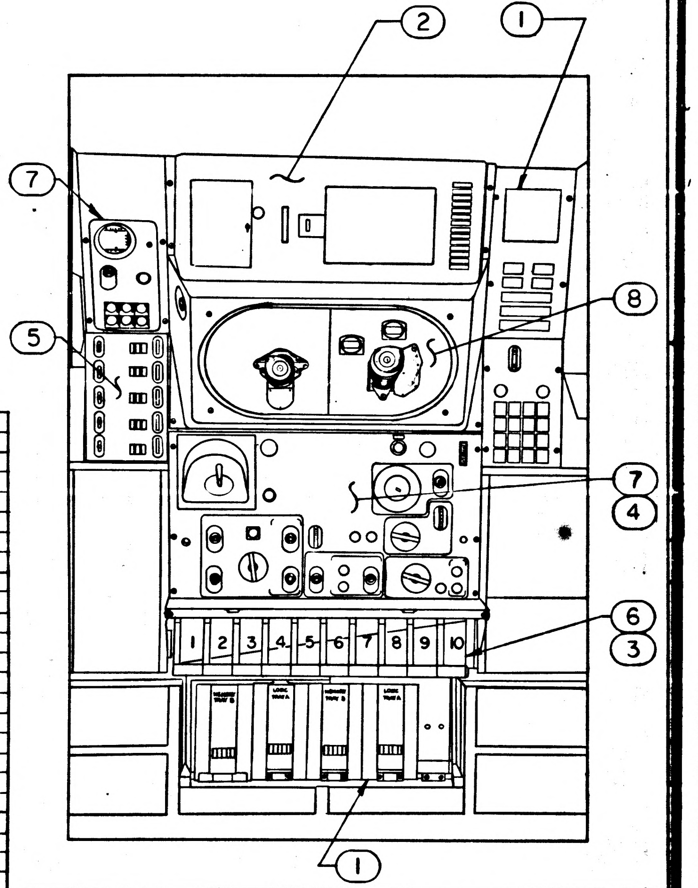
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK



	-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
	1899950-021	1899950-021	1899950-021	1899950-021	1899950-011		NAVIGATION BASE & OPTICS	65	8
	1014513	1014513	1014513	1014513	1014513		DISPLAY & CONTROL GROUP (D & C)	50	7
	1021207-011	1007170	1007100	1007100	1007100		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
	1016903-011	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY UNIT & FRAME SUB-SYSTEM	40	5
	1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	35	4
	1014606	1014606	1014606	1014606	1014606		INTERCONNECTION HARNESS & PSA END CONN	56	3
	1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER SUB-SYSTEM	15	2
	1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NOTES:

1. THIS DWG DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST *1019999
4. THIS DRAWING FOR REFERENCE ONLY

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN		11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W Kupfer	

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT COMMAND MODULE BLOCK I (SERIES 0)

CODE IDENT NO.
SIZE D
DRAWING NO. 1015000
SCALE
WT
SHEET 1 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK

			-051	-041	EFFECTIVITY UNDEFINED		SUB-SYSTEM	EQUIP CODE	FIND NO.
			1899950-031	1899950-031			NAVIGATION BASE & OPTICS	65	8
			1015023-011	1015023-011			DISPLAY & CONTROL GROUP (D & C)	50	7
			1007400-011	1007400-011			POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
			1016903-021	1016903-021			COUPLING & DISPLAY UNIT & FRAME SUB-SYSTEM	40	5
			1C01500-011	1001500-011			INERTIAL MEASURING UNIT ASSEMBLY	35	4
			1015056-011	1015056-011			INTERCONNECTION HARNESS & PSA END CONN	56	3
			1012221-011	1012221-011			MAP & DATA VIEWER SUB-SYSTEM	15	2
			1003770-031	1003770-011			APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN		11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	WKupfer	
MIT APPROVAL	WKupfer 13 Nov64	
APPROVED MSC	W J Rhine	11-13-64

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CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT COMMAND MODULE BLOCK I (SERIES 50)

CODE IDENT NO.
SIZE D
DRAWING NO. 1015000
SCALE
WT
SHEET 2 OF 3

MASTER

8 7 6 5 4 3 2 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15658	1/4/65	WK

-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
		1899950-041	1899950-041	1899950-041		NAVIGATION BASE & OPTICS	65	8
			1015023-021	1015023-021		DISPLAY & CONTROL GROUP (D & C)	50	7
			1007570-011	1007570-011		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
		1016903-021	1016903-021	1016903-021		COUPLING & DISPLAY UNIT & FRAME SUB-SYSTEM	40	5
	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	35	4
	1015086-011	1015086-011	1015086-011	1015086-011		INTERCONNECTION HARNESS & PSA END CONN	56	3
		1012221-021	1012221-021	1012221-021		MAP & DATA VIEWER SUB-SYSTEM	15	2
		1003770-011	1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W Kupfer	

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC 11-17-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G & N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO.
SIZE D
DRAWING NO. 1015000
SCALE
WT
SHEET 3 OF 3

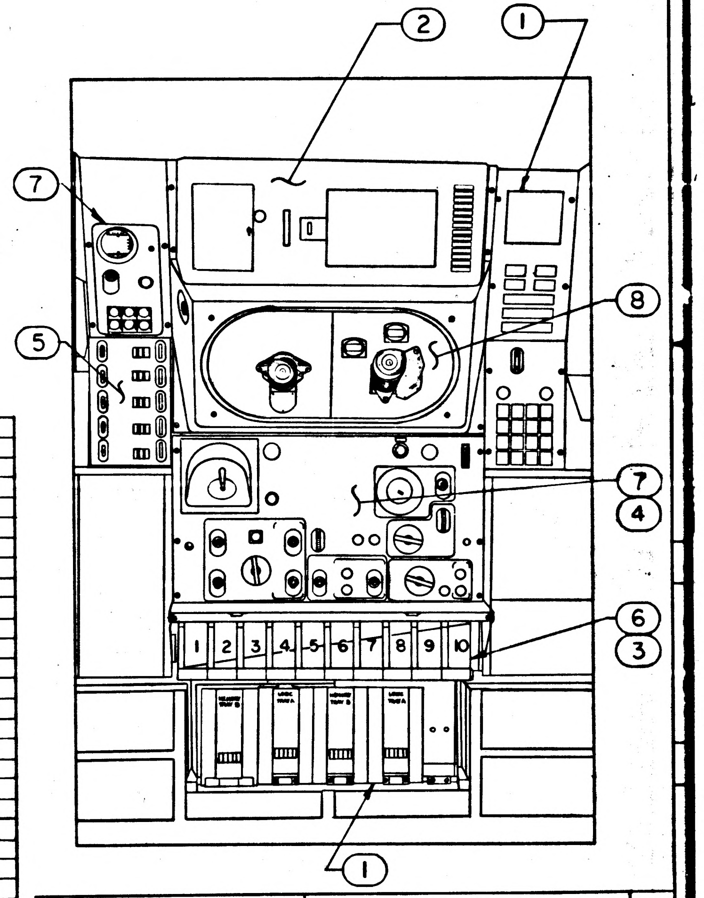
MASTER

4 3 2 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK



	-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
	1899950-021	1899950-021	1899950-021	1899950-021	1899950-011		NAVIGATION BASE & OPTICS	65	8
	1014513	1014513	1014513	1014513	1014513		DISPLAY & CONTROL GROUP (D & C)	50	7
	1021207-011	1007170	1007100	1007100	1007100		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
	1016903-011	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY UNIT & FRAME SUB-SYSTEM	40	5
	1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	35	4
	1014606	1014606	1014606	1014606	1014606		INTERCONNECTION HARNESS & PSA END CONN	56	3
	1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER SUB-SYSTEM	15	2
	1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NOTES:

1. THIS DWG DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA.
2. PROCURE TO PS 1015000
3. REF. DWGS. ← G & N C/M SUPPORTING DOCUMENTS LIST
   *1019999
4. THIS DRAWING FOR REFERENCE ONLY

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummola	11/11/64
CHECKED	A. J. Lunge	11/11/64
DESIGNER		
ENGINEER	W. Kupfer	

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-18-64

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CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO. SIZE D DRAWING NO. 1015000
SCALE WT SHEET 1 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK

-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
1899950-031	1899950-031		NAVIGATION BASE & OPTICS	65	8
1015023-011	1015023-011		DISPLAY & CONTROL GROUP (D&C)	50	7
1007400-011	1007400-011		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
1016903-021	1016903-021		COUPLING & DISPLAY UNIT & FRAME SUB-SYSTEM	40	5
1C01500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	35	4
1015056-011	1015056-011		INTERCONNECTION HARNESS & PSA END CONN	56	3
					2 (B)
1003770-031	1003770-011		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
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FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	V. Mummolo	11/11/64
CHECKED	A J Lucey	11/11/64
DESIGNER		
ENGINEER	W Kupfer	
MIT APPROVAL	W Kupfer	13 Nov 64
APPROVED MSC	W J Rhine	11-13-64

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G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO.
SIZE D
DRAWING NO. 1015000
SCALE
WT
SHEET 2 OF 3

1015000 B

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

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REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.

-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
		1899950-041	1899950-041	1899950-041		NAVIGATION BASE & OPTICS	65	8
			1015023-021	1015023-021		DISPLAY & CONTROL GROUP (D & C)	50	7
			1007570-011	1007570-011		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
		1016903-021	1016903-021	1016903-021		COUPLING & DISPLAY UNIT & FRAME SUB-SYSTEM	40	5
	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	35	4
	1015086-011	1015086-011	1015086-011	1015086-011		INTERCONNECTION HARNESS & PSA END CONN	56	3
								2 (B)
		1003770-011	1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W Kupfer	

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC 11-13-64

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO.
SIZE D
DRAWING NO. 1015000
SCALE
WT
SHEET 3 OF 3

1015000 B

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK

	-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
							WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
	1011788	1011788	1011788	1011788	1011788		LONG EYE RELIEF EYEPIECE ASSY, (SCT)		14
	1011787	1011787	1011787	1011787	1011787		LONG EYE RELIEF EYEPIECE ASSY, (SXT)		13
									12
	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
		1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	30	9
	1899950-041	1899950-031	1899950-021	1899950-021	1899950-011		NAVIGATION BASE & OPTICS	65	8
	1014513-011	1014513-000	1014513-000	1014513-000	1014513-000		DISPLAY & CONTROL GROUP (D & C)	50	7
	1021207-011	1007170	1007100	1007100	1007100		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
	1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
	1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	35	4
	1014606	1014606	1014606	1014606	1014606		INTERCONNECTION HARNESS & PSA END CONN	56	3
	1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER SUB-SYSTEM	15	2
	1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1
	20	8	7	6	5	G & N EFFECTIVITY ←			

SEE NOTE 5 (FIND NO. 13, 14)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NOTES:

1. THIS DWG DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA.
2. PROCURE TO PS 1015000.
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST # 1019999
4. THIS DRAWING FOR REFERENCE ONLY
5. THESE ITEMS ARE OPTIONAL EQUIPMENT WHICH MAY BE ORDERED BY NASA.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummola	11/11/64
CHECKED	A. J. Lunger	11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65
MIT APPROVAL	W Kupfer	13 Nov 64
APPROVED MSC	W J Rhine	11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 1015000
SCALE ~ | WT | SHEET 1 OF 3

MASTER

1015000 C

8 7 6 5 4 3 2 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS	14299		
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/19/65	WK

			1005707	1005707-011		WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
			1011788	1011788		LONG EYE RELIEF EYEPIECE ASSY, (SCT)		14
			1011787	1011787		LONG EYE RELIEF EYEPIECE ASSY, (SXT)		13
								12
			1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
			1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
			1007421-011	1007421-011		SIGNAL CONDITIONER ASSEMBLY	30	9
			1899950-051	1899950-061		NAVIGATION BASE & OPTICS	65	8
			1015023-011	1015023-011		DISPLAY & CONTROL GROUP (D&C)	50	7
			1007400-011	1007400-011		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
			1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
			1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	35	4
			1015056-011	1015056-011		INTERCONNECTION HARNESS & PSA END CONN	56	3
								2
			1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1
			-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
			17	12	G&N EFFECTIVITY ←			

SEE NOTE 5 (FIND NO. 13, 14)

(B) (FIND NO. 2)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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TOLERANCES ON
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DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED	AJ Lucyga	11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 apr 65
MIT APPROVAL	W Kupfer	13 Nov 64
APPROVED MSC	W J Rhine	11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT COMMAND MODULE BLOCK I (SERIES 50)

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	1015000
SCALE ~	WT	SHEET 2 OF 3

MASTER

8 7 6 5 4 3 2 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 19191	7/13/65	WK

-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	30	16
	1005727	1005727	1005707-011	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
	2011788	2011788	2011788	2011788		LONG EYE RELIEF EYEPIECE ASSY, (SCT)		14
	2011787	2011787	2011787	2011787		LONG EYE RELIEF EYEPIECE ASSY, (SXT)		13
								12
	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
						SIGNAL CONDITIONER ASSEMBLY	30	9
	1899950-071	1899950-071	1899950-071	1899950-071		NAVIGATION BASE & OPTICS	65	8
			1015023-021	1015023-021		DISPLAY & CONTROL GROUP (D & C)	50	7
			1007570-011	1007570-011		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
		1016903	1016903	1016903		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	35	4
	1015086-011	1015086-011	1015086-011	1015086-011		INTERCONNECTION HARNESS & PSA END CONN	56	3
								2 (B)
	1003770-031	1003770-031	1003770-021	1003770-031		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1
	121 — 124	111	110	109	G&N EFFECTIVITY ←			

SEE NOTE 5 (FIND NO. 13, 14)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65

MIT APPROVAL W. Kupfer 13 Nov 64
APPROVED MSC 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO. 80230 SIZE D DRAWING NO. 1015000
SCALE ~ WT SHEET 3 OF 3

MASTER

1015000 C

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20261	6/24/65	WK

	-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
							WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
	1011788	1011788	1011788	1011788	1011788		LONG EYE RELIEF EYEPIECE ASSY, (SCT)		14
	1011787	1011787	1011787	1011787	1011787		LONG EYE RELIEF EYEPIECE ASSY, (SXT)		13
									12
	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
		1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	30	9
	1899950-041	1899950-031	1899950-021	1899950-021	1899950-011		NAVIGATION BASE & OPTICS	65	8
	1014513-011	1014513-000	1014513-000	1014513-000	1014513-000		DISPLAY & CONTROL GROUP (D & C)	50	7
	1021207-011	1007170	1007267	1007100	1007100		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
	1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
	1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	35	4
	1014606	1014606	1014606	1014606	1014606		INTERCONNECTION HARNESS & PSA END CONN	56	3
	1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER SUB-SYSTEM	15	2
	1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1
	20	8	7	6	5	G & N EFFECTIVITY ←			

Find Nos. 14 and 13: SEE NOTE 5

NOTES:

1. THIS DWG DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I * 1019999
4. THIS DRAWING FOR REFERENCE ONLY
5. THESE ITEMS ARE OPTIONAL EQUIPMENT WHICH MAY BE ORDERED BY NASA.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummola	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stamm	5 Apr. 65
MIT APPROVAL	W Kupfer	13 Nov 64
APPROVED MSC	W J Rhine	11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 1 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/14/65	WK
D	REVISED PER TDRR 20261	6/22/65	WK

-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
1005707	1005707-011		WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
1011788	1011788		LONG EYE RELIEF EYEPIECE ASSY, (SCT)		14
1011787	1011787		LONG EYE RELIEF EYEPIECE ASSY, (SXT)	-	13
					12
1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	30	9
1899950-051	1899950-061		NAVIGATION BASE & OPTICS	65	8
1015023-011	1015023-011		DISPLAY & CONTROL GROUP (D & C)	50	7
1007400-011	1007400-011		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	35	4
1015056-011	1015056-011		INTERCONNECTION HARNESS & PSA END CONN	56	3
					2
1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1
17	12	G&N EFFECTIVITY ←			

Finds 14 and 13: SEE NOTE 5

Find 2: (B)

LIST OF MATERIALS

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 1015000
SCALE ~ | WT | SHEET 2 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

r

REVISIONS 14299			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15658	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 19191	7/13/65	WK
D	REVISED PER TDRR 20261	[illegible]	WK

-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	55	16
	1005727	1005727	1005707-011	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
	2011788	2011788	2011788	2011788		LONG EYE RELIEF EYEPIECE ASSY, (SCT)		14
	2011787	2011787	2011787	2011787		LONG EYE RELIEF EYEPIECE ASSY, (SXT)		13
								12
	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
	1007700-031	1007700-031	1007700-031	1007700-031		SIGNAL CONDITIONER ASSEMBLY	30	9
	1899950-071	1899950-071	1899950-071	1899950-071		NAVIGATION BASE & OPTICS	65	8
	1015023-021	1015023-021	1015023-021	1015023-021		DISPLAY & CONTROL GROUP (D & C)	50	7
	1007570-011	1007570-011	1007570-011	1007570-011		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	35	4
	1015086-011	1015086-011	1015086-011	1015086-011		INTERCONNECTION HARNESS & PSA END CONN	56	3
								2
	1003770-031	1003770-031	1003770-021	1003770-031		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1
	121 — 124	111	110	109	G&N EFFECTIVITY ←			

Find nos. 14, 13: SEE NOTE 5

Find no. 2: (B)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED	[illegible]	11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 apr. 65

MIT APPROVAL W. Kupfer 13 Nov 64
APPROVED MSC [illegible] 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT COMMAND MODULE BLOCK I (SERIES 100)

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	1015000
SCALE ~	WT	SHEET 3 OF 3

1015000 D

MASTER

12

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/14/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20261	6/29/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK

	-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
							WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
	1011788	1011788	1011788	1011788	1011788		LONG EYE RELIEF EYEPIECE ASSY, (SCT)	65	14
	1011787	1011787	1011787	1011787	1011787		LONG EYE RELIEF EYEPIECE ASSY, (SXT)	65	13
									12
	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
	1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	30	9
	1899950-041	1899950-031	1899950-021	1899950-021	1899950-011		NAVIGATION BASE & OPTICS	65	8
	1014513-011	1014513-000	1014513-000	1014513-000	1014513-000		DISPLAY & CONTROL GROUP (D & C)	50	7
	1021207-011	1007170	1007267	1007100	1007100		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
	1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
	1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	35	4
	1014606	1014606	1014606	1014606	1014606		INTERCONNECTION HARNESS & PSA END CONN	56	3
	1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER SUB-SYSTEM	15	2
	1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1
	20	8	7	6	5	G & N EFFECTIVITY ←			

} SEE NOTE 5

NOTES:

1. THIS DWG DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I # 1019999
4. THIS DRAWING FOR REFERENCE ONLY
5. THESE ITEMS ARE OPTIONAL EQUIPMENT WHICH MAY BE ORDERED BY NASA.

MASTER

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

HEAT TREATMENT

FINAL FINISH

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

SIGNATURES		DATE
DRAWN	J. Mummolo	11/11/64
CHECKED	A. J. Crango	11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT COMMAND MODULE BLOCK I (SERIES 0)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 1 OF 3

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20261	6/22/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK

-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
1005707	1005707-011		WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
1011788	1011788		LONG EYE RELIEF EYEPIECE ASSY, (SCT)	65	14
1011787	1011787		LONG EYE RELIEF EYEPIECE ASSY, (SXT)	65	13
					12
1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	30	9
1899950-051	1899950-061		NAVIGATION BASE & OPTICS	65	8
1015023-011	1015023-011		DISPLAY & CONTROL GROUP (D & C)	50	7
1007400-011	1007400-011		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	35	4
1015056-011	1015056-011		INTERCONNECTION HARNESS & PSA END CONN	56	3
					2
1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1
17	12	G&N EFFECTIVITY			

} SEE NOTE 5 (find nos. 13, 14)

(B) (find no. 2)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED	A J Lunge	11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 2 OF 3

1015000

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15658	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 19191	4/13/65	WK
D	REVISED PER TDRR 20261	6/2/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK

-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	55	16
	1005727	1005727	1005707-011	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
	2011788	2011788	2011788	2011788		LONG EYE RELIEF EYEPIECE ASSY, (SCT)	65	14
	2011787	2011787	2011787	2011787		LONG EYE RELIEF EYEPIECE ASSY, (SXT)	65	13
								12
	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
	1007700-031	1007700-031	1007700-031	1007700-031		SIGNAL CONDITIONER ASSEMBLY	30	9
	1899950-071	1899950-071	1899950-071	1899950-071		NAVIGATION BASE & OPTICS	65	8
	1015023-021	1015023-021	1015023-021	1015023-021		DISPLAY & CONTROL GROUP (D & C)	50	7
	1007570-011	1007570-011	1007570-011	1007570-011		POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	35	4
	1015086-000	1015086-000	1015086-000	1015086-000		INTERCONNECTION HARNESS & PSA END CONN	56	3
								2
	1003770-031	1003770-031	1003770-021	1003770-031		APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1
	121 — 124	111	110	109	G & N EFFECTIVITY ←			

SEE NOTE 5 (FIND NO. 13–14)

(B) (FIND NO. 2)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	V. Mummolo	11/11/64
CHECKED	A J Lungo	11/11/64
DESIGNER		
ENGINEER	W Stameris	5 apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 3 OF 3

MASTER

8 7 6 5 4 3 2 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/14/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20261	6/29/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK

	-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.	
	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	55	19	
	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, COOLANT	55	18	
	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	55	17	
									16	
									15	
	1011788	1011788	1011788	1011788	1011788		LONG EYE RELIEF EYEPIECE ASSY, (SCT)	65	14	SEE NOTE 5
	1011787	1011787	1011787	1011787	1011787		LONG EYE RELIEF EYEPIECE ASSY, (SXT)	65	13	
									12	
	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11	
	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10	
	1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	30	9	
	1899950-041	1899950-031	1899950-021	1899950-021	1899950-011		NAVIGATION BASE AND OPTICAL UNIT ASSY.	65	8	
	1014513-011	1014513-000	1014513-000	1014513-000	1014513-000		DISPLAY & CONTROL GROUP	50	7	
	1021207-011	1007170	1007267	1007100	1007100		POWER AND SERVO ASSEMBLY	45	6	
	1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5	
	1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	35	4	
	1014606	1014606	1014606	1014606	1014606		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	56	3	
	1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER SUB-SYSTEM	15	2	
	1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER GROUP	05	1	
	20	8	7	6	5	G & N EFFECTIVITY				

NOTES:

1. THIS DWG DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I
   * 1019999
4. THIS DRAWING FOR REFERENCE ONLY
5. THESE ITEMS ARE OPTIONAL EQUIPMENT WHICH MAY BE ORDERED BY NASA.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

HEAT TREATMENT

FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED	A. J. Lungo	11/11/64
DESIGNER		
ENGINEER	W. Stamm	5 Apr 65

MIT APPROVAL W Kupfer 13 Nov 64

APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	1015000

SCALE ~ WT SHEET 1 OF 3

8 7 6 5 4 3 2 1

NOTICE — WHEN GOVERNMENT DRAWINGS SPECIFICATIONS. OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION. THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20261	6/22/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK

			-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
			1000110-307	1000110-307		SCREW HEX SOCKET HEAD	55	19
			1001591	1001591		BRACKET ASSY, COOLANT	55	18
			1000293	1000293		CLAMP BRACKET (COOLANT LINE)	55	17
								16
			1005707-011	1005707-021		WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
			1011788	1011788		LONG EYE RELIEF EYEPIECE ASSY, (SCT)	65	14
			1011787	1011787		LONG EYE RELIEF EYEPIECE ASSY, (SXT)	65	13
								12
			1001470	1001470		OSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
			1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
			1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	30	9
			1899950-051	1899950-061		NAVIGATION BASE AND OPTICAL UNIT ASSY	65	8
			1015023-011	1015023-011		DISPLAY & CONTROL GROUP	50	7
			1007400-011	1007400-011		POWER AND SERVO ASSEMBLY	45	6
			1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
			1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	35	4
			1015056-011	1015056-011		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	56	3
								2
			1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER GROUP	05	1
			17	12	G&N EFFECTIVITY ←			

} SEE NOTE 5 (FIND NO. 14, 13)

(B) (FIND NO. 2)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

ND 1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED	A J Lesago	11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 apr. 65
MIT APPROVAL	W Kupfer	13 Nov 64
APPROVED MSC	W J Rhine	11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	1015000

SCALE ~ WT SHEET 2 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 19191	7/13/65	WK
D	REVISED PER TDRR 20261	[illegible]	WK
E	REVISED PER TDRR 21146	[illegible]	[illegible]
F	REVISED PER TDRR 21998	8-31-65	WK

	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	55	19	
	1001591	1001591	1001591	1001591		BRACKET ASSY, COOLANT	55	18	
	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	55	17	
	1007585-011	10075[illegible]011	1007585-011	1007585-011		TRACKER X & Y ASSY	55	16	
	1005727	1005727	1005707-021	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15	
	2011788	2011788	2011788	2011788		LONG EYE RELIEF EYEPIECE ASSY, (SCT)	65	14	SEE NOTE 5
	2011787	2011787	2011787	2011787		LONG EYE RELIEF EYEPIECE ASSY, (SXT)	65	13	
								12	
	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11	
	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10	
	1007700-031	1007700-031	1007700-031	1007700-031		SIGNAL CONDITIONER ASSEMBLY	30	9	
	1899950-071	1899950-071	1899950-071	1899950-071		NAVIGATION BASE AND OPTICAL UNIT ASSY	65	8	
	1015023-021	1015023-021	1015023-021	1015023-021		DISPLAY & CONTROL GROUP	50	7	
	1007570-011	1007570-011	1007570-011	1007570-011		POWER AND SERVO ASSEMBLY	45	6	
	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5	
	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	35	4	
	1015086-000	1015086-000	1015086-000	1015086-000		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	56	3	
								2	B
	1003770-031	1003770-031	1003770-021	1003770-031		APOLLO GUIDANCE COMPUTER GROUP	05	1	
-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.	
	121 — 124	111	110	109	G&N EFFECTIVITY ←				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

HEAT TREATMENT

FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED	A J Luongo	11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 apr. 65

MIT APPROVAL W Kupfer 13 Nov 64

APPROVED MSC 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE
SHEET 3 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20241	6/29/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21778	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK

	-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	55	19
	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, COOLANT	55	18
	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	55	17
									16
									15
									14
									13
									12
	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
	1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	30	9
	1899950-041	1899950-031	1899950-021	1899950-021	1899950-011		NAVIGATION BASE AND OPTICAL UNIT ASSY.	65	8
	1014513-000	1014513-000	1014513-000	1014513-000	1014513-000		DISPLAY & CONTROL GROUP	50	7
	1021207-011	1007170	1007267	1007100	1007100		POWER AND SERVO ASSEMBLY	45	6
	1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
	1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	35	4
	1014606	1014606	1014606	1014606	1014606		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	56	3
	1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER SUB-SYSTEM	15	2
	1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER GROUP	05	1
	20	8	7	6	5	G & N EFFECTIVITY ←			

NOTES:

1. THIS DWG DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I-1019999.
   INSTALLATION LIST APOLLO GUIDANCE EQUIPMENT BLOCK I-1014999.
4.
5.
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	J. Mummola	11/11/64
CHECKED	A. J. Curgo	11/11/64
DESIGNER		
ENGINEER	W. Stameus	5 Apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	1015000

SCALE ~ WT SHEET 1 OF 3

1015000 G

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/14/65	WK
D	REVISED PER TDRR 20261	6/22/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK

-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
1000110-307	1000110-307		SCREW HEX SOCKET HEAD	55	19
1001591	1001591		BRACKET ASSY, COOLANT	55	18
1000293	1000293		CLAMP BRACKET (COOLANT LINE)	55	17
					16
1005707-011	1005707-021		WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
					14
					13
					12
1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	30	9
1899950-051	1899950-061		NAVIGATION BASE AND OPTICAL UNIT ASSY	65	8
1015023-011	1015023-011		DISPLAY & CONTROL GROUP	50	7
1007400-011	1007400-011		POWER AND SERVO ASSEMBLY	45	6
1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	35	4
1015056-011	1015056-011		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	56	3
					2 (B)
1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER GROUP	05	1
17	12	G&N EFFECTIVITY ←			

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Nummola	11/11/64
CHECKED	A J Enoye	11/11/64
DESIGNER		
ENGINEER	W. Stameris	sept. 65

MIT APPROVAL WKupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 2 OF 3

1015000 G

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 19191	4/13/65	WK
D	REVISED PER TDRR 20261	6/2/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK

	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	55	19
	1001591	1001591	1001591	1001591		BRACKET ASSY, COOLANT	55	18
	1000293	1000293	1000293,	1000293		CLAMP BRACKET (COOLANT LINE)	55	17
	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	55	16
	1005727	1005727	1005707-021	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
								14
								13
								12
	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
	1007700-031	1007700-031	1007700-031	1007700-031		SIGNAL CONDITIONER ASSEMBLY	30	9
	1899950-071	1899950-071	1899950-071	1899950-071		NAVIGATION BASE AND OPTICAL UNIT ASSY	65	8
	1015023-021	1015023-021	1015023-021	1015023-021		DISPLAY & CONTROL GROUP	50	7
	1007570-011	1007570-011	1007570-011	1007570-011		POWER AND SERVO ASSEMBLY	45	6
	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	35	4
	1015086-000	1015086-000	1015086-000	1015086-000		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	56	3
								2 (B)
	1003770-031	1003770-031	1003770-021	1003770-031		APOLLO GUIDANCE COMPUTER GROUP	05	1
-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
	121 — 124	111	110	109	G&N EFFECTIVITY ←			

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

ND1000000	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 3 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RS	1/14/65	WK
B	REVISED PER TDRR 17409.	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20261	6/2/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21778	8-31-65	WK
G	REVISED PER TDRR 22567	9/24/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK

	-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	55	19
	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, COOLANT	55	18
	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	55	17
									16
									15
									14
									13
									12
	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
	1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	30	9
	1899950-021	1899950-021	1899950-021	1899950-021	1899950-011		NAVIGATION BASE AND OPTICAL UNIT ASSY.	65	8
	1014513-000	1014513-000	1014513-000	1014513-000	1014513-000		DISPLAY & CONTROL GROUP	50	7
	1021207-011	1007170	1007267	1007100	1007100		POWER AND SERVO ASSEMBLY	45	6
	1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
	1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	35	4
	1014606	1014606	1014606	1014606	1014606		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	56	3
	1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER SUB-SYSTEM	15	2
	1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER GROUP	05	1
	20	8	7	6	5	G&N EFFECTIVITY			

NOTES:

1. THIS DWG DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G&N C/M SUPPORTING DOCUMENTS LIST BLOCK I-1019999.
   INSTALLATION LIST APOLLO GUIDANCE EQUIPMENT BLOCK I-1014999.
4.
5.
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	J. Mummola	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameson	5 Apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	1015000

SCALE ~ WT SHEET 1 OF 1

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/19/65	WK
D	REVISED PER TDRR 20261	6/22/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK

-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
1000110-307	1000110-307		SCREW HEX SOCKET HEAD	55	19
1001591	1001591		BRACKET ASSY, COOLANT	55	18
1000293	1000293		CLAMP BRACKET (COOLANT LINE)	55	17
					16
1005707-011	1005707-021		WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
					14
					13
					12
1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	30	9
1899950-031	1899950-031		NAVIGATION BASE AND OPTICAL UNIT ASSY	65	8
1015023-011	1015023-011		DISPLAY & CONTROL GROUP	50	7
1007400-011	1007400-011		POWER AND SERVO ASSEMBLY	45	6
1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	35	4
1015056-011	1015056-011		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	56	3
1012136	1012136		MAP & DATA VIEWER SUBSYSTEM	15	2 (B)
1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER GROUP	05	1
17	12	G&N EFFECTIVITY			

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	V. Mummola	11/11/64
CHECKED	AJ Lawyer	11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65

MIT APPROVAL WKupfer 13 Nov 64
APPROVED MSC WJ Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 2 OF 3

H 1015000

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15658	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 19191	7/13/65	WK
D	REVISED PER TDRR 20261	[illegible]	WK
E	REVISED PER TDRR 21146	7/29/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK

-131	-121	-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	EQUIP CODE	FIND NO.
1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	55	19
1001591	1001591	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, COOLANT	55	18
1000293	1000293	1000293	1000293	1000293	1000293,	1000293		CLAMP BRACKET (COOLANT LINE)	55	17
1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	55	16
1005727	1005727	1005727	1005727	1005727	1005707-021	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	55	15
										14
										13
										12
1001470	1001470	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	55	11
1001469	1001469	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	55	10
1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031		SIGNAL CONDITIONER ASSEMBLY	30	9
1899950-081	1899950-081	1899950-081	1899950-061	1899950-071	1899950-071	1899950-081		NAVIGATION BASE AND OPTICAL UNIT ASSY	65	8
1015023-021	1015023-021	1015023-021	1015023-021	1015023-021	1015023-021	1015023-021		DISPLAY & CONTROL GROUP	50	7
1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011		POWER AND SERVO ASSEMBLY	45	6
1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	40	5
1001500-031	1001500-031	1001500-031	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	35	4
1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	56	3
										2 (B)
1003770-06	1003770-061	1003770-061	1003770-031	1003770-031	1003770-021	1003770-061		APOLLO GUIDANCE COMPUTER GROUP	05	1
124	123	122	121	111	110	109	G&N EFFECTIVITY ←			

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummola	11/11/64
CHECKED	A J Rongo	11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	1015000

SCALE ~ WT SHEET 3 OF 3

MASTER

H 1015000

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RS	1/14/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20261	6/29/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21778	8-31-65	WK
G	REVISED PER TDRR 22567	9/24/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK

	-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP. CODE	FIND NO.
	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, COOLANT	1	55	18
	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
										16
										15
										14
										13
										12
	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
	1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	1	30	9
	1899950-021	1899950-021	1899950-021	1899950-021	1899950-011		NAVIGATION BASE AND OPTICAL UNIT ASSY.	1	65	8
	1014513-000	1014513-000	1014513-000	1014513-000	1014513-000		DISPLAY & CONTROL GROUP	1	50	7
	1021207-011	1007170	1007267	1007100	1007100		POWER AND SERVO ASSEMBLY	1	45	6
	1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
	1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
	1014606	1014606	1014606	1014606	1014606		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
	1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER SUB-SYSTEM	1	15	2
	1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
	20	8	7	6	5	G & N EFFECTIVITY				

NOTES:

1. THIS DWG DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I-1019999.
   INSTALLATION LIST APOLLO GUIDANCE EQUIPMENT BLOCK I-1014999.
4.
5.
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

SIGNATURES		DATE
DRAWN	U. Mummola	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Marrow	5 Apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO. 80230 SIZE D DRAWING NO. 1015000
SCALE ~ WT SHEET 1 OF 3

MASTER

8 7 6 5 4 3 2 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/2/65	WK
C	REVISED PER TDRR 18191	4/19/65	WK
D	REVISED PER TDRR 20261	6/22/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK

			-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
			1000110-307	1000110-307		SCREW HEX SOCKET HEAD	1	55	19
			1001591	1001591		BRACKET ASSY, COOLANT	1	55	18
			1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
									16
			1005707-011	1005707-021		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
									14
									13
									12
			1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
			1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
			1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	1	30	9
			1899950-031	1899950-031		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
			1015023-011	1015023-011		DISPLAY & CONTROL GROUP	1	50	7
			1007400-011	1007400-011		POWER AND SERVO ASSEMBLY	1	45	6
			1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	45	5
			1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
			1015056-011	1015056-011		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
			1012136	1012136		MAP & DATA VIEWER SUBSYSTEM	1	15	2
			1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
			17	12	G&N EFFECTIVITY				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ___ DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
HEAT TREATMENT ___
FINAL FINISH ___

SIGNATURES		DATE
DRAWN	V. Mammola	11/11/64
CHECKED	AJ Lumyo	11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65
MIT APPROVAL	W Kupfer	13 Nov 64
APPROVED NBC	W J Rhine	11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	1015000

SCALE — WT SHEET 2 OF 3

MASTER

8 7 6 5 4 3 2 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15658	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 19191	4/13/65	WK
D	REVISED PER TDRR 20261	6/2/65	WK
E	REVISED PER TDRR 21146	7/29/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK

-111	-111	-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
124	123	122	121	111	110	109	G&N EFFECTIVITY ←				
1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, COOLANT	1	55	18
1000293	1000293	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	1	55	16
1005727	1005727	1005727	1005727	1005727	1005707-021	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
											14
											13
											12
1001470	1001470	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-081	1899950-08	1899950-08	1899950-06	1899950-071	1899950-071	1899950-081		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
1015023-021	1015023-021	1015023-021	1015023-021	1015023-021	1015023-021	1015023-021		DISPLAY & CONTROL GROUP	1	50	7
1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-031	1001500-031	1001500-031	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
											2
1003770-06	1003770-061	1003770-061	1003770-031	1003770-031	1003770-021	1003770-061		APOLLO GUIDANCE COMPUTER GROUP	1	05	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± -
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	1015000

SCALE ~ WT SHEET 3 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RS	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20261	6/29/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21778	8-31-65	WK
G	REVISED PER TDRR 22567	9/4/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK

	-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP. CODE	FIND NO.
	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
										16
										15
										14
										13
										12
	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
	1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	1	30	9
	1899950-021	1899950-021	1899950-021	1899950-021	1899950-011		NAVIGATION BASE AND OPTICAL UNIT ASSY.	1	65	8
	1014513-000	1014513-000	1014513-000	1014513-000	1014513-000		DISPLAY & CONTROL GROUP	1	50	7
	1021207-011	1007170	1007267	1007100	1007100		POWER AND SERVO ASSEMBLY	1	45	6
	1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
	1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
	1014606	1014606	1014606	1014606	1014606		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
	1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER ASSEMBLY	1	15	2
	1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
	20	8	7	6	5	G & N EFFECTIVITY				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NOTES:
1. THIS DRAWING DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA. SEE INSTALLATION LIST 1014999 FOR CONFIGURATION CHANGES DUE TO RETROFIT.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I-1019999.
   INSTALLATION LIST APOLLO GUIDANCE EQUIPMENT BLOCK I-1014999.
4.
5.
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

SIGNATURES		DATE
DRAWN	J. Mummola	11/11/64
CHECKED	A. J. Lunge	11/11/64
DESIGNER		
ENGINEER	W. Stameen	5 Apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO. 80230 SIZE D DRAWING NO. 1015000
SCALE ~ WT SHEET 1 OF 3

1015000 K

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/14/65	WK
D	REVISED PER TDRR 20261	6/22/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK

-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
1000110-307	1000110-307		SCREW HEX SOCKET HEAD	1	55	19
1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
						16
1005707-011	1005707-021		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
						14
						13
						12
1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469		HOSE ASSY. FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-031	1899950-031		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
1015023-011	1015023-011		DISPLAY & CONTROL GROUP	1	50	7
1007400-011	1007400-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	45	5
1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015056-011	1015056-011		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
1012136	1012136		MAP & DATA VIEWER ASSEMBLY	1	15	2
1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
17	12	G&N EFFECTIVITY ←				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED	A J Savage	11/11/64
DESIGNER		
ENGINEER	W. Stameris	Sept. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE —
WT
SHEET 2 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 19191	7/13/65	WK
D	REVISED PER TDRR 20261	7/2/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK

1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY,(COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	1	55	16
1005727	1005727	1005727	1005727	1005727	1005707-021	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
											14
											13
											12
1001470	1001470	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-081	1899950-081	1899950-081	1899950-061	1899950-071	1899950-071	1899950-081		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
1015023-021	1015023-021	1015023-021	1015023-021	1015023-021	1015023-021	1015023-021		DISPLAY & CONTROL GROUP	1	50	7
1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-031	1001500-031	1001500-031	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
											2
1003770-081	1003770-081	1003770-081	1003770-031	1003770-031	1003770-021	1003770-061		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
-111	-111	-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
124	123	122	121	111	110	109	G&N EFFECTIVITY ←				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

ND1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± -
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	V. Mummolo	11/1/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65

MIT APPROVAL W. Kupfer 13 Nov 64
APPROVED MSC 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 3 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RS	1/14/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20261	6/29/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21778	8-31-65	WK
G	REVISED PER TDRR 22567	9/14/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK

	-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP. CODE	FIND NO.
	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
										16
										15
										14
										13
										12
	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
	1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	1	30	9
	1899950-021	1899950-021	1899950-021	1899950-021	1899950-011		NAVIGATION BASE AND OPTICAL UNIT ASSY.	1	65	8
	1014513-000	1014513-000	1014513-000	1014513-000	1014513-000		DISPLAY & CONTROL GROUP	1	50	7
	1021207-011	1007170	1007267	1007100	1007100		POWER AND SERVO ASSEMBLY	1	45	6
	1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
	1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
	1014606	1014606	1014606	1014606	1014606		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
	1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER ASSEMBLY	1	15	2
	1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
	20	8	7	6	5	G & N EFFECTIVITY				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NOTES:

1. THIS DRAWING DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA. SEE INSTALLATION LIST 1014999 FOR CONFIGURATION CHANGES DUE TO RETROFIT.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I-1019999.
   INSTALLATION LIST APOLLO GUIDANCE EQUIPMENT BLOCK I-1014999.
4.
5.
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.

ND 1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL ———
HEAT TREATMENT ———
FINAL FINISH ———

SIGNATURES		DATE
DRAWN	W. Mummola	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stamm	5 Apr. 65
MIT APPROVAL	W Kupfer	13 Nov 64
APPROVED MSC	W J Rhine	11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT COMMAND MODULE BLOCK I (SERIES 0)

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	1015000
SCALE ~	WT	SHEET 1 OF 3

1015000

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/14/65	WK
D	REVISED PER TDRR 20261	6/22/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
Ⓜ K	REVISED PER TDRR 24366	11-29-65	WK
L *	REVISED PER TDRR 24493	12-6-65	WK

			-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
			1000110-307	1000110-307		SCREW HEX SOCKET HEAD	1	55	19
			1001591	1001591		BRACKET ASSY,(COOLANT LINE)	1	55	18
			1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
									16
			1005707-011	1005707-021		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
									14
									13
									12
			1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
			1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
			1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	1	30	9
			1899950-031	1899950-031		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
			1015023-011	1015023-011		DISPLAY & CONTROL GROUP	1	50	7
			1007400-011	1007400-011		POWER AND SERVO ASSEMBLY	1	45	6
			1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	45	5
			1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
			1015056-011	1015056-011		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
			1012136	1012136		MAP & DATA VIEWER ASSEMBLY	1	15	2
			1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
			17	12	G&N EFFECTIVITY ←				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

ND 1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

SIGNATURES		DATE
DRAWN	V. Mammola	11/11/64
CHECKED	A J Snoyer	11/11/64
DESIGNER		
ENGINEER	W. Stameris	Sept. 65

MIT APPROVAL WKupfer 13 Nov64
APPROVED MSC WJ Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO. 80230 SIZE D DRAWING NO. 1015000
SCALE — WT SHEET 2 OF 3

1015000

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15658	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 19191	4/13/65	WK
D	REVISED PER TDRR 20261	6/2/65	WK
E	REVISED PER TDRR 21146	7/2/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK

1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY,(COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	1	55	16
1005727	1005727	1005727	1005727	1005727	1005707-021	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
											14
											13
											12
1001470	1001470	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-081	1899950-081	1899950-081	1899950-061	1899950-071	1899950-071	1899950-081		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
1015023-021	1015023-021	1015023-021	1015023-021	1015023-021	1015023-021	1015023-021		DISPLAY & CONTROL GROUP	1	50	7
1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-031	1001500-031	1001500-031	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
											2
1003770-091	1003770-091	1003770-081	1003770-031	1003770-031	1003770-021	1003770-061		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
-121	-121	-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
124	123	122	121	111	110	109	G&N EFFECTIVITY ←				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NDI000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± -
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED	A J [illegible]	11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65
MIT APPROVAL	W Kupfer	13 Nov 64
APPROVED MSC	W J [illegible]	11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT COMMAND MODULE BLOCK I (SERIES 100)

CODE IDENT NO. 80230 SIZE D DRAWING NO. 1015000
SCALE ~ WT SHEET 3 OF 3

1015000

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/14/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20261	6/24/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21778	8-31-65	WK
G	REVISED PER TDRR 22567	9/24/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK

	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
										16
										15
										14
										13
										12
	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
	1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	1	30	9
	1399950-021	1899950-021	1899950-021	1899950-021	1899950-011		NAVIGATION BASE AND OPTICAL UNIT ASSY.	1	65	8
	1014513-000	1014513-000	1014513-000	1014513-000	1014513-000		DISPLAY & CONTROL GROUP	1	50	7
	1021207-011	1007170	1007267	1007100	1007100		POWER AND SERVO ASSEMBLY	1	45	6
	1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
	1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
	1014606	1014606	1014606	1014606	1014606		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
	1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER ASSEMBLY	1	15	2
	1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
	-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP. CODE	FIND NO.
	20	8	7	6	5	G & N EFFECTIVITY ←				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NOTES:

1. THIS DRAWING DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA. SEE INSTALLATION LIST 1014999 FOR CONFIGURATION CHANGES DUE TO RETROFIT.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I-1019999.
   INSTALLATION LIST APOLLO GUIDANCE EQUIPMENT BLOCK I-1014999.
4.
5.
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL —

HEAT TREATMENT —

FINAL FINISH —

SIGNATURES		DATE
DRAWN	J. Mammola	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 66

MIT APPROVAL W Kupfer 13 Nov 64

APPROVED MSC

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	1015000

SCALE ~ WT SHEET 1 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
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B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/19/65	WK
D	REVISED PER TDRR 20261	6/22/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK

Ⓜ

			-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
			1000110-307	1000110-307		SCREW HEX SOCKET HEAD	1	55	19
			1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
			1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
									16
			1005707-011	1005707-021		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
									14
									13
									12
			1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
			1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
			1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	1	30	9
			1899950-031	1899950-031		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
			1015023-011	1015023-011		DISPLAY & CONTROL GROUP	1	50	7
			1007400-011	1007400-011		POWER AND SERVO ASSEMBLY	1	45	6
			1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
			1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
			1015056-011	1015056-011		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
			1012136	1012136		MAP & DATA VIEWER ASSEMBLY	1	15	2
			1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
			17	12	G&N EFFECTIVITY				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

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SIGNATURES		DATE
DRAWN	U. Mammola	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65

MIT APPROVAL WKupfer 13 Nov 64
APPROVED MSC WJ Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE —
WT
SHEET 2 OF 3

1015000 M

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15658	1/4/65	WK
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C	REVISED PER TDRR 19191	4/13/65	WK
D	REVISED PER TDRR 20261	6/2/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22963	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK.

1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	1	55	16
1005727	1005727	1005727	1005727	1005727	1005707-021	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
											14
											13
											12
1001470	1001470	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-14	1899950-14	1399950-08	1899950-06	1899950-07	1899950-07	1899950-08		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
1015023-021	1015023-021	1015023-021	1015023-021	1015023-021	1015023-021	1015023-021		DISPLAY & CONTROL GROUP	1	50	7
1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-031	1001500-031	1001500-031	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
											2
1003770-091	1003770-091	1003770-081	1003770-031	1003770-081	1003770-021	1003770-061		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
-121	-121	-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
124	123	122	121	111	110	109	G&N EFFECTIVITY				

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LIST OF MATERIALS

NEXT ASSY	USED ON
ND1000000	

APPLICATION

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FRACTIONS ± — DECIMALS ± — ANGLES ± —
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HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65

MIT APPROVAL WKupfer 13 Nov 64
APPROVED MSC 11-17-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 3 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/18/65	WR
B	REVISED PER TDRR 17409.	3/12/65	WR
C	REVISED PER TDRR 18191	4/13/65	WR
D	REVISED PER TDRR 20241	6/24/65	WR
E	REVISED PER TDRR 21146	7/27/65	WR
F	REVISED PER TDRR 21778	8-31-65	WR
G	REVISED PER TDRR 22567	9/14/65	WR
H	REVISED PER TDRR 22903	10/5/65	WR
J	REVISED PER TDRR 23625	11-2-65	WR
K	REVISED PER TDRR 24366	11-29-65	WR
L	REVISED PER TDRR 24493	12-6-65	WR
M	REVISED PER TDRR 26619	2-23-66	WR
N	REVISED PER TDRR 27350	3-22-66	WR

	-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP. CODE	FIND NO.
	20	8	7	6	5	G & N EFFECTIVITY				
	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
										16
										15
										14
										13
										12
	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
	1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	1	30	9
	1899950-021	1899950-021	1899950-021	1899950-021	1899950-011		NAVIGATION BASE AND OPTICAL UNIT ASSY.	1	65	8
	1014513-000	1014513-000	1014513-000	1014513-000	1014513-000		DISPLAY & CONTROL GROUP	1	50	7
	1021207-011	1007170	1007267	1007100	1007100		POWER AND SERVO ASSEMBLY	1	45	6
	1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
	1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
	1014606	1014606	1014606	1014606	1014606		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
	1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER ASSEMBLY	1	15	2
	1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER GROUP	1	05	1

NOTES:

1. THIS DRAWING DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA. SEE INSTALLATION LIST 1014999 FOR CONFIGURATION CHANGES DUE TO RETROFIT.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I-1019999.
   INSTALLATION LIST APOLLO GUIDANCE EQUIPMENT BLOCK I-1014999.
4.
5.
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.
7. FLIGHT PROGRAM TO BE FURNISHED DIRECT TO KSC (NOT DELIVERED WITH G & N SYSTEM).

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

SIGNATURES		DATE
DRAWN	J. Mummolo	11/11/64
CHECKED	A. J. Lango	11/11/64
DESIGNER		
ENGINEER	W. Shannon	5 Apr. 65

MIT APPROVAL W Kupfer 13 Apr 64
APPROVED MSC W J Rhine 4/18/64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 1 OF 3

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/19/65	WK
D	REVISED PER TDRR 20261	6/22/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK
N	REVISED PER TDRR 27350	3-22-66	WK

Ⓜ

1021106-021			COMPUTER PROGRAM ASSY	1	55	REF.

SEE NOTE 7

-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
1000110-307	1000110-307		SCREW HEX SOCKET HEAD	1	55	19
1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
						16
1005707-011	1005707-021		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
						14
						13
						12
1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-031	1899950-031		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
1015023-011	1015023-011		DISPLAY & CONTROL GROUP	1	50	7
1007400-011	1007400-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015056-011	1015056-011		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
1012136	1012136		MAP & DATA VIEWER ASSEMBLY	1	15	2
1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
17	12	G&N EFFECTIVITY ←				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

ND 1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ___ DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
HEAT TREATMENT ___
FINAL FINISH ___

SIGNATURES		DATE
DRAWN	U. [illegible]	11/11/64
CHECKED	A. J. [illegible]	11/11/64
DESIGNER		
ENGINEER	W. Stameris	Sept. 65
MIT APPROVAL	WKupfer 13 Nov 64	
APPROVED NASA	W J Rhine 11-13-64	

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ——
WT
SHEET 2 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15658	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 19191	4/13/65	WK
D	REVISED PER TDRR 20261	6/2/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	9-3/65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK.
N	REVISED PER TDRR 27350	3-22-66	WK

-121	-121	-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	1	55	16
1005727	1005727	1005727	1005727	1005727	1005707-021	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
											14
											13
											12
1001470	1001470	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-14	1899950- 14	1399950-08	1899950-06	1899950-071	1899950-071	1899950-081		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
1015023-02	1015023-021	1015023-021	1015023-021	1015023-021	1015023-021	1015023-021		DISPLAY & CONTROL GROUP	1	50	7
1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-031	1001500-031	1001500-031	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
											2
1003770-091	1003770-091	1003770-081	1003770-031	1003770-031	1003770-021	1003770-061		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
124	123	122	121	111	110	109	G&N EFFECTIVITY ←				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameria	5 Apr. 65

MIT APPROVAL WKaffer 13 Nov 64
APPROVED MSC W J 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 3 OF 3

NOTICE — WHEN GOVERNMENT DRAWINGS SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20241	6/24/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21778	8-31-65	WK
G	REVISED PER TDRR 22567	9/24/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRP 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	MDM

-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP. CODE	FIND NO.
1014532	1014532	1014532	1014532	1014532	1014532	OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011	1014502-011	1014502-011	1014502-011	1014502-011	OPTICS SHROUD ASSEMBLY	1	50	24
1015003-000	1015003-000	1015003-000	1015003-000	1015003-000	1015003-000	CONTROL ELECTRONICS ASSEMBLY	1	50	23
1007059	1007059	1007059	1007059	1007059	1007059	D & C ELECTRONICS ASSEMBLY	1	50	22
1014578-011	1014578-011	1014578-011	1014578-011	1014578-011	1014578-011	G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1014526-011	1014526-011	1014526-011	1014526-011	1014526-011	1014526-011	IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
									16
									15
									14
									13
									12
1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-021	1899950-021	1899950-021	1899950-021	1899950-011		NAVIGATION BASE AND OPTICAL UNIT ASSY.	1	65	8
~~1014513-000~~	~~1014513-000~~	~~1014513-000~~	~~1014513-000~~	~~1014513-000~~		~~DISPLAY & CONTROL GROUP~~	~~1~~	~~50~~	~~7~~
1021207-011	1007170	1007267	1007100	1007100		POWER AND SERVO ASSEMBLY	1	45	6
1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1014606	1014606	1014606	1014606	1014606		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER ASSEMBLY	1	15	2
1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
20	8	7	6	5	G & N EFFECTIVITY				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NOTES:

1. THIS DRAWING DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA. SEE INSTALLATION LIST 1014999 FOR CONFIGURATION CHANGES DUE TO RETROFIT.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I-1019999.
   INSTALLATION LIST APOLLO GUIDANCE EQUIPMENT BLOCK I-1014999.
4.
5.
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.
7. FLIGHT PROGRAM TO BE FURNISHED DIRECT TO KSC (NOT DELIVERED WITH G & N SYSTEM).

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stamm	5 Apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 1 OF 3

1015000 P

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
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E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK.
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
Ⓜ K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	MGM

-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
1021106-021			COMPUTER PROGRAM ASSY	1	55	REF.
1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011		OPTICS SHROUD ASSEMBLY	1	50	24
1015064-011	1015064-011		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1015065-011	1015065-011		D & C ELECTRONICS ASSEMBLY	1	50	22
1015053-011	1015053-011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1015095-011	1015095-011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307		SCREW HEX SOCKET HEAD	1	55	19
1001591	1001591		BRACKET ASSY,(COOLANT LINE)	1	55	18
1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
						16
1005707-011	1005707-021		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
						14
						13
						12
1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-031	1899950-031		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
~~1015023-011~~	~~1015023-011~~		~~DISPLAY & CONTROL GROUP~~	~~1~~	~~50~~	~~7~~
1007400-011	1007400-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015056-011	1015056-011		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
1012136	1012136		MAP & DATA VIEWER ASSEMBLY	1	15	2
1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
17	12	G&N EFFECTIVITY				

SEE NOTE 7

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ___ DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
HEAT TREATMENT ___
FINAL FINISH ___

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED	A J Savage	11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ___
WT
SHEET 2 OF 3

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15658	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 19191	4/13/65	WK
D	REVISED PER TDRR 20261	6/2/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	MSM

1014532	1014532	1014532	1014532	1014532	1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502 - 011	1014502 - 011	1014502 - 011	1014502 - 011	1014502 - 011	1014502 - 011	1014502 - 011		OPTICS SHROUD ASSEMBLY	1	50	24
1015064 -021	1015064 -021	1015064 -021	1015064 -021	1015064 -021	1015064 -021	1015064 -021		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1015065 -041	1015065 -041	1015065 -041	1015065 -041	1015065 -041	1015065 -021	1015065 -041		D & C ELECTRONICS ASSEMBLY	1	50	22
1014664 - 011	1014664 - 011	1014664 - 011	1014664 - 011	1014664 - 011	1014664 - 011	1014664 - 011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1014628 - 011	1014628 - 011	1014628 - 011	1014628 - 011	1014628 - 011	1014628 - 011	1014628 - 011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	1	55	16
1005727	1005727	1005727	1005727	1005727	1005707-021	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
											14
											13
											12
1001470	1001470	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-141	1899950- 141	1399950-081	1899950-061	1899950-071	1899950-071	1899950-081		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~		~~DISPLAY & CONTROL GROUP~~	~~1~~	~~50~~	~~7~~
1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-031	1001500-031	1001500-031	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
											2
1003770-091	1003770-091	1003770-081	1003770-031	1003770-031	1003770-021	1003770-061		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
-121	-121	-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
124	123	122	121	111	110	109	G&N EFFECTIVITY ←				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± -
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 apr. 65

MIT APPROVAL WKupfer 13 Nov 64
APPROVED MSC 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 3 OF 3

1015000 P

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20241	6/24/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21778	8-31-65	WK
G	REVISED PER TDRR 22567	9/24/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	MGM
R	" " " 29713	6-28-66	MGM

									REF
					2012699-000	SEXTANT MIRROR HOUSING & AIR FOCUSING SHIM ASSY		65	31
					2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	30
					1013010-000	SCT PRISM HOUSING & INSULATION ASSEMBLY		65	29
					2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	28
					2012748-000	LONG EYE RELIEF EYEPIECE ASSY (SXT)		65	27
					2012691-000	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	26
1014532	1014532	1014532	1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011	1014502-011	1014502-011	1014502-011		OPTICS SHROUD ASSEMBLY	1	50	24
1015003-000	1015003-000	1015003-000	1015003-000	1015003-000		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1007059	1007059	1007059	1007059	1007059		D & C ELECTRONICS ASSEMBLY	1	50	22
1014578-011	1014578-011	1014578-011	1014578-011	1014578-011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1014526-011	1014526-011	1014526-011	1014526-011	1014526-011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
									16
									15
									14
									13
									12
1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-021	1899950-021	1899950-021	1899950-021	1899950-011		NAVIGATION BASE AND OPTICAL UNIT ASSY.	1	65	8
~~1014513-000~~	~~1014513-000~~	~~1014513-000~~	~~1014513-000~~	~~1014513-000~~		~~DISPLAY & CONTROL GROUP~~	~~1~~	~~50~~	~~7~~
1021207-011	1007170	1007267	1007100	1007100		POWER AND SERVO ASSEMBLY	1	45	6
1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1014606	1014606	1014606	1014606	1014606		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER ASSEMBLY	1	15	2
1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP. CODE	FIND NO.
20	8	7	6	5	G & N EFFECTIVITY				

SEE NOTE 8 (FIND NO. 26–31)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NOTES:

1. THIS DRAWING DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA. SEE INSTALLATION LIST 1014999 FOR CONFIGURATION CHANGES DUE TO RETROFIT.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I-1019999.
   INSTALLATION LIST APOLLO GUIDANCE EQUIPMENT BLOCK I - 1014999.
4.
5.
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.
7. FLIGHT PROGRAM TO BE FURNISHED DIRECT TO KSC (NOT DELIVERED WITH G & N SYSTEM).
8. THESE ITEMS TO BE USED FOR FLIGHT SYSTEMS AFTER INCORPORATION OF ECP 290 AND 202.

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED	A. J. Lunger	11/11/64
DESIGNER		
ENGINEER	W. Stameus	5 Apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-18-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT COMMAND MODULE BLOCK I (SERIES 0)

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 1015000
SCALE ~ | WT | SHEET 1 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/4/65	WK
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F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	MGM
R	" " " 29713	6-28-66	MGM

Ⓜ

1021106-021			COMPUTER PROGRAM ASSY	1	55	REF.

SEE NOTE 7

-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
		2012699-000	SEXTANT MIRROR HOUSING & AIR FOCUSING SHIM ASSY		65	31
		2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	30
		1013010-000	SCT PRISM HOUSING & INSULATION ASSEMBLY		65	29
		2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	28
		2012748-000	LONG EYE RELIEF EYEPIECE ASSY (SXT)		65	27
		2012691-000	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	26
1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011		OPTICS SHROUD ASSEMBLY	1	50	24
1015064-011	1015064-011		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1015065-011	1015065-011		D & C ELECTRONICS ASSEMBLY	1	50	22
1015053-011	1015053-011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1015095-011	1015095-011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307	-	SCREW HEX SOCKET HEAD	1	55	19
1001591	1001591		BRACKET ASSY,(COOLANT LINE)	1	55	18
1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
						16
1005707-011	1005707021		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
						14
						13
						12
1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-031	1899950-031		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
~~1015023-011~~	~~1015023-011~~		~~DISPLAY & CONTROL GROUP~~	~~1~~	~~50~~	~~7~~
1007400-011	1007400-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015056-011	1015056-011		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
1012136	1012136		MAP & DATA VIEWER ASSEMBLY	1	15	2
1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
17	12	G & N EFFECTIVITY ←				

SEE NOTE 8

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

ND 1000000	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —— DECIMALS ± —— ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED	A J Crayer	11/11/64
DESIGNER		
ENGINEER	W. Stameris	Sept. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ——
WT
SHEET 2 OF 3

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

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C	REVISED PER TDRR 19191	7/13/65	WK
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F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK.
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	MGM
R	" " " 29713	6-28-66	MGM

-121	-121	-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
124	123	122	121	111	110	109	G&N EFFECTIVITY				
											REF
							2012667-000	SCT PRISM HOUSING & AIR FOCUSING SHIM ASSY		65	32
							2012699-000	SEXTANT MIRROR HOUSING & AIR FOCUSING SHIM ASSY		65	31
							2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	30
							1013010-000	SCT PRISM HOUSING & INSULATION ASSEMBLY		65	29
							2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	28
							2012748-000	LONG EYE RELIEF EYEPIECE ASSY (SXT)		65	27
							2012691-000	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	26
1014532	1014532	1014532	1014532	1014532	1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011	1014502-011	1014502-011	1014502-011	1014502-011	1014502-011		OPTICS SHROUD ASSEMBLY	1	50	24
1015064-021	1015064-021	1015064-021	1015064-021	1015064-021	1015064-021	1015064-021		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1015065-041	1015065-041	1015065-041	1015065-041	1015065-041	1015065-021	1015065-041		D & C ELECTRONICS ASSEMBLY	1	50	22
1014664-011	1014664-011	1014664-011	1014664-011	1014664-011	1014664-011	1014664-011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1014628-011	1014628-011	1014628-011	1014628-011	1014628-011	1014628-011	1014628-011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	1	55	16
1005727	1005727	1005727	1005727	1005727	1005707-021	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
											14
											13
											12
1001470	1001470	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031	1007700-031		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-141	1899950-141	1899950-081	1899950-061	1899950-071	1899950-071	1899950-081		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~		~~DISPLAY & CONTROL GROUP~~	~~1~~	~~50~~	~~7~~
1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-031	1001500-031	1001500-031	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
											2
1003770-091	1003770-091	1003770-081	1003770-031	1003770-031	1003770-021	1003770-061		APOLLO GUIDANCE COMPUTER GROUP	1	05	1

SEE NOTE 8

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	1015000

SCALE ~ WT SHEET 3 OF 3

1015000 R

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE, OR SELL, ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/14/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20261	6/29/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21778	8-31-65	WK
G	REVISED PER TDRR 22567	9/14/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	MGM
R	" " " 29713	6-28-66	MGM
S	REVISION STATUS CHANGED	8-26-66	JI RW

									REF

-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP. CODE	FIND NO.
					2012699-000	SEXTANT MIRROR HOUSING & AIR FOCUSING SHIM ASSY		65	31
					2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	30
					1013010-000	SCT PRISM HOUSING & INSULATION ASSEMBLY		65	29
					2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	28
					2012748-000	LONG EYE RELIEF EYEPIECE ASSY (SXT)		65	27
					2012691-000	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	26
1014532	1014532	1014532	1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011	1014502-011	1014502-011	1014502-011		OPTICS SHROUD ASSEMBLY	1	50	24
1015003-000	1015003-000	1015003-000	1015003-000	1015003-000		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1007059	1007059	1007059	1007059	1007059		D & C ELECTRONICS ASSEMBLY	1	50	22
1014578-011	1014578-011	1014578-011	1014578-011	1014578-011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1014526-011	1014526-011	1014526-011	1014526-011	1014526-011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
									16
									15
									14
									13
									12
1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-021	1899950-021	1899950-021	1899950-021	1899950-011		NAVIGATION BASE AND OPTICAL UNIT ASSY.	1	65	8
~~1014513-000~~	~~1014513-000~~	~~1014513-000~~	~~1014513-000~~	~~1014513-000~~		~~DISPLAY & CONTROL GROUP~~	~~1~~	~~50~~	~~7~~
1021207-011	1007170	1007267	1007100	1007100		POWER AND SERVO ASSEMBLY	1	45	6
1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1014606	1014606	1014606	1014606	1014606		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER ASSEMBLY	1	15	2
1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
20	8	7	6	5	G & N EFFECTIVITY				

SEE NOTE 8 (FIND NO. 26–31)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NOTES:

1. THIS DRAWING DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA. SEE INSTALLATION LIST 1014999 FOR CONFIGURATION CHANGES DUE TO RETROFIT.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I-1019999.
   INSTALLATION LIST APOLLO GUIDANCE EQUIPMENT BLOCK I - 1014999.
4.
5.
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.
7. FLIGHT PROGRAM TO BE FURNISHED DIRECT TO KSC (NOT DELIVERED WITH G & N SYSTEM).
8. THESE ITEMS TO BE USED FOR FLIGHT SYSTEMS AFTER INCORPORATION OF ECP 290 AND 202.

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 1 OF 3

1015000 S

NOTICE — WHEN GOVERNMENT DRAWINGS SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
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E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
Ⓜ K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	MGM
R	" " " 29713	6-28-66	MGM
S	REVISION STATUS CHANGED	8-26-66	JI

-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
1021106-021			COMPUTER PROGRAM ASSY	1	55	REF.
		2012699-000	SEXTANT MIRROR HOUSING & AIR FOCUSING SHIM ASSY		65	31
		2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	30
		1013010-000	SCT PRISM HOUSING & INSULATION ASSEMBLY		65	29
		2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	28
		2012748-000	LONG EYE RELIEF EYEPIECE ASSY (SXT)		65	27
		2012691-000	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	26
1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011		OPTICS SHROUD ASSEMBLY	1	50	24
1015064-011	1015064-011		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1015065-011	1015065-011		D & C ELECTRONICS ASSEMBLY	1	50	22
1015053-011	1015053-011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1015095-011	1015095-011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307		SCREW HEX SOCKET HEAD	1	55	19
1001591	1001591		BRACKET ASSY,(COOLANT LINE)	1	55	18
1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
						16
1005707-011	1005707-021		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
						14
						13
						12
1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-031	1899950-031		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
~~1015023-011~~	~~1015023-011~~		~~DISPLAY & CONTROL GROUP~~	~~1~~	~~50~~	~~7~~
1007400-011	1007400-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015056-011	1015056-011		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
1012136	1012136		MAP & DATA VIEWER ASSEMBLY	1	15	2
1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
17	12	G&N EFFECTIVITY ←				

COMPUTER PROGRAM ASSY: SEE NOTE 7

FIND NO. 26–31: SEE NOTE 8

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr 65

MIT APPROVAL WKoffer 13 Nov 64
APPROVED MSC 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO. 80230 | SIZE D | DRAWING NO. 1015000
SCALE — | WT | SHEET 2 OF 3

S 1015000

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 19191	4/13/65	WK
D	REVISED PER TDRR 20261	6/2/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK.
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	WGM
R	" " " 29713	6-28-66	WGM
S	REVISED PER TDRR 30690	8-26-66	JI RW

-131	-121	-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
											REF
							2012667-000	SCT PRISM HOUSING & AIR FOCUSING SHIM ASSY		65	32
							2012699-000	SEXTANT MIRROR HOUSING & AIR FOCUSING SHIM ASSY		65	31
							2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	30
							1013010-000	SCT PRISM HOUSING & INSULATION ASSEMBLY		65	29
							2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	28
							2012748-000	LONG EYE RELIEF EYEPIECE ASSY (SXT)		65	27
							2012691-000	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	26
1014532	1014532	1014532	1014532	1014532	1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011	1014502-011	1014502-011	1014502-011	1014502-011	1014502-011		OPTICS SHROUD ASSEMBLY	1	50	24
1015064-021	1015064-021	1015064-021	1015064-021	1015064-021	1015064-021	1015064-021		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1015065-041	1015065-041	1015065-041	1015065-041	1015065-041	1015065-021	1015065-041		D & C ELECTRONICS ASSEMBLY	1	50	22
1014664-011	1014664-011	1014664-011	1014664-011	1014664-011	1014664-011	1014664-011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1014628-011	1014628-011	1014628-011	1014628-011	1014628-011	1014628-011	1014628-011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	1	55	16
1005727	1005727	1005727	1005727	1005727	1005707-021	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
											14
											13
											12
1001470	1001470	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
~~1007700-031~~	1007700-031	1007700-031	1007700-031	~~1007700-031~~	~~1007700-031~~	~~1007700-031~~		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-141	1899950-141	1899950-081	1899950-061	1899950-071	1899950-071	1899950-081		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~		~~DISPLAY & CONTROL GROUP~~	~~1~~	~~50~~	~~7~~
1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-031	1001500-031	1001500-031	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
											2
1003770-091	1003770-091	1003770-081	1003770-031	1003770-031	1003770-021	1003770-061		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
124	123	122	121	111	110	109	G&N EFFECTIVITY ←				

SEE NOTE 8

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± -
DO NOT SCALE THIS DRAWING
MATERIAL ——
HEAT TREATMENT ——
FINAL FINISH ——

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 apr. 65

MIT APPROVAL W. Kupfer 13 Nov 64
APPROVED MSC 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT COMMAND MODULE BLOCK I (SERIES 100)

CODE IDENT NO 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 3 OF 3

1015000 S

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 KJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20241	6/29/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21778	8-31-65	WK
G	REVISED PER TDRR 22567	9/4/65	WK
H	REVISED PER TDRR 22903	10/8/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	MCM
R	" " " 29713	6-28-66	MSM
S	REVISION STATUS CHANGED	8-26-66	JI RW
T	REVISION STATUS CHANGED	25 OCT 66	JC RW

-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP. CODE	FIND NO.
									REF
					2012699-000	SEXTANT MIRROR HOUSING & AIR FOCUSING SHIM ASSY		65	31
					2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	30
					1013010-000	SCT PRISM HOUSING & INSULATION ASSEMBLY		65	29
					2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	28
					2012748-000	LONG EYE RELIEF EYEPIECE ASSY (SXT)		65	27
					2012691-000	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	26
1014532	1014532	1014532	1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011	1014502-011	1014502-011	1014502-011		OPTICS SHROUD ASSEMBLY	1	50	24
1015003-000	1015003-000	1015003-000	1015003-000	1015003-000		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1007059	1007059	1007059	1007059	1007059		D & C ELECTRONICS ASSEMBLY	1	50	22
1014578-011	1014578-011	1014578-011	1014578-011	1014578-011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1014526-011	1014526-011	1014526-011	1014526-011	1014526-011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
									16
									15
									14
									13
									12
1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-021	1899950-021	1899950-021	1899950-021	1899950-011		NAVIGATION BASE AND OPTICAL UNIT ASSY.	1	65	8
~~1014513-000~~	~~1014513-000~~	~~1014513-000~~	~~1014513-000~~	~~1014513-000~~		~~DISPLAY & CONTROL GROUP~~	~~1~~	~~50~~	~~7~~
1021207-011	1007170	1007267	1007100	1007100		POWER AND SERVO ASSEMBLY	1	45	6
1016905	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1014606	1014606	1014606	1014606	1014606		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER ASSEMBLY	1	15	2
1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
20	8	7	6	5	G & N EFFECTIVITY				

SEE NOTE 8 (FIND NO. 26 – 31)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NOTES:
1. THIS DRAWING DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA. SEE INSTALLATION LIST 1014999 FOR CONFIGURATION CHANGES DUE TO RETROFIT.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I-1019999.
   INSTALLATION LIST APOLLO GUIDANCE EQUIPMENT BLOCK I-1014999.
4.
5.
6. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.
7. FLIGHT PROGRAM TO BE FURNISHED DIRECT TO KSC (NOT DELIVERED WITH G & N SYSTEM).
8. THESE ITEMS TO BE USED FOR FLIGHT SYSTEMS AFTER INCORPORATION OF ECP 290 AND 202.

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr 65

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC 11-12-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT COMMAND MODULE BLOCK I (SERIES 0)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 1 OF 3

1015000 T

NOTICE — WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RJ	1/4/65	WK
B	REVISED PER TDRR 17409	3/2/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20261	6/22/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/8/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	MDM
R	" " " 29713	6-28-66	MDM
S	REVISION STATUS CHANGED	8-26-66	JI RW
T	REVISION STATUS CHANGED	25OCT66	JC RW

1021106-021			COMPUTER PROGRAM ASSY	1	55	REF.

SEE NOTE 7

-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
		2012699-000	SEXTANT MIRROR HOUSING & AIR FOCUSING SHIM ASSY		65	31
		2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	30
		1013010-000	SCT PRISM HOUSING & INSULATION ASSEMBLY		65	29
		2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	28
		2012748-000	LONG EYE RELIEF EYEPIECE ASSY (SXT)		65	27
		2012691-000	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	26
1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011		OPTICS SHROUD ASSEMBLY	1	50	24
1015064-011	1015064-011		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1015065-011	1015065-011		D & C ELECTRONICS ASSEMBLY	1	50	22
1015053-011	1015053-011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1015095-011	1015095-011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307		SCREW HEX SOCKET HEAD	1	55	19
1001591	1001591		BRACKET ASSY,(COOLANT LINE)	1	55	18
1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
						16
1005707-011	1005707-021		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
						14
						13
						12
1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469		HOSE ASSY. FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-031	1899950-031		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
~~1015023-011~~	~~1015023-011~~		~~DISPLAY & CONTROL GROUP~~	~~1~~	~~50~~	~~7~~
1007400-011	1007400-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015056-011	1015056-011		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
1012136	1012136		MAP & DATA VIEWER ASSEMBLY	1	15	2
1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
17	12	G & N EFFECTIVITY ←				

SEE NOTE 8 (FIND NO. 26–31)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ___ DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
HEAT TREATMENT ___
FINAL FINISH ___

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED	J. Enayo	11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 apr 65

MIT APPROVAL WKupfer 13 Nov 64
APPROVED MSC W J Rh 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS

G&N SPACECRAFT EQUIPMENT COMMAND MODULE BLOCK I (SERIES 50)

CODE IDENT NO. 80230
SIZE D
DRAWING NO 1015000
SCALE ——
WT
SHEET 2 OF 3

1015000 T

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 17191	4/13/65	WK
D	REVISED PER TDRR 20261	6/2/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK.
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	
R	" " " 29713	6-28-66	
S	REVISED PER TDRR 30690	8-26-66	JI RW
T	REVISED PER TDRR 31631	25 OCT 66	JC RW

-121	-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
										REF
						2012667-000	SCT PRISM HOUSING & AIR FOCUSING SHIM ASSY		65	32
						2012699-000	SEXTANT MIRROR HOUSING & AIR FOCUSING SHIM ASSY		65	31
						2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	30
						1013010-000	SCT PRISM HOUSING & INSULATION ASSEMBLY		65	29
						2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	28
						2012748-000	LONG EYE RELIEF EYEPIECE ASSY (SXT)		65	27
						2012691-000	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	26
1014532	1014532	1014532	1014532	1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011	1014502-011	1014502-011	1014502-011	1014502-011		OPTICS SHROUD ASSEMBLY	1	50	24
1015064-021	1015064-021	1015064-021	1015064-021	1015064-021	1015064-021		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1015065-041	1015065-041	1015065-041	1015065-041	1015065-021	1015065-041		D & C ELECTRONICS ASSEMBLY	1	50	22
1014664-011	1014664-011	1014664-011	1014664-011	1014664-011	1014664-011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1014628-011	1014628-011	1014628-011	1014628-011	1014628-011	1014628-011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	1	55	16
1005727	1005727	1005727	1005727	1005707-021	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
										14
										13
										12
1001470	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-031	1007700-031	1007700-031	~~1007700-031~~	~~1007700-031~~	~~1007700-031~~		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-14	1899950-081	1899950-061	1899950-071	1899950-071	1899950-081		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~	~~1015023-021~~		~~DISPLAY & CONTROL GROUP~~	~~1~~	~~50~~	~~7~~
1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-031	1001500-031	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
										2
1003770-091	1003770-081	1003770-031	1003770-031	1003770-021	1003770-061		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
123	122	121	111	110	109	G&N EFFECTIVITY ←				

SEE NOTE 8 (FIND NO. 26–32)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± -
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 apr. 65
MIT APPROVAL	W. Kupfer	13 Nov 64
APPROVED MSC		11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 3 OF 3

1015000 T

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14249

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158 RS	1/14/65	WK
B	REVISED PER TDRR 17409.	3/12/65	WK
C	REVISED PER TDRR 18191	4/13/65	WK
D	REVISED PER TDRR 20261	6/29/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21778	8-31-65	WK
G	REVISED PER TDRR 22567	9/14/65	WK
H	REVISED PER TDRR 22903	10/8/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	MGM
R	" " " 29713	6-28-66	MGM
S	REVISION STATUS CHANGED	8-26-66	JI RW
T	REVISION STATUS CHANGED	25 OCT 66	JC RW
U	REVISED PER TDRR 31927	17 NOV 66	WA

-061	-031	-021	-011	-000	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP. CODE	FIND NO.
									REF
					2012699-000	SEXTANT MIRROR HOUSING & AIR FOCUSING SHIM ASSY		65	31
					2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	30
					1013010-000	SCT PRISM HOUSING & INSULATION ASSEMBLY		65	29
					2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	28
					2012748-000	LONG EYE RELIEF EYEPIECE ASSY (SXT)		65	27
					2012691-000	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	26
1014532	1014532	1014532	1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011	1014502-011	1014502-011	1014502-011		OPTICS SHROUD ASSEMBLY	1	50	24
1015003-000	1015003-000	1015003-000	1015003-000	1015003-000		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1007059	1007059	1007059	1007059	1007059		D & C ELECTRONICS ASSEMBLY	1	50	22
1014578-011	1014578-011	1014578-011	1014578-011	1014578-011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1014526-011	1014526-011	1014526-011	1014526-011	1014526-011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
									16
									15
									14
									13
									12
1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007121	1007121	1007121	1007121	1007121		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-021	1899950-021	1899950-021	1899950-021	1899950-011		NAVIGATION BASE AND OPTICAL UNIT ASSY.	1	65	8
									7
1021207-011	1007170	1007267	1007100	1007100		POWER AND SERVO ASSEMBLY	1	45	6
1016905-011	1016903-011	1016903-011	1016903-011	1016903-011		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001479	1000201	1000201	1000201	1000201		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1014606	1014606	1014606	1014606	1014606		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
1012136	1012136	1012136	1011559	1011559		MAP & DATA VIEWER ASSEMBLY	1	15	2
1003400-2	1003400-2	1003400-1	1003400-1	1003400-1		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
20	8	7	6	5	G & N EFFECTIVITY				

SEE NOTE 5

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NOTES:

1. THIS DRAWING DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS AT THE TIME OF DELIVERY TO NASA. SEE INSTALLATION LIST 1014999 FOR CONFIGURATION CHANGES DUE TO RETROFIT.
2. ~~PROCURE TO PS 1015000~~
3. REF. ~~DWGS.~~ — G & N C/M SUPPORTING DOCUMENTS LIST BLOCK I-1019999.
   INSTALLATION LIST APOLLO GUIDANCE EQUIPMENT BLOCK I-1014999.
4. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.
5. THESE ITEMS TO BE USED FOR FLIGHT SYSTEMS AFTER INCORPORATION OF ECP 290 AND 202.

NEXT ASSY	USED ON
ND 1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

SIGNATURES		DATE
DRAWN	U. Mammola	11/11/64
CHECKED	A. J. Cunger	11/11/64
DESIGNER		
ENGINEER	W. Stamm	5 Apr 66

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE ~
WT
SHEET 1 OF 3

1015000 U

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15158	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK
C	REVISED PER TDRR 18191	4/4/65	WK
D	REVISED PER TDRR 20261	6/22/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	MGM
R	" " " 29713	6-28-66	MGM
S	REVISION STATUS CHANGED	8-26-66	JJ
T	REVISION STATUS CHANGED	25OCT66	JC RW
U	REVISED PER TDRR 31927	17NOV66	WA

-051	-041	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
		2012699-008	SEXTANT MIRROR HOUSING & AIR FOCUSING SHIM ASSY		65	31
		2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	30
		1013010-000	SCT PRISM HOUSING & INSULATION ASSEMBLY		65	29
		2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	28
		2012748-000	LONG EYE RELIEF EYEPIECE ASSY (SXT)		65	27
		2012691-000	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	26
1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011		OPTICS SHROUD ASSEMBLY	1	50	24
1015064-011	1015064-011		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1015065-011	1015065-011		D & C ELECTRONICS ASSEMBLY	1	50	22
1015053-011	1015053-011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1015095-011	1015095-011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307		SCREW HEX SOCKET HEAD	1	55	19
1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
						16
1005707-011	1005707-021		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
						14
						13
						12
1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-011	1007700-021		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-031	1899950-031		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
						7
1007400-011	1007400-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-021	1016903-021		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-011	1001500-011		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015056-011	1015056-011		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
1012136	1012136		MAP & DATA VIEWER ASSEMBLY	1	15	2
1003770-011	1003770-011		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
17	12	G & N EFFECTIVITY				

SEE NOTE 5

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN		11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	Sept. 65

MIT APPROVAL 13 Nov64
APPROVED MSC 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015000
SCALE —
WT
SHEET 2 OF 3

1015000 U

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 15658	1/4/65	WK
B	REVISED PER TDRR 17409	3/12/65	WK.
C	REVISED PER TDRR 19191	4/13/65	WK
D	REVISED PER TDRR 20261	6/2/65	WK
E	REVISED PER TDRR 21146	7/27/65	WK
F	REVISED PER TDRR 21998	8-31-65	WK
G	REVISED PER TDRR 22567	9/21/65	WK
H	REVISED PER TDRR 22903	10/5/65	WK
J	REVISED PER TDRR 23625	11-2-65	WK
K	REVISED PER TDRR 24366	11-29-65	WK
L	REVISED PER TDRR 24493	12-6-65	WK
M	REVISED PER TDRR 26619	2-23-66	WK.
N	REVISED PER TDRR 27350	3-22-66	WK
P	REVISED PER TDRR 29648	6-15-66	MGM
R	" " " 29713	6-28-66	MGM
S	REVISED PER TDRR 30690	8-26-66	JI RW
T	REVISED PER TDRR 31631	25 OCT 66	JC RW
U	REVISED PER TDRR 31927	17 NOV 66	WA

-121	-111	-101	-091	-081	-071	EFFECTIVITY UNDEFINED	SUB-SYSTEM	QTY.	EQUIP CODE	FIND NO.
										REF
						2012667-000	SCT PRISM HOUSING & AIR FOCUSING SHIM ASSY		65	32
						2012699-000	SEXTANT MIRROR HOUSING & AIR FOCUSING SHIM ASSY		65	31
						2012700-000	SEXTANT EYEPIECE ASSEMBLY		65	30
						1013010-000	SCT PRISM HOUSING & INSULATION ASSEMBLY		65	29
						2012719-000	SCT EYEPIECE ASSEMBLY (ADJUSTABLE FOCUSING)		65	28
						2012748-000	LONG EYE RELIEF EYEPIECE ASSY (SXT)		65	27
						2012691-000	LONG EYE RELIEF EYEPIECE ASSY (SCT)		65	26
1014532	1014532	1014532	1014532	1014532	1014532		OPTICS COVER ASSEMBLY	1	50	25
1014502-011	1014502-011	1014502-011	1014502-011	1014502-011	1014502-011		OPTICS SHROUD ASSEMBLY	1	50	24
1015064-021	1015064-021	1015064-021	1015064-021	1015064-021	1015064-021		CONTROL ELECTRONICS ASSEMBLY	1	50	23
1015065-041	1015065-041	1015065-041	1015065-041	1015065-021	1015065-041		D & C ELECTRONICS ASSEMBLY	1	50	22
1014664-011	1014664-011	1014664-011	1014664-011	1014664-011	1014664-011		G & N INDICATOR CONTROL PANEL ASSY	1	50	21
1014628-011	1014628-011	1014628-011	1014628-011	1014628-011	1014628-011		IMU CONTROL PANEL ASSEMBLY	1	50	20
1000110-307	1000110-307	1000110-307	1000110-307	1000110-307	1000110-307		SCREW, HEX SOCKET HEAD	1	55	19
1001591	1001591	1001591	1001591	1001591	1001591		BRACKET ASSY, (COOLANT LINE)	1	55	18
1000293	1000293	1000293	1000293	1000293	1000293		CLAMP BRACKET (COOLANT LINE)	1	55	17
1007585-011	1007585-011	1007585-011	1007585-011	1007585-011	1007585-011		TRACKER X & Y ASSY	1	55	16
1005727	1005727	1005727	1005727	1005707-021	1005727		WIRING HARNESS AGC TO PSA AND G/N TO S/C	1	55	15
										14
										13
										12
1001470	1001470	1001470	1001470	1001470	1001470		HOSE ASSY, FLEX (IMU TO SPACECRAFT)	1	55	11
1001469	1001469	1001469	1001469	1001469	1001469		HOSE ASSY, FLEX (S/C TO OPTICS BASE)	1	55	10
1007700-03	1007700-031	1007700-03	~~1007700-031~~	~~1007700-031~~	~~1007700-031~~		SIGNAL CONDITIONER ASSEMBLY	1	30	9
1899950-14	1399950-08	1899950-06	1899950-071	1899950-071	1899950-081		NAVIGATION BASE AND OPTICAL UNIT ASSY	1	65	8
										7
1007570-011	1007570-011	1007570-011	1007570-011	1007570-011	1007570-011		POWER AND SERVO ASSEMBLY	1	45	6
1016903-031	1016903-031	1016903-031	1016903-031	1016903-031	1016903-031		COUPLING & DISPLAY FRAME & PANEL ASSEMBLY	1	40	5
1001500-031	1001500-031	1001500-031	1001500-021	1001500-021	1001500-021		INERTIAL MEASURING UNIT ASSEMBLY	1	35	4
1015086-000	1015086-000	1015086-000	1015086-000	1015086-000	1015086-000		AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	1	56	3
										2
1003770-091	1003770-081	1003770-031	1003770-031	1003770-021	1003770-061		APOLLO GUIDANCE COMPUTER GROUP	1	05	1
123	122	121	111	110	109	G&N EFFECTIVITY ←				

SEE NOTE 5 (FIND NO. 26–32)

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
ND1000000	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± -
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER	W. Stameris	5 Apr. 65
MIT APPROVAL	W Kupfer	13 Nov 64
APPROVED NBC		11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO.	SIZE	DRAWING NO.
80230	D	1015000

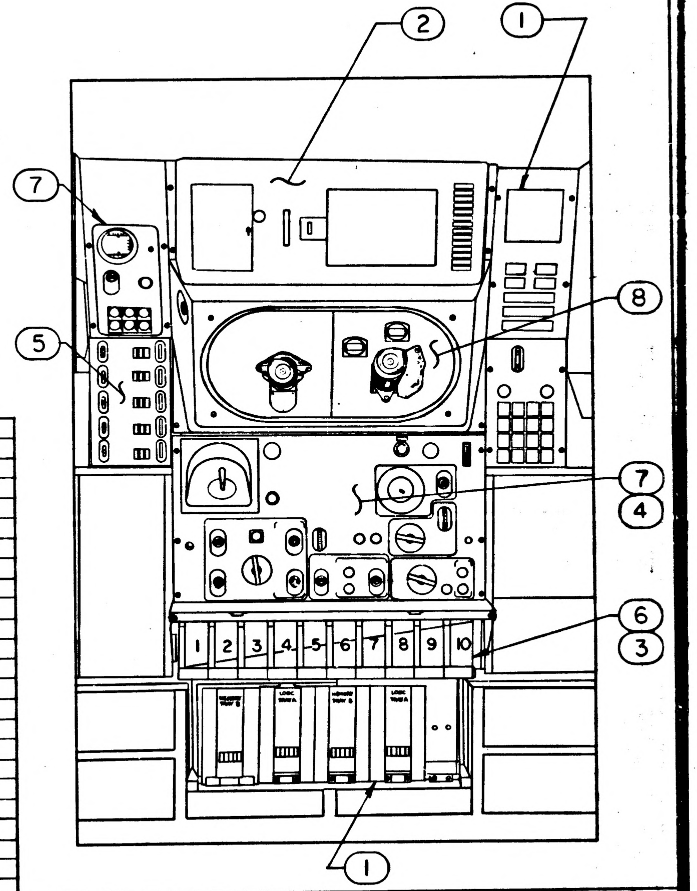
SCALE ~ WT SHEET 3 OF 3

1015000 U

8 7 6 5 4 3 2 1

SYM	REVISIONS DESCRIPTION 14299	DATE	APPROVAL

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



		-061	-031	-021	-011	-000	SUB-SYSTEM	EQUIP CODE	FIND NO.
		1899950-021	1899950-021	1899950-021	1899950-021	1899950-011	NAVIGATION BASE & OPTICS	65	8
		1014513	1014513	1014513	1014513	1014513	DISPLAY & CONTROL GROUP (D & C)	50	7
		1021207-011	1007170	1007100	1007100	1007100	POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
		1016903-011	1016903-011	1016903-011	1016903-011	1016903-011	COUPLING & DISPLAY UNIT & FRAME SUB-SYSTEM	40	5
		1001479	1000201	1000201	1000201	1000201	INERTIAL MEASURING UNIT ASSEMBLY	35	4
		1014606	1014606	1014606	1014606	1014606	INTERCONNECTOR HARNESS & PSA END CONN	56	3
		1012136	1012136	1012136	1011559	1011559	MAP & DATA VIEWER SUB-SYSTEM	15	2
		1003400-3	1003400-3	1003400-2	1003400-1	1003400	APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1

8 7 6 5

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NOTES:

1. THIS DWG DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA.
2. PROCURE TO PS 1015000
3. REF. DWGS. — G & N C/M SUPPORTING DOCUMENTS LIST
   * 1019999
4. THIS DRAWING FOR REFERENCE ONLY

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN	J. Mummola	11/11/64
CHECKED	D. Lunger	11/11/64
DESIGNER		
ENGINEER		

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 0)

CODE IDENT NO. SIZE D DRAWING NO. 1015000
SCALE WT SHEET 1 OF 3

8 7 6 5 4 3 2 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299

SYM	DESCRIPTION	DATE	APPROVAL

-041	SUB-SYSTEM	EQUIP CODE	FIND NO.
	NAVIGATION BASE & OPTICS	65	8
	DISPLAY & CONTROL GROUP (D & C)	50	7
1007400-011	POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
	COUPLING & DISPLAY UNIT & FRAME SUB-SYSTEM	40	5
1001500-011	INERTIAL MEASURING UNIT ASSEMBLY	35	4
1015056	INTERCONNECTOR HARNESS & PSA END CONN	56	3
1012221-011	MAP & DATA VIEWER SUB-SYSTEM	15	2
1003400-3	APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

SIGNATURES		DATE
DRAWN		11/11/64
CHECKED		11/11/64
DESIGNER		
ENGINEER		

MIT APPROVAL W Kupfer 13 Nov 64
APPROVED MSC W J Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 50)

CODE IDENT NO.
SIZE D
DRAWING NO. 1015000
SCALE
WT
SHEET 2 OF

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 14299			
SYM	DESCRIPTION	DATE	APPROVAL

				-111	-071	SUB-SYSTEM	EQUIP CODE	FIND NO.
						NAVIGATION BASE & OPTICS	65	8
						DISPLAY & CONTROL GROUP (D & C)	50	7
				1007570-011	1007570-011	POWER & SERVO ASSEMBLY SUB-SYSTEM	45	6
						COUPLING & DISPLAY UNIT & FRAME SUB-SYSTEM	40	5
				10015000-031	1001500-021	INERTIAL MEASURING UNIT ASSEMBLY	35	4
						INTERCONNECTOR HARNESS & PSA END CONN	56	3
						MAP & DATA VIEWER SUB-SYSTEM	15	2
						APOLLO GUIDANCE COMPUTER SUB-SYSTEM	05	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

HEAT TREATMENT

FINAL FINISH

SIGNATURES		DATE
DRAWN	U. Mummolo	11/11/64
CHECKED	A J Lungo	11/11/64
DESIGNER		
ENGINEER		

MIT APPROVAL W. Copper 13 Nov 64

APPROVED MSC W. J. Rhine 11-13-64

INSTRUMENTATION LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.

G&N SPACECRAFT EQUIPMENT
COMMAND MODULE
BLOCK I (SERIES 100)

CODE IDENT NO. SIZE D DRAWING NO. 1015000

SCALE WT SHEET 3 OF 3

MASTER

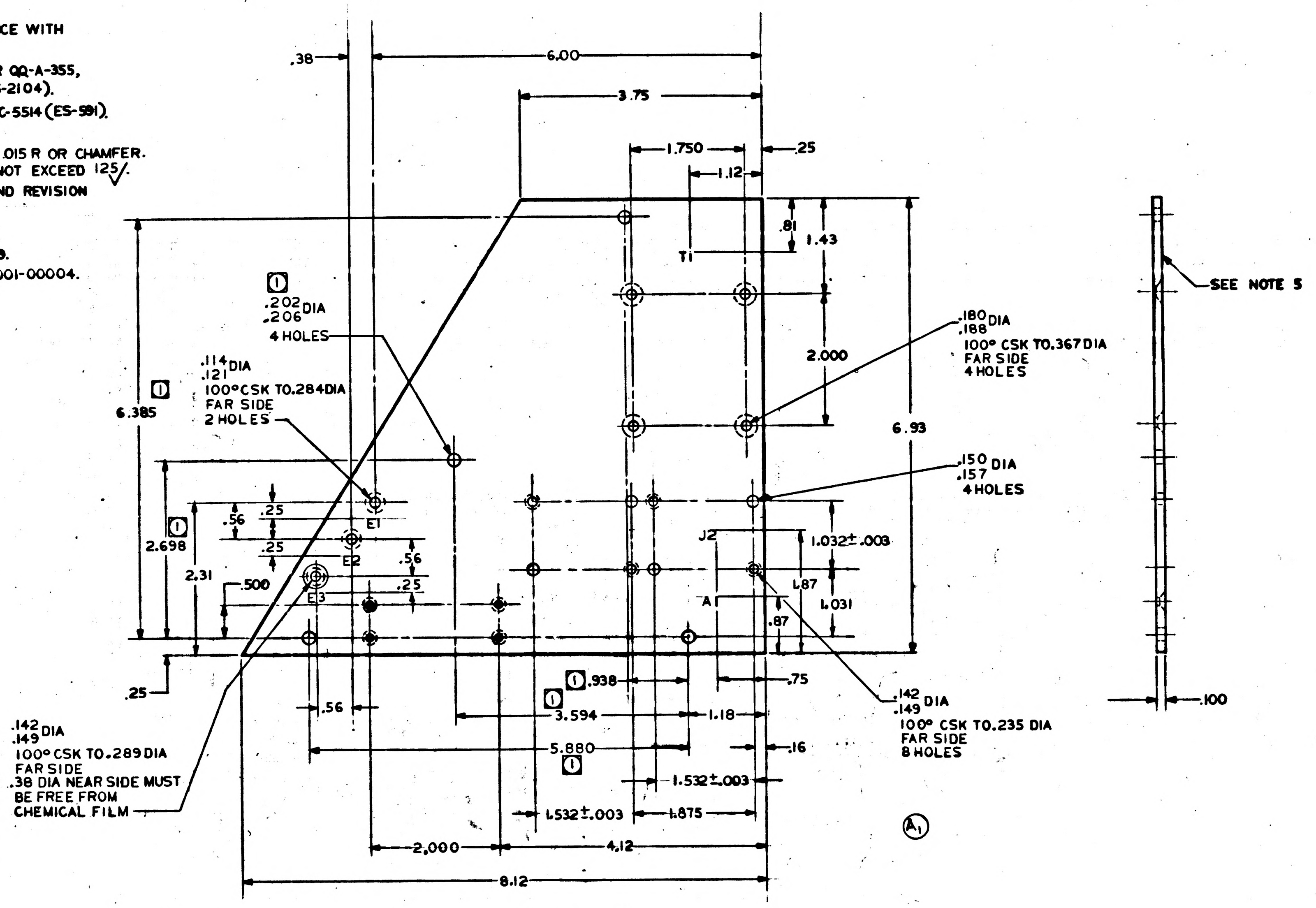
INCHES

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 05765			
SYM	DESCRIPTION	DATE	APPROVAL
A1	REVISED PER TDRR NO. 06256	18 FEB 64	WK

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. MATERIAL: ALUMINUM ALLOY PER QQ-A-355, TEMPER-T3 (TYPE 2024-T3) (ES-2104).
3. FINISH: CHEMICAL FILM PER MIL-C-5514 (ES-591).
4. UNLESS OTHERWISE SPECIFIED:
   ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
   SURFACE ROUGHNESS MUST NOT EXCEED 125√.
5. IDENTIFY USING PART NUMBER AND REVISION LETTER PER ND1002019.
6. CHARACTERS TO BE MARKED IN .12 HIGH BLACK PER ND1002019.
7. ① DIMENSIONS CONTROLLED BY ICD01-00004.
8. MUST BE FREE FROM BURRS.


.38
6.00
3.75
1.750
.25
1.12
.81
1.43
T1
2.000
6.93
6.385
①
.202
.206 DIA
4 HOLES
.114
.121 DIA
100° CSK TO .284 DIA
FAR SIDE
2 HOLES
①
2.698
2.31
.56
.25
.25
.56
.25
.500
E1
E2
E3
.180
.188 DIA
100° CSK TO .367 DIA
FAR SIDE
4 HOLES
.150
.157 DIA
4 HOLES
J2
1.032±.003
.87
1.031
A1
.87
.25
.56
① .938
① 3.594
1.18
.75
5.880
①
.16
1.532±.003
1.532±.003
1.875
2.000
4.12
8.12
.142
.149 DIA
100° CSK TO .289 DIA
FAR SIDE
.38 DIA NEAR SIDE MUST BE FREE FROM CHEMICAL FILM
.142
.149 DIA
100° CSK TO .235 DIA
FAR SIDE
8 HOLES
SEE NOTE 5
.100
A1

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1015003	1015003

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± .005
ANGLES ± 1°
DO NOT SCALE THIS DRAWING

MATERIAL: SEE NOTE 2
HEAT TREATMENT: —//—
FINAL FINISH: SEE NOTE 3

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT

DRAWN C.R. Grasso DATE Oct 63
CHECKED H. Thaler 1-14-64
APPROVAL J. J. Nevins 1/14/64
APPROVAL [illegible] 1-14-64
NASA APPROVAL W. J. Rhine 1-15-64
MIT APPROVAL 15 Jan 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PLATE -
CONTROL ELECTRONICS

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015001
SCALE FULL
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

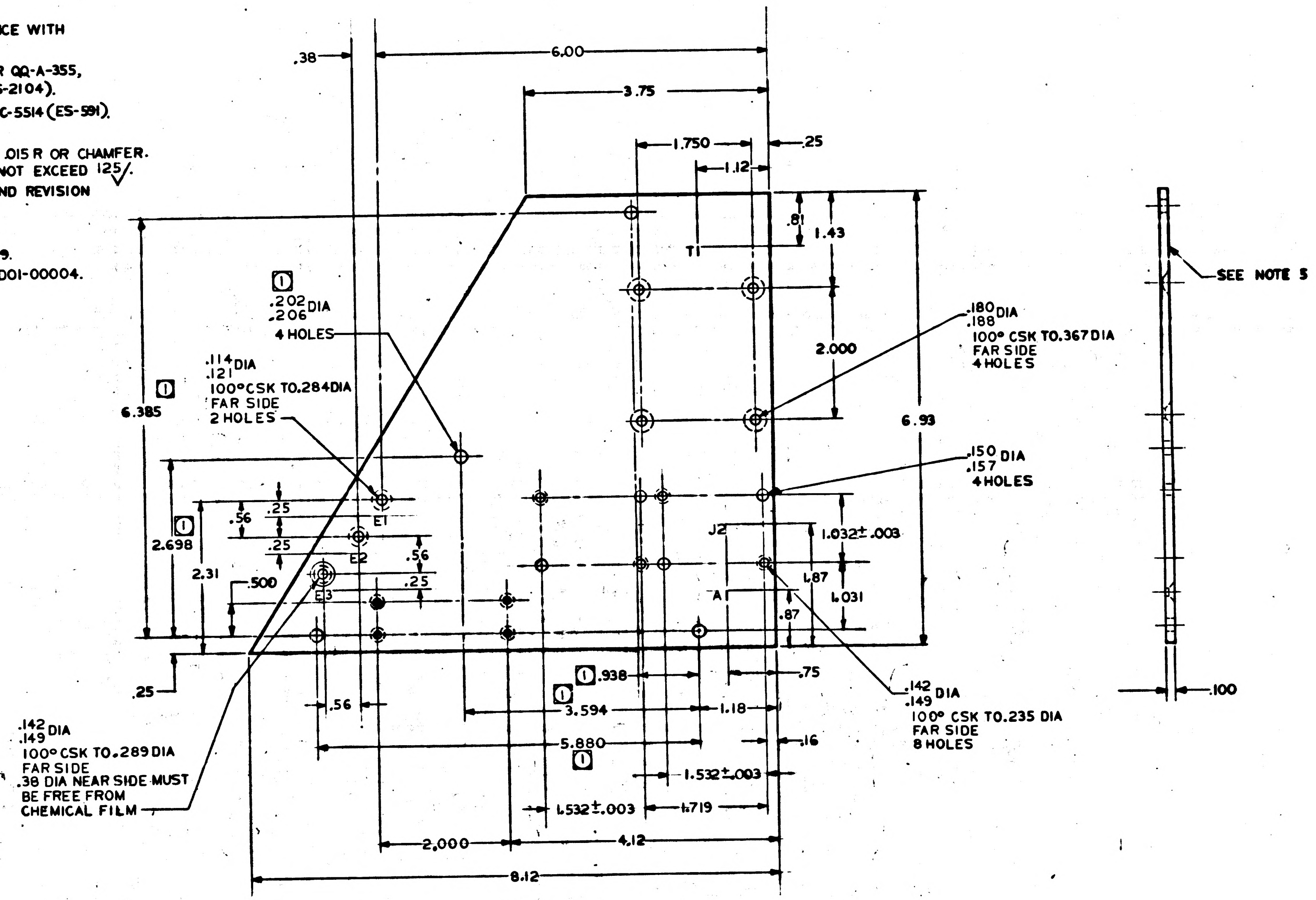
REVISIONS TDRR 05765

SYM	DESCRIPTION	DATE	APPROVAL

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. MATERIAL: ALUMINUM ALLOY PER QQ-A-355, TEMPER-T3 (TYPE 2024-T3) (ES-2104).
3. FINISH: CHEMICAL FILM PER MIL-C-5514 (ES-591).
4. UNLESS OTHERWISE SPECIFIED:
    ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
    SURFACE ROUGHNESS MUST NOT EXCEED 125√.
5. IDENTIFY USING PART NUMBER AND REVISION LETTER PER ND1002019.
6. CHARACTERS TO BE MARKED IN .12 HIGH BLACK PER ND1002019.
7. ① DIMENSIONS CONTROLLED BY ICD01-00004.
8. MUST BE FREE FROM BURRS.


.38
6.00
3.75
1.750
.25
1.12
.81
1.43
T1
① .202 .206 DIA 4 HOLES
.114 .121 DIA 100° CSK TO.284 DIA FAR SIDE 2 HOLES ①
6.385
2.000
.180 .188 DIA 100° CSK TO.367 DIA FAR SIDE 4 HOLES
6.93
.150 .157 DIA 4 HOLES
SEE NOTE 5
.25
.56
E1
.25
E2
.56
.25
E3
2.698 ①
2.31
.500
J2
1.032±.003
A
.87
1.031
.87
.25
.75
.142 .149 DIA 100° CSK TO .235 DIA FAR SIDE 8 HOLES
① .938
① 3.594
1.18
.56
5.880 ①
.16
1.532±.003
.142 .149 DIA 100° CSK TO .289 DIA FAR SIDE .38 DIA NEAR SIDE MUST BE FREE FROM CHEMICAL FILM
1.532±.003
1.719
2.000
4.12
8.12
.100

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1015003	1015003
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± .02
3 PLACE DECIMALS ± .005
ANGLES ± 1°
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 2

HEAT TREATMENT
—//—

FINAL FINISH
SEE NOTE 3

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT

DRAWN C.R. Grasso DATE
CHECKED H. Thaler 1-14-64
APPROVAL 1/14/64
APPROVAL 1-14-64
NASA APPROVAL W. J. Rhine 1-15-64
MIT APPROVAL 15 Jan 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PLATE -
CONTROL ELECTRONICS

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015001
SCALE FULL
WT
SHEET 1 OF 1

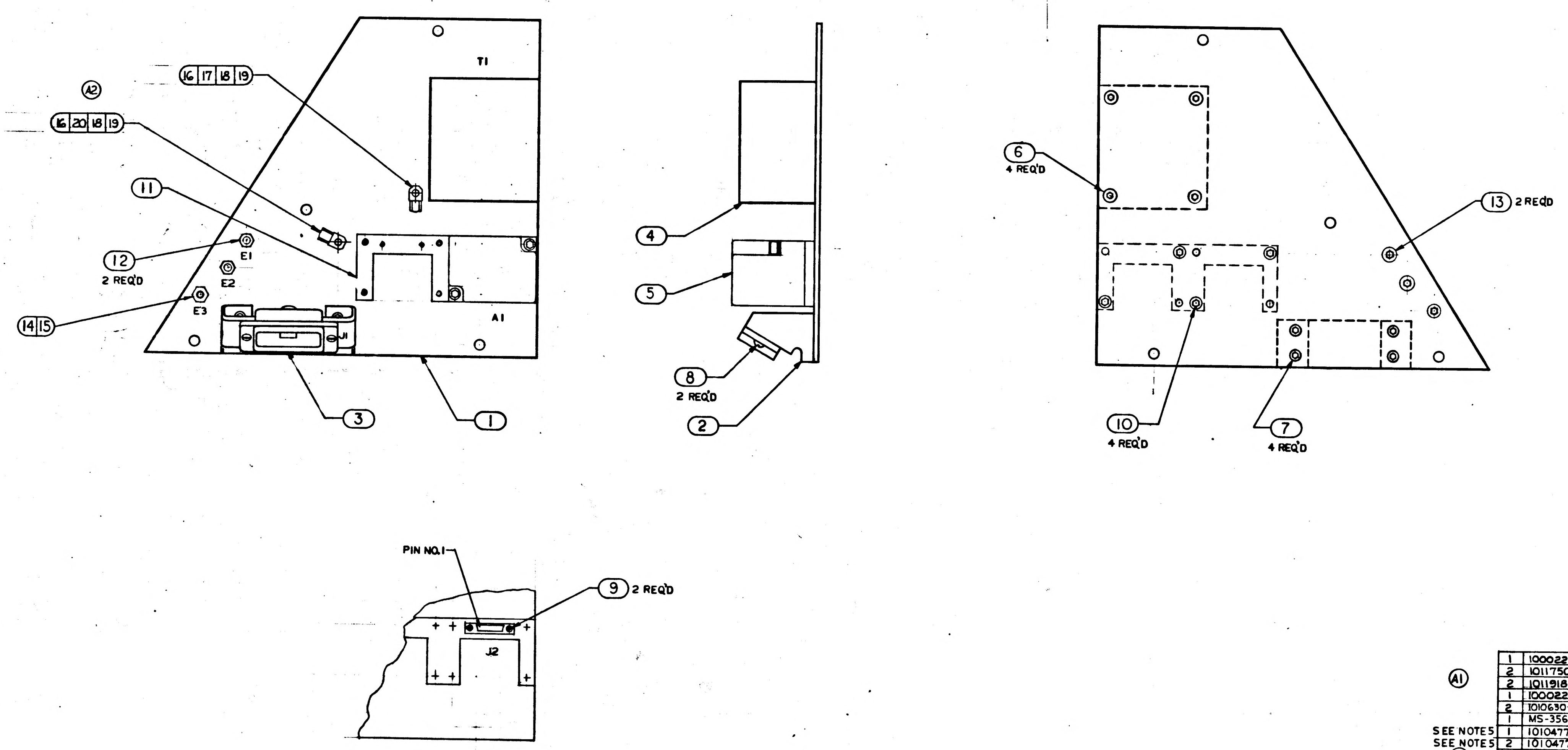
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 05765

SYM	DESCRIPTION	DATE	APPROVAL
A3	REVISED PER TDRR NO. 06787	10 MAR 64	WK

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. DRAWINGS FOR REFERENCE
   - 1015004 SCHEMATIC, CONTROL ELECTRONICS
   - 1015005 SCHEMATIC, RELAY & DIODE MODULE
3. INSPECT PER PS1015003.
4. SERIALIZE PER ND1002023.
5. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.



A1

A3

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	1000220-5	CLAMP, CABLE	20
	2	1011750-8	NUT	19
	2	1011918-1	WASHER	18
	1	1000220-4	CLAMP, CABLE	17
	2	1010630-15	SCREW	16
	1	MS-35649-64	NUT PLAIN HEX	15
SEE NOTE 5	1	1010477-24	SCREW, FLAT HD SOC HEX	14
SEE NOTE 5	2	1010477-12	SCREW, FLAT HD SOC HEX	13
	2	1010676-1	TERMINAL STUD	12
	1	1014625	ADAPTER PLATE	11
	4	1010477-13	SCREW, FLAT HD, SOC HEX	10
	2	1010618-3	SCREW, BUTTON HD, SOC HEX	9
	2	1006783-19	SCREW, BUTTON HD, SOC HEX	8
	4	1010630-14	SCREW, FLAT HD, SOC HEX	7
SEE NOTE 5	4	1010284-2	SCREW, FLAT HD, SOC HEX	6
	1	1007115	RELAY & DIODE MODULE	5
SEE NOTE 5	1	1010486	TRANSFORMER	4
	1	1014626	WIRING HARNESS A	3
	1	1015002	MOUNTING BRACKET CONNECTOR	2
	1	1015001	PLATE	1

LIST OF MATERIALS

1014513	1014513
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN C.R. Gorasso DATE
CHECKED H. Kruby 1-14-64
APPROVAL 1/17/64
APPROVAL 1/14/64
NASA APPROVAL W. J. R 1-15-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CONTROL ELECTRONICS ASSEMBLY

CODE IDENT NO. SIZE E NASA DRAWING NO. 1015003
SCALE FULL WT SHEET 1 OF 1

MASTER

INCHES
PHOTOGRAPHIC SCALE ONLY

Class A Release
TDRR 05906

PROCUREMENT SPECIFICATION

FOR

CONTROL ELECTRONICS ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
1/21/64	A	06871	4	WAK	

This specification consists of page i to iii and 1 to 8 inclusive.

PROCUREMENT SPECIFICATION

FOR

CONTROL ELECTRONICS ASSEMBLY

The purpose of this document is to establish the requirements for the procurement of the Control Electronics Assembly for use in APOLLO Guidance and Navigation Equipment.

W. A. Kupfer 22 Jan 64
MIT/IL DATE

J. Barnard 1/22/64
NASA/MSC APPROVAL DATE

PROCUREMENT SPECIFICATION

FOR

CONTROL ELECTRONICS ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Control Electronics Assembly, Drawing 1015003, hereafter called the assembly.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM-1015003	Final Test Method for Control Electronics Assembly

DRAWINGS

APOLLO G&N

1015003	Control Electronics Assembly
1015004	Control Electronics Assembly Schematic

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

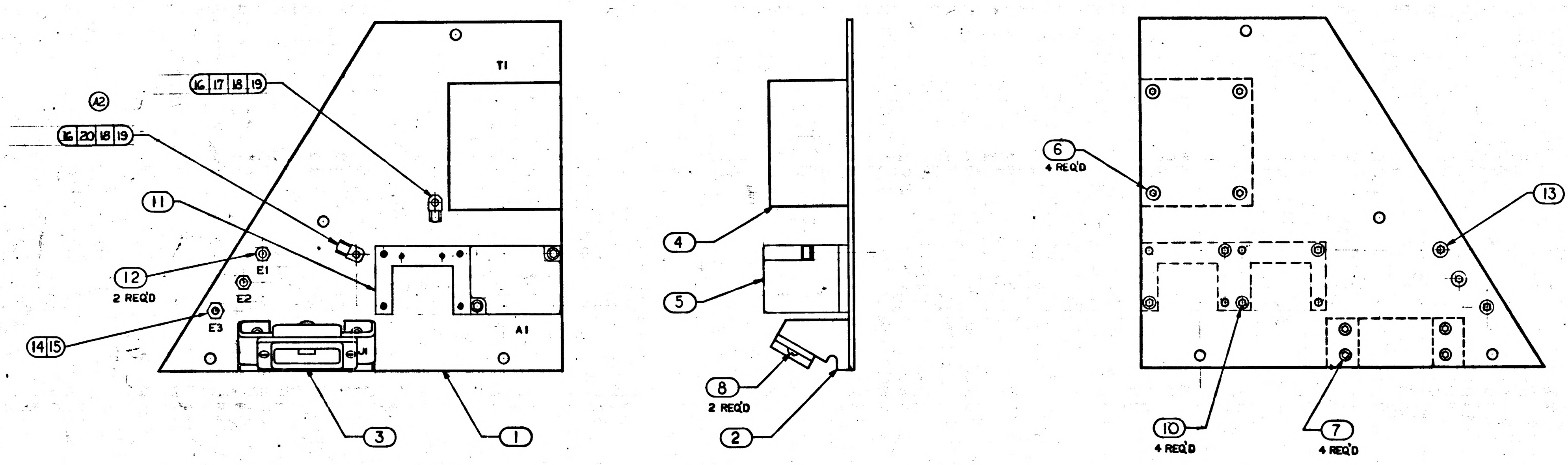
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

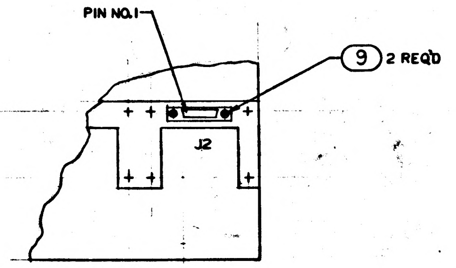
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. DRAWINGS FOR REFERENCE
   - 1015004 SCHEMATIC, CONTROL ELECTRONICS
   - 1015005 SCHEMATIC, RELAY & DIODE MODULE
3. INSPECT PER PS1015003.
4. SERIALIZE PER ND1002023.
5. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.

REVISIONS TDRR 05765

SYM	DESCRIPTION	DATE	APPROVAL
A_3	REVISED PER TDRR NO. 06787	10 MAR	WK
B_1	REVISED PER TDRR NO. 06869	17 MAR 64	WK.





A1

SEE NOTE 5

SEE NOTE 5

A3

SEE NOTE 5

SEE NOTE 5

B_1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1000220-5	CLAMP, CABLE	20
2	1011750-8	NUT	19
2	1011918-1	WASHER	18
1	1000220-4	CLAMP, CABLE	17
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4	1010630-14	SCREW, FLAT HD, SOC HEX	7
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1	1007115	RELAY & DIODE MODULE	5
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1	1014626	WIRING HARNESS A	3
1	1015002	MOUNTING BRACKET CONNECTOR	2
1	1015001	PLATE	1

LIST OF MATERIALS

1014513	1014513	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ± DO NOT SCALE THIS DRAWING MATERIAL —//— HEAT TREATMENT —//— FINAL FINISH —//—	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS DWG. NO. CONTRACT DRAWN C.R. Gazzaro DATE Oct [illegible] CHECKED H. [illegible] 1-14-64 APPROVAL F.F. [illegible] 1/17/64 APPROVAL [illegible] 1/14/64 NASA APPROVAL W.J. R[illegible] 1-15-64 MIT APPROVAL [illegible] 15 Jan 64	MANNED SPACECRAFT CENTER HOUSTON, TEXAS CONTROL ELECTRONICS ASSEMBLY CODE IDENT NO. SIZE E NASA DRAWING NO. 1015003 SCALE FULL WT SHEET 1 OF 1
NEXT ASSY	USED ON			
APPLICATION				

MASTER

Class A Release
TDRR 05906

PROCUREMENT SPECIFICATION

FOR

CONTROL ELECTRONICS ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
4/21/64	A	06871	4		
6/29/64	B	10515	4		

This specification consists of page i to iii and 1 to 4 inclusive.

PROCUREMENT SPECIFICATION

FOR

CONTROL ELECTRONICS ASSEMBLY

The purpose of this document is to establish the requirements for the procurement of the Control Electronics Assembly for use in APOLLO Guidance and Navigation Equipment.

W. S. Kupfer 22 Jan 64
MIT/IL DATE

J Barnard 1/23/64
NASA/MSC APPROVAL DATE

PROCUREMENT SPECIFICATION

FOR

CONTROL ELECTRONICS ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Control Electronics Assembly, Drawing 1015003, hereafter called the assembly.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM-1015003	Final Test Method for Control Electronics Assembly

DRAWINGS

APOLLO G&N

1015003	Control Electronics Assembly
1015004	Control Electronics Assembly Schematic

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

APOLLO G&N Specification
PS-1015003 B
21 January 1964

Class A Release
TDRR 05906

PROCUREMENT SPECIFICATION
FOR
CONTROL ELECTRONICS ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
4/21/64	A	06871	4	WJR	
6/29/64	B	10515	4	WR.	

This specification consists of page i to iii and 1 to 6 inclusive.

APOLLO G&N Specification
PS-1015003
21 January 1964

PROCUREMENT SPECIFICATION
FOR
CONTROL ELECTRONICS ASSEMBLY

The purpose of this document is to establish the requirements for the procurement of the Control Electronics Assembly for use in APOLLO Guidance and Navigation Equipment.

W.S. Kupfer 22 Jan 64
MIT/IL DATE

1/22/64
NASA/MSC APPROVAL DATE

PREPARED BY	**TITLE**	**DATE**
O. J. Rygaard	Spec. Engr. Writer	12-20-63
AC Spark Plug		
EXAMINED BY	**TITLE**	**DATE**
R. E. Priest	Proj Engr	12-20-63
AC Spark Plug		
APPROVED BY	**TITLE**	**DATE**
	Asst. Dir.	1/21/61
MIT/IL		
APPROVED BY	**TITLE**	**DATE**
MIT/IL		
APPROVED BY	**TITLE**	**DATE**
MIT/IL		

APOLLO G&N Specification
PS-1015003
21 January 1964

PROCUREMENT SPECIFICATION

FOR

CONTROL ELECTRONICS ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Control Electronics Assembly, Drawing 1015003, hereafter called the assembly.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM-1015003	Final Test Method for Control Electronics Assembly

DRAWINGS

APOLLO G&N

1015003	Control Electronics Assembly
1015004	Control Electronics Assembly Schematic

3. REQUIREMENTS

3.1 GENERAL SPECIFICATION. Unless otherwise specified herein, all of the requirements of Specification ND-1002210 shall apply as requirements of this specification.

3.2 DESCRIPTION. The assembly will provide switching for the gimbal lock lamp and the main panel gimbal lock lamp, supply voltages for the lamps in the D and C group and supply motor excitation and slewing voltages for the map and data viewer.

3.3 FUNCTIONAL REQUIREMENTS

3.3.1 Electrical Inputs. The assembly shall perform as specified herein when energized with 115 ±4 volts rms at 400 ±40cps and 24 to 31 vdc.

3.3.2 Insulation Resistance. The insulation resistance between pin J1-1 and all other pins of J1 shall be equal to or greater than 100 megohms.

3.3.3 Continuity and DC Resistance. The continuity and dc resistance of the assembly shall be as specified in Table I.

3.3.4 Transformer Operation. With 115.0V rms at 400±40 cps applied between pins J1-69 and J1-68, the jumpers connected and the outputs loaded as specified in Table II, the output voltages shall be as specified in Table II.

TABLE I

CONTINUITY AND DC RESISTANCE

FROM J1 PIN	TO J1 PIN	DC RESISTANCE (ohms)
69	68	3±2
49	38	0.5 max
49	39	0.5 max
49	48	2.0 max
81	94	0.5 max
↑	95	↑
	108	
	106	
↓	93	
81	107	
10	24	↓
22	8	0.5 max
12 (+)	13 (−)	3100±310
13 (+)	12 (−)	30.0 max
102	88	0.5 max
90	103	0.5 max
104 (+)	91 (−)	3100±310
91 (+)	104 (−)	30.0 max
24	106	100M min
8	9	↑
88	101	↓
103	89	100M min
J1-1	Chassis	0.02 max

TABLE II

TRANSFORMER OPERATION

JUMPER CONNECTED		OUTPUT PINS		LOAD AT OUTPUT PINS	OUTPUT VOLTAGE (rms)	
FROM	TO	FROM	TO		Min	Max
None	None	106	108	1.00 to 1.10Ω; 40W	5.7	6.3
↕	↕	49	48	1.05K to 1.15KΩ; 7W	25.48	27.84
		49	38	800 to 1000Ω	1.485	1.515
None	None	49	39	800 to 1000Ω	1.485	1.515
108	69	68	106		120.7	121.6
49	106	108	48		31.18	34.46
None	None	48	38	1.5K to 1.8K Ω	23.97	26.36
None	None	48	39	1.5K to 1.8K Ω	26.97	29.36

3.3.5 Relay Operation

3.3.5.1 Relay K1. With 23.9 ±0.1 vdc applied to pins J1-12 (+) and J1-13 (-), relay K1 shall energize and the contacts shall be opened or closed as specified in Table III.

TABLE III

RELAY CONTACT POSITIONS

PINS		CONTACT STATE
From	To	
J1-24	J1-10	Open
J1-24	J1-106	Closed
J1-8	J1-22	Open
J1-8	J1-9	Closed

3.3.5.2 Relay K2. With 23.9 ±0.1 vdc applied to pins J1-104 (+) and J1-91 (-), relay K2 shall energize and the contacts shall be opened or closed as specified in Table IV.

TABLE IV

RELAY CONTACT POSITIONS

PINS		CONTACT STATE
From	To	
J1-88	J1-102	Open
J1-88	J1-101	Closed
J1-103	J1-90	Open
J1-103	J1-89	Closed

3.4 PERFORMANCE AND PRODUCT CHARACTERISTICS

3.4.1 Service Life

3.4.1.1 Operating Life. The assembly shall meet performance specifications for at least 2000 hours of operation, excluding the supplier's test time of the completed unit.

3.4.1.2 Shelf Life. The assembly shall have a life of at least 5 years, without operation, at ambient room temperature after final acceptance at the supplier's facility.

3.4.2 Reliability. Design objectives require maximum reliability of the assembly during its period of useful life. Every effort shall be made to design and produce units capable of meeting a maximum failure rate of 21 failures per million hours.

4. QUALITY ASSURANCE PROVISIONS

4.1 GENERAL SPECIFICATION. Unless otherwise specified herein, all the quality assurance provisions of Specification ND-1002210 shall form a part of this specification.

4.2 NASA ACCEPTANCE INSPECTION. The NASA acceptance inspection shall be in accordance with Specification FTM-1015003.

5. PREPARATION FOR DELIVERY.

5.1 GENERAL. Preparation for delivery shall be in accordance with Specification ND-1002210.

6. NOTES. None.

Notice: When APOLLO G&N drawings, specifications, or other data are used for any purpose other than in connection with a definitely related NASA procurement operation, NASA thereby incurs no responsibility nor any obligation whatsoever, and the fact that NASA may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

OJR:jp

APOLLO G&N Specification
PS-1015003 C
21 January 1964

Class A Release
TDRR 05906

PROCUREMENT SPECIFICATION
FOR
CONTROL ELECTRONICS ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
4/21/64	A	06871	4	WJR	
6/29/64	B	10515	4	WK.	
12/15/64	C	14815	1	WK	WJR

This specification consists of page i to iii and 1 to 6 inclusive.

PROCUREMENT SPECIFICATION
FOR
CONTROL ELECTRONICS ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Control Electronics Assembly, hereafter called the assembly.

1.2 CLASSIFICATION. Unless otherwise specified, all types shall meet the requirements specified herein. Special requirements for the equipment covered by this specification shall be classified as follows:

a. Type I: The special requirements for Part No. 1015003 shall be designated as Type I.

b. Type II: The special requirements for Part No. 1015064-011 shall be designated as Type II.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM1015003	Final Test Method for Control Electronics Assembly

DRAWINGS

APOLLO G&N

1015003	Control Electronics Assembly
1015004	Control Electronics Assembly Schematic
1015064	Control Electronics Assembly
1015066	Control Electronics Schematic

APOLLO G&N Specification
FTM-1015003 C
28 January 1964
Class A Release
TDRR 05986

FINAL TEST METHOD

FOR

CONTROL ELECTRONICS ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
12/15/64	A	14815	1, 2, 3, 4	WK	WJR
2/17/65	B	16525	1, 2, 3, 4	WK	TM
3/2/65	C	17056	1	WK	WJR

This specification consists of page i
to iii and 1 to 4 inclusive.

APOLLO G&N Specification
PS-1015003 DC
21 January 1964

Class A Release
TDRR 05906

PROCUREMENT SPECIFICATION

FOR

CONTROL ELECTRONICS ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
1/21/64	A	06871	4	WJK	
6/29/64	B	10515	4	WK	
12/15/64	C	14815	1	WK	WJR
2/17/65	D	16525	1-4, was 6 pages, now 7 pages.	WK	TM

M

This specification consists of page i to iii and 1 to 9 inclusive.

APOLLO G&N Specification
FTM-1015003 Ⓓ
28 January 1964
Class A Release
TDRR 05906

FINAL TEST METHOD

FOR

CONTROL ELECTRONICS ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				AC	NASA
12/15/64	A	14815	1, 2, 3, 4 RDG/[illegible]	WK	WJR
M 2/17/65	B	16525	1, 2, 3, 4 RDG/[illegible]	WK	TM
Ⓜ 3/2/65	C	17056	1 RDG/[illegible]	WK	WJR
12/1/66	D	32247	1 RDG/[illegible]	MGM EA	---

This specification consists of page i
to iii and 1 to 4 inclusive.

APOLLO G&N Specification
PS-1015003 E
21 January 1964

Class A Release
TDRR 05906

PROCUREMENT SPECIFICATION

FOR

CONTROL ELECTRONICS ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
4/21/64	A	06871	4	WK	
6/29/64	B	10515	4	WK	
Ⓜ 12/15/64	C	14815	1	WK	WJR
Ⓜ 2/17/65	D	16525	1-4, was 6 pages, now 7 pages.	WK	TM
3/2/65	E	17057	1	WK	WJR

This specification consists of page i to iii and 1 to v inclusive.

PROCUREMENT SPECIFICATION

FOR

CONTROL ELECTRONICS ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Control Electronics Assembly, hereafter called the assembly.

1.2 CLASSIFICATION. Unless otherwise specified, all types shall meet the requirements specified herein. Special requirements for the equipment covered by this specification shall be classified as follows:

a. Type I: The special requirements for Part No. 1015003-000 and 1015003-011 and 1015064-011 shall be designated as Type I.

b. Type II: The special requirements for Part No. 1015064-021 shall be designated as Type II.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM1015003	Final Test Method for Control Electronics Assembly

DRAWINGS

APOLLO G&N

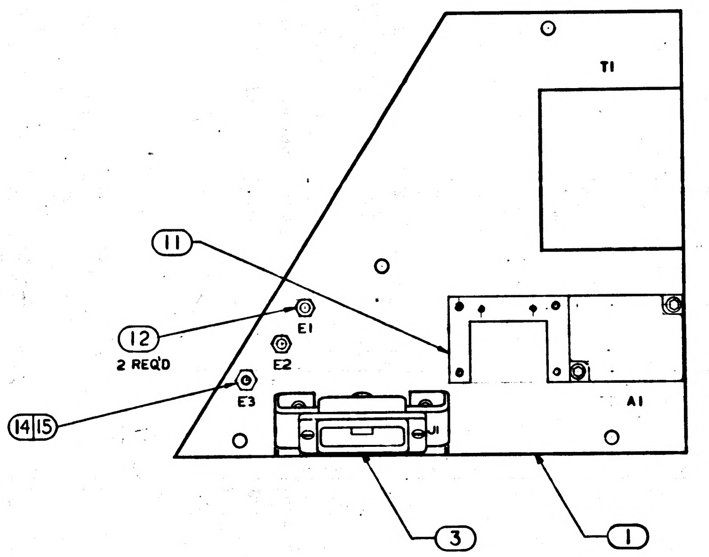
1015003	Control Electronics Assembly
1015004	Control Electronics Assembly Schematic
1015064	Control Electronics Assembly
1015066	Control Electronics Schematic
1021738	Control Electronics Schematic

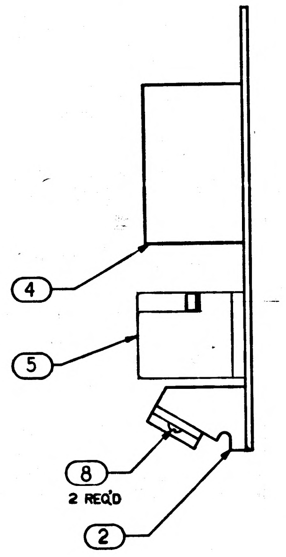
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

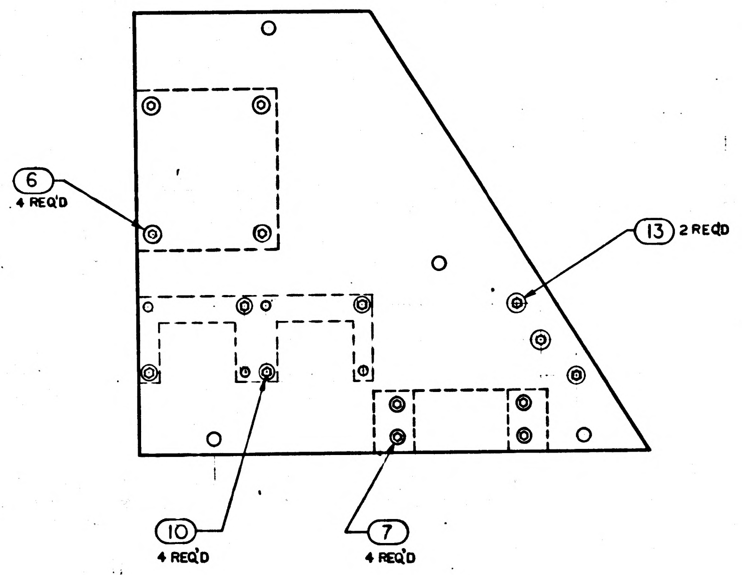
REVISIONS TDRR 05765			
SYM	DESCRIPTION	DATE	APPROVAL

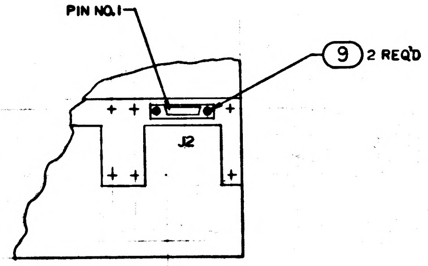
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. DRAWINGS FOR REFERENCE
   1015004 SCHEMATIC, CONTROL ELECTRONICS
   1015005 SCHEMATIC, RELAY & DIODE MODULE
3. INSPECT PER PS1015003.
4. SERIALIZE PER ND 1002023.
5. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.









	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	1	MS-35649-64	NUT PLAIN HEX	15
SEE NOTE 5	1	1010630-24	SCREW, FLAT HD SOC HEX	14
SEE NOTE 5	2	1010630-12	SCREW, FLAT HD SOC HEX	13
	2	1010676-1	TERMINAL STUD	12
	1	1014625	ADAPTER PLATE	11
	4	1010630-13	SCREW, FLAT HD, SOC HEX	10
	2	1010618-3	SCREW, BUTTON HD, SOC HEX	9
	2	1006783-19	SCREW, BUTTON HD, SOC HEX	8
	4	1010630-14	SCREW, FLAT HD, SOC HEX	7
SEE NOTE 5	4	1015831-239	SCREW, FLAT HD, SOC HEX	6
	1	1007115	RELAY & DIODE MODULE	5
SEE NOTE 5	1	1010486	TRANSFORMER	4
	1	1014626	WIRING HARNESS A	3
	1	1015002	MOUNTING BRACKET CONNECTOR	2
	1	1015001	PLATE	1

LIST OF MATERIALS

1014513	1014513
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN C R Gorrao DATE Oct 9 [illegible]
CHECKED H. [illegible] 1-14-64
APPROVAL [illegible] 1/7/64
APPROVAL [illegible] 1/14/64
NASA APPROVAL W. J. [illegible] 1-15-64
MIT APPROVAL [illegible] 15 Jan 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CONTROL ELECTRONICS
ASSEMBLY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015003
SCALE FULL
WT
SHEET 1 OF 1

1015003

MASTER

APOLLO G&N Specification
PS-1015003
21 January 1964
Class A Release
TDRR 05906

PROCUREMENT SPECIFICATION

FOR

CONTROL ELECTRONICS ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page i to iii and 1 to 6 inclusive.

APOLLO G&N Specification
PS-1015003
21 January 1964

PROCUREMENT SPECIFICATION

FOR

CONTROL ELECTRONICS ASSEMBLY

The purpose of this document is to establish the requirements for the procurement of the Control Electronics Assembly for use in APOLLO Guidance and Navigation Equipment.

W.A. Kupfer 22 Jan 64
MIT/IL DATE

J. Barnard 1/22/64
NASA/MSC APPROVAL DATE

APOLLO G&N Specification
PS-1015003
21 January 1964

PROCUREMENT SPECIFICATION

FOR

CONTROL ELECTRONICS ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Control Electronics Assembly, Drawing 1015003, hereafter called the assembly.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM-1015003	Final Test Method for Control Electronics Assembly

DRAWINGS

APOLLO G&N

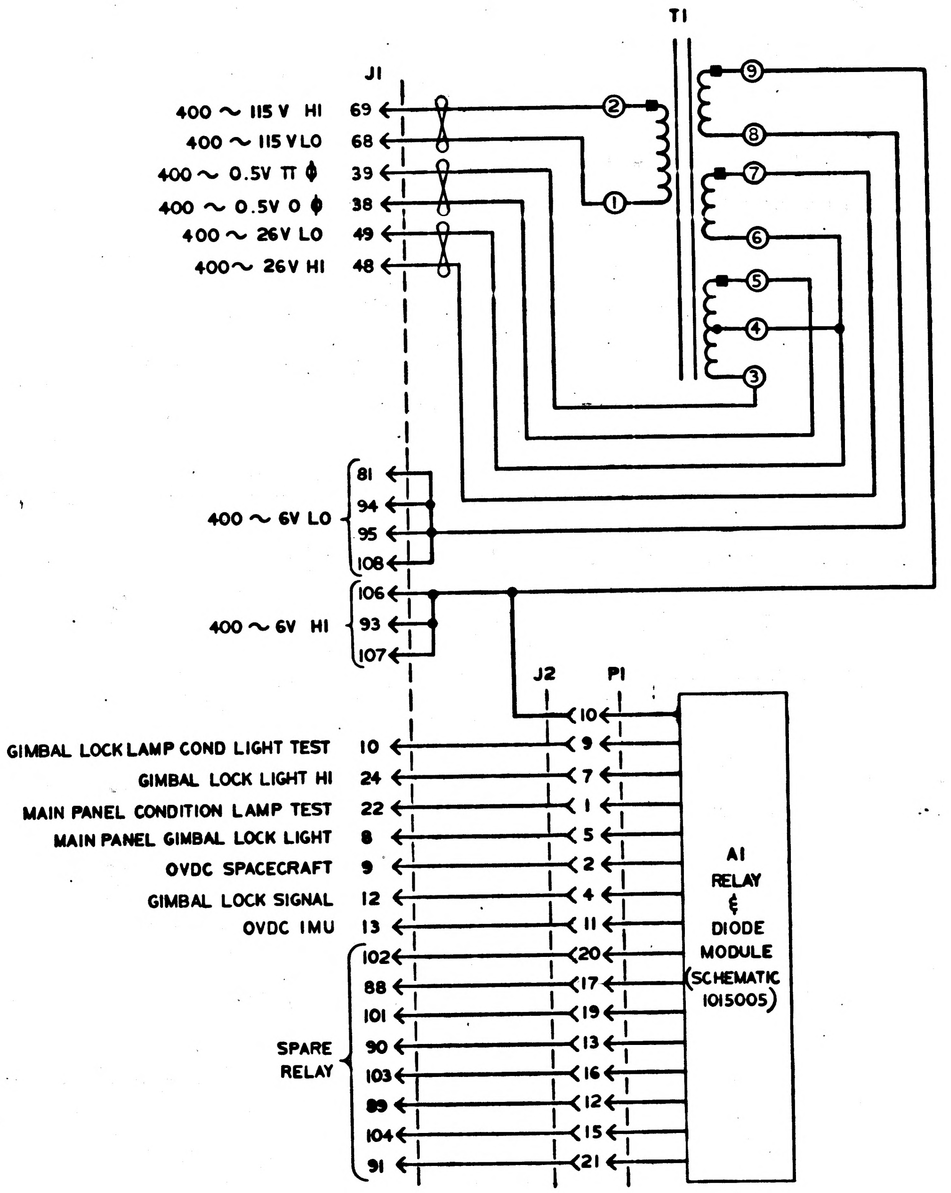
1015003	Control Electronics Assembly
1015004	Control Electronics Assembly Schematic

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 04592			
SYM	DESCRIPTION	DATE	APPROV

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. ALL PART NUMBERS ARE FOR REFERENCE ONLY.
3. DRAWING FOR REFERENCE: 1015003 ASSEMBLY
4. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX THEM WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.


T1
J1
400 ~ 115 V HI 69
400 ~ 115 V LO 68
400 ~ 0.5V π ϕ 39
400 ~ 0.5V 0 ϕ 38
400 ~ 26V LO 49
400 ~ 26V HI 48
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
400 ~ 6V LO 81 94 95 108
400 ~ 6V HI 106 93 107
J2
P1
GIMBAL LOCK LAMP COND LIGHT TEST 10
GIMBAL LOCK LIGHT HI 24
MAIN PANEL CONDITION LAMP TEST 22
MAIN PANEL GIMBAL LOCK LIGHT 8
OVDC SPACECRAFT 9
GIMBAL LOCK SIGNAL 12
OVDC IMU 13
SPARE RELAY 102 88 101 90 103 89 104 91
10 9 7 1 5 2 4 11 20 17 19 13 16 12 15 21
A1 RELAY & DIODE MODULE (SCHEMATIC 1015005)

REF. DESIG	PART NO.	DESCRIPTION	VALUE	TOL	RATING
T1	1010486	TRANSFORMER			
J2	1010472-1	CONNECTOR			
J1	1010496-1	CONNECTOR			
A1	1007115	RELAY DIODE MODULE			

PARTS LIST

NEXT ASSY	USED ON
1015003	1015003

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± # DECIMALS ± # ANGLES ± #
DO NOT SCALE THIS DRAWING
MATERIAL #
HEAT TREATMENT #
FINAL FINISH #

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN C.R. Grasso DATE [illegible]
CHECKED [illegible] 11-12-63
APPROVAL [illegible] 11/12/63
APPROVAL
NASA APPROVAL W. J. [illegible] 11-13-63
MIT APPROVAL W Kupfer 12/14/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CONTROL ELECTRONICS
SCHEMATIC

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015004
SCALE NONE
WT
SHEET 1 OF 1

MASTER

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

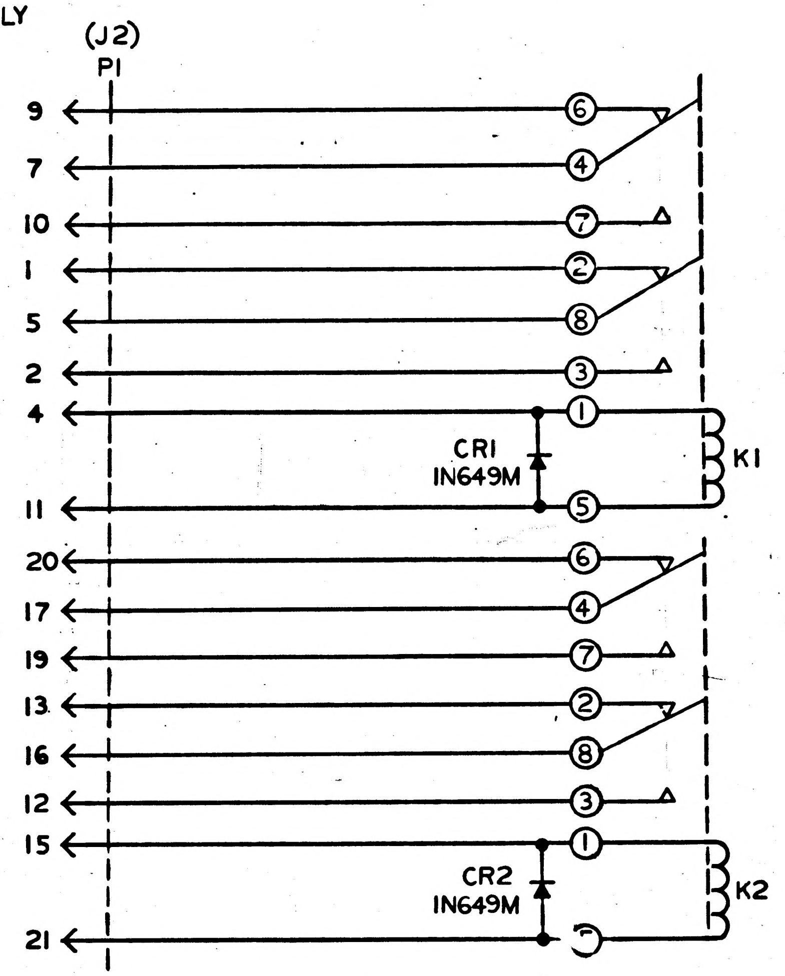
1015005

REVISIONS 04572			
SYM	DESCRIPTION	DATE	APPROVAL

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. ALL PART NUMBERS ARE FOR REFERENCE ONLY
3. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX THEM WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.



P1	1010472-2	CONNECTOR			
K2	1010353-4	RELAY			
K1	1010353-4	RELAY			
CR2	1010362-3	DIODE	IN649M		
CR1	1010362-3	DIODE	IN649M		
REF DESIG	PART NO.	DESCRIPTION	VALUE	TOL	RATING

PARTS LIST

MASTER

1007115	1015003
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± # DECIMALS ± # ANGLES ± #
DO NOT SCALE THIS DRAWING
MATERIAL #
HEAT TREATMENT #
FINAL FINISH #

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN C.R. Grasso DATE Oct 16 1963
CHECKED 11-12-63
APPROVAL 11/12/63
APPROVAL
NASA APPROVAL W. J. Rhine 11-13-63
MIT APPROVAL W Kupfer 12 Nov 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RELAY & DIODE MODULE
SCHEMATIC
(CONTROL ELECTRONICS)

CODE IDENT NO. | SIZE C | NASA DRAWING NO. 1015005
SCALE NONE | WT | SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1014578-021	1014513 Ⓜ	A	REVISED PER TDRR-11202	6 AUG 64	JWP CP

REV						
SHEET						
REV STATUS REV	A	+	A	A	A	A
OF SHEETS SHEET	1	2	3	4	5	6

23 APR 64

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN Summerwill DATE 21 APR 64
CHECKED 23 APR 64
APPROVAL D.W. Mieling 23 APR 64
APPROVAL J. E. King 4/7/64
NASA APPROVAL
MIT APPROVAL
CONTRACT NAS 9-497

WIRE LIST A-A
G&N INDICATOR CONTROL PANEL

CODE IDENT NO.
SIZE
1015014
REV A
SCALE —
SHEET 1 OF 6

GNZ WIRE LIST AA 1015014

PENNANT NOTE

GENERAL NOTES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MARK CONDUCTOR IDENTIFICATION OMITTING ALL SUFFIX LETTERS EXCEPT A,B,C, AND D PER ND1002019 . (ES-2475-7)

SOLDER PER MIL-S-6872 (ES-2505-1) USING ITEMS 2 AND 3

Y OR N IN TINNED COLUMN INDICATES YES OR NO.

PARTIAL REF. DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGINATION PREFIX WITH 50A1

TOLERANCE CHART. UNLESS OTHERWISE SPECIFIED---

APPLICABLE LENGTH FOR WIRE OR CABLE. STRIP WIRE. STRIP JACKET. CUT WIRE OR CUT SHIELD.	TOLERANCE WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015014
SCALE-NONE
REV LTR
SHEET 2 OF 6

GNZ WIRE LIST AA 1015014

PENNANT

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1014624-001	WIRE. 1010685- 1 24AWG WHITE. FT INCHES TOTAL LENGTH 6 9
	2	AR	QQ-S-571	SOLDER SN60 (ES-2175 ALLOY 1)
	3	AR	QQ-S-571	FLUX TYPE AR (ES-2175 TYPE 1 OR 2) OR MIL-F-14256 FLUX (ES-2798)
	4	26 ~~16~~	1010176 ~~1010490-082~~	INSULATION SLEEVING HEAT SHRINK
	~~5~~	~~10~~	~~1010490-080~~	~~INSULATION SLEEVING HEAT SHRINK~~

MANNED SPACECRAFT CENTER
HOUSTON TEXAS
SIZE A
1015014
SCALE-NONE
REV LTR A
SHEET 3 OF 6

GNZ WIRE LIST AA 1015014

CONDUCTOR NUMBER	ITEM NO	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2 / T 1 N	TERMINATION SPEC 1 NO. ITEM NO	TO CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2 / T 1 N	TERMINATION SPEC 1 NO ITEM NO
AA 1	1	150	T1- 2	25Y		T1- 3	25Y	
AA 2								
AA 3								
AA 4	1	200	S3- 1-C	25Y	4	S3- 2-NC	25Y	4
AA 5	1	150	S16- 7-C	25Y		S16- 8-C	25Y	4
AA 6								
AA 7	1	150	S16- 3-C	25Y		S16- 2-C	25Y	4X
AA 8	1	150	S16- 2-C	25Y		S16- 1-C	25Y	4
AA 9	1	150	S15- 1-NC	25Y		S15- 2-NO	25Y	
AA 10	1	400	S15- 4-NC	25Y		S15- 5-NC	25Y	4
AA 11								
AA 12	1	150	S15- 3-NC	25Y		S15- 4-NO	25Y	
AA 13	1	200	S15- 1-NO	25Y	4X	S15- 3-NO	25Y	
AA 14	1	500	S15- 1-NC	25Y		S15- 5-NO	25Y	4X
AA 15	1	200	S15- 6-NO	25Y	4	S15- 5-NO	25Y	
AA 16								
AA 17								
AA 18	1	150	S17- 1-C	25Y		S17- 2-C	25Y	

1 . THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 . DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS

MANNED SPACECRAFT CENTER
HOUSTON TEXAS
SIZE A
1015014
SCALE-NONE
REV LTR A
SHEET 4 OF 6

GNZ WIRE LIST AA 1015014

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2 / T 1 N	TERMINATION SPEC 1 NO. ITEM NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2 / T 1 N	TERMINATION SPEC 1 NO ITEM NO
AA 19	1	150	R1-WIPER	25Y	4	R1-CW	25Y	
AA 20								
AA 21								
AA 22								
AA 23								
AA 24								
AA 25								
AA 26								
AA 27								
AA 28								
AA 29								
AA 30								
AA 31	1	150	S10- 4	25Y	4	S10- 3	25Y	
AA 32	1	150	S14- 1-C	25Y	4	S14- 2-NC	25Y	4
AA 33	1	150	S18- 2-C	25Y		S18- 1-C	25Y	4
AA 34	1	300	S21- 3-NC	25Y		S20- 2-NC	25Y	
AA 35	1	300	S21- 1-C	25Y		S20- 1-C	25Y	4X
AA 36								

1 . THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 . DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015014
SCALE-NONE
REV LTR A
SHEET 5 OF 6

GNZ

WIRE LIST AA

1015014

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT 2	T/N 2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT 2	T/N 2	TO ITEM NO	TERMINATION SPEC 1	NO
AA 37	1	500	S9- 4-NO	25Y			S9- 8-NO	25Y	4		
AA 38											
AA 39	1	500	S9- 2-C	25Y			S9- 7-C	25Y	4		
AA 40	1	500	S9- 1-C	25Y			S9- 5-C	25Y	4 ~~4~~		
AA 41	[redacted]	[redacted]	[redacted]	[redacted]			[redacted]	[redacted]	[redacted]		
AA 42	1	150	S20- 4-NC	25Y			S20- 3-NC	25Y	4 ~~4~~		
AA 43	1	300	S20- 3-NC	25Y			S21- 4-NC	25Y	4 ~~4~~		
AA 44	1	150	S21- 4-NC	25Y			S21- 2-NC	25Y	4		
AA 45	1	500	S9- 8-C	25Y			S9- 4-C	25Y	4 ~~4~~		
AA 46											
AA 47	1	275	S20- 1-NC	25Y			S21- 1-NC	25Y	4		
AA 48	1	500	S9- 1-NO	25Y			S9- 5-NO	25Y	4 ~~4~~		
AA 49											
AA 50	1	300	S20- 3-C	25Y			S21- 4-C	25Y	4		
AA 51	1	300	S20- 4-C	25Y			S21- 2-C	25Y	4		
AA 52											

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015014
SCALE - NONE	REV LTR A	SHEET 6 OF 6

APPLICATION		REVISIONS TPRN 10170			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1014878-021	1014513				

REV STATUS OF SHEETS						
REV	+	+	+	+	+	+
SHEET	1	2	3	4	5	6

H. Erickson 23 APR 64

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Summerville DATE 21 APR 64
CHECKED Peterson 23 APR 64
APPROVAL D.W. Mueller 23 APR 64
APPROVAL J. Weiss 4/9/64
NASA APPROVAL
MIT APPROVAL 4/1/64
CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRE LIST A-A
G&N INDICATOR CONTROL PANEL

CODE IDENT NO. | SIZE | 1015014 | REV

SCALE — | SHEET 1 OF 6

GNZ WIRE LIST AA ◆ 1015014

PENNANT NOTE | GENERAL NOTES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MARK CONDUCTOR IDENTIFICATION OMITTING ALL SUFFIX LETTERS EXCEPT A,B,C, AND D PER ND1002019 . (ES-2475-7)

SOLDER PER MIL-S-6872 (ES-2505-1) USING ITEMS 2 AND 3

Y OR N IN TINNED COLUMN INDICATES YES OR NO.

PARTIAL REF. DESIGINATIONS ARE SHOWN. FOR COMPLETE DESIGINATION PREFIX WITH 50A1

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015014

SCALE-NONE | REV LTR + | SHEET 2 OF 6

GNZ WIRE LIST AA ◆ 1015014

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
				LIST OF MATERIALS
	1	1	1014624-001	WIRE, 1010685- 1 24AWG WHITE. 6 FT 9 INCHES TOTAL LENGTH
	2	AR	QQ-S-571	SOLDER SN60 (ES-2175 ALLOY 1)
	3	AR	QQ-S-571	FLUX TYPE AR (ES-2175 TYPE 1 OR 2) OR MIL-F-14256 FLUX (ES-2798)
	4	16	1010490-082	INSULATION SLEEVING HEAT SHRINK
	5	10	1010490-080	INSULATION SLEEVING HEAT SHRINK

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015014

SCALE-NONE | REV LTR + | SHEET 3 OF 6

GNZ WIRE LIST AA ◆ 1015014

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	FROM STRIP 2	FROM TIN	FROM TERMINATION SPEC. 1 ITEM NO.	FROM NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	TO STRIP 2	TO TIN	TO TERMINATION SPEC 1 ITEM NO.	TO NO.
AA 1	1	150	T1- 2	25	Y			T1- 3	25	Y		
AA 2												
AA 3												
AA 4	1	200	S3- 1-C	25	Y	4		S3- 2-NC	25	Y	4	
AA 5	1	150	S16- 7-C	25	Y			S16- 8-C	25	Y	4	
AA 6												
AA 7	1	150	S16- 3-C	25	Y			S16- 2-C	25	Y	5	
AA 8	1	150	S16- 2-C	25	Y			S16- 1-C	25	Y	4	
AA 9	1	150	S15- 1-NC	25	Y			S15- 2-NO	25	Y		
AA 10	1	400	S15- 4-NC	25	Y			S15- 5-NC	25	Y	4	
AA 11												
AA 12	1	150	S15- 3-NC	25	Y			S15- 4-NO	25	Y		
AA 13	1	200	S15- 1-NO	25	Y	5		S15- 3-NO	25	Y		
AA 14	1	500	S15- 1-NO	25	Y			S15- 5-NO	25	Y	5	
AA 15	1	200	S15- 6-NO	25	Y	4		S15- 5-NO	25	Y		
AA 16												
AA 17												
AA 18	1	150	S17- 1-C	25	Y			S17- 2-C	25	Y		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015014

SCALE-NONE | REV LTR + | SHEET 4 OF 6

GNZ

WIRE LIST AA

✦ 1015014

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	2	T I N	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	2	T I N	TO TERMINATION SPEC 1 ITEM NO.	NO.
AA 19	1	150	R1-WIPER	25	Y	4		R1-CW	25	Y		
AA 20												
AA 21												
AA 22												
AA 23												
AA 24												
AA 25												
AA 26												
AA 27												
AA 28												
AA 29												
AA 30												
AA 31	1	150	S10- 4	25	Y	4		S10- 3	25	Y		
AA 32	1	150	S14- 1-C	25	Y	4		S14- 2-NC	25	Y	4	
AA 33	1	150	S18- 2-C	25	Y			S18- 1-C	25	Y	4	
AA 34	1	300	S21- 3-NC	25	Y			S20- 2-NC	25	Y		
AA 35	1	300	S21- 1-C	25	Y			S20- 1-C	25	Y	5	
AA 36												

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015014
SCALE - NONE	REV LTR ✦	SHEET 5 OF 6

MIL 2085 - 4-63 WIR

GNZ

WIRE LIST AA

✦ 1015014

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	2	T I N	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	2	T I N	TO TERMINATION SPEC 1 ITEM NO.	NO.
AA 37	1	500	S9- 4-NO	25	Y			S9- 8-NO	25	Y	4	
AA 38												
AA 39	1	500	S9- 2-C	25	Y			S9- 7-C	25	Y	4	
AA 40	1	500	S9- 1-C	25	Y			S9- 5-C	25	Y	5	
AA 41	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]			[redacted]	[redacted]	[redacted]	[redacted]	
AA 42	1	150	S20- 4-NC	25	Y			S20- 3-NC	25	Y	5	
AA 43	1	300	S20- 3-NC	25	Y			S21- 4-NC	25	Y	5	
AA 44	1	150	S21- 4-NC	25	Y			S21- 2-NC	25	Y	4	
AA 45	1	500	S9- 8-C	25	Y			S9- 4-C	25	Y	5	
AA 46												
AA 47	1	275	S20- 1-NC	25	Y			S21- 1-NC	25	Y	4	
AA 48	1	500	S9- 1-NO	25	Y			S9- 5-NO	25	Y	5	
AA 49												
AA 50	1	300	S20- 3-C	25	Y			S21- 4-C	25	Y	4	
AA 51	1	300	S20- 4-C	25	Y			S21- 2-C	25	Y	4	
AA 52												

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015014
SCALE - NONE	REV LTR ✦	SHEET 6 OF 6

MIL 2085 - 4-63 WIR

APPLICATION		REVISIONS TDRR 10170			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1014578-021	1014513 ⑪	A	REVISED PER TDRR NO. 10948	30 JUL 64	JJJ MEM

H. Erickson
7 May 64

REV STATUS OF SHEETS																							
REV	A	-	-	-	A	-	A	-	A	-	A	-	-	-	A	-	-	-	-	A			
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN DATE 20 APR 64
CHECKED M. Manning 7 May 64
APPROVAL 2 May 64
APPROVAL
NASA APPROVAL
MIT APPROVAL 6/16/64
CONTRACT NAS 9-497

WIRING HARNESS "A"
G&N INDICATOR CONTROL PANEL

CODE IDENT NO.
SIZE A
1015015
REV A
SCALE
SHEET 1 OF 20

GNY WIRE HARNESS A ◆ 1015015

PENNANT GENERAL NOTES

NOTE

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION OMITTING ALL SUFFIX LETTERS EXCEPT A,B,C, AND D PER ND1002019. (ES-2475-7).

5 SOLDER PER MIL-S-6872 (ES-2505-1) USING ITEMS 16 AND 17

6 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

7 GRID MODULE IS 1 INCH.

8 UNLESS OTHERWISE SPECIFIED -
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - 1/4 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - 1/8 INCH

9 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

10 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING OR CONDUCTOR COLOR.
A - FROM END SHIELD
B - TO END SHIELD
L - BLUE
R - RED
W - WHITE

11 INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND1002206.

12 BIND WIRES TOGETHER PER ND1002032 USING MIL-T-713, TYPE P, CLASS 2 TAPE. FORM RUNNING LOCKSTITCH AT 1/2 INCH SPACING.

13 TWIST CONDUCTORS A1,A2 AND A3 APPROX 18 TURNS PER FOOT

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE REV LTR ◆ SHEET 2 OF 20

MIL 2084 4 63

GNY WIRE HARNESS A ◆ 1015015

PENNANT GENERAL NOTES

NOTE

14 TWIST CONDUCTORS A32 AND A33 APPROX 18 TURNS PER FOOT

15 TWIST CONDUCTORS A58 AND A59 APPROX 18 TURNS PER FOOT

16 TWIST CONDUCTORS A60 AND A61 APPROX 18 TURNS PER FOOT

17 TWIST CONDUCTORS [redacted]A64 AND A65 APPROX 18 TURNS PER FOOT

18 TWIST CONDUCTORS A66,A67,A68,A79 AND A80 APPROX 18 TURNS PER FOOT

19 [redacted]

20 TWIST CONDUCTORS A97 AND A98 APPROX 18 TURNS PER FOOT

21 TWIST CONDUCTORS A99 AND A100 APPROX 18 TURNS PER FOOT

22 TWIST CONDUCTORS A112 AND A113 APPROX 18 TURNS PER FOOT

23 TWIST CONDUCTORS A130,A131 AND A132 APPROX 18 TURNS PER FOOT

24 TWIST CONDUCTORS A134,A135 AND A136 APPROX 18 TURNS PER FOOT

25 TWIST CONDUCTORS A138,A139 AND A140 APPROX 18 TURNS PER FOOT

26 TWIST CONDUCTORS A66,A68,A72 AND A73 APPROX 18 TURNS PER FOOT

27 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH 50A1

28 CONDUCTOR LENGTHS ARE FOR MFG. REF ONLY

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE REV LTR ◆ SHEET 3 OF 20

GNY WIRE HARNESS A ◆ 1015015

PENNANT GENERAL NOTES

NOTE

29 USE A FIGURE EIGHT TYPE STITCH IN BRANCH A BETWEEN SECTION B-B AND C-C (APPROXIMATELY 4 INCH). WIDTH SHALL NOT EXCEED 5/16 INCH PER BUNDLE. CONDUCTORS BREAKING OUT ON TOP SIDE TO TERMINATION POINTS 34 THRU 39, 43 AND 44 SHALL BE ROUTED IN TOP BUNDLES.

30 INSULATION SHALL BE RECESSED INTO INSULATION CUP OF PIN BODY ON ALL CONDUCTORS TERMINATING IN TERMINATION NO. 1.

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP		CUT	
		WIRE	JACKET	WIRE	SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

31 ◆ Serialize per ND 1002023

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE REV LTR ◆ SHEET 4 OF 20

MIL 2084 4 63

GNY WIRE HARNESS A A 1015015

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015015- 1	WIRE PER 1010685-4, WHT JKT 24AWG WHT. 17 FT 2.5 IN. TOTAL LENGTH
	2	1	1015015- 2	WIRE PER 1010685-5, WHT JKT 24AWG WHITE, RED. 13 FT 4.0 IN. TOTAL LENGTH
	3	1	1015015- 3	WIRE PER 1010685-6, WHT JKT 24AWG WHITE, RED, BLUE. 8 FT 9.3 IN. TOTAL LENGTH
	4	1	1015015- 4	WIRE PER 1010685-1, 24AWG WHITE. 133 FT 3.3 IN. TOTAL LENGTH
	5	1	1015015- 5	WIRE PER 1010685-2, 22AWG WHITE. 47.0 IN. TOTAL LENGTH
9	6	9	1010490-170	INSULATION SLEEVING HEAT SHRINK
9	7	5	1010490-168	INSULATION SLEEVING HEAT SHRINK
9	8	116	1010490-082	INSULATION SLEEVING HEAT SHRINK
9	9	33	1010490-080	INSULATION SLEEVING HEAT SHRINK
9	10	9	1010402- 1	SOLDER SLEEVE
9	11	20	1010402- 2	SOLDER SLEEVE
9	12	9	1010490-172	INSULATION SLEEVING HEAT SHRINK
	13			DELETED
9	14	95	1010738- 1	CONTACT ELECTRICAL
9	15	1	1010347- 1	CONNECTOR, PLUG, ELECTRICAL
	16	AR	QQ-S-571	SOLDER SN60 (ES-2175 ALLOY 1)

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE REV LTR A SHEET 5 OF 20

GNY WIRE HARNESS A ◆ 1015015

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	17	AR	QQ-S-571	FLUX AR (ES-2175 TYPE 1 OR 2) OR MIL 14256 FLUX (ES-2798)
9	18	1	1010638- 6	TERMINAL
	19	AR	MIL-T-713	TYPE P, TAPE CLASS 2, BLACK

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE - NONE | REV LTR ◆ | SHEET 6 OF 20

MIL 2084 4-63

GNY WIRE HARNESS A A 1015015

CONDUCTOR			FROM							TO						
INDIVIDUAL LENGTH NUMBER	ITEM NO.	▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ITEM NO.	▷1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ITEM NO.	▷1	NO.
A 1	4	1150	A1- 1	25	Y		8		21	T1- 3	25	Y				22
A 2	4	1725	A1- 2	25	Y		8		21A	S3-2-C	25	Y		9		47
A 3	4	1725	A1- 3	25	Y		8		21A	S3-2-C	25	Y				47
A 4	2	1950		350		325	6	7A			800		775	11	8A	
A 4B	4	600	E2	25	N				48	SHLD A4	25	Y				
A 4R			A1-12	25	Y		8		21A	S11-4-NC	25	Y		8		27A
A 4W			A1- 4	25	Y	200	8		21A	S15-1-C	25	Y	200	8		29A
A 5	2	1950		350		325	6	7A			750		725	11	8A	
A 5B	4	600	E2	25	N				48	SHLD A5	25	Y				
A 5R			A1-10	25	Y		8		21A	S11-3-NC	25	Y		8		27A
A 5W			A1- 8	25	Y		8		21A	S11-9-NO	25	Y	100	8		28C
A 6	2	1650		350		325	6	7A			300		275	11	8A	
A 6B	4	600	E2	25	N				48	SHLD A6	25	Y				
A 6R			A1- 5	25	Y		8		21A	S11-5-NC	25	Y		8		27A
A 6W			A1- 9	25	Y		8		21A	S11-5-NO	25	Y		9		27A
A 7	2	1650		350		325	6	7A			350		325	11	8A	
A 7B	4	600	E2	25	N				48	SHLD A7	25	Y				
A 7R			A1- 6	25	Y		8		21A	S11-6-NC	25	Y		8		27

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE - NONE | REV LTR A | SHEET 7 OF 20

MIL 2085 - 4-63 WIN

GNY WIRE HARNESS A ◆ 1015015

CONDUCTOR			FROM							TO						
INDIVIDUAL LENGTH NUMBER	ITEM NO.	▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ITEM NO.	▷1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ITEM NO.	▷1	NO.
A 7W			A1- 7	25	Y		8		21A	S11-6-NO	25	Y		9		27
A 8	2	2100		250		225	11	8A			375		350	6	7A	B
A 8A	4	600	SHLD A8	25	Y					E3	25	N				51
A 8R			P1- 80	10			14		1	T1- 1	25	Y		9		22
A 8W			P1- 69	10	N		14		1	T1- 2	25	Y				22
A 9	4	1125	S3-2-NO	25	Y		8		47	T1- 1	25	Y				22
A 10	4	1125	S3-1-NC	25	Y		8		47	T1- 7	25	Y		8		22
A 11	4	1125	S3-1-NO	25	Y		8		47	T1- 5	25	Y		8		22
A 12			DELETED													
A 13			DELETED													
A 14	4	950	P1- 92	10	N		14		1	S16-7-C	25	Y				39
A 15	4	950	P1- 74	10	N		14		1	S16-8-NC	25	Y		8		39
A 16	4	950	P1- 90	10	N		14		1	S16-4-C	25	Y				55
A 17	4	950	P1-100	10	N		14		1	S16-3-C	25	Y				55
A 18	4	950	P1- 88	10	N		14		1	S16-1-NC	25	Y		9		55
A 19	4	950	P1- 87	10	N		14		1	S16-2-NC	25	Y		8		55
A 20	4	950	P1-101	10	N		14		1	S16-3-NC	25	Y		8		55
A 21	4	950	P1- 94	10	N		14		1	S16-4-NC	25	Y		8		55

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE - NONE | REV LTR ◆ | SHEET 8 OF 20

MIL 2085 - 4-63 WIN

GNY WIRE HARNESS A A 1015015

CONDUCTOR			FROM							TO						
INDIVIDUAL LENGTH NUMBER	ITEM NO.	▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ITEM NO.	▷1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ITEM NO.	▷1	NO.
A 22	4	1000	S16-1-NC	25	Y				55	S16-6-C	25	Y		8		39
A 23	4	950	P1- 76	10	N		14		1	S16-5-NC	25	Y		8		39
A 24	4	950	P1- 75	10	N		14		1	S16-6-NC	25	Y		8		39
A 25	4	950	P1-105	10	N		14		1	S16-7-NC	25	Y		8		39
A 26	1	2600		250		225	10	8A			350		325	12	7A	B
A 26A	4	600	SHLD A26	25	Y					E3	25	N				51
A 26W			P1- 56	10	N		14		1	S11-8-NC	25	Y		8		28C
A 27	1	2600		250		225	10	8A			350		325	12	7A	B
A 27A	4	600	SHLD A27	25	Y					E3	25	N				51
A 27W			P1- 47	10	N		14		1	S11-11-NC	25	Y		8		28A
A 28	1	2600		250		225	10	8A			350		325	12	7A	B
A 28A	4	600	SHLD A28	25	Y					E3	25	N				51
A 28W			P1- 48	10	N		14		1	S11-10-NC	25	Y		8		28B
A 29			DELETED													
A 29A			DELETED													
A 29W			DELETED													
A 30	1	2200		250		225	10	8A			350		325	12	7A	A
A 30A	4	600	SHLD A30	25	Y					E4	25	N				52

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE - NONE | REV LTR A | SHEET 9 OF 20

MIL 2085 - 4-63 WIN

GNY WIRE HARNESS A ◆ 1015015

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 30W			P1- 49	10	N		14		1	S15-8-C	25	Y		9		30	
A 31	1	2200		250		225	10	8A			350		325	12	7A		A
A 31A	4	600	SHLD A31	25	Y					E4	25	N				52	
A 31W			P1- 38	10	N		14		1	S15-8-NC	25	Y		9		30	
A 32	4	1500	S15-8-C	25	Y				30A	S11-5-NO	25	Y				27	
A 33	4	1500	S15-8-NC	25	Y				30A	S11-6-NO	25	Y				27	
A 34	4	2300	P1- 72	10	N		14		1	S11-1-NC	25	Y		8		27C	
A 35	3	2600		275		250	11	8B			800		775	7	7A		B
A 35A	4	600	SHLD A35	25	Y					E5	25	N				53	
A 35L			P1- 37	10	N		14		1	S11-12-NC	25	Y		8		28	
A 35R			P1- 25	10	N		14		1	S11-2-NC	25	Y		8		27B	
A 35W			P1- 36	10	N		14		1	S11-12-C	25	Y		9		28C	
A 36	4	1200	S11-12-C	25	Y				28	S11-2-C	25	Y		8		27C	
A 37	4	2200	P1- 1	10	N		14		1	S15-7-NC	25	Y		9		30	A
A 38	4	1350	S15-7-NC	25	Y				30A	S11-1-C	25	Y		9		27B	
A 39	4	1000	S11-1-C	25	Y				27	S14-2-C	25	Y		8		25	
A 41	1	2300		400		375	10	8B			400		375	12	7A		B
A 41A	4	600	SHLD A41	25	N					E5	25	N				53	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MIL 2085 - 4-63 WIR

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015

SCALE - NONE | REV LTR + | SHEET 10 OF 20

GNY WIRE HARNESS A A 1015015

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 41W			P1- 96	10	N		14		1	S4-1-NO	25	Y		8		26	
A 42	4	650	S11-5-C	25	Y				27A	S11-6-C	25	Y		9		27A	
A 43	4	1200	S11-6-C	25	Y				27	S4-3-NC	25	Y		9		26B	
A 44	4	1000	S15-6-NC	25	Y		8		30A	S15-2-NC	25	Y		9		29A	
A 45	4	1050	S11-4-C	25	Y		8		27	S15-2-NC	25	Y				29A	
A 46	4	1100	S11-11-C	25	Y		8		28C	S11-5-C	25	Y		9		27B	
A 47	4	1050	S11-4-NO	25	Y		8		27B	S11-10-C	25	Y		8		28A	
A 48	4	1175	S11-10-NO	25	Y		8		28C	S15-1-NC	25	Y				29A	
A 49	2	1825		350		325	11	8B			250		225	6	7A		A
A 49A	4	600	SHLD A49	25	Y					E4	25	N				52	
A 49R			P1- 35	10	N		14		1	S15-2-C	25	Y		8		29A	
A 49W			P1- 34	10	N		14		1	S15-2-NO	25	Y				29A	
A 50	4	900	S11-3-C	25	Y		8		27B	S15-4-NC	25	Y				29	
A 51	4	1100	S11-9-C	25	Y		8		28C	S15-3-C	25	Y		8		29A	
A 52	4	1100	S11-8-NO	25	Y		8		28C	S15-3-NC	25	Y				29A	
A 53	2	1825		350		325	11	8B			250		225	6	7A		A
A 53A	4	600	SHLD A53	25	Y					E4	25	N				52	
A 53R			P1- 19	10	N		14		1	S15-4-C	25	Y		8		29	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MIL 2085 - 4-63 WIR

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015

SCALE - NONE | REV LTR A | SHEET 11 OF 20

GNY WIRE HARNESS A ◆ 1015015

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 53W			P1- 33	10	N		14		1	S15-4-NO	25	Y				29	
A 54	4	2150	P1- 99	10	N		14		1	S15-7-C	25	Y		8		30A	A
A 55	3	1725		300		275	7	7A			650		625	11	8A		
A 55B	4	600	E2	25	N				48	SHLD A55	25	Y					
A 55L			S12-3-NO	25	Y		8		24	S15-5-C	25	Y		8		30	
A 55R			S12-2-NO	25	Y		8		24	S15-3-NO	25	Y	300			29A	
A 55W			S12-1-NO	25	Y		8		24	S15-6-C	25	Y		8		30	
A 56	3	2400		300		275	11	8A			325		300	7	7A		B
A 56A	4	600	SHLD A56	25	Y					E5	25	N				53	
A 56L			P1- 24	10	N	50	14		1	S12-1-C	25	Y		8		24	
A 56R			P1- 23	10	N	25	14		1	S12-2-C	25	Y		8		24	
A 56W			P1- 10	10	N		14		1	S12-3-C	25	Y		8		24	
A 57	3	2450		250		225	11	8A			350		325	7	7A		B
A 57A	4	600	SHLD A57	25	Y					E5	25	N				53	
A 57L			P1- 22	10	N	100	14		1	S12-3-NC	25	Y		8		24A	
A 57R			P1- 9	10	N	25	14		1	S12-2-NC	25	Y		8		24A	
A 57W			P1- 8	10	N	50	14		1	S12-1-NC	25	Y		8		24	
A 58	4	1450	P1- 84	10	N		14		1	S17-2-NC	25	Y		9		45	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MIL 2085 - 4-63 WIR

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015

SCALE - NONE | REV LTR + | SHEET 12 OF 20

GNY WIRE HARNESS A ◆ 1015015

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 59	4	1450	P1- 54	10	N		14		1	S17-1-NC	25	Y		9		45	
A 60	4	1900	S17-2-NC	25	Y				45	S12-4-NO	25	Y		8		24A	
A 61	4	1900	S17-1-NC	25	Y				45	S12-4-NC	25	Y		9		24A	
A 62	4	850	S12-4-C	25	Y		8		24A	XDS12-HI	25	Y		8		23A	
A 63			DELETED														
A 64	4	2550	XDS 4-LO	25	Y		9		20	XDS 3-LO	25	Y		9		5	
A 65	4	2550	XDS 4-HI	25	Y		9		20	XDS 3-HI	25	Y				5	
A 66	4	2200	P1- 52	10	N		14		1	XDS12-LO	25	Y		9		23A	A
A 67	4	1200	P1- 61	10	N		14		1	S1-2-NC	25	Y				44	
A 68	4	2000	P1- 62	10	N		14		1	S2-1-C	25	Y		9		19	A
A 69	4	1500	S1-1-C	25	Y				44	S18-3-NC	25	Y				31A	
A 70	4	750	S17-2-C	25	Y				45A	S24-1-NO	25	Y		9		46	
A 71			DELETED														
A 72	4	1450	S24-1-NO	25	Y				46	S2-1-C	25	Y				19A	
A 73	4	1125	XDS12-LO	25	Y				23	XDS 4-LO	25	Y				20	
A 74	4	750	S2-1-NC	25	Y		8		19B	XDS 4-HI	25	Y				20	
A 75	4	1350	P1- 32	10	N		14		1	S25-1-NO	25	Y		9		46	
A 76	4	450	S25-1-NO	25	Y				46	R1-CW	25	Y		8		46	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MIL 2085 - 4-63 WIR

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015

SCALE - NONE | REV LTR + | SHEET 13 OF 20

GNY

WIRE HARNESS A + 1015015

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 77	4	1500	P1- 44	10	N		14	1	R1-CCW	25	Y			50	B
A 78	4	1400	P1- 26	10	N		14	1	S25-1-C	25	Y		8	46	
A 79	4	1400	P1- 63	10	N		14	1	S24-1-C	25	Y		9	46	
A 80	4	1400	P1- 64	10	N		14	1	S24-1-C	25	Y			46	
A 81			DELETED												
A 82			DELETED												
A 83			DELETED												
A 84			DELETED												
A 85			DELETED												
A 86			DELETED												
A 87	4	1250	P1- 41	10	N		14	1	S10-1	25	Y		8	6	
A 88	4	1250	P1- 50	10	N		14	1	S10-3	25	Y			6	
A 89			DELETED												
A 90			DELETED												
A 91			DELETED												
A 92			DELETED												
A 93	4	1250	P1- 73	10	N		14	1	S1-1-NC	25	Y		8	44	
A 94			DELETED												

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015015

SCALE-NONE | REV LTR + | SHEET 14 OF 20

MIL 2085 - 4-63 WIR

GNY

WIRE HARNESS A A 1015015

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 95	4	1250	P1- 29	10	N		14	1	S1-2-C	25	Y		8	44	
A 96	4	2550	P1- 71	10	N		14	1	S4-3-NC	25	Y			26B	B
A 97	4	2750	P1- 60	10	N		14	1	S4-2-NO	25	Y		8	26	B
A 98	4	2550	P1- 70	10	N		14	1	S4-2-C	25	Y		8	26B	B
A 99	4	2600	P1- 2	10	N		14	1	S4-3-NO	25	Y		8	26A	B
A 100	4	2600	P1- 21	10	N		14	1	S4-3-C	25	Y		8	26A	B
A 101	1	2600		400		375	10	8B		350		325	12	7A	B
A 101A	4	600	SHLD A101	25	Y				E5	25	N			53	
A 101W			P1- 82	10	N		14	1	S4-1-C	25	Y		8	26A	
A 102	4	2600	P1- 58	10	N		14	1	S14-1-NC	25	Y		8	25	
A 103	4	2600	P1- 59	10	N		14	1	S14-1-NO	25	Y		8	25	
A 104	3	1350		250		225	11	8A		250		225	7	7A	
A 104A	4	600	SHLD A104	25	Y				E6	25	N			54	
A 104L			P1- 42	10	N		14	1	S13-1-C	25	Y		8	8	
A 104R			P1- 31	10	N		14	1	S13-1-NO	25	Y		8	8	
A 104W			P1- 30	10	N		14	1	S13-1-NC	25	Y		8	8	
A 105	2	1850		350		325	11	8B		250		225	6	7A	A
A 105A	4	600	SHLD A105	25	Y				E6	25	N			54	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015015

SCALE-NONE | REV LTR A | SHEET 15 OF 20

MIL 2085 - 4-63 WIR

GNY

WIRE HARNESS A + 1015015

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 105R			P1- 55	10	N		14	1	S18-2-NO	25	Y		8	31A	
A 105W			P1- 46	10	N		14	1	S18-2-NC	25	Y		8	31A	
A 106	1	1800		350		325	10	8B		250		225	12	7A	
A 106A	4	600	SHLD A106	25	Y				E6	25	N			54	
A 106W			P1- 53	10	N		14	1	S18-1-NC	25	Y			31	
A 107			DELETED												
A 108	4	1800	P1- 51	10	N		14	1	S18-3-NC	25	Y			31	
A 109	4	1200	S18-3-C	25	Y		8	31A	S21-1-C	25	Y			33	
A 110	4	1200	P1- 66	10	N		14	1	S9-2-C	25	Y			34	
A 111	2	1200		250		225	11	8A		350		325	6	7A	
A 111A	4	600	SHLD A111	25	Y				E6	25	N			54	
A 111R			P1- 95	10	N		14	1	S9-1-C	25	Y			34	
A 111W			P1- 81	10	N		14	1	S9-1-NO	25	Y			34	
A 112	4	1250	P1- 65	10	N		14	1	S9-2-NO	25	Y		8	34A	
A 113	4	1550	P1- 77	10	N		14	1	S9-7-NO	25	Y		8	35C	
A 114	4	1350	P1- 67	10	N		14	1	S9-8-C	25	Y			35	
A 115	4	1550	P1- 78	10	N		14	1	S20-2-C	25	Y		8	32C	
A 116	4	1700	P1- 79	10	N		14	1	S21-3-C	25	Y		8	33	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015015

SCALE-NONE | REV LTR + | SHEET 16 OF 20

MIL 2085 - 4-63 WIR

GNY

WIRE HARNESS A + 1015015

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 117	1	1750		250		225	10	8A		450		425	12	7A	
A 117A	4	600	SHLD A117	25	Y				E6	25	N			54	
A 117W			P1- 68	10	N		14	1	S20-4-C	25	Y			32E	
A 118	4	1700	P1- 93	10	N		14	1	S21-3-NO	25	Y		8	33	
A 119	4	1600	P1-106	10	N		14	1	S20-2-NO	25	Y		8	32D	
A 120	4	850	P1- 85	10	N		14	1	S7-2-C	25	Y		8	40	
A 121	4	850	P1- 86	10	N		14	1	S23-1-NO	25	Y		8	41	
A 122	4	850	P1- 89	10	N		14	1	S7-2-NC	25	Y		8	40	
A 123	4	800	P1- 97	10	N		14	1	S8-1-NO	25	Y		8	42	
A 124	4	850	P1- 98	10	N		14	1	S7-1-C	25	Y		8	40	
A 125	4	850	P1-102	10	N		14	1	S23-1-NC	25	Y		8	41	
A 126	4	750	P1-103	10	N		14	1	S8-1-NC	25	Y		8	42	
A 127	4	875	P1-104	10	N		14	1	S7-1-NC	25	Y		8	40	
A 128	4	800	S7-1-NO	25	Y		8	40	S8-1-C	25	Y		8	42A	
A 129	4	875	S7-2-NO	25	Y		8	40	S23-1-C	25	Y		8	41A	
A 130	4	1050	P1- 16	10	N		14	1	S19-5-C	25	Y		9	12	
A 131	4	1200	P1- 17	10	N		14	1	S19-6-NO	25	Y		8	15	
A 132	4	1050	P1- 3	10	N		14	1	S19-5-NO	25	Y		8	12	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015015

SCALE-NONE | REV LTR + | SHEET 17 OF 20

MIL 2085 - 4-63 WIR

GNY WIRE HARNESS A ◆ 1015015

CONDUCTOR			FROM					TO				
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC. 1		CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC 1	
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	ITEM NO.	NO.	CIRCUIT POINT	2	TIN	ITEM NO.	NO.
A 133	4	1300	S19-5-C	25	Y		12	S19-6-C	25	Y	8	16
A 134	4	1150	P1- 7	10	N	14	1	S19-4-C	25	Y	9	11
A 135	4	1150	P1- 6	10	N	14	1	S19-4-NO	25	Y	8	11
A 136	4	1350	P1- 20	10	N	14	1	S19-3-NO	25	Y	8	17
A 137	4	1550	S19-4-C	25	Y		11	S19-3-C	25	Y	8	18
A 138	4	1200	P1- 5	10	N	14	1	S19-2-NO	25	Y	8	9
A 139	4	1100	P1- 4	10	N	14	1	S19-1-NO	25	Y	8	14
A 140	4	1100	P1- 18	10	N	14	1	S19-1-C	25	Y	9	14A
A 141	4	1450	S19-1-C	25	Y		13	S19-2-C	25	Y	8	10
A 142	5	550	P1-91	10	N	14	1	E1	25	N	18	3
A 143	5	700	P1-83	10	N	14	1	E7	25	N	11	2
A 144	5	700	E6	25	N	11	54	E7	25	N		2
A 145	5	300	E5	25	N	11	53	E7	25	N		2
A 146	5	900	E4	25	N	11	52	E7	25	N		2
A 147	5	500	E3	25	N	11	51	E7	25	N		2
A 148	5	1050	E2	25	N	11	48	E7	25	N		2
A 149	4	1150	P1-40	10	N	14	1	S10-5	25	Y	8	6
A 150			DELETED									

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

1015015

SCALE - NONE

REV LTR

SHEET 18 OF 20

MIL 2085 - 4-63 WIR

GNY WIRE HARNESS A ◆ 1015015

CONDUCTOR			FROM					TO				
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC. 1		CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC 1	
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	ITEM NO.	NO.	CIRCUIT POINT	2	TIN	ITEM NO.	NO.
A 151	4	1100	S17-1-C	25	Y		45A	S1-2-NC	25	Y		44
A 152	4	1150	S11-3-NO	25	Y	8	27C	S11-8-C	25	Y	8	28C
A 153	4	1150	S20-1-C	25	Y		32B	S9-4-NO	25	Y	9	34B
A 154	4	1350	S9-8-NO	25	Y		35B	S20-2-NC	25	Y	9	32D
A 155	4	1250	S9-5-C	25	Y		35A	S20-4-NC	25	Y	9	32
A 156	4	1100	S9-4-C	25	Y		34B	S20-1-NC	25	Y	9	32A
A 157	4	1450	S9-5-NO	25	Y		35A	S20-3-C	25	Y	9	32E
A 158	4	1000	S16-4-C	25	Y		55	S16-5-C	25	Y	8	39

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

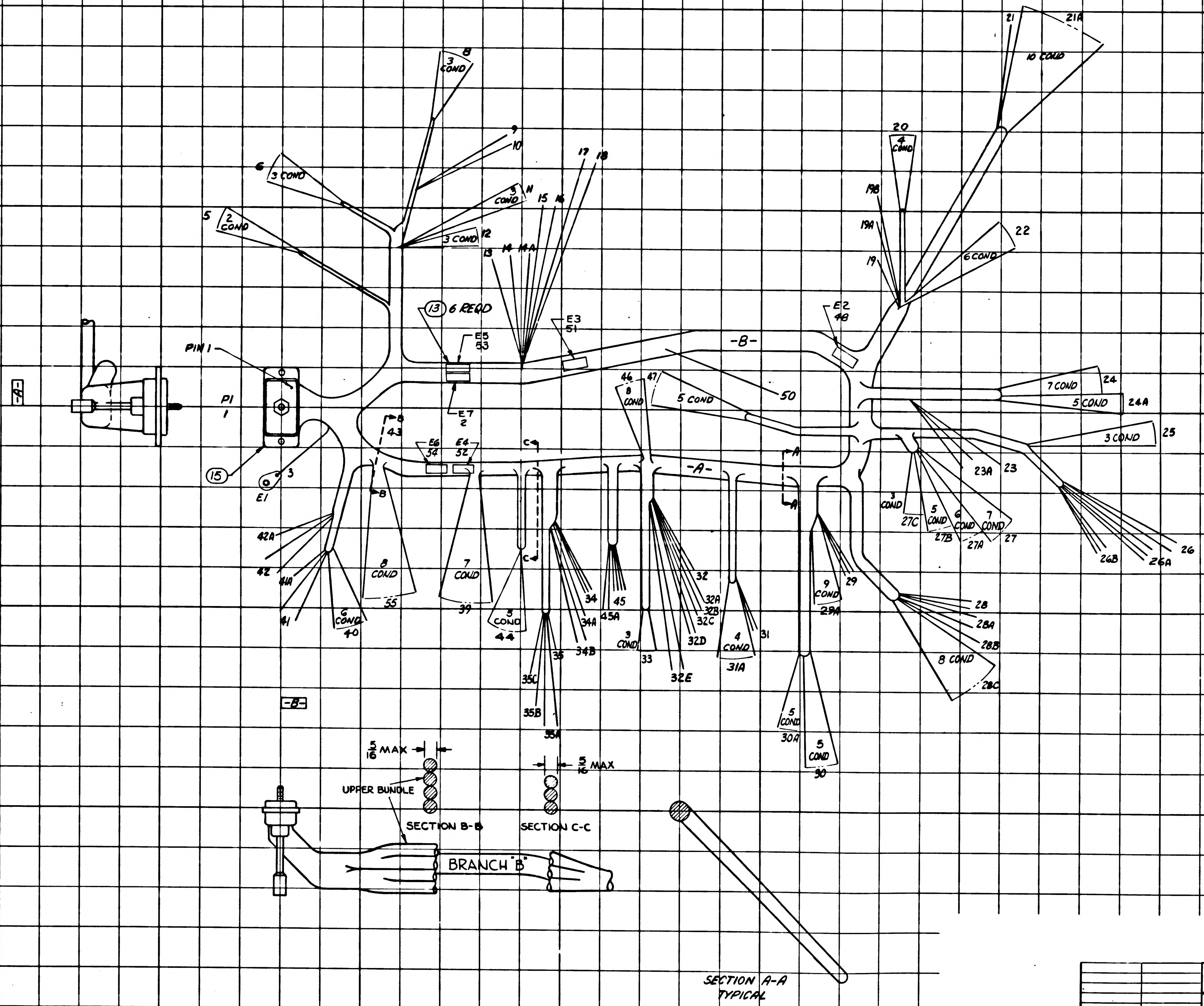
1015015

SCALE - NONE

REV LTR

SHEET 19 OF 20

MIL 2085 - 4-63 WIR



-A-
P1
1
PIN 1
(15)
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-B-
(13) 6 REQD
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54
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41A
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6 COND
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8 COND
55
7 COND
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5 COND
44
35C
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35B
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34A
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32B
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32E
4 COND
31A
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5 COND
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27B
6 COND
27A
7 COND
27
26B
26A
26
28
28A
28B
8 COND
28C
5/16 MAX
UPPER BUNDLE
SECTION B-B
5/16 MAX
SECTION C-C
BRANCH "B"
SECTION A-A
TYPICAL

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ + +
- - -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J. Kam DATE 22 Apr 64
M. [illegible] 7 May 64
CHECKED
APPROVAL D.W. Mi[illegible] 7 May 64
APPROVAL J. [illegible] 6/2/64
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 6/1/64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
G&N INDICATOR CONTROL PANEL

CODE IDENT NO.
SIZE E
1015015
SCALE 1/1
SHEET 20 OF 20

J. Erickson 7 MAY 64

1015015

APPLICATION	
NEXT ASSY	USED ON
1014578-021	1014513 Ⓜ Ⓜ

REVISIONS TDRR 10170

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR NO. 10948	30 JUL 64	JJJ / MEM
B	REVISED PER TDRR NO. 11149	10 AUG 64	JWP

H. Erickson
7 MAY 64

REV																								
SHEET																								
REV STATUS OF SHEETS	REV	B	+	+	+	B	+	B	B	A	B	B	B	B	B	A	+	B	B	B	A			
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN T. Kowalski DATE 20 APR 64
CHECKED M. Manning 7 MAY 64
APPROVAL 7 MAY 64
APPROVAL 7 MAY
NASA APPROVAL
MIT APPROVAL 6/16/64
CONTRACT NAS 9-497

WIRING HARNESS "A"
G&N INDICATOR CONTROL PANEL

CODE IDENT NO.
SIZE A
1015015
REV B
SCALE
SHEET 1 OF 20

GNY WIRE HARNESS A ◆ 1015015

PENNANT GENERAL NOTES

NOTE

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2. —

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION OMITTING ALL SUFFIX LETTERS EXCEPT A,B,C, AND D PER ND1002019. (ES-2475-7).

5 SOLDER PER MIL-S-6872 (ES-2505-1) USING ITEMS 16 AND 17

6 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

7 GRID MODULE IS 1 INCH.

8 UNLESS OTHERWISE SPECIFIED -
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - 1/4 INCH. END OF
HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - 1/8 INCH

9 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

10 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING OR CONDUCTOR COLOR.
A - FROM END SHIELD
B - TO END SHIELD
L - BLUE
R - RED
W - WHITE

11 INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND1002206.

12 BIND WIRES TOGETHER PER ND1002032 USING MIL-T-713, TYPE P, CLASS 2 TAPE. FORM RUNNING LOCKSTITCH AT 1/2 INCH SPACING.

13 TWIST CONDUCTORS A1,A2 AND A3 APPROX 18 TURNS PER FOOT

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE-NONE | REV LTR ◆ | SHEET 2 OF 20

GNY WIRE HARNESS A ◆ 1015015

PENNANT GENERAL NOTES

NOTE

14 TWIST CONDUCTORS A32 AND A33 APPROX 18 TURNS PER FOOT

15 TWIST CONDUCTORS A58 AND A59 APPROX 18 TURNS PER FOOT

16 TWIST CONDUCTORS A60 AND A61 APPROX 18 TURNS PER FOOT

17 TWIST CONDUCTORS [redacted]A64 AND A65 APPROX 18 TURNS PER FOOT

18 TWIST CONDUCTORS A66,A67,A68,A79 AND A80 APPROX 18 TURNS PER FOOT

19 [redacted]

20 TWIST CONDUCTORS A97 AND A98 APPROX 18 TURNS PER FOOT

21 TWIST CONDUCTORS A99 AND A100 APPROX 18 TURNS PER FOOT

22 TWIST CONDUCTORS A112 AND A113 APPROX 18 TURNS PER FOOT

23 TWIST CONDUCTORS A130,A131 AND A132 APPROX 18 TURNS PER FOOT

24 TWIST CONDUCTORS A134,A135 AND A136 APPROX 18 TURNS PER FOOT

25 TWIST CONDUCTORS A138,A139 AND A140 APPROX 18 TURNS PER FOOT

26 TWIST CONDUCTORS A66,A68,A72 AND A73 APPROX 18 TURNS PER FOOT

27 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH 50A1

28 CONDUCTOR LENGTHS ARE FOR MFG. REF ONLY

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015 —
SCALE-NONE | REV LTR ◆ | SHEET 3 OF 20

GNY WIRE HARNESS A ◆ 1015015

PENNANT GENERAL NOTES

NOTE

29 USE A FIGURE EIGHT TYPE STITCH IN BRANCH A BETWEEN SECTION B-B AND C-C (APPROXIMATELY 4 INCH). WIDTH SHALL NOT EXCEED 5/16 INCH PER BUNDLE. CONDUCTORS BREAKING OUT ON TOP SIDE TO TERMINATION POINTS 34 THRU 39, 43 AND 44 SHALL BE ROUTED IN TOP BUNDLES.

30 INSULATION SHALL BE RECESSED INTO INSULATION CUP OF PIN BODY ON ALL CONDUCTORS TERMINATING IN TERMINATION NO. 1.

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ——

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

31 Serialize per ND 1002023

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE-NONE | REV LTR ◆ | SHEET 4 OF 20

GNY WIRE HARNESS A B 1015015

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015015- 1	WIRE PER 1010685-4, WHT JKT 24AWG WHT. 17 FT 2.5 IN. TOTAL LENGTH
	2	1	1015015- 2	WIRE PER 1010685-5, WHT JKT 24AWG WHITE, RED. 13 FT 4.0 IN. TOTAL LENGTH
	3	1	1015015- 3	WIRE PER 1010685-6, WHT JKT 24AWG WHITE, RED, BLUE. 8 FT 9.3 IN. TOTAL LENGTH
	4	1	1015015- 4	WIRE PER 1010685-1, 24AWG WHITE. 133 FT 3.3 IN. TOTAL LENGTH
	5	1	1015015- 5	WIRE PER 1010685-2, 22AWG WHITE. 47.0 IN. TOTAL LENGTH
9	6	9	1010490-170	INSULATION SLEEVING HEAT SHRINK
9	7	5	1010490-168	INSULATION SLEEVING HEAT SHRINK
9	8	149 ~~116~~	1010476-82 ~~1010490-082~~	INSULATION SLEEVING HEAT SHRINK
~~9~~	9	~~90~~	~~1010490-080~~	~~INSULATION SLEEVING HEAT SHRINK~~
9	10	9	1010402- 1	SOLDER SLEEVE
9	11	20	1010402- 2	SOLDER SLEEVE
9	12	9	1010490-172	INSULATION SLEEVING HEAT SHRINK
	13			DELETED
9	14	95	1010738- 1	CONTACT ELECTRICAL
9	15	1	1010347- 1	CONNECTOR, PLUG, ELECTRICAL
	16	AR	QQ-S-571	SOLDER SN60 (ES-2175 ALLOY 1)

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE-NONE | REV LTR B | SHEET 5 OF 20

GNY WIRE HARNESS A 1015015

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	17	AR	QQ-S-571	FLUX AR (ES-2175 TYPE 1 OR 2) OR MIL 14256 FLUX (ES-2798)
9	18	1	1010638- 6	TERMINAL
	19	AR	MIL-T-713	TYPE P, TAPE CLASS 2, BLACK

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

SIZE A 1015015

SCALE-NONE REV LTR SHEET 6 OF 20

GNY WIRE HARNESS A B 1015015

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2▷	CIRCUIT POINT 2▷	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD 2▷	TERMINATION SPEC. 1▷ ITEM NO.		NO.	CIRCUIT POINT 2▷	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD 2▷	TERMINATION SPEC 1▷ ITEM NO.		NO.	
A 1	4	1150	A1- 1	25	Y		8		21	T1- 3	25	Y				22	
A 2	4	1725	A1- 2	25	Y		8		21A	S3-2-C	25	Y		8		47	
A 3	4	1725	A1- 3	25	Y		8		21A	S3-2-C	25	Y				47	
A 4	2	1950		350		325	6	7A			800		775	11	8A		
A 4B	4	600	E2	25	N				48	SHLD A4	25	Y					
A 4R			A1-12	25	Y		8		21A	S11-4-NC	25	Y		8		27A	
A 4W			A1- 4	25	Y	200	8		21A	S15-1-C	25	Y	200	8		29A	
A 5	2	1950		350		325	6	7A			750		725	11	8A		
A 5B	4	600	E2	25	N				48	SHLD A5	25	Y					
A 5R			A1-10	25	Y		8		21A	S11-3-NC	25	Y		8		27A	
A 5W			A1- 8	25	Y		8		21A	S11-9-NO	25	Y	100	8		28C	
A 6	2	1650		350		325	6	7A			300		275	11	8A		
A 6B	4	600	E2	25	N				48	SHLD A6	25	Y					
A 6R			A1- 5	25	Y		8		21A	S11-5-NC	25	Y		8		27A	
A 6W			A1- 9	25	Y		8		21A	S11-5-NO	25	Y		8		27A	
A 7	2	1650		350		325	6	7A			350		325	11	8A		
A 7B	4	600	E2	25	N				48	SHLD A7	25	Y					
A 7R			A1- 6	25	Y		8		21A	S11-6-NC	25	Y		8		27	

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

SIZE A 1015015

SCALE-NONE REV LTR B SHEET 7 OF 20

MIL 2085 · 4-63 WIR

GNY WIRE HARNESS A B 1015015

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2▷	CIRCUIT POINT 2▷	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD 2▷	TERMINATION SPEC. 1▷ ITEM NO.		NO.	CIRCUIT POINT 2▷	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD 2▷	TERMINATION SPEC 1▷ ITEM NO.		NO.	
A 7W			A1- 7	25	Y		8		21A	S11-6-NO	25	Y		8		27	
A 8	2	2100		250		225	11	8A			375		350	6	7A		B
A 8A	4	600	SHLD A8	25	Y					E3	25	N				51	
A 8R			P1- 80	10			14		1	T1- 1	25	Y		8		22	
A 8W			P1- 69	10	N		14		1	T1- 2	25	Y				22	
A 9	4	1125	S3-2-NO	25	Y		8		47	T1- 1	25	Y				22	
A 10	4	1125	S3-1-NC	25	Y		8		47	T1- 7	25	Y		8		22	
A 11	4	1125	S3-1-NO	25	Y		8		47	T1- 5	25	Y		8		22	
A 12			DELETED														
A 13			DELETED														
A 14	4	950	P1- 92	10	N		14		1	S16-7-C	25	Y				39	
A 15	4	950	P1- 74	10	N		14		1	S16-8-NC	25	Y		8		39	
A 16	4	950	P1- 90	10	N		14		1	S16-4-C	25	Y				55	
A 17	4	950	P1-100	10	N		14		1	S16-3-C	25	Y				55	
A 18	4	950	P1- 88	10	N		14		1	S16-1-NC	25	Y		8		55	
A 19	4	950	P1- 87	10	N		14		1	S16-2-NC	25	Y		8		55	
A 20	4	950	P1-101	10	N		14		1	S16-3-NC	25	Y		8		55	
A 21	4	950	P1- 94	10	N		14		1	S16-4-NC	25	Y		8		55	

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

SIZE A 1015015

SCALE-NONE REV LTR B SHEET 8 OF 20

MIL 2085 · 4-63 WIR

GNY WIRE HARNESS A A 1015015

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2▷	CIRCUIT POINT 2▷	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD 2▷	TERMINATION SPEC. 1▷ ITEM NO.		NO.	CIRCUIT POINT 2▷	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD 2▷	TERMINATION SPEC 1▷ ITEM NO.		NO.	
A 22	4	1000	S16-1-NC	25	Y				55	S16-6-C	25	Y		8		39	
A 23	4	950	P1- 76	10	N		14		1	S16-5-NC	25	Y		8		39	
A 24	4	950	P1- 75	10	N		14		1	S16-6-NC	25	Y		8		39	
A 25	4	950	P1-105	10	N		14		1	S16-7-NC	25	Y		8		39	
A 26	1	2600		250		225	10	8A			350		325	12	7A		B
A 26A	4	600	SHLD A26	25	Y					E3	25	N				51	
A 26W			P1- 56	10	N		14		1	S11-8-NC	25	Y		8		28C	
A 27	1	2600		250		225	10	8A			350		325	12	7A		B
A 27A	4	600	SHLD A27	25	Y					E3	25	N				51	
A 27W			P1- 47	10	N		14		1	S11-11-NC	25	Y		8		28A	
A 28	1	2600		250		225	10	8A			350		325	12	7A		B
A 28A	4	600	SHLD A28	25	Y					E3	25	N				51	
A 28W			P1- 48	10	N		14		1	S11-10-NC	25	Y		8		28B	
A 29			DELETED														
A 29A			DELETED														
A 29W			DELETED														
A 30	1	2200		250		225	10	8A			350		325	12	7A		A
A 30A	4	600	SHLD A30	25	Y					E4	25	N				52	

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

SIZE A 1015015

SCALE-NONE REV LTR A SHEET 9 OF 20

MIL 2085 · 4-63 WIR

GNY

WIRE HARNESS A ▲ B 1015015

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC. 1		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC 1		NO.	
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	2	ITEM NO.			CIRCUIT POINT	2	TIN	2	ITEM NO.			
A 30W			P1- 49	10	N		14		1	S15-8-C	25	Y		8		30	
A 31	1	2200		250		225	10	8A			350		325	12	7A		A
A 31A	4	600	SHLD A31	25	Y					E4	25	N				52	
A 31W			P1- 38	10	N		14		1	S15-8-NC	25	Y		8		30	
A 32	4	1500	S15-8-C	25	Y				30A	S11-5-NO	25	Y				27	
A 33	4	1500	S15-8-NC	25	Y				30A	S11-6-NO	25	Y				27	
A 34	4	2300	P1- 72	10	N		14		1	S11-1-NC	25	Y		8		27C	
A 35	3	2600		275		250	11	8B			800		775	7	7A		B
A 35A	4	600	SHLD A35	25	Y					E5	25	N				53	
A 35L			P1- 37	10	N		14		1	S11-12-NC	25	Y		8		28	
A 35R			P1- 25	10	N		14		1	S11-2-NC	25	Y		8		27B	
A 35W			P1- 36	10	N		14		1	S11-12-C	25	Y		8		28C	
A 36	4	1200	S11-12-C	25	Y				28	S11-2-C	25	Y		8		27C	
A 37	4	2200	P1- 1	10	N		14		1	S15-7-NC	25	Y		8		30	A
A 38	4	1350	S15-7-NC	25	Y				30A	S11-1-C	25	Y		8		27B	
A 39	4	1000	S11-1-C	25	Y				27	S14-2-C	25	Y		8		25	
A 41	1	2300		400		375	10	8B			400		375	12	7A		B
A 41A	4	600	SHLD A41	25	N					E5	25	N				53	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE
REV LTR B
SHEET 10 OF 20

MIL 2085 · 4-63 WIR

GNY

WIRE HARNESS A ▲ B 1015015

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC. 1		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC 1		NO.	
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	2	ITEM NO.			CIRCUIT POINT	2	TIN	2	ITEM NO.			
A 41W			P1- 96	10	N		14		1	S4-1-NO	25	Y		8		26	
A 42	4	650	S11-5-C	25	Y				27A	S11-6-C	25	Y		8		27A	
A 43	4	1200	S11-6-C	25	Y				27	S4-3-NC	25	Y		8		26B	
A 44	4	1000	S15-6-NC	25	Y		8		30A	S15-2-NC	25	Y		8		29A	
A 45	4	1050	S11-4-C	25	Y		8		27	S15-2-NC	25	Y				29A	
A 46	4	1100	S11-11-C	25	Y		8		28C	S11-5-C	25	Y		8		27B	
A 47	4	1050	S11-4-NO	25	Y		8		27B	S11-10-C	25	Y		8		28A	
A 48	4	1175	S11-10-NO	25	Y		8		28C	S15-1-NC	25	Y				29A	
A 49	2	1825		350		325	11	8B			250		225	6	7A		A
A 49A	4	600	SHLD A49	25	Y					E4	25	N				52	
A 49R			P1- 35	10	N		14		1	S15-2-C	25	Y		8		29A	
A 49W			P1- 34	10	N		14		1	S15-2-NO	25	Y				29A	
A 50	4	900	S11-3-C	25	Y		8		27B	S15-4-NC	25	Y				29	
A 51	4	1100	S11-9-C	25	Y		8		28C	S15-3-C	25	Y		8		29A	
A 52	4	1100	S11-8-NO	25	Y		8		28C	S15-3-NC	25	Y				29A	
A 53	2	1825		350		325	11	8B			250		225	6	7A		A
A 53A	4	600	SHLD A53	25	Y					E4	25	N				52	
A 53R			P1- 19	10	N		14		1	S15-4-C	25	Y		8		29	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE
REV LTR B
SHEET 11 OF 20

MIL 2085 · 4-63 WIR

GNY

WIRE HARNESS A ▲ B 1015015

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC. 1		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC 1		NO.	
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	2	ITEM NO.			CIRCUIT POINT	2	TIN	2	ITEM NO.			
A 53W			P1- 33	10	N		14		1	S15-4-NO	25	Y				29	
A 54	4	2150	P1- 99	10	N		14		1	S15-7-C	25	Y		8		30A	A
A 55	3	1725		300		275	7	7A			650		625	11	8A		
A 55B	4	600	E2	25	N				48	SHLD A55	25	Y					
A 55L			S12-3-NO	25	Y		8		24	S15-5-C	25	Y		8		30	
A 55R			S12-2-NO	25	Y		8		24	S15-3-NO	25	Y	300			29A	
A 55W			S12-1-NO	25	Y		8		24	S15-6-C	25	Y		8		30	
A 56	3	2400		300		275	11	8A			325		300	7	7A		B
A 56A	4	600	SHLD A56	25	Y					E5	25	N				53	
A 56L			P1- 24	10	N	50	14		1	S12-1-C	25	Y		8		24	
A 56R			P1- 23	10	N	25	14		1	S12-2-C	25	Y		8		24	
A 56W			P1- 10	10	N		14		1	S12-3-C	25	Y		8		24	
A 57	3	2450		250		225	11	8A			350		325	7	7A		B
A 57A	4	600	SHLD A57	25	Y					E5	25	N				53	
A 57L			P1- 22	10	N	100	14		1	S12-3-NC	25	Y		8		24A	
A 57R			P1- 9	10	N	25	14		1	S12-2-NC	25	Y		8		24A	
A 57W			P1- 8	10	N	50	14		1	S12-1-NC	25	Y		8		24	
A 58	4	1450	P1- 84	10	N		14		1	S17-2-NC	25	Y		8		45	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE
REV LTR B
SHEET 12 OF 20

MIL 2085 · 4-63 WIR

GNY

WIRE HARNESS A ▲ B 1015015

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC. 1		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC 1		NO.	
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	2	ITEM NO.			CIRCUIT POINT	2	TIN	2	ITEM NO.			
A 59	4	1450	P1- 54	10	N		14		1	S17-1-NC	25	Y		8		45	
A 60	4	1900	S17-2-NC	25	Y				45	S12-4-NO	25	Y		8		24A	
A 61	4	1900	S17-1-NC	25	Y				45	S12-4-NC	25	Y		8		24A	
A 62	4	850	S12-4-C	25	Y		8		24A	XDS12-HI	25	Y		8		23A	
A 63			DELETED														
A 64	4	2550	XDS 4-LO	25	Y		8		20	XDS 3-LO	25	Y		8		5	
A 65	4	2550	XDS 4-HI	25	Y		8		20	XDS 3-HI	25	Y				5	
A 66	4	2200	P1- 52	10	N		14		1	XDS12-LO	25	Y		8		23A	A
A 67	4	1200	P1- 61	10	N		14		1	S1-2-NC	25	Y				44	
A 68	4	2000	P1- 62	10	N		14		1	S2-1-C	25	Y		8		19	A
A 69	4	1500	S1-1-C	25	Y				44	S18-3-NC	25	Y				31A	
A 70	4	750	S17-2-C	25	Y				45A	S24-1-NO	25	Y		8		46	
A 71			DELETED														
A 72	4	1450	S24-1-NO	25	Y				46	S2-1-C	25	Y				19A	
A 73	4	1125	XDS12-LO	25	Y				23	XDS 4-LO	25	Y				20	
A 74	4	750	S2-1-NC	25	Y		8		19B	XDS 4-HI	25	Y				20	
A 75	4	1350	P1- 32	10	N		14		1	S25-1-NO	25	Y		8		46	
A 76	4	450	S25-1-NO	25	Y				46	R1-CW	25	Y		8		46	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE
REV LTR B
SHEET 13 OF 20

MIL 2085 · 4-63 WIR

GNY WIRE HARNESS A 3 B 1015015

NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T IN 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T IN 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 77	4	1500	P1- 44	10N	14	1	R1-CCW	25Y		50	B
A 78	4	1400	P1- 26	10N	14	1	S25-1-C	25Y	8	46	
A 79	4	1400	P1- 63	10N	14	1	S24-1-C	25Y	8 ~~8~~	46	
A 80	4	1400	P1- 64	10N	14	1	S24-1-C	25Y		46	
A 81			DELETED								
A 82			DELETED								
A 83			DELETED								
A 84			DELETED								
A 85			DELETED								
A 86			DELETED								
A 87	4	1250	P1- 41	10N	14	1	S10-1	25Y	8	6	
A 88	4	1250	P1- 50	10N	14	1	S10-3	25Y		6	
A 89			DELETED								
A 90			DELETED								
A 91			DELETED								
A 92			DELETED								
A 93	4	1250	P1- 73	10N	14	1	S1-1-NC	25Y	8	44	
A 94			DELETED								

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE-NONE | REV LTR 3 B | SHEET 14 OF 20

MIL 2085 - 4-63 WIR

GNY WIRE HARNESS A A 1015015

NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T IN 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T IN 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 95	4	1250	P1- 29	10N	14	1	S1-2-C	25Y	8	44	
A 96	4	2550	P1- 71	10N	14	1	S4-3-NC	25Y		26B	B
A 97	4	2750	P1- 60	10N	14	1	S4-2-NO	25Y	8	26	B
A 98	4	2550	P1- 70	10N	14	1	S4-2-C	25Y	8	26B	B
A 99	4	2600	P1- 2	10N	14	1	S4-3-NO	25Y	8	26A	B
A 100	4	2600	P1- 21	10N	14	1	S4-3-C	25Y	8	26A	B
A 101	1	2600		400 375	10 8B			350 325	12 7A		B
A 101A	4	600	SHLD A101	25Y			E5	25N		53	
A 101W			P1- 82	10N	14	1	S4-1-C	25Y	8	26A	
A 102	4	2600	P1- 58	10N	14	1	S14-1-NC	25Y	8	25	
A 103	4	2600	P1- 59	10N	14	1	S14-1-NO	25Y	8	25	
A 104	3	1350		250 225	11 8A			250 225	7 7A		
A 104A	4	600	SHLD A104	25Y			E6	25N		54	
A 104L			P1- 42	10N	14	1	S13-1-C	25Y	8	8	
A 104R			P1- 31	10N	14	1	S13-1-NO	25Y	8	8	
A 104W			P1- 30	10N	14	1	S13-1-NC	25Y	8	8	
A 105	2	1850		350 325	11 8B			250 225	6 7A		A
A 105A	4	600	SHLD A105	25Y			E6	25N		54	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015 –
SCALE-NONE | REV LTR A | SHEET 15 OF 20

MIL 2085 - 4-63 WIR

GNY WIRE HARNESS A + 1015015

NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T IN 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T IN 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 105R			P1- 55	10N	14	1	S18-2-NO	25Y	8	31A	
A 105W			P1- 46	10N	14	1	S18-2-NC	25Y	8	31A	
A 106	1	1800		350 325	10 8B			250 225	12 7A		
A 106A	4	600	SHLD A106	25Y			E6	25N		54	
A 106W			P1- 53	10N	14	1	S18-1-NC	25Y		31	
A 107			DELETED								
A 108	4	1800	P1- 51	10N	14	1	S18-3-NC	25Y		31	
A 109	4	1200	S18-3-C	25Y	8	31A	S21-1-C	25Y		33	
A 110	4	1200	P1- 66	10N	14	1	S9-2-C	25Y		34	
A 111	2	1200		250 225	11 8A			350 325	6 7A		
A 111A	4	600	SHLD A111	25Y			E6	25N		54	
A 111R			P1- 95	10N	14	1	S9-1-C	25Y		34	
A 111W			P1- 81	10N	14	1	S9-1-NO	25Y		34	
A 112	4	1250	P1- 65	10N	14	1	S9-2-NO	25Y	8	34A	
A 113	4	1550	P1- 77	10N	14	1	S9-7-NO	25Y	8	35C	
A 114	4	1350	P1- 67	10N	14	1	S9-8-C	25Y		35	
A 115	4	1550	P1- 78	10N	14	1	S20-2-C	25Y	8	32C	
A 116	4	1700	P1- 79	10N	14	1	S21-3-C	25Y	8	33	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE-NONE | REV LTR + | SHEET 16 OF 20

MIL 2085 - 4-63 WIR

GNY WIRE HARNESS A 4 B 1015015

NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T IN 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T IN 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 117	1	1750		250 225	10 8A			450 425	12 7A		
A 117A	4	600	SHLD A117	25Y			E6	25N		54	
A 117W			P1- 68	10N	14	1	S20-4-C	25Y		32E	
A 118	4	1700	P1- 93	10N	14	1	S21-3-NO	25Y	8	33	
A 119	4	1600	P1-106	10N	14	1	S20-2-NO	25Y	8	32D	
A 120	4	850	P1- 85	10N	14	1	S7-2-C	25Y	8	40	
A 121	4	850	P1- 86	10N	14	1	S23-1-NO	25Y	8	41	
A 122	4	850	P1- 89	10N	14	1	S7-2-NC	25Y	8	40	
A 123	4	800	P1- 97	10N	14	1	S8-1-NO	25Y	8	42	
A 124	4	850	P1- 98	10N	14	1	S7-1-C	25Y	8	40	
A 125	4	850	P1-102	10N	14	1	S23-1-NC	25Y	8	41	
A 126	4	750	P1-103	10N	14	1	S8-1-NC	25Y	8	42	
A 127	4	875	P1-104	10N	14	1	S7-1-NC	25Y	8	40	
A 128	4	800	S7-1-NO	25Y	8	40	S8-1-C	25Y	8	42A	
A 129	4	875	S7-2-NO	25Y	8	40	S23-1-C	25Y	8	41A	
A 130	4	1050	P1- 16	10N	14	1	S19-5-C	25Y	8 ~~8~~	12	
A 131	4	1200	P1- 17	10N	14	1	S19-6-NO	25Y	8	15	
A 132	4	1050	P1- 3	10N	14	1	S19-5-NO	25Y	8	12	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE-NONE | REV LTR 3 B | SHEET 17 OF 20

MIL 2085 - 4-63 WIR

GNY

WIRE HARNESS A

~~3~~ B 1015015

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.
A 133	4	1300	S19-5-C	25	Y		12	S19-6-C	25	Y	8	16
A 134	4	1150	P1- 7	10	N	14	1	S19-4-C	25	Y	8	11
A 135	4	1150	P1- 6	10	N	14	1	S19-4-NO	25	Y	8	11
A 136	4	1350	P1- 20	10	N	14	1	S19-3-NO	25	Y	8	17
A 137	4	1550	S19-4-C	25	Y		11	S19-3-C	25	Y	8	18
A 138	4	1200	P1- 5	10	N	14	1	S19-2-NO	25	Y	8	9
A 139	4	1100	P1- 4	10	N	14	1	S19-1-NO	25	Y	8	14
A 140	4	1100	P1- 18	10	N	14	1	S19-1-C	25	Y	8	14A
A 141	4	1450	S19-1-C	25	Y		13	S19-2-C	25	Y	8	10
A 142	5	550	P1-91	10	N	14	1	E1	25	N	18	3
A 143	5	700	P1-83	10	N	14	1	E7	25	N	11	2
A 144	5	700	E6	25	N	11	54	E7	25	N		2
A 145	5	300	E5	25	N	11	53	E7	25	N		2
A 146	5	900	E4	25	N	11	52	E7	25	N		2
A 147	5	500	E3	25	N	11	51	E7	25	N		2
A 148	5	1050	E2	25	N	11	48	E7	25	N		2
A 149	4	1150	P1-40	10	N	14	1	S10-5	25	Y	8	6
A 150			DELETED									

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015015	
SCALE - NONE	REV LTR ~~3~~ B	SHEET 18 OF 20	

MIL 2085 - 4-63 WIR

GNY

WIRE HARNESS A

B 1015015

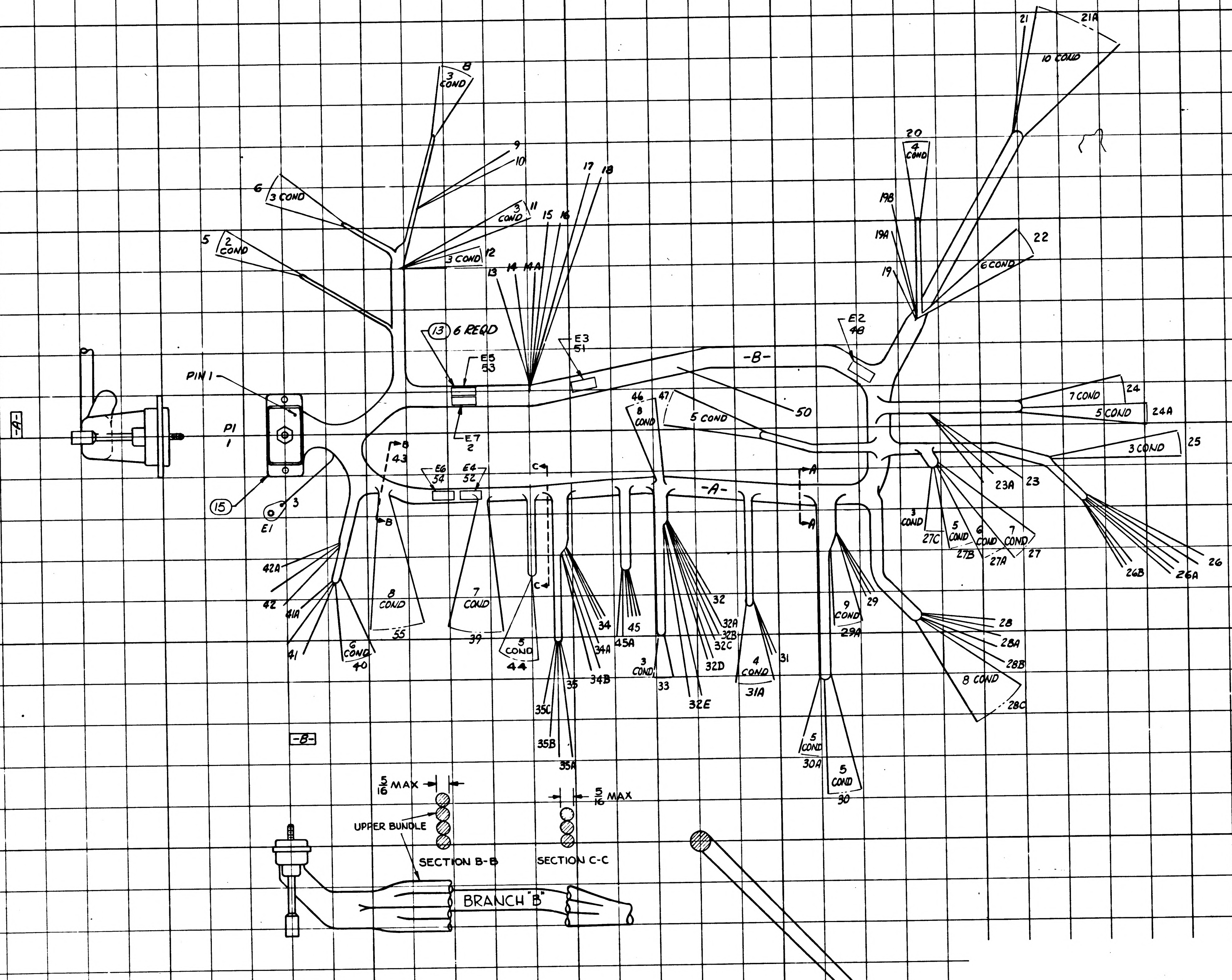
CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.
A 151	4	1100	S17-1-C	25	Y		45A	S1-2-NC	25	Y		44
A 152	4	1150	S11-3-NO	25	Y	8	27C	S11-8-C	25	Y	8	28C
A 153	4	1150	S20-1-C	25	Y		32B	S9-4-NO	25	Y	8	34B
A 154	4	1350	S9-8-NO	25	Y		35B	S20-2-NC	25	Y	8	32D
A 155	4	1250	S9-5-C	25	Y		35A	S20-4-NC	25	Y	8	32
A 156	4	1100	S9-4-C	25	Y		34B	S20-1-NC	25	Y	8	32A
A 157	4	1450	S9-5-NO	25	Y		35A	S20-3-C	25	Y	8	32E
A 158	4	1000	S16-4-C	25	Y		55	S16-5-C	25	Y	8	39

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015015	-
SCALE - NONE	REV LTR B	SHEET 19 OF 20	

MIL 2085 - 4-63 WIR


21
21A
10 COND
20
4 COND
19B
19A
19
22
6 COND
E2
48
8
3 COND
9
10
6
3 COND
5
2 COND
3 COND
11
3 COND
12
15
16
17
18
13
14
14A
13
6 REQD
E3
51
E5
53
-B-
50
PIN 1
-A-
P1
1
E7
2
46
8 COND
47
5 COND
7 COND
24
5 COND
24A
3 COND
25
B
43
B
E6
54
E4
52
C
C
-A-
A
A
23A
23
15
3
E1
3 COND
27C
5 COND
27B
6 COND
27A
7 COND
27
26
26A
26B
42A
42
41A
41
6 COND
40
8 COND
55
7 COND
39
5 COND
44
34
34A
34B
35
35C
35B
35A
45
45A
32
32A
32B
32C
32D
32E
3 COND
33
4 COND
31A
31
9 COND
29A
29
28
28A
28B
8 COND
28C
5 COND
30A
5 COND
30
-B-
5/16 MAX
UPPER BUNDLE
SECTION B-B
5/16 MAX
SECTION C-C
BRANCH "B"

SECTION A-A
TYPICAL

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 23 APR 64
CHECKED 7 MAY 64
APPROVAL 7 MAY 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
G&N INDICATOR CONTROL PANEL

CODE IDENT NO.
SIZE E
1015015
SCALE 1/1
SHEET 20 OF 20

7 MAY 64

MX-10

APPLICATION		REVISIONS 1 ~~VIII~~ 16170			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1014578-021	1014513				

REV																							
SHEET																							
REV STATUS REV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
OF SHEETS SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

K. Erickson
7 MAY 64

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN J. Kamarth DATE 20 APR 64
CHECKED M. Morris 7 MAY 64
APPROVAL M. Miley 2 May 64
APPROVAL J. J. [illegible] 4/4/64
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 6/16/64

WIRING HARNESS "A"
G&N INDICATOR CONTROL PANEL

CODE IDENT NO.
SIZE A
1015015
REV
SCALE
SHEET 1 OF 20
CONTRACT NAS 9-497

PENNANT NOTE — GENERAL NOTES

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION OMITTING ALL SUFFIX LETTERS EXCEPT A,B,C, AND D PER ND1002019. (ES-2475-7).

5 SOLDER PER MIL-S-6872 (ES-2505-1) USING ITEMS 16 AND 17

6 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

7 GRID MODULE IS 1 INCH.

8 UNLESS OTHERWISE SPECIFIED -
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - 1/4 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - 1/8 INCH

9 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

10 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING OR CONDUCTOR COLOR.
A - FROM END SHIELD
B - TO END SHIELD
L - BLUE
R - RED
W - WHITE

11 INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND1002206.

12 BIND WIRES TOGETHER PER ND1002032 USING MIL-T-713, TYPE P, CLASS 2 TAPE. FORM RUNNING LOCKSTITCH AT 1/2 INCH SPACING.

13 TWIST CONDUCTORS A1,A2 AND A3 APPROX 18 TURNS PER FOOT

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE-NONE | REV LTR + | SHEET 2 OF 20

PENNANT NOTE — GENERAL NOTES

14 TWIST CONDUCTORS A32 AND A33 APPROX 18 TURNS PER FOOT

15 TWIST CONDUCTORS A58 AND A59 APPROX 18 TURNS PER FOOT

16 TWIST CONDUCTORS A60 AND A61 APPROX 18 TURNS PER FOOT

17 TWIST CONDUCTORS [redacted]A64 AND A65 APPROX 18 TURNS PER FOOT

18 TWIST CONDUCTORS A66,A67,A68,A79 AND A80 APPROX 18 TURNS PER FOOT

19 [redacted]

20 TWIST CONDUCTORS A97 AND A98 APPROX 18 TURNS PER FOOT

21 TWIST CONDUCTORS A99 AND A100 APPROX 18 TURNS PER FOOT

22 TWIST CONDUCTORS A112 AND A113 APPROX 18 TURNS PER FOOT

23 TWIST CONDUCTORS A130,A131 AND A132 APPROX 18 TURNS PER FOOT

24 TWIST CONDUCTORS A134,A135 AND A136 APPROX 18 TURNS PER FOOT

25 TWIST CONDUCTORS A138,A139 AND A140 APPROX 18 TURNS PER FOOT

26 TWIST CONDUCTORS A66,A68,A72 AND A73 APPROX 18 TURNS PER FOOT

27 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH 50A1

28 CONDUCTOR LENGTHS ARE FOR MFG. REF ONLY

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE-NONE | REV LTR + | SHEET 3 OF 20

PENNANT NOTE — GENERAL NOTES

29 USE A FIGURE EIGHT TYPE STITCH IN BRANCH A BETWEEN SECTION B-B AND C-C (APPROXIMATELY 4 INCH). WIDTH SHALL NOT EXCEED 5/16 INCH PER BUNDLE. CONDUCTORS BREAKING OUT ON TOP SIDE TO TERMINATION POINTS 34 THRU 39, 43 AND 44 SHALL BE ROUTED IN TOP BUNDLES.

30 INSULATION SHALL BE RECESSED INTO INSULATION CUP OF PIN BODY ON ALL CONDUCTORS TERMINATING IN TERMINATION NO. 1.

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

31 Serialize per ND 1002023

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE-NONE | REV LTR + | SHEET 4 OF 20

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015015- 1	WIRE PER 1010685-4, WHT JKT 24AWG WHT. 19 FT 4.5 IN. TOTAL LENGTH
	2	1	1015015- 2	WIRE PER 1010685-5, WHT JKT 24AWG WHITE, RED, 13 FT 4.0 IN. TOTAL LENGTH
	3	1	1015015- 3	WIRE PER 1010685-6, WHT JKT 24AWG WHITE, RED, BLUE, 8 FT 9.3 IN. TOTAL LENGTH
	4	1	1015015- 4	WIRE PER 1010685-1, 24AWG WHITE. 133 FT 7.3 IN. TOTAL LENGTH
	5	1	1015015- 5	WIRE PER 1010685-2, 22AWG WHITE. 47.0 IN. TOTAL LENGTH
9	6	9	1010490-170	INSULATION SLEEVING HEAT SHRINK
9	7	5	1010490-168	INSULATION SLEEVING HEAT SHRINK
9	8	119	1010490-082	INSULATION SLEEVING HEAT SHRINK
9	9	32	1010490-080	INSULATION SLEEVING HEAT SHRINK
9	10	10	1010402- 1	SOLDER SLEEVE
9	11	20	1010402- 2	SOLDER SLEEVE
9	12	10	1010490-172	INSULATION SLEEVING HEAT SHRINK
	13			DELETED
9	14	96	1010738- 1	CONTACT ELECTRICAL
9	15	1	1010347- 1	CONNECTOR, PLUG, ELECTRICAL
	16	AR	QQ-S-571	SOLDER SN60 (ES-2175 ALLOY 1)

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE-NONE | REV LTR + | SHEET 5 OF 20

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	17	AR	QQ-S-571	FLUX AR (ES-2175 TYPE 1 OR 2) OR MIL 14256 FLUX (ES-2798)
9	18	1	1010638- 6	TERMINAL
	19	AR	MIL-T-713	TYPE P, TAPE CLASS 2, BLACK

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE-NONE | REV LTR + | SHEET 6 OF 20

CONDUCTOR			FROM							TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2▷	CIRCUIT POINT 2▷	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2▷	TERMINATION ITEM NO.	TERMINATION SPEC. 1▷	NO.	CIRCUIT POINT 2▷	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2▷	TERMINATION ITEM NO.	TERMINATION SPEC 1▷	NO.
A 1	4	1150	A1- 1	25	Y		8		21	T1- 3	25	Y				22
A 2	4	1725	A1- 2	25	Y		8		21A	S3-2-C	25	Y		9		47
A 3	4	1725	A1- 3	25	Y		8		21A	S3-2-C	25	Y				47
A 4	2	1950		350		325	6	7A			800		775	11	8A	
A 4B	4	600	E2	25	N				48	SHLD A4	25	Y				
A 4R			A1-12	25	Y		8		21A	S11-4-NC	25	Y		8		27A
A 4W			A1- 4	25	Y	200	8		21A	S11-11-NO	25	Y	200	8		28A
A 5	2	1950		350		325	6	7A			750		725	11	8A	
A 5B	4	600	E2	25	N				48	SHLD A5	25	Y				
A 5R			A1-10	25	Y		8		21A	S11-3-NC	25	Y		8		27A
A 5W			A1- 8	25	Y		8		21A	S11-9-NO	25	Y	100	8		28C
A 6	2	1650		350		325	6	7A			300		275	11	8A	
A 6B	4	600	E2	25	N				48	SHLD A6	25	Y				
A 6R			A1- 5	25	Y		8		21A	S11-5-NC	25	Y		8		27A
A 6W			A1- 9	25	Y		8		21A	S11-5-NO	25	Y		9		27A
A 7	2	1650		350		325	6	7A			350		325	11	8A	
A 7B	4	600	E2	25	N				48	SHLD A7	25	Y				
A 7R			A1- 6	25	Y		8		21A	S11-6-NC	25	Y		8		27

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE-NONE | REV LTR + | SHEET 7 OF 20

MIL 2085 - 4-63 WIN

CONDUCTOR			FROM							TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2▷	CIRCUIT POINT 2▷	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2▷	TERMINATION ITEM NO.	TERMINATION SPEC. 1▷	NO.	CIRCUIT POINT 2▷	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2▷	TERMINATION ITEM NO.	TERMINATION SPEC 1▷	NO.
A 7W			A1- 7	25	Y		8		21A	S11-6-NO	25	Y		9		27
A 8	2	2100		250		225	11	8A			375		350	6	7A	B
A 8A	4	600	SHLD A8	25	Y					E3	25	N				51
A 8R			P1- 80	10			14		1	T1- 1	25	Y		9		22
A 8W			P1- 69	10	N		14		1	T1- 2	25	Y				22
A 9	4	1125	S3-2-NO	25	Y		8		47	T1- 1	25	Y				22
A 10	4	1125	S3-1-NC	25	Y		8		47	T1- 7	25	Y		8		22
A 11	4	1125	S3-1-NO	25	Y		8		47	T1- 5	25	Y		8		22
A 12			DELETED													
A 13			DELETED													
A 14	4	950	P1- 92	10	N		14		1	S16-7-C	25	Y				39
A 15	4	950	P1- 74	10	N		14		1	S16-8-NC	25	Y		8		39
A 16	4	950	P1- 90	10	N		14		1	S16-4-C	25	Y				55
A 17	4	950	P1-100	10	N		14		1	S16-3-C	25	Y				55
A 18	4	950	P1- 88	10	N		14		1	S16-1-NC	25	Y		9		55
A 19	4	950	P1- 87	10	N		14		1	S16-2-NC	25	Y		8		55
A 20	4	950	P1-101	10	N		14		1	S16-3-NC	25	Y		8		55
A 21	4	950	P1- 94	10	N		14		1	S16-4-NC	25	Y		8		55

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015
SCALE-NONE | REV LTR + | SHEET 8 OF 20

MIL 2085 - 4-63 WIN

GNY WIRE HARNESS A + 1015015

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							
NUMBER	ITEM NO.	2▷	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	TIN	2▷	TERMINATION SPEC. 1▷ ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	TIN	2▷	TERMINATION SPEC 1▷ ITEM NO.		NO.	
A 22	4	1000	S16-1-NC	25	Y				55	S16-6-C	25	Y		8		39	
A 23	4	950	P1- 76	10	N		14		1	S16-5-NC	25	Y		8		39	
A 24	4	950	P1- 75	10	N		14		1	S16-6-NC	25	Y		8		39	
A 25	4	950	P1-105	10	N		14		1	S16-7-NC	25	Y		8		39	
A 26	1	2600		250		225	10	8A			350		325	12	7A		B
A 26A	4	600	SHLD A26	25	Y					E3	25	N				51	
A 26W			P1- 56	10	N		14		1	S11-8-NC	25	Y		8		28C	
A 27	1	2600		250		225	10	8A			350		325	12	7A		B
A 27A	4	600	SHLD A27	25	Y					E3	25	N				51	
A 27W			P1- 47	10	N		14		1	S11-9-NC	25	Y		8		28C	
A 28	1	2600		250		225	10	8A			350		325	12	7A		B
A 28A	4	600	SHLD A28	25	Y					E3	25	N				51	
A 28W			P1- 48	10	N		14		1	S11-10-NC	25	Y		8		28B	
A 29	1	2600		250		225	10	8A			350		325	12	7A		B
A 29A	4	600	SHLD A29	25	Y					E3	25	N				51	
A 29W			P1- 57	10	N		14		1	S11-11-NC	25	Y		8		28A	
A 30	1	2200		250		225	10	8A			350		325	12	7A		A
A 30A	4	600	SHLD A30	25	Y					E4	25	N				52	

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE
REV LTR +
SHEET 9 OF 20

MIL 2085 · 4-63 WIR

GNY WIRE HARNESS A + 1015015

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							
NUMBER	ITEM NO.	2▷	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	TIN	2▷	TERMINATION SPEC. 1▷ ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	TIN	2▷	TERMINATION SPEC 1▷ ITEM NO.		NO.	
A 30W			P1- 49	10	N		14		1	S15-8-C	25	Y		9		30	
A 31	1	2200		250		225	10	8A			350		325	12	7A		A
A 31A	4	600	SHLD A31	25	Y					E4	25	N				52	
A 31W			P1- 38	10	N		14		1	S15-8-NC	25	Y		9		30	
A 32	4	1500	S15-8-C	25	Y				30A	S11-5-NO	25	Y				27	
A 33	4	1500	S15-8-NC	25	Y				30A	S11-6-NO	25	Y				27	
A 34	4	2300	P1- 72	10	N		14		1	S11-1-NC	25	Y		8		27C	
A 35	3	2600		275		250	11	8B			800		775	7	7A		B
A 35A	4	600	SHLD A35	25	Y					E5	25	N				53	
A 35L			P1- 37	10	N		14		1	S11-12-NC	25	Y		8		28	
A 35R			P1- 25	10	N		14		1	S11-2-NC	25	Y		8		27B	
A 35W			P1- 36	10	N		14		1	S11-12-C	25	Y		9		28C	
A 36	4	1200	S11-12-C	25	Y				28	S11-2-C	25	Y		8		27C	
A 37	4	2200	P1- 1	10	N		14		1	S15-7-NC	25	Y		9		30	A
A 38	4	1350	S15-7-NC	25	Y				30A	S11-1-C	25	Y		9		27B	
A 39	4	1000	S11-1-C	25	Y				27	S14-2-C	25	Y		8		25	
A 41	1	2300		400		375	10	8B			400		375	12	7A		B
A 41A	4	600	SHLD A41	25	N					E5	25	N				53	

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE
REV LTR +
SHEET 10 OF 20

MIL 2085 · 4-63 WIR

GNY WIRE HARNESS A + 1015015

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							
NUMBER	ITEM NO.	2▷	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	TIN	2▷	TERMINATION SPEC. 1▷ ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	TIN	2▷	TERMINATION SPEC 1▷ ITEM NO.		NO.	
A 41W			P1- 96	10	N		14		1	S11-5-C	25	Y		9		27B	
A 42	4	650	S11-5-C	25	Y				27A	S11-6-C	25	Y		9		27A	
A 43	4	1200	S11-6-C	25	Y				27	S4-1-NO	25	Y		8		26	
A 44	4	1000	S15-6-NC	25	Y		8		30A	S15-2-NC	25	Y		9		29A	
A 45	4	1050	S11-4-C	25	Y		8		27	S15-2-NC	25	Y				29A	
A 46	4	1100	S11-11-C	25	Y		8		28C	S15-1-C	25	Y		8		29A	
A 47	4	1050	S11-4-NO	25	Y		8		27B	S11-10-C	25	Y		8		28A	
A 48	4	1175	S11-10-NO	25	Y		8		28C	S15-1-NC	25	Y				29A	
A 49	2	1825		350		325	11	8B			250		225	6	7A		A
A 49A	4	600	SHLD A49	25	Y					E4	25	N				52	
A 49R			P1- 35	10	N		14		1	S15-2-C	25	Y		8		29A	
A 49W			P1- 34	10	N		14		1	S15-2-NO	25	Y				29A	
A 50	4	900	S11-3-C	25	Y		8		27B	S15-4-NC	25	Y				29	
A 51	4	1100	S11-9-C	25	Y		8		28C	S15-3-C	25	Y		8		29A	
A 52	4	1100	S11-8-NO	25	Y		8		28C	S15-3-NC	25	Y				29A	
A 53	2	1825		350		325	11	8B			250		225	6	7A		A
A 53A	4	600	SHLD A53	25	Y					E4	25	N				52	
A 53R			P1- 19	10	N		14		1	S15-4-C	25	Y		8		29	

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE
REV LTR +
SHEET 11 OF 20

MIL 2085 · 4-63 WIR

GNY WIRE HARNESS A + 1015015

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							
NUMBER	ITEM NO.	2▷	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	TIN	2▷	TERMINATION SPEC. 1▷ ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	TIN	2▷	TERMINATION SPEC 1▷ ITEM NO.		NO.	
A 53W			P1- 33	10	N		14		1	S15-4-NO	25	Y				29	
A 54	4	2150	P1- 99	10	N		14		1	S15-7-C	25	Y		8		30A	A
A 55	3	1725		300		275	7	7A			650		625	11	8A		
A 55B	4	600	E2	25	N				48	SHLD A55	25	Y					
A 55L			S12-3-NO	25	Y		8		24	S15-5-C	25	Y		8		30	
A 55R			S12-2-NO	25	Y		8		24	S15-3-NO	25	Y	300			29A	
A 55W			S12-1-NO	25	Y		8		24	S15-6-C	25	Y		8		30	
A 56	3	2400		300		275	11	8A			325		300	7	7A		B
A 56A	4	600	SHLD A56	25	Y					E5	25	N				53	
A 56L			P1- 24	10	N	50	14		1	S12-1-C	25	Y		8		24	
A 56R			P1- 23	10	N	25	14		1	S12-2-C	25	Y		8		24	
A 56W			P1- 10	10	N		14		1	S12-3-C	25	Y		8		24	
A 57	3	2450		250		225	11	8A			350		325	7	7A		B
A 57A	4	600	SHLD A57	25	Y					E5	25	N				53	
A 57L			P1- 22	10	N	100	14		1	S12-3-NC	25	Y		8		24A	
A 57R			P1- 9	10	N	25	14		1	S12-2-NC	25	Y		8		24A	
A 57W			P1- 8	10	N	50	14		1	S12-1-NC	25	Y		8		24	
A 58	4	1450	P1- 84	10	N		14		1	S17-2-NC	25	Y		9		45	

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE
REV LTR +
SHEET 12 OF 20

MIL 2085 · 4-63 WIR

GNY WIRE HARNESS A + 1015015

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ITEM NO.	▷1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ITEM NO.	▷1	NO.	
A 59	4	1450	P1- 54	10	N		14		1	S17-1-NC	25	Y		9		45	
A 60	4	1900	S17-2-NC	25	Y				45	S12-4-NO	25	Y		8		24A	
A 61	4	1900	S17-1-NC	25	Y				45	S12-4-NC	25	Y		9		24A	
A 62	4	850	S12-4-C	25	Y		8		24A	XDS12-HI	25	Y		8		23A	
A 63			DELETED														
A 64	4	2550	XDS 4-LO	25	Y		9		20	XDS 3-LO	25	Y		9		5	
A 65	4	2550	XDS 4-HI	25	Y		9		20	XDS 3-HI	25	Y				5	
A 66	4	2200	P1- 52	10	N		14		1	XDS12-LO	25	Y		9		23A	A
A 67	4	1200	P1- 61	10	N		14		1	S1-2-NC	25	Y				44	
A 68	4	2000	P1- 62	10	N		14		1	S2-1-C	25	Y		9		19	A
A 69	4	1500	S1-1-C	25	Y				44	S18-3-NC	25	Y				31A	
A 70	4	750	S17-2-C	25	Y				45A	S24-1-NO	25	Y		9		46	
A 71			DELETED														
A 72	4	1450	S24-1-NO	25	Y				46	S2-1-C	25	Y				19A	
A 73	4	1125	XDS12-LO	25	Y				23	XDS 4-LO	25	Y				20	
A 74	4	750	S2-1-NC	25	Y		8		19B	XDS 4-HI	25	Y				20	
A 75	4	1350	P1- 32	10	N		14		1	S25-1-NO	25	Y		9		46	
A 76	4	450	S25-1-NO	25	Y				46	R1-CW	25	Y		8		46	

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015

SCALE-NONE | REV LTR + | SHEET 13 OF 20

MIL 2085 - 4-63 WIR

GNY WIRE HARNESS A + 1015015

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ITEM NO.	▷1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ITEM NO.	▷1	NO.	
A 77	4	1500	P1- 44	10	N		14		1	R1-CCW	25	Y				50	B
A 78	4	1400	P1- 26	10	N		14		1	S25-1-C	25	Y		8		46	
A 79	4	1400	P1- 63	10	N		14		1	S24-1-C	25	Y		9		46	
A 80	4	1400	P1- 64	10	N		14		1	S24-1-C	25	Y				46	
A 81			DELETED														
A 82			DELETED														
A 83			DELETED														
A 84			DELETED														
A 85			DELETED														
A 86			DELETED														
A 87	4	1250	P1- 41	10	N		14		1	S10-1	25	Y		8		6	
A 88	4	1250	P1- 50	10	N		14		1	S10-3	25	Y				6	
A 89			DELETED														
A 90			DELETED														
A 91			DELETED														
A 92			DELETED														
A 93	4	1250	P1- 73	10	N		14		1	S1-1-NC	25	Y		8		44	
A 94			DELETED														

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015

SCALE-NONE | REV LTR + | SHEET 14 OF 20

MIL 2085 - 4-63 WIR

GNY WIRE HARNESS A + 1015015

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ITEM NO.	▷1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ITEM NO.	▷1	NO.	
A 95	4	1250	P1- 29	10	N		14		1	S1-2-C	25	Y		8		44	
A 96	4	2550	P1- 71	10	N		14		1	S4-3-NC	25	Y		8		26B	B
A 97	4	2750	P1- 60	10	N		14		1	S4-2-NO	25	Y		8		26	B
A 98	4	2550	P1- 70	10	N		14		1	S4-2-C	25	Y		8		26B	B
A 99	4	2600	P1- 2	10	N		14		1	S4-3-NO	25	Y		8		26A	B
A 100	4	2600	P1- 21	10	N		14		1	S4-3-C	25	Y		8		26A	B
A 101	1	2600		400		375	10	8B			350		325	12	7A		B
A 101A	4	600	SHLD A101	25	Y					E5	25	N				53	
A 101W			P1- 82	10	N		14		1	S4-1-C	25	Y		8		26A	
A 102	4	2600	P1- 58	10	N		14		1	S14-1-NC	25	Y		8		25	
A 103	4	2600	P1- 59	10	N		14		1	S14-1-NO	25	Y		8		25	
A 104	3	1350		250		225	11	8A			250		225	7	7A		
A 104A	4	600	SHLD A104	25	Y					E6	25	N				54	
A 104L			P1- 42	10	N		14		1	S13-1-C	25	Y		8		8	
A 104R			P1- 31	10	N		14		1	S13-1-NO	25	Y		8		8	
A 104W			P1- 30	10	N		14		1	S13-1-NC	25	Y		8		8	
A 105	2	1850		350		325	11	8B			250		225	6	7A		A
A 105A	4	600	SHLD A105	25	Y					E6	25	N				54	

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015

SCALE-NONE | REV LTR + | SHEET 15 OF 20

MIL 2085 - 4-63 WIR

GNY WIRE HARNESS A + 1015015

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ITEM NO.	▷1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ITEM NO.	▷1	NO.	
A 105R			P1- 55	10	N		14		1	S18-2-NO	25	Y		8		31A	
A 105W			P1- 46	10	N		14		1	S18-2-NC	25	Y		8		31A	
A 106	1	1800		350		325	10	8B			250		225	12	7A		
A 106A	4	600	SHLD A106	25	Y					E6	25	N				54	
A 106W			P1- 53	10	N		14		1	S18-1-NC	25	Y				31	
A 107			DELETED														
A 108	4	1800	P1- 51	10	N		14		1	S18-3-NC	25	Y				31	
A 109	4	1200	S18-3-C	25	Y		8		31A	S21-1-C	25	Y				33	
A 110	4	1200	P1- 66	10	N		14		1	S9-2-C	25	Y				34	
A 111	2	1200		250		225	11	8A			350		325	6	7A		
A 111A	4	600	SHLD A111	25	Y					E6	25	N				54	
A 111R			P1- 95	10	N		14		1	S9-1-C	25	Y				34	
A 111W			P1- 81	10	N		14		1	S9-1-NO	25	Y				34	
A 112	4	1250	P1- 65	10	N		14		1	S9-2-NO	25	Y		8		34A	
A 113	4	1550	P1- 77	10	N		14		1	S9-7-NO	25	Y		8		35C	
A 114	4	1350	P1- 67	10	N		14		1	S9-8-C	25	Y				35	
A 115	4	1550	P1- 78	10	N		14		1	S20-2-C	25	Y		8		32C	
A 116	4	1700	P1- 79	10	N		14		1	S21-3-C	25	Y		8		33	

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015015

SCALE-NONE | REV LTR + | SHEET 16 OF 20

MIL 2085 - 4-63 WIR

GNY WIRE HARNESS A + 1015015

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION ITEM NO.	TERMINATION SPEC. 1>	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION ITEM NO.	TERMINATION SPEC 1>	NO.
A 117	1	1750		250		225	10	8A			450		425	12	7A	
A 117A	4	600	SHLD A117	25	Y					E6	25	N				54
A 117W			P1- 68	10	N		14		1	S20-4-C	25	Y				32E
A 118	4	1700	P1- 93	10	N		14		1	S21-3-NO	25	Y		8		33
A 119	4	1600	P1-106	10	N		14		1	S20-2-NO	25	Y		8		32D
A 120	4	850	P1- 85	10	N		14		1	S7-2-C	25	Y		8		40
A 121	4	850	P1- 86	10	N		14		1	S23-1-NO	25	Y		8		41
A 122	4	850	P1- 89	10	N		14		1	S7-2-NC	25	Y		8		40
A 123	4	800	P1- 97	10	N		14		1	S8-1-NO	25	Y		8		42
A 124	4	850	P1- 98	10	N		14		1	S7-1-C	25	Y		8		40
A 125	4	850	P1-102	10	N		14		1	S23-1-NC	25	Y		8		41
A 126	4	750	P1-103	10	N		14		1	S8-1-NC	25	Y		8		42
A 127	4	875	P1-104	10	N		14		1	S7-1-NC	25	Y		8		40
A 128	4	800	S7-1-NO	25	Y		8		40	S8-1-C	25	Y		8		42A
A 129	4	875	S7-2-NO	25	Y		8		40	S23-1-C	25	Y		8		41A
A 130	4	1050	P1- 16	10	N		14		1	S19-5-C	25	Y		9		12
A 131	4	1200	P1- 17	10	N		14		1	S19-6-NO	25	Y		8		15
A 132	4	1050	P1- 3	10	N		14		1	S19-5-NO	25	Y		8		12

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE
REV LTR +
SHEET 17 OF 20

MIL 2085 - 4-63 WIR

GNY WIRE HARNESS A + 1015015

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION ITEM NO.	TERMINATION SPEC. 1>	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION ITEM NO.	TERMINATION SPEC 1>	NO.
A 133	4	1300	S19-5-C	25	Y				12	S19-6-C	25	Y		8		16
A 134	4	1150	P1- 7	10	N		14		1	S19-4-C	25	Y		9		11
A 135	4	1150	P1- 6	10	N		14		1	S19-4-NO	25	Y		8		11
A 136	4	1350	P1- 20	10	N		14		1	S19-3-NO	25	Y		8		17
A 137	4	1550	S19-4-C	25	Y				11	S19-3-C	25	Y		8		18
A 138	4	1200	P1- 5	10	N		14		1	S19-2-NO	25	Y		8		9
A 139	4	1100	P1- 4	10	N		14		1	S19-1-NO	25	Y		8		14
A 140	4	1100	P1- 18	10	N		14		1	S19-1-C	25	Y		9		14A
A 141	4	1450	S19-1-C	25	Y				13	S19-2-C	25	Y		8		10
A 142	5	550	P1-91	10	N		14		1	E1	25	N		18		3
A 143	5	700	P1-83	10	N		14		1	E7	25	N		11		2
A 144	5	700	E6	25	N		11		54	E7	25	N				2
A 145	5	300	E5	25	N		11		53	E7	25	N				2
A 146	5	900	E4	25	N		11		52	E7	25	N				2
A 147	5	500	E3	25	N		11		51	E7	25	N				2
A 148	5	1050	E2	25	N		11		48	E7	25	N				2
A 149	4	1150	P1-40	10	N		14		1	S10-5	25	Y		8		6
A 150			DELETED													

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE
REV LTR +
SHEET 18 OF 20

MIL 2085 - 4-63 WIR

GNY WIRE HARNESS A + 1015015

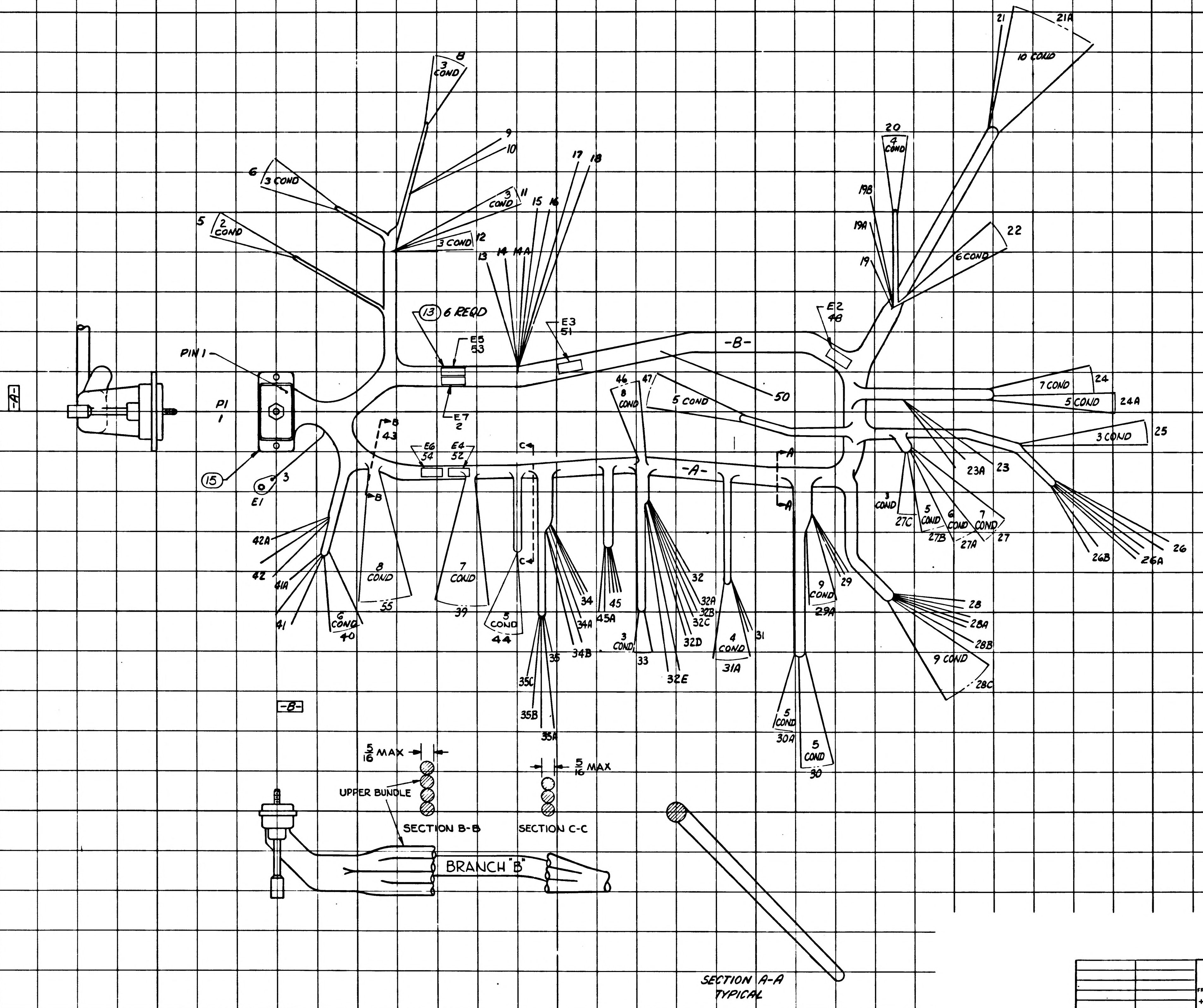
CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION ITEM NO.	TERMINATION SPEC. 1>	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION ITEM NO.	TERMINATION SPEC 1>	NO.
A 151	4	1100	S17-1-C	25	Y				45A	S1-2-NC	25	Y				44
A 152	4	1150	S11-3-NO	25	Y		8		27C	S11-8-C	25	Y		8		28C
A 153	4	1150	S20-1-C	25	Y				32B	S9-4-NO	25	Y		9		34B
A 154	4	1350	S9-8-NO	25	Y				35B	S20-2-NC	25	Y		9		32D
A 155	4	1250	S9-5-C	25	Y				35A	S20-4-NC	25	Y		9		32
A 156	4	1100	S9-4-C	25	Y				34B	S20-1-NC	25	Y		9		32A
A 157	4	1450	S9-5-NO	25	Y				35A	S20-3-C	25	Y		9		32E
A 158	4	1000	S16-4-C	25	Y				55	S16-5-C	25	Y		8		39

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015015
SCALE - NONE
REV LTR +
SHEET 19 OF 20

MIL 2085 - 4-63 WIR


21
21A
10 COND
8
3 COND
9
10
6
3 COND
5
2 COND
3 COND
11
3 COND
12
17
18
15
16
13
14
14A
20
4 COND
19B
19A
19
22
6 COND
E2
48
13
6 REQD
E5
53
E3
51
-B-
50
-A-
PIN 1
P1
1
15
3
E1
46
8 COND
47
5 COND
7 COND
24
5 COND
24A
3 COND
25
23A
23
E7
2
8
43
E6
54
E4
52
C
A
A
3 COND
27C
5 COND
27B
6 COND
27A
7 COND
27
26B
26A
26
42A
42
41A
41
8
8 COND
55
6 COND
40
7 COND
39
5 COND
44
34
34A
34B
45
45A
35
35C
35B
35A
3 COND
33
32
32A
32B
32C
32D
32E
4 COND
31
31A
9 COND
29
29A
28
28A
28B
9 COND
28C
5 COND
30A
5 COND
30
-B-
5/16 MAX
UPPER BUNDLE
SECTION B-B
5/16 MAX
SECTION C-C
BRANCH "B"
SECTION A-A
TYPICAL

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

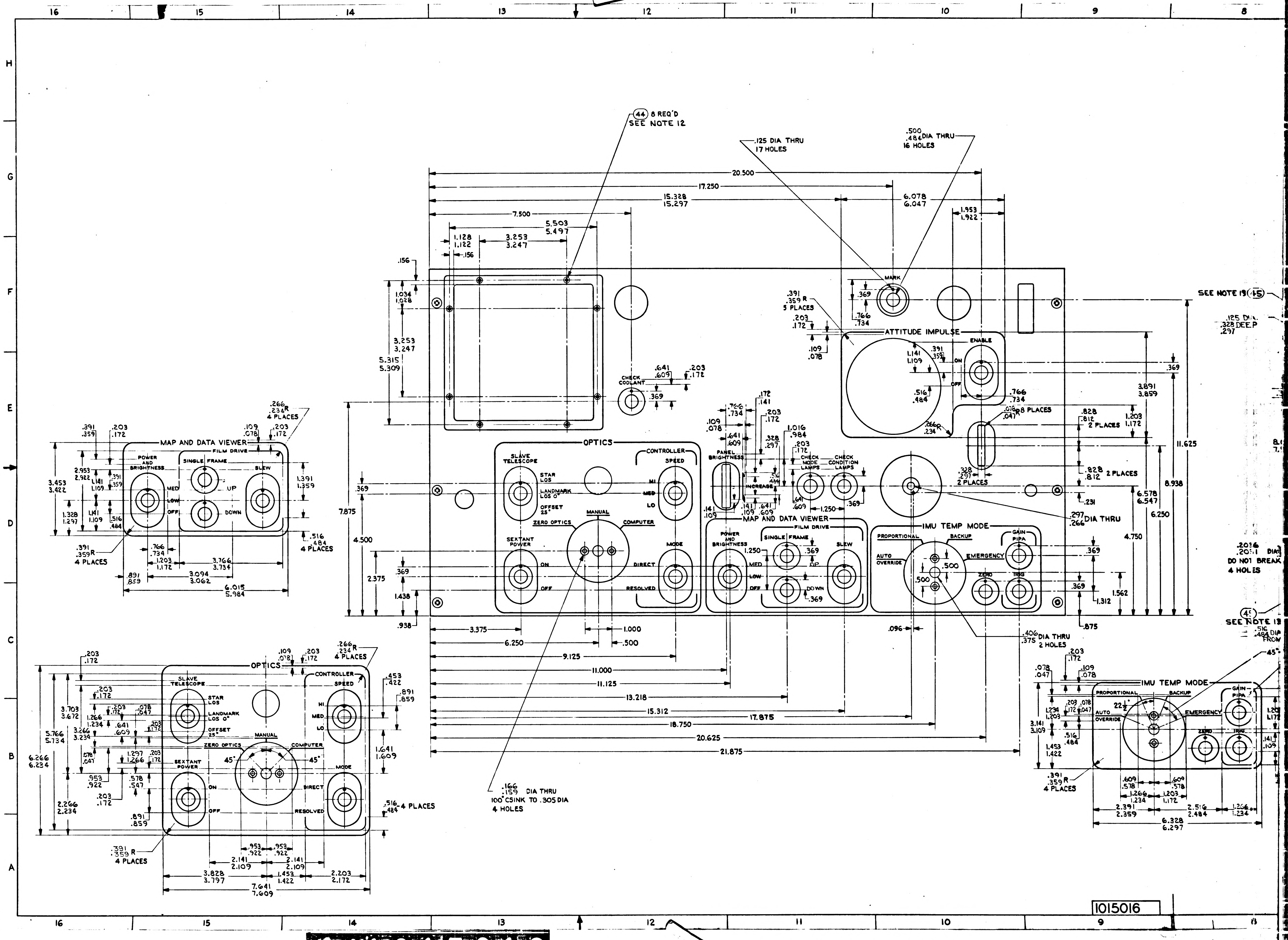
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN F. Kowalski DATE 23 APR 64
CHECKED M. Mamory 7 MAY 64
APPROVAL D.W. Minkey 7 MAY 64
APPROVAL G. E. Kin 5/5/64
NASA APPROVAL W. D. Tiffet
MIT APPROVAL S. Hazel 5/6/64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
G&N INDICATOR CONTROL PANEL

CODE IDENT NO.
SIZE E
1015015
SCALE 1/1
SHEET 20 OF 20

D. Erickson 7 MAY 64



44 8 REQ'D
SEE NOTE 12
.125 DIA THRU
17 HOLES
.500 .484 DIA THRU
16 HOLES
20.500
17.250
15.328 15.297
6.078 6.047
7.500
5.503 5.497
1.953 1.922
1.128 1.122
3.253 3.247
.156
MARK
SEE NOTE 19 45
.125 DIA
.328 .297 DEEP
.391 .359 R
5 PLACES
ATTITUDE IMPULSE
ENABLE
ON
OFF
CHECK COOLANT
OPTICS
SLAVE TELESCOPE
STAR LOS
LANDMARK LOS 0°
OFFSET 25°
ZERO OPTICS
MANUAL
COMPUTER
SEXTANT POWER
CONTROLLER
SPEED
HI
MED
LO
MODE
DIRECT
RESOLVED
PANEL BRIGHTNESS
INCREASE
CHECK MODE LAMPS
CHECK CONDITION LAMPS
MAP AND DATA VIEWER
FILM DRIVE
POWER AND BRIGHTNESS
SINGLE FRAME
SLEW
UP
DOWN
LOW
IMU TEMP MODE
PROPORTIONAL
BACKUP
AUTO OVERRIDE
EMERGENCY
GAIN PIPA
ZERO
TRIG
.297 .266 DIA THRU
.406 .375 DIA THRU
2 HOLES
.078 .047 R 8 PLACES
.828 .812 2 PLACES
.328 .297 2 PLACES
.266 .234 R
11.625
8.938
6.578 6.547
6.250
4.750
3.891 3.859
1.562
1.312
.875
.096
7.875
4.500
2.375
1.438
.938
3.375
6.250
1.000
.500
9.125
11.000
11.125
13.218
15.312
17.875
18.750
20.625
21.875
.166 .159 DIA THRU
100° CSINK TO .305 DIA
4 HOLES
.2016 .2001 DIA
DO NOT BREAK
4 HOLES
SEE NOTE 13
.516 .484 DIA
.266 .234 R
4 PLACES
.391 .359 R
4 PLACES
.516 .484
4 PLACES
6.015 5.984
3.766 3.734
3.094 3.062
3.453 3.422
2.953 2.922
6.266 6.234
5.766 5.734
3.703 3.672
7.641 7.609
3.828 3.797
2.203 2.172
1.641 1.609
45°
22½°
6.328 6.297
2.391 2.359
2.516 2.484
16
15
14
13
12
11
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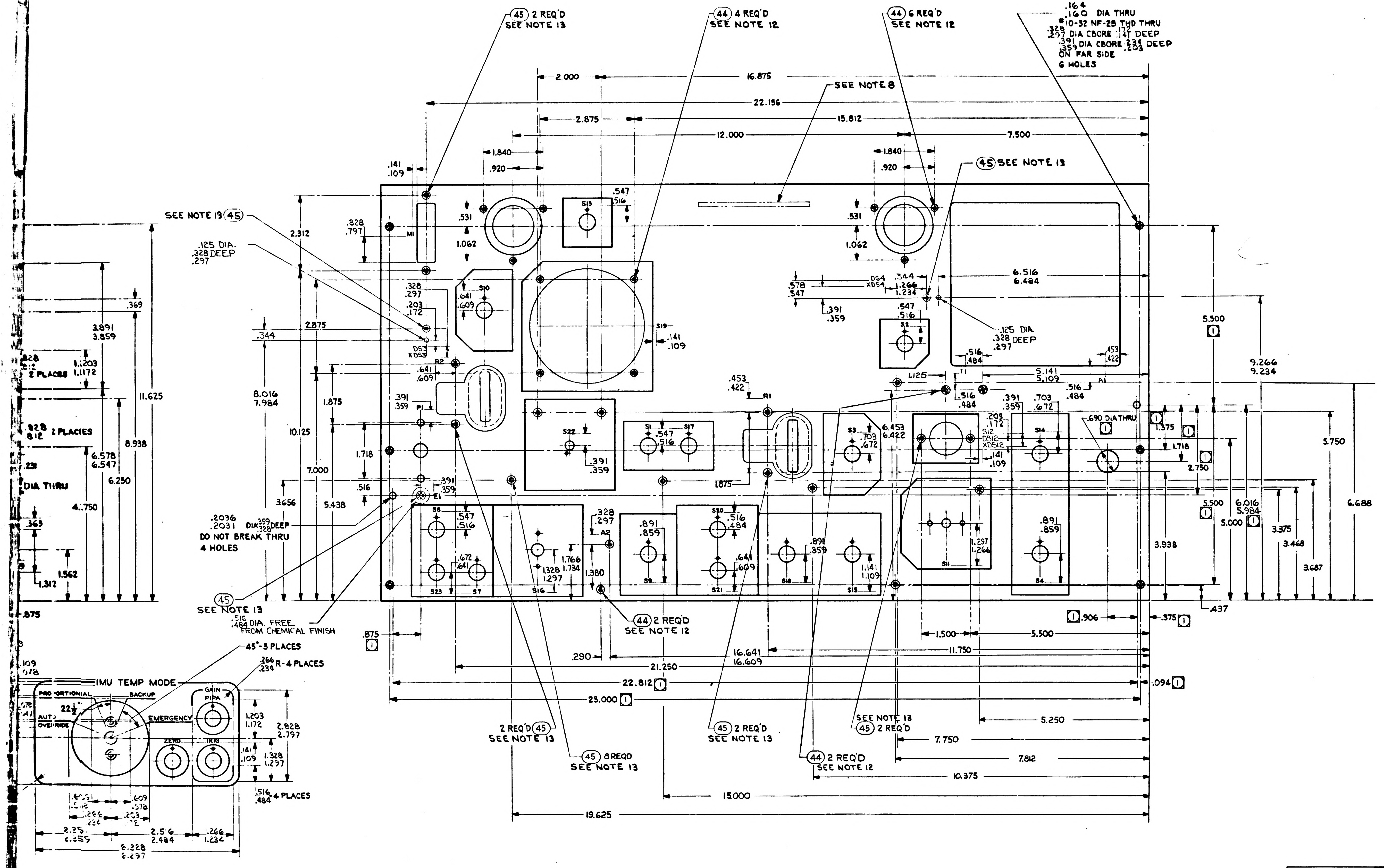
9
8
H
G
F
E
D
C
B
A

1015016


(45) 2 REQ'D SEE NOTE 13
(44) 4 REQ'D SEE NOTE 12
(44) 6 REQ'D SEE NOTE 12
.164 .160 DIA THRU
#10-32 NF-2B THD THRU
.328 .297 DIA CBORE .172 .141 DEEP
.391 .359 DIA CBORE .234 .203 DEEP ON FAR SIDE
6 HOLES
SEE NOTE 8
(45) SEE NOTE 13
SEE NOTE 13 (45)
.125 DIA. .328 .297 DEEP
.125 DIA .328 .297 DEEP
.690 DIA THRU
.2036 .2031 DIA .359 .328 DEEP
DO NOT BREAK THRU
4 HOLES
(45) SEE NOTE 13
.516 .484 DIA. FREE FROM CHEMICAL FINISH
45°-3 PLACES
.266 .234 R-4 PLACES
.516 .484 4 PLACES
IMU TEMP MODE
PROPORTIONAL
BACKUP
AUTO OVERRIDE
EMERGENCY
GAIN PIPA
ZERO
IRIG
2 PLACES
DIA THRU
(44) 2 REQ'D SEE NOTE 12
2 REQ'D (45) SEE NOTE 13
(45) 8 REQD SEE NOTE 13
(45) 2 REQ'D SEE NOTE 13
(44) 2 REQ'D SEE NOTE 12
SEE NOTE 13 (45) 2 REQ'D
M1 S13 S10 S19 S22 S1 S17 S3 S12 S14 S2 S8 S23 S7 S16 S9 S20 S21 S18 S15 S11 S4
DS3 XDS3 DS4 XDS4 DS12 XDS12
P1 P2 E1 A2 R1 T1
22.812 23.000 22.156 16.875 15.812 12.000 7.500 21.250 19.625 15.000 10.375 7.812 7.750 5.250 11.750 5.500 1.500 16.641 16.609
11.625 10.125 8.938 8.016 7.984 7.000 6.250 5.438 6.688 5.750 9.266 9.234 6.016 5.984 5.500 5.000 3.938 3.375 3.468 3.687

10 5016

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R W Kaind DATE 21 APR 64
CHECKED Ed Foster 6 MAY 64
APPROVAL D W Mi
APPROVAL J F K 6/5/64
NASA APPROVAL 6/16/64
MIT APPROVAL 6/16/64

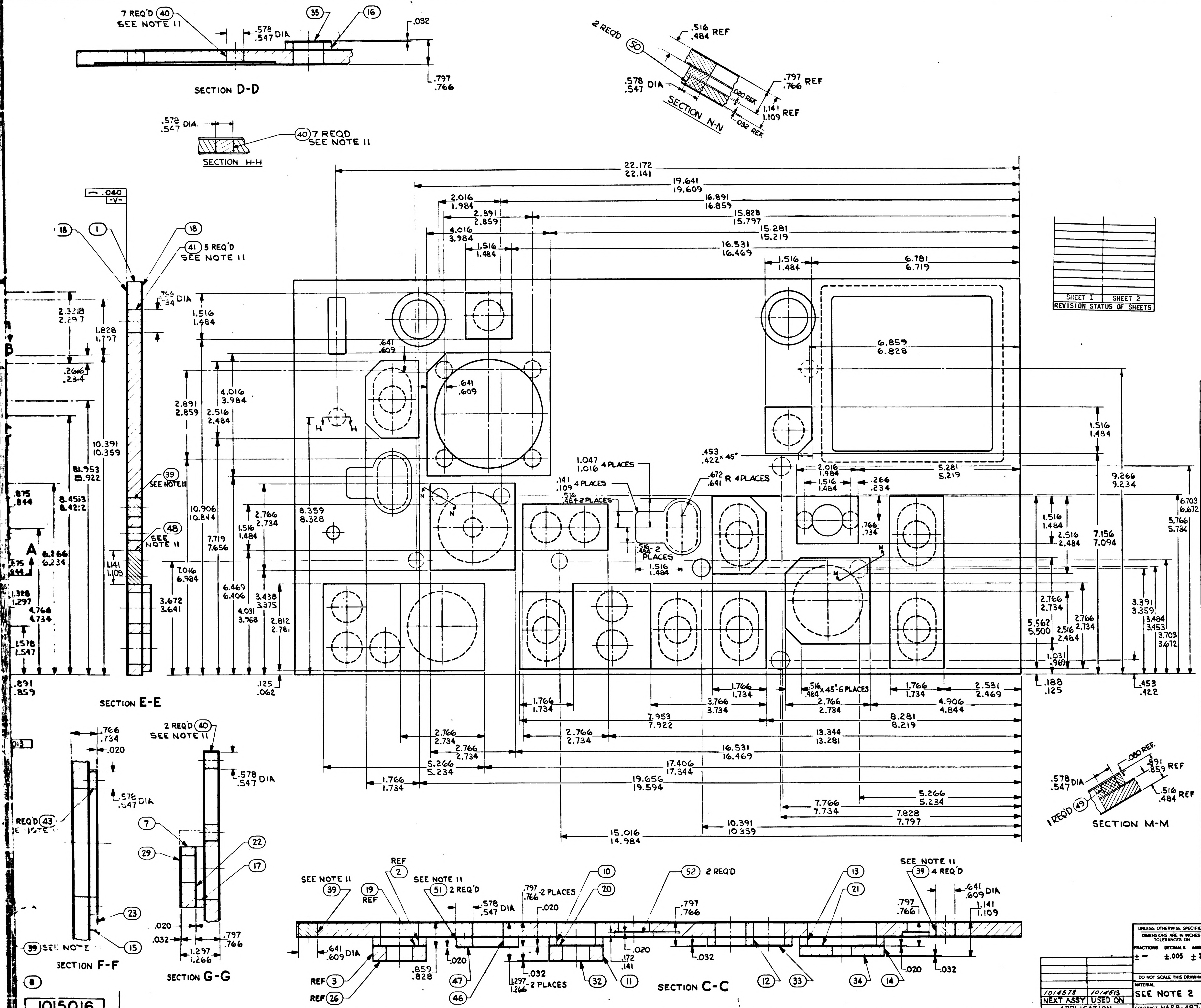
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

PANEL
G & N INDICATOR CONTROL
(INSEPARABLE)

CODE IDENT NO.
SIZE J
1015016
SCALE 1:1
SHEET 2 OF 2

27 1015016

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD



SECTION D-D
7 REQ'D (40) SEE NOTE 11
.578 .547 DIA
(35)
(16)
.032
.797 .766
2 REQ'D (50)
.516 .484 REF
.578 .547 DIA
.797 .766 REF
.080 REF.
1.141 1.109 REF
.032 REF
SECTION N-N
.578 .547 DIA.
(40) 7 REQD SEE NOTE 11
SECTION H-H
22.172 22.141
19.641 19.609
16.891 16.859
15.828 15.797
15.281 15.219
16.531 16.469
2.016 1.984
2.891 2.859
4.016 3.984
1.516 1.484
6.781 6.719
6.859 6.828
9.266 9.234
7.156 7.094
5.562 5.500
1.047 1.016 4 PLACES
.141 .109 4 PLACES
.516 .484 2 PLACES
.672 .641 R 4 PLACES
.453 .422 x 45°
.516 .484 x 45° 6 PLACES
(18) (1) (18) (41) 5 REQ'D SEE NOTE 11
.040 -V-
(39) SEE NOTE 11
(48) SEE NOTE 11
SECTION E-E
2 REQ'D (40) SEE NOTE 11
(43) REQ'D SEE NOTE
(39) SEE NOTE
SECTION F-F
(7) (29) (22) (17) (23) (15)
SECTION G-G
SEE NOTE 11 (39)
(19) REF
(2) REF
SEE NOTE 11 (51) 2 REQ'D
(10) (20)
(52) 2 REQ'D
(13) (21)
SEE NOTE 11 (39) 4 REQ'D
REF (3)
REF (26)
(47) (46) (32) (11) (12) (33) (34) (14)
SECTION C-C
.578 .547 DIA
.080 REF.
.891 .859 REF
.516 .484 REF
1 REQ'D (49)
SECTION M-M

SHEET 1	SHEET 2

REVISION STATUS OF SHEETS

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
53	1	↑ -053	FACE-PAD
52	2	-052	FACE-PAD
51	2	-051	INSERT CORE PAD
50	2	-050	↑
49	1	-049	INSERT CORE PAD
48	1	-048	INSERT-CORE, PANEL
47	1	-047	FACE-PAD
46	1	1015016-046	CORE-HONEYCOMB, PAD
45	19	1000115-3	↑ ↑ ↑
44	22	1000115-2	INSERT-THREADED, SELF-LOCKING
43	4	↑ -043	INSERT-CORE, PAD
42	1	-042	↑ ↑ ↑
41	11	-041	
40	16	-040	
39	11	-039	
38	1	-038	INSERT-CORE, PANEL
37	1	-037	RING
36	1	-036	↑ ↑
35	2	-035	
34	1	-034	
33	1	-033	
32	1	1015016-032	FACE-PAD
31			
30	1	↑ -030	↑ ↑
29	2	-029	
28	1	-028	
27	1	-027	
26	1	-026	
25	2	-025	
24	1	-024	
23	1	-023	
22	1	-022	
21	1	-021	
20	1	-020	
19	1	-019	FACE-PAD
18	2	-018	FACE-PANEL
17	1	-017	↑ ↑ ↑
16	2	-016	
15	1	-015	
14	1	-014	
13	1	-013	
12	1	-012	
11	1	-011	
10	1	1015016-010	CORE-HONEYCOMB, PAD
9			
8	1	↑ -008	↑ ↑ ↑
7	2	-007	
6	1	-006	
5	1	-005	
4	1	-004	
3	1	-003	
2	1	-002	CORE-HONEYCOMB, PAD
1	1	1015016-001	CORE-HONEYCOMB, PANEL

LIST OF PARTS AND MATERIALS

1014578	1014513
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.005 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 2
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R W Keisel DATE 21 APR 64
CHECKED Ed Foster 6 MAY 64
APPROVAL 6 MAY 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

PANEL
G & N INDICATOR CONTROL
(INSEPARABLE)

CODE IDENT NO.
SIZE J
1015016
SCALE 1:1
SHEET 1 OF 2

1015016

1015016

2/1015016

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. MATERIAL:
   - A. ITEMS 1 THRU 17 AND ITEM 46: HONEYCOMB IN ACCORDANCE WITH MIL-C-7438C, 1/8 CELL SIZE, .001 FOIL GAUGE (PERFORATED CELL WALLS) ALUMINUM ALLOY PER (5052-H39), 4.5 DENSITY CORE.
   - ① B. ITEMS 18 THRU 25 AND ITEMS 47 & 52: .020 THK AL ALY PER QQ-A-362, TEMPER T-3 (TYPE 2024-T3)(ES-2104).
   - ① C. ITEMS 26 THRU 35: .032 THK AL ALY PER QQ-A-362, TEMPER T-3 (TYPE 2024-T3)(ES-2104).
   - ① D. ITEM 36 & 53 .080 THK AL ALY PER QQ-A-362, TEMPER T-3 (TYPE 2024-T3)(ES-2104).
   - ① E. ITEM 37: AL ALY PER QQ-A-362, TEMPER T-3 (TYPE 2024-T3) (ES-2104).
   - F. ITEMS 38 THRU 43 AND 48 THRU 51: AL ALY PER QQ-A-268, TEMPER T-4 (TYPE 2024-T4)(ES-2104).

3. ADHESIVE: ADHESIVE FOR METALLIC CONSTRUCTION IS TO BE PER MIL-A-25463(ASG), TYPE II, CLASS 2.

4. UNLESS OTHERWISE SPECIFIED:
   - A. ALL EDGES MUST BE .005 TO .015 R OR CHAMFER.
   - B. SURFACE ROUGHNESS MUST NOT EXCEED 125/✓.
   - C. ALL EDGES ON SURFACE V AND ON BUILD UPS ON OPPOSITE SIDE MUST BE .030 TO .040 RADIUS.

5. MUST BE FREE FROM BURRS.

6. FINISH:
   - ① A. CHEMICAL FILM PER MIL-C-5541(ES-591).
   - ① B. APPLY ZINC CHROMATE PRIMER PER MIL-P-6808 (ES-2589).
   - ② C. APPLY TT-E-527(ES-2602) LUSTERLESS ENAMEL (GREY), COLOR NO. 36231 OF FED-STD-595, TO FRONT AND SIDES OF PANEL, PER ND1002110.

② 7. CHARACTERS, BORDER LINES, POSITION MARKS AND ARROWS ON FRONT OF PANEL TO BE SILK SCREENED PER ND1002112 USING ND1002111 LUSTERLESS (WHITE) ENAMEL, COLOR NO. 37875 OF FED-STD-595. UNLESS OTHERWISE SPECIFIED CHARACTERS TO BE .125HIGH FUTURA DEMIBOLD PER ND 1002122. CENTRALIZE AS SHOWN. BORDER LINES, POSITION MARKS AND ARROWS TO BE .031 WIDE.

8. IDENTIFY USING DWG. NO. AND REVISION LETTER PER ND 1002019.

9. CHARACTERS ON REAR OF PANEL, EXCEPT MFR'S SYMBOL, TO BE MARKED IN .125HIGH BLACK CHARACTERS IN POSITION SHOWN PER ND 1002019.

10. BAND ALL EXPOSED HONEYCOMB CORE EDGES PER ND1002178 USING EPOXY PUTTY PER ND1002177.

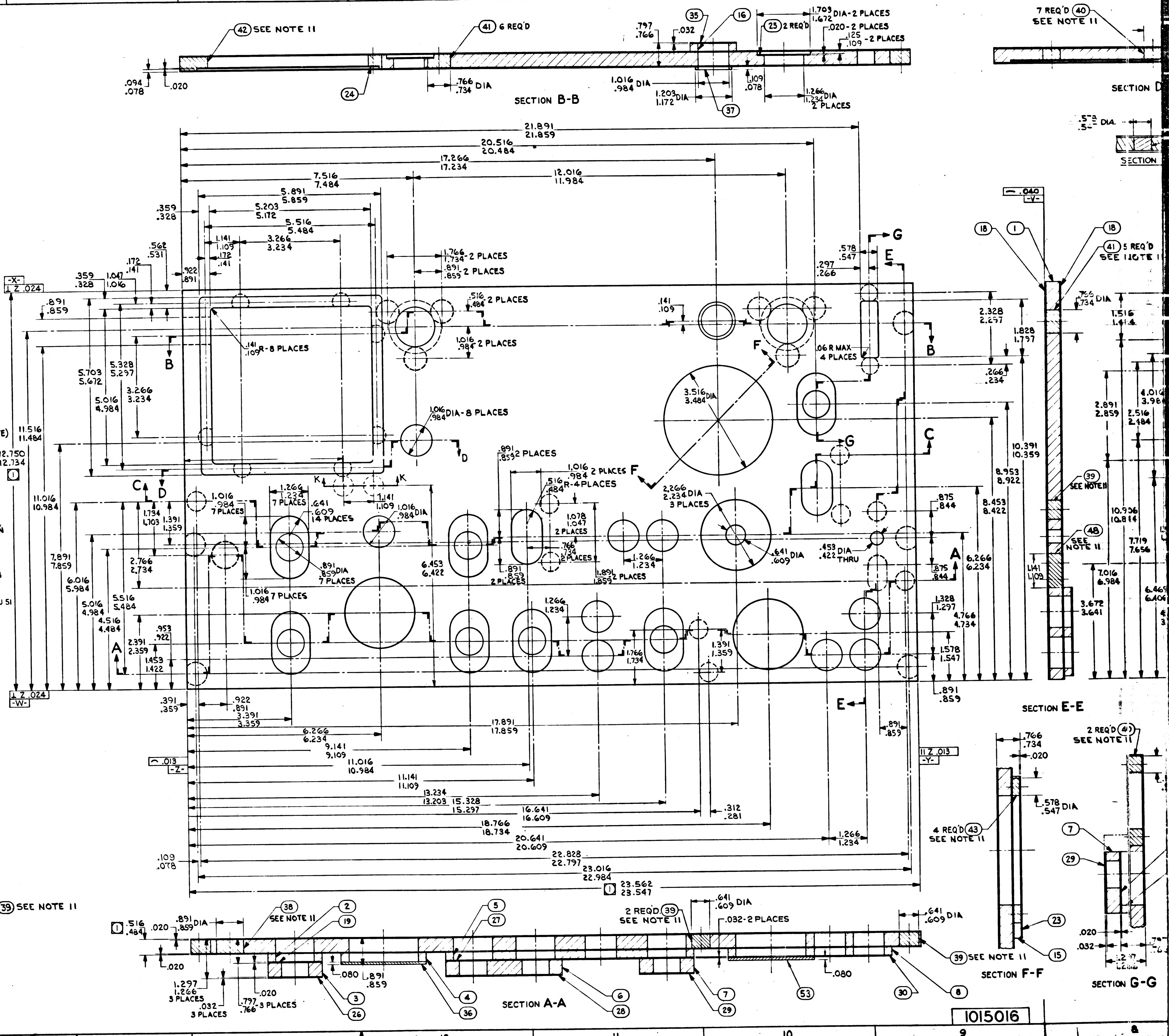
11. TOLERANCE FOR LOCATION OF ITEMS 38 THRU 43 AND 48 THRU 51 15±.031. HOLE LOCATIONS SHALL BE AS SPECIFIED.

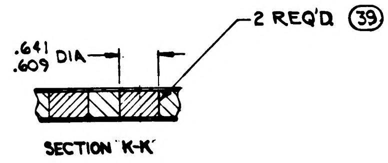
12. .169/.165 DIA .344/.312 DEEP
10-32 UNF-2B THD .205/.190 DEEP
82° C'SINK TO .194 DIA
INSTALL ITEM (44) .010 TO .030
BELOW EXPOSED SURFACE OF FACE.
22 HOLES

13. .194/.190 DIA .391/.359 DEEP
12-28 UNF-2B THD .225/.210 DEEP
82° C'SINK TO .220 DIA
INSTALL ITEM (45) .010 TO .030
BELOW EXPOSED SURFACE OF FACE.
11 HOLES

① 14. CONTROLLED BY ICD MH01-01004-116.

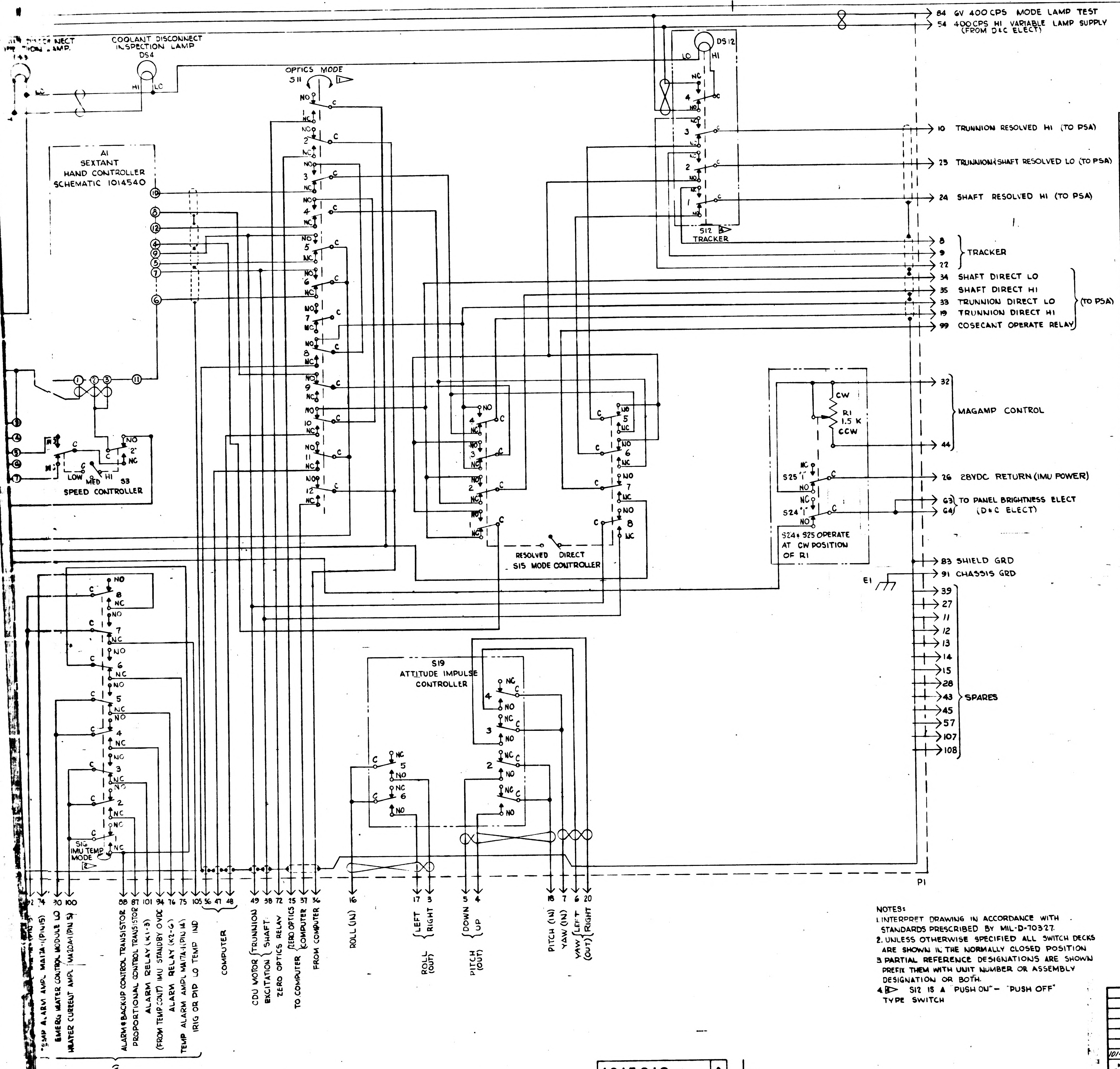
② 15. CONTROLLED BY ICD MH01-01046-416.


16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
(42) SEE NOTE 11
(41) 6 REQ'D
(24)
.094
.078
.020
.766
.734 DIA
SECTION B-B
(35)
(16)
(25) 2 REQ'D
1.703
1.672 DIA-2 PLACES
.020-2 PLACES
.125
.109 -2 PLACES
.797
.766
.032
1.016
.984 DIA
1.203
1.172 DIA
(37)
.109
.078
1.266
1.234 DIA
2 PLACES
7 REQ'D (40)
SEE NOTE 11
SECTION D
.578
.547 DIA.
SECTION
21.891
21.859
20.516
20.484
17.266
17.234
12.016
11.984
7.516
7.484
5.891
5.859
5.203
5.172
5.516
5.484
3.266
3.234
1.141
1.109
.172
.141
.359
.328
.562
.531
.922
.891
1.047
1.016
-X-
⊥ Z .024
.891
.859
1.766
1.734 -2 PLACES
.891
.859 2 PLACES
.516
.484 2 PLACES
1.016
.984 2 PLACES
.141
.109 R-8 PLACES
1.016
.984 DIA-8 PLACES
.141
.109
.578
.547
.297
.266
G
E
B
F
3.516
3.484 DIA
.06 R MAX
4 PLACES
2.328
2.297
1.828
1.797
.266
.234
C
D
5.703
5.672
5.328
5.297
5.016
4.984
3.266
3.234
11.516
11.484
12.750
12.734
①
11.016
10.984
.891
.859 2 PLACES
1.016 2 PLACES F
.516
.484 R-4 PLACES
1.266
1.234
7 PLACES
1.016
.984
7 PLACES
.641
.609
14 PLACES
1.141
1.109
1.016
.984 DIA
K
K
1.734
1.703
1.391
1.359
1.078
1.047
2 PLACES
.766
.734
2 PLACES
2.266
2.234 DIA
3 PLACES
.641
.609 DIA
.453
.422 DIA THRU
.875
.844
A
.891
.859 DIA
7 PLACES
1.016
.984 7 PLACES
6.453
6.422
.891
.859 2 PLACES
1.891
1.859 2 PLACES
1.266
1.234
7.891
7.859
6.016
5.984
2.766
2.734
5.516
5.484
5.016
4.984
4.516
4.484
2.391
2.359
.953
.922
1.453
1.422
1.266
1.234
1.766
1.734
1.391
1.359
1.328
1.297
1.578
1.547
10.391
10.359
8.953
8.922
8.453
8.422
6.266
6.234
4.766
4.734
.875
.844
⊥ Z .024
-W-
.391
.359
.922
.891
3.391
3.359
6.266
6.234
9.141
9.109
11.016
10.984
11.141
11.109
13.234
13.203
15.328
15.297
16.641
16.609
17.891
17.859
18.766
18.734
20.641
20.609
22.828
22.797
23.016
22.984
23.562
23.547
.312
.281
1.266
1.234
.891
.859
E
.109
.078
⌒ .013
-Z-
// Z .013
-Y-
— .040
-V-
(18)
(1)
(18)
(41) 5 REQ'D
SEE NOTE 11
.766
.734 DIA
1.516
1.484
(39)
SEE NOTE 11
(48)
SEE NOTE 11
2.891
2.859
2.516
2.484
4.016
3.984
10.936
10.814
7.719
7.656
7.016
6.984
3.672
3.641
1.141
1.109
SECTION E-E
(38)
SEE NOTE 11
(2)
(19)
(5)
(27)
2 REQ'D (39)
SEE NOTE 11
.641
.609 DIA
.032-2 PLACES
.641
.609 DIA
.516
.484
.020
.891
.859 DIA
.020
1.297
1.266
3 PLACES
.032
3 PLACES
.797
.766 -3 PLACES
.020
.080
.891
.859
(3)
(26)
(4)
(36)
SECTION A-A
(6)
(28)
(7)
(29)
(53)
.080
(30)
(8)
(39) SEE NOTE 11
.766
.734
.020
2 REQ'D (41)
SEE NOTE 11
.578
.547 DIA
4 REQ'D (43)
SEE NOTE 11
(7)
(29)
(23)
(15)
.020
.032
SECTION F-F
SECTION G-G
1015016


2 REQ'D (39) SEE NOTE 11
.641
.609 DIA
SECTION K-K

171015016

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 10950		2 JUL 64	IWF J.E.G.



84 6V 400 CPS MODE LAMP TEST
54 400 CPS HI VARIABLE LAMP SUPPLY (FROM D&C ELECT)
COOLANT DISCONNECT INSPECTION LAMP
DS4
DS3
HI
LO
DS12
OPTICS MODE
S11
A1
SEXTANT
HAND CONTROLLER
SCHEMATIC 1014540
NO
NC
C
S12
TRACKER
10 TRUNNION RESOLVED HI (TO PSA)
25 TRUNNION/SHAFT RESOLVED LO (TO PSA)
24 SHAFT RESOLVED HI (TO PSA)
8
9
22
TRACKER
34 SHAFT DIRECT LO
35 SHAFT DIRECT HI
33 TRUNNION DIRECT LO
19 TRUNNION DIRECT HI
99 COSECANT OPERATE RELAY
(TO PSA)
32
44
MAGAMP CONTROL
CW
R1
1.5 K
CCW
S25
S24
26 28VDC RETURN (IMU POWER)
G3
G4
TO PANEL BRIGHTNESS ELECT (D&C ELECT)
S24 & S25 OPERATE AT CW POSITION OF R1
RESOLVED
DIRECT
S15 MODE CONTROLLER
B3 SHIELD GRD
91 CHASSIS GRD
E1
39
27
11
12
13
14
15
28
43
45
57
107
108
SPARES
LOW
MED
HI
S3
SPEED CONTROLLER
S19
ATTITUDE IMPULSE CONTROLLER
S16
IMU TEMP MODE
P1
72
74
30
100
88
87
101
94
76
75
105
56
47
48
49
38
72
25
37
36
16
17
3
5
4
18
7
6
20
TEMP ALARM AMPL MA17A-1 (PIN 15)
EMERG HEATER CONTROL MODULE LO
HEATER CURRENT AMPL MA20A-1 (PIN 5)
ALARM & BACK-UP CONTROL TRANSISTOR
PROPORTIONAL CONTROL TRANSISTOR
ALARM RELAY (K1-3)
(FROM TEMP CONT) IMU STANDBY 0VDC
ALARM RELAY (K2-6)
TEMP ALARM AMPL MA17A-1 (PIN 14)
IRIG OR PIP LO TEMP IND
(PSA)
COMPUTER
CDU MOTOR EXCITATION TRUNNION SHAFT
ZERO OPTICS RELAY
TO COMPUTER ZERO OPTICS COMPUTER
FROM COMPUTER
ROLL (IN)
ROLL (OUT) LEFT RIGHT
PITCH (OUT) DOWN UP
PITCH (IN)
YAW (IN)
YAW (OUT) LEFT RIGHT

REF DES	PART NO	DESCRIPTION	VALUE	TOL	RATING
A1	1014558	SEXTANT HAND CONT			
DS3	1010268-2	LAMP			
DS4	1010268-2				
DS12	1010624-2				
E1	1010638-6	TERMINAL LUG			
M1					
P1	1010347-1	CONNECTOR			
R1	1010764-2	POTENTIOMETER	1.5 K		5 W
S1	1010480-1	SWITCH-PUSH BUTTON			
S2	1010480-2	PUSH BUTTON			
S3	1010478-1	TOGGLE			
S4	1010484-1	TOGGLE			
S7	1010480-1	PUSH BUTTON			
S8	1010480-2	PUSH BUTTON			
S9	1010479-2	TOGGLE			
S10	1010489-1	TOGGLE			
S11	1010494-3	ROTARY			
S12	1010627-2	PUSH BUTTON			
S13	1010480-2	PUSH BUTTON			
S14	1010478-1	TOGGLE			
S15	1010479-1	TOGGLE			
S16	1010494-2	ROTARY			
S17	1010480-1	PUSH BUTTON			
S18	1010478-2	TOGGLE			
S19	1014643	IMPULSE			
S20	1010480-3	PUSH BUTTON			
S21	1010480-3	PUSH BUTTON			
S23	1010480-2	PUSH BUTTON			
S24	1010435-001				
S25	1010435-001				
T1	1010492	TRANSFORMER			

1▷ S11 OPTICS MODE SWITCH

POSITION	DECK ACTUATED
ZERO OPTICS	1,2
MANUAL	3,4,5,6,7
COMPUTER	8,9,10,11,12

2▷ S16 IMU TEMP MODE SWITCH

POSITION	DECK ACTUATED
AUTO OVERIDE	3,5,6,7
PROPORTIONAL	2,6,7
BACK-UP	1
EMERGENCY	4,8

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED ALL SWITCH DECKS ARE SHOWN IN THE NORMALLY CLOSED POSITION
3. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX THEM WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
4. 3▷ S12 IS A "PUSH ON" - "PUSH OFF" TYPE SWITCH

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

1014578-02	1014513
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± # DECIMALS ± # ANGLES ± #
DO NOT SCALE THIS DRAWING
MATERIAL #
HEAT TREATMENT #
FINAL FINISH #

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN R. RABLING DATE 28 APR 64
CHECKED Ed Foster 28 APR 64
APPROVAL D. J. Mulling 28 APR 64
APPROVAL
NASA APPROVAL 6/16/64
MIT APPROVAL

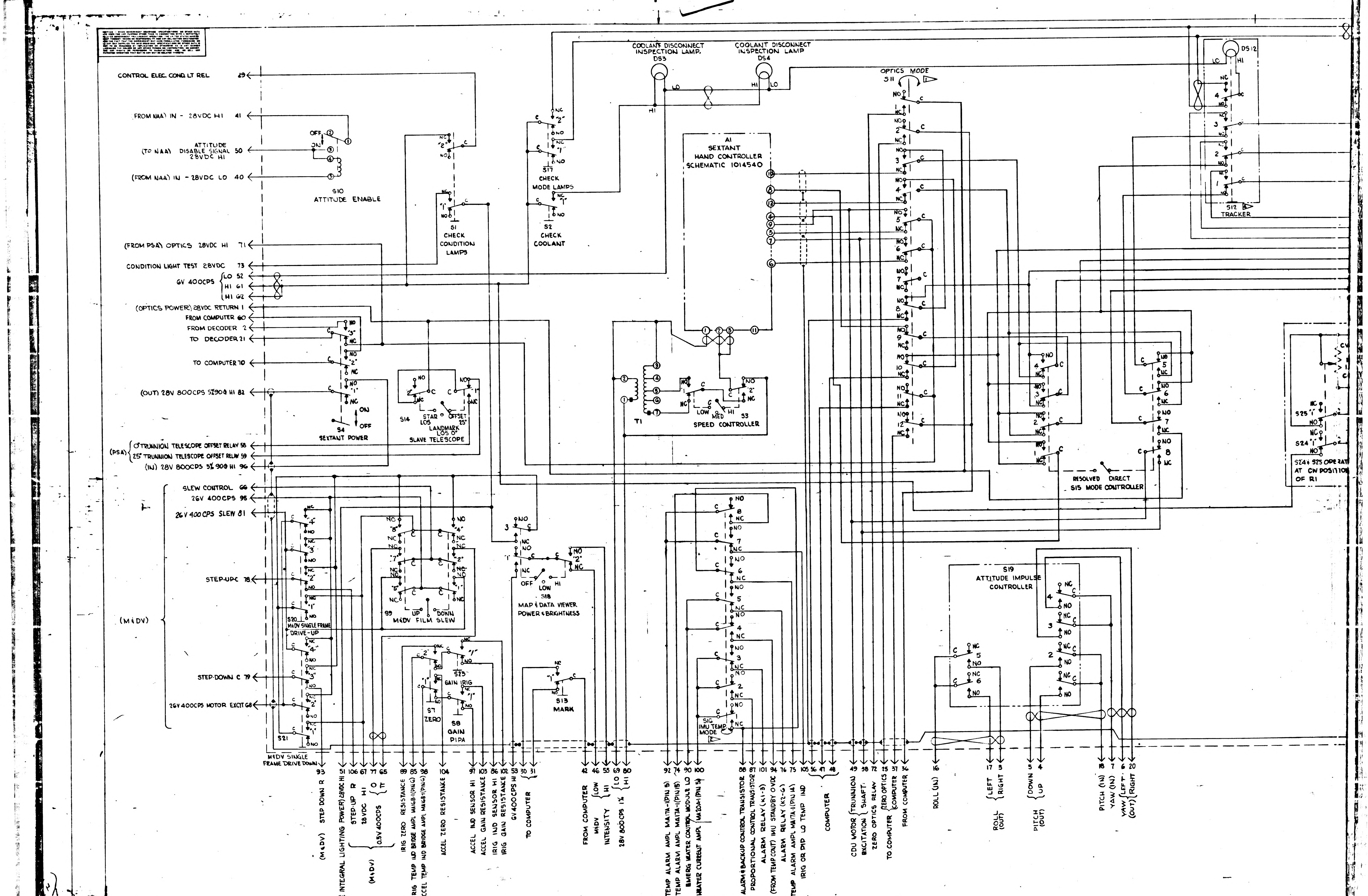
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G&N INDICATOR
CONTROL PANEL
SCHEMATIC DIAGRAM

CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1015018
SCALE #
WT
SHEET 1 OF 1

1015018 | A

27 1015018

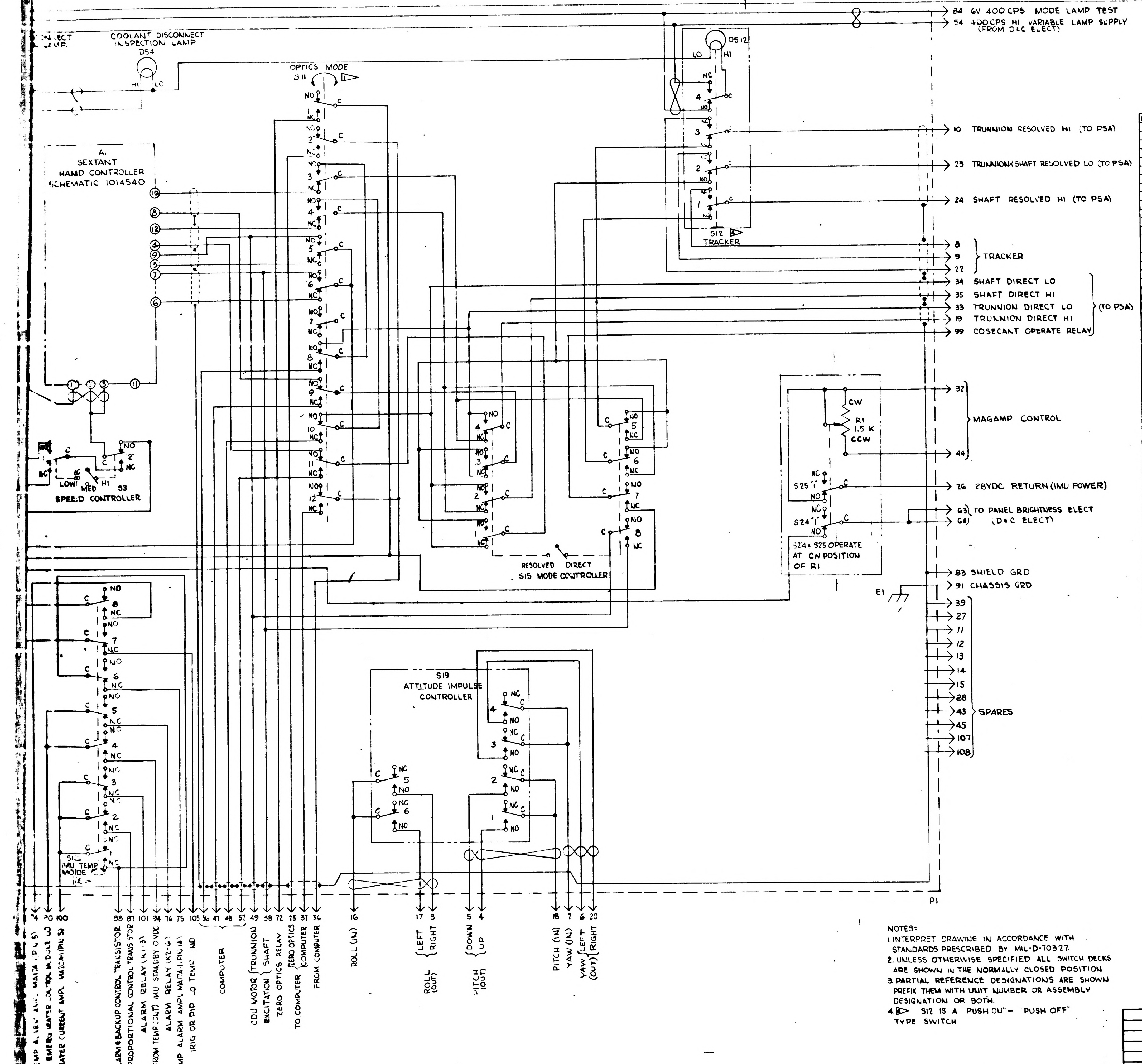

CONTROL ELEC. COND. LT REL 29
FROM NAA) IN - 28VDC HI 41
ATTITUDE (TO NAA) DISABLE SIGNAL 28VDC HI 50
(FROM NAA) IN - 28VDC LO 40
OFF ON
S10 ATTITUDE ENABLE
S1 CHECK CONDITION LAMPS
S17 CHECK MODE LAMPS
S2 CHECK COOLANT
COOLANT DISCONNECT INSPECTION LAMP DS3
COOLANT DISCONNECT INSPECTION LAMP DS4
HI LO
OPTICS MODE S11
A1 SEXTANT HAND CONTROLLER SCHEMATIC 1014540
DS12
S12 TRACKER
(FROM PSA) OPTICS 28VDC HI 71
CONDITION LIGHT TEST 28VDC 73
6V 400CPS LO 52 HI 61 HI 62
(OPTICS POWER) 28VDC RETURN 1
FROM COMPUTER 60
FROM DECODER 2
TO DECODER 21
TO COMPUTER 70
(OUT) 28V 800CPS 5%900 HI 82
S4 SEXTANT POWER
ON OFF
S14 STAR LOS LANDMARK LOS OF SLAVE TELESCOPE
OFFSET 25°
T1
LOW MED HI
S3 SPEED CONTROLLER
(PSA) 0°TRUNNION TELESCOPE OFFSET RELAY 58
25° TRUNNION TELESCOPE OFFSET RELAY 59
(IN) 28V 800CPS 5% 900 HI 96
SLEW CONTROL 66
26V 400CPS 95
26V 400CPS SLEW 81
STEP-UP C 78
(M&DV)
S20 M&DV SINGLE FRAME DRIVE-UP
STEP-DOWN C 79
26V 400CPS MOTOR EXCIT 68
S21 M&DV SINGLE FRAME DRIVE DOWN
S9 M&DV FILM SLEW UP DOWN
S18 MAP & DATA VIEWER POWER & BRIGHTNESS OFF LOW HI
S23 S7 ZERO
S8 GAIN PIPA GAIN IRIG
S13 MARK
RESOLVED DIRECT S15 MODE CONTROLLER
S24 & S25 OPERATE AT CW POSITION OF R1
S19 ATTITUDE IMPULSE CONTROLLER
SIG IMU TEMP MODE
NO NC C
93 STEP DOWN R (M&DV)
51 (M&DV & INTEGRAL LIGHTING POWER) 28VDC HI
106 STEP-UP R
67 28VDC HI
77 0.5V 400CPS
65 (M&DV)
89 IRIG ZERO RESISTANCE
85 IRIG TEMP IND BRIDGE AMPL MAIG-B (PIN G)
98 ACCEL TEMP IND BRIDGE AMPL MAIG-B (PIN G)
104 ACCEL ZERO RESISTANCE
97 ACCEL IND SENSOR HI
103 ACCEL GAIN RESISTANCE
86 IRIG IND SENSOR HI
102 IRIG GAIN RESISTANCE
53 6V 400CPS HI
30 31 TO COMPUTER
(PSA)
42 FROM COMPUTER
46 M&DV
55 INTENSITY LOW HI
69 80 28V 800CPS 1% LO HI
92 TEMP ALARM AMPL MA1TA-1 (PIN 5)
74 TEMP ALARM AMPL MA1TA-1 (PIN 15)
90 EMERG HEATER CONTROL MODULE LO
100 HEATER CURRENT AMPL MA1DA (PIN 5)
88 ALARM & BACKUP CONTROL TRANSISTOR
87 PROPORTIONAL CONTROL TRANSISTOR
101 ALARM RELAY (K1-3)
94 (FROM TEMP CONT) IMU STANDBY 0 VDC
76 ALARM RELAY (K2-6)
75 TEMP ALARM AMPL MA1TA-1 (PIN 14)
105 IRIG OR PIP LO TEMP IND
(PSA)
56 47 48 COMPUTER
49 CDU MOTOR EXCITATION TRUNNION
38 SHAFT
72 ZERO OPTICS RELAY
25 ZERO OPTICS
37 TO COMPUTER
36 COMPUTER FROM COMPUTER
16 ROLL (IN)
17 LEFT
3 RIGHT ROLL (OUT)
5 DOWN
4 UP PITCH (OUT)
18 PITCH (IN)
7 YAW (IN)
6 LEFT
20 RIGHT YAW (OUT)

1015018 A

1/1015018

1015018

SYM	ZONE	REVISIONS DESCRIPTION	CHG NO	DATE	APPD



84 6V 400 CPS MODE LAMP TEST
54 400 CPS HI VARIABLE LAMP SUPPLY (FROM D&C ELECT)
COOLANT DISCONNECT INSPECTION LAMP
DS4
HI
LC
OPTICS MODE
S11
1
DS12
S12
TRACKER
4
NO
NC
C
A1
SEXTANT
HAND CONTROLLER
SCHEMATIC 1014540
10 TRUNNION RESOLVED HI (TO PSA)
25 TRUNNION&SHAFT RESOLVED LO (TO PSA)
24 SHAFT RESOLVED HI (TO PSA)
8
9
22
TRACKER
34 SHAFT DIRECT LO
35 SHAFT DIRECT HI
33 TRUNNION DIRECT LO
19 TRUNNION DIRECT HI
99 COSECANT OPERATE RELAY
(TO PSA)
32
44
MAGAMP CONTROL
CW
R1
1.5 K
CCW
S25
S24
26 28VDC RETURN (IMU POWER)
G3
G4
TO PANEL BRIGHTNESS ELECT (D&C ELECT)
S24 & S25 OPERATE AT CW POSITION OF R1
LOW
MED
HI
S3
SPEED CONTROLLER
RESOLVED
DIRECT
S15 MODE CONTROLLER
83 SHIELD GRD
91 CHASSIS GRD
E1
39
27
11
12
13
14
15
28
43
45
107
108
SPARES
S19
ATTITUDE IMPULSE CONTROLLER
S16
IMU TEMP MODE
2
P1
74
90
100
TEMP ALARM AMPL MA17A (PIN 5)
EMERG HEATER CONTROL MODULE
HEATER CURRENT AMPL MA20A-1 (PIN 5)
88
87
101
94
76
75
105
ALARM & BACKUP CONTROL TRANSISTOR
PROPORTIONAL CONTROL TRANSISTOR
ALARM RELAY (K1-3)
(FROM TEMP CONT) IMU STANDBY 0 VDC
ALARM RELAY (K2-6)
TEMP ALARM AMPL MA17A-1 (PIN 14)
IRIG OR PIP LO TEMP IND
(PSA)
56
47
48
57
COMPUTER
49
38
72
25
37
36
CDU MOTOR EXCITATION TRUNNION SHAFT
ZERO OPTICS RELAY
TO COMPUTER ZERO OPTICS COMPUTER
FROM COMPUTER
16
ROLL (IN)
17
3
ROLL (OUT) LEFT RIGHT
5
4
PITCH (OUT) DOWN UP
18
7
6
20
PITCH (IN)
YAW (IN)
YAW (OUT) LEFT RIGHT

REF DES	PART NO	DESCRIPTION	VALUE	TOL	RATING
A1	1014558	SEXTANT HAND CONT			
DS3	1010268-2	LAMP			
DS4	1010268-2				
DS12	1010624-2				
E1	1010638-6	TERMINAL LUG			
M1					
P1	1010347-1	CONNECTOR			
R1	1010764-2	POTENTIOMETER	1.5 K		5 W
S1	1010480-1	SWITCH-PUSH BUTTON			
S2	1010480-2	PUSH BUTTON			
S3	1010478-1	TOGGLE			
S4	1010484-1	TOGGLE			
S7	1010480-1	PUSH BUTTON			
S8	1010480-2	PUSH BUTTON			
S9	1010479-2	TOGGLE			
S10	1010489-1	TOGGLE			
S11	1010494-3	ROTARY			
S12	1010627-2	PUSH BUTTON			
S13	1010480-2	PUSH BUTTON			
S14	1010478-1	TOGGLE			
S15	1010479-1	TOGGLE			
S16	1010494-2	ROTARY			
S17	1010480-1	PUSH BUTTON			
S18	1010478-2	TOGGLE			
S19	1014643	IMPULSE			
S20	1010480-3	PUSH BUTTON			
S21	1010480-3	PUSH BUTTON			
S23	1010480-2	PUSH BUTTON			
S24	1010435-001				
S25	1010435-001				
T1	1010492	TRANSFORMER			

1▷ S11 OPTICS MODE SWITCH

POSITION	DECK ACTUATED
ZERO OPTICS	1,2
MANUAL	3,4,5,6,7
COMPUTER	8,9,10,11,12

2▷ S16 IMU TEMP MODE SWITCH

POSITION	DECK ACTUATED
AUTO OVERIDE	3,5,6,7
PROPORTIONAL	2,6,7
BACK-UP	1
EMERGENCY	4,8

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED ALL SWITCH DECKS ARE SHOWN IN THE NORMALLY CLOSED POSITION
3. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX THEM WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
4. 4▷ S12 IS A "PUSH ON" - "PUSH OFF" TYPE SWITCH

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
LIST OF MATERIALS			

NEXT ASSY	USED ON
1014578-021	1014513

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± # DECIMALS ± # ANGLES ± #
DO NOT SCALE THIS DRAWING
MATERIAL #
HEAT TREATMENT #
FINAL FINISH #

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN R. D. RAEZING DATE 28 APR 64
CHECKED Ed Foster 28 APR 64
APPROVAL 28 APR 64
APPROVAL
NASA APPROVAL 6/16/64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

G&N INDICATOR
CONTROL PANEL
SCHEMATIC DIAGRAM

CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1015018
SCALE #
WT
SHEET 1 OF 1

1015018

1015018

2/1015018

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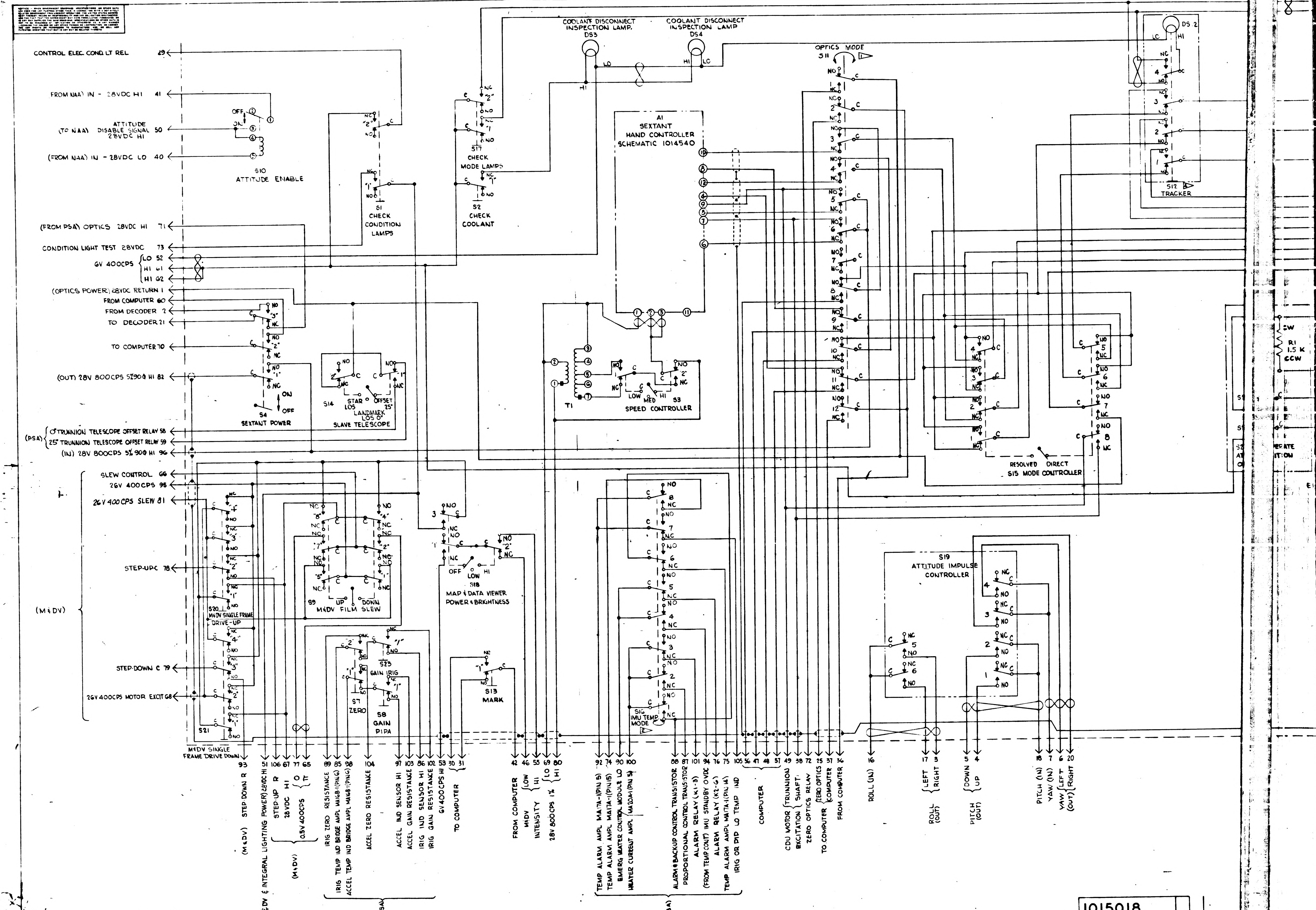


CONTROL ELEC. COND. LT REL 29
FROM NAA) IN - 28VDC HI 41
ATTITUDE DISABLE SIGNAL 28VDC HI (TO NAA) 50
(FROM NAA) IN - 28VDC LO 40
OFF
ON
S10 ATTITUDE ENABLE
S1 CHECK CONDITION LAMPS
S17 CHECK MODE LAMPS
S2 CHECK COOLANT
COOLANT DISCONNECT INSPECTION LAMP DS3
COOLANT DISCONNECT INSPECTION LAMP DS4
LO
HI
LC
A1 SEXTANT HAND CONTROLLER SCHEMATIC 1014540
OPTICS MODE S11
DS 2
S12 TRACKER
(FROM PSA) OPTICS 28VDC HI 71
CONDITION LIGHT TEST 28VDC 73
6V 400CPS LO 52
HI 61
HI 62
(OPTICS POWER) 28VDC RETURN 1
FROM COMPUTER 60
FROM DECODER 2
TO DECODER 21
TO COMPUTER 70
(OUT) 28V 800CPS 5% 900 HI 82
ON
OFF
S4 SEXTANT POWER
STAR LOS
LANDMARK LOS 0°
OFFSET 25°
S14 SLAVE TELESCOPE
T1
LOW
MED
HI
S3 SPEED CONTROLLER
(PSA) 0° TRUNNION TELESCOPE OFFSET RELAY 58
25° TRUNNION TELESCOPE OFFSET RELAY 59
(IN) 28V 800CPS 5% 900 HI 96
RESOLVED
DIRECT
S15 MODE CONTROLLER
2W
R1 1.5 K CCW
SLEW CONTROL 66
26V 400CPS 98
26V 400CPS SLEW 81
STEP-UP C 78
(M&DV)
STEP-DOWN C 79
26V 400CPS MOTOR EXCIT 68
S20 M&DV SINGLE FRAME DRIVE-UP
S21
M&DV SINGLE FRAME DRIVE DOWN
S9 UP DOWN M&DV FILM SLEW
OFF LOW HI
S18 MAP & DATA VIEWER POWER & BRIGHTNESS
S13 MARK
S7 ZERO
S8 GAIN PIPA
S23 GAIN IRIG
S16 IMU TEMP MODE
S19 ATTITUDE IMPULSE CONTROLLER
93 (M&DV) STEP-DOWN R
51 (M&DV & INTEGRAL LIGHTING POWER) 28VDC HI
106 STEP-UP R
67 28VDC HI
77 O
65 T
0.5V 400CPS
(M&DV)
89 IRIG ZERO RESISTANCE
85 IRIG TEMP IND BRIDGE AMPL MA16B-1 (PIN 6)
98 ACCEL TEMP IND BRIDGE AMPL MA16B-1 (PIN 9)
104 ACCEL ZERO RESISTANCE
97 ACCEL IND SENSOR HI
103 ACCEL GAIN RESISTANCE
86 IRIG IND SENSOR HI
102 IRIG GAIN RESISTANCE
53 6V 400CPS HI
(PSA)
30 31 TO COMPUTER
42 FROM COMPUTER
46 LOW
55 HI
M&DV INTENSITY
69 LO
80 HI
28V 800CPS 1%
92 TEMP ALARM AMPL MA17A-1 (PIN 5)
74 TEMP ALARM AMPL MA17A-1 (PIN 15)
90 EMERG HEATER CONTROL MODULE LO
100 HEATER CURRENT AMPL MA20A-1 (PIN 5)
88 ALARM & BACK-UP CONTROL TRANSISTOR
87 PROPORTIONAL CONTROL TRANSISTOR
101 ALARM RELAY (K1-3)
94 (FROM TEMP CONT) IMU STANDBY 0VDC
76 ALARM RELAY (K2-6)
75 TEMP ALARM AMPL MA17A-1 (PIN 14)
105 IRIG OR PIP LO TEMP IND
(PSA)
56 47 48 57 COMPUTER
49 CDU MOTOR TRUNNION
38 EXCITATION SHAFT
72 ZERO OPTICS RELAY
25 ZERO OPTICS
37 COMPUTER
TO COMPUTER
36 FROM COMPUTER
16 ROLL (IN)
17 LEFT
3 RIGHT
ROLL (OUT)
5 DOWN
4 UP
PITCH (OUT)
18 PITCH (IN)
7 YAW (IN)
6 LEFT
20 RIGHT
YAW (OUT)

1015018

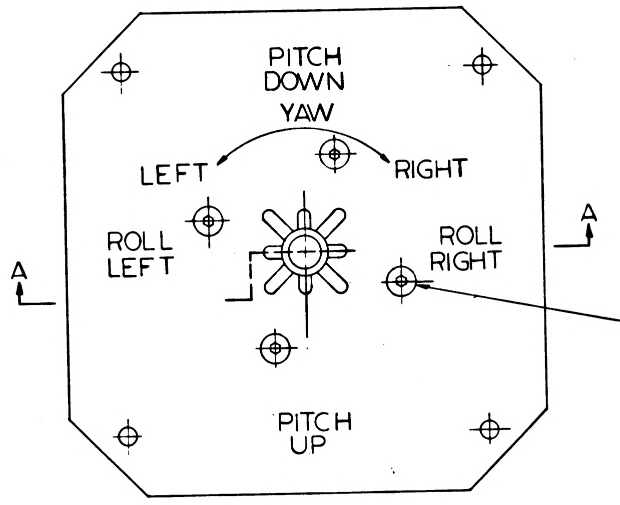
17 1015018

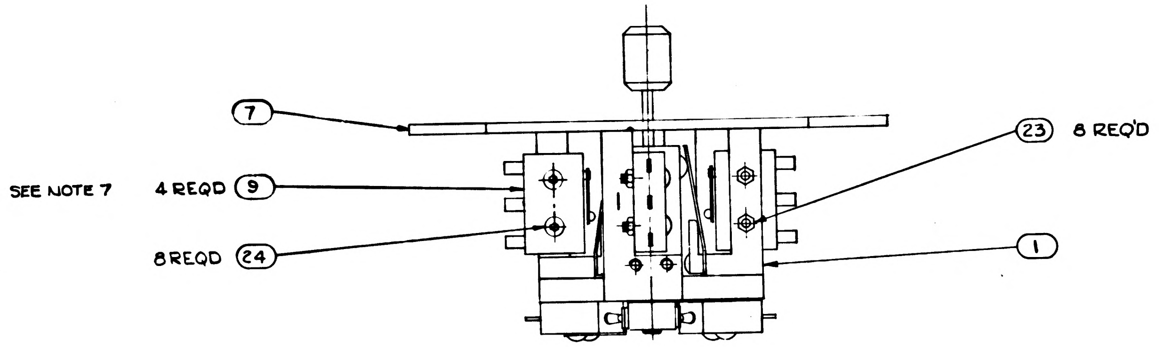
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

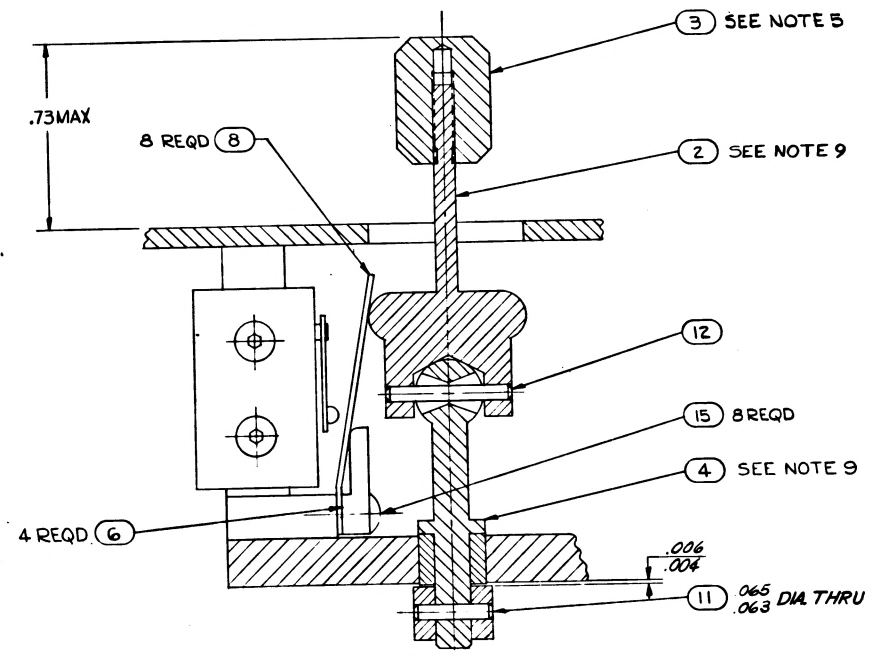
REVISIONS 10365			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISE PER TDRR 11630	26 AUG 64	

1. INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBE BY MIL-D-70327.
2. MUST BE FREE FROM BURRS AND SHARP CORNERS.
3. IDENTIFY USING DRAWING NUMBER AND APPLICABLE DASH NUMBER, REVISION LETTER, AND MANUFACTURERS SYMBOL AND SERIALIZE PER ND1002023.

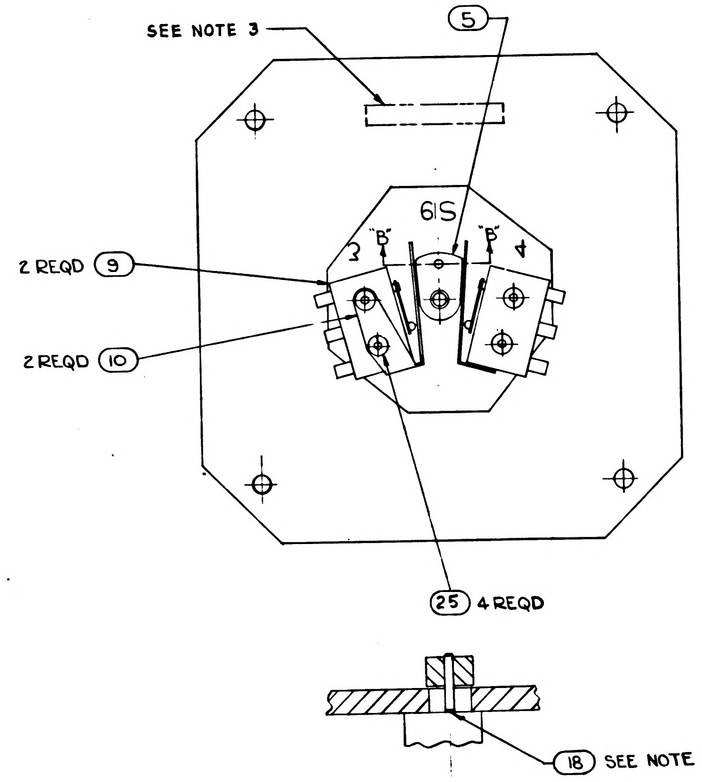
5. SECURE FIND (3) USING FIND (17) PER ND1002211.
6. FIND (18) TO BE FLUSH WITH FIND (1)
7. BOND FIND 9 (4 ONLY) TO FIND 1, USING FIND 21 & 22, PER ND1002004 SEMI-RIGID COMPOSITION.
   PROCEDURE:
   a. APPLY EPOXY TO INTERFACES OF FIND 9 AND FIND 1.
   b. ASSEMBLE USING FIND 23 AND FIND 24, ADJUSTING FIND 9 PER NOTE 8.
   c. CURE
8. THE SWITCHES, FIND 9, ARE TO BE ADJUSTED SUCH THAT THE SWITCH OR SWITCHES ASSOCIATED WITH THE DIRECTION OF DEFLECTION OF THE SHAFT, FIND 2, ARE ACTUATED WHEN FIND 2 IS .04 FROM THE CLOSED END OF THE SLOT, IN FIND 7.
9. *PROCEDURE FOR APPLICATION OF FIND 26:*
   A. PARTS SHALL BE FREE FROM OIL, GREASE AND DIRT BEFORE APPLICATION OF LUBRICANT.
   B. APPLY A FILM OF FIND 26 TO THE SPHERICAL SURFACE AND THE INSIDE SURFACES OF THE SLOT IN FIND 4, AND TO THE SURFACES OF THE .277 DIAMETER CAVITY IN FIND 2.
   C. REMOVE EXCESS LUBRICANT.
10. *VENDOR ITEM - SEE SPECIFICATION DRAWING*







PARTIAL VIEW A-A
SCALE 4:1



PARTIAL VIEW B-B

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
	AR	*MIL-M-7866*	*MOLYBDENUM DISULFIDE POWDER*	26
	4	NAS1352 C02 LL8	SCREW, SOC. HD. CAP	25
SEE NOTE 10	8	1010468-1	SCREW, SOC. HD. CAP	24
	8	MS35649-24	NUT, PLAIN, HEX.	23
SEE NOTE 10	AR	1010686	CATALYST	22
SEE NOTE 10	AR	1010657	EPOXY RESIN	21
	1	MS171435	PIN SPRING	18
	AR	*MIL-S-22473 GRADE C*	*SEALING COMPOUND*	17
SEE NOTE 10	4	1010477-12	SCREW, FLAT HD	16
SEE NOTE 10	8	1010618-3	SCREW, BUTTON HD	15
	1	MS171436	PIN, SPRING	12
	1	MS171433	PIN, SPRING	11
SEE NOTE 10	2	1010457-2	ACTUATOR, AUXILIARY	10
SEE NOTE 10	6	1010435-1	SWITCH, BASIC	9
	8	1014653	ACTUATOR SPRING	8
	1	1014671	PLATE, MOUNTING	7
	4	1014652	STOP BLOCK	6
	1	1014644	CAM, ACTUATOR	5
	1	1014645	SHAFT, FULCRUM	4
	1	1014669	KNOB, SHAFT ACTUATOR	3
	1	1014670	ACTUATOR & SHAFT	2
	1	1014649	HOUSING	1

LIST OF MATERIALS

1014578	1014578	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ±.02 DECIMALS ± — ANGLES ± — DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
NEXT ASSY	USED ON	MATERIAL —	ACSP PN	SWITCH- ATTITUDE IMPULSE ASSY
APPLICATION		HEAT TREATMENT —	DRAWN Pettigrew DATE 12 MAY 64 CHECKED 13 MAY64 APPROVAL E. Matz 13 MAY64 APPROVAL 6/23/64	CODE IDENT NO. SIZE E 1015020
		FINAL FINISH —	NASA APPROVAL MIT APPROVAL 23 Jul 64	SCALE 2:1 WT SHEET 1 OF 1

13 MAY 64

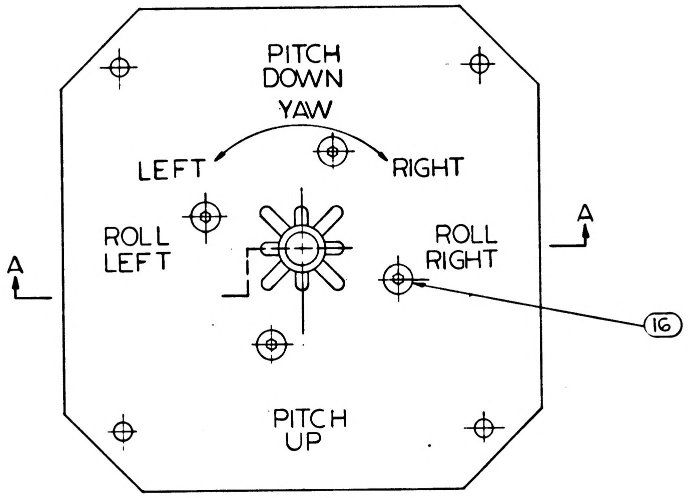
1015020 A

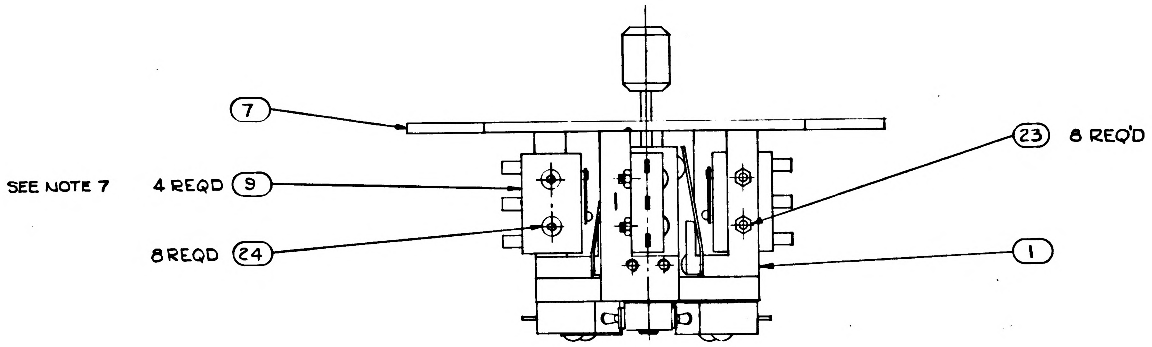
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL

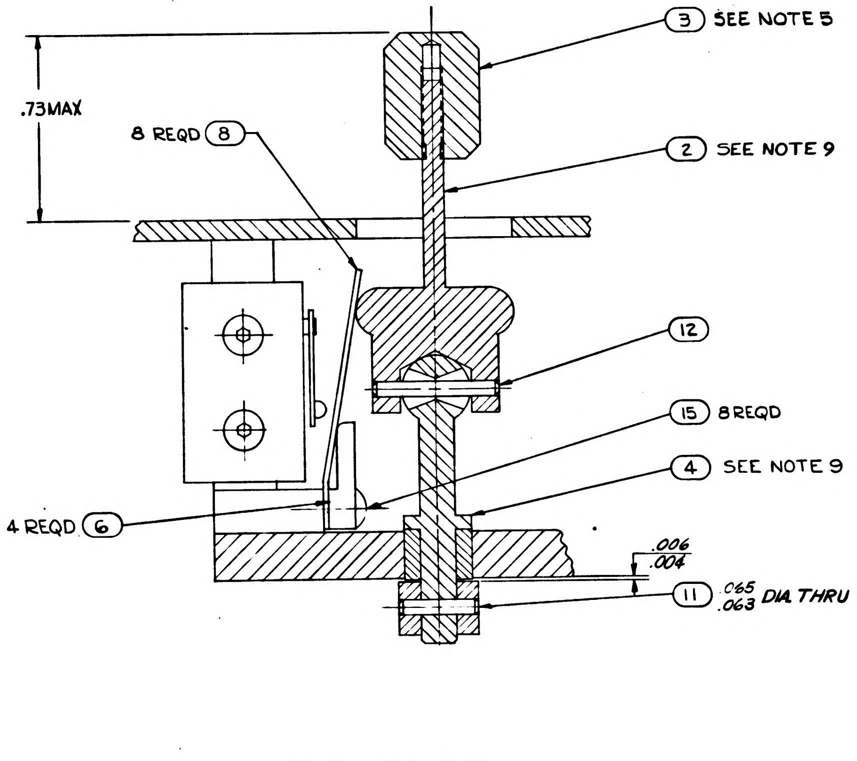
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1. INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBE BY MIL-D-70327.
2. MUST BE FREE FROM BURRS AND SHARP CORNERS.
3. IDENTIFY USING DRAWING NUMBER AND APPLICABLE DASH NUMBER, REVISION LETTER, AND MANUFACTURERS SYMBOL AND SERIALIZE PER ND1002023.

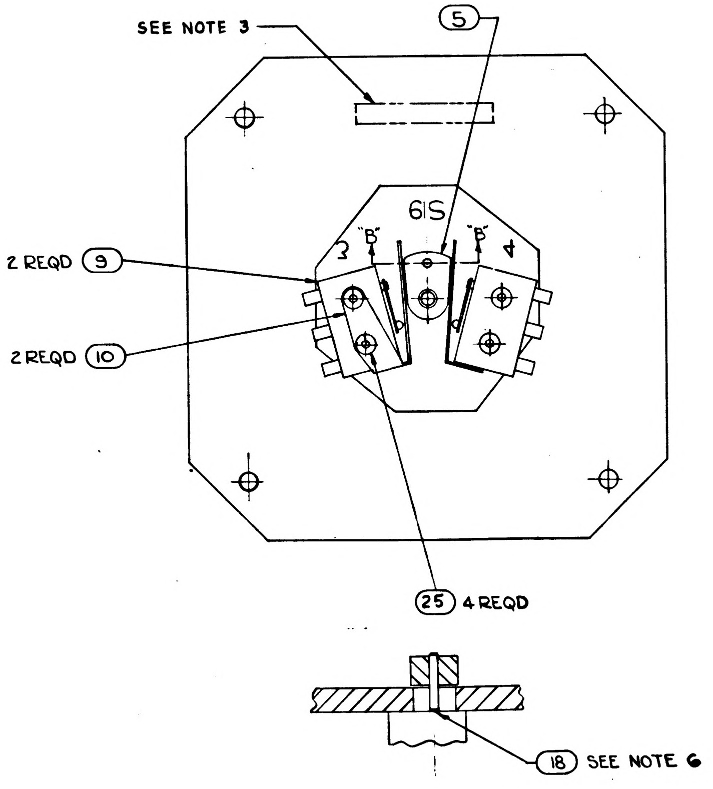
5. SECURE FIND ③ USING FIND ⑰ PER ND1002211.
6. FIND ⑱ TO BE FLUSH WITH FIND ①
7. BOND FIND 9 (4 ONLY) TO FIND 1, USING FIND 21 & 22, PER ND1002004 SEMI-RIGID COMPOSITION.
   PROCEDURE:
   a. APPLY EPOXY TO INTERFACES OF FIND 9 AND FIND 1.
   b. ASSEMBLE USING FIND 19 AND FIND 20, ADJUSTING FIND 9 PER NOTE 8.
   c. CURE
8. THE SWITCHES, FIND 9, ARE TO BE ADJUSTED SUCH THAT THE SWITCH OR SWITCHES ASSOCIATED WITH THE DIRECTION OF DEFLECTION OF THE SHAFT, FIND 2, ARE ACTUATED WHEN FIND 2 IS .04 FROM THE CLOSED END OF THE SLOT, IN FIND 7.
9. *PROCEDURE FOR APPLICATION OF FIND 26:*
   A. PARTS SHALL BE FREE FROM OIL, GREASE AND DIRT BEFORE APPLICATION OF LUBRICANT.
   B. APPLY A FILM OF FIND 26 TO THE SPHERICAL SURFACE AND THE INSIDE SURFACES OF THE SLOT IN FIND 4, AND TO THE SURFACES OF THE .277 DIAMETER CAVITY IN FIND 2.
   C. REMOVE EXCESS LUBRICANT.
10. *VENDOR ITEM - SEE SPECIFICATION DRAWING*







PARTIAL VIEW A-A
SCALE 4:1



PARTIAL VIEW B-B

	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	AR	*MIL-M-7866*	*MOLYBDENUM DISULFIDE POWDER*	26
	4	NAS1352 C02 LL8	SCREW, SOC. HD. CAP	25
SEE NOTE 10	8	1010468-1	SCREW, SOC. HD. CAP	24
	8	MS35649-24	NUT, PLAIN, HEX.	23
SEE NOTE 10	AR	1010686	CATALYST	22
SEE NOTE 10	AR	1010657	EPOXY RESIN	21
	1	MS171435	PIN SPRING	18
	AR	*MIL-S-22473 GRADE C*	*SEALING COMPOUND*	17
SEE NOTE 10	4	1010477-12	SCREW, FLAT HD	16
SEE NOTE 10	8	1010618-3	SCREW, BUTTON HD	15
	1	MS171436	PIN, SPRING	12
	1	MS171433	PIN, SPRING	11
SEE NOTE 10	2	1010457-2	ACTUATOR, AUXILIARY	10
SEE NOTE 10	6	1010435-1	SWITCH, BASIC	9
	8	1014653	ACTUATOR SPRING	8
	1	1014671	PLATE, MOUNTING	7
	4	1014652	STOP BLOCK	6
	1	1014644	CAM, ACTUATOR	5
	1	1014645	SHAFT, FULCRUM	4
	1	1014669	KNOB, SHAFT ACTUATOR	3
	1	1014670	ACTUATOR & SHAFT	2
	1	1014649	HOUSING	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1014578	1014578

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ±.02 DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Pettigrew DATE 12 MAY 64
CHECKED [illegible] 13 MAY 64
APPROVAL E. Mott 13 MAY 64
APPROVAL [illegible] 4/23/
NASA APPROVAL
MIT APPROVAL [illegible] 23 [illegible] 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SWITCH-
ATTITUDE IMPULSE
ASSY

CODE IDENT NO.
SIZE E 1015020
SCALE 2:1 WT SHEET 1 OF 1

[illegible] 13MAY64

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		UPGRADED FOR CLASS A RELEASE 13815		6 OCT. 64	WB

		1	—		9	1015064-021	CONTROL ELECTRONICS ASSEMBLY
		1	—		8	1014664-011	G & N INDICATOR CONTROL PANEL ASSEMBLY
		1	—		7	1014628-011	IMU CONTROL PANEL ASSEMBLY
		—	1		6	1015064-011	CONTROL ELECTRONICS ASSEMBLY
		1	1		5	1014532	OPTICS COVER ASSEMBLY
		—	1		4	1015053-011	G&N INDICATOR CONT. PANEL ASSY.
		1	1		3	1015065-011	D&C ELECTRONICS ASSEMBLY
		1	1		2	1014502-011	OPTICS SHROUD ASSEMBLY
		—	1		1	1015095-011	IMU CONTROL PANEL ASSEMBLY
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Litzow DATE 28 APRIL 64
CHECKED 28 APR 64
APPROVAL D.W. Mickey 28 APR 64
APPROVAL J. L. Kevin 10/20/64
NASA APPROVAL W. J. R 10-20-64
MIT APPROVAL 10/24/64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DISPLAY & CONTROL
GROUP

CODE IDENT NO.
SIZE C
1015023
SCALE —
SHEET 1 OF 1

MIL 1078C—P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		UPGRADED FOR CLASS A RELEASE 13815		6 OCT. 64	WB
D		REVISED PER TDRR 14863		21 DEC 64	J.K. W.D.

		/	–		10	1015065-021	D&C ELECTRONICS ASSEMBLY
		/	–		9	1015064-021	CONTROL ELECTRONICS ASSEMBLY
		/	–		8	1014664-011	G&N INDICATOR CONTROL PANEL ASSEMBLY
		/	–		7	1014628-011	IMU CONTROL PANEL ASSEMBLY
		–	/		6	1015064-011	CONTROL ELECTRONICS ASSEMBLY
		/	/		5	1014532	OPTICS COVER ASSEMBLY
		–	/		4	1015053-011	G&N INDICATOR CONT. PANEL ASSY.
		–	/		3	1015065-011	D&C ELECTRONICS ASSEMBLY
		/	/		2	1014502-011	OPTICS SHROUD ASSEMBLY
		–	/		1	1015095-011	IMU CONTROL PANEL ASSEMBLY
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − — DECIMALS + — − — ANGLES + — − —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Litzow DATE 28 APRIL 64
CHECKED 28 APR 64
APPROVAL D.W. 28 APR 64
APPROVAL 10/20/64
NASA APPROVAL 10-20-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DISPLAY & CONTROL
GROUP

CODE IDENT NO.
SIZE C
1015023
SCALE —
SHEET 1 OF 1

MIL 1078C—P

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		UPGRADED FOR CLASS A RELEASE 13815		6 OCT. 64	WB
D		REVISED PER TDRR 14863		21 DEC 64	J.K.
E		REVISED PER TDRR 17410		15 MAR 65	JHR

Ⓜ

		1	-		12	1023040-011	CONDITION ANNUNCIATOR ASSEMBLY
		-	1		11	1023014-011	CONDITION ANNUNCIATOR ASSEMBLY
		1	—		10	1015065-021	D&C ELECTRONICS ASSEMBLY
		1	—		9	1015064-021	CONTROL ELECTRONICS ASSEMBLY
		1	—		8	1014664-011	G&N INDICATOR CONTROL PANEL ASSEMBLY
		1	—		7	1014628-011	IMU CONTROL PANEL ASSEMBLY
		—	1		6	1015064-011	CONTROL ELECTRONICS ASSEMBLY
		1	1		5	1014532	OPTICS COVER ASSEMBLY
		—	1		4	1015053-011	G&N INDICATOR CONT. PANEL ASSY.
		—	1		3	1015065-011	D&C ELECTRONICS ASSEMBLY
		1	1		2	1014502-011	OPTICS SHROUD ASSEMBLY
		—	1		1	1015095-011	IMU CONTROL PANEL ASSEMBLY
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	+ —	+ —
– —	– —	– —

DO NOT SCALE THIS DRAWING

MATERIAL ______

CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN E. Litzow DATE 28 APRIL 64
CHECKED 28 APR 64
APPROVAL D.W. Mulaney 28 APR 64
APPROVAL J. J. Kevin 10/20/64
NASA APPROVAL 10-20-64
MIT APPROVAL 10/20/64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DISPLAY & CONTROL
GROUP

CODE IDENT NO.

SIZE C

1015023

SCALE —

SHEET 1 OF 1

MIL 1078C-P

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		UPGRADED FOR CLASS A RELEASE 13815		6 OCT. 64	WB
D		REVISED PER TDRR 14863		21 DEC 64	J.K W.D.
E		REVISED PER TDRR 17410		15 MAR 65	JHR
F		REVISED PER TDRR 22362		15 SEP 65	JWP AU

		1	-		13	1015065-041	D&C ELECTRONICS ASSEMBLY
		1	-		12	1023040-011	CONDITION ANNUNCIATOR ASSEMBLY
		-	1		11	1023014-011	CONDITION ANNUNCIATOR ASSEMBLY
		~~1~~	~~-~~		~~10~~	~~1015065-021~~	~~D&C ELECTRONICS ASSEMBLY~~
		1	—		9	1015064-021	CONTROL ELECTRONICS ASSEMBLY
		1	—		8	1014664-011	G&N INDICATOR CONTROL PANEL ASSEMBLY
		1	—		7	1014628-011	IMU CONTROL PANEL ASSEMBLY
		—	1		6	1015064-011	CONTROL ELECTRONICS ASSEMBLY
		1	1		5	1014532	OPTICS COVER ASSEMBLY
		—	1		4	1015053-011	G&N INDICATOR CONT. PANEL ASSY.
		—	1		3	1015065-011	D&C ELECTRONICS ASSEMBLY
		1	1		2	1014502-011	OPTICS SHROUD ASSEMBLY
		—	1		1	1015095-011	IMU CONTROL PANEL ASSEMBLY
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

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CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Litzow DATE 28 APRIL 64
CHECKED 28 APR 64
APPROVAL D.W. 28 APR 64
APPROVAL 10/20/64
NASA APPROVAL 10-20-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DISPLAY & CONTROL
GROUP

CODE IDENT NO.
SIZE C
1015023
SCALE —
SHEET 1 OF 1

1015023 G

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		UPGRADED FOR CLASS A RELEASE 13815		6 OCT. 64	WB
Ⓜ D		REVISED PER TDRR 14863		21 DEC 64	J.K.
Ⓜ E		REVISED PER TDRR 17410		15 MAR 65	JHK
Ⓜ F		REVISED PER TDRR 22362		15 SEP 65	JWP AU
G		REVISED PER TDRR 24992		11 JAN 66	RLP MEM

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011				
		—	1		14	1015065-031	D&C ELECTRONICS ASSEMBLY
		1	-		13	1015065-041	D&C ELECTRONICS ASSEMBLY
		1	-		12	1023040-011	CONDITION ANNUNCIATOR ASSEMBLY
		-	1		11	1023014-011	CONDITION ANNUNCIATOR ASSEMBLY
		~~1~~	~~—~~		~~10~~	~~1015065-021~~	~~D&C ELECTRONICS ASSEMBLY~~
		1	—		9	1015064-021	CONTROL ELECTRONICS ASSEMBLY
		1	—		8	1014664-011	G&N INDICATOR CONTROL PANEL ASSEMBLY
		1	—		7	1014628-011	IMU CONTROL PANEL ASSEMBLY
		—	1		6	1015064-011	CONTROL ELECTRONICS ASSEMBLY
		1	1		5	1014532	OPTICS COVER ASSEMBLY
		—	1		4	1015053-011	G&N INDICATOR CONT. PANEL ASSY.
		~~—~~	~~1~~		~~3~~	~~1015065-011~~	~~D&C ELECTRONICS ASSEMBLY~~
		1	1		2	1014502-011	OPTICS SHROUD ASSEMBLY
		—	1		1	1015095-011	IMU CONTROL PANEL ASSEMBLY

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT
DRAWN E. Litzow DATE 28 APRIL 64
CHECKED 28 APR 64
APPROVAL D.W. Mintry 28 APR 64
APPROVAL 10/20/64
NASA APPROVAL 10-20-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DISPLAY & CONTROL
GROUP

CODE IDENT NO. 80230
SIZE C
1015023
SCALE —
SHEET 1 OF 1

MIL 1078C—P

G 1015023 B

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		UPGRADED FOR CLASS A RELEASE 13815		6 OCT. 64	WB
D		REVISED PER TDRR 14863		21 DEC 64	J.K.
E		REVISED PER TDRR 17410		15 MAR 65	JHR
F		REVISED PER TDRR 22362		15 SEP 65	JWP AU
G		REVISED PER TDRR 24992		11 JAN 66	RLP MEM
H		REVISED PER TDRR 25467		26 JAN 66	LK

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
041	031	021	011				
1	—	—	—	ECP246	16	1015065-061	D&C ELECTRONICS ASSEMBLY
—	1	—	—	ECP246	15	1015065-051	D&C ELECTRONICS ASSEMBLY
—	—	—	1	ECP137	14	1015065-031	D&C ELECTRONICS ASSEMBLY
—	—	1	—	ECP137	13	1015065-041	D&C ELECTRONICS ASSEMBLY
—	—	1	—		12	1023040-011	CONDITION ANNUNCIATOR ASSEMBLY
—	—	—	1		11	1023014-011	CONDITION ANNUNCIATOR ASSEMBLY
		~~1~~	~~—~~	SERIES 100	~~10~~	~~1015065-021~~	~~D&C ELECTRONICS ASSEMBLY~~
1	—	1	—	SERIES 100	9	1015064-021	CONTROL ELECTRONICS ASSEMBLY
1	—	1	—	SERIES 100	8	1014664-011	G&N INDICATOR CONTROL PANEL ASSEMBLY
1	—	1	—	SERIES 100	7	1014628-011	IMU CONTROL PANEL ASSEMBLY
—	1	—	1	SERIES 50	6	1015064-011	CONTROL ELECTRONICS ASSEMBLY
1	1	1	1	SERIES 50	5	1014532	OPTICS COVER ASSEMBLY
—	1	—	1	SERIES 50	4	1015053-011	G&N INDICATOR CONT. PANEL ASSY.
		~~—~~	~~1~~	SERIES 50	~~3~~	~~1015065-011~~	~~D&C ELECTRONICS ASSEMBLY~~
1	1	1	1	SERIES 50	2	1014502-011	OPTICS SHROUD ASSEMBLY
—	1	—	1	SERIES 50	1	1015095-011	IMU CONTROL PANEL ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —

DO NOT SCALE THIS DRAWING

MATERIAL ______

CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DWG. NO CONTRACT
DRAWN DATE 28 APRIL 64
CHECKED 28 APR 64
APPROVAL D.W. 28 APR 64
APPROVAL 10/20/64
NASA APPROVAL 10-20-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DISPLAY & CONTROL GROUP

CODE IDENT NO. 80230
SIZE C
1015023
SCALE ——
SHEET 1 OF 1

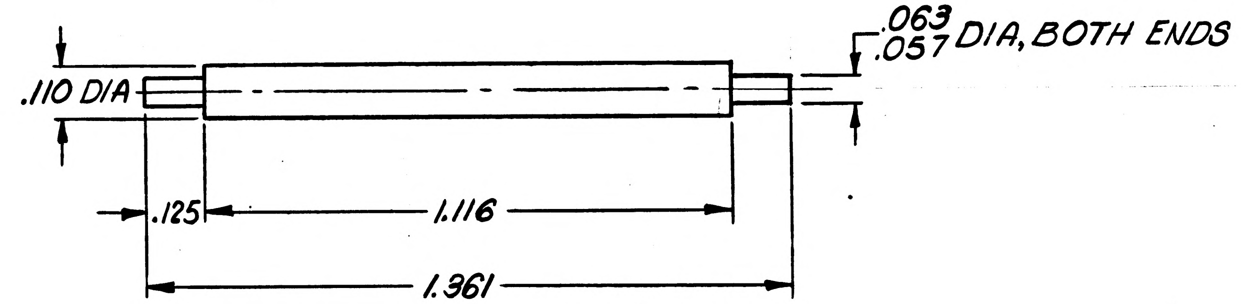
MIL 1078C—P

1015028

REVISIONS 14366

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A1	-	COMPLETELY REVISED	DO58518	3 OCT 64	WF

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: 1010692-5 TYPE GEE GLASS EPOXY ROD.
3. MUST BE FREE FROM BURRS AND SHARP EDGES.



1014638-011	1015065-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + —, DECIMALS ±.005, ANGLES + —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. LaHue DATE 15 JUN 64
CHECKED R W Heise 16 JUN 64
APPROVAL R. Priest 17 JUN 64
APPROVAL A. C. Smith 11-4-64
NASA APPROVAL W J Rhine 11-18-64
MIT APPROVAL
2 Charleston 17 JUN 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SPACER, INSULATED

CODE IDENT NO.
SIZE C
1015028
SCALE 4:1
SHEET 1 OF 1

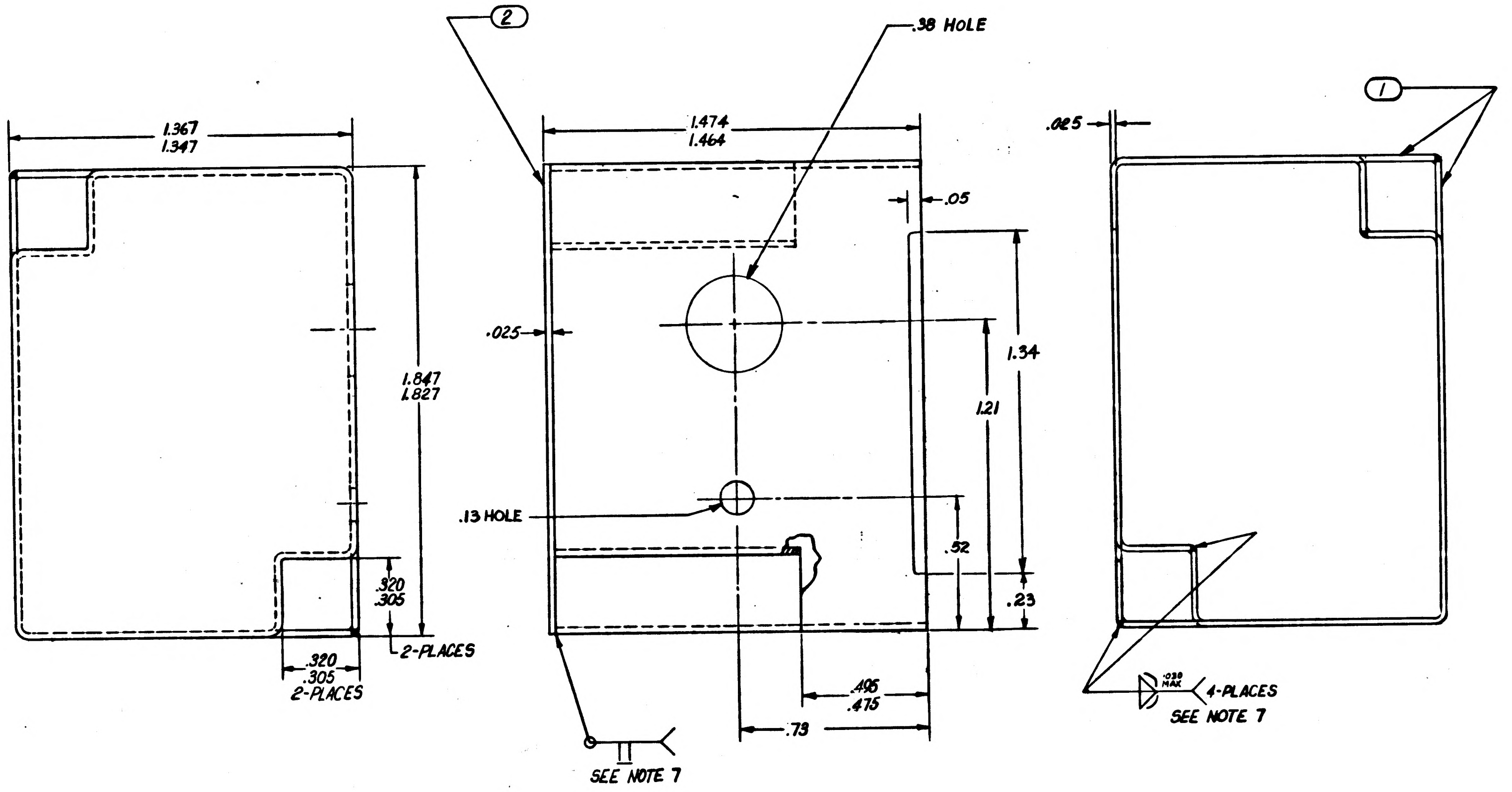
MIL 1077C—P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A,	-	COMPLETELY REVISED	DO58518	3 OCT 64	JRS W.K

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER ND1002019.
3. UNLESS OTHERWISE SPECIFIED:
   a. INSIDE BEND RADII TO BE .03 R.
   b. MACHINED CORNERS TO BE .005 TO .015 R. OR CHAMFER.
4. MUST BE FREE FROM BURRS AND SHARP EDGES.
5. MATERIAL : ALUMINUM ALLOY PER QQ-A-250/11, TEMPER O ,
6. FINISH: ANODIZE PER MIL-A-8625, TYPE II BLACK
7. DIP BRAZE ITEM ① TO ITEM ② PER ND1002073 USING ITEM ③. OR FUSION WELD ITEIM ① TO ITEM ② PER MIL-W-8604 USING ITEM ④.
8. MINIMUM BEND RELIEF PERMISSABLE WHERE REQUIRED.



ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
4	AR	QQ-R-566	WELDING RODS
3	AR	QQ-B-655	CLASS 4 ALLOY 4047, FS-B AL-Si BRAZING ALLOY
2	1	1015031-002	TOP, HOUSING
1	2	1015031-001	SIDE, HOUSING

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015039-011	1015064-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − —
DECIMALS ±.02
ANGLES + — − —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN C. Knotek DATE 31 Jul 64
CHECKED W. Diehl 1 Oct '64
APPROVAL L. Jaje 2 Oct '64
APPROVAL 11-4-64
NASA APPROVAL W.J. Rhine 11-12-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HOUSING, RELAY AND DIODE MODULE
(INSEPARABLE ASSEMBLY)

CODE IDENT NO.
SIZE E
1015031
SCALE 4:1
SHEET 1 OF 1

1015031

MASTER

RELEASED BY TDRR 13892

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1015095	1015023	A	UPGRADED FOR CLASS A RELEASE	6 OCT 64	FK

Charleston
17 SEP 64

	REV										
	SHEET										
REV STATUS	REV	A	A	A	A	A	A	A	A	A	A
OF SHEETS	SHEET	1	2	3	4	5	6	7	8	9	10

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN 19 AUG 64 DATE
CHECKED W. Buehl 17 Sep '64
APPROVAL D. J. Moran 18 Sep '64
APPROVAL 10/21/64

NASA APPROVAL 10-29-64
MIT APPROVAL

CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
IMU CONTROL PANEL

CODE IDENT NO.	SIZE		REV
	A	1015035	A

SCALE FULL

SHEET 1 OF 10

GRI WIRING HARNESS A + 1015035

PENNANT NOTE	GENERAL NOTES
1	SEE CONDUCTOR CHART, PENNANT NOTE 1.
2	SEE CONDUCTOR CHART, PENNANT NOTE 2.
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	LACE HARNESS USING ITEM 11. FORM RUNNING LOCKSTITCH AT .50 INCH SPACING.
8	IDENTIFY USING DRAWING NO. AND REVISION LETTER PER ND 1002019 (ES-267).
9	SOLDER ELECTRICAL CONNECTIONS PER ND1002071 USING ITEMS 7 AND 8.
10	Y OR N IN TINNED COLUMN INDICATES YES OR NO.
11	LENGTHS SPECIFIED ARE FOR CONDUCTORS BEFORE ATTACHING TO AN ACCESSORY.
12	GRID IS SHOWN FOR DIMENSIONING PURPOSES.
13	GRID MODULE IS 1 INCH BASIC.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015035
SCALE-NONE | REV LTR + A | SHEET 2 OF 10

GRI WIRING HARNESS A + 1015035

PENNANT NOTE	GENERAL NOTES
14	UNLESS OTHERWISE SPECIFIED - FEATURE CENTERLINES AT TRUE POSITION WITHIN + OR - .25 INCH RELATIVE TO GRID. ENDS OF CONDUCTORS OR ACCESSORIES AT TRUE POSITION WITHIN + OR - .12 INCH RELATIVE TO GRID. TRUE POSITION DIMENSIONS ARE REGARDLESS OF FEATURE SIZE.
15	BREAKOUTS OF INDIVIDUAL OR GROUPS OR CONDUCTORS ARE MINIMUM CONFIGURATION.
16	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
17	TWIST CONDUCTORS A1 AND A2, A4 AND A5, A6 AND A7, A20 AND A21, 18 TURNS PER FOOT.
18	INSPECT PER REQUIREMENTS OF DWG. 1015035.
19	CONDUCTOR INDIVIDUAL LENGTH COLUMN FOR REFERENCE ONLY
20	INSTALL CRIMP STYLE TERMINALS PER ND1002206
21	PARTIAL REF DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH 50A2.
22	CLEAR GLYPTAL WILL NOT BE USED ON ENDS OF LACING TAPE.
23	FILL UP UNASSIGNED CONTACT HOLES IN ITEM 2, USING ITEM 3.
24	PRESS ITEM 12 OVER CONTACTS IN ITEM 2 AFTER MOISTURE PROOFING CONNECTOR.
25	Fabricate Harness in Accordance with ND 1002032.
26	Pot back of Connector P1 in Accordance with ND 1002236.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015035
SCALE-NONE | REV LTR + A | SHEET 3 OF 10

GRI WIRING HARNESS A + 1015035

PENNANT NOTE | GENERAL NOTES

26 TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP		CUT	
		WIRE	JACKET	WIRE	SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015035
SCALE-NONE | REV LTR + A | SHEET 4 OF 10

WIRING HARNESS A 1015035

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015035-001	Wire 1010789-1 24 AWG, Yellow, 42 ft 4 in. total length
16	2	1	1010825- 1	Connector, Plug Electrical
16	3	108	1010738- 5	Contact, Pin and Socket
16	5	1	1010638- 6	Terminal-Lug
	6	1	1015035-002	Wire, 1010789-6 22 AWG, Yellow, 6 in. total length
	7	AR	QQ-S-571 SN60 Wrap 2	Solder (ES-2175 Alloy 1)
	8	AR	MIL-F-14256	Flux
16	9	52	1010476-82	Insulation, Sleeving
16	10	8	1010476-112	Insulation, Sleeving
16	11	1	1012507- 1	Tape, Lacing and Tying
16	12	1	1010812- 3	Gasket
16	13	AR	1012503- 1	Compound Polyurethane
16	14	AR	1012503- 2	Compound Polyurethane
16	15	AR	1012504- 1	Primer Metal
16	16	AR	1012504- 2	Primer Metal
16	17	AR	1012505- 1	Primer PVC

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015035
SCALE-NONE | REV LTR A | SHEET 5 of 10

MIL 2084-4-64

GRI WIRING HARNESS A + 1015035

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC 1 ITEM NO.	NO.
A 1	1	[redacted]	P1- 1	10	N	3	1	M1- 1 (+)	25	Y	10	2
A 2	1	[redacted]	P1- 2	10	N	3	1	M1- 2 (-)	25	Y	10	2
A 3	1	[redacted]	P1- 12	10	N	3	1	S4- 1-NC	25	Y	9	7
A 4	1	[redacted]	P1- 14	10	N	3	1	M1- 3 (+)	25	Y	10	2
A 5	1	[redacted]	P1- 15	10	N	3	1	M1- 4 (-)	25	Y	10	2
A 6	1	[redacted]	P1- 29	10	N	3	1	M1- 5 (+)	25	Y	10	2
A 7	1	[redacted]	P1- 28	10	N	3	1	M1- 6 (-)	25	Y	10	2
A 8	1	[redacted]	P1- 56	10	N	3	1	S3- 1-NC	25	Y	9	4
A 9	1	[redacted]	P1- 68	10	N	3	1	S4- 3-C	25	Y	9	5
A 10	1	[redacted]	P1- 69	10	N	3	1	S4- 3-NC	25	Y	9	5
A 11	1	[redacted]	P1- 18	10	N	3	1	S4- 1-NO	25	Y	9	7
A 12	1	[redacted]	P1- 78	10	N	3	1	S3- 2-C	25	Y	9	3
A 13	1	[redacted]	P1- 79	10	N	3	1	XDS10-HI	25	Y	9	16
A 14	1	[redacted]	P1- 81	10	N	3	1	S4- 2-NC	25	Y	9	6
A 15	1	[redacted]	P1- 92	10	N	3	1	XDS6-HI	25	Y	9	14
A 16	1	[redacted]	P1- 93	10	N	3	1	S3- 2-NC	25	Y	9	4
A 17	1	[redacted]	P1- 94	10	N	3	1	XDS8-HI	25	Y	9	19
A 18	1	[redacted]	P1-104	10	N	3	1	XDS5-HI	25	Y	9	8

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015035
SCALE - NONE | REV LTR + A | SHEET 6 OF 10

MIL 2085 · 4-63 WIR

GRI WIRING HARNESS A + 1015035

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC 1 ITEM NO.	NO.
A 19	1	[redacted]	P1-105	10	N	3	1	XDS7-HI	25	Y	9	13
A 20	1	[redacted]	P1-107	10	N	3	1	M1-XDS- 8	25	Y	10	2
A 21	1	[redacted]	P1-108	10	N	3	1	M1-XDS- 7	25	Y	10	2
A 22	1	[redacted]	M1-XDS- 8	25	Y		2	XDS8-LO	25	Y	9	19
A 23	1	[redacted]	P1- 22	25	Y	3	1	XDS9-HI	25	Y	9	15
A 24	1	[redacted]	XDS5-LO	25	Y	9	8	XDS6-LO	25	Y	9	14
A 25	1	[redacted]	XDS6-LO	25	Y		14	XDS8-LO	25	Y		19
A 26	1	[redacted]	XDS5-LO	25	Y		8	XDS7-LO	25	Y	9	13
A 27	1	[redacted]	XDS10-LO	25	Y	9	16	XDS9-LO	25	Y	9	15
A 28	1	[redacted]	XDS9-LO	25	Y		15	XDS7-LO	25	Y		13
A 29	1	[redacted]	S3- 2-C	25	Y		4	S5- 2-C	25	Y	9	9
A 30	1	[redacted]	P1- 37	10	N	3	1	S3- 1-C	25	Y	9	3
A 31	1	[redacted]	P1- 46	10	N	3	1	S4- 2-NO	25	Y	9	6
A 32	1	[redacted]	P1- 23	10	N	3	1	S8- 1-NC	25	Y	9	18
A 33	1	[redacted]	P1- 24	10	N	3	1	S4- 2-C	25	Y	9	6
A 34	1	[redacted]	P1- 25	10	N	3	1	S10- 1-NC	25	Y	9	17
A 35	1	[redacted]	P1- 34	10	N	3	1	S5- 1-NC	25	Y	9	9
A 36	1	[redacted]	P1- 35	10	N	3	1	S6- 1-NC	25	Y	9	12

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015035
SCALE - NONE | REV LTR + A | SHEET 7 OF 10

MIL 2085 · 4-63 WIR

GRI WIRING HARNESS A + 1015035

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC 1 ITEM NO.	NO.
A 37	1	[redacted]	P1- 36	10	N	3	1	S7- 1-NC	25	Y	9	10
A 38	1	[redacted]	S10- 1-C	25	Y	9	17	S8- 1-NO	25	Y	9	18
A 39	1	[redacted]	S7- 1-NO	25	Y	9	10	S8- 1-C	25	Y	9	18
A 40	1	[redacted]	S6- 1-NO	25	Y	9	12	S7- 1-C	25	Y	9	10
A 41	1	[redacted]	S5- 1-NO	25	Y	9	9	S6- 1-C	25	Y	9	12
A 42	1	[redacted]	S9- 1-NO	25	Y	9	11	S5- 1-C	25	Y	9	9
A 43	1	[redacted]	S10- 1-NO	25	Y	9	17	P1- 9	25	N	3	1
A 44	1	[redacted]	S3- 2-NC	25	Y		4	S4- 1-C	25	Y	9	7
A 45	1	[redacted]	P1- 6	10	N	3	1	S5- 2-NC	25	Y	9	9
A 46	1	[redacted]	S5- 2-NC	25	Y		9	S6- 2-NC	25	Y	9	12
A 47	1	[redacted]	S6- 2-NC	25	Y		12	S7- 2-NC	25	Y	9	10
A 48	1	[redacted]	S7- 2-NC	25	Y		10	S8- 2-NC	25	Y	9	18
A 49	1	[redacted]	S8- 2-NC	25	Y		18	S9- 2-NC	25	Y	9	11
A 50	1	[redacted]	S5- 2-C	25	Y		9	S6- 2-C	25	Y	9	12
A 51	1	[redacted]	S6- 2-C	25	Y		12	S7- 2-C	25	Y	9	10
A 52	1	[redacted]	S7- 2-C	25	Y		10	S8- 2-C	25	Y	9	18
A 53	1	[redacted]	S8- 2-C	25	Y		18	S9- 2-C	25	Y	9	11
A 54	1	[redacted]	S9- 2-C	25	Y		11	S9- 1-C	25	Y	9	11

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015035
SCALE - NONE | REV LTR + A | SHEET 8 OF 10

MIL 2085 · 4-63 WIR

GRI WIRING HARNESS A + 1015035

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC 1 ITEM NO.	NO.
A 55	1	[redacted]	S4- 2-NO	25	Y		6	S9- 1-NC	25	Y	9	11
A 56	6	[redacted]	P1- 91	10	N	3	1	E1	25	Y	5	20

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

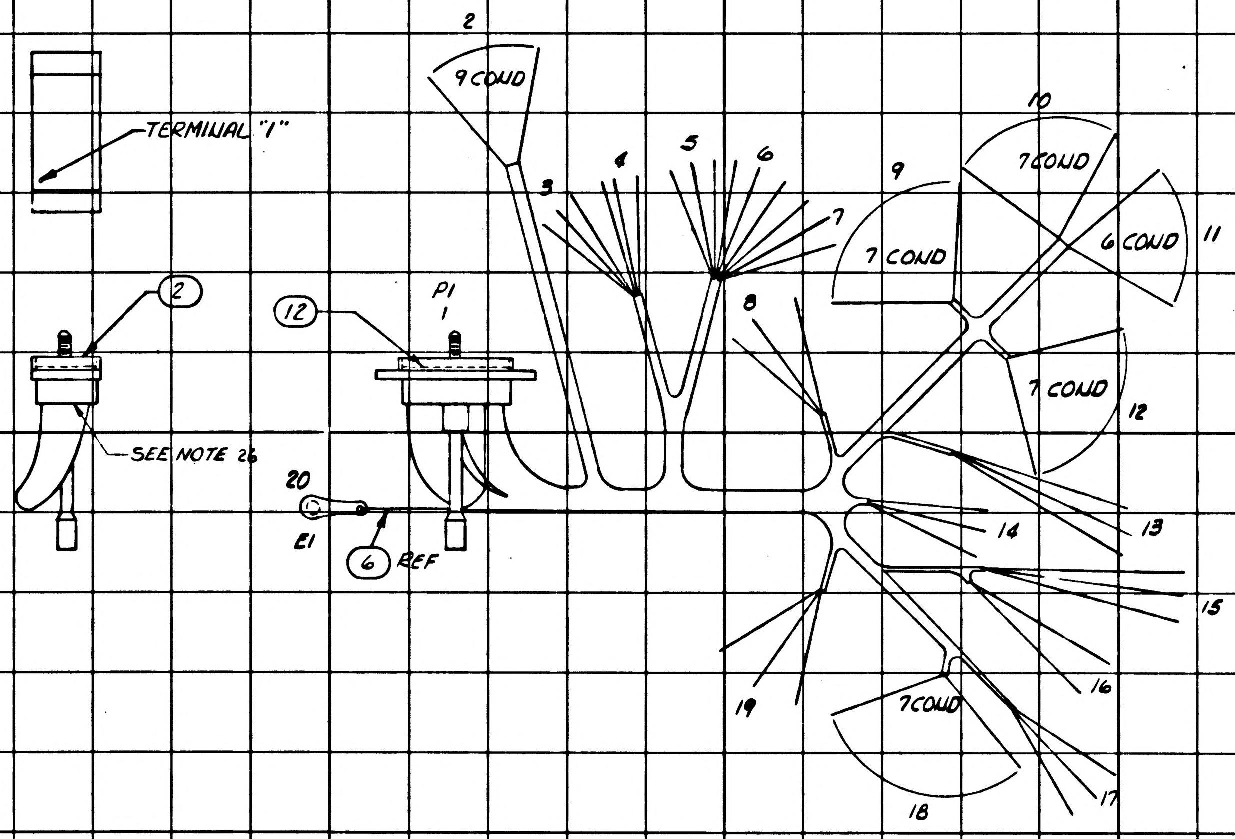
MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015035
SCALE - NONE | REV LTR + A | SHEET 9 OF 10

MIL 2085 · 4-63 WIR

1015035 A

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
		SEE SHEET 1 FOR REVISION RECORD			

REVISIONS DRR 13892


TERMINAL "1"
2
SEE NOTE 26
12
P1
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6 REF
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7 COND
10
7 COND
6 COND
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7 COND
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16
17
7 COND
18
19

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

NEXT ASSY	USED ON
1015095	1015023

APPLICATION

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 19 AUG. 64 DATE
CHECKED W. Diehl 17 SEP. '64
APPROVAL Moran 18 SEP '64
APPROVAL 10/21/64
NASA APPROVAL W. J.
MIT APPROVAL 27 Oct 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
IMU CONTROL PANEL

CODE IDENT NO. SIZE D 1015035

SCALE FULL

SHEET 10 OF 10

RELEASED BY TDRR 13892

③

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1015095	1015023	A	UPGRADED FOR CLASS A RELEASE	6 OCT 64	FK
		B	REVISED PER TDRR 14284	19 NOV 64	JWP EF

Charleston
17 SEP 64

	REV										
	SHEET										
REV STATUS	REV	B	B	B	B	B	B	B	B	B	A
OF SHEETS	SHEET	1	2	3	4	5	6	7	8	9	10

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

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HOUSTON, TEXAS

ACSP PN

DRAWN DATE 19 AUG 64
CHECKED 17 Sep '64
APPROVAL 18 Sep 64
APPROVAL 10/21/64

WIRING HARNESS "A"
IMU CONTROL PANEL

NASA APPROVAL 10-27
MIT APPROVAL 27 Oct 64
CONTRACT NAS 9-497

CODE IDENT NO.	SIZE		REV
	A	1015035	B

SCALE FULL

SHEET 1 OF 10

PENNANT NOTE

GENERAL NOTES

1 SEE CONDUCTOR CHART. PENNANT NOTE 1.

2 SEE CONDUCTOR CHART. PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 2 INCHES.

6 SPIRALLING OF THE MARKING IS ALLOWED.

7 LACE HARNESS USING ITEM 11. FORM RUNNING LOCKSTITCH AT .50 INCH SPACING.

8 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER ND1002019 (ES-267).

9 SOLDER ELECTRICAL CONNECTIONS PER ND1002071 USING ITEMS 7 AND 8.

10 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

11 LENGTHS SPECIFIED ARE FOR CONDUCTORS BEFORE ATTACHING TO AN ACCESSORY.

12 GRID IS SHOWN FOR DIMENSIONING PURPOSES.

13 GRID MODULE IS 1 INCH BASIC.

PENNANT NOTE

GENERAL NOTES

14 UNLESS OTHERWISE SPECIFIED - FEATURE CENTERLINES AT TRUE POSITION WITHIN + OR - .25 INCH RELATIVE TO GRID. ENDS OF CONDUCTORS OR ACCESSORIES AT TRUE POSITION WITHIN + OR - .12 INCH RELATIVE TO GRID. TRUE POSITION DIMENSIONS ARE REGARDLESS OF FEATURE SIZE.

15 BREAKOUTS OF INDIVIDUAL OR GROUPS OR CONDUCTORS ARE MINIMUM CONFIGURATION.

16 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

17 TWIST CONDUCTORS A1 AND A2, A4 AND A5, A6 AND A7, A20 AND A21, 18 TURNS PER FOOT.

18 INSPECT PER REQUIREMENTS OF DWG. 1015035.

19 DELETED

20 INSTALL CRIMP STYLE TERMINALS PER ND1002206

21 PARTIAL REF DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH 5UA2.

22 CLEAR GLYPTAL WILL NOT BE USED ON ENDS OF LACING TAPE.

23 FILL UP UNASSIGNED CONTACT HOLES IN ITEM 2 USING ITEM 3.

24 PRESS ITEM 12 OVER CONTACTS IN ITEM 2 AFTER MOISTURE PROOFING CONNECTOR.

25 FABRICATE HARNESS IN ACCORDANCE WITH ND1002032.

26 POT BACK OF CONNECTOR P1 IN ACCORDANCE WITH ND1002236.

PENNANT NOTE

GENERAL NOTES

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
		STRIP		CUT	
	WIRE OR CABLE	WIRE	JACKET	WIRE	SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015035-001	WIRE 1010789-1 24AWG, YELLOW, 42 FEET 4 INCHES TOTAL LENGTH
16	2	1	1010825- 3	CONNECTOR, PLUG ELECTRICAL
16	3	108	1010738- 5	CONTACT, PIN AND SOCKET
16	5	1	1010638- 6	TERMINAL-LUG
	6	1	1015035-002	WIRE, 1010789-6 22AWG, YELLOW 6 IN. TOTAL LG
	7	AR	QQ-S-571 SN60 WRAP 2	SOLDER (ES-2175 ALLOY 1)
	8	AR	MIL-F-14256	FLUX
16	9	52	1010476- 82	INSULATION, SLEEVING
16	10	8	1010476-112	INSULATION, SLEEVING
16	11	1	1012507- 1	TAPE, LACING AND TYING
16	12	1	1010812- 3	GASKET
16	13	AR	1012503- 1	COMPOUND POLYURETHANE
16	14	AR	1012503- 2	COMPOUND POLYURETHANE
16	15	AR	1012504- 1	PRIMER METAL
16	16	AR	1012504- 2	PRIMER METAL
16	17	AR	1012505- 1	PRIMER PVC

GRI

WIRING HARNESS A

B 1015035

CONDUCTOR INDIVIDUAL LENGTH		FROM					TO				
NUMBER	ITEM NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC. ITEM NO.	NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC ITEM NO.	NO.
A 1	1	P1- 1	10	N	3	1	M1- 1 (+)	25	Y	10	2
A 2	1	P1- 2	10	N	3	1	M1- 2 (-)	25	Y	10	2
A 3	1	P1- 12	10	N	3	1	S4- 1-NC	25	Y	9	7
A 4	1	P1- 14	10	N	3	1	M1- 3 (+)	25	Y	10	2
A 5	1	P1- 15	10	N	3	1	M1- 4 (-)	25	Y	10	2
A 6	1	P1- 29	10	N	3	1	M1- 5 (+)	25	Y	10	2
A 7	1	P1- 28	10	N	3	1	M1- 6 (-)	25	Y	10	2
A 8	1	P1- 56	10	N	3	1	S3- 1-NC	25	Y	9	4
A 9	1	P1- 68	10	N	3	1	S4- 3-C	25	Y	9	5
A 10	1	P1- 69	10	N	3	1	S4- 3-NC	25	Y	9	5
A 11	1	P1- 18	10	N	3	1	S4- 1-NO	25	Y	9	7
A 12	1	P1- 78	10	N	3	1	S3- 2-C	25	Y	9	3
A 13	1	P1- 79	10	N	3	1	XDS10-HI	25	Y	9	16
A 14	1	P1- 81	10	N	3	1	S4- 2-NC	25	Y	9	6
A 15	1	P1- 92	10	N	3	1	XDS6-HI	25	Y	9	14
A 16	1	P1- 93	10	N	3	1	S3- 2-NC	25	Y	9	4
A 17	1	P1- 94	10	N	3	1	XDS8-HI	25	Y	9	19
A 18	1	P1-104	10	N	3	1	XDS5-HI	25	Y	9	8

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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HOUSTON, TEXAS

SIZE A 1015035

SCALE - NONE REV LTR B SHEET 6 OF 10

MIL 2085 · 4-63 WIR

GRI

WIRING HARNESS A

B 1015035

CONDUCTOR INDIVIDUAL LENGTH		FROM					TO				
NUMBER	ITEM NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC. ITEM NO.	NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC ITEM NO.	NO.
A 19	1	P1-105	10	N	3	1	XDS7-HI	25	Y	9	13
A 20	1	P1-107	10	N	3	1	M1-XDS- 8	25	Y	10	2
A 21	1	P1-108	10	N	3	1	M1-XDS- 7	25	Y	10	2
A 22	1	M1-XDS- 8	25	Y		2	XDS8-LO	25	Y	9	19
A 23	1	P1- 22	25	Y	3	1	XDS9-HI	25	Y	9	15
A 24	1	XDS5-LO	25	Y	9	8	XDS6-LO	25	Y	9	14
A 25	1	XDS6-LO	25	Y		14	XDS8-LO	25	Y		19
A 26	1	XDS5-LO	25	Y		8	XDS7-LO	25	Y	9	13
A 27	1	XDS10-LO	25	Y	9	16	XDS9-LO	25	Y	9	15
A 28	1	XDS9-LO	25	Y		15	XDS7-LO	25	Y		13
A 29	1	S3- 2-C	25	Y		4	S5- 2-C	25	Y	9	9
A 30	1	P1- 37	10	N	3	1	S3- 1-C	25	Y	9	3
A 31	1	P1- 46	10	N	3	1	S4- 2-NO	25	Y	9	6
A 32	1	P1- 23	10	N	3	1	S8- 1-NC	25	Y	9	18
A 33	1	P1- 24	10	N	3	1	S4- 2-C	25	Y	9	6
A 34	1	P1- 25	10	N	3	1	S10- 1-NC	25	Y	9	17
A 35	1	P1- 34	10	N	3	1	S5- 1-NC	25	Y	9	9
A 36	1	P1- 35	10	N	3	1	S6- 1-NC	25	Y	9	12

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A 1015035

SCALE - NONE REV LTR B SHEET 7 OF 10

MIL 2085 · 4-63 WIR

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WIRING HARNESS A

B 1015035

CONDUCTOR INDIVIDUAL LENGTH		FROM					TO				
NUMBER	ITEM NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC. ITEM NO.	NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC ITEM NO.	NO.
A 37	1	P1- 36	10	N	3	1	S7- 1-NC	25	Y	9	10
A 38	1	S10- 1-C	25	Y	9	17	S8- 1-NO	25	Y	9	18
A 39	1	S7- 1-NO	25	Y	9	10	S8- 1-C	25	Y	9	18
A 40	1	S6- 1-NO	25	Y	9	12	S7- 1-C	25	Y	9	10
A 41	1	S5- 1-NO	25	Y	9	9	S6- 1-C	25	Y	9	12
A 42	1	S9- 1-NO	25	Y	9	11	S5- 1-C	25	Y	9	9
A 43	1	S10- 1-NO	25	Y	9	17	P1- 9	25	N	3	1
A 44	1	S3- 2-NC	25	Y		4	S4- 1-C	25	Y	9	7
A 45	1	P1- 6	10	N	3	1	S5- 2-NC	25	Y	9	9
A 46	1	S5- 2-NC	25	Y		9	S6- 2-NC	25	Y	9	12
A 47	1	S6- 2-NC	25	Y		12	S7- 2-NC	25	Y	9	10
A 48	1	S7- 2-NC	25	Y		10	S8- 2-NC	25	Y	9	18
A 49	1	S8- 2-NC	25	Y		18	S9- 2-NC	25	Y	9	11
A 50	1	S5- 2-C	25	Y		9	S6- 2-C	25	Y	9	12
A 51	1	S6- 2-C	25	Y		12	S7- 2-C	25	Y	9	10
A 52	1	S7- 2-C	25	Y		10	S8- 2-C	25	Y	9	18
A 53	1	S8- 2-C	25	Y		18	S9- 2-C	25	Y	9	11
A 54	1	S9- 2-C	25	Y		11	S9- 1-C	25	Y	9	11

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A 1015035

SCALE - NONE REV LTR B SHEET 8 OF 10

MIL 2085 · 4-63 WIR

GRI

WIRING HARNESS-A

B 1015035

CONDUCTOR INDIVIDUAL LENGTH		FROM					TO				
NUMBER	ITEM NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC. ITEM NO.	NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC ITEM NO.	NO.
A 55	1	S4- 2-NO	25	Y		6	S9- 1-NC	25	Y	9	11
A 56	6	P1- 91	10	N	3	1	E1	25	Y	5	20

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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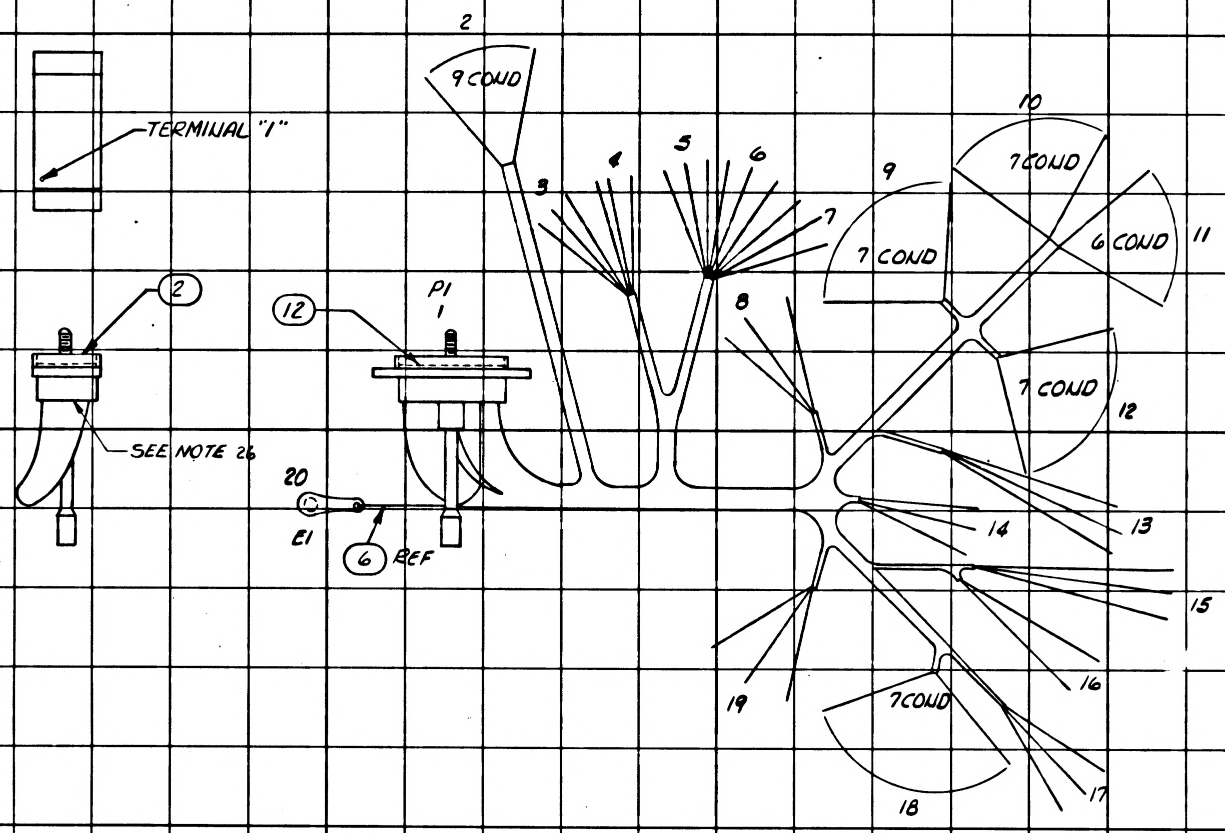
SIZE A 1015035

SCALE - NONE REV LTR B SHEET 9 OF 10

MIL 2085 · 4-63 WIR

1015035 A

REVISIONS TDRR 13792					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
		SEE SHEET 1 FOR REVISION RECORD			



TERMINAL "1"
2
SEE NOTE 26
12
P1
1
20
E1
6 REF
2
9 COND
3
4
5
6
7
8
9
7 COND
10
7 COND
6 COND
11
7 COND
12
13
14
15
16
19
7COND
17
18

1015095	1015023
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN D. J. Fl[illegible] DATE 19 AUG. 64
CHECKED W. Diehl 17 SEP. '64
APPROVAL D. J. Moran 18 SEP '64
APPROVAL [illegible] 10/21/64
NASA APPROVAL W. J. [illegible] 10-29-64
MIT APPROVAL [illegible] 27 Oct 64

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WIRING HARNESS "A"
IMU CONTROL PANEL

CODE IDENT NO.
SIZE D
1015035
SCALE FULL
SHEET 10 OF 10

RELEASED BY TDRR 13892

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
Ⓜ 1015095	1015023	A	UPGRADED FOR CLASS A RELEASE	6 OCT 64	FK
		Ⓜ B	REVISED PER TDRR 14284	19 NOV 64	JWP EF
		C	REVISED PER TDRR 15184	8 JAN 65	JJJ EF

17 SE 64

REV											
SHEET											
REV STATUS	REV	C	C	B	C	C	C	C	C	C	A
OF SHEETS	SHEET	1	2	3	4	5	6	7	8	9	10

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

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ACSP PN

DRAWN DATE 19 AUG 64
CHECKED W. Buehl 17 Sep. '64
APPROVAL V. J. Moran 18 Sep 64
APPROVAL 10/2/64
NASA APPROVAL 10-29
MIT APPROVAL
CONTRACT NAS 9-497

WIRING HARNESS "A"
IMU CONTROL PANEL

CODE IDENT NO.	SIZE		REV
	A	1015035	C

SCALE FULL

SHEET 1 OF 10

GRI WIRING HARNESS A C 1015035

PENNANT GENERAL NOTES

NOTE

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 2 INCHES.

6 SPIRALLING OF THE MARKING IS ALLOWED.

7 LACE HARNESS USING ITEM 11. FORM RUNNING LOCKSTITCH AT .50 INCH SPACING.

8 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER ND1002019 (ES-267).

9 SOLDER ELECTRICAL CONNECTIONS PER ND1002071 USING ITEMS 7 AND 8.

10 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

11 DELETED

12 GRID IS SHOWN FOR DIMENSIONING PURPOSES.

13 GRID MODULE IS 1 INCH BASIC.

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SIZE A
1015035
SCALE-NONE REV LTR C SHEET 2 OF 10

GRI WIRING HARNESS A B 1015035

PENNANT GENERAL NOTES

NOTE

14 UNLESS OTHERWISE SPECIFIED - FEATURE CENTERLINES AT TRUE POSITION WITHIN + OR - .25 INCH RELATIVE TO GRID. ENDS OF CONDUCTORS OR ACCESSORIES AT TRUE POSITION WITHIN + OR - .12 INCH RELATIVE TO GRID. TRUE POSITION DIMENSIONS ARE REGARDLESS OF FEATURE SIZE.

15 BREAKOUTS OF INDIVIDUAL OR GROUPS OR CONDUCTORS ARE MINIMUM CONFIGURATION.

16 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

17 TWIST CONDUCTORS A1 AND A2, A4 AND A5, A6 AND A7, A20 AND A21, 18 TURNS PER FOOT.

18 INSPECT PER REQUIREMENTS OF DWG. 1015035.

19 DELETED

20 INSTALL CRIMP STYLE TERMINALS PER ND1002206

21 PARTIAL REF DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH 50A2.

22 CLEAR GLYPTAL WILL NOT BE USED ON ENDS OF LACING TAPE.

23 FILL UP UNASSIGNED CONTACT HOLES IN ITEM 2 USING ITEM 3.

24 PRESS ITEM 12 OVER CONTACTS IN ITEM 2 AFTER MOISTURE PROOFING CONNECTOR.

25 FABRICATE HARNESS IN ACCORDANCE WITH ND1002032.

26 POT BACK OF CONNECTOR P1 IN ACCORDANCE WITH ND1002236.

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SIZE A
1015035
SCALE-NONE REV LTR B SHEET 3 OF 10

GRI WIRING HARNESS A C 1015035

PENNANT GENERAL NOTES

NOTE

27 TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP		CUT	
		WIRE	JACKET	WIRE	SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

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SIZE A
1015035
SCALE-NONE REV LTR C SHEET 4 OF 10

GRI WIRING HARNESS A C 1015035

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015035-001	WIRE 1010789-1 24AWG, YELLOW, 42 FEET 4 INCHES TOTAL LENGTH
16	2	1	1010825- 3	CONNECTOR, PLUG ELECTRICAL
16	3	108	1010738- 5	CONTACT, PIN AND SOCKET
16	5	1	1010638- 6	TERMINAL-LUG
	6	1	1015035-002	WIRE, 1010789-6 22AWG, YELLOW 6 IN. TOTAL LG
	7	AR	QQ-S-571 SN60 WRAP 2	SOLDER (ES-2175 ALLOY 1)
	8	AR	MIL-F-14256	FLUX
	9			DELETED (1010476- 82)
	10			DELETED (1010476-112)
16	11	1	1012507- 1	TAPE, LACING AND TYING
16	12	1	1010812- 3	GASKET
16	13	AR	1012503- 1	COMPOUND POLYURETHANE
16	14	AR	1012503- 2	COMPOUND POLYURETHANE
	15			DELETED (1012504- 1)
	16			DELETED (1012504- 2)
	17			DELETED (1012505- 1)

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SIZE A
1015035
SCALE-NONE REV LTR C SHEET 5 OF 10

GRI

WIRING HARNESS A C 1015035

CONDUCTOR INDIVIDUAL LENGTH		FROM					TO				
NUMBER	ITEM NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.
A 1	1	P1- 1	10	N	3	1	M1- 1 (+)	25	Y		2
A 2	1	P1- 2	10	N	3	1	M1- 2 (-)	25	Y		2
A 3	1	P1- 12	10	N	3	1	S4- 1-NC	25	Y		7
A 4	1	P1- 14	10	N	3	1	M1- 3 (+)	25	Y		2
A 5	1	P1- 15	10	N	3	1	M1- 4 (-)	25	Y		2
A 6	1	P1- 29	10	N	3	1	M1- 5 (+)	25	Y		2
A 7	1	P1- 28	10	N	3	1	M1- 6 (-)	25	Y		2
A 8	1	P1- 56	10	N	3	1	S3- 1-NC	25	Y		4
A 9	1	P1- 68	10	N	3	1	S4- 3-C	25	Y		5
A 10	1	P1- 69	10	N	3	1	S4- 3-NC	25	Y		5
A 11	1	P1- 18	10	N	3	1	S4- 1-NO	25	Y		7
A 12	1	P1- 78	10	N	3	1	S3- 2-C	25	Y		3
A 13	1	P1- 79	10	N	3	1	XDS10-HI	25	Y		16
A 14	1	P1- 81	10	N	3	1	S4- 2-NC	25	Y		6
A 15	1	P1- 92	10	N	3	1	XDS6-HI	25	Y		14
A 16	1	P1- 93	10	N	3	1	S3- 2-NC	25	Y		4
A 17	1	P1- 94	10	N	3	1	XDS8-HI	25	Y		19
A 18	1	P1-104	10	N	3	1	XDS5-HI	25	Y		8

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A 1015035

SCALE - NONE REV LTR C SHEET 6 OF 10

MIL 2085 · 4-63 WIR

GRI

WIRING HARNESS A C 1015035

CONDUCTOR INDIVIDUAL LENGTH		FROM					TO				
NUMBER	ITEM NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.
A 19	1	P1-105	10	N	3	1	XDS7-HI	25	Y		13
A 20	1	P1-107	10	N	3	1	M1-XDS- 8	25	Y		2
A 21	1	P1-108	10	N	3	1	M1-XDS- 7	25	Y		2
A 22	1	M1-XDS- 8	25	Y		2	XDS8-LO	25	Y		19
A 23	1	P1- 22	25	Y	3	1	XDS9-HI	25	Y		15
A 24	1	XDS5-LO	25	Y		8	XDS6-LO	25	Y		14
A 25	1	XDS6-LO	25	Y		14	XDS8-LO	25	Y		19
A 26	1	XDS5-LO	25	Y		8	XDS7-LO	25	Y		13
A 27	1	XDS10-LO	25	Y		16	XDS9-LO	25	Y		15
A 28	1	XDS9-LO	25	Y		15	XDS7-LO	25	Y		13
A 29	1	S3- 2-C	25	Y		4	S5- 2-C	25	Y		9
A 30	1	P1- 37	10	N	3	1	S3- 1-C	25	Y		3
A 31	1	P1- 46	10	N	3	1	S4- 2-NO	25	Y		6
A 32	1	P1- 23	10	N	3	1	S8- 1-NC	25	Y		18
A 33	1	P1- 24	10	N	3	1	S4- 2-C	25	Y		6
A 34	1	P1- 25	10	N	3	1	S10- 1-NC	25	Y		17
A 35	1	P1- 34	10	N	3	1	S5- 1-NC	25	Y		9
A 36	1	P1- 35	10	N	3	1	S6- 1-NC	25	Y		12

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015035

SCALE - NONE REV LTR C SHEET 7 OF 10

MIL 2085 · 4-63 WIR

GRI

WIRING HARNESS A C 1015035

CONDUCTOR INDIVIDUAL LENGTH		FROM					TO				
NUMBER	ITEM NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.
A 37	1	P1- 36	10	N	3	1	S7- 1-NC	25	Y		10
A 38	1	S10- 1-C	25	Y		17	S8- 1-NO	25	Y		18
A 39	1	S7- 1-NO	25	Y		10	S8- 1-C	25	Y		18
A 40	1	S6- 1-NO	25	Y		12	S7- 1-C	25	Y		10
A 41	1	S5- 1-NO	25	Y		9	S6- 1-C	25	Y		12
A 42	1	S9- 1-NO	25	Y		11	S5- 1-C	25	Y		9
A 43	1	S10- 1-NO	25	Y		17	P1- 9	25	N	3	1
A 44	1	S3- 2-NC	25	Y		4	S4- 1-C	25	Y		7
A 45	1	P1- 6	10	N	3	1	S5- 2-NC	25	Y		9
A 46	1	S5- 2-NC	25	Y		9	S6- 2-NC	25	Y		12
A 47	1	S6- 2-NC	25	Y		12	S7- 2-NC	25	Y		10
A 48	1	S7- 2-NC	25	Y		10	S8- 2-NC	25	Y		18
A 49	1	S8- 2-NC	25	Y		18	S9- 2-NC	25	Y		11
A 50	1	S5- 2-C	25	Y		9	S6- 2-C	25	Y		12
A 51	1	S6- 2-C	25	Y		12	S7- 2-C	25	Y		10
A 52	1	S7- 2-C	25	Y		10	S8- 2-C	25	Y		18
A 53	1	S8- 2-C	25	Y		18	S9- 2-C	25	Y		11
A 54	1	S9- 2-C	25	Y		11	S9- 1-C	25	Y		11

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015035

SCALE - NONE REV LTR C SHEET 8 OF 10

MIL 2085 · 4-63 WIR

GRI

WIRING HARNESS A C 1015035

CONDUCTOR INDIVIDUAL LENGTH		FROM					TO				
NUMBER	ITEM NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.
A 55	1	S4- 2-NO	25	Y		6	S9- 1-NC	25	Y		11
A 56	6	P1- 91	10	N	3	1	E1	25	Y	5	20

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

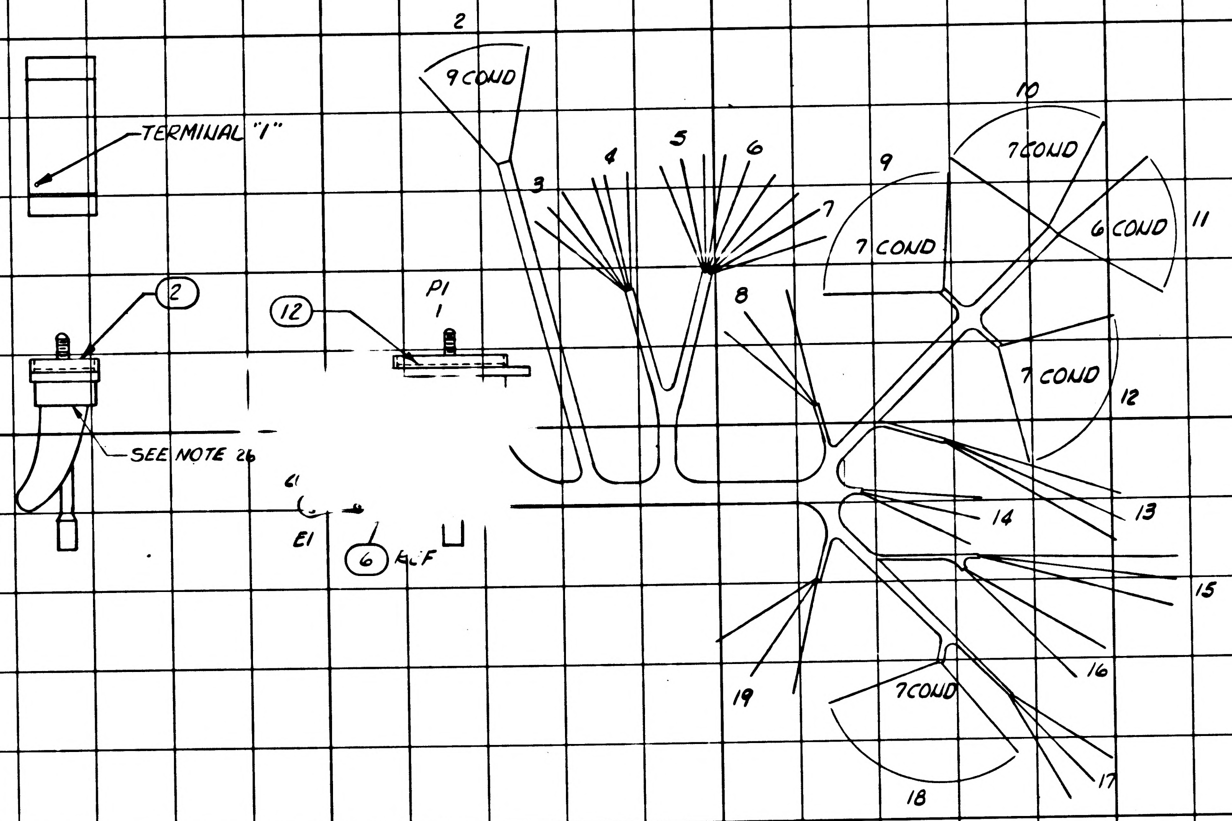
SIZE A 1015035

SCALE - NONE REV LTR C SHEET 9 OF 10

MIL 2085 · 4-63 WIR

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
		SEE SHEET 1 FOR REVISION RECORD			

REVISIONS TDRR 13892



TERMINAL "1"
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SEE NOTE 26
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1015095	1015023
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN D. J. Hube DATE 19 AUG. 64
CHECKED W. Dick 17 SEP '64
APPROVAL E. J. Moran 18 SEP '64
APPROVAL
NASA APPROVAL
MIT APPROVAL 27 Oct 64

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SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
IMU CONTROL PANEL

CODE IDENT NO.
SIZE D
1015035
SCALE FULL
SHEET

RELEASED BY TDRR 13892

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
Ⓜ 1015095	1015023	A	UPGRADED FOR CLASS A RELEASE	6 OCT 64	FK
		Ⓜ B	REVISED PER TDRR 14284	19 NOV 64	JWP EF
		Ⓜ C	REVISED PER TDRR 15184	5 JAN 65	JJJ EF
		D	REVISED PER TDRR 17730	25 MAR 65	JWP W.D.

Charleston
17-SEP-64

REV STATUS OF SHEETS											
REV											
SHEET											
	REV	D	C	B	C	C	C	C	C	C	D
	SHEET	1	2	3	4	5	6	7	8	9	10

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN [illegible] DATE 19-AUG-64
CHECKED W. Buckl 17 Sep '64
APPROVAL V. J. Moran 18 Sep '64
APPROVAL [illegible] 10/2/64

WIRING HARNESS "A" IMU CONTROL PANEL

NASA APPROVAL W. J. [illegible] 10-29-64
MIT APPROVAL [illegible] 27 Aug 64

CODE IDENT NO.
SIZE A
1015035
REV D

CONTRACT NAS 9-497
SCALE FULL
SHEET 1 OF 10

GRI WIRING HARNESS A C 1015035

PENNANT GENERAL NOTES

NOTE

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 2 INCHES.

6 SPIRALLING OF THE MARKING IS ALLOWED.

7 LACE HARNESS USING ITEM 11. FORM RUNNING LOCKSTITCH AT .50 INCH SPACING.

8 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER ND1002019 (ES-267).

9 SOLDER ELECTRICAL CONNECTIONS PER ND1002071 USING ITEMS 7 AND 8.

10 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

11 DELETED

12 GRID IS SHOWN FOR DIMENSIONING PURPOSES.

13 GRID MODULE IS 1 INCH BASIC.

MANNED
SPACECRAFT
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1015035
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SHEET 2 OF 10

MIL 2084 4 63

GRI WIRING HARNESS A B 1015035

PENNANT GENERAL NOTES

NOTE

14 UNLESS OTHERWISE SPECIFIED - FEATURE CENTERLINES AT TRUE POSITION WITHIN + OR - .25 INCH RELATIVE TO GRID. ENDS OF CONDUCTORS OR ACCESSORIES AT TRUE POSITION WITHIN + OR - .12 INCH RELATIVE TO GRID. TRUE POSITION DIMENSIONS ARE REGARDLESS OF FEATURE SIZE.

15 BREAKOUTS OF INDIVIDUAL OR GROUPS OR CONDUCTORS ARE MINIMUM CONFIGURATION.

16 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

17 TWIST CONDUCTORS A1 AND A2, A4 AND A5, A6 AND A7, A20 AND A21, 18 TURNS PER FOOT.

18 INSPECT PER REQUIREMENTS OF DWG. 1015035.

19 DELETED

20 INSTALL CRIMP STYLE TERMINALS PER ND1002206

21 PARTIAL REF DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH 50A2.

22 CLEAR GLYPTAL WILL NOT BE USED ON ENDS OF LACING TAPE.

23 FILL UP UNASSIGNED CONTACT HOLES IN ITEM 2 USING ITEM 3.

24 PRESS ITEM 12 OVER CONTACTS IN ITEM 2 AFTER MOISTURE PROOFING CONNECTOR.

25 FABRICATE HARNESS IN ACCORDANCE WITH ND1002032.

26 POT BACK OF CONNECTOR P1 IN ACCORDANCE WITH ND1002236.

MANNED
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REV LTR B
SHEET 3 OF 10

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GRI WIRING HARNESS A C 1015035

PENNANT GENERAL NOTES

NOTE

27 TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

MANNED
SPACECRAFT
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SIZE A
1015035
SCALE - NONE
REV LTR C
SHEET 4 OF 10

MIL 2084 4 63

GRI WIRING HARNESS A C 1015035

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015035-001	WIRE 1010789-1 24AWG, YELLOW, 42 FEET 4 INCHES TOTAL LENGTH
16	2	1	1010825- 3	CONNECTOR, PLUG ELECTRICAL
16	3	108	1010738- 5	CONTACT, PIN AND SOCKET
16	5	1	1010638- 6	TERMINAL-LUG
	6	1	1015035-002	WIRE, 1010789-6 22AWG, YELLOW 6 IN. TOTAL LG
	7	AR	QQ-S-571 SN60 WRAP 2	SOLDER (ES-2175 ALLOY 1)
	8	AR	MIL-F-14256	FLUX
	9			DELETED (1010476- 82)
	10			DELETED (1010476-112)
16	11	1	1012507- 1	TAPE, LACING AND TYING
16	12	1	1010812- 3	GASKET
16	13	AR	1012503- 1	COMPOUND POLYURETHANE
16	14	AR	1012503- 2	COMPOUND POLYURETHANE
	15			DELETED (1012504- 1)
	16			DELETED (1012504- 2)
	17			DELETED (1012505- 1)

MANNED
SPACECRAFT
CENTER
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SIZE A
1015035
SCALE - NONE
REV LTR C
SHEET 5 OF 10

MIL 2084 4 63

GRI WIRING HARNESS A C 1015035

CONDUCTOR			FROM					TO				
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.
A 1	1		P1- 1	10	N	3	1	M1- 1 (+)	25	Y		2
A 2	1		P1- 2	10	N	3	1	M1- 2 (-)	25	Y		2
A 3	1		P1- 12	10	N	3	1	S4- 1-NC	25	Y		7
A 4	1		P1- 14	10	N	3	1	M1- 3 (+)	25	Y		2
A 5	1		P1- 15	10	N	3	1	M1- 4 (-)	25	Y		2
A 6	1		P1- 29	10	N	3	1	M1- 5 (+)	25	Y		2
A 7	1		P1- 28	10	N	3	1	M1- 6 (-)	25	Y		2
A 8	1		P1- 56	10	N	3	1	S3- 1-NC	25	Y		4
A 9	1		P1- 68	10	N	3	1	S4- 3-C	25	Y		5
A 10	1		P1- 69	10	N	3	1	S4- 3-NC	25	Y		5
A 11	1		P1- 18	10	N	3	1	S4- 1-NO	25	Y		7
A 12	1		P1- 78	10	N	3	1	S3- 2-C	25	Y		3
A 13	1		P1- 79	10	N	3	1	XDS10-HI	25	Y		16
A 14	1		P1- 81	10	N	3	1	S4- 2-NC	25	Y		6
A 15	1		P1- 92	10	N	3	1	XDS6-HI	25	Y		14
A 16	1		P1- 93	10	N	3	1	S3- 2-NC	25	Y		4
A 17	1		P1- 94	10	N	3	1	XDS8-HI	25	Y		19
A 18	1		P1-104	10	N	3	1	XDS5-HI	25	Y		8

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015035	
SCALE - NONE	REV LTR C		SHEET 6 OF 10

MIL 2085 - 4-63 WIR

GRI WIRING HARNESS A C 1015035

CONDUCTOR			FROM					TO				
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.
A 19	1		P1-105	10	N	3	1	XDS7-HI	25	Y		13
A 20	1		P1-107	10	N	3	1	M1-XDS- 8	25	Y		2
A 21	1		P1-108	10	N	3	1	M1-XDS- 7	25	Y		2
A 22	1		M1-XDS- 8	25	Y		2	XDS8-LO	25	Y		19
A 23	1		P1- 22	25	Y	3	1	XDS9-HI	25	Y		15
A 24	1		XDS5-LO	25	Y		8	XDS6-LO	25	Y		14
A 25	1		XDS6-LO	25	Y		14	XDS8-LO	25	Y		19
A 26	1		XDS5-LO	25	Y		8	XDS7-LO	25	Y		13
A 27	1		XDS10-LO	25	Y		16	XDS9-LO	25	Y		15
A 28	1		XDS9-LO	25	Y		15	XDS7-LO	25	Y		13
A 29	1		S3- 2-C	25	Y		4	S5- 2-C	25	Y		9
A 30	1		P1- 37	10	N	3	1	S3- 1-C	25	Y		3
A 31	1		P1- 46	10	N	3	1	S4- 2-NO	25	Y		6
A 32	1		P1- 23	10	N	3	1	S8- 1-NC	25	Y		18
A 33	1		P1- 24	10	N	3	1	S4- 2-C	25	Y		6
A 34	1		P1- 25	10	N	3	1	S10- 1-NC	25	Y		17
A 35	1		P1- 34	10	N	3	1	S5- 1-NC	25	Y		9
A 36	1		P1- 35	10	N	3	1	S6- 1-NC	25	Y		12

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MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015035	
SCALE - NONE	REV LTR C		SHEET 7 OF 10

MIL 2085 - 4-63 WIR

GRI WIRING HARNESS A C 1015035

CONDUCTOR			FROM					TO				
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.
A 37	1		P1- 36	10	N	3	1	S7- 1-NC	25	Y		10
A 38	1		S10- 1-C	25	Y		17	S8- 1-NO	25	Y		18
A 39	1		S7- 1-NO	25	Y		10	S8- 1-C	25	Y		18
A 40	1		S6- 1-NO	25	Y		12	S7- 1-C	25	Y		10
A 41	1		S5- 1-NO	25	Y		9	S6- 1-C	25	Y		12
A 42	1		S9- 1-NO	25	Y		11	S5- 1-C	25	Y		9
A 43	1		S10- 1-NO	25	Y		17	P1- 9	25	N	3	1
A 44	1		S3- 2-NC	25	Y		4	S4- 1-C	25	Y		7
A 45	1		P1- 6	10	N	3	1	S5- 2-NC	25	Y		9
A 46	1		S5- 2-NC	25	Y		9	S6- 2-NC	25	Y		12
A 47	1		S6- 2-NC	25	Y		12	S7- 2-NC	25	Y		10
A 48	1		S7- 2-NC	25	Y		10	S8- 2-NC	25	Y		18
A 49	1		S8- 2-NC	25	Y		18	S9- 2-NC	25	Y		11
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A 51	1		S6- 2-C	25	Y		12	S7- 2-C	25	Y		10
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A 53	1		S8- 2-C	25	Y		18	S9- 2-C	25	Y		11
A 54	1		S9- 2-C	25	Y		11	S9- 1-C	25	Y		11

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MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015035	
SCALE - NONE	REV LTR C		SHEET 8 OF 10

MIL 2085 - 4-63 WIR

GRI WIRING HARNESS A C 1015035

CONDUCTOR			FROM					TO				
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.
A 55	1		S4- 2-NO	25	Y		6	S9- 1-NC	25	Y		11
A 56	6		P1- 91	10	N	3	1	E1	25	Y	5	20

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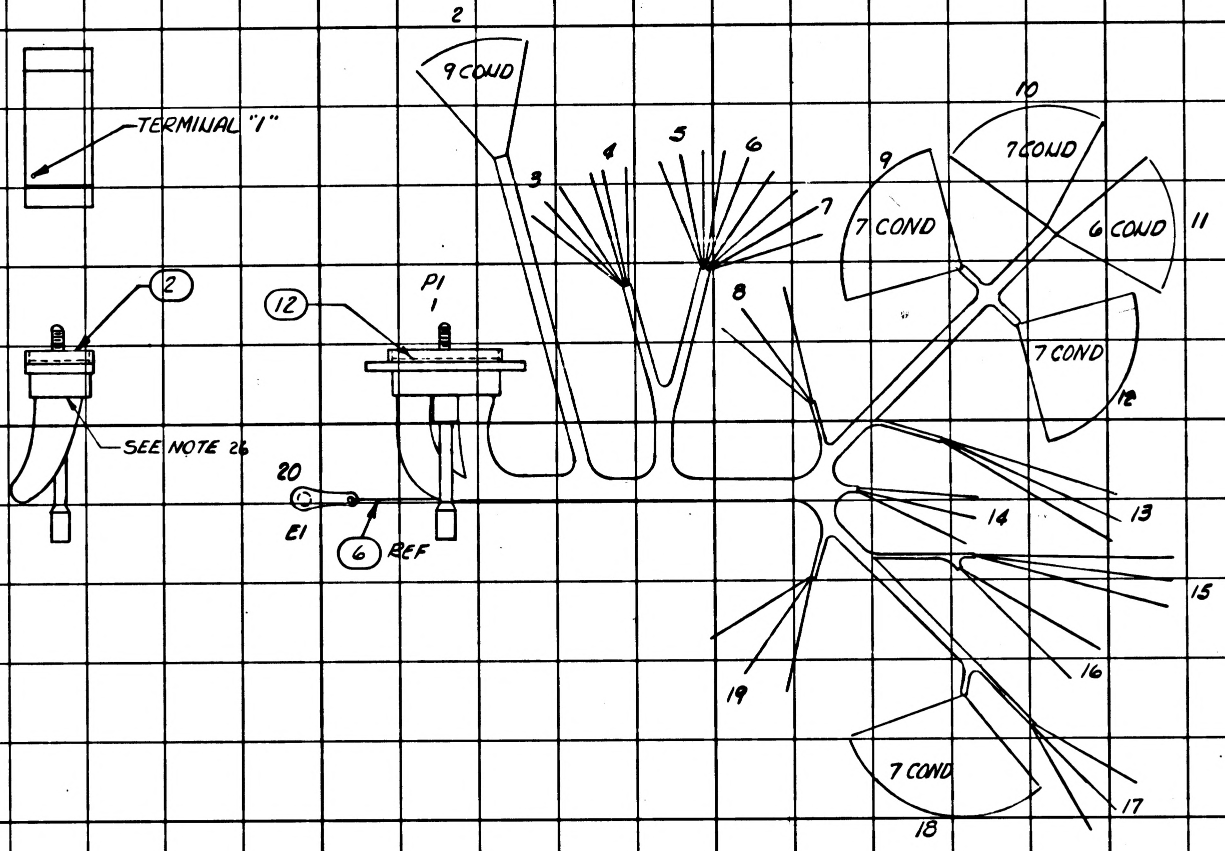
MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015035	
SCALE - NONE	REV LTR C		SHEET 9 OF 10

MIL 2085 - 4-63 WIR

D 1015035

REVISIONS		TDRR 13892			
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		SEE SHEET 1 FOR REVISION RECORD			



TERMINAL "1"
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1015095	1015023	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN
NEXT ASSY	USED ON	MATERIAL —	ACSP PN
APPLICATION		CONTRACT NAS 9-497	DRAWN DATE 19 AUG. 64 CHECKED W. Diehl 17 Sep. '64 APPROVAL E. J. Moran 18 Sep '64 APPROVAL 10/21/64 NASA APPROVAL W. J. Rhine 10-29-64 MIT APPROVAL 27 Oct 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
IMU CONTROL PANEL

CODE IDENT NO.
SIZE D
1015035
SCALE FULL
SHEET 10 OF 10

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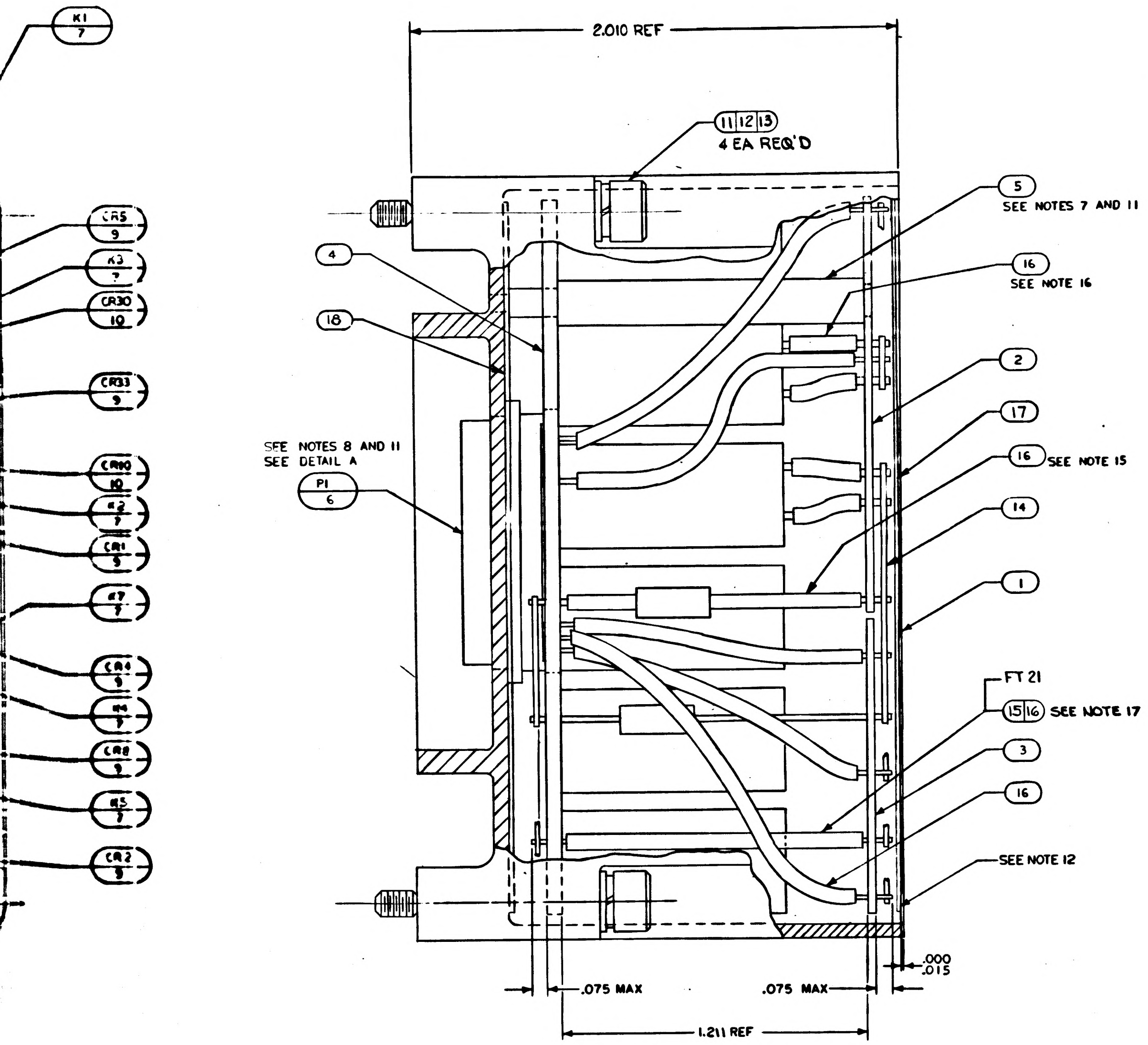
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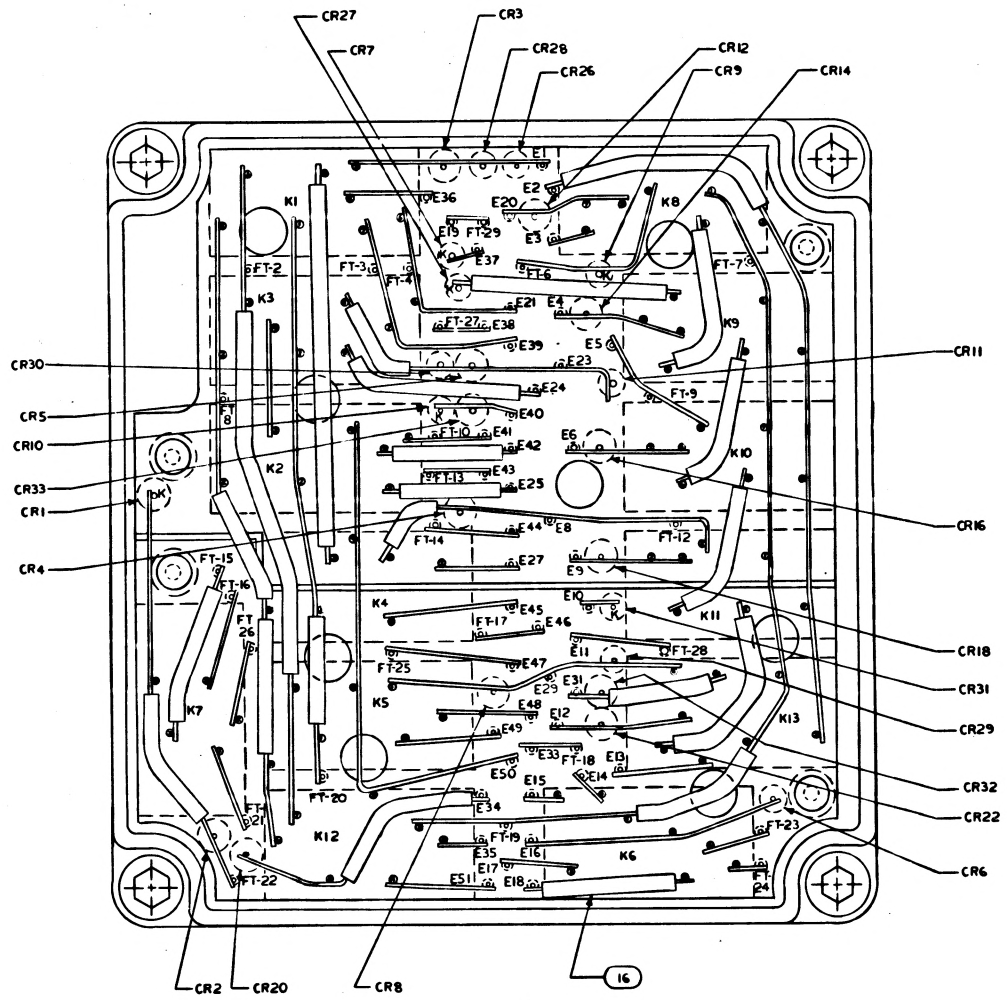
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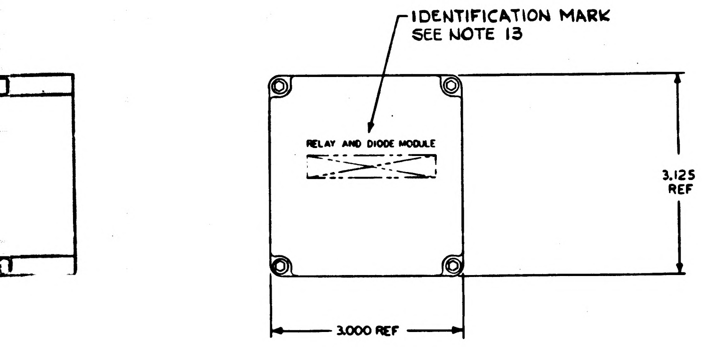
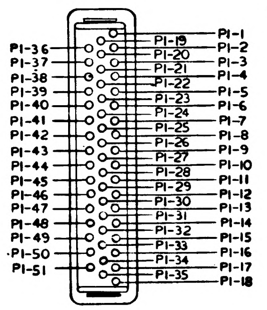

IDENTIFICATION MARK
SEE NOTE 13
RELAY AND DIODE MODULE
3.125 REF
3.000 REF

MARKING VIEW
SCALE 1:1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P1-50
P1-51

DETAIL A

CONNECTOR TERMINAL
IDENTIFICATION VIEW

WIRING DATA

FROM CIRCUIT POINT	TO CIRCUIT POINT	CIRCUIT FUNCTION
P1-1	E1	ZERO ENCODER RELAY CONT (AGC)
P1-2	E2	MANUAL MODE RELAY COMMON LINE (IMU)
P1-3	E3	ATTITUDE CONTROL SIGNAL
P1-4	E4	COARSE ALIGN RELAY CONT
P1-5	E5	MANUAL ALIGN (IMU CONT PNL)
P1-6	E6	CDU MANUAL RELAY CONT
P1-7	SPARE	
P1-8	E8	FINE ALIGN RELAY CONT (AGC)
P1-9	E9	FINE ALIGN RELAY CONT
P1-10	E10	FINE ALIGN RELAY COMMAND (AGC)
P1-11	E11	ENTRY RELAY COMMAND (AGC)
P1-12	E12	ENTRY RELAY CONT
P1-13	E13	MODE SW INTERLOCK (IMU CONT PNL)
P1-14	E14	OVDC
P1-15	E15	TO TEMP CONT
P1-16	E16	40 SEC TIME DELAY RELAY CONT
P1-17	E17	TO TEMP CONT
P1-18	E18	TO TEMP CONT
P1-19	E19	ZERO ENCODER RELAY COMMAND (AGC)
P1-20	E20	ZERO ENCODER RELAY CONT
P1-21	E21	VAR ILLUM & IND LAMP PWR 400 (IMU)
P1-22	SPARE	
P1-23	E23	CDU PANEL RELAY CONT (AGC)
P1-24	E24	CDU MANUAL LT (IMU CONT PNL)
P1-25	E25	COARSE ALIGN MODE LT (IMU CONT PNL)
P1-26	SPARE	
P1-27	E27	AGC FINE ALIGN

WIRING DATA

FROM CIRCUIT POINT	TO CIRCUIT POINT	CIRCUIT FUNCTION
P1-28	SPARE	
P1-29	E29	ENTRY RELAY CONT (AGC)
P1-30	SPARE	
P1-31	E31	ENTRY RELAY CONT RESET
P1-32	SPARE	
P1-33	E33	MODE RELAY COMMON LINE (IMU CONT)
P1-34	E34	ATTITUDE CONT RELAY CONT
P1-35	E35	ATTITUDE CONT MODE SW IND (AGC)
P1-36	E36	ZERO ENCODER MODE LT (IMU CONT PNL)
P1-37	E37	COARSE ALIGN RELAY COMMAND (AGC)
P1-38	E38	CDU MANUAL RELAY COMMAND (AGC)
P1-39	E39	MODE LAMP TEST (G & N PANEL)
P1-40	E40	BACK UP ELECTRONICS RELAY (PSA)
P1-41	E41	COARSE ALIGN RELAY
P1-42	E42	AGC COARSE ALIGN
P1-43	E43	+ 28 VDC
P1-44	E44	IMU DELAY LT
P1-45	E45	FINE ALIGN MODE LT (IMU CONT PNL)
P1-46	E46	+ 28 VDC (TO TEMP CONT)
P1-47	E47	CONDITION LAMP TEST
P1-48	E48	AGC HI SPEED ROLL (AGC)
P1-49	E49	ENTRY MODE LT (IMU CONT PNL)
P1-50	E50	AGC COMMON (IMU CONT PNL)
P1-51	E51	ATTITUDE CONT LT SIGNAL (IMU CONT)

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			011				
			☒		REF	1014623	SCHEMATIC
			1		18	1015030	INSULATOR, PLATE, BOTTOM
			1		17	1015029	INSULATOR, PLATE, TOP
			AR		16	1006776-21	INSULATION, SLEEVING, ELEC
			AR		15	1006787-2	WIRE, ELECTRICAL
			AR		14	1006757-1	WIRE, ELECTRICAL
			4		13	MS35338-78	WASHER, LOCK
			4		12	MS15795-303	WASHER, FLAT
			4		11	1008069-2	SCREW, SOC HD EXT RELIEVED BODY
			11		10	1010392-1	DIODE
			14		9	1010362-003	DIODE
			1		8	1006772-3	RELAY
			12		7	1010353-4	RELAY
			1		6	1010615-2	CONNECTOR, ELEC, RECEPTACLE
			4		5	1015061	SPACER, INSULATED
			1		4	1015070	WIRING BOARD, BOTTOM
			1		3	1015062-2	WIRING BOARD, TOP
			1		2	1015062-1	WIRING BOARD, TOP
			1		1	1015060	HOUSING

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015065-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN A. J. Fluder DATE 10 SEP 64
CHECKED 29 SEP 64
APPROVAL 29 Sep 64
APPROVAL 11-4-64
NASA APPROVAL W J R 11-12-64
MIT APPROVAL W 10 Nov 64

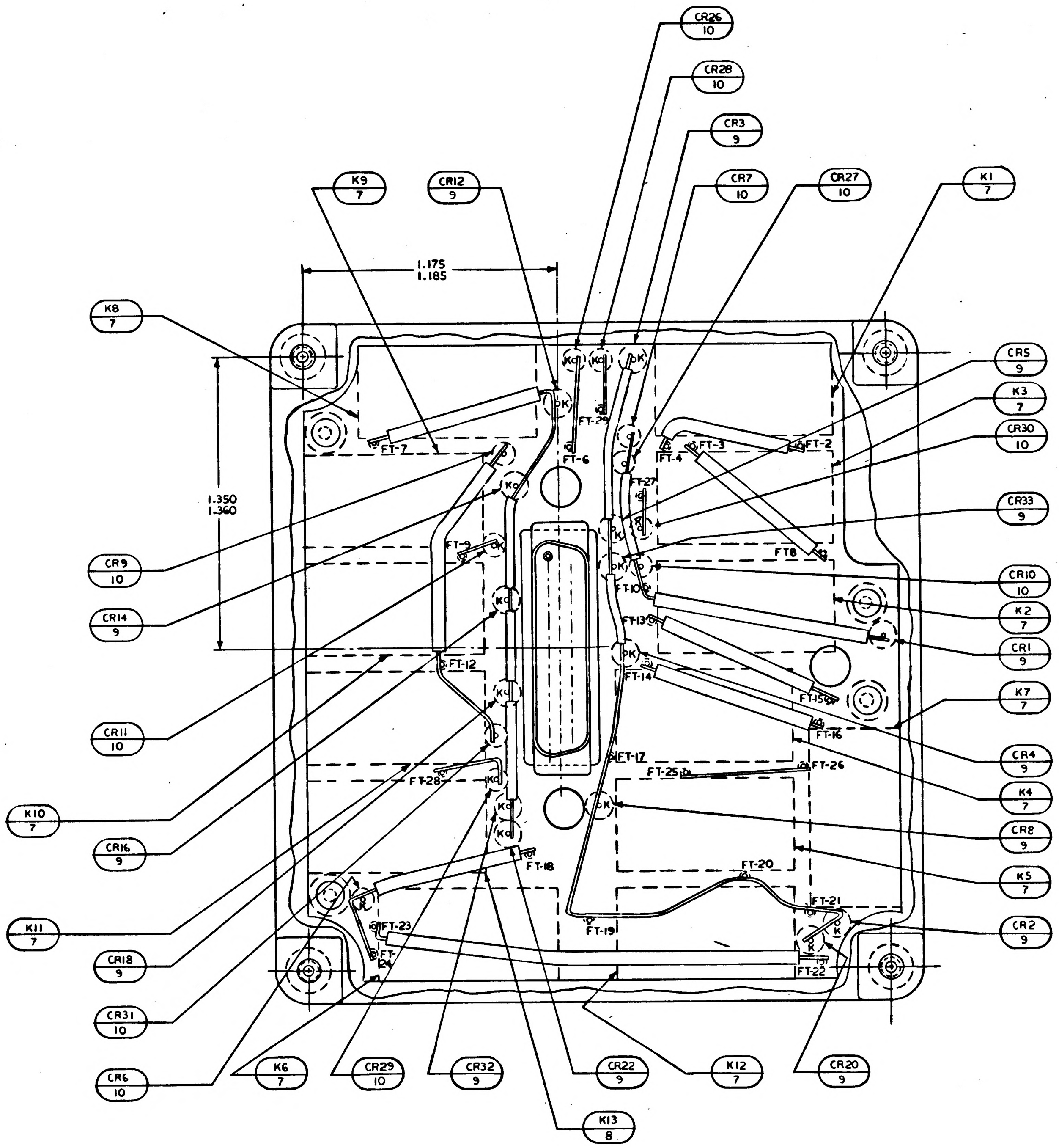
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RELAY AND DIODE MODULE ASSEMBLY

CODE IDENT NO.
SIZE J2
1015036

SCALE 2:1
SHEET 3 of

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. "FT" DENOTES FEED THRU.
3. ALL WELDS TO BE PER ND1002005.
4. "K" DENOTES CATHODE END OF DIODE.
5. "AR" DENOTES AS REQUIRED.
6. BOND ITEM 7 AND ITEM 8 TO ITEM 4 PER ND1002004 TYPE 1
7. BOND ITEM 5 TO ITEM 4 PER ND1002004.
8. SPARE LEADS ON ITEM 6 TO BE CUT .030 TO .090 LENGTH.
9. ALL WIRING TO COMPLY WITH STANDARDS PRESCRIBED BY ND1002069.
10. DIPCOAT PER ND1002068 PRIOR TO ENCAPSULATION.
11. BOND ITEM 5 AND ITEM 6 TO ITEM 1 PER ND1002004 TYPE 1
12. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM), FLUSH WITH SURFACES OF ITEM 1 AND ITEM 17.
13. SERIALIZE PER ND1002023 AND IDENTIFY PER ND1002019, CENTRALIZE AS SHOWN.
14. ALL UNUSED RELAY LEADS TO BE CUT .060 TO .090 ABOVE RELAY CASE.
15. INSULATION SLEEVING TO BE USED ON DIODE LEADS.
16. INSULATION SLEEVING TO BE USED ON RELAY LEADS.
17. INSULATION SLEEVING TO BE USED ON FT POINTS.
18. INSPECT PER PS1007036.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1.185
K8 7
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CR30 10
CR33 9
1.350
1.360
CR9 10
CR14 9
CR10 10
K2 7
CR1 9
K7 7
CR11 10
CR4 9
K4 7
K10 7
CR16 9
CR8 9
K5 7
K11 7
CR2 9
CR18 9
CR31 10
CR6 10
K6 7
CR29 10
CR32 9
CR22 9
K12 7
CR20 9
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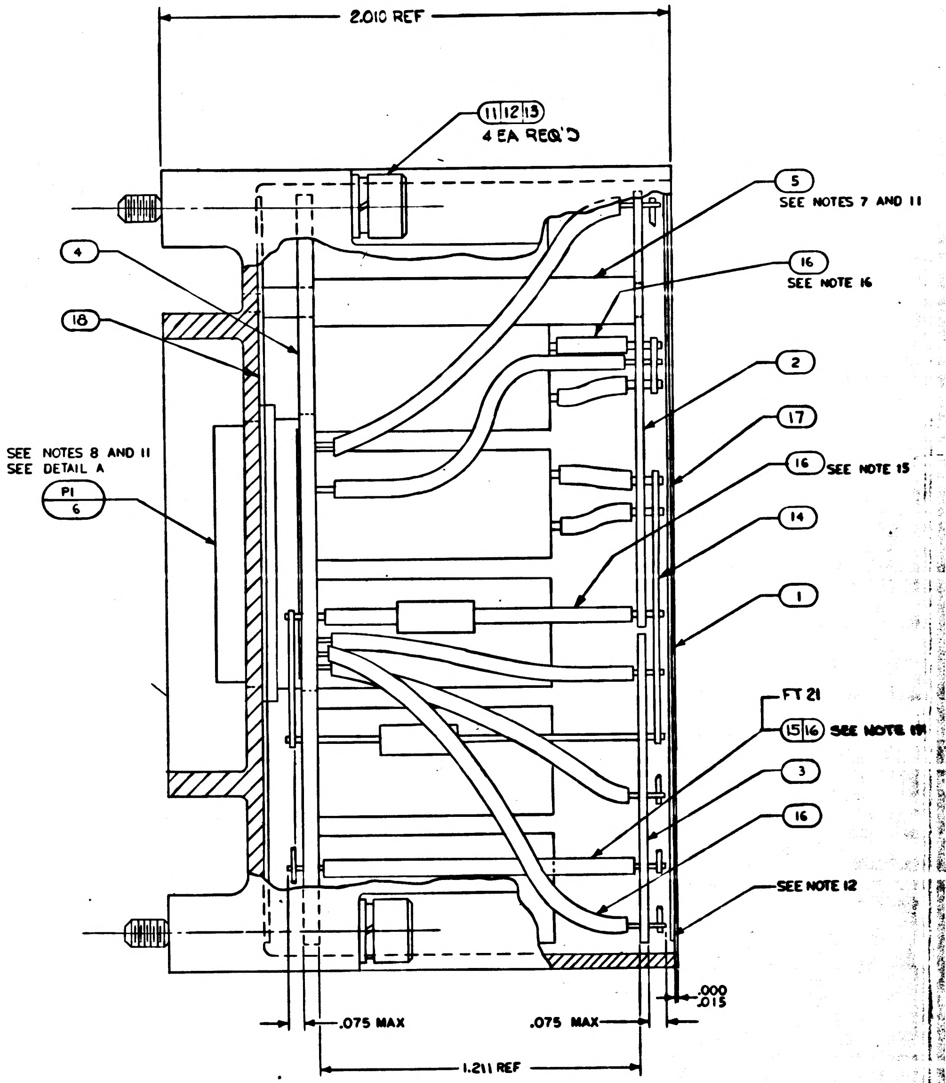
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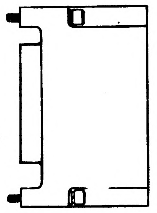
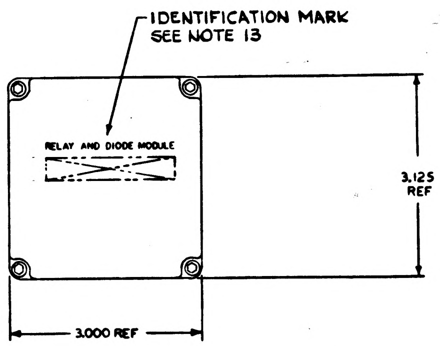
11 12 13
4 EA REQ'D
5
SEE NOTES 7 AND 11
16
SEE NOTE 16
4
18
2
17
SEE NOTES 8 AND 11
SEE DETAIL A
P1
6
16
SEE NOTE 15
14
1
FT 21
15 16
SEE NOTE 17
3
16
SEE NOTE 12
.000
.015
.075 MAX
.075 MAX
1.211 REF

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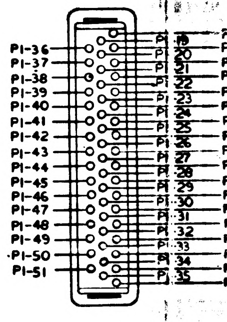
SEE NOTE 13
RELAY AND DIODE MODULE
3.125
REF
3.000 REF

MARKING VIEW
SCALE 1:1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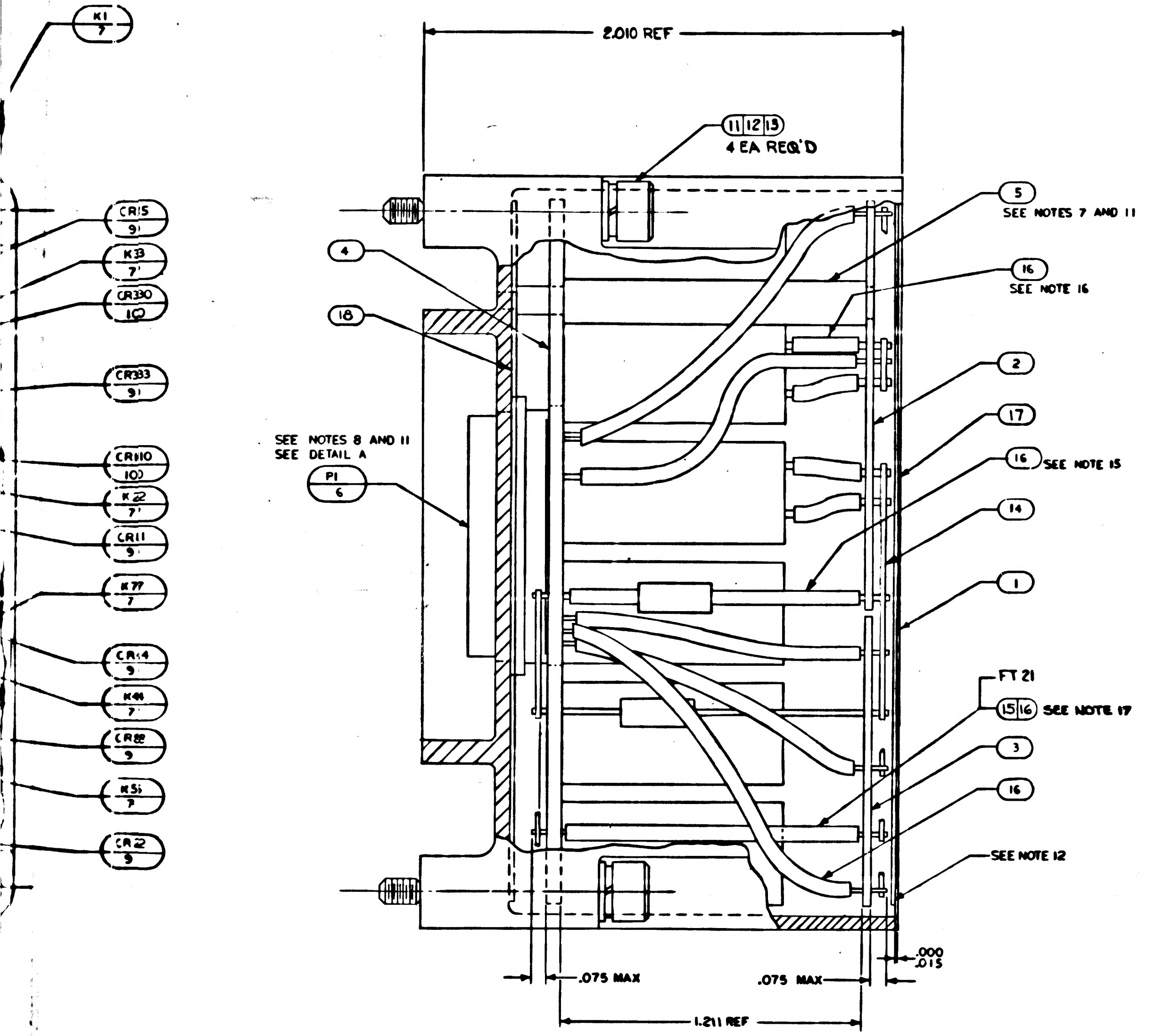
P1-18

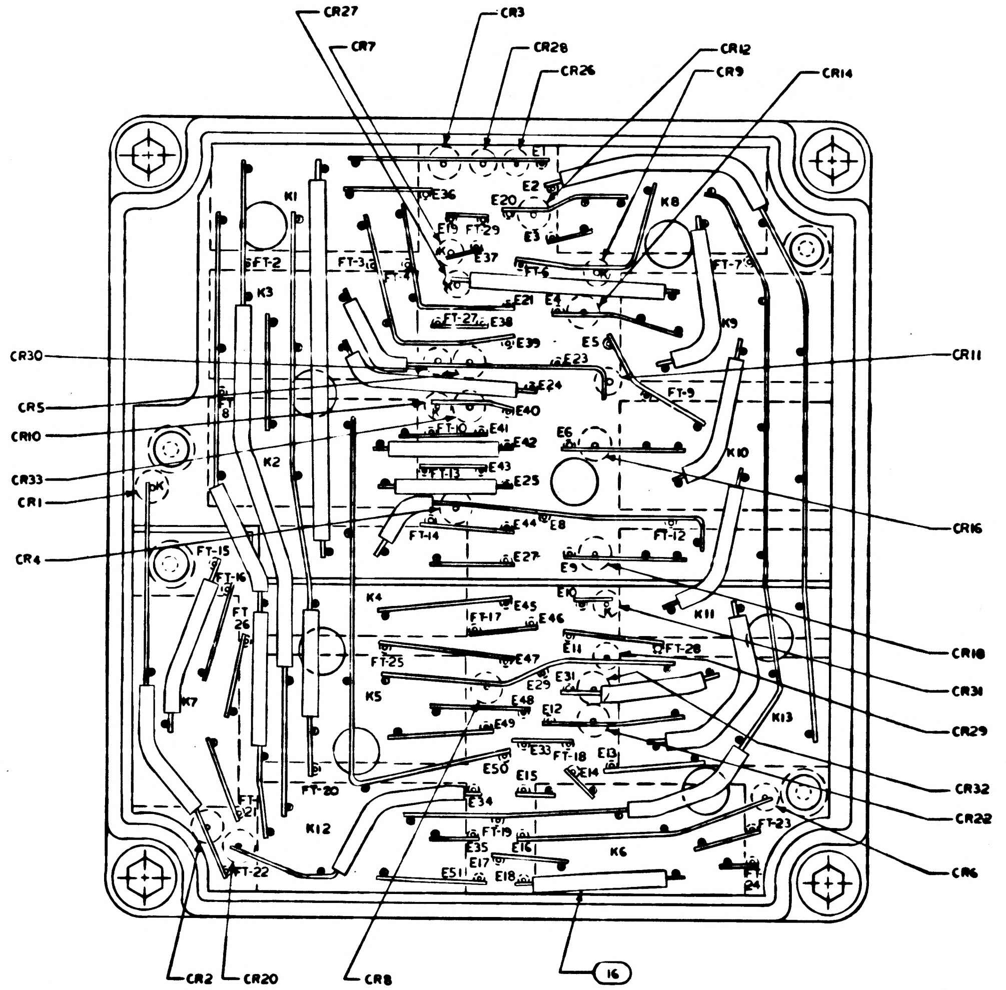
DETAIL A

CONNECTOR TERMINAL
IDENTIFICATION VIEW

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A1	-	COMPLETELY REVISED	DC 58518	5 OCT 64	WF
B	—	REVISED PER TCRR 16625	—	24-FEB-65	



2.010 REF
11 12 13 4 EA REQ'D
5 SEE NOTES 7 AND 11
16 SEE NOTE 16
4
18
2
17
16 SEE NOTE 15
14
1
SEE NOTES 8 AND 11 SEE DETAIL A
P1 6
FT 21
15 16 SEE NOTE 17
3
16
SEE NOTE 12
.075 MAX
.075 MAX
.000 .015
1.211 REF
K1 7
CR15 9
K33 7'
CR330 10
CR333 9
CR110 10
K22 7'
CR11 9
K77 7
CR14 9
K44 7'
CR22 9
K55 7
CR2 9



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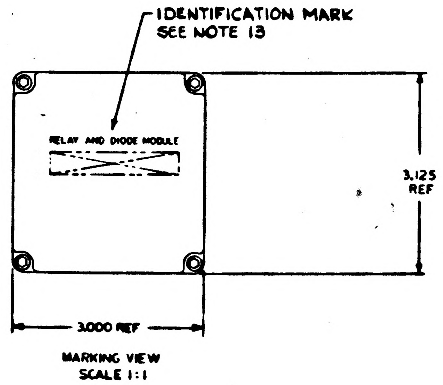
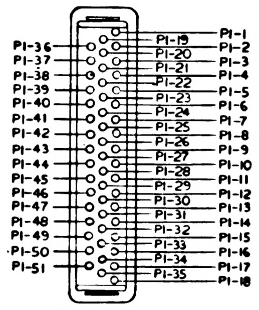


IDENTIFICATION MARK SEE NOTE 13
RELAY AND DIODE MODULE
3.125 REF
3.000 REF

MARKING VIEW
SCALE 1:1



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P1-17
P1-18

DETAIL A

CONNECTOR TERMINAL IDENTIFICATION VIEW

WIRING DATA		
FROM CIRCUIT POINT	TO CIRCUIT POINT	CIRCUIT FUNCTION
P1-1	E1	ZERO ENCODER RELAY CONT (AGC)
P1-2	E2	MANUAL MODE RELAY COMMON LINE (IMU)
P1-3	E3	ATTITUDE CONTROL SIGNAL
P1-4	E4	COARSE ALIGN RELAY CONT
P1-5	E5	MANUAL ALIGN (IMU CONT PNL)
P1-6	E6	CDU MANUAL RELAY CONT
P1-7	SPARE	
P1-8	E8	FINE ALIGN RELAY CONT (AGC)
P1-9	E9	FINE ALIGN RELAY CONT
P1-10	E10	FINE ALIGN RELAY COMMAND (AGC)
P1-11	E11	ENTRY RELAY COMMAND (AGC)
P1-12	E12	ENTRY RELAY CONT
P1-13	E13	MODE SW INTERLOCK (IMU CONT PNL)
P1-14	E14	0VDC
P1-15	E15	TO TEMP CONT
P1-16	E16	40 SEC TIME DELAY RELAY CONT
P1-17	E17	TO TEMP CONT
P1-18	E18	TO TEMP CONT
P1-19	E19	ZERO ENCODER RELAY COMMAND (AGC)
P1-20	E20	ZERO ENCODER RELAY CONT
P1-21	E21	VAR ILLUM & IND LAMP PWR 400 (IMU)
P1-22	SPARE	
P1-23	E23	CDU PANEL RELAY CONT (AGC)
P1-24	E24	CDU MANUAL LT (IMU CONT PNL)
P1-25	E25	COARSE ALIGN MODE LT (IMU CONT PNL)
P1-26	SPARE	
P1-27	E27	AGC FINE ALIGN

WIRING DATA		
FROM CIRCUIT POINT	TO CIRCUIT POINT	CIRCUIT FUNCTION
P1-28	SPARE	
P1-29	E29	ENTRY RELAY CONT (AGC)
P1-30	SPARE	
P1-31	E31	ENTRY RELAY CONT RESET
P1-32	SPARE	
P1-33	E33	MODE RELAY COMMON LINE (IMU CONT)
P1-34	E34	ATTITUDE CONT RELAY CONT
P1-35	E35	ATTITUDE CONT MODE SW IND (AGC)
P1-36	E36	ZERO ENCODER MODE LT (IMU CONT PNL)
P1-37	E37	COARSE ALIGN RELAY COMMAND (AGC)
P1-38	E38	CDU MANUAL RELAY COMMANC (AGC)
P1-39	E39	MODE LAMP TEST (G & N PANEL)
P1-40	E40	BACK UP ELECTRONICS RELAY (PSA)
P1-41	E41	COARSE ALIGN RELAY
P1-42	E42	AGC COARSE ALIGN
P1-43	E43	+ 28 VDC
P1-44	E44	IMU DELAY LT
P1-45	E45	FINE ALIGN MODE LT (IMU CONT PNL)
P1-46	E46	+ 28 VDC (TO TEMP CONT)
P1-47	E47	CONDITION LAMP TEST
P1-48	E48	AGC HI SPEED ROLL (AGC)
P1-49	E49	ENTRY MODE LT (IMU CONT PNL)
P1-50	E50	AGC COMMON (IMU CONT PNL)
P1-51	E51	ATTITUDE CONT LT SIGNAL (IMU CONT)

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			-011				
			☒		REF	1014623	SCHEMATIC
			11		19	1021706	PLATE, ELECTRICAL SHIELD
			1		18	1015030	INSULATOR, PLATE, BOTTOM
			1		17	1015029	INSULATOR, PLATE, TOP
			AR		16	1006776-21	INSULATION, SLEEVING, ELEC
			AR		15	1006787-2	WIRE, ELECTRICAL
			AR		14	1006757-1	WIRE, ELECTRICAL
			4		13	MS35338-78	WASHER, LOCK
			4		12	MS15795-303	WASHER, FLAT
			4		11	1008069-2	SCREW, SOC HD EXT RELIEVED BODY
			11		10	1010392-1	DIODE
			14		9	1010362-003	DIODE
			1		8	1006772-3	RELAY
			12		7	1010353-4	RELAY
			1		6	1010615-2	CONNECTOR, ELEC, RECEPTACLE
			4		5	1015061	SPACER, INSULATED
			1		4	1015070	WIRING BOARD, BOTTOM
			1		3	1015062-2	WIRING BOARD, TOP
			1		2	1015062-1	WIRING BOARD, TOP
			1		1	1015060	HOUSING

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015065-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 10 SEP 64
CHECKED 29 SEP 64
APPROVAL
APPROVAL 11-4-64
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RELAY AND DIODE MODULE ASSEMBLY

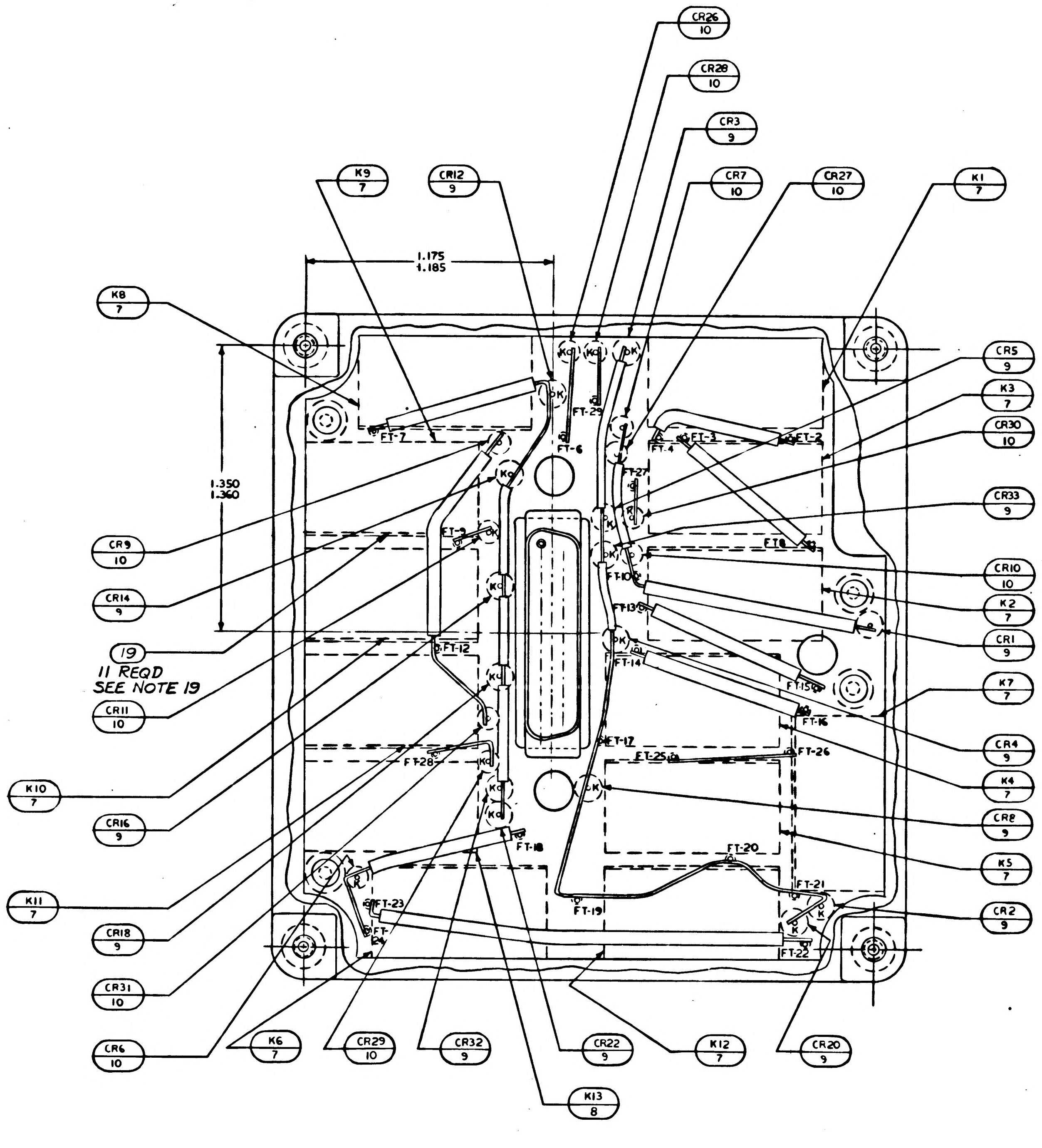
CODE IDENT NO.
SIZE J2
1015036
SCALE 1:1
SHEET 2 of 1

1015036 B

2 / 1015036

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. "FT" DENOTES FEED THRU.
3. ALL WELDS TO BE PER ND1002005.
4. "K" DENOTES CATHODE END OF DIODE.
5. "AR" DENOTES AS REQUIRED.
6. BOND ITEM 7 AND ITEM 8 TO ITEM 4 PER ND1002004 TYPE 1
7. BOND ITEM 5 TO ITEM 4 PER ND1002004.
8. SPARE LEADS ON ITEM 6 TO BE CUT .030 TO .090 LENGTH.
9. ALL WIRING TO COMPLY WITH STANDARDS PRESCRIBED BY ND1002069.
10. DIPCOAT PER ND1002068 PRIOR TO ENCAPSULATION.
11. BOND ITEM 3 AND ITEM 6 TO ITEM 1 PER ND1002004 TYPE 1
12. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM); FLUSH WITH SURFACES OF ITEM 1 AND ITEM 17.
13. SERIALIZE PER ND1002023 AND IDENTIFY PER ND1002019, CENTRALIZE AS SHOWN.
14. ALL UNUSED RELAY LEADS TO BE CUT .060 TO .090 ABOVE RELAY CASE.
15. INSULATION SLEEVING TO BE USED ON DIODE LEADS.
16. INSULATION SLEEVING TO BE USED ON RELAY LEADS.
17. INSULATION SLEEVING TO BE USED ON FT POINTS.
18. INSPECT PER PS1007036.
19. BOND ITEM 19 TO K2, 3, 4, 5, 6, 7, 8, 9, 10, 11 AND 12 PER ND1002004, TYPE 1.



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CR3 9
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CR7 10
CR27 10
K1 7
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1.185
K8 7
1.350
1.360
CR5 9
K3 7
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FT-22
FT-23
FT-24
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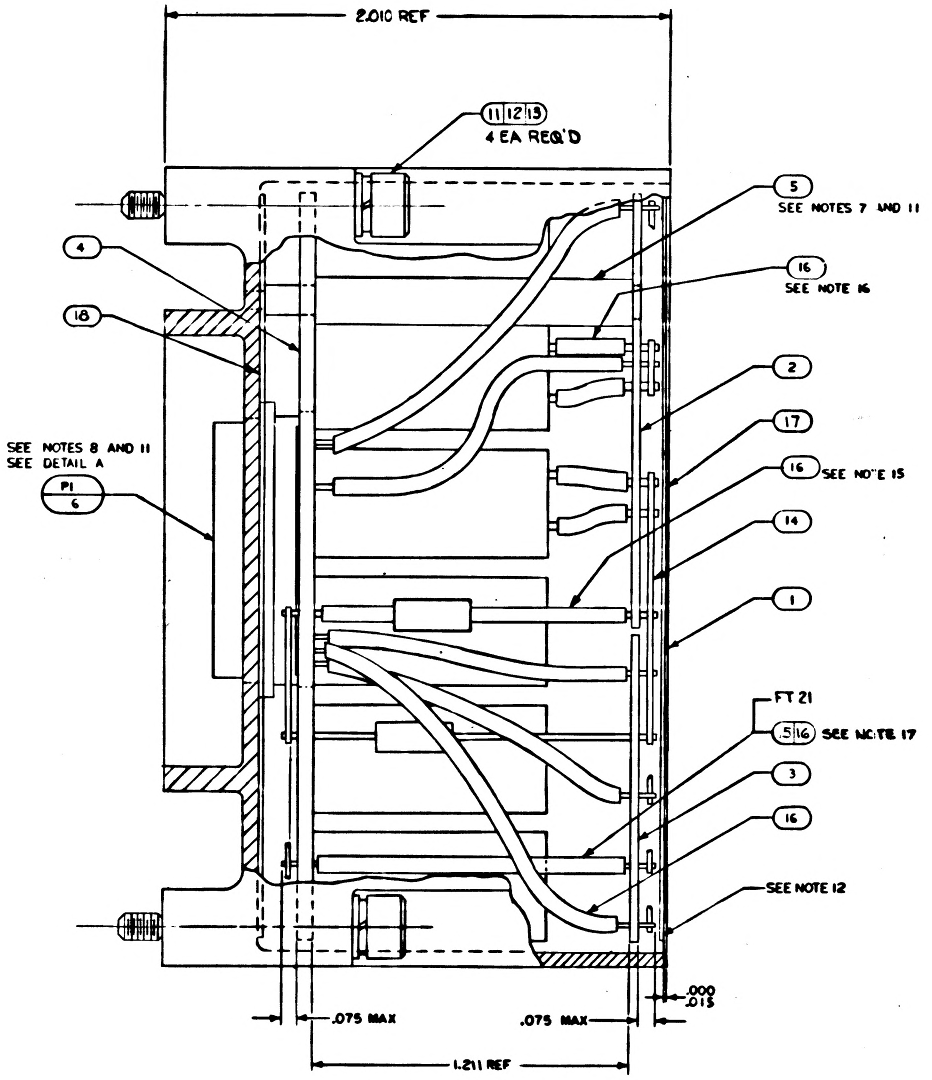
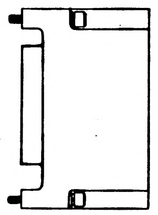
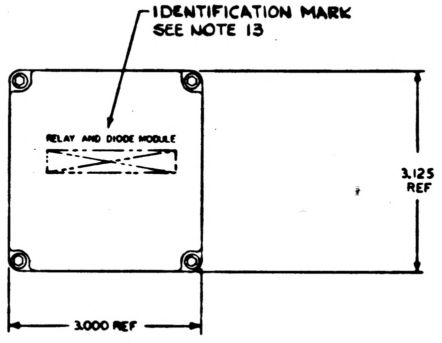


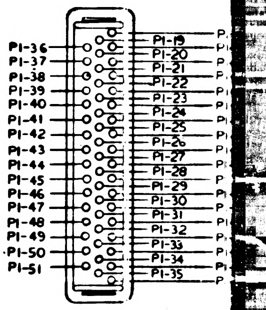
2.010 REF
11 12 13
4 EA REQ'D
5
SEE NOTES 7 AND 11
4
16
SEE NOTE 16
18
2
17
SEE NOTES 8 AND 11
SEE DETAIL A
P1 6
16
SEE NOTE 15
14
1
FT 21
5 16
SEE NOTE 17
3
16
SEE NOTE 12
.000
.015
.075 MAX
.075 MAX
1.211 REF





IDENTIFICATION MARK
SEE NOTE 13
RELAY AND DIODE MODULE
3.125 REF
3.000 REF

MARKING VIEW
SCALE 1:1



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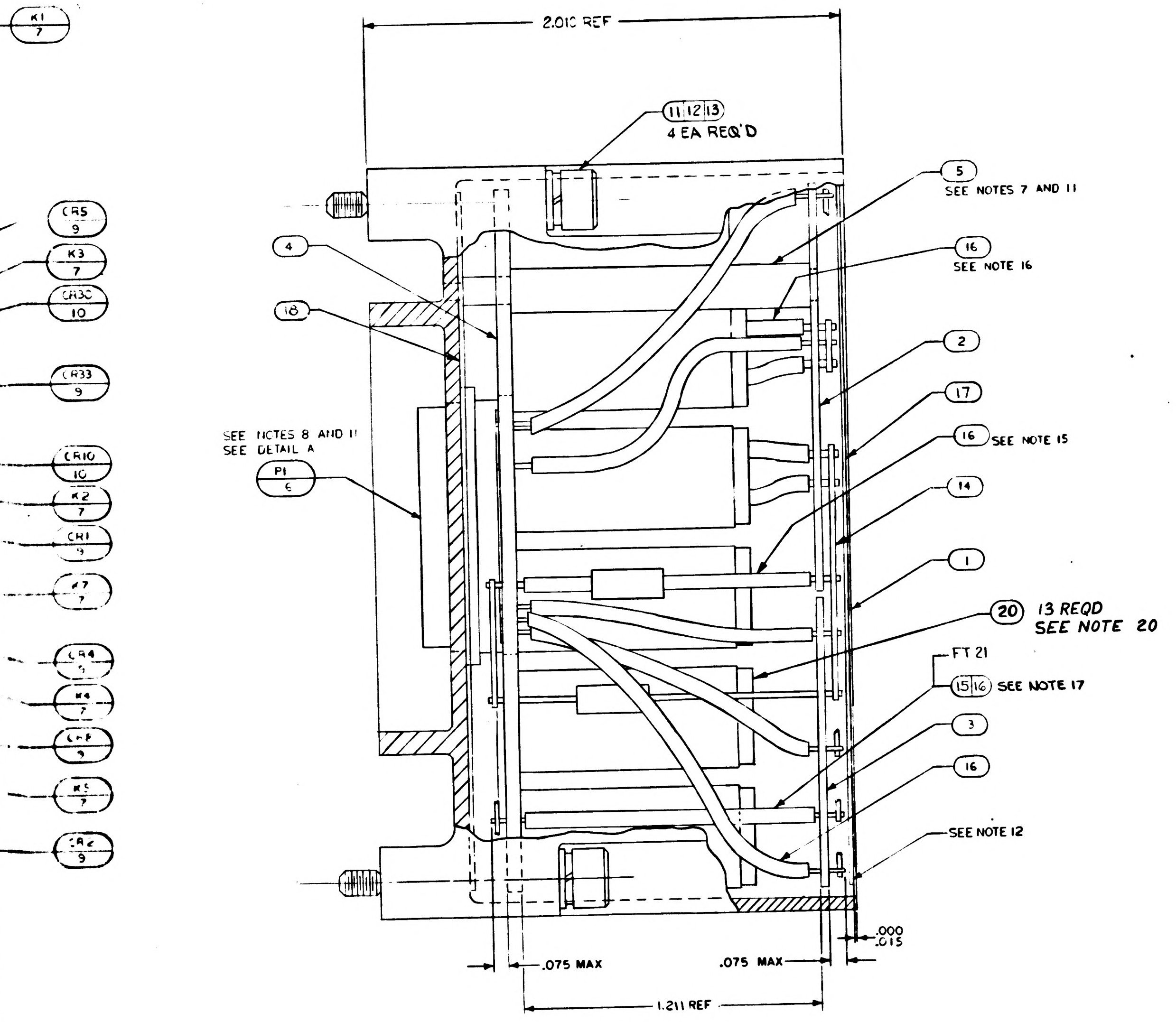
P1-28
P1-29
P1-30
P1-31
P1-32
P1-33
P1-34
P1-35

DETAIL A

CONNECTOR TERMINAL IDENTIFICATION VIEW

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A1	–	COMPLETELY REVISED	[illegible]-59513	5 OCT 64	KF
B	–	[illegible] 25	——	[illegible]	[illegible]
C		REVISED PER TDRR 22206		3 SEP 65	[illegible]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CR33 9
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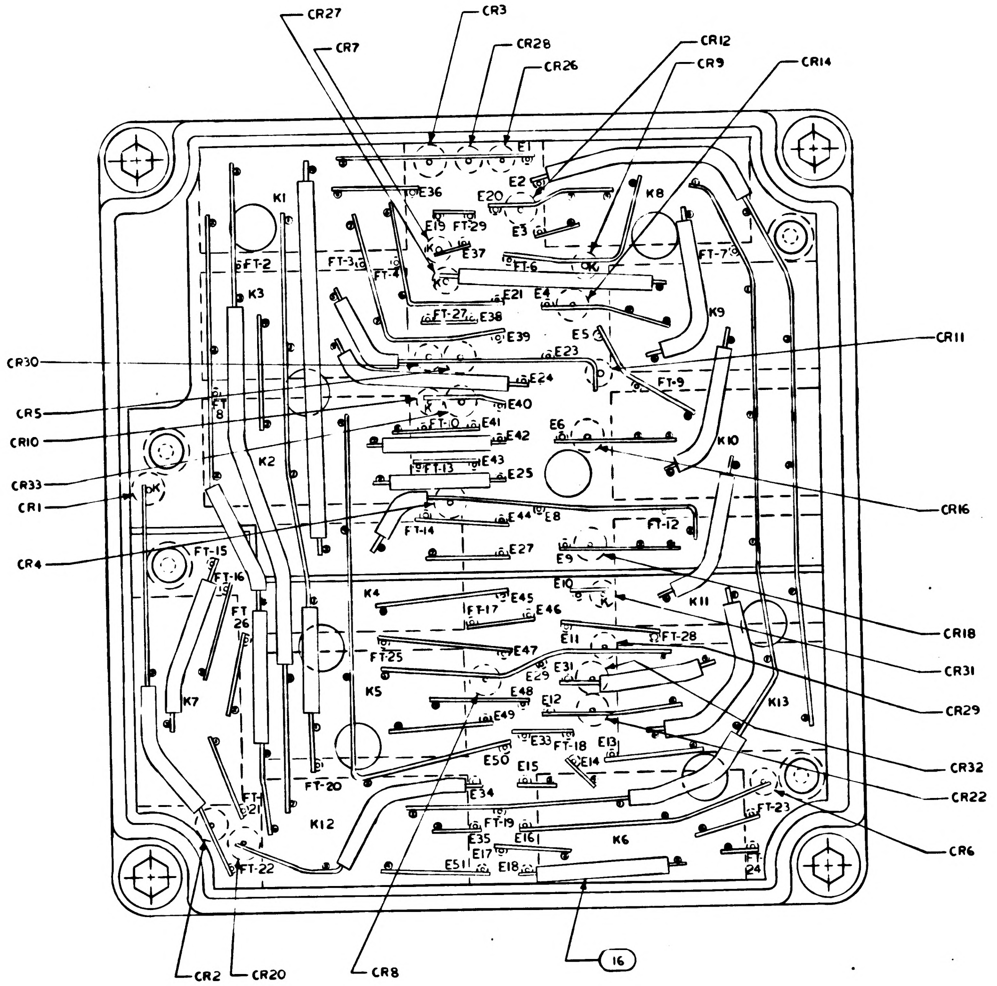
K2 7
CR1 9
K7 7
CR4 9
K4 7
CR8 9
K5 7
CR2 9
2.010 REF
11 12 13 4 EA REQ'D
5 SEE NOTES 7 AND 11
16 SEE NOTE 16
4
18
2
17
16 SEE NOTE 15
SEE NOTES 8 AND 11 SEE DETAIL A
P1 6
14
1
20 13 REQD SEE NOTE 20
FT 21
15 16 SEE NOTE 17
3
16
SEE NOTE 12
.075 MAX
.075 MAX
1.211 REF
.000 .015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CR31
CR29
CR32
CR22
CR6
CR2
CR20
CR8
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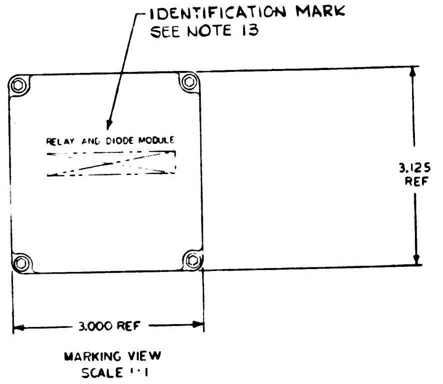
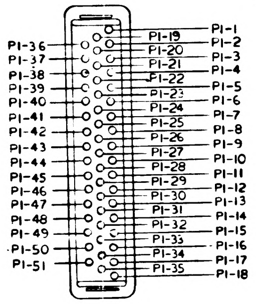

IDENTIFICATION MARK SEE NOTE 13
RELAY AND DIODE MODULE
3.125 REF
3.000 REF

MARKING VIEW
SCALE 1:1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P1-7
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P1-10
P1-11
P1-12
P1-13
P1-14
P1-15
P1-16
P1-17
P1-18

DETAIL A

CONNECTOR TERMINAL IDENTIFICATION VIEW

WIRING DATA

FROM CIRCUIT POINT	TO CIRCUIT POINT	CIRCUIT FUNCTION
P1-1	E1	ZERO ENCODER RELAY CONT (AGC)
P1-2	E2	MANUAL MODE RELAY COMMON LINE (IMU)
P1-3	E3	ATTITUDE CONTROL SIGNAL
P1-4	E4	COARSE ALIGN RELAY CONT
P1-5	E5	MANUAL ALIGN (IMU CONT PNL)
P1-6	E6	CDU MANUAL RELAY CONT
P1-7	SPARE	
P1-8	E8	FINE ALIGN RELAY CONT (AGC)
P1-9	E9	FINE ALIGN RELAY CONT
P1-10	E10	FINE ALIGN RELAY COMMAND (AGC)
P1-11	E11	ENTRY RELAY COMMAND (AGC)
P1-12	E12	ENTRY RELAY CONT
P1-13	E13	MODE SW INTERLOCK (IMU CONT PNL)
P1-14	E14	OVDC
P1-15	E15	TO TEMP CONT
P1-16	E16	40 SEC TIME DELAY RELAY CONT
P1-17	E17	TO TEMP CONT
P1-18	E18	TO TEMP CONT
P1-19	E19	ZERO ENCODER RELAY COMMAND (AGC)
P1-20	E20	ZERO ENCODER RELAY CONT
P1-21	E21	VAR ILLUM & IND LAMP PWR 400 (IMU)
P1-22	SPARE	
P1-23	E23	CDU PANEL RELAY CONT (AGC)
P1-24	E24	CDU MANUAL LT (IMU CONT PNL)
P1-25	E25	COARSE ALIGN MODE LT (IMU CONT PNL)
P1-26	SPARE	
P1-27	E27	AGC FINE ALIGN

WIRING DATA

FROM CIRCUIT POINT	TO CIRCUIT POINT	CIRCUIT FUNCTION
P1-28	SPARE	
P1-29	E29	ENTRY RELAY CONT (AGC)
P1-30	SPARE	
P1-31	E31	ENTRY RELAY CONT RESET
P1-32	SPARE	
P1-33	E33	MODE RELAY COMMON LINE (IMU CONT)
P1-34	E34	ATTITUDE CONT RELAY CONT
P1-35	E35	ATTITUDE CONT MODE SW IND (AGC)
P1-36	E36	ZERO ENCODER MODE LT (IMU CONT PNL)
P1-37	E37	COARSE ALIGN RELAY COMMAND (AGC)
P1-38	E38	CDU MANUAL RELAY COMMAND (AGC)
P1-39	E39	MODE LAMP TEST (G & N PANEL)
P1-40	E40	BACK UP ELECTRONICS RELAY (PSA)
P1-41	E41	COARSE ALIGN RELAY
P1-42	E42	AGC COARSE ALIGN
P1-43	E43	+ 28 VDC
P1-44	E44	IMU DELAY LT
P1-45	E45	FINE ALIGN MODE LT (IMU CONT PNL)
P1-46	E46	+ 28 VDC (TO TEMP CONT)
P1-47	E47	CONDITION LAMP TEST
P1-48	E48	AGC HI SPEED ROLL (AGC)
P1-49	E49	ENTRY MODE LT (IMU CONT PNL)
P1-50	E50	AGC COMMON (IMU CONT PNL)
P1-51	E51	ATTITUDE CONT LT SIGNAL (IMU CONT)

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		REF	1014623	SCHEMATIC
13		20	1023025	PLATE, PROTECTION
11		19	1021706	PLATE, ELECTRICAL SHIELD
1		18	1015030	INSULATOR, PLATE, BOTTOM
1		17	1015029	INSULATOR, PLATE, TOP
AR		16	1006776-21	INSULATION, SLEEVING, ELEC
AR		15	1006787-2	WIRE, ELECTRICAL
AR		14	1006757-1	WIRE ELECTRICAL
4		13	MS35338-78	WASHER, LOCK
4		12	MS15795-303	WASHER, FLAT
4		11	1008069-2	SCREW, SOC HD EXT RELIEVED BODY
11		10	1010392-1	DIODE
14		9	1010362-003	DIODE
1		8	1006772-3	RELAY
12		7	1010353-4	RELAY
1		6	1010615-2	CONNECTOR ELEC RECEPTACLE
4		5	1015061	SPACER, INSULATED
1		4	1015070	WIRING BOARD BOTTOM
1		3	1015062-2	WIRING BOARD, TOP
1		2	1015062-1	WIRING BOARD, TOP
1		1	1015060	HOUSING

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015065-011	101[illegible]-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ___ DECIMALS ± ___ ANGLES ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ___
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fluder DATE 10 SEP 64
CHECKED [illegible] 29 SEP 64
APPROVAL [illegible] 29 Sep 64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RELAY AND DIODE MODULE ASSEMBLY

CODE IDENT NO. | SIZE J2 | 1015036
SCALE 2/1 | SHEET 1 OF 1

Charleston 28 SEP 64

1012038

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. FT DENOTES FEED THRU.

3. ALL WELDS TO BE PER ND1002C05.

4. K DENOTES CATHODE END OF DIODE.

5. "AR" DENOTES AS REQUIRED.

6. BOND ITEM 7 AND ITEM 8 TO ITEM 4 PER ND1002004 TYPE 1

7 BOND ITEM 5 TO ITEM 4 PER ND1002004.

8. SPARE LEADS ON ITEM 6 TO BE CUT .030 TO .090 LENGTH.

9 ALL WIRING TO COMPLY WITH STANDARDS PRESCRIBED BY ND1002069.

10. DIPCOAT PER ND1002068 PRIOR TO ENCAPSULATION.

11. BOND ITEM 5 AND ITEM 6 TO ITEM 1 PER ND1002004 TYPE 1

12. ENCAPSULATE MODULE PER ND1002C02 (BLACK POLYURETHANE FOAM). FLUSH WITH SURFACES OF ITEM 1 AND ITEM 17.

13. SERIALIZE PER ND1002023 AND IDENTIFY PER ND1002019, CENTRALIZE AS SHOWN.

14. ALL UNUSED RELAY LEADS TO BE CUT .060 TO .090 ABOVE RELAY CASE.

15. INSULATION SLEEVING TO BE USED ON DIODE LEADS.

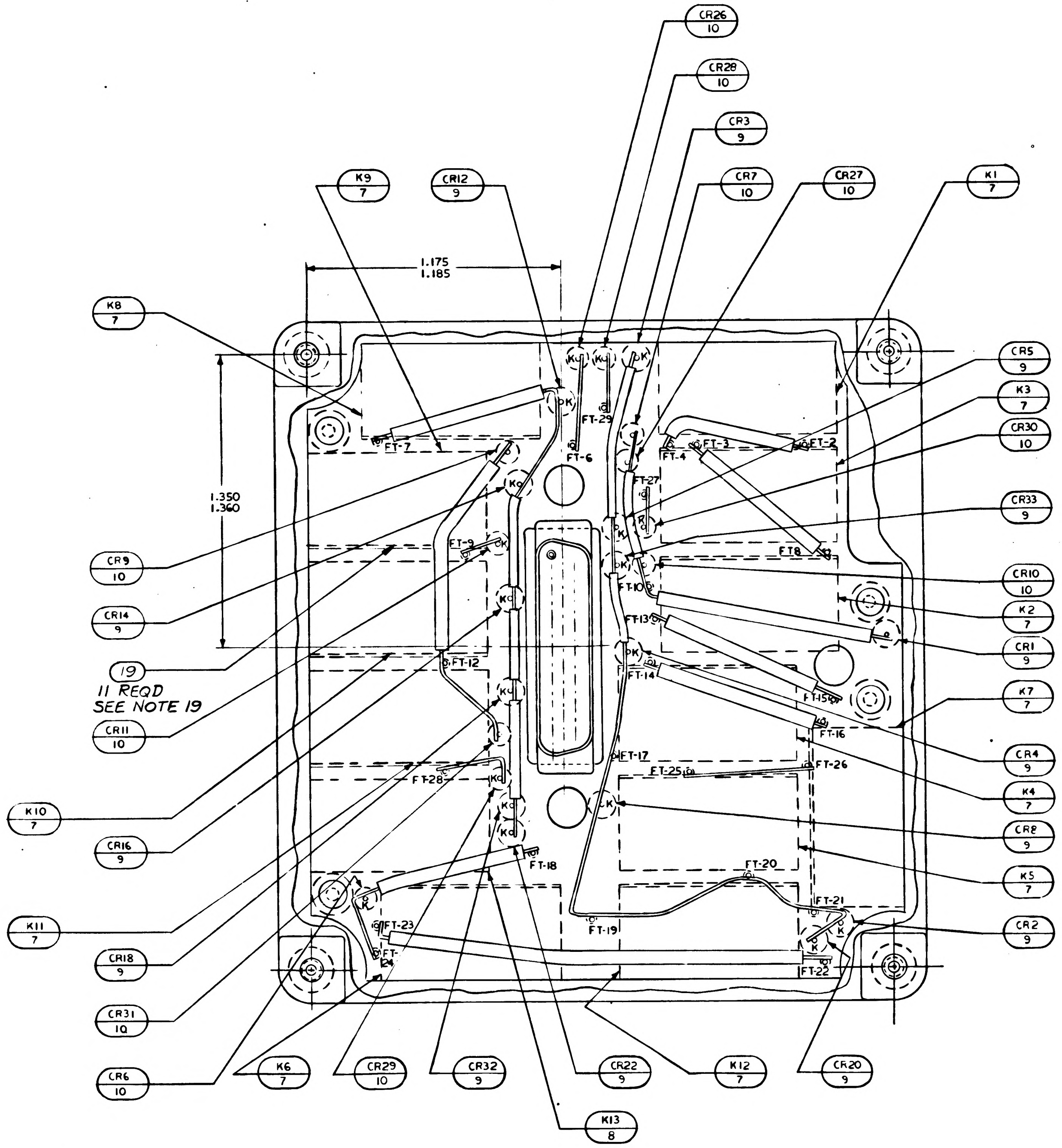
16. INSULATION SLEEVING TO BE USED ON RELAY LEADS.

17. INSULATION SLEEVING TO BE USED ON FT POINTS.

18. INSPECT PER PS1007036.

19. BOND ITEM 19 TO K2, 3, 4, 5, 6, 7, 8, 9, 10, 11 AND 12 PER ND1002004, TYPE I.

20. BOND ITEM 20 TO RELAYS K1 THROUGH K13 PER ND1002187, TYPE I, AND MARK ITEM 20 PER ND1002019 WITH A BLUE DOT ADJACENT TO LEAD 1 FOR RELAYS K1 THROUGH K12 AND WITH A BLUE DOT ADJACENT TO LEADS 1 AND 9 FOR RELAY K13.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1.185
1.350
1.360
CR5 9
K3 7
CR30 10
CR33 9
CR9 10
CR14 9
19
11 REQD
SEE NOTE 19
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K2 7
CR1 9
K7 7
CR4 9
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CR2 9
K10 7
CR16 9
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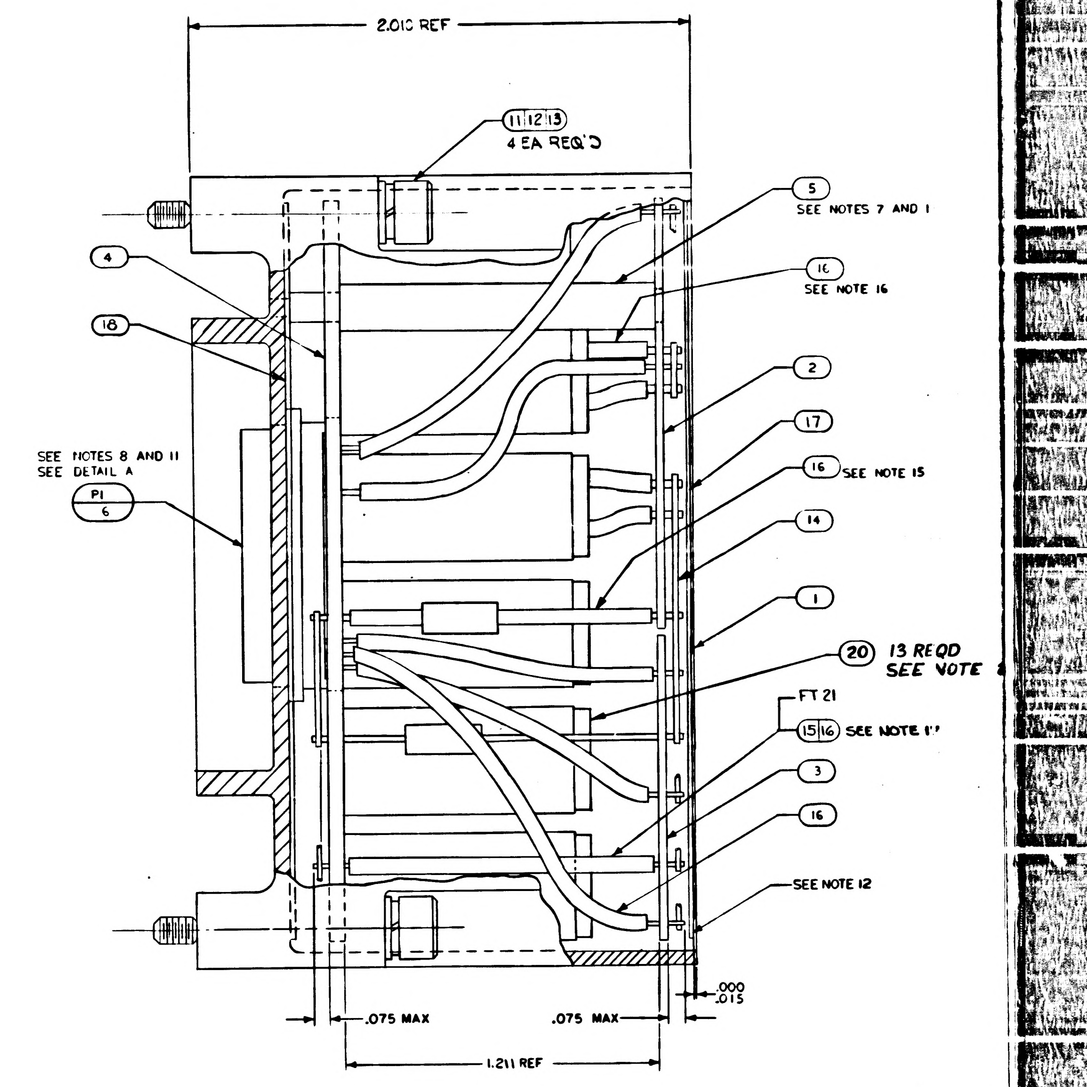
2.010 REF
11 12 13
4 EA REQ'D
5
SEE NOTES 7 AND 1
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16
SEE NOTE 16
18
2
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SEE NOTES 8 AND 11
SEE DETAIL A
P1
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16 SEE NOTE 15
14
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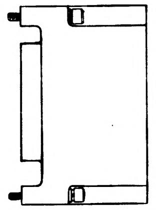
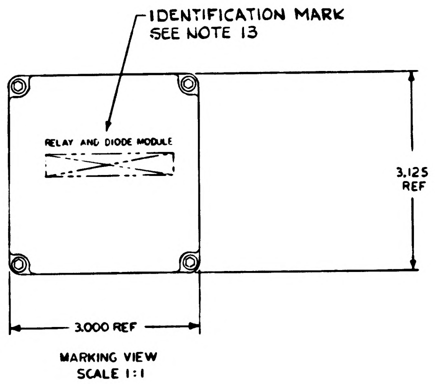
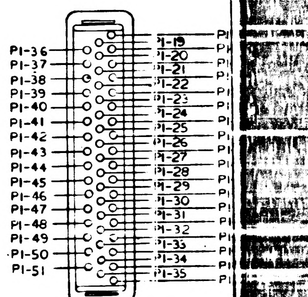
20 13 REQD
SEE NOTE
FT 21
15 16 SEE NOTE 1
3
16
SEE NOTE 12
.000
.015
.075 MAX
.075 MAX
1.211 REF




IDENTIFICATION MARK
SEE NOTE 13
RELAY AND DIODE MODULE
3.125 REF
3.000 REF

MARKING VIEW
SCALE 1:1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P1-30
P1-31
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P1-33
P1-34
P1-35

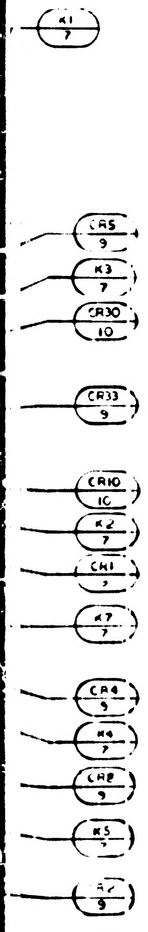
DETAIL A

CONNECTOR TERMINAL IDENTIFICATION VIEW

1015036 C

1/1015036

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A1	-	COMPLETELY REVISED	58518	5 OCT 64	WF
B	—	REVISED PER TDRR ..25	——		
C		REVISED PER TDRR 22206		8 SEP 65	
D		REVISED PER TDRR 23705		8 NOV 65	



K1 7
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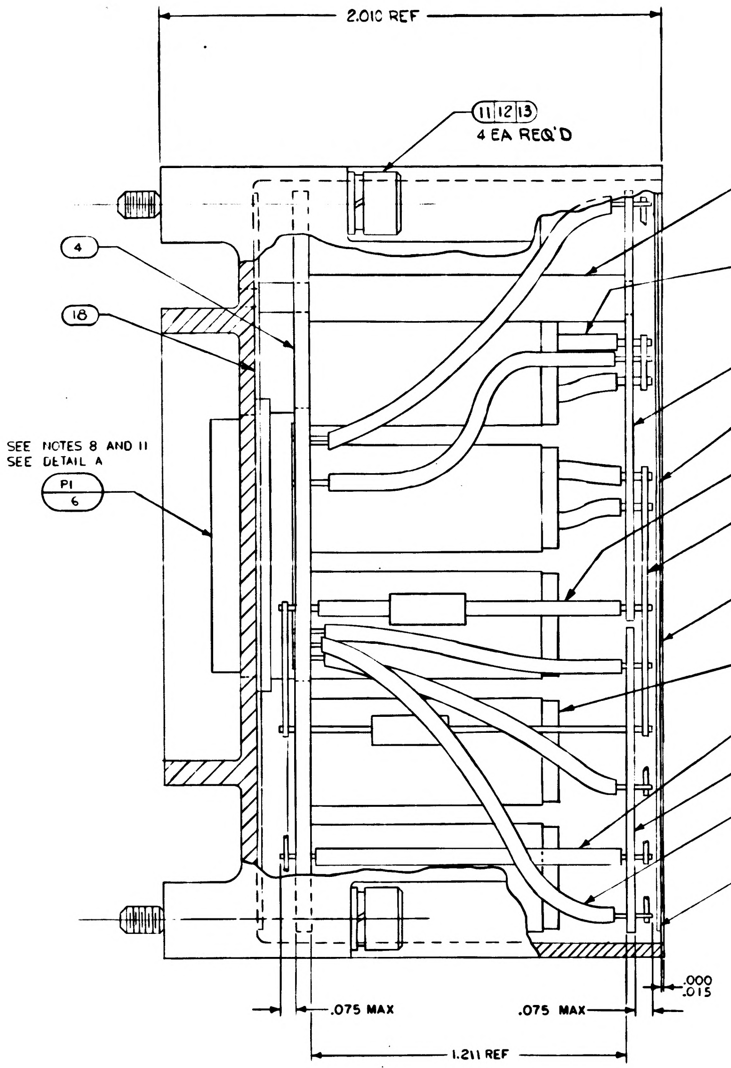
K3 7
CR30 10
CR33 9
CR10 10
K2 7
CR1 7
K7 7
CR4 9
K4 7
CR8 9
K5 7



2.010 REF
11 12 13 4 EA REQ'D
5 SEE NOTES 7 AND 11
16 SEE NOTE 16
4
18
2
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16 SEE NOTE 15
14
1
SEE NOTES 8 AND 11
SEE DETAIL A
P1 6
20 13 REQD SEE NOTE 20
FT 21
15 16 SEE NOTE 17
3
16
SEE NOTE 12
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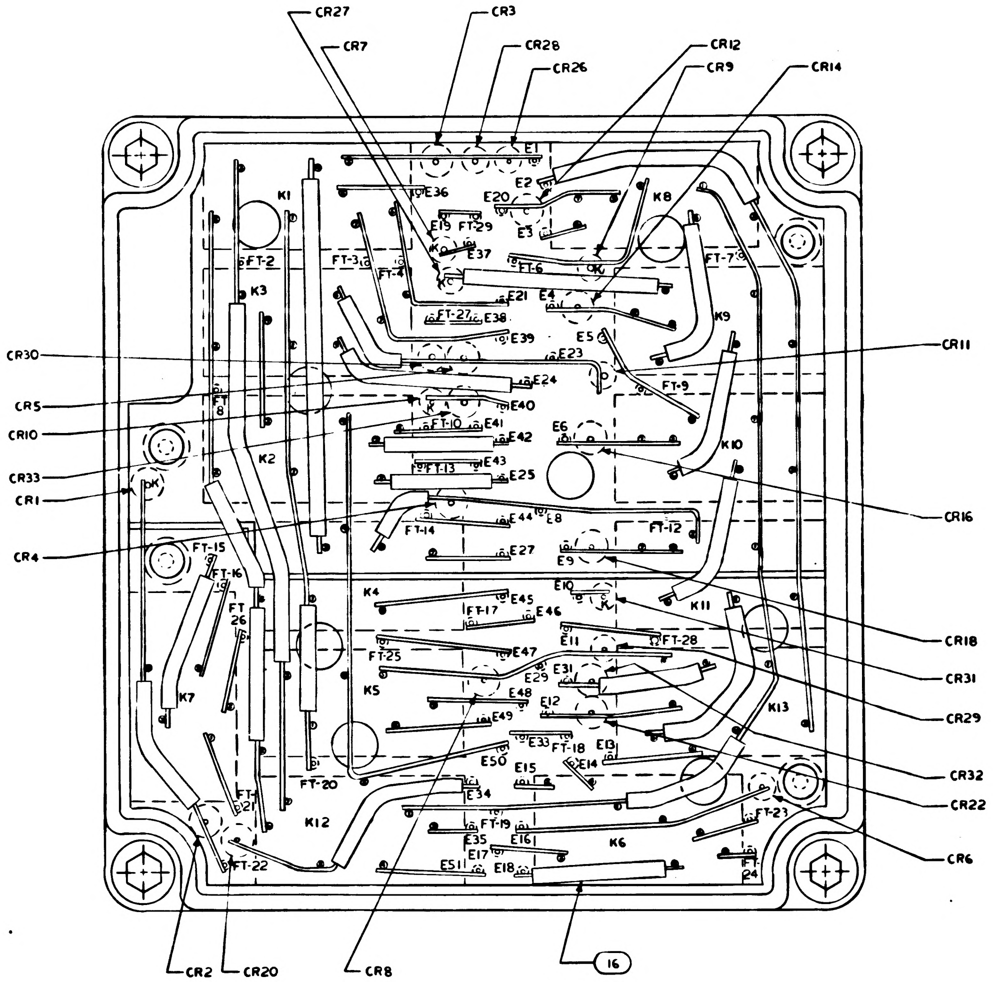
.075 MAX
.000 .015
1.211 REF



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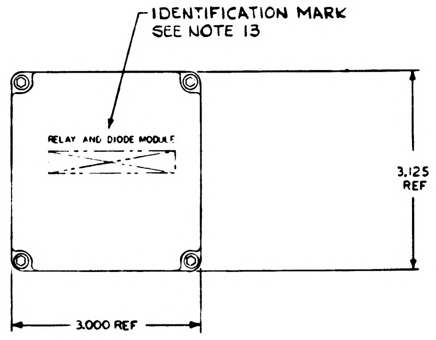
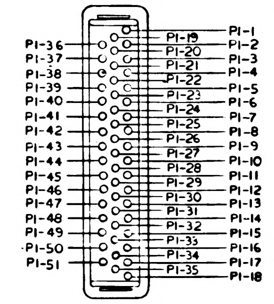


IDENTIFICATION MARK
SEE NOTE 13
RELAY AND DIODE MODULE
3.125 REF
3.000 REF

MARKING VIEW
SCALE 1:1



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P1-16
P1-17
P1-18

DETAIL A

CONNECTOR TERMINAL IDENTIFICATION VIEW

WIRING DATA		
FROM CIRCUIT POINT	TO CIRCUIT POINT	CIRCUIT FUNCTION
P1-1	E1	ZERO ENCODER RELAY CONT (AGC)
P1-2	E2	MANUAL MODE RELAY COMMON LINE (IMU)
P1-3	E3	ATTITUDE CONTROL SIGNAL
P1-4	E4	COARSE ALIGN RELAY CONT
P1-5	E5	MANUAL ALIGN (IMU CONT PNL)
P1-6	E6	CDU MANUAL RELAY CONT
P1-7	SPARE	
P1-8	E8	FINE ALIGN RELAY CONT (AGC)
P1-9	E9	FINE ALIGN RELAY CONT
P1-10	E10	FINE ALIGN RELAY COMMAND (AGC)
P1-11	E11	ENTRY RELAY COMMAND (AGC)
P1-12	E12	ENTRY RELAY CONT
P1-13	E13	MODE SW INTERLOCK (IMU CONT PNL)
P1-14	E14	OVDC
P1-15	E15	TO TEMP CONT
P1-16	E16	40 SEC TIME DELAY RELAY CONT
P1-17	E17	TO TEMP CONT
P1-18	E18	TO TEMP CONT
P1-19	E19	ZERO ENCODER RELAY COMMAND (AGC)
P1-20	E20	ZERO ENCODER RELAY CONT
P1-21	E21	VAR ILLUM & IND LAMP PWR 400 (IMU)
P1-22	SPARE	
P1-23	E23	CDU PANEL RELAY CONT (AGC)
P1-24	E24	CDU MANUAL LT (IMU CONT PNL)
P1-25	E25	COARSE ALIGN MODE LT (IMU CONT PNL)
P1-26	SPARE	
P1-27	E27	AGC FINE ALIGN

WIRING DATA		
FROM CIRCUIT POINT	TO CIRCUIT POINT	CIRCUIT FUNCTION
P1-28	SPARE	
P1-29	E29	ENTRY RELAY CONT (AGC)
P1-30	SPARE	
P1-31	E31	ENTRY RELAY CONT RESET
P1-32	SPARE	
P1-33	E33	MODE RELAY COMMON LINE (IMU CONT)
P1-34	E34	ATTITUDE CONT RELAY CONT
P1-35	E35	ATTITUDE CONT MODE SW IND (AGC)
P1-36	E36	ZERO ENCODER MODE LT (IMU CONT PNL)
P1-37	E37	COARSE ALIGN RELAY COMMAND (AGC)
P1-38	E38	CDU MANUAL RELAY COMMAND (AGC)
P1-39	E39	MODE LAMP TEST (G & N PANEL)
P1-40	E40	BACK UP ELECTRONICS RELAY (PSA)
P1-41	E41	COARSE ALIGN RELAY
P1-42	E42	AGC COARSE ALIGN
P1-43	E43	+ 28 VDC
P1-44	E44	IMU DELAY LT
P1-45	E45	FINE ALIGN MODE LT (IMU CONT PNL)
P1-46	E46	+ 28 VDC (TO TEMP CONT)
P1-47	E47	CONDITION LAMP TEST
P1-48	E48	AGC HI SPEED ROLL (AGC)
P1-49	E49	ENTRY MODE LT (IMU CONT PNL)
P1-50	E50	AGC COMMON (IMU CONT PNL)
P1-51	E51	ATTITUDE CONT LT SIGNAL (IMU CONT)

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			011				
			☒		REF	1014623	SCHEMATIC
			13		20	1023025	PLATE, PROTECTION
			11		19	1021706	PLATE, ELECTRICAL SHIELD
			1		18	1015030	INSULATOR, PLATE, BOTTOM
			1		17	1015029	INSULATOR PLATE, TOP
			AR		16	1006776-21	INSULATION, SLEEVING, ELEC
			AR		15	1006787-2	WIRE, ELECTRICAL
			AR		14	1006757-1	WIRE, ELECTRICAL
			4		13	MS35338-78	WASHER, LOCK
			4		12	MS15795-303	WASHER, FLAT
			4		11	1008069-2	SCREW, SOC HD EXT RELIEVED BODY
			11		10	1010392-1	DIODE
			14		9	1010837-003	DIODE
			1		8	1006772-3	RELAY
			12		7	1010353-4	RELAY
			1		6	1010615-2	CONNECTOR ELEC, RECEPTACLE
			4		5	1015061	SPACER, INSULATED
			1		4	1015070	WIRING BOARD, BOTTOM
			1		3	1015062-2	WIRING BOARD, TOP
			1		2	1015062-1	WIRING BOARD, TOP
			1		1	1015036	HOUSING

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015065-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL ——

CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN A. J. Fluke DATE 10 SEP 61
CHECKED 29 SEP 64
APPROVAL 29
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RELAY AND DIODE MODULE
ASSEMBLY

CODE IDENT NO. 80230
SIZE J2
1015036
SCALE 4:1
SHEET 1 OF 1

1015036 D

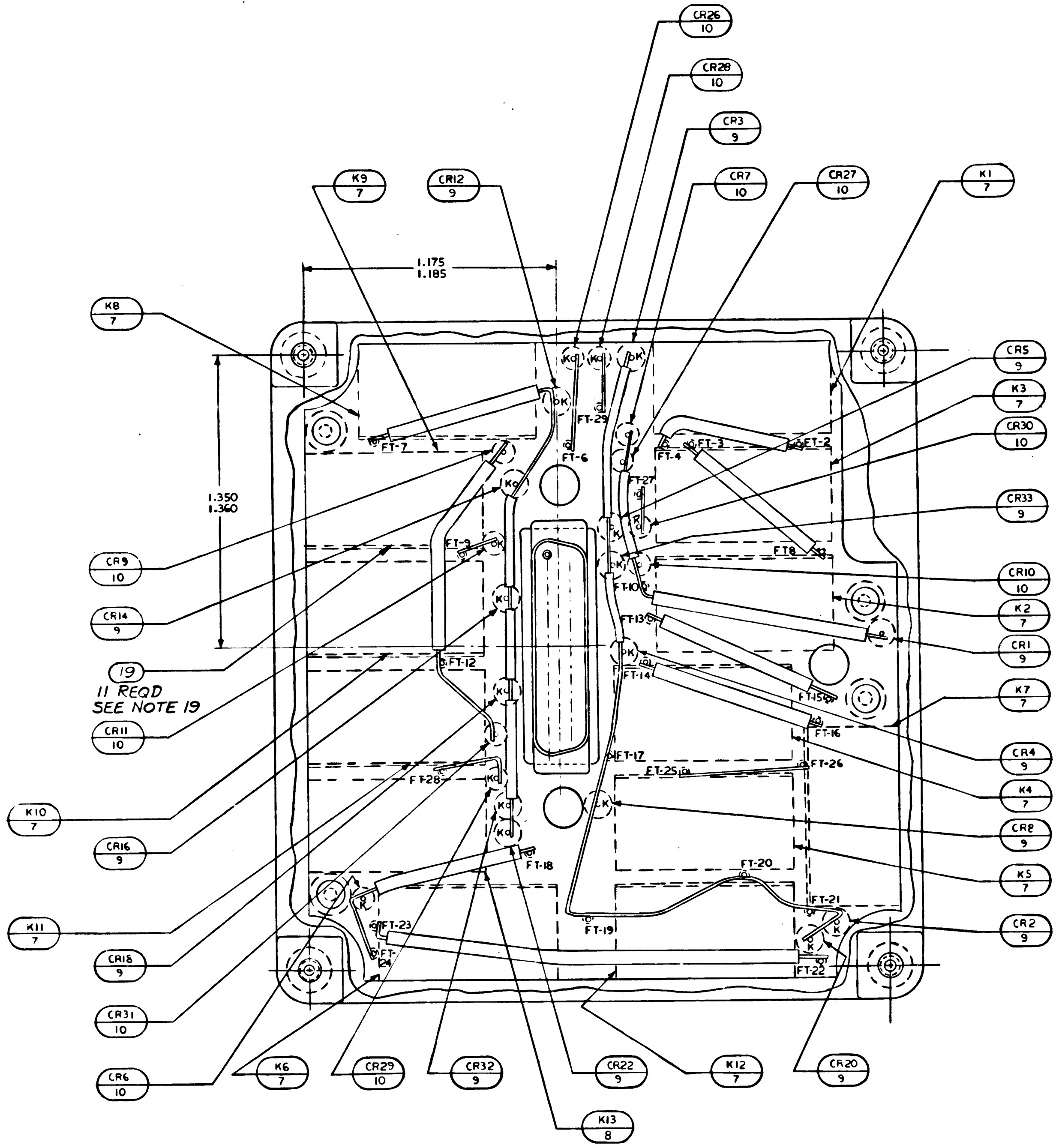
2 Thurston 28 SEP 64

1015036 D

2/1015036

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. "FT" DENOTES FEED THRU.
3. ALL WELDS TO BE PER ND1002005.
4. "K" DENOTES CATHODE END OF DIODE.
5. "AR" DENOTES AS REQUIRED.
6. BOND ITEM 7 AND ITEM 8 TO ITEM 4 PER ND1002004 TYPE 1
7. BOND ITEM 5 TO ITEM 4 PER ND1002004.
8. SPARE LEADS ON ITEM 6 TO BE CUT .030 TO .090 LENGTH.
9. ALL WIRING TO COMPLY WITH STANDARDS PRESCRIBED BY ND1002069.
10. DIPCOAT PER ND1002068 PRIOR TO ENCAPSULATION.
11. BOND ITEM 5 AND ITEM 6 TO ITEM 1 PER ND1002004 TYPE 1
12. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). FLUSH WITH SURFACES OF ITEM 1 AND ITEM 17.
13. SERIALIZE PER ND1002023 AND IDENTIFY PER ND1002019. CENTRALIZE AS SHOWN.
14. ALL UNUSED RELAY LEADS TO BE CUT .060 TO .090 ABOVE RELAY CASE.
15. INSULATION SLEEVING TO BE USED ON DIODE LEADS.
16. INSULATION SLEEVING TO BE USED ON RELAY LEADS.
17. INSULATION SLEEVING TO BE USED ON FT POINTS.
18. INSPECT PER PS1007036.
19. BOND ITEM 19 TO K2, 3, 4, 5, 6, 7, 8, 9, 10, 11 AND 12 PER ND1002004, TYPE I.
20. BOND ITEM 20 TO RELAYS K1 THROUGH K13 PER ND1002187, TYPE I, AND MARK ITEM 20 PER ND1002019 WITH A BLUE DOT ADJACENT TO LEAD 1 FOR RELAYS K1 THROUGH K12 AND WITH A BLUE DOT ADJACENT TO LEADS 1 AND 9 FOR RELAY K13.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CR28 10
CR3 9
K9 7
CR12 9
CR7 10
CR27 10
K1 7
1.175
1.185
K8 7
CR5 9
K3 7
CR30 10
CR33 9
1.350
1.360
CR9 10
CR14 9
19
11 REQD
SEE NOTE 19
CR11 10
K10 7
CR16 9
K11 7
CR18 9
CR31 10
CR6 10
K6 7
CR29 10
CR32 9
CR22 9
K13 8
K12 7
CR20 9
CR10 10
K2 7
CR1 9
K7 7
CR4 9
K4 7
CR8 9
K5 7
CR2 9
FT-1
FT-2
FT-3
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FT-26
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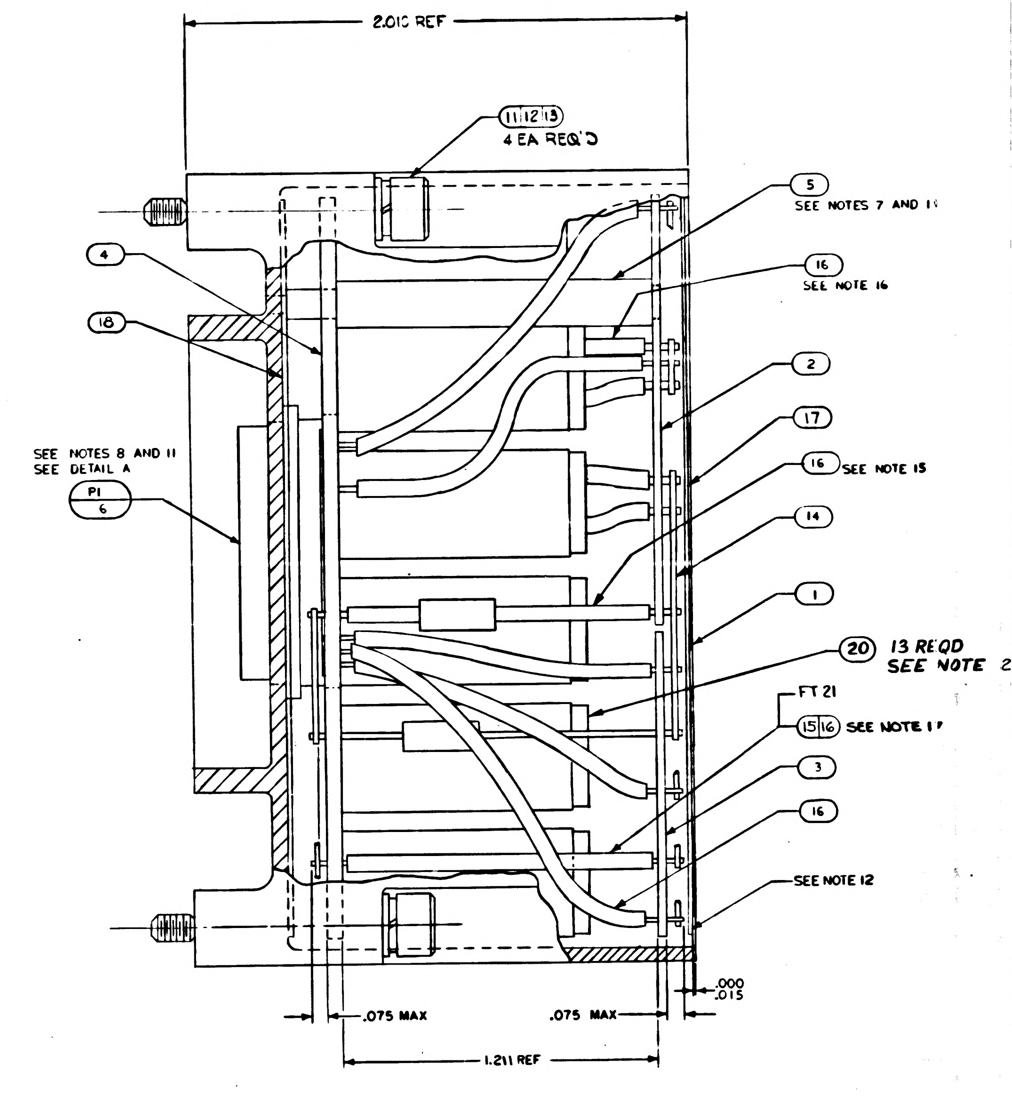
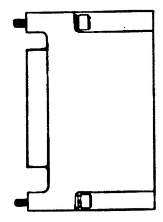
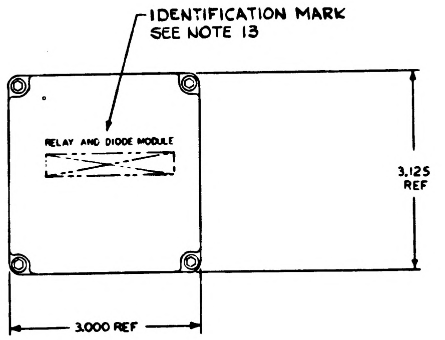
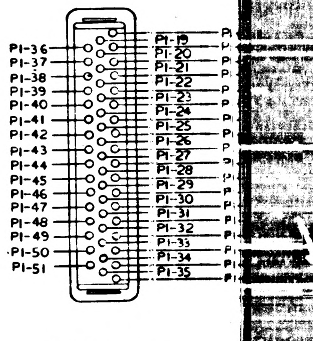
FT-28
K


2.010 REF
11 12 13
4 EA REQ'D
5
SEE NOTES 7 AND 1
16
SEE NOTE 16
4
18
2
17
16
SEE NOTE 15
SEE NOTES 8 AND 11
SEE DETAIL A
P1 6
14
1
20
13 REQD
SEE NOTE 2
FT 21
15 16
SEE NOTE 1
3
16
SEE NOTE 12
.000
.015
.075 MAX
.075 MAX
1.211 REF




IDENTIFICATION MARK
SEE NOTE 13
RELAY AND DIODE MODULE
3.125
REF
3.000 REF

MARKING VIEW
SCALE 1:1


P1-36
P1-37
P1-38
P1-39
P1-40
P1-41
P1-42
P1-43
P1-44
P1-45
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P1-47
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P1-26
P1-27
P1-28
P1-29
P1-30
P1-31
P1-32
P1-33
P1-34
P1-35

DETAIL A
CONNECTOR TERMINAL
IDENTIFICATION VIEW

1015036 D

14078

APPLICATION	
NEXT ASSY	USED ON
1015064-011	1015023-011

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER D.O. 58618	26 Sep 64	W.S.

REV							
SHEET							
REV STATUS	A	+	+	A	+	+	A
OF SHEETS	1	2	3	4	5	6	7

Charleston
15 Sep 64

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS,
BRANCHED-A

ACSP PN
DRAWN R. J. Leisel DATE 1 SEP 64
CHECKED C. Piorgda 15 SEP 64
APPROVAL 15 Sep 64
APPROVAL 10/21/64
NASA APPROVAL 11-12-64
MIT APPROVAL 10 Nov 64
CONTRACT NAS9-497

CODE IDENT NO. SIZE A 1015037 REV A
SCALE NONE SHEET 1 OF 8

GRP WIRE HARNESS A + 1015037

PENNANT NOTE	GENERAL NOTES
1	SEE CONDUCTOR CHART, PENNANT NOTE 1.
2	SEE CONDUCTOR CHART, PENNANT NOTE 2.
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	LACE HARNESS USING ITEM 10.
8	IDENTIFY USING DRAWING NO. AND REVISION LETTER PER ND1002019 (ES-267)
9	SOLDER PER ND-1002071 USING ITEMS 11 AND 12
10	Y OR N IN TINNED COLUMN INDICATES YES OR NO.
11	LENGTHS SPECIFIED ARE FOR CONDUCTORS BEFORE ATTACHING TO AN ACCESSORY.
12	GRID IS SHOWN FOR DIMENSIONING PURPOSES.
13	GRID MODULE IS 1 INCH TRUE POSITION
14	UNLESS OTHERWISE SPECIFIED - FEATURE CENTERLINES AT TRUE POSITION WITHIN + OR - .25 INCH RELATIVE TO GRID. ENDS OF CONDUCTORS OR ACCESSORIES AT TRUE POSITION WITHIN + OR - .12 INCH RELATIVE TO GRID. TRUE POSITION DIMENSIONS ARE REGARDLESS OF FEATURE SIZE.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS — SIZE A — 1015037
SCALE-NONE REV LTR + SHEET 2 OF 8

MIL 2084 4-63

GRP WIRE HARNESS A + 1015037

PENNANT NOTE	GENERAL NOTES
15	BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.
16	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
17	CONNECTOR ITEM 4 IS SUPPLIED WITH 21 COLOR CODED NO. 28AWG LEADS 30 INCHES LONG. ALL UNUSED LEADS SHALL BE TRIMMED TO A MAX. LENGTH OF 1.00 INCH FROM THE CONNECTOR.
18	SEE NOTE 16 AND 17.
19	LENGTHS SPECIFIED FOR INDIVIDUAL CONDUCTORS ARE FOR REFERENCE ONLY.
20	TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED —

APPLICABLE LENGTH FOR STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	TOLERANCE STRIP JACKET	TOLERANCE CUT WIRE	TOLERANCE CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50

21	Fabricate Harness in Accordance With ND 1002032.
22	Pot back of Connector P1 in Accordance with ND-1002236.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS — SIZE A — 1015037
SCALE-NONE REV LTR + SHEET 3 OF 8

MIL 2084 4-63

WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015037- 1	WIRE 1010789- 14 (YELLOW) 16 AWG 14.5 INCHES TOTAL LENGTH
	2	1	1015037- 2	WIRE 1010789- 1 (YELLOW) 24 AWG 6 FEET 5.0 INCHES TOTAL LENGTH
16	3	1	1010823- 3	CONNECTOR PLUG ELECTRICAL
18	4	1	1015059	ADAPTER PLATE, DIODE MODULE (INSEP ASSY)
16	5	88	1010738- 5	CONTACT, NO. 22
16	6	20	1010738- 7	CONTACT, NO. 24
[redacted]	7	[redacted]	[redacted]	[redacted]
[redacted]	8	[redacted]	[redacted]	[redacted]
16	9	1	1010638- 6	TERMINAL LUG
	10	AR	1012507- 1	LACING TAPE
	11	AR	QQ-S-571 SN60 WRAP2	SOLDER
	12	AR	MIL-F-14256	FLUX
16	13	1	1010812- 3	GASKET
16	14	AR	1012503- 1	COMPOUND POLYURETHANE
16	15	AR	1012503- 2	COMPOUND POLYURETHANE
16	16	AR	1012504- 1	PRIMER METAL
16	17	AR	1012504- 2	PRIMER METAL
16	18	AR	1012505- 1	PRIMER PVC

MANNED SPACECRAFT CENTER HOUSTON, TEXAS — SIZE A — 1015037
SCALE-NONE REV LTR A SHEET 4 of 8

MIL 2084-4-64

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GRP

WIRE HARNESS A + 1015037

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.
A 19	4	[illegible]	2- 2					6	J1- 88	9	N		6	1
A 20	4	[illegible]	2- 3					6	J1- 91	9	N		6	1
A 21	4	[illegible]	2- 4					6	J1-102	9	N		6	1
A 22	4	[illegible]	2- 5					6	J1- 22	9	N		6	1
A 23	4	[illegible]	2- 7					6	J1- 9	9	N		6	1
A 24	4	[illegible]	J2- 8					6	J1- 24	9	N		6	1
A 25	4	[illegible]	J2- 12					6	J1- 90	9	N		6	1
A 26	4	[illegible]	J2- 13					6	J1-104	9	N		6	1
A 27	4	[illegible]	J2- 14					6	J1-103	9	N		6	1
A 28	4	[illegible]	J2- 15					6	J1-101	9	N		6	1
A 29	4	[illegible]	J2- 16					6	J1- 12	9	N		6	1
A 30	4	[illegible]	J2- 18					6	J1- 8	9	N		6	1
A 31	4	[illegible]	J2- 19					6	J1- 13	9	N		6	1
A 32	4	[illegible]	J2- 20					6	E1	30	Y			4
A 33	4	[illegible]	J2- 21					6	J1- 10	9	N		[illegible]	1
A 34	4		J2- 6					6	J1- 97	9	N		6	1
A 35	4		J2- 9					6	J1- 98	9	N		6	1
A 36	4		J2- 10					6	J1- 99	9	N		6	1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MIL 2085 - 4-63 WIR

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015037	
SCALE - NONE	REV LTR +		SHEET 6 OF 8

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.
A-37	4		J2- 11					6	J1- 100	9	N		6	1
A-38	4		J2-17					6	J1- 105	9	N		6	1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MIL 2085-4-64 WIR

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015037	
SCALE - NONE	REV LTR +		SHEET 7 of 8

GRP

WIRE HARNESS A + 1015037

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.
A 1	2	[illegible]	J1- 38	9	N		5	1	T1- 5	30	Y		[illegible]	5
A 2	2	[illegible]	J1- 39	9	N		5	1	T1- 3	30	Y		[illegible]	5
A 3	2	[illegible]	J1- 48	9	N		5	1	T1- 7	30	Y		[illegible]	5
A 4	2	[illegible]	J1- 49	9	N		5	1	T1- 4	30	Y		[illegible]	5
A 5	2	[illegible]	T1- 6	30	Y		[illegible]	5	T1- 4	30	Y			5
A 6	2	[illegible]	J1- 68	9	N		5	1	T1- 1	30	Y		[illegible]	5
A 7	2	[illegible]	J1- 69	9	N		5	1	T1- 2	30	Y		[illegible]	5
A 8	2	[illegible]	J1- 81	9	N		5	1	E2	30	Y			3
A 9	2	[illegible]	J1- 94	9	N		5	1	E2	30	Y			3
A 10	2	[illegible]	J1- 95	9	N		5	1	E2	30	Y			3
A 11	2	[illegible]	J1-108	9	N		5	1	E2	30	Y			3
A 12	1	[illegible]	T1- 8	30	N		[illegible]	5	E2	30	N			3
A 13	2	[illegible]	J1- 93	9	N		5	1	E1	30	Y			4
A 14	2	[illegible]	J1-106	9	N		5	1	E1	30	Y			4
A 15	2	[illegible]	J1-107	9	N		5	1	E1	30	Y			4
A 16	1	[illegible]	T1- 9	30	N		[illegible]	5	E1	30	N			4
A 17	2	[illegible]	J1- 1	9	N		5	1	E3	30	N		9[illegible]	2
A 18	4	[illegible]	J2- 1					6	J1- 89	9	N		6	1

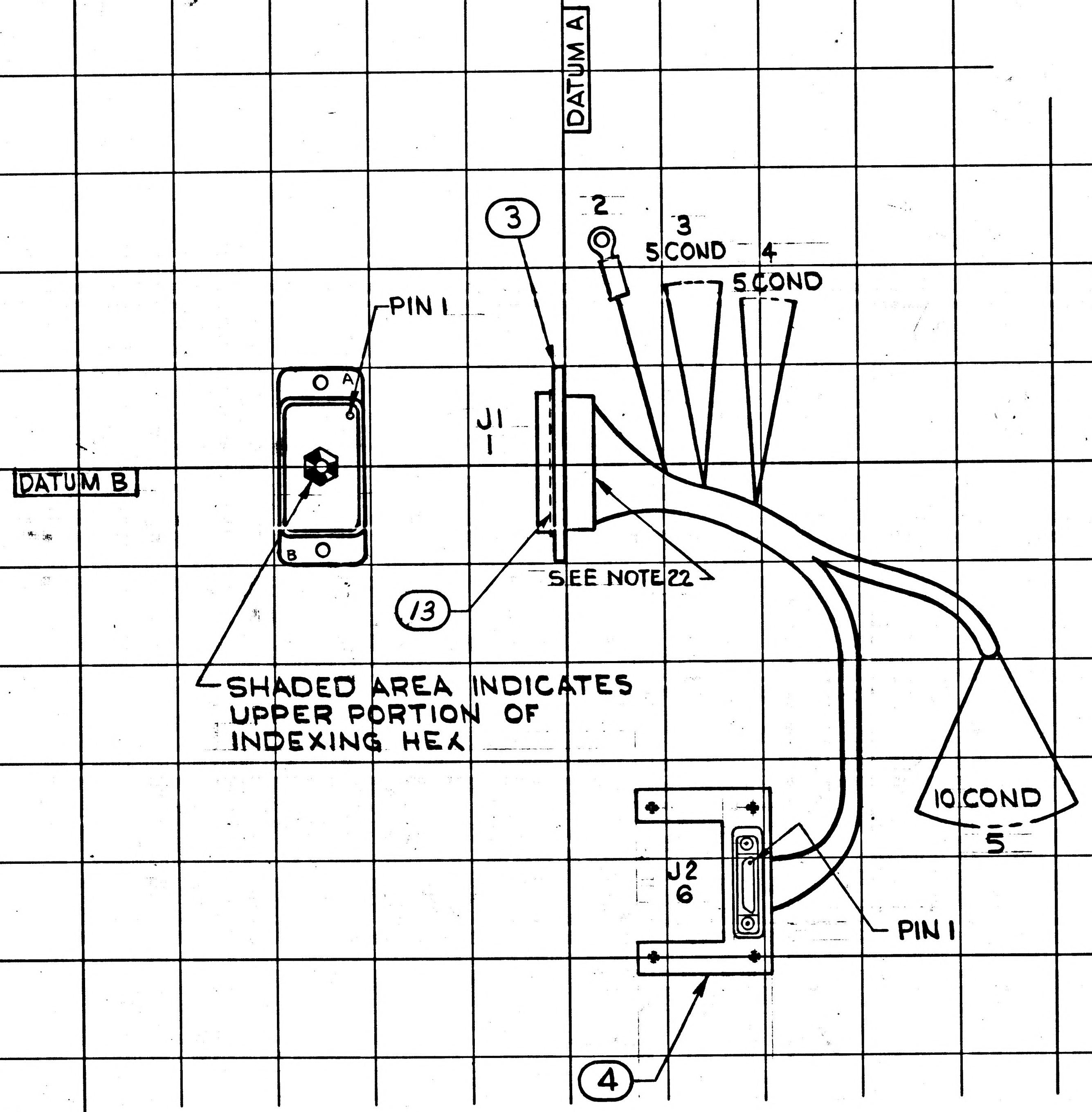
1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015037	
SCALE - NONE	REV LTR +		SHEET 5 OF 8

REVISIONS 14078

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		SEE SHEET NO. 1			


DATUM A
DATUM B
PIN 1
A
B
3
J1
1
2
3
5 COND
4
5 COND
13
SEE NOTE 22
SHADED AREA INDICATES UPPER PORTION OF INDEXING HEX
10 COND
5
J2
6
PIN 1
4

MASTER

NEXT ASSY	USED ON
1015064-011	1015023-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN F.W. Heisel DATE 2 SEP 64
CHECKED C. Piojda 15 SEP 64
APPROVAL R.C. De Vries 15 Sept
APPROVAL J. Kern 10/21/64
NASA APPROVAL W.J. 11-12-64
MIT APPROVAL W. 10/30/64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS, BRANCHED-A

CODE IDENT NO.
SIZE C
1015037
SCALE FULL
SHEET 8 OF 8

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

14078

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1015064-011	1015023-011	A	REVISED PER D.O. 58618	26 Sep 64	W.B.
		B	REVISED PER TDRR 14574	7 DEC 64	JWP

Charleston
15 SEP 64

REV STATUS OF SHEETS	REV	B	+	+	B	+	+	+	A
	SHEET	1	2	3	4	5	6	7	8

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN Reisel DATE 1 SEP 64
CHECKED C. Piojda 15 SEP 64
APPROVAL McDe Vree 15 Sep 64
APPROVAL J. Heim 10/21/64
NASA APPROVAL W. J. 11-12-64
MIT APPROVAL W. Kupfer 10 Nov 64
CONTRACT NAS9-497

WIRING HARNESS, BRANCHED-A

CODE IDENT NO.	SIZE		REV
	A	1015037	B

SCALE NONE

SHEET 1 OF 8

GRP WIRE HARNESS A 1015037

PENNANT NOTE	GENERAL NOTES
1	SEE CONDUCTOR CHART. PENNANT NOTE 1.
2	SEE CONDUCTOR CHART. PENNANT NOTE 2.
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	LACE HARNESS USING ITEM 10.
8	IDENTIFY USING DRAWING NO. AND REVISION LETTER PER ND1002019 (ES-267)
9	SOLDER PER ND-1002071 USING ITEMS 11 AND 12
10	Y OR N IN TINNED COLUMN INDICATES YES OR NO.
11	LENGTHS SPECIFIED ARE FOR CONDUCTORS BEFORE ATTACHING TO AN ACCESSORY.
12	GRID IS SHOWN FOR DIMENSIONING PURPOSES.
13	GRID MODULE IS 1 INCH TRUE POSITION.
14	UNLESS OTHERWISE SPECIFIED - FEATURE CENTERLINES AT TRUE POSITION WITHIN + OR - .25 INCH RELATIVE TO GRID. ENDS OF CONDUCTORS OR ACCESSORIES AT TRUE POSITION WITHIN + OR - .12 INCH RELATIVE TO GRID. TRUE POSITION DIMENSIONS ARE REGARDLESS OF FEATURE SIZE.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015037
SCALE - NONE | REV LTR | SHEET 2 OF 8

GRP WIRE HARNESS A 1015037

PENNANT NOTE	GENERAL NOTES
15	BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.
16	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
17	CONNECTOR ITEM 4 IS SUPPLIED WITH 21 COLOR CODED NO. 28AWG LEADS 30 INCHES LONG. ALL UNUSED LEADS SHALL BE TRIMMED TO A MAX. LENGTH OF 1.00 INCH FROM THE CONNECTOR.
18	SEE NOTE 16 AND 17.
19	LENGTHS SPECIFIED FOR INDIVIDUAL CONDUCTORS ARE FOR REFERENCE ONLY.
20	TOLERANCE CHART. UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR STRIP WIRE. STRIP JACKET. CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	TOLERANCE STRIP JACKET	TOLERANCE CUT WIRE	TOLERANCE CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50

21 Fabricate Harness in Accordance With ND 1002032.

22 Pot back of Connector J1 in Accordance with ND-1002236.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015037
SCALE - NONE | REV LTR | SHEET 3 OF 8

WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015037- 1	WIRE 1010789- 14 (YELLOW) 16 AWG 14.5 INCHES TOTAL LENGTH
	2	1	1015037- 2	WIRE 1010789- 1 (YELLOW) 24 AWG 6 FEET 5.0 INCHES TOTAL LENGTH
16	3	1	1010823- ~~#~~ 4	CONNECTOR PLUG ELECTRICAL
18	4	1	1015059	ADAPTER PLATE, DIODE MODULE (INSEP ASSY)
16	5	88	1010738- 5	CONTACT, NO. 22
16	6	20	1010738- 7	CONTACT, NO. 28
[redacted]	7	[redacted]	[redacted]	[redacted]
[redacted]	8	[redacted]	[redacted]	[redacted]
16	9	1	1010638- 6	TERMINAL LUG
	10	AR	1012507- 1	LACING TAPE
	11	AR	QQ-S-571 SN60 WRAP2	SOLDER
	12	AR	MIL-F-14256	FLUX
16	13	1	1010812- 3	GASKET
16	14	AR	1012503- 1	COMPOUND POLYURETHANE
16	15	AR	1012503- 2	COMPOUND POLYURETHANE
16	16	AR	1012504- 1	PRIMER METAL
16	17	AR	1012504- 2	PRIMER METAL
16	18	AR	1012505- 1	PRIMER PVC

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015037
SCALE - NONE | REV LTR X B | SHEET 4 of 8

GRP WIRE HARNESS A 1015037

CONDUCTOR GRP	CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET	FROM TIN	FROM TERMINATION SPEC. ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET	TO TIN	TO TERMINATION SPEC ITEM NO.	TO NO.
A	1	2	[redacted]	J1- 38	9	N	5	1	T1- 5	30	Y	[redacted]	5
A	2	2	[redacted]	J1- 39	9	N	5	1	T1- 3	30	Y	[redacted]	5
A	3	2	[redacted]	J1- 48	9	N	5	1	T1- 7	30	Y	[redacted]	5
A	4	2	[redacted]	J1- 49	9	N	5	1	T1- 4	30	Y	[redacted]	5
A	5	2	[redacted]	T1- 6	30	Y	[redacted]	5	T1- 4	30	Y		5
A	6	2	[redacted]	J1- 68	9	N	5	1	T1- 1	30	Y	[redacted]	5
A	7	2	[redacted]	J1- 69	9	N	5	1	T1- 2	30	Y	[redacted]	5
A	8	2	[redacted]	J1- 81	9	N	5	1	E2	30	Y		3
A	9	2	[redacted]	J1- 94	9	N	5	1	E2	30	Y		3
A	10	2	[redacted]	J1- 95	9	N	5	1	E2	30	Y		3
A	11	2	[redacted]	J1-108	9	N	5	1	E2	30	Y		3
A	12	1	[redacted]	T1- 8	30	N	[redacted]	5	E2	30	N		3
A	13	2	[redacted]	J1- 93	9	N	5	1	E1	30	Y		4
A	14	2	[redacted]	J1-106	9	N	5	1	E1	30	Y		4
A	15	2	[redacted]	J1-107	9	N	5	1	E1	30	Y		4
A	16	1	[redacted]	T1- 9	30	N	[redacted]	5	E1	30	N		4
A	17	2	[redacted]	J1- 1	9	N	5	1	E3	30	N	9[redacted]	2
A	18	4	[redacted]	J2- 1				6	J1- 89	9	N	6	1

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015037
SCALE - NONE | REV LTR | SHEET 5 OF 8

MIL 2065 - 4-65 WIR

GRP WIRE HARNESS A + 1015037

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.
A 19	4	[redacted]	J2- 2				6	J1- 88	9	N	6	1
A 20	4	[redacted]	J2- 3				6	J1- 91	9	N	6	1
A 21	4	[redacted]	J2- 4				6	J1-102	9	N	6	1
A 22	4	[redacted]	J2- 5				6	J1- 22	9	N	6	1
A 23	4	[redacted]	J2- 7				6	J1- 9	9	N	6	1
A 24	4	[redacted]	J2- 8				6	J1- 24	9	N	6	1
A 25	4	[redacted]	J2- 12				6	J1- 90	9	N	6	1
A 26	4	[redacted]	J2- 13				6	J1-104	9	N	6	1
A 27	4	[redacted]	J2- 14				6	J1-103	9	N	6	1
A 28	4	[redacted]	J2- 15				6	J1-101	9	N	6	1
A 29	4	[redacted]	J2- 16				6	J1- 12	9	N	6	1
A 30	4	[redacted]	J2- 18				6	J1- 8	9	N	6	1
A 31	4	[redacted]	J2- 19				6	J1- 13	9	N	6	1
A 32	4	[redacted]	J2- 20				6	E1·	30	Y		4
A 33	4	[redacted]	J2- 21				6	J1- 10	9	N	6	1
A 34	4		J2- 6				6	J1- 97	9	N	6	1
A 35	4		J2 - 9				6	J1- 98	9	N	6	1
A 36	4		J2- 10				6	J1- 99	9	N	6	1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015037

SCALE - NONE | REV LTR + | SHEET 6 OF 8

MIL 2065 - 4-63 WIR

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.
A-37	4		J2- 11				6	J1- 100	9	N	6	1
A-38	4		J2-17				6	J1- 105	9	N	6	1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

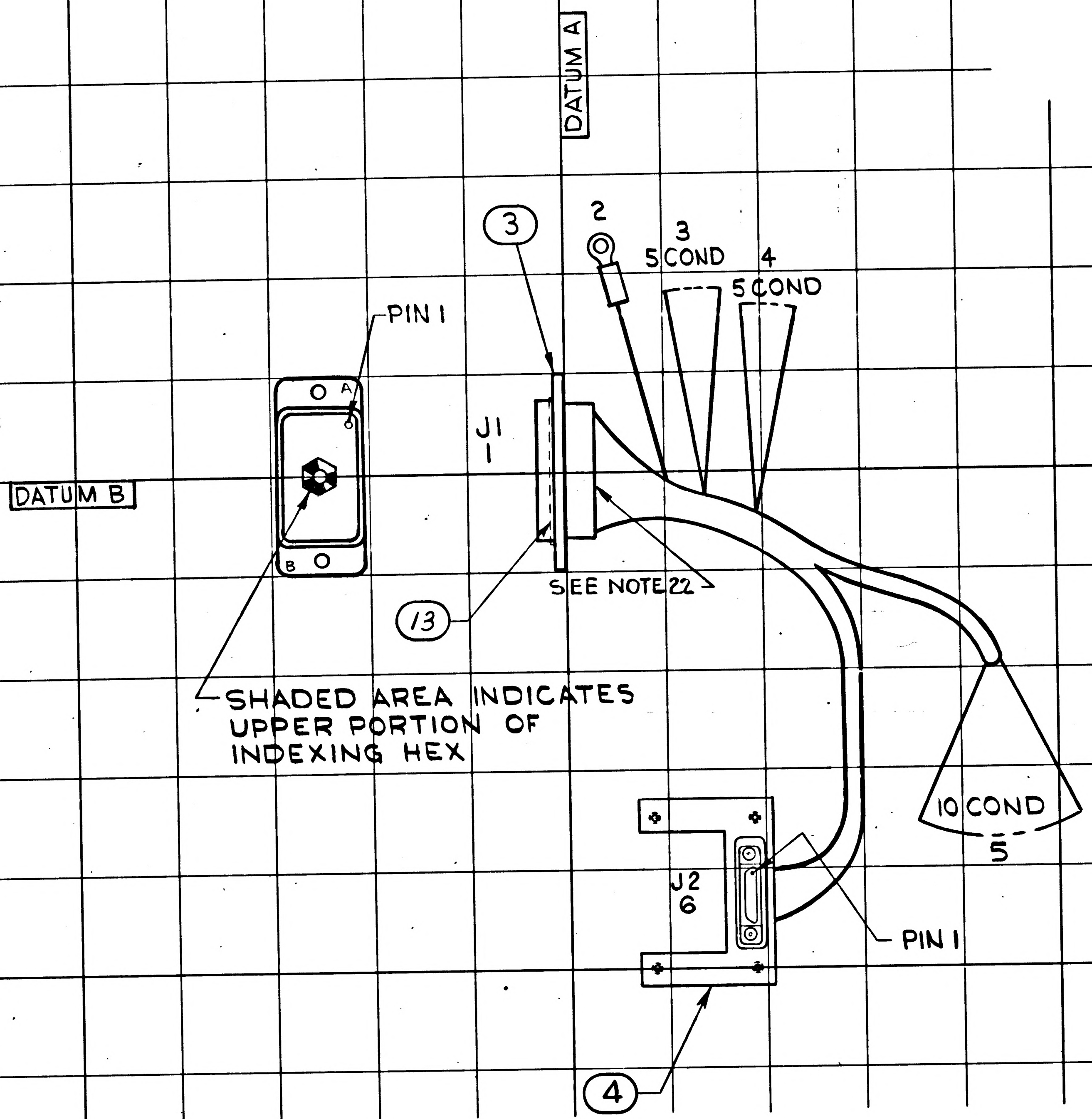
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015037

SCALE - NONE | REV LTR + | SHEET 7 of 8

MIL 2065-4 64 WIR

REVISIONS 14078					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		SEE SHEET NO. 1			


DATUM A
DATUM B
PIN 1
J1
1
③
2
3
5 COND
4
5 COND
⑬
SEE NOTE 22
SHADED AREA INDICATES UPPER PORTION OF INDEXING HEX
10 COND
5
J2
6
PIN 1
④

1015064-011	1015023-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN K W Hersel DATE 2 SEP 64
CHECKED C. Piojda 15 SEP 64
APPROVAL R C DeVries 15 Sept
APPROVAL J Wem 10/1/64
NASA APPROVAL 11-13-64
MIT APPROVAL W Kupfer 10 Nov 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS,
BRANCHED-A

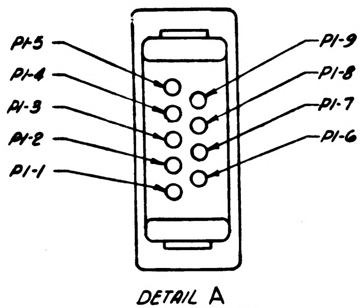
CODE IDENT NO.
SIZE C
1015037
SCALE FULL
SHEET 8 OF 8

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
A.		COMPLETELY REVISED	DO 58518	3 OCT 64	JRS / W.S.

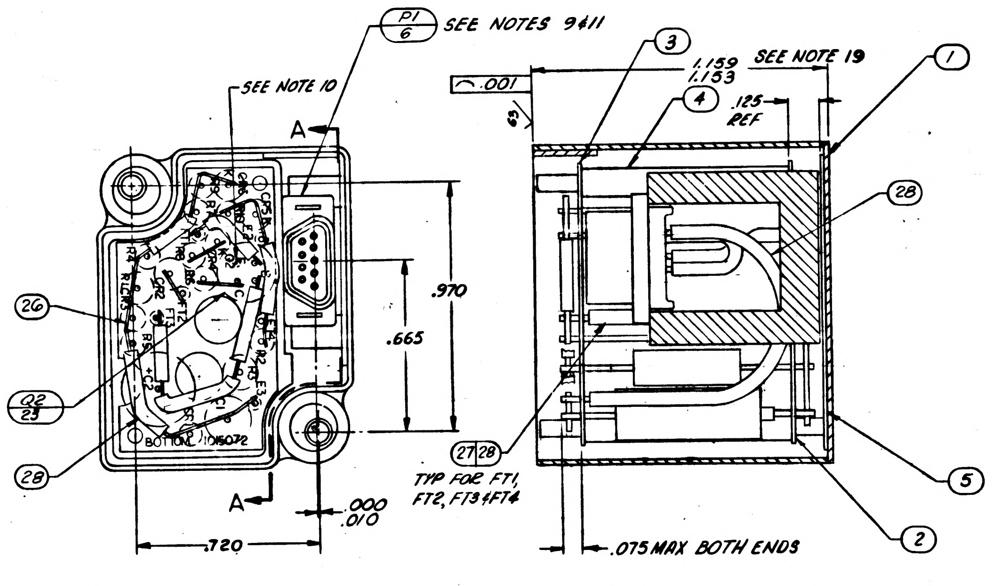
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL WIRING TO COMPLY WITH STANDARDS PRESCRIBED PER ND1002069.
3. ALL WELDS TO BE PER ND1002005
4. K DENOTES CATHODE END OF DIODE.
5. AR DENOTES AS REQUIRED.
6. R3 TO BE SELECTED IN ACCORDANCE WITH ATP 1015038 & TABLE 1
7. BOND ITEMS 23, 24 & 25 TO ITEM 2 PER ND1002004 TYPE 1
8. BOND ITEM 4 TO ITEMS 2 & 3 PER ND1002004 TYPE 1
9. SPARE LEADS ON ITEM 6 TO BE CUT TO .030 TO .090 LENGTH.
10. SPARE LEAD, EMITTER BASE, ON ITEM 23 TO BE CUT TO .060 TO .090 LENGTH
11. BOND ITEM 6 TO ITEM 1 PER ND1002004 TYPE 1
12.
13. ENCAPSULATE MODULE PER ND1002036 TO .330/.480 USING ITEMS (33) & (34), THEN ENCAPSULATE REMAINDER OF MODULE PER ND1002002 USING ITEMS (35) & (36)
14. ENCAPSULATION MATERIAL TO BE FLUSH WITH SURFACE OF ITEM 1
15. SERIALIZE PER ND1002023 AND IDENTIFY PER ND1002019 CENTRALIZE ON SURFACE SHOWN.
16. INSPECT PER PS 1015038.
17.
18. FT DENOTES FEED THRU.
19. MACHINE TO DIMENSION SHOWN AFTER ENCAPSULATION.

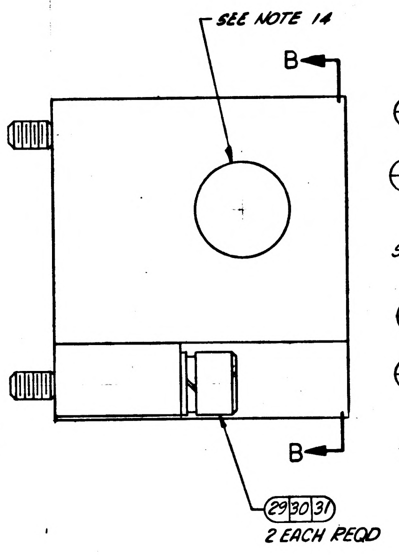
WIRING DATA		
"FROM" CIRCUIT POINT	"TO" CIRCUIT POINT	CIRCUIT FUNCTION
P1-1	SPARE	
P1-2	E2	+28 VDC
P1-3	E1	TIME DELAY RELAY
P1-4	SPARE	
P1-5	E3	0 VDC GROUND
P1-6	SPARE	
P1-7	SPARE	
P1-8	SPARE	
P1-9	SPARE	

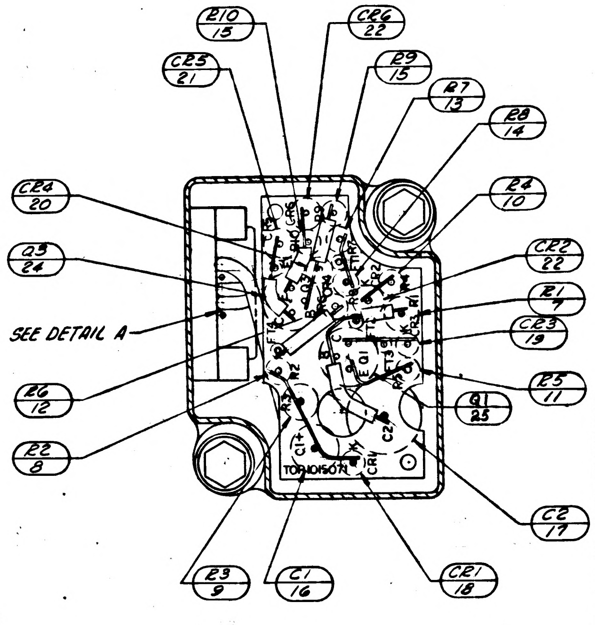

P1-5
P1-4
P1-3
P1-2
P1-1
P1-9
P1-8
P1-7
P1-6

DETAIL A
SCALE: NONE
CONNECTOR TERMINAL IDENTIFICATION VIEW

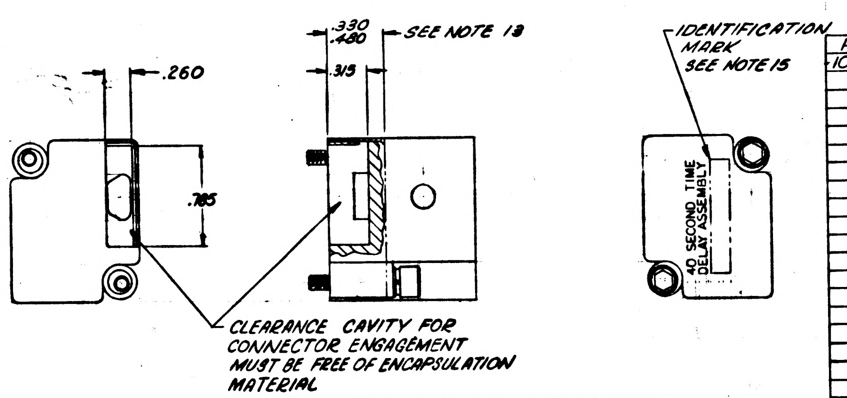

P1/6 SEE NOTES 9 & 11
SEE NOTE 10
A
A
26
Q2/23
28
BOTTOM 1015072
.970
.665
.720
.000 .010
3
4
1
.001
1.159 1.153
SEE NOTE 19
.125 REF
28
27 28
TYP FOR FT1, FT2, FT3 & FT4
5
2
.075 MAX BOTH ENDS

SECTION A-A


SEE NOTE 14
B
B
29 30 31
2 EACH REQD


R10/15
CR6/22
CR5/21
R9/15
R7/13
R8/14
CR4/20
R4/10
Q3/24
CR2/22
R1/7
SEE DETAIL A
CR3/19
R6/12
R5/11
Q1/25
R2/8
C2/17
R3/9
C1/16
CR1/18
TOP 1015071

SECTION B-B


.260
.785
.330 .480
.315
SEE NOTE 13
CLEARANCE CAVITY FOR CONNECTOR ENGAGEMENT MUST BE FREE OF ENCAPSULATION MATERIAL
IDENTIFICATION MARK SEE NOTE 15
40 SECOND TIME DELAY ASSEMBLY

MARKING & ENCAPSULATION VIEWS
SCALE 2:1

TABLE 1 SEE NOTE 6

PART NO.	PART NO.	PART NO.
1010364-652	1010364-692	1010364-732
-654	-694	-734
656	-636	-736
658	-698	-738
660	-700	-740
662	-702	-742
664	-704	-744
666	-706	-746
668	-708	-748
670	-710	-750
672	-712	-752
674	-714	-754
676	-716	-756
678	-718	-758
680	-720	-760
682	-722	-762
684	-724	-764
686	-726	-766
688	-728	
690	-730	

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR		36	1010798-1	POLYURETHANE FOAM, BLACK
AR		35	1010798-2	POLYURETHANE FOAM, BLACK
AR		34	1010306	CATALYST
AR		33	1010305	EPOXY RESIN
☒		32	1009510	SCHEMATIC DIAGRAM, ELEC
2		31	1008069-1	SCREW, SOCKET HD
2		30	MS35338-78	WASHER, LOCK
2		29	MS15795-303	WASHER, FLAT
AR		28	1006776-21	INSULATION SLEEVING, ELEC
AR		27	1006787-1	WIRE, ELECTRICAL
AR		26	1006757-1	WIRE, ELECTRICAL
1		25	1010397-1	TRANSISTOR
1		24	1010357-1	TRANSISTOR
1		23	1010342	TRANSISTOR (DUAL SECTION)
2		22	1010362-002	DIODE
1		21	1010385	DIODE
1		20	1010286-5	DIODE
1		19	1010286-9	DIODE
1		18	1010286-11	DIODE
1		17	1010393-043	CAPACITOR
1		16	1006755-77	CAPACITOR
2		15	1006750-56	RESISTOR, FIXED FILM
1		14	1006750-36	RESISTOR, FIXED FILM
1		13	1006750-32	RESISTOR, FIXED FILM
1		12	1006750-8	RESISTOR, FIXED FILM
1		11	1006750-49	RESISTOR, FIXED FILM
1		10	1006750-83	RESISTOR, FIXED FILM
1		9	1010364-SEE NOTE 6	RESISTOR
1		8	1006750-34	RESISTOR, FIXED FILM
1		7	1010364-733	RESISTOR
1		6	1010318-2	CONNECTOR
1		5	1015025	INSULATOR, PLATE
2		4	1015073	SPACER, INSULATED
1		3	1015072	WIRING BOARD, BOTTOM
1		2	1015071	WIRING BOARD, TOP
1		1	1015027	HOUSING (INSEP ASSY)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015065-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − — DECIMALS ±.005 ± — ANGLES + — − —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. LaHue 22 SEPT 64 DATE
CHECKED W. Diell 2 OCT '64
APPROVAL A.C. De Haan 2 Oct 64
APPROVAL S.C. Smith 11-4-64
NASA APPROVAL 11-16-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

40 SECOND TIME DELAY ASSEMBLY

CODE IDENT NO.
SIZE E
1015038
SCALE 4:1 SHOWN
SHEET 1 OF 1

APOLLO G&N Specification
PS1015038 A
Original Issue Date: 15 Dec 64
Release Authority: TDRR 14821
Class A Release

PROCUREMENT SPECIFICATION

FOR

40 SECOND TIME DELAY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
5/26/65	A	19590	3	W. K.	TM

This specification consists of page 1 to 4 inclusive.

APPROVALS	W J Rhine 12-15-64 NASA/MSC	G. Cushman W Kupfer 15 Dec 64 14-12-64 MIT/IL	J. Walasewicz ACSP

3. REQUIREMENTS

3.1 GENERAL SPECIFICATION. Unless otherwise specified herein, all of the requirements of Specification ND-1002210 shall apply as requirements of this specification.

3.2 DESCRIPTION. The assembly shall be used in the Display and Control Electronics Assembly to provide a time delay for the gyro wheels to come up to operating speed before the IMU control power is applied.

3.3 FUNCTIONAL REQUIREMENTS

3.3.1 Electrical Inputs. The assembly shall operate as specified herein when 24-30 vdc is applied.

3.3.2 Time Delay. Upon application of power to the assembly, the time for closing of the external relay contacts shall be 40^{+6}_{-4} seconds. With the power remaining applied for a minimum of 2 minutes, then removed for 5±0.5 seconds and reapplied, the time for closing of the external relay contacts shall be 25±7seconds.

When the preceding steps have been performed, the same procedure shall be repeated twice.

3.4 PERFORMANCE AND PRODUCT CHARACTERISTICS

3.4.1 Service Life

3.4.1.1 Operating Life. The assembly shall meet performance specifications for at least 2000 hours of operation, excluding the supplier's test time of the completed unit.

3.4.1.2 Shelf Life. The assembly shall have a shelf life of at least 3 years, without operation, at ambient room temperature after final acceptance at the supplier's facility, when packaged in accordance with ND1002214.

3.4.2 Reliability. Design objectives require maximum reliability of the assembly during its period of useful life. Every effort shall be made to design and produce assemblies capable of meeting a maximum failure rate of 1.1 per million hours.

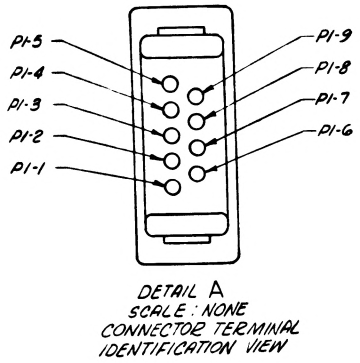
1015038

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		COMPLETELY REVISED	DO 58518	3 OCT 64	JRS / W.D.
B		REVISED PER TDRR 14682		15 DEC 64	

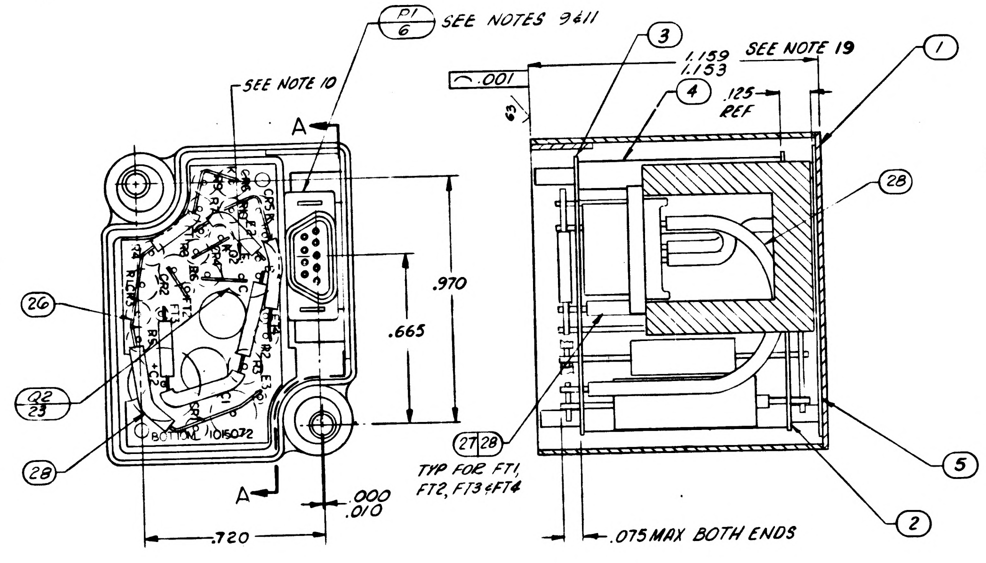
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL WIRING TO COMPLY WITH STANDARDS PRESCRIBED PER ND1002069.
3. ALL WELDS TO BE PER ND1002005
4. K DENOTES CATHODE END OF DIODE.
5. AR DENOTES AS REQUIRED.
6. R3 TO BE SELECTED IN ACCORDANCE WITH ATP 1015038 & TABLE 1
7. BOND ITEMS 23, 24 & 25 TO ITEM 2 PER ND1002004 TYPE 1
8. BOND ITEM 4 TO ITEMS 2 & 3 PER ND1002004 TYPE 1
9. SPARE LEADS ON ITEM 6 TO BE CUT TO .030 TO .090 LENGTH.
10. SPARE LEAD, EMITTER BASE, ON ITEM 23 TO BE CUT TO .060 TO .090 LENGTH
11. BOND ITEM 6 TO ITEM 1 PER ND 1002004 TYPE 1
12.
13. ENCAPSULATE MODULE PER ND1002036 TO .330/.480 USING ITEMS ㉝ & ㉞, THEN ENCAPSULATE REMAINDER OF MODULE PER ND1002002 USING ITEMS ㉟ & (36)
14. ENCAPSULATION MATERIAL TO BE FLUSH WITH SURFACE OF ITEM 1
15. SERIALIZE PER ND1002023 AND IDENTIFY PER ND1002019 CENTRALIZE ON SURFACE SHOWN.
16. INSPECT PER PS 1015038.
17.
18. FT DENOTES FEED THRU.
19. MACHINE TO DIMENSION SHOWN AFTER ENCAPSULATION.

WIRING DATA		
"FROM" CIRCUIT POINT	"TO" CIRCUIT POINT	CIRCUIT FUNCTION
P1-1	SPARE	
P1-2	E2	+28 VDC
P1-3	E1	TIME DELAY RELAY
P1-4	SPARE	
P1-5	E3	0 VDC GROUND
P1-6	SPARE	
P1-7	SPARE	
P1-8	SPARE	
P1-9	SPARE	


P1-5
P1-4
P1-3
P1-2
P1-1
P1-9
P1-8
P1-7
P1-6

DETAIL A
SCALE: NONE
CONNECTOR TERMINAL IDENTIFICATION VIEW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SEE NOTES 9 & 11
SEE NOTE 10
A
3
1.159
1.153
SEE NOTE 19
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4
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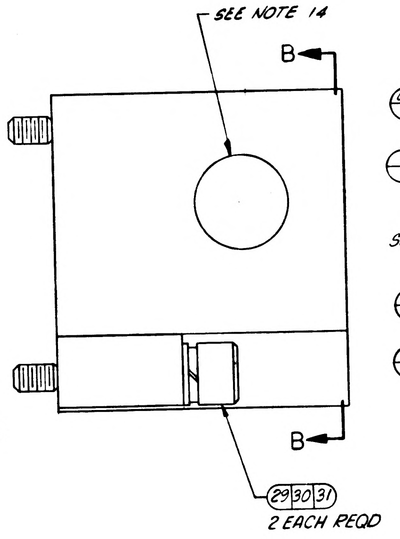
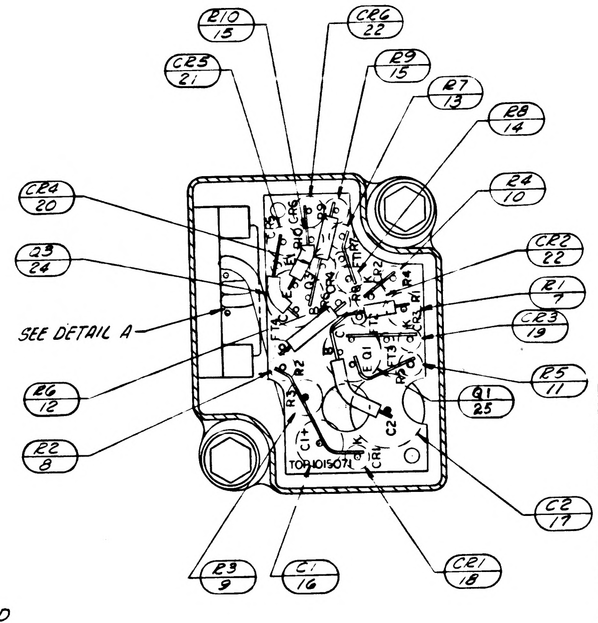
.001
28
.970
.665
26
22
23
28
1015072
A
.000
.010
.720
27 28
TYP FOR FT1, FT2, FT3 & FT4
5
2
.075 MAX BOTH ENDS

SECTION A-A


SEE NOTE 14
B
B
29 30 31
2 EACH REQD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CR5
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R9
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R7
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R8
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CR4
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24
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CR2
22
R1
7
CR3
19
R5
11
SEE DETAIL A
26
12
22
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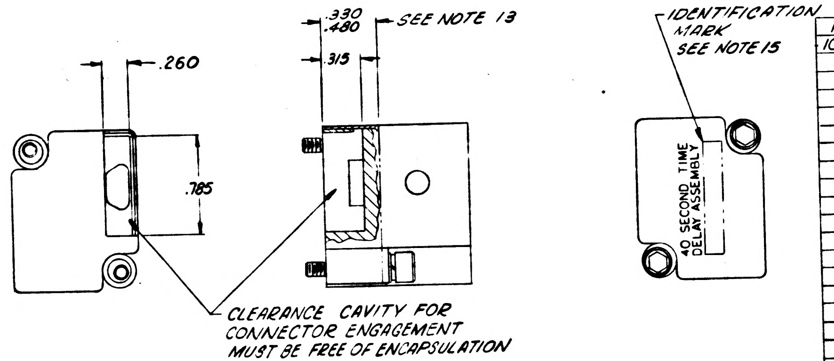
Q1
25
C2
17
R3
9
C1
16
CR1
18
TOP 1015071

SECTION B-B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SEE NOTE 13
315
IDENTIFICATION MARK
SEE NOTE 15
40 SECOND TIME DELAY ASSEMBLY
CLEARANCE CAVITY FOR CONNECTOR ENGAGEMENT MUST BE FREE OF ENCAPSULATION MATERIAL

MARKING & ENCAPSULATION VIEWS
SCALE 2:1

TABLE 1 SEE NOTE 6

PART NO	PART NO.	PART NO.
1010364-652	1010364-692	1010364-732
-654	-694	-734
656	696	-736
658	698	-738
660	-700	-740
662	-702	-742
664	-704	-744
666	-706	-746
668	-708	-748
670	-710	-750
672	-712	-752
674	-714	-754
676	-716	-756
678	-718	-758
680	-720	-760
682	-722	-762
684	-724	-764
686	-726	-766
688	-728	
690	-730	

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR		36	1010798-1	POLYURETHANE FOAM, BLACK
AR		35	1010798-2	POLYURETHANE FOAM, BLACK
AR		34	1010306	CATALYST
AR		33	1010305	EPOXY RESIN
X		32	1009510	SCHEMATIC DIAGRAM, ELEC
2		31	1008069-1	SCREW, SOCKET HD
2		30	MS35338-78	WASHER, LOCK
2		29	MS15795-303	WASHER, FLAT
AR		28	1006776-21	INSULATION SLEEVING, ELEC
AR		27	1006787-1	WIRE, ELECTRICAL
AR		26	1006757-1	WIRE, ELECTRICAL
1		25	1010397-1	TRANSISTOR
1		24	1010357-1	TRANSISTOR
1		23	1010342	TRANSISTOR (DUAL SECTION)
2		22	1010362-002	DIODE
1		21	1010385	DIODE
1		20	1010286-5	DIODE
1		19	1010286-9	DIODE
1		18	1010286-11	DIODE
1		17	1010393-043	CAPACITOR
1		16	1006755-77	CAPACITOR
2		15	1006750-56	RESISTOR, FIXED FILM
1		14	1006750-36	RESISTOR, FIXED FILM
1		13	1006750-32	RESISTOR, FIXED FILM
1		12	1006750-8	RESISTOR, FIXED FILM
1		11	1006750-49	RESISTOR, FIXED FILM
1		10	1006750-84	RESISTOR, FIXED FILM
1		9	1010364-SEE NOTE 6	RESISTOR
1		8	1006750-34	RESISTOR, FIXED FILM
1		7	1010364-734	RESISTOR
1		6	1010318-2	CONNECTOR
1		5	1015025	INSULATOR, PLATE
2		4	1015073	SPACER, INSULATED
1		3	1015072	WIRING BOARD, BOTTOM
1		2	1015071	WIRING BOARD, TOP
1		1	1015027	HOUSING (INSED ASSY)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015665-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + —
DECIMALS ± .005
ANGLES + —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN B. Fa Dare DATE 22 SEPT 64
CHECKED W. Buhl 2 OCT 64
APPROVAL A.C. De Vries 2 Oct 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

40 SECOND TIME DELAY ASSEMBLY

CODE IDENT NO
SIZE E
1015038
SCALE
SHEET 1 OF 1

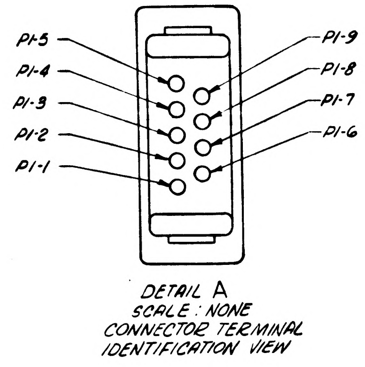
1015038 B

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL WIRING TO COMPLY WITH STANDARDS PRESCRIBED PER ND1002069.
3. ALL WELDS TO BE PER ND1002005
4. K DENOTES CATHODE END OF DIODE.
5. AR DENOTES AS REQUIRED.
6. R3 TO BE SELECTED IN ACCORDANCE WITH ATP 1015038 & TABLE 1
7. BOND ITEMS 23, 24 & 25 TO ITEM 2 PER ND1002004 TYPE 1
8. BOND ITEM 4 TO ITEMS 2 & 3 PER ND1002004 TYPE 1
9. SPARE LEADS ON ITEM 6 TO BE CUT TO .030 TO .090 LENGTH.
10. SPARE LEAD, EMITTER BASE, ON ITEM 23 TO BE CUT TO .060 TO .090 LENGTH
11. BOND ITEM 6 TO ITEM 1 PER ND 1002004 TYPE 1
12.
13. ENCAPSULATE MODULE PER ND1002036 TO .330/.480 USING ITEMS ㉝ & ㉞, THEN ENCAPSULATE REMAINDER OF MODULE PER ND1002002 USING ITEMS ㉟ & ㊱
14. ENCAPSULATION MATERIAL TO BE FLUSH WITH SURFACE OF ITEM 1
15. SERIALIZE PER ND1002023 AND IDENTIFY PER ND1002019 CENTRALIZE ON SURFACE SHOWN.
16. INSPECT PER PS 1015038.
17.
18. FT DENOTES FEED THRU.
19. MACHINE TO DIMENSION SHOWN AFTER ENCAPSULATION.

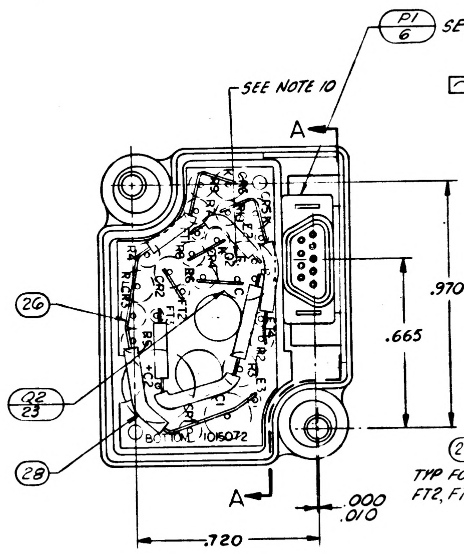
WIRING DATA		
"FROM" CIRCUIT POINT	"TO" CIRCUIT POINT	CIRCUIT FUNCTION
P1-1	SPARE	
P1-2	E2	+28 VDC
P1-3	E1	TIME DELAY RELAY
P1-4	SPARE	
P1-5	E3	0 VDC GROUND
P1-6	SPARE	
P1-7	SPARE	
P1-8	SPARE	
P1-9	SPARE	

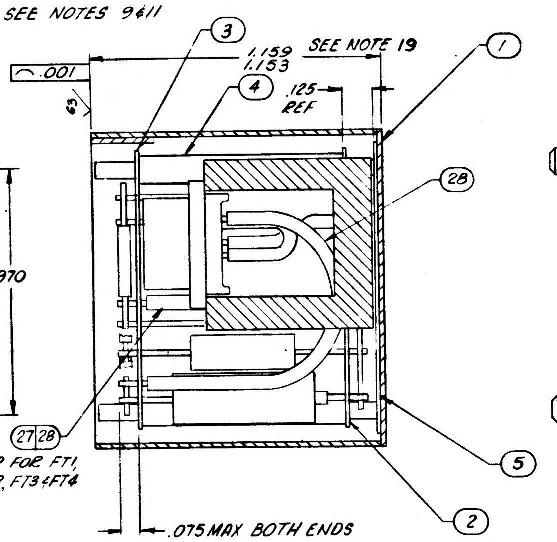
REVISIONS 14678

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		COMPLETELY REVISED	DO 58518	3 OCT 64	JRS
B		REVISED PER TDRR 14682		15 DEC 64	
C		REVISED PER TDRR 4995		4 JAN 65	

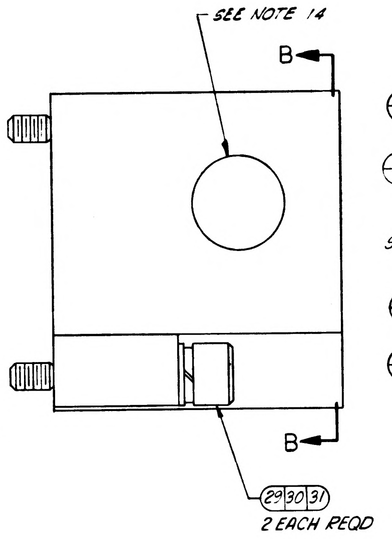

P1-5
P1-4
P1-3
P1-2
P1-1
P1-9
P1-8
P1-7
P1-6

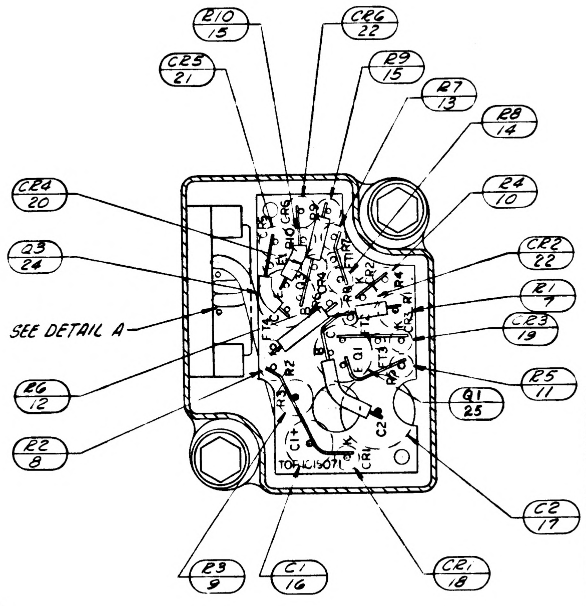
DETAIL A
SCALE: NONE
CONNECTOR TERMINAL IDENTIFICATION VIEW


P1/6 SEE NOTES 9 & 11
SEE NOTE 10
A
A
26
Q2/23
28
BOTTOM 1015072
.970
.665
.720
.000/.010

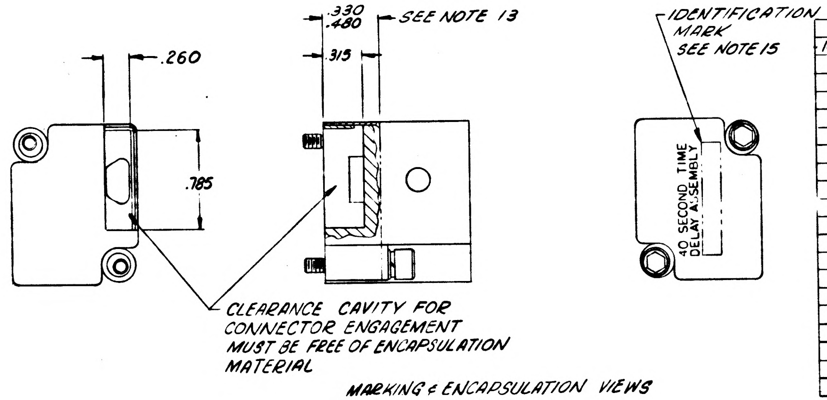

3
4
1
28
5
2
.001
63
1.159/1.153
SEE NOTE 19
.125 REF
27 28
TYP FOR FT1, FT2, FT3 & FT4
.075 MAX BOTH ENDS

SECTION A-A


SEE NOTE 14
B
B
29 30 31
2 EACH REQD


CR10/15
CR6/22
CR5/21
R9/15
R7/13
R8/14
24/10
CR4/20
Q3/24
CR2/22
R1/7
CR3/19
SEE DETAIL A
R6/12
R5/11
Q1/25
R2/8
C2/17
E3/9
C1/16
CR1/18

SECTION B-B


.260
.330/.480
SEE NOTE 13
.315
.785
CLEARANCE CAVITY FOR CONNECTOR ENGAGEMENT MUST BE FREE OF ENCAPSULATION MATERIAL
IDENTIFICATION MARK SEE NOTE 15
40 SECOND TIME DELAY ASSEMBLY

MARKING & ENCAPSULATION VIEWS
SCALE 2:1

TABLE 1 SEE NOTE 6

PART NO	PART NO.	PART NO.
1010364-652	1010364-692	1010364-732
-654	-694	-734
656	696	-736
658	698	-738
660	-700	-740
662	-702	-742
664	-704	-744
666	-706	-746
668	-708	-748
670	-710	-750
672	-712	-752
674	-714	-754
676	-716	-756
678	-718	-758
680	-720	-760
682	-722	-762
684	-724	-764
686	-726	-766
688	-728	
690	-730	

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			AR		36	1010798-1	POLYURETHANE FOAM, BLACK
			AR		35	1010798-2	POLYURETHANE FOAM, BLACK
			AR		34	1010306	CATALYST
			AR		33	1010305	EPOXY RESIN
			☒		32	1009510	SCHEMATIC DIAGRAM, ELEC
			2		31	1008069-1	SCREW, SOCKET HD
			2		30	MS35338-78	WASHER, LOCK
			2		29	MS15795-303	WASHER, FLAT
			AR		28	1006776-21	INSULATION SLEEVING, ELEC
			AR		27	1006787-2	WIRE, ELECTRICAL
			AR		26	1006757-1	WIRE, ELECTRICAL
			1		25	1010397-1	TRANSISTOR
			1		24	1010357-1	TRANSISTOR
			1		23	1010342	TRANSISTOR (DUAL SECTION)
			2		22	1010362-002	DIODE
			1		21	1010385	DIODE
			1		20	1010286-5	DIODE
			1		19	1010286-9	DIODE
			1		18	1010286-11	DIODE
			1		17	1010393-043	CAPACITOR
			1		16	1006755-77	CAPACITOR
			2		15	1006750-56	RESISTOR, FIXED FILM
			1		14	1006750-36	RESISTOR, FIXED FILM
			1		13	1006750-32	RESISTOR, FIXED FILM
			1		12	1006750-8	RESISTOR, FIXED FILM
			1		11	1006750-49	RESISTOR, FIXED FILM
			1		10	1006750-84	RESISTOR, FIXED FILM
			1		9	1010364 - SEE NOTE 6	RESISTOR
			1		8	1006750-34	RESISTOR, FIXED FILM
			1		7	1010364-734	RESISTOR
			1		6	1010318-2	CONNECTOR
			1		5	1015025	INSULATOR, PLATE
			2		4	1015073	SPACER, INSULATED
			1		3	1015072	WIRING BOARD, BOTTOM
			1		2	1015071	WIRING BOARD, TOP
			1		1	1015027	HOUSING (USED ASSY)

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
[illegible]	[illegible]	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± .005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN B. [illegible] DATE 22 SEPT 64
CHECKED W. Buell 2 OCT 64
APPROVAL A C De Vries 2 Oct 64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

40 SECOND TIME DELAY ASSEMBLY

CODE IDENT NO
SIZE E
1015038
SCALE 4/1
SHEET 1 OF 1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL WIRING TO COMPLY WITH STANDARDS PRESCRIBED PER ND1002069.
3. ALL WELDS TO BE PER ND1002005
4. K DENOTES CATHODE END OF DIODE.
5. AR DENOTES AS REQUIRED.
6. R3 TO BE SELECTED IN ACCORDANCE WITH ATP 1015038 & TABLE 1
7. BOND ITEMS 23, 24 & 25 TO ITEM 2 PER ND1002004 TYPE 1
8. BOND ITEM 4 TO ITEMS 2 & 3 PER ND1002004 TYPE 1
9. SPARE LEADS ON ITEM 6 TO BE CUT TO .030 TO .090 LENGTH.
10. SPARE LEAD, EMITTER BASE, ON ITEM 23 TO BE CUT TO .060 TO .090 LENGTH
11. BOND ITEM 6 TO ITEM 1 PER ND 1002004 TYPE 1
12.
13. ENCAPSULATE MODULE PER ND1002036 TO .330/.480 USING ITEMS (33) & (34), THEN ENCAPSULATE REMAINDER OF MODULE PER ND1002002 USING ITEMS (35) & (36)
14. ENCAPSULATION MATERIAL TO BE FLUSH WITH SURFACE OF ITEM 1
15. SERIALIZE PER ND1002023 AND IDENTIFY PER ND1002019 CENTRALIZE ON SURFACE SHOWN.
16. INSPECT PER PS 1015038.
17.
18. FT DENOTES FEED THRU.

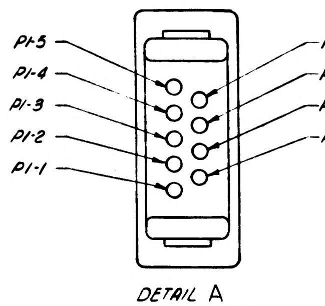
19. MACHINE TO DIMENSION SHOWN AFTER ENCAPSULATION.

WIRING DATA

"FROM" CIRCUIT POINT	TO CIRCUIT POINT	CIRCUIT FUNCTION
P1-1	SPARE	
P1-2	E2	+28 VDC
P1-3	E1	TIME DELAY RELAY
P1-4	SPARE	
P1-5	E3	0 VDC GROUND
P1-6	SPARE	
P1-7	SPARE	
P1-8	SPARE	
P1-9	SPARE	

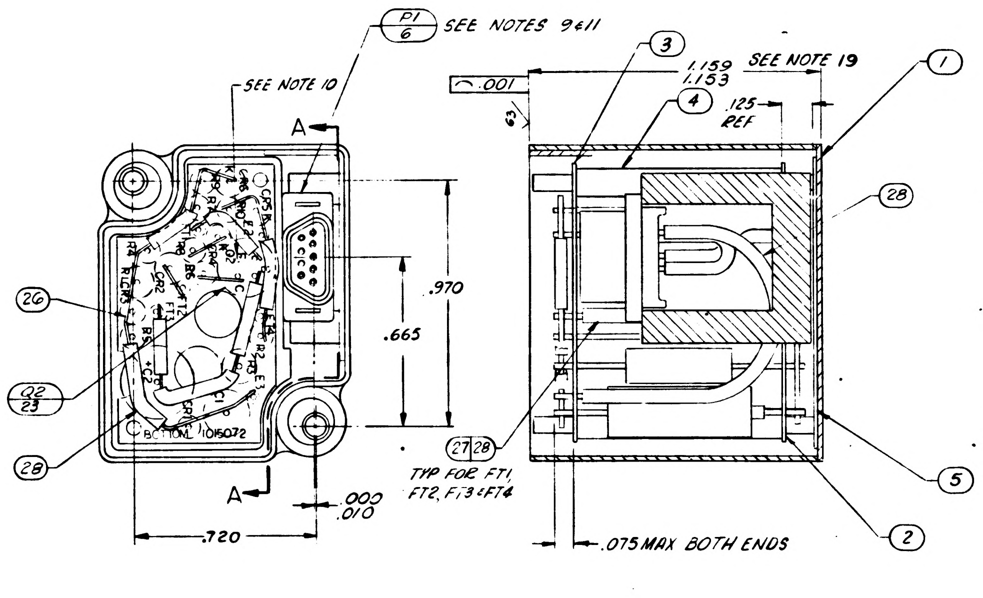
REVISIONS 14078

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		COMPLETELY REVISED	DO 58518	3 OCT 64	JRS / W.D.
(M) B		REVISED PER TDRR 14682		15 DEC 64	
(M) C		REVISED PER TDRR 14995		4-JAN-65	
D		REVISED PER TDRR 16978		8 MAR 65	R.W.T. / W.D.



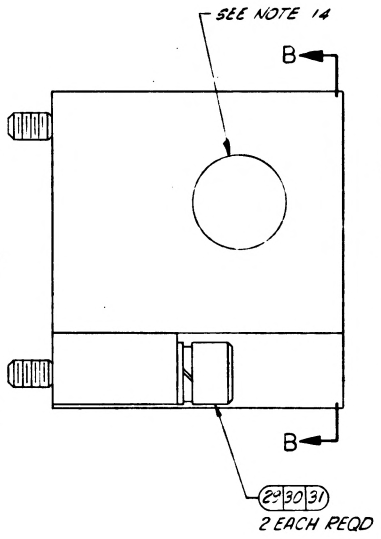
P1-5
P1-4
P1-3
P1-2
P1-1
P1-9
P1-8
P1-7
P1-6

DETAIL A
SCALE: NONE
CONNECTOR TERMINAL IDENTIFICATION VIEW

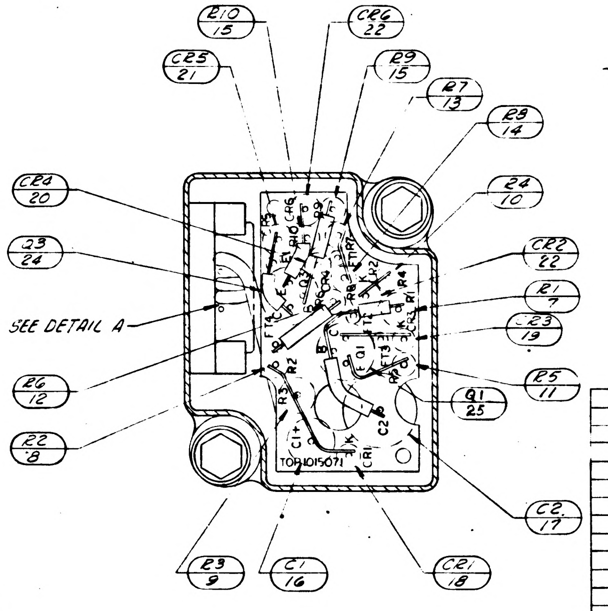


P1 / 6
SEE NOTES 9 & 11
SEE NOTE 10
A
3
4
1
SEE NOTE 19
.001
1.159
1.153
.125
REF
28
.970
.665
26
Q2 / 23
28
1015072
.000
.010
.720
27 28
TYP FOR FT1, FT2, FT3 & FT4
5
2
.075 MAX BOTH ENDS

SECTION A-A

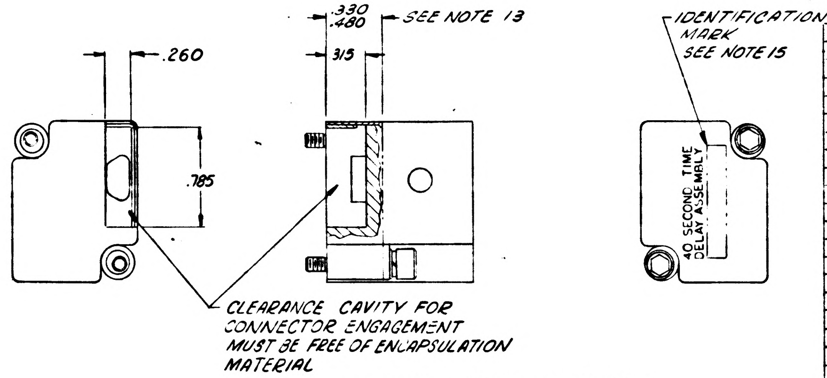


SEE NOTE 14
B
B
29 30 31
2 EACH REQD



R10 / 15
CR6 / 22
CR5 / 21
R9 / 15
R7 / 13
R8 / 14
CR4 / 20
24 / 10
CR2 / 22
Q3 / 24
R1 / 7
R3 / 19
SEE DETAIL A
R5 / 11
R6 / 12
Q1 / 25
R2 / 8
C2 / 17
TOP 1015071
R3 / 9
C1 / 16
CR1 / 18

SECTION B-B



.260
.330
.480
SEE NOTE 13
.315
.785
IDENTIFICATION MARK SEE NOTE 15
40 SECOND TIME DELAY ASSEMBLY
CLEARANCE CAVITY FOR CONNECTOR ENGAGEMENT MUST BE FREE OF ENCAPSULATION MATERIAL

MARKING & ENCAPSULATION VIEWS
SCALE 2:1

TABLE 1 SEE NOTE 6

PART NO	PART NO	PART NO
1010364-652	1010364-692	1010364-732
-654	-694	-734
656	-696	-736
658	698	-738
660	-700	-740
662	-702	-742
664	-704	-744
666	-706	-746
668	-708	-748
670	-710	-750
672	-712	-752
674	-714	-754
676	-716	-756
678	-718	-758
680	-720	-760
682	-722	-762
684	-724	-764
686	-726	-766
688	-728	
690	-730	

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED			011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			AR		36	1010798-1	POLYURETHANE FOAM, BLACK
			AR		35	1010798-2	POLYURETHANE FOAM, BLACK
			AR		34	1010306	CATALYST
			AR		33	1010305	EPOXY RESIN
			╳		32	1009510	SCHEMATIC DIAGRAM, ELEC
			2		31	1008069-1	SCREW, SOCKET HD
			2		30	MS35338-78	WASHER, LOCK
			2		29	MS15795-303	WASHER, FLAT
			AR		28	1006776-21	INSULATION, SLEEVING, ELEC
			AR		27	1006787-2	WIRE, ELECTRICAL
			AR		26	1006757-1	WIRE, ELECTRICAL
			1		25	1010397-1	TRANSISTOR
			1		24	1010357-1	TRANSISTOR
			1		23	1010342	TRANSISTOR (DUAL SECTION)
			2		22	1010362-002	DIODE
			1		21	1010385	DIODE
			1		20	1010830 -5	DIODE
			1		19	1010830 -9	DIODE
			1		18	1010830 -11	DIODE
			1		17	1010393-043	CAPACITOR
			1		16	1006755-77	CAPACITOR
			2		15	1006750-56	RESISTOR, FIXED FILM
			1		14	1006750-36	RESISTOR, FIXED FILM
			1		13	1006750-32	RESISTOR, FIXED FILM
			1		12	1006750-8	RESISTOR, FIXED FILM
			1		11	1006750-49	RESISTOR, FIXED FILM
			1		10	1006750-84	RESISTOR, FIXED FILM
			1		9	1010364-SEE NOTE 6	RESISTOR
			1		8	1006750-34	RESISTOR, FIXED FILM
			1		7	1010364-734	RESISTOR
			1		6	1010318-2	CONNECTOR
			1		5	1015025	INSULATOR, PLATE
			2		4	1015073	SPACER, INSULATED
			1		3	1015072	WIRING BOARD, BOTTOM
			1		2	1015071	WIRING BOARD, TOP
			1		1	1015027	HOUSING (INSEP ASSY)

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015065-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — – —
DECIMALS ± .005
ANGLES + — – —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION. GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN R. Ja Rue DATE 22 SEPT 64
CHECKED W Ecehl 2 OCT 64
APPROVAL A C La Vine 2 Oct 64
APPROVAL
NASA APPROVAL W. J.
MIT APPROVAL W Kuffer

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

40 SECOND TIME DELAY ASSEMBLY

CODE IDENT NO
SIZE E
1015038
SCALE 4:1 & NOTED
SHEET 1 OF 1

2 Oct 64

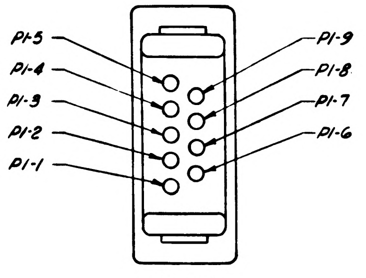
1015038

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL WIRING TO COMPLY WITH STANDARDS PRESCRIBED PER ND1002069.
3. ALL WELDS TO BE PER ND1002005
4. K DENOTES CATHODE END OF DIODE.
5. AR DENOTES AS REQUIRED.
6. R3 TO BE SELECTED IN ACCORDANCE WITH ATP 1015038 & TABLE 1
7. BOND ITEMS 23, 24 & 25 TO ITEM 2 PER ND1002004 TYPE 1
8. BOND ITEM 4 TO ITEMS 2 & 3 PER ND1002004 TYPE 1
9. SPARE LEADS ON ITEM 6 TO BE CUT TO .030 TO .090 LENGTH.
10. SPARE LEAD, EMITTER BASE, ON ITEM 23 TO BE CUT TO .060 TO .090 LENGTH
11. BOND ITEM 6 TO ITEM 1 PER ND1002004 TYPE 1
12.
13. ENCAPSULATE MODULE PER ND1002036 TO .330/.480 USING ITEMS (33) & (34), THEN ENCAPSULATE REMAINDER OF MODULE PER ND1002002 USING ITEMS (35) & (36)
14. ENCAPSULATION MATERIAL TO BE FLUSH WITH SURFACE OF ITEM 1
15. SERIALIZE PER ND1002023 AND IDENTIFY PER ND1002019 CENTRALIZE ON SURFACE SHOWN.
16. INSPECT PER PS 1015038.
17.
18. FT DENOTES FEED THRU.
19. MACHINE TO DIMENSION SHOWN AFTER ENCAPSULATION.
20. APPLY CHEMICAL FILM PER MIL-C-5541 TO MACHINED BRIGHT ALUMINUM USING BRUSH METHOD.

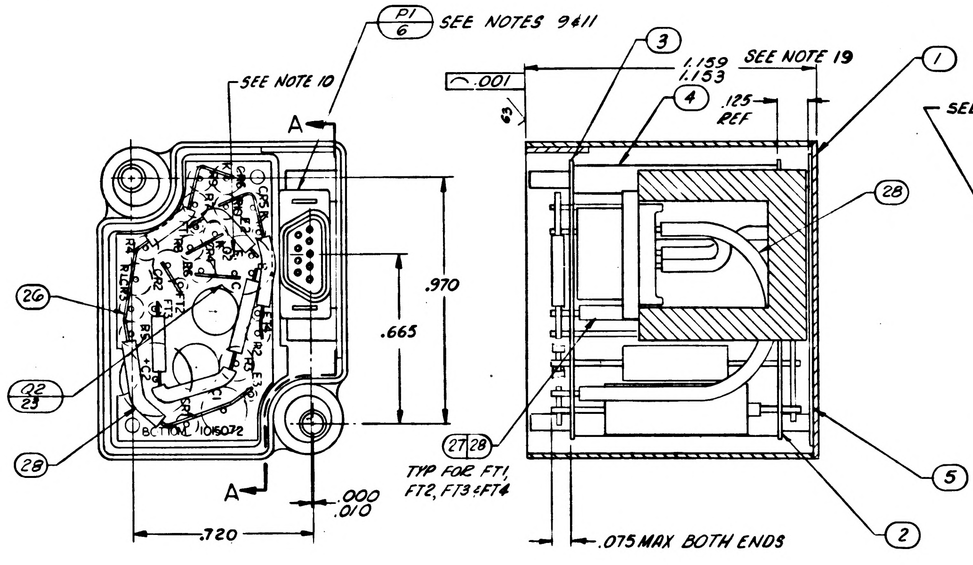
WIRING DATA		
"FROM" CIRCUIT POINT	"TO" CIRCUIT POINT	CIRCUIT FUNCTION
P1-1	SPARE	
P1-2	E2	+28 VDC
P1-3	E1	TIME DELAY RELAY
P1-4	SPARE	
P1-5	E3	0 VDC GROUND
P1-6	SPARE	
P1-7	SPARE	
P1-8	SPARE	
P1-9	SPARE	

REVISIONS 14078

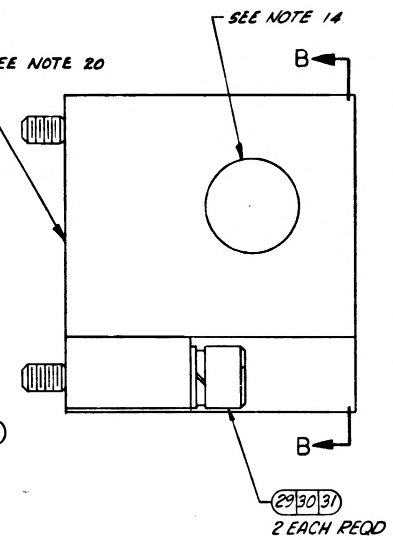
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		COMPLETELY REVISED	DO 58518	3 OCT 64	JRS / W.S.
B		REVISED PER TDRR 14682		15 DEC 64	
C		REVISED PER TDRR 4995		4-JAN-65	
D		REVISED PER TDRR 16978		8 MAR 65	R.W.
E		REVISED PER TDRR 16986		8 MAR 65	

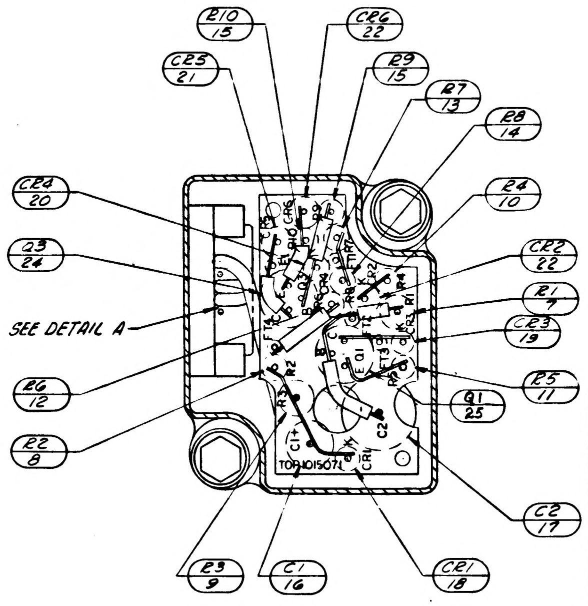

P1-5
P1-4
P1-3
P1-2
P1-1
P1-9
P1-8
P1-7
P1-6

DETAIL A
SCALE: NONE
CONNECTOR TERMINAL IDENTIFICATION VIEW

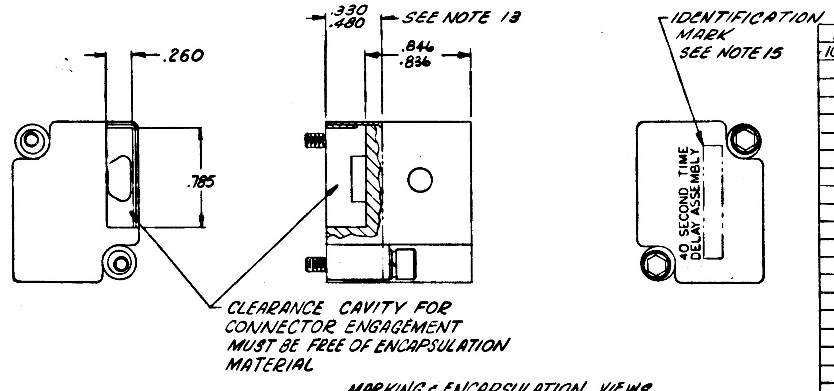

P1 / 6
SEE NOTES 9 & 11
SEE NOTE 10
A
A
26
Q2 / 23
28
BOTTOM 1015072
.970
.665
.720
.000 / .010
.001
63
1.159 / 1.153
SEE NOTE 19
.125 REF
3
4
1
28
27 28
TYP FOR FT1, FT2, FT3 & FT4
.075 MAX BOTH ENDS
5
2

SECTION A-A


SEE NOTE 20
SEE NOTE 14
B
B
29 30 31
2 EACH REQD


R10 / 15
CR6 / 22
CR5 / 21
R9 / 15
R7 / 13
R8 / 14
CR4 / 20
R4 / 10
Q3 / 24
CR2 / 22
R1 / 7
SEE DETAIL A
CR3 / 19
R6 / 12
R5 / 11
Q1 / 25
R2 / 8
TOP 1015071
C2 / 17
R3 / 9
C1 / 16
CR1 / 18

SECTION B-B


.260
.785
.330 / .480
SEE NOTE 13
.844 / .836
IDENTIFICATION MARK SEE NOTE 15
40 SECOND TIME DELAY ASSEMBLY
CLEARANCE CAVITY FOR CONNECTOR ENGAGEMENT MUST BE FREE OF ENCAPSULATION MATERIAL

MARKING & ENCAPSULATION VIEWS
SCALE 2:1

TABLE 1 SEE NOTE 6

PART NO	PART NO.	PART NO.
1010364-652	1010364-692	1010364-732
-654	-694	-734
656	696	-736
658	698	-738
660	-700	-740
662	-702	-742
664	-704	-744
666	-706	-746
668	-708	-748
670	-710	-750
672	-712	-752
674	-714	-754
676	-716	-756
678	-718	-758
680	-720	-760
682	-722	-762
684	-724	-764
686	-726	-766
688	-728	
690	-730	

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			AR		36	1010798-1	POLYURETHANE FOAM, BLACK
			AR		35	1010798-2	POLYURETHANE FOAM, BLACK
			AR		34	1010306	CATALYST
			AR		33	1010305	EPOXY RESIN
			X		32	1009510	SCHEMATIC DIAGRAM, ELEC
			2		31	1008069-1	SCREW, SOCKET HD
			2		30	MS35338-78	WASHER, LOCK
			2		29	MS15795-303	WASHER, FLAT
			AR		28	1006776-21	INSULATION SLEEVING, ELEC
			AR		27	1006787-2	WIRE, ELECTRICAL
			AR		26	1006757-1	WIRE, ELECTRICAL
			1		25	1010397-1	TRANSISTOR
			1		24	1010357-1	TRANSISTOR
			1		23	1010342	TRANSISTOR (DUAL SECTION)
			2		22	1010362-002	DIODE
			1		21	1010385	DIODE
			1		20	1010830 -5	DIODE
			1		19	1010830 -9	DIODE
			1		18	1010830 -11	DIODE
			1		17	1010393-043	CAPACITOR
			1		16	1006755-77	CAPACITOR
			2		15	1006750-56	RESISTOR, FIXED FILM
			1		14	1006750-36	RESISTOR, FIXED FILM
			1		13	1006750-32	RESISTOR, FIXED FILM
			1		12	1006750-8	RESISTOR, FIXED FILM
			1		11	1006750-49	RESISTOR, FIXED FILM
			1		10	1006750-84	RESISTOR, FIXED FILM
			1		9	1010364-SEE NOTE 6	RESISTOR
			1		8	1006750-34	RESISTOR, FIXED FILM
			1		7	1010364-734	RESISTOR
			1		6	1010318-2	CONNECTOR
			1		5	1015025	INSULATOR, PLATE
			2		4	1015073	SPACER, INSULATED
			1		3	1015072	WIRING BOARD, BOTTOM
			1		2	1015071	WIRING BOARD, TOP
			1		1	1015027	HOUSING (INSEP ASSY)

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015065-011	10[illegible]23-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± .005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. La Due DATE 22 SEPT 64
CHECKED W Buell 2 OCT '64
APPROVAL A.C. De Vane 2 Oct 64
APPROVAL S. C. [illegible] 11-4-64
NASA APPROVAL W. [illegible] 11-18-64
MIT APPROVAL W. [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

40 SECOND TIME DELAY ASSEMBLY

CODE IDENT NO.
SIZE E
1015038
SCALE 4:1 & NOTED
SHEET 1 OF 1

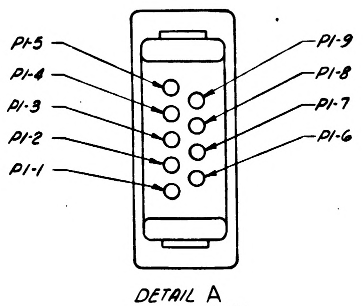
[illegible] 2 OCT 64

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL WIRING TO COMPLY WITH STANDARDS PRESCRIBED PER ND1002069.
3. ALL WELDS TO BE PER ND1002005
4. K DENOTES CATHODE END OF DIODE.
5. AR DENOTES AS REQUIRED.
6. R3 TO BE SELECTED IN ACCORDANCE WITH ATP 1015038 & TABLE 1
7. BOND ITEMS 23, 24 & 25 TO ITEM 2 PER ND1002004 TYPE 1
8. BOND ITEM 4 TO ITEMS 2 & 3 PER ND1002004 TYPE 1
9. SPARE LEADS ON ITEM 6 TO BE CUT TO .030 TO .090 LENGTH.
10. SPARE LEAD, EMITTER BASE, ON ITEM 23 TO BE CUT TO .060 TO .090 LENGTH
11. BOND ITEM 6 TO ITEM 1 PER ND 1002004 TYPE 1
12.
13. ENCAPSULATE MODULE PER ND1002036 TO .330/.480 USING ITEMS (33) & (34), THEN ENCAPSULATE REMAINDER OF MODULE PER ND1002002 USING ITEMS (35) & (36)
14. ENCAPSULATION MATERIAL TO BE FLUSH WITH SURFACE OF ITEM 1
15. SERIALIZE PER ND1002023 AND IDENTIFY PER ND1002019 CENTRALIZE ON SURFACE SHOWN.
16. INSPECT PER PS 1015038.
17.
18. FT DENOTES FEED THRU.
19. MACHINE TO DIMENSION SHOWN AFTER ENCAPSULATION.
20. APPLY CHEMICAL FILM PER MIL-C-5541 TO MACHINED BRIGHT ALUMINUM USING BRUSH METHOD.
21. APPLY A BRUSH PRIMER COAT TO INTERIOR SURFACES OF ITEM ① USING ITEMS (37) AND (38) PER ND1002187, TYPE II EXCEPT THAT THE PRIMER COAT NEED NOT BE CURED PER ND1002187 PRIOR TO ENCAPSULATION PER NOTE 13.

WIRING DATA

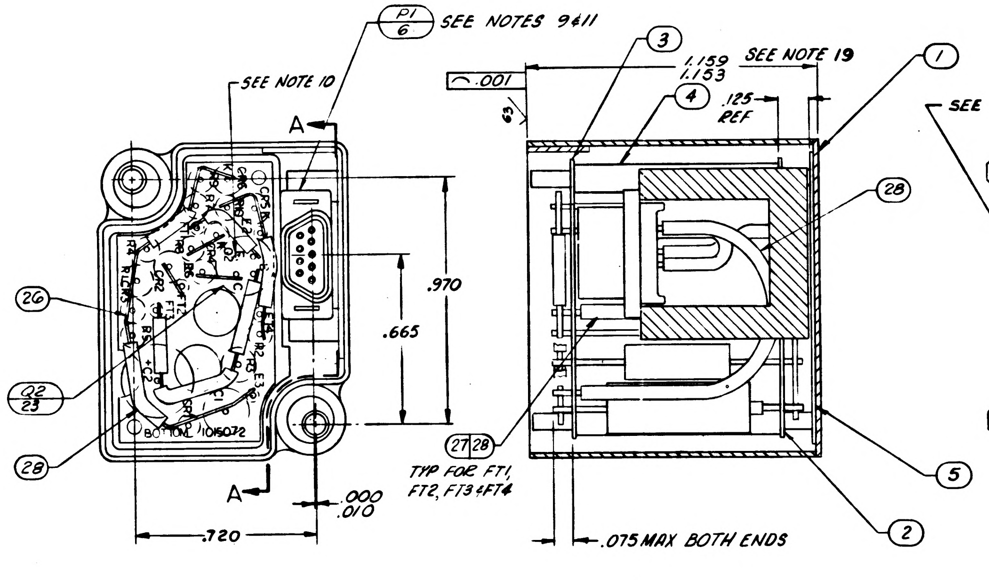
"FROM" CIRCUIT POINT	"TO" CIRCUIT POINT	CIRCUIT FUNCTION
P1-1	SPARE	
P1-2	E2	+28 VDC
P1-3	E1	TIME DELAY RELAY
P1-4	SPARE	
P1-5	E3	0 VDC GROUND
P1-6	SPARE	
P1-7	SPARE	
P1-8	SPARE	
P1-9	SPARE	


P1-5
P1-4
P1-3
P1-2
P1-1
P1-9
P1-8
P1-7
P1-6

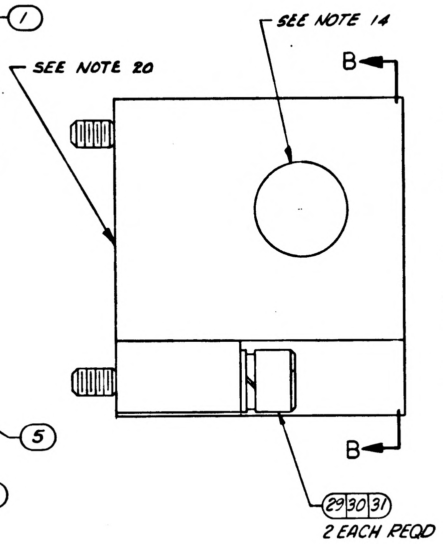
DETAIL A
SCALE: NONE
CONNECTOR TERMINAL IDENTIFICATION VIEW

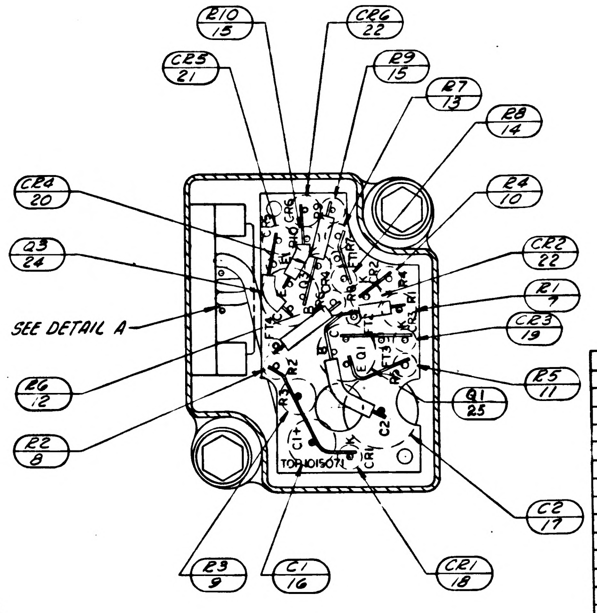
REVISIONS 14078

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		COMPLETELY REVISED	DO 58518	3 OCT 64	JRS / W.S.
B		REVISED PER TDRR 14682		15 DEC 64	
C		REVISED PER TDRR 4995		4-JAN-65	
D		REVISED PER TDRR 16978		8 MAR 65	
E		REVISED PER TDRR 16986		8 MAR 65	
F		REVISED PER TDRR 20135		18 JUN 65	M.G.

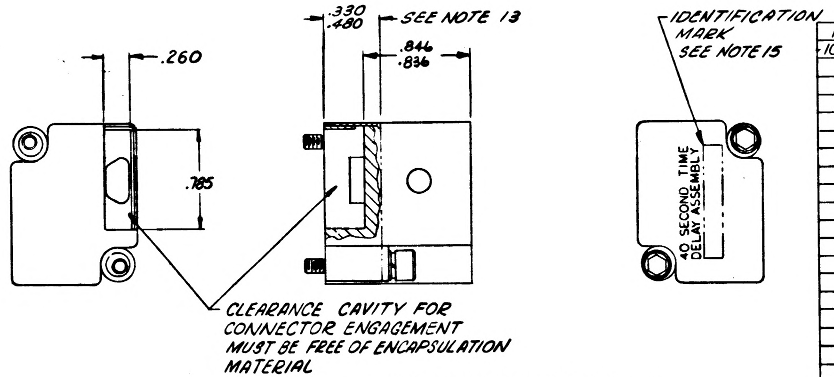

P1
6
SEE NOTES 9 & 11
SEE NOTE 10
A
A
26
Q2
23
28
BOTTOM 1015072
.970
.665
.720
.000
.010
3
4
1
.001
63
1.159
1.153
SEE NOTE 19
.125 REF
28
27 28
TYP FOR FT1, FT2, FT3 & FT4
.075 MAX BOTH ENDS
5
2

SECTION A-A


SEE NOTE 20
SEE NOTE 14
B
B
29 30 31
2 EACH REQD


R10
15
CR6
22
CR5
21
R9
15
R7
13
R8
14
CR4
20
R4
10
Q3
24
CR2
22
R1
7
CR3
19
SEE DETAIL A
R6
12
R5
11
Q1
25
R2
8
C2
17
R3
9
C1
16
CR1
18
TOP 1015071

SECTION B-B


.260
.785
.330
.480
SEE NOTE 13
.846
.836
IDENTIFICATION MARK SEE NOTE 15
40 SECOND TIME DELAY ASSEMBLY
CLEARANCE CAVITY FOR CONNECTOR ENGAGEMENT MUST BE FREE OF ENCAPSULATION MATERIAL

MARKING & ENCAPSULATION VIEWS
SCALE 2:1

TABLE 1 SEE NOTE 6

PART NO	PART NO.	PART NO.
1010364-652	1010364-692	1010364-732
-654	-694	-734
656	696	-736
658	698	-738
660	-700	-740
662	-702	-742
664	-704	-744
666	-706	-746
668	-708	-748
670	-710	-750
672	-712	-752
674	-714	-754
676	-716	-756
678	-718	-758
680	-720	-760
682	-722	-762
684	-724	-764
686	-726	-766
688	-728	
690	-730	

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			AR		38	1010679	ADHESIVE ACTIVATOR
			AR		37	1010661	EPOXY RESIN
			AR		36	1010798-1	POLYURETHANE FOAM, BLACK
			AR		35	1010798-2	POLYURETHANE FOAM, BLACK
			AR		34	1010306	CATALYST
			AR		33	1010305	EPOXY RESIN
			X		32	1009510	SCHEMATIC DIAGRAM, ELEC
			2		31	1008069-1	SCREW, SOCKET HD
			2		30	MS35338-78	WASHER, LOCK
			2		29	MS15795-303	WASHER, FLAT
			AR		28	1006776-21	INSULATION, SLEEVING, ELEC
			AR		27	1006787-2	WIRE, ELECTRICAL
			AR		26	1006757-1	WIRE, ELECTRICAL
			1		25	1010397-1	TRANSISTOR
			1		24	1010357-1	TRANSISTOR
			1		23	1010342	TRANSISTOR (DUAL SECTION)
			2		22	1010362-002	DIODE
			1		21	1010385	DIODE
			1		20	1010830 -5	DIODE
			1		19	1010830 -9	DIODE
			1		18	1010830 -11	DIODE
			1		17	1010393-043	CAPACITOR
			1		16	1006755-77	CAPACITOR
			2		15	1006750-56	RESISTOR, FIXED FILM
			1		14	1006750-36	RESISTOR, FIXED FILM
			1		13	1006750-32	RESISTOR, FIXED FILM
			1		12	1006750-8	RESISTOR, FIXED FILM
			1		11	1006750-49	RESISTOR, FIXED FILM
			1		10	1006750-84	RESISTOR, FIXED FILM
			1		9	1010364-SEE NOTE 6	RESISTOR
			1		8	1006750-34	RESISTOR, FIXED FILM
			1		7	1010364-734	RESISTOR
			1		6	1010318-2	CONNECTOR
			1		5	1015025	INSULATOR, PLATE
			2		4	1015073	SPACER, INSULATED
			1		3	1015072	WIRING BOARD, BOTTOM
			1		2	1015071	WIRING BOARD, TOP
			1		1	1015027	HOUSING (INSEP ASSY)

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015065-011	10[illegible]3-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± .005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN R. LaDue 22 SEPT 64 DATE
CHECKED W. Buell 2 OCT '64
APPROVAL A.C. De Vries 2 Oct 64
APPROVAL 11-4-64
NASA APPROVAL 11-18-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

40 SECOND TIME DELAY ASSEMBLY

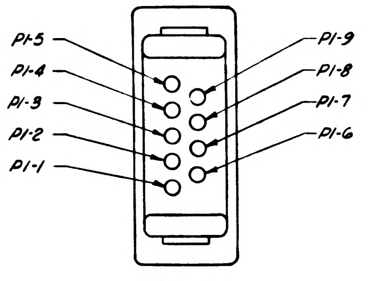
CODE IDENT NO. 80230
SIZE E
1015038
SCALE 4:1 & NOTED
SHEET 1 OF 1

1015038

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL WIRING TO COMPLY WITH STANDARDS PRESCRIBED PER ND1002069.
3. ALL WELDS TO BE PER ND1002005
4. K DENOTES CATHODE END OF DIODE.
5. AR DENOTES AS REQUIRED.
6. R3 TO BE SELECTED IN ACCORDANCE WITH ATP 1015038 & TABLE 1
7. BOND ITEMS 23, 24 & 25 TO ITEM 2 PER ND1002004 TYPE 1
8. BOND ITEM 4 TO ITEMS 2 & 3 PER ND1002004 TYPE 1
9. SPARE LEADS ON ITEM 6 TO BE CUT TO .030 TO .090 LENGTH.
10. SPARE LEAD, EMITTER BASE ON ITEM 23 TO BE CUT TO .060 TO .090 LENGTH
11. BOND ITEM 6 TO ITEM 1 PER ND 1002004 TYPE 1
12.
13. ENCAPSULATE MODULE PER ND1002036 TO .330/.480 USING ITEMS (33) & (34), THEN ENCAPSULATE REMAINDER OF MODULE PER ND1002002 USING ITEMS (35) & (36)
14. ENCAPSULATION MATERIAL TO BE FLUSH WITH SURFACE OF ITEM 1
15. SERIALIZE PER ND1002023 AND IDENTIFY PER ND1002019 CENTRALIZE ON SURFACE SHOWN.
16. INSPECT PER PS 1015038.
17.
18. FT DENOTES FEED THRU.
19. MACHINE TO DIMENSION SHOWN AFTER ENCAPSULATION.
20. APPLY CHEMICAL FILM PER MIL-C-5541 TO MACHINED BRIGHT ALUMINUM USING BRUSH METHOD.
21. APPLY A BRUSH PRIMER COAT TO INTERIOR SURFACES OF ITEM (1) USING ITEMS (37) AND (38) PER ND1002187, TYPE II EXCEPT THAT THE PRIMER COAT NEED NOT BE CURED PER ND1002187 PRIOR TO ENCAPSULATION PER NOTE 13.

WIRING DATA

"FROM" CIRCUIT POINT	"TO" CIRCUIT POINT	CIRCUIT FUNCTION
P1-1	SPARE	
P1-2	E2	+28 VDC
P1-3	E1	TIME DELAY RELAY
P1-4	SPARE	
P1-5	E3	0 VDC GROUND
P1-6	SPARE	
P1-7	SPARE	
P1-8	SPARE	
P1-9	SPARE	

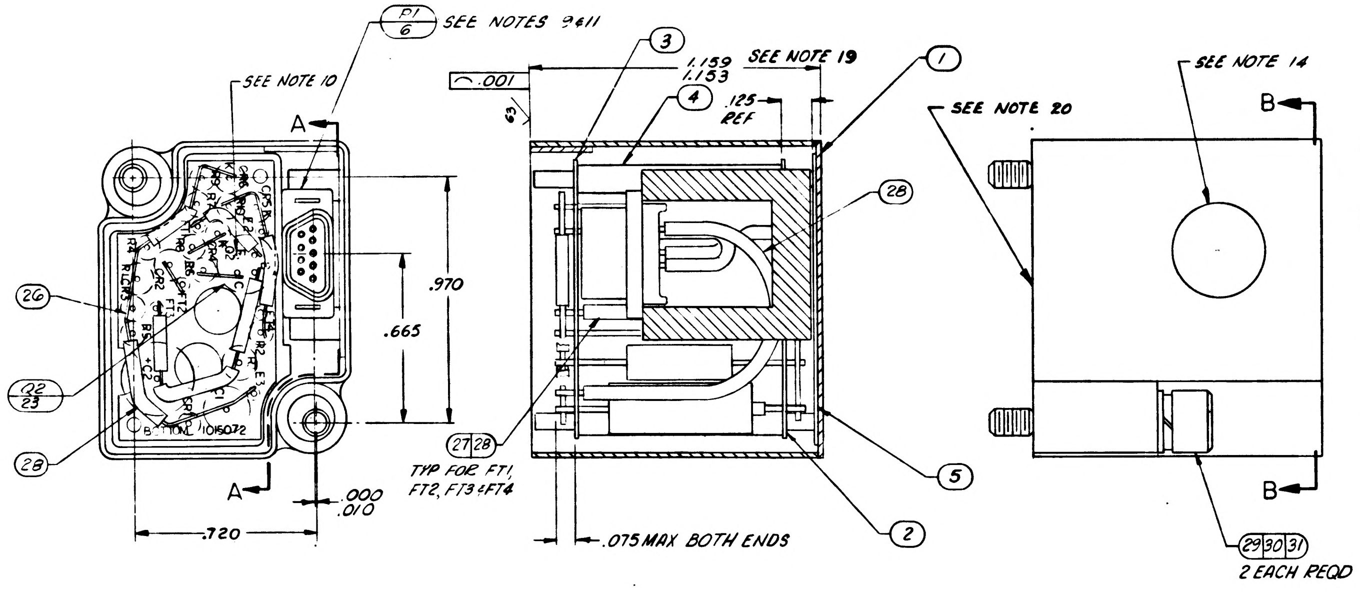

P1-5
P1-4
P1-3
P1-2
P1-1
P1-9
P1-8
P1-7
P1-6

DETAIL A
SCALE: NONE
CONNECTOR TERMINAL IDENTIFICATION VIEW

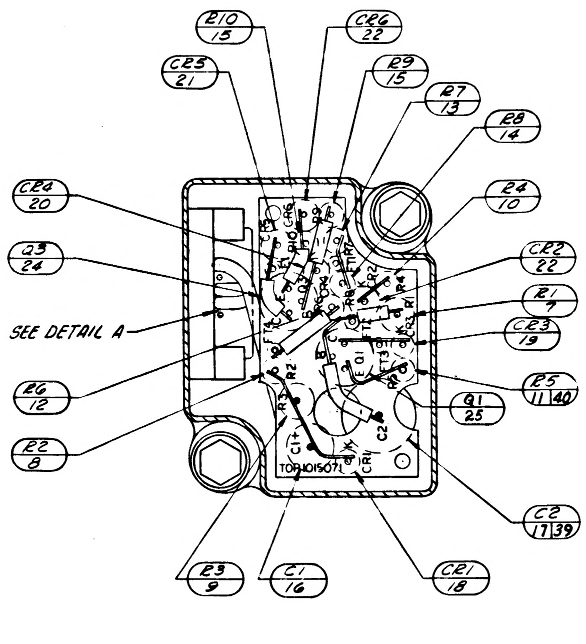
MFG CODE 041	031	021	011

REVISIONS 14978

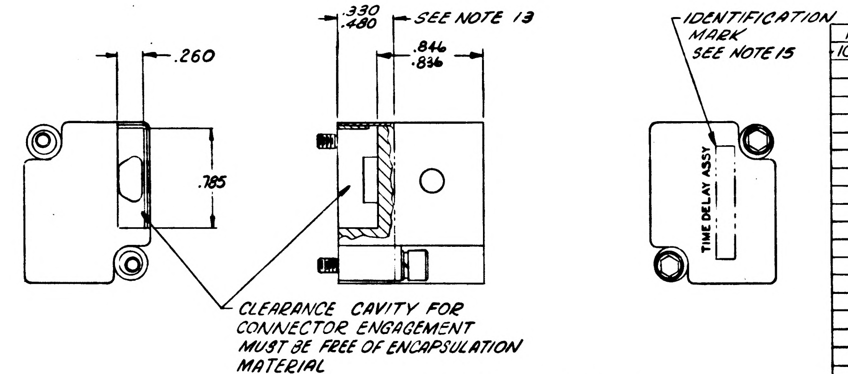
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		COMPLETELY REVISED	DC 58518	3 OCT 64	JRS
B		REVISED PER TDRR 4682		5 DEC 64	
C		REVISED PER TDRR 4995		4-JAN-65	
D		REVISED PER TDRR 6978		8 MAR 65	R.W.
E		REVISED PER TDRR 16986		8 MAR 65	
F		REVISED PER TDRR 20135		18 JAN 65	M.G.
G		REVISED PER TDRR 22364		6 SEP 65	P-G


P1
6
SEE NOTES 9 & 11
SEE NOTE 10
A
A
26
R2 23
28
.970
.665
.720
.000 .010
.001
3
4
1.159 1.153
SEE NOTE 19
.125 REF
1
28
27 28
TYP FOR FT1, FT2, FT3 & FT4
5
2
.075 MAX BOTH ENDS
SEE NOTE 20
SEE NOTE 14
B
B
29 30 31
2 EACH REQD

SECTION A-A


R10 15
CR6 22
CR5 21
R9 15
R7 13
R8 14
CR4 20
Q3 24
R4 10
SEE DETAIL A
CR2 22
R1 7
CR3 19
R6 12
R5 11 40
Q1 25
R2 8
C2 17 39
R3 9
C1 16
CR1 18

SECTION B-B


.260
.785
.330 .480
SEE NOTE 13
.846 .836
IDENTIFICATION MARK SEE NOTE 15
TIME DELAY ASSY
CLEARANCE CAVITY FOR CONNECTOR ENGAGEMENT MUST BE FREE OF ENCAPSULATION MATERIAL

MARKING & ENCAPSULATION VIEWS
SCALE 2:1

TABLE 1 SEE NOTE 6

PART NO	PART NO.	PART NO.
1010364-652	1010364-692	1010364-732
-654	-694	-734
656	-696	-736
658	698	-738
660	-700	-740
662	-702	-742
664	-704	-744
666	-706	-746
668	-708	-748
670	-710	-750
672	-712	-752
674	-714	-754
676	-716	-756
678	-718	-758
680	-720	-760
682	-722	-762
684	-724	-764
686	-726	-766
688	-728	
690	-730	

LIST OF PARTS AND MATERIALS

		QUANTITY REQUIRED 021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		☒	-		41	1023022	SCHEMATIC, TIME DELAY
		1	-		40	1006750-42	RESISTOR, FIXED FILM
		1	-		39	1006755-34	CAPACITOR
		AR	AR		38	1010679	ADHESIVE ACTIVATOR
		AR	AR		37	1010661	EPOXY RESIN
		AR	AR		36	1010798-1	POLYURETHANE FOAM, BLACK
		AR	AR		35	1010798-2	POLYURETHANE FOAM, BLACK
		AR	AR		34	1010306	CATALYST
		AR	AR		33	1010305	EPOXY RESIN
		-	☒		32	1009510	SCHEMATIC DIAGRAM, ELEC
		2	2		31	1008069-1	SCREW, SOCKET HD
		2	2		30	MS35338-78	WASHER, LOCK
		2	2		29	MS15795-303	WASHER, FLAT
		AR	AR		28	1006776-21	INSULATION, SLEEVING, ELEC
		AR	AR		27	1006787-2	WIRE, ELECTRICAL
		AR	AR		26	1006757-1	WIRE, ELECTRICAL
		1	1		25	1010397-1	TRANSISTOR
		1	1		24	1010357-1	TRANSISTOR
		1	1		23	1010342	TRANSISTOR (DUAL SECTION)
		2	2		22	1010362-002	DIODE
		1	1		21	1010385	DIODE
		1	1		20	1010830 -5	DIODE
		1	1		19	1010830 -9	DIODE
		1	1		18	1010830 -11	DIODE
		-	1		17	1010393-043	CAPACITOR
		1	1		16	1006755-77	CAPACITOR
		2	2		15	1006750-56	RESISTOR, FIXED FILM
		1	1		14	1006750-36	RESISTOR, FIXED FILM
		1	1		13	1006750-32	RESISTOR, FIXED FILM
		1	1		12	1006750-8	RESISTOR, FIXED FILM
		-	1		11	1006750-49	RESISTOR, FIXED FILM
		1	1		10	1006750-84	RESISTOR, FIXED FILM
		1	1		9	1010364-SEE NOTE 6	RESISTOR
		1	1		8	1006750-34	RESISTOR, FIXED FILM
		1	1		7	1010364-734	RESISTOR
		1	1		6	1010318-2	CONNECTOR
		1	1		5	1015025	INSULATOR, PLATE
		2	2		4	1015073	SPACER, INSULATED
		1	1		3	1015072	WIRING BOARD, BOTTOM
		1	1		2	1015071	WIRING BOARD, TOP
		1	1		1	1015027	HOUSING (INSED ASSY)

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015065-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN B. LaDue DATE 22 SEPT 64
CHECKED W Buell 2 OCT '64
APPROVAL 2 Oct 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TIME DELAY ASSEMBLY

CODE IDENT NO 80230
SIZE E
1015038
SCALE 4:1 & NOTED
SHEET 1 OF 1

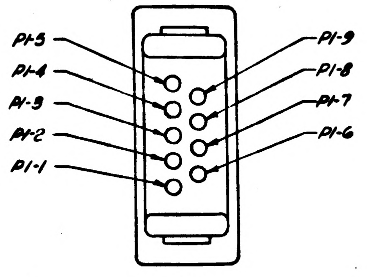
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ALL WIRING TO COMPLY WITH STANDARDS PRESCRIBED PER ND1002069.
3. ALL WELDS TO BE PER ND1002005
4. K DENOTES CATHODE END OF DIODE.
5. AR DENOTES AS REQUIRED.
6. R3 TO BE SELECTED IN ACCORDANCE WITH ATP 1015038 & TABLE 1
7. BOND ITEMS 23, 24 & 25 TO ITEM 2 PER ND1002004 TYPE 1
8. BOND ITEM 4 TO ITEMS 2 & 3 PER ND1002004 TYPE 1
9. SPARE LEADS ON ITEM 6 TO BE CUT TO .030 TO .090 LENGTH.
10. SPARE LEAD, EMITTER BASE, ON ITEM 23 TO BE CUT TO .060 TO .090 LENGTH
11. BOND ITEM 6 TO ITEM 1 PER ND 1002004 TYPE 1
12.
13. ENCAPSULATE MODULE PER ND1002036 TO .330/.480 USING ITEMS (33) & (34), THEN ENCAPSULATE REMAINDER OF MODULE PER ND1002002 USING ITEMS (35) & (36)
14. ENCAPSULATION MATERIAL TO BE FLUSH WITH SURFACE OF ITEM 1
15. SERIALIZE PER ND1002023 AND IDENTIFY PER ND1002019 CENTRALIZE ON SURFACE SHOWN.
16. INSPECT PER PS 1015038.
17.
18. FT DENOTES FEED THRU.
19. MACHINE TO DIMENSION SHOWN AFTER ENCAPSULATION.
20. APPLY CHEMICAL FILM PER MIL-C-5541 TO MACHINED BRIGHT ALUMINUM USING BRUSH METHOD.
21. APPLY A BRUSH PRIMER COAT TO INTERIOR SURFACES OF ITEM (1) USING ITEMS (37) AND (38) PER ND1002187, TYPE II EXCEPT THAT THE PRIMER COAT NEED NOT BE CURED PER ND1002187 PRIOR TO ENCAPSULATION PER NOTE 13.

WIRING DATA

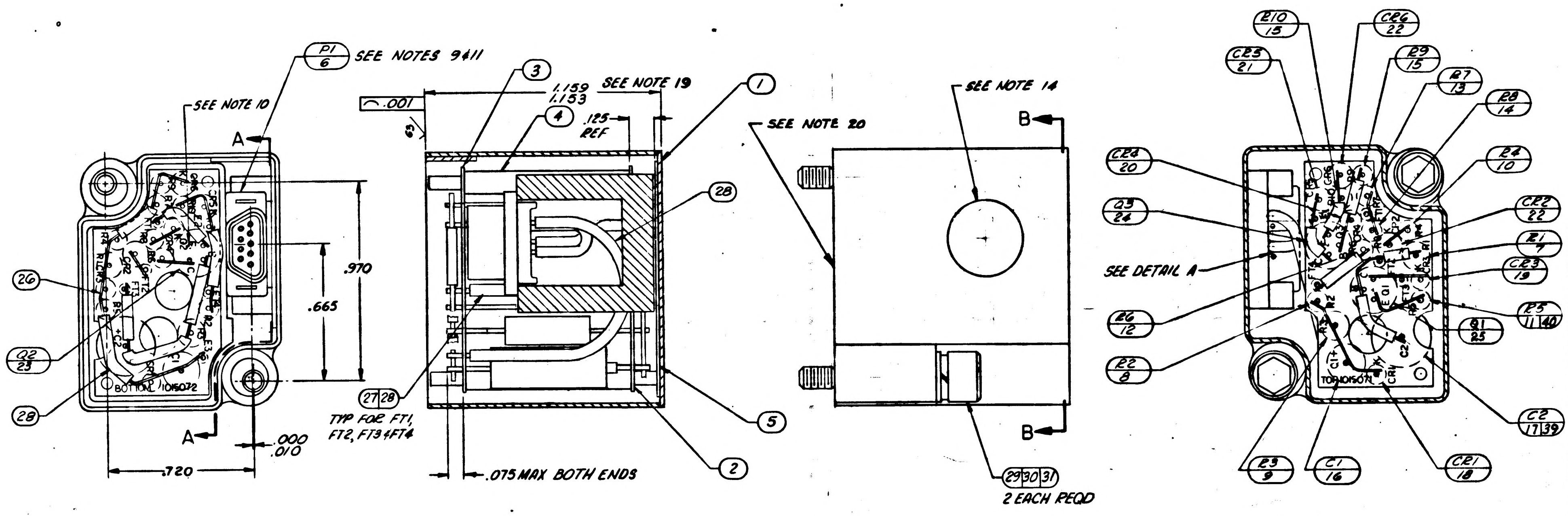
"FROM" CIRCUIT POINT	"TO" CIRCUIT POINT	CIRCUIT FUNCTION
P1-1	SPARE	
P1-2	E2	+28 VDC
P1-3	E1	TIME DELAY RELAY
P1-4	SPARE	
P1-5	E3	0 VDC GROUND
P1-6	SPARE	
P1-7	SPARE	
P1-8	SPARE	
P1-9	SPARE	

REVISIONS 14078

MFG CODE 041	031	021	011	SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
				A		COMPLETELY REVISED	80 58518	3 OCT 64	JRS W.S.
				B		REVISED PER TDRR 14682		15 DEC 64	
				C		REVISED PER TDRR 14995		4-JAN-65	
				D		REVISED PER TDRR 16976		8 MAR 65	
				E		REVISED PER TDRR 16986		8 MAR 65	
				F		REVISED PER TDRR 20135		18 JUN 65	M.G.
				G		REVISED PER TDRR 22364		16 SEP 65	PHG
				H		REVISED PER TDRR 22656		22 SEP 65	JNP


P1-5
P1-4
P1-3
P1-2
P1-1
P1-9
P1-8
P1-7
P1-6

DETAIL A
SCALE: NONE
CONNECTOR TERMINAL IDENTIFICATION VIEW

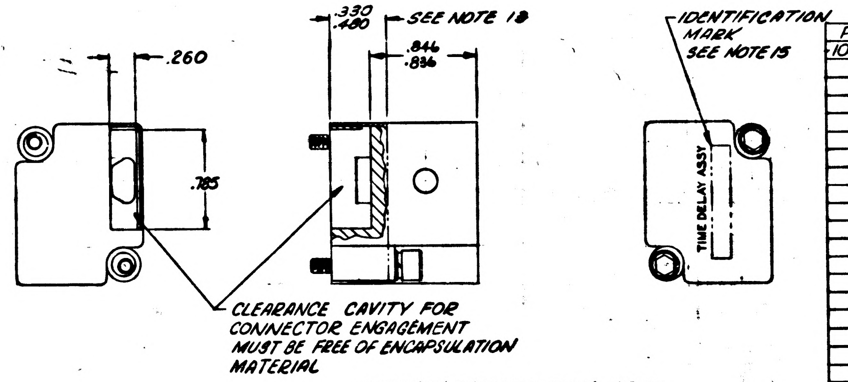

P1 6
SEE NOTES 9 & 11
SEE NOTE 10
A
A
BOTTOM 1015072
.970
.665
.720
.000 .010
26
Q2 23
28
3
4
.001
1.159 1.133
SEE NOTE 19
.125 REF
1
28
27 28
TYP FOR FT1, FT2, FT3 & FT4
.075 MAX BOTH ENDS
5
2
SEE NOTE 20
SEE NOTE 14
B
B
29 30 31
2 EACH REQD
SEE DETAIL A
E10 15
CR6 22
CR5 21
R9 15
R7 13
R8 14
CR4 20
Q3 24
R4 10
CR2 22
R1 7
CR3 19
R6 12
R5 11 40
R2 8
Q1 25
C2 17 39
E3 9
C1 16
CR1 18

SECTION A-A

SECTION B-B

TABLE 1 SEE NOTE 6

PART NO.	PART NO.	PART NO.
1010364-652	1010364-692	1010364-732
-654	-694	-734
656	696	-736
658	698	-738
660	-700	-740
662	-702	-742
664	-704	-744
666	-706	-746
668	-708	-748
670	-710	-750
672	-712	-752
674	-714	-754
676	-716	-756
678	-718	-758
680	-720	-760
682	-722	-762
684	-724	-764
686	-726	-766
688	-728	
690	-730	


.260
.330 .480
SEE NOTE 18
.846 .836
.785
IDENTIFICATION MARK
SEE NOTE 15
TIME DELAY ASSY
CLEARANCE CAVITY FOR CONNECTOR ENGAGEMENT MUST BE FREE OF ENCAPSULATION MATERIAL

MARKING & ENCAPSULATION VIEWS
SCALE 2:1

		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		☒	-		41	1023022	SCHEMATIC, TIME DELAY
		1	-		40	1006750-42	RESISTOR, FIXED FILM
		1	-		39	1006755-34	CAPACITOR
		AR	AR		38	1010679	ADHESIVE ACTIVATOR
		AR	AR		37	1010661	EPOXY RESIN
		AR	AR		36	1010798-1	POLYURETHANE FOAM, BLACK
		AR	AR		35	1010798-2	POLYURETHANE FOAM, BLACK
		AR	AR		34	1010306	CATALYST
		AR	AR		33	1010305	EPOXY RESIN
		-	☒		32	1009510	SCHEMATIC DIAGRAM, ELEC
		2	2		31	1008069-1	SCREW, SOCKET HD
		2	2		30	MS35338-78	WASHER, LOCK
		2	2		29	MS15795-303	WASHER, FLAT
		AR	AR		28	1006776-21	INSULATION, SLEEVING, ELEC
		AR	AR		27	1006787-2	WIRE, ELECTRICAL
		AR	AR		26	1006757-1	WIRE, ELECTRICAL
		1	1		25	1010397-1	TRANSISTOR
		1	1		24	1010357-1	TRANSISTOR
		1	1		23	1010342	TRANSISTOR (DUAL SECTION)
		2	2		22	1010362-002	DIODE
		1	1		21	1010385	DIODE
		1	1		20	1010830 -5	DIODE
		1	1		19	1010830 -9	DIODE
		1	1		18	1010830 -11	DIODE
		-	1		17	1010393-043	CAPACITOR
		1	1		16	1006755-77	CAPACITOR
		2	2		15	1006750-56	RESISTOR, FIXED FILM
		1	1		14	1006750-36	RESISTOR, FIXED FILM
		1	1		13	1006750-49	RESISTOR, FIXED FILM
		1	1		12	1006750-8	RESISTOR, FIXED FILM
		-	1		11	1006750-49	RESISTOR, FIXED FILM
		1	1		10	1006750-84	RESISTOR, FIXED FILM
		1	1		9	1010364-SEE NOTE 6	RESISTOR
		1	1		8	1006750-34	RESISTOR, FIXED FILM
		1	1		7	1010364-734	RESISTOR
		1	1		6	1010318-2	CONNECTOR
		1	1		5	1015025	INSULATOR, PLATE
		2	2		4	1015073	SPACER, INSULATED
		1	1		3	1015072	WIRING BOARD, BOTTOM
		1	1		2	1015071	WIRING BOARD, TOP
		1	1		1	1015027	HOUSING (INSEP ASSY)

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015065-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — DECIMALS ±.005 ANGLES + —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN R. LaRue 22 SEPT 64 DATE
CHECKED W. Dill 2 OCT '64
APPROVAL A.C. De Vane 2 Oct 64
APPROVAL [illegible] 11-4-64
NASA APPROVAL W [illegible] 11-18-64
MIT APPROVAL W [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TIME DELAY ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1015038
SCALE 4:1 FAMS
SHEET 1 OF 1

1015038

Charleston 2 OCT 64

APOLLO G&N Specification
PS1015038
Original Issue Date: 15 Dec 64
Release Authority: TDRR 14821
Class A Release

PROCUREMENT SPECIFICATION

FOR

40 SECOND TIME DELAY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page 1 to 4 inclusive.

APPROVALS	W J Rhine 12-15-64 NASA/MSC	G. Cushman 14-12-64 W Guffer 15 Dec 64 MIT/IL	HJW. J. Walsiewicz J. Ramage ACSP

PROCUREMENT SPECIFICATION

FOR

40 SECOND TIME DELAY

1. SCOPE

1.1 **PURPOSE.** This specification establishes the requirements for the procurement of the 40 Second Time Delay, Drawing 1015038, hereafter called the assembly.

2. APPLICABLE DOCUMENTS

2.1 **EFFECTIVE ISSUES.** The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND1002214	General Specification for Packaging AGE
ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM1015038	Final Test Method for 40 Second Time Delay

DRAWINGS

APOLLO G&N

1015038	40 Second Time Delay
1009510	Schematic, 40 Second Time Delay (For Reference Only)

3. REQUIREMENTS

3.1 GENERAL SPECIFICATION. Unless otherwise specified herein, all of the requirements of Specification ND-1002210 shall apply as requirements of this specification.

3.2 DESCRIPTION. The assembly shall be used in the Display and Control Electronics Assembly to provide a time delay for the gyro wheels to come up to operating speed before the IMU control power is applied.

3.3 FUNCTIONAL REQUIREMENTS

3.3.1 Electrical Inputs. The assembly shall operate as specified herein when 24-30 vdc is applied.

3.3.2 Time Delay. Upon application of power to the assembly, the time for closing of the external relay contacts shall be 40±2 seconds. With the power remaining applied for a minimum of 2 minutes, then removed for 5±0.5 seconds and reapplied, the time for closing of the external relay contacts shall be 25±7 seconds.

When the preceding steps have been performed, the same procedure shall be repeated twice.

3.4 PERFORMANCE AND PRODUCT CHARACTERISTICS

3.4.1 Service Life

3.4.1.1 Operating Life. The assembly shall meet performance specifications for at least 2000 hours of operation, excluding the supplier's test time of the completed unit.

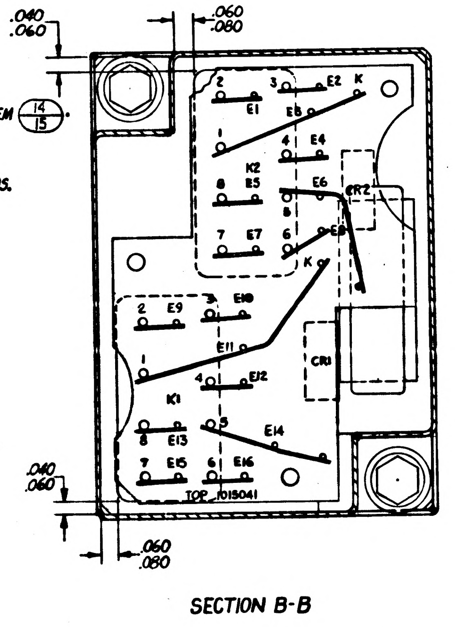
3.4.1.2 Shelf Life. The assembly shall have a shelf life of at least 3 years, without operation, at ambient room temperature after final acceptance at the supplier's facility, when packaged in accordance with ND1002214.

3.4.2 Reliability. Design objectives require maximum reliability of the assembly during its period of useful life. Every effort shall be made to design and produce assemblies capable of meeting a maximum failure rate of 1.1 per million hours.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A	-	COMPLETEY REVISED	DO.58518	3 OCT 64	JRS / W.S.

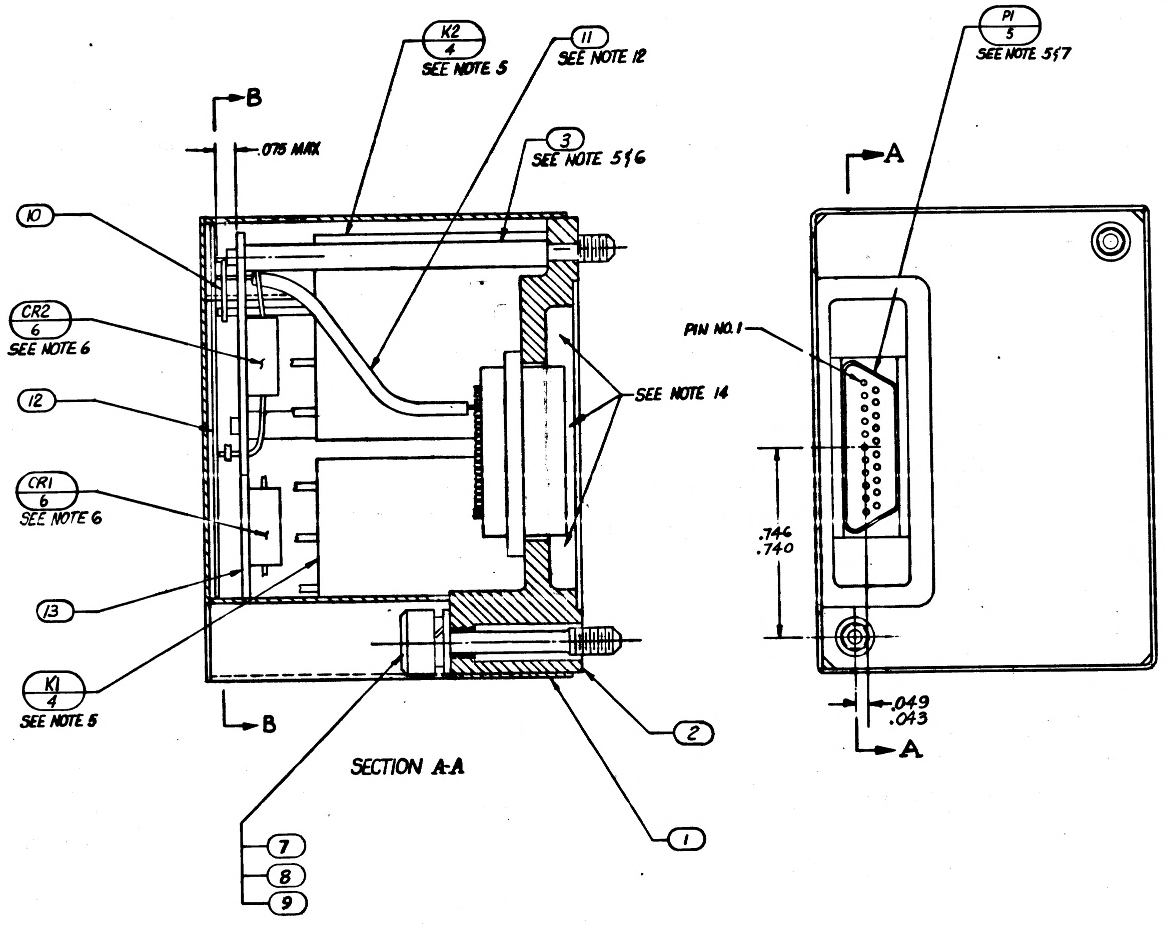
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. WELD PER ND1002005
3. 'K' DENOTES CATHODE END OF DIODE.
4. AR DENOTES AS REQUIRED.
5. BOND ITEM (3) & ITEM (4) & ITEM (5) TO ITEM (2) PER ND1002004 TYPE 1.
6. BOND ITEM (3) & ITEM (6) TO ITEM (13) PER ND1002004 TYPE 1.
7. SPARE LEADS ON ITEM (5) TO BE CUT .030 TO .090 IN LENGTH.
8. ALL WIRING TO COMPLY WITH STANDARDS PRESCRIBED BY ND1002069.
9. DIPCOAT PER ND1002068 PRIOR TO POTTING.
10. POT PER ND1002002, BLACK (POLYURETHANE FOAM) PER ITEM (14/15).
11. SERIALIZE PER ND1002023 AND IDENTIFY PER ND1002019, CENTRALIZE AS SHOWN.
12. INSULATION SLEEVING TO BE USED ON ALL CONNECTOR LEADS.
13.
14. THIS AREA TO BE FREE OF POTTING MATERIAL.
15. INSPECT PER PS 1007115.



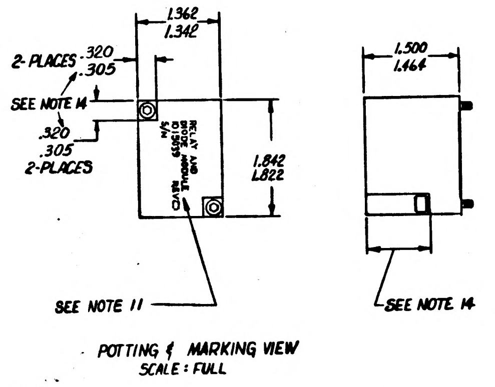
.040
.060
.060
.080
.040
.060
.060
.080
E1
E2
E3
E4
E5
E6
E7
E8
E9
E10
E11
E12
E13
E14
E15
E16
K
K1
K2
CR1
CR2
TOP 1015041

SECTION B-B



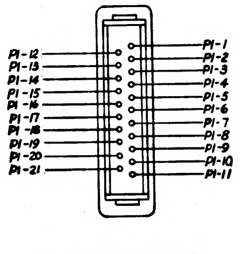
B
.078 MAX
K2 4
SEE NOTE 5
11
SEE NOTE 12
3
SEE NOTE 5 & 6
10
CR2 6
SEE NOTE 6
12
CR1 6
SEE NOTE 6
13
K1 4
SEE NOTE 5
SEE NOTE 14
2
1
7
8
9
B
P1 5
SEE NOTE 5 & 7
A
PIN NO. 1
.746
.740
.049
.043
A

SECTION A-A



1.362
1.342
2-PLACES .320 .305
SEE NOTE 14
.320
.305
2-PLACES
1.842
1.822
SEE NOTE 11
1.500
1.464
SEE NOTE 14

POTTING & MARKING VIEW
SCALE: FULL



P1-12
P1-13
P1-14
P1-15
P1-16
P1-17
P1-18
P1-19
P1-20
P1-21
P1-1
P1-2
P1-3
P1-4
P1-5
P1-6
P1-7
P1-8
P1-9
P1-10
P1-11

CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE

WIRING DATA	
FROM CIRCUIT POINT	TO CIRCUIT POINT
P1-1	E2
P1-2	E4
P1-3	E6
P1-4	E8
P1-5	E9
P1-6	SPARE
P1-7	E10
P1-8	E12
P1-9	SPARE
P1-10	SPARE
P1-11	SPARE
P1-12	E1
P1-13	E3
P1-14	E5
P1-15	E7
P1-16	E11
P1-17	SPARE
P1-18	E13
P1-19	E14
P1-20	E15
P1-21	E16

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			011				
			AR		15	1010798-1	POLYURETHANE FOAM
			AR		14	1010798-2	POLYURETHANE FOAM
			X		REF	1015005	SCHEMATIC DIAGRAM, ELECTRICAL
			1		13	1015041	WIRING BOARD, TOP
			1		12	1015032	INSULATOR, PLATE
			AR		11	1006776-21	INSULATION, SLEEVING
			AR		10	1006757-1	WIRE, ELECTRICAL
			2		9	MS35338-78	WASHER, LOCK
			2		8	MS15795-303	WASHER, FLAT
			2		7	1008069-1	SCREW, SOC. HD.
			2		6	1010362-003	DIODE
			1		5	1010472-2	CONNECTOR, RECEPTACLE
			2		4	1010353-4	RELAY, ELECTRO MAGNETIC
			3		3	1015040	INSULATOR, ROD
			1		2	1015042	BASE
			1		1	1015031	HOUSING (INSEP. ASSY)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015064-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +— —— DECIMALS ±.005 ANGLES +— —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN C. Kutch DATE 9 SEPT 64
CHECKED W. Juhl 1 OCT '64
APPROVAL L. Jaie 2 Oct '64
APPROVAL L. C. Smith 11-4-64
NASA APPROVAL W. J. Kline 11-12-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RELAY AND DIODE MODULE
ASSEMBLY
(CONTROL ELECTRONICS)

CODE IDENT NO.
SIZE E
1015039
SCALE 4:1
SHEET 1 OF 1

Charleston 1 Oct 64

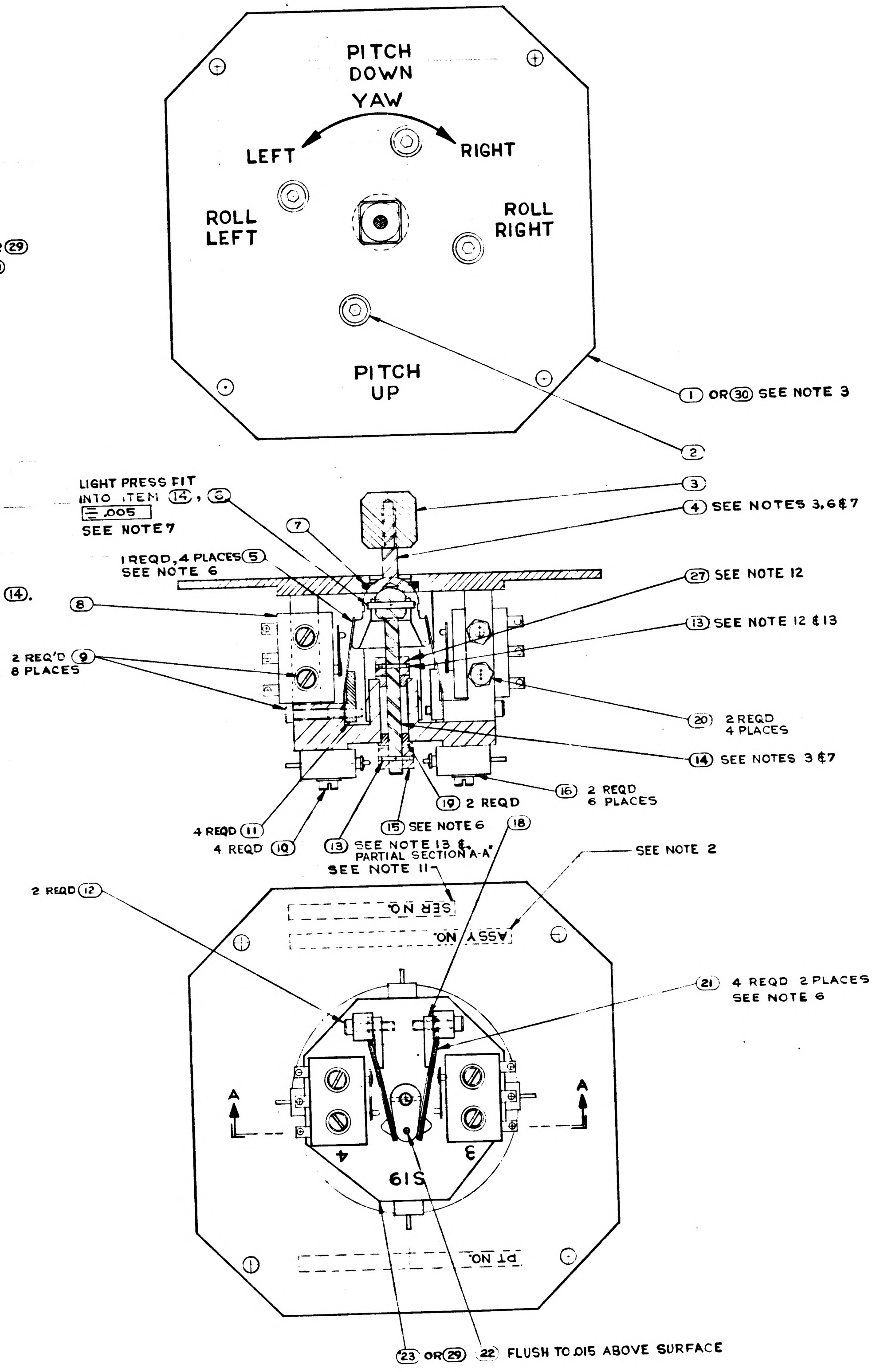
1015039

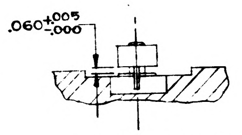
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
Ⓐ	INITIAL CLASS A RELEASE TDRR NO. 13914		
A	REVISED PER TDRR 14684	14 DEC 64	JJJ

NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STD PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DWG NO. AND APPLICABLE DASH NO; REV. LETTER, AND MFG SYMBOL
3. CENTER ITEM ① OR ㉚ WITH RESPECT TO ITEM ⑭ WITH ITEM ⑦ BEARING AGAINST ITEM ④.
4. BOND ITEM ⑧ TO ITEM ㉓ OR ㉙ WITH ITEM ㉕ AND ⑰ PER ND 1002004 SEMI-RIGID COMPOSITION.
   PROCEDURE:
   a. APPLY EPOXY TO INTERFACES OF ITEM ⑧ AND ITEM ㉓ OR ㉙
   b. ASSEMBLE USING ITEM ⑨ AND ITEM ⑳ OR ITEM ① OR ㉚ ADJUSTING ITEM ⑧ PER NOTE 6
   c. CURE
5. THE SWITCHES, ITEM ⑧, ARE TO BE ADJUSTED SUCH THAT THE SWITCH OR SWITCHES ASSOCIATED WITH THE DIRECTION OF DEFLECTION OF THE SHAFT, ITEM ④, ARE ACTUATED WHEN ITEM ④ IS .04 FROM THE STOP SURFACE OF ITEM ① OR ㉚ AND BEFORE ⑮ IS AGAINST STOP SURFACE.
6. PROCEDURE FOR APPLICATION OF ITEM ㉖:
   a. PARTS SHALL BE FREE FROM OIL, GREASE AND DIRT BEFORE APPLICATION OF LUBRICANT.
   b. APPLY A FILM OF ITEM ㉖ TO ITEM ⑮ AND BOTH SIDE ITEM ⑤ AND ㉑.
   c. APPLY A FILM OF ITEM ㉖ TO OUTSIDE OF ITEM ④.
   d. REMOVE EXCESS LUBRICANT.
7. APPLY ITEM ㉘ PER ND 1002216 AS NOTED BELOW:
   a. ITEM ④. INSIDE SPHERICAL RAD AND SLOTS ONLY.
   b. EXPOSED PORTIONS OF ITEM ⑥ AND BALL END ONLY OF ITEM ⑭.
8. SECURE ITEM ③ USING ITEM ㉔ PER ND 1002211.
9. VENDOR ITEM, SEE SPECIFICATION DWG.
10. THE ASSEMBLY PART NO. IS THE DWG NO AND THE DASH NO. THAT APPLIES.
11. SERIALIZE PER ND 1002023.
12. LOCATE ITEM ㉗ TO OBTAIN .001 TO .004 END PLAY OF ITEM ④ WITH RESPECT TO THE TOP SURFACE OF ITEM ① OR ㉚. USE FORCE OF 2 TO 8 OUNCES TO DETERMINE END PLAY.
13. AFTER ALL LOCATING REQUIREMENTS HAVE BEEN ESTABLISHED, DRILL THRU, .031±.002 DIA, USING PILOT HOLE FOR LOCATION. INSTALL ITEM ⑬.
14. ALL SCREWS NOT SECURED BY LOCKING DEVICES SHALL BE SECURED USING ITEM ㉔ PER ND 1002211





PARTIAL SECTION "A-A"

			1	-		30	1021747	PLATE, MOUNTING
			1	-		29	1021746	HOUSING
SEE NOTE 7&9			AR	AR		28	1012049	LUBRICANT, DRY FILM
			1	1		27	1021736	SLEEVE, ADJUSTING
SEE NOTE 6			AR	AR		26	MIL-M-7866	MOLYBDENUM DISULFIDE POWDER
SEE NOTE 9			AR	AR		25	1010657	EPOXY RESIN
			AR	AR		24	MIL-S-22473 GRADE A	SEALING COMPOUND, RETAINING
			-	1		23	1014537	HOUSING
			1	1		22	MS171434	PIN, SPRING
			8	8		21	1015052	SPRING, ACTUATOR
			8	8		20	MS 35649-24	NUT, PLAIN, HEX.
SEE NOTE 9			2	2		19	1010418-002	BUSHING, FLANGED
			2	2		18	1015051	STOP BLOCK
SEE NOTE 9			AR	AR		17	1010686	CATALYST
			12	12		16	MS 15795-802	WASHER, PLAIN
			1	1		15	1015046	CAM, ACTUATOR
			1	1		14	1015045	SHAFT, FULCRUM
			2	2		13	MS 51923-168	PIN, SPRING
			2	2		12	NAS 1352 C02-6	SCREW, SOC HD CAP
			4	4		11	1014615	STOP BLOCK
			4	4		10	MS 35233-6	SCREW, PAN HD
			16	16		9	MS 35233-8	SCREW, PAN HD
SEE NOTE 9			6	6		8	1010435-1	SWITCH, BASIC
SEE NOTE 9			1	1		7	1010785-12	PACKING, PREFORMED
			1	1		6	MS 16555-605	PIN, DOWEL
			4	4		5	1014614	SPRING, ACTUATOR
			1	1		4	1015044	ACTUATOR AND SHAFT
			1	1		3	1014669	KNOB, SHAFT ACTUATOR
SEE NOTE 9			4	4		2	1006783-18	SCREW, BUTTON HD, SOC.
			-	1		1	1015047	PLATE, MOUNTING
			021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
	QUANTITY REQUIRED					LIST OF MATERIALS		

1015053-011	1015023-011	011
1014664-011	1015023-021	021
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT NAS9-497
DRAWN DATE 4-16-64
CHECKED E. Metz 10-8-64
APPROVAL 10/20/64
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SWITCH
ATTITUDE - IMPULSE ASSEMBLY

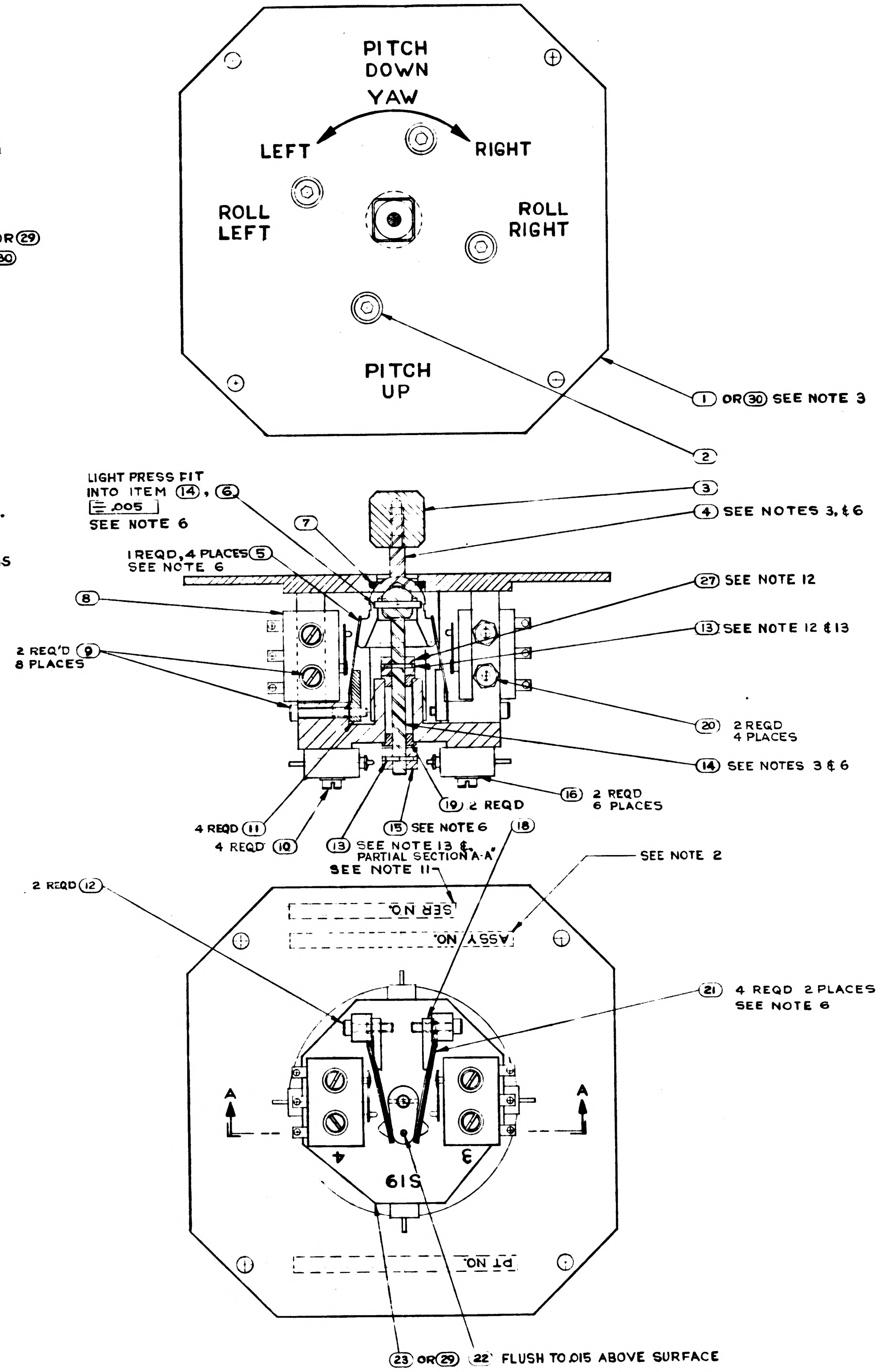
CODE IDENT NO.
SIZE E
NASA DRAWING NO 1015048
SCALE 2/1
WT
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

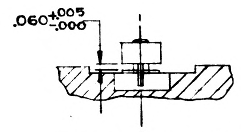
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
	INITIAL CLASS A RELEASE TDRR NO. 13814		
A	REVISED PER TDRR 14684	14 DEC 64	J J J
B	REVISED PER TDRR 16874	4 MAR 65	

NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STD PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DWG NO. AND APPLICABLE DASH NO, REV. LETTER, AND MFG SYMBOL
3. CENTER ITEM ① OR ㉚ WITH RESPECT TO ITEM ⑭ WITH ITEM ⑦ BEARING AGAINST ITEM (4).
4. BOND ITEM ⑧ TO ITEM ㉓ OR ㉙ WITH ITEM ㉕ AND ⑰ PER ND 1002004 SEMI-RIGID COMPOSITION.
   PROCEDURE:
   a. APPLY EPOXY TO INTERFACES OF ITEM ⑧ AND ITEM ㉓ OR ㉙
   b. ASSEMBLE USING ITEM ⑨ AND ITEM ⑳ OR ITEM ① OR ㉚ ADJUSTING ITEM ⑧ PER NOTE 5
   c. CURE
5. THE SWITCHES, ITEM ⑧, ARE TO BE ADJUSTED SUCH THAT THE SWITCH OR SWITCHES ASSOCIATED WITH THE DIRECTION OF DEFLECTION OF THE SHAFT, ITEM ④, ARE ACTUATED WHEN ITEM ④ IS .04 FROM THE STOP SURFACE OF ITEM ① OR ㉚ AND BEFORE ⑮ IS AGAINST STOP SURFACE.
6. PROCEDURE FOR APPLICATION OF ITEM ㉖:
   a. PARTS SHALL BE FREE FROM OIL, GREASE AND DIRT BEFORE APPLICATION OF LUBRICANT.
   b. APPLY A FILM OF ITEM ㉖ TO ITEM ⑮ AND BOTH SIDE ITEM ⑤ AND ㉑.
   c. APPLY A FILM OF ITEM ㉖ TO OUTSIDE OF ITEM ④.
   d. APPLY A FILM OF ITEM ㉖ TO INSIDE SPHERICAL RAD AND SLOTS ONLY OF ITEM ④.
   e. APPLY A FILM OF ITEM ㉖ TO THE EXPOSED PORTIONS OF ITEM 6 AND BALL END ONLY OF ITEM ④.
   f. REMOVE EXCESS LUBRICANT.
8. SECURE ITEM ③ USING ITEM ㉔ PER ND 1002211.
9. VENDOR ITEM, SEE SPECIFICATION DWG.
10. THE ASSEMBLY PART NO. IS THE DWG NO AND THE DASH NO. THAT APPLIES.
11. SERIALIZE PER ND 1002023.
12. LOCATE ITEM ㉗ TO OBTAIN .001 TO .004 END PLAY OF ITEM ④ WITH RESPECT TO THE TOP SURFACE OF ITEM ① OR ㉚. USE FORCE OF 2 TO 8 OUNCES TO DETERMINE END PLAY.
13. AFTER ALL LOCATING REQUIREMENTS HAVE BEEN ESTABLISHED, DRILL THRU .031±.002 DIA, USING PILOT HOLE FOR LOCATION. INSTALL ITEM ⑬.
14. ALL SCREWS NOT SECURED BY LOCKING DEVICES SHALL BE SECURED USING ITEM ㉔ PER ND 1002211



~~7. APPLY ITEM ㉘ PER ND1002216 AS NOTED BELOW:~~
~~a. ITEM ④ INSIDE SPHERICAL RAD AND SLOTS ONLY.~~
~~b. EXPOSED PORTIONS OF ITEM ⑥ AND BALL END ONLY OF ITEM ⑭~~



PARTIAL SECTION "A-A"

			021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
			1	-		30	1021747	PLATE, MOUNTING
			1	-		29	1021746	HOUSING
~~SEE NOTE 6 & 9~~			~~AR~~	~~AR~~		28	~~1012049~~	~~LUBRICANT, DRY FILM~~
			1	1		27	1021736	SLEEVE, ADJUSTING
SEE NOTE 6			AR	AR		26	MIL-M-7866	MOLYBDENUM DISULFIDE POWDER
SEE NOTE 9			AR	AR		25	1010657	EPOXY RESIN
			AR	AR		24	MIL-S-22473 GRADE A	SEALING COMPOUND, RETAINING
			-	1		23	1014537	HOUSING
			1	1		22	MS171434	PIN, SPRING
			8	8		21	1015052	SPRING, ACTUATOR
			8	8		20	MS 35649-24	NUT, PLAIN, HEX.
SEE NOTE 9			2	2		19	1010418-001	BUSHING, FLANGED
			2	2		18	1015051	STOP BLOCK
SEE NOTE 9			AR	AR		17	1010686	CATALYST
			12	12		16	MS 15795-802	WASHER, PLAIN
			1	1		15	1015046	CAM, ACTUATOR
			1	1		14	1015045	SHAFT, FULCRUM
			2	2		13	MS 51923-168	PIN, SPRING
			2	2		12	NAS 1352 C02-6	SCREW, SOC HD CAP
			4	4		11	1014615	STOP BLOCK
			4	4		10	MS 35233-6	SCREW, PAN HD
			16	16		9	MS 35233-8	SCREW, PAN HD
SEE NOTE 9			6	6		8	1010435-1	SWITCH, BASIC
SEE NOTE 9			1	1		7	1010785-12	PACKING, PREFORMED
			1	1		6	MS 16555-605	PIN, DOWEL
			4	4		5	1014614	SPRING, ACTUATOR
			1	1		4	1015044	ACTUATOR AND SHAFT
			1	1		3	1014669	KNOB, SHAFT ACTUATOR
SEE NOTE 9			4	4		2	1006783-18	SCREW, BUTTON HD, SOC.
			-	1		1	1015047	PLATE, MOUNTING
	QUANTITY REQUIRED					LIST OF MATERIALS		

1015053-011	1015023-011	011
1014664-011	1015023-021	021
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT NAS9 497
DRAWN [illegible] DATE 11 AUG 4
CHECKED E. Metz 10-8-64
APPROVAL [illegible] 10/20/64
APPROVAL
NASA APPROVAL W. J. [illegible] 10-20-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SWITCH
ATTITUDE - IMPULSE
ASSEMBLY

CODE IDENT NO
SIZE E
NASA DRAWING NO. 1015048
SCALE 2/1
WT
SHEET 1 OF 1

1015048 B

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REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
	INITIAL CLASS A RELEASE TDRR NO. 13814		
A	REVISED PER TDRR 14684	14 DEC 64	JJJ
B	REVISED PER TDRR 16874	MAR 65	JWP
C	REVISED PER TDRR 17695	24 MAR 65	EM AU

NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STD PRESCRIBED BY MIL-D-70327.
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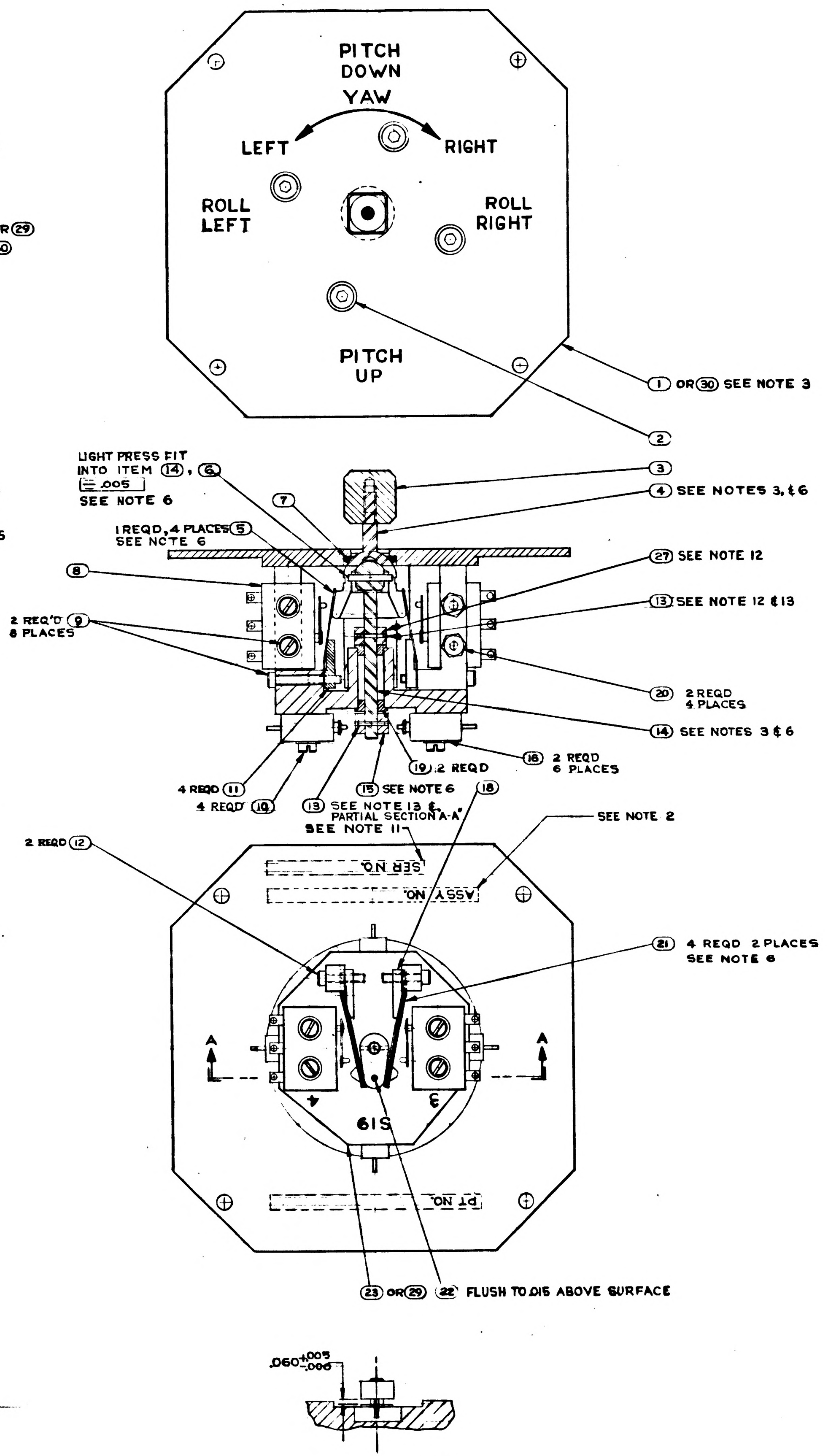

~~7. APPLY ITEM ㉘ PER ND1002216 AS NOTED BELOW:~~
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			021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
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			1	-		29	1021746	HOUSING
~~SEE NOTE 6 & 9~~			~~AR~~	~~AR~~		28	~~1012049~~	~~LUBRICANT, DRY FILM~~
			1	1		27	1021736	SLEEVE, ADJUSTING
SEE NOTE 6			AR	AR		26	MIL-M-7866	MOLYBDENUM DISULFIDE POWDER
SEE NOTE 9			AR	AR		25	1010657	EPOXY RESIN
			AR	AR		24	MIL-S-22473 GRADE A	SEALING COMPOUND, RETAINING
			-	1		23	1014537	HOUSING
			1	1		22	MS171434	PIN, SPRING
			8	8		21	1015052	SPRING, ACTUATOR
			8	8		20	MS 35649-24	NUT, PLAIN, HEX.
SEE NOTE 9			2	2		19	1010418-001	BUSHING, FLANGED
			2	2		18	1015051	STOP BLOCK
SEE NOTE 9			AR	AR		17	1010686	CATALYST
			12	12		16	MS 15795-802	WASHER, PLAIN
			1	1		15	1015046	CAM, ACTUATOR
			1	1		14	1015045	SHAFT, FULCRUM
			2	2		13	MS 51923-168	PIN, SPRING
			2	2		12	NAS 1352C02-6	SCREW, SOC HD CAP
			4	4		11	1014615	STOP BLOCK
			4	4		10	MS 35233-6	SCREW, PAN HD
			16	16		9	MS 35233-8	SCREW, PAN HD
SEE NOTE 9			6	6		8	1010901-1	SWITCH, BASIC
SEE NOTE 9			1	1		7	1010785-12	PACKING, PREFORMED
			1	1		6	MS 16555-605	PIN, DOWEL
			4	4		5	1014614	SPRING, ACTUATOR
			1	1		4	1015044	ACTUATOR AND SHAFT
			1	1		3	1014669	KNOB, SHAFT ACTUATOR
SEE NOTE 9			4	4		2	1006783-18	SCREW, BUTTON HD, SOC.
			-	1		1	1015047	PLATE, MOUNTING
	QUANTITY REQUIRED						LIST OF MATERIALS	

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015053-011	1015023-011	011
1014664-01	1015023-021	021
APPLICATION		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE INCHES
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FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
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FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS9-497
DRAWN DATE 1 NOV 64
CHECKED E. Metz 10-8-64
APPROVAL 10/9/64
APPROVAL
NASA APPROVAL W. J. 10-20-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SWITCH
ATTITUDE - IMPULSE
ASSEMBLY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015048
SCALE 2/1
WT
SHEET 1 OF 1

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REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
	INITIAL CLASS A RELEASE TDRR NO. 13914		

NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STD PRESCRIBED BY MIL-D-70327.
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   c. CURE
5. THE SWITCHES, ITEM ⑧, ARE TO BE ADJUSTED SUCH THAT THE SWITCH OR SWITCHES ASSOCIATED WITH THE DIRECTION OF DEFLECTION OF THE SHAFT, ITEM ④, ARE ACTUATED WHEN ITEM ④ IS .04 FROM THE STOP SURFACE OF ITEM ① OR ㉚ AND BEFORE ⑮ IS AGAINST STOP SURFACE.
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   c. APPLY A FILM OF ITEM ㉖ TO OUTSIDE OF ITEM ④.
   d. REMOVE EXCESS LUBRICANT.
7. APPLY ITEM ㉘ PER ND 1002216 AS NOTED BELOW:
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   b. EXPOSED PORTIONS OF ITEM ⑥ AND BALL END ONLY OF ITEM ⑭.
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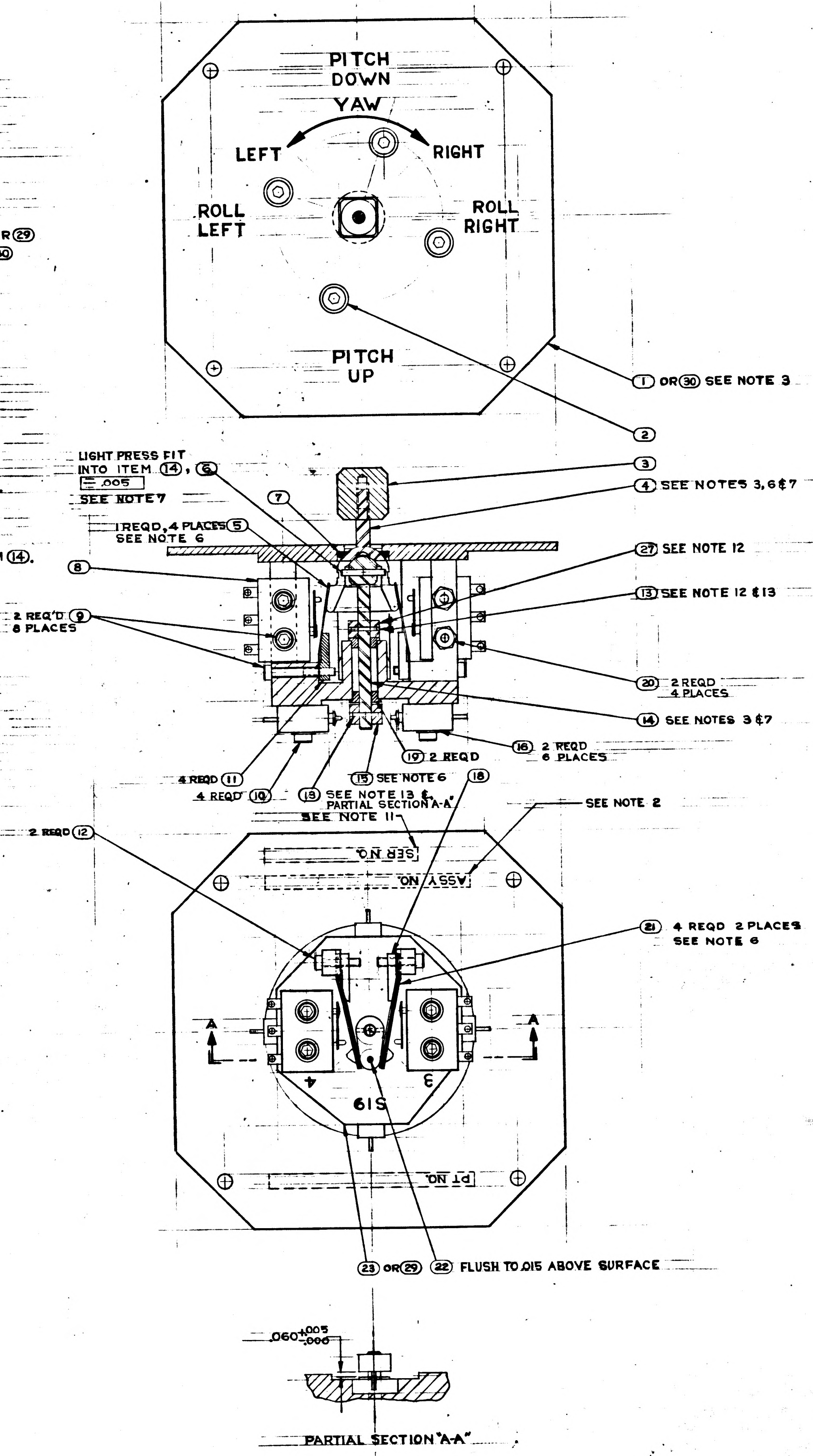


PARTIAL SECTION "A-A"

					ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
			021	011	EFFECTIVITY		
		1	-		30	1021747	PLATE, MOUNTING
		1	-		29	1021746	HOUSING
SEE NOTE 7 & 9		AR	AR		28	1012049	LUBRICANT. DRY FILM
		1	1		27	1021736	SLEEVE, ADJUSTING
SEE NOTE 6		AR	AR		26	MIL-M-7866	MOLYBDENUM DISULFIDE POWDER
SEE NOTE 9		AR	AR		25	1010657	EPOXY RESIN
		AR	AR		24	MIL-S-22473 GRADE A	SEALING COMPOUND, RETAINING
		-	1		23	1014537	HOUSING
		1	1		22	MS171434	PIN, SPRING
		8	8		21	1015052	SPRING, ACTUATOR
		8	8		20	MS 35649-24	NUT, PLAIN, HEX.
SEE NOTE 9		2	2		19	1010418-002	BUSHING, FLANGED
		2	2		18	1015051	STOP BLOCK
SEE NOTE 9		AR	AR		17	1010686	CATALYST
		12	12		16	MS 15795-802	WASHER, PLAIN
		1	1		15	1015046	CAM, ACTUATOR
		1	1		14	1015045	SHAFT, FULCRUM
		2	2		13	MS 51923-168	PIN, SPRING
		2	2		12	NAS 1352 C02-6	SCREW, SOC HD CAP
		4	4		11	1014615	STOP BLOCK
		4	4		10	NAS 1352 C02-7	SCREW, SOC. HD CAP
		16	16		9	NAS 1352 C02-10	SCREW, SOC HD CAP
SEE NOTE 9		6	6		8	1010435-1	SWITCH, BASIC
SEE NOTE 9		1	1		7	1010785-12	PACKING, PREFORMED
		1	1		6	MS 16555-605	PIN, DOWEL
		4	4		5	1014614	SPRING, ACTUATOR
		1	1		4	1015044	ACTUATOR AND SHAFT
		1	1		3	1014669	KNOB, SHAFT ACTUATOR
SEE NOTE 9		4	4		2	1006783-18	SCREW, BUTTON HD, SOC.
		-	1		1	1015047	PLATE, MOUNTING
	QUANTITY REQUIRED					LIST OF MATERIALS	

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015053-011	1015023-011	011
1014664-011	1015023-021	021

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT NAS9-497
DRAWN DATE 11-16-64
CHECKED E. Motz 10-8-64
APPROVAL 10/20/64
APPROVAL
NASA APPROVAL W J 10-20-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SWITCH
ATTITUDE - IMPULSE
ASSEMBLY

CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1015048
SCALE 2/1 | WT | SHEET 1 OF 1

MASTER

1015048

G+N WIRE LIST AA

GENERAL NOTES

1 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

3 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

4 TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50

6 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATIONS PREFIX WITH 50A1.

7. Solder Per ND 1002071 using items 2 and 3

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015049
SCALE - NONE	REV LTR	SHEET 2

MIL 2084-4-64

G+N WIRE LIST AA

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015049- 1	WIRE PER 1010789-001 24AWG YEL. 5 FT 4.25 IN TOTAL LENGTH
	2	AR	QQ-S-571 SN60 WRAP 2	SOLDER (ES-2175 ALLOY 1)
	3	AR	MIL-F-14256	FLUX (ES-2798)
	4	21	1010476-082	INSULATION SLEEVING HEAT SHRINK

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015049
SCALE - NONE	REV LTR	SHEET 3

MIL 2084-4-64

14847

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL

APPLICATION	
NEXT ASSY	USED ON
1014664-011	1015023-021

REV					
SHEET					
REV STATUS OF SHEETS	REV	-	-	-	-	-
	SHEET	1	2	3	4	5

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN
DRAWN R. Cotilla DATE 17 AUG 64
CHECKED E J Boehme 9-25-64
APPROVAL 9/26/64
APPROVAL
NASA APPROVAL 14
MIT APPROVAL
CONTRACT

WIRE LIST A-A
G & N INDICATOR CONTROL PANEL

CODE IDENT NO.	SIZE		REV
	A	1015049	-
SCALE —		SHEET 1 OF 5	

G+N WIRE LIST AA

CONDUCTOR			FROM					TO				
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION		CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION	
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N 2	SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	2	T I N 2	SPEC 1 ITEM NO.	NO.
AA 1	1		T1- 2	25	Y			T1- 3	25	Y		
AA 2	1		S 3-1-C	25	Y	4		S 3-2-NC	25	Y	4	
AA 3	1		S16-7-C	25	Y			S16-8-C	25	Y	4	
AA 4	1		S16-3-C	25	Y			S16-2-C	25	Y	4	
AA 5	1		S16-2-C	25	Y			S16-1-C	25	Y	4	
AA 6	1		S17-1-C	25	Y			S17-2-C	25	Y		
AA 7	1		R1-WIPER	25	Y	4		R1-CW	25	Y		
AA 8	1		S10- 4	25	Y	4		S10- 3	25	Y		
AA 9	1		S14-1-C	25	Y	4		S14-2-NC	25	Y	4	
AA 10	1		S18-2-C	25	Y	4		S18-1-C	25	Y	4	
AA 11	1		S21-3-NC	25	Y	4		S20-2-NC	25	Y		
AA 12	1		S21-1-C	25	Y			S20-1-C	25	Y		
AA 13	1		S 9-4-NO	25	Y			S 9-8-NO	25	Y		
AA 14	1		S 9-2-C	25	Y			S 9-7-C	25	Y	4	
AA 15	1		S 9-1-C	25	Y			S 9-5-C	25	Y		
AA 16	1		S20-4-NC	25	Y			S20-3-NC	25	Y	4	
AA 17	1		S20-3-NC	25	Y			S21-4-NC	25	Y	4	
AA 18	1		S21-4-NC	25	Y			S21-2-NC	25	Y	4	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015049
SCALE - NONE	REV LTR +	SHEET 4

MIL 2085-4-64 WIR

G+N WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN 2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN 2	TO TERMINATION SPEC 1 ITEM NO.	NO.
AA 19	1		S 9-8-C	25	Y			S 9-4-C	25	Y		
AA 20	1		S20-1-NC	25	Y			S21-1-NC	25	Y	4	
AA 21	1		S 9-1-NO	25	Y			S 9-5-NO	25	Y		
AA 22	1		S20-3-C	25	Y			S21-4-C	25	Y	4	
AA 23	1		S20-4-C	25	Y			S21-2-C	25	Y	4	
AA 24	1		S12-2-NC	25	Y	4		S12-3-NO	25	Y		
AA 25	1		A1-3	25	Y	4		A1-2	25	Y		

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

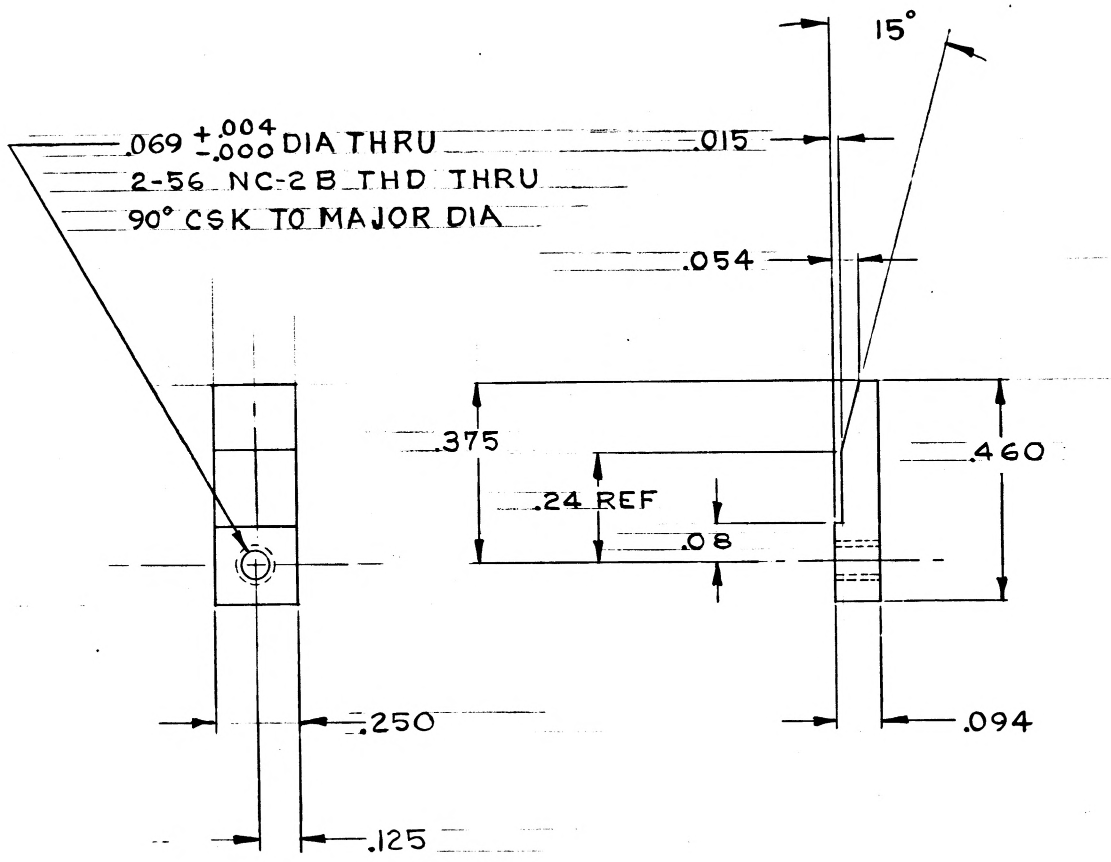
MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015049
SCALE - NONE	REV LTR +	SHEET 5

MIL 2088-4-64 WIR

NOTES:
1. INTERPRET THIS DWG IN ACCORDANCE WITH STD PRESCRIBED BY MIL-D-70327.
2. MATERIAL: QQ-S-763, CL 302 OR 304, COND A, CF (ES-376).
3. FINISH: MIL-F-14072 (SIG C), FIN E 300 (ES-585).
4. UNLESS OTHERWISE SPECIFIED:
   a. ALL CORNERS TO BE .005 TO .015 RAD. OR CHAMFER.
   b. SURFACE ROUGHNESS MUST NOT EXCEED 63/ .
   c. REMOVE ALL BURRS.
5. IDENTIFY USING DWG NO. AND REV. LETTER PER ND 1002019.

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		INITIAL CLASS A RELEASE TDRR NO. 13814			



1015048-011	1015048-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
.XX DEC. ± .02
.XXX DEC. ± .005
ANGLES ± 1°
DO NOT SCALE THIS DRAWING

MATERIAL SEE NOTE 2
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J. Barth III DATE 4 SEPT 64
CHECKED E. Mertz 10-8-64
APPROVAL J. F. Nevin 10/20/64
APPROVAL
NASA APPROVAL W. J. Rhine 10-20-64
MIT APPROVAL 10/28/64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

STOP BLOCK

CODE IDENT NO.
SIZE C
1015051
SCALE 4/1
SHEET 1 OF 1

MIL 1077C-P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD.
A		UPGRADED FOR CLASS A RELEASE 1385	6 OCT 64	FK

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. INSPECT PER (65).
3. SERIALIZE PER ND 1002023.
4. SOLDER PER ND 1002071. USING (66) AND (67).
5. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.
6. ASSEMBLE AND MOISTUREPROOF PER ATP 1015053.

PICTURE INCOMPLETE

	QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	AR		77	1012504-2	PRIMER, METAL
	AR		76	1012504-1	PRIMER, METAL
	AR		75	1012503-2	COMPOUND POLYURETHANE
	AR		74	1012503-1	COMPOUND POLYURETHANE
NOTE 5	4		73	NAS 1081C06D3L	SCREW-SET, SELF LOCK
	1		72	1014660	PLATE
			71		
NOTE 5	1		70	1006783-21	SCREW, BUTTON HD
NOTE 5	1		69	1010624-2	LAMP-INCANDESCENT
	1		68	1015094	WIRE LIST A-A
	AR		67	MIL-F-14256	FLUX (ES-2798)
	AR		66	QQ-S-571 SN60 WRAP2	SOLDER (ES-2175 ALLOY 1)
	☒		65	PS1015053	PROC SPECIFICATION
	☒		64	1015054	SCHEMATIC DIAGRAM, ELECTRICAL
	1		63	1014650-10	NAMEPLATE
	1		62	1015093	HARNESS
NOTE 5	2		60	MS-16633-4009	RING-RETAINING
NOTE 5	1		59	1000220-10	CLAMP-CABLE
NOTE 5	5		58	1000220-8	CLAMP-CABLE
NOTE 5	2		57	1000220-7	CLAMP-CABLE
NOTE 5	3		55	1000220-4	CLAMP-CABLE
NOTE 5	10		54	1011918-3	WASHER-CABLE CLAMP
NOTE 5	1		53	1011918-1	WASHER-CABLE CLAMP
NOTE 5	16		50	1006783-22	SCREW-BUTTON HD.
NOTE 5	2		48	1006783-18	SCREW-BUTTON HD.
NOTE 5	4		47	1010630-25	SCREW-FLAT HD.
NOTE 5	10		46	1006783-19	SCREW-BUTTON HD.
NOTE 5	2		45	NAS1081C04D3L	SCREW-SET, SELF LOCK
NOTE 5	12		44	1010630-14	SCREW-FLAT HD.
	6		43	1014503	SCREW-CAPTIVE
NOTE 5	2		39	1010268-2	LAMP-INCANDESCENT
NOTE 5	2		38	1010625-1	HOLDER, LAMP
	2		37	1014595	BRACKET, MOUNTING-LAMP
	1		36	1014594	PLATE, MOUNTING SWITCH
	2		35	1014587	WINDOW
	4		34	1014584	GASKET, WINDOW
	2		33	1014583	CLAMP, WINDOW
	2		32	1014530	PIN-CONNECTOR
	2		31	1014528	PIN-PANEL
	1		30	1014588	WHEEL, POTENTIOMETER
	1		28	1014586	SUPPORT, HAND CONTROLLER
	1		27	1014651-7	CAP-PUSH BUTTON ILLUMINATED
NOTE 5	9		26	1010475-1	CAP, PUSHBUTTON
	2		24	1014585-003	KNOB, ROTARY SWITCH
NOTE 5	1		23	1010494-3	SWITCH ASSY, ROTARY
NOTE 5	1		22	1010494-2	SWITCH ASSY, ROTARY
NOTE 5	1		20	1010627-2	SWITCH ASSY, PUSH BUTTON ILLUMINATED
↑	3		19	1010480-3	SWITCH ASSY, PUSH BUTTON
│	4		18	1010480-2	SWITCH ASSY, PUSH BUTTON
│	2		17	1010480-1	SWITCH ASSY, PUSH BUTTON
│	1		16	1010489-1	SWITCH ASSY, TOGGLE
│	1		15	1010479-2	SWITCH ASSY, TOGGLE
│	2		14	1010479-1	SWITCH ASSY, TOGGLE
│	1		13	1010484-1	SWITCH ASSY, TOGGLE
↓	1		11	1010478-2	SWITCH ASSY, TOGGLE
NOTE 5	2		10	1010478-1	SWITCH ASSY, TOGGLE
NOTE 5	1		7	1010492	TRANSFORMER, POWER
	1		5	1015048-011	ATTITUDE IMPULSE SWITCH ASSY
	1		4	1021700-011	SEXTANT HAND CONTROLLER ASSY.
	1		2	1014591-011	BRACKET & POT. ASSEMBLY
	1		1	1015092	PANEL, G&N IND. CONT. (INSEP.)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023	1015023	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 23 SEP 65 DATE
CHECKED 1 OCT 65
APPROVAL 20 OCT
APPROVAL
NASA APPROVAL 10-28-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G&N INDICATOR CONTROL PANEL
ASSEMBLY

CODE IDENT NO.
SIZE E
1015053
SCALE —
SHEET 1 OF 1

Chg. List 7 Oct 64

10 Nov '64

APOLLO G&N Specification
PS1015053A
Original Issue Date: 15 Dec 64
Release Authority: TDRR 14819
Class A **Release**

PROCUREMENT SPECIFICATION

FOR

G&N INDICATOR CONTROL PANEL ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
2/17/65	A	16526	9	W.K.	T.M.

This specification consists of page 1 to 11 inclusive.

APPROVALS	W J Rhine 12-15-64 NASA/MSC	15 Dec 64 12/14/64 MIT/IL	11-9-64 J. Walisiewicz ACSP

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
A		UPGRADED FOR CLASS A RELEASE 13815		6 OCT 64	FK
B		REVISED PER TDRR 14577	—	7 DEC 64	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. INSPECT PER (65).
3. SERIALIZE PER ND 1002023.
4. SOLDER PER ND 1002071. USING (66) AND (67).
5. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.
6. ASSEMBLE AND MOISTUREPROOF PER ATP 1015053.

	QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	AR		77	1012504-2	PRIMER, METAL
	AR		76	1012504-1	PRIMER, METAL
	AR		75	1012503-2	COMPOUND POLYURETHANE
	AR		74	1012503-1	COMPOUND POLYURETHANE
NOTE 5	4		73	NAS 1081C06D3L	SCREW-SET, SELF LOCK
	1		72	1014660	PLATE
			71		
NOTE 5	1		70	1006783-21	SCREW, BUTTON HD
NOTE 5	1		69	1010624-2	LAMP-INCANDESCENT
	1		68	1015094	WIRE LIST A-A
	AR		67	MIL-F-14256	FLUX (ES-2798)
	AR		66	QQ-S-571 SN60 WRAP2	SOLDER (ES-2175 ALLOY 1)
	☒		65	PS1015053	PROC SPECIFICATION
	☒		64	1015054	SCHEMATIC DIAGRAM, ELECTRICAL
	1		63	1014650-10	NAMEPLATE
	1		62	1015093	HARNESS
NOTE 5	2		60	MS-16633-4009	RING-RETAINING
~~NOTE 5~~	~~1~~		~~59~~	~~1000220-10~~	~~CLAMP-CABLE~~
~~NOTE 5~~	~~5~~		~~58~~	~~1000220-8~~	~~CLAMP-CABLE~~
~~NOTE 5~~	~~2~~		~~57~~	~~1000220-7~~	~~CLAMP-CABLE~~
NOTE 5	11		55	1000220-1 THRU 1000220-12	CLAMP-CABLE
NOTE 5	10		54	1011918-3	WASHER-CABLE CLAMP
NOTE 5	1		53	1011918-1	WASHER-CABLE CLAMP
NOTE 5	16		50	1006783-22	SCREW-BUTTON HD.
NOTE 5	2		48	1006783-18	SCREW-BUTTON HD.
NOTE 5	4		47	1010630-25	SCREW-FLAT HD.
NOTE 5	10		46	1006783-19	SCREW-BUTTON HD.
NOTE 5	2		45	NAS1081C04D3L	SCREW-SET, SELF LOCK
NOTE 5	12		44	1010630-14	SCREW-FLAT HD.

LIST OF PARTS AND MATERIALS

	QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	6		43	1014503	SCREW-CAPTIVE
NOTE 5	2		39	1010268-2	LAMP-INCANDESCENT
NOTE 5	2		38	1010625-1	HOLDER, LAMP
	2		37	1014595	BRACKET, MOUNTING-LAMP
	1		36	1014594	PLATE, MOUNTING SWITCH
	2		35	1014587	WINDOW
	4		34	1014584	GASKET, WINDOW
	2		33	1014583	CLAMP, WINDOW
	2		32	1014530	PIN-CONNECTOR
	2		31	1014528	PIN-PANEL
	1		30	1014588	WHEEL, POTENTIOMETER
	1		28	1014586	SUPPORT, HAND CONTROLLER
	1		27	1014651-7	CAP-PUSH BUTTON ILLUMINATED
NOTE 5	9		26	1010475-1	CAP, PUSHBUTTON
	2		24	1014585-003	KNOB, ROTARY SWITCH
NOTE 5	1		23	1010494-3	SWITCH ASSY, ROTARY
NOTE 5	1		22	1010494-2	SWITCH ASSY, ROTARY
NOTE 5	1		20	1010627-2	SWITCH ASSY, PUSH BUTTON ILLUMINATED
↑	3		19	1010480-3	SWITCH ASSY, PUSH BUTTON
	4		18	1010480-2	SWITCH ASSY, PUSH BUTTON
	2		17	1010480-1	SWITCH ASSY, PUSH BUTTON
	1		16	1010489-1	SWITCH ASSY, TOGGLE
	1		15	1010479-2	SWITCH ASSY, TOGGLE
	2		14	1010479-1	SWITCH ASSY, TOGGLE
	1		13	1010484-1	SWITCH ASSY, TOGGLE
↓	1		11	1010478-2	SWITCH ASSY, TOGGLE
NOTE 5	2		10	1010478-1	SWITCH ASSY, TOGGLE
NOTE 5	1		7	1010492	TRANSFORMER, POWER
	1		5	1015048-011	ATTITUDE IMPULSE SWITCH ASSY
	1		4	1021700-011	SEXTANT HAND CONTROLLER ASSY.
	1		2	1014591-011	BRACKET & POT. ASSEMBLY
	1		1	1015092	PANEL, G&N IND. CONT. (INSEP.)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 23 Sep 65
CHECKED C. Pijde 1 OCT 65
APPROVAL 2 OCT 65
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

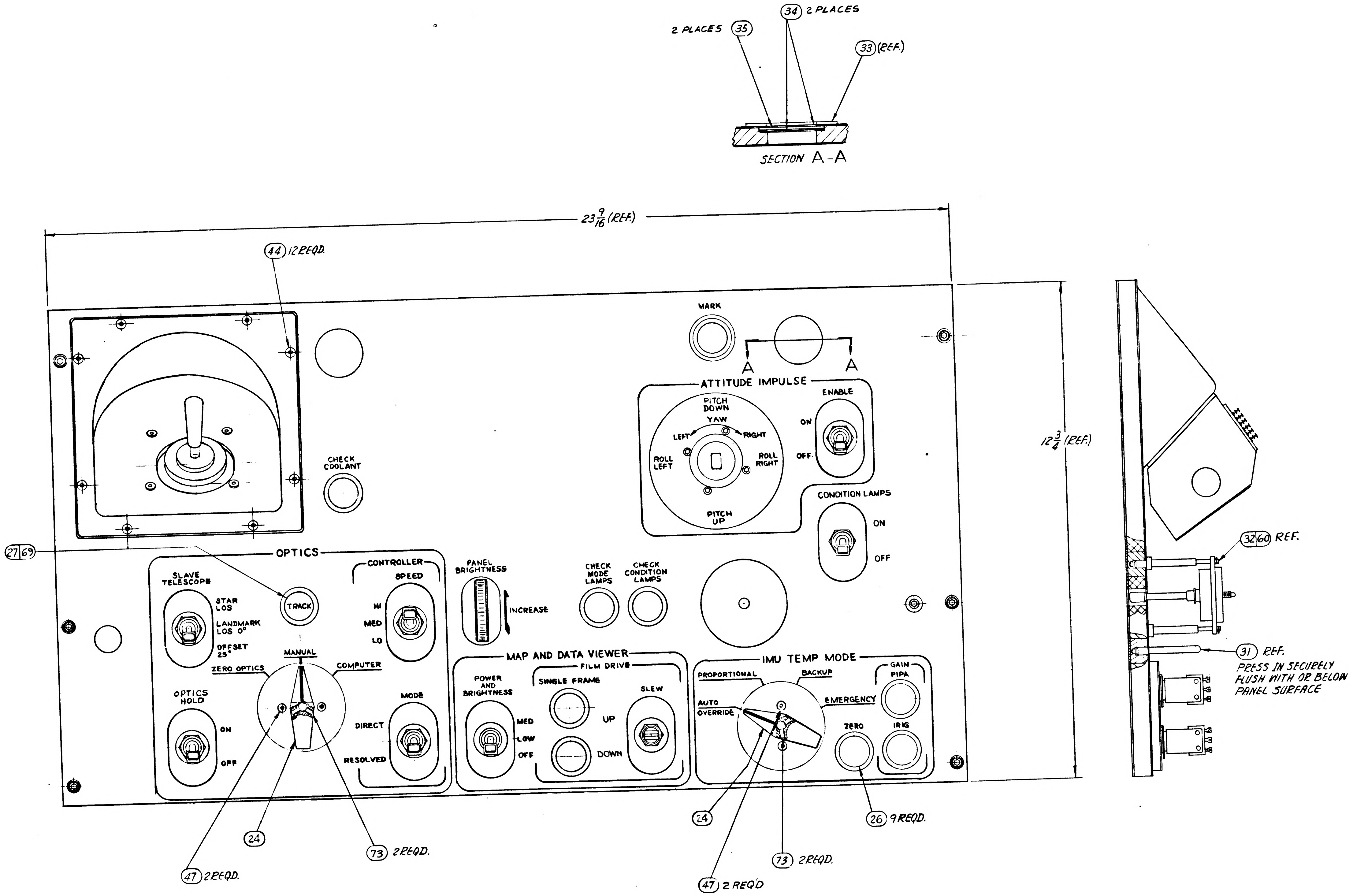
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G&N INDICATOR CONTROL PANEL
ASSEMBLY

CODE IDENT NO.
SIZE E
1015053
SCALE —
SHEET 1 OF 3

B 1015053

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
		SEE SHEET 1 FOR REVISION RECORD 14577		12/1/64	WK
B		THIS SHEET ADDED PER TDRR 14577		7 DEC 64	


2 PLACES (35)
(34) 2 PLACES
(33) (REF.)
SECTION A-A
$23\frac{9}{16}$ (REF.)
$12\frac{3}{4}$ (REF.)
(44) 12 REQD.
MARK
A
A
ATTITUDE IMPULSE
PITCH DOWN
YAW
LEFT
RIGHT
ROLL LEFT
ROLL RIGHT
PITCH UP
ENABLE
ON
OFF
CONDITION LAMPS
ON
OFF
CHECK COOLANT
(27)(69)
OPTICS
SLAVE TELESCOPE
STAR LOS
LANDMARK LOS 0°
OFFSET 25°
TRACK
CONTROLLER
SPEED
HI
MED
LO
MANUAL
ZERO OPTICS
COMPUTER
OPTICS HOLD
ON
OFF
MODE
DIRECT
RESOLVED
PANEL BRIGHTNESS
INCREASE
CHECK MODE LAMPS
CHECK CONDITION LAMPS
MAP AND DATA VIEWER
POWER AND BRIGHTNESS
MED
LOW
OFF
FILM DRIVE
SINGLE FRAME
UP
DOWN
SLEW
IMU TEMP MODE
PROPORTIONAL
BACKUP
AUTO OVERRIDE
EMERGENCY
GAIN
PIPA
ZERO
IRIG
(24)
(73) 2 REQD.
(47) 2 REQD.
(24)
(73) 2 REQD.
(47) 2 REQ'D
(26) 9 REQD.
(32)(60) REF.
(31) REF.
PRESS IN SECURELY FLUSH WITH OR BELOW PANEL SURFACE

Ⓑ THIS SHEET ADDED

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-011	1015023-011	011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN H. Fause DATE 23 SEP 64
CHECKED C. Propka 1 OCT 64
APPROVAL D. W. Mintey 2 OCT 64
APPROVAL 11/24/64
NASA APPROVAL 12-1-64
MIT APPROVAL 1 Dec 64

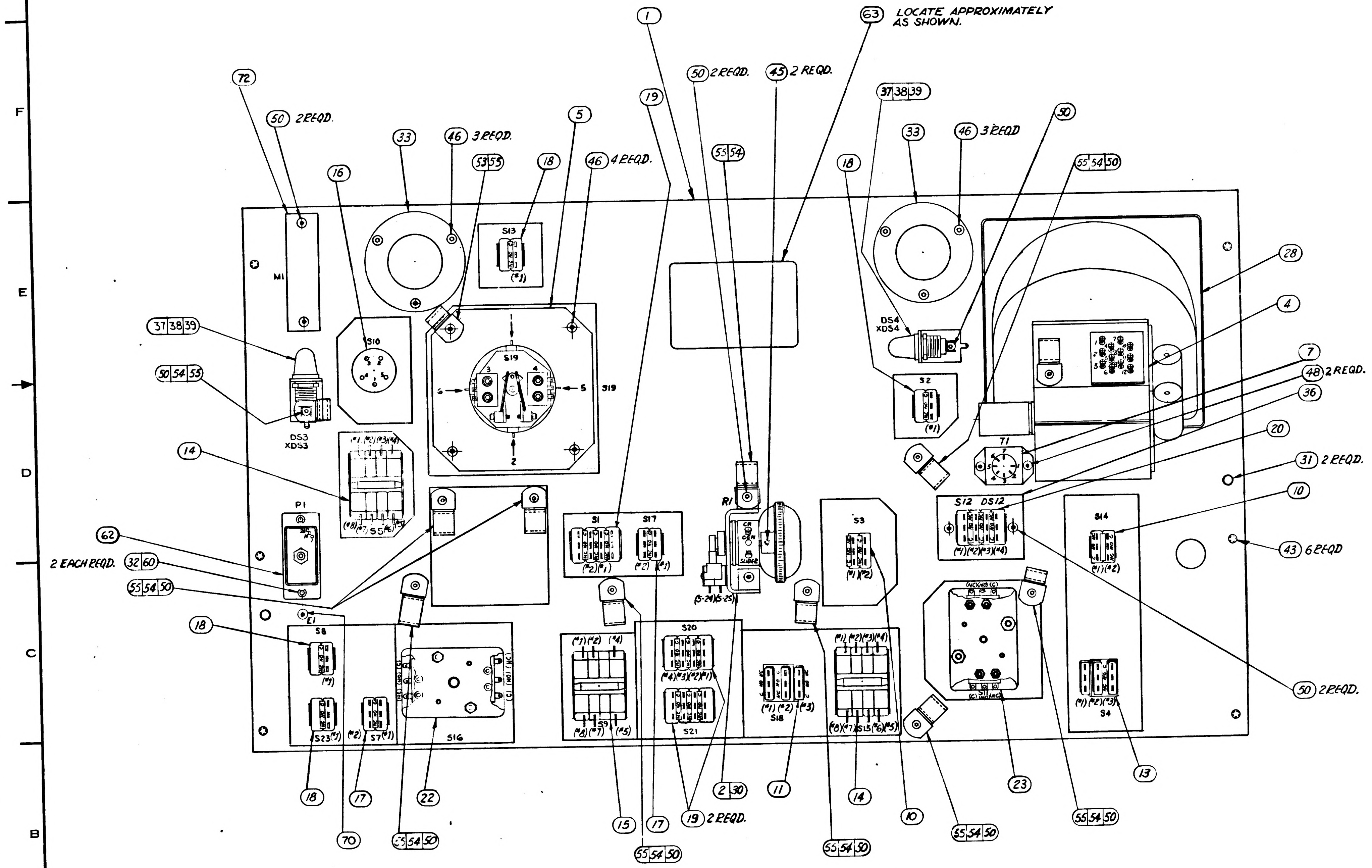
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

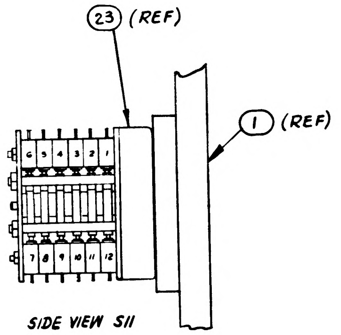
G&N INDICATOR CONTROL PANEL
ASSEMBLY

CODE IDENT NO.
SIZE E
1015053
SCALE —
SHEET 2 OF 3

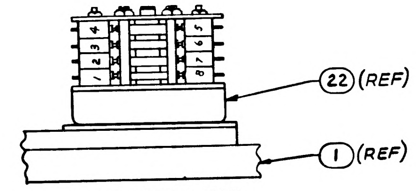
1015053 B

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		SEE SHEET 1 FOR REVISION RECORD 14577		12/1/64	uk
B		THIS SHEET ADDED PER TDRR 14577	—	7 DEC 64	

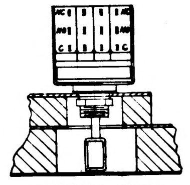

63 LOCATE APPROXIMATELY AS SHOWN.
1
19
50 2 REQD.
45 2 REQD.
37 38 39
72
50 2 REQD.
33
46 3 REQD.
5
53 55
18
46 4 REQD.
16
55 54
33
46 3 REQD
50
55 54 50
18
M1
S13
S10
S19
1
2
3
4
5
6
37 38 39
50 54 55
DS3
XDS3
DS4
XDS4
S2
T1
S12 DS12
14
S5
P1
62
2 EACH REQD. 32 60
55 54 50
E1
S1
S17
R1
(S-24)(S-25)
S3
S14
28
4
7
48 2 REQD.
36
20
31 2 REQD.
10
43 6 REQD
50 2 REQD.
18
S8
S23
S7
S16
S9
S20
S21
S18
S15
S11
S4
18
17
22
70
55 54 50
15
17
19 2 REQD.
55 54 50
2 30
11
14
10
55 54 50
55 54 50
23
55 54 50
13



SIDE VIEW S11



BOTTOM VIEW S16



TYPICAL VIEW
S9 AND S15

Ⓑ THIS SHEET ADDED

1015023-011	1015023-011	011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN
NEXT ASSY	USED ON	APPLICABLE DASH NO.	DO NOT SCALE THIS DRAWING	ACSP PN
APPLICATION			MATERIAL	DRAWN 23 SEP 64 DATE
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES			CONTRACT NAS 9-497	CHECKED C. Pirjda 1 OCT 64
				APPROVAL D.W. Mickey 2 OCT 64
				APPROVAL 11/30/64
				NASA APPROVAL 2-64
				MIT APPROVAL 1 Dec 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G&N INDICATOR CONTROL PANEL
ASSEMBLY

CODE IDENT NO. | SIZE E | 1015053
SCALE — | SHEET 3 OF 3

1015053 B

10 Nov '64

APOLLO G&N Specification
PS1015053B
Original Issue Date: 15 Dec 64
Release Authority: TDRR 14819
Class A Release

PROCUREMENT SPECIFICATION

FOR

G&N INDICATOR CONTROL PANEL ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
2/17/65	A	16526	9	W.K.	T.M.
2/10/66	B	26151	2, 3, and 6	WK	---

This specification consists of page 1 to 11 inclusive.

APPROVALS	W J Rhine 12-15-64 NASA/MSC	15 Dec 64 12/14/64 MIT/IL	J. Walisiewicz ACSP

3. REQUIREMENTS

3.1 GENERAL SPECIFICATION. Unless otherwise specified herein, all of the requirements of Specification ND-1002210 shall apply as requirements for this specification.

3.2 DESCRIPTION. The assembly shall contain the Sextant Hand Controller Assembly, the Attitude Impulse Switch Assembly, the IMU temperature mode controls, the Map and Data Viewer controls, the Power and Film position controls, and the panel brightness control.

3.3 FUNCTIONAL REQUIREMENTS

3.3.1 Electrical Inputs. The assembly shall perform as specified herein with the following electrical inputs.

a. 24 vdc max
b. 5.50±0.25V rms, 400±20 cps
c. 28.00±0.28V rms, 760±40 cps

3.3.2 Continuity and DC Resistance. The continuity and dc resistance of the assembly shall be as specified in Table I and 3.3.2.1 through 3.3.2.7, using Method 303 of Standard MIL-STD-202 (Reference Drawing 1015054).

TABLE I

CONTINUITY AND DC RESISTANCE

PINS		RESISTANCE (ohms)	
FROM	TO		
40	50	220 to 265	*2
61	62	0.5 max	
69	80	110 max	
63	64	0.5 max	
91	Chassis*1	0.02 max	
51	67	0.5 max*3	

*1 Connect to back skin but not to mounting pads.
*2 Types I & II.
*3 Type II only.

3.3.2.1 Optics Group and Sextant Hand Controller. With either 28.00±0.28V rms, 720 cps ±1 percent or 28.00±0.28V rms, 800 cps ±1 percent applied between pins 80 (Hi) and 69 (Lo); 5.50±0.25V rms, 400±20 cps applied between pins 54 (Hi) and 52 (Lo); and the sextant hand controller and the optics switches in the positions specified in Table II, the outputs and continuity shall be as specified in Table II.

3.3.2.2 Map and Data Viewer Switch Continuity. With no power applied and the map and data viewer switches set in the positions specified in Table III, the continuity through these switches shall be as specified in Table III.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
A		UPGRADED FOR CLASS A RELEASE 13815		6 OCT 64	FK
B		REVISED PER TDRR 14577	—	7 DEC 64	JJJ AU
C		REVISED PER TDRR 17697	—	24 MAR 65	DAS

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. INSPECT PER (65).

3. SERIALIZE PER ND 1002023.

4. SOLDER PER ND 1002071. USING (66) AND (67).

5. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.

6. MOISTUREPROOFING:
   A. THE PANEL ASSEMBLY, WITHOUT THE SEXTANT HAND CONTROLLER, ITEM 4 SHALL HAVE ALL SOLDERED ELECTRICAL CONNECTIONS ENCAPSULATED TO A .06 MINIMUM DEPTH USING ITEMS 74, 75, 76, & 77 PER ND 1002236.
   B. UPON COMPLETION OF 6.A ASSEMBLE THE SEXTANT HAND CONTROLLER, ITEM 4, INTO THE PANEL ASSEMBLY AND ENCASULATE ALL SOLDERED ELECTRICAL TERMINATIONS ON TB-1 TO A .06 MINIMUM DEPTH, USING ITEMS 74, 75, 76 & 77 PER ND 1002236 EXCEPT THE OVEN TEMPERATURE SHALL BE 130° ± 5°F FOR 16 HOURS MINIMUM.
   C. CONDUCTOR INSULATION SHALL EXTEND INTO THE ENCAPSULATION 0.18 ± 0.06 INCHES.

	QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	6		43	1014503	SCREW-CAPTIVE
NOTE 5	2		39	1010268-2	LAMP-INCANDESCENT
NOTE 5	2		38	1010625-1	HOLDER, LAMP
	2		37	1014595	BRACKET, MOUNTING-LAMP
	1		36	1014594	PLATE, MOUNTING SWITCH
	2		35	1014587	WINDOW
	4		34	1014584	GASKET, WINDOW
	2		33	1014583	CLAMP, WINDOW
	2		32	1014530	PIN-CONNECTOR
	2		31	1014528	PIN-PANEL
	1		30	1014588	WHEEL, POTENTIOMETER
	1		28	1014586	SUPPORT, HAND CONTROLLER
	1		27	1014651-7	CAP-PUSH BUTTON ILLUMINATED
NOTE 5	9		26	1010475-1	CAP, PUSHBUTTON
	2		24	1014585-003	KNOB, ROTARY SWITCH
NOTE 5	1		23	1010494-3	SWITCH ASSY, ROTARY
NOTE 5	1		22	1010494-2	SWITCH ASSY, ROTARY
NOTE 5 ↕	1		20	1010627-2	SWITCH ASSY, PUSH BUTTON ILLUMINATED
	3		19	1010480-3	SWITCH ASSY, PUSH BUTTON
	4		18	1010480-2	SWITCH ASSY, PUSH BUTTON
	2		17	1010480-1	SWITCH ASSY, PUSH BUTTON
	1		16	1010489-1	SWITCH ASSY, TOGGLE
	1		15	1010479-2	SWITCH ASSY, TOGGLE
	2		14	1010479-1	SWITCH ASSY, TOGGLE
	1		13	1010484-1	SWITCH ASSY, TOGGLE
	1		11	1010478-2	SWITCH ASSY, TOGGLE
NOTE 5	2		10	1010478-1	SWITCH ASSY, TOGGLE
NOTE 5	1		7	1010492	TRANSFORMER, POWER
	1		5	1015048-011	ATTITUDE IMPULSE SWITCH ASSY
	1		4	1021700-011	SEXTANT HAND CONTROLLER ASSY.
	1		2	1014591-011	BRACKET & POT. ASSEMBLY
	1		1	1015092	PANEL, G&N IND. CONT. (INSEP.)

LIST OF PARTS AND MATERIALS

	QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	AR		77	1012504-2	PRIMER, METAL
	AR		76	1012504-1	PRIMER, METAL
NOTE 5	AR		75	1012503-2	COMPOUND POLYURETHANE
NOTE 5	AR		74	1012503-1	COMPOUND POLYURETHANE
~~NOTE 5~~	4		73	NAS 1081C06D3L	SCREW-SET, SELF LOCK
	1		72	1014660	PLATE
			71		
NOTE 5	1		70	1006783-21	SCREW, BUTTON HD
NOTE 5	1		69	1010624-2	LAMP-INCANDESCENT
	1		68	1015094	WIRE LIST A-A
	AR		67	MIL-F-14256	FLUX (ES-2798)
	AR		66	QQ-S-571 SN60 WRAP2	SOLDER (ES-2175 ALLOY 1)
	☒		65	PS1015053	PROC SPECIFICATION
	☒		64	1015054	SCHEMATIC DIAGRAM, ELECTRICAL
	1		63	1014650-10	NAMEPLATE
	1		62	1015093	HARNESS
NOTE 5	2		60	MS-16633-4009	RING-RETAINING
~~NOTE 5~~	~~1~~		~~59~~	~~1000220-10~~	~~CLAMP-CABLE~~
~~NOTE 5~~	~~5~~		~~58~~	~~1000220-8~~	~~CLAMP-CABLE~~
~~NOTE 5~~	~~2~~		~~57~~	~~1000220-7~~	~~CLAMP-CABLE~~
NOTE 5	11		55	1000220-1 THRU 1000220-12	CLAMP-CABLE
NOTE 5	10		54	1011918-3	WASHER-CABLE CLAMP
NOTE 5	1		53	1011918-1	WASHER-CABLE CLAMP
NOTE 5	16		50	1006783-22	SCREW-BUTTON HD.
NOTE 5	2		48	1006783-18	SCREW-BUTTON HD.
NOTE 5	4		47	1010630-25	SCREW-FLAT HD.
NOTE 5	10		46	1006783-19	SCREW-BUTTON HD.
~~NOTE 5~~	2		45	NAS1081C04D3L	SCREW-SET, SELF LOCK
NOTE 5	12		44	1010630-14	SCREW-FLAT HD.

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 23 SEP 65
CHECKED C. Pierce 1 OCT 65
APPROVAL 20 OCT 65
APPROVAL
NASA APPROVAL 10-28-64
MIT APPROVAL

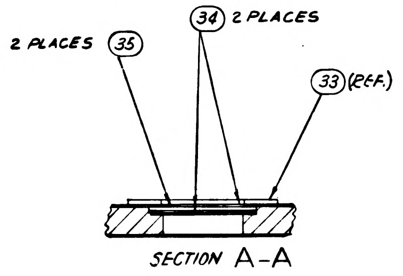
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G&N INDICATOR CONTROL PANEL
ASSEMBLY

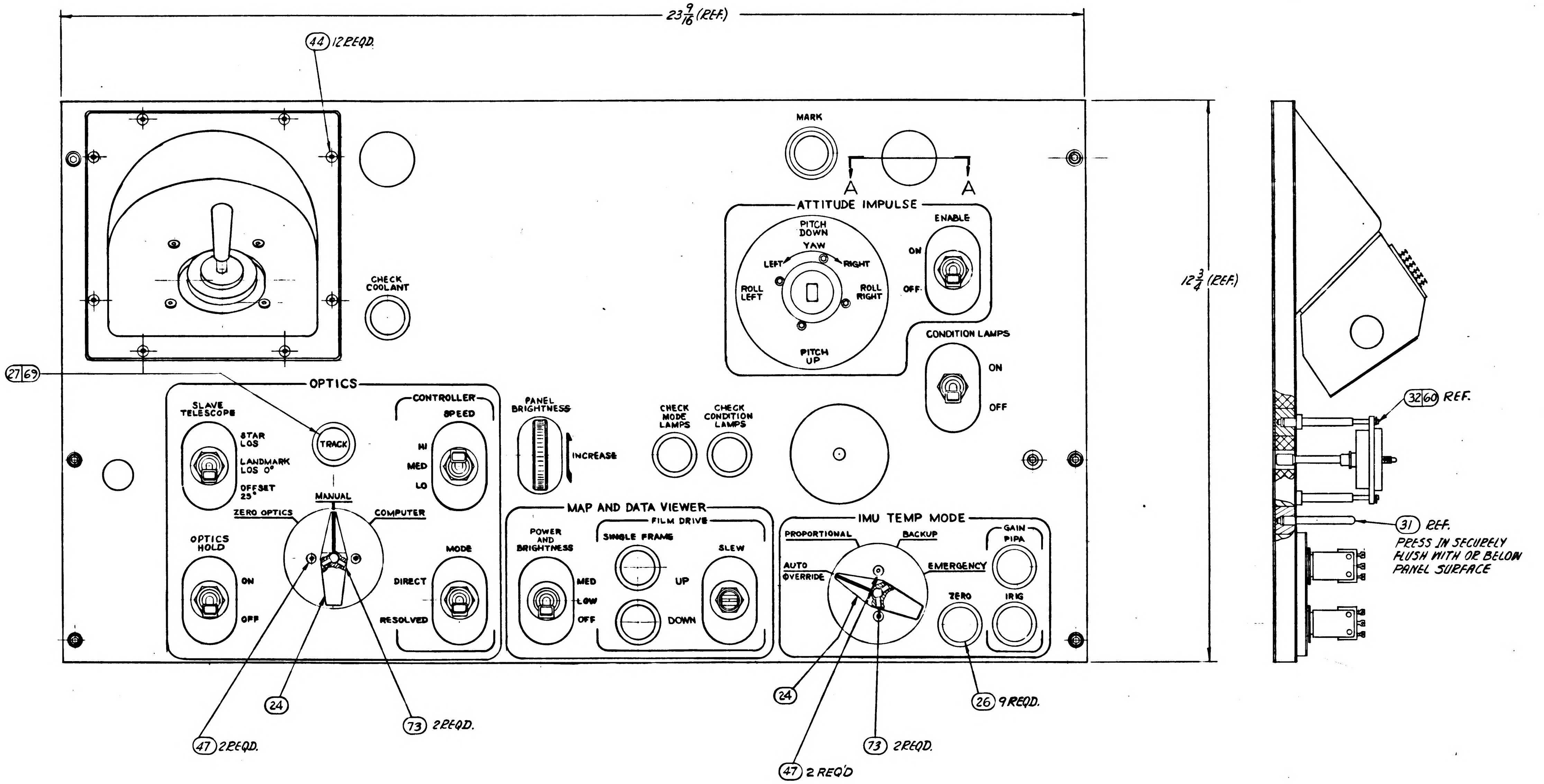
CODE IDENT NO. SIZE E 1015053
SCALE — SHEET 1 OF 3

1015053 C

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		SEE SHEET 1 FOR REVISION RECORD 14577		12/1/64 WK	
B		THIS SHEET ADDED PER TDRR 14577		7 DEC 64	JJJ AL



2 PLACES 35
34 2 PLACES
33 (REF.)
SECTION A-A



23 9/16 (REF.)
44 12 REQD.
MARK
A
A
CHECK COOLANT
ATTITUDE IMPULSE
PITCH DOWN
YAW
LEFT
RIGHT
ROLL LEFT
ROLL RIGHT
PITCH UP
ENABLE
ON
OFF
CONDITION LAMPS
ON
OFF
12 3/4 (REF.)
27 69
OPTICS
SLAVE TELESCOPE
STAR LOS
LANDMARK LOS 0°
OFFSET 25°
TRACK
CONTROLLER
SPEED
HI
MED
LO
ZERO OPTICS
MANUAL
COMPUTER
OPTICS HOLD
ON
OFF
MODE
DIRECT
RESOLVED
PANEL BRIGHTNESS
INCREASE
CHECK MODE LAMPS
CHECK CONDITION LAMPS
MAP AND DATA VIEWER
FILM DRIVE
POWER AND BRIGHTNESS
MED
LOW
OFF
SINGLE FRAME
UP
DOWN
SLEW
IMU TEMP MODE
PROPORTIONAL
BACKUP
AUTO OVERRIDE
EMERGENCY
GAIN
PIPA
ZERO
IRIG
24
73 2 REQD.
47 2 REQD.
24
73 2 REQD.
47 2 REQ'D
26 9 REQD.
32 60 REF.
31 REF.
PRESS IN SECURELY FLUSH WITH OR BELOW PANEL SURFACE

Ⓑ **THIS SHEET ADDED**

1015023-011	1015023-011	011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN H. Fuise DATE 23 SEP 64
CHECKED C. Pyola 1 OCT 64
APPROVAL D.W. Minley 2 OCT 64
APPROVAL 11/24/64
NASA APPROVAL 12-1-64
MIT APPROVAL 1 Dec 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

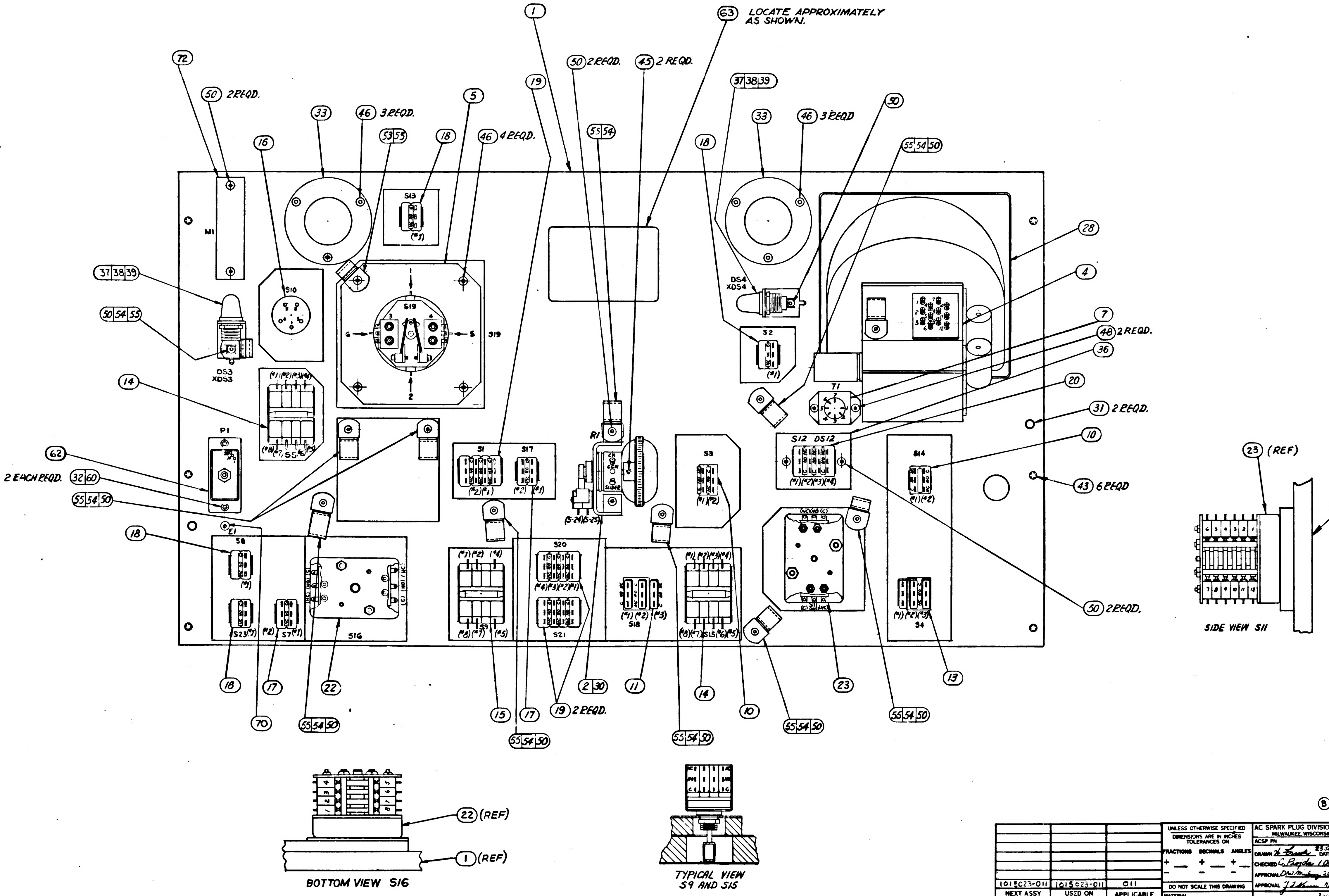
G&N INDICATOR CONTROL PANEL
ASSEMBLY

CODE IDENT NO.
SIZE E
1015053
SCALE —
SHEET 2 OF 3

1015053 C

1015023

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		SEE SHEET 1 FOR REVISION RECORD 14577		12/1/64 wk	
(M) B		THIS SHEET ADDED PER TDRR 14577	—	7 DEC 64	JJ / AU



(63) LOCATE APPROXIMATELY AS SHOWN.
(1)
(19)
(50) 2 REQD.
(45) 2 REQD.
(72)
(50) 2 REQD.
(33)
(46) 3 REQD.
(5)
(16)
(53)(55)
(18)
(46) 4 REQD.
(55)(54)
(37)(38)(39)
(18)
(33)
(46) 3 REQD
(50)
(55)(54)(50)
(28)
(4)
(7)
(48) 2 REQD.
(36)
(20)
(31) 2 REQD.
(10)
(43) 6 REQD
(50) 2 REQD.
(37)(38)(39)
(50)(54)(55)
(14)
(62)
2 EACH REQD. (32)(60)
(55)(54)(50)
(18)
M1
S10
S13
S19
DS3 XDS3
DS4 XDS4
S2
T1
P1
R1
S1
S17
S3
S12 DS12
S14
E1
S8
S23
S7
S16
S20
S21
S9
S18
S15
S4
(18)
(17)
(22)
(70)
(55)(54)(50)
(15)
(17)
(55)(54)(50)
(19) 2 REQD.
(2)(30)
(11)
(55)(54)(50)
(14)
(10)
(55)(54)(50)
(23)
(55)(54)(50)
(13)
(23) (REF)
(1) (REF)
SIDE VIEW S11
(22) (REF)
(1) (REF)
BOTTOM VIEW S16
TYPICAL VIEW S9 AND S15

Ⓑ **THIS SHEET ADDED**

			UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
			FRACTIONS ± — DECIMALS ± — ANGLES ± —	ACSP PN	
				DRAWN 23 SEP 64 DATE	G&N INDICATOR CONTROL PANEL ASSEMBLY
				CHECKED C. Pizzola 1 OCT 64	
				APPROVAL D.W. Mickey 2 OCT 64	
1015023-011	1015023-011	011	DO NOT SCALE THIS DRAWING	APPROVAL J.J. Kenna 9/30/64	
NEXT ASSY	USED ON	APPLICABLE DASH NO.	MATERIAL	NASA APPROVAL 2-1-64	CODE IDENT NO. / SIZE E / 1015053
APPLICATION					
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES			CONTRACT NAS 9-497	MIT APPROVAL	SCALE — / SHEET 3 OF 3

1015053 C

1012023

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
A		UPGRADED FOR CLASS A RELEASE 13815		6 OCT 64	FK
B		REVISED PER TDRR 14577	—	7 DEC 64	JJJ AL
C		REVISED PER TDRR 17697	—	24 MAR 65	DAS
D		REVISED PER TDRR 26161	—	8 ... 66	Z

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. INSPECT PER (65).

3. SERIALIZE PER ND 1002023.

4. SOLDER PER ND 1002071. USING (66) AND (67).

5. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.

6. MOISTUREPROOFING:
   A. THE PANEL ASSEMBLY, WITHOUT THE SEXTANT HAND CONTROLLER, ITEM 4 SHALL HAVE ALL SOLDERED ELECTRICAL CONNECTIONS ENCAPSULATED TO A .06 MINIMUM DEPTH USING ITEMS 74, 75, 76, & 77 PER ND 1002236.
   B. UPON COMPLETION OF 6.A ASSEMBLE THE SEXTANT HAND CONTROLLER, ITEM 4, INTO THE PANEL ASSEMBLY AND ENCASULATE ALL SOLDERED ELECTRICAL TERMINATIONS ON TB-1, TO A .06 MINIMUM DEPTH, USING ITEMS 74, 75, 76 & 77 PER ND 1002236 EXCEPT THE OVEN TEMPERATURE SHALL BE 130° ± 5°F FOR 16 HOURS MINIMUM.
   C. CONDUCTOR INSULATION SHALL EXTEND INTO THE ENCAPSULATION 0.18 ± 0.06 INCHES.

	QUANTITY REQUIRED				EFFECTIVITY	LIST OF PARTS AND MATERIALS		
			021	011		ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			1	-		85	2014764-021	HANDLE ASSEMBLY
			1	-		84	2014764-011	HANDLE ASSEMBLY
						83		
			1	-		82	1023073	PANEL, G&N IND. CONT (INSEP ASSY
			1	-		81	1023097	WIRING HARNESS A
			☒	-		80	1023096	SCHEMATIC DIA., ELECTRICAL
			1	-		79	1014650-29	NAMEPLATE
			1	-		78	1015048-031	ATTITUDE IMPULSE SWITCH ASSY
			AR	AR		77	1012504-2	PRIMER, METAL
			AR	AR		76	1012504-1	PRIMER, METAL
NOTE 5			AR	AR		75	1012503-2	COMPOUND POLYURETHANE
NOTE 5			AR	AR		74	1012503-1	COMPOUND POLYURETHANE
~~NOTE 5~~			4	4		73	NAS 1081C06D3L	SCREW-SET, SELF LOCK
			-	1		72	1014660	PLATE
						71		
NOTE 5			1	1		70	1006783-21	SCREW, BUTTON HD
NOTE 5			1	1		69	1010624-2	LAMP-INCANDESCENT
			1	1		68	1015094	WIRE LIST A-A
			AR	AR		67	MIL-F-14256	FLUX (ES-2798)
			AR	AR		66	QQ-S-571 SN60 WRAP2	SOLDER (ES-2175 ALLOY 1)
			☒	☒		65	PS1015053	PROC SPECIFICATION
			-	☒		64	1015054	SCHEMATIC DIAGRAM, ELECTRICAL
			-	1		63	1014650-10	NAMEPLATE
			-	1		62	1015093	HARNESS
NOTE 5			2	2		60	MS-16633-4009	RING-RETAINING
~~NOTE 5~~				~~1~~		~~59~~	~~1000220-10~~	~~CLAMP-CABLE~~
~~NOTE 5~~				~~5~~		~~58~~	~~1000220-8~~	~~CLAMP-CABLE~~
~~NOTE 5~~				~~2~~		~~57~~	~~1000220-7~~	~~CLAMP-CABLE~~
NOTE 5			11	11		55	1000220-1 THRU 1000220-12	CLAMP-CABLE
NOTE 5			10	10		54	1011918-3	WASHER-CABLE CLAMP
NOTE 5			1	1		53	1011918-1	WASHER-CABLE CLAMP
NOTE 5			14	16		50	1006783-22	SCREW-BUTTON HD.
NOTE 5			2	2		48	1006783-18	SCREW-BUTTON HD.
NOTE 5			4	4		47	1010630-25	SCREW-FLAT HD.
NOTE 5			10	10		46	1006783-19	SCREW-BUTTON HD.
~~NOTE 5~~			2	2		45	NAS1081C04D3L	SCREW-SET, SELF LOCK
NOTE 5			12	12		44	1010630-14	SCREW-FLAT HD.

	QUANTITY REQUIRED				EFFECTIVITY	LIST OF PARTS AND MATERIALS		
			021	011		ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			-	6		43	1014503	SCREW-CAPTIVE
NOTE 5			2	2		39	1010268-2	LAMP-INCANDESCENT
NOTE 5			2	2		38	1010625-1	HOLDER, LAMP
			2	2		37	1014595	BRACKET, MOUNTING-LAMP
			1	1		36	1014594	PLATE, MOUNTING SWITCH
			2	2		35	1014587	WINDOW
			4	4		34	1014584	GASKET, WINDOW
			2	2		33	1014583	CLAMP, WINDOW
			2	2		32	1014530	PIN-CONNECTOR
			2	2		31	1014528	PIN-PANEL
			1	1		30	1014588	WHEEL, POTENTIOMETER
			1	1		28	1014586	SUPPORT, HAND CONTROLLER
			1	1		27	1014651-7	CAP-PUSH BUTTON ILLUMINATED
NOTE 5			9	9		26	1010475-1	CAP, PUSHBUTTON
			2	2		24	1014585-003	KNOB, ROTARY SWITCH
NOTE 5			1	1		23	1010494-3	SWITCH ASSY, ROTARY
NOTE 5			1	1		22	1010494-2	SWITCH ASSY, ROTARY
NOTE 5 ↕			1	1		20	1010627-2	SWITCH ASSY, PUSH BUTTON ILLUMINATED
			3	3		19	1010480-3	SWITCH ASSY, PUSH BUTTON
			4	4		18	1010480-2	SWITCH ASSY, PUSH BUTTON
			2	2		17	1010480-1	SWITCH ASSY, PUSH BUTTON
			1	1		16	1010489-1	SWITCH ASSY, TOGGLE
			1	1		15	1010479-2	SWITCH ASSY, TOGGLE
			2	2		14	1010479-1	SWITCH ASSY, TOGGLE
			1	1		13	1010484-1	SWITCH ASSY, TOGGLE
			1	1		11	1010478-2	SWITCH ASSY, TOGGLE
NOTE 5			2	2		10	1010478-1	SWITCH ASSY, TOGGLE
NOTE 5			1	1		7	1010492	TRANSFORMER, POWER
			-	1		5	1015048-011	ATTITUDE IMPULSE SWITCH ASSY
			1	1		4	1021700-011	SEXTANT HAND CONTROLLER ASSY.
			1	1		2	1014591-011	BRACKET & POT. ASSEMBLY
			-	1		1	1015092	PANEL, G&N IND. CONT. (INSEP.)

1015053 D

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-011	1015023-011	-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

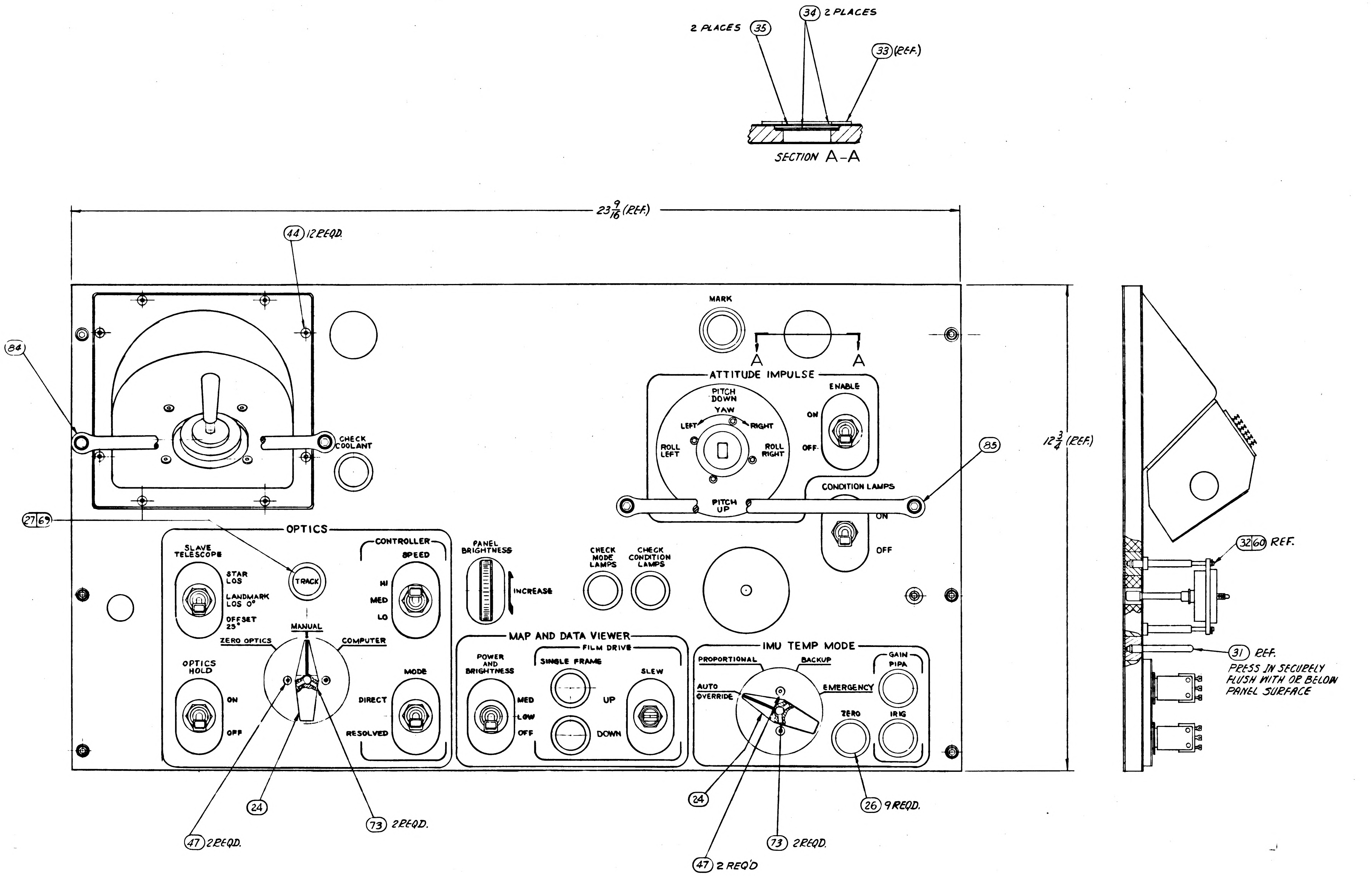
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 23 SEP 65 DATE
CHECKED C. Pizzie 1 OCT 65
APPROVAL 20 OCT
APPROVAL
NASA APPROVAL 10-28-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G&N INDICATOR CONTROL PANEL ASSEMBLY

CODE IDENT NO.
SIZE E
1015053
SCALE —
SHEET 1 OF 3

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD.
		SEE SHEET 1 FOR REVISION RECORD CHG NO. 14577		12/1/64 WK
Ⓜ B		THIS SHEET ADDED PER TDRR 14577	7 DEC 64	JJJ / 4U
D		REVISED PER TDRR 26161	8 FEB	/ AKM



2 PLACES (35)
(34) 2 PLACES
(33) (REF.)
SECTION A-A
$23\frac{9}{16}$ (REF.)
(44) 12 REQD.
(84)
CHECK COOLANT
MARK
A
A
ATTITUDE IMPULSE
PITCH DOWN
YAW
LEFT
RIGHT
ROLL LEFT
ROLL RIGHT
PITCH UP
ENABLE
ON
OFF
(85)
CONDITION LAMPS
ON
OFF
$12\frac{3}{4}$ (REF.)
(27)(69)
OPTICS
SLAVE TELESCOPE
STAR LOS
LANDMARK LOS 0°
OFFSET 25°
TRACK
CONTROLLER
SPEED
HI
MED
LO
MANUAL
ZERO OPTICS
COMPUTER
OPTICS HOLD
ON
OFF
MODE
DIRECT
RESOLVED
PANEL BRIGHTNESS
INCREASE
CHECK MODE LAMPS
CHECK CONDITION LAMPS
MAP AND DATA VIEWER
FILM DRIVE
POWER AND BRIGHTNESS
SINGLE FRAME
SLEW
MED
LOW
OFF
UP
DOWN
IMU TEMP MODE
PROPORTIONAL
BACKUP
AUTO OVERRIDE
EMERGENCY
GAIN
PIPA
ZERO
IRIG
(24)
(47) 2 REQD.
(73) 2 REQD.
(24)
(47) 2 REQ'D
(73) 2 REQD.
(26) 9 REQD.
(32)(60) REF.
(31) REF.
PRESS IN SECURELY FLUSH WITH OR BELOW PANEL SURFACE

1015053

Ⓑ **THIS SHEET ADDED**

1015023-011	1015023-011	011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — + — + —
− − −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN H. Fuiss DATE 23 SEP 64
CHECKED C. Purple 1 OCT 64
APPROVAL D.W. Mickey 2 OCT 64
APPROVAL 11-24-64
NASA APPROVAL 12-1-64
MIT APPROVAL 1 Dec 64

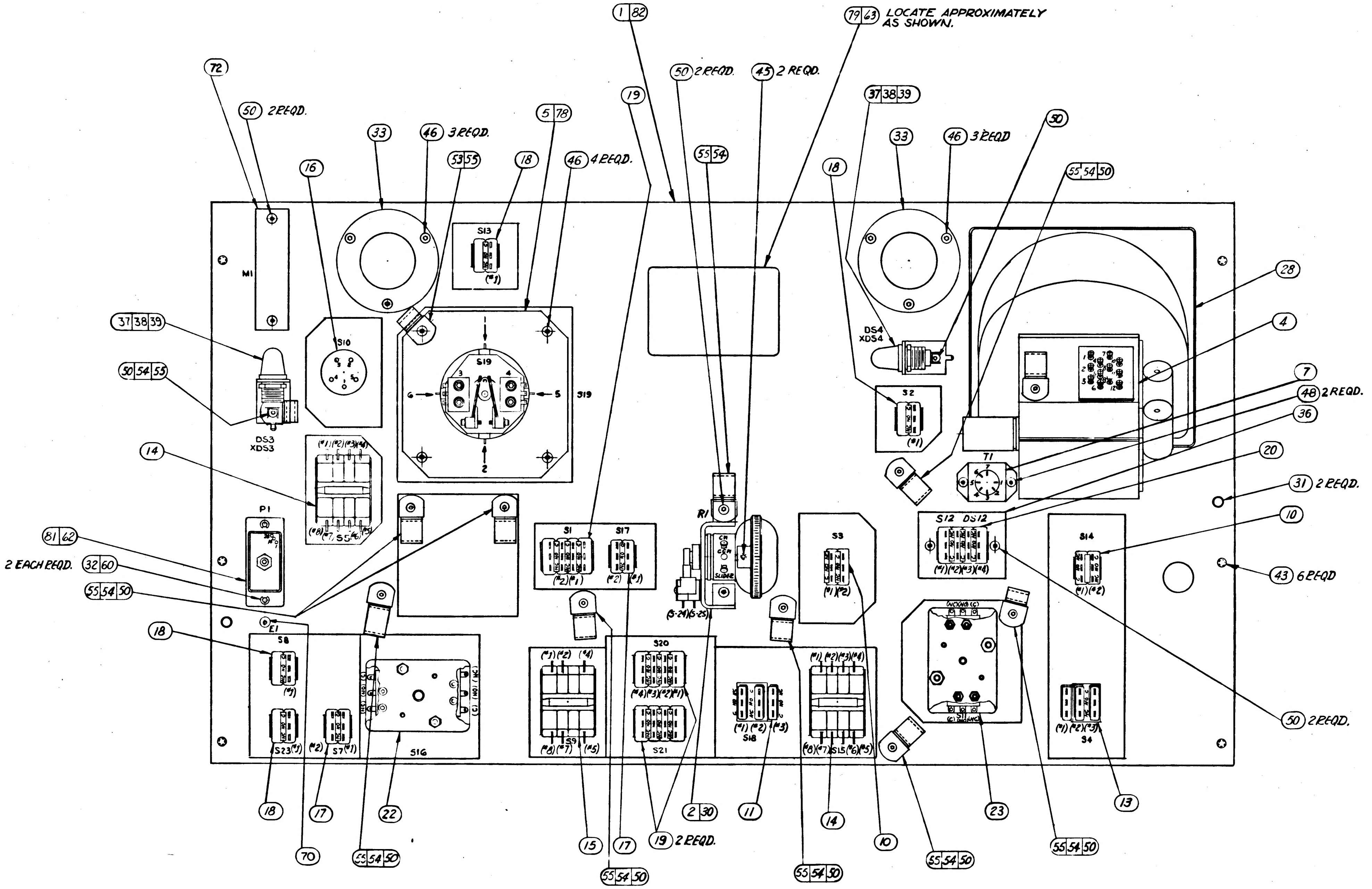
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G&N INDICATOR CONTROL PANEL ASSEMBLY

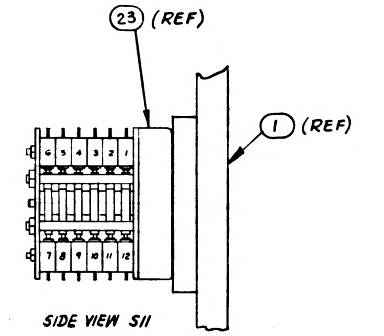
CODE IDENT NO
SIZE E
1015053
SCALE —
SHEET 2 OF 3

1012023

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		SEE SHEET 1 FOR REVISION RECORD 14577		12/1/64	
(M) B		THIS SHEET ADDED PER TDRR 14577	—	7 DEC 64	
D		REVISED PER TDRR 26161		8-28-66	R / MDN

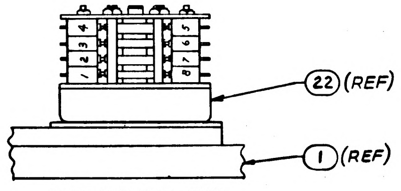


1 82
79 63 LOCATE APPROXIMATELY AS SHOWN.
72
50 2 REQD.
16
33
46 3 REQD.
53 55
18
5 78
46 4 REQD.
19
50 2 REQD.
45 2 REQD.
55 54
37 38 39
18
33
46 3 REQD
50
55 54 50
M1
S13
(#1)
S10
S19
319
37 38 39
50 54 55
DS3
XDS3
14
S5
P1
81 62
2 EACH REQD.
32 60
55 54 50
E1
R1
CR
SLIDER
(S-24)(S-25)
DS4
XDS4
S2
(#1)
S3
(#1)(#2)
T1
S12 DS12
(#1)(#2)(#3)(#4)
S14
(#1)(#2)
S1
S17
(#2)(#1)
28
4
7
48 2 REQD.
36
20
31 2 REQD.
10
43 6 REQD
50 2 REQD.
18
S8
S23
S7
S16
S9
S20
S21
S18
S15
S11
S4
(C)(NO)(NC)
18
17
22
70
55 54 50
15
17
19 2 REQD.
55 54 50
2 30
11
14
55 54 50
10
55 54 50
23
55 54 50
13

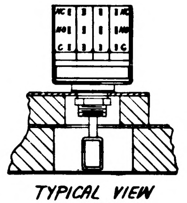


23 (REF)
1 (REF)
6 5 4 3 2 1
7 8 9 10 11 12

SIDE VIEW S11



BOTTOM VIEW S16



TYPICAL VIEW S9 AND S15

Ⓑ THIS SHEET ADDED

1015023-011	1015023-011	011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 23 SEP 64 DATE
CHECKED C. Frojda 1 OCT 64
APPROVAL D.W. Mickey 2 OCT 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

G&N INDICATOR CONTROL PANEL
ASSEMBLY

CODE IDENT NO.
SIZE E
1015053
SCALE —
SHEET 3 OF 3

1015053 D

10 Nov '64

APOLLO G&N Specification
PS1015053
Original Issue Date: 15 Dec 64
Release Authority: TDRR 14819
Class A Release

PROCUREMENT SPECIFICATION

FOR

G&N INDICATOR CONTROL PANEL ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals MIT	Approvals NASA

This specification consists of page 1 to 11 inclusive.

APPROVALS	W J Rhine 12-15-64 NASA/MSC	15 Dec 64 12/14/64 MIT/IL	11-9-64 J. Walisiewicz ACSP

PROCUREMENT SPECIFICATION

FOR

G&N INDICATOR CONTROL PANEL ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the G&N Indicator Control Panel Assembly, Drawing 1015053, hereafter called the assembly.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND1002214	General Specification for Packaging AGE
ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM1015053	Final Test Method for G&N Indicator Control Panel Assembly

STANDARDS

Military

MIL-STD-202	Test Methods for Electronic and Electrical Component Parts

DRAWINGS

APOLLO G&N

1015053	G&N Indicator Control Panel Assembly
1015054	G&N Indicator Control Panel (Schematic) (For Reference Only)

3. REQUIREMENTS

3.1 GENERAL SPECIFICATION. Unless otherwise specified herein, all of the requirements of Specification ND-1002210 shall apply as requirements for this specification.

3.2 DESCRIPTION. The assembly shall contain the Sextant Hand Controller Assembly, the Attitude Impulse Switch Assembly, the IMU temperature mode controls, the Map and Data Viewer controls, the Power and Film position controls, and the panel brightness control.

3.3 FUNCTIONAL REQUIREMENTS

3.3.1 Electrical Inputs. The assembly shall perform as specified herein with the following electrical inputs:

a. 24 vdc max
b. 5.50±0.25V rms, 400±20 cps
c. 28.00±0.28V rms, 760±40 cps

3.3.2 Continuity and DC Resistance. The continuity and dc resistance of the assembly shall be as specified in Table I and 3.3.2.1 through 3.3.2.7, using Method 303 of Standard MIL-STD-202 (Reference Drawing 1015054).

TABLE I

CONTINUITY AND DC RESISTANCE

PINS		RESISTANCE (ohms)
FROM	TO	
40	50	220 to 265
61	62	0.5 max
69	80	110 max
63	64	0.5 max
91	Chassis*	0.02 max

*Connect to back skin, but not to mounting pads.

3.3.2.1 Optics Group and Sextant Hand Controller. With either 28.00±0.28Vrms, 720cps±1% or 28.00±0.28Vrms, 800cps±1% applied between pins 80(Hi) and 69(Lo); 5.50 ±0.25Vrms, 400±20cps applied between pins 54(Hi) and 52(Lo); and the sextant hand controller and the optics switches in the positions specified in Table II, the outputs and continuity shall be as specified in Table II.

3.3.2.2 Map and Data Viewer Switch Continuity. With no power applied and the map and data viewer switches set in the positions specified in Table III, the continuity through these switches shall be as specified in Table III.

TABLE III

MAP AND DATA VIEWER GROUP SWITCH CONTINUITY

SWITCHES AND POSITIONS				CONTINUITY		
POWER AND BRIGHTNESS	SINGLE FRAME U	SINGLE FRAME D	SLEW	From Pin	To Pin	Resistance (ohms)
"OFF"	"OUT"	"OUT"	"CENTER"	51	67	100 meg min
"OFF"	"IN"	"IN"	"UP"	51	67	↕
"OFF"	"IN"	"IN"	"DOWN"	51	67	
"OFF"	Optional	Optional	Optional	53	46	
"OFF"	Optional	Optional	Optional	53	55	100 meg min
"LOW"	"OUT"	"OUT"	"UP"	51	67	1.4 max
↕	↕	"OUT"	"CENTER"	51	67	100 meg min
		"OUT"	"DOWN"	51	67	1.4 max
	"OUT"	"IN"	"CENTER"	51	67	1.4 max
	"IN"	"OUT"	"CENTER"	51	67	1.4 max
"LOW"	Optional	Optional	Optional	53	46	1.4 max
"LOW"	Optional	Optional	Optional	53	55	100 meg min
"MED"	"OUT"	"OUT"	"CENTER"	51	67	100 meg min
↕	↕	"OUT"	"UP"	51	67	1.4 max
		"OUT"	"DOWN"	51	67	1.4 max
	"OUT"	"IN"	"CENTER"	51	67	1.4 max
	"IN"	"OUT"	"CENTER"	51	67	1.4 max
	Optional	Optional	Optional	53	46	100 meg min
"MED"	Optional	↕	↕	53	55	1.4 max
Optional	"OUT"			78	51	100 meg min
Optional	"OUT"			78	106	1.0 max
Optional	"IN"			78	106	100 meg min
"LOW"or"MED"	"IN"	Optional		78	51	1.4 max
Optional	Optional	"OUT"		79	51	100 meg min
Optional	Optional	"OUT"		79	93	1.0 max
Optional	Optional	"IN"		79	93	100 meg min
"LOW"or"MED"	Optional	"IN"	Optional	79	51	1.4 max
Optional	"OUT"	"OUT"	"CENTER"	95	81	100 meg min
↕	"IN"	"OUT"	"CENTER"	95	81	1.0 max
	"OUT"	"IN"	"CENTER"	95	81	1.0 max
	"OUT"	"OUT"	"UP"	95	81	1.0 max
	"OUT"	"OUT"	"DOWN"	95	81	1.0 max
	"OUT"	"OUT"	Optional	95	68	100 meg min
	"IN"	"OUT"	Optional	95	68	1.0 max
	"OUT"	"IN"	Optional	95	68	1.0 max
	Optional	Optional	"CENTER"	77	66	100 meg min
	↕	↕	"CENTER"	65	66	100 meg min
			"UP"	77	66	1.0 max
			"UP"	65	66	100 meg min
Optional			"DOWN"	77	66	100 meg min
	Optional	Optional	"DOWN"	65	66	1.0 max

3.3.2.5 Panel Brightness Control. The PANEL BRIGHTNESS control shall have the following DC resistance for switch positions specified:

a. With PANEL BRIGHTNESS control set in the extreme "DECREASE" position and the switches actuated into their open position; the resistance between pins P1-32 and P1-26 shall be no less than 100 megohms, the resistance between pins P1-61 and P1-64 shall be no less than 100 megohms and the resistance between pins P1-44 and P1-32 shall be 1.0 ohm max.

b. With the PANEL BRIGHTNESS control rotated in the "INCREASE" direction to the point at which the switches are just actuated into their closed position; (approx. one-tenth of full rotation) the resistance between pins P1-32 and P1-26 shall be less than 1.0 ohm the resistance between pins P1-61 and P1-64 shall be less than 1.0Ω, and the resistance of the potentiometer existing between pins P1-44 and P1-32 shall be 1.0 ohm max.

c. With the PANEL BRIGHTNESS control rotated in the "INCREASE" direction past the point of switch actuations, the resistance between pins 61 and 64 shall be no greater than 1.0 ohms, and the resistance between pins 32 and 26 shall be no greater than 1.0 ohms.

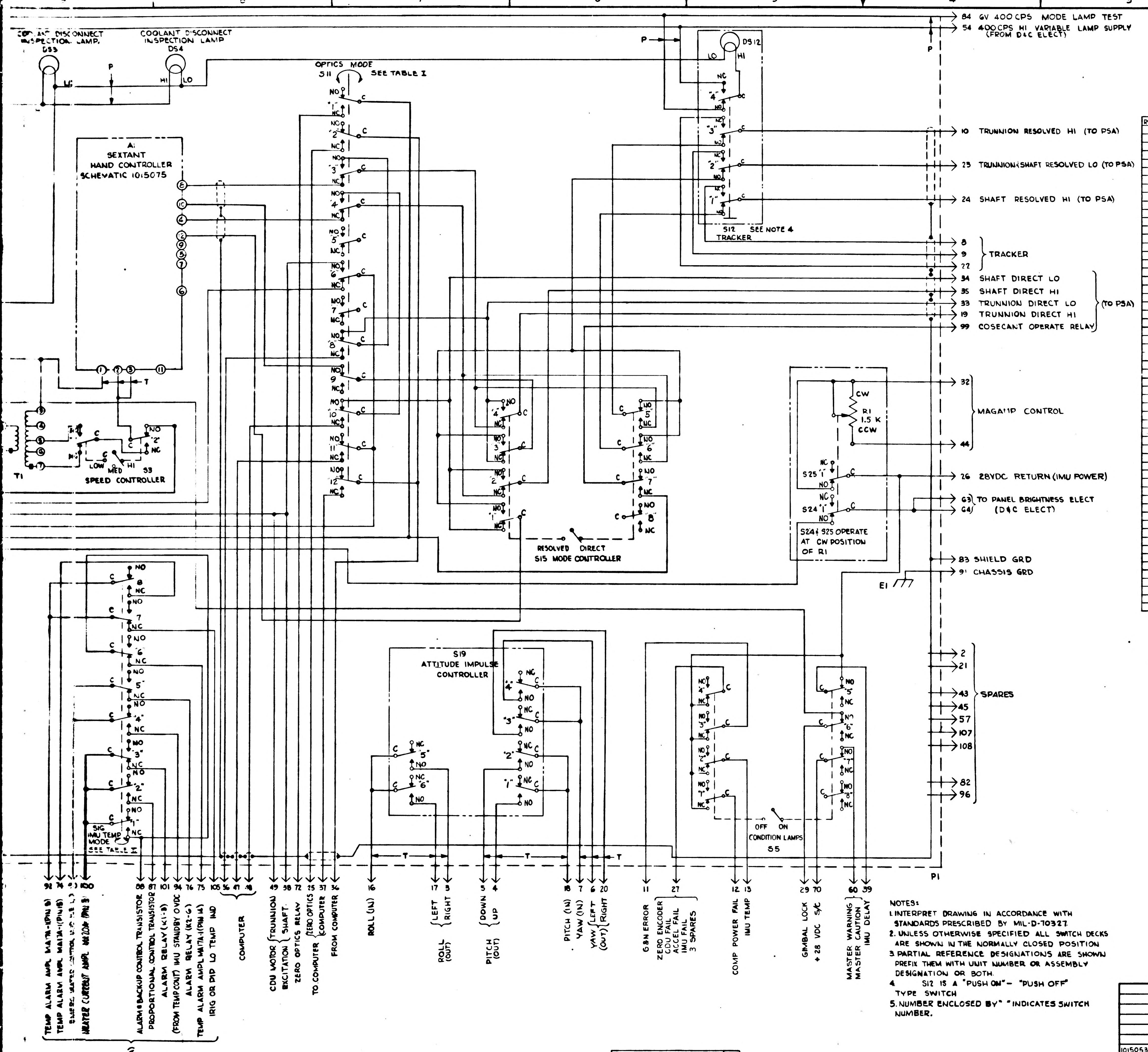
3.3.2.6 Check Condition Lamps. With no power applied and the CHECK CONDITION LAMPS switch S1 and CONDITION LAMPS switch S5 in the positions specified in Table VII, the continuity through the switches shall be as specified in Table VII.

TABLE VII

CONDITION LAMPS CONTINUITY

PINS		SWITCH POSITIONS		CONTINUITY
FROM	TO	CHECK CONDITION LAMPS-S1	CONDITION LAMPS-S5	RESISTANCE (ohms)
51	73	OUT	OPTIONAL	100 Meg Min
14	15	OUT	↕	100 Meg Min
51	73	IN	↕	1.0 Max
14	15	IN	OPTIONAL	1.0 Max
29	28	OUT	"ON"	1.4 max
29	61	OUT	"ON"	100 Meg Min
29	61	IN	"ON"	1.4 Max
29	61	IN	"OFF"	100 Meg Min
29	28	IN	"ON"	↕
29	28	OUT	"OFF"	↕
26	11	OPTIONAL	"OFF"	↕
26	12	↕	↕	↕
26	13	↕	↕	↕
26	27	↕	↕	↕
26	39	↕	"OFF"	100 Meg Min
[illegible]	[illegible]	↕	"OFF"	100 Meg Min
26	11	↕	"ON"	1.0 Max
26	12	↕	↕	↕
26	13	↕	↕	↕
26	27	↕	↕	↕
26	39	OPTIONAL	"ON"	1.0 MAX
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		UPGRADED FOR CLASS A RELEASE		OCT 64	WB



COOLANT DISCONNECT INSPECTION LAMP, DS3
COOLANT DISCONNECT INSPECTION LAMP DS4
LO
HI
P
OPTICS MODE S11 SEE TABLE I
A1 SEXTANT HAND CONTROLLER SCHEMATIC 1015075
T1
LOW MED HI S3
SPEED CONTROLLER
NO NC C
DS12
S12 SEE NOTE 4 TRACKER
84 6V 400 CPS MODE LAMP TEST
54 400CPS HI VARIABLE LAMP SUPPLY (FROM D&C ELECT)
10 TRUNNION RESOLVED HI (TO PSA)
25 TRUNNION&SHAFT RESOLVED LO (TO PSA)
24 SHAFT RESOLVED HI (TO PSA)
8
9 TRACKER
22
34 SHAFT DIRECT LO
35 SHAFT DIRECT HI
33 TRUNNION DIRECT LO
19 TRUNNION DIRECT HI
99 COSECANT OPERATE RELAY
(TO PSA)
32
44
MAGAMP CONTROL
R1 1.5 K CW CCW
S25 S24
26 28VDC RETURN (IMU POWER)
G3 G4 TO PANEL BRIGHTNESS ELECT (D&C ELECT)
S24 & S25 OPERATE AT CW POSITION OF R1
RESOLVED DIRECT
S15 MODE CONTROLLER
83 SHIELD GRD
91 CHASSIS GRD
E1
S19 ATTITUDE IMPULSE CONTROLLER
OFF ON CONDITION LAMPS S5
2 21 43 45 57 107 108 82 96 SPARES
S16 IMU TEMP MODE SEE TABLE II
P1
T
92 TEMP ALARM AMPL MAITA-1(PIN 8)
74 TEMP ALARM AMPL MAITA-1(PIN 8)
93 EMERG HEATER CONTROL
100 HEATER CURRENT AMPL MA20A (PIN 3)
88 ALARM & BACKUP CONTROL TRANSISTOR
87 PROPORTIONAL CONTROL TRANSISTOR
101 ALARM RELAY (K1-3)
94 (FROM TEMP CONT) IMU STANDBY OVDC
76 ALARM RELAY (K2-G)
75 TEMP ALARM AMPL MAITA-1(PIN 14)
105 IRIG OR PIP LO TEMP IND
(PSA)
56 47 48 COMPUTER
49 CDU MOTOR TRUNNION
38 EXCITATION SHAFT
72 ZERO OPTICS RELAY
25 ZERO OPTICS
37 TO COMPUTER COMPUTER
36 FROM COMPUTER
16 ROLL (IN)
17 3 ROLL (OUT) LEFT RIGHT
5 4 PITCH (OUT) DOWN UP
18 PITCH (IN)
13 YAW (IN)
6 20 YAW (OUT) LEFT RIGHT
11 G&N ERROR
27 ZERO ENCODER CDU FAIL ACCEL FAIL IMU FAIL 3 SPARES
12 COMP POWER FAIL
13 IMU TEMP
29 GIMBAL LOCK
70 + 28 VDC S/C
60 MASTER WARNING MASTER CAUTION
39 IMU DELAY

REF DES	PART NO	DESCRIPTION	VALUE	TOL	RATING
A1	1021700-011	SEXTANT HAND CONT			
DS3	1010268-2	LAMP			
DS4	1010268-2				
DS12	1010624-2				
E1	1010638-6	TERMINAL LUG			
P1	1010825-1	CONNECTOR			
R1	1010764 -2	POTENTIOMETER	1.5 K		5 W
S1	1010480-3	SWITCH-PUSH BUTTON			
S2	1010480-2	PUSH BUTTON			
S3	1010478-1	TOGGLE			
S4	1010484-1	TOGGLE			
S5	1010479-1	TOGGLE			
S7	1010480-1	PUSH BUTTON			
S8	1010480-2	PUSH BUTTON			
S9	1010479-2	TOGGLE			
S10	1010489-1	TOGGLE			
S11	1010494-3	ROTARY			
S12	1010627-2	PUSH BUTTON			
S13	1010480-2	PUSH BUTTON			
S14	1010478-1	TOGGLE			
S15	1010479-1	TOGGLE			
S16	1010494-2	ROTARY			
S17	1010480-1	PUSH BUTTON			
S18	1010478-2	TOGGLE			
S19	1015048-011	IMPULSE			
S20	1010480-3	PUSH BUTTON			
S21	1010480-3	PUSH BUTTON			
S23	1010480-2	PUSH BUTTON			
S24	1010435-001				
S25	1010435-001				
T1	1010492	TRANSFORMER			

TABLE I
S11 OPTICS MODE SWITCH

POSITION	DECK ACTUATED
ZERO OPTICS	1,2
MANUAL	3,4,5,6,7
COMPUTER	8,9,10,11,12

TABLE II
S16 IMU TEMP MODE SWITCH

POSITION	DECK ACTUATED
AUTO OVERIDE	3,5,6,7
PROPORTIONAL	2,6,7
BACK-UP	1
EMERGENCY	4,8

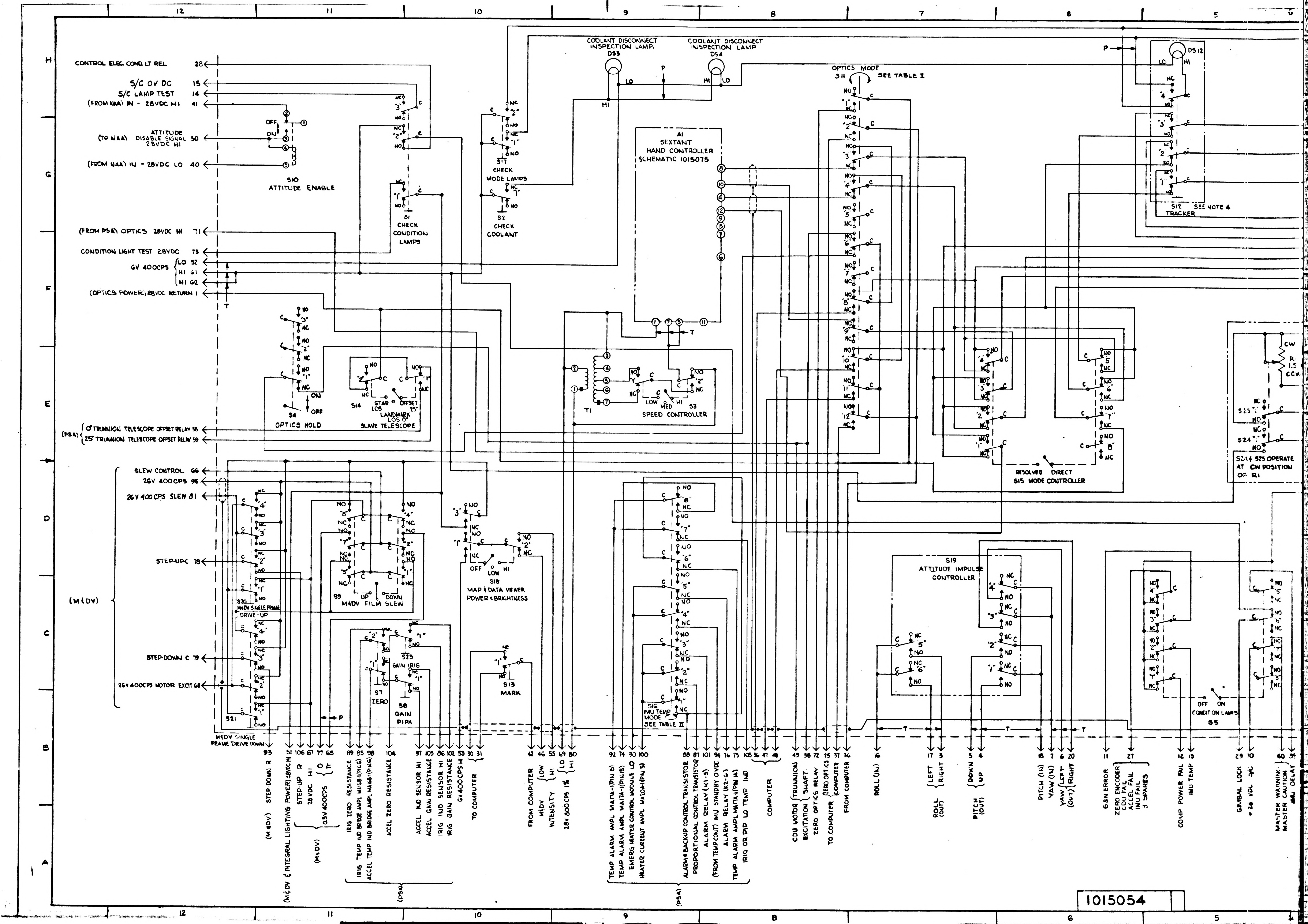
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED ALL SWITCH DECKS ARE SHOWN IN THE NORMALLY CLOSED POSITION
3. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX THEM WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
4. S12 IS A "PUSH ON" - "PUSH OFF" TYPE SWITCH
5. NUMBER ENCLOSED BY " " INDICATES SWITCH NUMBER.

1015053-011	1015023-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± — DECIMALS ± — ANGLES ± — DO NOT SCALE THIS DRAWING MATERIAL HEAT TREATMENT FINAL FINISH	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN H. Fude 23 SEP 64 CHECKED C. Proda 5 OCT 64 APPROVAL D.W. Mielang 5-OCT-64 APPROVAL NASA APPROVAL W. J. Rhine 10-29-64 MIT APPROVAL 27 Oct 64	MANNED SPACECRAFT CENTER HOUSTON, TEXAS G&N INDICATOR CONTROL PANEL SCHEMATIC DIAGRAM CODE IDENT NO. SIZE J NASA DRAWING NO. 1015054 SCALE — SHEET 1 OF 1
NEXT ASSY	USED ON			
APPLICATION				

1015054

1015054

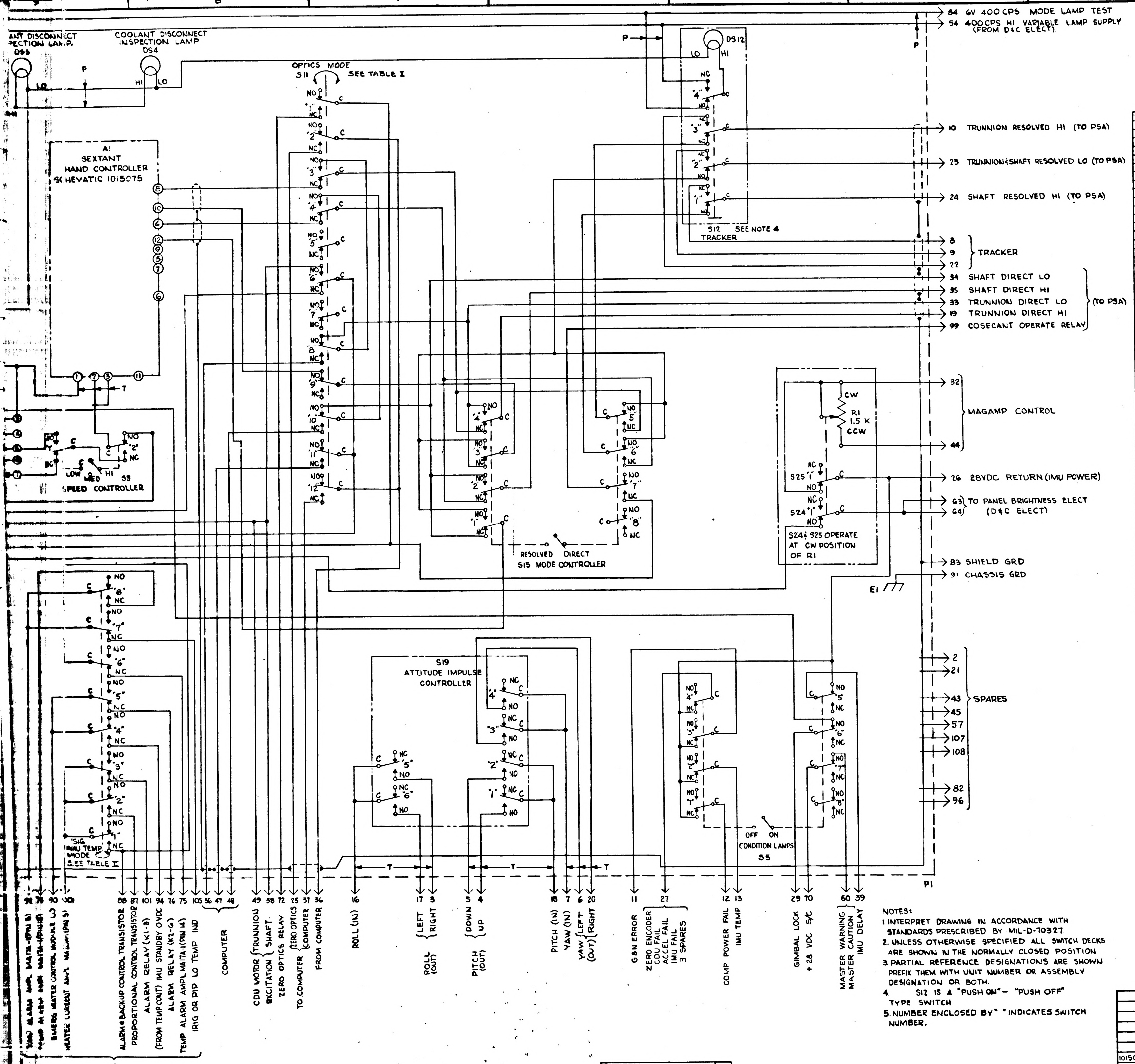
1015054



CONTROL ELEC. COND. LT REL 28
S/C OV DC 15
S/C LAMP TEST 14
(FROM NAA) IN - 28VDC HI 41
ATTITUDE DISABLE SIGNAL 28VDC HI (TO NAA) 50
(FROM NAA) IN - 28VDC LO 40
S10 ATTITUDE ENABLE
OFF
ON
S1 CHECK CONDITION LAMPS
S17 CHECK MODE LAMPS
S2 CHECK COOLANT
COOLANT DISCONNECT INSPECTION LAMP DS3
COOLANT DISCONNECT INSPECTION LAMP DS4
A1 SEXTANT HAND CONTROLLER SCHEMATIC 1015075
OPTICS MODE S11 SEE TABLE I
DS12
S12 TRACKER SEE NOTE 4
(FROM PSA) OPTICS 28VDC HI 71
CONDITION LIGHT TEST 28VDC 73
6V 400CPS LO 52 HI G1 HI G2
(OPTICS POWER) 28VDC RETURN 1
S4 OPTICS HOLD
S14 STAR LOS LANDMARK LOS 0° OFFSET 25° SLAVE TELESCOPE
T1
S3 SPEED CONTROLLER LOW MED HI
(PSA) 0° TRUNNION TELESCOPE OFFSET RELAY 58
25° TRUNNION TELESCOPE OFFSET RELAY 59
S15 MODE CONTROLLER RESOLVED DIRECT
R1 1.5 CW CCW
S24 & S25 OPERATE AT CW POSITION OF R1
SLEW CONTROL 66
26V 400CPS 96
26V 400CPS SLEW 81
STEP-UP C 78
(M&DV)
S20 M&DV SINGLE FRAME DRIVE-UP
STEP-DOWN C 79
26V 400CPS MOTOR EXCIT 68
S21 M&DV SINGLE FRAME DRIVE DOWN
S9 M&DV FILM SLEW UP DOWN
S23 GAIN IRIG
S7 ZERO
S8 GAIN PIPA
S18 MAP & DATA VIEWER POWER & BRIGHTNESS OFF LOW HI
S13 MARK
S16 IMU TEMP MODE SEE TABLE II
S19 ATTITUDE IMPULSE CONTROLLER
S5 CONDITION LAMPS OFF ON
93 (M&DV) STEP DOWN R
51 (M&DV & INTEGRAL LIGHTING POWER) 28VDC HI
106 67 77 65 (M&DV) STEP UP R 28VDC HI 0.5V 400CPS O T
89 IRIG ZERO RESISTANCE
85 IRIG TEMP IND BRIDGE AMPL M416B-1 (PIN G)
98 ACCEL TEMP IND BRIDGE AMPL M416B-1 (PIN G)
104 ACCEL ZERO RESISTANCE
97 ACCEL IND SENSOR HI
103 ACCEL GAIN RESISTANCE
86 IRIG IND SENSOR HI
102 IRIG GAIN RESISTANCE
53 6V 400CPS HI
30 31 TO COMPUTER
(PSA)
42 FROM COMPUTER
46 55 M&DV INTENSITY LOW HI
69 80 28V 800CPS 1% LO HI
92 TEMP ALARM AMPL M417A-1 (PIN 5)
74 TEMP ALARM AMPL M417A-1 (PIN 5)
90 EMERG HEATER CONTROL MODULE LO
100 HEATER CURRENT AMPL M424A-1 (PIN 5)
88 ALARM & BACKUP CONTROL TRANSISTOR
87 PROPORTIONAL CONTROL TRANSISTOR
101 ALARM RELAY (K1-3)
94 (FROM TEMP CONT) IMU STANDBY 0VDC
76 ALARM RELAY (K2-6)
75 TEMP ALARM AMPL M417A-1 (PIN 14)
105 IRIG OR PIP LO TEMP IND
(PSA)
56 47 48 COMPUTER
49 CDU MOTOR EXCITATION (TRUNNION SHAFT)
58 ZERO OPTICS RELAY
72 25 37 TO COMPUTER (ZERO OPTICS COMPUTER)
36 FROM COMPUTER
16 ROLL (IN)
17 3 ROLL (OUT) LEFT RIGHT
5 4 PITCH (OUT) DOWN UP
18 PITCH (IN)
7 YAW (IN)
6 20 YAW (OUT) LEFT RIGHT
11 G&N ERROR
27 ZERO ENCODER CDU FAIL ACCEL FAIL IMU FAIL 3 SPARES
12 COMP POWER FAIL
13 IMU TEMP
29 GIMBAL LOCK
10 +28 VDC SPC
60 MASTER WARNING MASTER CAUTION
IMU DELAY
P
T
12 11 10 9 8 7 6 5
H G F E D C B A
1015054

1/1015054

REVISIONS TDRR 13892					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		UPGRADED FOR CLASS A RELEASE		6 OCT 64	WB
B		REVISED PER TDRR 14285		19 NOV 64	WB


84 6V 400 CPS MODE LAMP TEST
54 400 CPS HI VARIABLE LAMP SUPPLY (FROM D&C ELECT)
ANT DISCONNECT INSPECTION LAMP DS3
COOLANT DISCONNECT INSPECTION LAMP DS4
DS12
LO
HI
P
OPTICS MODE S11 SEE TABLE I
A1 SEXTANT HAND CONTROLLER SCHEMATIC 1015075
S12 SEE NOTE 4 TRACKER
10 TRUNNION RESOLVED HI (TO PSA)
25 TRUNNION & SHAFT RESOLVED LO (TO PSA)
24 SHAFT RESOLVED HI (TO PSA)
8
9
22
TRACKER
34 SHAFT DIRECT LO
35 SHAFT DIRECT HI
33 TRUNNION DIRECT LO
19 TRUNNION DIRECT HI
99 COSECANT OPERATE RELAY
(TO PSA)
32
44
MAGAMP CONTROL
CW
R1 1.5 K
CCW
S25 "1"
S24 "1"
S24 & S25 OPERATE AT CW POSITION OF R1
26 28VDC RETURN (IMU POWER)
63
64
TO PANEL BRIGHTNESS ELECT (D&C ELECT)
83 SHIELD GRD
91 CHASSIS GRD
E1
LOW
MED
HI
S3
SPEED CONTROLLER
RESOLVED
DIRECT
S15 MODE CONTROLLER
S19 ATTITUDE IMPULSE CONTROLLER
2
21
43
45
57
107
108
82
96
SPARES
OFF
ON
CONDITION LAMPS S5
S16 IMU TEMP MODE SEE TABLE II
NO
NC
C
T
P1
92 TEMP ALARM AMP MA17A-1 (PIN 8)
78 TEMP ALARM AMP MA17A-1 (PIN 9)
90 EMERG HEATER CONTROL MODULE
100 HEATER CURRENT AMPL MA18A-1 (PIN 5)
88 ALARM & BACK-UP CONTROL TRANSISTOR
87 PROPORTIONAL CONTROL TRANSISTOR
101 ALARM RELAY (K1-3)
94 (FROM TEMP CONT) IMU STANDBY OVDC
76 ALARM RELAY (K2-6)
75 TEMP ALARM AMPL MA17A-1 (PIN 14)
105 IRIG OR PIP LO TEMP IND
(PSA)
56 47 48 COMPUTER
49 CDU MOTOR EXCITATION TRUNNION
38 SHAFT
72 ZERO OPTICS RELAY
25 TO COMPUTER ZERO OPTICS
37 COMPUTER
36 FROM COMPUTER
16 ROLL (IN)
17 LEFT
3 RIGHT
ROLL (OUT)
5 DOWN
4 UP
PITCH (OUT)
18 PITCH (IN)
7 YAW (IN)
6 LEFT
20 RIGHT
YAW (OUT)
11 G&N ERROR
27 ZERO ENCODER CDU FAIL ACCEL FAIL IMU FAIL 3 SPARES
12 COMP POWER FAIL
13 IMU TEMP
29 GIMBAL LOCK
70 + 28 VDC S/C
60 MASTER WARNING MASTER CAUTION
39 IMU DELAY

REF DES	PART NO	DESCRIPTION	VALUE	TOL	RATING
A1	1021700-011	SEXTANT HAND CONT			
DS3	1010268-2	LAMP			
DS4	1010268-2				
DS12	1010624-2	↓			
E1	1010638-6	TERMINAL LUG			
P1	1010825-4	CONNECTOR			
R1	1010764-2	POTENTIOMETER	1.5 K		5 W
S1	1010480-3	SWITCH-PUSH BUTTON			
S2	1010480-2	PUSH BUTTON			
S3	1010478-1	TOGGLE			
S4	1010484-1	TOGGLE			
S5	1010479-1	TOGGLE			
S7	1010480-1	PUSH BUTTON			
S8	1010480-2	PUSH BUTTON			
S9	1010479-2	TOGGLE			
S10	1010489-1	TOGGLE			
S11	1010494-3	ROTARY			
S12	1010627-2	PUSH BUTTON			
S13	1010480-2	PUSH BUTTON			
S14	1010478-1	TOGGLE			
S15	1010479-1	TOGGLE			
S16	1010494-2	ROTARY			
S17	1010480-1	PUSH BUTTON			
S18	1010478-2	TOGGLE			
S19	1015048-011	IMPULSE			
S20	1010480-3	PUSH BUTTON			
S21	1010480-3	PUSH BUTTON			
S23	1010480-2	PUSH BUTTON			
S24	1010435-001				
S25	1010435-001	↓			
T1	1010492	TRANSFORMER			

TABLE I
S11 OPTICS MODE SWITCH

POSITION	DECK ACTUATED
ZERO OPTICS	1,2
MANUAL	3,4,5,6,7
COMPUTER	8,9,10,11,12

TABLE II
S16 IMU TEMP MODE SWITCH

POSITION	DECK ACTUATED
AUTO OVERIDE	3,5,6,7
PROPORTIONAL	2,6,7
BACK-UP	1
EMERGENCY	4,8

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED ALL SWITCH DECKS ARE SHOWN IN THE NORMALLY CLOSED POSITION
3. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX THEM WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
4. S12 IS A "PUSH ON" – "PUSH OFF" TYPE SWITCH
5. NUMBER ENCLOSED BY " " INDICATES SWITCH NUMBER.

NEXT ASSY	USED ON
1015053-011	1015023-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN H. Fuede DATE 23 SEP 64
CHECKED C. Pizoda 5 OCT 64
APPROVAL D. W. Mieling 5 OCT 64
APPROVAL
NASA APPROVAL W. J. Rhine 10-29-64
MIT APPROVAL 27 Oct 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

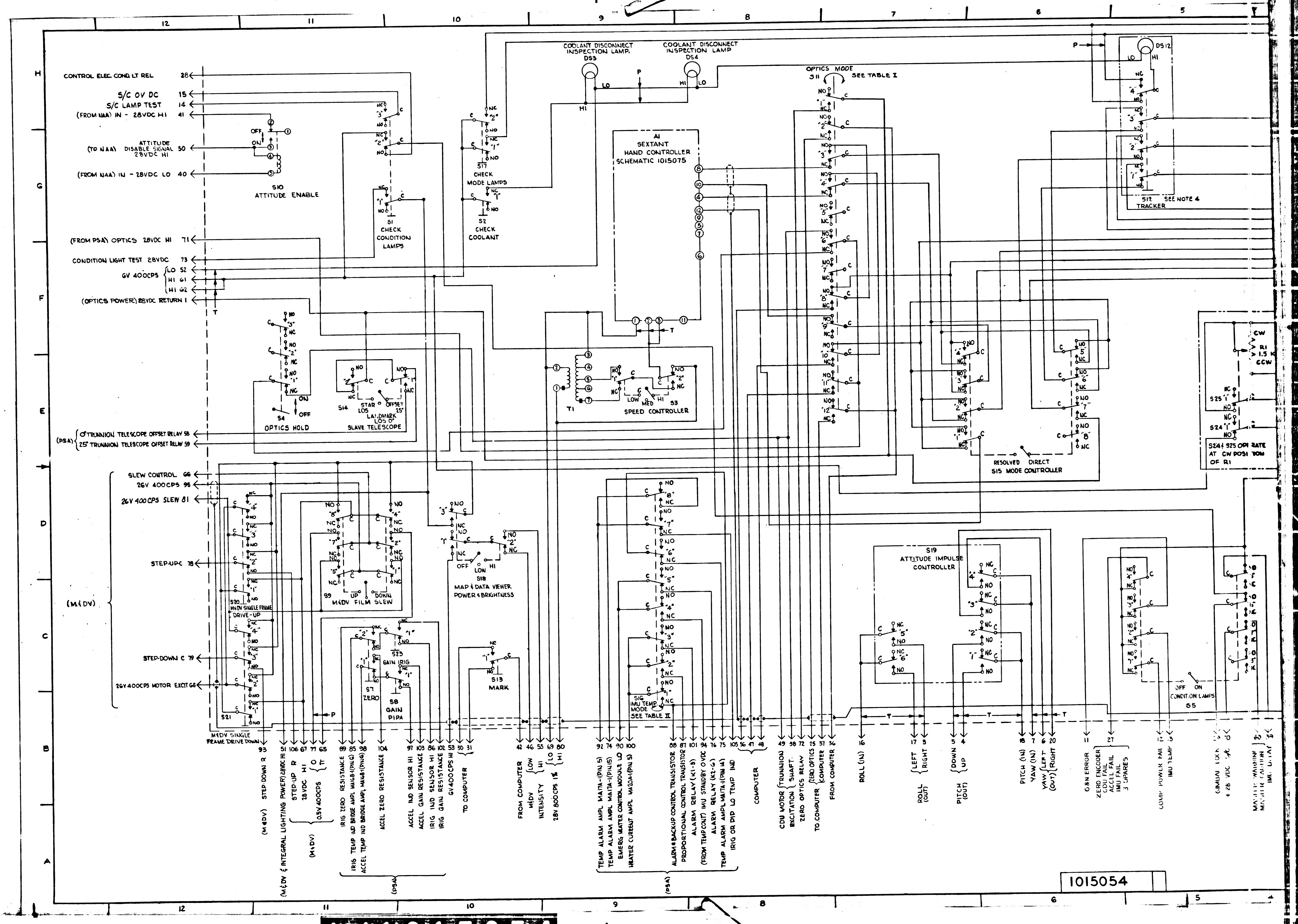
G&N INDICATOR
CONTROL PANEL
SCHEMATIC DIAGRAM

CODE IDENT NO. | SIZE J | NASA DRAWING NO. 1015054
SCALE — | SHEET 1 OF 1

1015054

1015054 B

2 7 1 0 1 5 0 5 4


CONTROL ELEC COND LT REL 28
S/C OV DC 15
S/C LAMP TEST 14
(FROM NAA) IN - 28VDC HI 41
(TO NAA) ATTITUDE DISABLE SIGNAL 28VDC HI 50
(FROM NAA) IN - 28VDC LO 40
S10 ATTITUDE ENABLE
OFF
ON
S1 CHECK CONDITION LAMPS
S17 CHECK MODE LAMPS
S2 CHECK COOLANT
COOLANT DISCONNECT INSPECTION LAMP DS3
COOLANT DISCONNECT INSPECTION LAMP DS4
HI
LO
P
A1 SEXTANT HAND CONTROLLER SCHEMATIC 1015075
OPTICS MODE S11 SEE TABLE I
DS12
S12 TRACKER
SEE NOTE 4
(FROM PSA) OPTICS 28VDC HI 71
CONDITION LIGHT TEST 28VDC 73
GV 400CPS LO 52
HI 61
HI 62
(OPTICS POWER) 28VDC RETURN 1
T
S4 OPTICS HOLD
ON
OFF
S14 STAR LOS
LANDMARK LOS 0°
OFFSET 25°
SLAVE TELESCOPE
T1
LOW MED HI
S3 SPEED CONTROLLER
RESOLVED DIRECT
S15 MODE CONTROLLER
CW
R1 1.5 K
CCW
S25
S24
S24 & S25 OPERATE AT CW POSITION OF R1
(PSA) 0° TRUNNION TELESCOPE OFFSET RELAY 58
25° TRUNNION TELESCOPE OFFSET RELAY 59
SLEW CONTROL 66
26V 400CPS 95
26V 400CPS SLEW 81
STEP-UP C 78
(M&DV)
S20 M&DV SINGLE FRAME DRIVE-UP
STEP-DOWN C 79
26V 400CPS MOTOR EXCIT 68
S21 M&DV SINGLE FRAME DRIVE DOWN
S9 M&DV FILM SLEW
UP
DOWN
S18 MAP & DATA VIEWER POWER & BRIGHTNESS
OFF LOW HI
S7 ZERO
S23 GAIN IRIG
S8 GAIN PIPA
S13 MARK
S16 IMU TEMP MODE SEE TABLE II
S19 ATTITUDE IMPULSE CONTROLLER
OFF ON CONDITION LAMPS S5
93 STEP-DOWN R (M&DV)
51 (M&DV & INTEGRAL LIGHTING POWER) 28VDC HI
106 STEP-UP R
67 28VDC HI
77 0.5V 400CPS 0
65 0.5V 400CPS π
(M&DV)
89 IRIG ZERO RESISTANCE
85 IRIG TEMP IND BRIDGE AMPL MAI6B(PIN 6)
98 ACCEL TEMP IND BRIDGE AMPL MAI6B(PIN 6)
104 ACCEL ZERO RESISTANCE
97 ACCEL IND SENSOR HI
103 ACCEL GAIN RESISTANCE
86 IRIG IND SENSOR HI
102 IRIG GAIN RESISTANCE
53 GV400CPS HI
(PSA)
30 31 TO COMPUTER
42 46 FROM COMPUTER
55 M&DV INTENSITY LOW HI
69 80 28V 800CPS 1% LO HI
92 TEMP ALARM AMPL MAI7A-1(PIN 5)
74 TEMP ALARM AMPL MAI7A-1(PIN 5)
90 EMERG HEATER CONTROL MODULE LO
100 HEATER CURRENT AMPL MA20A-1(PIN 5)
88 ALARM & BACKUP CONTROL TRANSISTOR
87 PROPORTIONAL CONTROL TRANSISTOR
101 ALARM RELAY (K1-3)
94 (FROM TEMP CONT) IMU STANDBY 0VDC
76 ALARM RELAY (K2-6)
75 TEMP ALARM AMPL MAI7A-1(PIN 14)
105 IRIG OR DIP LO TEMP IND
(PSA)
36 47 48 COMPUTER
49 58 72 CDU MOTOR EXCITATION (TRUNNION SHAFT)
ZERO OPTICS RELAY
25 37 ZERO OPTICS COMPUTER TO COMPUTER
34 FROM COMPUTER
16 ROLL (IN)
17 3 ROLL (OUT) LEFT RIGHT
5 4 PITCH (OUT) DOWN UP
18 PITCH (IN)
7 YAW (IN)
6 20 YAW (OUT) LEFT RIGHT
11 G&N ERROR
27 ZERO ENCODER CDU FAIL ACCEL FAIL IMU FAIL 3 SPARES
12 COMP POWER FAIL
13 IMU TEMP
GIMBAL LOCK
+28 VDC
MASTER WARNING MASTER CAUTION IMU DELAY
1015054
12 11 10 9 8 7 6 5
H G F E D C B A

1/4 1015054

APPLICATION		REVISIONS TDRR 14008			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		A	REVISED PER TDRR 14576	12-7-64	JWP

SEE SHEET 2 FOR REVISION STATUS OF SHEETS

REV																										
SHEET																										
REV STATUS OF SHEETS	REV																									
	SHEET																									

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN E Costa DATE 10-26-64
CHECKED Allen E. Alderson
APPROVAL
APPROVAL 10/27/64

NASA APPROVAL 11-4-64
MIT APPROVAL

CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
AGE INTERCONNECT

CODE IDENT NO.
SIZE A
1015055
REV A
SCALE —
SHEET 1 OF 84

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	A	37	+	73	+										
2	A	38	+	74	+										
3	+	39	+	75	+										
4	+	40	+	76	+										
5	+	41	+	77	+										
6	+	42	+	78	+										
7	A	43	+	79	+										
8	+	44	+	80	+										
9	+	45	+	81	+										
10	A	46	+	82	+										
11	+	47	+	83	+										
12	+	48	+	84	+										
13	+	49	+												
14	+	50	+												
15	+	51	+												
16	+	52	+												
17	+	53	+												
18	+	54	+												
19	+	55	+												
20	+	56	+												
21	+	57	+												
22	+	58	+												
23	+	59	+												
24	+	60	+												
25	+	61	+												
26	+	62	+												
27	+	63	+												
28	+	64	+												
29	+	65	+												
30	+	66	+												
31	+	67	+												
32	+	68	+												
33	+	69	+												
34	+	70	+												
35	+	71	+												
36	+	72	+												

MANNED
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HOUSTON, TEXAS

REVISION A

NASA DRAWING NO.
1015055
SHEET 2 OF 84

WIRE HARNESS A

GENERAL NOTES

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 SPACING OF CONDUCTOR IDENTIFICATION MARKING SHALL BE EVERY 1.2 INCHES.

6 SPIRALLING OF THE MARKING IS ALLOWED.

7 MARK SLEEVING OF MULTI-CONDUCTORS WITH THE CONDUCTOR NUMBER .12 INCH HIGH, COLOR BLACK, PER ND1002019 WHEN SLEEVING ITEM NUMBERS FOLLOW AN A OR T IN THE ACCESSORIES ITEM NUMBER FIELD.

8 A OR T PREFIX IN THE ACCESSORIES ITEM NUMBER COLUMN INDICATES THE READING POSITION AWAY FROM TERMINATION OR TOWARD TERMINATION RESPECTIVELY, OF THE WIRE MARKER SLEEVE.

9 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

10 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

11 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

12 LACE HARNESS PER ND1002032 USING ITEMS 51 AND 77.

13 CONDUCTORS LISTED WITH AN A OR B IN THE ROUTING COLUMN ARE TO BE ASSEMBLED PER DETAIL A OR B AS SHOWN ON THE CONFIGURATION DRAWING (1015056 REF).

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE-NONE
REV LTR +
SHEET 3

MIL 2084-4-64

WIRE HARNESS A

GENERAL NOTES

14 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, MARKING, OR TWISTING
A - FROM END SHIELD
B - TO END SHIELD
G - GREEN
K - BLACK
L - BLUE
N - BROWN
R - RED
W - WHITE
Y - YELLOW

15 ASSEMBLE HARNESS AS SHOWN PER CONFIGURATION DRAWING (1015056 REF).

16 SERIALIZE PER ND1002023.

17 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING

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SIZE A
1015055
SCALE-NONE
REV LTR +
SHEET 4

MIL 2084-4-64

WIRE HARNESS A

GENERAL NOTES

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP		CUT	
		WIRE	JACKET	WIRE	SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE-NONE
REV LTR +
SHEET 5

MIL 2084-4-64

WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015055- 1	WIRE PER 1010789-011 YEL. JKT. 24AWG YEL. 13 FT. 0.0 IN. TOTAL LENGTH
	2	1	1015055- 2	WIRE PER 1010789-012 YEL. JKT. 24AWG YEL, RED. 369 FT. 6.0 INCHES TOTAL LENGTH.
	3	1	1015055- 3	WIRE PER 1010789-013 YEL. JKT. 24AWG YEL, RED, GREEN 30 FT. 4.0 IN. TOTAL LENGTH
	4	1	1015055- 4	WIRE PER 1010789-001 24AWG YELLOW 863 FT. 9.0 INCHES TOTAL LENGTH.
	5	1	1015055- 5	WIRE PER 1010789-006 22AWG YELLOW 164 FT.9.0 INCHES TOTAL LENGTH.
	6	1	1015055- 6	WIRE PER 1010707-1 RED JKT. 29AWG BLUE, RED, AND WHITE 26 FT. 6.0 INCHES TOTAL LENGTH.
17	7	1	1010824- 3	CONNECTOR RECP ELECTRICAL
17	8	5	1010824- 2	CONNECTOR RECP ELECTRICAL
17	9	1	1010822- 5	CONNECTOR RECP ELECTRICAL
17	10	1	1010822- 3	CONNECTOR RECP ELECTRICAL
17	11	1	1010816-144	CONNECTOR RECP ELECTRICAL
17	12	1	1010816-244	CONNECTOR RECP ELECTRICAL
17	13	1	1010348- 1	CONNECTOR PLUG ELECTRICAL
17	14	1	1010348- 2	CONNECTOR PLUG ELECTRICAL
	15	1	1010671- 1	CONNECTOR PLUG ELECTRICAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE-NONE
REV LTR +
SHEET 6

MIL 2084-4-64

WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	16	1	1010671- 2	CONNECTOR PLUG ELECTRICAL
17	17	1	1010674- 1	CONNECTOR PLUG ELECTRICAL
17	18	1	1010674- 2	CONNECTOR PLUG ELECTRICAL
17	19	1	1010674- 3	CONNECTOR PLUG ELECTRICAL
17	20	1	1010674- 4	CONNECTOR PLUG ELECTRICAL
17	21	1	1010824- 5	CONNECTOR RECP ELECTRICAL
17	22	1	1010824- 4	CONNECTOR RECP ELECTRICAL
17	23	1	1010822- 4	CONNECTOR RECP ELECTRICAL
17	24	1	1010824-1 ~~4~~	CONNECTOR RECP ELECTRICAL
17	27	16	1010402- 1	SLEEVE, SOLDER
17	28	130	1010402- 2	SLEEVE, SOLDER
17	30	30	1010490-108	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	31	286	1010490-110	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	32	238	1010490-112	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	38	1	1010490-975	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE) 2 FT 5 IN. TOTAL LENGTH
17	39	1	1010490-979	INSULATION-SLEEVING, ELECTRICAL,

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE-NONE	REV LTR ~~*~~ A	SHEET 7

MIL 2084-4-64

WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
				HEAT SHRINKABLE (WHITE) 2 FT 5 IN. TOTAL LENGTH
17	40	2	1010490-216	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	41	2	1010490-222	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
	42	1	1015055- 7	WIRE, BRAID PER QQ-B-575 (COPPER, TIN-COATED, TUBLAR) SIZE 3/8 ID, 36 GAUGE, 2 FT 5 IN. TOTAL LENGTH
	43	1	1015055- 8	WIRE, BRAID PER QQ-B-575 (COPPER, TIN-COATED, TUBULAR) SIZE 1/2 ID, 36 GAUGE, 2 FT 5 IN. TOTAL LENGTH
17	44	1	1010809- 1	CONNECTOR, ELECTRICAL, RECEPTACLE 12 CONTACTS
17	45	1	1000243- 34	FERRULE, INNER ELECTRICAL CONDUCTOR
17	46	1	1000243- 26	FERRULE, INNER ELECTRICAL CONDUCTOR
17	47	1	1000242- 30	FERRULE, OUTER ELECTRICAL CONDUCTOR
	49	1296	1010738- 6	CONTACT, SOCKET
	51	AR	1012057- 2	LACING TAPE, DACRON, BLACK, 0.05 INCHES WIDE.
	52	RF		CONTACT SOCKETS SUPPLIED WITH 1010348
	53	RF		CONTACT SOCKETS SUPPLIED WITH 1010671
	54	RF		CONTACT SOCKETS SUPPLIED WITH 1010674
17	59	1	1000242- 24	FERRULE, OUTER ELECTRICAL CONDUCTOR

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE-NONE	REV LTR +	SHEET 8

MIL 2084-4-64

WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
17	60	1	1000243- 30	FERRULE, INNER ELECTRICAL CONDUCTOR
17	61	1	1000242- 27	FERRULE, OUTER ELECTRICAL CONDUCTOR
17	62	1	1000243- 36	FERRULE, INNER ELECTRICAL CONDUCTOR
17	63	1	1000242- 33	FERRULE, OUTER ELECTRICAL CONDUCTOR
	64	270	1010743- 1	WRAPOST RECEPTACLE
	65	137	1010743- 2	WRAPOST RECEPTACLE
	66	80	1010743- 3	WRAPOST RECEPTACLE
	67	1	1010734- 16	GROMMET, CONNECTOR STRAIN RELIEF
	68	1	1010734- 18	GROMMET, CONNECTOR STRAIN RELIEF
	69	1	1015055- 9	WIRE PER 1010789-002 24AWG BLACK 118 FT. 0.0 INCHES TOTAL LENGTH.
	70	1	1015055- 10	WIRE PER 1010789-003 24AWG YELLOW, RED 392 FT. 1.0 INCHES TOTAL LENGTH.
	71	1	1015055- 11	WIRE PER 1010789-003 24AWG YELLOW, RED, GREEN 90 FT. 6.0 INCHES TOTAL LENGTH.
	72	1	1015055- 12	WIRE PER 1010789-005 24AWG YELLOW, RED, GREEN BROWN 25 FT. 11.0 INCHES TOTAL LENGTH.
	73	1	1015055- 13	WIRE PER 1010789-008 22AWG YELLOW, RED 13 FT. 9.0 INCHES TOTAL LENGTH.
	74	1	1015055- 14	WIRE PER 1010789-009 22AWG YELLOW, RED, GREEN

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE-NONE	REV LTR +	SHEET 9

MIL 2084-4-64

WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
				4 FT. 6.0 INCHES TOTAL LENGTH.
	75	1	1015055- 15	WIRE PER 1010789-010 22AWG YELLOW, RED, GREEN BROWN 16 FT. 1.0 INCH TOTAL LENGTH.
	77	AR	1012507- 4	LACING TAPE, DACRON, BLACK, 0.09 INCHES WIDE.
	78	~~RF~~ 12	1010770- 2	CONTACT, SOCKET~~S SUPPLIED WITH 1010809~~

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE-NONE	REV LTR ~~*~~ A	SHEET 10

MIL 2084-4-64

WIRE HARNESS A

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.		NO.	ROUTING
A 1	70						A 32							A 32		66	G1 H1
A 1R			P01- 80	10	N		49			TB2-A 2	18	N					
A 1Y			P01- 95	10	N		49			TB2-A 1	18	N					
A 3	4		P01- 38	10	N		49			TB1-K 4	18	N				135	G1 K1
A 4	4		P01- 48	10	N		49			TB1-K 3	18	N				144	G1 K1
A 5	4		P01- 13	10	N		49			TB1-K 5	18	N				132	G1 K2
A 6	4		P01- 27	10	N		49			TB1-K 8	18	N				99	G1 K2
A 7	4		P01- 58	10	N		49			TB1-K 6	18	N				120	G1 K2
A 8	4		P01- 12	10	N		49			TB2-B 2	18	N		64		63	G1 H1
A 9	4		P01- 57	10	N		49			TB2-R 4	18	N		64		9	G1 H2
A 10	4		P01- 5	10	N		49			TB2-C 1	18	N		64		93	G1 H1
A 11	4		P01- 69	10	N		49			TB2-B 1	18	N		64		96	G1 H1
A 12	4		P01- 24	10	N		49			TB3-F 4	18	N				129	C1 J2
A 13	2			300		275	A 31				125		100	A 31	28	39	G1 H2
A 13B	69		TB2-D 3	18	N					SHLD A 13	20	N					
A 13R			E 61	20	N		28			TB2-F 3	18	N					
A 13Y			P01- 68	10	N	250	49			TB2-D 2	18	N					
A 14	2			300		275	A 31				100		75	A 31	28	3	C1 J6

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 11

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.		NO.	ROUTING
A 14B	69		E 44	20	N		28			SHLD A 14	20	N					
A 14R			E 61	20	N					J21-155	10	N		49			
A 14Y			P01- 59	10	N	250	49			J21-154	10	N		49			
A 15	2			300		275	A 31				100		75	A 31	28	6	C1 J6
A 15B	69		E 44	20	N					SHLD A 15	20	N					
A 15R			E 61	20	N					J21-223	10	N		49			
A 15Y			P01- 49	10	N	250	49			J21-222	10	N		49			
A 16	2			300		275	A 31				100		75	A 31	28	12	C1 J6
A 16B	69		E 44	20	N					SHLD A 16	20	N					
A 16R			E 61	20	N					J21-227	10	N		49			
A 16Y			P01- 39	10	N	250	49			J21-226	10	N		49			
A 18	4		P01- 91	10	N		49			TB1-K 1	18	N				162	G1 K1
A 19	70						A 32							A 32		21	G1 H2
A 19R			P01- 11	10	N		49			TB2-G 4	18	N					
A 19Y			P01- 10	10	N		49			TB2-H 4	18	N					
A 20	4		P01- 78	10	N		49			TB2-M 4	18	N				12	G1 H2
A 21	4		P01- 7	10	N		49			TB3-S21	18	N				321	C2 J3
A 22	4		P01- 26	10	N		49			TB1-U 2	18	N				147	G1 K1

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 12

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.		NO.	ROUTING
A 23	2			50		25	A 31				125		100	A 31	28	54	G1 H1
A 23B	69		TB2-S 2	18	N					SHLD A 23	20	N					
A 23R			P01- 96	10	N		49			TB2-N 2	18	N					
A 23Y			P01- 97	10	N		49			TB2-R 2	18	N					
A 24	2			50		25	A 31				125		100	A 31	28	60	G1 H1
A 24B	69		TB2-F 2	18	N					SHLD A 24	20	N					
A 24R			P01- 70	10	N		49			TB2-H 2	18	N					
A 24Y			P01- 71	10	N		49			TB2-G 2	18	N					
A 25	2			50		25	A 31				125		100	A 31	28	348	G2 H4
A 25B	69		TB2-F 7	18	N					SHLD A 25	20	N					
A 25R			P01- 82	10	N		49			TB2-H 7	18	N					
A 25Y			P01- 83	10	N		49			TB2-G 7	18	N					
A 26	4		P01- 4	10	N		49			TB1-D 6	18	N		64		126	G1 K2
A 27	2			300		275	A 31				100		75	A 31	28	9	C1 J6
A 27B	69		E 44	20	N					SHLD A 27	20	N					
A 27R			E 61	20	N					J21-225	10	N		49			
A 27Y			P01- 76	10	N	250	49			J21-224	10	N		49			
A 28	4		P01- 88	10	N		49			TB3-F 3	18	N				108	C1 J2

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 13

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	T I N	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.		NO.	ROUTING
A 29	4		P01- 89	10	N		49			TB3-M21	18	N		65		330	C2 J3
A 33	4		P01- 84	10	N		49			TB3-B20	18	N				27	C1 J1
A 38	70						A 32							A 32		33	G1 H2
A 38R			J01- 67	10	N		49			TB2-H 3	18	N		64			
A 38Y			J01- 57	10	N		49			TB2-G 3	18	N		64			
A 39	2			50		25	A 31				125		100	A 31	28	57	G1 H1
A 39B	69		TB2-F 2	18	N					SHLD A 39	20	N					
A 39R			J01- 35	10	N		49			TB2-H 2	18	N					
A 39Y			J01- 45	10	N		49			TB2-G 2	18	N					
A 40	2			50		25	A 31				125		100	A 31	28	36	C1 J1
A 40B	69		TB3-H14	18	N					SHLD A 40	20	N					
A 40R			J01- 20	10	N		49			TB3-F14	18	N					
A 40Y			J01- 6	10	N		49			TB3-F13	18	N					
A 41	2			50		25	A 31				125		100	A 31	28	39	C1 J1
A 41B	69		TB3-H13	18	N					SHLD A 41	20	N					
A 41R			J01- 21	10	N		49			TB3-D13	18	N					
A 41Y			J01- 7	10	N		49			TB3-D14	18	N					
A 42	2			50		25	A 31				125		100	A 31	28	87	G1 H1

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 14

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	FROM TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TO TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 42B	69		TB2-G 1	18	N		65		SHLD A 42	20	N				
A 42R			J01-104	10	N		49		TB2-H 1	18	N		64		
A 42Y			J01- 90	10	N		49		TB2-G 1	18	N				
A 43	2			50		25	A 31			125		100	A 31 28	333	G2 H4
A 43B	69		TB2-V 6	18	N				SHLD A 43	20	N				
A 43R			J01-100	10	N		49		TB2-W 6	18	N				
A 43Y			J01- 86	10	N		49		TB2-W 7	18	N		64		
A 44	2			50		25	A 31			125		100	A 31 28	324	G2 H4
A 44B	69		TB2-D 8	18	N		65		SHLD A 44	20	N				
A 44R			J01-101	10	N		49		TB2-B 8	18	N				
A 44Y			J01- 87	10	N		49		TB2-C 8	18	N		64		
A 45	3			50		25	A 30			125		100	A 30 28	399	G2 H3
A 45B	69		TB2-A 5	18	N		65		SHLD A 45	20	N				
A 45G			J01-108	10	N		49		TB2-C 5	18	N		64		
A 45R			J01- 94	10	N		49		TB2-A 5	18	N				
A 45Y			J01-107	10	N		49		TB2-B 5	18	N		64		
A 46	70						A 32						A 32		
A 46R			J01- 50	10	N		49		E 4	20	N		27		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 15

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	FROM TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TO TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 46Y			J01- 60	10	N		49		E 3	20	N		27		
A 48	4		J01- 16	10	N		49		E 6	20	N		27		
A 50	4		J01- 15	10	N		49		E 8	20	N		27		
A 51	3			50		25	A 30			125		100	A 30 28	339	G2 H4
A 51B	69		TB2-T 7	18	N		65		SHLD A 51	20	N				
A 51G			J01-105	10	N		49		TB2-T 6	18	N		64		
A 51R			J01-106	10	N		49		TB2-U 6	18	N		64		
A 51Y			J01- 92	10	N		49		TB2-T 7	18	N				
A 52	71						A 31						A 31	363	G2 H3
A 52G			J01- 31	10	N		49		TB2-L 5	18	N		64		
A 52R			J01- 43	10	N		49		TB2-K 4	18	N				
A 52Y			J01- 32	10	N		49		TB2-L 6	18	N		64		
A 53	70						A 32						A 32		
A 53R			J01- 28	10	N		49		E 9	20	N		28		
A 53Y			J01- 29	10	N		49		E 10	20	N		28		
A 54	4		J01- 41	10	N		49		E 12	20	N		28		
A 55	4		J01- 34	10	N		49		TB2-W 1	18	N		64	72	G1 H1
A 56	4		J01- 30	10	N		49		TB2-N 5	18	N		64	393	G2 H3

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 16

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	FROM TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TO TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 62	70						A 32						A 32	369	G2 H3
A 62R			J02- 67	10	N		49		TB2-H 6	18	N		64		
A 62Y			J02- 57	10	N		49		TB2-G 6	18	N		64		
A 63	2			50		25	A 31			125		100	A 31 28	345	G2 H4
A 63B	69		TB2-F 7	18	N				SHLD A 63	20	N				
A 63R			J02- 35	10	N		49		TB2-H 7	18	N				
A 63Y			J02- 45	10	N		49		TB2-G 7	18	N				
A 64	2			50		25	A 31			125		100	A 31 28	324	C2 J3
A 64B	69		E 48	20	N		27		SHLD A 64	20	N				
A 64R			J02- 20	10	N		49		TB3-N20	18	N				
A 64Y			J02- 6	10	N		49		TB3-N21	18	N				
A 65	2			50		25	A 31			125		100	A 31 28	42	C1 J1
A 65B	69		TB3-H12	18	N				SHLD A 65	20	N				
A 65R			J02- 21	10	N		49		TB3-C13	18	N				
A 65Y			J02- 7	10	N		49		TB3-C14	18	N				
A 66	2			50		25	A 31			125		100	A 31 28	321	G2 H4
A 66B	69		TB2-G 8	18	N		65		SHLD A 66	20	N				
A 66R			J02-104	10	N		49		TB2-H 8	18	N		64		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 17

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	FROM TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TO TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 66Y			J02- 90	10	N		49		TB2-G 8	18	N				
A 67	2			50		25	A 31			125		100	A 31 28	384	G2 H3
A 67B	69		TB2-V 5	18	N				SHLD A 67	20	N				
A 67R			J02-100	10	N		49		TB2-U 5	18	N				
A 67Y			J02- 86	10	N		49		TB2-U 4	18	N		64		
A 68	2			50		25	A 31			125		100	A 31 28	351	G2 H4
A 68B	69		TB2-D 7	18	N				SHLD A 68	20	N				
A 68R			J02-101	10	N		49		TB2-B 7	18	N				
A 68Y			J02- 87	10	N		49		TB2-C 7	18	N		64		
A 69	3			50		25	A 30			125		100	A 30 28	378	G2 H3
A 69B	69		TB2-C 6	18	N		65		SHLD A 69	20	N				
A 69G			J02-108	10	N		49		TB2-A 6	18	N		64		
A 69R			J02- 94	10	N		49		TB2-C 6	18	N				
A 69Y			J02-107	10	N		49		TB2-B 6	18	N		64		
A 70	70						A 32						A 32		
A 70R			J02- 50	10	N		49		E 4	20	N				
A 70Y			J02- 60	10	N		49		E 3	20	N				
A 72	4		J02- 16	10	N		49		E 6	20	N				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 18

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 74	4		J02- 15	10	N		49		E 8	20	N				
A 75	3			50		25	A 30			125		100	A 30 28	360	G2 H3
A 75B	69		TB2-X 6	18	N		65		SHLD A 75	20	N				
A 75G			J02-105	10	N		49		TB2-X 5	18	N		64		
A 75R			J02-106	10	N		49		TB2-W 5	18	N		64		
A 75Y			J02- 92	10	N		49		TB2-X 6	18	N				
A 76	71						A 31						A 31	30	G1 H2
A 76G			J02- 31	10	N		49		TB2-L 3	18	N		64		
A 76R			J02- 43	10	N		49		TB2-K 4	18	N				
A 76Y			J02- 32	10	N		49		TB2-K 3	18	N		64		
A 77	70						A 32						A 32		
A 77R			J02- 28	10	N		49		E 9	20	N				
A 77Y			J02- 29	10	N		49		E 10	20	N				
A 78	4		J02- 41	10	N		49		E 12	20	N				
A 79	4		J02- 34	10	N		49		TB2-X 1	18	N		64	69	G1 H1
A 80	4		J02- 30	10	N		49		TB2-R 5	18	N		64	390	G2 H3
A 84	70						A 32						A 32		
A 84R			J03- 1	10	N		49		E 1	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 19

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 84Y			J03- 14	10	N		49		E 2	20	N				
A 85	70						A 32						A 32	81	G1 H1
A 85R			J03- 67	10	N		49		TB2-N 1	18	N		64		
A 85Y			J03- 57	10	N		49		TB2-R 1	18	N		64		
A 86	2			50		25	A 31			125		100	A 31 28	51	G1 H1
A 86B	69		TB2-S 2	18	N				SHLD A 86	20	N				
A 86R			J03- 35	10	N		49		TB2-N 2	18	N				
A 86Y			J03- 45	10	N		49		TB2-R 2	18	N				
A 87	2			50		25	A 31			125		100	A 31 28	312	G2 H4
A 87B	69		TB2-M 8	18	N				SHLD A 87	20	N				
A 87R			J03- 20	10	N		49		TB2-R 8	18	N		64		
A 87Y			J03- 6	10	N		49		TB2-N 7	18	N				
A 88	2			50		25	A 31			125		100	A 31 28	306	G2 H4
A 88B	69		TB2-V 8	18	N				SHLD A 88	20	N				
A 88R			J03- 21	10	N		49		TB2-T 8	18	N		64		
A 88Y			J03- 7	10	N		49		TB2-U 8	18	N				
A 89	2			50		25	A 31			125		100	A 31 28	27	G1 H2
A 89B	69		TB2-S 3	18	N		64		SHLD A 89	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 20

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 89R			J03-104	10	N		49		TB2-N 3	18	N		64		
A 89Y			J03- 90	10	N		49		TB2-R 3	18	N		64		
A 90	2			50		25	A 31			125		100	A 31 28	3	G1 H2
A 90B	69		TB2-V 4	18	N		65		SHLD A 90	20	N				
A 90R			J03-100	10	N		49		TB2-W 4	18	N				
A 90Y			J03- 86	10	N		49		TB2-X 4	18	N		64		
A 91	2			50		25	A 31			125		100	A 31 28	42	G1 H2
A 91B	69		TB2-V 2	18	N				SHLD A 91	20	N				
A 91R			J03-101	10	N		49		TB2-W 2	18	N				
A 91Y			J03- 87	10	N		49		TB2-X 2	18	N		64		
A 92	3			50		25	A 30			125		100	A 30 28	24	G1 H2
A 92B	69		TB2-A 4	18	N		65		SHLD A 92	20	N				
A 92G			J03-108	10	N		49		TB2-C 4	18	N		64		
A 92R			J03- 94	10	N		49		TB2-A 4	18	N				
A 92Y			J03-107	10	N		49		TB2-B 4	18	N		64		
A 93	70						A 32						A 32		
A 93R			J03- 50	10	N		49		E 4	20	N				
A 93Y			J03- 60	10	N		49		E 3	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 21

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 96	3			50		25	A 30			125		100	A 30 28	342	G2 H4
A 96B	69		TB2-R 7	18	N		65		SHLD A 96	20	N				
A 96G			J03-105	10	N		49		TB2-R 6	18	N		64		
A 96R			J03-106	10	N		49		TB2-N 6	18	N		64		
A 96Y			J03- 92	10	N		49		TB2-R 7	18	N				
97	71						A 31						A 31	366	G2 H3
A 97G			J03- 31	10	N		49		TB2-K 6	18	N		64		
A 97R			J03- 43	10	N		49		TB2-K 4	18	N		66		
A 97Y			J03- 32	10	N		49		TB2-K 5	18	N		64		
A 98	70						A 32						A 32		
A 98R			J03- 28	10	N		49		E 9	20	N				
A 98Y			J03- 29	10	N		49		E 10	20	N				
A 99	4		J03- 41	10	N		49		E 12	20	N				
A 100	4		J03- 34	10	N		49		TB2-S 1	18	N		64	78	G1 H1
A 101	4		J03- 89	10	N		49		TB2-T 1	18	N		64	75	G1 H1
A 102	4		J03- 30	10	N		49		TB2-K 8	18	N		64	318	G2 H4
A 104	70						A 32						A 32		
A 104R			J04- 1	10	N		49		E 14	20	N		28		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 22

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 104Y			J04- 14	10	N		49		E 13	20	N		28		
A 107	2			50		25	A 31			125		100	A 31 28	63	C1 J1
A 107B	69		TB3-H 9	18	N				SHLD A 107	20	N				
A 107R			J04- 57	10	N		49		TB3-K11	18	N				
A 107Y			J04- 67	10	N		49		TB3-K10	18	N				
A 108	2			50		25	A 31			125		100	A 31 28	381	C2 J4
A 108B	69		TB3-N15	18	N		64		SHLD A 108	20	N				
A 108R			J04- 66	10	N		49		TB3-N13	18	N				
A 108Y			J04- 56	10	N		49		TB3-N14	18	N				
A 109	71						A 31						A 31	396	C2 J4
A 109G			J04- 34	10	N		49		TB3-T12	18	N		64		
A 109R			J04- 45	10	N		49		TB3-R12	18	N		64		
A 109Y			J04- 35	10	N		49		TB3-S12	18	N		64		
A 110	2			50		25	A 31			125		100	A 31 28	84	C1 J2
A 110B	69		TB3-K 9	18	N				SHLD A 110	20	N				
A 110R			J04- 6	10	N		49		TB3-K 7	18	N		64		
A 110Y			J04- 20	10	N		49		TB3-K 8	18	N		64		
A 111	2			50		25	A 31			125		100	A 31 28	33	C1 J1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 23

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 111B	69		TB3-G15	18	N		64		SHLD A 111	20	N				
A 111R			J04- 7	10	N		49		TB3-G13	18	N		64		
A 111Y			J04- 21	10	N		49		TB3-G14	18	N		64		
A 112	2			50		25	A 31			125		100	A 31 28	66	C1 J1
A 112B	69		TB3-H 9	18	N				SHLD A 112	20	N				
A 112R			J04-104	10	N		49		TB3-H10	18	N		64		
A 112Y			J04- 90	10	N		49		TB3-H11	18	N		64		
A 113	4		J04- 89	10	N		49		TB3-M18	18	N		64	351	C2 J3
A 114	2			50		25	A 31			125		100	A 31 28	75	C1 J2
A 114B	69		TB3-N 9	18	N				SHLD A 114	20	N				
A 114R			J04-100	10	N		49		TB3-N 7	18	N		64		
A 114Y			J04- 86	10	N		49		TB3-N 8	18	N		64		
A 115	2			50		25	A 31			125		100	A 31 28	57	C1 J1
A 115B	69		TB3-N 9	18	N		65		SHLD A 115	20	N				
A 115R			J04-101	10	N		49		TB3-N11	18	N		64		
A 115Y			J04- 87	10	N		49		TB3-N10	18	N		64		
A 116	3			50		25	A 30			125		100	A 30 28	426	C2 J4
A 116B	69		TB3-S 5	18	N		65		SHLD A 116	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 24

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 116G			J04-108	10	N		49		TB3-S 4	18	N		64		
A 116R			J04- 94	10	N		49		TB3-S 5	18	N				
A 116Y			J04-107	10	N		49		TB3-S 6	18	N		64		
A 117	70						A 32						A 32		
A 117R			J04- 50	10	N		49		E 17	20	N		27		
A 117Y			J04- 60	10	N		49		E 16	20	N		27		
A 121	2			50		25	A 31			125		100	A 31 28	81	C1 J2
A 121B	69		TB3-L 9	18	N				SHLD A 121	20	N				
A 121R			J04-106	10	N		49		TB3-L 7	18	N		64		
A 121Y			J04- 92	10	N		49		TB3-L 8	18	N		64		
A 122	71						A 31						A 31	69	C1 J1
A 122G			J04- 31	10	N		49		TB3-D11	18	N		64		
A 122R			J04- 43	10	N		49		TB3-B17	18	N		65		
A 122Y			J04- 32	10	N		49		TB3-C11	18	N		64		
A 123	70						A 32						A 32		
A 123R			J04- 28	10	N		49		E 9	20	N				
A 123Y			J04- 29	10	N		49		E 10	20	N				
A 124	4		J04- 41	10	N		49		E 12	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 25

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 130	2			50		25	A 31			125		100	A 31 28	72	C1 J1
A 130B	69		TB3-G 9	18	N				SHLD A 130	20	N				
A 130R			J05- 8	10	N		49		TB3-G10	18	N				
A 130Y			J05- 22	10	N		49		TB3-F10	18	N				
A 131	2			50		25	A 31			125		100	A 31 28	30	C1 J1
A 131B	69		TB3-K15	18	N		66		SHLD A 131	20	N				
A 131R			J05- 9	10	N		49		TB3-F16	18	N				
A 131Y			J05- 10	10	N		49		TB3-G16	18	N				
A 132	2			300		275	A 31			125		100	A 31 28	60	C1 J1
A 132B	69		TB3-L 9	18	N		65		SHLD A 132	20	N				
A 132R			J05- 12	10	N	250	49		TB3-L10	18	N		64		
A 132Y			E 18	20	N		27		TB3-L11	18	N		64		
A 133	4		J05- 11	10	N		49		E 18	20	N				
A 134	2			50		25	A 31			125		100	A 31 28	375	C2 J4
A 134B	69		TB3-R15	18	N				SHLD A 134	20	N				
A 134R			J05- 68	10	N		49		TB3-R14	18	N		64		
A 134Y			J05- 67	10	N		49		TB3-R13	18	N		64		
A 135	2			50		25	A 31			125		100	A 31 28	87	C1 J2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 26

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH		FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET				FROM TERMINATION SPEC. 1		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TO TERMINATION SPEC 1		ROUTING
NUMBER	ITEM NO. 2	CIRCUIT POINT 2		T I N	2	ITEM NO.	NO.	CIRCUIT POINT 2		T I N	2	ITEM NO.	NO.	
A 135B	69	TB3-H 9	18	N		66		SHLD A 135	20	N				
A 135R		J05-104	10	N		49		TB3-H 8	18	N		64		
A 135Y		J05- 90	10	N		49		TB3-H 7	18	N		64		
A 136	4	J05- 89	10	N		49		TB3-N18	18	N		64	348	C2 J3
A 137	2		50		25	A 31			125		100	A 31 28	399	C2 J4
A 137B	69	TB3-T 9	18	N				SHLD A 137	20	N				
A 137R		J05-100	10	N		49		TB3-T11	18	N		64		
A 137Y		J05- 86	10	N		49		TB3-T10	18	N		64		
A 138	2		50		25	A 31			125		100	A 31 28	402	C2 J4
A 138B	69	TB3-S 9	18	N				SHLD A 138	20	N				
A 138R		J05-101	10	N		49		TB3-S11	18	N		64		
A 138Y		J05- 87	10	N		49		TB3-S10	18	N		64		
A 139	3		50		25	A 30			125		100	A 30 28	423	C2 J4
A 139B	69	TB3-T 5	18	N		65		SHLD A 139	20	N				
A 139G		J05-108	10	N		49		TB3-T 6	18	N		64		
A 139R		J05- 94	10	N		49		TB3-T 5	18	N				
A 139Y		J05-107	10	N		49		TB3-T 4	18	N		64		
A 144	2		50		25	A 31			125		100	A 31 28	78	C1 J2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 27

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH		FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET				FROM TERMINATION SPEC. 1		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TO TERMINATION SPEC 1		ROUTING
NUMBER	ITEM NO. 2	CIRCUIT POINT 2		T I N	2	ITEM NO.	NO.	CIRCUIT POINT 2		T I N	2	ITEM NO.	NO.	
A 144B	69	TB3-M 9	18	N				SHLD A 144	20	N				
A 144R		J05-106	10	N		49		TB3-M 8	18	N		64		
A 144Y		J05- 92	10	N		49		TB3-M 7	18	N		64		
A 145	71					A 31						A 31	54	C1 J1
A 145G		J05- 31	10	N		49		TB3-D12	18	N		64		
A 145R		J05- 43	10	N		49		TB3-B16	18	N		65		
A 145Y		J05- 32	10	N		49		TB3-C12	18	N		64		
A 146	70					A 32						A 32		
A 146R		J05- 28	10	N		49		E 9	20	N				
A 146Y		J05- 29	10	N		49		E 10	20	N				
A 147	4	J05- 41	10	N		49		E 12	20	N				
A 148	70					A 32						A 32	51	C1 J1
A 148R		J05- 56	10	N		49		TB3-L12	18	N		64		
A 148Y		J05- 66	10	N		49		TB3-K12	18	N		64		
A 149	4	J05- 25	10	N		49		E 18	20	N				
A 150	70					A 32						A 32		
A 150R		J06- 1	10	N		49		P01- 1	10	N		49		
A 150Y		J06- 2	10	N		49		P01- 2	10	N		49		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 28

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH		FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET				FROM TERMINATION SPEC. 1		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TO TERMINATION SPEC 1		ROUTING
NUMBER	ITEM NO. 2	CIRCUIT POINT 2		T I N	2	ITEM NO.	NO.	CIRCUIT POINT 2		T I N	2	ITEM NO.	NO.	
A 151	70					A 32						A 32		
A 151R		J06- 14	10	N		49		P01- 14	10	N		49		
A 151Y		J06- 15	10	N		49		P01- 15	10	N		49		
A 152	70					A 32						A 32		
A 152R		J06- 29	10	N		49		P01- 29	10	N		49		
A 152Y		J06- 28	10	N		49		P01- 28	10	N		49		
A 153	70					A 32						A 32	156	G1 K1
A 153R		J06-108	10	N		49		TB1-S 1	18	N				
A 153Y		J06-107	10	N		49		TB1-S 2	18	N				
A 154	4	J06- 12	10	N		49		TB1-K 7	18	N			111	G1 K2
A 155	2		300		275	A 31			125		100	A 31 28	36	G1 H2
A 155B	69	TB2-D 3	18	N		65		SHLD A 155	20	N				
A 155R		E 55	20	N		27		TB2-F 3	18	N		65		
A 155Y		J06- 68	10	N	250	49		TB2-D 2	18	N		65		
A 156	2		300		275	A 31			100		75	A 31 28	15	C1 J6
A 156B	69	E 44	20	N				SHLD A 156	20	N				
A 156R		E 55	20	N				J21-229	10	N		49		
A 156Y		J06- 69	10	N	250	49		J21-228	10	N		49		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 29

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH		FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET				FROM TERMINATION SPEC. 1		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TO TERMINATION SPEC 1		ROUTING
NUMBER	ITEM NO. 2	CIRCUIT POINT 2		T I N	2	ITEM NO.	NO.	CIRCUIT POINT 2		T I N	2	ITEM NO.	NO.	
A 157	4	J06- 18	10	N		49		P01- 18	10	N		49		
A 158	4	J06- 81	10	N		49		TB1-F 8	18	N			105	G1 K2
A 160	4	J06- 9	10	N		49		P01- 9	10	N		49		
A 161	4	J06- 6	10	N		49		P01- 6	10	N		49		
A 162	4	J06- 34	10	N		49		P01- 34	10	N		49		
A 163	4	J06- 35	10	N		49		P01- 35	10	N		49		
A 164	4	J06- 36	10	N		49		P01- 36	10	N		49		
A 165	4	J06- 23	10	N		49		P01- 23	10	N		49		
A 166	4	J06- 24	10	N		49		TB3-F 4	18	N		65	102	C1 J2
A 167	4	J06- 25	10	N		49		P01- 25	10	N		49		
A 168	4	J06- 93	10	N		49		P01- 93	10	N		49		
A 169	4	J06- 78	10	N		49		TB2-L 4	18	N			15	G1 H2
A 170	4	J06- 56	10	N		49		P01- 56	10	N		49		
A 171	4	J06-104	10	N		49		P01-104	10	N		49		
A 172	4	J06- 92	10	N		49		P01- 92	10	N		49		
A 173	4	J06-105	10	N		49		P01-105	10	N		49		
A 174	4	J06- 94	10	N		49		P01- 94	10	N		49		
A 175	4	J06- 22	10	N		49		P01- 22	10	N		49		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 30

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	FROM TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	TO TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 176	4	J06- 79	10	N		49		P01- 79	10	N		49		
A 177	4	J06- 46	10	N		49		P01- 46	10	N		49		
A 178	4	J06- 91	10	N		49		TB3-B21	18	N			21	C1 J1
A 179	4	J08- 67	10	N		49		TB1-G 1	18	N			165	G1 K1
A 181	4	J08- 66	10	N		49		TB3-H 6	18	N			93	C1 J2
A 182	70					A 32						A 32	48	C1 J1
A 182R		J08- 68	10	N		49		TB3-B13	18	N				
A 182Y		J08- 81	10	N		49		TB3-B12	18	N				
A 183	4	J08-106	10	N		49		TB2-S 6	18	N			357	G2 H3
A 184	4	J08- 78	10	N		49		TB2-S 7	18	N			336	G2 H4
A 185	4	J08- 93	10	N		49		TB2-S 4	18	N			6	G1 H2
A 186	4	J08- 79	10	N		49		TB2-S 5	18	N			387	G2 H3
A 187	4	J08- 51	10	N		49		TB1-H 8	18	N			102	G1 K2
A 188	4	J08- 60	10	N		49		TB3-M 6	18	N			90	C1 J2
A 190	4	J08- 73	10	N		49		TB3-B 5	18	N			99	C1 J2
A 192	4	J08- 62	10	N		49		TB3-D 3	18	N			111	C1 J2
A 193	4	J08- 42	10	N		49		TB1-U 2	18	N			150	G1 K1
A 196	4	J08- 53	10	N		49		J22- 38	10	N		49	306	C2 J5

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 31

MIL 2085-4 64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	FROM TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	TO TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 198	4	J08- 71	10	N		49		TB1-H 6	18	N			123	G1 K2
A 199	4	J08- 95	10	N		49		TB3-B14	18	N			45	C1 J1
A 200	4	J08- 72	10	N		49		TB3-B 3	18	N			117	C1 J2
A 202	4	J08- 18	10	N		49		TB2-S 8	18	N			309	G2 H4
A 203	4	J08- 41	10	N		49		TB3-B 4	18	N			105	C1 J2
A 206	4	J08- 43	10	N		49		J22- 72	10	N		49	312	C2 J5
A 211	4	J08- 92	10	N		49		TB1-S 5	18	N			129	G1 K2
A 215	4	J08- 29	10	N		49		TB3-B21	18	N		65	18	C1 J1
A 216	70					A 32						A 32	396	G2 H3
A 216R		P02-A	20	N		54		TB2-G 4	18	N				
A 216Y		P02-B	20	N		54		TB2-G 5	18	N		64		
A 217	2		100		75	A 31			125		100	A 31 28	402	G2 H3
A 217B	69	TB2-V 3	18	N		64		SHLD A 217	20	N				
A 217R		P02-C	20	N		54		TB2-W 4	18	N		65		
A 217Y		P02-D	20	N		54		TB2-W 3	18	N		64		
A 218	2		100		75	A 31			125		100	A 31 28	405	G2 H3
A 218B	69	TB2-V 2	18	N		65		SHLD A 218	20	N				
A 218R		P02-E	20	N		54		TB2-X 3	18	N		64		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 32

MIL 2085-4 64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	FROM TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	TO TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 218Y		P02-F	20	N		54		TB2-W 2	18	N		65		
A 219	2		100		75	A 31			125		100	A 31 28	381	G2 H3
A 219B	69	TB2-V 5	18	N		65		SHLD A 219	20	N				
A 219R		P02-G	20	N		54		TB2-U 5	18	N		65		
A 219Y		P02-H	20	N		54		TB2-T 5	18	N		64		
A 220	2		100		75	A 31			125		100	A 31 28	354	G2 H4
A 220B	69	TB2-D 7	18	N		65		SHLD A 220	20	N				
A 220R		P02-J	20	N		54		TB2-A 7	18	N		64		
A 220Y		P02-K	20	N		54		TB2-B 7	18	N		65		
A 221	2		100		75	A 31			125		100	A 31 28	327	C2 J3
A 221B	69	E 48	20	N				SHLD A 221	20	N				
A 221R		P02-L	20	N		54		TB3-N20	18	N				
A 221Y		P02-M	20	N		54		TB3-N21	18	N				
A 222	2		100		75	A 31			125		100	A 31 28	393	C2 J4
A 222B	69	TB3-H12	18	N				SHLD A 222	20	N				
A 222R		P02-P	20	N		54		TB3-C14	18	N				
A 222Y		P02-N	20	N		54		TB3-C13	18	N				
A 223	70					A 32						A 32	447	G2 K3

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 33

MIL 2085-4 64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	FROM TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	TO TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 223R		P02-R	20	N		54		TB1-D 2	18	N		64		
A 223Y		P02-S	20	N		54		TB1-C 2	18	N		64		
A 224	2		100		75	A 31			125		100	A 31 28	423	G2 K3
A 224B	69	TB1-D 7	18	N				SHLD A 224	20	N				
A 224R		P02-T	20	N		54		TB1-C 6	18	N				
A 224Y		P02-U	20	N		54		TB1-B 6	18	N				
A 225	2		100		75	A 31			125		100	A 31 28	330	G2 H4
A 225B	69	TB2-V 6	18	N		65		SHLD A 225	20	N				
A 225R		P02-W	20	N		54		TB2-W 6	18	N		65		
A 225Y		P02-X	20	N		54		TB2-X 7	18	N		64		
A 226	2		100		75	A 31			125		100	A 31 28	327	G2 H4
A 226B	69	.32-D 8	18	N				SHLD A 226	20	N				
A 226R		P02-Y	20	N		54		TB2-A 8	18	N		64		
A 226Y		P02-Z	20	N		54		TB2-B 8	18	N		65		
A 227	2		100		75	A 31			125		100	A 31 28	387	C2 J4
A 227B	69	TB3-H14	18	N				SHLD A 227	20	N				
A 227R		P02-A*	20	N		54		TB3-F14	18	N				
A 227Y		P02-B*	20	N		54		TB3-F13	18	N				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 34

MIL 2085-4 64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO						
NUMBER	ITEM NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	ITEM NO.	SPEC	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	ITEM NO.	SPEC	NO.	ROUTING
A 228	2		100	75	A 31			125	100	A 31	28	390	C2 J4
A 228B	69	TB3-H13	18N				SHLD A 228	20N					
A 228R		P02-F*	20N		54		TB3-D13	18N					
A 228Y		P02-G*	20N		54		TB3-D14	18N					
A 229	1		100	75	A 32			125	100	A 32	27	420	G2 K3
A 229B	69	TB1-D 7	18N		66		SHLD A 229	20N					
A 229Y		P03-A	20N		54		TB1-C 7	18N					
A 230	1		100	75	A 32			125	100	A 32	27	414	G2 K3
A 230B	69	TB1-D 8	18N		64		SHLD A 230	20N					
A 230Y		P03-B	20N		54		TB1-C 8	18N					
A 231	72				A 31					A 31		417	G2 K3
A 231G		P03-U	20N		54		TB1-B 8	18N					
A 231N		P03-W	20N		54		TB1-A 7	18N					
A 231R		P03-C	20N		54		TB1-A 8	18N					
A 231Y		P03-V	20N		54		TB1-B 7	18N					
A 232	2		100	75	A 31			125	100	A 31	28	315	G2 H4
A 232B	69	TB2-M 8	18N				SHLD A 232	20N					
A 232R		P03-D	20N		54		TB2-N 8	18N					

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 35

MIL 2065-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO						
NUMBER	ITEM NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	ITEM NO.	SPEC	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	ITEM NO.	SPEC	NO.	ROUTING
A 232Y		P03-E	20N		54		TB2-N 7	18N					
A 233	2		100	75	A 31			125	100	A 31	28	303	G2 H4
A 233B	69	TB2-V 8	18N				SHLD A 233	20N					
A 233R		P03-F	20N		54		TB2-U 8	18N					
A 233Y		P03-G	20N		54		TB2-U 7	18N					
A 234	2		100	75	A 31			125	100	A 31	28	429	G2 K3
A 234B	69	TB1-B 5	18N		65		SHLD A 234	20N					
A 234R		P03-J	20N		54		TB1-B 5	18N					
A 234Y		P03-H	20N		54		TB1-C 5	18N		64			
A 235	2		100	75	A 31			125	100	A 31	28	426	G2 K3
A 235B	69	TB1-A 6	18N		65		SHLD A 235	20N					
A 235R		P03-K	20N		54		TB1-A 6	18N					
A 235Y		P03-L	20N		54		TB1-A 5	18N		64			
A 236	2		100	75	A 31			125	100	A 31	28	429	C2 J4
A 236B	69	TB3-S 3	18N		65		SHLD A 236	20N					
A 236R		P03-N	20N		54		TB3-R 4	18N		64			
A 236Y		P03-M	20N		54		TB3-R 5	18N		64			
A 237	2		100	75	A 31			125	100	A 31	28	384	C2 J4

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 36

MIL 2065-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO						
NUMBER	ITEM NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	ITEM NO	SPEC	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	ITEM NO.	SPEC	NO.	ROUTING
A 237B	69	TB3-T 3	18N				SHLD A 237	20N					
A 237R		P03-R	20N		54		TB3-M14	18N		64			
A 237Y		P03-P	20N		54		TB3-M13	18N		64			
A 238	70				A 32					A 32		450	G2 K3
A 238R		P03-X	20N		54		TB1-B 2	18N					
A 238Y		P03-Y	20N		54		TB1-A 2	18N					
A 239	70				A 32					A 32		441	G2 K3
A 239R		P03-Z	20N		54		TB1-A 4	18N					
A 239Y		P03-A*	20N		54		TB1-A 3	18N					
A 240	70				A 32					A 32		438	G2 K3
A 240R		P03-B*	20N		54		TB1-A 3	18N					
A 240Y		P03-C*	20N		54		TB1-A 4	18N					
A 241	70				A 32					A 32		435	G2 K3
A 241R		P03-D*	20N		54		TB1-D 3	18N					
A 241Y		P03-E*	20N		54		TB1-D 4	18N					
A 242	70				A 32					A 32		432	G2 K3
A 242R		P03-F*	20N		54		TB1-D 4	18N					
A 242Y		P03-G*	20N		54		TB1-D 3	18N					

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 37

MIL 2065-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO						
NUMBER	ITEM NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	ITEM NO.	SPEC	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	ITEM NO.	SPEC	NO.	ROUTING
A 243	4	P03-J*	20N		54		TB3-F 5	18N				432	C2 J4
A 244	4	P03-H*	20N		54		TB3-T20	18N				342	C2 J3
A 246	71				A 31					A 31		357	C2 J3
A 246G		P05-J*	20N		52		TB3-D16	18N		64			
A 246R		P05-P	20N		52		TB3-C18	18N					
A 246Y		P05-I*	20N		52		TB3-D17	18N		64			
A 247	70				A 32					A 32			
A 247R		P05-K	20N		52		P05-CC	20N		52			
A 247Y		P05-J	20N		52		P05-DD	20N		52			
A 248	2		150	125	A 31			125	100	A 31	28	420	C2 J4
A 248B	69	TB3-R 9	18N				SHLD A 248	20N					
A 248R		P05-P*	20N		52		TB3-R 8	18N		64			
A 248Y		P05-N*	20N		52		TB3-R 7	18N		64			
A 249	4	P05-S	20N		52		TB3-K21	18N				333	C2 J3
A 250	4	P05-T	20N		52		TB3-K21	18N		65		336	C2 J3
A 251	70				A 32					A 32			
A 251R		P05-EE	20N		52		P04-D1	10N		78			
A 251Y		P05-FF	20N		52		P04-D2	10N		78			

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 38

MIL 2065-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					
NUMBER	ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 252	2		150	125	A 31			125	100	A 31 28	414	C2 J4
A 252B	69	TB3-T 9	18N		65		SHLD A 252	20N				
A 252R		P05-Z	20N		52		TB3-T 8	18N		64		
A 252Y		P05-Y	20N		52		TB3-T 7	18N		64		
A 253	2		150	125	A 31			125	100	A 31 28	417	C2 J4
A 253B	69	TB3-S 9	18N		65		SHLD A 253	20N				
A 253R		P05-A*	20N		52		TB3-S 8	18N		64		
A 253Y		P05-B*	20N		52		TB3-S 7	18N		64		
A 254	2		150	125	A 31			125	100	A 31 28	366	C2 J3
A 254B	69	TB3-M15	18N				SHLD A 254	20N				
A 254R		P05-C*	20N		52		TB3-M16	18N		64		
A 254Y		P05-D*	20N		52		TB3-M17	18N		64		
A 255	2		150	125	A 31			125	100	A 31 28	372	C2 J3
A 255B	69	TB3-H15	18N				SHLD A 255	20N				
A 255R		P05-F*	20N		52		TB3-G16	18N		65		
A 255Y		P05-E*	20N		52		TB3-F16	18N		65		
A 256	2		150	125	A 31			125	100	A 31 28	411	C2 J4
A 256B	69	TB3-G 9	18N		65		SHLD A 256	20N				

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 39

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					
NUMBER	ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 256R		P05-G*	20N		52		TB3-G10	18N		65		
A 256Y		P05-H*	20N		52		TB3-F10	18N		65		
A 257	2		150	125	A 31			125	100	A 31 28	360	C2 J3
A 257B	69	TB3-S15	18N				SHLD A 257	20N				
A 257R		P05-K*	20N		52		TB3-T16	18N		64		
A 257Y		P05-M*	20N		52		TB3-T17	18N		64		
A 258	2		150	125	A 31			125	100	A 31 28	405	C2 J4
A 258B	69	TB3-R 9	18N		65		SHLD A 258	20N				
A 258R		P05-Q*	20N		52		TB3-R10	18N		64		
A 258Y		P05-R*	20N		52		TB3-R11	18N		64		
A 259	71				A 31					A 31	354	C2 J3
A 259G		P05-C	20N		52		TB3-F18	18N		64		
A 259R		P05-B	20N		52		TB3-C18	18N		65		
A 259Y		P05-A	20N		52		TB3-D18	18N		64		
A 260	2		150	125	A 31			125	100	A 31 28	363	C2 J3
A 260B	69	TB3-S15	18N				SHLD A 260	20N				
A 260R		P05-U*	20N		52		TB3-S17	18N		64		
A 260Y		P05-V*	20N		52		TB3-S16	18N		64		

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 40

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					
NUMBER	ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 261	2		150	125	A 31			125	100	A 31 28	378	C2 J4
A 261B	69	TB3-R15	18N				SHLD A 261	20N				
A 261R		P05-W*	20N		52		TB3-N13	18N				
A 261Y		P05-X*	20N		52		TB3-N14	18N				
A 262	2		150	125	A 31			125	100	A 31 28	408	C2 J4
A 262B	69	TB3-K 9	18N				SHLD A 262	20N				
A 262R		P05-Y*	20N		52		TB3-K10	18N				
A 262Y		P05-Z*	20N		52		TB3-K11	18N				
A 263	2		150	125	A 31			125	100	A 31 28	369	C2 J3
A 263B	69	TB3-H15	18N				SHLD A 263	20N				
A 263R		P05-HH	20N		52		TB3-H16	18N		64		
A 263Y		P05-BB	20N		52		TB3-H17	18N		64		
A 264	4	P05-AA	20N		52		TB3-S18	18N		64	345	C2 J3
A 265	70				A 32					A 32	411	G2 H3
A 265R		P05-CC	20N				TB2-K 2	18N				
A 265Y		P05-DD	20N				TB2-L 2	18N				
A 266	70				A 32					A 32	444	G2 K3
A 266R		P05-L	20N		52		TB1-T 1	18N				

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 41

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					
NUMBER	ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 266Y		P05-M	20N		52		TB1-T 2	18N				
A 267	70				A 32					A 32		
A 267R		P05-X	20N		52		P04-F2	10N		78		
A 267Y		P05-W	20N		52		P04-F1	10N		78		
A 268	70				A 32					A 32		
A 268R		P05-J	20N				P04-E2	10N		78		
A 268Y		P05-K	20N				P04-E1	10N		78		
A 270	4	P05-R	20N		52		TB3-F21	18N			339	C2 J3
A 271	71				A 31					A 31	495	E2 D4
A 271G		P06-C	20N		54		TB1-G 2	18N				
A 271R		P06-A	20N		54		TB1-H 3	18N				
A 271Y		P06-B	20N		54		TB1-H 2	18N				
A 272	4	P06-F	20N		54		TB1-D 5	18N		65		
A 273	70				A 32					A 32	501	E2 D4
A 273R		P06-H	20N		54		TB1-A 2	18N				
A 273Y		P06-J	20N		54		TB1-B 2	18N				
A 274	4	P06-K	20N		54		TB3-G 5	18N		64	360	E2 L2
A 275	70				A 32					A 32	369	E2 L2

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 42

MIL 2085-4-64 WIR

WIRE HARNESS A

Conductor Number	Individual Length Item No.	From Circuit Point	From Cut Wire or Shield / Strip Wire or Jacket	From T I N		From Termination Spec Item No.	From No.	To Circuit Point	To Cut Wire or Shield / Strip Wire or Jacket	To T I N		To Termination Spec Item No.		To No.	Routing
A 275R		P06-M	20	N		54		TB3-L 4	18	N		64			
A 275Y		P06-L	20	N		54		TB3-L 3	18	N		64			
A 276	4	P06-N	20	N		54		TB3-R 6	18	N				318	E2 L4
A 277	4	P06-Y	20	N		54		TB3-N 6	18	N				321	E2 L4
A 278	2		.100		75	A 31			125		100	A 31	28	345	E2 L4
A 278B	69	TB3-R 3	18	N				SHLD A 278	20	N					
A 278R		P06-V	20	N		54		TB3-N 5	18	N		64			
A 278Y		P06-W	20	N		54		TB3-N 4	18	N		64			
A 279	2		100		75	A 31			125		100	A 31	28	378	E2 L2
→ A 279B	69	TB3-N 3	18	N		66		SHLD A 279	20	N					
A 279R		P06-X	20	N		54		TB3-N 1	18	N		64			
A 279Y		P06-R	20	N		54		TB3-N 2	18	N		64			
A 280	4	P06-Z	20	N		54		TB3-H 4	18	N		64		372	E2 L2
A 281	70					A 32						A 32		72	E1 L1
A 281R		P06-F*	20	N		54		TB3-C 2	18	N		64			
A 281Y		P06-G*	20	N		54		TB3-C 3	18	N					
A 282	70					A 32						A 32		462	F2 L5
A 282R		P06-B*	20	N		54		TB3-L13	18	N		64			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 43

MIL 2085-4-64 WIR

WIRE HARNESS A

Conductor Number	Individual Length Item No.	From Circuit Point	From Cut Wire or Shield / Strip Wire or Jacket	From T I N		From Termination Spec Item No.	From No.	To Circuit Point	To Cut Wire or Shield / Strip Wire or Jacket	To T I N		To Termination Spec Item No.		To No.	Routing
A 282Y		P06-C*	20	N		54		TB3-K13	18	N		64			
A 283	70					A 32						A 32		396	F2 L9
A 283R		P06-D*	20	N		54		TB3-K19	18	N					
A 283Y		P06-E*	20	N		54		TB3-H19	18	N					
A 284	4	P06-D	20	N		54		TB3-T20	18	N		65		366	F2 L9
A 285	4	P06-P	20	N		54		TB3-M 1	18	N		64		381	E2 L2
A 286	4	P06-A*	20	N		54		TB3-K 3	18	N		64		375	E2 L2
A 287	4	P06-E	20	N		54		TB2-D 4	18	N				408	E2 D6
A 288	4	P06-G	20	N		54		TB3-F21	18	N				363	F2 L9
→ A 289	6		125		100	A 30			125		100	A 30	28	417	E2 D3
A 289B	69	TB1-S 8	18	N		64		SHLD A 289	20	N					
A 289L		P07-C	40	N		54		TB1-U 8	18	N		64			
A 289R		P07-A	40	N		54		TB1-T 8	18	N		64			
A 289W		P07-B	40	N		54		TB1-U 7	18	N		64			
A 290	6		125		100	A 30			125		100	A 30	28	420	E2 D3
A 290B	69	TB1-N 8	18	N		66		SHLD A 290	20	N					
A 290L		P07-F	40	N		54		TB1-L 7	18	N		64			
A 290R		P07-D	40	N		54		TB1-M 8	18	N		64			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 44

MIL 2085-4-64 WIR

WIRE HARNESS A

Conductor Number	Individual Length Item No.	From Circuit Point	From Cut Wire or Shield / Strip Wire or Jacket	From T I N		From Termination Spec Item No.	From No.	To Circuit Point	To Cut Wire or Shield / Strip Wire or Jacket	To T I N		To Termination Spec Item No.		To No.	Routing
A 290W		P07-E	40	N		54		TB1-L 8	18	N		64			
A 291	6		125		100	A 30			125		100	A 30	28	453	E2 D3
A 291B	69	TB1-S 6	18	N		65		SHLD A 291	20	N					
A 291L		P07-J	40	N		54		TB1-U 6	18	N		64			
A 291R		P07-G	40	N		54		TB1-T 6	18	N		64			
A 291W		P07-H	40	N		54		TB1-U 5	18	N		64			
A 292	6		125		100	A 30			125		100	A 30	28	483	E2 D4
A 292B	69	TB1-S 3	18	N		65		SHLD A 292	20	N					
A 292L		P07-M	40	N		54		TB1-U 3	18	N		64			
→ A 292R		P07-K	40	N		54		TB1-U 4	18	N		64			
A 292W		P07-L	40	N		54		TB1-T 3	18	N		64			
A 293	6		125		100	A 30			125		100	A 30	28	486	E2 D4
A 293B	69	TB1-N 4	18	N				SHLD A 293	20	N					
A 293L		P07-R	40	N		54		TB1-M 4	18	N		64			
A 293R		P07-N	40	N		54		TB1-L 4	18	N		64			
A 293W		P07-P	40	N		54		TB1-L 3	18	N		64			
A 294	6		125		100	A 30			125		100	A 30	28	456	E2 D3
A 294B	69	TB1-N 5	18	N				SHLD A 294	20	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 45

MIL 2085-4-64 WIR

WIRE HARNESS A

Conductor Number	Individual Length Item No.	From Circuit Point	From Cut Wire or Shield / Strip Wire or Jacket	From T I N		From Termination Spec Item No.	From No.	To Circuit Point	To Cut Wire or Shield / Strip Wire or Jacket	To T I N		To Termination Spec Item No.		To No.	Routing
A 294L		P07-W	40	N		54		TB1-L 5	18	N		64			
A 294R		P07-U	40	N		54		TB1-M 5	18	N		64			
A 294W		P07-V	40	N		54		TB1-L 6	18	N		64			
A 295	70					A 32						A 32		438	E2 D3
A 295R		P07-X	20	N		54		TB1-M 7	18	N		64			
A 295Y		P07-Y	20	N		54		TB1-M 6	18	N		64			
A 296	70					A 32						A 32		492	E2 D4
A 296R		P07-Z	20	N		54		TB1-M 3	18	N		64			
A 296Y		P07-A*	20	N		54		TB1-N 2	18	N		64			
→ A 297	70					A 32						A 32		465	E2 D4
A 297R		P07-B*	20	N		54		TB1-T 5	18	N		64			
A 297Y		P07-C*	20	N		54		TB1-T 4	18	N		64			
A 298	72					A 31						A 31		489	E2 D4
A 298G		P07-G*	20	N		54		TB1-B 4	18	N		64			
A 298N		P07-H*	20	N		54		TB1-C 4	18	N		64			
A 298R		P07-F*	20	N		54		TB1-C 3	18	N		64			
A 298Y		P07-J*	20	N		54		TB1-B 3	18	N		64			
A 299	70					A 32						A 32		411	E2 D6

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 46

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 299R			P08-A	20	N		52		TB2-U 3	18	N				
A 299Y			P08-B	20	N		52		TB2-T 2	18	N				
A 300	71						A 31						A 31	402	F2 L9
A 300G			P08-G	20	N		52		TB3-C16	18	N				
A 300R			P08-F	20	N		52		TB3-C19	18	N				
A 300Y			P08-E	20	N		52		TB3-C17	18	N				
A 301	70						A 32						A 32	414	E2 D6
A 301R			P08-J	20	N		52		TB2-K 2	18	N		65		
A 301Y			P08-K	20	N		52		TB2-L 2	18	N		65		
A 302	2			150		125	A 31			125		100	A 31 28	417	F2 L7
A 302B	69		TB3-S15	18	N		66		SHLD A 302	20	N				
A 302R			P08-N	20	N		52		TB3-R17	18	N		64		
A 302Y			P08-P	20	N		52		TB3-R16	18	N		64		
A 303	4		P08-R	20	N		52		TB3-K15	18	N			435	F2 L7
A 304	2			150		125	A 31			125		100	A 31 28	426	F2 L7
A 304B	69		TB3-H15	18	N		66		SHLD A 304	20	N				
A 304R			P08-T	20	N		52		TB3-K17	18	N		64		
A 304Y			P08-S	20	N		52		TB3-K16	18	N		64		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 47

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 305	4		P08-U	20	N		52		TB3-R18	18	N		64	408	F2 L7
A 306	2			150		125	A 31			125		100	A 31 28	441	F2 L5
A 306B	69		TB3-T15	18	N				SHLD A 306	20	N				
A 306R			P08-V	20	N		52		TB3-S13	18	N		64		
A 306Y			P08-W	20	N		52		TB3-S14	18	N		64		
A 307	2			150		125	A 31			125		100	A 31 28	438	F2 L5
A 307B	69		TB3-T15	18	N		66		SHLD A 307	20	N				
A 307R			P08-X	20	N		52		TB3-T14	18	N		64		
A 307Y			P08-Y	20	N		52		TB3-T13	18	N		64		
A 308	71						A 31						A 31	399	F2 L9
A 308G			P08-D*	20	N		52		TB3-F17	18	N				
A 308R			P08-H	20	N		52		TB3-C19	18	N		65		
A 308Y			P08-C*	20	N		52		TB3-G17	18	N				
A 309	2			150		125	A 31			125		100	A 31 28	420	F2 L7
A 309B	69		TB3-M15	18	N				SHLD A 309	20	N				
A 309R			P08-E*	20	N		52		TB3-N16	18	N		64		
A 309Y			P08-F*	20	N		52		TB3-N17	18	N		64		
A 310	2			150		125	A 31			125		100	A 31 28	423	F2 L7

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 48

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 310B	69		TB3-M15	18	N		66		SHLD A 310	20	N				
A 310R			P08-G*	20	N		52		TB3-L16	18	N		64		
A 310Y			P08-I*	20	N		52		TB3-L17	18	N		64		
A 311	4		P08-H*	20	N		52		TB3-T18	18	N		64	405	F2 L7
A 312	2			150		125	A 31			125		100	A 31 28	306	E2 L4
A 312B	69		TB3-K 9	18	N		66		SHLD A 312	20	N				
A 312R			P08-K*	20	N		52		TB3-K11	18	N		66		
A 312Y			P08-J*	20	N		52		TB3-K10	18	N		66		
A 313	2			150		125	A 31			125		100	A 31 28	444	F2 L5
A 313B	69		TB3-R15	18	N		66		SHLD A 313	20	N				
A 313R			P08-N*	20	N		52		TB3-N14	18	N		66		
A 313Y			P08-M*	20	N		52		TB3-N13	18	N		66		
A 314	70						A 32						A 32	498	E2 D4
A 314R			P08-R*	20	N		52		TB1-T 1	18	N				
A 314Y			P08-S*	20	N		52		TB1-T 2	18	N				
A 315	4		P08-B*	20	N		52		TB3-K15	18	N			432	F2 L7
A 316	4		P08-T*	20	N		52		TB3-F22	18	N			351	F2 L9
A 318	70						A 32						A 32	147	F1 L6

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 49

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 318R			P09- 9	10	N		49		TB3-B18	18	N		64		
A 318Y			P09- 8	10	N		49		TB3-B19	18	N		64		
A 319	71						A 31						A 31	174	E1 D2
A 319G			P09- 78	10	N		49		TB1-H 2	18	N		65		
A 319R			P09- 67	10	N		49		TB1-G 2	18	N		65		
A 319Y			P09- 79	10	N		49		TB1-H 3	18	N		65		
A 320	70						A 32						A 32	69	E1 L1
A 320R			P09- 22	10	N		49		TB3-D 2	18	N				
A 320Y			P09- 34	10	N		49		TB3-C 3	18	N				
A 321	70						A 32						A 32	141	E1 D5
A 321R			P09- 45	10	N		49		TB2-K 1	18	N				
A 321Y			P09- 55	10	N		49		TB2-L 1	18	N				
A 322	70						A 32						A 32	120	E1 D5
A 322R			P09- 56	10	N		49		TB2-U 3	18	N				
A 322Y			P09- 57	10	N		49		TB2-T 3	18	N				
A 323	70						A 32						A 32	462	E2 D4
A 323R			P09- 59	10	N		49		TB1-C 6	18	N		65		
A 323Y			P09- 58	10	N		49		TB1-B 6	18	N		65		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 50

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC. 1		CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	2	ITEM NO.	NO.	CIRCUIT POINT	2	T I N	2	ITEM NO.	NO.	
A 324	70						A 32						A 32	159	E1 D1
A 324R			P09- 69	10	N		49		TB1-H 4	18	N				
A 324Y			P09- 81	10	N		49		TB1-G 4	18	N				
A 325	70						A 32						A 32	444	E2 D3
A 325R			P09- 68	10	N		49		TB1-H 7	18	N				
A 325Y			P09- 80	10	N		49		TB1-G 7	18	N				
A 328	4		P09- 65	10	N		49		TB3-H20	18	N		64	120	F1 L6
A 329	4		P09- 66	10	N		49		TB3-L21	18	N			360	F2 L9
A 330	4		P09- 4	10	N		49		TB3-R20	18	N		64	372	F2 L9
A 331	4		P09- 18	10	N		49		TB3-N19	18	N			384	F2 L9
A 332	4		P09- 13	10	N		49		TB1-H 6	18	N		65	459	E2 D3
A 336	4		P09- 12	10	N		49		TB1-H 8	18	N		65	426	E2 D3
A 342	4		P09- 10	10	N		49		TB3-F 5	18	N			366	E2 L2
A 344	4		P09- 11	10	N		49		TB3-D 3	18	N		65	66	E1 L1
A 345	4		P09- 46	10	N		49		TB1-U 2	18	N		66	177	E1 D2
A 349	4		P09- 33	10	N		49		TB1-L 2	18	N		64	186	E1 D2
A 350	4		P09- 43	10	N		49		TB1-M 2	18	N		64	183	E1 D2
A 351	4		P09- 44	10	N		49		TB1-T 7	18	N		64	435	E2 D3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 51

MIL 2089-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC. 1		CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	2	ITEM NO.	NO.	CIRCUIT POINT	2	T I N	2	ITEM NO.	NO.	
A 352	70						A 32						A 32	162	E1 D1
A 352R			P09- 93	10	N		49		TB1-D 4	18	N		66		
A 352Y			P09-106	10	N		49		TB1-D 3	18	N		66		
A 353	70						A 32						A 32	165	E1 D1
A 353R			P09-107	10	N		49		TB1-A 3	18	N		66		
A 353Y			P09-108	10	N		49		TB1-A 4	18	N		66		
A 354	70						A 32						A 32	189	E1 D2
A 354R			P09- 94	10	N		49		TB1-B 2	18	N		66		
A 354Y			P09- 95	10	N		49		TB1-A 2	18	N		66		
A 355	2			50		25	A 31			125		100	A 31 28	453	F2 L5
A 355B	69		TB3-H13	18	N		66		SHLD A 355	20	N				
A 355R			P09- 1	10	N		49		TB3-D13	18	N		66		
A 355Y			P09- 14	10	N		49		TB3-D14	18	N		66		
A 356	2			50		25	A 31			125		100	A 31 28	450	F2 L5
A 356B	69		TB3-H14	18	N		66		SHLD A 356	20	N				
A 356R			P09- 2	10	N		49		TB3-F13	18	N		66		
A 356Y			P09- 3	10	N		49		TB3-F14	18	N		66		
A 357	2			50		25	A 31			125		100	A 31 28	456	F2 L5

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 52

MIL 2089-4-64 WIR

WIRE HARNESS' A

CONDUCTOR			FROM						TO						ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC. 1		CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	2	ITEM NO.	NO.	CIRCUIT POINT	2	T I N	2	ITEM NO.	NO.	
A 357B	69		TB3-H12	18	N		66		SHLD A 357	20	N				
A 357R			P09- 15	10	N		49		TB3-C13	18	N		66		
A 357Y			P09- 29	10	N		49		TB3-C14	18	N		66		
A 358	2			50		25	A 31			125		100	A 31 28	357	F2 L9
A 358B	69		E 48	20	N				SHLD A 358	20	N				
A 358R			P09- 28	10	N		49		TB3-N20	18	N		66		
A 358Y			P09- 40	10	N		49		TB3-N21	18	N		66		
A 359	2			50		25	A 31			125		100	A 31 28	384	E2 D6
A 359B	69		TB2-V 8	18	N		66		SHLD A 359	20	N				
A 359R			P09- 16	10	N		49		TB2-U 7	18	N		65		
A 359Y			P09- 17	10	N		49		TB2-U 8	18	N		66		
A 360	2			50		25	A 31			125		100	A 31 28	390	E2 D6
A 360B	69		TB2-M 8	18	N		66		SHLD A 360	20	N				
A 360R			P09- 30	10	N		49		TB2-N 8	18	N		65		
A 360Y			P09- 31	10	N		49		TB2-N 7	18	N		66		
A 361	4		P09- 41	10	N		49		TB1-C 8	18	N		65	432	E2 D3
A 362	4		P09- 52	10	N		49		TB1-C 7	18	N		65	447	E2 D3
A 363	72						A 31						A 31	450	E2 D3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 53

MIL 2089-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC. 1		CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	2	ITEM NO.	NO.	CIRCUIT POINT	2	T I N	2	ITEM NO.	NO.	
A 363G			P09- 61	10	N		49		TB1-B 8	18	N		65		
A 363N			P09- 51	10	N		49		TB1-B 7	18	N		65		
A 363R			P09- 60	10	N		49		TB1-A 7	18	N		65		
A 363Y			P09- 50	10	N		49		TB1-A 8	18	N		65		
A 364	2			50		25	A 31			125		100	A 31 28	129	E1 D5
A 364B	69		TB2-F 2	18	N		66		SHLD A 364	20	N				
A 364R			P09- 96	10	N		49		TB2-H 2	18	N		66		
A 364Y			P09- 82	10	N		49		TB2-G 2	18	N		66		
A 365	2			50		25	A 31			125		100	A 31 28	396	E2 D6
A 365B	69		TB2-F 7	18	N		66		SHLD A 365	20	N				
A 365R			P09- 70	10	N		49		TB2-H 7	18	N		66		
A 365Y			P09- 71	10	N		49		TB2-G 7	18	N		66		
A 366	2			50		25	A 31			125		100	A 31 28	126	E1 D5
A 366B	69		TB2-S 2	18	N		66		SHLD A 366	20	N				
A 366R			P09- 72	10	N		49		TB2-N 2	18	N		66		
A 366Y			P09- 83	10	N		49		TB2-R 2	18	N		66		
A 367	4		P09- 98	10	N		49		TB3-D 4	18	N		64	39	E1 L1
A 368	4		P09- 85	10	N		49		TB3-C 5	18	N		64	24	E1 L3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 54

MIL 2089-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 369	4		P09- 97	10	N		49		TB3-D 5	18	N		64	21	E1 L3
A 370	4		P09- 73	10	N		49		TB3-C 4	18	N		64	42	E1 L1
A 371	71						A 31						A 31	144	F1 L6
A 371G			P09- 64	10	N		49		TB3-G19	18	N		64		
A 371R			P09- 74	10	N		49		TB3-F19	18	N		64		
A 371Y			P09- 75	10	N		49		TB3-D19	18	N		64		
A 376	70						A 32						A 32	156	F1 L6
A 376R			P09- 91	10	N		49		TB3-C17	18	N		65		
A 376Y			P09- 92	10	N		49		TB3-C16	18	N		65		
A 378	70						A 32						A 32	153	F1 L6
A 378R			P09- 76	10	N		49		TB3-G17	18	N		65		
A 378Y			P09- 77	10	N		49		TB3-F17	18	N		65		
A 379	70						A 32						A 32	393	F2 L9
A 379R			P09- 42	10	N		49		TB3-K19	18	N		65		
A 379Y			P09- 53	10	N		49		TB3-H19	18	N		65		
A 380	4		P09- 62	10	N		49		TB3-L19	18	N		64	390	F2 L9
A 381	4		P09- 54	10	N		49		TB3-M19	18	N		64	387	F2 L9
A 382	4		P09- 63	10	N		49		TB3-N19	18	N		65	381	F2 L9

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 55

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 384	4		P09- 84	10	N		49		TB3-D 6	18	N		64	18	E1 L3
A 385	4		P09- 32	10	N		49		TB2-F 4	18	N		64	114	E1 D5
A 386	70						A 32						A 32	369	F2 L9
A 386R			P09- 21	10	N		49		TB3-S20	18	N		64		
A 386Y			P09- 7	10	N		49		TB3-R19	18	N		64		
A 387	71						A 31						A 31	30	F1 M1
A 387G			J09- 5	10	N		49		J22-232	10	N		49		
A 387R			J09- 18	10	N		49		J22-195	10	N		49		
A 387Y			J09- 4	10	N		49		J22-233	10	N		49		
A 388	71						A 31						A 31	33	F1 M1
A 388G			J09- 6	10	N		49		J22-197	10	N		49		
A 388R			J09- 7	10	N		49		J22-235	10	N		49		
A 388Y			J09- 20	10	N		49		J22-198	10	N		49		
A 389	71						A 31						A 31	36	F1 M1
A 389G			J09- 17	10	N		49		J22-192	10	N		49		
A 389R			J09- 16	10	N		49		J22-230	10	N		49		
A 389Y			J09- 3	10	N		49		J22-193	10	N		49		
A 390	4		J09- 73	10	N		49		TB3-F 3	18	N			63	E1 L1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 56

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 393	71						A 31						A 31	39	F1 M1
A 393G			J09- 50	10	N		49		J22-238	10	N		49		
A 393R			J09- 41	10	N		49		J22-237	10	N		49		
A 393Y			J09- 40	10	N		49		J22-200	10	N		49		
A 394	4		J09- 72	10	N		49		TB3-B11	18	N		64	3	E1 L3
A 395	4		J09- 97	10	N		49		TB3-R 6	18	N		65	315	E2 L4
A 396	4		J09- 98	10	N		49		TB3-C 1	18	N		64	99	E1 L1
A 397	4		J09-104	10	N		49		TB3-M 4	18	N		64	33	E1 L1
A 398	4		J09- 86	10	N		49		TB3-L 1	18	N		64	84	E1 L1
A 399	4		J09-102	10	N		49		TB3-H 3	18	N		64	54	E1 L1
A 400	4		J09- 76	10	N		49		TB3-L 5	18	N		64	351	E2 L2
A 401	72						A 31						A 31	78	E1 L1
A 401G			J09- 87	10	N		49		TB3-H 1	18	N		64		
A 401N			J09- 88	10	N		49		TB3-G 2	18	N		64		
A 401R			J09-100	10	N		49		TB3-G 1	18	N		64		
A 401Y			J09-101	10	N		49		TB3-H 2	18	N		64		
A 402	4		J09- 90	10	N		49		TB3-N 6	18	N		65	324	E2 L4
A 403	4		J09- 74	10	N		49		TB3-H 5	18	N		64	357	E2 L2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 57

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 404	4		J09- 59	10	N		49		TB3-G18	18	N		64	150	F1 L6
A 405	4		J09- 58	10	N		49		TB3-K18	18	N		64	414	F2 L7
A 408	4		J09- 66	10	N		49		TB3-H 6	18	N		65	336	E2 L4
A 409	70						A 32						A 32	465	F2 L5
A 409R			J09- 68	10	N		49		TB3-B13	18	N		65		
A 409Y			J09- 81	10	N		49		TB3-B12	18	N		65		
A 410	4		J09- 67	10	N		49		TB1-G 1	18	N		65	195	E1 D2
A 411	4		J09- 93	10	N		49		TB2-S 4	18	N		65	108	E1 D5
A 412	4		J09- 79	10	N		49		TB2-S 5	18	N		65	405	E2 D6
A 413	4		J09-106	10	N		49		TB2-S 6	18	N		65	399	E2 D6
A 414	4		J09- 78	10	N		49		TB2-S 7	18	N		65	393	E2 D6
A 415	4		J09- 42	10	N		49		E 56	20	N		27		
A 416	70						A 32						A 32	138	E1 D5
A 416R			J09- 80	10	N		49		TB2-K 1	18	N				
A 416Y			J09- 69	10	N		49		TB2-L 1	18	N				
A 420	4		J09- 36	10	N		49		E 56	20	N				
A 425	3			50		25	A 30						A 30 28	303	E2 L4
A 425B	69		TB3-M 9	18	N		65		SHLD A 425	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 58

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC. 1	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC 1	NO.	ROUTING
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	2	ITEM NO.		CIRCUIT POINT	2	TIN	2	ITEM NO.		
A 425G			J09- 24	10	N		49		TB3-M12	18	N		64		
A 425R			J09- 10	10	N		49		TB3-M10	18	N		64		
A 425Y			J09- 23	10	N		49		TB3-M11	18	N		64		
A 426	2			50		25	A 31			125		100	A 31 28	468	F2 L5
A 426B	69		TB3-G12	18	N		65		SHLD A 426	20	N				
A 426R			J09- 19	10	N		49		TB3-G11	18	N		64		
A 426Y			J09- 33	10	N		49		TB3-G12	18	N				
A 427	2			50		25	A 31			125		100	A 31 28	471	F2 L5
A 427B	69		TB3-F12	18	N		65		SHLD A 427	20	N				
A 427R			J09- 35	10	N		49		TB3-F11	18	N		64		
A 427Y			J09- 34	10	N		49		TB3-F12	18	N				
A 428	4		J09- 99	10	N		49		TB3-L18	18	N		64	411	F2 L7
A 429	4		J09- 1	10	N		49		TB3-L22	18	N			348	F2 L9
A 431	70						A 32						A 32	132	E1 D5
A 431R			J09- 32	10	N		49		TB2-A 2	18	N		65		
A 431Y			J09- 44	10	N		49		TB2-A 1	18	N		65		
A 433	2			300		275	A 31			100		75	A 31 28	306	F2 N4
A 433B	69		E 44	20	N				SHLD A 433	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE | REV LTR + | SHEET 59

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC. 1	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC 1	NO.	ROUTING
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	2	ITEM NO.		CIRCUIT POINT	2	TIN	2	ITEM NO.		
A 433R			E 58	20	N		28		J21- 87	10	N		49		
A 433Y			J09- 30	10	N	250	49		J21- 86	10	N		49		
A 434	2			300		275	A 31			100		75	A 31 28	309	F2 N4
A 434B	69		E 44	20	N				SHLD A 434	20	N				
A 434R			E 58	20	N				J21- 89	10	N		49		
A 434Y			J09- 31	10	N	250	49		J21- 88	10	N		49		
A 435	4		J09- 51	10	N		49		TB3-M22	18	N			345	F2 L9
A 436	4		J09- 83	10	N		49		TB3-L15	18	N		64	429	F2 L7
A 437	2			300		275	A 31			100		75	A 31 28	312	F2 N4
A 437B	69		E 44	20	N				SHLD A 437	20	N				
A 437R			E 58	20	N				J21- 55	10	N		49		
A 437Y			J09- 25	10	N	250	49		J21- 54	10	N		49		
A 438	4		J09- 92	10	N		49		TB3-K 1	18	N		64	87	E1 L1
A 439	4		J09- 94	10	N		49		TB3-D 1	18	N		64	96	E1 L1
A 440	2			100		75	A 31 28	315		150		125	A 31		F2 N4
A 440A	69		SHLD A 440	20	N				E 44	20	N				
A 440R			J21-120	10	N		49		E 58	20	N				
A 440Y			J21-119	10	N		49		E 56	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE | REV LTR + | SHEET 60

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC 1	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC 1	NO.	ROUTING
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	2	ITEM NO.		CIRCUIT POINT	2	TIN	2	ITEM NO.		
A 441	4		J09-103	10	N		49		TB3-M 5	18	N		64	348	E2 L2
A 442	4		J09- 85	10	N		49		TB3-G 4	18	N		64	36	E1 L1
A 443	4		J09- 89	10	N		49		TB3-G 3	18	N		64	57	E1 L1
A 444	4		J09- 75	10	N		49		TB3-K 5	18	N		64	354	E2 L2
A 445	4		J09- 71	10	N		49		TB3-M20	18	N		64	375	F2 L9
A 446	4		J09-105	10	N		49		TB3-K 2	18	N		64	75	E1 L1
A 447	4		J09- 95	10	N		49		P10- 48	10	N		49		
A 448	70						A 32						A 32		
A 448R			J09- 65	10	N		49		P10- 39	10	N		49		
A 448Y			J09- 77	10	N		49		P10- 38	10	N		49		
A 449	2			300		275	A 31			100		75	A 31 28	318	F2 N4
A 449B	69		E 44	20	N				SHLD A 449	20	N				
A 449R			J09- 37	10	N	250	49		J21- 18	10	N		49		
A 449Y			E 58	20	N				J21- 19	10	N		49		
A 450	4		J09- 26	10	N		49		TB2-D 6	18	N		64	402	E2 D6
A 451	4		J09- 91	10	N		49		TB3-F22	18	N			63	F1 L8
A 452	4		P10- 13	10	N		49		TB1-S 5	18	N		66	468	E2 D4
A 454	4		P10- 12	10	N		49		TB3-F 5	18	N		66	363	E2 L2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE | REV LTR + | SHEET 61

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC. 1	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION SPEC 1	NO.	ROUTING
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	2	ITEM NO.		CIRCUIT POINT	2	TIN	2	ITEM NO.		
A 458	4		TB2-D 5	18	N		64		E 48	20	N				H
A 460	4		P10- 49	10	N		49		TB3-B14	18	N		65	459	F2 L5
A 461	4		P10- 8	10	N		49		J22-171	10	N		49	42	F1 M1
A 462	4		P10- 9	10	N		49		TB3-F 1	18	N			90	E1 L1
A 464	4		J10- 2	10	N		49		TB3-F 3	18	N		66	64	E1 L1
A 465	4		J10- 6	10	N		49		TB3-M 6	18	N		65	327	E2 L4
A 466	4		J10- 7	10	N		49		TB1-F 1	18	N			198	E1 D2
A 467	70						A 32						A 32	2	B N1
A 467R			J10- 38	10	N		49		J21- 84	10	N		49		
A 467Y			E 25	20	N		28		J21- 85	10	N		49		
A 468	70						A 32						A 32	2	B N1
A 468R			E 25	20	N				J21- 13	10	N		49		
A 468Y			J10- 49	10	N		49		J21- 12	10	N		49		
A 469	4		J10- 72	10	N		49		J21-141	10	N		49	1	A N2
A 470	70						A 32						A 32	1	A N2
A 470R			J10- 42	10	N		49		J21- 47	10	N		49		
A 470Y			E 24	20	N		28		J21- 48	10	N		49		
A 471	70						A 32						A 32	1	A N2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE | REV LTR + | SHEET 62

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM					TO					ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 471R			J10- 20	10	N	49		J21- 82	10	N	49		
A 471Y			E 24	20	N			J21- 83	10	N	49		
A 472	70					A 32					A 32	2	B N1
A 472R			J10- 36	10	N	49		J21-150	10	N	49		
A 472Y			E 25	20	N			J21-151	10	N	49		
A 473	4		J10- 71	10	N	49		J21- 75	10	N	49	1	A N2
A 474	71					A 31					A 31	27	E1 L3
A 474G			J10- 5	10	N	49		TB3-B 5	18	N	65		
A 474R			J10- 4	10	N	49		TB3-B 3	18	N	65		
A 474Y			J10- 3	10	N	49		TB3-B 4	18	N	65		
A 475	4		J10- 12	10	N	49		TB1-F 8	18	N	65	429	E2 D3
A 476	4		J10- 70	10	N	49		J21- 3	10	N	49	1	A N2
A 477	4		J10- 57	10	N	49		J21-108	10	N	49	321	F2 N4
A 478	4		J10- 9	10	N	49		TB1-H 5	18	N	64	474	E2 D4
A 479	71					A 31					A 31	153	E1 D1
A 479G			J10- 22	10	N	49		TB1-K 3	18	N	65		
A 479R			J10- 24	10	N	49		TB1-K 5	18	N	65		
A 479Y			J10- 21	10	N	49		TB1-K 4	18	N	65		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 63

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM					TO					ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 480	71					A 31					A 31	423	E2 D3
A 480G			J10- 23	10	N	49		TB1-K 8	18	N	65		
A 480R			J10- 25	10	N	49		TB1-K 6	18	N	65		
A 480Y			J10- 26	10	N	49		TB1-K 7	18	N			
A 481	4		J10- 59	10	N	49		J21- 40	10	N	49	324	F2 N4
A 482	70					A 32					A 32	1	A N2
A 482R			J10- 32	10	N	49		J21- 80	10	N	49		
A 482Y			E 23	20	N	28		J21- 81	10	N	49		
A 483	70					A 32					A 32	1	A N2
A 483R			J10- 17	10	N	49		J21- 6	10	N	49		
A 483Y			E 23	20	N			J21- 7	10	N	49		
A 484	70					A 32					A 32	1	A N2
A 484R			J10- 18	10	N	49		J21-214	10	N	49		
A 484Y			E 23	20	N			J21-215	10	N	49		
A 485	70					A 32					A 32	1	A N2
A 485R			J10- 40	10	N	49		J21-179	10	N	49		
A 485Y			E 23	20	N			J21-180	10	N	49		
A 486	70					A 32					A 32	1	A N2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 64

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM					TO					ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 486R			J10- 41	10	N	49		J21-146	10	N	49		
A 486Y			E 23	20	N			J21-147	10	N	49		
A 487	70					A 32					A 32	1	A N2
A 487R			J10- 19	10	N	49		J21-113	10	N	49		
A 487Y			E 23	20	N			J21-114	10	N	49		
A 488	70					A 32					A 32	1	A N2
A 488R			J10- 33	10	N	49		J21- 45	10	N	49		
A 488Y			E 23	20	N			J21- 46	10	N	49		
A 489	70					A 32					A 32	1	A N2
A 489R			J10- 44	10	N	49		J21- 8	10	N	49		
A 489Y			E 24	20	N			J21- 9	10	N	49		
A 490	70					A 32					A 32	1	A N2
A 490R			J10- 43	10	N	49		J21-216	10	N	49		
A 490Y			E 24	20	N			J21-217	10	N	49		
A 491	70					A 32					A 32	1	A N2
A 491R			J10- 53	10	N	49		J21-181	10	N	49		
A 491Y			E 24	20	N			J21-182	10	N	49		
A 492	70					A 32					A 32	1	A N2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 65

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM					TO					ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 492R			J10- 51	10	N	49		J21-148	10	N	49		
A 492Y			E 24	20	N			J21-149	10	N	49		
A 493	70					A 32					A 32	1	A N3
A 493R			J10- 64	10	N	49		J21-115	10	N	49		
A 493Y			E 24	20	N			J21-116	10	N	49		
A 494	70					A 32					A 32	1	A N3
A 494R			J10- 73	10	N	49		J21-210	10	N	49		
A 494Y			E 22	20	N	28		J21-211	10	N	49		
A 495	70					A 32					A 32	1	A N3
A 495R			J10- 74	10	N	49		J21-175	10	N	49		
A 495Y			E 22	20	N			J21-176	10	N	49		
A 496	70					A 32					A 32	1	A N3
A 496R			J10- 60	10	N	49		J21-142	10	N	49		
A 496Y			E 22	20	N			J21-143	10	N	49		
A 497	70					A 32					A 32	1	A N3
A 497R			J10- 28	10	N	49		J21-109	10	N	49		
A 497Y			E 22	20	N			J21-110	10	N	49		
A 498	70					A 32					A 32	1	A N3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 66

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM					TO					ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	▷2	TIN	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	▷2	TIN	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 498R			J10- 29	10	N	49		J21- 76	10	N	49		
A 498Y			E 22	20	N			J21- 77	10	N	49		
A 499	70					A 32					A 32	1	A N3
A 499R			J10- 30	10	N	49		J21- 41	10	N	49		
A 499Y			E 22	20	N			J21- 42	10	N	49		
A 500	70					A 32					A 32	1	A N3
A 500R			J10- 61	10	N	49		J21-212	10	N	49		
A 500Y			E 22	20	N			J21-213	10	N	49		
A 501	70					A 32					A 32	1	A N3
A 501R			J10- 62	10	N	49		J21-177	10	N	49		
A 501Y			E 22	20	N			J21-178	10	N	49		
A 502	70					A 32					A 32	1	A N3
A 502R			J10- 63	10	N	49		J21-144	10	N	49		
A 502Y			E 22	20	N			J21-145	10	N	49		
A 503	70					A 32					A 32	1	A N3
A 503R			J10- 14	10	N	49		J21-111	10	N	49		
A 503Y			E 23	20	N			J21-112	10	N	49		
A 504	70					A 32					A 32	1	A N3

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 67

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM					TO					ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	▷2	TIN	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	▷2	TIN	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 504R			J10- 16	10	N	49		J21- 43	10	N	49		
A 504Y			E 23	20	N			J21- 44	10	N	49		
A 505	70					A 32					A 32	1	A N3
A 505R			J10- 31	10	N	49		J21- 4	10	N	49		
A 505Y			E 22	20	N			J21- 5	10	N	49		
A 506	70					A 32					A 32	1	A N3
A 506R			J10- 15	10	N	49		J21- 78	10	N	49		
A 506Y			E 23	20	N			J21- 79	10	N	49		
A 507	4		J10- 8	10	N	49		TB3-M22	18	N	65	342	F2 L9
A 509	4		J10- 58	10	N	49		J21- 39	10	N	49	327	F2 N4
A 510	70					A 32					A 32	2	B N1
A 510R			J10- 39	10	N	49		J21- 14	10	N	49		
A 510Y			E 25	20	N			J21- 15	10	N	49		
A 511	70					A 32					A 32	2	B N1
A 511R			J10- 37	10	N	49		J21-117	10	N	49		
A 511Y			E 25	20	N			J21-118	10	N	49		
A 512	4		J10- 56	10	N	49		J21-173	10	N	49	330	F2 N4
A 513	4		J10- 55	10	N	49		J21-174	10	N	49	333	F2 N4

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 68

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM					TO					ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	▷2	TIN	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	▷2	TIN	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 514	70					A 32					A 32	2	B N1
A 514R			J10- 35	10	N	49		J21-183	10	N	49		
A 514Y			E 25	20	N			J21-184	10	N	49		
A 515	70					A 32					A 32	2	B N1
A 515R			J10- 47	10	N	49		J21-185	10	N	49		
A 515Y			E 25	20	N			J21-186	10	N	49		
A 516	70					A 32					A 32	2	B N1
A 516R			J10- 34	10	N	49		J21-218	10	N	49		
A 516Y			E 25	20	N			J21-219	10	N	49		
A 517	70					A 32					A 32	2	B N1
A 517R			J10- 48	10	N	49		J21-220	10	N	49		
A 517Y			E 25	20	N			J21-221	10	N	49		
A 520	4		J10- 75	10	N	49		J21-209	10	N	49	1	A N3
A 521	4		J10- 13	10	N	49		TB1-K 7	18	N	66	441	E2 D3
A 522	4		J10- 45	10	N	49		J21- 10	10	N	49	2	B N1
A 523	4		J10- 46	10	N	49		J21- 11	10	N	49	2	B N1
A 548	4		TB3-B20	18	N	66	24	E 12	20	N			C1 J1
A 551	4		E 25	20	N			J10- 69	10	N	49		B

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 69

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM					TO					ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	▷2	TIN	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	▷2	TIN	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 552	4		E 24	20	N			J10- 82	10	N	49		A
A 554	4		E 23	20	N			E 22	20	N			A
A 555	4		E 23	20	N			E 24	20	N			A
A 557	4		E 8	20	N			TB2-D 1	18	N	64	90	G1 H1
A 558	70					A 32					A 32	84	G1 H1
A 558R			E 14	20	N			TB2-K 1	18	N	66		
A 558Y			E 13	20	N			TB2-L 1	18	N	66		
A 559	4		TB3-S21	18	N	65	318	E 6	20	N			C2 J3
A 560	70					A 32					A 32	114	G1 K2
A 560R			E 17	20	N			TB1-H 7	18	N	65		
A 560Y			E 16	20	N			TB1-G 7	18	N	65		
A 561	70					A 32					A 32	153	G1 K1
A 561R			E 9	20	N			TB1-S 1	18	N	65		
A 561Y			E 10	20	N			TB1-S 2	18	N			
A 564	70					A 32					A 32	138	G1 K1
A 564R			E 3	20	N			TB1-G 4	18	N	65		
A 564Y			E 4	20	N			TB1-H 4	18	N	65		
A 565	4		J08- 50	10	N	49		TB1-F 1	18	N	65	168	G1 K1

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 70

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 566	4		E 44	20	N			E 57	20	N			N
A 567	70					A 32					A 32	114	C1 J2
A 567R			E 7	20	N	27		TB3-D 2	18	N	65		
A 567Y			E 11	20	N			TB3-C 3	18	N	66		
A 568	4		J21-187	10	N	49	2	E 64	20	N			B N1
A 569	4		J10- 27	10	N	49		E 65	20	N			B
A 570	4		J10- 1	10	N	49		E 62	20	N			A
A 571	4		J21-107	10	N	49	1	E 63	20	N			A N3
A 572	70					A 32					A 32		
→ A 572R			J01- 1	10	N	49		E 1	20	N	28		←
A 572Y			J01- 14	10	N	49		E 2	20	N	27		
A 573	71					A 31					A 31		
A 573G			J01- 11	10	N	49		E 1	20	N			
A 573R			J01- 25	10	N	49		E 1	20	N			
A 573Y			J01- 12	10	N	49		E 5	20	N	27		
A 574	70					A 32					A 32		
A 574R			J02- 1	10	N	49		E 1	20	N			
A 574Y			J02- 14	10	N	49		E 2	20	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 71

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 575	71					A 31					A 31		
A 575G			J02- 11	10	N	49		E 1	20	N			
A 575R			J02- 25	10	N	49		E 1	20	N			
A 575Y			J02- 12	10	N	49		E 5	20	N			
A 576	71					A 31					A 31		
A 576G			J03- 11	10	N	49		E 1	20	N			
A 576R			J03- 25	10	N	49		E 1	20	N			
A 576Y			J03- 12	10	N	49		E 5	20	N			
A 577	71					A 31					A 31	18	G1 H2
→ A 577G			E 5	20	N			TB2-H 5	18	N	64		←
A 577R			E 1	20	N			TB2-G 4	18	N	66		
A 577Y			E 2	20	N			TB2-H 4	18	N	65		
A 578	70					A 32					A 32		
A 578R			J01- 3	10	N	49		E 7	20	N			
A 578Y			J01- 2	10	N	49		E 11	20	N	27		
A 579	70					A 32					A 32		
A 579R			J02- 3	10	N	49		E 7	20	N			
A 579Y			J02- 2	10	N	49		E 11	20	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 72

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 580	70					A 32					A 32		
A 580R			J03- 3	10	N	49		E 7	20	N			
A 580Y			J03- 2	10	N	49		E 11	20	N			
A 581	4		J03- 16	10	N	49		E 6	20	N			
A 582	4		J03- 15	10	N	49		E 8	20	N			
A 583	70					A 32					A 32		
A 583R			J05- 50	10	N	49		E 17	20	N			
A 583Y			J05- 60	10	N	49		E 16	20	N			
A 584	71					A 31					A 31		
→ A 584G			J04- 12	10	N	49		E 14	20	N			←
A 584R			J04- 25	10	N	49		E 13	20	N			
A 584Y			J04- 11	10	N	49		E 13	20	N			
A 585	71					A 31					A 31		
A 585G			J05- 17	10	N	49		E 14	20	N			
A 585R			J05- 4	10	N	49		E 13	20	N			
A 585Y			J05- 18	10	N	49		E 13	20	N			
A 586	70					A 32					A 32		
A 586R			J05- 1	10	N	49		E 14	20	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 73

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 586Y			J05- 14	10	N	49		E 13	20	N			
A 587	4		TB1-N 4	18	N	66		TB1-N 5	18	N			K
A 588	4		TB1-N 5	18	N	66		TB1-N 8	18	N			K
A 591	4		TB3-T 3	18	N	66		TB3-R 3	18	N			L
A 592	4		TB3-R 3	18	N	66		TB3-N 3	18	N			L
A 593	4		TB3-D15	18	N	66		TB3-L20	18	N	65		L
A 594	4		TB3-L22	18	N	65		TB3-D15	18	N			L
A 595	4		TB3-K20	18	N	65		TB3-C15	18	N			L
A 596	4		TB3-K22	18	N	65		TB3-C15	18	N	66		L
→ A 598	70					A 32					A 32	408	G2 H3 ←
A 598R			P05-D	20	N	52		TB2-U 3	18	N	66		
A 598Y			P05-E	20	N	52		TB2-T 3	18	N	65		
A 599	70					A 32					A 32	48	G1 H1
A 599R			J04- 3	10	N	49		TB2-U 1	18	N	65		
A 599Y			J04- 2	10	N	49		TB2-T 2	18	N			
A 600	70					A 32					A 32	45	G1 H2
A 600R			J05- 3	10	N	49		TB2-U 1	18	N			
A 600Y			J05- 2	10	N	49		TB2-T 2	18	N	66		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 74

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					ROUTING
NUMBER	INDIVIDUAL LENGTH ITEM NO. [2]	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	TERMINATION SPEC. [1] ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	TERMINATION SPEC [1] ITEM NO.	NO.	
A 601	4	TB2-L 4	18	N	66		TB2-M 4	18	N	65		H
A 602	75				A 31					A 31	159	G1 K1
A 602G		P01-106	10	N	49		TB1-N 1	18	N			
A 602N		P01- 90	10	N	49		TB1-M 1	18	N			
A 602R		P01-103	10	N	49		TB1-R 1	18	N			
A 602Y		P01-108	10	N	49		TB1-T 1	18	N	66		
A 603	75				A 31					A 31	141	G1 K1
A 603G		J08- 46	10	N	49		TB1-R 3	18	N			
A 603N		J08- 19	10	N	49		TB1-R 2	18	N			
A 603R		J08- 55	10	N	49		TB1-N 3	18	N			
A 603Y		J08- 36	10	N	49		TB1-R 2	18	N			
A 604	73				A 31					A 31	171	E1 D1
A 604R		J09- 55	10	N	49		TB1-N 3	18	N	65		
A 604Y		J09- 46	10	N	49		TB1-R 3	18	N	65		
A 605	75				A 31					A 31	192	E1 D2
A 605G		J09- 64	10	N	49		TB1-N 1	18	N	65		
A 605N		J09- 63	10	N	49		TB1-M 1	18	N	65		
A 605R		J09- 54	10	N	49		TB1-R 1	18	N	65		

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 75

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					ROUTING
NUMBER	INDIVIDUAL LENGTH ITEM NO. [2]	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	TERMINATION SPEC. [1] ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	TERMINATION SPEC [1] ITEM NO.	NO.	
A 605Y		J09- 84	10	N	49		TB1-K 1	18	N	65		
A 606	75				A 31					A 31		
A 606G		J09- 53	10	N	49		P10-107	10	N	49		
A 606N		J09- 52	10	N	49		P10-108	10	N	49		
A 606R		J09- 61	10	N	49		P10-106	10	N	49		
A 606Y		J09- 62	10	N	49		P10- 93	10	N	49		
A 607	73				A 31					A 31	447	F2 L5
A 607R		P10- 69	10	N	49		TB3-L14	18	N			
A 607Y		P10- 68	10	N	49		TB3-K14	18	N			
A 608	73				A 31					A 31	168	F1 L6
A 608R		P11-N	25	N	53		TB3-L14	18	N	65		
A 608Y		P11-K	25	N	53		TB3-K14	18	N	65		
A 609	5	P11-B	25	N	53		TB3-C20	18	N		138	F1 L6
A 610	5	P11-B	25	N			TB3-C20	18	N		135	F1 L6
A 611	5	P11-B	25	N			TB3-C20	18	N	66	132	F1 L6
A 612	5	P11-C	25	N	53		TB3-C21	18	N		111	F1 L6
A 613	5	P11-C	25	N			TB3-C21	18	N		108	F1 L6
A 614	5	P11-C	25	N			TB3-C21	18	N	66	105	F1 L8

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 76

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					ROUTING
NUMBER	INDIVIDUAL LENGTH ITEM NO. [2]	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	TERMINATION SPEC. [1] ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	TERMINATION SPEC [1] ITEM NO.	NO.	
A 615	5	P12-B	25	N	53		TB3-D20	18	N		129	F1 L6
A 616	5	P12-B	25	N			TB3-D20	18	N		126	F1 L6
A 617	5	P12-B	25	N			TB3-D20	18	N	66	123	F1 L6
A 618	5	P12-C	25	N	53		TB3-D21	18	N		102	F1 L8
A 619	5	P12-C	25	N			TB3-D21	18	N		99	F1 L8
A 620	5	P12-C	25	N			TB3-D21	18	N	66	96	F1 L8
A 621	5	P12-M	25	N	53		TB3-C22	18	N		75	F1 L8
A 622	5	P12-M	25	N			TB3-C22	18	N	65	72	F1 L8
A 623	5	P11-M	25	N	53		TB3-D22	18	N		69	F1 L8
A 624	5	P11-M	25	N			TB3-D22	18	N	65	66	F1 L8
A 625	5	P11-H	25	N	53		TB3-H21	18	N		87	F1 L8
A 626	5	P11-H	25	N			TB3-H21	18	N		84	F1 L8
A 627	5	P11-H	25	N			TB3-H21	18	N	66	81	F1 L8
A 628	5	P12-H	25	N	53		TB3-H22	18	N		48	F1 L8
A 629	5	P12-H	25	N			TB3-H22	18	N		51	F1 L8
A 630	5	P12-H	25	N			TB3-H22	18	N	66	54	F1 L8
A 631	5	P11-L	25	N	53		TB3-F21	18	N	66	93	F1 L8
A 632	5	P12-L	25	N	53		TB3-F22	18	N	66	60	F1 L8

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 77

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					ROUTING
NUMBER	INDIVIDUAL LENGTH ITEM NO. [2]	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	TERMINATION SPEC. [1] ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	TERMINATION SPEC [1] ITEM NO.	NO.	
A 633	5	P11-A	25	N	53		TB3-G21	18	N	66	90	F1 L8
A 634	5	P11-A	25	N			J21- 1	10	N	49	6	F1 N5
A 635	5	P11-A	25	N			J21- 73	10	N	49	9	F1 N5
A 636	5	P12-A	25	N	53		TB3-G22	18	N	66	57	F1 L8
A 637	5	P12-A	25	N			J21-139	10	N	49	12	F1 N5
A 638	5	P12-A	25	N			J21-207	10	N	49	15	F1 N5
A 639	5	P11-J	25	N	53		J21- 2	10	N	49	18	F1 N5
A 640	5	P11-J	25	N			J21- 74	10	N	49	21	F1 N5
A 641	5	P12-J	25	N	53		J21-140	10	N	49	24	F1 N5
A 642	5	P12-J	25	N			J21-208	10	N	49	27	F1 N5
A 643	5	P11-G	25	N	53		TB3-D15	18	N		162	F1 L6
A 644	5	P11-G	25	N			TB3-K20	18	N		117	F1 L6
A 645	5	P11-G	25	N			TB3-L21	18	N	65	78	F1 L8
A 646	5	P12-G	25	N	53		TB3-C15	18	N		165	F1 L6
A 647	5	P12-G	25	N			TB3-K22	18	N		45	F1 L8
A 648	5	P12-G	25	N			TB3-L20	18	N		114	F1 L6
A 649	5	P11-D	25	N	53		TB1-N 8	18	N		144	E1 D1
A 650	5	P11-D	25	N			TB1-S 6	18	N		150	E1 D1

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 78

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO. 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 651	5	P11-F	25	N		53		TB2-M 3	18	N		64	123	E1 D5
A 652	5	P11-F	25	N				TB2-D 4	18	N		65	117	E1 D5
A 653	5	P11-F	25	N				TB3-N 3	18	N			51	E1 L1
A 654	5	P11-E	25	N		53		TB2-M 7	18	N		64	102	E1 D5
A 655	5	P11-E	25	N				TB2-V 4	18	N			105	E1 D5
A 656	5	P12-D	25	N		53		TB1-N 4	18	N			156	E1 D1
A 657	5	P12-D	25	N				TB3-S 3	18	N			48	E1 L1
A 658	5	P12-E	25	N		53		TB3-T 3	18	N			45	E1 L1
A 659	5	P12-E	25	N				TB1-S 3	18	N			168	E1 D1
A 660	5	P12-F	25	N		53		TB2-M 1	18	N		64	135	E1 D5
A 661	5	P12-F	25	N				TB2-L 4	18	N			111	E1 D5
A 662	5	P12-F	25	N				TB1-D 7	18	N			147	E1 D1
A 663	74					A 31						A 31	180	E1 D2
A 663G		P10- 81	10	N		49		TB1-T 2	18	N		66		
A 663R		P10- 94	10	N		49		TB1-R 2	18	N		66		
A 663Y		P10- 95	10	N		49		TB1-S 2	18	N		66		
A 664	4	TB3-B15	18	N		64		TB3-T15	18	N				L
A 665	4	P10- 1	10	N		49		TB3-B20	18	N			141	F1 L6

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE

REV LTR +

SHEET 79

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO. 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 667	4	J09- 15	10	N		49		TB3-F 1	18	N		65	93	E1 L1
A 668	4	J09- 14	10	N		49		TB3-F 2	18	N		64	81	E1 L1
A 670	70					A 32						A 32	159	F1 L6
A 670R		J09- 49	10	N		49		TB3-B16	18	N				
A 670Y		J09- 38	10	N		49		TB3-B17	18	N				
A 671	1		50		25	A 31			125		100	A 31 28	309	E2 L4
A 671B	69	TB3-F 8	18	N		64		SHLD A 671	20	N				
A 671Y		J09- 48	10	N		49		TB3-G 8	18	N		64		
A 672	1		50		25	A 31			125		100	A 31 28	312	E2 L4
A 672B	69	TB3-F 7	18	N		64		SHLD A 672	20	N				
A 672Y		J09- 56	10	N		49		TB3-G 7	18	N		64		
A 673	4	J09- 47	10	N		49		TB3-A10	18	N		64	9	E1 L3
A 677	4	P09- 47	10	N		49		TB3-F 6	18	N		64	342	E2 L4
A 678	4	P09- 49	10	N		49		J21-171	10	N		49	336	F2 N4
A 679	4	P09- 37	10	N		49		TB3-G 6	18	N		64	339	E2 L4
A 680	4	P09- 38	10	N		49		TB3-K 6	18	N		64	333	E2 L4
A 681	4	P09- 48	10	N		49		TB3-L 6	18	N		64	330	E2 L4
A 682	72					A 31						A 31	15	E1 L3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE

REV LTR +

SHEET 80

MIL 2085-4-64 WIR

ARNESS A

CONDUCTOR		FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO. 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 682G		P09- 99	10	N		49		TB3-B 6	18	N		64		
A 682N		P09- 86	10	N		49		TB3-C 6	18	N		64		
A 682R		P09- 87	10	N		49		TB3-C 7	18	N		64		
A 682Y		P09-100	10	N		49		TB3-C 8	18	N		64		
A 683	4	P09- 35	10	N		49		TB1-D 5	18	N			480	E2 D4
A 684	71					A 31						A 31	30	E1 L3
A 684G		P09- 24	10	N		49		TB3-A 3	18	N		64		
A 684R		P09- 25	10	N		49		TB3-A 4	18	N		64		
A 684Y		P09- 36	10	N		49		TB3-A 5	18	N		64		
A 687	4	J06- 37	10	N		49		P01- 37	10	N		49		
A 689	72					A 31						A 31	12	E1 L3
A 689G		P09- 88	10	N		49		TB3-D 9	18	N		64		
A 689N		P09- 89	10	N		49		TB3-B 7	18	N		64		
A 689R		P09-102	10	N		49		TB3-D 8	18	N		64		
A 689Y		P09-101	10	N		49		TB3-D 7	18	N		64		
A 690	72					A 31						A 31	6	E1 L3
A 690G		P09- 90	10	N		49		TB3-C 9	18	N		64		
A 690N		P09-103	10	N		49		TB3-C10	18	N		64		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE

REV LTR +

SHEET 81

MIL 2085 4 64 WIR

WIRE HARNESS A

CONDUCTOR		FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO. 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 690R		P09-104	10	N		49		TB3-B 9	18	N		64		
A 690Y		P09-105	10	N		49		TB3-B10	18	N		64		
A 691	5	P09- 23	10	N		49		TB1-S 5	18	N			471	E2 D4
A 692	4	J21- 16	10	N		49		J21- 17	10	N		49		N
A 693	4	J08- 30	10	N		49		E 72	20	N				
A 694	4	J08- 61	10	N		49		E 72	20	N				
A 695	4	J08- 83	10	N		49		E 72	20	N				
A 696	4	J08- 84	10	N		49		E 72	20	N				
A 697	4	J08- 70	10	N		49		E 72	20	N				
A 698	4	J08- 28	10	N		49		E 72	20	N				
A 699	4	J08- 17	10	N		49		E 72	20	N				
A 700	5	E 72	20	N		28		TB2-F 1	18	N		65	89	G1 H1
A 701	5	J09- 27	10	N		49		TB2-F 1	18	N			142	E1 D5
A 702	4	J08- 52	10	N		49		TB2-V 1	18	N		65	74	G1 H1
A 703	4	J09- 11	10	N		49		TB2-V 1	18	N			133	E1 D5
A 704	4	J08- 63	10	N		49		TB2-N 4	18	N		65	10	G1 H2
A 705	4	J09- 13	10	N		49		TB2-N 4	18	N			109	E1 D5
A 706	4	J08- 31	10	N		49		TB2-T 4	18	N		65	5	G1 H2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE

REV LTR +

SHEET 82

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					ROUTING
INDIVIDUAL LENGTH		CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2			TERMINATION SPEC. 1	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2			TERMINATION SPEC 1	NO.	
NUMBER	ITEM NO. 2	CIRCUIT POINT 2		TIN	ITEM NO.		CIRCUIT POINT 2		TIN	ITEM NO.		
A 707	4	J09- 39	10	N	49		TB2-T 4	18	N		107	E1 H5
A 708	4	J08- 82	10	N	49		TB2-F 5	18	N	65	400	G2 M3
A 709	4	J09- 12	10	N	49		TB2-F 5	18	N		406	E2 D6
A 710	4	J08- 54	10	N	49		TB2-F 6	18	N	66	375	G2 H3
A 711	4	J09- 60	10	N	49		TB2-F 6	18	N		401	E2 D6
A 712	4	J08- 32	10	N	49		TB2-F 6	18	N		372	G2 H3
A 713	4	J09- 70	10	N	49		J22- 37	10	N	49	29	F1 M1
A 714	4	J09- 29	10	N	49		TB2-S 8	18	N	65	387	E2 D6
A 715	4	J09- 28	10	N	49		P10- 24	10	N	49		
A 716	4	J10- 10	10	N	49		TB3-M21	18	N		359	F2 L9
A 717	5	P09- 20	10	N	49		TB3-N22	18	N	64	339	F2 L9
A 718	5	P09- 19	10	N	49		TB3-T21	18	N	64	354	F2 L9
A 719	73				A 32					A 32	378	F2 L9
A 719R		P09- 5	10	N	49		TB3-T19	18	N	64		
A 719Y		P09- 6	10	N	49		TB3-S19	18	N	64		
A 720	5	J21- 49	10	N	49		TB3-G21	18	N			N L
A 721	5	J21- 50	10	N	49		TB3-G21	18	N			N L
A 722	5	J21- 51	10	N	49		TB3-G22	18	N			N L

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE | REV LTR | SHEET 83

MIL 2085 4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					ROUTING
INDIVIDUAL LENGTH		CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2			TERMINATION SPEC. 1	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2			TERMINATION SPEC 1	NO.	
NUMBER	ITEM NO. 2	CIRCUIT POINT 2		TIN	ITEM NO.		CIRCUIT POINT 2		TIN	ITEM NO.		
A 723	5	J21- 52	10	N	49		TB3-G22	18	N			N L
A 724	5	P11-J	25	N			P12-J	25	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE | REV LTR | SHEET 84

MIL 2085 4-64 WIR

Ⓜ

APPLICATION		REVISIONS TDRR 14008			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		A	REVISED PER TDRR 14576	12-7 64	JWP
		B	REVISED PER TDRR 16350	18-FEB 65	JM

SEE SHEET 2 FOR REVISION STATUS OF SHEETS

REV		
SHEET		
REV STATUS OF SHEETS	REV	
	SHEET	

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN DATE
CHECKED
APPROVAL
APPROVAL

NASA APPROVAL
MIT APPROVAL

CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
AGE INTERCONNECT

CODE IDENT NO.	SIZE		REV
	A	1015055	B
SCALE —		SHEET 1 OF 84	

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	B	37	+	73	+										
2	B	38	+	74	+										
3	+	39	+	75	+										
4	+	40	+	76	+										
5	+	41	+	77	+										
6	B	42	+	78	+										
7	B	43	+	79	+										
8	+	44	+	80	+										
9	B	45	+	81	+										
10	A	46	+	82	+										
11	+	47	+	83	B										
12	+	48	+	84	B										
13	+	49	+												
14	+	50	+												
15	+	51	+												
16	+	52	+												
17	+	53	+												
18	+	54	+												
19	+	55	+												
20	+	56	+												
21	B	57	+												
22	+	58	+												
23	+	59	+												
24	+	60	+												
25	+	61	+												
26	+	62	+												
27	+	63	+												
28	+	64	+												
29	+	65	+												
30	+	66	+												
31	+	67	+												
32	+	68	+												
33	+	69	+												
34	+	70	+												
35	+	71	+												
36	+	72	+												

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION
B

NASA DRAWING NO.
1015055
SHEET 2 OF 84

WIRE HARNESS A

GENERAL NOTES

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 SPACING OF CONDUCTOR IDENTIFICATION MARKING SHALL BE EVERY 1.2 INCHES.

6 SPIRALLING OF THE MARKING IS ALLOWED.

7 MARK SLEEVING OF MULTI-CONDUCTORS WITH THE CONDUCTOR NUMBER .12 INCH HIGH, COLOR BLACK, PER ND1002019 WHEN SLEEVING ITEM NUMBERS FOLLOW AN A OR T IN THE ACCESSORIES ITEM NUMBER FIELD.

8 A OR T PREFIX IN THE ACCESSORIES ITEM NUMBER COLUMN INDICATES THE READING POSITION AWAY FROM TERMINATION OR TOWARD TERMINATION RESPECTIVELY, OF THE WIRE MARKER SLEEVE.

9 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

10 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

11 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

12 LACE HARNESS PER ND1002032 USING ITEMS 51 AND 77.

13 CONDUCTORS LISTED WITH AN A OR B IN THE ROUTING COLUMN ARE TO BE ASSEMBLED PER DETAIL A OR B AS SHOWN ON THE CONFIGURATION DRAWING (1015056 REF).

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
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REV LTR +
SHEET 3

MIL 2084-4-64

WIRE HARNESS A

GENERAL NOTES

14 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, MARKING, OR TWISTING
A - FROM END SHIELD
B - TO END SHIELD
G - GREEN
K - BLACK
L - BLUE
N - BROWN
R - RED
W - WHITE
Y - YELLOW

15 ASSEMBLE HARNESS AS SHOWN PER CONFIGURATION DRAWING (1015056 REF).

16 SERIALIZE PER ND1002023.

17 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING

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WIRE HARNESS A

GENERAL NOTES

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP		CUT	
		WIRE	JACKET	WIRE	SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE-NONE
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MIL 2084-4-64

WIRE HARNESS A B 1015055

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015055- 1	WIRE PER 1010789-011 YEL. JKT. 24AWG YEL. 13 FT. 0.0 IN. TOTAL LENGTH
	2	1	1015055- 2	WIRE PER 1010789-012 YEL. JKT. 24AWG YEL, RED, 373 FT. 8.0 INCHES TOTAL LENGTH
	3	1	1015055- 3	WIRE PER 1010789-013 YEL. JKT. 24AWG YEL, RED, GREEN 30 FT. 4.0 IN. TOTAL LENGTH
	4	1	1015055- 4	WIRE PER 1010789-001 24AWG YELLOW 856 FT. 4.0 INCHES TOTAL LENGTH
	5	1	1015055- 5	WIRE PER 1010789-006 22AWG YELLOW 164 FT. 9.0 INCHES TOTAL LENGTH
	6	1	1015055- 6	WIRE PER 1010707-1 RED JKT. 29AWG BLUE, RED, AND WHITE 26 FT. 6.0 INCHES TOTAL LENGTH
17	7	1	1010824- 3	CONNECTOR RECP ELECTRICAL
17	8	5	1010824- 2	CONNECTOR RECP ELECTRICAL
17	9	1	1010822- 5	CONNECTOR RECP ELECTRICAL
17	10	1	1010822- 3	CONNECTOR RECP ELECTRICAL
17	11	1	1010816-144	CONNECTOR RECP ELECTRICAL
17	12	1	1010816-244	CONNECTOR RECP ELECTRICAL
17	13	1	1010348- 1	CONNECTOR PLUG ELECTRICAL
17	14	1	1010348- 2	CONNECTOR PLUG ELECTRICAL
	15	1	1010671- 1	CONNECTOR PLUG ELECTRICAL

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE-NONE
REV LTR B
SHEET 6

MIL 2084 4 63

WIRE HARNESS A B 1015055

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	16	1	1010671- 2	CONNECTOR PLUG ELECTRICAL
17	17	1	1010674- 1	CONNECTOR PLUG ELECTRICAL
17	18	1	1010674- 2	CONNECTOR PLUG ELECTRICAL
17	19	1	1010674- 3	CONNECTOR PLUG ELECTRICAL
17	20	1	1010674- 4	CONNECTOR PLUG ELECTRICAL
17	21	1	1010824- 5	CONNECTOR RECP ELECTRICAL
17	22	1	1010824- 4	CONNECTOR RECP ELECTRICAL
17	23	1	1010822- 4	CONNECTOR RECP ELECTRICAL
17	24	1	1010824- 1	CONNECTOR RECP ELECTRICAL
17	27	16	1010402- 1	SLEEVE, SOLDER
17	28	131	1010402- 2	SLEEVE, SOLDER
17	30	30	1010490-108	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	31	288	1010490-110	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	32	238	1010490-112	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	38	1	1010490-975	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE) 2 FT 5 IN. TOTAL LENGTH
17	39	1	1010490-979	INSULATION-SLEEVING, ELECTRICAL,

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
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MIL 2084 4-63

WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
				HEAT SHRINKABLE (WHITE) 2 FT 5 IN. TOTAL LENGTH
17	40	2	1010490-216	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	41	2	1010490-222	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
	42	1	1015055- 7	WIRE, BRAID PER QQ-B-575 (COPPER, TIN-COATED, TUBLAR) SIZE 3/8 ID, 36 GAUGE, 2 FT 5 IN. TOTAL LENGTH
	43	1	1015055- 8	WIRE, BRAID PER QQ-B-575 (COPPER, TIN-COATED, TUBULAR) SIZE 1/2 ID, 36 GAUGE, 2 FT 5 IN. TOTAL LENGTH
17	44	1	1010809- 1	CONNECTOR, ELECTRICAL, RECEPTACLE 12 CONTACTS
17	45	1	1000243- 34	FERRULE, INNER ELECTRICAL CONDUCTOR
17	46	1	1000243- 26	FERRULE, INNER ELECTRICAL CONDUCTOR
17	47	1	1000242- 30	FERRULE, OUTER ELECTRICAL CONDUCTOR
	49	1296	1010738- 6	CONTACT, SOCKET
	51	AR	1012057- 2	LACING TAPE, DACRON, BLACK, 0.05 INCHES WIDE.
	52	RF		CONTACT SOCKETS SUPPLIED WITH 1010348
	53	RF		CONTACT SOCKETS SUPPLIED WITH 1010671
	54	RF		CONTACT SOCKETS SUPPLIED WITH 1010674
17	59	1	1000242- 24	FERRULE, OUTER ELECTRICAL CONDUCTOR

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE-NONE | REV LTR + | SHEET 8

MIL 2084-4-64

WIRE HARNESS A B 1015055

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
17	60	1	1000243- 30	FERRULE, INNER ELECTRICAL CONDUCTOR
17	61	1	1000242- 27	FERRULE, OUTER ELECTRICAL CONDUCTOR
17	62	1	1000243- 36	FERRULE, INNER ELECTRICAL CONDUCTOR
17	63	1	1000242- 33	FERRULE, OUTER ELECTRICAL CONDUCTOR
	64	268	1010743- 1	WRAPOST RECEPTACLE
	65	140	1010743- 2	WRAPOST RECEPTACLE
	66	80	1010743- 3	WRAPOST RECEPTACLE
	67	1	1010734- 16	GROMMET, CONNECTOR STRAIN RELIEF
	68	1	1010734- 18	GROMMET, CONNECTOR STRAIN RELIEF
	69	1	1015055- 9	WIRE PER 1010789-002 24AWG BLACK 119 FT. 0.0 INCHES TOTAL LENGTH
	70	1	1015055- 10	WIRE PER 1010789-003 24AWG YELLOW, RED 392 FT. 1.0 INCHES TOTAL LENGTH
	71	1	1015055- 11	WIRE PER 1010789-003 24AWG YELLOW, RED, GREEN 90 FT. 6.0 INCHES TOTAL LENGTH
	72	1	1015055- 12	WIRE PER 1010789-005 24AWG YELLOW, RED, GREEN BROWN 25 FT. 11.0 INCHES TOTAL LENGTH
	73	1	1015055- 13	WIRE PER 1010789-008 22AWG YELLOW, RED 13 FT. 9.0 INCHES TOTAL LENGTH
	74	1	1015055- 14	WIRE PER 1010789-009 22AWG YELLOW, RED, GREEN

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE-NONE | REV LTR B | SHEET 9

MIL 2084 4-63

WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
				4 FT. 6.0 INCHES TOTAL LENGTH.
	75	1	1015055- 15	WIRE PER 1010789-010 22AWG YELLOW, RED, GREEN BROWN 16 FT. 1.0 INCH TOTAL LENGTH.
	77	AR	1012507- 4	LACING TAPE, DACRON, BLACK, 0.09 INCHES WIDE.
	78	12 ~~RF~~	1010770- 2	CONTACT, SOCKET~~S SUPPLIED WITH 1010809~~

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE-NONE | REV LTR * A | SHEET 10

MIL 2084-4-64

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT 2	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT 2	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 1	70						A 32						A 32	66	G1 H1
A 1R			P01- 80	10	N		49		TB2-A 2	18	N				
A 1Y			P01- 95	10	N		49		TB2-A 1	18	N				
A 3	4		P01- 38	10	N		49		TB1-K 4	18	N			135	G1 K1
A 4	4		P01- 48	10	N		49		TB1-K 3	18	N			144	G1 K1
A 5	4		P01- 13	10	N		49		TB1-K 5	18	N			132	G1 K2
A 6	4		P01- 27	10	N		49		TB1-K 8	18	N			99	G1 K2
A 7	4		P01- 58	10	N		49		TB1-K 6	18	N			120	G1 K2
A 8	4		P01- 12	10	N		49		TB2-B 2	18	N		64	63	G1 H1
A 9	4		P01- 57	10	N		49		TB2-R 4	18	N		64	9	G1 H2
A 10	4		P01- 5	10	N		49		TB2-C 1	18	N		64	93	G1 H1
A 11	4		P01- 69	10	N		49		TB2-B 1	18	N		64	96	G1 H1
A 12	4		P01- 24	10	N		49		TB3-F 4	18	N			129	C1 J2
A 13	2			300		275	A 31			125		100	A 31 28	39	G1 H2
A 13B	69		TB2-D 3	18	N				SHLD A 13	20	N				
A 13R			E 61	20	N		28		TB2-F 3	18	N				
A 13Y			P01- 68	10	N	250	49		TB2-D 2	18	N				
A 14	2			300		275	A 31			100		75	A 31 28	3	C1 J6

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 11

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT 2	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT 2	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 14B	69		E 44	20	N		28		SHLD A 14	20	N				
A 14R			E 61	20	N				J21-155	10	N		49		
A 14Y			P01- 59	10	N	250	49		J21-154	10	N		49		
A 15	2			300		275	A 31			100		75	A 31 28	6	C1 J6
A 15B	69		E 44	20	N				SHLD A 15	20	N				
A 15R			E 61	20	N				J21-223	10	N		49		
A 15Y			P01- 49	10	N	250	49		J21-222	10	N		49		
A 16	2			300		275	A 31			100		75	A 31 28	12	C1 J6
A 16B	69		E 44	20	N				SHLD A 16	20	N				
A 16R			E 61	20	N				J21-227	10	N		49		
A 16Y			P01- 39	10	N	250	49		J21-226	10	N		49		
A 18	4		P01- 91	10	N		49		TB1-K 1	18	N			162	G1 K1
A 19	70						A 32						A 32	21	G1 H2
A 19R			P01- 11	10	N		49		TB2-G 4	18	N				
A 19Y			P01- 10	10	N		49		TB2-H 4	18	N				
A 20	4		P01- 78	10	N		49		TB2-M 4	18	N			12	G1 H2
A 21	4		P01- 7	10	N		49		TB3-S21	18	N			321	C2 J3
A 22	4		P01- 26	10	N		49		TB1-U 2	18	N			147	G1 K1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 12

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT 2	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT 2	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 23	2			50		25	A 31			125		100	A 31 28	54	G1 H1
A 23B	69		TB2-S 2	18	N				SHLD A 23	20	N				
A 23R			P01- 96	10	N		49		TB2-N 2	18	N				
A 23Y			P01- 97	10	N		49		TB2-R 2	18	N				
A 24	2			50		25	A 31			125		100	A 31 28	60	G1 H1
A 24B	69		TB2-F 2	18	N				SHLD A 24	20	N				
A 24R			P01- 70	10	N		49		TB2-H 2	18	N				
A 24Y			P01- 71	10	N		49		TB2-G 2	18	N				
A 25	2			50		25	A 31			125		100	A 31 28	348	G2 H4
A 25B	69		TB2-F 7	18	N				SHLD A 25	20	N				
A 25R			P01- 82	10	N		49		TB2-H 7	18	N				
A 25Y			P01- 83	10	N		49		TB2-G 7	18	N				
A 26	4		P01- 4	10	N		49		TB1-D 6	18	N		64	126	G1 K2
A 27	2			300		275	A 31			100		75	A 31 28	9	C1 J6
A 27B	69		E 44	20	N				SHLD A 27	20	N				
A 27R			E 61	20	N				J21-225	10	N		49		
A 27Y			P01- 76	10	N	250	49		J21-224	10	N		49		
A 28	4		P01- 88	10	N		49		TB3-F 3	18	N			108	C1 J2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 13

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT 2	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT 2	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 29	4		P01- 89	10	N		49		TB3-M21	18	N		65	330	C2 J3
A 33	4		P01- 84	10	N		49		TB3-B20	18	N			27	C1 J1
A 38	70						A 32						A 32	33	G1 H2
A 38R			J01- 67	10	N		49		TB2-H 3	18	N		64		
A 38Y			J01- 57	10	N		49		TB2-G 3	18	N		64		
A 39	2			50		25	A 31			125		100	A 31 28	57	G1 H1
A 39B	69		TB2-F 2	18	N				SHLD A 39	20	N				
A 39R			J01- 35	10	N		49		TB2-H 2	18	N				
A 39Y			J01- 45	10	N		49		TB2-G 2	18	N				
A 40	2			50		25	A 31			125		100	A 31 28	36	C1 J1
A 40B	69		TB3-H14	18	N				SHLD A 40	20	N				
A 40R			J01- 20	10	N		49		TB3-F14	18	N				
A 40Y			J01- 6	10	N		49		TB3-F13	18	N				
A 41	2			50		25	A 31			125		100	A 31 28	39	C1 J1
A 41B	69		TB3-H13	18	N				SHLD A 41	20	N				
A 41R			J01- 21	10	N		49		TB3-D13	18	N				
A 41Y			J01- 7	10	N		49		TB3-D14	18	N				
A 42	2			50		25	A 31			125		100	A 31 28	87	G1 H1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 14

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 42B	69	TB2-G 1	18	N		65		SHLD A 42	20	N				
A 42R		J01-104	10	N		49		TB2-H 1	18	N		64		
A 42Y		J01- 90	10	N		49		TB2-G 1	18	N				
A 43	2		50		25	A 31			125		100	A 31 28	333	G2 H4
A 43B	69	TB2-V 6	18	N				SHLD A 43	20	N				
A 43R		J01-100	10	N		49		TB2-W 6	18	N				
A 43Y		J01- 86	10	N		49		TB2-W 7	18	N		64		
A 44	2		50		25	A 31			125		100	A 31 28	324	G2 H4
A 44B	69	TB2-D 8	18	N		65		SHLD A 44	20	N				
A 44R		J01-101	10	N		49		TB2-B 8	18	N				
A 44Y		J01- 87	10	N		49		TB2-C 8	18	N		64		
A 45	3		50		25	A 30			125		100	A 30 28	399	G2 H3
A 45B	69	TB2-A 5	18	N		65		SHLD A 45	20	N				
A 45G		J01-108	10	N		49		TB2-C 5	18	N		64		
A 45R		J01- 94	10	N		49		TB2-A 5	18	N				
A 45Y		J01-107	10	N		49		TB2-B 5	18	N		64		
A 46	70					A 32						A 32		
A 46R		J01- 50	10	N		49		E 4	20	N		27		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 15

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 46Y		J01- 60	10	N		49		E 3	20	N		27		
A 48	4	J01- 16	10	N		49		E 6	20	N		27		
A 50	4	J01- 15	10	N		49		E 8	20	N		27		
A 51	3		50		25	A 30			125		100	A 30 28	339	G2 H4
A 51B	69	TB2-T 7	18	N		65		SHLD A 51	20	N				
A 51G		J01-105	10	N		49		TB2-T 6	18	N		64		
A 51R		J01-106	10	N		49		TB2-U 6	18	N		64		
A 51Y		J01- 92	10	N		49		TB2-T 7	18	N				
A 52	71					A 31						A 31	363	G2 H3
A 52G		J01- 31	10	N		49		TB2-L 5	18	N		64		
A 52R		J01- 43	10	N		49		TB2-K 4	18	N				
A 52Y		J01- 32	10	N		49		TB2-L 6	18	N		64		
A 53	70					A 32						A 32		
A 53R		J01- 28	10	N		49		E 9	20	N		28		
A 53Y		J01- 29	10	N		49		E 10	20	N		28		
A 54	4	J01- 41	10	N		49		E 12	20	N		28		
A 55	4	J01- 34	10	N		49		TB2-W 1	18	N		64	72	G1 H1
A 56	4	J01- 30	10	N		49		TB2-N 5	18	N		64	393	G2 H3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 16

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 62	70					A 32						A 32	369	G2 H3
A 62R		J02- 67	10	N		49		TB2-H 6	18	N		64		
A 62Y		J02- 57	10	N		49		TB2-G 6	18	N		64		
A 63	2		50		25	A 31			125		100	A 31 28	345	G2 H4
A 63B	69	TB2-F 7	18	N				SHLD A 63	20	N				
A 63R		J02- 35	10	N		49		TB2-H 7	18	N				
A 63Y		J02- 45	10	N		49		TB2-G 7	18	N				
A 64	2		50		25	A 31			125		100	A 31 28	324	C2 J3
A 64B	69	E 48	20	N		27		SHLD A 64	20	N				
A 64R		J02- 20	10	N		49		TB3-N20	18	N				
A 64Y		J02- 6	10	N		49		TB3-N21	18	N				
A 65	2		50		25	A 31			125		100	A 31 28	42	C1 J1
A 65B	69	TB3-H12	18	N				SHLD A 65	20	N				
A 65R		J02- 21	10	N		49		TB3-C13	18	N				
A 65Y		J02- 7	10	N		49		TB3-C14	18	N				
A 66	2		50		25	A 31			125		100	A 31 28	321	G2 H4
A 66B	69	TB2-G 8	18	N		65		SHLD A 66	20	N				
A 66R		J02-104	10	N		49		TB2-H 8	18	N		64		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 17

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 66Y		J02- 90	10	N		49		TB2-G 8	18	N				
A 67	2		50		25	A 31			125		100	A 31 28	384	G2 H3
A 67B	69	TB2-V 5	18	N				SHLD A 67	20	N				
A 67R		J02-100	10	N		49		TB2-U 5	18	N				
A 67Y		J02- 86	10	N		49		TB2-U 4	18	N		64		
A 68	2		50		25	A 31			125		100	A 31 28	351	G2 H4
A 68B	69	TB2-D 7	18	N				SHLD A 68	20	N				
A 68R		J02-101	10	N		49		TB2-B 7	18	N				
A 68Y		J02- 87	10	N		49		TB2-C 7	18	N		64		
A 69	3		50		25	A 30			125		100	A 30 28	378	G2 H3
A 69B	69	TB2-C 6	18	N		65		SHLD A 69	20	N				
A 69G		J02-108	10	N		49		TB2-A 6	18	N		64		
A 69R		J02- 94	10	N		49		TB2-C 6	18	N				
A 69Y		J02-107	10	N		49		TB2-B 6	18	N		64		
A 70	70					A 32						A 32		
A 70R		J02- 50	10	N		49		E 4	20	N				
A 70Y		J02- 60	10	N		49		E 3	20	N				
A 72	4	J02- 16	10	N		49		E 6	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 18

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 74	4		J02- 15	10	N		49		E 8	20	N				
A 75	3			50		25	A 30			125		100	A 30 28	360	G2 H3
A 75B	69		TB2-X 6	18	N		65		SHLD A 75	20	N				
A 75G			J02-105	10	N		49		TB2-X 5	18	N		64		
A 75R			J02-106	10	N		49		TB2-W 5	18	N		64		
A 75Y			J02- 92	10	N		49		TB2-X 6	18	N				
A 76	71						A 31						A 31	30	G1 H2
A 76G			J02- 31	10	N		49		TB2-L 3	18	N		64		
A 76R			J02- 43	10	N		49		TB2-K 4	18	N				
A 76Y			J02- 32	10	N		49		TB2-K 3	18	N		64		
A 77	70						A 32						A 32		
A 77R			J02- 28	10	N		49		E 9	20	N				
A 77Y			J02- 29	10	N		49		E 10	20	N				
A 78	4		J02- 41	10	N		49		E 12	20	N				
A 79	4		J02- 34	10	N		49		TB2-X 1	18	N		64	69	G1 H1
A 80	4		J02- 30	10	N		49		TB2-R 5	18	N		64	390	G2 H3
A 84	70						A 32						A 32		
A 84R			J03- 1	10	N		49		E 1	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 19

MIL 2065-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 84Y			J03- 14	10	N		49		E 2	20	N				
A 85	70						A 32						A 32	81	G1 H1
A 85R			J03- 67	10	N		49		TB2-N 1	18	N		64		
A 85Y			J03- 57	10	N		49		TB2-R 1	18	N		64		
A 86	2			50		25	A 31			125		100	A 31 28	51	G1 H1
A 86B	69		TB2-S 2	18	N				SHLD A 86	20	N				
A 86R			J03- 35	10	N		49		TB2-N 2	18	N				
A 86Y			J03- 45	10	N		49		TB2-R 2	18	N				
A 87	2			50		25	A 31			125		100	A 31 28	312	G2 H4
A 87B	69		TB2-M 8	18	N				SHLD A 87	20	N				
A 87R			J03- 20	10	N		49		TB2-R 8	18	N		64		
A 87Y			J03- 6	10	N		49		TB2-N 7	18	N				
A 88	2			50		25	A 31			125		100	A 31 28	306	G2 H4
A 88B	69		TB2-V 8	18	N				SHLD A 88	20	N				
A 88R			J03- 21	10	N		49		TB2-T 8	18	N		64		
A 88Y			J03- 7	10	N		49		TB2-U 8	18	N				
A 89	2			50		25	A 31			125		100	A 31 28	27	G1 H2
A 89B	69		TB2-S 3	18	N		64		SHLD A 89	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 20

MIL 2065-4-64 WIR

WIRE HARNESS A

B 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 89R			J03-104	10	N		49		TB2-N 3	18	N		65		
A 89Y			J03- 90	10	N		49		TB2-R 3	18	N		65		
A 90	2			50		25	A 31			125		100	A 31 28	3	G1 H2
A 90B	69		TB2-V 4	18	N		65		SHLD A 90	20	N				
A 90R			J03-100	10	N		49		TB2-W 4	18	N				
A 90Y			J03- 86	10	N		49		TB2-X 4	18	N		64		
A 91	2			50		25	A 31			125		100	A 31 28	42	G1 H2
A 91B	69		TB2-V 2	18	N				SHLD A 91	20	N				
A 91R			J03-101	10	N		49		TB2-W 2	18	N				
A 91Y			J03- 87	10	N		49		TB2-X 2	18	N		64		
A 92	3			50		25	A 30			125		100	A 30 28	24	G1 H2
A 92B	69		TB2-A 4	18	N		65		SHLD A 92	20	N				
A 92G			J03-108	10	N		49		TB2-C 4	18	N		64		
A 92R			J03- 94	10	N		49		TB2-A 4	18	N				
A 92Y			J03-107	10	N		49		TB2-B 4	18	N		64		
A 93	70						A 32						A 32		
A 93R			J03- 50	10	N		49		E 4	20	N				
A 93Y			J03- 60	10	N		49		E 3	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR B | SHEET 21

MIL 2065 - 4-63 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 96	3			50		25	A 30			125		100	A 30 28	342	G2 H4
A 96B	69		TB2-R 7	18	N		65		SHLD A 96	20	N				
A 96G			J03-105	10	N		49		TB2-R 6	18	N		64		
A 96R			J03-106	10	N		49		TB2-N 6	18	N		64		
A 96Y			J03- 92	10	N		49		TB2-R 7	18	N				
A 97	71						A 31						A 31	366	G2 H3
A 97G			J03- 31	10	N		49		TB2-K 6	18	N		64		
A 97R			J03- 43	10	N		49		TB2-K 4	18	N		66		
A 97Y			J03- 32	10	N		49		TB2-K 5	18	N		64		
A 98	70						A 32						A 32		
A 98R			J03- 28	10	N		49		E 9	20	N				
A 98Y			J03- 29	10	N		49		E 10	20	N				
A 99	4		J03- 41	10	N		49		E 12	20	N				
A 100	4		J03- 34	10	N		49		TB2-S 1	18	N		64	78	G1 H1
A 101	4		J03- 89	10	N		49		TB2-T 1	18	N		64	75	G1 H1
A 102	4		J03- 30	10	N		49		TB2-K 8	18	N		64	318	G2 H4
A 104	70						A 32						A 32		
A 104R			J04- 1	10	N		49		E 14	20	N		28		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 22

MIL 2065-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 104Y			J04- 14	10	N		49		E 13	20	N		28		
A 107	2			50		25	A 31			125		100	A 31 28	63	C1 J1
A 107B	69		TB3-H 9	18	N				SHLD A 107	20	N				
A 107R			J04- 57	10	N		49		TB3-K11	18	N				
A 107Y			J04- 67	10	N		49		TB3-K10	18	N				
A 108	2			50		25	A 31			125		100	A 31 28	381	C2 J4
A 108B	69		TB3-N15	18	N		64		SHLD A 108	20	N				
A 108R			J04- 66	10	N		49		TB3-N13	18	N				
A 108Y			J04- 56	10	N		49		TB3-N14	18	N				
A 109	71						A 31						A 31	396	C2 J4
A 109G			J04- 34	10	N		49		TB3-T12	18	N		64		
A 109R			J04- 45	10	N		49		TB3-R12	18	N		64		
A 109Y			J04- 35	10	N		49		TB3-S12	18	N		64		
A 110	2			50		25	A 31			125		100	A 31 28	84	C1 J2
A 110B	69		TB3-K 9	18	N				SHLD A 110	20	N				
A 110R			J04- 6	10	N		49		TB3-K 7	18	N		64		
A 110Y			J04- 20	10	N		49		TB3-K 8	18	N		64		
A 111	2			50		25	A 31			125		100	A 31 28	33	C1 J1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 23

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 111B	69		TB3-G15	18	N		64		SHLD A 111	20	N				
A 111R			J04- 7	10	N		49		TB3-G13	18	N		64		
A 111Y			J04- 21	10	N		49		TB3-G14	18	N		64		
A 112	2			50		25	A 31			125		100	A 31 28	66	C1 J1
A 112B	69		TB3-H 9	18	N				SHLD A 112	20	N				
A 112R			J04-104	10	N		49		TB3-H10	18	N		64		
A 112Y			J04- 90	10	N		49		TB3-H11	18	N		64		
A 113	4		J04- 89	10	N		49		TB3-M18	18	N		64	351	C2 J3
A 114	2			50		25	A 31			125		100	A 31 28	75	C1 J2
A 114B	69		TB3-N 9	18	N				SHLD A 114	20	N				
A 114R			J04-100	10	N		49		TB3-N 7	18	N		64		
A 114Y			J04- 86	10	N		49		TB3-N 8	18	N		64		
A 115	2			50		25	A 31			125		100	A 31 28	57	C1 J1
A 115B	69		TB3-N 9	18	N		65		SHLD A 115	20	N				
A 115R			J04-101	10	N		49		TB3-N11	18	N		64		
A 115Y			J04- 87	10	N		49		TB3-N10	18	N		64		
A 116	3			50		25	A 30			125		100	A 30 28	426	C2 J4
A 116B	69		TB3-S 5	18	N		65		SHLD A 116	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 24

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 116G			J04-108	10	N		49		TB3-S 4	18	N		64		
A 116R			J04- 94	10	N		49		TB3-S 5	18	N				
A 116Y			J04-107	10	N		49		TB3-S 6	18	N		64		
A 117	70						A 32						A 32		
A 117R			J04- 50	10	N		49		E 17	20	N		27		
A 117Y			J04- 60	10	N		49		E 16	20	N		27		
A 121	2			50		25	A 31			125		100	A 31 28	81	C1 J2
A 121B	69		TB3-L 9	18	N				SHLD A 121	20	N				
A 121R			J04-106	10	N		49		TB3-L 7	18	N		64		
A 121Y			J04- 92	10	N		49		TB3-L 8	18	N		64		
A 122	71						A 31						A 31	69	C1 J1
A 122G			J04- 31	10	N		49		TB3-D11	18	N		64		
A 122R			J04- 43	10	N		49		TB3-B17	18	N		65		
A 122Y			J04- 32	10	N		49		TB3-C11	18	N		64		
A 123	70						A 32						A 32		
A 123R			J04- 28	10	N		49		E 9	20	N				
A 123Y			J04- 29	10	N		49		E 10	20	N				
A 124	4		J04- 41	10	N		49		E 12	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 25

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 130	2			50		25	A 31			125		100	A 31 28	72	C1 J1
A 130B	69		TB3-G 9	18	N				SHLD A 130	20	N				
A 130R			J05- 8	10	N		49		TB3-G10	18	N				
A 130Y			J05- 22	10	N		49		TB3-F10	18	N				
A 131	2			50		25	A 31			125		100	A 31 28	30	C1 J1
A 131B	69		TB3-K15	18	N		66		SHLD A 131	20	N				
A 131R			J05- 9	10	N		49		TB3-F16	18	N				
A 131Y			J05- 10	10	N		49		TB3-G16	18	N				
A 132	2			300		275	A 31			125		100	A 31 28	60	C1 J1
A 132B	69		TB3-L 9	18	N		65		SHLD A 132	20	N				
A 132R			J05- 12	10	N	250	49		TB3-L10	18	N		64		
A 132Y			E 18	20	N		27		TB3-L11	18	N		64		
A 133	4		J05- 11	10	N		49		E 18	20	N				
A 134	2			50		25	A 31			125		100	A 31 28	375	C2 J4
A 134B	69		TB3-R15	18	N				SHLD A 134	20	N				
A 134R			J05- 68	10	N		49		TB3-R14	18	N		64		
A 134Y			J05- 67	10	N		49		TB3-R13	18	N		64		
A 135	2			50		25	A 31			125		100	A 31 28	87	C1 J2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 26

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.		NO.	ROUTING
A 135B	69		TB3-H 9	18	N		66			SHLD A 135	20	N					
A 135R			J05-104	10	N		49			TB3-H 8	18	N		64			
A 135Y			J05- 90	10	N		49			TB3-H 7	18	N		64			
A 136	4		J05- 89	10	N		49			TB3-N18	18	N		64		348	C2 J3
A 137	2			50		25	A 31				125		100	A 31	28	399	C2 J4
A 137B	69		TB3-T 9	18	N					SHLD A 137	20	N					
A 137R			J05-100	10	N		49			TB3-T11	18	N		64			
A 137Y			J05- 86	10	N		49			TB3-T10	18	N		64			
A 138	2			50		25	A 31				125		100	A 31	28	402	C2 J4
A 138B	69		TB3-S 9	18	N					SHLD A 138	20	N					
A 138R			J05-101	10	N		49			TB3-S11	18	N		64			
A 138Y			J05- 87	10	N		49			TB3-S10	18	N		64			
A 139	3			50		25	A 30				125		100	A 30	28	423	C2 J4
A 139B	69		TB3-T 5	18	N		65			SHLD A 139	20	N					
A 139G			J05-108	10	N		49			TB3-T 6	18	N		64			
A 139R			J05- 94	10	N		49			TB3-T 5	18	N					
A 139Y			J05-107	10	N		49			TB3-T 4	18	N		64			
A 144	2			50		25	A 31				125		100	A 31	28	78	C1 J2

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 27

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.		NO.	ROUTING
A 144B	69		TB3-M 9	18	N					SHLD A 144	20	N					
A 144R			J05-106	10	N		49			TB3-M 8	18	N		64			
A 144Y			J05- 92	10	N		49			TB3-M 7	18	N		64			
A 145	71						A 31							A 31		54	C1 J1
A 145G			J05- 31	10	N		49			TB3-D12	18	N		64			
A 145R			J05- 43	10	N		49			TB3-B16	18	N		65			
A 145Y			J05- 32	10	N		49			TB3-C12	18	N		64			
A 146	70						A 32							A 32			
A 146R			J05- 28	10	N		49			E 9	20	N					
A 146Y			J05- 29	10	N		49			E 10	20	N					
A 147	4		J05- 41	10	N		49			E 12	20	N					
A 148	70						A 32							A 32		51	C1 J1
A 148R			J05- 56	10	N		49			TB3-L12	18	N		64			
A 148Y			J05- 66	10	N		49			TB3-K12	18	N		64			
A 149	4		J05- 25	10	N		49			E 18	20	N					
A 150	70						A 32							A 32			
A 150R			J06- 1	10	N		49			P01- 1	10	N		49			
A 150Y			J06- 2	10	N		49			P01- 2	10	N		49			

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 28

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.		NO.	ROUTING
A 151	70						A 32							A 32			
A 151R			J06- 14	10	N		49			P01- 14	10	N		49			
A 151Y			J06- 15	10	N		49			P01- 15	10	N		49			
A 152	70						A 32							A 32			
A 152R			J06- 29	10	N		49			P01- 29	10	N		49			
A 152Y			J06- 28	10	N		49			P01- 28	10	N		49			
A 153	70						A 32							A 32		156	G1 K1
A 153R			J06-108	10	N		49			TB1-S 1	18	N					
A 153Y			J06-107	10	N		49			TB1-S 2	18	N					
A 154	4		J06- 12	10	N		49			TB1-K 7	18	N				111	G1 K2
A 155	2			300		275	A 31				125		100	A 31	28	36	G1 H2
A 155B	69		TB2-D 3	18	N		65			SHLD A 155	20	N					
A 155R			E 55	20	N		27			TB2-F 3	18	N		65			
A 155Y			J06- 68	10	N	250	49			TB2-D 2	18	N		65			
A 156	2			300		275	A 31				100		75	A 31	28	15	C1 J6
A 156B	69		E 44	20	N					SHLD A 156	20	N					
A 156R			E 55	20	N					J21-229	10	N		49			
A 156Y			J06- 69	10	N	250	49			J21-228	10	N		49			

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 29

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.		NO.	ROUTING
A 157	4		J06- 18	10	N		49			P01- 18	10	N		49			
A 158	4		J06- 81	10	N		49			TB1-F 8	18	N				105	G1 K2
A 160	4		J06- 9	10	N		49			P01- 9	10	N		49			
A 161	4		J06- 6	10	N		49			P01- 6	10	N		49			
A 162	4		J06- 34	10	N		49			P01- 34	10	N		49			
A 163	4		J06- 35	10	N		49			P01- 35	10	N		49			
A 164	4		J06- 36	10	N		49			P01- 36	10	N		49			
A 165	4		J06- 23	10	N		49			P01- 23	10	N		49			
A 166	4		J06- 24	10	N		49			TB3-F 4	18	N		65		102	C1 J2
A 167	4		J06- 25	10	N		49			P01- 25	10	N		49			
A 168	4		J06- 93	10	N		49			P01- 93	10	N		49			
A 169	4		J06- 78	10	N		49			TB2-L 4	18	N				15	G1 H2
A 170	4		J06- 56	10	N		49			P01- 56	10	N		49			
A 171	4		J06-104	10	N		49			P01-104	10	N		49			
A 172	4		J06- 92	10	N		49			P01- 92	10	N		49			
A 173	4		J06-105	10	N		49			P01-105	10	N		49			
A 174	4		J06- 94	10	N		49			P01- 94	10	N		49			
A 175	4		J06- 22	10	N		49			P01- 22	10	N		49			

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 30

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 176	4		J06- 79	10	N		49		P01- 79	10	N		49		
A 177	4		J06- 46	10	N		49		P01- 46	10	N		49		
A 178	4		J06- 91	10	N		49		TB3-B21	18	N			21	C1 J1
A 179	4		J08- 67	10	N		49		TB1-G 1	18	N			165	G1 K1
A 181	4		J08- 66	10	N		49		TB3-H 6	18	N			93	C1 J2
A 182	70						A 32						A 32	48	C1 J1
A 182R			J08- 68	10	N		49		TB3-B13	18	N				
A 182Y			J08- 81	10	N		49		TB3-B12	18	N				
A 183	4		J08-106	10	N		49		TB2-S 6	18	N			357	G2 H3
A 184	4		J08- 78	10	N		49		TB2-S 7	18	N			336	G2 H4
A 185	4		J08- 93	10	N		49		TB2-S 4	18	N			6	G1 H2
A 186	4		J08- 79	10	N		49		TB2-S 5	18	N			387	G2 H3
A 187	4		J08- 51	10	N		49		TB1-H 8	18	N			102	G1 K2
A 188	4		J08- 60	10	N		49		TB3-M 6	18	N			90	C1 J2
A 190	4		J08- 73	10	N		49		TB3-B 5	18	N			99	C1 J2
A 192	4		J08- 62	10	N		49		TB3-D 3	18	N			111	C1 J2
A 193	4		J08- 42	10	N		49		TB1-U 2	18	N			150	G1 K1
A 196	4		J08- 53	10	N		49		J22- 38	10	N		49	306	C2 J5

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR +		SHEET 31

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 198	4		J08- 71	10	N		49		TB1-H 6	18	N			123	G1 K2
A 199	4		J08- 95	10	N		49		TB3-B14	18	N			45	C1 J1
A 200	4		J08- 72	10	N		49		TB3-B 3	18	N			117	C1 J2
A 202	4		J08- 18	10	N		49		TB2-S 8	18	N			309	G2 H4
A 203	4		J08- 41	10	N		49		TB3-B 4	18	N			105	C1 J2
A 206	4		J08- 43	10	N		49		J22- 72	10	N		49	312	C2 J5
A 211	4		J08- 92	10	N		49		TB1-S 5	18	N			129	G1 K2
A 215	4		J08- 29	10	N		49		TB3-B21	18	N		65	18	C1 J1
A 216	70						A 32						A 32	396	G2 H3
A 216R			P02-A	20	N		54		TB2-G 4	18	N				
A 216Y			P02-B	20	N		54		TB2-G 5	18	N		64		
A 217	2			100		75	A 31			125		100	A 31 28	402	G2 H3
A 217B	69		TB2-V 3	18	N		64		SHLD A 217	20	N				
A 217R			P02-C	20	N		54		TB2-W 4	18	N		65		
A 217Y			P02-D	20	N		54		TB2-W 3	18	N		64		
A 218	2			100		75	A 31			125		100	A 31 28	405	G2 H3
A 218B	69		TB2-V 2	18	N		65		SHLD A 218	20	N				
A 218R			P02-E	20	N		54		TB2-X 3	18	N		64		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR +		SHEET 32

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 218Y			P02-F	20	N		54		TB2-W 2	18	N		65		
A 219	2			100		75	A 31			125		100	A 31 28	381	G2 H3
A 219B	69		TB2-V 5	18	N		65		SHLD A 219	20	N				
A 219R			P02-G	20	N		54		TB2-U 5	18	N		65		
A 219Y			P02-H	20	N		54		TB2-T 5	18	N		64		
A 220	2			100		75	A 31			125		100	A 31 28	354	G2 H4
A 220B	69		TB2-D 7	18	N		65		SHLD A 220	20	N				
A 220R			P02-J	20	N		54		TB2-A 7	18	N		64		
A 220Y			P02-K	20	N		54		TB2-B 7	18	N		65		
A 221	2			100		75	A 31			125		100	A 31 28	327	C2 J3
A 221B	69		E 48	20	N				SHLD A 221	20	N				
A 221R			P02-L	20	N		[illegible]		TB3-N20	18	N				
A 221Y			P02-M	20	N		54		TB3-N21	18	N				
A 222	2			100		75	A 31			125		100	A 31 28	393	C2 J4
A 222B	69		TB3-H12	18	N				SHLD A 222	20	N				
A 222R			P02-P	20	N		54		TB3-C14	18	N				
A 222Y			P02-N	20	N		54		TB3-C13	18	N				
A 223	70						A 32						A 32	447	G2 K3

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR +		SHEET 33

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 223R			P02-R	20	N		54		TB1-D 2	18	N		64		
A 223Y			P02-S	20	N		54		TB1-C 2	18	N		64		
A 224	2			100		75	A 31			125		100	A 31 28	423	G2 K3
A 224B	69		TB1-D 7	18	N				SHLD A 224	20	N				
A 224R			P02-T	20	N		54		TB1-C 6	18	N				
A 224Y			P02-U	20	N		54		TB1-B 6	18	N				
A 225	2			100		75	A 31			125		100	A 31 28	330	G2 H4
A 225B	69		TB2-V 6	18	N		65		SHLD A 225	20	N				
A 225R			P02-W	20	N		54		TB2-W 6	18	N		65		
A 225Y			P02-X	20	N		54		TB2-X 7	18	N		64		
A 226	2			100		75	A 31			125		100	A 31 28	327	G2 H4
A 226B	69		TB2-D 8	18	N				SHLD A 226	20	N				
A 226R			P02-Y	20	N		54		TB2-A 8	18	N		64		
A 226Y			P02-Z	20	N		54		TB2-B 8	18	N		65		
A 227	2			100		75	A 31			125		100	A 31 28	387	C2 J4
A 227B	69		TB3-H14	18	N				SHLD A 227	20	N				
A 227R			P02-A*	20	N		54		TB3-F14	18	N				
A 227Y			P02-B*	20	N		54		TB3-F13	18	N				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR +		SHEET 34

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 228	2			100		75	A 31			125		100	A 31 28	390	C2 J4
A 228B	69		TB3-H13	18	N				SHLD A 228	20	N				
A 228R			P02-F*	20	N		54		TB3-D13	18	N				
A 228Y			P02-G*	20	N		54		TB3-D14	18	N				
A 229	1			100		75	A 32			125		100	A 32 27	420	G2 K3
A 229B	69		TB1-D 7	18	N		66		SHLD A 229	20	N				
A 229Y			P03-A	20	N		54		TB1-C 7	18	N				
A 230	1			100		75	A 32			125		100	A 32 27	414	G2 K3
A 230B	69		TB1-D 8	18	N		64		SHLD A 230	20	N				
A 230Y			P03-B	20	N		54		TB1-C 8	18	N				
A 231	72						A 31						A 31	417	G2 K3
A 231G			P03-U	20	N		54		TB1-B 8	18	N				
A 231N			P03-W	20	N		54		TB1-A 7	18	N				
A 231R			P03-C	20	N		54		TB1-A 8	18	N				
A 231Y			P03-V	20	N		54		TB1-B 7	18	N				
A 232	2			100		75	A 31			125		100	A 31 28	315	G2 H4
A 232B	69		TB2-M 8	18	N				SHLD A 232	20	N				
A 232R			P03-D	20	N		54		TB2-N 8	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 35

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 232Y			P03-E	20	N		54		TB2-N 7	18	N				
A 233	2			100		75	A 31			125		100	A 31 28	303	G2 H4
A 233B	69		TB2-V 8	18	N				SHLD A 233	20	N				
A 233R			P03-F	20	N		54		TB2-U 8	18	N				
A 233Y			P03-G	20	N		54		TB2-U 7	18	N				
A 234	2			100		75	A 31			125		100	A 31 28	429	G2 K3
A 234B	69		TB1-B 5	18	N		65		SHLD A 234	20	N				
A 234R			P03-J	20	N		54		TB1-B 5	18	N				
A 234Y			P03-H	20	N		54		TB1-C 5	18	N		64		
A 235	2			100		75	A 31			125		100	A 31 28	426	G2 K3
A 235B	69		TB1-A 6	18	N		65		SHLD A 235	20	N				
A 235R			P03-K	20	N		54		TB1-A 6	18	N				
A 235Y			P03-L	20	N		54		TB1-A 5	18	N		64		
A 236	2			100		75	A 31			125		100	A 31 28	429	C2 J4
A 236B	69		TB3-S 3	18	N		65		SHLD A 236	20	N				
A 236R			P03-N	20	N		54		TB3-R 4	18	N		64		
A 236Y			P03-M	20	N		54		TB3-R 5	18	N		64		
A 237	2			100		75	A 31			125		100	A 31 28	384	C2 J4

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 36

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 237B	69		TB3-T 3	18	N				SHLD A 237	20	N				
A 237R			P03-R	20	N		54		TB3-M14	18	N		64		
A 237Y			P03-P	20	N		54		TB3-M13	18	N		64		
A 238	70						A 32						A 32	450	G2 K3
A 238R			P03-X	20	N		54		TB1-B 2	18	N				
A 238Y			P03-Y	20	N		54		TB1-A 2	18	N				
A 239	70						A 32						A 32	441	G2 K3
A 239R			P03-Z	20	N		54		TB1-A 4	18	N				
A 239Y			P03-A*	20	N		54		TB1-A 3	18	N				
A 240	70						A 32						A 32	438	G2 K3
A 240R			P03-B*	20	N		54		TB1-A 3	18	N				
A 240Y			P03-C*	20	N		54		TB1-A 4	18	N				
A 241	70						A 32						A 32	435	G2 K3
A 241R			P03-D*	20	N		54		TB1-D 3	18	N				
A 241Y			P03-E*	20	N		54		TB1-D 4	18	N				
A 242	70						A 32						A 32	432	G2 K3
A 242R			P03-F*	20	N		54		TB1-D 4	18	N				
A 242Y			P03-G*	20	N		54		TB1-D 3	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 37

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 243	4		P03-J*	20	N		54		TB3-F 5	18	N			432	C2 J4
A 244	4		P03-H*	20	N		54		TB3-T20	18	N			342	C2 J3
A 246	71						A 31						A 31	357	C2 J3
A 246G			P05-J*	20	N		52		TB3-D16	18	N		64		
A 246R			P05-P	20	N		52		TB3-C18	18	N				
A 246Y			P05-I*	20	N		52		TB3-D17	18	N		64		
A 247	70						A 32						A 32		
A 247R			P05-K	20	N		52		P05-CC	20	N		52		
A 247Y			P05-J	20	N		52		P05-DD	20	N		52		
A 248	2			150		125	A 31			125		100	A 31 28	420	C2 J4
A 248B	69		TB3-R 9	18	N				SHLD A 248	20	N				
A 248R			P05-P*	20	N		52		TB3-R 8	18	N		64		
A 248Y			P05-N*	20	N		52		TB3-R 7	18	N		64		
A 249	4		P05-S	20	N		52		TB3-K21	18	N			333	C2 J3
A 250	4		P05-T	20	N		52		TB3-K21	18	N		65	336	C2 J3
A 251	70						A 32						A 32		
A 251R			P05-EE	20	N		52		P04-D1	10	N		78		
A 251Y			P05-FF	20	N		52		P04-D2	10	N		78		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 38

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH	CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 252	2			150		125	A 31			125		100	A 31 28	414	C2 J4
A 252B	69		TB3-T 9	18	N		65		SHLD A 252	20	N				
A 252R			P05-Z	20	N		52		TB3-T 8	18	N		64		
A 252Y			P05-Y	20	N		52		TB3-T 7	18	N		64		
A 253	2			150		125	A 31			125		100	A 31 28	417	C2 J4
A 253B	69		TB3-S 9	18	N		65		SHLD A 253	20	N				
A 253R			P05-A*	20	N		52		TB3-S 8	18	N		64		
A 253Y			P05-B*	20	N		52		TB3-S 7	18	N		64		
A 254	2			150		125	A 31			125		100	A 31 28	366	C2 J3
A 254B	69		TB3-M15	18	N				SHLD A 254	20	N				
A 254R			P05-C*	20	N		52		TB3-M16	18	N		64		
A 254Y			P05-D*	20	N		52		TB3-M17	18	N		64		
A 255	2			150		125	A 31			125		100	A 31 28	372	C2 J3
A 255B	69		TB3-H15	18	N				SHLD A 255	20	N				
A 255R			P05-F*	20	N		52		TB3-G16	18	N		65		
A 255Y			P05-E*	20	N		52		TB3-F16	18	N		65		
A 256	2			150		125	A 31			125		100	A 31 28	411	C2 J4
A 256B	69		TB3-G 9	18	N		65		SHLD A 256	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 39

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH	CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 256R			P05-G*	20	N		52		TB3-G10	18	N		65		
A 256Y			P05-H*	20	N		52		TB3-F10	18	N		65		
A 257	2			150		125	A 31			125		100	A 31 28	360	C2 J3
A 257B	69		TB3-S15	18	N				SHLD A 257	20	N				
A 257R			P05-K*	20	N		52		TB3-T16	18	N		64		
A 257Y			P05-M*	20	N		52		TB3-T17	18	N		64		
A 258	2			150		125	A 31			125		100	A 31 28	405	C2 J4
A 258B	69		TB3-R 9	18	N		65		SHLD A 258	20	N				
A 258R			P05-Q*	20	N		52		TB3-R10	18	N		64		
A 258Y			P05-R*	20	N		52		TB3-R11	18	N		64		
A 259	71						A 31						A 31	354	C2 J3
A 259G			P05-C	20	N		52		TB3-F18	18	N		64		
A 259R			P05-B	20	N		52		TB3-C18	18	N		65		
A 259Y			P05-A	20	N		52		TB3-D18	18	N		64		
A 260	2			150		125	A 31			125		100	A 31 28	363	C2 J3
A 260B	69		TB3-S15	18	N				SHLD A 260	20	N				
A 260R			P05-U*	20	N		52		TB3-S17	18	N		64		
A 260Y			P05-V*	20	N		52		TB3-S16	18	N		64		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 40

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH	CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 261	2			150		125	A 31			125		100	A 31 28	378	C2 J4
A 261B	69		TB3-R15	18	N				SHLD A 261	20	N				
A 261R			P05-W*	20	N		52		TB3-N13	18	N				
A 261Y			P05-X*	20	N		52		TB3-N14	18	N				
A 262	2			150		125	A 31			125		100	A 31 28	408	C2 J4
A 262B	69		TB3-K 9	18	N				SHLD A 262	20	N				
A 262R			P05-Y*	20	N		52		TB3-K10	18	N				
A 262Y			P05-Z*	20	N		52		TB3-K11	18	N				
A 263	2			150		125	A 31			125		100	A 31 28	369	C2 J3
A 263B	69		TB3-H15	18	N				SHLD A 263	20	N				
A 263R			P05-HH	20	N		52		TB3-H16	18	N		64		
A 263Y			P05-BB	20	N		52		TB3-H17	18	N		64		
A 264	4		P05-AA	20	N		52		TB3-S18	18	N		64	345	C2 J3
A 265	70						A 32						A 32	411	G2 H3
A 265R			P05-CC	20	N				TB2-K 2	18	N				
A 265Y			P05-DD	20	N				TB2-L 2	18	N				
A 266	70						A 32						A 32	444	G2 K3
A 266R			P05-L	20	N		52		TB1-T 1	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TFXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 41

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH	CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 266Y			P05-M	20	N		52		TB1-T 2	18	N				
A 267	70						A 32						A 32		
A 267R			P05-X	20	N		52		P04-F2	10	N		78		
A 267Y			P05-W	20	N		52		P04-F1	10	N		78		
A 268	70						A 32						A 32		
A 268R			P05-J	20	N				P04-E2	10	N		78		
A 268Y			P05-K	20	N				P04-E1	10	N		78		
A 270	4		P05-R	20	N		52		TB3-F21	18	N			339	C2 J3
A 271	71						A 31						A 31	495	E2 D4
A 271G			P06-C	20	N		54		TB1-G 2	18	N				
A 271R			P06-A	20	N		54		TB1-H 3	18	N				
A 271Y			P06-B	20	N		54		TB1-H 2	18	N				
A 272	4		P06-F	20	N		54		TB1-D 5	18	N		65		
A 273	70						A 32						A 32	501	E2 D4
A 273R			P06-H	20	N		54		TB1-A 2	18	N				
A 273Y			P06-J	20	N		54		TB1-B 2	18	N				
A 274	4		P06-K	20	N		54		TB3-G 5	18	N		64	360	E2 L2
A 275	70						A 32						A 32	369	E2 L2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 42

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	CUT WIRE OR SHIELD STRIP WIRE OR JACKET ▷2	TIN	▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD STRIP WIRE OR JACKET ▷2	TIN	▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 275R			P06-M	20	N		54		TB3-L 4	18	N		64		
A 275Y			P06-L	20	N		54		TB3-L 3	18	N		64		
A 276	4		P06-N	20	N		54		TB3-R 6	18	N			318	E2 L4
A 277	4		P06-Y	20	N		54		TB3-N 6	18	N			321	E2 L4
A 278	2			100		75	A 31			125		100	A 31 28	345	E2 L4
A 278B	69		TB3-R 3	18	N				SHLD A 278	20	N				
A 278R			P06-V	20	N		54		TB3-N 5	18	N		64		
A 278Y			P06-W	20	N		54		TB3-N 4	18	N		64		
A 279	2			100		75	A 31			125		100	A 31 28	378	E2 L2
A 279B	69		TB3-N 3	18	N		66		SHLD A 279	20	N				
A 279R			P06-X	20	N		54		TB3-N 1	18	N		64		
A 279Y			P06-R	20	N		54		TB3-N 2	18	N		64		
A 280	4		P06-Z	20	N		54		TB3-H 4	18	N		64	372	E2 L2
A 281	70						A 32						A 32	72	E1 L1
A 281R			P06-F*	20	N		54		TB3-C 2	18	N		64		
A 281Y			P06-G*	20	N		54		TB3-C 3	18	N				
A 282	70						A 32						A 32	462	F2 L5
A 282R			P06-B*	20	N		54		TB3-L13	18	N		64		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 43

MIL 2065-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	CUT WIRE OR SHIELD STRIP WIRE OR JACKET ▷2	TIN	▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD STRIP WIRE OR JACKET ▷2	TIN	▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 282Y			P06-C*	20	N		54		TB3-K13	18	N		64		
A 283	70						A 32						A 32	396	F2 L9
A 283R			P06-D*	20	N		54		TB3-K19	18	N				
A 283Y			P06-E*	20	N		54		TB3-H19	18	N				
A 284	4		P06-D	20	N		54		TB3-T20	18	N		65	366	F2 L9
A 285	4		P06-P	20	N		54		TB3-M 1	18	N		64	381	E2 L2
A 286	4		P06-A*	20	N		54		TB3-K 3	18	N		64	375	E2 L2
A 287	4		P06-E	20	N		54		TB2-D 4	18	N			408	E2 D6
A 288	4		P06-G	20	N		54		TB3-F21	18	N			363	F2 L9
A 289	6			125		100	A 30			125		100	A 30 28	417	E2 D3
A 289B	69		TB1-S 8	18	N		64		SHLD A 289	20	N				
A 289L			P07-C	40	N		54		TB1-U 8	18	N		64		
A 289R			P07-A	40	N		54		TB1-T 8	18	N		64		
A 289W			P07-B	40	N		54		TB1-U 7	18	N		64		
A 290	6			125		100	A 30			125		100	A 30 28	420	E2 D3
A 290B	69		TB1-N 8	18	N		66		SHLD A 290	20	N				
A 290L			P07-F	40	N		54		TB1-L 7	18	N		64		
A 290R			P07-D	40	N		54		TB1-M 8	18	N		64		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 44

MIL 2065-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	CUT WIRE OR SHIELD STRIP WIRE OR JACKET ▷2	TIN	▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD STRIP WIRE OR JACKET ▷2	TIN	▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 290W			P07-E	40	N		54		TB1-L 8	18	N		64		
A 291	6			125		100	A 30			125		100	A 30 28	453	E2 D3
A 291B	69		TB1-S 6	18	N		65		SHLD A 291	20	N				
A 291L			P07-J	40	N		54		TB1-U 6	18	N		64		
A 291R			P07-G	40	N		54		TB1-T 6	18	N		64		
A 291W			P07-H	40	N		54		TB1-U 5	18	N		64		
A 292	6			125		100	A 30			125		100	A 30 28	483	E2 D4
A 292B	69		TB1-S 3	18	N		65		SHLD A 292	20	N				
A 292L			P07-M	40	N		54		TB1-U 3	18	N		64		
A 292R			P07-K	40	N		54		TB1-U 4	18	N		64		
A 292W			P07-L	40	N		54		TB1-T 3	18	N		64		
A 293	6			125		100	A 30			125		100	A 30 28	486	E2 D4
A 293B	69		TB1-N 4	18	N				SHLD A 293	20	N				
A 293L			P07-R	40	N		54		TB1-M 4	18	N		64		
A 293R			P07-N	40	N		54		TB1-L 4	18	N		64		
A 293W			P07-P	40	N		54		TB1-L 3	18	N		64		
A 294	6			125		100	A 30			125		100	A 30 28	456	E2 D3
A 294B	69		TB1-N 5	18	N				SHLD A 294	20	N				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 45

MIL 2065-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	CUT WIRE OR SHIELD STRIP WIRE OR JACKET ▷2	TIN	▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD STRIP WIRE OR JACKET ▷2	TIN	▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 294L			P07-W	40	N		54		TB1-L 5	18	N		64		
A 294R			P07-U	40	N		54		TB1-M 5	18	N		64		
A 294W			P07-V	40	N		54		TB1-L 6	18	N		64		
A 295	70						A 32						A 32	438	E2 D3
A 295R			P07-X	20	N		54		TB1-M 7	18	N		64		
A 295Y			P07-Y	20	N		54		TB1-M 6	18	N		64		
A 296	70						A 32						A 32	492	E2 D4
A 296R			P07-Z	20	N		54		TB1-M 3	18	N		64		
A 296Y			P07-A*	20	N		54		TB1-N 2	18	N		64		
A 297	70						A 32						A 32	465	E2 D4
A 297R			P07-B*	20	N		54		TB1-T 5	18	N		64		
A 297Y			P07-C*	20	N		54		TB1-T 4	18	N		64		
A 298	72						A 31						A 31	489	E2 D4
A 298G			P07-G*	20	N		54		TB1-B 4	18	N		64		
A 298N			P07-H*	20	N		54		TB1-C 4	18	N		64		
A 298R			P07-F*	20	N		54		TB1-C 3	18	N		64		
A 298Y			P07-J*	20	N		54		TB1-B 3	18	N		64		
A 299	70						A 32						A 32	411	E2 D6

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 46

MIL 2065-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	▷2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	TIN	▷2	FROM TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	TIN	▷2	TO TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 299R			P08-A	20	N		52		TB2-U 3	18	N				
A 299Y			P08-B	20	N		52		TB2-T 2	18	N				
A 300	71						A 31						A 31	402	F2 L9
A 300G			P08-G	20	N		52		TB3-C16	18	N				
A 300R			P08-F	20	N		52		TB3-C19	18	N				
A 300Y			P08-E	20	N		52		TB3-C17	18	N				
A 301	70						A 32						A 32	414	E2 D6
A 301R			P08-J	20	N		52		TB2-K 2	18	N		65		
A 301Y			P08-K	20	N		52		TB2-L 2	18	N		65		
A 302	2			150		125	A 31			125		100	A 31 28	417	F2 L7
A 302B	69		TB3-S15	18	N		66		SHLD A 302	20	N				
A 302R			P08-N	20	N		52		TB3-R17	18	N		64		
A 302Y			P08-P	20	N		52		TB3-R16	18	N		64		
A 303	4		P08-R	20	N		52		TB3-K15	18	N			435	F2 L7
A 304	2			150		125	A 31			125		100	A 31 28	426	F2 L7
A 304B	69		TB3-H15	18	N		66		SHLD A 304	20	N				
A 304R			P08-T	20	N		52		TB3-K17	18	N		64		
A 304Y			P08-S	20	N		52		TB3-K16	18	N		64		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 47

MIL 2068 4 64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	▷2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	TIN	▷2	FROM TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	TIN	▷2	TO TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 305	4		P08-U	20	N		52		TB3-R18	18	N		64	408	F2 L7
A 306	2			150		125	A 31			125		100	A 31 28	441	F2 L5
A 306B	69		TB3-T15	18	N				SHLD A 306	20	N				
A 306R			P08-V	20	N		52		TB3-S13	18	N		64		
A 306Y			P08-W	20	N		52		TB3-S14	18	N		64		
A 307	2			150		125	A 31			125		100	A 31 28	438	F2 L5
A 307B	69		TB3-T15	18	N		66		SHLD A 307	20	N				
A 307R			P08-X	20	N		52		TB3-T14	18	N		64		
A 307Y			P08-Y	20	N		52		TB3-T13	18	N		64		
A 308	71						A 31						A 31	399	F2 L9
A 308G			P08-D*	20	N		52		TB3-F17	18	N				
A 308R			P08-H	20	N		52		TB3-C19	18	N		65		
A 308Y			P08-C*	20	N		52		TB3-G17	18	N				
A 309	2			150		125	A 31			125		100	A 31 28	420	F2 L7
A 309B	69		TB3-M15	18	N				SHLD A 309	20	N				
A 309R			P08-E*	20	N		52		TB3-N16	18	N		64		
A 309Y			P08-F*	20	N		52		TB3-N17	18	N		64		
A 310	2			150		125	A 31			125		100	A 31 28	423	F2 L7

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 48

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	▷2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	TIN	▷2	FROM TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	TIN	▷2	TO TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 310B	69		TB3-M15	18	N		66		SHLD A 310	20	N				
A 310R			P08-G*	20	N		52		TB3-L16	18	N		64		
A 310Y			P08-I*	20	N		52		TB3-L17	18	N		64		
A 311	4		P08-H*	20	N		52		TB3-T18	18	N		64	405	F2 L7
A 312	2			150		125	A 31			125		100	A 31 28	306	E2 L4
A 312B	69		TB3-K 9	18	N		66		SHLD A 312	20	N				
A 312R			P08-K*	20	N		52		TB3-K11	18	N		66		
A 312Y			P08-J*	20	N		52		TB3-K10	18	N		66		
A 313	2			150		125	A 31			125		100	A 31 28	444	F2 L5
A 313B	69		TB3-R15	18	N		66		SHLD A 313	20	N				
A 313R			P08-N*	20	N		52		TB3-N14	18	N		66		
A 313Y			P08-M*	20	N		52		TB3-N13	18	N		66		
A 314	70						A 32						A 32	498	E2 D4
A 314R			P08-R*	20	N		52		TB1-T 1	18	N				
A 314Y			P08-S*	20	N		52		TB1-T 2	18	N				
A 315	4		P08-B*	20	N		52		TB3-K15	18	N			432	F2 L7
A 316	4		P08-T*	20	N		52		TB3-F22	18	N			351	F2 L9
A 318	70						A 32						A 32	147	F1 L6

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 49

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	▷2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	TIN	▷2	FROM TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	▷2	TIN	▷2	TO TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 318R			P09- 9	10	N		49		TB3-B18	18	N		64		
A 318Y			P09- 8	10	N		49		TB3-B19	18	N		64		
A 319	71						A 31						A 31	174	E1 D2
A 319G			P09- 78	10	N		49		TB1-H 2	18	N		65		
A 319R			P09- 67	10	N		49		TB1-G 2	18	N		65		
A 319Y			P09- 79	10	N		49		TB1-H 3	18	N		65		
A 320	70						A 32						A 32	69	E1 L1
A 320R			P09- 22	10	N		49		TB3-D 2	18	N				
A 320Y			P09- 34	10	N		49		TB3-C 3	18	N				
A 321	70						A 32						A 32	141	E1 D5
A 321R			P09- 45	10	N		49		TB2-K 1	18	N				
A 321Y			P09- 55	10	N		49		TB2-L 1	18	N				
A 322	70						A 32						A 32	120	E1 D5
A 322R			P09- 56	10	N		49		TB2-U 3	18	N				
A 322Y			P09- 57	10	N		49		TB2-T 3	18	N				
A 323	70						A 32						A 32	462	E2 D4
A 323R			P09- 59	10	N		49		TB1-C 6	18	N		65		
A 323Y			P09- 58	10	N		49		TB1-B 6	18	N		65		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 50

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	STRIP WIRE OR JACKET / T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC. 1	NO.	CIRCUIT POINT 2	STRIP WIRE OR JACKET / T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC 1	NO.	
A 324	70					A 32						A 32		159	E1 D1
A 324R			P09- 69	10N		49			TB1-H 4	18N					
A 324Y			P09- 81	10N		49			TB1-G 4	18N					
A 325	70					A 32						A 32		444	E2 D3
A 325R			P09- 68	10N		49			TB1-H 7	18N					
A 325Y			P09- 80	10N		49			TB1-G 7	18N					
A 328	4		P09- 65	10N		49			TB3-H20	18N		64		120	F1 L6
A 329	4		P09- 66	10N		49			TB3-L21	18N				360	F2 L9
A 330	4		P09- 4	10N		49			TB3-R20	18N		64		372	F2 L9
A 331	4		P09- 18	10N		49			TB3-N19	18N				384	F2 L9
A 332	4		P09- 13	10N		49			TB1-H 6	18N		65		459	E2 D3
A 336	4		P09- 12	10N		49			TB1-H 8	18N		65		426	E2 D3
A 342	4		P09- 10	10N		49			TB3-F 5	18N				366	E2 L2
A 344	4		P09- 11	10N		49			TB3-D 3	18N		65		66	E1 L1
A 345	4		P09- 46	10N		49			TB1-U 2	18N		66		177	E1 D2
A 349	4		P09- 33	10N		49			TB1-L 2	18N		64		186	E1 D2
A 350	4		P09- 43	10N		49			TB1-M 2	18N		64		183	E1 D2
A 351	4		P09- 44	10N		49			TB1-T 7	18N		64		435	E2 D3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 51

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	STRIP WIRE OR JACKET / T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC. 1	NO.	CIRCUIT POINT 2	STRIP WIRE OR JACKET / T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC 1	NO.	
A 352	70					A 32						A 32		162	E1 D1
A 352R			P09- 93	10N		49			TB1-D 4	18N		66			
A 352Y			P09-106	10N		49			TB1-D 3	18N		66			
A 353	70					A 32						A 32		165	E1 D1
A 353R			P09-107	10N		49			TB1-A 3	18N		66			
A 353Y			P09-108	10N		49			TB1-A 4	18N		66			
A 354	70					A 32						A 32		189	E1 D2
A 354R			P09- 94	10N		49			TB1-B 2	18N		66			
A 354Y			P09- 95	10N		49			TB1-A 2	18N		66			
A 355	2			50	25	A 31				125	100	A 31	28	453	F2 L5
A 355B	69		TB3-H13	18N		66			SHLD A 355	20N					
A 355R			P09- 1	10N		49			TB3-D13	18N		66			
A 355Y			P09- 14	10N		49			TB3-D14	18N		66			
A 356	2			50	25	A 31				125	100	A 31	28	450	F2 L5
A 356B	69		TB3-H14	18N		66			SHLD A 356	20N					
A 356R			P09- 2	10N		49			TB3-F13	18N		66			
A 356Y			P09- 3	10N		49			TB3-F14	18N		66			
A 357	2			50	25	A 31				125	100	A 31	28	456	F2 L5

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 52

MIL 2068 4 64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	STRIP WIRE OR JACKET / T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC. 1	NO.	CIRCUIT POINT 2	STRIP WIRE OR JACKET / T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC 1	NO.	
A 357B	69		TB3-H12	18N		66			SHLD A 357	20N					
A 357R			P09- 15	10N		49			TB3-C13	18N		66			
A 357Y			P09- 29	10N		49			TB3-C14	18N		66			
A 358	2			50	25	A 31				125	100	A 31	28	357	F2 L9
A 358B	69		E 48	20N					SHLD A 358	20N					
A 358R			P09- 28	10N		49			TB3-N20	18N		66			
A 358Y			P09- 40	10N		49			TB3-N21	18N		66			
A 359	2			50	25	A 31				125	100	A 31	28	384	E2 D6
A 359B	69		TB2-V 8	18N		66			SHLD A 359	20N					
A 359R			P09- 16	10N		49			TB2-U 7	18N		65			
A 359Y			P09- 17	10N		49			TB2-U 8	18N		66			
A 360	2			50	25	A 31				125	100	A 31	28	390	E2 D6
A 360B	69		TB2-M 8	18N		66			SHLD A 360	20N					
A 360R			P09- 30	10N		49			TB2-N 8	18N		65			
A 360Y			P09- 31	10N		49			TB2-N 7	18N		66			
A 361	4		P09- 41	10N		49			TB1-C 8	18N		65		432	E2 D3
A 362	4		P09- 52	10N		49			TB1-C 7	18N		65		447	E2 D3
A 363	72					A 31						A 31		450	E2 D3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 53

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	STRIP WIRE OR JACKET / T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC. 1	NO.	CIRCUIT POINT 2	STRIP WIRE OR JACKET / T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC 1	NO.	
A 363G			P09- 61	10N		49			TB1-B 8	18N		65			
A 363N			P09- 51	10N		49			TB1-B 7	18N		65			
A 363R			P09- 60	10N		49			TB1-A 7	18N		65			
A 363Y			P09- 50	10N		49			TB1-A 8	18N		65			
A 364	2			50	25	A 31				125	100	A 31	28	129	E1 D5
A 364B	69		TB2-F 2	18N		66			SHLD A 364	20N					
A 364R			P09- 96	10N		49			TB2-H 2	18N		66			
A 364Y			P09- 82	10N		49			TB2-G 2	18N		66			
A 365	2			50	25	A 31				125	100	A 31	28	396	E2 D6
A 365B	69		TB2-F 7	18N		66			SHLD A 365	20N					
A 365R			P09- 70	10N		49			TB2-H 7	18N		66			
A 365Y			P09- 71	10N		49			TB2-G 7	18N		66			
A 366	2			50	25	A 31				125	100	A 31	28	126	E1 D5
A 366B	69		TB2-S 2	18N		66			SHLD A 366	20N					
A 366R			P09- 72	10N		49			TB2-N 2	18N		66			
A 366Y			P09- 83	10N		49			TB2-R 2	18N		66			
A 367	4		P09- 98	10N		49			TB3-D 4	18N		64		39	E1 L1
A 368	4		P09- 85	10N		49			TB3-C 5	18N		64		24	E1 L3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 54

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 369	4		P09- 97	10	N		49		TB3-D 5	18	N		64	21	E1 L3
A 370	4		P09- 73	10	N		49		TB3-C 4	18	N		64	42	E1 L1
A 371	71						A 31						A 31	144	F1 L6
A 371G			P09- 64	10	N		49		TB3-G19	18	N		64		
A 371R			P09- 74	10	N		49		TB3-F19	18	N		64		
A 371Y			P09- 75	10	N		49		TB3-D19	18	N		64		
A 376	70						A 32						A 32	156	F1 L6
A 376R			P09- 91	10	N		49		TB3-C17	18	N		65		
A 376Y			P09- 92	10	N		49		TB3-C16	18	N		65		
A 378	70						A 32						A 32	153	F1 L6
A 378R			P09- 76	10	N		49		TB3-G17	18	N		65		
A 378Y			P09- 77	10	N		49		TB3-F17	18	N		65		
A 379	70						A 32						A 32	393	F2 L9
A 379R			P09- 42	10	N		49		TB3-K19	18	N		65		
A 379Y			P09- 53	10	N		49		TB3-H19	18	N		65		
A 380	4		P09- 62	10	N		49		TB3-L19	18	N		64	390	F2 L9
A 381	4		P09- 54	10	N		49		TB3-M19	18	N		64	387	F2 L9
A 382	4		P09- 63	10	N		49		TB3-N19	18	N		65	381	F2 L9

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 55

MIL 2089-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 384	4		P09- 84	10	N		49		TB3-D 6	18	N		64	18	E1 L3
A 385	4		P09- 32	10	N		49		TB2-F 4	18	N		64	114	E1 D5
A 386	70						A 32						A 32	369	F2 L9
A 386R			P09- 21	10	N		49		TB3-S20	18	N		64		
A 386Y			P09- 7	10	N		49		TB3-R19	18	N		64		
A 387	71						A 31						A 31	30	F1 M1
A 387G			J09- 5	10	N		49		J22-232	10	N		49		
A 387R			J09- 18	10	N		49		J22-195	10	N		49		
A 387Y			J09- 4	10	N		49		J22-233	10	N		49		
A 388	71						A 31						A 31	33	F1 M1
A 388G			J09- 6	10	N		49		J22-197	10	N		49		
A 388R			J09- 7	10	N		49		J22-235	10	N		49		
A 388Y			J09- 20	10	N		49		J22-198	10	N		49		
A 389	71						A 31						A 31	36	F1 M1
A 389G			J09- 17	10	N		49		J22-192	10	N		49		
A 389R			J09- 16	10	N		49		J22-230	10	N		49		
A 389Y			J09- 3	10	N		49		J22-193	10	N		49		
A 390	4		J09- 73	10	N		49		TB3-F 3	18	N			63	E1 L1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 56

MIL 2089-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 393	71						A 31						A 31	39	F1 M1
A 393G			J09- 50	10	N		49		J22-238	10	N		49		
A 393R			J09- 41	10	N		49		J22-237	10	N		49		
A 393Y			J09- 40	10	N		49		J22-200	10	N		49		
A 394	4		J09- 72	10	N		49		TB3-B11	18	N		64	3	E1 L3
A 395	4		J09- 97	10	N		49		TB3-R 6	18	N		65	315	E2 L4
A 396	4		J09- 98	10	N		49		TB3-C 1	18	N		64	99	E1 L1
A 397	4		J09-104	10	N		49		TB3-M 4	18	N		64	33	E1 L1
A 398	4		J09- 86	10	N		49		TB3-L 1	18	N		64	84	E1 L1
A 399	4		J09-102	10	N		49		TB3-H 3	18	N		64	54	E1 L1
A 400	4		J09- 76	10	N		49		TB3-L 5	18	N		64	351	E2 L2
A 401	72						A 31						A 31	78	E1 L1
A 401G			J09- 87	10	N		49		TB3-H 1	18	N		64		
A 401N			J09- 88	10	N		49		TB3-G 2	18	N		64		
A 401R			J09-100	10	N		49		TB3-G 1	18	N		64		
A 401Y			J09-101	10	N		49		TB3-H 2	18	N		64		
A 402	4		J09- 90	10	N		49		TB3-N 6	18	N		65	324	E2 L4
A 403	4		J09- 74	10	N		49		TB3-H 5	18	N		64	357	E2 L2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 57

MIL 2089-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 404	4		J09- 59	10	N		49		TB3-G18	18	N		64	150	F1 L6
A 405	4		J09- 58	10	N		49		TB3-K18	18	N		64	414	F2 L7
A 408	4		J09- 66	10	N		49		TB3-H 6	18	N		65	336	E2 L4
A 409	70						A 32						A 32	465	F2 L5
A 409R			J09- 68	10	N		49		TB3-B13	18	N		65		
A 409Y			J09- 81	10	N		49		TB3-B12	18	N		65		
A 410	4		J09- 67	10	N		49		TB1-G 1	18	N		65	195	E1 D2
A 411	4		J09- 93	10	N		49		TB2-S 4	18	N		65	108	E1 D5
A 412	4		J09- 79	10	N		49		TB2-S 5	18	N		65	405	E2 D6
A 413	4		J09-106	10	N		49		TB2-S 6	18	N		65	399	E2 D6
A 414	4		J09- 78	10	N		49		TB2-S 7	18	N		65	393	E2 D6
A 415	4		J09- 42	10	N		49		E 56	20	N		27		
A 416	70						A 32						A 32	138	E1 D5
A 416R			J09- 80	10	N		49		TB2-K 1	18	N				
A 416Y			J09- 69	10	N		49		TB2-L 1	18	N				
A 420	4		J09- 36	10	N		49		E 56	20	N				
A 425	3			50		25	A 30						A 30 28	303	E2 L4
A 425B	69		TB3-M 9	18	N		65		SHLD A 425	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 58

MIL 2089-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 425G			J09- 24	10	N		49		TB3-M12	18	N		64		
A 425R			J09- 10	10	N		49		TB3-M10	18	N		64		
A 425Y			J09- 23	10	N		49		TB3-M11	18	N		64		
A 426	2			50		25	A 31			125		100	A 31 28	468	F2 L5
A 426B	69		TB3-G12	18	N		65		SHLD A 426	20	N				
A 426R			J09- 19	10	N		49		TB3-G11	18	N		64		
A 426Y			J09- 33	10	N		49		TB3-G12	18	N				
A 427	2			50		25	A 31			125		100	A 31 28	471	F2 L5
A 427B	69		TB3-F12	18	N		65		SHLD A 427	20	N				
A 427R			J09- 35	10	N		49		TB3-F11	18	N		64		
A 427Y			J09- 34	10	N		49		TB3-F12	18	N				
A 428	4		J09- 99	10	N		49		TB3-L18	18	N		64	411	F2 L7
A 429	4		J09- 1	10	N		49		TB3-L22	18	N			348	F2 L9
A 431	70						A 32						A 32	132	E1 D5
A 431R			J09- 32	10	N		49		TB2-A 2	18	N		65		
A 431Y			J09- 44	10	N		49		TB2-A 1	18	N		65		
A 433	2			300		275	A 31			100		75	A 31 28	306	F2 N4
A 433B	69		E 44	20	N				SHLD A 433	20	N				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 59

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 433R			E 58	20	N		28		J21- 87	10	N		49		
A 433Y			J09- 30	10	N	250	49		J21- 86	10	N		49		
A 434	2			300		275	A 31			100		75	A 31 28	309	F2 N4
A 434B	69		E 44	20	N				SHLD A 434	20	N				
A 434R			E 58	20	N				J21- 89	10	N		49		
A 434Y			J09- 31	10	N	250	49		J21- 88	10	N		49		
A 435	4		J09- 51	10	N		49		TB3-M22	18	N			345	F2 L9
A 436	4		J09- 83	10	N		49		TB3-L15	18	N		64	429	F2 L7
A 437	2			300		275	A 31			100		75	A 31 28	312	F2 N4
A 437B	69		E 44	20	N				SHLD A 437	20	N				
A 437R			E 58	20	N				J21- 55	10	N		49		
A 437Y			J09- 25	10	N	250	49		J21- 54	10	N		49		
A 438	4		J09- 92	10	N		49		TB3-K 1	18	N		64	87	E1 L1
A 439	4		J09- 94	10	N		49		TB3-D 1	18	N		64	96	E1 L1
A 440	2			100		75	A 31 28	315		150		125	A 31		F2 N4
A 440A	69		SHLD A 440	20	N				E 44	20	N				
A 440R			J21-120	10	N		49		E 58	20	N				
A 440Y			J21-119	10	N		49		E 56	20	N				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 60

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 441	4		J09-103	10	N		49		TB3-M 5	18	N		64	348	E2 L2
A 442	4		J09- 85	10	N		49		TB3-G 4	18	N		64	36	E1 L1
A 443	4		J09- 89	10	N		49		TB3-G 3	18	N		64	57	E1 L1
A 444	4		J09- 75	10	N		49		TB3-K 5	18	N		64	354	E2 L2
A 445	4		J09- 71	10	N		49		TB3-M20	18	N		64	375	F2 L9
A 446	4		J09-105	10	N		49		TB3-K 2	18	N		64	75	E1 L1
A 447	4		J09- 95	10	N		49		P10- 48	10	N		49		
A 448	70						A 32						A 32		
A 448R			J09- 65	10	N		49		P10- 39	10	N		49		
A 448Y			J09- 77	10	N		49		P10- 38	10	N		49		
A 449	2			300		275	A 31			100		75	A 31 28	318	F2 N4
A 449B	69		E 44	20	N				SHLD A 449	20	N				
A 449R			J09- 37	10	N	250	49		J21- 18	10	N		49		
A 449Y			E 58	20	N				J21- 19	10	N		49		
A 450	4		J09- 26	10	N		49		TB2-D 6	18	N		64	402	E2 D6
A 451	4		J09- 91	10	N		49		TB3-F22	18	N			63	F1 L8
A 452	4		P10- 13	10	N		49		TB1-S 5	18	N		66	468	E2 D4
A 454	4		P10- 12	10	N		49		TB3-F 5	18	N		66	363	E2 L2

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 61

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 458	4		TB2-D 5	18	N		64		E 48	20	N				H
A 460	4		P10- 49	10	N		49		TB3-B14	18	N		65	459	F2 L5
A 461	4		P10- 8	10	N		49		J22-171	10	N		49	42	F1 M1
A 462	4		P10- 9	10	N		49		TB3-F 1	18	N			90	E1 L1
A 464	4		J10- 2	10	N		49		TB3-F 3	18	N		66	60	E1 L1
A 465	4		J10- 6	10	N		49		TB3-M 6	18	N		65	327	E2 L4
A 466	4		J10- 7	10	N		49		TB1-F 1	18	N			198	E1 D2
A 467	70						A 32						A 32	2	B N1
A 467R			J10- 38	10	N		49		J21- 84	10	N		49		
A 467Y			E 25	20	N		28		J21- 85	10	N		49		
A 468	70						A 32						A 32	2	B N1
A 468R			E 25	20	N				J21- 13	10	N		49		
A 468Y			J10- 49	10	N		49		J21- 12	10	N		49		
A 469	4		J10- 72	10	N		49		J21-141	10	N		49	1	A N2
A 470	70						A 32						A 32	1	A N2
A 470R			J10- 42	10	N		49		J21- 47	10	N		49		
A 470Y			E 24	20	N		28		J21- 48	10	N		49		
A 471	70						A 32						A 32	1	A N2

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 62

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					
NUMBER	INDIVIDUAL LENGTH ITEM NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 471R		J10- 20	10	N	49		J21- 82	10	N	49		
A 471Y		E 24	20	N			J21- 83	10	N	49		
A 472	70				A 32					A 32	2	B N1
A 472R		J10- 36	10	N	49		J21-150	10	N	49		
A 472Y		E 25	20	N			J21-151	10	N	49		
A 473	4	J10- 71	10	N	49		J21- 75	10	N	49	1	A N2
A 474	71				A 31					A 31	27	E1 L3
A 474G		J10- 5	10	N	49		TB3-B 5	18	N	65		
A 474R		J10- 4	10	N	49		TB3-B 3	18	N	65		
A 474Y		J10- 3	10	N	49		TB3-B 4	18	N	65		
A 475	4	J10- 12	10	N	49		TB1-F 8	18	N	65	429	E2 D3
A 476	4	J10- 70	10	N	49		J21- 3	10	N	49	1	A N2
A 477	4	J10- 57	10	N	49		J21-108	10	N	49	321	F2 N4
A 478	4	J10- 9	10	N	49		TB1-H 5	18	N	64	474	E2 D4
A 479	71				A 31					A 31	153	E1 D1
A 479G		J10- 22	10	N	49		TB1-K 3	18	N	65		
A 479R		J10- 24	10	N	49		TB1-K 5	18	N	65		
A 479Y		J10- 21	10	N	49		TB1-K 4	18	N	65		

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 63

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					
NUMBER	INDIVIDUAL LENGTH ITEM NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 480	71				A 31					A 31	423	E2 D3
A 480G		J10- 23	10	N	49		TB1-K 8	18	N	65		
A 480R		J10- 25	10	N	49		TB1-K 6	18	N	65		
A 480Y		J10- 26	10	N	49		TB1-K 7	18	N			
A 481	4	J10- 59	10	N	49		J21- 40	10	N	49	324	F2 N4
A 482	70				A 32					A 32	1	A N2
A 482R		J10- 32	10	N	49		J21- 80	10	N	49		
A 482Y		E 23	20	N	28		J21- 81	10	N	49		
A 483	70				A 32					A 32	1	A N2
A 483R		J10- 17	10	N	49		J21- 6	10	N	49		
A 483Y		E 23	20	N			J21- 7	10	N	49		
A 484	70				A 32					A 32	1	A N2
A 484R		J10- 18	10	N	49		J21-214	10	N	49		
A 484Y		E 23	20	N			J21-215	10	N	49		
A 485	70				A 32					A 32	1	A N2
A 485R		J10- 40	10	N	49		J21-179	10	N	49		
A 485Y		E 23	20	N			J21-180	10	N	49		
A 486	70				A 32					A 32	1	A N2

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 64

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					
NUMBER	INDIVIDUAL LENGTH ITEM NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 486R		J10- 41	10	N	49		J21-146	10	N	49		
A 486Y		E 23	20	N			J21-147	10	N	49		
A 487	70				A 32					A 32	1	A N2
A 487R		J10- 19	10	N	49		J21-113	10	N	49		
A 487Y		E 23	20	N			J21-114	10	N	49		
A 488	70				A 32					A 32	1	A N2
A 488R		J10- 33	10	N	49		J21- 45	10	N	49		
A 488Y		E 23	20	N			J21- 46	10	N	49		
A 489	70				A 32					A 32	1	A N2
A 489R		J10- 44	10	N	49		J21- 8	10	N	49		
A 489Y		E 24	20	N			J21- 9	10	N	49		
A 490	70				A 32					A 32	1	A N2
A 490R		J10- 43	10	N	49		J21-216	10	N	49		
A 490Y		E 24	20	N			J21-217	10	N	49		
A 491	70				A 32					A 32	1	A N2
A 491R		J10- 53	10	N	49		J21-181	10	N	49		
A 491Y		E 24	20	N			J21-182	10	N	49		
A 492	70				A 32					A 32	1	A N2

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 65

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM					TO					
NUMBER	INDIVIDUAL LENGTH ITEM NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 492R		J10- 51	10	N	49		J21-148	10	N	49		
A 492Y		E 24	20	N			J21-149	10	N	49		
A 493	70				A 32					A 32	1	A N3
A 493R		J10- 64	10	N	49		J21-115	10	N	49		
A 493Y		E 24	20	N			J21-116	10	N	49		
A 494	70				A 32					A 32	1	A N3
A 494R		J10- 73	10	N	49		J21-210	10	N	49		
A 494Y		E 22	20	N	28		J21-211	10	N	49		
A 495	70				A 32					A 32	1	A N3
A 495R		J10- 74	10	N	49		J21-175	10	N	49		
A 495Y		E 22	20	N			J21-176	10	N	49		
A 496	70				A 32					A 32	1	A N3
A 496R		J10- 60	10	N	49		J21-142	10	N	49		
A 496Y		E 22	20	N			J21-143	10	N	49		
A 497	70				A 32					A 32	1	A N3
A 497R		J10- 28	10	N	49		J21-109	10	N	49		
A 497Y		E 22	20	N			J21-110	10	N	49		
A 498	70				A 32					A 32	1	A N3

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 66

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	STRIP / TIN	FROM TERMINATION SPEC. ITEM NO.	FROM NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	STRIP / TIN	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
A 498R		J10- 29	10N	49		J21- 76	10N	49		
A 498Y		E 22	20N			J21- 77	10N	49		
A 499	70			A 32				A 32	1	A N3
A 499R		J10- 30	10N	49		J21- 41	10N	49		
A 499Y		E 22	20N			J21- 42	10N	49		
A 500	70			A 32				A 32	1	A N3
A 500R		J10- 61	10N	49		J21-212	10N	49		
A 500Y		E 22	20N			J21-213	10N	49		
A 501	70			A 32				A 32	1	A N3
A 501R		J10- 62	10N	49		J21-177	10N	49		
A 501Y		E 22	20N			J21-178	10N	49		
A 502	70			A 32				A 32	1	A N3
A 502R		J10- 63	10N	49		J21-144	10N	49		
A 502Y		E 22	20N			J21-145	10N	49		
A 503	70			A 32				A 32	1	A N3
A 503R		J10- 14	10N	49		J21-111	10N	49		
A 503Y		E 23	20N			J21-112	10N	49		
A 504	70			A 32				A 32	1	A N3

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 67

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	STRIP / TIN	FROM TERMINATION SPEC. ITEM NO.	FROM NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	STRIP / TIN	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
A 504R		J10- 16	10N	49		J21- 43	10N	49		
A 504Y		E 23	20N			J21- 44	10N	49		
A 505	70			A 32				A 32	1	A N3
A 505R		J10- 31	10N	49		J21- 4	10N	49		
A 505Y		E 22	20N			J21- 5	10N	49		
A 506	70			A 32				A 32	1	A N3
A 506R		J10- 15	10N	49		J21- 78	10N	49		
A 506Y		E 23	20N			J21- 79	10N	49		
A 507	4	J10- 8	10N	49		TB3-M22	18N	65	342	F2 L9
A 509	4	J10- 58	10N	49		J21- 39	10N	49	327	F2 N4
A 510	70			A 32				A 32	2	B N1
A 510R		J10- 39	10N	49		J21- 14	10N	49		
A 510Y		E 25	20N			J21- 15	10N	49		
[illegible]	70			A 32				A 32	2	B N1
[illegible]		J10- 37	10N	49		J21-117	10N	49		
[illegible]		E 25	20N			J21-118	10N	49		
[illegible]12	4	J10- 56	10N	49		J21-173	10N	49	330	F2 N4
A 513	4	J10- 55	10N	49		J21-174	10N	49	333	F2 N4

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 68

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	STRIP / TIN	FROM TERMINATION SPEC. ITEM NO.	FROM NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	STRIP / TIN	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
A 514	70			A 32				A 32	2	B N1
A 514R		J10- 35	10N	49		J21-183	10N	49		
A 514Y		E 25	20N			J21-184	10N	49		
A 515	70			A 32				A 32	2	B N1
A 515R		J10- 47	10N	49		J21-185	10N	49		
A 515Y		E 25	20N			J21-186	10N	49		
A 516	70			A 32				A 32	2	B N1
A 516R		J10- 34	10N	49		J21-218	10N	49		
A 516Y		E 25	20N			J21-219	10N	49		
A 517	70			A 32				A 32	2	B N1
A 517R		J10- 48	10N	49		J21-220	10N	49		
A 517Y		E 25	20N			J21-221	10N	49		
A 520	4	J10- 75	10N	49		J21-209	10N	49	1	A N3
A 521	4	J10- 13	10N	49		TB1-K 7	18N	66	441	E2 D3
A 522	4	J10- 45	10N	49		J21- 10	10N	49	2	B N1
A 523	4	J10- 46	10N	49		J21- 11	10N	49	2	B N1
A 548	4	TB3-B20	18N	66	24	E 12	20N			C1 J1
A 551	4	E 25	20N			J10- 69	10N	49		B

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 69

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	STRIP / TIN	FROM TERMINATION SPEC. ITEM NO.	FROM NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	STRIP / TIN	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
A 552	4	E 24	20N			J10- 82	10N	49		A
A 554	4	E 23	20N			E 22	20N			A
A 555	4	E 23	20N			E 24	20N			A
A 557	4	E 8	20N			TB2-D 1	18N	64	90	G1 H1
A 558	70			A 32				A 32	84	G1 H1
A 558R		E 14	20N			TB2-K 1	18N	66		
A 558Y		E 13	20N			TB2-L 1	18N	66		
A 559	4	TB3-S21	18N	65	318	E 6	20N			C2 J3
A 560	70			A 32				A 32	114	G1 K2
A 560R		E 17	20N			TB1-H 7	18N	65		
A 560Y		E 16	20N			TB1-G 7	18N	65		
A 561	70			A 32				A 32	153	G1 K1
A 561R		E 9	20N			TB1-S 1	18N	65		
A 561Y		E 10	20N			TB1-S 2	18N			
A 564	70			A 32				A 32	138	G1 K1
A 564R		E 3	20N			TB1-G 4	18N	65		
A 564Y		E 4	20N			TB1-H 4	18N	65		
A 565	4	J08- 50	10N	49		TB1-F 1	18N	65	168	G1 K1

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 70

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM					TO					ROUTING
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 566	4		E 44	20	N			E 57	20	N			N
A 567	70					A 32					A 32	114	C1 J2
A 567R			E 7	20	N	27		TB3-D 2	18	N	65		
A 567Y			E 11	20	N			TB3-C 3	18	N	66		
A 568	4		J21-187	10	N	49	2	E 64	20	N			B N1
A 569	4		J10- 27	10	N	49		E 65	20	N			B
A 570	4		J10- 1	10	N	49		E 62	20	N			A
A 571	4		J21-107	10	N	49	1	E 63	20	N			A N3
A 572	70					A 32					A 32		
A 572R			J01- 1	10	N	49		E 1	20	N	28		
A 572Y			J01- 14	10	N	49		E 2	20	N	27		
A 573	71					A 31					A 31		
A 573G			J01- 11	10	N	49		E 1	20	N			
A 573R			J01- 25	10	N	49		E 1	20	N			
A 573Y			J01- 12	10	N	49		E 5	20	N	27		
A 574	70					A 32					A 32		
A 574R			J02- 1	10	N	49		E 1	20	N			
A 574Y			J02- 14	10	N	49		E 2	20	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 71

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM					TO					ROUTING
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 575	71					A 31					A 31		
A 575G			J02- 11	10	N	49		E 1	20	N			
A 575R			J02- 25	10	N	49		E 1	20	N			
A 575Y			J02- 12	10	N	49		E 5	20	N			
A 576	71					A 31					A 31		
A 576G			J03- 11	10	N	49		E 1	20	N			
A 576R			J03- 25	10	N	49		E 1	20	N			
A 576Y			J03- 12	10	N	49		E 5	20	N			
A 577	71					A 31					A 31	18	G1 H2
A 577G			E 5	20	N			TB2-H 5	18	N	64		
A 577R			E 1	20	N			TB2-G 4	18	N	66		
A 577Y			E 2	20	N			TB2-H 4	18	N	65		
A 578	70					A 32					A 32		
A 578R			J01- 3	10	N	49		E 7	20	N			
A 578Y			J01- 2	10	N	49		E 11	20	N	27		
A 579	70					A 32					A 32		
A 579R			J02- 3	10	N	49		E 7	20	N			
A 579Y			J02- 2	10	N	49		E 11	20	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 72

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM					TO					ROUTING
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 580	70					A 32					A 32		
A 580R			J03- 3	10	N	49		E 7	20	N			
A 580Y			J03- 2	10	N	49		E 11	20	N			
A 581	4		J03- 16	10	N	49		E 6	20	N			
A 582	4		J03- 15	10	N	49		E 8	20	N			
A 583	70					A 32					A 32		
A 583R			J05- 50	10	N	49		E 17	20	N			
A 583Y			J05- 60	10	N	49		E 16	20	N			
A 584	71					A 31					A 31		
A 584G			J04- 12	10	N	49		E 14	20	N			
A 584R			J04- 25	10	N	49		E 13	20	N			
A 584Y			J04- 11	10	N	49		E 13	20	N			
A 585	71					A 31					A 31		
A 585G			J05- 17	10	N	49		E 14	20	N			
A 585R			J05- 4	10	N	49		E 13	20	N			
A 585Y			J05- 18	10	N	49		E 13	20	N			
A 586	70					A 32					A 32		
A 586R			J05- 1	10	N	49		E 14	20	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 73

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM					TO					ROUTING
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 586Y			J05- 14	10	N	49		E 13	20	N			
A 587	4		TB1-N 4	18	N	66		TB1-N 5	18	N			K
A 588	4		TB1-N 5	18	N	66		TB1-N 8	18	N			K
A 591	4		TB3-T 3	18	N	66		TB3-R 3	18	N			L
A 592	4		TB3-R 3	18	N	66		TB3-N 3	18	N			L
A 593	4		TB3-D15	18	N	66		TB3-L20	18	N	65		L
A 594	4		TB3-L22	18	N	65		TB3-D15	18	N			L
A 595	4		TB3-K20	18	N	65		TB3-C15	18	N			L
A 596	4		TB3-K22	18	N	65		TB3-C15	18	N	66		L
A 598	70					A 32					A 32	408	G2 H3
A 598R			P05-D	20	N	52		TB2-U 3	18	N	66		
A 598Y			P05-E	20	N	52		TB2-T 3	18	N	65		
A 599	70					A 32					A 32	48	G1 H1
A 599R			J04- 3	10	N	49		TB2-U 1	18	N	65		
A 599Y			J04- 2	10	N	49		TB2-T 2	18	N			
A 600	70					A 32					A 32	45	G1 H2
A 600R			J05- 3	10	N	49		TB2-U 1	18	N			
A 600Y			J05- 2	10	N	49		TB2-T 2	18	N	66		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 74

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM						TO						ROUTING
NUMBER	ITEM NO.	CIRCUIT POINT		TIN	ITEM NO.	SPEC.	NO.	CIRCUIT POINT		TIN	ITEM NO.	SPEC	NO.	
A 601	4	TB2-L 4	18	N	66			TB2-M 4	18	N	65			H
A 602	75				A	31					A	31	159	G1 K1
A 602G		P01-106	10	N	49			TB1-N 1	18	N				
A 602N		P01- 90	10	N	49			TB1-M 1	18	N				
A 602R		P01-103	10	N	49			TB1-R 1	18	N				
A 602Y		P01-108	10	N	49			TB1-T 1	18	N	66			
A 603	75				A	31					A	31	141	G1 K1
A 603G		J08- 46	10	N	49			TB1-R 3	18	N				
A 603N		J08- 19	10	N	49			TB1-R 2	18	N				
A 603R		J08- 55	10	N	49			TB1-N 3	18	N				
A 603Y		J08- 36	10	N	49			TB1-R 2	18	N				
A 604	73				A	31					A	31	171	E1 D1
A 604R		J09- 55	10	N	49			TB1-N 3	18	N	65			
A 604Y		J09- 46	10	N	49			TB1-R 3	18	N	65			
A 605	75				A	31					A	31	192	E1 D2
A 605G		J09- 64	10	N	49			TB1-N 1	18	N	65			
A 605N		J09- 63	10	N	49			TB1-M 1	18	N	65			
A 605R		J09- 54	10	N	49			TB1-R 1	18	N	65			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 75

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM						TO						ROUTING
NUMBER	ITEM NO.	CIRCUIT POINT		TIN	ITEM NO.	SPEC.	NO.	CIRCUIT POINT		TIN	ITEM NO.	SPEC	NO.	
A 605Y		J09- 84	10	N	49			TB1-K 1	18	N	65			
A 606	75				A	31					A	31		
A 606G		J09- 53	10	N	49			P10-107	10	N	49			
A 606N		J09- 52	10	N	49			P10-108	10	N	49			
A 606R		J09- 61	10	N	49			P10-106	10	N	49			
A 606Y		J09- 62	10	N	49			P10- 93	10	N	49			
A 607	73				A	31					A	31	447	F2 L5
A 607R		P10- 69	10	N	49			TB3-L14	18	N				
A 607Y		P10- 68	10	N	49			TB3-K14	18	N				
A 608	73				A	31					A	31	168	F1 L6
A 608R		P11-N	25	N	53			TB3-L14	18	N	65			
A 608Y		P11-K	25	N	53			TB3-K14	18	N	65			
A 609	5	P11-B	25	N	53			TB3-C20	18	N			138	F1 L6
A 610	5	P11-B	25	N				TB3-C20	18	N			135	F1 L6
A 611	5	P11-B	25	N				TB3-C20	18	N	66		132	F1 L6
A 612	5	P11-C	25	N	53			TB3-C21	18	N			111	F1 L6
A 613	5	P11-C	25	N				TB3-C21	18	N			108	F1 L6
A 614	5	P11-C	25	N				TB3-C21	18	N	66		105	F1 L8

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 76

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM						TO						ROUTING
NUMBER	ITEM NO.	CIRCUIT POINT		TIN	ITEM NO.	SPEC.	NO.	CIRCUIT POINT		TIN	ITEM NO.	SPEC	NO.	
A 615	5	P12-B	25	N	53			TB3-D20	18	N			129	F1 L6
A 616	5	P12-B	25	N				TB3-D20	18	N			126	F1 L6
A 617	5	P12-B	25	N				TB3-D20	18	N	66		123	F1 L6
A 618	5	P12-C	25	N	53			TB3-D21	18	N			102	F1 L8
A 619	5	P12-C	25	N				TB3-D21	18	N			99	F1 L8
A 620	5	P12-C	25	N				TB3-D21	18	N	66		96	F1 L8
A 621	5	P12-M	25	N	53			TB3-C22	18	N			75	F1 L8
A 622	5	P12-M	25	N				TB3-C22	18	N	65		72	F1 L8
A 623	5	P11-M	25	N	53			TB3-D22	18	N			69	F1 L8
A 624	5	P11-M	25	N				TB3-D22	18	N	65		66	F1 L8
A 625	5	P11-H	25	N	53			TB3-H21	18	N			87	F1 L8
A 626	5	P11-H	25	N				TB3-H21	18	N			84	F1 L8
A 627	5	P11-H	25	N				TB3-H21	18	N	66		81	F1 L8
A 628	5	P12-H	25	N	53			TB3-H22	18	N			48	F1 L8
A 629	5	P12-H	25	N				TB3-H22	18	N			51	F1 L8
A 630	5	P12-H	25	N				TB3-H22	18	N	66		54	F1 L8
A 631	5	P11-L	25	N	53			TB3-F21	18	N	66		93	F1 L8
A 632	5	P12-L	25	N	53			TB3-F22	18	N	66		60	F1 L8

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 77

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM						TO						ROUTING
NUMBER	ITEM NO.	CIRCUIT POINT		TIN	ITEM NO.	SPEC.	NO.	CIRCUIT POINT		TIN	ITEM NO.	SPEC	NO.	
A 633	5	P11-A	25	N	53			TB3-G21	18	N	66		90	F1 L8
A 634	5	P11-A	25	N				J21- 1	10	N	49		6	F1 N5
A 635	5	P11-A	25	N				J21- 73	10	N	49		9	F1 N5
A 636	5	P12-A	25	N	53			TB3-G22	18	N	66		57	F1 L8
A 637	5	P12-A	25	N				J21-139	10	N	49		12	F1 N5
A 638	5	P12-A	25	N				J21-207	10	N	49		15	F1 N5
A 639	5	P11-J	25	N	53			J21- 2	10	N	49		18	F1 N5
A 640	5	P11-J	25	N				J21- 74	10	N	49		21	F1 N5
A 641	5	P12-J	25	N	53			J21-140	10	N	49		24	F1 N5
A 642	5	P12-J	25	N				J21-208	10	N	49		27	F1 N5
A 643	5	P11-G	25	N	53			TB3-D15	18	N			162	F1 L6
A 644	5	P11-G	25	N				TB3-K20	18	N			117	F1 L6
A 645	5	P11-G	25	N				TB3-L21	18	N	65		78	F1 L8
A 646	5	P12-G	25	N	53			TB3-C15	18	N			165	F1 L6
A 647	5	P12-G	25	N				TB3-K22	18	N			45	F1 L8
A 648	5	P12-G	25	N				TB3-L20	18	N			114	F1 L6
A 649	5	P11-D	25	N	53			TB1-N 8	18	N			144	E1 D1
A 650	5	P11-D	25	N				TB1-S 6	18	N			150	E1 D1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 78

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
A 651	5		P11-F	25	N		53			TB2-M 3	18	N		64		123	E1 D5
A 652	5		P11-F	25	N					TB2-D 4	18	N		65		117	E1 D5
A 653	5		P11-F	25	N					TB3-N 3	18	N				51	E1 L1
A 654	5		P11-E	25	N		53			TB2-M 7	18	N		64		102	E1 D5
A 655	5		P11-E	25	N					TB2-V 4	18	N				105	E1 D5
A 656	5		P12-D	25	N		53			TB1-N 4	18	N				156	E1 D1
A 657	5		P12-D	25	N					TB3-S 3	18	N				48	E1 L1
A 658	5		P12-E	25	N		53			TB3-T 3	18	N				45	E1 L1
A 659	5		P12-E	25	N					TB1-S 3	18	N				168	E1 D1
A 660	5		P12-F	25	N		53			TB2-M 1	18	N		64		135	E1 D5
A 661	5		P12-F	25	N					TB2-L 4	18	N				111	E1 D5
A 662	5		P12-F	25	N					TB1-D 7	18	N				147	E1 D1
A 663	74						A 31							A 31		180	E1 D2
A 663G			P10- 81	10	N		49			TB1-T 2	18	N		66			
A 663R			P10- 94	10	N		49			TB1-R 2	18	N		66			
A 663Y			P10- 95	10	N		49			TB1-S 2	18	N		66			
A 664	4		TB3-B15	18	N		64			TB3-T15	18	N					L
A 665	4		P10- 1	10	N		49			TB3-B20	18	N				141	F1 L6

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 79

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
A 667	4		J09- 15	10	N		49			TB3-F 1	18	N		65		93	E1 L1
A 668	4		J09- 14	10	N		49			TB3-F 2	18	N		64		81	E1 L1
A 670	70						A 32							A 32		159	F1 L6
A 670R			J09- 49	10	N		49			TB3-B16	18	N					
A 670Y			J09- 38	10	N		49			TB3-B17	18	N					
A 671	1			50		25	A 31				125		100	A 31	28	309	E2 L4
A 671B	69		TB3-F 8	18	N		64			SHLD A 671	20	N					
A 671Y			J09- 48	10	N		49			TB3-G 8	18	N		64			
A 672	1			50		25	A 31				125		100	A 31	28	312	E2 L4
A 672B	69		TB3-F 7	18	N		64			SHLD A 672	20	N					
A 672Y			J09- 56	10	N		49			TB3-G 7	18	N		64			
A 673	4		J09- 47	10	N		49			TB3-A10	18	N		64		9	E1 L3
A 677	4		P09- 47	10	N		49			TB3-F 6	18	N		64		342	E2 L4
A 678	4		P09- 49	10	N		49			J21-171	10	N		49		336	F2 N4
A 679	4		P09- 37	10	N		49			TB3-G 6	18	N		64		339	E2 L4
A 680	4		P09- 38	10	N		49			TB3-K 6	18	N		64		333	E2 L4
A 681	4		P09- 48	10	N		49			TB3-L 6	18	N		64		330	E2 L4
A 682	72						A 31							A 31		15	E1 L3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 80

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
A 682G			P09- 99	10	N		49			TB3-B 6	18	N		64			
A 682N			P09- 86	10	N		49			TB3-C 6	18	N		64			
A 682R			P09- 87	10	N		49			TB3-C 7	18	N		64			
A 682Y			P09-100	10	N		49			TB3-C 8	18	N		64			
A 683	4		P09- 35	10	N		49			TB1-D 5	18	N				480	E2 D4
A 684	71						A 31							A 31		30	E1 L3
A 684G			P09- 24	10	N		49			TB3-A 3	18	N		64			
A 684R			P09- 25	10	N		49			TB3-A 4	18	N		64			
A 684Y			P09- 36	10	N		49			TB3-A 5	18	N		64			
A 687	4		J06- 37	10	N		49			P01- 37	10	N		49			
A 689	72						A 31							A 31		12	E1 L3
A 689G			P09- 88	10	N		49			TB3-D 9	18	N		64			
A 689N			P09- 89	10	N		49			TB3-B 7	18	N		64			
A 689R			P09-102	10	N		49			TB3-D 8	18	N		64			
A 689Y			P09-101	10	N		49			TB3-D 7	18	N		64			
A 690	72						A 31							A 31		6	E1 L3
A 690G			P09- 90	10	N		49			TB3-C 9	18	N		64			
A 690N			P09-103	10	N		49			TB3-C10	18	N		64			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 81

MIL 2068-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
A 690R			P09-104	10	N		49			TB3-B 9	18	N		64			
A 690Y			P09-105	10	N		49			TB3-B10	18	N		64			
A 691	5		P09- 23	10	N		49			TB1-S 5	18	N				471	E2 D4
A 692	4		J21- 16	10	N		49			J21- 17	10	N		49			N
A 693	4		J08- 30	10	N		49			E 72	20	N					
A 694	4		J08- 61	10	N		49			E 72	20	N					
A 695	4		J08- 83	10	N		49			E 72	20	N					
A 696	4		J08- 84	10	N		49			E 72	20	N					
A 697	4		J08- 70	10	N		49			E 72	20	N					
A 698	4		J08- 28	10	N		49			E 72	20	N					
A 699	4		J08- 17	10	N		49			E 72	20	N					
A 700	5		E 72	20	N		28			TB2-F 1	18	N		65		89	G1 H1
A 701	5		J09- 27	10	N		49			TB2-F 1	18	N				142	E1 D5
A 702	4		J08- 52	10	N		49			TB2-V 1	18	N		65		74	G1 H1
A 703	4		J09- 11	10	N		49			TB2-V 1	18	N				133	E1 D5
A 704	4		J08- 63	10	N		49			TB2-N 4	18	N		65		10	G1 H2
A 705	4		J09- 13	10	N		49			TB2-N 4	18	N				109	E1 D5
A 706	4		J08- 31	10	N		49			TB2-T 4	18	N		65		5	G1 H2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 82

MIL 2068-4-64 WIR

WIRE HARNESS A B 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 707	4		J09- 39	10	N		49		TB2-T 4	18	N			107	E1 H5
A 708	4		J08- 82	10	N		49		TB2-F 5	18	N		65	400	G2 H3
A 709	4		J09- 12	10	N		49		TB2-F 5	18	N			406	E2 D6
A 710	4		J08- 54	10	N		49		TB2-F 6	18	N		66	375	G2 H3
A 711			DELETED												
A 712	4		J08- 32	10	N		49		TB2-F 6	18	N			372	G2 H3
A 713			DELETED												
A 714	4		J09- 29	10	N		49		TB2-S 8	18	N		65	387	E2 D6
A 715	4		J09- 28	10	N		49		P10- 24	10	N		49		
A 716	4		J10- 10	10	N		49		TB3-M21	18	N			359	F2 L9
A 717	5		P09- 20	10	N		49		TB3-N22	18	N		64	339	F2 L9
A 718	5		P09- 19	10	N		49		TB3-T21	18	N		64	354	F2 L9
A 719	73						A 32						A 32	378	F2 L9
A 719R			P09- 5	10	N		49		TB3-T19	18	N		64		
A 719Y			P09- 6	10	N		49		TB3-S19	18	N		64		
A 720	5		J21- 49	10	N		49		TB3-G21	18	N				N L
A 721	5		J21- 50	10	N		49		TB3-G21	18	N				N L
A 722	5		J21- 51	10	N		49		TB3-G22	18	N				N L

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR B | SHEET 83

MIL 2085 · 4-65 WIN

WIRE HARNESS A B 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 723	5		J21- 52	10	N		49		TB3-G22	18	N				N L
A 724	5		P11-J	25	N				P12-J	25	N				
A 725	2			50		25	A 31			125		100	A 31 28	407	E2 D6
A 725B	69		TB2-S 3	18	N		65		SHLD A 725	20	N				
A 725R			P09- 27	10	N		49		TB2-N 3	18	N				
A 725Y			P09- 26	10	N		49		TB2-R 3	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR B | SHEET 84

MIL 2085 · 4-65 WIN

APPLICATION		REVISIONS TDRR 14008			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		A	REVISED PER TDRR 14576	12-9 64	JWP
		B	REVISED PER TDRR 16350	18-FEB 65	JM
		C	REPLACED WITH CHANGE BY REV D PER TDRR 18052	9 APR 65	JJJ W.D.

© REPLACED BY CHANGE WITH REV D

SEE SHEET 2 FOR REVISION STATUS OF SHEETS

REV		
SHEET		
REV STATUS OF SHEETS	REV	
	SHEET	

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN
DATE 10-26-64
CHECKED
APPROVAL
APPROVAL 10/27/64
NASA APPROVAL
MIT APPROVAL
CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
AGE INTERCONNECT

CODE IDENT NO.	SIZE		REV
	A	1015055	C
SCALE —		SHEET 1 OF 84	

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	C	37	C	73	C										
2	C	38	C	74	C										
3	C	39	C	75	C										
4	C	40	C	76	C										
5	C	41	C	77	C										
6	C	42	C	78	C										
7	C	43	C	79	C										
8	C	44	C	80	C										
9	C	45	C	81	C										
10	C	46	C	82	C										
11	C	47	C	83	C										
12	C	48	C	84	C										
13	C	49	C												
14	C	50	C												
15	C	51	C												
16	C	52	C												
17	C	53	C												
18	C	54	C												
19	C	55	C												
20	C	56	C												
21	C	57	C												
22	C	58	C												
23	C	59	C												
24	C	60	C												
25	C	61	C												
26	C	62	C												
27	C	63	C												
28	C	64	C												
29	C	65	C												
30	C	66	C												
31	C	67	C												
32	C	68	C												
33	C	69	C												
34	C	70	C												
35	C	71	C												
36	C	72	C												

	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	REVISION C	NASA DRAWING NO. 1015055 SHEET 2 OF 84

APPLICATION		REVISIONS 1052			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		D	REPLACES REV. C WITH CHANGE PER TDRR-1502		

Ⓓ REPLACES REV C WITH CHANGE

SEE SHEET 2 FOR REVISION STATUS OF SHEETS

	REV	
	SHEET	
REV STATUS OF SHEETS	REV	
	SHEET	

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Bender DATE 1-FEB-65
CHECKED Taylor 1 FEB 65
APPROVAL J. Hicks 2 FEB 65
APPROVAL J. Wenn 3/24/65

NASA APPROVAL W J [illegible] 4-6-65
MIT APPROVAL W [illegible] 6 Apr 65

CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
AGE INTERCONNECT

CODE IDENT NO.	SIZE		REV
	A	1015055	D

SCALE — SHEET 1 OF 84

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	D	37	D	73	D										
2	D	38	D	74	D										
3	D	39	D	75	D										
4	D	40	D	76	D										
5	D	41	D	77	D										
6	D	42	D	78	D										
7	D	43	D	79	D										
8	D	44	D	80	D										
9	D	45	D	81	D										
10	D	46	D	82	D										
11	D	47	D	83	D										
12	D	48	D	84	D										
13	D	49	D												
14	D	50	D												
15	D	51	D												
16	D	52	D												
17	D	53	D												
18	D	54	D												
19	D	55	D												
20	D	56	D												
21	D	57	D												
22	D	58	D												
23	D	59	D												
24	D	60	D												
25	D	61	D												
26	D	62	D												
27	D	63	D												
28	D	64	D												
29	D	65	D												
30	D	66	D												
31	D	67	D												
32	D	68	D												
33	D	69	D												
34	D	70	D												
35	D	71	D												
36	D	72	D												

	REVISION	NASA DRAWING NO.
MANNED SPACECRAFT CENTER HOUSTON, TEXAS	D	1015055

SHEET 2 OF 84

PENNANT NOTE	GENERAL NOTES
1	SEE CONDUCTOR CHART. PENNANT NOTE 1.
2	SEE CONDUCTOR CHART. PENNANT NOTE 2.
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION MARKING SHALL BE EVERY 1.2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	MARK SLEEVING OF MULTI-CONDUCTORS WITH THE CONDUCTOR NUMBER .12 INCH HIGH, COLOR BLACK, PER ND1002019 WHEN SLEEVING ITEM NUMBERS FOLLOW AN A OR T IN THE ACCESSORIES ITEM NUMBER FIELD.
8	A OR T PREFIX IN THE ACCESSORIES ITEM NUMBER COLUMN INDICATES THE READING POSITION AWAY FROM TERMINATION OR TOWARD TERMINATION RESPECTIVELY, OF THE WIRE MARKER SLEEVE.
9	PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.
10	A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.
11	Y OR N IN TINNED COLUMN INDICATES YES OR NO.
12	LACE HARNESS PER ND1002032 USING ITEMS 51 AND 77.
13	CONDUCTORS LISTED WITH AN A OR B IN THE ROUTING COLUMN ARE TO BE ASSEMBLED PER DETAIL A OR B AS SHOWN ON THE CONFIGURATION DRAWING (1015056 REF).

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE-NONE	REV LTR D	SHEET 3 OF 84

PENNANT NOTE	GENERAL NOTES
14	THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, MARKING, OR TWISTING A - FROM END SHIELD B - TO END SHIELD G - GREEN K - BLACK L - BLUE N - BROWN R - RED W - WHITE Y - YELLOW
15	ASSEMBLE HARNESS AS SHOWN PER CONFIGURATION DRAWING (1015056 REF).
16	SERIALIZE PER ND1002023.
17	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE-NONE	REV LTR D	SHEET 4 OF 84

PENNANT GENERAL NOTES

NOTE

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE-NONE | REV LTR D | SHEET 5 OF 84

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015055- 1	WIRE PER 1010789-011 YEL. JKT. 24AWG YEL. 13 FT. 0.0 IN. TOTAL LENGTH
	2	1	1015055- 2	WIRE PER 1010789-012 YEL. JKT. 24AWG YEL. RED. 373 FT. 8.0 INCHES TOTAL LENGTH.
	3	1	1015055- 3	WIRE PER 1010789-013 YEL. JKT. 24AWG YEL. RED. GREEN 30 FT. 4.0 IN. TOTAL LENGTH
	4	1	1015055- 4	WIRE PER 1010789-001 24AWG YELLOW 856 FT. 4.0 INCHES TOTAL LENGTH.
	5	1	1015055- 5	WIRE PER 1010789-006 22AWG YELLOW 164 FT.9.0 INCHES TOTAL LENGTH.
	6	1	1015055- 6	WIRE PER 1010707-1 RED JKT. 29AWG BLUE, RED, AND WHITE 26 FT. 6.0 INCHES TOTAL LENGTH.
17	7	1	1010824- 3	CONNECTOR RECP ELECTRICAL
17	8	5	1010824- 2	CONNECTOR RECP ELECTRICAL
17	9	1	1010822- 5	CONNECTOR RECP ELECTRICAL
17	10	1	1010822- 3	CONNECTOR RECP ELECTRICAL
17	11	1	1010816-144	CONNECTOR RECP ELECTRICAL
17	12	1	1010816-244	CONNECTOR RECP ELECTRICAL
17	13	1	1010348- 1	CONNECTOR PLUG ELECTRICAL
17	14	1	1010348- 2	CONNECTOR PLUG ELECTRICAL
	~~15~~	~~1~~	~~1010671- 1~~	~~CONNECTOR PLUG ELECTRICAL~~

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE-NONE | REV LTR D | SHEET 6 OF 84

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	~~16~~	~~1~~	~~1010671- 2~~	~~CONNECTOR PLUG ELECTRICAL~~
17	17	1	1010674- 1	CONNECTOR PLUG ELECTRICAL
17	18	1	1010674- 2	CONNECTOR PLUG ELECTRICAL
17	19	1	1010674- 3	CONNECTOR PLUG ELECTRICAL
17	20	1	1010674- 4	CONNECTOR PLUG ELECTRICAL
17	21	1	1010824- 5	CONNECTOR RECP ELECTRICAL
17	22	1	1010824- 4	CONNECTOR RECP ELECTRICAL
17	23	1	1010822- 4	CONNECTOR RECP ELECTRICAL
17	24	1	1010824- 1	CONNECTOR RECP ELECTRICAL
17	27	16	1010402- 1	SLEEVE, SOLDER
17	28	131	1010402- 2	SLEEVE, SOLDER
17	30	30	1010490-108	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	31	288	1010490-110	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	32	238	1010490-112	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	38	1	1010490-975	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE) 2 FT 5 IN. TOTAL LENGTH

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE-NONE | REV LTR D | SHEET 7 OF 84

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
17	39	1	1010490-979	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE) 2 FT 5 IN. TOTAL LENGTH
17	40	2	1010490-216	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	41	2	1010490-222	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
	42	1	1015055- 7	WIRE, BRAID PER QQ-B-575 (COPPER, TIN-COATED, TUBLAR) SIZE 3/8 ID, 36 GAUGE, 2 FT 5 IN. TOTAL LENGTH
	43	1	1015055- 8	WIRE, BRAID PER QQ-B-575 (COPPER, TIN-COATED, TUBULAR) SIZE 1/2 ID, 36 GAUGE, 2 FT 5 IN. TOTAL LENGTH
17	44	1	1010809- 1	CONNECTOR, ELECTRICAL, RECEPTACLE 12 CONTACTS
17	45	1	1000243- 34	FERRULE, INNER ELECTRICAL CONDUCTOR
17	46	1	1000243- 26	FERRULE, INNER ELECTRICAL CONDUCTOR
17	47	1	1000242- 30	FERRULE, OUTER ELECTRICAL CONDUCTOR
	49	1296	1010738- 6	CONTACT, SOCKET
	51	AR	1012507- 2	LACING TAPE, DACRON, BLACK, 0.05 INCHES WIDE.
	52	RF		CONTACT SOCKETS SUPPLIED WITH 1010348
	53	RF		CONTACT SOCKETS SUPPLIED WITH 1010671
	54	RF		CONTACT SOCKETS SUPPLIED WITH 1010674
17	59	1	1000242- 24	FERRULE, OUTER ELECTRICAL CONDUCTOR

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE-NONE | REV LTR D | SHEET 8 OF 84

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
17	60	1	1000243- 30	FERRULE. INNER ELECTRICAL CONDUCTOR
17	61	1	1000242- 27	FERRULE. OUTER ELECTRICAL CONDUCTOR
17	62	1	1000243- 36	FERRULE. INNER ELECTRICAL CONDUCTOR
17	63	1	1000242- 33	FERRULE. OUTER ELECTRICAL CONDUCTOR
	64	268	1010743- 1	WRAPOST RECEPTACLE
	65	140	1010743- 2	WRAPOST RECEPTACLE
	66	80	1010743- 3	WRAPOST RECEPTACLE
	67	1	1010734- 16	GROMMET. CONNECTOR STRAIN RELIEF
	68	1	1010734- 18	GROMMET. CONNECTOR STRAIN RELIEF
	69	1	1015055- 9	WIRE PER 1010789-002 24AWG BLACK 119 FT. 0.0 INCHES TOTAL LENGTH.
	70	1	1015055- 10	WIRE PER 1010789-003 24AWG YELLOW. RED 392 FT. 1.0 INCHES TOTAL LENGTH.
	71	1	1015055- 11	WIRE PER 1010789-004 24AWG YELLOW. RED. GREEN 90 FT. 6.0 INCHES TOTAL LENGTH.
	72	1	1015055- 12	WIRE PER 1010789-005 24AWG YELLOW. RED. GREEN BROWN 25 FT. 11.0 INCHES TOTAL LENGTH.
	73	1	1015055- 13	WIRE PER 1010789-008 22AWG YELLOW. RED 13 FT. 9.0 INCHES TOTAL LENGTH.
	74	1	1015055- 14	WIRE PER 1010789-009 22AWG YELLOW. RED. GREEN 4 FT. 6.0 INCHES TOTAL LENGTH.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015055
SCALE-NONE REV LTR D SHEET 9 OF 84

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	75	1	1015055- 15	WIRE PER 1010789-010 22AWG YELLOW. RED. GREEN BROWN 16 FT. 1.0 INCH TOTAL LENGTH.
	77	AR	1012507- 4	LACING TAPE. DACRON. BLACK. 0.09 INCHES WIDE.
	78	12	1010770- 2	CONTACT. SOCKET
	79	1	1021714-1	Connector Plug, Elect.
	80	1	1021414-2	Connector Plug, Elect

MANNED SPACECRAFT CENTER
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SIZE A 1015055
SCALE-NONE REV LTR D SHEET 10 OF 84

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 1	70	390					A 32						A 32		G15H1
A 1R			P01- 80	10	N		49		TB2-A 2	18	N				
A 1Y			P01- 95	10	N		49		TB2-A 1	18	N				
A 3	4	380	P01- 38	10	N		49		TB1-K 4	18	N				G15K1
A 4	4	380	P01- 48	10	N		49		TB1-K 3	18	N				G15K1
A 5	4	380	P01- 13	10	N		49		TB1-K 5	18	N				G15K2
A 6	4	380	P01- 27	10	N		49		TB1-K 8	18	N				G15K2
A 7	4	380	P01- 58	10	N		49		TB1-K 6	18	N				G15K2
A 8	4	390	P01- 12	10	N		49		TB2-B 2	18	N		64		G15H1
A 9	4	390	P01- 57	10	N		49		TB2-R 4	18	N		64		G14H2
A 10	4	390	P01- 5	10	N		49		TB2-C 1	18	N		64		G15H1
A 11	4	390	P01- 69	10	N		49		TB2-B 1	18	N		64		G15H1
A 12	4	480	P01- 24	10	N		49		TB3-F 4	18	N				G13J
A 13	2	390		300		275	A 31			125		100	A 31 28		G15H2
A 13B	69	120	TB2-D 3	18	N				SHLD A 13	20	N				
A 13R			E 61	20	N		28		TB2-F 3	18	N				
A 13Y			P01- 68	10	N	250	49		TB2-D 2	18	N				
A 14	2	510		300		275	A 31			100		75	A 31 28		G16J

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015055
SCALE-NONE REV LTR D SHEET 11 OF 84

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 14B	69	120	E 44	20	N		28		SHLD A 14	20	N				
A 14R			E 61	20	N				J21-155	10	N		49		
A 14Y			P01- 59	10	N	250	49		J21-154	10	N		49		
A 15	2	510		300		275	A 31			100		75	A 31 28		G16J
A 15B	69	120	E 44	20	N				SHLD A 15	20	N				
A 15R			E 61	20	N				J21-223	10	N		49		
A 15Y			P01- 49	10	N	250	49		J21-222	10	N		49		G16J
A 16	2	510		300		275	A 31			100		75	A 31 28		
A 16B	69	120	E 44	20	N				SHLD A 16	20	N				
A 16R			E 61	20	N				J21-227	10	N		49		
A 16Y			P01- 39	10	N	250	49		J21-226	10	N		49		
A 18	4	380	P01- 91	10	N		49		TB1-K 1	18	N				G15K1
A 19	70	390					A 32						A 32		G14H2
A 19R			P01- 11	10	N		49		TB2-G 4	18	N				
A 19Y			P01- 10	10	N		49		TB2-H 4	18	N				
A 20	4	390	P01- 78	10	N		49		TB2-M 4	18	N				G14H2
A 21	4	480	P01- 7	10	N		49		TB3-S21	18	N				C9J
A 22	4	380	P01- 26	10	N		49		TB1-U 2	18	N				G15K1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015055
SCALE-NONE REV LTR D SHEET 12 OF 84

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH [2]	CIRCUIT POINT	CUT WIRE OR SHIELD [2]	T I N	STRIP WIRE OR JACKET [2]	TERMINATION SPEC. [1] ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD [2]	T I N	STRIP WIRE OR JACKET [2]	TERMINATION SPEC [1] ITEM NO.	NO.	
A 23	2	390		50		25	A 31			125		100	A 31 28		G14H1
A 23B	69	120	TB2-S 2	18	N				SHLD A 23	20	N				
A 23R			P01- 96	10	N		49		TB2-N 2	18	N				
A 23Y			P01- 97	10	N		49		TB2-R 2	18	N				
A 24	2	390		50		25	A 31			125		100	A 31 28		G15H1
A 24B	69	120	TB2-F 2	18	N				SHLD A 24	20	N				
A 24R			P01- 70	10	N		49		TB2-H 2	18	N				
A 24Y			P01- 71	10	N		49		TB2-G 2	18	N				
A 25	2	390		50		25	A 31			125		100	A 31 28		G15H4
A 25B	69	120	TB2-F 7	18	N				SHLD A 25	20	N				
A 25R			P01- 82	10	N		49		TB2-H 7	18	N				
A 25Y			P01- 83	10	N		49		TB2-G 7	18	N				
A 26	4	380	P01- 4	10	N		49		TB1-D 6	18	N		64		G16K2
A 27	2	390		300		275	A 31			100		75	A 31 28		G16J
A 27B	69	120	E 44	20	N				SHLD A 27	20	N				
A 27R			E 61	20	N				J21-225	10	N		49		
A 27Y			P01- 76	10	N	250	49		J21-224	10	N		49		
A 28	4	480	P01- 88	10	N		49		TB3-F 3	18	N				G13J

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE REV LTR D SHEET 13 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH [2]	CIRCUIT POINT	CUT WIRE OR SHIELD [2]	T I N	STRIP WIRE OR JACKET [2]	TERMINATION SPEC. [1] ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD [2]	T I N	STRIP WIRE OR JACKET [2]	TERMINATION SPEC [1] ITEM NO.	NO.	
A 29	4	480	P01- 89	10	N		49		TB3-M21	18	N		65		C9J
A 33	4	480	P01- 84	10	N		49		TB3-B20	18	N				C9J
A 38	70	380					A 32						A 32		G14H2
A 38R			J01- 67	10	N		49		TB2-H 3	18	N		64		
A 38Y			J01- 57	10	N		49		TB2-G 3	18	N		64		
A 39	2	380		50		25	A 31			125		100	A 31 28		G14H1
A 39B	69	120	TB2-F 2	18	N				SHLD A 39	20	N				
A 39R			J01- 35	10	N		49		TB2-H 2	18	N				
A 39Y			J01- 45	10	N		49		TB2-G 2	18	N				
A 40	2	470		50		25	A 31			125		100	A 31 28		C10J
A 40B	69	120	TB3-H14	18	N				SHLD A 40	20	N				
A 40R			J01- 20	10	N		49		TB3-F14	18	N				
A 40Y			J01- 6	10	N		49		TB3-F13	18	N				
A 41	2	470		50		25	A 31			125		100	A 31 28		C10J
A 41B	69	120	TB3-H13	18	N				SHLD A 41	20	N				
A 41R			J01- 21	10	N		49		TB3-D13	18	N				
A 41Y			J01- 7	10	N		49		TB3-D14	18	N				
A 42	2	380		50		25	A 31			125		100	A 31 28		G15H1

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE REV LTR D SHEET 14 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH [2]	CIRCUIT POINT	CUT WIRE OR SHIELD [2]	T I N	STRIP WIRE OR JACKET [2]	TERMINATION SPEC. [1] ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD [2]	T I N	STRIP WIRE OR JACKET [2]	TERMINATION SPEC [1] ITEM NO.	NO.	
A 42B	69	120	TB2-G 1	18	N		65		SHLD A 42	20	N				
A 42R			J01-104	10	N		49		TB2-H 1	18	N		64		
A 42Y			J01- 90	10	N		49		TB2-G 1	18	N				
A 43	2	380		50		25	A 31			125		100	A 31 28		G14H4
A 43B	69	120	TB2-V 6	18	N				SHLD A 43	20	N				
A 43R			J01-100	10	N		49		TB2-W 6	18	N				
A 43Y			J01- 86	10	N		49		TB2-W 7	18	N		64		
A 44	2	380		50		25	A 31			125		100	A 31 28		G15H4
A 44B	69	120	TB2-D 8	18	N		65		SHLD A 44	20	N				
A 44R			J01-101	10	N		49		TB2-B 8	18	N				
A 44Y			J01- 87	10	N		49		TB2-C 8	18	N		64		
A 45	3	380		50		25	A 30			125		100	A 30 28		G14H3
A 45B	69	120	TB2-A 5	18	N		65		SHLD A 45	20	N				
A 45G			J01-108	10	N		49		TB2-C 5	18	N		64		
A 45R			J01- 94	10	N		49		TB2-A 5	18	N				
A 45Y			J01-107	10	N		49		TB2-B 5	18	N		64		
A 46	70	120					A 32						A 32		
A 46R			J01- 50	10	N		49		E 4	20	N		27		

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE REV LTR D SHEET 15 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH [2]	CIRCUIT POINT	CUT WIRE OR SHIELD [2]	T I N	STRIP WIRE OR JACKET [2]	TERMINATION SPEC. [1] ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD [2]	T I N	STRIP WIRE OR JACKET [2]	TERMINATION SPEC [1] ITEM NO.	NO.	
A 46Y			J01- 60	10	N		49		E 3	20	N		27		
A 48	4	120	J01- 16	10	N		49		E 6	20	N		27		
A 50	4	120	J01- 15	10	N		49		E 8	20	N		27		
A 51	3	380		50		25	A 30			125		100	A 30 28		G14H4
A 51B	69	120	TB2-T 7	18	N		65		SHLD A 51	20	N				
A 51G			J01-105	10	N		49		TB2-T 6	18	N		64		
A 51R			J01-106	10	N		49		TB2-U 6	18	N		64		
A 51Y			J01- 92	10	N		49		TB2-T 7	18	N				
A 52	71	380					A 31						A 31		G14H3
A 52G			J01- 31	10	N		49		TB2-L 5	18	N		64		
A 52R			J01- 43	10	N		49		TB2-K 4	18	N				
A 52Y			J01- 32	10	N		49		TB2-L 6	18	N		64		
A 53	70	120					A 32						A 32		
A 53R			J01- 28	10	N		49		E 9	20	N		28		
A 53Y			J01- 29	10	N		49		E 10	20	N		28		
A 54	4	120	J01- 41	10	N		49		E 12	20	N		28		
A 55	4	380	J01- 34	10	N		49		TB2-W 1	18	N		64		G13H1
A 56	4	380	J01- 30	10	N		49		TB2-N 5	18	N		64		G13H3

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE REV LTR D SHEET 16 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 62	70	370					A 32						A 32		G14H3
A 62R			J02- 67	10	N		49		TB2-H 6	18	N		64		
A 62Y			J02- 57	10	N		49		TB2-G 6	18	N		64		
A 63	2	370		50		25	A 31			125		100	A 31 28		G14H4
A 63B	69	120	TB2-F 7	18	N				SHLD A 63	20	N				
A 63R			J02- 35	10	N		49		TB2-H 7	18	N				
A 63Y			J02- 45	10	N		49		TB2-G 7	18	N				
A 64	2	460		50		25	A 31			125		100	A 31 28		C10J
A 64B	69	120	E 48	20	N		27		SHLD A 64	20	N				
A 64R			J02- 20	10	N		49		TB3-N20	18	N				
A 64Y			J02- 6	10	N		49		TB3-N21	18	N				
A 65	2	460		50		25	A 31			125		100	A 31 28		C10J
A 65B	69	120	TB3-H12	18	N				SHLD A 65	20	N				
A 65R			J02- 21	10	N		49		TB3-C13	18	N				
A 65Y			J02- 7	10	N		49		TB3-C14	18	N				
A 66	2	370		50		25	A 31			125		100	A 31 28		G14H4
A 66B	69	120	TB2-G 8	18	N		65		SHLD A 66	20	N				
A 66R			J02-104	10	N		49		TB2-H 8	18	N		64		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR D
SHEET 17 OF 84

MIL 2088 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 66Y			J02- 90	10	N		49		TB2-G 8	18	N				
A 67	2	370		50		25	A 31			125		100	A 31 28		G14H3
A 67B	69	120	TB2-V 5	18	N				SHLD A 67	20	N				
A 67R			J02-100	10	N		49		TB2-U 5	18	N				
A 67Y			J02- 86	10	N		49		TB2-U 4	18	N		64		
A 68	2	370		50		25	A 31			125		100	A 31 28		G15H4
A 68B	69	120	TB2-D 7	18	N				SHLD A 68	20	N				
A 68R			J02-101	10	N		49		TB2-B 7	18	N				
A 68Y			J02- 87	10	N		49		TB2-C 7	18	N		64		
A 69	3	370		50		25	A 30			125		100	A 30 28		G14H3
A 69B	69	120	TB2-C 6	18	N		65		SHLD A 69	20	N				
A 69G			J02-108	10	N		49		TB2-A 6	18	N		64		
A 69R			J02- 94	10	N		49		TB2-C 6	18	N				
A 69Y			J02-107	10	N		49		TB2-B 6	18	N		64		
A 70	70	120					A 32						A 32		
A 70R			J02- 50	10	N		49		E 4	20	N				
A 70Y			J02- 60	10	N		49		E 3	20	N				
A 72	4	120	J02- 16	10	N		49		E 6	20	N				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR D
SHEET 18 OF 84

MIL 2088 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 74	4	120	J02- 15	10	N		49		E 8	20	N				
A 75	3	370		50		25	A 30			125		100	A 30 28		G13H3
A 75B	69	120	TB2-X 6	18	N		65		SHLD A 75	20	N				
A 75G			J02-105	10	N		49		TB2-X 5	18	N		64		
A 75R			J02-106	10	N		49		TB2-W 5	18	N		64		
A 75Y			J02- 92	10	N		49		TB2-X 6	18	N				
A 76	71	370					A 31						A 31		G13H2
A 76G			J02- 31	10	N		49		TB2-L 3	18	N		64		
A 76R			J02- 43	10	N		49		TB2-K 4	18	N				
A 76Y			J02- 32	10	N		49		TB2-K 3	18	N		64		
A 77	70	120					A 32						A 32		
A 77R			J02- 28	10	N		49		E 9	20	N				
A 77Y			J02- 29	10	N		49		E 10	20	N				
A 78	4	120	J02- 41	10	N		49		E 12	20	N				
A 79	4	370	J02- 34	10	N		49		TB2-X 1	18	N		64		G13H1
A 80	4	370	J02- 30	10	N		49		TB2-R 5	18	N		64		G13H3
A 84	70	120					A 32						A 32		
A 84R			J03- 1	10	N		49		E 1	20	N				

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▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR D
SHEET 19 OF 84

MIL 2088 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 84Y			J03- 14	10	N		49		E 2	20	N				
A 85	70	380					A 32						A 32		G14H1
A 85R			J03- 67	10	N		49		TB2-N 1	18	N		64		
A 85Y			J03- 57	10	N		49		TB2-R 1	18	N		64		
A 86	2	380		50		25	A 31			125		100	A 31 28		G13H1
A 86B	69	120	TB2-S 2	18	N				SHLD A 86	20	N				
A 86R			J03- 35	10	N		49		TB2-N 2	18	N				
A 86Y			J03- 45	10	N		49		TB2-R 2	18	N				
A 87	2	380		50		25	A 31			125		100	A 31 28		G14H4
A 87B	69	120	TB2-M 8	18	N				SHLD A 87	20	N				
A 87R			J03- 20	10	N		49		TB2-R 8	18	N		64		
A 87Y			J03- 6	10	N		49		TB2-N 7	18	N				
A 88	2	380		50		25	A 31			125		100	A 31 28		G13H4
A 88B	69	120	TB2-V 8	18	N				SHLD A 88	20	N				
A 88R			J03- 21	10	N		49		TB2-T 8	18	N		64		
A 88Y			J03- 7	10	N		49		TB2-U 8	18	N				
A 89	2	380		50		25	A 31			125		100	A 31 28		G15H2
A 89B	69	120	TB2-S 3	18	N		64		SHLD A 89	20	N				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR D
SHEET 20 OF 84

MIL 2088 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.		NO.	
A 89R			J03-104	10N		49			TB2-N 3	18N		65			
A 89Y			J03- 90	10N		49			TB2-R 3	18N		65			
A 90	2	380		50	25	A 31				125	100	A 31	28		G14H2
A 90B	69	120	TB2-V 4	18N		65			SHLD A 90	20N					
A 90R			J03-100	10N		49			TB2-W 4	18N					
A 90Y			J03- 86	10N		49			TB2-X 4	18N		64			
A 91	2	380		50	25	A 31				125	100	A 31	28		G14H2
A 91B	69	120	TB2-V 2	18N					SHLD A 91	20N					
A 91R			J03-101	10N		49			TB2-W 2	18N					
A 91Y			J03- 87	10N		49			TB2-X 2	18N		64			
A 92	3	380		50	25	A 30				125	100	A 30	28		G15H2
A 92B	69	120	TB2-A 4	18N		65			SHLD A 92	20N					
A 92G			J03-108	10N		49			TB2-C 4	18N		64			
A 92R			J03- 94	10N		49			TB2-A 4	18N					
A 92Y			J03-107	10N		49			TB2-B 4	18N		64			
A 93	70	120				A 32						A 32			
A 93R			J03- 50	10N		49			E 4	20N					
A 93Y			J03- 60	10N		49			E 3	20N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE REV LTR D SHEET 21 OF 84

MIL 2085 - 4-65 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.		NO.	
A 96	3	380		50	25	A 30				125	100	A 30	28		G15H4
A 96B	69	120	TB2-R 7	18N		65			SHLD A 96	20N					
A 96G			J03-105	10N		49			TB2-R 6	18N		64			
A 96R			J03-106	10N		49			TB2-N 6	18N		64			
A 96Y			J03- 92	10N		49			TB2-R 7	18N					
A 97	71	380				A 31						A 31			G14H3
A 97G			J03- 31	10N		49			TB2-K 6	18N		64			
A 97R			J03- 43	10N		49			TB2-K 4	18N		66			
A 97Y			J03- 32	10N		49			TB2-K 5	18N		64			
A 98	70	120				A 32						A 32			
A 98R			J03- 28	10N		49			E 9	20N					
A 98Y			J03- 29	10N		49			E 10	20N					
A 99	4	120	J03- 41	10N		49			E 12	20N					
A 100	4	380	J03- 34	10N		49			TB2-S 1	18N		64			G14H1
A 101	4	380	J03- 89	10N		49			TB2-T 1	18N		64			G13H1
A 102	4	380	J03- 30	10N		49			TB2-K 8	18N		64			G14H4
A 104	70	120				A 32						A 32			
A 104R			J04- 1	10N		49			E 14	20N		28			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE REV LTR D SHEET 22 OF 84

MIL 2085 - 4-65 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.		NO.	
A 104Y			J04- 14	10N		49			E 13	20N		28			
A 107	2	480		50	25	A 31				125	100	A 31	28		C11J
A 107B	69	120	TB3-H 9	18N					SHLD A 107	20N					
A 107R			J04- 57	10N		49			TB3-K11	18N					
A 107Y			J04- 67	10N		49			TB3-K10	18N					
A 108	2	480		50	25	A 31				125	100	A 31	28		C9J
A 108B	69	120	TB3-N15	18N		64			SHLD A 108	20N					
A 108R			J04- 66	10N		49			TB3-N13	18N					
A 108Y			J04- 56	10N		49			TB3-N14	18N					
A 109	71	480				A 31						A 31			C11J
A 109G			J04- 34	10N		49			TB3-T12	18N		64			
A 109R			J04- 45	10N		49			TB3-R12	18N		64			
A 109Y			J04- 35	10N		49			TB3-S12	18N		64			
A 110	2	480		50	25	A 31				125	100	A 31	28		C10J
A 110B	69	120	TB3-K 9	18N					SHLD A 110	20N					
A 110R			J04- 6	10N		49			TB3-K 7	18N		64			
A 110Y			J04- 20	10N		49			TB3-K 8	18N		64			
A 111	2	480		50	25	A 31				125	100	A 31	28		C9J

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE REV LTR D SHEET 23 OF 84

MIL 2085 - 4-65 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.		NO.	
A 111B	69	120	TB3-G15	18N		64			SHLD A 111	20N					
A 111R			J04- 7	10N		49			TB3-G13	18N		64			
A 111Y			J04- 21	10N		49			TB3-G14	18N		64			
A 112	2	480		50	25	A 31				125	100	A 31	28		C11J
A 112B	69	120	TB3-H 9	18N					SHLD A 112	20N					
A 112R			J04-104	10N		49			TB3-H10	18N		64			
A 112Y			J04- 90	10N		49			TB3-H11	18N		64			
A 113	4	480	J04- 89	10N		49			TB3-M18	18N		64			C9J
A 114	2	480		50	25	A 31				125	100	A 31	28		C12J
A 114B	69	120	TB3-N 9	18N					SHLD A 114	20N					
A 114R			J04-100	10N		49			TB3-N 7	18N		64			
A 114Y			J04- 86	10N		49			TB3-N 8	18N		64			
A 115	2	480		50	25	A 31				125	100	A 31	28		C11J
A 115B	69	120	TB3-N 9	18N		65			SHLD A 115	20N					
A 115R			J04-101	10N		49			TB3-N11	18N		64			
A 115Y			J04- 87	10N		49			TB3-N10	18N		64			
A 116	3	480		50	25	A 30				125	100	A 30	28		G13J
A 116B	69	120	TB3-S 5	18N		65			SHLD A 116	20N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE REV LTR D SHEET 24 OF 84

MIL 2085 - 4-65 WIR

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH NUMBER	ITEM NO.	▷2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 116G			J04-108	10	N		49		TB3-S 4	18	N		64		
A 116R			J04- 94	10	N		49		TB3-S 5	18	N				
A 116Y			J04-107	10	N		49		TB3-S 6	18	N		64		
A 117	70	120					A 32						A 32		
A 117R			J04- 50	10	N		49		E 17	20	N		27		
A 117Y			J04- 60	10	N		49		E 26	20	N		27		
A 121	2	480		50		25	A 31			125		100	A 31	28	C12J
A 121B	69	120	TB3-L 9	18	N				SHLD A 121	20	N				
A 121R			J04-106	10	N		49		TB3-L 7	18	N		64		
A 121Y			J04- 92	10	N		49		TB3-L 8	18	N		64		
A 122	71	480					A 31						A 31		C11J
A 122G			J04- 31	10	N		49		TB3-D11	18	N		64		
A 122R			J04- 43	10	N		49		TB3-B17	18	N		65		
A 122Y			J04- 32	10	N		49		TB3-C11	18	N		64		
A 123	70	120					A 32						A 32		
A 123R			J04- 28	10	N		49		E 9	20	N				
A 123Y			J04- 29	10	N		49		E 10	20	N				
A 124	4	120	J04- 41	10	N		49		E 12	20	N				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE-NONE
REV LTR D
SHEET 25 OF 84

MIL 2085 - 4-63 WIR

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH NUMBER	ITEM NO.	▷2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 130	2	500		50		25	A 31			125		100	A 31	28	C11J
A 130B	69	120	TB3-G 9	18	N				SHLD A 130	20	N				
A 130R			J05- 8	10	N		49		TB3-G10	18	N				
A 130Y			J05- 22	10	N		49		TB3-F10	18	N				
A 131	2	500		50		25	A 31			125		100	A 31	28	C10J
A 131B	69	120	TB3-K15	18	N		66		SHLD A 131	20	N				
A 131R			J05- 9	10	N		49		TB3-F16	18	N				
A 131Y			J05- 10	10	N		49		TB3-G16	18	N				
A 132	2	500		300		275	A 31			125		100	A 31	28	C11J
A 132B	69	120	TB3-L 9	18	N		65		SHLD A 132	20	N				
A 132R			J05- 12	10	N	250	49		TB3-L10	18	N		64		
A 132Y			E 18	20	N		27		TB3-L11	18	N		64		
A 133	4	120	J05- 11	10	N		49		E 18	20	N				
A 134	2	500		50		25	A 31			125		100	A 31	28	C9J
A 134B	69	120	TB3-R15	18	N				SHLD A 134	20	N				
A 134R			J05- 68	10	N		49		TB3-R14	18	N		64		
A 134Y			J05- 67	10	N		49		TB3-R13	18	N		64		
A 135	2	500		50		25	A 31			125		100	A 31	28	G13J

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE-NONE
REV LTR D
SHEET 26 OF 84

MIL 2085 - 4-63 WIR

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH NUMBER	ITEM NO.	▷2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 135B	69	120	TB3-H 9	18	N		66		SHLD A 135	20	N				
A 135R			J05-104	10	N		49		TB3-H 8	18	N		64		
A 135Y			J05- 90	10	N		49		TB3-H 7	18	N		64		
A 136	4	500	J05- 89	10	N		49		TB3-N18	18	N		64		C9J
A 137	2	500		50		25	A 31			125		100	A 31	28	C12J
A 137B	69	120	TB3-T 9	18	N				SHLD A 137	20	N				
A 137R			J05-100	10	N		49		TB3-T11	18	N		64		
A 137Y			J05- 86	10	N		49		TB3-T10	18	N		64		
A 138	2	500		50		25	A 31			125		100	A 31	28	C11J
A 138B	69	120	TB3-S 9	18	N				SHLD A 138	20	N				
A 138R			J05-101	10	N		49		TB3-S11	18	N		64		
A 138Y			J05- 87	10	N		49		TB3-S10	18	N		64		
A 139	3	500		50		25	A 30			125		100	A 30	28	G13J
A 139B	69	120	TB3-T 5	18	N		65		SHLD A 139	20	N				
A 139G			J05-108	10	N		49		TB3-T 6	18	N		64		
A 139R			J05- 94	10	N		49		TB3-T 5	18	N				
A 139Y			J05-107	10	N		49		TB3-T 4	18	N		64		
A 144	2	500		50		25	A 31			125		100	A 31	28	C11J

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE-NONE
REV LTR D
SHEET 27 OF 84

MIL 2085 - 4-63 WIR

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH NUMBER	ITEM NO.	▷2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	▷2	T I N	▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	
A 144B	69	120	TB3-M 9	18	N				SHLD A 144	20	N				
A 144R			J05-106	10	N		49		TB3-M 8	18	N		64		
A 144Y			J05- 92	10	N		49		TB3-M 7	18	N		64		
A 145	71	500					A 31						A 31		C10J
A 145G			J05- 31	10	N		49		TB3-D12	18	N		64		
A 145R			J05- 43	10	N		49		TB3-B16	18	N		65		
A 145Y			J05- 32	10	N		49		TB3-C12	18	N		64		
A 146	70	120					A 32						A 32		
A 146R			J05- 28	10	N		49		E 9	20	N				
A 146Y			J05- 29	10	N		49		E 10	20	N				
A 147	4	120	J05- 41	10	N		49		E 12	20	N				
A 148	70	500					A 32						A 32		C11J
A 148R			J05- 56	10	N		49		TB3-L12	18	N		64		
A 148Y			J05- 66	10	N		49		TB3-K12	18	N		64		
A 149	4	120	J05- 25	10	N		49		E 18	20	N				
A 150	70	800					A 32						A 32		
A 150R			J06- 1	10	N		49		P01- 1	10	N		49		
A 150Y			J06- 2	10	N		49		P01- 2	10	N		49		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE-NONE
REV LTR D
SHEET 28 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC. 1	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC 1	NO.	
A 151	70	800					A 32							A 32			
A 151R			J06- 14	10	N		49			P01- 14	10	N		49			
A 151Y			J06- 15	10	N		49			P01- 15	10	N		49			
A 152	70	800					A 32							A 32			
A 152R			J06- 29	10	N		49			P01- 29	10	N		49			
A 152Y			J06- 28	10	N		49			P01- 28	10	N		49			
A 153	70	510					A 32							A 32			G15K1
A 153R			J06-108	10	N		49			TB1-S 1	18	N					
A 153Y			J06-107	10	N		49			TB1-S 2	18	N					
A 154	4	510	J06- 12	10	N		49			TB1-K 7	18	N					G15K2
A 155	2	560		300		275	A 31				125		100	A 31 28			G14H2
A 155B	69	120	TB2-D 3	18	N		65			SHLD A 155	20	N					
A 155R			E 55	20	N		27			TB2-F 3	18	N		65			
A 155Y			J06- 68	10	N	250	49			TB2-D 2	18	N		65			
A 156	2	680		300		275	A 31				100		75	A 31 28			G15J
A 156B	69	120	E 44	20	N					SHLD A 156	20	N					
A 156R			E 95	20	N					J21-229	10	N		49			
A 156Y			J06- 69	10	N	250	49			J21-228	10	N		49			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE-NONE | REV LTR D | SHEET 29 OF 84

MIL 2088 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC. 1	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC 1	NO.	
A 176	4	800	J06- 79	10	N		49			P01- 79	10	N		49			
A 177	4	800	J06- 46	10	N		49			P01- 46	10	N		49			
A 178	4	660	J06- 91	10	N		49			TB3-B21	18	N					C9J
A 179	4	500	J08- 67	10	N		49			TB1-G 1	18	N					G15K1
A 181	4	650	J08- 66	10	N		49			TB3-H 6	18	N					G13J
A 182	70	650					A 32							A 32			C11J
A 182R			J08- 68	10	N		49			TB3-B13	18	N					
A 182Y			J08- 81	10	N		49			TB3-B12	18	N					
A 183	4	550	J08-106	10	N		49			TB2-S 6	18	N					G14H3
A 184	4	550	J08- 78	10	N		49			TB2-S 7	18	N					G13H4
A 185	4	550	J08- 93	10	N		49			TB2-S 4	18	N					G15H2
A 186	4	550	J08- 79	10	N		49			TB2-S 5	18	N					G13H3
A 187	4	500	J08- 51	10	N		49			TB1-H 8	18	N					G15K2
A 188	4	650	J08- 60	10	N		49			TB3-M 6	18	N					G13J
A 190	4	650	J08- 73	10	N		49			TB3-B 5	18	N					G13J
A 192	4	650	J08- 62	10	N		49			TB3-D 3	18	N					G13J
A 193	4	500	J08- 42	10	N		49			TB1-U 2	18	N					G15K1
A 196	4	680	J08- 53	10	N		49			J22- 38	10	N		49			G16J

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE-NONE | REV LTR D | SHEET 31 OF 84

MIL 2088 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC. 1	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC 1	NO.	
A 157	4	800	J06- 18	10	N		49			P01- 18	10	N		49			
A 158	4	510	J06- 81	10	N		49			TB1-F 8	18	N					G16K2
A 160	4	800	J06- 9	10	N		49			P01- 9	10	N		49			
A 161	4	800	J06- 6	10	N		49			P01- 6	10	N		49			
A 162	4	800	J06- 34	10	N		49			P01- 34	10	N		49			
A 163	4	800	J06- 35	10	N		49			P01- 35	10	N		49			
A 164	4	800	J06- 36	10	N		49			P01- 36	10	N		49			
A 165	4	800	J06- 23	10	N		49			P01- 23	10	N		49			
A 166	4	660	J06- 24	10	N		49			TB3-F 4	18	N		65			G13J
A 167	4	800	J06- 25	10	N		49			P01- 25	10	N		49			
A 168	4	800	J06- 93	10	N		49			P01- 93	10	N		49			
A 169	4	560	J06- 78	10	N		49			TB2-L 4	18	N					G14H2
A 170	4	800	J06- 56	10	N		49			P01- 56	10	N		49			
A 171	4	800	J06-104	10	N		49			P01-104	10	N		49			
A 172	4	800	J06- 92	10	N		49			P01- 92	10	N		49			
A 173	4	800	J06-105	10	N		49			P01-105	10	N		49			
A 174	4	800	J06- 94	10	N		49			P01- 94	10	N		49			
A 175	4	800	J06- 22	10	N		49			P01- 22	10	N		49			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE-NONE | REV LTR D | SHEET 30 OF 84

MIL 2088 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC. 1	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.	SPEC 1	NO.	
A 198	4	500	J08- 71	10	N		49			TB1-H 6	18	N					G16K2
A 199	4	650	J08- 95	10	N		49			TB3-B14	18	N					C10J
A 200	4	650	J08- 72	10	N		49			TB3-B 3	18	N					G13J
A 202	4	550	J08- 18	10	N		49			TB2-S 8	18	N					G14H4
A 203	4	650	J08- 41	10	N		49			TB3-B 4	18	N					G13J
A 206	4	680	J08- 43	10	N		49			J22- 72	10	N		49			G16J
A 211	4	500	J08- 92	10	N		49			TB1-S 5	18	N					G15K2
A 215	4	650	J08- 29	10	N		49			TB3-B21	18	N		65			C9J
A 216	70	370					A 32							A 32			C11H3
A 216R			P02-A	20	N		54			TB2-G 4	18	N					
A 216Y			P02-B	20	N		54			TB2-G 5	18	N		64			
A 217	2	370		100		75	A 31				125		100	A 31 28			C10H3
A 217B	69	120	TB2-V 3	18	N		64			SHLD A 217	20	N					
A 217R			P02-C	20	N		54			TB2-W 4	18	N		65			
A 217Y			P02-D	20	N		54			TB2-W 3	18	N		64			
A 218	2	330		100		75	A 31				125		100	A 31 28			C11H3
A 218B	69	120	TB2-V 2	18	N		65			SHLD A 218	20	N					
A 218R			P02-E	20	N		54			TB2-X 3	18	N		64			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE-NONE | REV LTR D | SHEET 32 OF 84

MIL 2088 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO								
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 218Y			P02-F	20	N		54			TB2-W 2	18	N		65				
A 219	2	330		100		75	A	31			125		100	A	31	28		C10H3
A 219B	69	120	TB2-V 5	18	N		65			SHLD A 219	20	N						
A 219R			P02-G	20	N		54			TB2-U 5	18	N		65				
A 219Y			P02-H	20	N		54			TB2-T 5	18	N		64				
A 220	2	330		100		75	A	31			125		100	A	31	28		C10H4
A 220B	69	120	TB2-D 7	18	N		65			SHLD A 220	20	N						
A 220R			P02-J	20	N		54			TB2-A 7	18	N		64				
A 220Y			P02-K	20	N		54			TB2-B 7	18	N		65				
A 221	2	330		100		75	A	31			125		100	A	31	28		C9J
A 221B	69	120	E 48	20	N					SHLD A 221	20	N						
A 221R			P02-L	20	N		54			TB3-N20	18	N						
A 221Y			P02-M	20	N		54			TB3-N21	18	N						
A 222	2	330		100		75	A	31			125		100	A	31	28		C9J
A 222B	69	120	TB3-H12	18	N					SHLD A 222	20	N						
A 222R			P02-P	20	N		54			TB3-C14	18	N						
A 222Y			P02-N	20	N		54			TB3-C13	18	N						
A 223	70	330					A	32						A	32			C11K3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE - NONE REV LTR D SHEET 33 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO								
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 223R			P02-R	20	N		54			TB1-D 2	18	N		64				
A 223Y			P02-S	20	N		54			TB1-C 2	18	N		64				
A 224	2	330		100		75	A	31			125		100	A	31	28		C11K3
A 224B	69	120	TB1-D 7	18	N					SHLD A 224	20	N						
A 224R			P02-T	20	N		54			TB1-C 6	18	N						
A 224Y			P02-U	20	N		54			TB1-B 6	18	N						
A 225	2	370		100		75	A	31			125		100	A	31	28		C11H4
A 225B	69	120	TB2-V 6	18	N		65			SHLD A 225	20	N						
A 225R			P02-W	20	N		54			TB2-W 6	18	N		65				
A 225Y			P02-X	20	N		54			TB2-X 7	18	N		64				
A 226	2	370		100		75	A	31			125		100	A	31	28		C11H4
A 226B	69	120	TB2-D 8	18	N					SHLD A 226	20	N						
A 226R			P02-Y	20	N		54			TB2-A 8	18	N		64				
A 226Y			P02-Z	20	N		54			TB2-B 8	18	N		65				
A 227	2	450		100		75	A	31			125		100	A	31	28		C10J
A 227B	69	120	TB3-H14	18	N					SHLD A 227	20	N						
A 227R			P02-A*	20	N		54			TB3-F14	18	N						
A 227Y			P02-B*	20	N		54			TB3-F13	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE - NONE REV LTR D SHEET 34 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO								
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 228	2	450		100		75	A	31			125		100	A	31	28		C10J
A 228B	69	120	TB3-H13	18	N					SHLD A 228	20	N						
A 228R			P02-F*	20	N		54			TB3-D13	18	N						
A 228Y			P02-G*	20	N		54			TB3-D14	18	N						
A 229	1	380		100		75	A	32			125		100	A	32	27		C11K3
A 229B	69	120	TB1-D 7	18	N		66			SHLD A 229	20	N						
A 229Y			P03-A	20	N		54			TB1-C 7	18	N						
A 230	1	380		100		75	A	32			125		100	A	32	27		C11K3
A 230B	69	120	TB1-D 8	18	N		64			SHLD A 230	20	N						
A 230Y			P03-B	20	N		54			TB1-C 8	18	N						
A 231	72	380					A	31						A	31			C11K3
A 231G			P03-U	20	N		54			TB1-B 8	18	N						
A 231N			P03-W	20	N		54			TB1-A 7	18	N						
A 231R			P03-C	20	N		54			TB1-A 8	18	N						
A 231Y			P03-V	20	N		54			TB1-B 7	18	N						
A 232	2	420		100		75	A	31			125		100	A	31	28		C10H4
A 232B	69	120	TB2-M 8	18	N					SHLD A 232	20	N						
A 232R			P03-D	20	N		54			TB2-N 8	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE - NONE REV LTR D SHEET 35 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO								
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 232Y			P03-E	20	N		54			TB2-N 7	18	N						
A 233	2	420		100		75	A	31			125		100	A	31	28		C10H4
A 233B	69	120	TB2-V 8	18	N					SHLD A 233	20	N						
A 233R			P03-F	20	N		54			TB2-U 8	18	N						
A 233Y			P03-G	20	N		54			TB2-U 7	18	N						
A 234	2	380		100		75	A	31			125		100	A	31	28		C11K3
A 234B	69	120	TB1-B 5	18	N		65			SHLD A 234	20	N						
A 234R			P03-J	20	N		54			TB1-B 5	18	N						
A 234Y			P03-H	20	N		54			TB1-C 5	18	N		64				
A 235	2	380		100		75	A	31			125		100	A	31	28		C11K3
A 235B	69	120	TB1-A 6	18	N		65			SHLD A 235	20	N						
A 235R			P03-K	20	N		54			TB1-A 6	18	N						
A 235Y			P03-L	20	N		54			TB1-A 5	18	N		64				
A 236	2	500		100		75	A	31			125		100	A	31	28		C9J
A 236B	69	120	TB3-S 3	18	N		65			SHLD A 236	20	N						
A 236R			P03-N	20	N		54			TB3-R 4	18	N		64				
A 236Y			P03-M	20	N		54			TB3-R 5	18	N		64				
A 237	2	500		100		75	A	31			125		100	A	31	28		C9J

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE - NONE REV LTR D SHEET 36 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION			
NUMBER	ITEM NO.	(2)	CIRCUIT POINT	(2)	T I N	(2)	SPEC. (1) ITEM NO.		NO.	CIRCUIT POINT	(2)	T I N	(2)	SPEC (1) ITEM NO.		NO.	
A 237B	69	120	TB3-T 9	18	N					SHLD A 237	20	N					
A 237R			P03-R	20	N		54			TB3-M14	18	N		64			
A 237Y			P03-P	20	N		54			TB3-M13	18	N		64			
A 238	70	380					A 32							A 32			C10K3
A 238R			P03-X	20	N		54			TB1-B 2	18	N					
A 238Y			P03-Y	20	N		54			TB1-A 2	18	N					
A 239	70	380					A 32							A 32			C11K3
A 239R			P03-Z	20	N		54			TB1-A 4	18	N					
A 239Y			P03-A*	20	N		54			TB1-A 3	18	N					
A 240	70	380					A 32							A 32			C11K3
A 240R			P03-B*	20	N		54			TB1-A 3	18	N					
A 240Y			P03-C*	20	N		54			TB1-A 4	18	N					
A 241	70	380					A 32							A 32			C9K3
A 241R			P03-D*	20	N		54			TB1-D 3	18	N					
A 241Y			P03-E*	20	N		54			TB1-D 4	18	N					
A 242	70	380					A 32							A 32			C9K3
A 242R			P03-F*	20	N		54			TB1-D 4	18	N					
A 242Y			P03-G*	20	N		54			TB1-D 3	18	N					

(1) THE STD CONDUCTOR TERMINATION FIGURES ARE PER
(2) DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR D
SHEET 37 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION			
NUMBER	ITEM NO.	(2)	CIRCUIT POINT	(2)	T I N	(2)	SPEC. (1) ITEM NO.		NO.	CIRCUIT POINT	(2)	T I N	(2)	SPEC (1) ITEM NO.		NO.	
A 243	4	500	P03-J*	20	N		54			TB3-F 5	18	N					C10J
A 244	4	500	P03-H*	20	N		54			TB3-T20	18	N					C9J
A 246	71	550					A 31							A 31			C9J
A 246G			P05-J*	20	N		52			TB3-D16	18	N		64			
A 246R			P05-P	20	N		52			TB3-C18	18	N					
A 246Y			P05-I*	20	N		52			TB3-D17	18	N		64			
A 247	70	120					A 32							A 32			
A 247R			P05-K	20	N		52			P05-CC	20	N		52			
A 247Y			P05-J	20	N		52			P05-DD	20	N		52			
A 248	2	560		150		125	A 31				125		100	A 31	28		C9J
A 248B	69	120	TB3-R 9	18	N					SHLD A 248	20	N					
A 248R			P05-P*	20	N		52			TB3-R 8	18	N		64			
A 248Y			P05-N*	20	N		52			TB3-R 7	18	N		64			
A 249	4	550	P05-S	20	N		52			TB3-K21	18	N					C10J
A 250	4	550	P05-T	20	N		52			TB3-K21	18	N		65			C9J
A 251	70	180					A 32							A 32			
A 251R			P05-EE	20	N		52			P04-D1	10	N		78			
A 251Y			P05-FF	20	N		52			P04-D2	10	N		78			

(1) THE STD CONDUCTOR TERMINATION FIGURES ARE PER
(2) DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR D
SHEET 38 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION			
NUMBER	ITEM NO.	(2)	CIRCUIT POINT	(2)	T I N	(2)	SPEC. (1) ITEM NO.		NO.	CIRCUIT POINT	(2)	T I N	(2)	SPEC (1) ITEM NO.		NO.	
A 252	2	560		150		125	A 31				125		100	A 31	28		C10J
A 252B	69	120	TB3-T 9	18	N		65			SHLD A 252	20	N					
A 252R			P05-Z	20	N		52			TB3-T 8	18	N		64			
A 252Y			P05-Y	20	N		52			TB3-T 7	18	N		64			
A 253	2	560		150		125	A 31				125		100	A 31	28		C9J
A 253B	69	120	TB3-S 9	18	N		65			SHLD A 253	20	N					
A 253R			P05-A*	20	N		52			TB3-S 8	18	N		64			
A 253Y			P05-B*	20	N		52			TB3-S 7	18	N		64			
A 254	2	560		150		125	A 31				125		100	A 31	28		C9J
A 254B	69	120	TB3-M15	18	N					SHLD A 254	20	N					
A 254R			P05-C*	20	N		52			TB3-M16	18	N		64			
A 254Y			P05-D*	20	N		52			TB3-M17	18	N		64			
A 255	2	560		150		125	A 31				125		100	A 31	28		C9J
A 255B	69	120	TB3-H15	18	N					SHLD A 255	20	N					
A 255R			P05-F*	20	N		52			TB3-G16	18	N		65			
A 255Y			P05-E*	20	N		52			TB3-F16	18	N		65			
A 256	2	560		150		125	A 31				125		100	A 31	28		C9J
A 256B	69	120	TB3-G 9	18	N		65			SHLD A 256	20	N					

(1) THE STD CONDUCTOR TERMINATION FIGURES ARE PER
(2) DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR D
SHEET 39 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION			
NUMBER	ITEM NO.	(2)	CIRCUIT POINT	(2)	T I N	(2)	SPEC. (1) ITEM NO.		NO.	CIRCUIT POINT	(2)	T I N	(2)	SPEC (1) ITEM NO.		NO.	
A 256R			P05-G*	20	N		52			TB3-G10	18	N		65			
A 256Y			P05-H*	20	N		52			TB3-F10	18	N		65			
A 257	2	560		150		125	A 31				125		100	A 31	28		C9J
A 257B	69	120	TB3-S15	18	N					SHLD A 257	20	N					
A 257R			P05-K*	20	N		52			TB3-T16	18	N		64			
A 257Y			P05-M*	20	N		52			TB3-T17	18	N		64			
A 258	2	560		150		125	A 31				125		100	A 31	28		C10J
A 258B	69	120	TB3-R 9	18	N		65			SHLD A 258	20	N					
A 258R			P05-Q*	20	N		52			TB3-R10	18	N		64			
A 258Y			P05-R*	20	N		52			TB3-R11	18	N		64			
A 259	71	550					A 31							A 31			C10J
A 259G			P05-C	20	N		52			TB3-F18	18	N		64			
A 259R			P05-B	20	N		52			TB3-C18	18	N		65			
A 259Y			P05-A	20	N		52			TB3-D18	18	N		64			
A 260	2	560		150		125	A 31				125		100	A 31	28		C10J
A 260B	69	120	TB3-S15	18	N					SHLD A 260	20	N					
A 260R			P05-U*	20	N		52			TB3-S17	18	N		64			
A 260Y			P05-V*	20	N		52			TB3-S16	18	N		64			

(1) THE STD CONDUCTOR TERMINATION FIGURES ARE PER
(2) DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR D
SHEET 40 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 261	2	560		150		125	A 31			125		100	A 31 28		C9J
A 261B	69	120	TB3-R15	18	N				SHLD A 261	20	N				
A 261R			P05-W*	20	N		52		TB3-N13	18	N				
A 261Y			P05-X*	20	N		52		TB3-N14	18	N				
A 262	2	560		150		125	A 31			125		100	A 31 28		C10J
A 262B	69	120	TB3-K 9	18	N				SHLD A 262	20	N				
A 262R			P05-Y*	20	N		52		TB3-K10	18	N				
A 262Y			P05-Z*	20	N		52		TB3-K11	18	N				
A 263	2	560		150		125	A 31			125		100	A 31 28		C9J
A 263B	69	120	TB3-M15	18	N				SHLD A 263	20	N				
A 263R			P05-MM	20	N		52		TB3-M16	18	N		64		
A 263Y			P05-BB	20	N		52		TB3-M17	18	N		64		
A 264	4	550	P05-AA	20	N		52		TB3-S18	18	N		64		C9J
A 265	70	470					A 32						A 32		C11H3
A 265R			P05-CC	20	N				TB2-K 2	18	N				
A 265Y			P05-DD	20	N				TB2-L 2	18	N				
A 266	70	430					A 32						A 32		C12K3
A 266R			P05-L	20	N		52		TB1-T 1	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 41 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 266Y			P05-M	20	N		52		TB1-T 2	18	N				
A 267	70	180					A 32						A 32		
A 267R			P05-X	20	N		52		P04-F2	10	N		78		
A 267Y			P05-W	20	N		52		P04-F1	10	N		78		
A 268	70	180					A 32						A 32		
A 268R			P05-J	20	N				P04-E2	10	N		78		
A 268Y			P05-K	20	N				P04-E1	10	N		78		
A 270	4	550	P05-R	20	N		52		TB3-F21	18	N				C9J
A 271	71	480					A 31						A 31		E7D
A 271G			P06-C	20	N		54		TB1-G 2	18	N				
A 271R			P06-A	20	N		54		TB1-H 3	18	N				
A 271Y			P06-B	20	N		54		TB1-M 2	18	N				
A 272	4	480	P06-F	20	N		54		TB1-D 5	18	N		65		E7D
A 273	70	480					A 32						A 32		E8D
A 273R			P06-H	20	N		54		TB1-A 2	18	N				
A 273Y			P06-J	20	N		54		TB1-B 2	18	N				
A 274	4	360	P06-K	20	N		54		TB3-G 5	18	N		64		E7L2
A 275	70	360					A 32						A 32		E6L2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 42 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 275R			P06-M	20	N		54		TB3-L 4	18	N		64		
A 275Y			P06-L	20	N		54		TB3-L 3	18	N		64		
A 276	4	360	P06-N	20	N		54		TB3-R 6	18	N				E6L4
A 277	4	360	P06-Y	20	N		54		TB3-N 6	18	N				E7L4
A 278	2	360		100		75	A 31			125		100	A 31 28		E7L4
A 278B	69	120	TB3-R 3	18	N				SHLD A 278	20	N				
A 278R			P06-V	20	N		54		TB3-N 5	18	N		64		
A 278Y			P06-W	20	N		54		TB3-N 4	18	N		64		
A 279	2	360		100		75	A 31			125		100	A 31 28		E7L2
A 279B	69	120	TB3-N 3	18	N		66		SHLD A 279	20	N				
A 279R			P06-X	20	N		54		TB3-N 1	18	N		64		
A 279Y			P06-R	20	N		54		TB3-N 2	18	N		64		
A 280	4	360	P06-Z	20	N		54		TB3-M 4	18	N		64		E7L2
A 281	70	360					A 32						A 32		E7L1
A 281R			P06-F*	20	N		54		TB3-C 2	18	N		64		
A 281Y			P06-G*	20	N		54		TB3-C 3	18	N				
A 282	70	360					A 32						A 32		E6L5
A 282R			P06-B*	20	N		54		TB3-L13	18	N		64		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 43 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D · 1015055

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 282Y			P06-C*	20	N		54		TB3-K13	18	N		64		
A 283	70	360					A 32						A 32		E6L9
A 283R			P06-D*	20	N		54		TB3-K19	18	N				
A 283Y			P06-E*	20	N		54		TB3-M19	18	N				
A 284	4	360	P06-D	20	N		54		TB3-T20	18	N		65		E6L9
A 285	4	360	P06-P	20	N		54		TB3-M 1	18	N		64		E7L2
A 286	4	360	P06-A*	20	N		54		TB3-K 3	18	N		64		E6L2
A 287	4	440	P06-E	20	N		54		TB2-D 4	18	N				E7D6
A 288	4	360	P06-G	20	N		54		TB3-F21	18	N				E7L9
A 289	6	530		125		100	A 30			125		100	A 30 28		E7D
A 289B	69	120	TB1-S 8	18	N		64		SHLD A 289	20	N				
A 289L			P07-C	40	N		54		TB1-U 8	18	N		64		
A 289R			P07-A	40	N		54		TB1-T 8	18	N		64		
A 289W			P07-B	40	N		54		TB1-U 7	18	N		64		
A 290	6	530		125		100	A 30			125		100	A 30 28		E7D
A 290B	69	120	TB1-N 8	18	N		66		SHLD A 290	20	N				
A 290L			P07-F	40	N		54		TB1-L 7	18	N		64		
A 290R			P07-D	40	N		54		TB1-M 8	18	N		64		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 44 OF 84

MIL 2085 - 4-63 WIR

6XC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 290W			P07-E	40	N		54		TB1-L 8	18	N		64		
A 291	6	530		125		100	A 30			125		100	A 30 28		E7D
A 291B	69	120	TB1-S 6	18	N		65		SHLD A 291	20	N				
A 291L			P07-J	40	N		54		TB1-U 6	18	N		64		
A 291R			P07-G	40	N		54		TB1-T 6	18	N		64		
A 291W			P07-H	40	N		54		TB1-U 5	18	N		64		
A 292	6	530		125		100	A 30			125		100	A 30 28		E7D
A 292B	69	120	TB1-S 3	18	N		65		SHLD A 292	20	N				
A 292L			P07-M	40	N		54		TB1-U 3	18	N		64		
A 292R			P07-K	40	N		54		TB1-U 4	18	N		64		
A 292W			P07-L	40	N		54		TB1-T 3	18	N		64		
A 293	6	530		125		100	A 30			125		100	A 30 28		E7D
A 293B	69	120	TB1-N 4	18	N				SHLD A 293	20	N				
A 293L			P07-R	40	N		54		TB1-M 4	18	N		64		
A 293R			P07-N	40	N		54		TB1-L 4	18	N		64		
A 293W			P07-P	40	N		54		TB1-L 3	18	N		64		
A 294	6	530		125		100	A 30			125		100	A 30 28		E7D
A 294B	69	120	TB1-N 5	18	N				SHLD A 294	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 45 OF 84

MIL 2085 - 4-63 WIR

6XC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 294L			P07-W	40	N		54		TB1-L 5	18	N		64		
A 294R			P07-U	40	N		54		TB1-M 5	18	N		64		
A 294W			P07-V	40	N		54		TB1-L 6	18	N		64		
A 295	70	530					A 32						A 32		E7D
A 295R			P07-X	20	N		54		TB1-M 7	18	N		64		
A 295Y			P07-Y	20	N		54		TB1-M 6	18	N		64		
A 296	70	530					A 32						A 32		E7D
A 296R			P07-Z	20	N		54		TB1-M 3	18	N		64		
A 296Y			P07-A*	20	N		54		TB1-N 2	18	N		64		
A 297	70	530					A 32						A 32		E7D
A 297R			P07-B*	20	N		54		TB1-T 5	18	N		64		
A 297Y			P07-C*	20	N		54		TB1-T 4	18	N		64		
A 298	72	530					A 31						A 31		E8D
A 298G			P07-G*	20	N		54		TB1-B 4	18	N		64		
A 298N			P07-H*	20	N		54		TB1-C 4	18	N		64		
A 298R			P07-F*	20	N		54		TB1-C 3	18	N		64		
A 298Y			P07-J*	20	N		54		TB1-B 3	18	N		64		
A 299	70	550					A 32						A 32		E7D

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 46 OF 84

MIL 2085 - 4-63 WIR

6XC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 299R			P08-A	20	N		52		TB2-U 3	18	N				
A 299Y			P08-B	20	N		52		TB2-T 2	18	N				
A 300	71	460					A 31						A 31		E6L9
A 300G			P08-G	20	N		52		TB3-C16	18	N				
A 300R			P08-F	20	N		52		TB3-C19	18	N				
A 300Y			P08-E	20	N		52		TB3-C17	18	N				
A 301	70	550					A 32						A 32		E7D
A 301R			P08-J	20	N		52		TB2-K 2	18	N		65		
A 301Y			P08-K	20	N		52		TB2-L 2	18	N		65		
A 302	2	460		150		125	A 31			125		100	A 31 28		E6L7
A 302B	69	120	TB3-S15	18	N		66		SHLD A 302	20	N				
A 302R			P08-N	20	N		52		TB3-R17	18	N		64		
A 302Y			P08-P	20	N		52		TB3-R16	18	N		64		
A 303	4	460	P08-R	20	N		52		TB3-K15	18	N				E6L7
A 304	2	460		150		125	A 31			125		100	A 31 28		E6L7
A 304B	69	120	TB3-M15	18	N		66		SHLD A 304	20	N				
A 304R			P08-T	20	N		52		TB3-K17	18	N		64		
A 304Y			P08-S	20	N		52		TB3-K16	18	N		64		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 47 OF 84

MIL 2085 - 4-63 WIR

6XC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 305	4	460	P08-U	20	N		52		TB3-R18	18	N		64		E6L7
A 306	2	460		150		125	A 31			125		100	A 31 28		E6L5
A 306B	69	120	TB3-T15	18	N				SHLD A 306	20	N				
A 306R			P08-V	20	N		52		TB3-S13	18	N		64		
A 306Y			P08-W	20	N		52		TB3-S14	18	N		64		
A 307	2	460		150		125	A 31			125		100	A 31 28		E6L5
A 307B	69	120	TB3-T15	18	N		66		SHLD A 307	20	N				
A 307R			P08-X	20	N		52		TB3-T14	18	N		64		
A 307Y			P08-Y	20	N		52		TB3-T13	18	N		64		
A 308	71	460					A 31						A 31		E6L9
A 308G			P08-D*	20	N		52		TB3-F17	18	N				
A 308R			P08-M	20	N		52		TB3-C19	18	N		65		
A 308Y			P08-C*	20	N		52		TB3-G17	18	N				
A 309	2	460		150		125	A 31			125		100	A 31 28		E6L7
A 309B	69	120	TB3-M15	18	N				SHLD A 309	20	N				
A 309R			P08-E*	20	N		52		TB3-N16	18	N		64		
A 309Y			P08-F*	20	N		52		TB3-N17	18	N		64		
A 310	2	460		150		125	A 31			125		100	A 31 28		E6L7

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 48 OF 84

MIL 2085 - 4-63 WIR

6XC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 310B	69	120	TB3-M15	18	N		66		SHLD A 310	20	N				
A 310R			P08-G*	20	N		52		TB3-L16	18	N		64		
A 310Y			P08-I*	20	N		52		TB3-L17	18	N		64		
A 311	4	460	P08-H*	20	N		52		TB3-T18	18	N		64		E6L7
A 312	2	460		150		125	A 31			125		100	A 31 28		E6L4
A 312B	69	120	TB3-K 9	18	N		66		SHLD A 312	20	N				
A 312R			P08-K*	20	N		52		TB3-K11	18	N		66		
A 312Y			P08-J*	20	N		52		TB3-K10	18	N		66		
A 313	2	460		150		125	A 31			125		100	A 31 28		E6L5
A 313B	69	120	TB3-R15	18	N		66		SHLD A 313	20	N				
A 313R			P08-N*	20	N		52		TB3-N14	18	N		66		
A 313Y			P08-M*	20	N		52		TB3-N13	18	N		66		
A 314	70	590					A 32						A 32		E7D
A 314R			P08-R*	20	N		52		TB1-T 1	18	N				
A 314Y			P08-S*	20	N		52		TB1-T 2	18	N				
A 315	4	460	P08-B*	20	N		52		TB3-K15	18	N				E6L7
A 316	4	460	P08-T*	20	N		52		TB3-F22	18	N				E6L9
A 318	70	420					A 32						A 32		F4L6

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE-NONE | REV LTR D | SHEET 49 OF 84

MIL 2085 - 4-63 WIR

6XC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 318R			P09- 9	10	N		49		TB3-B18	18	N		64		
A 318Y			P09- 8	10	N		49		TB3-B19	18	N		64		
A 319	71	540					A 31						A 31		E7D
A 319G			P09- 78	10	N		49		TB1-H 2	18	N		65		
A 319R			P09- 67	10	N		49		TB1-G 2	18	N		65		
A 319Y			P09- 79	10	N		49		TB1-H 3	18	N		65		
A 320	70	420					A 32						A 32		E6L1
A 320R			P09- 22	10	N		49		TB3-D 2	18	N				
A 320Y			P09- 34	10	N		49		TB3-C 3	18	N				
A 321	70	500					A 32						A 32		E6D
A 321R			P09- 45	10	N		49		TB2-K 1	18	N				
A 321Y			P09- 55	10	N		49		TB2-L 1	18	N				
A 322	70	500					A 32						A 32		E6D
A 322R			P09- 56	10	N		49		TB2-U 3	18	N				
A 322Y			P09- 57	10	N		49		TB2-T 3	18	N				
A 323	70	540					A 32						A 32		E7D
A 323R			P09- 59	10	N		49		TB1-C 6	18	N		65		
A 323Y			P09- 58	10	N		49		TB1-B 6	18	N		65		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE-NONE | REV LTR D | SHEET 50 OF 84

MIL 2085 - 4-63 WIR

6XC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 324	70	540					A 32						A 32		E7D
A 324R			P09- 69	10	N		49		TB1-H 4	18	N				
A 324Y			P09- 81	10	N		49		TB1-G 4	18	N				
A 325	70	540					A 32						A 32		E7D
A 325R			P09- 68	10	N		49		TB1-H 7	18	N				
A 325Y			P09- 80	10	N		49		TB1-G 7	18	N				
A 328	4	420	P09- 65	10	N		49		TB3-H20	18	N		64		F3L6
A 329	4	420	P09- 66	10	N		49		TB3-L21	18	N				F3L9
A 330	4	420	P09- 4	10	N		49		TB3-R20	18	N		64		F3L9
A 331	4	420	P09- 18	10	N		49		TB3-N19	18	N				F3L9
A 332	4	540	P09- 13	10	N		49		TB1-H 6	18	N		65		E7D
A 336	4	540	P09- 12	10	N		49		TB1-H 8	18	N		65		E7D
A 342	4	420	P09- 10	10	N		49		TB3-F 5	18	N				E5L2
A 344	4	420	P09- 11	10	N		49		TB3-D 3	18	N		65		E5L1
A 345	4	540	P09- 46	10	N		49		TB1-U 2	18	N		66		E6D
A 349	4	540	P09- 33	10	N		49		TB1-L 2	18	N		64		E7D
A 350	4	540	P09- 43	10	N		49		TB1-M 2	18	N		64		E6D
A 351	4	540	P09- 44	10	N		49		TB1-T 7	18	N		64		E6D

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE-NONE | REV LTR D | SHEET 51 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 352	70	540					A 32						A 32		E7D
A 352R			P09- 93	10	N		49		TB1-D 4	18	N		66		
A 352Y			P09-106	10	N		49		TB1-D 3	18	N		66		
A 353	70	540					A 32						A 32		E7D
A 353R			P09-107	10	N		49		TB1-A 3	18	N		66		
A 353Y			P09-108	10	N		49		TB1-A 4	18	N		66		
A 354	70	540					A 32						A 32		E7D
A 354R			P09- 94	10	N		49		TB1-B 2	18	N		66		
A 354Y			P09- 95	10	N		49		TB1-A 2	18	N		66		
A 355	2	420		50		25	A 31			125		100	A 31 28		F4L5
A 355B	69	120	TB3-H13	18	N		66		SHLD A 355	20	N				
A 355R			P09- 1	10	N		49		TB3-D13	18	N		66		
A 355Y			P09- 14	10	N		49		TB3-D14	18	N		66		
A 356	2	420		50		25	A 31			125		100	A 31 28		F4L5
A 356B	69	120	TB3-H14	18	N		66		SHLD A 356	20	N				
A 356R			P09- 2	10	N		49		TB3-F13	18	N		66		
A 356Y			P09- 3	10	N		49		TB3-F14	18	N		66		
A 357	2	420		50		25	A 31			125		100	A 31 28		F4L5

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE-NONE | REV LTR D | SHEET 52 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 357B	69	120	TB3-H12	18	N		66			SHLD A 357	20	N					
A 357R			P09- 15	10	N		49			TB3-C13	18	N		66			
A 357Y			P09- 29	10	N		49			TB3-C14	18	N		66			
A 358	2	420		50		25	A 31				125		100	A 31	28		F3L9
A 358B	69	120	E 48	20	N					SHLD A 358	20	N					
A 358R			P09- 28	10	N		49			TB3-N20	18	N		66			
A 358Y			P09- 40	10	N		49			TB3-N21	18	N		66			
A 359	2	500		50		25	A 31				125		100	A 31	28		E5D
A 359B	69	120	TB2-V 8	18	N		66			SHLD A 359	20	N					
A 359R			P09- 16	10	N		49			TB2-U 7	18	N		65			
A 359Y			P09- 17	10	N		49			TB2-U 8	18	N		66			
A 360	2	500		50		25	A 31				125		100	A 31	28		E6D
A 360B	69	120	TB2-M 8	18	N		66			SHLD A 360	20	N					
A 360R			P09- 30	10	N		49			TB2-N 8	18	N		65			
A 360Y			P09- 31	10	N		49			TB2-N 7	18	N		66			
A 361	4	540	P09- 41	10	N		49			TB1-C 8	18	N		65			E7D
A 362	4	940	P09- 52	10	N		49			TB1-C 7	18	N		65			E7D
A 363	72	540					A 31							A 31			E7D

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE-NONE REV LTR D SHEET 53 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 363G			P09- 61	10	N		49			TB1-B 8	18	N		65			
A 363N			P09- 51	10	N		49			TB1-B 7	18	N		65			
A 363R			P09- 60	10	N		49			TB1-A 7	18	N		65			
A 363Y			P09- 50	10	N		49			TB1-A 8	18	N		65			
A 364	2	500		50		25	A 31				125		100	A 31	28		E5D
A 364B	69	120	TB2-F 2	18	N		66			SHLD A 364	20	N					
A 364R			P09- 96	10	N		49			TB2-H 2	18	N		66			
A 364Y			P09- 82	10	N		49			TB2-G 2	18	N		66			
A 365	2	500		50		25	A 31				125		100	A 31	28		E5D
A 365B	69	120	TB2-F 7	18	N		66			SHLD A 365	20	N					
A 365R			P09- 70	10	N		49			TB2-H 7	18	N		66			
A 365Y			P09- 71	10	N		49			TB2-G 7	18	N		66			
A 366	2	500		50		25	A 31				125		100	A 31	28		E5D
A 366B	69	120	TB2-S 2	18	N		66			SHLD A 366	20	N					
A 366R			P09- 72	10	N		49			TB2-N 2	18	N		66			
A 366Y			P09- 83	10	N		49			TB2-R 2	18	N		66			
A 367	4	420	P09- 98	10	N		49			TB3-D 4	18	N		64			E5L1
A 368	4	420	P09- 85	10	N		49			TB3-C 5	18	N		64			E6L3

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE-NONE REV LTR D SHEET 54 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 369	4	420	P09- 97	10	N		49			TB3-D 5	18	N		64			E5L3
A 370	4	420	P09- 73	10	N		49			TB3-C 4	18	N		64			E5L1
A 371	71	420					A 31							A 31			F4L6
A 371G			P09- 64	10	N		49			TB3-G19	18	N		64			
A 371R			P09- 74	10	N		49			TB3-F19	18	N		64			
A 371Y			P09- 75	10	N		49			TB3-D19	18	N		64			
A 376	70	420					A 32							A 32			F3L6
A 376R			P09- 91	10	N		49			TB3-C17	18	N		65			
A 376Y			P09- 92	10	N		49			TB3-C16	18	N		65			
A 378	70	420					A 32							A 32			F3L6
A 378R			P09- 76	10	N		49			TB3-G17	18	N		65			
A 378Y			P09- 77	10	N		49			TB3-F17	18	N		65			
A 379	70	420					A 32							A 32			F3L9
A 379R			P09- 42	10	N		49			TB3-K19	18	N		65			
A 379Y			P09- 53	10	N		49			TB3-H19	18	N		65			
A 380	4	420	P09- 62	10	N		49			TB3-L19	18	N		64			F3L9
A 381	4	420	P09- 54	10	N		49			TB3-M19	18	N		64			F3L9
A 382	4	420	P09- 63	10	N		49			TB3-N19	18	N		65			F4L9

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE-NONE REV LTR D SHEET 55 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 384	4	500	P09- 84	10	N		49			TB3-D 6	18	N		64			E5L3
A 385	4	500	P09- 32	10	N		49			TB2-F 4	18	N		64			E6D
A 386	70	420					A 32							A 32			F3L9
A 386R			P09- 21	10	N		49			TB3-S20	18	N		64			
A 386Y			P09- 7	10	N		49			TB3-R19	18	N		64			
A 387	71	400					A 31							A 31			F2M1
A 387G			J09- 5	10	N		49			J22-232	10	N		49			
A 387R			J09- 18	10	N		49			J22-195	10	N		49			
A 387Y			J09- 4	10	N		49			J22-233	10	N		49			
A 388	71	400					A 31							A 31			F2M1
A 388G			J09- 6	10	N		49			J22-197	10	N		49			
A 388R			J09- 7	10	N		49			J22-235	10	N		49			
A 388Y			J09- 20	10	N		49			J22-198	10	N		49			
A 389	71	400					A 31							A 31			F2M1
A 389G			J09- 17	10	N		49			J22-192	10	N		49			
A 389R			J09- 16	10	N		49			J22-230	10	N		49			
A 389Y			J09- 3	10	N		49			J22-193	10	N		49			
A 390	4	400	J09- 73	10	N		49			TB3-F 3	18	N					E6L1

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE-NONE REV LTR D SHEET 56 OF 84

MIL 2085 - 4-63 WIR

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. ▷1		NO.	CUT WIRE OR SHIELD				TERMINATION SPEC ▷1		NO.	
	ITEM NO.	▷2	STRIP WIRE OR JACKET		T I N	▷2				STRIP WIRE OR JACKET		T I N	▷2				
NUMBER			CIRCUIT POINT	▷2			ITEM NO.			CIRCUIT POINT	▷2			ITEM NO.			
A 393	71	400					A 31							A 31			F2M1
A 393G			J09- 50	10	N		49			J22-238	10	N		49			
A 393R			J09- 41	10	N		49			J22-237	10	N		49			
A 393Y			J09- 40	10	N		49			J22-200	10	N		49			
A 394	4	400	J09- 72	10	N		49			TB3-B11	18	N		64			F4L3
A 395	4	400	J09- 97	10	N		49			TB3-R 6	18	N		65			E5L4
A 396	4	400	J09- 98	10	N		49			TB3-C 1	18	N		64			E6L1
A 397	4	400	J09-104	10	N		49			TB3-M 4	18	N		64			E5L1
A 398	4	400	J09- 86	10	N		49			TB3-L 1	18	N		64			E5L1
A 399	4	400	J09-102	10	N		49			TB3-H 3	18	N		64			E6L1
A 400	4	400	J09- 76	10	N		49			TB3-L 5	18	N		64			E5L2
A 401	72	400					A 31							A 31			E5L1
A 401G			J09- 87	10	N		49			TB3-H 1	18	N		64			
A 401N			J09- 88	10	N		49			TB3-G 2	18	N		64			
A 401R			J09-100	10	N		49			TB3-G 1	18	N		64			
A 401Y			J09-101	10	N		49			TB3-H 2	18	N		64			
A 402	4	400	J09- 90	10	N		49			TB3-N 6	18	N		65			E5L4
A 403	4	400	J09- 74	10	N		49			TB3-H 5	18	N		64			E5L2

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE REV LTR D SHEET 57 OF 84

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. ▷1		NO.	CUT WIRE OR SHIELD				TERMINATION SPEC ▷1		NO.	
	ITEM NO.	▷2	STRIP WIRE OR JACKET		T I N	▷2				STRIP WIRE OR JACKET		T I N	▷2				
NUMBER			CIRCUIT POINT	▷2			ITEM NO.			CIRCUIT POINT	▷2			ITEM NO.			
A 404	4	400	J09- 59	10	N		49			TB3-G18	18	N		64			F3L6
A 405	4	400	J09- 58	10	N		49			TB3-K18	18	N		64			F3L7
A 408	4	400	J09- 66	10	N		49			TB3-H 6	18	N		65			E5L4
A 409	70	400					A 32							A 32			F4L5
A 409R			J09- 68	10	N		49			TB3-B13	18	N		65			
A 409Y			J09- 81	10	N		49			TB3-B12	18	N		65			
A 410	4	530	J09- 67	10	N		49			TB1-G 1	18	N		65			E7D
A 411	4	490	J09- 93	10	N		49			TB2-S 4	18	N		65			E6D
A 412	4	490	J09- 79	10	N		49			TB2-S 5	18	N		65			E6D
A 413	4	490	J09-106	10	N		49			TB2-S 6	18	N		65			E6D
A 414	4	490	J09- 78	10	N		49			TB2-S 7	18	N		65			E6D
A 415	4	120	J09- 42	10	N		49			E 56	20	N		27			
A 416	70	490					A 32							A 32			E6D
A 416R			J09- 80	10	N		49			TB2-K 1	18	N					
A 416Y			J09- 69	10	N		49			TB2-L 1	18	N					
A 420	4	120	J09- 36	10	N		49			E 56	20	N					
A 425	3	400		50		25	A 30							A 30	28		F3L4
A 425B	69	120	TB3-M 9	18	N		65			SHLD A 425	20	N					

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE REV LTR D SHEET 58 OF 84

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. ▷1		NO.	CUT WIRE OR SHIELD				TERMINATION SPEC ▷1		NO.	
	ITEM NO.	▷2	STRIP WIRE OR JACKET		T I N	▷2				STRIP WIRE OR JACKET		T I N	▷2				
NUMBER			CIRCUIT POINT	▷2			ITEM NO.			CIRCUIT POINT	▷2			ITEM NO.			
A 425G			J09- 24	10	N		49			TB3-M12	18	N		64			
A 425R			J09- 10	10	N		49			TB3-M10	18	N		64			
A 425Y			J09- 23	10	N		49			TB3-M11	18	N		64			
A 426	2	400		50		25	A 31				125		100	A 31	28		F3L5
A 426B	69	120	TB3-G12	18	N		65			SHLD A 426	20	N					
A 426R			J09- 19	10	N		49			TB3-G11	18	N		64			
A 426Y			J09- 33	10	N		49			TB3-G12	18	N					
A 427	2	400		50		25	A 31				125		100	A 31	28		F3L5
A 427B	69	120	TB3-F12	18	N		65			SHLD A 427	20	N					
A 427R			J09- 35	10	N		49			TB3-F11	18	N		64			
A 427Y			J09- 34	10	N		49			TB3-F12	18	N					
A 428	4	400	J09- 99	10	N		49			TB3-L18	18	N		64			F3L7
A 429	4	400	J09- 1	10	N		49			TB3-L22	18	N					F3L9
A 431	70	490					A 32							A 32			E6D
A 431R			J09- 32	10	N		49			TB2-A 2	18	N		65			
A 431Y			J09- 44	10	N		49			TB2-A 1	18	N		65			
A 433	2	390		300		275	A 31				100		75	A 31	28		F2N4
A 433B	69	120	E 44	20	N					SHLD A 433	20	N					

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE REV LTR D SHEET 59 OF 84

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. ▷1		NO.	CUT WIRE OR SHIELD				TERMINATION SPEC ▷1		NO.	
	ITEM NO.	▷2	STRIP WIRE OR JACKET		T I N	▷2				STRIP WIRE OR JACKET		T I N	▷2				
NUMBER			CIRCUIT POINT	▷2			ITEM NO.			CIRCUIT POINT	▷2			ITEM NO.			
A 433R			E 58	20	N		28			J21- 87	10	N		49			
A 433Y			J09- 30	10	N	250	49			J21- 86	10	N		49			
A 434	2	390		300		275	A 31				100		75	A 31	28		F2N4
A 434B	69	120	E 44	20	N					SHLD A 434	20	N					
A 434R			E 58	20	N					J21- 89	10	N		49			
A 434Y			J09- 31	10	N	250	49			J21- 88	10	N		49			
A 435	4	400	J09- 51	10	N		49			TB3-M22	18	N					F3L9
A 436	4	400	J09- 83	10	N		49			TB3-L15	18	N		64			F4L7
A 437	2	390		300		275	A 31				100		75	A 31	28		F2N4
A 437B	69	120	E 44	20	N					SHLD A 437	20	N					
A 437R			E 58	20	N					J21- 55	10	N		49			
A 437Y			J09- 25	10	N	250	49			J21- 54	10	N		49			
A 438	4	400	J09- 92	10	N		49			TB3-K 1	18	N		64			E5L1
A 439	4	400	J09- 94	10	N		49			TB3-D 1	18	N		64			E5L1
A 440	2	390		100		75	A 31	28	315		150		125	A 31			F2N4
A 440A	69	120	SHLD A 440	20	N					E 44	20	N					
A 440R			J21-120	10	N		49			E 58	20	N					
A 440Y			J21-119	10	N		49			E 56	20	N					

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

1015055

SCALE - NONE REV LTR D SHEET 60 OF 84

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION			CUT WIRE OR SHIELD				TERMINATION			
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	SPEC. 1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	SPEC 1	NO.	
A 441	4	400	J09-103	10	N		49			TB3-M 5	18	N		64			E5L2
A 442	4	400	J09- 85	10	N		49			TB3-G 4	18	N		64			E5L1
A 443	4	400	J09- 89	10	N		49			TB3-G 3	18	N		64			E6L1
A 444	4	400	J09- 75	10	N		49			TB3-K 5	18	N		64			E5L2
A 445	4	400	J09- 71	10	N		49			TB3-M20	18	N		64			F3L9
A 446	4	400	J09-105	10	N		49			TB3-K 2	18	N		64			E6L1
A 447	4	420	J09- 95	10	N		49			P10- 48	10	N		49			
A 448	70	400					A 32							A 32			
A 448R			J09- 65	10	N		49			P10- 39	10	N		49			
A 448Y			J09- 77	10	N		49			P10- 38	10	N		49			
A 449	2	390		300		275	A 31				100		75	A 31 28			F2N4
A 449B	69	120	E 44	20	N					SHLD A 449	20	N					
A 449R			J09- 37	10	N	250	49			J21- 18	10	N		49			
A 449Y			E 58	20	N					J21- 19	10	N		49			
A 450	4	490	J09- 26	10	N		49			TB2-D 6	18	N		64			E6D
A 451	4	400	J09- 91	10	N		49			TB3-F22	18	N					F3L8
A 452	4	540	P10- 13	10	N		49			TB1-S 5	18	N		66			E6D
A 454	4	420	P10- 12	10	N		49			TB3-F 5	18	N		66			E5L2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE-NONE REV LTR D SHEET 61 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION			CUT WIRE OR SHIELD				TERMINATION			
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	SPEC. 1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	SPEC 1	NO.	
A 458	4	120	TB2-D 5	18	N		64			E 48	20	N					H
A 460	4	420	P10- 49	10	N		49			TB3-B14	18	N		65			F4L5
A 461	4	410	P10- 8	10	N		49			J22-171	10	N		49			F2M1
A 462	4	420	P10- 9	10	N		49			TB3-F 1	18	N					E5L1
A 464	4	490	J10- 2	10	N		49			TB3-F 3	18	N		66			E5L1
A 465	4	490	J10- 6	10	N		49			TB3-M 6	18	N		65			E5L4
A 466	4	610	J10- 7	10	N		49			TB1-F 1	18	N					E7D
A 467	70	480					A 32							A 32			BN1
A 467R			J10- 38	10	N		49			J21- 84	10	N		49			
A 467Y			E 25	20	N		28			J21- 85	10	N		49			
A 468	70	480					A 32							A 32			BN1
A 468R			E 25	20	N					J21- 13	10	N		49			
A 468Y			J10- 49	10	N		49			J21- 12	10	N		49			
A 469	4	480	J10- 72	10	N		49			J21-141	10	N		49			AN2
A 470	70	480					A 32							A 32			AN2
A 470R			J10- 42	10	N		49			J21- 47	10	N		49			
A 470Y			E 24	20	N		28			J21- 48	10	N		49			
A 471	70	480					A 32							A 32			AN2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE-NONE REV LTR D SHEET 62 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION			CUT WIRE OR SHIELD				TERMINATION			
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	SPEC. 1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	SPEC 1	NO.	
A 471R			J10- 20	10	N		49			J21- 82	10	N		49			
A 471Y			E 24	20	N					J21- 83	10	N		49			
A 472	70	480					A 32							A 32			BN1
A 472R			J10- 36	10	N		49			J21-150	10	N		49			
A 472Y			E 25	20	N					J21-151	10	N		49			
A 473	4	480	J10- 71	10	N		49			J21- 75	10	N		49			AN2
A 474	71	490					A 31							A 31			E5L9
A 474G			J10- 5	10	N		49			TB3-B 5	18	N		65			
A 474R			J10- 4	10	N		49			TB3-B 3	18	N		65			
A 474Y			J10- 3	10	N		49			TB3-B 4	18	N		65			
A 475	4	610	J10- 12	10	N		49			TB1-F 8	18	N		65			E7D
A 476	4	480	J10- 70	10	N		49			J21- 3	10	N		49			AN2
A 477	4	480	J10- 57	10	N		49			J21-108	10	N		49			F2N4
A 478	4	610	J10- 9	10	N		49			TB1-H 5	18	N		64			E7D
A 479	71	610					A 31							A 31			E7D
A 479G			J10- 22	10	N		49			TB1-K 3	18	N		65			
A 479R			J10- 24	10	N		49			TB1-K 5	18	N		65			
A 479Y			J10- 21	10	N		49			TB1-K 4	18	N		65			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE-NONE REV LTR D SHEET 63 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM							TO							
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION			CUT WIRE OR SHIELD				TERMINATION			
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	SPEC. 1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	SPEC 1	NO.	
A 480	71	610					A 31							A 31			E7D
A 480G			J10- 23	10	N		49			TB1-K 8	18	N		65			
A 480R			J10- 25	10	N		49			TB1-K 6	18	N		65			
A 480Y			J10- 26	10	N		49			TB1-K 7	18	N					
A 481	4	480	J10- 59	10	N		49			J21- 40	10	N		49			
A 482	70	480					A 32							A 32			AN2
A 482R			J10- 32	10	N		49			J21- 80	10	N		49			
A 482Y			E 23	20	N		28			J21- 81	10	N		49			
A 483	70	480					A 32							A 32			AN2
A 483R			J10- 17	10	N		49			J21- 6	10	N		49			
A 483Y			E 23	20	N					J21- 7	10	N		49			
A 484	70	480					A 32							A 32			AN2
A 484R			J10- 18	10	N		49			J21-214	10	N		49			
A 484Y			E 23	20	N					J21-215	10	N		49			
A 485	70	480					A 32							A 32			AN2
A 485R			J10- 40	10	N		49			J21-179	10	N		49			
A 485Y			E 23	20	N					J21-180	10	N		49			
A 486	70	480					A 32							A 32			AN2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE-NONE REV LTR D SHEET 64 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	2	TIN	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	TIN	TO TERMINATION SPEC 1 ITEM NO.	NO.	
A 486R			J10- 41	10	N	49		J21-146	10	N	49		
A 486Y			E 23	20	N			J21-147	10	N	49		
A 487	70	480				A 32					A 32		AN2
A 487R			J10- 19	10	N	49		J21-113	10	N	49		
A 487Y			E 23	20	N			J21-114	10	N	49		
A 488	70	480				A 32					A 32		AN2
A 488R			J10- 33	10	N	49		J21- 45	10	N	49		
A 488Y			E 23	20	N			J21- 46	10	N	49		
A 489	70	480				A 32					A 32		AN2
A 489R			J10- 44	10	N	49		J21- 8	10	N	49		
A 489Y			E 24	20	N			J21- 9	10	N	49		
A 490	70	480				A 32					A 32		AN2
A 490R			J10- 43	10	N	49		J21-216	10	N	49		
A 490Y			E 24	20	N			J21-217	10	N	49		
A 491	70	480				A 32					A 32		AN2
A 491R			J10- 53	10	N	49		J21-181	10	N	49		
A 491Y			E 24	20	N			J21-182	10	N	49		
A 492	70	480				A 32					A 32		AN2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE - NONE REV LTR D SHEET 65 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	2	TIN	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	TIN	TO TERMINATION SPEC 1 ITEM NO.	NO.	
A 492R			J10- 51	10	N	49		J21-148	10	N	49		
A 492Y			E 24	20	N			J21-149	10	N	49		
A 493	70	480				A 32					A 32		AN3
A 493R			J10- 64	10	N	49		J21-115	10	N	49		
A 493Y			E 24	20	N			J21-116	10	N	49		
A 494	70	480				A 32					A 32		AN3
A 494R			J10- 73	10	N	49		J21-210	10	N	49		
A 494Y			E 22	20	N	28		J21-211	10	N	49		
A 495	70	480				A 32					A 32		AN3
A 495R			J10- 74	10	N	49		J21-175	10	N	49		
A 495Y			E 22	20	N			J21-176	10	N	49		
A 496	70	480				A 32					A 32		AN3
A 496R			J10- 60	10	N	49		J21-142	10	N	49		
A 496Y			E 22	20	N			J21-143	10	N	49		
A 497	70	480				A 32					A 32		AN3
A 497R			J10- 28	10	N	49		J21-109	10	N	49		
A 497Y			E 22	20	N			J21-110	10	N	49		
A 498	70	480				A 32					A 32		AN3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE - NONE REV LTR D SHEET 66 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	2	TIN	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	TIN	TO TERMINATION SPEC 1 ITEM NO.	NO.	
A 498R			J10- 29	10	N	49		J21- 76	10	N	49		
A 498Y			E 22	20	N			J21- 77	10	N	49		
A 499	70	480				A 32					A 32		AN3
A 499R			J10- 30	10	N	49		J21- 41	10	N	49		
A 499Y			E 22	20	N			J21- 42	10	N	49		
A 500	70	480				A 32					A 32		AN3
A 500R			J10- 61	10	N	49		J21-212	10	N	49		
A 500Y			E 22	20	N			J21-213	10	N	49		
A 501	70	480				A 32					A 32		AN3
A 501R			J10- 62	10	N	49		J21-177	10	N	49		
A 501Y			E 22	20	N			J21-178	10	N	49		
A 502	70	480				A 32					A 32		AN3
A 502R			J10- 63	10	N	49		J21-144	10	N	49		
A 502Y			E 22	20	N			J21-145	10	N	49		
A 503	70	480				A 32					A 32		AN3
A 503R			J10- 14	10	N	49		J21-111	10	N	49		
A 503Y			E 23	20	N			J21-112	10	N	49		
A 504	70	480				A 32					A 32		AN3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE - NONE REV LTR D SHEET 67 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	2	TIN	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	TIN	TO TERMINATION SPEC 1 ITEM NO.	NO.	
A 504R			J10- 16	10	N	49		J21- 43	10	N	49		
A 504Y			E 23	20	N			J21- 44	10	N	49		
A 505	70	480				A 32					A 32		AN3
A 505R			J10- 31	10	N	49		J21- 4	10	N	49		
A 505Y			E 22	20	N			J21- 5	10	N	49		
A 506	70	480				A 32					A 32		AN3
A 506R			J10- 15	10	N	49		J21- 78	10	N	49		
A 506Y			E 23	20	N			J21- 79	10	N	49		
A 507	4	490	J10- 8	10	N	49		TB3-M22	18	N	65		F3L9
A 509	4	480	J10- 58	10	N	49		J21- 39	10	N	49		F2N4
A 510	70	480				A 32					A 32		BN1
A 510R			J10- 39	10	N	49		J21- 14	10	N	49		
A 510Y			E 25	20	N			J21- 15	10	N	49		
A 511	70	480				A 32					A 32		BN1
A 511R			J10- 37	10	N	49		J21-117	10	N	49		
A 511Y			E 25	20	N			J21-118	10	N	49		
A 512	4	480	J10- 56	10	N	49		J21-173	10	N	49		F2N4
A 513	4	480	J10- 55	10	N	49		J21-174	10	N	49		F2N4

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015055

SCALE - NONE REV LTR D SHEET 68 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET			FROM TERMINATION SPEC. [1]		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TO TERMINATION SPEC [1]		
NUMBER	ITEM NO.	[2]	CIRCUIT POINT	[2]	TIN	ITEM NO.	NO.	CIRCUIT POINT	[2]	TIN	ITEM NO.	NO.	
A 514	70	480				A 32					A 32		BN1
A 514R			J10- 35	10	N	49		J21-183	10	N	49		
A 514Y			E 25	20	N			J21-184	10	N	49		
A 515	70	480				A 32					A 32		BN1
A 515R			J10- 47	10	N	49		J21-185	10	N	49		
A 515Y			E 25	20	N			J21-186	10	N	49		
A 516	70	480				A 32					A 32		BN1
A 516R			J10- 34	10	N	49		J21-218	10	N	49		
A 516Y			E 25	20	N			J21-219	10	N	49		
A 517	70	480				A 32					A 32		BN1
A 517R			J10- 48	10	N	49		J21-220	10	N	49		
A 517Y			E 25	20	N			J21-221	10	N	49		
A 520	4	480	J10- 75	10	N	49		J21-209	10	N	49		AN3
A 521	4	610	J10- 13	10	N	49		TB1-K 7	18	N	66		E6D
A 522	4	480	J10- 45	10	N	49		J21- 10	10	N	49		BN1
A 523	4	480	J10- 46	10	N	49		J21- 11	10	N	49		BN1
A 548	4	400	TB3-B20	18	N	66	24	E 12	20	N			C9J
A 551	4	120	E 25	20	N			J10- 69	10	N	49		B

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE-NONE	REV LTR D	SHEET 69 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET			FROM TERMINATION SPEC. [1]		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TO TERMINATION SPEC [1]		
NUMBER	ITEM NO.	[2]	CIRCUIT POINT	[2]	TIN	ITEM NO.	NO.	CIRCUIT POINT	[2]	TIN	ITEM NO.	NO.	
A 552	4	120	E 24	20	N			J10- 82	10	N	49		
A 554	4	120	E 23	20	N			E 22	20	N			
A 555	4	120	E 23	20	N			E 24	20	N			
A 557	4	400	E 8	20	N			TB2-D 1	18	N	64		G14H1
A 558	70	400				A 32					A 32		G14H1
A 558R			E 14	20	N			TB2-K 1	18	N	66		
A 558Y			E 13	20	N			TB2-L 1	18	N	66		
A 559	4	400	TB3-S21	18	N	65	318	E 6	20	N			C9J
A 560	70	400				A 32					A 32		G15K2
A 560R			E 17	20	N			TB1-H 7	18	N	65		
A 560Y			E 16	20	N			TB1-G 7	18	N	65		
A 561	70	400				A 32					A 32		G15K1
A 561R			E 9	20	N			TB1-S 1	18	N	65		
A 561Y			E 10	20	N			TB1-S 2	18	N			
A 564	70	400				A 32					A 32		G15K1
A 564R			E 3	20	N			TB1-G 4	18	N	65		
A 564Y			E 4	20	N			TB1-H 4	18	N	65		
A 565	4	500	J08- 50	10	N	49		TB1-F 1	18	N	65		G16K1

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE-NONE	REV LTR D	SHEET 70 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET			FROM TERMINATION SPEC. [1]		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TO TERMINATION SPEC [1]		
NUMBER	ITEM NO.	[2]	CIRCUIT POINT	[2]	TIN	ITEM NO.	NO.	CIRCUIT POINT	[2]	TIN	ITEM NO.	NO.	
A 566	4	180	E 44	20	N			E 57	20	N			N
A 567	70	470				A 32					A 32		G13J
A 567R			E 7	20	N	27		TB3-D 2	18	N	65		
A 567Y			E 11	20	N			TB3-C 3	18	N	66		
A 568	4	120	J21-187	10	N	49	2	E 64	20	N			BN1
A 569	4	120	J10- 27	10	N	49		E 65	20	N			
A 570	4	120	J10- 1	10	N	49		E 62	20	N			
A 571	4	120	J21-107	10	N	49	1	E 63	20	N			AN3
A 572	70	120				A 32					A 32		
A 572R			J01- 1	10	N	49		E 1	20	N	28		
A 572Y			J01- 14	10	N	49		E 2	20	N	27		
A 573	71	120				A 31					A 31		
A 573G			J01- 11	10	N	49		E 1	20	N			
A 573R			J01- 25	10	N	49		E 1	20	N			
A 573Y			J01- 12	10	N	49		E 5	20	N	27		
A 574	70	120				A 32					A 32		
A 574R			J02- 1	10	N	49		E 1	20	N			
A 574Y			J02- 14	10	N	49		E 2	20	N			

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE-NONE	REV LTR D	SHEET 71 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET			FROM TERMINATION SPEC. [1]		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TO TERMINATION SPEC [1]		
NUMBER	ITEM NO.	[2]	CIRCUIT POINT	[2]	TIN	ITEM NO.	NO.	CIRCUIT POINT	[2]	TIN	ITEM NO.	NO.	
A 575	71	120				A 31					A 31		
A 575G			J02- 11	10	N	49		E 1	20	N			
A 575R			J02- 25	10	N	49		E 1	20	N			
A 575Y			J02- 12	10	N	49		E 5	20	N			
A 576	71	120				A 31					A 31		
A 576G			J03- 11	10	N	49		E 1	20	N			
A 576R			J03- 25	10	N	49		E 1	20	N			
A 576Y			J03- 12	10	N	49		E 5	20	N			
A 577	71	480				A 31					A 31		G14H2
A 577G			E 5	20	N			TB2-H 5	18	N	64		
A 577R			E 1	20	N			TB2-G 4	18	N	66		
A 577Y			E 2	20	N			TB2-H 4	18	N	65		
A 578	70	120				A 32					A 32		
A 578R			J01- 3	10	N	49		E 7	20	N			
A 578Y			J01- 2	10	N	49		E 11	20	N	27		
A 579	70	120				A 32					A 32		
A 579R			J02- 3	10	N	49		E 7	20	N			
A 579Y			J02- 2	10	N	49		E 11	20	N			

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE-NONE	REV LTR D	SHEET 72 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP	TIN	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP	TIN	TERMINATION SPEC ITEM NO.	NO.	
A 580	70	120				A 32					A 32		
A 580R			J03- 3	10	N	49		E 7	20	N			
A 580Y			J03- 2	10	N	49		E 11	20	N			
A 581	4	120	J03- 16	10	N	49		E 6	20	N			
A 582	4	120	J03- 15	10	N	49		E 8	20	N			
A 583	70	120				A 32					A 32		
A 583R			J05- 50	10	N	49		E 17	20	N			
A 583Y			J05- 60	10	N	49		E 16	20	N			
A 584	71	120				A 31					A 31		
A 584G			J04- 12	10	N	49		E 14	20	N			
A 584R			J04- 25	10	N	49		E 13	20	N			
A 584Y			J04- 11	10	N	49		E 13	20	N			
A 585	71	120				A 31					A 31		
A 585G			J05- 17	10	N	49		E 14	20	N			
A 585R			J05- 4	10	N	49		E 13	20	N			
A 585Y			J05- 18	10	N	49		E 13	20	N			
A 586	70	120				A 32					A 32		
A 586R			J05- 1	10	N	49		E 14	20	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE-NONE | REV LTR D | SHEET 73 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP	TIN	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP	TIN	TERMINATION SPEC ITEM NO.	NO.	
A 586Y			J05- 14	10	N	49		E 13	20	N			
A 587	4	60	TB1-N 4	18	N	66		TB1-N 5	18	N			K
A 588	4	60	TB1-N 5	18	N	66		TB1-N 8	18	N			K
A 591	4	60	TB3-T 3	18	N	66		TB3-R 3	18	N			L
A 592	4	60	TB3-R 3	18	N	66		TB3-N 3	18	N			L
A 593	4	60	TB3-D15	18	N	66		TB3-L20	18	N	65		L
A 594	4	60	TB3-L22	18	N	65		TB3-D15	18	N			L
A 595	4	60	TB3-K20	18	N	65		TB3-C15	18	N			L
A 596	4	60	TB3-K22	18	N	65		TB3-C15	18	N	66		L
A 598	70	470				A 32					A 32		C10H3
A 598R			P05-D	20	N	52		TB2-U 3	18	N	66		
A 598Y			P05-E	20	N	52		TB2-T 3	18	N	65		
A 599	70	390				A 32					A 32		G13H1
A 599R			J04- 3	10	N	49		TB2-U 1	18	N	65		
A 599Y			J04- 2	10	N	49		TB2-T 2	18	N			
A 600	70	410				A 32					A 32		G13H2
A 600R			J05- 3	10	N	49		TB2-U 1	18	N			
A 600Y			J05- 2	10	N	49		TB2-T 2	18	N	66		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE-NONE | REV LTR D | SHEET 74 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP	TIN	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP	TIN	TERMINATION SPEC ITEM NO.	NO.	
A 601	4	60	TB2-L 4	18	N	66		TB2-M 4	18	N	65		H
A 602	75	480				A 31					A 31		G15K1
A 602G			P01-106	10	N	49		TB1-N 1	18	N			
A 602N			P01- 90	10	N	49		TB1-M 1	18	N			
A 602R			P01-103	10	N	49		TB1-R 1	18	N			
A 602Y			P01-108	10	N	49		TB1-T 1	18	N	66		
A 603	75	500				A 31					A 31		G15K1
A 603G			J08- 46	10	N	49		TB1-R 3	18	N			
A 603N			J08- 19	10	N	49		TB1-R 2	18	N			
A 603R			J08- 55	10	N	49		TB1-N 3	18	N			
A 603Y			J08- 36	10	N	49		TB1-R 2	18	N			
A 604	73	530				A 31					A 31		E7D
A 604R			J09- 55	10	N	49		TB1-N 3	18	N	65		
A 604Y			J09- 46	10	N	49		TB1-R 3	18	N	65		
A 605	75	530				A 31					A 31		E6D
A 605G			J09- 64	10	N	49		TB1-N 1	18	N	65		
A 605N			J09- 63	10	N	49		TB1-M 1	18	N	65		
A 605R			J09- 54	10	N	49		TB1-R 1	18	N	65		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE-NONE | REV LTR D | SHEET 75 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP	TIN	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP	TIN	TERMINATION SPEC ITEM NO.	NO.	
A 605Y			J09- 84	10	N	49		TB1-K 1	18	N	65		
A 606	75	420				A 31					A 31		
A 606G			J09- 53	10	N	49		P10-107	10	N	49		
A 606N			J09- 52	10	N	49		P10-108	10	N	49		
A 606R			J09- 61	10	N	49		P10-106	10	N	49		
A 606Y			J09- 62	10	N	49		P10- 93	10	N	49		
A 607	73	420				A 31					A 31		F4L5
A 607R			P10- 69	10	N	49		TB3-L14	18	N			
A 607Y			P10- 68	10	N	49		TB3-K14	18	N			
A 608	73	280				A 31					A 31		F4L6
A 608R			P11-N	25	N	53		TB3-L14	18	N	65		
A 608Y			P11-K	25	N	53		TB3-K14	18	N	65		
A 609	5	280	P11-B	25	N	53		TB3-C20	18	N			F3L6
A 610	5	280	P11-B	25	N			TB3-C20	18	N			F3L6
A 611	5	280	P11-B	25	N			TB3-C20	18	N	66		F3L6
A 612	5	280	P11-C	25	N	53		TB3-C21	18	N			F3L6
A 613	5	280	P11-C	25	N			TB3-C21	18	N			F3L6
A 614	5	280	P11-C	25	N			TB3-C21	18	N	66		F3L8

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE-NONE | REV LTR D | SHEET 76 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT 2	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 615	5	280	P12-B	25	N		53		TB3-D20	18	N				F3L6
A 616	5	280	P12-B	25	N				TB3-D20	18	N				F3L6
A 617	5	280	P12-B	25	N				TB3-D20	18	N		66		F3L6
A 618	5	280	P12-C	25	N		53		TB3-D21	18	N				F3L8
A 619	5	280	P12-C	25	N				TB3-D21	18	N				F3L8
A 620	5	280	P12-C	25	N				TB3-D21	18	N		66		F3L8
A 621	5	280	P12-M	25	N		53		TB3-C22	18	N				F3L8
A 622	5	280	P12-M	25	N				TB3-C22	18	N		65		F3L8
A 623	5	280	P11-M	25	N		53		TB3-D22	18	N				F3L8
A 624	5	280	P11-M	25	N				TB3-D22	18	N		65		F3L8
A 625	5	280	P11-H	25	N		53		TB3-H21	18	N				F3L8
A 626	5	280	P11-M	25	N				TB3-H21	18	N				F3L8
A 627	5	280	P11-H	25	N				TB3-H21	18	N		66		F3L8
A 628	5	280	P12-H	25	N		53		TB3-H22	18	N				F3L8
A 629	5	280	P12-H	25	N				TB3-H22	18	N				F3L8
A 630	5	280	P12-H	25	N				TB3-H22	18	N		66		F3L8
A 631	5	280	P11-L	25	N		53		TB3-F21	18	N		66		F3L8
A 632	5	280	P12-L	25	N		53		TB3-F22	18	N		66		F3L8

1 TH" STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 77 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT 2	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 633	5	280	P11-A	25	N		53		TB3-G21	18	N		66		F3L8
A 634	5	350	P11-A	25	N				J21- 1	10	N		49		F3N5
A 635	5	350	P11-A	25	N				J21- 73	10	N		49		F3N5
A 636	5	280	P12-A	25	N		53		TB3-G22	18	N		66		F3L8
A 637	5	350	P12-A	25	N				J21-139	10	N		49		F3N5
A 638	5	350	P12-A	25	N				J21-207	10	N		49		F3N5
A 639	5	350	P11-J	25	N		53		J21- 2	10	N		49		F3N5
A 640	5	350	P11-J	25	N				J21- 74	10	N		49		F3N5
A 641	5	350	P12-J	25	N		53		J21-140	10	N		49		F3N5
A 642	5	350	P12-J	25	N				J21-208	10	N		49		F3N5
A 643	5	280	P11-G	25	N		53		TB3-D15	18	N				F4L6
A 644	5	280	P11-G	25	N				TB3-K20	18	N				F3L6
A 645	5	280	P11-G	25	N				TB3-L21	18	N		65		F3L8
A 646	5	280	P12-G	25	N		53		TB3-C15	18	N				F4L6
A 647	5	280	P12-G	25	N				TB3-K22	18	N				F3L8
A 648	5	280	P12-G	25	N				TB3-L20	18	N				F3L6
A 649	5	390	P11-D	25	N		53		TB1-N 8	18	N				E7D
A 650	5	390	P11-D	25	N				TB1-S 6	18	N				E6D

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 78 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT 2	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 651	5	350	P11-F	25	N		53		TB2-M 3	18	N		64		E6D
A 652	5	350	P11-F	25	N				TB2-D 4	18	N		65		E6D
A 653	5	280	P11-F	25	N				TB3-N 3	18	N				E5L1
A 654	5	350	P11-E	25	N		53		TB2-M 7	18	N		64		E6D
A 655	5	350	P11-E	25	N				TB2-V 4	18	N				E6D
A 656	5	350	P12-D	25	N		53		TB1-N 4	18	N				E7D
A 657	5	280	P12-D	25	N				TB3-S 3	18	N				E6L1
A 658	5	280	P12-E	25	N		53		TB3-T 3	18	N				E5L1
A 659	5	390	P12-E	25	N				TB1-S 3	18	N				E6D
A 660	5	350	P12-F	25	N		53		TB2-M 1	18	N		64		E6D
A 661	5	350	P12-F	25	N				TB2-L 4	18	N				E6D
A 662	5	390	P12-F	25	N				TB1-D 7	18	N				E7D
A 663	74	540					A 31						A 31		E6D
A 663G			P10- 81	10	N		49		TB1-T 2	18	N		66		
A 663R			P10- 94	10	N		49		TB1-R 2	18	N		66		
A 663Y			P10- 95	10	N		49		TB1-S 2	18	N		66		
A 664	4	60	TB3-B15	18	N		64		TB3-T15	18	N				L
A 665	4	420	P10- 1	10	N		49		TB3-B20	18	N				F4L6

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 79 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT 2	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 667	4	400	J09- 15	10	N		49		TB3-F 1	18	N		65		E6L1
A 668	4	400	J09- 14	10	N		49		TB3-F 2	18	N		64		E5L1
A 670	70	400					A 32						A 32		F3L6
A 670R			J09- 49	10	N		49		TB3-B16	18	N				
A 670Y			J09- 38	10	N		49		TB3-B17	18	N				
A 671	1	400		50		25	A 31			125		100	A 31 28		F3L4
A 671B	69	120	TB3-F 8	18	N		64		SHLD A 671	20	N				
A 671Y			J09- 48	10	N		49		TB3-G 8	18	N		64		
A 672	1	400		50		25	A 31			125		100	A 31 28		F3L4
A 672B	69	120	TB3-F 7	18	N		64		SHLD A 672	20	N				
A 672Y			J09- 56	10	N		49		TB3-G 7	18	N		64		
A 673	4	400	J09- 47	10	N		49		TB3-A10	18	N		64		F4L3
A 677	4	420	P09- 47	10	N		49		TB3-F 6	18	N		64		E5L4
A 678	4	480	P09- 49	10	N		49		J21-171	10	N		49		F2N4
A 679	4	420	P09- 37	10	N		49		TB3-G 6	18	N		64		E5L4
A 680	4	420	P09- 38	10	N		49		TB3-K 6	18	N		64		E5L4
A 681	4	420	P09- 48	10	N		49		TB3-L 6	18	N		64		E5L4
A 682	72	420					A 31						A 31		F4L3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 80 OF 84

MIL 2085 - 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.		NO.	
A 682G			P09- 99	10	N		49			TB3-B 6	18	N		64			
A 682N			P09- 86	10	N		49			TB3-C 6	18	N		64			
A 682R			P09- 87	10	N		49			TB3-C 7	18	N		64			
A 682Y			P09-100	10	N		49			TB3-C 8	18	N		64			
A 683	4	540	P09- 35	10	N		49			TB1-D 5	18	N					E7D
A 684	71	420					A 31							A 31			E5L3
A 684G			P09- 24	10	N		49			TB3-A 3	18	N		64			
A 684R			P09- 25	10	N		49			TB3-A 4	18	N		64			
A 684Y			P09- 36	10	N		49			TB3-A 5	18	N		64			
A 687	4	800	J06- 37	10	N		49			P01- 37	10	N		49			
A 689	72	420					A 31							A 31			F4L3
A 689G			P09- 88	10	N		49			TB3-D 9	18	N		64			
A 689N			P09- 89	10	N		49			TB3-B 7	18	N		64			
A 689R			P09-102	10	N		49			TB3-D 8	18	N		64			
A 689Y			P09-101	10	N		49			TB3-D 7	18	N		64			
A 690	72	420					A 31							A 31			F4L3
A 690G			P09- 90	10	N		49			TB3-C 9	18	N		64			
A 690N			P09-103	10	N		49			TB3-C10	18	N		64			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 81 OF 84

MIL 2085 · 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.		NO.	
A 690R			P09-104	10	N		49			TB3-B 9	18	N		64			
A 690Y			P09-105	10	N		49			TB3-B10	18	N		64			
A 691	5	540	P09- 23	10	N		49			TB1-S 5	18	N					E6D
A 692	4	60	J21- 16	10	N		49			J21- 17	10	N		49			N
A 693	4	120	J08- 30	10	N		49			E 72	20	N					
A 694	4	120	J08- 61	10	N		49			E 72	20	N					
A 695	4	120	J08- 83	10	N		49			E 72	20	N					
A 696	4	120	J08- 84	10	N		49			E 72	20	N					
A 697	4	120	J08- 70	10	N		49			E 72	20	N					
A 698	4	120	J08- 28	10	N		49			E 72	20	N					
A 699	4	120	J08- 17	10	N		49			E 72	20	N					
A 700	5	550	E 72	20	N		28			TB2-F 1	18	N		65			G15H1
A 701	5	490	J09- 27	10	N		49			TB2-F 1	18	N					E6D
A 702	4	550	J08- 52	10	N		49			TB2-V 1	18	N		65			G15H1
A 703	4	490	J09- 11	10	N		49			TB2-V 1	18	N					E6D
A 704	4	550	J08- 63	10	N		49			TB2-N 4	18	N		65			G14H2
A 705	4	490	J09- 13	10	N		49			TB2-N 4	18	N					E6D
A 706	4	550	J08- 31	10	N		49			TB2-T 4	18	N		65			G14H2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 82 OF 84

MIL 2085 · 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.		NO.	
A 707	4	490	J09- 39	10	N		49			TB2-T 4	18	N					E6H5
A 708	4	550	J08- 82	10	N		49			TB2-F 5	18	N		65			G15H3
A 709	4	490	J09- 12	10	N		49			TB2-F 5	18	N					E6D
A 710	4	550	J08- 54	10	N		49			TB2-F 6	18	N		66			G15H3
A 711	4	490	J09- 60	10	N		49			TB2-F 6	18	N					
A 712	4	550	J08- 32	10	N		49			TB2-F 6	18	N					G15H3
A 713	4	400	J09- 70	10	N		49			J22- 37	10	N		49			
A 714	4	490	J09- 29	10	N		49			TB2-S 8	18	N		65			E6D
A 715	4	420	J09- 28	10	N		49			P10- 24	10	N		49			
A 716	4	610	J10- 10	10	N		49			TB3-M21	18	N					F3L9
A 717	5	420	P09- 20	10	N		49			TB3-N22	18	N		64			F3L9
A 718	5	420	P09- 19	10	N		49			TB3-T21	18	N		64			F3L9
A 719	73	420					A 32							A 32			F3L9
A 719R			P09- 5	10	N		49			TB3-T19	18	N		64			
A 719Y			P09- 6	10	N		49			TB3-S19	18	N		64			
A 720	5	170	J21- 49	10	N		49			TB3-G21	18	N					NL
A 721	5	170	J21- 50	10	N		49			TB3-G21	18	N					NL
A 722	5	170	J21- 51	10	N		49			TB3-G22	18	N					NL

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 83 OF 84

MIL 2085 · 4-63 WIR

GXC WIRE HARNESS A D 1015055

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.		NO.	
A 723	5	170	J21- 52	10	N		49			TB3-G22	18	N					NL
A 724	5	60	P11-J	25	N					P12-J	25	N					
A 725	2			50		25	A 31				125		100	A 31	28		E5D
A 725B	69		TB1-S3	18	N		65			SHLD A725	20	N					
A 725R			P09-27	10	N		49			TB2-N3	18	N					
A 725Y			P09-26	10	N		49			TB2-R3	18	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR D | SHEET 84 OF 84

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APPLICATION		REVISIONS TDRR 14008			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL

SEE SHEET 2 FOR REVISION STATUS OF SHEETS

REV							
SHEET							
REV STATUS OF SHEETS	REV						
	SHEET						

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN E. Polke DATE Oct 24 64
CHECKED Allen E. Olson 10-26-64
APPROVAL J. Green 10/26/64
APPROVAL J J Keene 10/27/64
NASA APPROVAL 11-4-64
MIT APPROVAL
CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
AGE INTERCONNECT

CODE IDENT NO.
SIZE A
1015055
REV +
SCALE —
SHEET 1 OF 84

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	+	37	+	73	+												
2	+	38	+	74	+												
3	+	39	+	75	+												
4	+	40	+	76	+												
5	+	41	+	77	+												
6	+	42	+	78	+												
7	+	43	+	79	+												
8	+	44	+	80	+												
9	+	45	+	81	+												
10	+	46	+	82	+												
11	+	47	+	83	+												
12	+	48	+	84	+												
13	+	49	+														
14	+	50	+														
15	+	51	+														
16	+	52	+														
17	+	53	+														
18	+	54	+														
19	+	55	+														
20	+	56	+														
21	+	57	+														
22	+	58	+														
23	+	59	+														
24	+	60	+														
25	+	61	+														
26	+	62	+														
27	+	63	+														
28	+	64	+														
29	+	65	+														
30	+	66	+														
31	+	67	+														
32	+	68	+														
33	+	69	+														
34	+	70	+														
35	+	71	+														
36	+	72	+														

MANNED
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REVISION +

NASA DRAWING NO.
1015055
SHEET 2 OF 84

WIRE HARNESS A

GENERAL NOTES

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 SPACING OF CONDUCTOR IDENTIFICATION MARKING SHALL BE EVERY 1.2 INCHES.

6 SPIRALLING OF THE MARKING IS ALLOWED.

7 MARK SLEEVING OF MULTI-CONDUCTORS WITH THE CONDUCTOR NUMBER .12 INCH HIGH, COLOR BLACK, PER ND1002019 WHEN SLEEVING ITEM NUMBERS FOLLOW AN A OR T IN THE ACCESSORIES ITEM NUMBER FIELD.

8 A OR T PREFIX IN THE ACCESSORIES ITEM NUMBER COLUMN INDICATES THE READING POSITION AWAY FROM TERMINATION OR TOWARD TERMINATION RESPECTIVELY, OF THE WIRE MARKER SLEEVE.

9 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

10 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

11 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

12 LACE HARNESS PER ND1002032 USING ITEMS 51 AND 77.

13 CONDUCTORS LISTED WITH AN A OR B IN THE ROUTING COLUMN ARE TO BE ASSEMBLED PER DETAIL A OR B AS SHOWN ON THE CONFIGURATION DRAWING (1015056 REF).

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
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SCALE-NONE REV LTR + SHEET 3

MIL 2064-4-64

WIRE HARNESS A

GENERAL NOTES

14 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, MARKING, OR TWISTING
A - FROM END SHIELD
B - TO END SHIELD
G - GREEN
K - BLACK
L - BLUE
N - BROWN
R - RED
W - WHITE
Y - YELLOW

15 ASSEMBLE HARNESS AS SHOWN PER CONFIGURATION DRAWING (1015056 REF).

16 SERIALIZE PER ND1002023.

17 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING

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SIZE A
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SCALE-NONE REV LTR + SHEET 4

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WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015055- 1	WIRE PER 1010789-011 YEL. JKT. 24AWG YEL. 13 FT. 0.0 IN. TOTAL LENGTH
	2	1	1015055- 2	WIRE PER 1010789-012 YEL. JKT. 24AWG YEL, RED. 369 FT. 6.0 INCHES TOTAL LENGTH.
	3	1	1015055- 3	WIRE PER 1010789-013 YEL. JKT. 24AWG YEL, RED, GREEN 30 FT. 4.0 IN. TOTAL LENGTH
	4	1	1015055- 4	WIRE PER 1010789-001 24AWG YELLOW 863 FT. 9.0 INCHES TOTAL LENGTH.
	5	1	1015055- 5	WIRE PER 1010789-006 22AWG YELLOW 164 FT.9.0 INCHES TOTAL LENGTH.
	6	1	1015055- 6	WIRE PER 1010707-1 RED JKT. 29AWG BLUE, RED, AND WHITE 26 FT. 6.0 INCHES TOTAL LENGTH.
17	7	1	1010824- 3	CONNECTOR RECP ELECTRICAL
17	8	5	1010824- 2	CONNECTOR RECP ELECTRICAL
17	9	1	1010822- 5	CONNECTOR RECP ELECTRICAL
17	10	1	1010822- 3	CONNECTOR RECP ELECTRICAL
17	11	1	1010816-144	CONNECTOR RECP ELECTRICAL
17	12	1	1010816-244	CONNECTOR RECP ELECTRICAL
17	13	1	1010348- 1	CONNECTOR PLUG ELECTRICAL
17	14	1	1010348- 2	CONNECTOR PLUG ELECTRICAL
	15	1	1010671- 1	CONNECTOR PLUG ELECTRICAL

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SHEET 6

MIL 2064-4-64

WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	16	1	1010671- 2	CONNECTOR PLUG ELECTRICAL
17	17	1	1010674- 1	CONNECTOR PLUG ELECTRICAL
17	18	1	1010674- 2	CONNECTOR PLUG ELECTRICAL
17	19	1	1010674- 3	CONNECTOR PLUG ELECTRICAL
17	20	1	1010674- 4	CONNECTOR PLUG ELECTRICAL
17	21	1	1010824- 5	CONNECTOR RECP ELECTRICAL
17	22	1	1010824- 4	CONNECTOR RECP ELECTRICAL
17	23	1	1010822- 4	CONNECTOR RECP ELECTRICAL
17	24	1	1010824- 6	CONNECTOR RECP ELECTRICAL
17	27	16	1010402- 1	SLEEVE, SOLDER
17	28	130	1010402- 2	SLEEVE, SOLDER
17	30	30	1010490-108	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	31	286	1010490-110	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	32	238	1010490-112	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	38	1	1010490-975	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE) 2 FT 5 IN. TOTAL LENGTH
17	39	1	1010490-979	INSULATION-SLEEVING, ELECTRICAL,

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WIRE HARNESS A

GENERAL NOTES

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP		CUT	
		WIRE	JACKET	WIRE	SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

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WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
				HEAT SHRINKABLE (WHITE) 2 FT 5 IN. TOTAL LENGTH
17	40	2	1010490-216	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
17	41	2	1010490-222	INSULATION-SLEEVING, ELECTRICAL, HEAT SHRINKABLE (WHITE)
	42	1	1015055- 7	WIRE, BRAID PER QQ-B-575 (COPPER, TIN-COATED, TUBLAR) SIZE 3/8 ID, 36 GAUGE, 2 FT 5 IN. TOTAL LENGTH
	43	1	1015055- 8	WIRE, BRAID PER QQ-B-575 (COPPER, TIN-COATED, TUBULAR) SIZE 1/2 ID, 36 GAUGE, 2 FT 5 IN. TOTAL LENGTH
17	44	1	1010809- 1	CONNECTOR, ELECTRICAL, RECEPTACLE 12 CONTACTS
17	45	1	1000243- 34	FERRULE, INNER ELECTRICAL CONDUCTOR
17	46	1	1000243- 26	FERRULE, INNER ELECTRICAL CONDUCTOR
17	47	1	1000242- 30	FERRULE, OUTER ELECTRICAL CONDUCTOR
	49	1296	1010738- 6	CONTACT, SOCKET
	51	AR	1012057- 2	LACING TAPE, DACRON, BLACK, 0.05 INCHES WIDE.
	52	RF		CONTACT SOCKETS SUPPLIED WITH 1010348
	53	RF		CONTACT SOCKETS SUPPLIED WITH 1010671
	54	RF		CONTACT SOCKETS SUPPLIED WITH 1010674
17	59	1	1000242- 24	FERRULE, OUTER ELECTRICAL CONDUCTOR

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MIL 2064-4-64

INCHES
0 1 2

WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
17	60	1	1000243- 30	FERRULE, INNER ELECTRICAL CONDUCTOR
17	61	1	1000242- 27	FERRULE, OUTER ELECTRICAL CONDUCTOR
17	62	1	1000243- 36	FERRULE, INNER ELECTRICAL CONDUCTOR
17	63	1	1000242- 33	FERRULE, OUTER ELECTRICAL CONDUCTOR
	64	270	1010743- 1	WRAPOST RECEPTACLE
	65	137	1010743- 2	WRAPOST RECEPTACLE
	66	80	1010743- 3	WRAPOST RECEPTACLE
	67	1	1010734- 16	GROMMET, CONNECTOR STRAIN RELIEF
	68	1	1010734- 18	GROMMET, CONNECTOR STRAIN RELIEF
	69	1	1015055- 9	WIRE PER 1010789-002 24AWG BLACK 118 FT. 0.0 INCHES TOTAL LENGTH.
	70	1	1015055- 10	WIRE PER 1010789-003 24AWG YELLOW, RED 392 FT. 1.0 INCHES TOTAL LENGTH.
	71	1	1015055- 11	WIRE PER 1010789-003 24AWG YELLOW, RED, GREEN 90 FT. 6.0 INCHES TOTAL LENGTH.
	72	1	1015055- 12	WIRE PER 1010789-005 24AWG YELLOW, RED, GREEN BROWN 25 FT. 11.0 INCHES TOTAL LENGTH.
	73	1	1015055- 13	WIRE PER 1010789-008 22AWG YELLOW, RED 13 FT. 9.0 INCHES TOTAL LENGTH.
	74	1	1015055- 14	WIRE PER 1010789-009 22AWG YELLOW, RED, GREEN

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REV LTR +
SHEET 9

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WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
				4 FT. 6.0 INCHES TOTAL LENGTH.
	75	1	1015055- 15	WIRE PER 1010789-010 22AWG YELLOW, RED, GREEN BROWN 16 FT. 1.0 INCH TOTAL LENGTH.
	77	AR	1012507- 4	LACING TAPE, DACRON, BLACK, 0.09 INCHES WIDE.
	78	RF	1010770- 2	CONTACT SOCKETS SUPPLIED WITH 1010809

MANNED SPACECRAFT CENTER
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1015055
SCALE - NONE
REV LTR +
SHEET 10

MIL 2084-4-64

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH			FROM						TO						
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 1	70						A 32						A 32	66	G1 H1
A 1R			P01- 80	10	N		49		TB2-A 2	18	N				
A 1Y			P01- 95	10	N		49		TB2-A 1	18	N				
A 3	4		P01- 38	10	N		49		TB1-K 4	18	N			135	G1 K1
A 4	4		P01- 48	10	N		49		TB1-K 3	18	N			144	G1 K1
A 5	4		P01- 13	10	N		49		TB1-K 5	18	N			132	G1 K2
A 6	4		P01- 27	10	N		49		TB1-K 8	18	N			99	G1 K2
A 7	4		P01- 58	10	N		49		TB1-K 6	18	N			120	G1 K2
A 8	4		P01- 12	10	N		49		TB2-B 2	18	N		64	63	G1 H1
A 9	4		P01- 57	10	N		49		TB2-R 4	18	N		64	9	G1 H2
A 10	4		P01- 5	10	N		49		TB2-C 1	18	N		64	93	G1 H1
A 11	4		P01- 69	10	N		49		TB2-B 1	18	N		64	96	G1 H1
A 12	4		P01- 24	10	N		49		TB3-F 4	18	N			129	C1 J2
A 13	2			300		275	A 31			125		100	A 31 28	39	G1 H2
A 13B	69		TB2-D 3	18	N				SHLD A 13	20	N				
A 13R			E 61	20	N		28		TB2-F 3	18	N				
A 13Y			P01- 68	10	N	250	49		TB2-D 2	18	N				
A 14	2			300		275	A 31			100		75	A 31 28	3	C1 J6

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 11

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH			FROM						TO						
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 14B	69		E 44	20	N		28		SHLD A 14	20	N				
A 14R			E 61	20	N				J21-155	10	N		49		
A 14Y			P01- 59	10	N	250	49		J21-154	10	N		49		
A 15	2			300		275	A 31			100		75	A 31 28	6	C1 J6
A 15B	69		E 44	20	N				SHLD A 15	20	N				
A 15R			E 61	20	N				J21-223	10	N		49		
A 15Y			P01- 49	10	N	250	49		J21-222	10	N		49		
A 16	2			300		275	A 31			100		75	A 31 28	12	C1 J6
A 16B	69		E 44	20	N				SHLD A 16	20	N				
A 16R			E 61	20	N				J21-227	10	N		49		
A 16Y			P01- 39	10	N	250	49		J21-226	10	N		49		
A 18	4		P01- 91	10	N		49		TB1-K 1	18	N			162	G1 K1
A 19	70						A 32						A 32	21	G1 H2
A 19R			P01- 11	10	N		49		TB2-G 4	18	N				
A 19Y			P01- 10	10	N		49		TB2-H 4	18	N				
A 20	4		P01- 78	10	N		49		TB2-M 4	18	N			12	G1 H2
A 21	4		P01- 7	10	N		49		TB3-S21	18	N			321	C2 J3
A 22	4		P01- 26	10	N		49		TB1-U 2	18	N			147	G1 K1

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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MANNED SPACECRAFT CENTER
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SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 12

MIL 2085-4-64 WIR

INCHES
PHOTOGRAPHIC SCALE ONLY

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 29	4	P01- 89	10	N		49	TB3-M21	18	N		65	330	C2 J3
A 33	4	P01- 84	10	N		49	TB3-B20	18	N			27	C1 J1
A 38	70					A 32					A 32	33	G1 H2
A 38R		J01- 67	10	N		49	TB2-H 3	18	N		64		
A 38Y		J01- 57	10	N		49	TB2-G 3	18	N		64		
A 39	2		50		25	A 31		125		100	A 31 28	57	G1 H1
A 39B	69	TB2-F 2	18	N			SHLD A 39	20	N				
A 39R		J01- 35	10	N		49	TB2-H 2	18	N				
A 39Y		J01- 45	10	N		49	TB2-G 2	18	N				
A 40	2		50		25	A 31		125		100	A 31 28	36	C1 J1
A 40B	69	TB3-H14	18	N			SHLD A 40	20	N				
A 40R		J01- 20	10	N		49	TB3-F14	18	N				
A 40Y		J01- 6	10	N		49	TB3-F13	18	N				
A 41	2		50		25	A 31		125		100	A 31 28	39	C1 J1
A 41B	69	TB3-H13	18	N			SHLD A 41	20	N				
A 41R		J01- 21	10	N		49	TB3-D13	18	N				
A 41Y		J01- 7	10	N		49	TB3-D14	18	N				
A 42	2		50		25	A 31		125		100	A 31 28	87	G1 H1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
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SCALE - NONE
REV LTR +
SHEET 14

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 42B	69	TB2-G 1	18	N		65	SHLD A 42	20	N				
A 42R		J01-104	10	N		49	TB2-H 1	18	N		64		
A 42Y		J01- 90	10	N		49	TB2-G 1	18	N				
A 43	2		50		25	A 31		125		100	A 31 28	333	G2 H4
A 43B	69	TB2-V 6	18	N			SHLD A 43	20	N				
A 43R		J01-100	10	N		49	TB2-W 6	18	N				
A 43Y		J01- 86	10	N		49	TB2-W 7	18	N		64		
A 44	2		50		25	A 31		125		100	A 31 28	324	G2 H4
A 44B	69	TB2-D 8	18	N		65	SHLD A 44	20	N				
A 44R		J01-101	10	N		49	TB2-B 8	18	N				
A 44Y		J01- 87	10	N		49	TB2-C 8	18	N		64		
A 45	3		50		25	A 30		125		100	A 30 28	399	G2 H3
A 45B	69	TB2-A 5	18	N		65	SHLD A 45	20	N				
A 45G		J01-108	10	N		49	TB2-C 5	18	N		64		
A 45R		J01- 94	10	N		49	TB2-A 5	18	N				
A 45Y		J01-107	10	N		49	TB2-B 5	18	N		64		
A 46	70					A 32					A 32		
A 46R		J01- 50	10	N		49	E 4	20	N		27		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE - NONE
REV LTR +
SHEET 15

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 23	2		50		25	A 31		125		100	A 31 28	54	G1 H1
A 23B	69	TB2-S 2	18	N			SHLD A 23	20	N				
A 23R		P01- 96	10	N		49	TB2-N 2	18	N				
A 23Y		P01- 97	10	N		49	TB2-R 2	18	N				
A 24	2		50		25	A 31		125		100	A 31 28	60	G1 H1
A 24B	69	TB2-F 2	18	N			SHLD A 24	20	N				
A 24R		P01- 70	10	N		49	TB2-H 2	18	N				
A 24Y		P01- 71	10	N		49	TB2-G 2	18	N				
A 25	2		50		25	A 31		125		100	A 31 28	348	G2 H4
A 25B	69	TB2-F 7	18	N			SHLD A 25	20	N				
A 25R		P01- 82	10	N		49	TB2-H 7	18	N				
A 25Y		P01- 83	10	N		49	TB2-G 7	18	N				
A 26	4	P01- 4	10	N		49	TB1-D 6	18	N		64	126	G1 K2
A 27	2		300		275	A 31		100		75	A 31 28	9	C1 J6
A 27B	69	E 44	20	N			SHLD A 27	20	N				
A 27R		E 61	20	N			J21-225	10	N		49		
A 27Y		P01- 76	10	N	250	49	J21-224	10	N		49		
A 28	4	P01- 88	10	N		49	TB3-F 3	18	N			108	C1 J2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 13

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 46Y		J01- 60	10	N		49	E 3	20	N		27		
A 48	4	J01- 16	10	N		49	E 6	20	N		27		
A 50	4	J01- 15	10	N		49	E 8	20	N		27		
A 51	3		50		25	A 30		125		100	A 30 28	339	G2 H4
A 51B	69	TB2-T 7	18	N		65	SHLD A 51	20	N				
A 51G		J01-105	10	N		49	TB2-T 6	18	N		64		
A 51R		J01-106	10	N		49	TB2-U 6	18	N		64		
A 51Y		J01- 92	10	N		49	TB2-T 7	18	N				
A 52	71					A 31					A 31	363	G2 H3
A 52G		J01- 31	10	N		49	TB2-L 5	18	N		64		
A 52R		J01- 43	10	N		49	TB2-K 4	18	N				
A 52Y		J01- 32	10	N		49	TB2-L 6	18	N		64		
A 53	70					A 32					A 32		
A 53R		J01- 28	10	N		49	E 9	20	N		28		
A 53Y		J01- 29	10	N		49	E 10	20	N		28		
A 54	4	J01- 41	10	N		49	E 12	20	N		28		
A 55	4	J01- 34	10	N		49	TB2-W 1	18	N		64	72	G1 H1
A 56	4	J01- 30	10	N		49	TB2-N 5	18	N		64	393	G2 H3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 16

MIL 2085-4-64 WIR

INCHES
0 1 2

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH			FROM						TO						
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 66Y			J02- 90	10	N		49		TB2-G 8	18	N				
A 67	2			50		25	A 31			125		100	A 31 28	384	G2 H3
A 67B	69		TB2-V 5	18	N				SHLD A 67	20	N				
A 67R			J02-100	10	N		49		TB2-U 5	18	N				
A 67Y			J02- 86	10	N		49		TB2-U 4	18	N		64		
A 68	2			50		25	A 31			125		100	A 31 28	351	G2 H4
A 68B	69		TB2-D 7	18	N				SHLD A 68	20	N				
A 68R			J02-101	10	N		49		TB2-B 7	18	N				
A 68Y			J02- 87	10	N		49		TB2-C 7	18	N		64		
A 69	3			50		25	A 30			125		100	A 30 28	378	G2 H3
A 69B	69		TB2-C 6	18	N		65		SHLD A 69	20	N				
A 69G			J02-108	10	N		49		TB2-A 6	18	N		64		
A 69R			J02- 94	10	N		49		TB2-C 6	18	N				
A 69Y			J02-107	10	N		49		TB2-B 6	18	N		64		
A 70	70						A 32						A 32		
A 70R			J02- 50	10	N		49		E 4	20	N				
A 70Y			J02- 60	10	N		49		E 3	20	N				
A 72	4		J02- 16	10	N		49		E 6	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 18

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH			FROM						TO						
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 74	4		J02- 15	10	N		49		E 8	20	N				
A 75	3			50		25	A 30			125		100	A 30 28	360	G2 H3
A 75B	69		TB2-X 6	18	N		65		SHLD A 75	20	N				
A 75G			J02-105	10	N		49		TB2-X 5	18	N		64		
A 75R			J02-106	10	N		49		TB2-W 5	18	N		64		
A 75Y			J02- 92	10	N		49		TB2-X 6	18	N				
A 76	71						A 31						A 31	30	G1 H2
A 76G			J02- 31	10	N		49		TB2-L 3	18	N		64		
A 76R			J02- 43	10	N		49		TB2-K 4	18	N				
A 76Y			J02- 32	10	N		49		TB2-K 3	18	N		64		
A 77	70						A 32						A 32		
A 77R			J02- 28	10	N		49		E 9	20	N				
A 77Y			J02- 29	10	N		49		E 10	20	N				
A 78	4		J02- 41	10	N		49		E 12	20	N				
A 79	4		J02- 34	10	N		49		TB2-X 1	18	N		64	69	G1 H1
A 80	4		J02- 30	10	N		49		TB2-R 5	18	N		64	390	G2 H3
A 84	70						A 32						A 32		
A 84R			J03- 1	10	N		49		E 1	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 19

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH			FROM						TO						
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 62	70						A 32						A 32	369	G2 H3
A 62R			J02- 67	10	N		49		TB2-H 6	18	N		64		
A 62Y			J02- 57	10	N		49		TB2-G 6	18	N		64		
A 63	2			50		25	A 31			125		100	A 31 28	345	G2 H4
A 63B	69		TB2-F 7	18	N				SHLD A 63	20	N				
A 63R			J02- 35	10	N		49		TB2-H 7	18	N				
A 63Y			J02- 45	10	N		49		TB2-G 7	18	N				
A 64	2			50		25	A 31			125		100	A 31 28	324	C2 J3
A 64B	69		E 48	20	N		27		SHLD A 64	20	N				
A 64R			J02- 20	10	N		49		TB3-N20	18	N				
A 64Y			J02- 6	10	N		49		TB3-N21	18	N				
A 65	2			50		25	A 31			125		100	A 31 28	42	C1 J1
A 65B	69		TB3-H12	18	N				SHLD A 65	20	N				
A 65R			J02- 21	10	N		49		TB3-C13	18	N				
A 65Y			J02- 7	10	N		49		TB3-C14	18	N				
A 66	2			50		25	A 31			125		100	A 31 28	321	G2 H4
A 66B	69		TB2-G 8	18	N		65		SHLD A 66	20	N				
A 66R			J02-104	10	N		49		TB2-H 8	18	N		64		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 17

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH			FROM						TO						
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 84Y			J03- 14	10	N		49		E 2	20	N				
A 85	70						A 32						A 32	81	G1 H1
A 85R			J03- 67	10	N		49		TB2-N 1	18	N		64		
A 85Y			J03- 57	10	N		49		TB2-R 1	18	N		64		
A 86	2			50		25	A 31			125		100	A 31 28	51	G1 H1
A 86B	69		TB2-S 2	18	N				SHLD A 86	20	N				
A 86R			J03- 35	10	N		49		TB2-N 2	18	N				
A 86Y			J03- 45	10	N		49		TB2-R 2	18	N				
A 87	2			50		25	A 31			125		100	A 31 28	312	G2 H4
A 87B	69		TB2-M 8	18	N				SHLD A 87	20	N				
A 87R			J03- 20	10	N		49		TB2-R 8	18	N		64		
A 87Y			J03- 6	10	N		49		TB2-N 7	18	N				
A 88	2			50		25	A 31			125		100	A 31 28	306	G2 H4
A 88B	69		TB2-V 8	18	N				SHLD A 88	20	N				
A 88R			J03- 21	10	N		49		TB2-T 8	18	N		64		
A 88Y			J03- 7	10	N		49		TB2-U 8	18	N				
A 89	2			50		25	A 31			125		100	A 31 28	27	G1 H2
A 89B	69		TB2-S 3	18	N		64		SHLD A 89	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 20

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1	NO.	CUT WIRE OR SHIELD				TERMINATION SPEC 1	NO.	ROUTING
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		
A 96	3			50		25	A 30			125		100	A 30 28	342	G2 H4
A 96B	69		TB2-R 7	18	N		65		SHLD A 96	20	N				
A 96G			J03-105	10	N		49		TB2-R 6	18	N		64		
A 96R			J03-106	10	N		49		TB2-N 6	18	N		64		
A 96Y			J03- 92	10	N		49		TB2-R 7	18	N				
A 97	71						A 31						A 31	366	G2 H3
A 97G			J03- 31	10	N		49		TB2-K 6	18	N		64		
A 97R			J03- 43	10	N		49		TB2-K 4	18	N		66		
A 97Y			J03- 32	10	N		49		TB2-K 5	18	N		64		
A 98	70						A 32						A 32		
A 98R			J03- 28	10	N		49		E 9	20	N				
A 98Y			J03- 29	10	N		49		E 10	20	N				
A 99	4		J03- 41	10	N		49		E 12	20	N				
A 100	4		J03- 34	10	N		49		TB2-S 1	18	N		64	78	G1 H1
A 101	4		J03- 89	10	N		49		TB2-T 1	18	N		64	75	G1 H1
A 102	4		J03- 30	10	N		49		TB2-K 8	18	N		64	318	G2 H4
A 104	70						A 32						A 32		
A 104R			J04- 1	10	N		49		E 14	20	N		28		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR +		SHEET 22

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1	NO.	CUT WIRE OR SHIELD				TERMINATION SPEC 1	NO.	ROUTING
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		
A 104Y			J04- 14	10	N		49		E 13	20	N		28		
A 107	2			50		25	A 31			125		100	A 31 28	63	C1 J1
A 107B	69		TB3-H 9	18	N				SHLD A 107	20	N				
A 107R			J04- 57	10	N		49		TB3-K11	18	N				
A 107Y			J04- 67	10	N		49		TB3-K10	18	N				
A 108	2			50		25	A 31			125		100	A 31 28	381	C2 J4
A 108B	69		TB3-N15	18	N		64		SHLD A 108	20	N				
A 108R			J04- 66	10	N		49		TB3-N13	18	N				
A 108Y			J04- 56	10	N		49		TB3-N14	18	N				
A 109	71						A 31						A 31	396	C2 J4
A 109G			J04- 34	10	N		49		TB3-T12	18	N		64		
A 109R			J04- 45	10	N		49		TB3-R12	18	N		64		
A 109Y			J04- 35	10	N		49		TB3-S12	18	N		64		
A 110	2			50		25	A 31			125		100	A 31 28	84	C1 J2
A 110B	69		TB3-K 9	18	N				SHLD A 110	20	N				
A 110R			J04- 6	10	N		49		TB3-K 7	18	N		64		
A 110Y			J04- 20	10	N		49		TB3-K 8	18	N		64		
A 111	2			50		25	A 31			125		100	A 31 28	33	C1 J1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR +		SHEET 23

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1	NO.	CUT WIRE OR SHIELD				TERMINATION SPEC 1	NO.	ROUTING
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		
A 89R			J03-104	10	N		49		TB2-N 3	18	N		64		
A 89Y			J03- 90	10	N		49		TB2-R 3	18	N		64		
A 90	2			50		25	A 31			125		100	A 31 28	3	G1 H2
A 90B	69		TB2-V 4	18	N		65		SHLD A 90	20	N				
A 90R			J03-100	10	N		49		TB2-W 4	18	N				
A 90Y			J03- 86	10	N		49		TB2-X 4	18	N		64		
A 91	2			50		25	A 31			125		100	A 31 28	42	G1 H2
A 91B	69		TB2-V 2	18	N				SHLD A 91	20	N				
A 91R			J03-101	10	N		49		TB2-W 2	18	N				
A 91Y			J03- 87	10	N		49		TB2-X 2	18	N		64		
A 92	3			50		25	A 30			125		100	A 30 28	24	G1 H2
A 92B	69		TB2-A 4	18	N		65		SHLD A 92	20	N				
A 92G			J03-108	10	N		49		TB2-C 4	18	N		64		
A 92R			J03- 94	10	N		49		TB2-A 4	18	N				
A 92Y			J03-107	10	N		49		TB2-B 4	18	N		64		
A 93	70						A 32						A 32		
A 93R			J03- 50	10	N		49		E 4	20	N				
A 93Y			J03- 60	10	N		49		E 3	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR +		SHEET 21

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1	NO.	CUT WIRE OR SHIELD				TERMINATION SPEC 1	NO.	ROUTING
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		
A 111B	69		TB3-G15	18	N		64		SHLD A 111	20	N				
A 111R			J04- 7	10	N		49		TB3-G13	18	N		64		
A 111Y			J04- 21	10	N		49		TB3-G14	18	N		64		
A 112	2			50		25	A 31			125		100	A 31 28	66	C1 J1
A 112B	69		TB3-H 9	18	N				SHLD A 112	20	N				
A 112R			J04-104	10	N		49		TB3-H10	18	N		64		
A 112Y			J04- 90	10	N		49		TB3-H11	18	N		64		
A 113	4		J04- 89	10	N		49		TB3-M18	18	N		64	351	C2 J3
A 114	2			50		25	A 31			125		100	A 31 28	75	C1 J2
A 114B	69		TB3-N 9	18	N				SHLD A 114	20	N				
A 114R			J04-100	10	N		49		TB3-N 7	18	N		64		
A 114Y			J04- 86	10	N		49		TB3-N 8	18	N		64		
A 115	2			50		25	A 31			125		100	A 31 28	57	C1 J1
A 115B	69		TB3-N 9	18	N		65		SHLD A 115	20	N				
A 115R			J04-101	10	N		49		TB3-N11	18	N		64		
A 115Y			J04- 87	10	N		49		TB3-N10	18	N		64		
A 116	3			50		25	A 30			125		100	A 30 28	426	C2 J4
A 116B	69		TB3-S 5	18	N		65		SHLD A 116	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR +		SHEET 24

MIL 2088-4-64 WIR

INCHES

0 2

PHOTOGRAPHIC SCALE ONLY

WIRE HARNESS A

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	STRIP 2	TIN	CUT 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	STRIP 2	TIN	CUT 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 130	2			50		25	A 31			125		100	A 31 28	72	C1 J1
A 130B	69		TB3-G 9	18	N				SHLD A 130	20	N				
A 130R			J05- 8	10	N		49		TB3-G10	18	N				
A 130Y			J05- 22	10	N		49		TB3-F10	18	N				
A 131	2			50		25	A 31			125		100	A 31 28	30	C1 J1
A 131B	69		TB3-K15	18	N		66		SHLD A 131	20	N				
A 131R			J05- 9	10	N		49		TB3-F16	18	N				
A 131Y			J05- 10	10	N		49		TB3-G16	18	N				
A 132	2			300		275	A 31			125		100	A 31 28	60	C1 J1
A 132B	69		TB3-L 9	18	N		65		SHLD A 132	20	N				
A 132R			J05- 12	10	N	250	49		TB3-L10	18	N		64		
A 132Y			E 18	20	N		27		TB3-L11	18	N		64		
A 133	4		J05- 11	10	N		49		E 18	20	N				
A 134	2			50		25	A 31			125		100	A 31 28	375	C2 J4
A 134B	69		TB3-R15	18	N				SHLD A 134	20	N				
A 134R			J05- 68	10	N		49		TB3-R14	18	N		64		
A 134Y			J05- 67	10	N		49		TB3-R13	18	N		64		
A 135	2			50		25	A 31			125		100	A 31 28	87	C1 J2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 26

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	STRIP 2	TIN	CUT 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	STRIP 2	TIN	CUT 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 135B	69		TB3-H 9	18	N		66		SHLD A 135	20	N				
A 135R			J05-104	10	N		49		TB3-H 8	18	N		64		
A 135Y			J05- 90	10	N		49		TB3-H 7	18	N		64		
A 136	4		J05- 89	10	N		49		TB3-N18	18	N		64	348	C2 J3
A 137	2			50		25	A 31			125		100	A 31 28	399	C2 J4
A 137B	69		TB3-T 9	18	N				SHLD A 137	20	N				
A 137R			J05-100	10	N		49		TB3-T11	18	N		64		
A 137Y			J05- 86	10	N		49		TB3-T10	18	N		64		
A 138	2			50		25	A 31			125		100	A 31 28	402	C2 J4
A 138B	69		TB3-S 9	18	N				SHLD A 138	20	N				
A 138R			J05-101	10	N		49		TB3-S11	18	N		64		
A 138Y			J05- 87	10	N		49		TB3-S10	18	N		64		
A 139	3			50		25	A 30			125		100	A 30 28	423	C2 J4
A 139B	69		TB3-T 5	18	N		65		SHLD A 139	20	N				
A 139G			J05-108	10	N		49		TB3-T 6	18	N		64		
A 139R			J05- 94	10	N		49		TB3-T 5	18	N				
A 139Y			J05-107	10	N		49		TB3-T 4	18	N		64		
A 144	2			50		25	A 31			125		100	A 31 28	78	C1 J2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 27

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	STRIP 2	TIN	CUT 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	STRIP 2	TIN	CUT 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 116G			J04-108	10	N		49		TB3-S 4	18	N		64		
A 116R			J04- 94	10	N		49		TB3-S 5	18	N				
A 116Y			J04-107	10	N		49		TB3-S 6	18	N		64		
A 117	70						A 32						A 32		
A 117R			J04- 50	10	N		49		E 17	20	N		27		
A 117Y			J04- 60	10	N		49		E 16	20	N		27		
A 121	2			50		25	A 31			125		100	A 31 28	81	C1 J2
A 121B	69		TB3-L 9	18	N				SHLD A 121	20	N				
A 121R			J04-106	10	N		49		TB3-L 7	18	N		64		
A 121Y			J04- 92	10	N		49		TB3-L 8	18	N		64		
A 122	71						A 31						A 31	69	C1 J1
A 122G			J04- 31	10	N		49		TB3-D11	18	N		64		
A 122R			J04- 43	10	N		49		TB3-B17	18	N		65		
A 122Y			J04- 32	10	N		49		TB3-C11	18	N		64		
A 123	70						A 32						A 32		
A 123R			J04- 28	10	N		49		E 9	20	N				
A 123Y			J04- 29	10	N		49		E 10	20	N				
A 124	4		J04- 41	10	N		49		E 12	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 25

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	STRIP 2	TIN	CUT 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	STRIP 2	TIN	CUT 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 144B	69		TB3-M 9	18	N				SHLD A 144	20	N				
A 144R			J05-106	10	N		49		TB3-M 8	18	N		64		
A 144Y			J05- 92	10	N		49		TB3-M 7	18	N		64		
A 145	71						A 31						A 31	54	C1 J1
A 145G			J05- 31	10	N		49		TB3-D12	18	N		64		
A 145R			J05- 43	10	N		49		TB3-B16	18	N		65		
A 145Y			J05- 32	10	N		49		TB3-C12	18	N		64		
A 146	70						A 32						A 32		
A 146R			J05- 28	10	N		49		E 9	20	N				
A 146Y			J05- 29	10	N		49		E 10	20	N				
A 147	4		J05- 41	10	N		49		E 12	20	N				
A 148	70						A 32						A 32	51	C1 J1
A 148R			J05- 56	10	N		49		TB3-L12	18	N		64		
A 148Y			J05- 66	10	N		49		TB3-K12	18	N		64		
A 149	4		J05- 25	10	N		49		E 18	20	N				
A 150	70						A 32						A 32		
A 150R			J06- 1	10	N		49		P01- 1	10	N		49		
A 150Y			J06- 2	10	N		49		P01- 2	10	N		49		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 28

MIL 2085-4-64 WIR

INCHES
0 1 2

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 157	4		J06- 18	10	N		49				P01- 18	10	N		49				
A 158	4		J06- 81	10	N		49				TB1-F 8	18	N					105	G1 K2
A 160	4		J06- 9	10	N		49				P01- 9	10	N		49				
A 161	4		J06- 6	10	N		49				P01- 6	10	N		49				
A 162	4		J06- 34	10	N		49				P01- 34	10	N		49				
A 163	4		J06- 35	10	N		49				P01- 35	10	N		49				
A 164	4		J06- 36	10	N		49				P01- 36	10	N		49				
A 165	4		J06- 23	10	N		49				P01- 23	10	N		49				
A 166	4		J06- 24	10	N		49				TB3-F 4	18	N		65			102	C1 J2
A 167	4		J06- 25	10	N		49				P01- 25	10	N		49				
A 168	4		J06- 93	10	N		49				P01- 93	10	N		49				
A 169	4		J06- 78	10	N		49				TB2-L 4	18	N					15	G1 H2
A 170	4		J06- 56	10	N		49				P01- 56	10	N		49				
A 171	4		J06-104	10	N		49				P01-104	10	N		49				
A 172	4		J06- 92	10	N		49				P01- 92	10	N		49				
A 173	4		J06-105	10	N		49				P01-105	10	N		49				
A 174	4		J06- 94	10	N		49				P01- 94	10	N		49				
A 175	4		J06- 22	10	N		49				P01- 22	10	N		49				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 30

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 176	4		J06- 79	10	N		49				P01- 79	10	N		49				
A 177	4		J06- 46	10	N		49				P01- 46	10	N		49				
A 178	4		J06- 91	10	N		49				TB3-B21	18	N					21	C1 J1
A 179	4		J08- 67	10	N		49				TB1-G 1	18	N					165	G1 K1
A 181	4		J08- 66	10	N		49				TB3-H 6	18	N					93	C1 J2
A 182	70						A	32							A	32		48	C1 J1
A 182R			J08- 68	10	N		49				TB3-B13	18	N						
A 182Y			J08- 81	10	N		49				TB3-B12	18	N						
A 183	4		J08-106	10	N		49				TB2-S 6	18	N					357	G2 H3
A 184	4		J08- 78	10	N		49				TB2-S 7	18	N					336	G2 H4
A 185	4		J08- 93	10	N		49				TB2-S 4	18	N					6	G1 H2
A 186	4		J08- 79	10	N		49				TB2-S 5	18	N					387	G2 H3
A 187	4		J08- 51	10	N		49				TB1-H 8	18	N					102	G1 K2
A 188	4		J08- 60	10	N		49				TB3-M 6	18	N					90	C1 J2
A 190	4		J08- 73	10	N		49				TB3-B 5	18	N					99	C1 J2
A 192	4		J08- 62	10	N		49				TB3-D 3	18	N					111	C1 J2
A 193	4		J08- 42	10	N		49				TB1-U 2	18	N					150	G1 K1
A 196	4		J08- 53	10	N		49				J22- 38	10	N		49			306	C2 J5

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 31

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 151	70						A	32							A	32			
A 151R			J06- 14	10	N		49				P01- 14	10	N		49				
A 151Y			J06- 15	10	N		49				P01- 15	10	N		49				
A 152	70						A	32							A	32			
A 152R			J06- 29	10	N		49				P01- 29	10	N		49				
A 152Y			J06- 28	10	N		49				P01- 28	10	N		49				
A 153	70						A	32							A	32		156	G1 K1
A 153R			J06-108	10	N		49				TB1-S 1	18	N						
A 153Y			J06-107	10	N		49				TB1-S 2	18	N						
A 154	4		J06- 12	10	N		49				TB1-K 7	18	N					111	G1 K2
A 155	2			300		275	A	31				125		100	A	31	28	36	G1 H2
A 155B	69		TB2-D 3	18	N		65				SHLD A 155	20	N						
A 155R			E 55	20	N		27				TB2-F 3	18	N		65				
A 155Y			J06- 68	10	N	250	49				TB2-D 2	18	N		65				
A 156	2			300		275	A	31				100		75	A	31	28	15	C1 J6
A 156B	69		E 44	20	N						SHLD A 156	20	N						
A 156R			E 55	20	N						J21-229	10	N		49				
A 156Y			J06- 69	10	N	250	49				J21-228	10	N		49				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 29

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 198	4		J08- 71	10	N		49				TB1-H 6	18	N					123	G1 K2
A 199	4		J08- 95	10	N		49				TB3-B14	18	N					45	C1 J1
A 200	4		J08- 72	10	N		49				TB3-B 3	18	N					117	C1 J2
A 202	4		J08- 18	10	N		49				TB2-S 8	18	N					309	G2 H4
A 203	4		J08- 41	10	N		49				TB3-B 4	18	N					105	C1 J2
A 206	4		J08- 43	10	N		49				J22- 72	10	N		49			312	C2 J5
A 211	4		J08- 92	10	N		49				TB1-S 5	18	N					129	G1 K2
A 215	4		J08- 29	10	N		49				TB3-B21	18	N		65			18	C1 J1
A 216	70						A	32							A	32		396	G2 H3
A 216R			P02-A	20	N		54				TB2-G 4	18	N						
A 216Y			P02-B	20	N		54				TB2-G 5	18	N		64				
A 217	2			100		75	A	31				125		100	A	31	28	402	G2 H3
A 217B	69		TB2-V 3	18	N		64				SHLD A 217	20	N						
A 217R			P02-C	20	N		54				TB2-W 4	18	N		65				
A 217Y			P02-D	20	N		54				TB2-W 3	18	N		64				
A 218	2			100		75	A	31				125		100	A	31	28	405	G2 H3
A 218B	69		TB2-V 2	18	N		65				SHLD A 218	20	N						
A 218R			P02-E	20	N		54				TB2-X 3	18	N		64				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 32

MIL 2088-4-64 WIR

INCHES
0

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 223R			P02-R	20	N		54		TB1-D 2	18	N		64		
A 223Y			P02-S	20	N		54		TB1-C 2	18	N		64		
A 224	2			100		75	A 31			125		100	A 31 28	423	G2 K3
A 224B	69		TB1-D 7	18	N				SHLD A 224	20	N				
A 224R			P02-T	20	N		54		TB1-C 6	18	N				
A 224Y			P02-U	20	N		54		TB1-B 6	18	N				
A 225	2			100		75	A 31			125		100	A 31 28	330	G2 H4
A 225B	69		TB2-V 6	18	N		65		SHLD A 225	20	N				
A 225R			P02-W	20	N		54		TB2-W 6	18	N		65		
A 225Y			P02-X	20	N		54		TB2-X 7	18	N		64		
A 226	2			100		75	A 31			125		100	A 31 28	327	G2 H4
A 226B	69		TB2-D 8	18	N				SHLD A 226	20	N				
A 226R			P02-Y	20	N		54		TB2-A 8	18	N		64		
A 226Y			P02-Z	20	N		54		TB2-B 8	18	N		65		
A 227	2			100		75	A 31			125		100	A 31 28	387	C2 J4
A 227B	69		TB3-H14	18	N				SHLD A 227	20	N				
A 227R			P02-A*	20	N		54		TB3-F14	18	N				
A 227Y			P02-B*	20	N		54		TB3-F13	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 34

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 228	2			100		75	A 31			125		100	A 31 28	390	C2 J4
A 228B	69		TB3-H13	18	N				SHLD A 228	20	N				
A 228R			P02-F*	20	N		54		TB3-D13	18	N				
A 228Y			P02-G*	20	N		54		TB3-D14	18	N				
A 229	1			100		75	A 32			125		100	A 32 27	420	G2 K3
A 229B	69		TB1-D 7	18	N		66		SHLD A 229	20	N				
A 229Y			P03-A	20	N		54		TB1-C 7	18	N				
A 230	1			100		75	A 32			125		100	A 32 27	414	G2 K3
A 230B	69		TB1-D 8	18	N		64		SHLD A 230	20	N				
A 230Y			P03-B	20	N		54		TB1-C 8	18	N				
A 231	72						A 31						A 31	417	G2 K3
A 231G			P03-U	20	N		54		TB1-B 8	18	N				
A 231N			P03-W	20	N		54		TB1-A 7	18	N				
A 231R			P03-C	20	N		54		TB1-A 8	18	N				
A 231Y			P03-V	20	N		54		TB1-B 7	18	N				
A 232	2			100		75	A 31			125		100	A 31 28	315	G2 H4
A 232B	69		TB2-M 8	18	N				SHLD A 232	20	N				
A 232R			P03-D	20	N		54		TB2-N 8	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 35

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 218Y			P02-F	20	N		54		TB2-W 2	18	N		65		
A 219	2			100		75	A 31			125		100	A 31 28	381	G2 H3
A 219B	69		TB2-V 5	18	N		65		SHLD A 219	20	N				
A 219R			P02-G	20	N		54		TB2-U 5	18	N		65		
A 219Y			P02-H	20	N		54		TB2-T 5	18	N		64		
A 220	2			100		75	A 31			125		100	A 31 28	354	G2 H4
A 220B	69		TB2-D 7	18	N		65		SHLD A 220	20	N				
A 220R			P02-J	20	N		54		TB2-A 7	18	N		64		
A 220Y			P02-K	20	N		54		TB2-B 7	18	N		65		
A 221	2			100		75	A 31			125		100	A 31 28	327	C2 J3
A 221B	69		E 48	20	N				SHLD A 221	20	N				
A 221R			P02-L	20	N		54		TB3-N20	18	N				
A 221Y			P02-M	20	N		54		TB3-N21	18	N				
A 222	2			100		75	A 31			125		100	A 31 28	393	C2 J4
A 222B	69		TB3-H12	18	N				SHLD A 222	20	N				
A 222R			P02-P	20	N		54		TB3-C14	18	N				
A 222Y			P02-N	20	N		54		TB3-C13	18	N				
A 223	70						A 32						A 32	447	G2 K3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 33

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 232Y			P03-E	20	N		54		TB2-N 7	18	N				
A 233	2			100		75	A 31			125		100	A 31 28	303	G2 H4
A 233B	69		TB2-V 8	18	N				SHLD A 233	20	N				
A 233R			P03-F	20	N		54		TB2-U 8	18	N				
A 233Y			P03-G	20	N		54		TB2-U 7	18	N				
A 234	2			100		75	A 31			125		100	A 31 28	429	G2 K3
A 234B	69		TB1-B 5	18	N		65		SHLD A 234	20	N				
A 234R			P03-J	20	N		54		TB1-B 5	18	N				
A 234Y			P03-H	20	N		54		TB1-C 5	18	N		64		
A 235	2			100		75	A 31			125		100	A 31 28	426	G2 K3
A 235B	69		TB1-A 6	18	N		65		SHLD A 235	20	N				
A 235R			P03-K	20	N		54		TB1-A 6	18	N				
A 235Y			P03-L	20	N		54		TB1-A 5	18	N		64		
A 236	2			100		75	A 31			125		100	A 31 28	429	C2 J4
A 236B	69		TB3-S 3	18	N		65		SHLD A 236	20	N				
A 236R			P03-N	20	N		54		TB3-R 4	18	N		64		
A 236Y			P03-M	20	N		54		TB3-R 5	18	N		64		
A 237	2			100		75	A 31			125		100	A 31 28	384	C2 J4

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055
SCALE - NONE	REV LTR +	SHEET 36

MIL 2085-4-64 WIR

INCHES

0

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 243	4		P03-J*	20	N		54		TB3-F 5	18	N			432	C2 J4
A 244	4		P03-H*	20	N		54		TB3-T20	18	N			342	C2 J3
A 246	71						A 31						A 31	357	C2 J3
A 246G			P05-J*	20	N		52		TB3-D16	18	N		64		
A 246R			P05-P	20	N		52		TB3-C18	18	N				
A 246Y			P05-I*	20	N		52		TB3-D17	18	N		64		
A 247	70						A 32						A 32		
A 247R			P05-K	20	N		52		P05-CC	20	N		52		
A 247Y			P05-J	20	N		52		P05-DD	20	N		52		
A 248	2			150		125	A 31			125		100	A 31 28	420	C2 J4
A 248B	69		TB3-R 9	18	N				SHLD A 248	20	N				
A 248R			P05-P*	20	N		52		TB3-R 8	18	N		64		
A 248Y			P05-N*	20	N		52		TB3-R 7	18	N		64		
A 249	4		P05-S	20	N		52		TB3-K21	18	N			333	C2 J3
A 250	4		P05-T	20	N		52		TB3-K21	18	N		65	336	C2 J3
A 251	70						A 32						A 32		
A 251R			P05-EE	20	N		52		P04-D1	10	N		78		
A 251Y			P05-FF	20	N		52		P04-D2	10	N		78		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 38

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 252	2			150		125	A 31			125		100	A 31 28	414	C2 J4
A 252B	69		TB3-T 9	18	N		65		SHLD A 252	20	N				
A 252R			P05-Z	20	N		52		TB3-T 8	18	N		64		
A 252Y			P05-Y	20	N		52		TB3-T 7	18	N		64		
A 253	2			150		125	A 31			125		100	A 31 28	417	C2 J4
A 253B	69		TB3-S 9	18	N		65		SHLD A 253	20	N				
A 253R			P05-A*	20	N		52		TB3-S 8	18	N		64		
A 253Y			P05-B*	20	N		52		TB3-S 7	18	N		64		
A 254	2			150		125	A 31			125		100	A 31 28	366	C2 J3
A 254B	69		TB3-M15	18	N				SHLD A 254	20	N				
A 254R			P05-C*	20	N		52		TB3-M16	18	N		64		
A 254Y			P05-D*	20	N		52		TB3-M17	18	N		64		
A 255	2			150		125	A 31			125		100	A 31 28	372	C2 J3
A 255B	69		TB3-H15	18	N				SHLD A 255	20	N				
A 255R			P05-F*	20	N		52		TB3-G16	18	N		65		
A 255Y			P05-E*	20	N		52		TB3-F16	18	N		65		
A 256	2			150		125	A 31			125		100	A 31 28	411	C2 J4
A 256B	69		TB3-G 9	18	N		65		SHLD A 256	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 39

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 237B	69		TB3-T 3	18	N				SHLD A 237	20	N				
A 237R			P03-R	20	N		54		TB3-M14	18	N		64		
A 237Y			P03-P	20	N		54		TB3-M13	18	N		64		
A 238	70						A 32						A 32	450	G2 K3
A 238R			P03-X	20	N		54		TB1-B 2	18	N				
A 238Y			P03-Y	20	N		54		TB1-A 2	18	N				
A 239	70						A 32						A 32	441	G2 K3
A 239R			P03-Z	20	N		54		TB1-A 4	18	N				
A 239Y			P03-A*	20	N		54		TB1-A 3	18	N				
A 240	70						A 32						A 32	438	G2 K3
A 240R			P03-B*	20	N		54		TB1-A 3	18	N				
A 240Y			P03-C*	20	N		54		TB1-A 4	18	N				
A 241	70						A 32						A 32	435	G2 K3
A 241R			P03-D*	20	N		54		TB1-D 3	18	N				
A 241Y			P03-E*	20	N		54		TB1-D 4	18	N				
A 242	70						A 32						A 32	432	G2 K3
A 242R			P03-F*	20	N		54		TB1-D 4	18	N				
A 242Y			P03-G*	20	N		54		TB1-D 3	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 37

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 256R			P05-G*	20	N		52		TB3-G10	18	N		65		
A 256Y			P05-H*	20	N		52		TB3-F10	18	N		65		
A 257	2			150		125	A 31			125		100	A 31 28	360	C2 J3
A 257B	69		TB3-S15	18	N				SHLD A 257	20	N				
A 257R			P05-K*	20	N		52		TB3-T16	18	N		64		
A 257Y			P05-M*	20	N		52		TB3-T17	18	N		64		
A 258	2			150		125	A 31			125		100	A 31 28	405	C2 J4
A 258B	69		TB3-R 9	18	N		65		SHLD A 258	20	N				
A 258R			P05-Q*	20	N		52		TB3-R10	18	N		64		
A 258Y			P05-R*	20	N		52		TB3-R11	18	N		64		
A 259	71						A 31						A 31	354	C2 J3
A 259G			P05-C	20	N		52		TB3-F18	18	N		64		
A 259R			P05-B	20	N		52		TB3-C18	18	N		65		
A 259Y			P05-A	20	N		52		TB3-D18	18	N		64		
A 260	2			150		125	A 31			125		100	A 31 28	363	C2 J3
A 260B	69		TB3-S15	18	N				SHLD A 260	20	N				
A 260R			P05-U*	20	N		52		TB3-S17	18	N		64		
A 260Y			P05-V*	20	N		52		TB3-S16	18	N		64		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 40

MIL 2085-4-64 WIR

INCHES
0 1 2

WIRE HARNESS A

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION ITEM NO.	SPEC. 1	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION ITEM NO.	SPEC 1	NO.	ROUTING
A 266Y			P05-M	20	N		52			TB1-T 2	18	N					
A 267	70						A 32							A 32			
A 267R			P05-X	20	N		52			P04-F2	10	N		78			
A 267Y			P05-W	20	N		52			P04-F1	10	N		78			
A 268	70						A 32							A 32			
A 268R			P05-J	20	N					P04-E2	10	N		78			
A 268Y			P05-K	20	N					P04-E1	10	N		78			
A 270	4		P05-R	20	N		52			TB3-F21	18	N				339	C2 J3
A 271	71						A 31							A 31		495	E2 D4
A 271G			P06-C	20	N		54			TB1-G 2	18	N					
A 271R			P06-A	20	N		54			TB1-H 3	18	N					
A 271Y			P06-B	20	N		54			TB1-H 2	18	N					
A 272	4		P06-F	20	N		54			TB1-D 5	18	N		65			
A 273	70						A 32							A 32		501	E2 D4
A 273R			P06-H	20	N		54			TB1-A 2	18	N					
A 273Y			P06-J	20	N		54			TB1-B 2	18	N					
A 274	4		P06-K	20	N		54			TB3-G 5	18	N		64		360	E2 L2
A 275	70						A 32							A 32		369	E2 L2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 42

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION ITEM NO.	SPEC. 1	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION ITEM NO.	SPEC 1	NO.	ROUTING
A 275R			P06-M	20	N		54			TB3-L 4	18	N		64			
A 275Y			P06-L	20	N		54			TB3-L 3	18	N		64			
A 276	4		P06-N	20	N		54			TB3-R 6	18	N				318	E2 L4
A 277	4		P06-Y	20	N		54			TB3-N 6	18	N				321	E2 L4
A 278	2			100		75	A 31				125		100	A 31 28		345	E2 L4
A 278B	69		TB3-R 3	18	N					SHLD A 278	20	N					
A 278R			P06-V	20	N		54			TB3-N 5	18	N		64			
A 278Y			P06-W	20	N		54			TB3-N 4	18	N		64			
A 279	2			100		75	A 31				125		100	A 31 28		378	E2 L2
A 279B	69		TB3-N 3	18	N		66			SHLD A 279	20	N					
A 279R			P06-X	20	N		54			TB3-N 1	18	N		64			
A 279Y			P06-R	20	N		54			TB3-N 2	18	N		64			
A 280	4		P06-Z	20	N		54			TB3-H 4	18	N		64		372	E2 L2
A 281	70						A 32							A 32		72	E1 L1
A 281R			P06-F*	20	N		54			TB3-C 2	18	N		64			
A 281Y			P06-G*	20	N		54			TB3-C 3	18	N					
A 282	70						A 32							A 32		462	F2 L5
A 282R			P06-B*	20	N		54			TB3-L13	18	N		64			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 43

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION ITEM NO.	SPEC. 1	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION ITEM NO.	SPEC 1	NO.	ROUTING
A 261	2			150		125	A 31				125		100	A 31 28		378	C2 J4
A 261B	69		TB3-R15	18	N					SHLD A 261	20	N					
A 261R			P05-W*	20	N		52			TB3-N13	18	N					
A 261Y			P05-X*	20	N		52			TB3-N14	18	N					
A 262	2			150		125	A 31				125		100	A 31 28		408	C2 J4
A 262B	69		TB3-K 9	18	N					SHLD A 262	20	N					
A 262R			P05-Y*	20	N		52			TB3-K10	18	N					
A 262Y			P05-Z*	20	N		52			TB3-K11	18	N					
A 263	2			150		125	A 31				125		100	A 31 28		369	C2 J3
A 263B	69		TB3-H15	18	N					SHLD A 263	20	N					
A 263R			P05-HH	20	N		52			TB3-H16	18	N		64			
A 263Y			P05-BB	20	N		52			TB3-H17	18	N		64			
A 264	4		P05-AA	20	N		52			TB3-S18	18	N		64		345	C2 J3
A 265	70						A 32							A 32		411	G2 H3
A 265R			P05-CC	20	N					TB2-K 2	18	N					
A 265Y			P05-DD	20	N					TB2-L 2	18	N					
A 266	70						A 32							A 32		444	G2 K3
A 266R			P05-L	20	N		52			TB1-T 1	18	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 41

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION ITEM NO.	SPEC. 1	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION ITEM NO.	SPEC 1	NO.	ROUTING
A 282Y			P06-C*	20	N		54			TB3-K13	18	N		64			
A 283	70						A 32							A 32		396	F2 L9
A 283R			P06-D*	20	N		54			TB3-K19	18	N					
A 283Y			P06-E*	20	N		54			TB3-H19	18	N					
A 284	4		P06-D	20	N		54			TB3-T20	18	N		65		366	F2 L9
A 285	4		P06-P	20	N		54			TB3-M 1	18	N		64		381	E2 L2
A 286	4		P06-A*	20	N		54			TB3-K 3	18	N		64		375	E2 L2
A 287	4		P06-E	20	N		54			TB2-D 4	18	N				408	E2 D6
A 288	4		P06-G	20	N		54			TB3-F21	18	N				363	F2 L9
A 289	6			125		100	A 30				125		100	A 30 28		417	E2 D3
A 289B	69		TB1-S 8	18	N		64			SHLD A 289	20	N					
A 289L			P07-C	40	N		54			TB1-U 8	18	N		64			
A 289R			P07-A	40	N		54			TB1-T 8	18	N		64			
A 289W			P07-B	40	N		54			TB1-U 7	18	N		64			
A 290	6			125		100	A 30				125		100	A 30 28		420	E2 D3
A 290B	69		TB1-N 8	18	N		66			SHLD A 290	20	N					
A 290L			P07-F	40	N		54			TB1-L 7	18	N		64			
A 290R			P07-D	40	N		54			TB1-M 8	18	N		64			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 44

MIL 2085-4-64 WIR

INCHES

WIRE HARNESS A

CONDUCTOR			FROM							TO								ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1	ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1	ITEM NO.		NO.	
A 294L			P07-W	40	N			54		TB1-L 5	18	N			64			
A 294R			P07-U	40	N			54		TB1-M 5	18	N			64			
A 294W			P07-V	40	N			54		TB1-L 6	18	N			64			
A 295	70						A	32						A	32		438	E2 D3
A 295R			P07-X	20	N			54		TB1-M 7	18	N			64			
A 295Y			P07-Y	20	N			54		TB1-M 6	18	N			64			
A 296	70						A	32						A	32		492	E2 D4
A 296R			P07-Z	20	N			54		TB1-M 3	18	N			64			
A 296Y			P07-A#	20	N			54		TB1-N 2	18	N			64			
A 297	70						A	32						A	32		465	E2 D4
A 297R			P07-B#	20	N			54		TB1-T 5	18	N			64			
A 297Y			P07-C#	20	N			54		TB1-T 4	18	N			64			
A 298	72						A	31						A	31		489	E2 D4
A 298G			P07-G#	20	N			54		TB1-B 4	18	N			64			
A 298N			P07-H#	20	N			54		TB1-C 4	18	N			64			
A 298R			P07-F#	20	N			54		TB1-C 3	18	N			64			
A 298Y			P07-J#	20	N			54		TB1-B 3	18	N			64			
A 299	70						A	32						A	32		411	E2 D6

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 46

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM							TO								ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1	ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1	ITEM NO.		NO.	
A 299R			P08-A	20	N			52		TB2-U 3	18	N						
A 299Y			P08-B	20	N			52		TB2-T 2	18	N						
A 300	71						A	31						A	31		402	F2 L9
A 300G			P08-G	20	N			52		TB3-C16	18	N						
A 300R			P08-F	20	N			52		TB3-C19	18	N						
A 300Y			P08-E	20	N			52		TB3-C17	18	N						
A 301	70						A	32						A	32		414	E2 D6
A 301R			P08-J	20	N			52		TB2-K 2	18	N			65			
A 301Y			P08-K	20	N			52		TB2-L 2	18	N			65			
A 302	2			150		125	A	31			125		100	A	31	28	417	F2 L7
A 302B	69		TB3-S15	18	N			66		SHLD A 302	20	N						
A 302R			P08-N	20	N			52		TB3-R17	18	N			64			
A 302Y			P08-P	20	N			52		TB3-R16	18	N			64			
A 303	4		P08-R	20	N			52		TB3-K15	18	N					435	F2 L7
A 304	2			150		125	A	31			125		100	A	31	28	426	F2 L7
A 304B	69		TB3-H15	18	N			66		SHLD A 304	20	N						
A 304R			P08-T	20	N			52		TB3-K17	18	N			64			
A 304Y			P08-S	20	N			52		TB3-K16	18	N			64			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 47

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM							TO								ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1	ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1	ITEM NO.		NO.	
A 290W			P07-E	40	N			54		TB1-L 8	18	N			64			
A 291	6			125		100	A	30			125		100	A	30	28	453	E2 D3
A 291B	69		TB1-S 6	18	N			65		SHLD A 291	20	N						
A 291L			P07-J	40	N			54		TB1-U 6	18	N			64			
A 291R			P07-G	40	N			54		TB1-T 6	18	N			64			
A 291W			P07-H	40	N			54		TB1-U 5	18	N			64			
A 292	6			125		100	A	30			125		100	A	30	28	483	E2 D4
A 292B	69		TB1-S 3	18	N			65		SHLD A 292	20	N						
A 292L			P07-M	40	N			54		TB1-U 3	18	N			64			
A 292R			P07-K	40	N			54		TB1-U 4	18	N			64			
A 292W			P07-L	40	N			54		TB1-T 3	18	N			64			
A 293	6			125		100	A	30			125		100	A	30	28	486	E2 D4
A 293B	69		TB1-N 4	18	N					SHLD A 293	20	N						
A 293L			P07-R	40	N			54		TB1-M 4	18	N			64			
A 293R			P07-N	40	N			54		TB1-L 4	18	N			64			
A 293W			P07-P	40	N			54		TB1-L 3	18	N			64			
A 294	6			125		100	A	30			125		100	A	30	28	456	E2 D3
A 294B	69		TB1-N 5	18	N					SHLD A 294	20	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 45

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM							TO								ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1	ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1	ITEM NO.		NO.	
A 305	4		P08-U	20	N			52		TB3-R18	18	N			64		408	F2 L7
A 306	2			150		125	A	31			125		100	A	31	28	441	F2 L5
A 306B	69		TB3-T15	18	N					SHLD A 306	20	N						
A 306R			P08-V	20	N			52		TB3-S13	18	N			64			
A 306Y			P08-W	20	N			52		TB3-S14	18	N			64			
A 307	2			150		125	A	31			125		100	A	31	28	438	F2 L5
A 307B	69		TB3-T15	18	N			66		SHLD A 307	20	N						
A 307R			P08-X	20	N			52		TB3-T14	18	N			64			
A 307Y			P08-Y	20	N			52		TB3-T13	18	N			64			
A 308	71						A	31						A	31		399	F2 L9
A 308G			P08-D#	20	N			52		TB3-F17	18	N						
A 308R			P08-H	20	N			52		TB3-C19	18	N			65			
A 308Y			P08-C#	20	N			52		TB3-G17	18	N						
A 309	2			150		125	A	31			125		100	A	31	28	420	F2 L7
A 309B	69		TB3-M15	18	N					SHLD A 309	20	N						
A 309R			P08-E#	20	N			52		TB3-N16	18	N			64			
A 309Y			P08-F#	20	N			52		TB3-N17	18	N			64			
A 310	2			150		125	A	31			125		100	A	31	28	423	F2 L7

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 48

MIL 2085-4-64 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD 2	T/I/N	FROM STRIP WIRE OR JACKET 2	FROM TERMINATION ITEM NO.	FROM SPEC. 1	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD 2	T/I/N	TO STRIP WIRE OR JACKET 2	TO TERMINATION ITEM NO.	TO SPEC 1	TO NO.	ROUTING
A 318R			P09- 9	10	N		49			TB3-B18	18	N		64			
A 318Y			P09- 8	10	N		49			TB3-B19	18	N		64			
A 319	71						A 31							A 31		174	E1 D2
A 319G			P09- 78	10	N		49			TB1-H 2	18	N		65			
A 319R			P09- 67	10	N		49			TB1-G 2	18	N		65			
A 319Y			P09- 79	10	N		49			TB1-H 3	18	N		65			
A 320	70						A 32							A 32		69	E1 L1
A 320R			P09- 22	10	N		49			TB3-D 2	18	N					
A 320Y			P09- 34	10	N		49			TB3-C 3	18	N					
A 321	70						A 32							A 32		141	E1 D5
A 321R			P09- 45	10	N		49			TB2-K 1	18	N					
A 321Y			P09- 55	10	N		49			TB2-L 1	18	N					
A 322	70						A 32							A 32		120	E1 D5
A 322R			P09- 56	10	N		49			TB2-U 3	18	N					
A 322Y			P09- 57	10	N		49			TB2-T 3	18	N					
A 323	70						A 32							A 32		462	E2 D4
A 323R			P09- 59	10	N		49			TB1-C 6	18	N		65			
A 323Y			P09- 58	10	N		49			TB1-B 6	18	N		65			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR	+	SHEET 50

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD 2	T/I/N	FROM STRIP WIRE OR JACKET 2	FROM TERMINATION ITEM NO.	FROM SPEC. 1	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD 2	T/I/N	TO STRIP WIRE OR JACKET 2	TO TERMINATION ITEM NO.	TO SPEC 1	TO NO.	ROUTING
A 324	70						A 32							A 32		159	E1 D1
A 324R			P09- 69	10	N		49			TB1-H 4	18	N					
A 324Y			P09- 81	10	N		49			TB1-G 4	18	N					
A 325	70						A 32							A 32		444	E2 D3
A 325R			P09- 68	10	N		49			TB1-H 7	18	N					
A 325Y			P09- 80	10	N		49			TB1-G 7	18	N					
A 328	4		P09- 65	10	N		49			TB3-H20	18	N		64		120	F1 L6
A 329	4		P09- 66	10	N		49			TB3-L21	18	N				360	F2 L9
A 330	4		P09- 4	10	N		49			TB3-R20	18	N		64		372	F2 L9
A 331	4		P09- 18	10	N		49			TB3-N19	18	N				384	F2 L9
A 332	4		P09- 13	10	N		49			TB1-H 6	18	N		65		459	E2 D3
A 336	4		P09- 12	10	N		49			TB1-H 8	18	N		65		426	E2 D3
A 342	4		P09- 10	10	N		49			TB3-F 5	18	N				366	E2 L2
A 344	4		P09- 11	10	N		49			TB3-D 3	18	N		65		66	E1 L1
A 345	4		P09- 46	10	N		49			TB1-U 2	18	N		66		177	E1 D2
A 349	4		P09- 33	10	N		49			TB1-L 2	18	N		64		186	E1 D2
A 350	4		P09- 43	10	N		49			TB1-M 2	18	N		64		183	E1 D2
A 351	4		P09- 44	10	N		49			TB1-T 7	18	N		64		435	E2 D3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR	+	SHEET 51

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD 2	T/I/N	FROM STRIP WIRE OR JACKET 2	FROM TERMINATION ITEM NO.	FROM SPEC. 1	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD 2	T/I/N	TO STRIP WIRE OR JACKET 2	TO TERMINATION ITEM NO.	TO SPEC 1	TO NO.	ROUTING
A 310B	69		TB3-M15	18	N		66			SHLD A 310	20	N					
A 310R			P08-G*	20	N		52			TB3-L16	18	N		64			
A 310Y			P08-I*	20	N		52			TB3-L17	18	N		64			
A 311	4		P08-H*	20	N		52			TB3-T18	18	N		64		405	F2 L7
A 312	2			150		125	A 31				125		100	A 31	28	306	E2 L4
A 312B	69		TB3-K 9	18	N		66			SHLD A 312	20	N					
A 312R			P08-K*	20	N		52			TB3-K11	18	N		66			
A 312Y			P08-J*	20	N		52			TB3-K10	18	N		66			
A 313	2			150		125	A 31				125		100	A 31	28	444	F2 L5
A 313B	69		TB3-R15	18	N		66			SHLD A 313	20	N					
A 313R			P08-N*	20	N		52			TB3-N14	18	N		66			
A 313Y			P08-M*	20	N		52			TB3-N13	18	N		66			
A 314	70						A 32							A 32		498	E2 D4
A 314R			P08-R*	20	N		52			TB1-T 1	18	N					
A 314Y			P08-S*	20	N		52			TB1-T 2	18	N					
A 315	4		P08-B*	20	N		52			TB3-K15	18	N				432	F2 L7
A 316	4		P08-T*	20	N		52			TB3-F22	18	N				351	F2 L9
A 318	70						A 32							A 32		147	F1 L6

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR	+	SHEET 49

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD 2	T/I/N	FROM STRIP WIRE OR JACKET 2	FROM TERMINATION ITEM NO.	FROM SPEC. 1	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD 2	T/I/N	TO STRIP WIRE OR JACKET 2	TO TERMINATION ITEM NO.	TO SPEC 1	TO NO.	ROUTING
A 352	70						A 32							A 32		162	E1 D1
A 352R			P09- 93	10	N		49			TB1-D 4	18	N		66			
A 352Y			P09-106	10	N		49			TB1-D 3	18	N		66			
A 353	70						A 32							A 32		165	E1 D1
A 353R			P09-107	10	N		49			TB1-A 3	18	N		66			
A 353Y			P09-108	10	N		49			TB1-A 4	18	N		66			
A 354	70						A 32							A 32		189	E1 D2
A 354R			P09- 94	10	N		49			TB1-B 2	18	N		66			
A 354Y			P09- 95	10	N		49			TB1-A 2	18	N		66			
A 355	2			50		25	A 31				125		100	A 31	28	453	F2 L5
A 355B	69		TB3-H13	18	N		66			SHLD A 355	20	N					
A 355R			P09- 1	10	N		49			TB3-D13	18	N		66			
A 355Y			P09- 14	10	N		49			TB3-D14	18	N		66			
A 356	2			50		25	A 31				125		100	A 31	28	450	F2 L5
A 356B	69		TB3-H14	18	N		66			SHLD A 356	20	N					
A 356R			P09- 2	10	N		49			TB3-F13	18	N		66			
A 356Y			P09- 3	10	N		49			TB3-F14	18	N		66			
A 357	2			50		25	A 31				125		100	A 31	28	456	F2 L5

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR	+	SHEET 52

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 363G		P09- 61	10	N		49		TB1-B 8	18	N		65		
A 363N		P09- 51	10	N		49		TB1-B 7	18	N		65		
A 363R		P09- 60	10	N		49		TB1-A 7	18	N		65		
A 363Y		P09- 50	10	N		49		TB1-A 8	18	N		65		
A 364	2		50		25	A 31			125		100	A 31 28	129	E1 D5
A 364B	69	TB2-F 2	18	N		66		SHLD A 364	20	N				
A 364R		P09- 96	10	N		49		TB2-H 2	18	N		66		
A 364Y		P09- 82	10	N		49		TB2-G 2	18	N		66		
A 365	2		50		25	A 31			125		100	A 31 28	396	E2 D6
A 365B	69	TB2-F 7	18	N		66		SHLD A 365	20	N				
A 365R		P09- 70	10	N		49		TB2-H 7	18	N		66		
A 365Y		P09- 71	10	N		49		TB2-G 7	18	N		66		
A 366	2		50		25	A 31			125		100	A 31 28	126	E1 D5
A 366B	69	TB2-S 2	18	N		66		SHLD A 366	20	N				
A 366R		P09- 72	10	N		49		TB2-N 2	18	N		66		
A 366Y		P09- 83	10	N		49		TB2-R 2	18	N		66		
A 367	4	P09- 98	10	N		49		TB3-D 4	18	N		64	39	E1 L1
A 368	4	P09- 85	10	N		49		TB3-C 5	18	N		64	24	E1 L3

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 54

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 369	4	P09- 97	10	N		49		TB3-D 5	18	N		64	21	E1 L3
A 370	4	P09- 73	10	N		49		TB3-C 4	18	N		64	42	E1 L1
A 371	71					A 31						A 31	144	F1 L6
A 371G		P09- 64	10	N		49		TB3-G19	18	N		64		
A 371R		P09- 74	10	N		49		TB3-F19	18	N		64		
A 371Y		P09- 75	10	N		49		TB3-D19	18	N		64		
A 376	70					A 32						A 32	156	F1 L6
A 376R		P09- 91	10	N		49		TB3-C17	18	N		65		
A 376Y		P09- 92	10	N		49		TB3-C16	18	N		65		
A 378	70					A 32						A 32	153	F1 L6
A 378R		P09- 76	10	N		49		TB3-G17	18	N		65		
A 378Y		P09- 77	10	N		49		TB3-F17	18	N		65		
A 379	70					A 32						A 32	393	F2 L9
A 379R		P09- 42	10	N		49		TB3-K19	18	N		65		
A 379Y		P09- 53	10	N		49		TB3-H19	18	N		65		
A 380	4	P09- 62	10	N		49		TB3-L19	18	N		64	390	F2 L9
A 381	4	P09- 54	10	N		49		TB3-M19	18	N		64	387	F2 L9
A 382	4	P09- 63	10	N		49		TB3-N19	18	N		65	381	F2 L9

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 55

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 357B	69	TB3-H12	18	N		66		SHLD A 357	20	N				
A 357R		P09- 15	10	N		49		TB3-C13	18	N		66		
A 357Y		P09- 29	10	N		49		TB3-C14	18	N		66		
A 358	2		50		25	A 31			125		100	A 31 28	357	F2 L9
A 358B	69	E 48	20	N				SHLD A 358	20	N				
A 358R		P09- 28	10	N		49		TB3-N20	18	N		66		
A 358Y		P09- 40	10	N		49		TB3-N21	18	N		66		
A 359	2		50		25	A 31			125		100	A 31 28	384	E2 D6
A 359B	69	TB2-V 8	18	N		66		SHLD A 359	20	N				
A 359R		P09- 16	10	N		49		TB2-U 7	18	N		65		
A 359Y		P09- 17	10	N		49		TB2-U 8	18	N		66		
A 360	2		50		25	A 31			125		100	A 31 28	390	E2 D6
A 360B	69	TB2-M 8	18	N		66		SHLD A 360	20	N				
A 360R		P09- 30	10	N		49		TB2-N 8	18	N		65		
A 360Y		P09- 31	10	N		49		TB2-N 7	18	N		66		
A 361	4	P09- 41	10	N		49		TB1-C 8	18	N		65	432	E2 D3
A 362	4	P09- 52	10	N		49		TB1-C 7	18	N		65	447	E2 D3
A 363	72					A 31						A 31	450	E2 D3

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 53

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR		FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 384	4	P09- 84	10	N		49		TB3-D 6	18	N		64	18	E1 L3
A 385	4	P09- 32	10	N		49		TB2-F 4	18	N		64	114	E1 D5
A 386	70					A 32						A 32	369	F2 L9
A 386R		P09- 21	10	N		49		TB3-S20	18	N		64		
A 386Y		P09- 7	10	N		49		TB3-R19	18	N		64		
A 387	71					A 31						A 31	30	F1 M1
A 387G		J09- 5	10	N		49		J22-232	10	N		49		
A 387R		J09- 18	10	N		49		J22-195	10	N		49		
A 387Y		J09- 4	10	N		49		J22-233	10	N		49		
A 388	71					A 31						A 31	33	F1 M1
A 388G		J09- 6	10	N		49		J22-197	10	N		49		
A 388R		J09- 7	10	N		49		J22-235	10	N		49		
A 388Y		J09- 20	10	N		49		J22-198	10	N		49		
A 389	71					A 31						A 31	36	F1 M1
A 389G		J09- 17	10	N		49		J22-192	10	N		49		
A 389R		J09- 16	10	N		49		J22-230	10	N		49		
A 389Y		J09- 3	10	N		49		J22-193	10	N		49		
A 390	4	J09- 73	10	N		49		TB3-F 3	18	N			63	E1 L1

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055
SCALE - NONE | REV LTR + | SHEET 56

MIL 2085-4-64 WIR

INCHES

WIRE HARNESS A

CONDUCTOR			FROM							TO							
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
A 404	4		J09- 59	10	N		49			TB3-G18	18	N		64		150	F1 L6
A 405	4		J09- 58	10	N		49			TB3-K18	18	N		64		414	F2 L7
A 408	4		J09- 66	10	N		49			TB3-H 6	18	N		65		336	E2 L4
A 409	70						A 32							A 32		465	F2 L5
A 409R			J09- 68	10	N		49			TB3-B13	18	N		65			
A 409Y			J09- 81	10	N		49			TB3-B12	18	N		65			
A 410	4		J09- 67	10	N		49			TB1-G 1	18	N		65		195	E1 D2
A 411	4		J09- 93	10	N		49			TB2-S 4	18	N		65		108	E1 D5
A 412	4		J09- 79	10	N		49			TB2-S 5	18	N		65		405	E2 D6
A 413	4		J09-106	10	N		49			TB2-S 6	18	N		65		399	E2 D6
A 414	4		J09- 78	10	N		49			TB2-S 7	18	N		65		393	E2 D6
A 415	4		J09- 42	10	N		49			E 56	20	N		27			
A 416	70						A 32							A 32		138	E1 D5
A 416R			J09- 80	10	N		49			TB2-K 1	18	N					
A 416Y			J09- 69	10	N		49			TB2-L 1	18	N					
A 420	4		J09- 36	10	N		49			E 56	20	N					
A 425	3			50		25	A 30							A 30	28	303	E2 L4
A 425B	69		TB3-M 9	18	N		65			SHLD A 425	20	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 58

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM							TO							
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
A 425G			J09- 24	10	N		49			TB3-M12	18	N		64			
A 425R			J09- 10	10	N		49			TB3-M10	18	N		64			
A 425Y			J09- 23	10	N		49			TB3-M11	18	N		64			
A 426	2			50		25	A 31				125		100	A 31	28	468	F2 L5
A 426B	69		TB3-G12	18	N		65			SHLD A 426	20	N					
A 426R			J09- 19	10	N		49			TB3-G11	18	N		64			
A 426Y			J09- 33	10	N		49			TB3-G12	18	N					
A 427	2			50		25	A 31				125		100	A 31	28	471	F2 L5
A 427B	69		TB3-F12	18	N		65			SHLD A 427	20	N					
A 427R			J09- 35	10	N		49			TB3-F11	18	N		64			
A 427Y			J09- 34	10	N		49			TB3-F12	18	N					
A 428	4		J09- 99	10	N		49			TB3-L18	18	N		64		411	F2 L7
A 429	4		J09- 1	10	N		49			TB3-L22	18	N				348	F2 L9
A 431	70						A 32							A 32		132	E1 D5
A 431R			J09- 32	10	N		49			TB2-A 2	18	N		65			
A 431Y			J09- 44	10	N		49			TB2-A 1	18	N		65			
A 433	2			300		275	A 31				100		75	A 31	28	306	F2 N4
A 433B	69		E 44	20	N					SHLD A 433	20	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 59

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM							TO							
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
A 393	71						A 31							A 31		39	F1 M1
A 393G			J09- 50	10	N		49			J22-238	10	N		49			
A 393R			J09- 41	10	N		49			J22-237	10	N		49			
A 393Y			J09- 40	10	N		49			J22-200	10	N		49			
A 394	4		J09- 72	10	N		49			TB3-B11	18	N		64		3	E1 L3
A 395	4		J09- 97	10	N		49			TB3-R 6	18	N		65		315	E2 L4
A 396	4		J09- 98	10	N		49			TB3-C 1	18	N		64		99	E1 L1
A 397	4		J09-104	10	N		49			TB3-M 4	18	N		64		33	E1 L1
A 398	4		J09- 86	10	N		49			TB3-L 1	18	N		64		84	E1 L1
A 399	4		J09-102	10	N		49			TB3-H 3	18	N		64		54	E1 L1
A 400	4		J09- 76	10	N		49			TB3-L 5	18	N		64		351	E2 L2
A 401	72						A 31							A 31		78	E1 L1
A 401G			J09- 87	10	N		49			TB3-H 1	18	N		64			
A 401N			J09- 88	10	N		49			TB3-G 2	18	N		64			
A 401R			J09-100	10	N		49			TB3-G 1	18	N		64			
A 401Y			J09-101	10	N		49			TB3-H 2	18	N		64			
A 402	4		J09- 90	10	N		49			TB3-N 6	18	N		65		324	E2 L4
A 403	4		J09- 74	10	N		49			TB3-H 5	18	N		64		357	E2 L2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 57

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM							TO							
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
A 433R			E 58	20	N		28			J21- 87	10	N		49			
A 433Y			J09- 30	10	N	250	49			J21- 86	10	N		49			
A 434	2			300		275	A 31				100		75	A 31	28	309	F2 N4
A 434B	69		E 44	20	N					SHLD A 434	20	N					
A 434R			E 58	20	N					J21- 89	10	N		49			
A 434Y			J09- 31	10	N	250	49			J21- 88	10	N		49			
A 435	4		J09- 51	10	N		49			TB3-M22	18	N				345	F2 L9
A 436	4		J09- 83	10	N		49			TB3-L15	18	N		64		429	F2 L7
A 437	2			300		275	A 31				100		75	A 31	28	312	F2 N4
A 437B	69		E 44	20	N					SHLD A 437	20	N					
A 437R			E 58	20	N					J21- 55	10	N		49			
A 437Y			J09- 25	10	N	250	49			J21- 54	10	N		49			
A 438	4		J09- 92	10	N		49			TB3-K 1	18	N		64		87	E1 L1
A 439	4		J09- 94	10	N		49			TB3-D 1	18	N		64		96	E1 L1
A 440	2			100		75	A 31	28	315		150		125	A 31			F2 N4
A 440A	69		SHLD A 440	20	N					E 44	20	N					
A 440R			J21-120	10	N		49			E 58	20	N					
A 440Y			J21-119	10	N		49			E 56	20	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 60

MIL 2088-4-64 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 458	4		TB2-D 5	18	N		64		E 48	20	N				H
A 460	4		P10- 49	10	N		49		TB3-B14	18	N		65	459	F2 L5
A 461	4		P10- 8	10	N		49		J22-171	10	N		49	42	F1 M1
A 462	4		P10- 9	10	N		49		TB3-F 1	18	N			90	E1 L1
A 464	4		J10- 2	10	N		49		TB3-F 3	18	N		66	60	E1 L1
A 465	4		J10- 6	10	N		49		TB3-M 6	18	N		65	327	E2 L4
A 466	4		J10- 7	10	N		49		TB1-F 1	18	N			198	E1 D2
A 467	70						A 32						A 32	2	B N1
A 467R			J10- 38	10	N		49		J21- 84	10	N		49		
A 467Y			E 25	20	N		28		J21- 85	10	N		49		
A 468	70						A 32						A 32	2	B N1
A 468R			E 25	20	N				J21- 13	10	N		49		
A 468Y			J10- 49	10	N		49		J21- 12	10	N		49		
A 469	4		J10- 72	10	N		49		J21-141	10	N		49	1	A N2
A 470	70						A 32						A 32	1	A N2
A 470R			J10- 42	10	N		49		J21- 47	10	N		49		
A 470Y			E 24	20	N		28		J21- 48	10	N		49		
A 471	70						A 32						A 32	1	A N2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 62

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 471R			J10- 20	10	N		49		J21- 82	10	N		49		
A 471Y			E 24	20	N				J21- 83	10	N		49		
A 472	70						A 32						A 32	2	B N1
A 472R			J10- 36	10	N		49		J21-150	10	N		49		
A 472Y			E 25	20	N				J21-151	10	N		49		
A 473	4		J10- 71	10	N		49		J21- 75	10	N		49	1	A N2
A 474	71						A 31						A 31	27	E1 L3
A 474G			J10- 5	10	N		49		TB3-B 5	18	N		65		
A 474R			J10- 4	10	N		49		TB3-B 3	18	N		65		
A 474Y			J10- 3	10	N		49		TB3-B 4	18	N		65		
A 475	4		J10- 12	10	N		49		TB1-F 8	18	N		65	429	E2 D3
A 476	4		J10- 70	10	N		49		J21- 3	10	N		49	1	A N2
A 477	4		J10- 57	10	N		49		J21-108	10	N		49	321	F2 N4
A 478	4		J10- 9	10	N		49		TB1-H 5	18	N		64	474	E2 D4
A 479	71						A 31						A 31	153	E1 D1
A 479G			J10- 22	10	N		49		TB1-K 3	18	N		65		
A 479R			J10- 24	10	N		49		TB1-K 5	18	N		65		
A 479Y			J10- 21	10	N		49		TB1-K 4	18	N		65		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 63

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 441	4		J09-103	10	N		49		TB3-M 5	18	N		64	348	E2 L2
A 442	4		J09- 85	10	N		49		TB3-G 4	18	N		64	36	E1 L1
A 443	4		J09- 89	10	N		49		TB3-G 3	18	N		64	57	E1 L1
A 444	4		J09- 75	10	N		49		TB3-K 5	18	N		64	354	E2 L2
A 445	4		J09- 71	10	N		49		TB3-M20	18	N		64	375	F2 L9
A 446	4		J09-105	10	N		49		TB3-K 2	18	N		64	75	E1 L1
A 447	4		J09- 95	10	N		49		P10- 48	10	N		49		
A 448	70						A 32						A 32		
A 448R			J09- 65	10	N		49		P10- 39	10	N		49		
A 448Y			J09- 77	10	N		49		P10- 38	10	N		49		
A 449	2			300		275	A 31			100		75	A 31 28	318	F2 N4
A 449B	69		E 44	20	N				SHLD A 449	20	N				
A 449R			J09- 37	10	N	250	49		J21- 18	10	N		49		
A 449Y			E 58	20	N				J21- 19	10	N		49		
A 450	4		J09- 26	10	N		49		TB2-D 6	18	N		64	402	E2 D6
A 451	4		J09- 91	10	N		49		TB3-F22	18	N			63	F1 L8
A 452	4		P10- 13	10	N		49		TB1-S 5	18	N		66	468	E2 D4
A 454	4		P10- 12	10	N		49		TB3-F 5	18	N		66	363	E2 L2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 61

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 480	71						A 31						A 31	423	E2 D3
A 480G			J10- 23	10	N		49		TB1-K 8	18	N		65		
A 480R			J10- 25	10	N		49		TB1-K 6	18	N		65		
A 480Y			J10- 26	10	N		49		TB1-K 7	18	N				
A 481	4		J10- 59	10	N		49		J21- 40	10	N		49	324	F2 N4
A 482	70						A 32						A 32	1	A N2
A 482R			J10- 32	10	N		49		J21- 80	10	N		49		
A 482Y			E 23	20	N		28		J21- 81	10	N		49		
A 483	70						A 32						A 32	1	A N2
A 483R			J10- 17	10	N		49		J21- 6	10	N		49		
A 483Y			E 23	20	N				J21- 7	10	N		49		
A 484	70						A 32						A 32	1	A N2
A 484R			J10- 18	10	N		49		J21-214	10	N		49		
A 484Y			E 23	20	N				J21-215	10	N		49		
A 485	70						A 32						A 32	1	A N2
A 485R			J10- 40	10	N		49		J21-179	10	N		49		
A 485Y			E 23	20	N				J21-180	10	N		49		
A 486	70						A 32						A 32	1	A N2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 64

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 492R			J10- 51	10	N	49		J21-148	10	N	49		
A 492Y			E 24	20	N			J21-149	10	N	49		
A 493	70					A 32					A 32	1	A N3
A 493R			J10- 64	10	N	49		J21-115	10	N	49		
A 493Y			E 24	20	N			J21-116	10	N	49		
A 494	70					A 32					A 32	1	A N3
A 494R			J10- 73	10	N	49		J21-210	10	N	49		
A 494Y			E 22	20	N	28		J21-211	10	N	49		
A 495	70					A 32					A 32	1	A N3
A 495R			J10- 74	10	N	49		J21-175	10	N	49		
A 495Y			E 22	20	N			J21-176	10	N	49		
A 496	70					A 32					A 32	1	A N3
A 496R			J10- 60	10	N	49		J21-142	10	N	49		
A 496Y			E 22	20	N			J21-143	10	N	49		
A 497	70					A 32					A 32	1	A N3
A 497R			J10- 28	10	N	49		J21-109	10	N	49		
A 497Y			E 22	20	N			J21-110	10	N	49		
A 498	70					A 32					A 32	1	A N3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 66

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 498R			J10- 29	10	N	49		J21- 76	10	N	49		
A 498Y			E 22	20	N			J21- 77	10	N	49		
A 499	70					A 32					A 32	1	A N3
A 499R			J10- 30	10	N	49		J21- 41	10	N	49		
A 499Y			E 22	20	N			J21- 42	10	N	49		
A 500	70					A 32					A 32	1	A N3
A 500R			J10- 61	10	N	49		J21-212	10	N	49		
A 500Y			E 22	20	N			J21-213	10	N	49		
A 501	70					A 32					A 32	1	A N3
A 501R			J10- 62	10	N	49		J21-177	10	N	49		
A 501Y			E 22	20	N			J21-178	10	N	49		
A 502	70					A 32					A 32	1	A N3
A 502R			J10- 63	10	N	49		J21-144	10	N	49		
A 502Y			E 22	20	N			J21-145	10	N	49		
A 503	70					A 32					A 32	1	A N3
A 503R			J10- 14	10	N	49		J21-111	10	N	49		
A 503Y			E 23	20	N			J21-112	10	N	49		
A 504	70					A 32					A 32	1	A N3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 67

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 486R			J10- 41	10	N	49		J21-146	10	N	49		
A 486Y			E 23	20	N			J21-147	10	N	49		
A 487	70					A 32					A 32	1	A N2
A 487R			J10- 19	10	N	49		J21-113	10	N	49		
A 487Y			E 23	20	N			J21-114	10	N	49		
A 488	70					A 32					A 32	1	A N2
A 488R			J10- 33	10	N	49		J21- 45	10	N	49		
A 488Y			E 23	20	N			J21- 46	10	N	49		
A 489	70					A 32					A 32	1	A N2
A 489R			J10- 44	10	N	49		J21- 8	10	N	49		
A 489Y			E 24	20	N			J21- 9	10	N	49		
A 490	70					A 32					A 32	1	A N2
A 490R			J10- 43	10	N	49		J21-216	10	N	49		
A 490Y			E 24	20	N			J21-217	10	N	49		
A 491	70					A 32					A 32	1	A N2
A 491R			J10- 53	10	N	49		J21-181	10	N	49		
A 491Y			E 24	20	N			J21-182	10	N	49		
A 492	70					A 32					A 32	1	A N2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 65

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 504R			J10- 16	10	N	49		J21- 43	10	N	49		
A 504Y			E 23	20	N			J21- 44	10	N	49		
A 505	70					A 32					A 32	1	A N3
A 505R			J10- 31	10	N	49		J21- 4	10	N	49		
A 505Y			E 22	20	N			J21- 5	10	N	49		
A 506	70					A 32					A 32	1	A N3
A 506R			J10- 15	10	N	49		J21- 78	10	N	49		
A 506Y			E 23	20	N			J21- 79	10	N	49		
A 507	4		J10- 8	10	N	49		TB3-M22	18	N	65	342	F2 L9
A 509	4		J10- 58	10	N	49		J21- 39	10	N	49	327	F2 N4
A 510	70					A 32					A 32	2	B N1
A 510R			J10- 39	10	N	49		J21- 14	10	N	49		
A 510Y			E 25	20	N			J21- 15	10	N	49		
A 511	70					A 32					A 32	2	B N1
A 511R			J10- 37	10	N	49		J21-117	10	N	49		
A 511Y			E 25	20	N			J21-118	10	N	49		
A 512	4		J10- 56	10	N	49		J21-173	10	N	49	330	F2 N4
A 513	4		J10- 55	10	N	49		J21-174	10	N	49	331	F2 N4

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 68

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 552	4		E 24	20	N				J10- 82	10	N		49		A
A 554	4		E 23	20	N				E 22	20	N				A
A 555	4		E 23	20	N				E 24	20	N				A
A 557	4		E 8	20	N				TB2-D 1	18	N		64	90	G1 H1
A 558	70						A 32						A 32	84	G1 H1
A 558R			E 14	20	N				TB2-K 1	18	N		66		
A 558Y			E 13	20	N				TB2-L 1	18	N		66		
A 559	4		TB3-S21	18	N		65	318	E 6	20	N				C2 J3
A 560	70						A 32						A 32	114	G1 K2
A 560R			E 17	20	N				TB1-H 7	18	N		65		
A 560Y			E 16	20	N				TB1-G 7	18	N		65		
A 561	70						A 32						A 32	153	G1 K1
A 561R			E 9	20	N				TB1-S 1	18	N		65		
A 561Y			E 10	20	N				TB1-S 2	18	N				
A 564	70						A 32						A 32	138	G1 K1
A 564R			E 3	20	N				TB1-G 4	18	N		65		
A 564Y			E 4	20	N				TB1-H 4	18	N		65		
A 565	4		J08- 50	10	N		49		TB1-F 1	18	N		65	168	G1 K1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR +		SHEET 70

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 566	4		E 44	20	N				E 57	20	N				N
A 567	70						A 32						A 32	114	C1 J2
A 567R			E 7	20	N		27		TB3-D 2	18	N		65		
A 567Y			E 11	20	N				TB3-C 3	18	N		66		
A 568	4		J21-187	10	N		49	2	E 64	20	N				B N1
A 569	4		J10- 27	10	N		49		E 65	20	N				B
A 570	4		J10- 1	10	N		49		E 62	20	N				A
A 571	4		J21-107	10	N		49	1	E 63	20	N				A N3
A 572	70						A 32						A 32		
A 572R			J01- 1	10	N		49		E 1	20	N		28		
A 572Y			J01- 14	10	N		49		E 2	20	N		27		
A 573	71						A 31						A 31		
A 573G			J01- 11	10	N		49		E 1	20	N				
A 573R			J01- 25	10	N		49		E 1	20	N				
A 573Y			J01- 12	10	N		49		E 5	20	N		27		
A 574	70						A 32						A 32		
A 574R			J02- 1	10	N		49		E 1	20	N				
A 574Y			J02- 14	10	N		49		E 2	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR +		SHEET 71

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 514	70						A 32						A 32	2	B N1
A 514R			J10- 35	10	N		49		J21-183	10	N		49		
A 514Y			E 25	20	N				J21-184	10	N		49		
A 515	70						A 32						A 32	2	B N1
A 515R			J10- 47	10	N		49		J21-185	10	N		49		
A 515Y			E 25	20	N				J21-186	10	N		49		
A 516	70						A 32						A 32	2	B N1
A 516R			J10- 34	10	N		49		J21-218	10	N		49		
A 516Y			E 25	20	N				J21-219	10	N		49		
A 517	70						A 32						A 32	2	B N1
A 517R			J10- 48	10	N		49		J21-220	10	N		49		
A 517Y			E 25	20	N				J21-221	10	N		49		
A 520	4		J10- 75	10	N		49		J21-209	10	N		49	1	A N3
A 521	4		J10- 13	10	N		49		TB1-K 7	18	N		66	441	E2 D3
A 522	4		J10- 45	10	N		49		J21- 10	10	N		49	2	B N1
A 523	4		J10- 46	10	N		49		J21- 11	10	N		49	2	B N1
A 548	4		TB3-B20	18	N		66	24	E 12	20	N				C1 J1
A 551	4		E 25	20	N				J10- 69	10	N		49		B

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR +		SHEET 69

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 575	71						A 31						A 31		
A 575G			J02- 11	10	N		49		E 1	20	N				
A 575R			J02- 25	10	N		49		E 1	20	N				
A 575Y			J02- 12	10	N		49		E 5	20	N				
A 576	71						A 31						A 31		
A 576G			J03- 11	10	N		49		E 1	20	N				
A 576R			J03- 25	10	N		49		E 1	20	N				
A 576Y			J03- 12	10	N		49		E 5	20	N				
A 577	71						A 31						A 31	18	G1 H2
A 577G			E 5	20	N				TB2-H 5	18	N		64		
A 577R			E 1	20	N				TB2-G 4	18	N		66		
A 577Y			E 2	20	N				TB2-H 4	18	N		65		
A 578	70						A 32						A 32		
A 578R			J01- 3	10	N		49		E 7	20	N				
A 578Y			J01- 2	10	N		49		E 11	20	N		27		
A 579	70						A 32						A 32		
A 579R			J02- 3	10	N		49		E 7	20	N				
A 579Y			J02- 2	10	N		49		E 11	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015055	
SCALE - NONE	REV LTR +		SHEET 72

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	FROM: TERMINATION SPEC. 1 ITEM NO.	FROM: NO.	TO: CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TO: TERMINATION SPEC 1 ITEM NO.	TO: NO.	ROUTING
A 586Y			J05- 14	10	N	49		E 13	20	N			
A 587	4		TB1-N 4	18	N	66		TB1-N 5	18	N			K
A 588	4		TB1-N 5	18	N	66		TB1-N 8	18	N			K
A 591	4		TB3-T 3	18	N	66		TB3-R 3	18	N			L
A 592	4		TB3-R 3	18	N	66		TB3-N 3	18	N			L
A 593	4		TB3-D15	18	N	66		TB3-L20	18	N	65		L
A 594	4		TB3-L22	18	N	65		TB3-D15	18	N			L
A 595	4		TB3-K20	18	N	65		TB3-C15	18	N			L
A 596	4		TB3-K22	18	N	65		TB3-C15	18	N	66		L
A 598	70					A 32					A 32	408	G2 H3
A 598R			P05-D	20	N	52		TB2-U 3	18	N	66		
A 598Y			P05-E	20	N	52		TB2-T 3	18	N	65		
A 599	70					A 32					A 32	48	G1 H1
A 599R			J04- 3	10	N	49		TB2-U 1	18	N	65		
A 599Y			J04- 2	10	N	49		TB2-T 2	18	N			
A 600	70					A 32					A 32	45	G1 H2
A 600R			J05- 3	10	N	49		TB2-U 1	18	N			
A 600Y			J05- 2	10	N	49		TB2-T 2	18	N	66		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 74

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	FROM: TERMINATION SPEC. 1 ITEM NO.	FROM: NO.	TO: CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TO: TERMINATION SPEC 1 ITEM NO.	TO: NO.	ROUTING
A 601	4		TB2-L 4	18	N	66		TB2-M 4	18	N	65		H
A 602	75					A 31					A 31	159	G1 K1
A 602G			P01-106	10	N	49		TB1-N 1	18	N			
A 602N			P01- 90	10	N	49		TB1-M 1	18	N			
A 602R			P01-103	10	N	49		TB1-R 1	18	N			
A 602Y			P01-108	10	N	49		TB1-T 1	18	N	66		
A 603	75					A 31					A 31	141	G1 K1
A 603G			J08- 46	10	N	49		TB1-R 3	18	N			
A 603N			J08- 19	10	N	49		TB1-R 2	18	N			
A 603R			J08- 55	10	N	49		TB1-N 3	18	N			
A 603Y			J08- 36	10	N	49		TB1-R 2	18	N			
A 604	73					A 31					A 31	171	E1 D1
A 604R			J09- 55	10	N	49		TB1-N 3	18	N	65		
A 604Y			J09- 46	10	N	49		TB1-R 3	18	N	65		
A 605	75					A 31					A 31	192	E1 D2
A 605G			J09- 64	10	N	49		TB1-N 1	18	N	65		
A 605N			J09- 63	10	N	49		TB1-M 1	18	N	65		
A 605R			J09- 54	10	N	49		TB1-R 1	18	N	65		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 75

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	FROM: TERMINATION SPEC. 1 ITEM NO.	FROM: NO.	TO: CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TO: TERMINATION SPEC 1 ITEM NO.	TO: NO.	ROUTING
A 580	70					A 32					A 32		
A 580R			J03- 3	10	N	49		E 7	20	N			
A 580Y			J03- 2	10	N	49		E 11	20	N			
A 581	4		J03- 16	10	N	49		E 6	20	N			
A 582	4		J03- 15	10	N	49		E 8	20	N			
A 583	70					A 32					A 32		
A 583R			J05- 50	10	N	49		E 17	20	N			
A 583Y			J05- 60	10	N	49		E 16	20	N			
A 584	71					A 31					A 31		
A 584G			J04- 12	10	N	49		E 14	20	N			
A 584R			J04- 25	10	N	49		E 13	20	N			
A 584Y			J04- 11	10	N	49		E 13	20	N			
A 585	71					A 31					A 31		
A 585G			J05- 17	10	N	49		E 14	20	N			
A 585R			J05- 4	10	N	49		E 13	20	N			
A 585Y			J05- 18	10	N	49		E 13	20	N			
A 586	70					A 32					A 32		
A 586R			J05- 1	10	N	49		E 14	20	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 73

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	FROM: TERMINATION SPEC. 1 ITEM NO.	FROM: NO.	TO: CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TO: TERMINATION SPEC 1 ITEM NO.	TO: NO.	ROUTING
A 605Y			J09- 84	10	N	49		TB1-K 1	18	N	65		
A 606	75					A 31					A 31		
A 606G			J09- 53	10	N	49		P10-107	10	N	49		
A 606N			J09- 52	10	N	49		P10-108	10	N	49		
A 606R			J09- 61	10	N	49		P10-106	10	N	49		
A 606Y			J09- 62	10	N	49		P10- 93	10	N	49		
A 607	73					A 31					A 31	447	F2 L5
A 607R			P10- 69	10	N	49		TB3-L14	18	N			
A 607Y			P10- 68	10	N	49		TB3-K14	18	N			
A 608	73					A 31					A 31	168	F1 L6
A 608R			P11-N	25	N	53		TB3-L14	18	N	65		
A 608Y			P11-K	25	N	53		TB3-K14	18	N	65		
A 609	5		P11-B	25	N	53		TB3-C20	18	N		138	F1 L6
A 610	5		P11-B	25	N			TB3-C20	18	N		135	F1 L6
A 611	5		P11-B	25	N			TB3-C20	18	N	66	132	F1 L6
A 612	5		P11-C	25	N	53		TB3-C21	18	N		111	F1 L6
A 613	5		P11-C	25	N			TB3-C21	18	N		108	F1 L6
A 614	5		P11-C	25	N			TB3-C21	18	N	66	105	F1 L8

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 76

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 633	5		P11-A	25	N		53		TB3-G21	18	N		66	90	F1 L8
A 634	5		P11-A	25	N				J21- 1	10	N		49	6	F1 N5
A 635	5		P11-A	25	N				J21- 73	10	N		49	9	F1 N5
A 636	5		P12-A	25	N		53		TB3-G22	18	N		66	57	F1 L8
A 637	5		P12-A	25	N				J21-139	10	N		49	12	F1 N5
A 638	5		P12-A	25	N				J21-207	10	N		49	15	F1 N5
A 639	5		P11-J	25	N		53		J21- 2	10	N		49	18	F1 N5
A 640	5		P11-J	25	N				J21- 74	10	N		49	21	F1 N5
A 641	5		P12-J	25	N		53		J21-140	10	N		49	24	F1 N5
A 642	5		P12-J	25	N				J21-208	10	N		49	27	F1 N5
A 643	5		P11-G	25	N		53		TB3-D15	18	N			162	F1 L6
A 644	5		P11-G	25	N				TB3-K20	18	N			117	F1 L6
A 645	5		P11-G	25	N				TB3-L21	18	N		65	78	F1 L8
A 646	5		P12-G	25	N		53		TB3-C15	18	N			165	F1 L6
A 647	5		P12-G	25	N				TB3-K22	18	N			45	F1 L8
A 648	5		P12-G	25	N				TB3-L20	18	N			114	F1 L6
A 649	5		P11-D	25	N		53		TB1-N 8	18	N			144	E1 D1
A 650	5		P11-D	25	N				TB1-S 6	18	N			150	E1 D1

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 78

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 651	5		P11-F	25	N		53		TB2-M 3	18	N		64	123	E1 D5
A 652	5		P11-F	25	N				TB2-D 4	18	N		65	117	E1 D5
A 653	5		P11-F	25	N				TB3-N 3	18	N			51	E1 L1
A 654	5		P11-E	25	N		53		TB2-M 7	18	N		64	102	E1 D5
A 655	5		P11-E	25	N				TB2-V 4	18	N			105	E1 D5
A 656	5		P12-D	25	N		53		TB1-N 4	18	N			156	E1 D1
A 657	5		P12-D	25	N				TB3-S 3	18	N			48	E1 L1
A 658	5		P12-E	25	N		53		TB3-T 3	18	N			45	E1 L1
A 659	5		P12-E	25	N				TB1-S 3	18	N			168	E1 D1
A 660	5		P12-F	25	N		53		TB2-M 1	18	N		64	135	E1 D5
A 661	5		P12-F	25	N				TB2-L 4	18	N			111	E1 D5
A 662	5		P12-F	25	N				TB1-D 7	18	N			147	E1 D1
A 663	74						A 31						A 31	180	E1 D2
A 663G			P10- 81	10	N		49		TB1-T 2	18	N		66		
A 663R			P10- 94	10	N		49		TB1-R 2	18	N		66		
A 663Y			P10- 95	10	N		49		TB1-S 2	18	N		66		
A 664	4		TB3-B15	18	N		64		TB3-T15	18	N				L
A 665	4		P10- 1	10	N		49		TB3-B20	18	N			141	F1 L6

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 79

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 615	5		P12-B	25	N		53		TB3-D20	18	N			129	F1 L6
A 616	5		P12-B	25	N				TB3-D20	18	N			126	F1 L6
A 617	5		P12-B	25	N				TB3-D20	18	N		66	123	F1 L6
A 618	5		P12-C	25	N		53		TB3-D21	18	N			102	F1 L8
A 619	5		P12-C	25	N				TB3-D21	18	N			99	F1 L8
A 620	5		P12-C	25	N				TB3-D21	18	N		66	96	F1 L8
A 621	5		P12-M	25	N		53		TB3-C22	18	N			75	F1 L8
A 622	5		P12-M	25	N				TB3-C22	18	N		65	72	F1 L8
A 623	5		P11-M	25	N		53		TB3-D22	18	N			69	F1 L8
A 624	5		P11-M	25	N				TB3-D22	18	N		65	66	F1 L8
A 625	5		P11-H	25	N		53		TB3-H21	18	N			87	F1 L8
A 626	5		P11-H	25	N				TB3-H21	18	N			84	F1 L8
A 627	5		P11-H	25	N				TB3-H21	18	N		66	81	F1 L8
A 628	5		P12-H	25	N		53		TB3-H22	18	N			48	F1 L8
A 629	5		P12-H	25	N				TB3-H22	18	N			51	F1 L8
A 630	5		P12-H	25	N				TB3-H22	18	N		66	54	F1 L8
A 631	5		P11-L	25	N		53		TB3-F21	18	N		66	93	F1 L8
A 632	5		P12-L	25	N		53		TB3-F22	18	N		66	60	F1 L8

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 77

MIL 2088-4-64 WIR

WIRE HARNESS A

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 667	4		J09- 15	10	N		49		TB3-F 1	18	N		65	93	E1 L1
A 668	4		J09- 14	10	N		49		TB3-F 2	18	N		64	81	E1 L1
A 670	70						A 32						A 32	159	F1 L6
A 670R			J09- 49	10	N		49		TB3-B16	18	N				
A 670Y			J09- 38	10	N		49		TB3-B17	18	N				
A 671	1			50		25	A 31			125		100	A 31 28	309	E2 L4
A 671B	69		TB3-F 8	18	N		64		SHLD A 671	20	N				
A 671Y			J09- 48	10	N		49		TB3-G 8	18	N		64		
A 672	1			50		25	A 31			125		100	A 31 28	312	E2 L4
A 672B	69		TB3-F 7	18	N		64		SHLD A 672	20	N				
A 672Y			J09- 56	10	N		49		TB3-G 7	18	N		64		
A 673	4		J09- 47	10	N		49		TB3-A10	18	N		64	9	E1 L3
A 677	4		P09- 47	10	N		49		TB3-F 6	18	N		64	342	E2 L4
A 678	4		P09- 49	10	N		49		J21-171	10	N		49	336	F2 N4
A 679	4		P09- 37	10	N		49		TB3-G 6	18	N		64	339	E2 L4
A 680	4		P09- 38	10	N		49		TB3-K 6	18	N		64	333	E2 L4
A 681	4		P09- 48	10	N		49		TB3-L 6	18	N		64	330	E2 L4
A 682	72						A 31						A 31	15	E1 L3

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015055
SCALE - NONE
REV LTR +
SHEET 80

MIL 2088-4-64 WIR

INCHES
0 1 2

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET			FROM TERMINATION SPEC. 1		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TO TERMINATION SPEC 1		ROUTING
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	ITEM NO.	NO.	CIRCUIT POINT	2	TIN	ITEM NO.	NO.	
A 690R			P09-104	10	N	49		TB3-B 9	18	N	64		
A 690Y			P09-105	10	N	49		TB3-B10	18	N	64		
A 691	5		P09- 23	10	N	49		TB1-S 5	18	N		471	E2 D4
A 692	4		J21- 16	10	N	49		J21- 17	10	N	49		N
A 693	4		J08- 30	10	N	49		E 72	20	N			
A 694	4		J08- 61	10	N	49		E 72	20	N			
A 695	4		J08- 83	10	N	49		E 72	20	N			
A 696	4		J08- 84	10	N	49		E 72	20	N			
A 697	4		J08- 70	10	N	49		E 72	20	N			
A 698	4		J08- 28	10	N	49		E 72	20	N			
A 699	4		J08- 17	10	N	49		E 72	20	N			
A 700	5		E 72	20	N	28		TB2-F 1	18	N	65	89	G1 H1
A 701	5		J09- 27	10	N	49		TB2-F 1	18	N		142	E1 D5
A 702	4		J08- 52	10	N	49		TB2-V 1	18	N	65	74	G1 H1
A 703	4		J09- 11	10	N	49		TB2-V 1	18	N		133	E1 D5
A 704	4		J08- 63	10	N	49		TB2-N 4	18	N	65	10	G1 H2
A 705	4		J09- 13	10	N	49		TB2-N 4	18	N		109	E1 D5
A 706	4		J08- 31	10	N	49		TB2-T 4	18	N	65	5	G1 H2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 82

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET			FROM TERMINATION SPEC. 1		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TO TERMINATION SPEC 1		ROUTING
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	ITEM NO.	NO.	CIRCUIT POINT	2	TIN	ITEM NO.	NO.	
A 707	4		J09- 39	10	N	49		TB2-T 4	18	N		107	E1 H5
A 708	4		J08- 82	10	N	49		TB2-F 5	18	N	65	400	G2 H3
A 709	4		J09- 12	10	N	49		TB2-F 5	18	N		406	E2 D6
A 710	4		J08- 54	10	N	49		TB2-F 6	18	N	66	375	G2 H3
A 711	4		J09- 60	10	N	49		TB2-F 6	18	N		461	E2 D6
A 712	4		J08- 32	10	N	49		TB2-F 6	18	N		372	G2 H3
A 713	4		J09- 70	10	N	49		J22- 37	10	N	49	29	F1 M1
A 714	4		J09- 29	10	N	49		TB2-S 8	18	N	65	387	E2 D6
A 715	4		J09- 28	10	N	49		P10- 24	10	N	49		
A 716	4		J10- 10	10	N	49		TB3-M21	18	N		359	F2 L9
A 717	5		P09- 20	10	N	49		TB3-N22	18	N	64	339	F2 L9
A 718	5		P09- 19	10	N	49		TB3-T21	18	N	64	354	F2 L9
A 719	73					A 32					A 32	378	F2 L9
A 719R			P09- 5	10	N	49		TB3-T19	18	N	64		
A 719Y			P09- 6	10	N	49		TB3-S19	18	N	64		
A 720	5		J21- 49	10	N	49		TB3-G21	18	N			N L
A 721	5		J21- 50	10	N	49		TB3-G21	18	N			N L
A 722	5		J21- 51	10	N	49		TB3-G22	18	N			N L

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 83

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET			FROM TERMINATION SPEC. 1		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TO TERMINATION SPEC 1		ROUTING
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	ITEM NO.	NO.	CIRCUIT POINT	2	TIN	ITEM NO.	NO.	
A 682G			P09- 99	10	N	49		TB3-B 6	18	N	64		
A 682N			P09- 86	10	N	49		TB3-C 6	18	N	64		
A 682R			P09- 87	10	N	49		TB3-C 7	18	N	64		
A 682Y			P09-100	10	N	49		TB3-C 8	18	N	64		
A 683	4		P09- 35	10	N	49		TB1-D 5	18	N		480	E2 D4
A 684	71					A 31					A 31	30	E1 L3
A 684G			P09- 24	10	N	49		TB3-A 3	18	N	64		
A 684R			P09- 25	10	N	49		TB3-A 4	18	N	64		
A 684Y			P09- 36	10	N	49		TB3-A 5	18	N	64		
A 687	4		J06- 37	10	N	49		P01- 37	10	N	49		
A 689	72					A 31					A 31	12	E1 L3
A 689G			P09- 88	10	N	49		TB3-D 9	18	N	64		
A 689N			P09- 89	10	N	49		TB3-B 7	18	N	64		
A 689R			P09-102	10	N	49		TB3-D 8	18	N	64		
A 689Y			P09-101	10	N	49		TB3-D 7	18	N	64		
A 690	72					A 31					A 31	6	E1 L3
A 690G			P09- 90	10	N	49		TB3-C 9	18	N	64		
A 690N			P09-103	10	N	49		TB3-C10	18	N	64		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 81

MIL 2085-4-64 WIR

WIRE HARNESS A

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET			FROM TERMINATION SPEC. 1		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TO TERMINATION SPEC 1		ROUTING
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	ITEM NO.	NO.	CIRCUIT POINT	2	TIN	ITEM NO.	NO.	
A 723	5		J21- 52	10	N	49		TB3-G22	18	N			N L
A 724	5		P11-J	25	N			P12-J	25	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015055

SCALE - NONE | REV LTR + | SHEET 84

MIL 2085-4-64 WIR

INCHES
0 1 2

APOLLO G&N Specification
PS1015056 REV A
Original Issue Date: 4 NOV 64
Release Authority: TDRR 14008
Class A Release

PROCUREMENT SPECIFICATION

FOR

AGE HARNESS & PSA END CONNECTOR ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
2/10/66	A	26133	All, Was 5 pages now 6	WK	---

This specification consists of page 1 to 6 inclusive.

APPROVALS	W. J. Rhine 9-4-64 NASA/MSC		MIT/IL	ACSP

PROCUREMENT SPECIFICATION

FOR

AGE HARNESS & PSA END CONNECTOR ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the AGE Harness & PSA End Connector Assembly, Drawing 1015056, hereafter called the assembly.

1.2 CLASSIFICATION. The requirements for the equipment covered by this specification shall be classified as follows. Unless identified by the respective type, all requirements of this specification are applicable for all types.

a. Type I. The special requirements for Part Number 1015056-011 shall be designated as Type I.

b. Type II. The special requirements for Part Number 1015056-021 shall be designated as Type II.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
ND1002214	General Specification for Preservation, Packaging, Packing and Container Marking of APOLLO Guidance and Navigation Major Assemblies, Assemblies, Subassemblies, Parts and Associated Ground Support Equipment
FTM1015056	Final Test Method for AGE Harness & PSA End Connector Assembly

DRAWINGS

APOLLO G&N

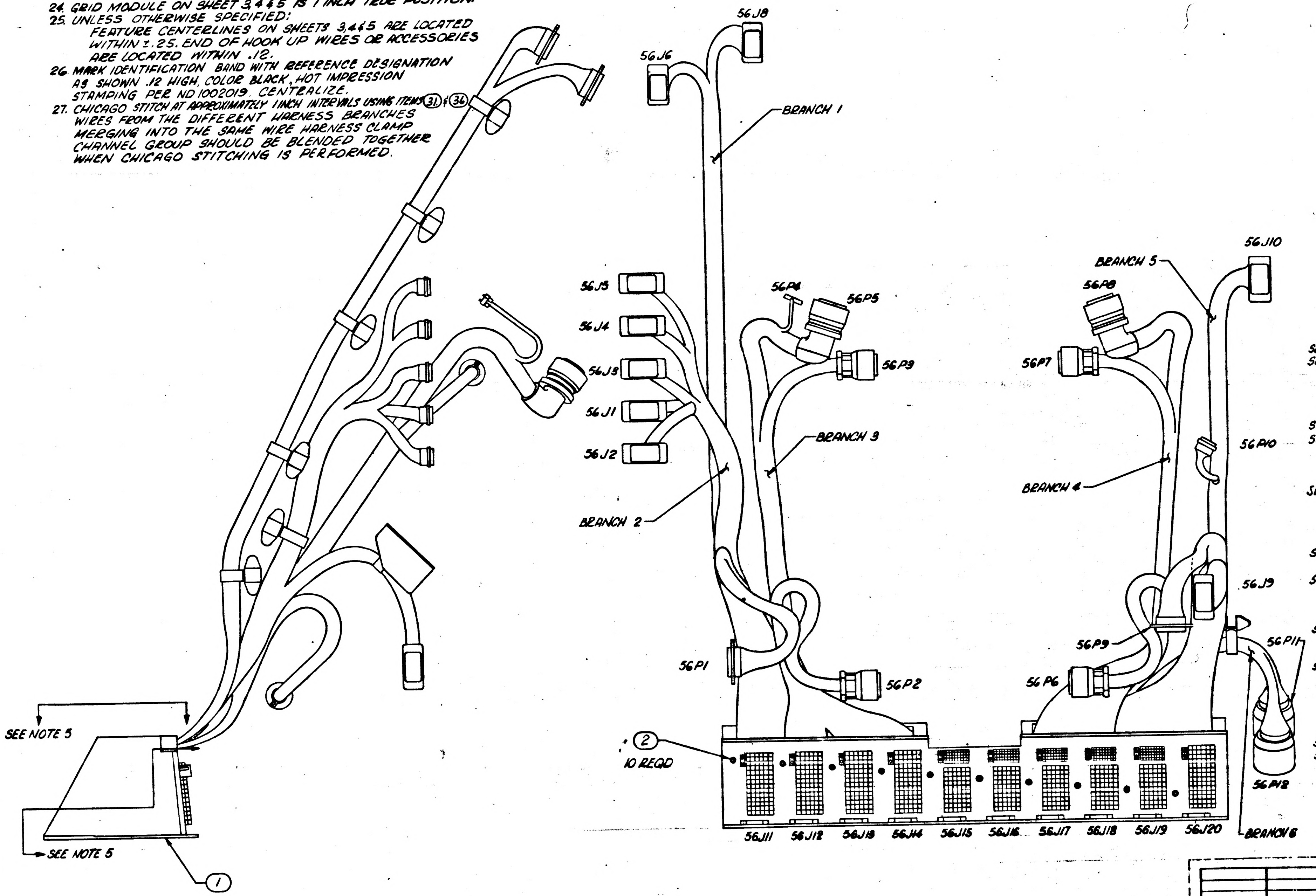
1015056	AGE Harness & PSA End Connector Assembly

1015056

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MAXIMUM ENVELOPE AND "E" POINTS FOR ITEM ㉘ WIRE LIST ARE SHOWN ON SHEET 2.
3. BRANCHES 1, 2 & 3 OF ITEM ㉗ HARNESS ARE SHOWN ON SHEET 3.
4. BRANCHES 4, 5 & 6 OF ITEM ㉗ HARNESS ARE SHOWN ON SHEET 4.
5. MARRIAGE CONFIGURATION OF ITEMS 27 & 28 ARE SHOWN ON SHEET 5.
6. MOUNTING TORQUE FOR ITEM ② IS 6.5 IN/LBS.
7. TERMINATION NUMBERS ARE LISTED IN 1015055 CONDUCTOR CHART.
8. ALL WIRING SHALL BE BELOW THE SURFACE OF THE ENCAPSULATING MATERIAL.
9. TERMINAL BOARDS ARE TO BE LOCATED TO THESE DIMENSIONS BEFORE POTTING.
10. WELD PER ND 1002225.
11. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING
12. ENCAPSULATION ENVELOPE IS SHOWN ON SHEET 6.
13. ENCAPSULATE PER ND 1002002 USING ITEMS ㉞ & ㉟
14. ASSEMBLE AND ENCAPSULATE IN ACCORDANCE WITH ATP1015056 USING ITEM ㉙ PER ND1002236 AND ITEMS ㉜ & ㉝ PER ND1002009 METHOD B.
15. DIMENSIONS TO BE STABLE AFTER POTTING.
16. SERIALIZE & MARK CHARACTERS .12 HIGH, WHITE PER ND 1002023.
17. DIMENSION OR CHARACTERISTIC IS CONTROLLED BY ICDMH01-01003-116.
18. ICDM01-01003-116 ENVELOPE DIMENSIONS ARE 7.000 AND 22.690 RESPECTIVELY; ACTUAL VALUES MAY BE LESS. POTTING SHALL BE FLUSH TO .015 LESS THAN THE ENVELOPE DEFINED BY THE ACTUAL LENGTH AND WIDTH OF THE END CONNECTOR ASSEMBLY.
19. INTERCONNECTION LIST OF AGE HARNESS & END CONNECTOR ASSEMBLY IS 1015057.
20. INTERCONNECTION DIAG OF AGE C/M, LOWER EQUIPMENT BAY IS 1015089.
21. SECURE TO ITEM ㉗ HARNESS USING ITEM ㊱ & ㉛
22. ASSEMBLE AND TEST PER ATP 1015056.
23. INSPECT PER PS 1015056.
24. GRID MODULE ON SHEET 3, 4 & 5 IS 1 INCH TRUE POSITION.
25. UNLESS OTHERWISE SPECIFIED:
    FEATURE CENTERLINES ON SHEETS 3, 4 & 5 ARE LOCATED WITHIN ±.25. END OF HOOK UP WIRES OR ACCESSORIES ARE LOCATED WITHIN .12.
26. MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS SHOWN .12 HIGH, COLOR BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE.
27. CHICAGO STITCH AT APPROXIMATELY 1 INCH INTERVALS USING ITEMS ㉛ & ㊱ WIRES FROM THE DIFFERENT HARNESS BRANCHES MERGING INTO THE SAME WIRE HARNESS CLAMP CHANNEL GROUP SHOULD BE BLENDED TOGETHER WHEN CHICAGO STITCHING IS PERFORMED.

NOTES CONTINUED:
28. BEFORE WIRING APPLY SILICONE RUBBER PER ND1002009 METHOD B, USING ITEMS ㉜ AND ㉝, AROUND ENTIRE LENGTH OF CONNETORS 56J21 AND 56J22 AND OVER THE PORTION OF ITEM 2 WITHIN THE END CONNECTOR.
29. APPLY EPOXY PER ND 1002187 USING ITEMS ㊲ AND ㊳ TO BOND ITEMS ⑮ AND ⑯ TO ITEM ①, AROUND ENTIRE LENGTH OF NOTED SURFACES, AT REAR OF CONNECTORS 56J21 AND 56J22 AND BEHIND CONNECTORS 56J11 THRU 56J20 TO HEIGHT SUFFICIENT TO COVER NYLON INSULATORS.
30. SELECT NOTED ITEMS IN ACCORDANCE WITH ATP REQUIREMENTS AT ENCAPSULATION PHASE OF END CONNECTOR BUILD UP.
31. CRIMP PER ND1002206
32. POT BACK OF CONNECTORS PER ND1002236 USING ITEM ㉙.
33. WIRE WRAP PSA END CONNECTOR ASSY PER ND1002031. — SEE DWG 1015091 FOR ROUTING.
34. LACE HARNESS PER ND1002032.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B2		B1 REPLACES REVISION A WITH CHANGE		20 OCT 64	FK
		B2 CHANGED PER TDRR 16007		6 NOV 64	



B1 REPLACES REVISION A WITH CHANGE

	QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
				011				
				2		44	1021253-6	SPACER
				2		43	1021253-5	SPACER
				1		42	1021253-4	SPACER
				1		41	1021253-3	SPACER
				2		40	1021253-2	SPACER
				2		39	1021253-1	SPACER
SEE NOTE 11				AR		38	1010679	ADHESIVE ACTIVATOR
SEE NOTE 11				AR		37	1010661	EPOXY RESIN
				AR		36	1012507-004	LACING TAPE
				AR		35	1006743-2	ACTIVATOR
				AR		34	1006743-1	RESIN
SEE NOTE 11				AR		33	1006835	AGENT, CURING
SEE NOTE 11				AR		32	1006834	COMPOUND, SILICONE RUBBER
				AR		31	1012507-002	LACING TAPE
				1		30	1021253-8	SPACER
				AR		29	1012503	COMPOUND, POTTING, POLYURETHANE
SEE NOTE 33				1		28	1015058	WIRE LIST AA
				1		27	1015055	WIRING HARNESS A
				21		26	1010811-001	BAND, IDENTIFICATION
				1		25	AN345C10	(1897146-210) NUT, PLAIN HEX
				1		24	1014609	BRACKET, CLAMP
SEE NOTE 11				1		23	1010400-8	CLAMP, LOOP, HINGED
				1		22	1021253-7	SPACER
SEE NOTE 11				3		21	1010400-3	CLAMP, LOOP, HINGED
				1		20	1010400-2	CLAMP, LOOP, HINGED
				1		19	1010400-7	CLAMP, LOOP, HINGED
				5		18	1010400-1	CLAMP, LOOP, HINGED
SEE NOTE 11				1		17	1010705-8	CLAMP, LOOP
				3		16	1008232	CAP, PROTECTIVE
				4		15	1008231	CAP, PROTECTIVE
SEE NOTE 11				6		14	1006783-47	SCREW, BUTTON HD
				1		13	1008164	CABLE CLAMP, LEFT
				1		12	1008165	CABLE CLAMP, RIGHT
				1		11	1008148	CONNECTOR PLATE ASSY (264 PIN)
				1		10	1008149	CONNECTOR PLATE ASSY (293 PIN)
				3		9	MS35649-44	NUT, PLAIN HEX
SEE NOTE 11				1		8	1010618-13	SCREW, BUTTON HD
SEE NOTE 11				3		7	1010618-14	SCREW, BUTTON HD
				4		6	MS35335-57	WASHER, LOCK
				1		5	MS35338-081	WASHER, LOCK
				8		4	MS16995-17	SCREW, HEX SOCKET HD
				4		3	MS16995-10	SCREW, HEX SOCKET HD
				10		2	1008169	PIN, LOCATING
				1		1	1007461-011	END CONNECTOR ASSY, PSA

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
		-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Lo[illegible] DATE 29 SEP 64
CHECKED J. GRIED 15 OCT 64
APPROVAL 27 Oct 64
APPROVAL 10/27/64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

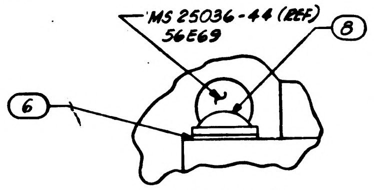
AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE E
1015056
SCALE 1/2
SHEET 1 OF 6

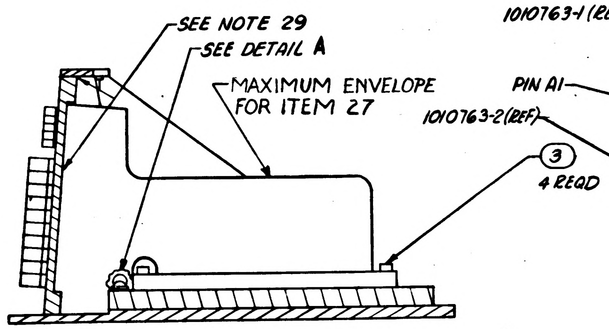
MASTER

1015056

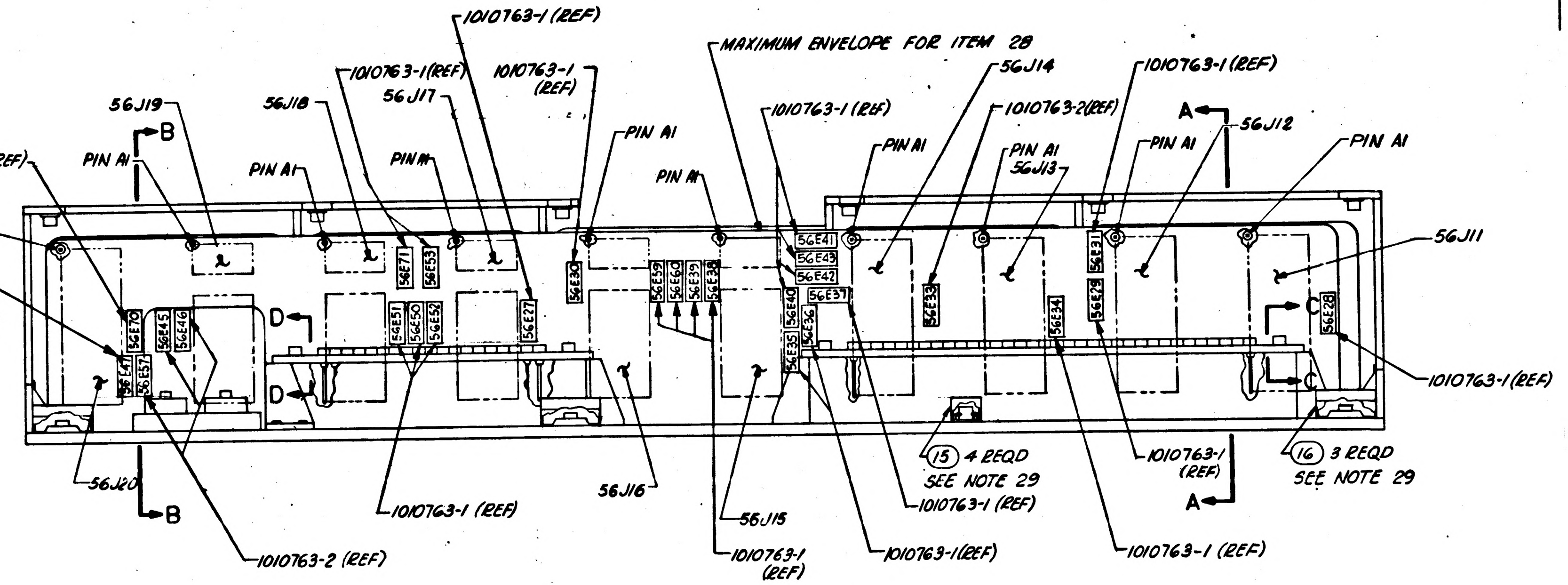
REVISIONS			
	DESCRIPTION	DATE	APPROVAL
B2	B1 REPLACES REVISION A WITH CHANGE	20 OCT 64	FL
	B2 CHANGED PER TDRR 16007		

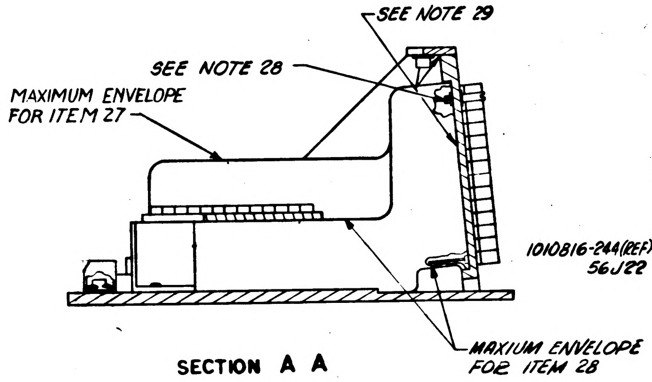

MS 25036-44 (REF)
56E69
8
6

DETAIL A
SCALE 4/1

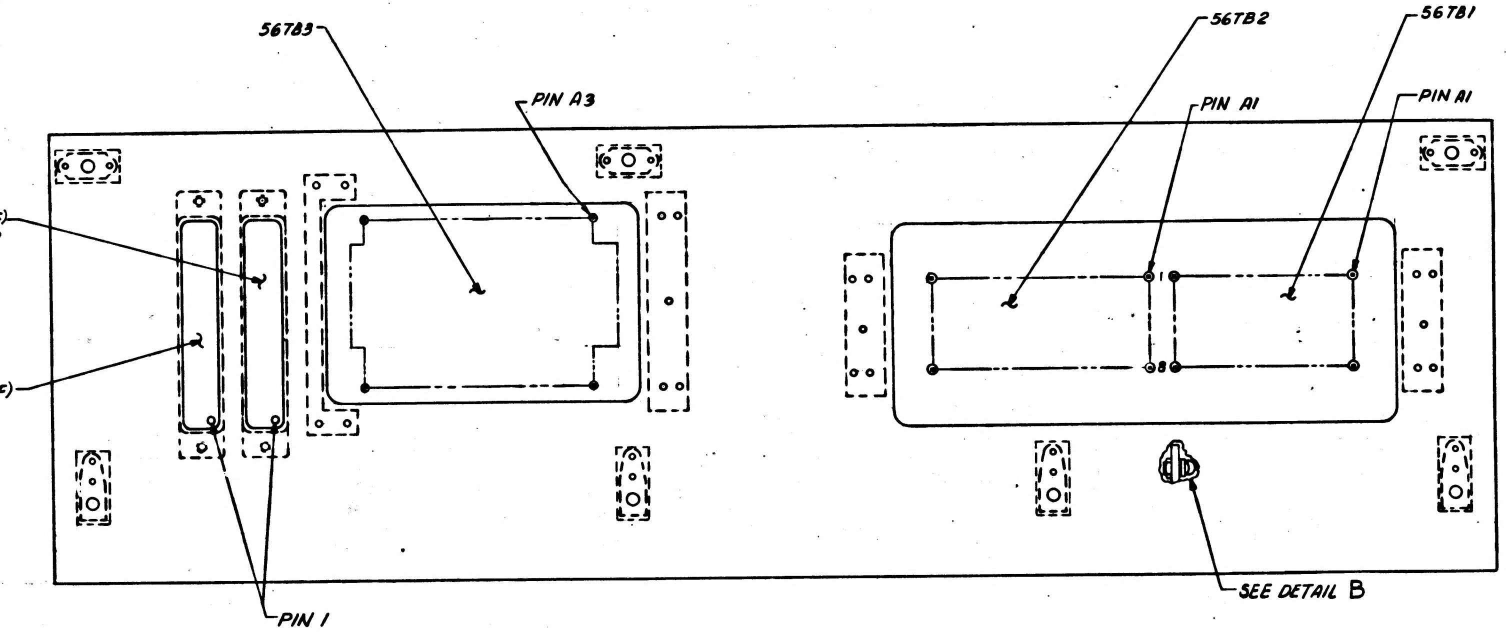

SEE NOTE 29
SEE DETAIL A
MAXIMUM ENVELOPE FOR ITEM 27
3
4 REQD

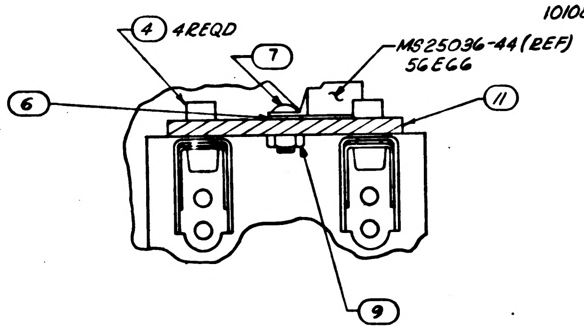
SECTION B B


1010763-1 (REF)
1010763-1(REF)
1010763-1 (REF)
56J19
56J18
56J17
PIN A1
B
PIN A1
PIN A1
1010763-1 (REF)
PIN A1
1010763-2(REF)
PIN A1
56E70
56E47
56E57
56E45
56E46
56E71
56E53
56E51
56E50
56E52
56E27
56E30
56E59
56E60
56E39
56E38
D
D
56J20
B
1010763-2 (REF)
1010763-1 (REF)
56J16
MAXIMUM ENVELOPE FOR ITEM 28
56J14
1010763-1 (REF)
1010763-2(REF)
1010763-1 (REF)
A
56J12
PIN A1
PIN A1
PIN A1
56J13
PIN A1
56J11
56E41
56E43
56E42
56E40
56E36
56E35
56E37
56E33
56E34
56E31
56E29
56E28
C
C
1010763-1 (REF)
15 4 REQD
SEE NOTE 29
16 3 REQD
SEE NOTE 29
1010763-1 (REF)
1010763-1 (REF)
A
56J15
1010763-1 (REF)
1010763-1(REF)
1010763-1 (REF)

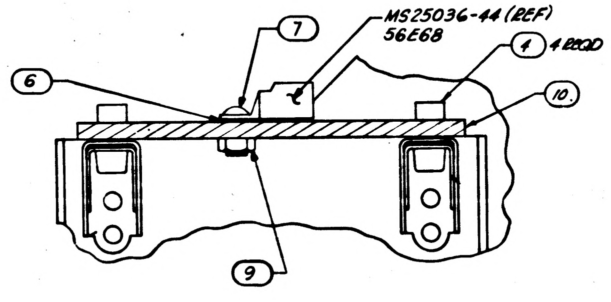

SEE NOTE 29
SEE NOTE 28
MAXIMUM ENVELOPE FOR ITEM 27
MAXIUM ENVELOPE FOR ITEM 28

SECTION A A

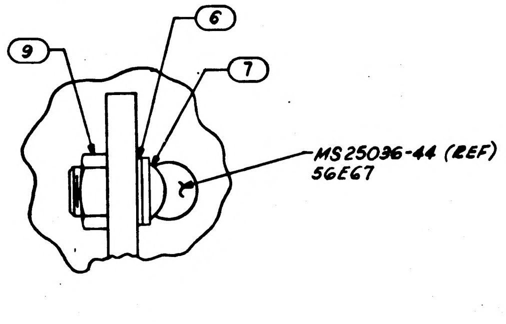

56TB3
PIN A3
56TB2
56TB1
PIN A1
PIN A1
1010816-244(REF)
56J22
1010816-144(REF)
56J21
PIN 1
SEE DETAIL B


4 4 REQD
7
MS25036-44 (REF)
56E66
6
11
9

PARTIAL SECTION C C
SCALE 2/1


7
MS25036-44 (REF)
56E68
4 4 REQD
6
10
9

PARTIAL SECTION D D
SCALE 2/1


9
6
7
MS25036-44 (REF)
56E67

DETAIL B
SCALE 4/1

1015056 B

MASTER

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

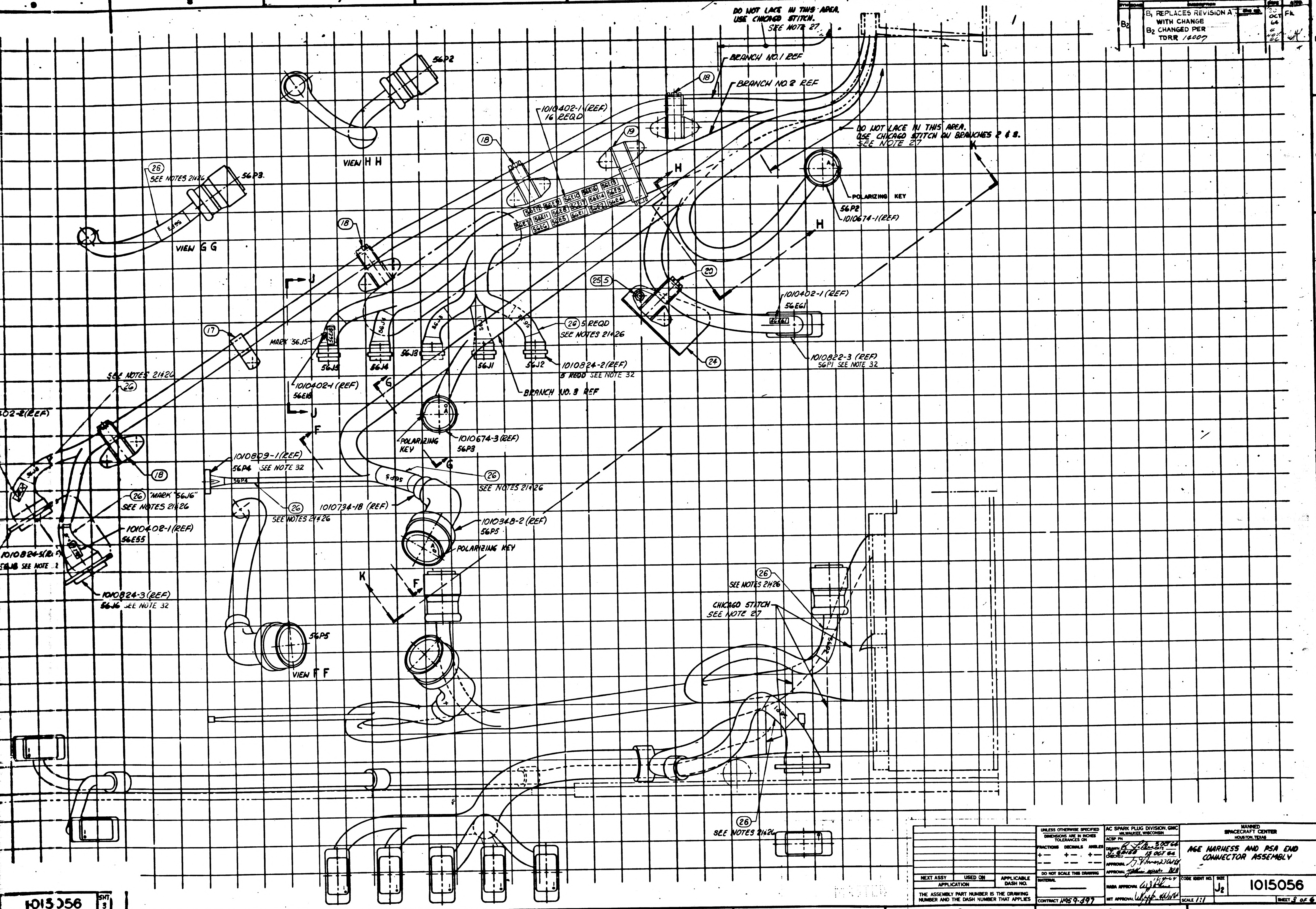
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Lalka 8 OCT 64 DATE
CHECKED J. Gaiser 15 OCT 64
APPROVAL 27 Oct 64
APPROVAL
NASA APPROVAL W. J. 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE E
NASA DRAWING NO 1015056
SCALE 1/1
NAS 9-497
SHEET 2 OF 6


DO NOT LACE IN THIS AREA.
USE CHICAGO STITCH.
SEE NOTE 27.
BRANCH NO.1 REF
BRANCH NO.2 REF
18
56P2
VIEW H H
1010402-1 (REF)
16 REQD
18
19
DO NOT LACE IN THIS AREA.
USE CHICAGO STITCH ON BRANCHES 2 & 3.
SEE NOTE 27
K
H
56E12
56E9
56E10
56E16
56E13
56E7
56E11
56E8
56E17
56E14
56E3
56E6
56E5
56E1
56E2
56E4
POLARIZING KEY
56P2
1010674-1(REF)
H
26
SEE NOTES 21 & 26
56P3.
VIEW G G
18
J
25 5
20
1010402-1 (REF)
56E61
17
MARK '56J5'
56E18
56J5
56J4
56J3
56J1
56J2
26 5 REQD
SEE NOTES 21 & 26
1010824-2 (REF)
5 REQD SEE NOTE 32
24
1010822-3 (REF)
56P1 SEE NOTE 32
SEE NOTES 21 & 26
26
02-2(REF)
1010402-1 (REF)
56E18
J
BRANCH NO. 3 REF
G
F
POLARIZING KEY
1010674-3 (REF)
56P3
G
1010809-1 (REF)
56P4 SEE NOTE 32
56P4
18
26 "MARK "56J6"
SEE NOTES 21 & 26
1010402-1 (REF)
56E55
1010824-5(REF)
56J8 SEE NOTE 32
1010824-3 (REF)
56J6 SEE NOTE 32
26
SEE NOTES 21 & 26
26
SEE NOTES 21 & 26
1010734-18 (REF)
1010348-2 (REF)
56P5
POLARIZING KEY
K
F
56P5
VIEW F F
26
SEE NOTES 21 & 26
CHICAGO STITCH
SEE NOTE 27
26
SEE NOTES 21 & 26
9
8
7
6
5
4
3
2
1
H
G
F
E
D
C
B
A

REVISIONS

SYMBOL	ZONE	DESCRIPTION		DATE	APP
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14007		20 OCT 64 4 NOV 64	FK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. L. Olen 5 OCT 64
J. GRIBB 15 OCT 64
CHECKED
APPROVAL D. V. Immer 27 Oct 64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

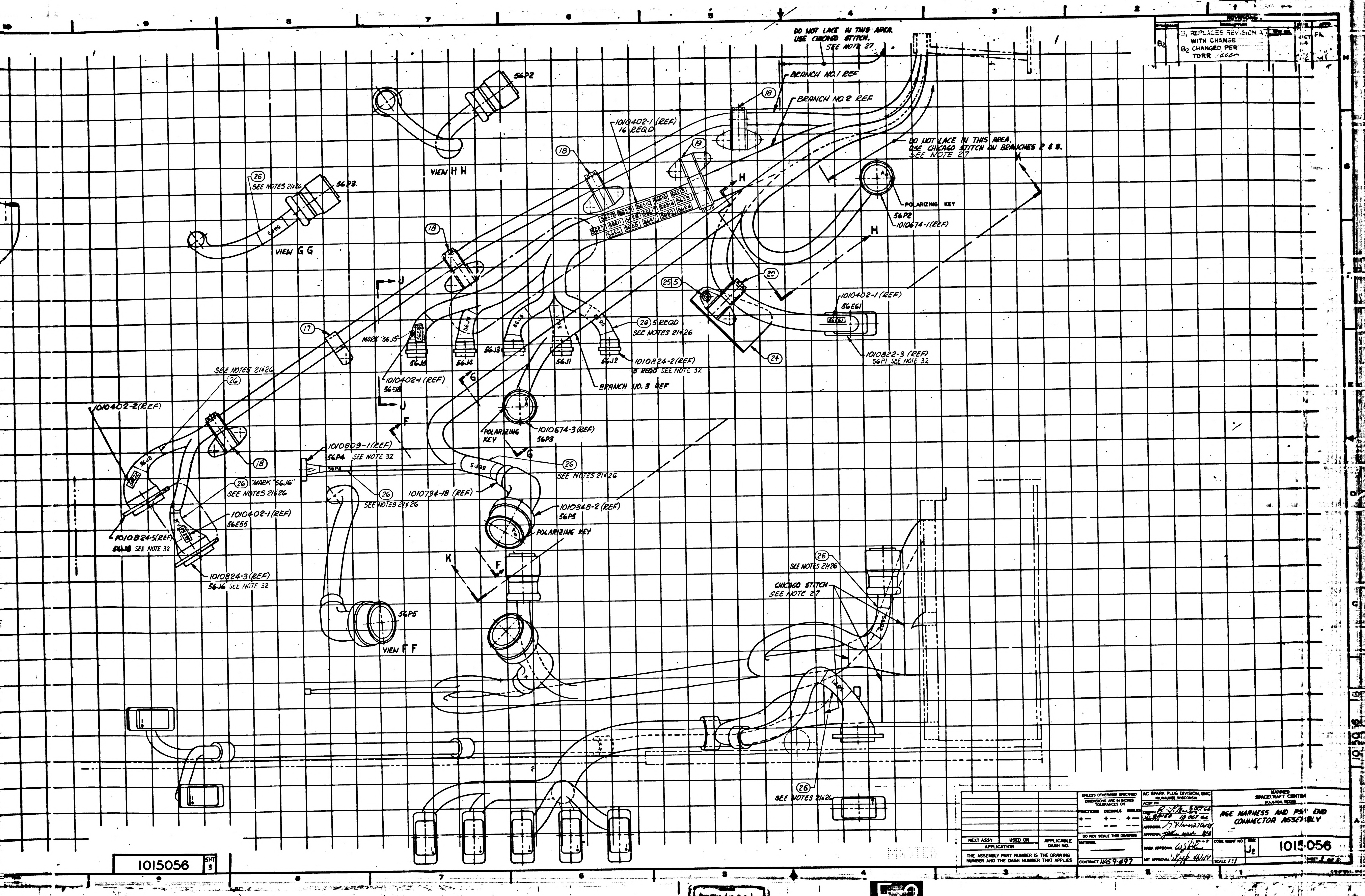
AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE J2
1015056
SCALE 1:1
SHEET 3 OF 6

1015056 SHT 3

1015056

F3



DO NOT LACE IN THIS AREA. USE CHICAGO STITCH. SEE NOTE 27.
BRANCH NO.1 REF
BRANCH NO.2 REF
DO NOT LACE IN THIS AREA. USE CHICAGO STITCH ON BRANCHES 2 & 8. SEE NOTE 27
18
19
56P2
VIEW H H
1010402-1 (REF.) 16 REQD
26
SEE NOTES 21&26
56P3.
VIEW G G
56E8
56E9
56E10
56E16
56E15
56E12
56E13
56E14
56E7
56E11
56E6
56E5
56E1
56E2
56E3
56E4
H
POLARIZING KEY
56P2
1010674-1(REF)
K
J
17
MARK "56J5"
56J5
56J4
56J3
56J1
56J2
26 5 REQD SEE NOTES 21&26
1010824-2(REF) 5 REQD SEE NOTE 32
BRANCH NO. 3 REF
25 5
20
24
1010402-1 (REF) 56E6J
56E6J
1010822-3 (REF) 56P1 SEE NOTE 32
1010402-1 (REF) 56E18
SEE NOTES 21&26
1010402-2(REF)
G
F
1010674-3(REF) 56P3
POLARIZING KEY
1010809-1(REF) 56P4 SEE NOTE 32
56P4
SEE NOTES 21&26
"MARK "56J6" SEE NOTES 21&26
1010734-18 (REF)
1010348-2 (REF) 56P5
POLARIZING KEY
1010402-1(REF) 56E55
1010824-5(REF) 56J8 SEE NOTE 32
1010824-3 (REF) 56J6 SEE NOTE 32
56J8
56P5
VIEW F F
SEE NOTES 21&26
CHICAGO STITCH SEE NOTE 27
SEE NOTES 21&26
9
8
7
6
5
4
3
2
1

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPR
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14007		FK

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

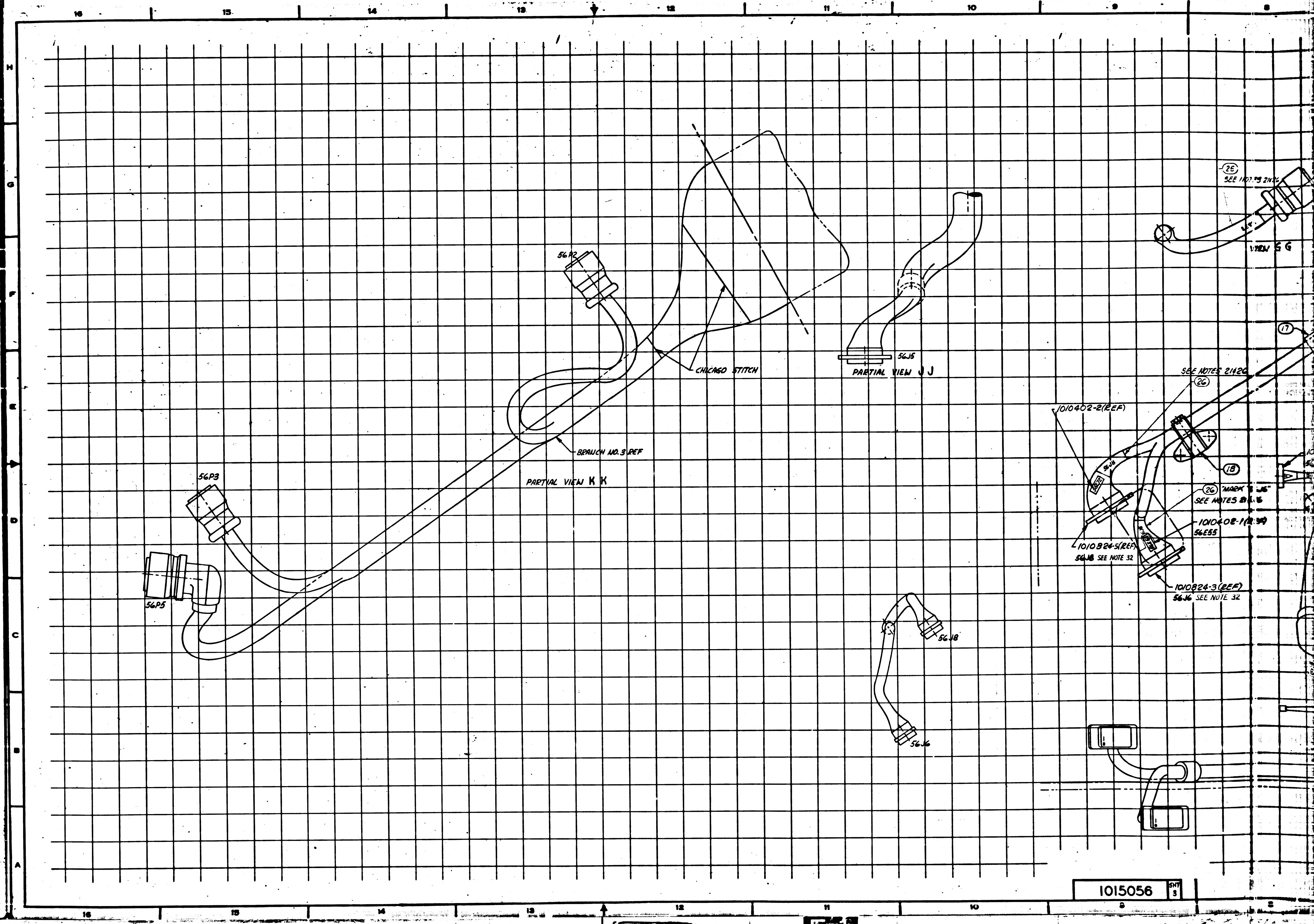
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. L. Klein 5 OCT 64
CHECKED J. Gibbs 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSI END CONNECTOR ASSEMBLY

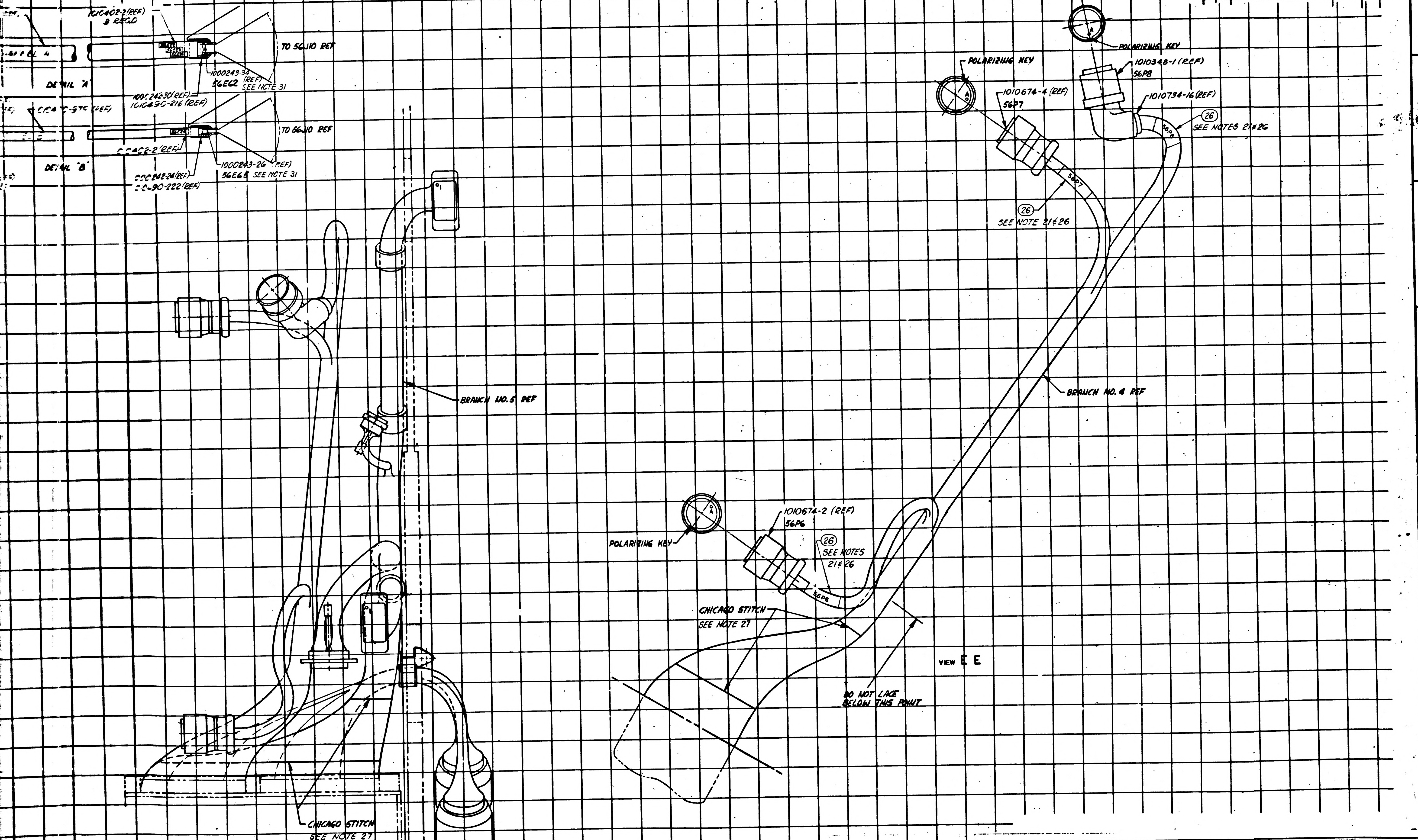
CODE IDENT NO.
SIZE J2
1015056
SCALE 1:1
SHEET 3 OF 6

1015056 SHT 3


16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
56P2
CHICAGO STITCH
BRANCH NO.3 REF
PARTIAL VIEW K K
56P3
56P5
56J5
PARTIAL VIEW J J
56J8
56J6
28
SEE NOTES 21&26
VIEW G G
17
SEE NOTES 21&26
26
1010402-2(REF)
18
56J8
26
"MARK 56J6"
SEE NOTES 21&26
1010402-1(REF)
56E55
1010824-5(REF)
56J8 SEE NOTE 32
1010824-3(REF)
56J6 SEE NOTE 32

1015056 SHT 3

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		B₁ REPLACES REVISION A WITH CHANGE	—	20 OCT 64	FK
B2		B2 CHANGED PER TDRR 14007		4 NOV 64	WK



1C10402-2 (REF) 3 REQD
EL 4
TO 56J10 REF
1000243-34 (REF) 56E62 SEE NOTE 31
DETAIL "A"
1000242-30 (REF)
1C10490-216 (REF)
TO 56J10 REF
2-2 (REF)
DETAIL "B"
1000243-26 (REF) 56E65 SEE NOTE 31
242-24 (REF)
90-222 (REF)
POLARIZING KEY
1010348-1 (REF) 56P8
POLARIZING KEY
1010674-4 (REF) 56P7
1010734-16 (REF)
26 SEE NOTES 21 & 26
56P8
56P7
26 SEE NOTE 21 & 26
BRANCH NO. 5 REF
BRANCH NO. 4 REF
1010674-2 (REF) 56P6
POLARIZING KEY
26 SEE NOTES 21 & 26
56P6
CHICAGO STITCH SEE NOTE 27
VIEW E E
DO NOT LACE BELOW THIS POINT
CHICAGO STITCH SEE NOTE 27

		-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN R. L. Dun DATE 30 SEP 64 CHECKED J. GRIEB 15 OCT 64 APPROVAL 27 Oct 64 APPROVAL 11 Nov 64 NEA	MANNED SPACECRAFT CENTER HOUSTON, TEXAS AGE HARNESS AND PSA END CONNECTOR ASSEMBLY
NEXT ASSY	USED ON	APPLICABLE DASH NO.	DO NOT SCALE THIS DRAWING	NASA APPROVAL 12-4-64	CODE IDENT NO. | SIZE | 1015056
APPLICATION			MATERIAL —	MIT APPROVAL	SCALE 1:1 | SHEET 6 OF 6
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES			CONTRACT NAS 9-497		

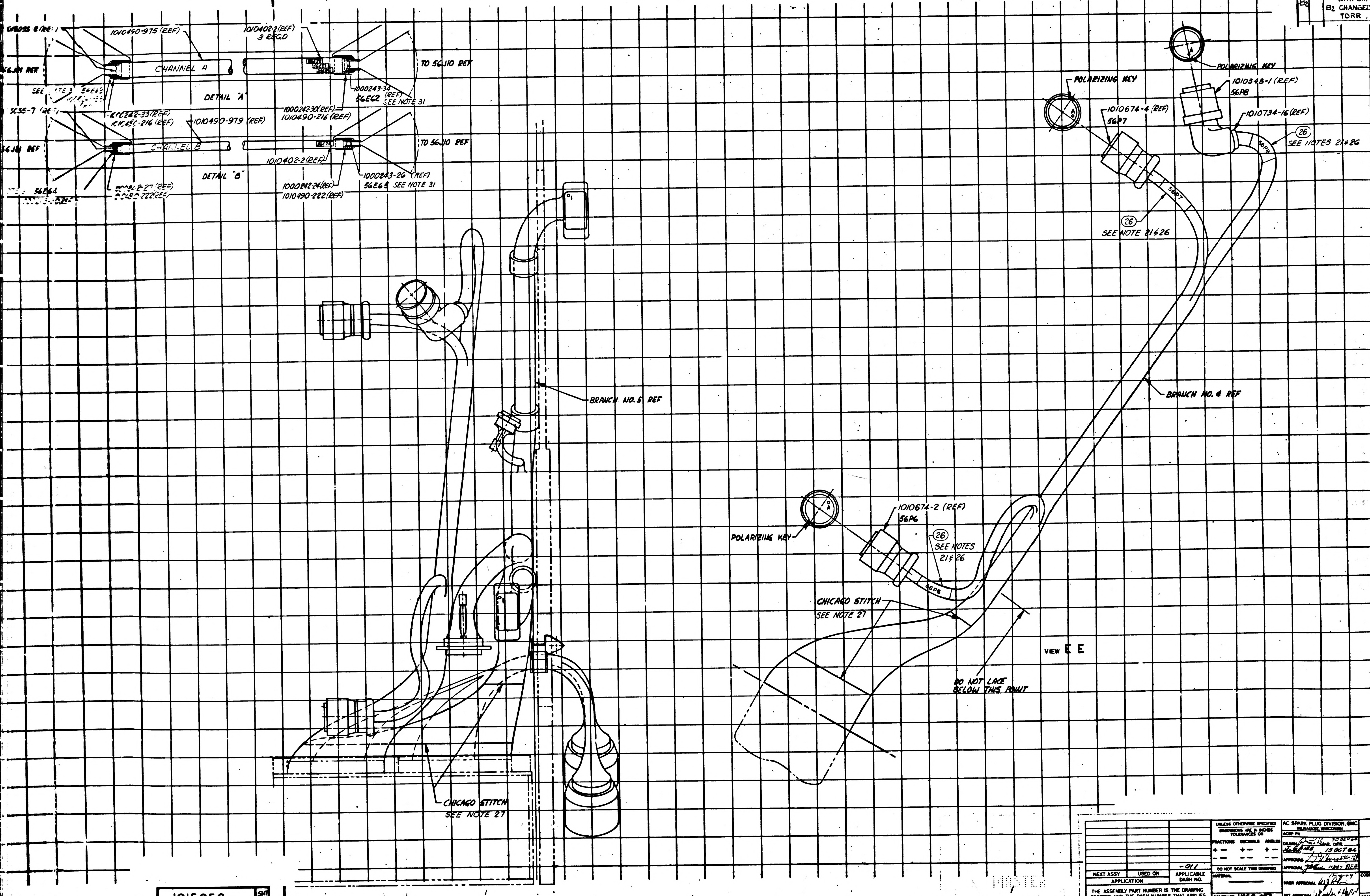
1015056 B

1015056 SHT 4

(34)

F3

SYM	ZONE	DESCRIPTION		DATE
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR , 400		



10
9
8
7
6
5
4
3
2
1
1010490-975 (REF)
1010402-2 (REF) 3 REQD
CHANNEL A
TO 56J10 REF
56J11 REF
SEE NOTE 3
56E63
1000243-34 (REF)
56E62 SEE NOTE 31
DETAIL "A"
3C55-7 (REF)
1000242-33 (REF)
1010490-216 (REF)
1010490-979 (REF)
1000242-30 (REF)
1010490-216 (REF)
CHANNEL B
TO 56J10 REF
56J11 REF
1010402-2 (REF)
DETAIL "B"
1000243-26 (REF)
56E65 SEE NOTE 31
56E64
1000242-27 (REF)
1010490-222 (REF)
1000242-24 (REF)
1010490-222 (REF)
POLARIZING KEY
POLARIZING KEY
1010348-1 (REF)
56P8
1010674-4 (REF)
56P7
1010734-16 (REF)
26
SEE NOTES 21 & 26
56P8
56P7
26
SEE NOTE 21 & 26
BRANCH NO. 5 REF
BRANCH NO. 4 REF
1010674-2 (REF)
56P6
POLARIZING KEY
26
SEE NOTES 21 & 26
56P6
CHICAGO STITCH SEE NOTE 27
VIEW E E
DO NOT LACE BELOW THIS POINT
CHICAGO STITCH SEE NOTE 27

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

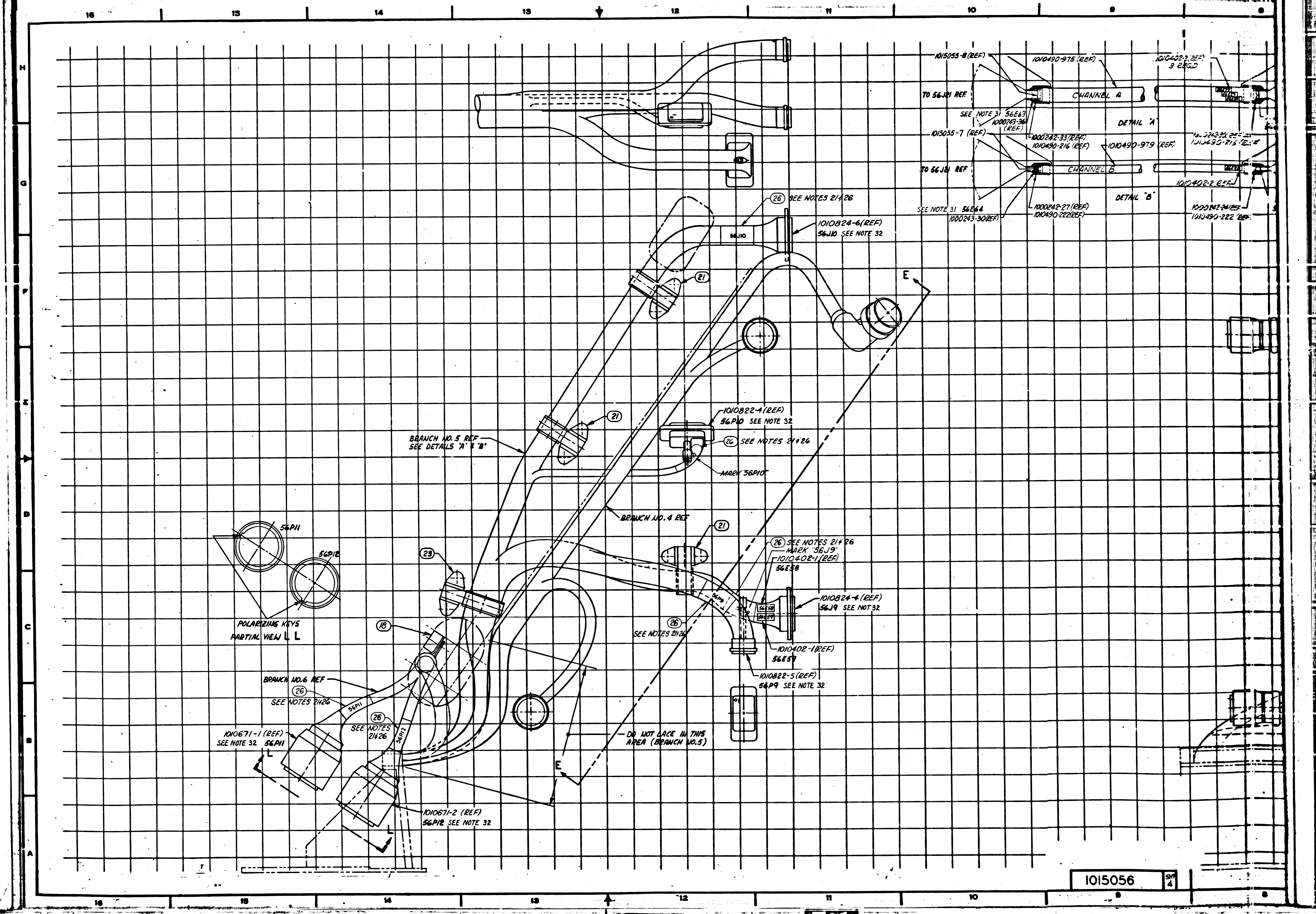
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 30 SEP 64
J. GREBB 15 OCT 64
CHECKED
APPROVAL 27 Oct 64
APPROVAL 10 Nov 64 NEA
NASA APPROVAL 12-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSR SU
CONNECTING ASSEMBLY

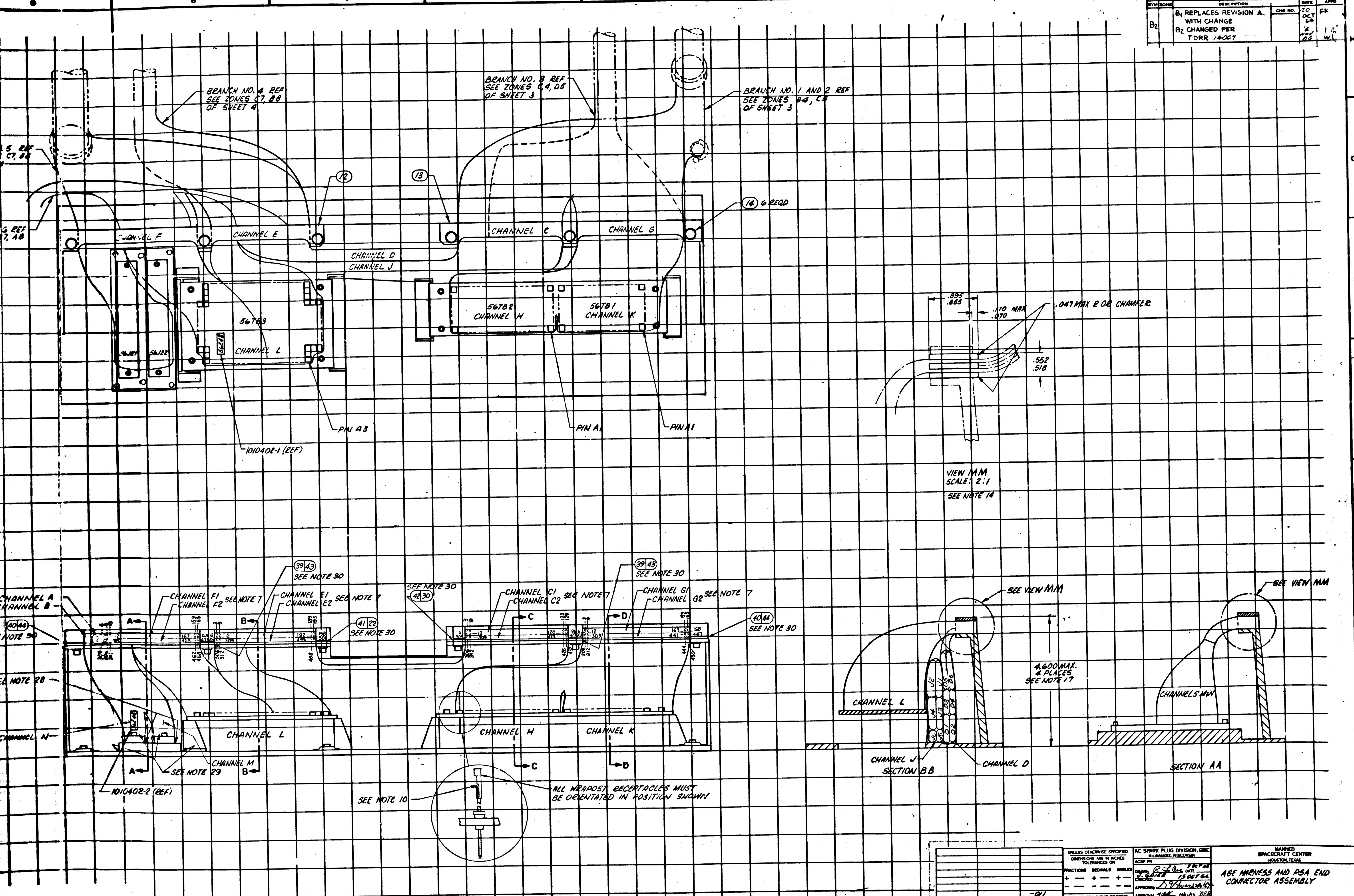
CODE IDENT NO.
SIZE
1015056
SCALE 1:1
SHEET 4

1015056 SHT 4

16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
1015055-8 (REF)
1010490-975 (REF)
TO 56J21 REF
CHANNEL A
SEE NOTE 31 56E63
1000243-36 (REF)
DETAIL "A"
1015055-7 (REF)
1000242-33 (REF)
1010490-216 (REF)
1010490-979 (REF)
TO 56J21 REF
CHANNEL B
1010402-2 REF
DETAIL "B"
SEE NOTE 31 56E64
1000243-30 (REF)
1000242-27 (REF)
1010490-222 (REF)
1010490-222 REF
(26) SEE NOTES 21 & 26
56J10
1010824-6 (REF)
56J10 SEE NOTE 32
(21)
E
(21)
1010822-4 (REF)
56P10 SEE NOTE 32
(26) SEE NOTES 21 & 26
MARK "56P10"
BRANCH NO. 5 REF
SEE DETAILS "A" & "B"
BRANCH NO. 4 REF
56P11
56P12
(21)
(26) SEE NOTES 21 & 26
MARK "56J9"
1010402-1 (REF)
56E58
(29)
56P9
1010824-4 (REF)
56J9 SEE NOT 32
56E58
56E59
POLARIZING KEYS
PARTIAL VIEW L L
(26)
SEE NOTES 21 & 26
1010402-1 (REF)
56E57
(18)
1010822-5 (REF)
56P9 SEE NOTE 32
BRANCH NO. 6 REF
(26)
SEE NOTES 21 & 26
56P11
(26)
SEE NOTES 21 & 26
56P12
1010671-1 (REF)
SEE NOTE 32 56P11
L
DO NOT LACE IN THIS AREA (BRANCH NO. 5)
E
1010671-2 (REF)
56P12 SEE NOTE 32
L

1015056 SH 4

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B2		B1 REPLACES REVISION A. WITH CHANGE		20 OCT 64	FK
		B2 CHANGED PER TDRR 14007		4 NOV 64	WK



BRANCH NO. 4 REF SEE ZONES C7, B8 OF SHEET 4
BRANCH NO. 3 REF SEE ZONES C4, D5 OF SHEET 3
BRANCH NO. 1 AND 2 REF SEE ZONES B4, C8 OF SHEET 3
5 REF C7, B8
6 REF 7, A8
12
13
14 6 REQD
CHANNEL F
CHANNEL E
CHANNEL D
CHANNEL J
CHANNEL C
CHANNEL G
56783
CHANNEL L
56782 CHANNEL H
56781 CHANNEL K
56121
56122
PIN A3
PIN A1
PIN A1
1010402-1 (REF)
.895 .855
.110 MAX .070
.047 MAX R OR CHAMFER
.552 .518
VIEW MM SCALE: 2:1
SEE NOTE 14
CHANNEL A
CHANNEL B
40 44 SEE NOTE 30
SEE NOTE 28
CHANNEL N
CHANNEL F1
CHANNEL F2
SEE NOTE 7
39 43 SEE NOTE 30
CHANNEL E1
CHANNEL E2
SEE NOTE 7
41 22 SEE NOTE 30
SEE NOTE 30 42 30
CHANNEL C1
CHANNEL C2
SEE NOTE 7
39 43 SEE NOTE 30
CHANNEL G1
CHANNEL G2
SEE NOTE 7
40 44 SEE NOTE 30
A
B
C
D
CHANNEL L
CHANNEL M
SEE NOTE 29
1010402-2 (REF)
CHANNEL H
CHANNEL K
SEE NOTE 10
ALL WRAPOST RECEPTACLES MUST BE ORIENTATED IN POSITION SHOWN
SEE VIEW MM
4.600 MAX. 4 PLACES SEE NOTE 17
CHANNEL L
J2
J1
J4
J3
J5
J6
D1
D2
D3
D4
D5
D6
CHANNEL J
SECTION BB
CHANNEL D
SEE VIEW MM
CHANNELS M-N
SECTION AA

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN B. LaBue DATE 5 OCT 64
CHECKED J. GEIEB 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL W J 11-4-64
MIT APPROVAL 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO. | SIZE J2 | 1015056
SCALE 1:1 | SHEET 5 OF 6

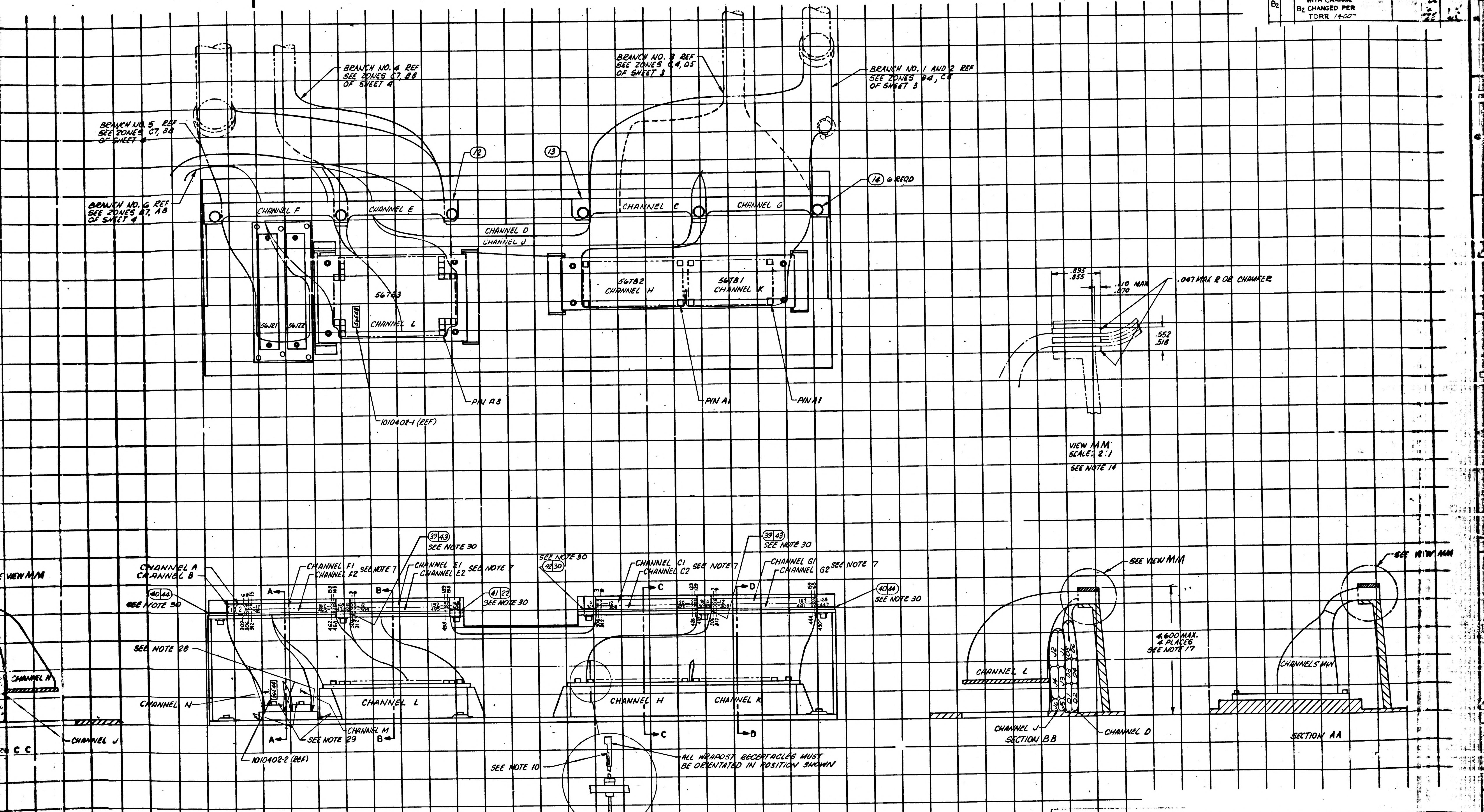
1015056 B

1015056 SHT 5

MASTER

F-3

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPR
B2		B1 REPLACES REVISION A. WITH CHANGE B2 CHANGED PER TDRR 1400-		30 OCT 64 2 NOV 66	FA



BRANCH NO. 4 REF SEE ZONES C7, B8 OF SHEET 4
BRANCH NO. 8 REF SEE ZONES C4, D5 OF SHEET 3
BRANCH NO. 1 AND 2 REF SEE ZONES B4, C5 OF SHEET 3
BRANCH NO. 5 REF SEE ZONES C7, B8 OF SHEET 4
BRANCH NO. 6 REF SEE ZONES B7, A8 OF SHEET 4
12
13
14 6 REQD
CHANNEL F
CHANNEL E
CHANNEL C
CHANNEL G
CHANNEL D
CHANNEL J
56J21
56J22
56J83
56E8
CHANNEL L
56J82 CHANNEL H
56J81 CHANNEL K
PIN A3
PIN A1
PIN A1
1010402-1 (REF)
.895 .855
.110 MAX .070
.047 MAX R OR CHAMFER
.552 .518
VIEW MM SCALE: 2:1 SEE NOTE 14
CHANNEL A
CHANNEL B
SEE VIEW MM
40 44 SEE NOTE 30
CHANNEL F1
CHANNEL F2
SEE NOTE 7
A
B
39 43 SEE NOTE 30
CHANNEL E1
CHANNEL E2
SEE NOTE 7
41 22 SEE NOTE 30
SEE NOTE 30 42 30
CHANNEL C1
CHANNEL C2
SEE NOTE 7
C
39 43 SEE NOTE 30
CHANNEL G1
CHANNEL G2
SEE NOTE 7
D
40 44 SEE NOTE 30
SEE NOTE 28
CHANNEL H
CHANNEL N
CHANNEL J
C C
CHANNEL L
CHANNEL M
SEE NOTE 29
1010402-2 (REF)
CHANNEL H
CHANNEL K
SEE NOTE 10
ALL WRAPOST RECEPTACLES MUST BE ORIENTATED IN POSITION SHOWN
SEE VIEW MM
4.600 MAX. 4 PLACES SEE NOTE 17
CHANNEL L
CHANNEL J
SECTION BB
CHANNEL D
SEE VIEW MM
CHANNELS M+N
SECTION AA

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. LeBlanc DATE 5 OCT 64
J. GRIEB 15 OCT 64
CHECKED
APPROVAL D. V. Brezina 4/64
APPROVAL J. Allen
NASA APPROVAL W. J. Rohn 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEX

AGE HARNESS AND AGA END CONNECTOR ASSEMBLY

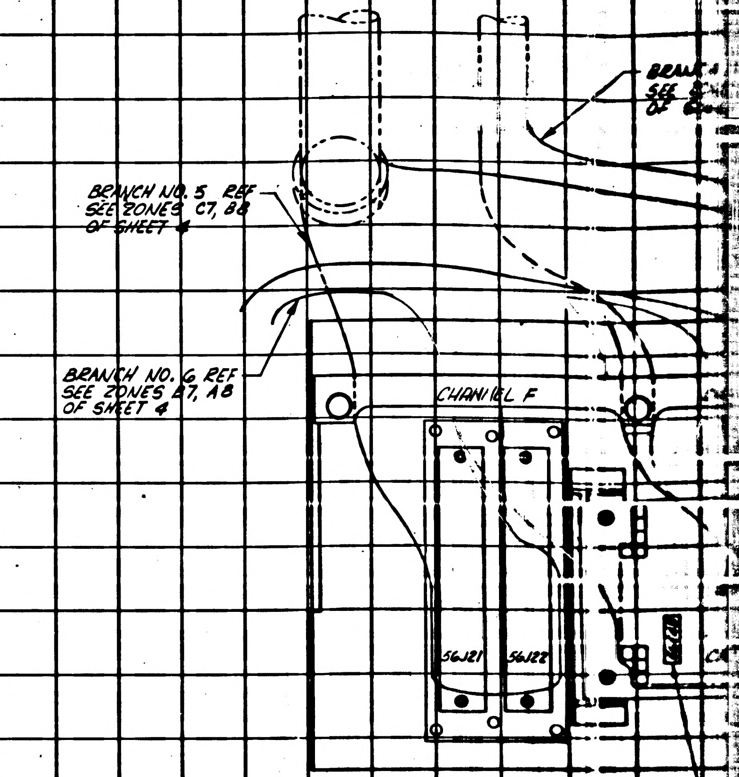
CODE IDENT NO. SIZE J2 1015056
SCALE 1:1 SHEET 5 OF 6

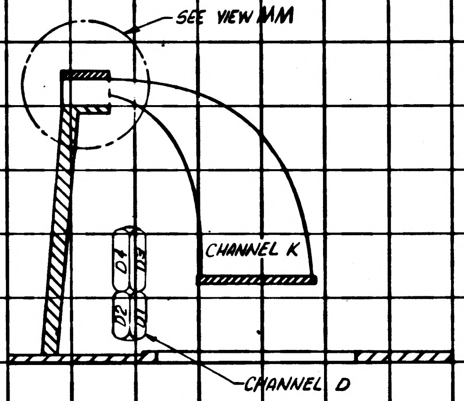
1015056 SHT 5

MASTER

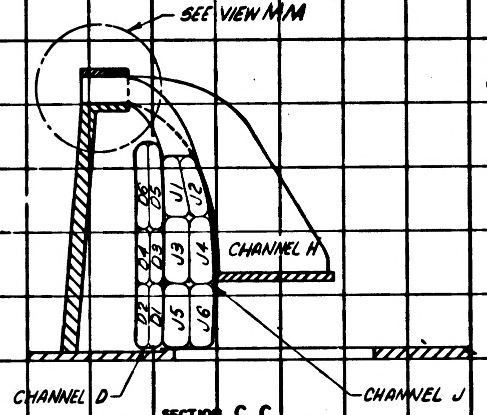
16 15 14 13 12 11 10 9 8

H G F E D C B A

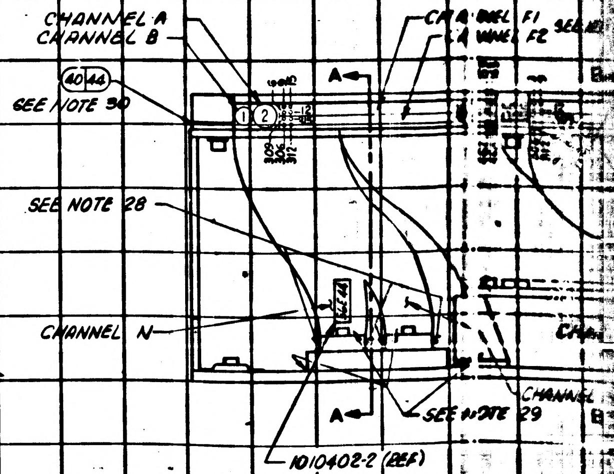

BRANCH NO. 5 REF
SEE ZONES C7, B8
OF SHEET 4
BRANCH NO. 6 REF
SEE ZONES B7, A8
OF SHEET 4
CHANNEL F
56J21
56J22


SEE VIEW MM
CHANNEL K
D4
D3
D2
D1
CHANNEL D

SECTION D D


SEE VIEW MM
CHANNEL H
CHANNEL D
CHANNEL J
J1
J2
J3
J4
J5
J6

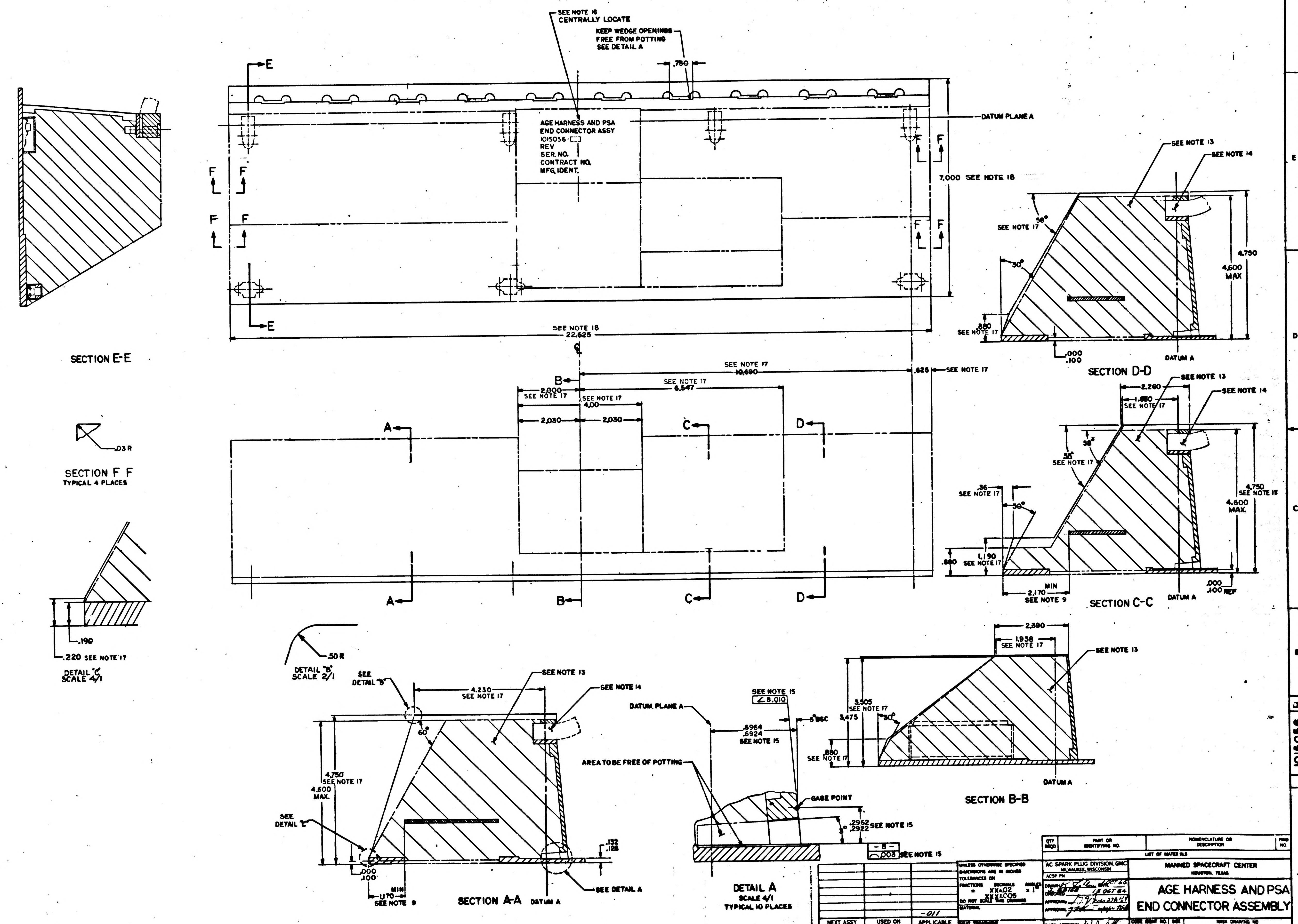
SECTION C C


CHANNEL A
CHANNEL B
40
44
SEE NOTE 30
1
2
SEE NOTE 28
CHANNEL N
A
A
SEE NOTE 29
1010402-2 (REF)
CHANNEL F1
CHANNEL F2
CHANNEL

16 15 14 13 12 11 10 9 8

1015056 SHT 5

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B2	B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 16008	20 OCT 64 4 NOV 64	FK



SEE NOTE 16
CENTRALLY LOCATE
KEEP WEDGE OPENINGS FREE FROM POTTING SEE DETAIL A
.750
AGE HARNESS AND PSA END CONNECTOR ASSY
1015056-
REV
SER. NO.
CONTRACT NO.
MFG. IDENT.
DATUM PLANE A
7.000 SEE NOTE 18
SEE NOTE 18
22.625
E
F
SECTION E-E
.03 R
SECTION F F
TYPICAL 4 PLACES
.190
.220 SEE NOTE 17
DETAIL "C"
SCALE 4/1
.50 R
DETAIL "B"
SCALE 2/1
SEE NOTE 17
10.690
.625
SEE NOTE 17
6.547
2.800
SEE NOTE 17
4.00
2.030
2.030
A
B
C
D
SEE NOTE 13
SEE NOTE 14
58°
30°
SEE NOTE 17
4.750
4.600 MAX
.880
SEE NOTE 17
.000
.100
DATUM A
SECTION D-D
2.260
1.660
SEE NOTE 17
.36
SEE NOTE 17
1.190
SEE NOTE 17
2.170
MIN
SEE NOTE 9
4.750
SEE NOTE 17
4.600 MAX.
.000
.100 REF
SECTION C-C
2.390
1.938
SEE NOTE 17
3.505
3.475
SEE NOTE 17
.880
SEE NOTE 17
SECTION B-B
SEE DETAIL "B"
4.230
SEE NOTE 17
60°
SEE DETAIL "C"
.132
.128
1.170
MIN
SEE NOTE 9
SEE DETAIL A
SECTION A-A
DATUM A
SEE NOTE 15
∠ B .010
DATUM PLANE A
.5 BSC
.6964
.6924
SEE NOTE 15
AREA TO BE FREE OF POTTING
GAGE POINT
3°
.2962
.2922 SEE NOTE 15
-B-
⌒ .003 SEE NOTE 15
DETAIL A
SCALE 4/1
TYPICAL 10 PLACES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
		-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE OCT 64
CHECKED 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 11-9-64
MSC APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015056
SCALE AS NOTED
NAS 9-497
SHEET 6 OF 6

1015056 B

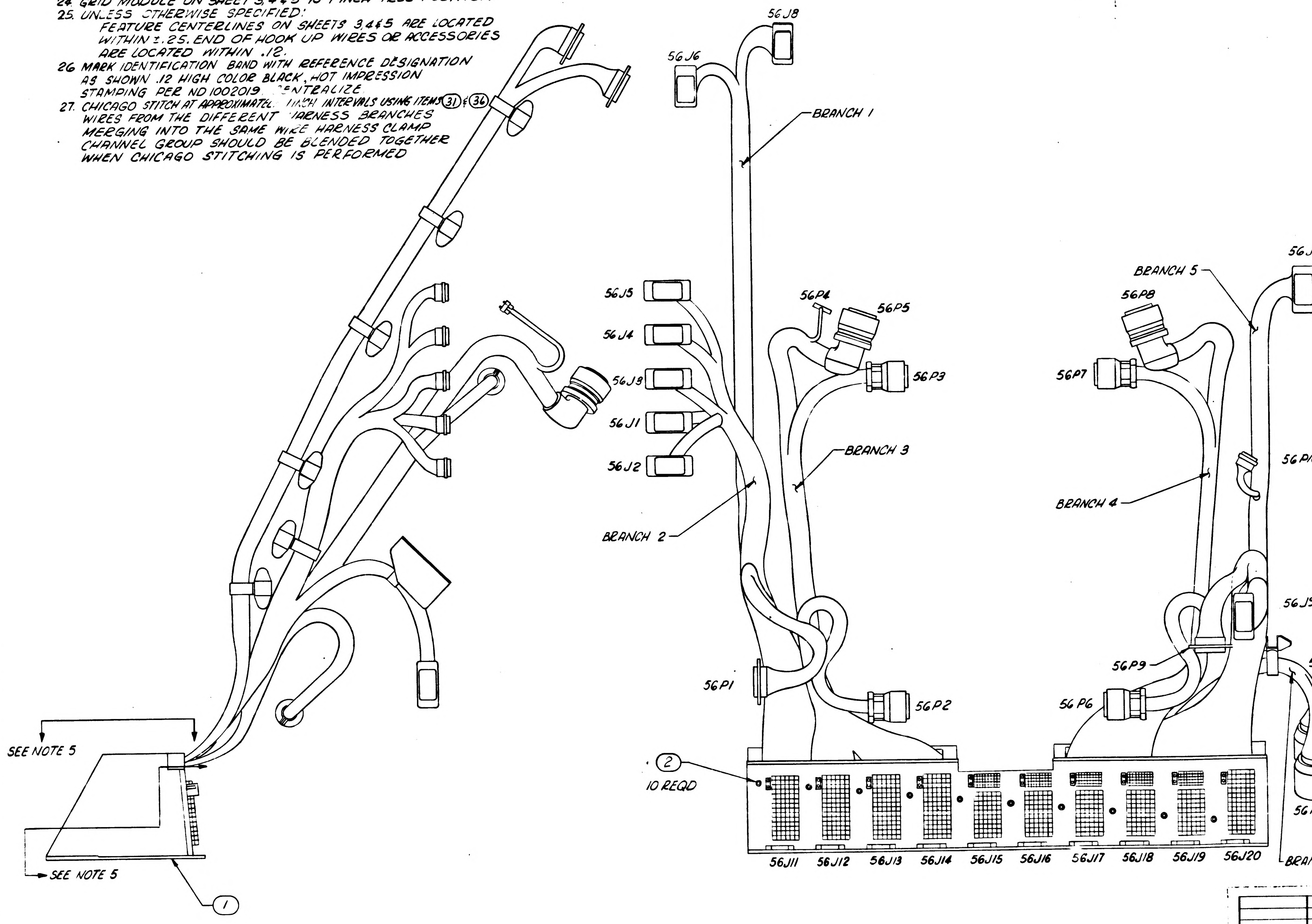
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14007		20 OCT 64 4 NOV 64	FK
C		REVISED PER TDRR 14575		7 DEC 64	JWP / MEM

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MAXIMUM ENVELOPE AND "E" POINTS FOR ITEM (28) WIRE LIST ARE SHOWN ON SHEET 2.
3. BRANCHES 1, 2 & 3 OF ITEM (27) HARNESS ARE SHOWN ON SHEET 3.
4. BRANCHES 4, 5 & 6 OF ITEM (27) HARNESS ARE SHOWN ON SHEET 4.
5. MARRIAGE CONFIGURATION OF ITEMS 27 & 28 ARE SHOWN ON SHEET 5.
6. MOUNTING TORQUE FOR ITEM (2) IS 6.5 IN/LBS.
7. TERMINATION NUMBERS ARE LISTED IN 1015055 CONDUCTOR CHART.
8. ALL WIRING SHALL BE BELOW THE SURFACE OF THE ENCAPSULATING MATERIAL.
9. TERMINAL BOARDS ARE TO BE LOCATED TO THESE DIMENSIONS BEFORE POTTING.
10. WELD PER ND 1002225.
11. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING
12. ENCAPSULATION ENVELOPE IS SHOWN ON SHEET 6.
13. ENCAPSULATE PER ND 1002002 USING ITEMS (34) & (35)
14. ASSEMBLE AND ENCAPSULATE IN ACCORDANCE WITH ATP 1015056 USING ITEM (29) PER ND1002236. ~~AND ITEMS (32) & (33) PER ND1002009 METHOD B~~
15. DIMENSIONS TO BE STABLE AFTER POTTING.
16. SERIALIZE & MARK CHARACTERS .12 HIGH, WHITE PER ND 1002023.
17. DIMENSION OR CHARACTERISTIC IS CONTROLLED BY ICDMH01-01003-116.
18. ICDM01-01003-116 ENVELOPE DIMENSIONS ARE 7.000 AND 22.690 RESPECTIVELY; ACTUAL VALUES MAY BE LESS. POTTING SHALL BE FLUSH TO .015 LESS THAN THE ENVELOPE DEFINED BY THE ACTUAL LENGTH AND WIDTH OF THE END CONNECTOR ASSEMBLY.
19. INTERCONNECTION LIST OF AGE HARNESS & END CONNECTOR ASSEMBLY IS 1015057.
20. INTERCONNECTION DIAG OF AGE C/M, LOWER EQUIPMENT BAY IS 1015089.
21. SECURE TO ITEM (27) HARNESS USING ITEM (36) & (31)
22. ASSEMBLE AND TEST PER ATP 1015056.
23. INSPECT PER PS 1015056
24. GRID MODULE ON SHEET 3, 4 & 5 IS 1 INCH TRUE POSITION.
25. UNLESS OTHERWISE SPECIFIED:
    FEATURE CENTERLINES ON SHEETS 3, 4 & 5 ARE LOCATED WITHIN ±.25. END OF HOOK UP WIRES OR ACCESSORIES ARE LOCATED WITHIN .12.
26. MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS SHOWN .12 HIGH COLOR BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE.
27. CHICAGO STITCH AT APPROXIMATELY 1 INCH INTERVALS USING ITEMS (31) & (36) WIRES FROM THE DIFFERENT HARNESS BRANCHES MERGING INTO THE SAME WIRE HARNESS CLAMP CHANNEL GROUP SHOULD BE BLENDED TOGETHER WHEN CHICAGO STITCHING IS PERFORMED

NOTES CONTINUED:

28. BEFORE WIRING APPLY SILICONE RUBBER PER ND1002009 METHOD B, USING ITEMS (32) AND (33), AROUND ENTIRE LENGTH OF CONNECTORS 56J21 AND 56J22 AND OVER THE PORTION OF ITEM 2 WITHIN THE END CONNECTOR.
29. APPLY EPOXY PER ND 1002187 USING ITEMS (37) AND (38) TO BOND ITEMS (15) AND (16) TO ITEM (1), AROUND ENTIRE LENGTH OF NOTED SURFACES, AT REAR OF CONNECTORS 56J21 AND 56J22 AND BEHIND CONNECTORS 56J11 THRU 56J20 TO HEIGHT SUFFICIENT TO COVER NYLON INSULATORS.
30. SELECT NOTED ITEMS IN ACCORDANCE WITH ATP REQUIREMENTS AT ENCAPSULATION PHASE OF END CONNECTOR BUILD UP.
31. CRIMP PER ND1002206
32. POT BACK OF CONNECTORS PER ND1002236 USING ITEM (29).
33. WIRE WRAP PSA END CONNECTOR ASSY PER ND1002031. SEE DWG 1015091 FOR ROUTING.
34. LACE HARNESS PER ND1002032.



B1 REPLACES REVISION A WITH CHANGE

	QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	2		44	1021253-6	SPACER
	2		43	1021253-5	SPACER
	1		42	1021253-4	SPACER
	1		41	1021253-3	SPACER
	2		40	1021253-2	SPACER
	2		39	1021253-1	SPACER
SEE NOTE 11	AR		38	1010679	ADHESIVE ACTIVATOR
SEE NOTE 11	AR		37	1010661	EPOXY RESIN
	AR		36	1012507-004	LACING TAPE
	AR		35	1010798-2	ACTIVATOR
	AR		34	1010798-1	RESIN
SEE NOTE 11	AR		33	1006835	AGENT, CURING
SEE NOTE 11	AR		32	1006834	COMPOUND, SILICONE RUBBER
	AR		31	1012507-002	LACING TAPE
	1		30	1021253-8	SPACER
	AR		29	1012503	COMPOUND, POTTING, POLYURETHANE
SEE NOTE 33	1		28	1015058	WIRE LIST AA
	1		27	1015055	WIRING HARNESS A
	21		26	1010811-001	BAND, IDENTIFICATION
	1		25	AN345C10	(1897146-110) NUT, PLAIN HEX
	1		24	1014609	BRACKET, CLAMP
SEE NOTE 11	1		23	1010400-8	CLAMP, LOOP, HINGED
	1		22	1021253-7	SPACER
SEE NOTE 11	3		21	1010400-3	CLAMP, LOOP, HINGED
	1		20	1010400-2	CLAMP, LOOP, HINGED
	1		19	1010400-7	CLAMP, LOOP, HINGED
	5		18	1010400-1	CLAMP, LOOP, HINGED
SEE NOTE 11	1		17	1010705-8	CLAMP, LOOP
	3		16	1008232	CAP, PROTECTIVE
	4		15	1008231	CAP, PROTECTIVE
SEE NOTE 11	6		14	1006783-47	SCREW, BUTTON HD
	1		13	1008164	CABLE CLAMP, LEFT
	1		12	1008165	CABLE CLAMP, RIGHT
	1		11	1008148	CONNECTOR PLATE ASSY (264 PIN)
	1		10	1008149	CONNECTOR PLATE ASSY 293 PIN)
	3		9	MS35649-44	NUT, PLAIN HEX
SEE NOTE 11	1		8	1010618-18	SCREW, BUTTON HD
SEE NOTE 11	3		7	1010618-14	SCREW, BUTTON HD
	4		6	MS35335-57	WASHER, LOCK
	1		5	MS35338-081	WASHER, LOCK
	8		4	MS16995-17	SCREW, HEX SOCKET HD
	4		3	MS16995-10	SCREW, HEX SOCKET HD
	10		2	1008163	PIN, LOCATING
	1		1	1007461-011	END CONNECTOR ASSY, PSA

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
		-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

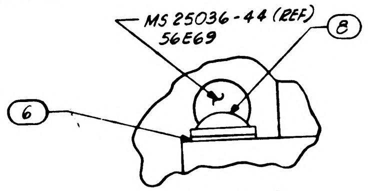
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN F. Lohre DATE 29 SEP 64
CHECKED J. GRIEB 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

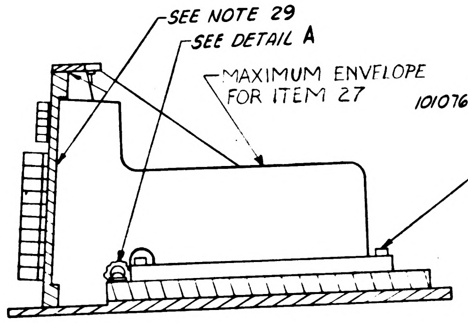
CODE IDENT NO
SIZE E
1015056
SCALE 1/2
SHEET 1 OF 6

	REVISIONS		
	DESCRIPTION	DATE	APPROVAL
B_2	B_1 REPLACES REVISION A WITH CHANGE B_2 CHANGED PER TDRR 4057	20 OCT 64	FK WH
C	REVISED PER TDRR 14575	DEC 64	[illegible]



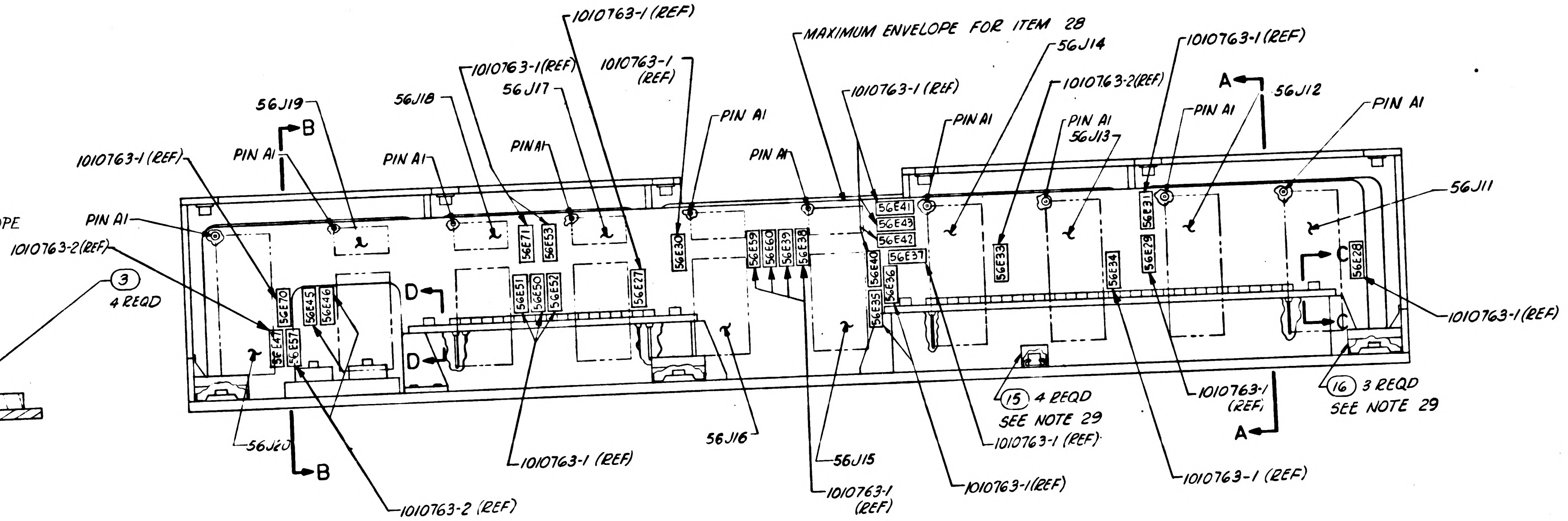
MS 25036-44 (REF)
56E69
8
6

DETAIL A
SCALE 4/1

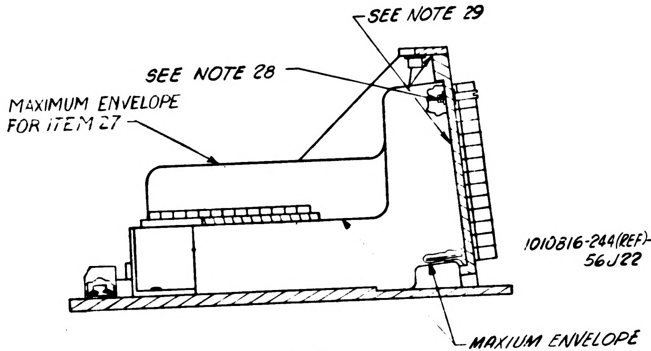


SEE NOTE 29
SEE DETAIL A
MAXIMUM ENVELOPE FOR ITEM 27
3
4 REQD

SECTION B B

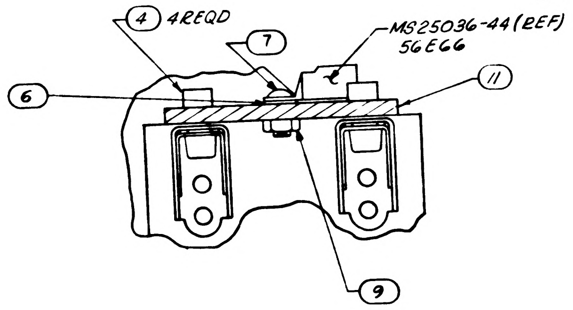


1010763-1 (REF)
MAXIMUM ENVELOPE FOR ITEM 28
56J14
1010763-1 (REF)
56J19
B
56J18
1010763-1 (REF)
56J17
1010763-1 (REF)
PIN A1
1010763-1 (REF)
1010763-2 (REF)
PIN A1
56J13
A
56J12
PIN A1
PIN A1
1010763-1 (REF)
PIN A1
PIN A1
PIN A1
PIN A1
PIN A1
56J11
1010763-2 (REF)
3
4 REQD
56E41
56E43
56E42
56E37
56E70
56E45
56E46
56E47
56E57
56E71
56E53
56E51
56E50
56E52
56E27
56E30
56E59
56E60
56E39
56E38
56E40
56E35
56E36
56E33
56E31
56E29
56E34
56E28
D
D
C
C
1010763-1 (REF)
15 4 REQD
SEE NOTE 29
16 3 REQD
SEE NOTE 29
56J20
B
1010763-1 (REF)
56J16
56J15
1010763-1 (REF)
1010763-1 (REF)
1010763-1 (REF)
1010763-1 (REF)
A
1010763-1 (REF)
1010763-2 (REF)
1010763-1 (REF)



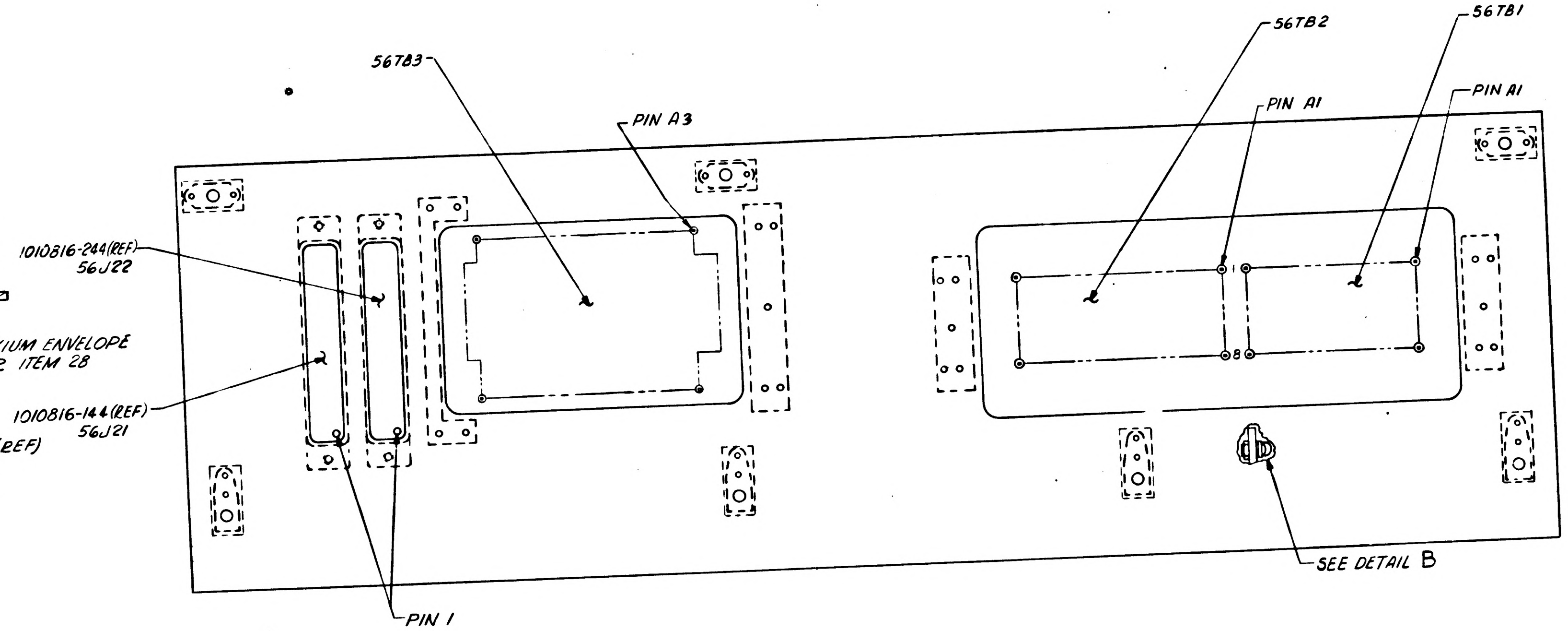
SEE NOTE 29
SEE NOTE 28
MAXIMUM ENVELOPE FOR ITEM 27
MAXIMUM ENVELOPE FOR ITEM 28

SECTION A A

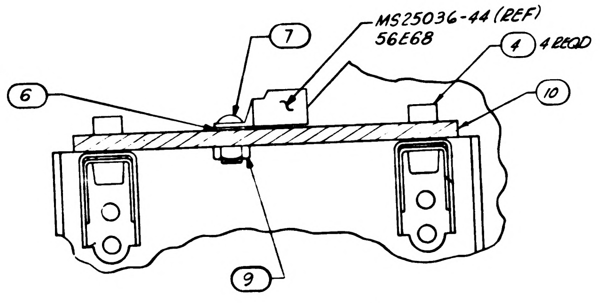


4 4 REQD
7
MS25036-44 (REF)
56E66
6
11
9

PARTIAL SECTION C C
SCALE 2/1

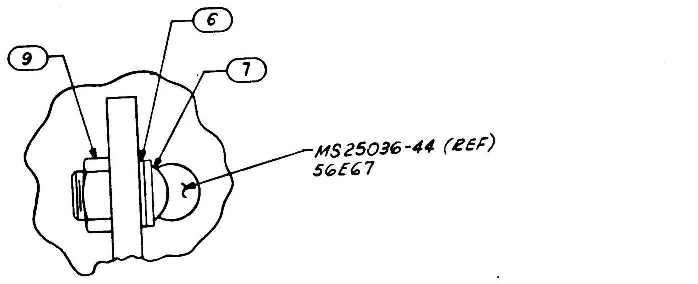


56TB3
56TB2
56TB1
PIN A1
PIN A1
PIN A3
1010816-244 (REF)
56J22
1010816-144 (REF)
56J21
PIN 1
SEE DETAIL B



7
MS25036-44 (REF)
56E68
4 4 REQD
6
10
9

PARTIAL SECTION D D
SCALE 2/1



9
6
7
MS25036-44 (REF)
56E67

DETAIL B
SCALE 4/1

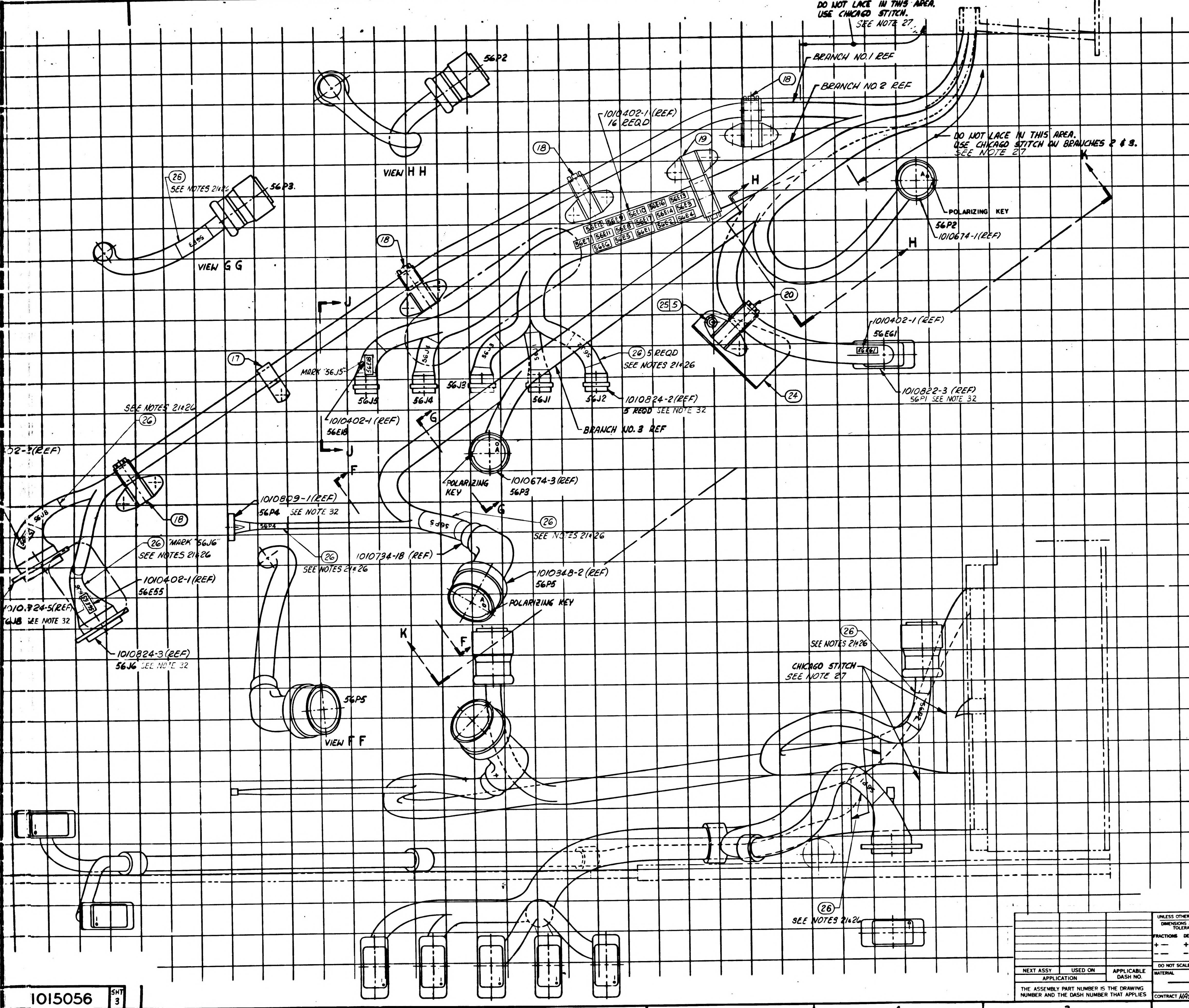
		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± — DECIMALS ± — ANGLES ± —	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON TEXAS	
DO NOT SCALE THIS DRAWING	ACSP PN		
MATERIAL —	DRAWN R. Lehn DATE 8 OCT 64 CHECKED J. GRIEB 15 OCT 64 APPROVAL B.V. [illegible] 27 Oct 64 APPROVAL J. Klein 10/28/64	AGE HARNESS AND PSA END CONNECTOR ASSEMBLY	
HEAT TREATMENT —	NASA APPROVAL [illegible] 11-4-64	CODE IDENT NO	SIZE E — NASA DRAWING NO 1015056
FINAL FINISH —	MIT APPROVAL [illegible] 4 Nov	SCALE 1/1	NAS 9-497 — SHEET 2 OF 6

1015056 C

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPR.
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 12007	20 OCT 64 4 NOV 64	FK
C		REVISED PER TDRR 14575	7 SEC 64	


DO NOT LACE IN THIS AREA. USE CHICAGO STITCH. SEE NOTE 27
BRANCH NO. 1 REF
BRANCH NO. 2 REF
18
56P2
VIEW H H
1010402-1 (REF.) 16 REQD
18
19
DO NOT LACE IN THIS AREA. USE CHICAGO STITCH ON BRANCHES 2 & 3. SEE NOTE 27
K
H
26
SEE NOTES 21 & 26
56P3.
56E12
56E9
56E10
56E16
56E13
56E7
56E11
56E8
56E17
56E14
56E3
56E6
56E5
56E1
56E2
56E4
POLARIZING KEY
56P2
1010674-1 (REF)
H
VIEW G G
18
J
20
25 5
1010402-1 (REF)
56E61
17
MARK "56J5"
56E18
56J5
56J4
56J3
56J1
56J2
26 5 REQD
SEE NOTES 21 & 26
1010824-2 (REF)
5 REQD SEE NOTE 32
1010822-3 (REF)
56P1 SEE NOTE 32
24
SEE NOTES 21 & 26
26
52-3 (REF)
1010402-1 (REF)
56E18
J
G
BRANCH NO. 3 REF
1010674-3 (REF)
56P3
POLARIZING KEY
F
1010809-1 (REF)
56P4 SEE NOTE 32
56P4
G
26
SEE NOTES 21 & 26
56J8
18
26 "MARK "56J6"
SEE NOTES 21 & 26
1010734-18 (REF)
26
SEE NOTES 21 & 26
1010402-1 (REF)
56E55
1010348-2 (REF)
56P5
POLARIZING KEY
1010824-5 (REF)
56J8 SEE NOTE 32
1010824-3 (REF)
56J6 SEE NOTE 32
K
F
56P5
VIEW F F
26
SEE NOTES 21 & 26
CHICAGO STITCH
SEE NOTE 27
26
SEE NOTES 21 & 26

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. LaPlace DATE 5 OCT 64
CHECKED J. GRIEB 15 OCT 64
APPROVAL 27 Oct 64
APPROVAL NEB
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

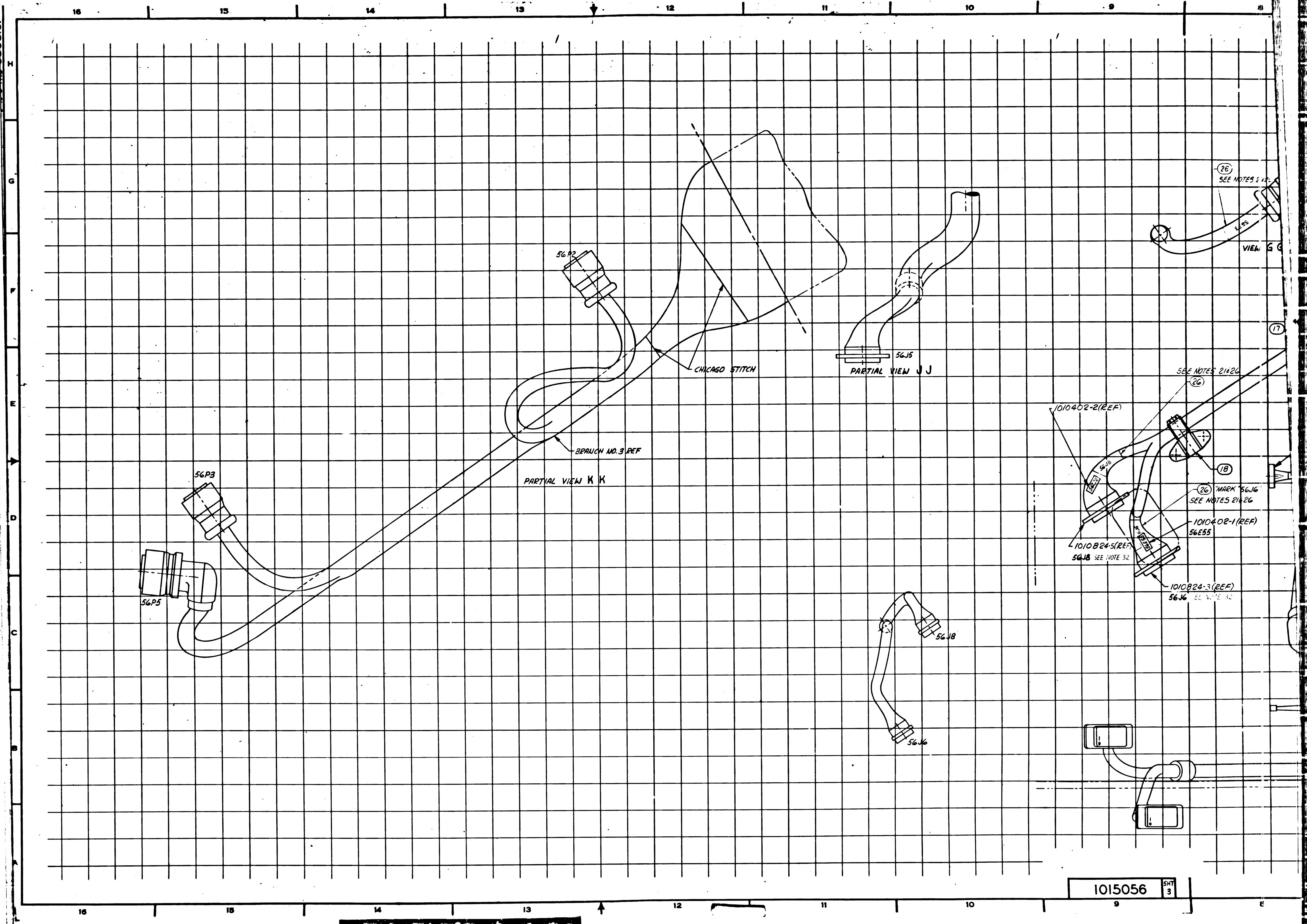
CODE IDENT NO.
SIZE J2
1015056
SCALE 1:1
SHEET 3 OF 6

1015056 SHT 3

1015056

3-7

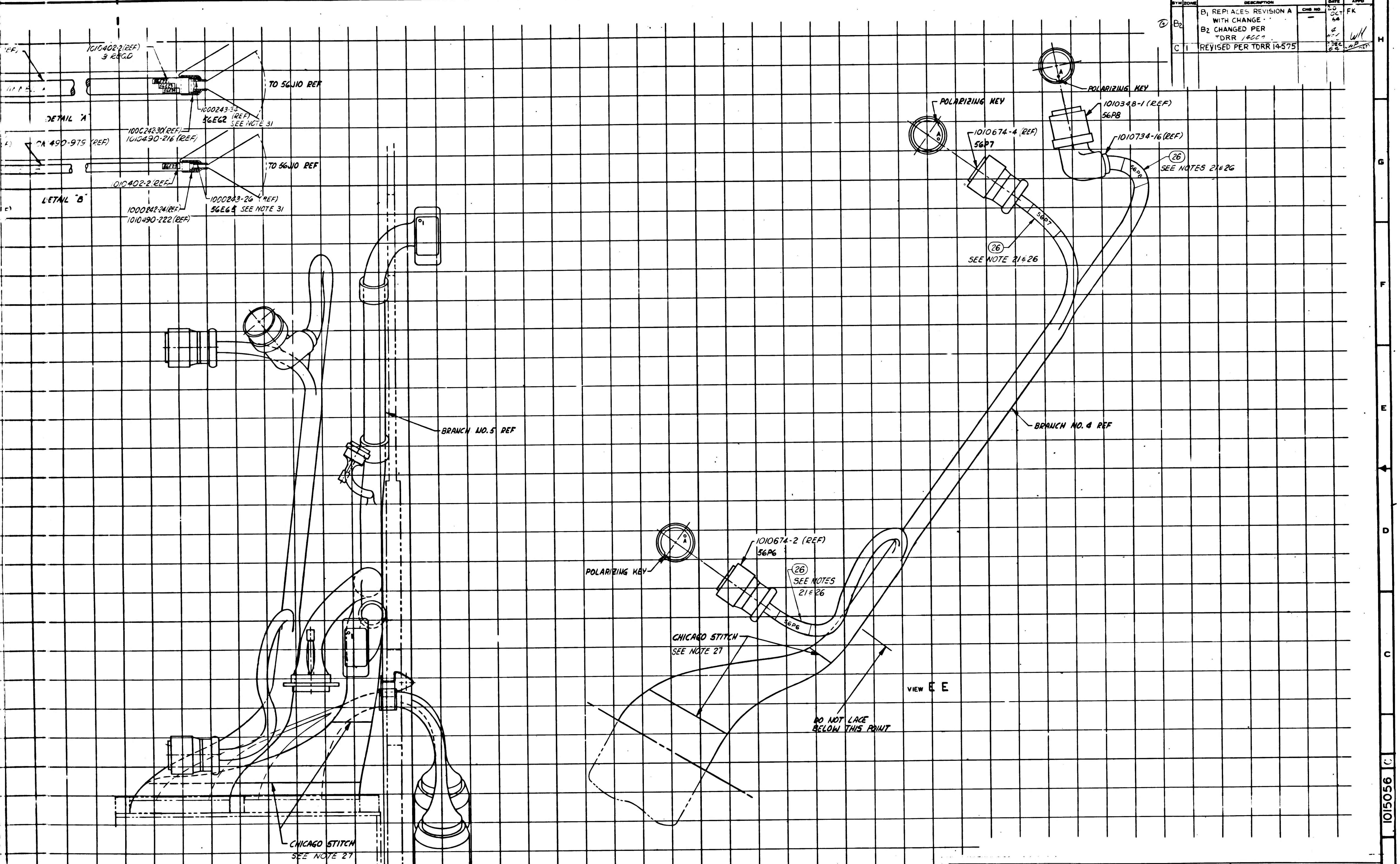
2/1015056


16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
56P2
CHICAGO STITCH
BRANCH NO. 3 REF
PARTIAL VIEW K K
56P3
56P5
56J5
PARTIAL VIEW J J
56J8
56J6
(26)
SEE NOTES 21&26
56E55
VIEW G G
(17)
SEE NOTES 21&26
(26)
1010402-2(REF)
56J8
56E72
(18)
(26) "MARK "56J6"
SEE NOTES 21&26
1010402-1(REF)
56E55
1010824-5(REF)
56J8 SEE NOTE 32
1010824-3(REF)
56J6 SEE NOTE 32

1015056 SHT 3

1/1015056

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14007	—	20 OCT 64 4 NOV	FK WK
C	1	REVISED PER TDRR 14-575		DEC 64	WP



9
8
7
6
5
4
3
2
1
1010402-2 (REF)
3 REQD
TO 56J10 REF
1000243-34 (REF)
56E62 SEE NOTE 31
DETAIL "A"
1000242-30 (REF)
1010490-216 (REF)
490-979 (REF)
TO 56J10 REF
1010402-2 (REF)
DETAIL "B"
1000243-26 (REF)
56E65 SEE NOTE 31
1000242-24 (REF)
1010490-222 (REF)
POLARIZING KEY
1010348-1 (REF)
56P8
1010734-16 (REF)
26
SEE NOTES 21 & 26
POLARIZING KEY
1010674-4 (REF)
56P7
26
SEE NOTE 21 & 26
56P7
56P8
BRANCH NO. 5 REF
BRANCH NO. 4 REF
POLARIZING KEY
1010674-2 (REF)
56P6
26
SEE NOTES 21 & 26
56P6
CHICAGO STITCH
SEE NOTE 27
VIEW E E
DO NOT LACE BELOW THIS POINT
CHICAGO STITCH
SEE NOTE 27
H
G
F
E
D
C
B
A

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 30 SEP 64
J. GRIEB 15 OCT 64
CHECKED
APPROVAL 27 Oct 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

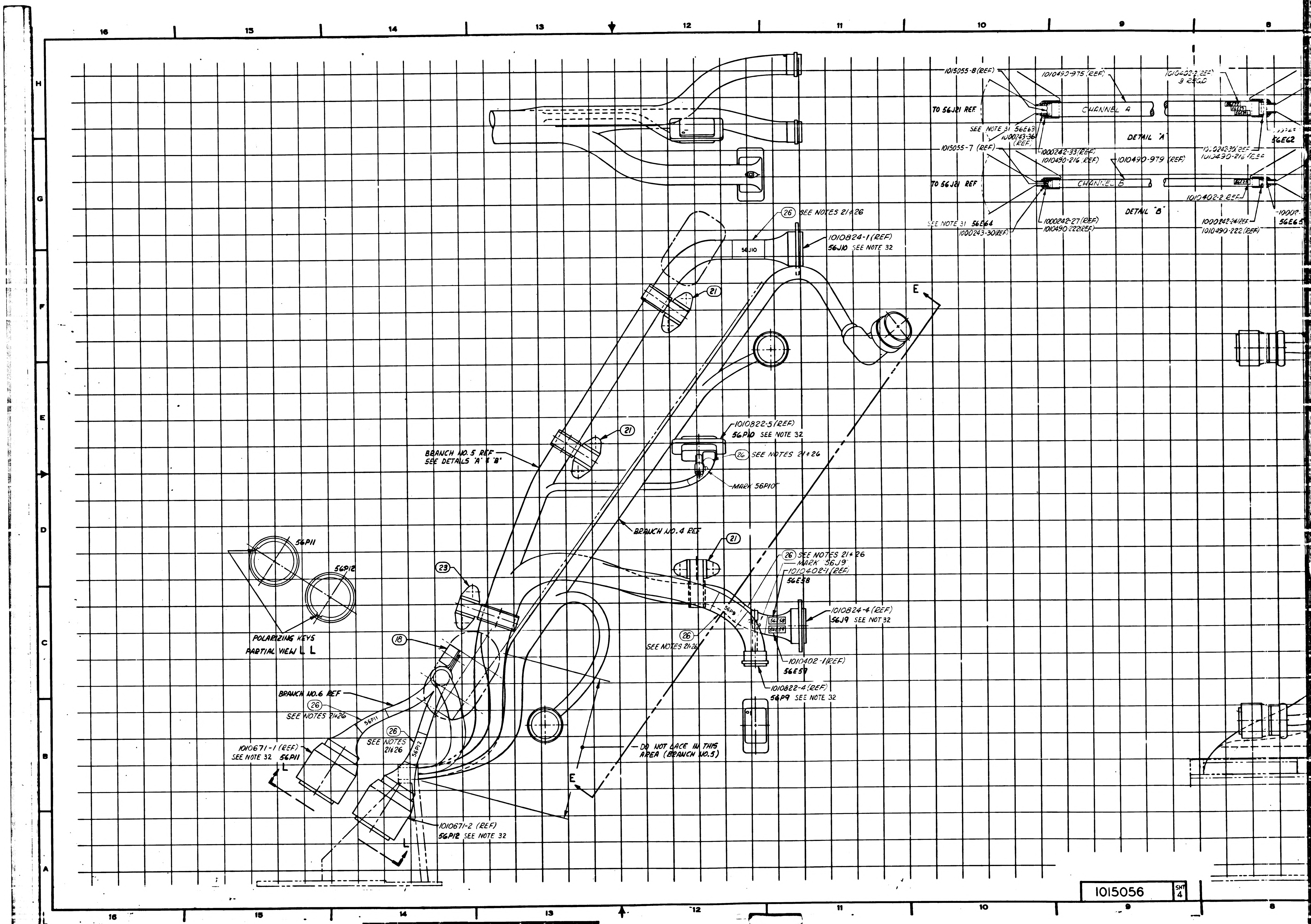
AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO. SIZE 1015056
SCALE 1:1 SHEET 6 OF 6

1015056 C

1015056 SHT 4

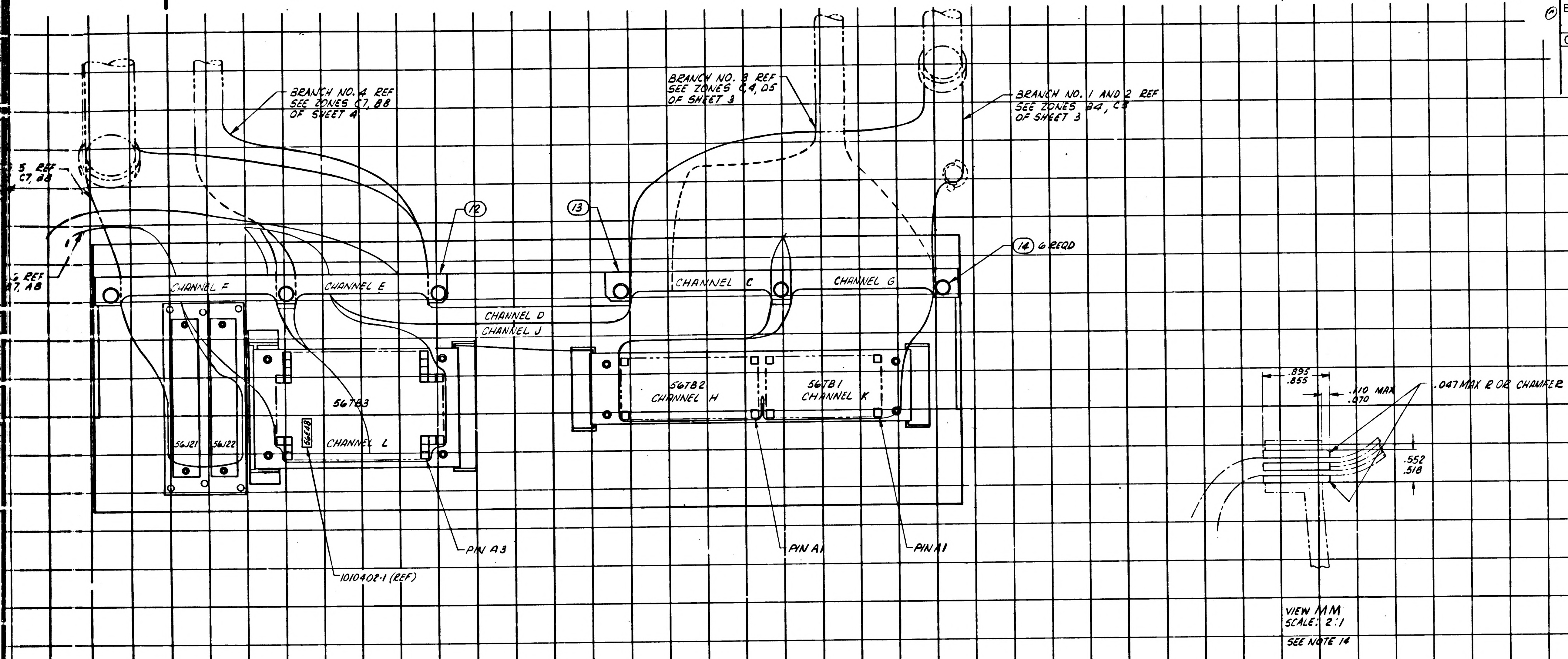
2/1015056

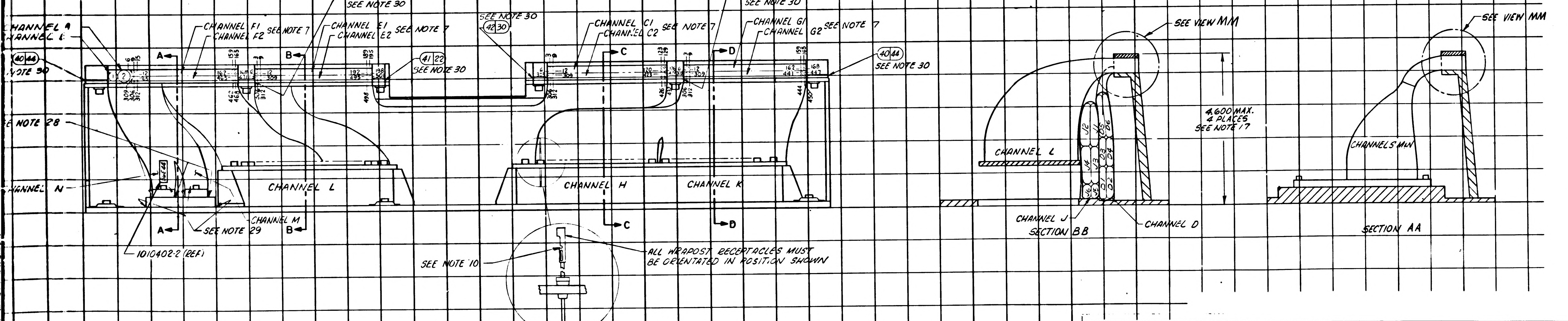

16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
1015055-8 (REF)
1010490-975 (REF)
1010402-2 (REF)
3 REQD
TO 56J21 REF
CHANNEL A
SEE NOTE 31 56E63
1000243-36 (REF)
DETAIL "A"
56E62
1015055-7 (REF)
1000242-33 (REF)
1010490-216 (REF)
1010490-979 (REF)
1000242-30 (REF)
1010490-216 (REF)
TO 56J21 REF
CHANNEL B
1010402-2 REF
DETAIL "B"
SEE NOTE 31 56E64
1000243-30 (REF)
1000242-27 (REF)
1010490-222 (REF)
1000242-24 (REF)
1010490-222 (REF)
56E65
26 SEE NOTES 21 & 26
56J10
1010824-1 (REF)
56J10 SEE NOTE 32
21
E
1010822-5 (REF)
56P10 SEE NOTE 32
26 SEE NOTES 21 & 26
MARK "56P10"
BRANCH NO. 5 REF
SEE DETAILS "A" & "B"
BRANCH NO. 4 REF
21
56P11
56P12
23
26 SEE NOTES 21 & 26
MARK "56J9"
1010402-1 (REF)
56E58
1010824-4 (REF)
56J9 SEE NOT 32
56P9
26
SEE NOTES 21 & 26
1010402-1 (REF)
56E57
1010822-4 (REF)
56P9 SEE NOTE 32
POLARIZING KEYS
PARTIAL VIEW L L
18
BRANCH NO. 6 REF
26
SEE NOTES 21 & 26
56P11
26
SEE NOTES 21 & 26
56P12
1010671-1 (REF)
SEE NOTE 32 56P11
L
DO NOT LACE IN THIS AREA (BRANCH NO. 5)
E
1010671-2 (REF)
56P12 SEE NOTE 32
L

1015056 SHT 4

1/1015056

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14307		20 OCT 64 4 NOV 64	FK
C		REVISED PER TDRR 14575		DEC 64	


BRANCH NO. 4 REF
SEE ZONES C7, B8
OF SHEET 4
5 REF
C7, B8
REF
7, A8
1
12
13
BRANCH NO. 3 REF
SEE ZONES C4, D5
OF SHEET 3
BRANCH NO. 1 AND 2 REF
SEE ZONES B4, C5
OF SHEET 3
14 6 REQD
CHANNEL F
CHANNEL E
CHANNEL C
CHANNEL G
CHANNEL D
CHANNEL J
56TB3
CHANNEL L
56J21
56J22
56E48
56TB2
CHANNEL H
56TB1
CHANNEL K
PIN A3
PIN A1
PIN A1
1010402-1 (REF)
.895
.855
.110 MAX
.070
.047 MAX R OR CHAMFER
.552
.518
VIEW MM
SCALE: 2:1
SEE NOTE 14


CHANNEL A
CHANNEL B
40 44
NOTE 30
CHANNEL F1
CHANNEL F2
SEE NOTE 7
A
B
39 43
SEE NOTE 30
CHANNEL E1
CHANNEL E2
SEE NOTE 7
41 22
SEE NOTE 30
SEE NOTE 30
42 30
CHANNEL C1
CHANNEL C2
SEE NOTE 7
C
D
39 43
SEE NOTE 30
CHANNEL G1
CHANNEL G2
SEE NOTE 7
40 44
SEE NOTE 30
1
2
6
9
15
12
315
309
306
312
159
165
162
465
462
468
168
471
6
3
9
12
309
306
312
189
195
192
495
198
501
498
6
303
12
309
306
312
123
129
120
423
426
432
126
429
6
303
3
9
12
309
306
312
159
165
162
441
168
447
444
450
NOTE 28
CHANNEL N
56E44
CHANNEL L
CHANNEL M
SEE NOTE 29
A
B
1010402-2 (REF)
CHANNEL H
CHANNEL K
C
D
SEE NOTE 10
ALL WRAPOST RECEPTACLES MUST
BE ORIENTATED IN POSITION SHOWN
SEE VIEW MM
4.600 MAX.
4 PLACES
SEE NOTE 17
CHANNEL L
J2
J1
D5
D6
J4
J3
D3
D4
J6
J5
D1
D2
CHANNEL J
SECTION BB
CHANNEL D
SEE VIEW MM
CHANNELS M&N
SECTION AA

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. LeDue DATE 5 OCT 64
CHECKED J. GRIEB 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

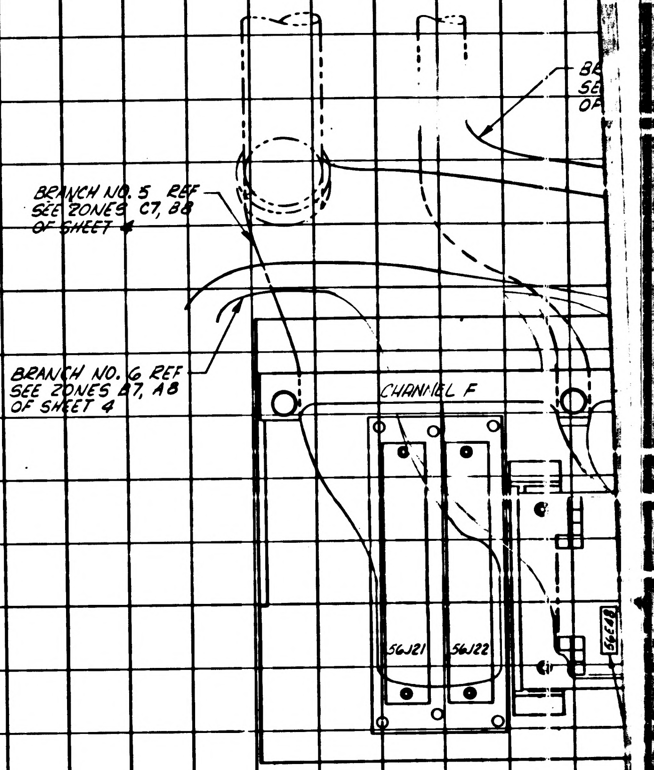
AGE HARNESS AND PSA END
CONNECTOR ASSEMBLY

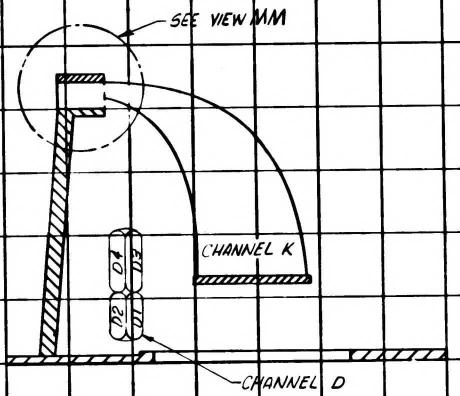
CODE IDENT NO.
SIZE J2
1015056
SCALE 1:1
SHEET 5 OF 6

1015056 SHT 5

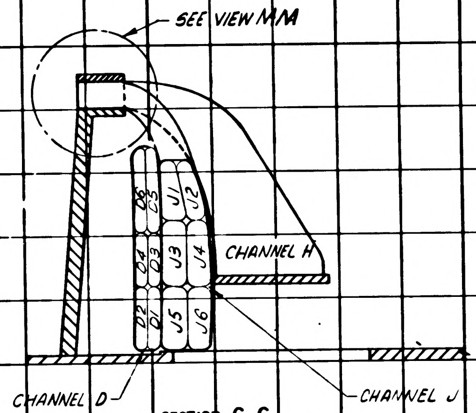
1015056 C

2 / 1015056

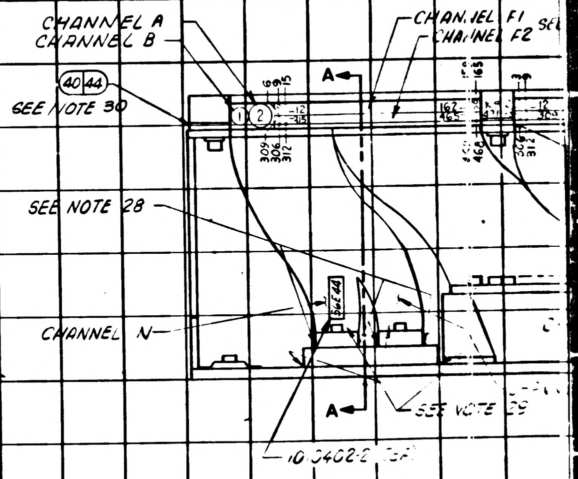

BRANCH NO. 5 REF
SEE ZONES C7, B8
OF SHEET 4
BRANCH NO. 6 REF
SEE ZONES B7, A8
OF SHEET 4
CHANNEL F
56J21
56J22
56E48
BE
SE
OF


SEE VIEW MM
D4
D3
D2
D1
CHANNEL K
CHANNEL D

SECTION D D


SEE VIEW MM
D6
D5
J1
J2
D4
D3
J3
J4
D2
D1
J5
J6
CHANNEL H
CHANNEL D
CHANNEL J

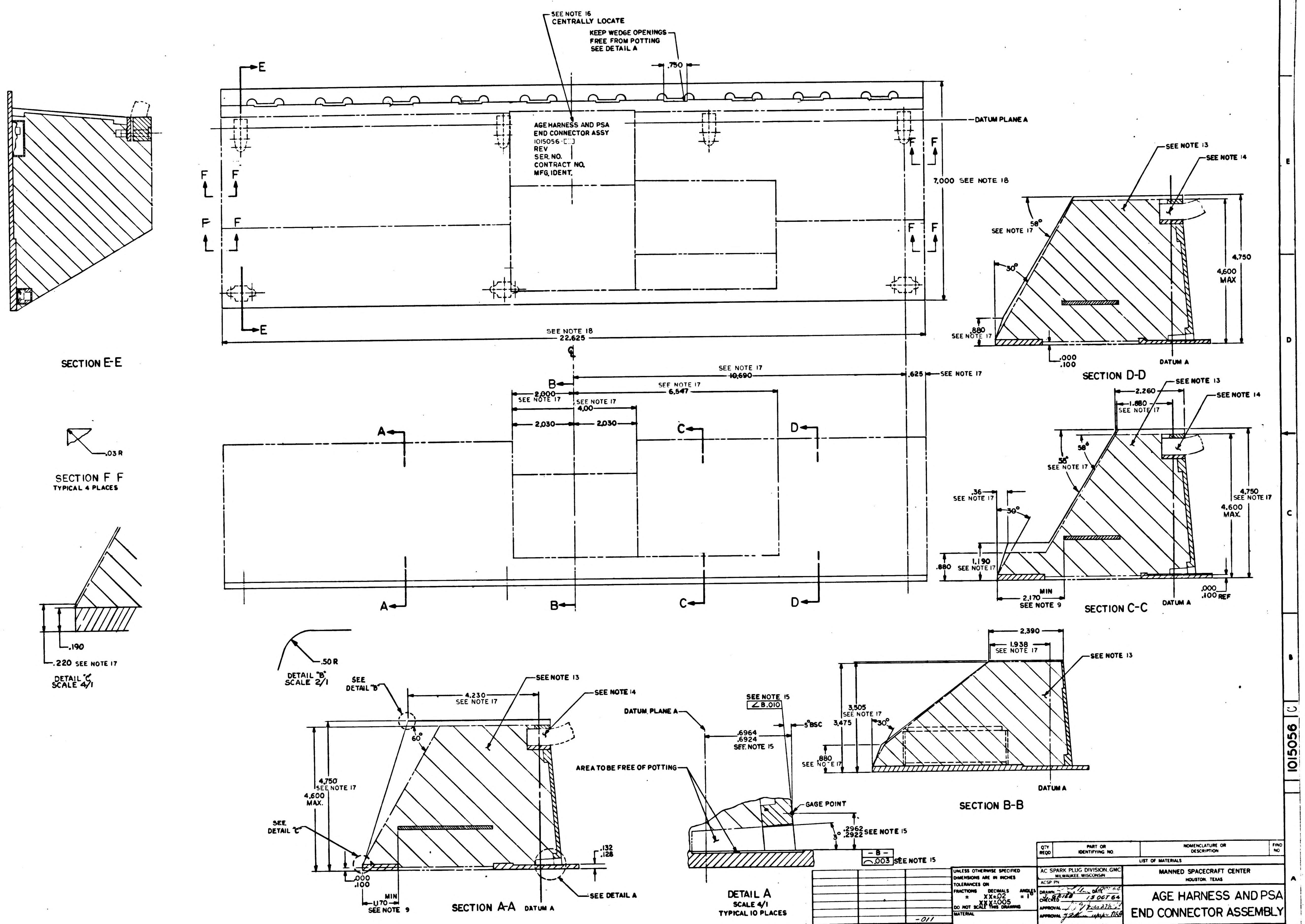
SECTION C C


CHANNEL A
CHANNEL B
40 44
SEE NOTE 30
CHANNEL F1
CHANNEL F2
SEE
A
A
1
2
6
9
15
12
315
309
306
312
162
465
165
468
12
309
312
SEE NOTE 28
56E44
CHANNEL N
SEE NOTE 29
10 0402-2 REF

1015056 SHT 5

1/21015056

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B2	B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14028	20 OCT 64 Nov 64	FK
C	REVISED PER TDRR 14575	7 DEC 64	JWP mcm



SEE NOTE 16
CENTRALLY LOCATE
KEEP WEDGE OPENINGS FREE FROM POTTING SEE DETAIL A
.750
E
E
AGE HARNESS AND PSA
END CONNECTOR ASSY
1015056-
REV
SER. NO.
CONTRACT NO.
MFG. IDENT.
DATUM PLANE A
F
7,000 SEE NOTE 18
SEE NOTE 18
22.625
SECTION E-E
SEE NOTE 13
SEE NOTE 14
58°
SEE NOTE 17
30°
.880
SEE NOTE 17
.000
.100
4.750
4.600 MAX
DATUM A
SECTION D-D
℄
SEE NOTE 17
10.690
.625
SEE NOTE 17
6.547
2.000 SEE NOTE 17
SEE NOTE 17 4.00
2.030
2.030
A
B
C
D
.03 R
SECTION F F
TYPICAL 4 PLACES
2.260
1.880 SEE NOTE 17
58°
58° SEE NOTE 17
.36 SEE NOTE 17
30°
1.190 SEE NOTE 17
.880
MIN
2.170
SEE NOTE 9
4.750 SEE NOTE 17
4.600 MAX.
.000
.100 REF
SECTION C-C
.190
.220 SEE NOTE 17
DETAIL "C" SCALE 4/1
.50 R
DETAIL "B" SCALE 2/1
2.390
1.938 SEE NOTE 17
3.505 SEE NOTE 17
3.475
30°
.880 SEE NOTE 17
SECTION B-B
SEE DETAIL "B"
4.230 SEE NOTE 17
60°
4.750 SEE NOTE 17
4.600 MAX.
SEE DETAIL "C"
.000
.100
MIN
1.170
SEE NOTE 9
.132
.128
SEE DETAIL A
SECTION A-A
DATUM A
SEE NOTE 15
∠B.010
DATUM PLANE A
5° BSC
.6964
.6924
SEE NOTE 15
AREA TO BE FREE OF POTTING
GAGE POINT
3°
.2962
.2922 SEE NOTE 15
-B-
⌒.003 SEE NOTE 15
DETAIL A
SCALE 4/1
TYPICAL 10 PLACES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
		-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J. GRIEB DATE 15 OCT 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

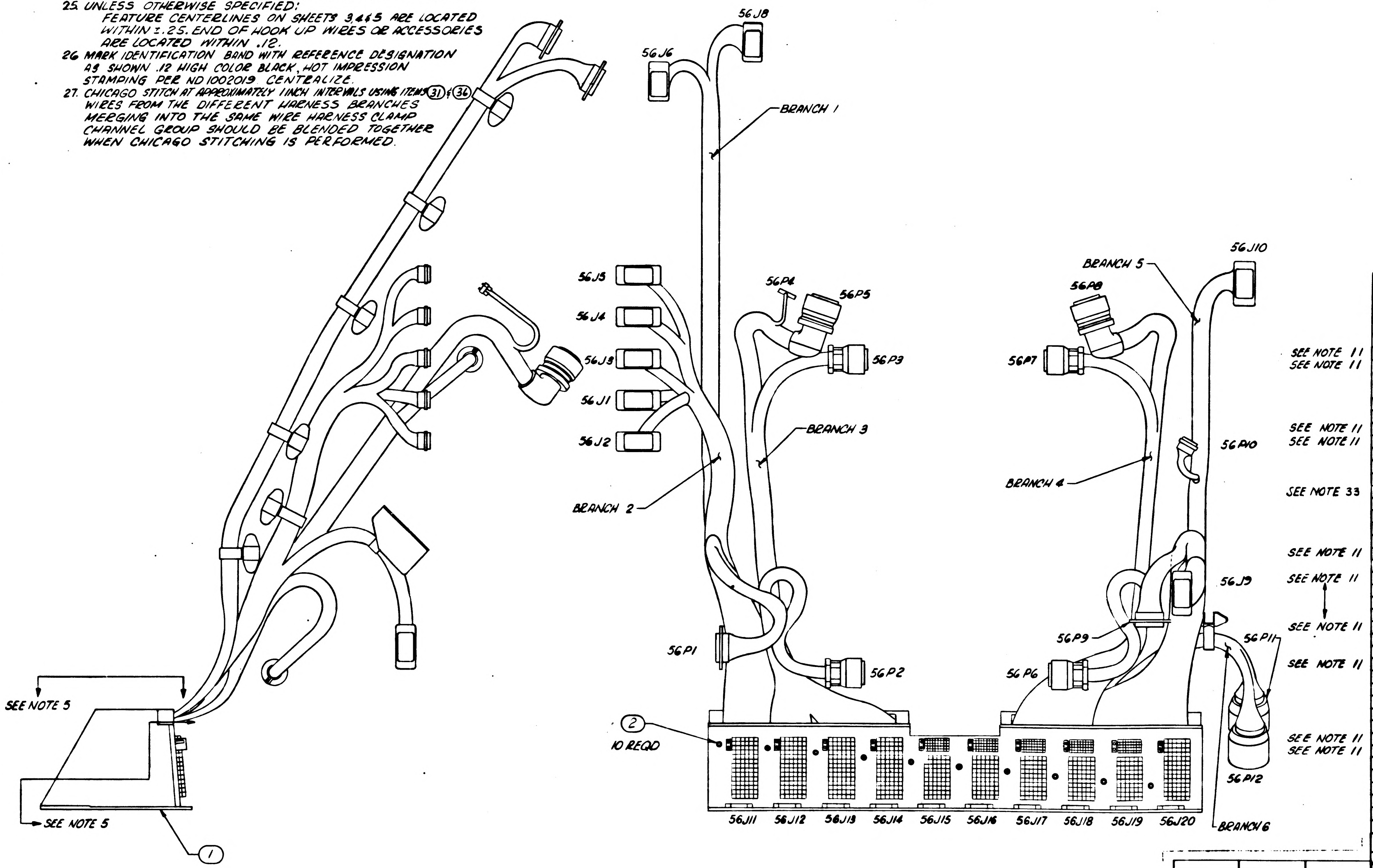
CODE IDENT NO.
SIZE E
NASA DRAWING NO 1015056
SCALE 1/1 NOTED
NAS 9-497
SHEET 6 OF 6

1015056 C

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MAXIMUM ENVELOPE AND "E" POINTS FOR ITEM (28) WIRE LIST ARE SHOWN ON SHEET 2.
3. BRANCHES 1, 2 & 3 OF ITEM (27) HARNESS ARE SHOWN ON SHEET 3.
4. BRANCHES 4, 5 & 6 OF ITEM (27) HARNESS ARE SHOWN ON SHEET 4.
5. MARRIAGE CONFIGURATION OF ITEMS 27 & 28 ARE SHOWN ON SHEET 5.
6. MOUNTING TORQUE FOR ITEM ② IS 6.5 IN/LBS.
7. TERMINATION NUMBERS ARE LISTED IN 1015055 CONDUCTOR CHART.
8. ALL WIRING SHALL BE BELOW THE SURFACE OF THE ENCAPSULATING MATERIAL.
9. TERMINAL BOARDS ARE TO BE LOCATED TO THESE DIMENSIONS BEFORE POTTING.
10. WELD PER ND 1002225.
11. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING
12. ENCAPSULATION ENVELOPE IS SHOWN ON SHEET 6.
13. ENCAPSULATE PER ND 1002002 USING ITEMS (34) & (35)
14. ASSEMBLE AND ENCAPSULATE IN ACCORDANCE WITH ATP1015056 USING ITEM (29) PER ND1002236. ~~AND ITEMS (32) & (33) PER ND1002009 METHOD B~~.
15. DIMENSIONS TO BE STABLE AFTER POTTING.
16. SERIALIZE & MARK CHARACTERS .12 HIGH, WHITE PER ND 1002023.
17. DIMENSION OR CHARACTERISTIC IS CONTROLLED BY ICDMH01-01003-116.
18. ICDM01-01003-116 ENVELOPE DIMENSIONS ARE 7.000 AND 22.690 RESPECTIVELY; ACTUAL VALUES MAY BE LESS. POTTING SHALL BE FLUSH TO .015 LESS THAN THE ENVELOPE DEFINED BY THE ACTUAL LENGTH AND WIDTH OF THE END CONNECTOR ASSEMBLY.
19. INTERCONNECTION LIST OF AGE HARNESS & END CONNECTOR ASSEMBLY IS 1015057.
20. INTERCONNECTION DIAG OF AGE C/M, LOWER EQUIPMENT BAY IS 1015089.
21. SECURE TO ITEM (27) HARNESS USING ITEM (36) & (31)
22. ASSEMBLE AND TEST PER ATP 1015056.
23. INSPECT PER PS 1015056.
24. GRID MODULE ON SHEET 3, 4 & 5 IS 1 INCH TRUE POSITION.
25. UNLESS OTHERWISE SPECIFIED:
    FEATURE CENTERLINES ON SHEETS 3, 4 & 5 ARE LOCATED WITHIN ±.25. END OF HOOK UP WIRES OR ACCESSORIES ARE LOCATED WITHIN .12.
26. MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS SHOWN .12 HIGH COLOR BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE.
27. CHICAGO STITCH AT APPROXIMATELY 1 INCH INTERVALS USING ITEMS (31) & (36) WIRES FROM THE DIFFERENT HARNESS BRANCHES MERGING INTO THE SAME WIRE HARNESS CLAMP CHANNEL GROUP SHOULD BE BLENDED TOGETHER WHEN CHICAGO STITCHING IS PERFORMED.

NOTES CONTINUED:
28. BEFORE WIRING APPLY SILICONE RUBBER PER ND1002009 METHOD B, USING ITEMS (32) AND (33), AROUND ENTIRE LENGTH OF CONNECTORS 56J21 AND 56J22 AND OVER THE PORTION OF ITEM 2 WITHIN THE END CONNECTOR.
29. APPLY EPOXY PER ND1002187 USING ITEMS (37) AND (38) TO BOND ITEMS (15) AND (16) TO ITEM ①, AROUND ENTIRE LENGTH OF NOTED SURFACES, AT REAR OF CONNECTORS 56J21 AND 56J22 AND BEHIND CONNECTORS 56J11 THRU 56J20 TO HEIGHT SUFFICIENT TO COVER NYLON INSULATORS.
30. SELECT NOTED ITEMS IN ACCORDANCE WITH ATP REQUIREMENTS AT ENCAPSULATION PHASE OF END CONNECTOR BUILD UP.
31. CRIMP PER ND1002206
32. POT BACK OF CONNECTORS PER ND1002236 USING ITEM (29).
33. WIRE WRAP PSA END CONNECTOR ASSY PER ND1002031. SEE DWG 1015091 FOR ROUTING.
34. LACE HARNESS PER ND1002032.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14007		20 OCT 64 6 NOV 64	FK
M C		REVISED PER TDRR 14575		7 DEC 64	JWP / MEM
D		REVISED PER TDRR 18049		12-APR-65	H.T.H. / EF



B1 REPLACES REVISION A WITH CHANGE

	QUANTITY REQUIRED				EFFECTIVITY	LIST OF PARTS AND MATERIALS		
				011		ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
				2		44	1021253-6	SPACER
				2		43	1021253-5	SPACER
				1		42	1021253-4	SPACER
				1		41	1021253-3	SPACER
				2		40	1021253-2	SPACER
				2		39	1021253-1	SPACER
SEE NOTE 11				AR		38	1010679	ADHESIVE ACTIVATOR
SEE NOTE 11				AR		37	1010661	EPOXY RESIN
				AR		36	1012507-004	LACING TAPE
				AR		35	1010798-2	ACTIVATOR
				AR		34	1010798-1	RESIN
SEE NOTE 11				AR		33	1006835	AGENT, CURING
SEE NOTE 11				AR		32	1006834	COMPOUND, SILICONE RUBBER
				AR		31	1012507-002	LACING TAPE
				1		30	1021253-8	SPACER
				AR		29	1012503	COMPOUND, POTTING, POLYURETHANE
SEE NOTE 33				1		28	1015058	WIRE LIST AA
				1		27	1015055	WIRING HARNESS A
				21		26	1010811-001	BAND, IDENTIFICATION
				1		25	AN345C10	(1897146-110) NUT, PLAIN HEX
				1		24	1014609	BRACKET, CLAMP
SEE NOTE 11				1		23	1010400-8	CLAMP, LOOP, HINGED
				1		22	1021253-7	SPACER
SEE NOTE 11				3		21	1010400-3	CLAMP, LOOP, HINGED
				1		20	1010400-2	CLAMP, LOOP, HINGED
				1		19	1010400-7	CLAMP, LOOP, HINGED
				5		18	1010400-1	CLAMP, LOOP, HINGED
SEE NOTE 11				1		17	1010705-8	CLAMP, LOOP
				3		16	1008232	CAP, PROTECTIVE
				4		15	1008231	CAP, PROTECTIVE
SEE NOTE 11				6		14	1006783-47	SCREW, BUTTON HD
				1		13	1008164	CABLE CLAMP, LEFT
				1		12	1008165	CABLE CLAMP, RIGHT
				1		11	1008148	CONNECTOR PLATE ASSY (264 PIN)
				1		10	1008149	CONNECTOR PLATE ASSY (293 PIN)
				3		9	MS35649-44	NUT, PLAIN HEX
SEE NOTE 11				1		8	1010618-13	SCREW, BUTTON HD
SEE NOTE 11				3		7	1010618-14	SCREW, BUTTON HD
				4		6	MS35335-57	WASHER, LOCK
				1		5	MS35338-081	WASHER, LOCK
				8		4	MS16995-17	SCREW, HEX SOCKET HD
				4		3	MS16995-10	SCREW, HEX SOCKET HD
				10		2	1008163	PIN, LOCATING
				1		1	1007461-011	END CONNECTOR ASSY, PSA

NEXT ASSY	USED ON	APPLICABLE DASH NO.
		-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

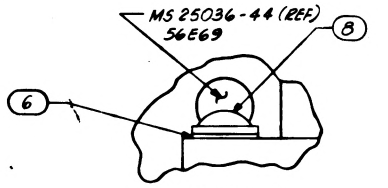
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 29 SEP 64
CHECKED J. GRIED 15 OCT 64
APPROVAL 27 Oct 64
APPROVAL 10/
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

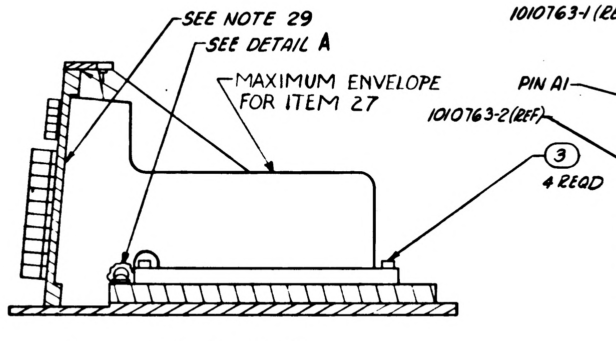
CODE IDENT NO
SIZE E
1015056
SCALE 1/2
SHEET 1 OF 6

REVISIONS			
	DESCRIPTION	DATE	APPROVAL
BB2	B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14007	20 OCT 64 2 NOV 64	FK WK
C	REVISED PER TDRR 14575	7 DEC 64	JWP MEM
D	REVISED PER TDRR 18049	2-APR-65	EF



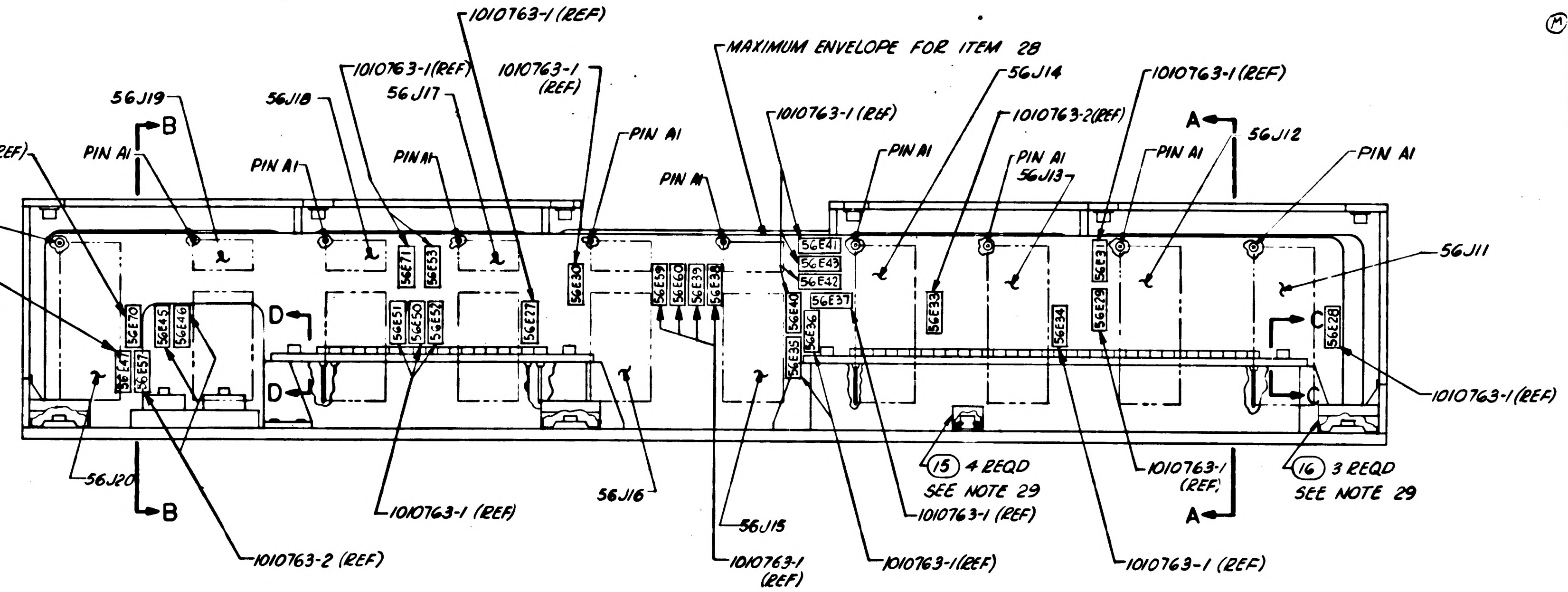
MS 25036-44 (REF)
56E69
8
6

DETAIL A
SCALE 4/1

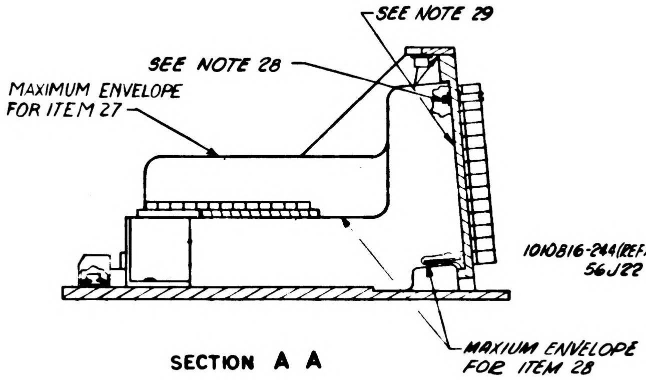


SEE NOTE 29
SEE DETAIL A
MAXIMUM ENVELOPE FOR ITEM 27
3
4 REQD

SECTION B B

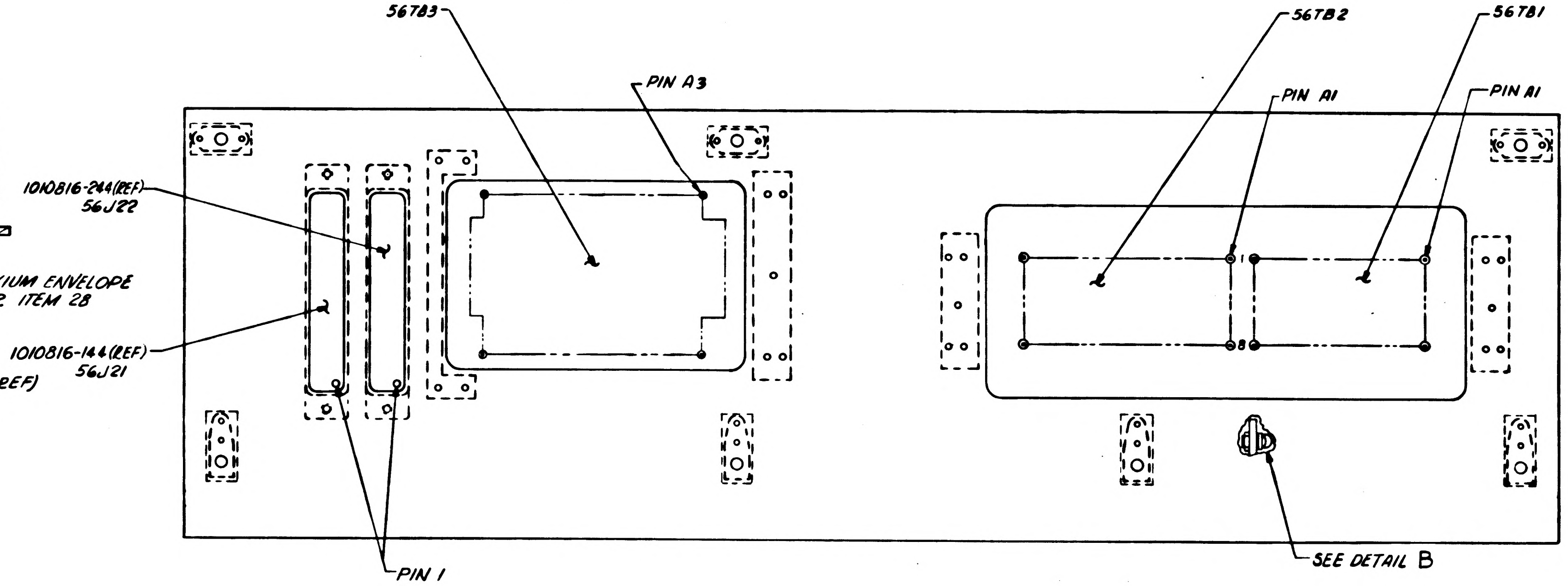


1010763-1 (REF)
MAXIMUM ENVELOPE FOR ITEM 28
56J14
1010763-1 (REF)
1010763-1(REF)
1010763-1 (REF)
56J19
56J18
56J17
1010763-1(REF)
1010763-2(REF)
1010763-1(REF)
PIN A1
PIN A1
PIN A1
PIN A1
PIN A1
PIN A1
PIN A1
PIN A1
56J13
PIN A1
56J12
PIN A1
1010763-2(REF)
B
A
56J11
56E41
56E43
56E42
56E37
56E40
56E36
56E35
56E47
56E57
56E70
56E45
56E46
56E51
56E50
56E52
56E71
56E53
56E27
56E30
56E59
56E60
56E39
56E38
56E33
56E34
56E31
56E29
56E28
D
D
C
C
1010763-1(REF)
56J20
B
1010763-2 (REF)
1010763-1 (REF)
56J16
56J15
1010763-1 (REF)
1010763-1(REF)
1010763-1(REF)
15
4 REQD
SEE NOTE 29
1010763-1 (REF)
1010763-1 (REF)
16
3 REQD
SEE NOTE 29
A

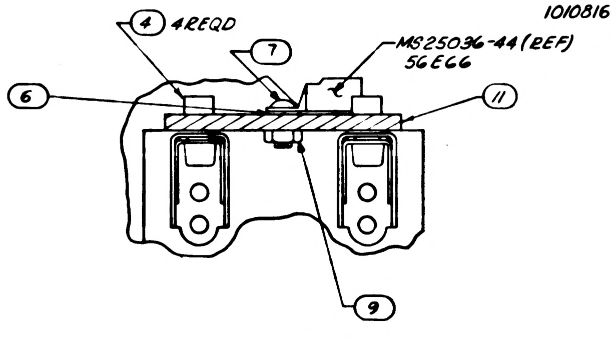


SEE NOTE 29
SEE NOTE 28
MAXIMUM ENVELOPE FOR ITEM 27
MAXIUM ENVELOPE FOR ITEM 28

SECTION A A

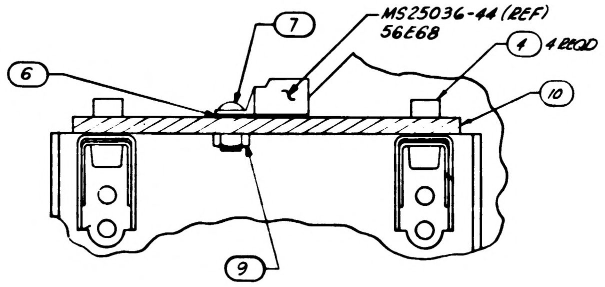


56TB3
PIN A3
56TB2
56TB1
PIN A1
PIN A1
1010816-244(REF)
56J22
1010816-144(REF)
56J21
PIN 1
SEE DETAIL B



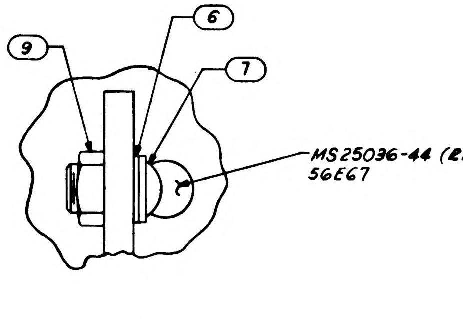
4
4 REQD
7
MS25036-44 (REF)
56E66
6
11
9

PARTIAL SECTION C C
SCALE 2/1



7
MS25036-44 (REF)
56E68
4
4 REQD
6
10
9

PARTIAL SECTION D D
SCALE 2/1



9
6
7
MS25036-44 (REF)
56E67

DETAIL B
SCALE 4/1

1015056 D

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

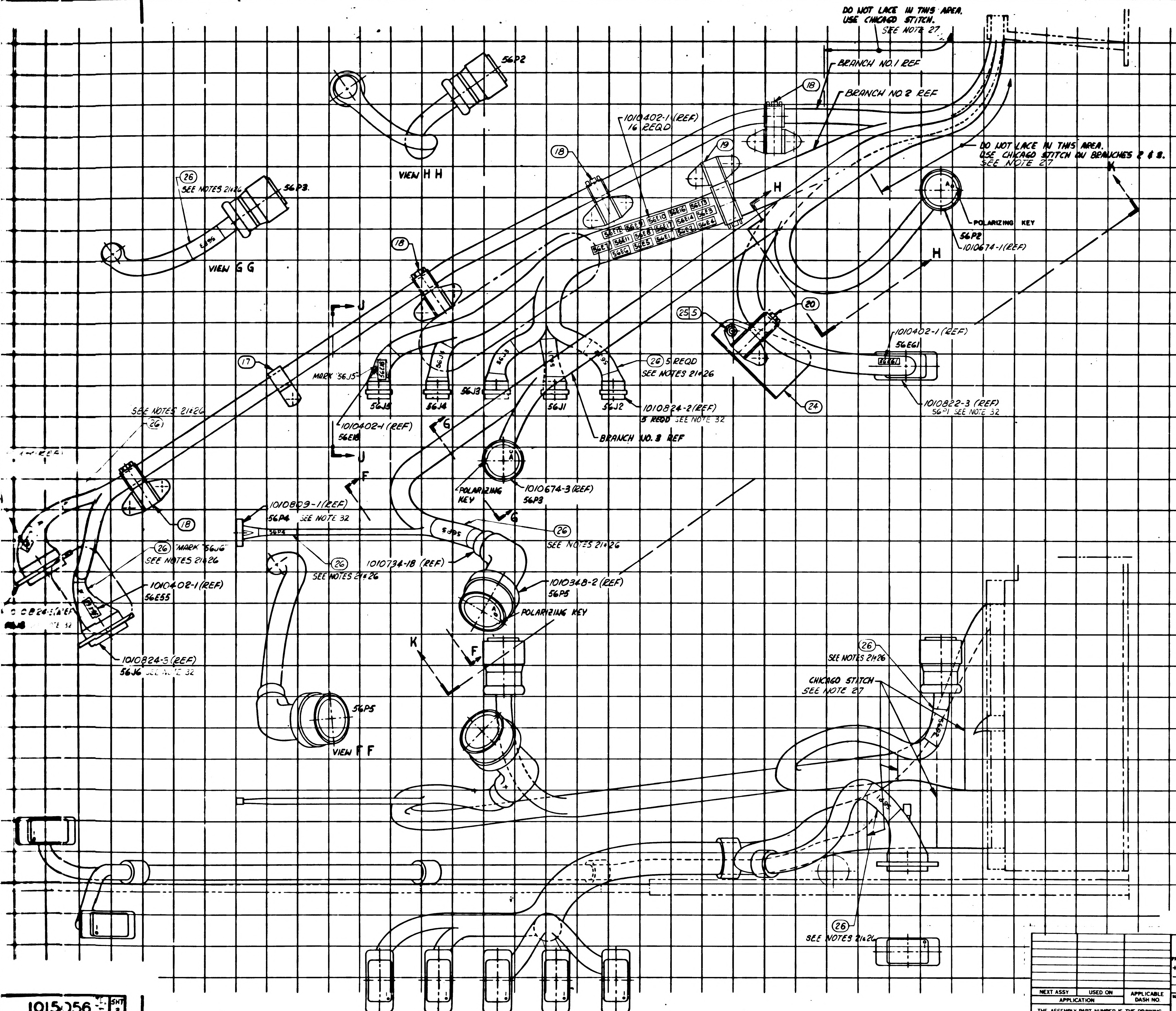
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. [illegible] DATE 8 OCT 64
CHECKED J. GRIEB 15 OCT 64
APPROVAL [illegible] 27 Oct 64
APPROVAL [illegible] 14 Oct 64
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL W Kupfer 4 Nov

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO	SIZE	NASA DRAWING NO
	E	1015056
SCALE 1/1	NAS 9-497	SHEET 2 OF 6


DO NOT LACE IN THIS AREA. USE CHICAGO STITCH. SEE NOTE 27
56P2
VIEW H H
BRANCH NO. 1 REF
BRANCH NO. 2 REF
18
1010402-1 (REF) 16 REQD
19
DO NOT LACE IN THIS AREA. USE CHICAGO STITCH ON BRANCHES 2 & 3. SEE NOTE 27
K
H
26
SEE NOTES 21 & 26
56P3
VIEW G G
56E12 56E13 56E10 56E16 56E15
56E8 56E9 56E17 56E14 56E3
56E7 56E11 56E6 56E1 56E2 56E4
56E5
POLARIZING KEY
56P2
1010674-1 (REF)
J
20
25.5
1010402-1 (REF)
56E61
17
MARK "56J5"
56J5 56J4 56J3 56J1 56J2
26 5 REQD
SEE NOTES 21 & 26
1010824-2 (REF)
5 REQD SEE NOTE 32
24
1010822-3 (REF)
56P1 SEE NOTE 32
1010402-1 (REF)
56E18
G
BRANCH NO. 3 REF
1010674-3 (REF)
56P3
POLARIZING KEY
F
1010809-1 (REF)
56P4 SEE NOTE 32
56P4
56P5
26
SEE NOTES 21 & 26
"MARK "56J6"
1010734-18 (REF)
1010348-2 (REF)
56P5
POLARIZING KEY
1010402-1 (REF)
56E55
1010824-3 (REF)
56J6 SEE NOTE 32
K
F
56P5
VIEW F F
26
SEE NOTES 21 & 26
CHICAGO STITCH
SEE NOTE 27
26
SEE NOTES 21 & 26

REVISIONS

SYM	ZONE	DESCRIPTION		DATE	APPR.
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 12007		20 OCT 64 4 NOV 64	FK
C		REVISED PER TDRR 14575			
D		REVISED PER TDRR 18049			

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. L. [illegible] DATE 5 OCT 64
CHECKED J. GRIEB 15 OCT 64
APPROVAL 27 Oct 64
APPROVAL NEA
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

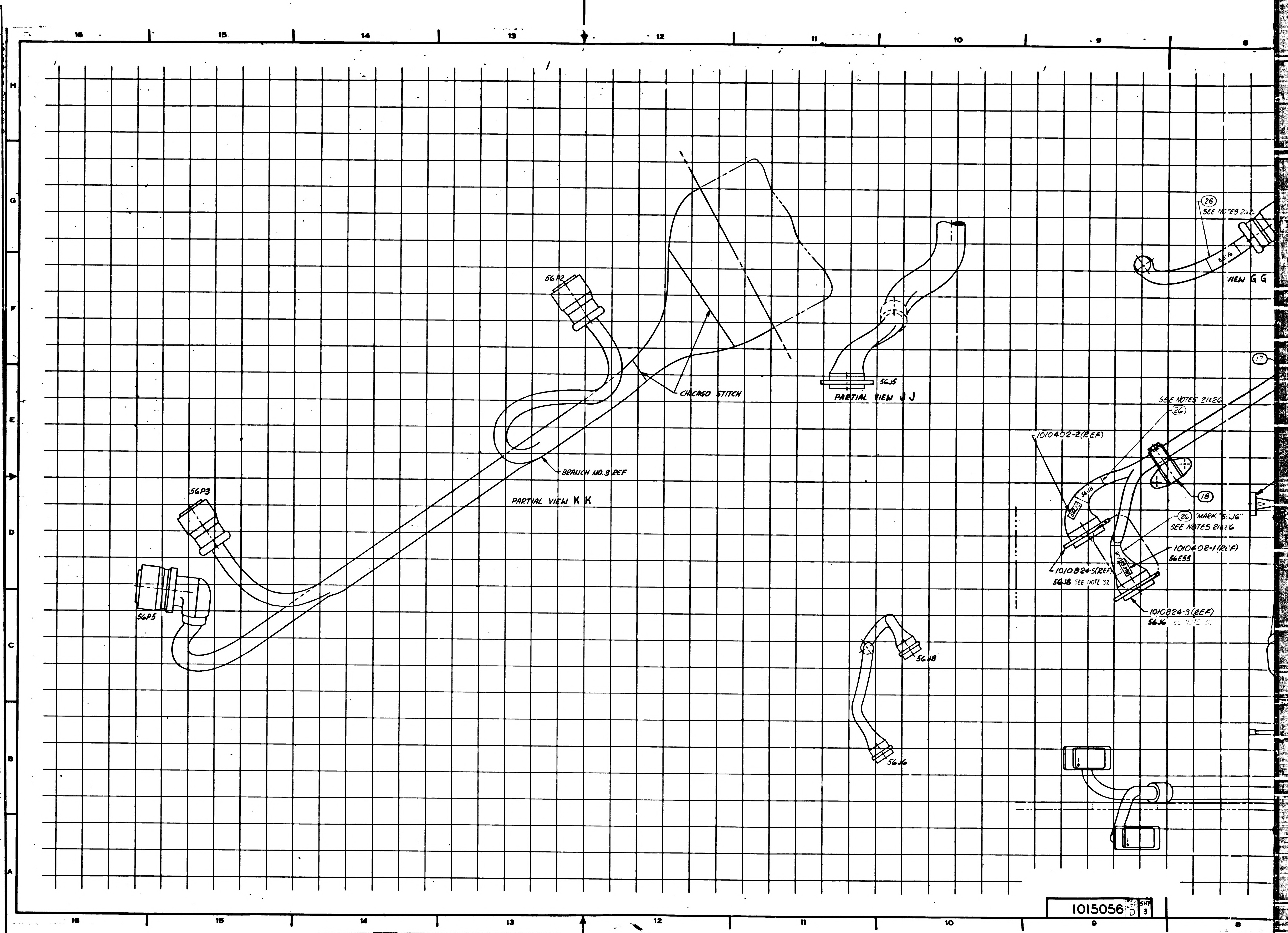
AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO. SIZE J2 1015056
SCALE 1:1 SHEET 3 OF 6

1015056 D

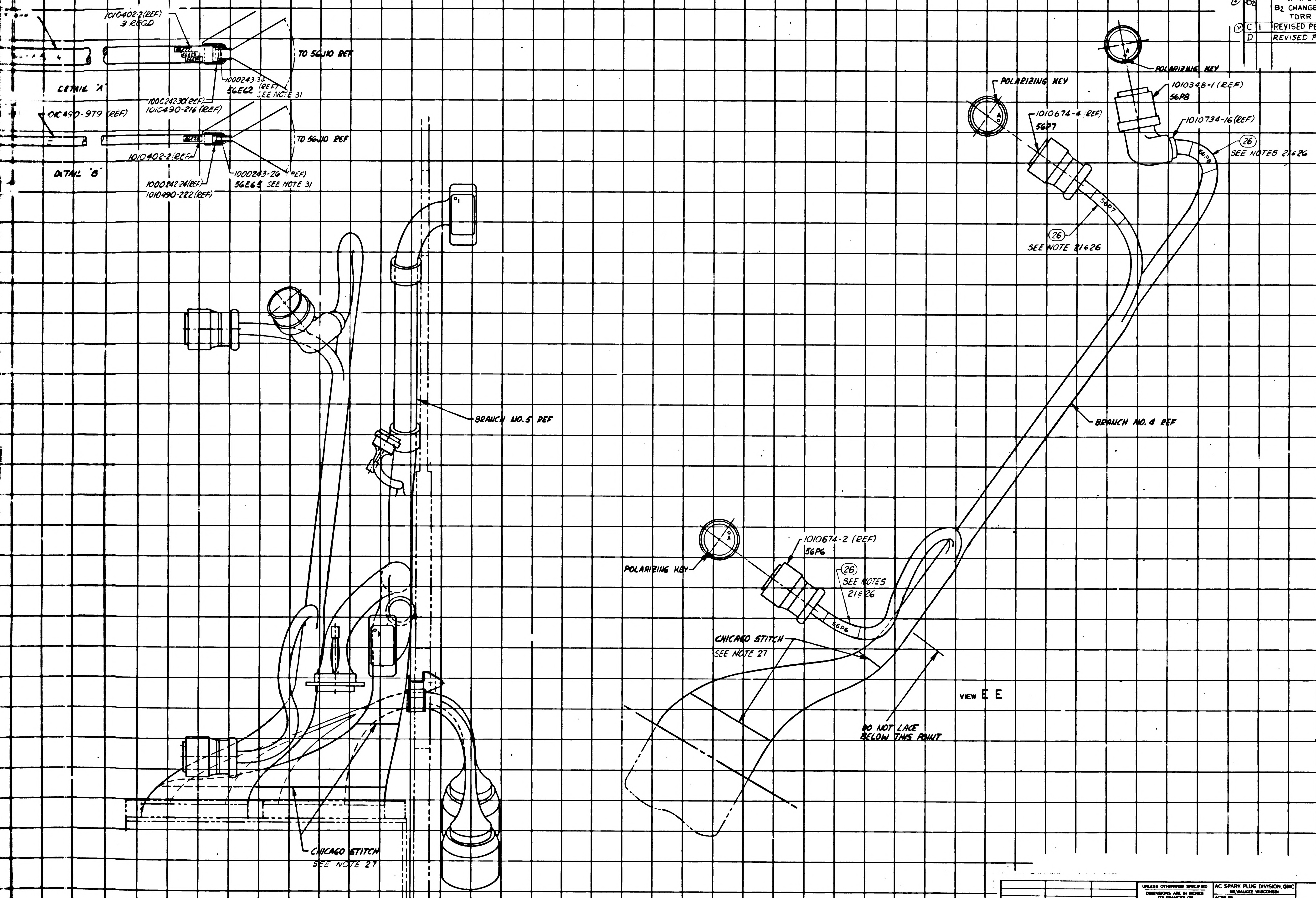
1015056 SHT 3

2/1015056


16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
56P2
CHICAGO STITCH
56J5
PARTIAL VIEW J J
BRANCH NO. 3 REF
PARTIAL VIEW K K
56P3
56P5
26
SEE NOTES 21&26
VIEW G G
17
SEE NOTES 21&26
26
1010402-2(REF)
56J8
18
26
"MARK "56J6"
SEE NOTES 21&26
1010402-1(REF)
56E55
1010824-5(REF)
56J8 SEE NOTE 32
1010824-3(REF)
56J6 SEE NOTE 32
56J8
56J6
1015056
D
SHT
3

1/1015056

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		REVISIONS			
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14007	—	20 OCT 64 4 NOV	FK WK
C	1	REVISED PER TDRR 14575		7 DEC 64	JWP MEM
D		REVISED PER TDRR 8049		12-APR-65	K.T.W.



1010402-2 (REF)
3 REQD
TO 56J10 REF
1000243-34 (REF)
56E62
SEE NOTE 31
DETAIL "A"
100C242-30 (REF)
1010490-216 (REF)
01C490-979 (REF)
TO 56J10 REF
1010402-2 (REF)
1000243-26 (REF)
56E65 SEE NOTE 31
DETAIL "B"
1000242-24 (REF)
1010490-222 (REF)
POLARIZING KEY
1010348-1 (REF)
56P8
POLARIZING KEY
1010674-4 (REF)
56P7
1010734-16 (REF)
(26)
SEE NOTES 21 & 26
56P8
56P7
(26)
SEE NOTE 21 & 26
BRANCH NO. 5 REF
BRANCH NO. 4 REF
1010674-2 (REF)
56P6
POLARIZING KEY
(26)
SEE NOTES 21 & 26
56P6
CHICAGO STITCH
SEE NOTE 27
VIEW E E
DO NOT LACE BELOW THIS POINT
CHICAGO STITCH
SEE NOTE 27

NEXT ASSY	USED ON	APPLICABLE DASH NO.
		-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN DATE 30 SEP 64
CHECKED J. GRIEB 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 12-4-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END
CONNECTOR ASSEMBLY

CODE IDENT NO. SIZE 1015056

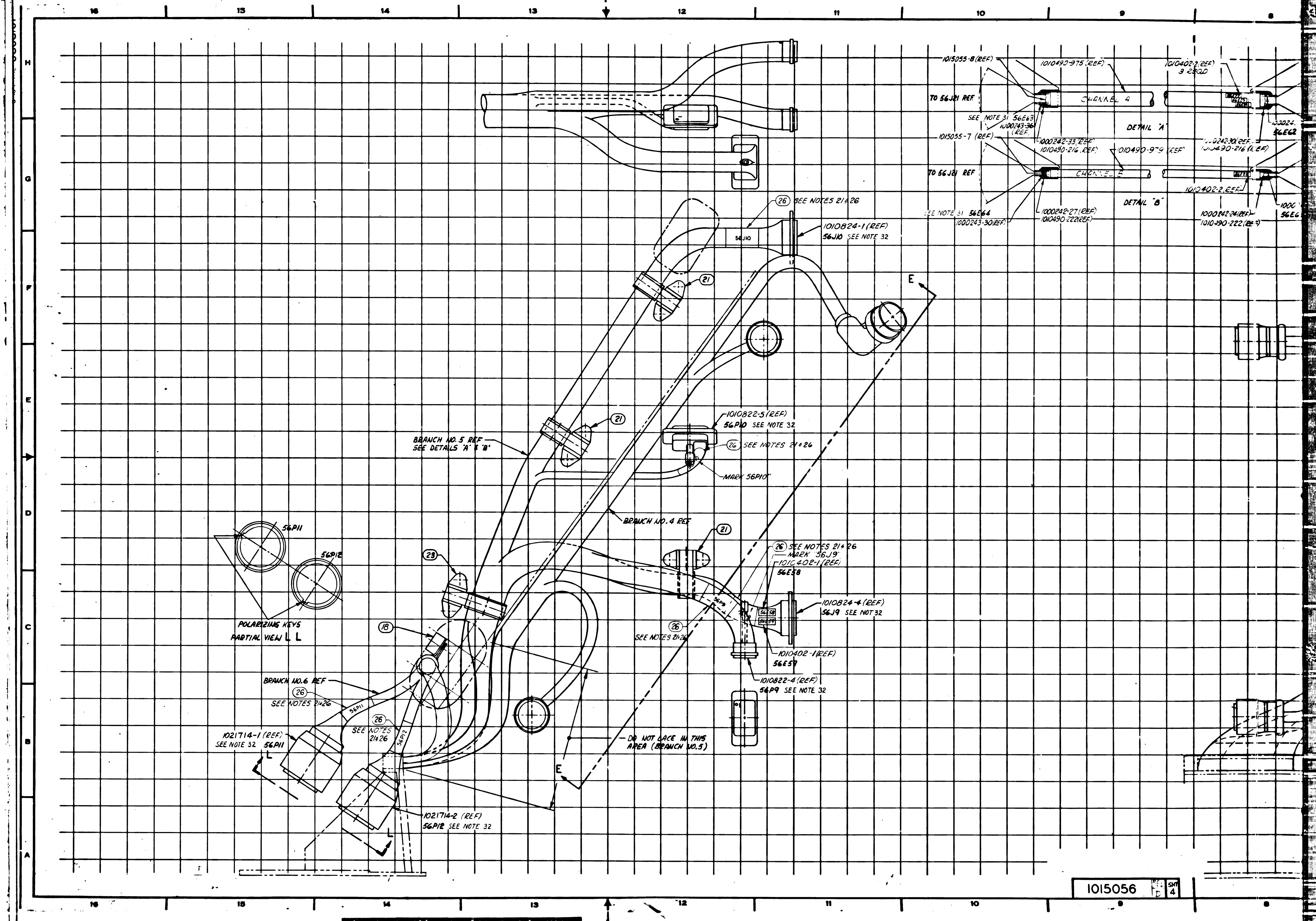
SCALE 1:1 SHEET 6 OF 6

1015056 D

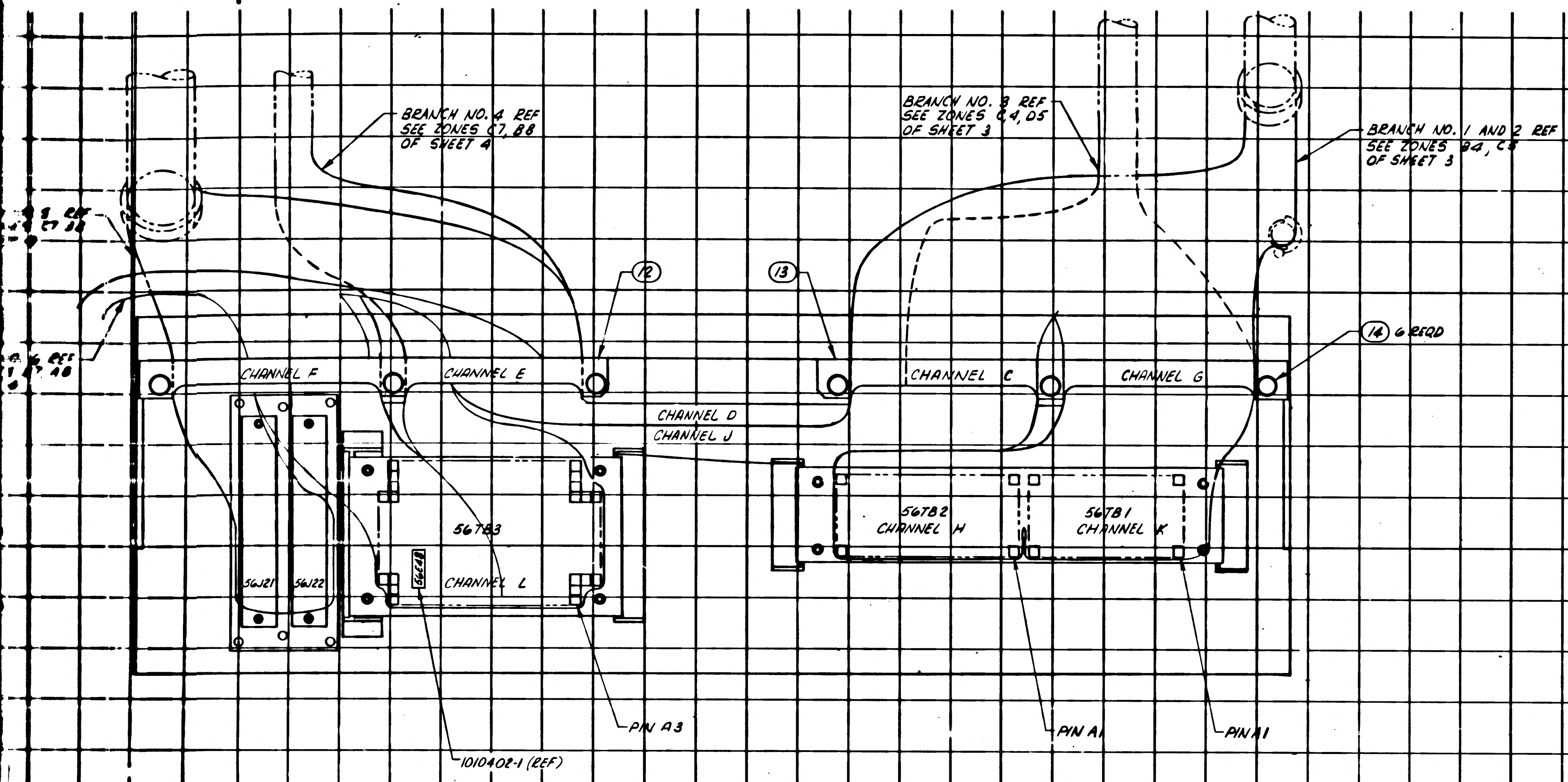
1015056 SHT 4

2/1015056

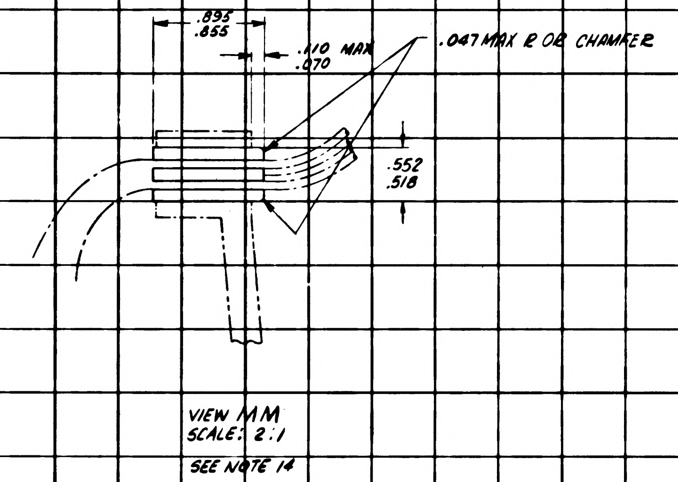
(34)


16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
1015055-8 (REF)
1010490-975 (REF)
1010402-2 (REF)
3 25QD
TO 56J21 REF
CHANNEL 4
SEE NOTE 31 56E63
1000243-36 (REF)
DETAIL "A"
56E62
1015055-7 (REF)
1000242-33 (REF)
1010490-216 (REF)
1010490-979 (REF)
1010490-216 (REF)
TO 56J21 REF
CHANNEL 5
1010402-2 (REF)
DETAIL "B"
SEE NOTE 31 56E64
1000243-30 (REF)
1000242-27 (REF)
1010490-222 (REF)
1000242-24 (REF)
1010490-222 (REF)
56E6
26 SEE NOTES 21 & 26
56J10
1010824-1 (REF)
56J10 SEE NOTE 32
21
E
21
1010822-5 (REF)
56P10 SEE NOTE 32
26 SEE NOTES 21 & 26
MARK 56P10"
BRANCH NO. 5 REF
SEE DETAILS "A" & "B"
BRANCH NO. 4 REF
21
26 SEE NOTES 21 & 26
MARK "56J9"
1010402-1 (REF)
56E58
56P9
56E58
56E59
1010824-4 (REF)
56J9 SEE NOT 32
26
SEE NOTES 21 & 26
1010402-1 (REF)
56E59
1010822-4 (REF)
56P9 SEE NOTE 32
56P11
56P12
POLARIZING KEYS
PARTIAL VIEW L L
23
18
BRANCH NO. 6 REF
26
SEE NOTES 21 & 26
56P11
26
SEE NOTES 21 & 26
56P12
1021714-1 (REF)
SEE NOTE 32 56P11
L
L
1021714-2 (REF)
56P12 SEE NOTE 32
DO NOT LACE IN THIS AREA (BRANCH NO. 5)
E
1015056
D
SHT 4

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14007		20 OCT 64	FK
C		REVISED PER TDRR 14575		DEC 64	WD
D		REVISED PER TDRR 18049		12-APR-65	

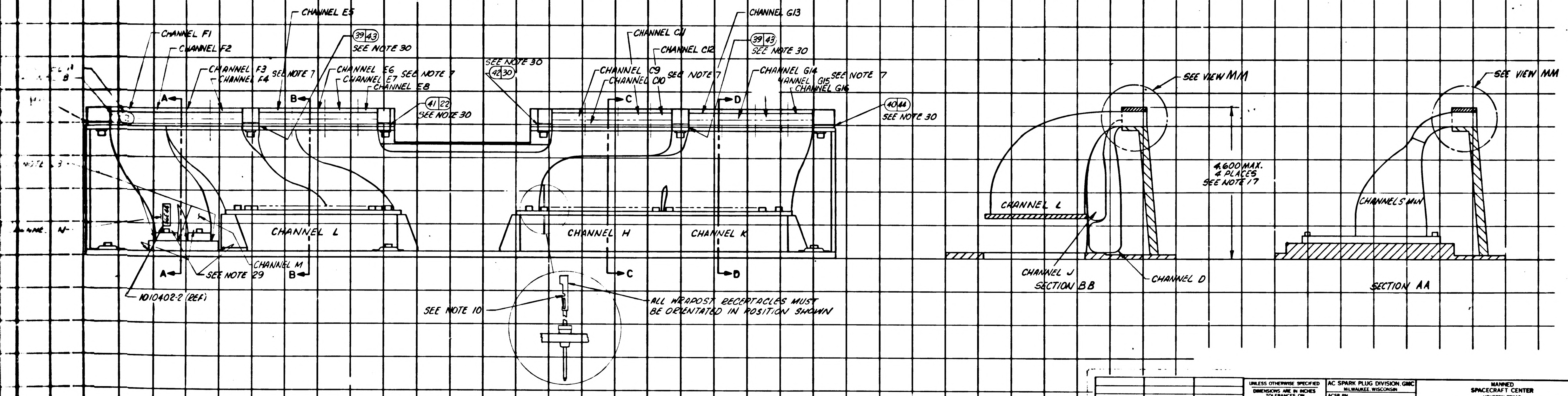


BRANCH NO. 4 REF SEE ZONES C7, B8 OF SHEET 4
BRANCH NO. 3 REF SEE ZONES C4, D5 OF SHEET 3
BRANCH NO. 1 AND 2 REF SEE ZONES B4, C8 OF SHEET 3
12
13
14 6 REQD
CHANNEL F
CHANNEL E
CHANNEL C
CHANNEL G
CHANNEL D
CHANNEL J
56783
56782 CHANNEL H
56781 CHANNEL K
56J21
56J22
CHANNEL L
PIN A3
PIN A1
PIN A1
1010402-1 (REF)



.895
.855
.110 MAX
.070
.047 MAX R OR CHAMFER
.552
.518

VIEW MM
SCALE: 2:1
SEE NOTE 14



CHANNEL F1
CHANNEL F2
CHANNEL F3
CHANNEL F4
CHANNEL E5
SEE NOTE 7
39 43 SEE NOTE 30
CHANNEL E6
CHANNEL E7
CHANNEL E8
SEE NOTE 7
41 22 SEE NOTE 30
SEE NOTE 30
42 30
CHANNEL C9
CHANNEL C10
CHANNEL C11
CHANNEL C12
SEE NOTE 7
39 43 SEE NOTE 30
CHANNEL G13
CHANNEL G14
CHANNEL G15
CHANNEL G16
SEE NOTE 7
40 44 SEE NOTE 30
A
B
C
D
CHANNEL L
CHANNEL H
CHANNEL K
CHANNEL M
SEE NOTE 29
1010402-2 (REF)
SEE NOTE 10
ALL WRAPOST RECEPTACLES MUST BE ORIENTATED IN POSITION SHOWN
SEE VIEW MM
SEE VIEW MM
4.600 MAX. 4 PLACES SEE NOTE 17
CHANNEL L
CHANNEL J
CHANNEL D
CHANNELS M-N

SECTION BB

SECTION AA

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. LeClair DATE 5 OCT 64
CHECKED J. GRIEB 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

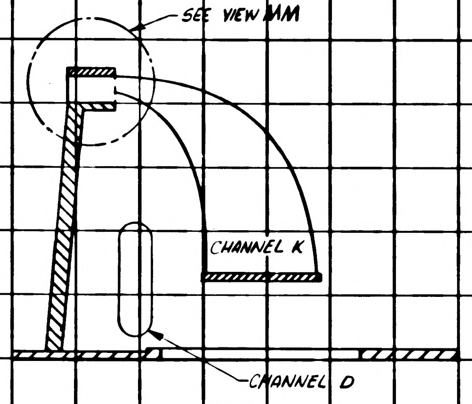
AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE J2
1015056
SCALE 1:1
SHEET 5 OF 6

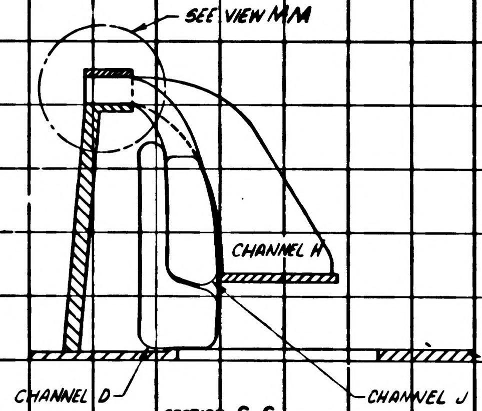
1015056 D

1015056 SHT 5

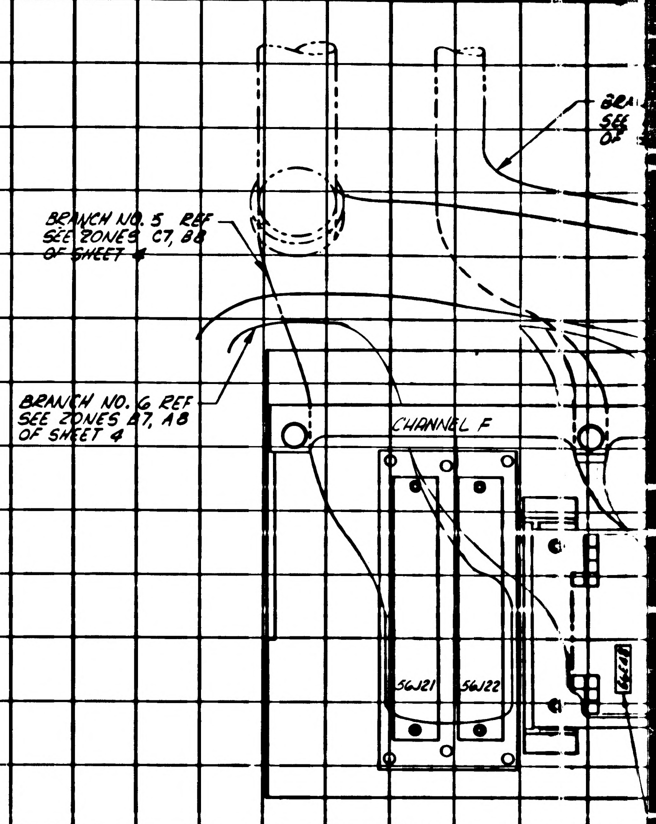
27 1015056

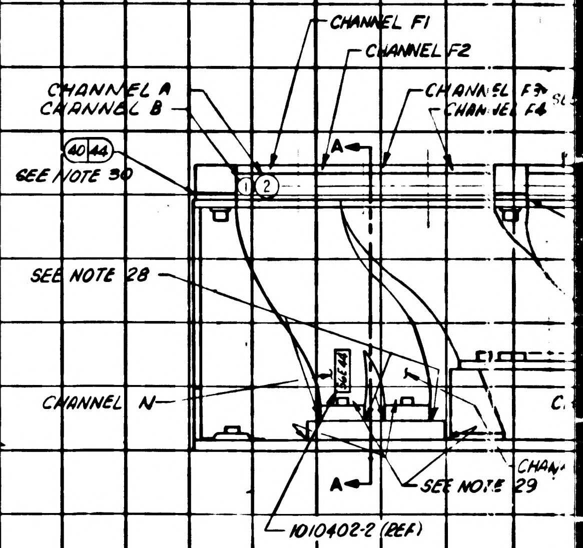

SEE VIEW MM
CHANNEL K
CHANNEL D

SECTION D D

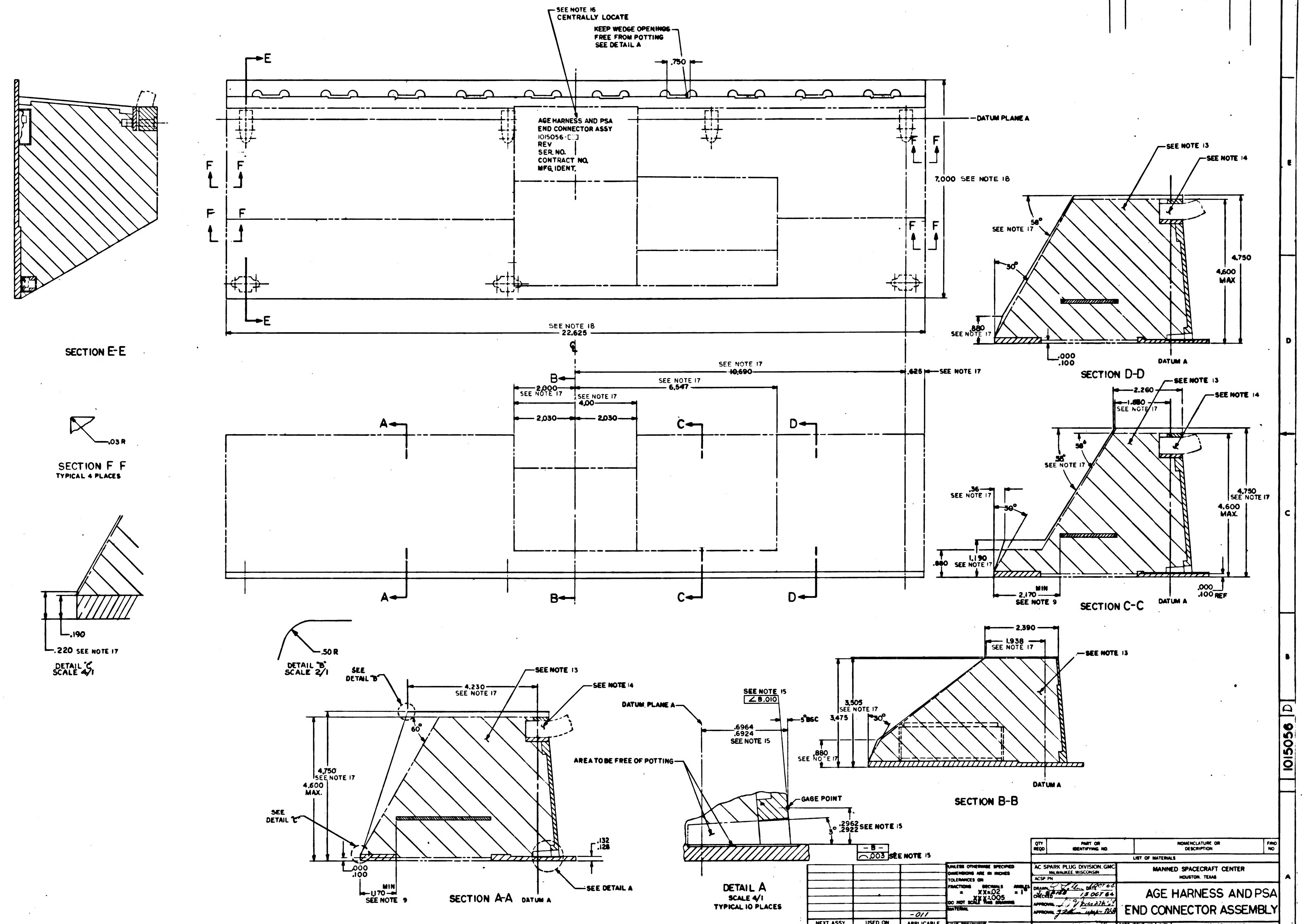

SEE VIEW MM
CHANNEL H
CHANNEL D
CHANNEL J

SECTION C C


BRANCH NO. 5 REF
SEE ZONES C7, B8
OF SHEET 4
BRANCH NO. 6 REF
SEE ZONES B7, A8
OF SHEET 4
CHANNEL F
56J21
56J22
56E44


CHANNEL F1
CHANNEL F2
CHANNEL A
CHANNEL B
CHANNEL F3
CHANNEL F4
40
44
SEE NOTE 30
1
2
A
SEE NOTE 28
56E44
CHANNEL N
A
SEE NOTE 29
1010402-2 (REF)

SYM	DESCRIPTION	DATE	APPROVAL
B2	B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 18001	20 OCT 64	FK
C	REVISED PER TDRR 4575	DEC	JWP
D	REVISED PER TDRR 8049	12- -65	


SEE NOTE 16
CENTRALLY LOCATE
KEEP WEDGE OPENINGS FREE FROM POTTING SEE DETAIL A
.750
E
E
AGE HARNESS AND PSA
END CONNECTOR ASSY
1015056-
REV
SER. NO.
CONTRACT NO.
MFG. IDENT.
DATUM PLANE A
F
7.000 SEE NOTE 18
SEE NOTE 18
22.625
SECTION E-E
SEE NOTE 17
10.690
.625
SEE NOTE 17
6.547
2.000 SEE NOTE 17
4.00 SEE NOTE 17
2.030
2.030
A
B
C
D
.03 R
SECTION F F
TYPICAL 4 PLACES
.190
.220 SEE NOTE 17
DETAIL "C" SCALE 4/1
.50 R
DETAIL "B" SCALE 2/1
SEE DETAIL "B"
4.230 SEE NOTE 17
SEE NOTE 13
SEE NOTE 14
60°
4.750 SEE NOTE 17
4.600 MAX.
SEE DETAIL "C"
.000
.100
MIN
1.170
SEE NOTE 9
.132
.128
SEE DETAIL A
SECTION A-A
DATUM A
SEE NOTE 15
∠ B .010
DATUM PLANE A
5° BSC
.6964
.6924
SEE NOTE 15
AREA TO BE FREE OF POTTING
GAGE POINT
3°
.2962
.2922 SEE NOTE 15
- B -
⌒ .003 SEE NOTE 15
DETAIL A
SCALE 4/1
TYPICAL 10 PLACES
2.390
1.938 SEE NOTE 17
SEE NOTE 13
3.505 SEE NOTE 17
3.475
30°
.880 SEE NOTE 17
DATUM A
SECTION B-B
SEE NOTE 13
SEE NOTE 14
58°
SEE NOTE 17
30°
4.750
4.600 MAX
.880 SEE NOTE 17
.000
.100
DATUM A
SECTION D-D
2.260
1.880 SEE NOTE 17
SEE NOTE 13
SEE NOTE 14
58°
30° SEE NOTE 17
.36 SEE NOTE 17
30°
4.750 SEE NOTE 17
4.600 MAX.
1.190 SEE NOTE 17
.880
MIN
2.170
SEE NOTE 9
SECTION C-C
DATUM A
.000
.100 REF

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE OCT 64
CHECKED J. Gibbs 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO
SIZE E
NASA DRAWING NO 1015056
SCALE 1/1: NOTED
NAS 9-497
SHEET 6 OF 6

1015056 D

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14007		20 OCT 64 4 NOV 64	FK
C		REVISED PER TDRR 14575		7 DEC 64	JWP MEM
D		REVISED PER TDRR 8049		12-4-65	
E		REVISED PER TDRR 26134		17 FEB 66	RLP

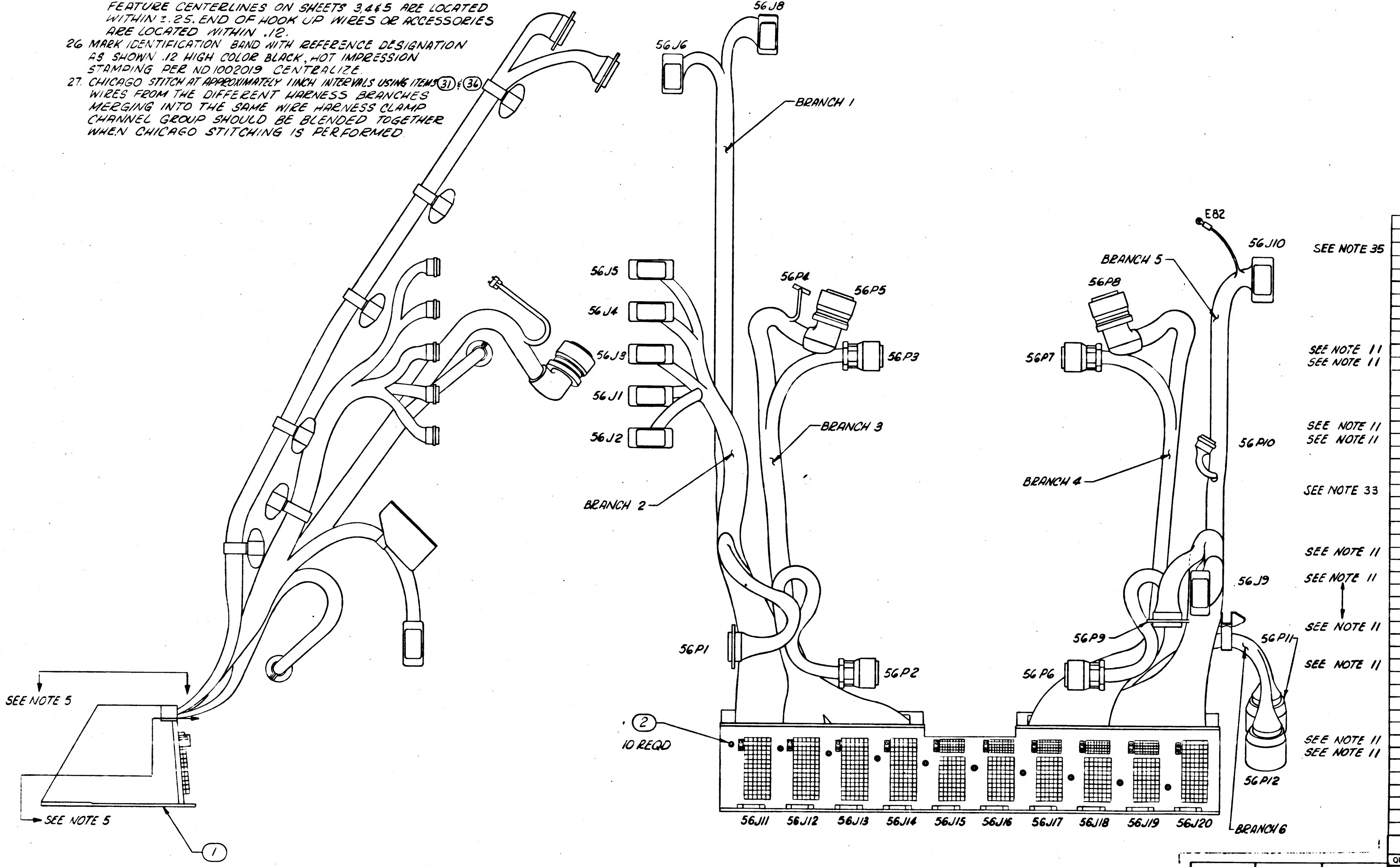
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MAXIMUM ENVELOPE AND "E" POINTS FOR ITEM (28) WIRE LIST ARE SHOWN ON SHEET 2.
3. BRANCHES 1, 2 & 3 OF ITEM (27) HARNESS ARE SHOWN ON SHEET 3.
4. BRANCHES 4, 5 & 6 OF ITEM (27) HARNESS ARE SHOWN ON SHEET 4.
5. MARRIAGE CONFIGURATION OF ITEMS 27 & 28 ARE SHOWN ON SHEET 5.
6. MOUNTING TORQUE FOR ITEM ② IS 6.5 IN/LBS.
7. TERMINATION NUMBERS ARE LISTED IN 1015055 OR 1023057 CONDUCTOR CHART.
8. ALL WIRING SHALL BE BELOW THE SURFACE OF THE ENCAPSULATING MATERIAL.
9. TERMINAL BOARDS ARE TO BE LOCATED TO THESE DIMENSIONS BEFORE POTTING.
10. WELD PER ND 1002225.
11. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING
12. ENCAPSULATION ENVELOPE IS SHOWN ON SHEET 6.
13. ENCAPSULATE PER ND 1002002 USING ITEMS (34) & (35)
14. ASSEMBLE AND ENCAPSULATE IN ACCORDANCE WITH ATP 1015056 USING ITEM (29) PER ND1002236. ~~AND ITEMS (32) & (33) PER ND1002009 METHOD B~~
15. DIMENSIONS TO BE STABLE AFTER POTTING.
16. SERIALIZE & MARK CHARACTERS .12 HIGH, WHITE PER ND 1002023.
17. DIMENSION OR CHARACTERISTIC IS CONTROLLED BY ICDMH01-01003-116.
18. ICDM01-01003-116 ENVELOPE DIMENSIONS ARE 7.000 AND 22.690 RESPECTIVELY; ACTUAL VALUES MAY BE LESS. POTTING SHALL BE FLUSH TO .015 LESS THAN THE ENVELOPE DEFINED BY THE ACTUAL LENGTH AND WIDTH OF THE END CONNECTOR ASSEMBLY.
19. ~~INTERCONNECTION LIST OF AGE HARNESS & END CONNECTOR ASSEMBLY IS 1015057.~~
20. INTERCONNECTION DIAG OF AGE C/M, LOWER EQUIPMENT BAY IS 1015089.
21. SECURE TO ITEM (27) HARNESS USING ITEM (36) & (31)
22. ASSEMBLE AND TEST PER ATP 1015056.
23. INSPECT PER PS 1015056
24. GRID MODULE ON SHEET 3, 4 & 5 IS 1 INCH TRUE POSITION.
25. UNLESS OTHERWISE SPECIFIED:
    FEATURE CENTERLINES ON SHEETS 3, 4 & 5 ARE LOCATED WITHIN ±.25. END OF HOOK UP WIRES OR ACCESSORIES ARE LOCATED WITHIN .12.
26. MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS SHOWN .12 HIGH COLOR BLACK, HOT IMPRESSION STAMPING PER ND 1002019 CENTRALIZE.
27. CHICAGO STITCH AT APPROXIMATELY 1 INCH INTERVALS USING ITEMS (31) & (36) WIRES FROM THE DIFFERENT HARNESS BRANCHES MERGING INTO THE SAME WIRE HARNESS CLAMP CHANNEL GROUP SHOULD BE BLENDED TOGETHER WHEN CHICAGO STITCHING IS PERFORMED

NOTES CONTINUED:

28. BEFORE WIRING APPLY SILICONE RUBBER PER ND1002009 METHOD B, USING ITEMS (32) AND (33), AROUND ENTIRE LENGTH OF CONNECTORS 56J21 AND 56J22 AND OVER THE PORTION OF ITEM 2 WITHIN THE END CONNECTOR.
29. APPLY EPOXY PER ND 1002187 USING ITEMS (37) AND (38) TO BOND ITEMS (15) AND (16) TO ITEM ①, AROUND ENTIRE LENGTH OF NOTED SURFACES, AT REAR OF CONNECTORS 56J21 AND 56J22 AND BEHIND CONNECTORS 56J11 THRU 56J20 TO HEIGHT SUFFICIENT TO COVER NYLON INSULATORS.
30. SELECT NOTED ITEMS IN ACCORDANCE WITH ATP REQUIREMENTS AT ENCAPSULATION PHASE OF END CONNECTOR BUILD UP.
31. CRIMP PER ND1002206
32. POT BACK OF CONNECTORS PER ND1002236 USING ITEM (29).
33. WIRE WRAP PSA END CONNECTOR ASSY PER ND1002031. SEE DWG 1015091 FOR ROUTING.
34. LACE HARNESS PER ND1002032.
35. SELECT SIZES TO CONFORM TO BUNDLE DIAMETERS AT LOCATIONS SHOWN ON SHEETS 3 & 4.

B1 REPLACES REVISION A WITH CHANGE



	QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			021	011				
			X	—		48	1023056	INTERCONNECTION LIST
			1	—		47	1023057	WIRING HARNESS A
SEE NOTE 35			10	—		46	1010400-1 THRU -18	CLAMP, LOOP, HINGED
			—	X		45	1015057	INTERCONNECTION LIST
			2	2		44	1021253-6	SPACER
			2	2		43	1021253-5	SPACER
			1	1		42	1021253-4	SPACER
			1	1		41	1021253-3	SPACER
			2	2		40	1021253-2	SPACER
			2	2		39	1021253-1	SPACER
SEE NOTE 11			AR	AR		38	1010679	ADHESIVE ACTIVATOR
SEE NOTE 11			AR	AR		37	1010661	EPOXY RESIN
			AR	AR		36	1012507-004	LACING TAPE
			AR	AR		35	1010798-2	ACTIVATOR
			AR	AR		34	1010798-1	RESIN
SEE NOTE 11			AR	AR		33	1006835	AGENT, CURING
SEE NOTE 11			AR	AR		32	1006834	COMPOUND, SILICONE RUBBER
			AR	AR		31	1012507-002	LACING TAPE
			1	1		30	1021253-8	SPACER
			AR	AR		29	1012503	COMPOUND, POTTING, POLYURETHANE
SEE NOTE 33			1	1		28	1015058	WIRE LIST AA
			—	1		27	1015055	WIRING HARNESS A
			21	21		26	1010811-001	BAND, IDENTIFICATION
			—	1		25	AN345C10	(1897146-110) NUT, PLAIN HEX
			—	1		24	1014609	BRACKET, CLAMP
SEE NOTE 11			—	1		23	1010400-8	CLAMP, LOOP, HINGED
			1	1		22	1021253-7	SPACER
SEE NOTE 11			—	3		21	1010400-3	CLAMP, LOOP, HINGED
			—	1		20	1010400-2	CLAMP, LOOP, HINGED
			—	1		19	1010400-7	CLAMP, LOOP, HINGED
			—	5		18	1010400-1	CLAMP, LOOP, HINGED
SEE NOTE 11			2	1		17	1010705-8	CLAMP, LOOP
			3	3		16	1008232	CAP, PROTECTIVE
			4	4		15	1008231	CAP, PROTECTIVE
SEE NOTE 11			6	6		14	1006783-47	SCREW, BUTTON HD
			1	1		13	1008164	CABLE CLAMP, LEFT
			1	1		12	1008165	CABLE CLAMP, RIGHT
			1	1		11	1008148	CONNECTOR PLATE ASSY (264 PIN)
			1	1		10	1008149	CONNECTOR PLATE ASSY (293 PIN)
			3	3		9	MS35649-44	NUT, PLAIN HEX
SEE NOTE 11			1	1		8	1010618-13	SCREW, BUTTON HD
SEE NOTE 11			3	3		7	1010618-14	SCREW, BUTTON HD
			4	4		6	MS35335-57	WASHER, LOCK
			1	1		5	MS35338-081	WASHER, LOCK
			8	8		4	MS16995-17	SCREW, HEX SOCKET HD
			4	4		3	MS16995-10	SCREW, HEX SOCKET HD
			10	10		2	1008163	PIN, LOCATING
			1	1		1	1007461-011	END CONNECTOR ASSY, PSA

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
		-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

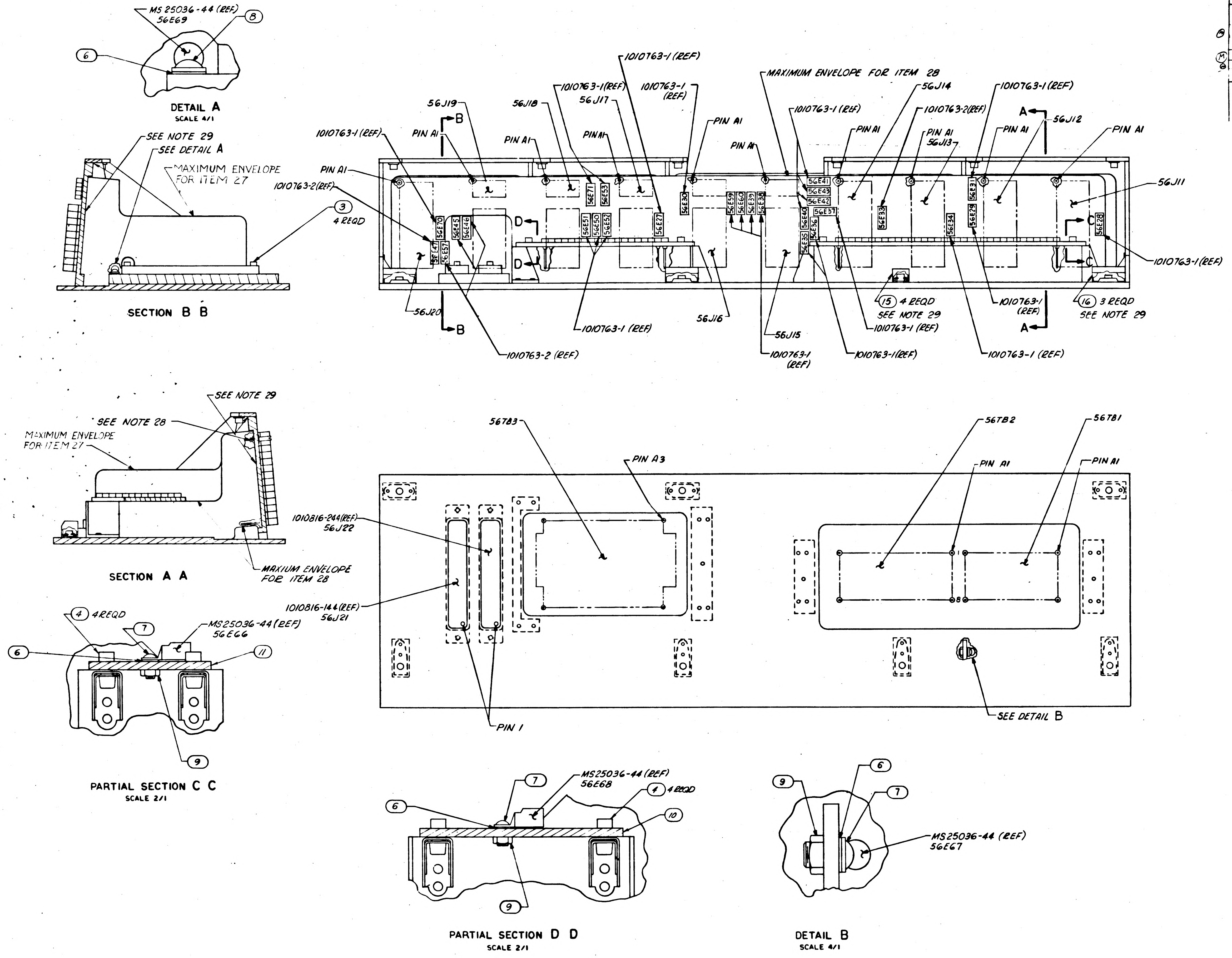
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN B. Lalune DATE 29 SEP 64
CHECKED J. GRIEB 15 OCT 64
APPROVAL 27 Oct 64
APPROVAL 10/27
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO
SIZE E
1015056
SCALE 1/2
SHEET 1 OF 6

REVISIONS			
	DESCRIPTION	DATE	APPROVAL
B₂	B₁ REPLACES REVISION A WITH CHANGE B₂ CHANGED PER TDRR 14007	20 OCT 64 2 NOV 64	FK WH
C	REVISED PER TDRR 14575	7 DEC 64	WP
D	REVISED PER TDRR 18049	APR 65	
E	REVISION STATUS CHANGED	17 FEB 66	RP


MS 25036-44 (REF)
56E69
8
6
DETAIL A
SCALE 4/1
SEE NOTE 29
SEE DETAIL A
MAXIMUM ENVELOPE FOR ITEM 27
3
4 REQD
SECTION B B
1010763-1 (REF)
1010763-1(REF)
1010763-1 (REF)
MAXIMUM ENVELOPE FOR ITEM 28
56J14
1010763-1 (REF)
56J19
B
56J18
56J17
PIN A1
1010763-2(REF)
PIN A1
56J13
A
56J12
1010763-1 (REF)
1010763-2(REF)
56J11
56E41
56E43
56E42
56E37
56E47
56E57
56E70
56E45
56E46
56E51
56E50
56E52
56E71
56E53
56E27
56E30
56E59
56E60
56E39
56E38
56E40
56E36
56E35
56E33
56E34
56E29
56E31
56E28
D
C
56J20
56J16
56J15
1010763-2 (REF)
1010763-1 (REF)
15
4 REQD
SEE NOTE 29
16
3 REQD
SEE NOTE 29
SEE NOTE 29
SEE NOTE 28
MAXIMUM ENVELOPE FOR ITEM 27
MAXIUM ENVELOPE FOR ITEM 28
SECTION A A
56TB3
PIN A3
56TB2
56TB1
PIN A1
1010816-244(REF)
56J22
1010816-144(REF)
56J21
PIN 1
SEE DETAIL B
4
4 REQD
7
MS25036-44 (REF)
56E66
11
9
PARTIAL SECTION C C
SCALE 2/1
MS25036-44 (REF)
56E68
10
PARTIAL SECTION D D
SCALE 2/1
MS25036-44 (REF)
56E67
DETAIL B
SCALE 4/1

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tolken DATE 8 OCT 64
CHECKED J. GRIEB 15 OCT 64
APPROVAL 27 Oct 64
APPROVAL 10/26/64 712A
NASA APPROVAL 11-4-64
MIT APPROVAL W Kupfer 4 Nov

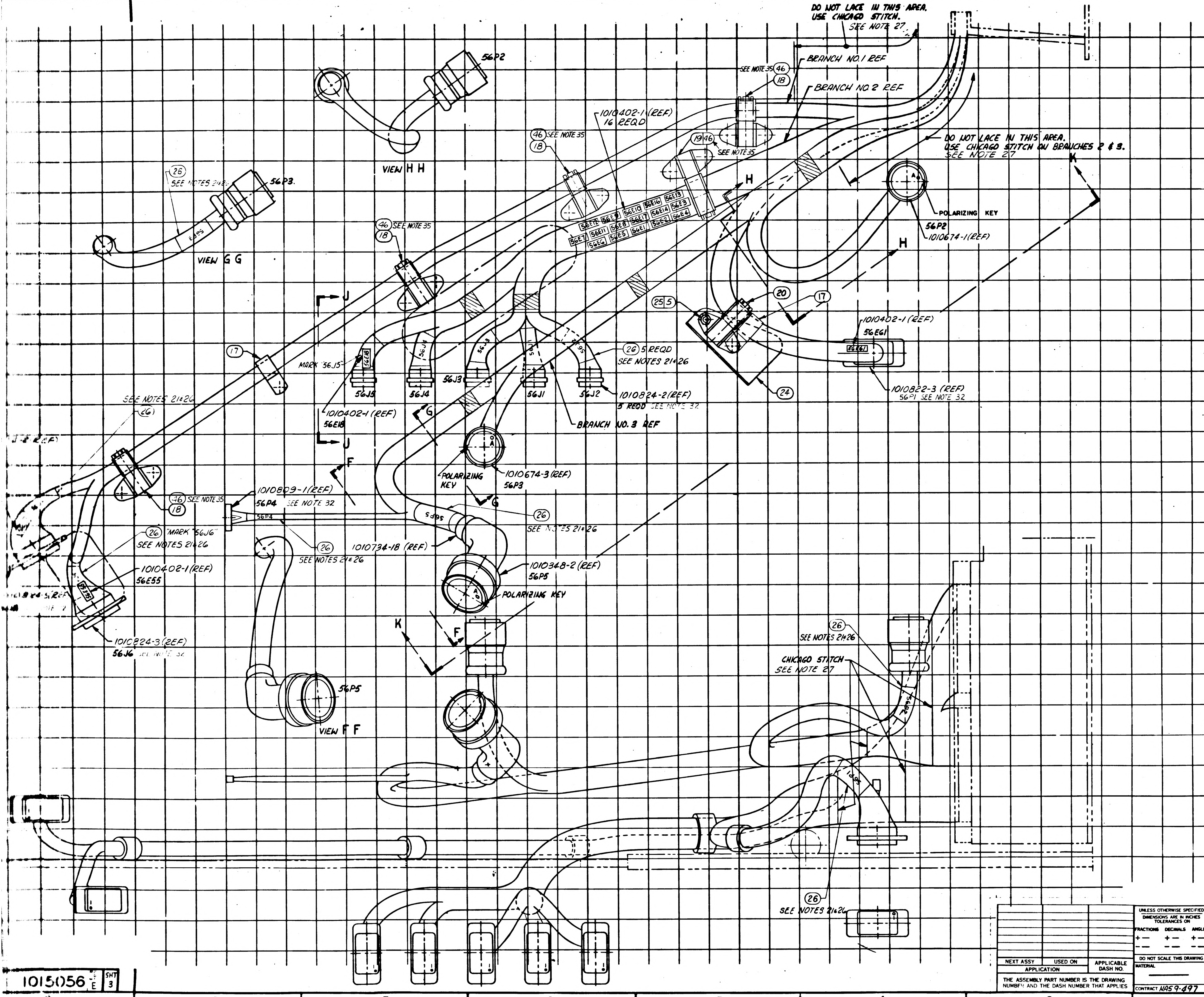
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO
SIZE E
NASA DRAWING NO 1015056
SCALE 1/1
NAS 9-497
SHEET 2 OF 6

1015056 E

SYM	ZONE	DESCRIPTION	DWG NO.	DATE	APPD.
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 12007		20 OCT 64	FK
C		REVISED PER TDRR 14575		7 DEC 64	LWP
D		REVISED PER TDRR 18049			
E		REVISED PER TDRR 26134		17 FEB 66	RLP


DO NOT LACE IN THIS AREA. USE CHICAGO STITCH. SEE NOTE 27
56P2
VIEW H H
(46) SEE NOTE 35
(18)
BRANCH NO. 1 REF
BRANCH NO. 2 REF
1010402-1 (REF)
16 REQD
(46) SEE NOTE 35
(18)
(19)(46) SEE NOTE 35
DO NOT LACE IN THIS AREA. USE CHICAGO STITCH ON BRANCHES 2 & 3. SEE NOTE 27
K
(26)
SEE NOTES 21 & 26
56P3
VIEW G G
56E12
56E9
56E10
56E16
56E13
56E7
56E11
56E8
56E17
56E14
56E3
56E6
56E5
56E1
56E2
56E4
H
POLARIZING KEY
56P2
1010674-1 (REF)
H
(46) SEE NOTE 35
(18)
J
(25)(5)
(20)
(17)
1010402-1 (REF)
56E61
(17)
MARK 56J5
(26) 5 REQD
SEE NOTES 21 & 26
56J5
56J4
56J3
56J1
56J2
1010824-2 (REF)
5 REQD SEE NOTE 32
(24)
1010822-3 (REF)
56P1 SEE NOTE 32
SEE NOTES 21 & 26
(26)
1010402-1 (REF)
56E18
G
BRANCH NO. 3 REF
J
J-2 (REF)
F
POLARIZING KEY
1010674-3 (REF)
56P3
(46) SEE NOTE 35
(18)
1010809-1 (REF)
56P4 SEE NOTE 32
56P4
G
(26)
SEE NOTES 21 & 26
(26) "MARK "56J6"
SEE NOTES 21 & 26
(26)
SEE NOTES 21 & 26
1010734-18 (REF)
1010402-1 (REF)
56E55
1010348-2 (REF)
56P5
POLARIZING KEY
1010824-3 (REF)
56J6 SEE NOTE 32
K
F
56P5
VIEW F F
(26)
SEE NOTES 21 & 26
CHICAGO STITCH
SEE NOTE 27
(26)
SEE NOTES 21 & 26
9
8
7
6
5
4
3
2
1
H
G
F
E
D
C
B
A

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+— +— +—
—— —— ——
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. L. Klee DATE 5 OCT 64
CHECKED J. GRIEB 15 OCT 64
APPROVAL 27 Oct 64
APPROVAL NEA
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

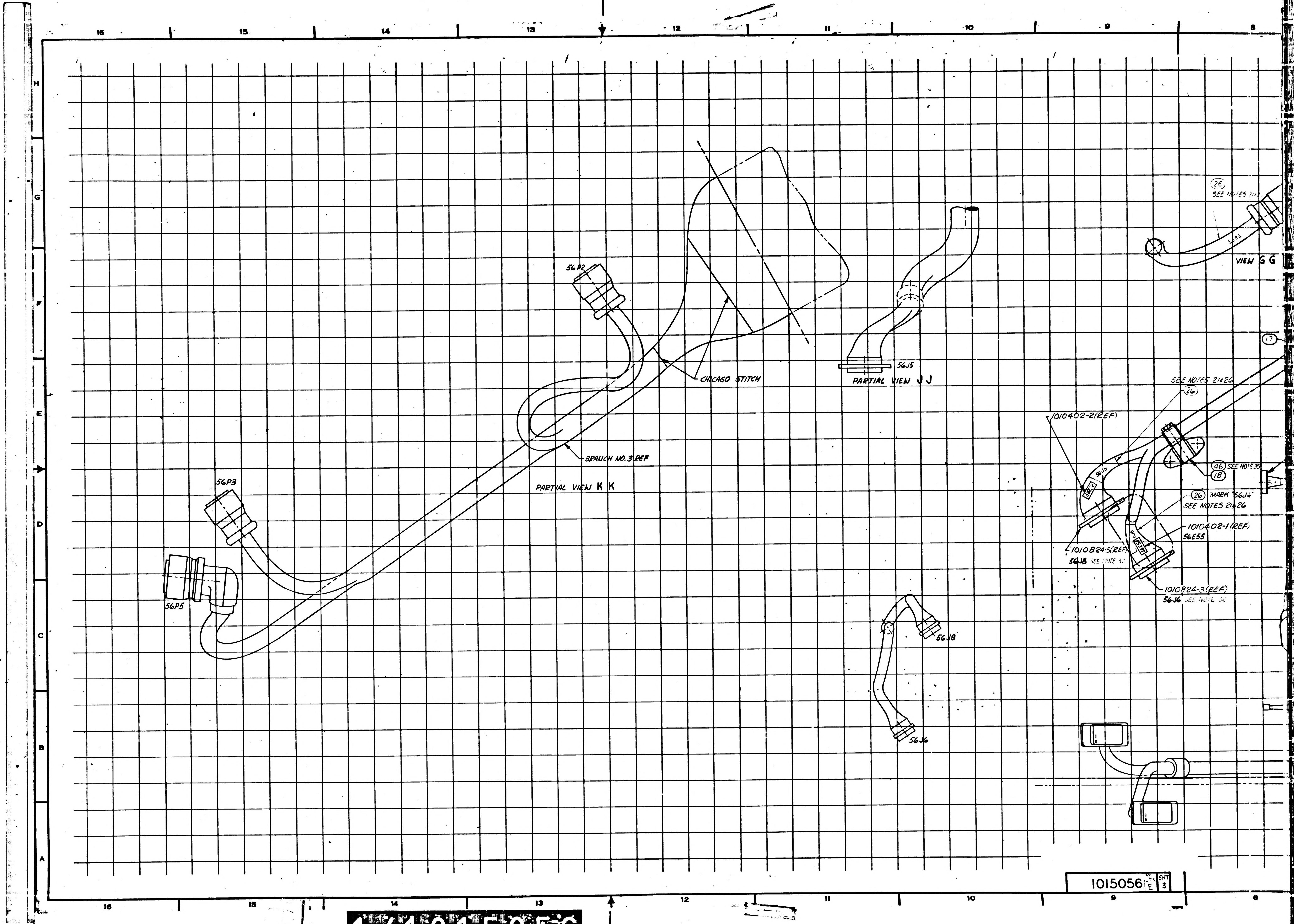
CODE IDENT NO.
SIZE J2
1015056
SCALE 1:1
SHEET 3 OF 6

1015056 E

1015056 E SHT 3

(34)

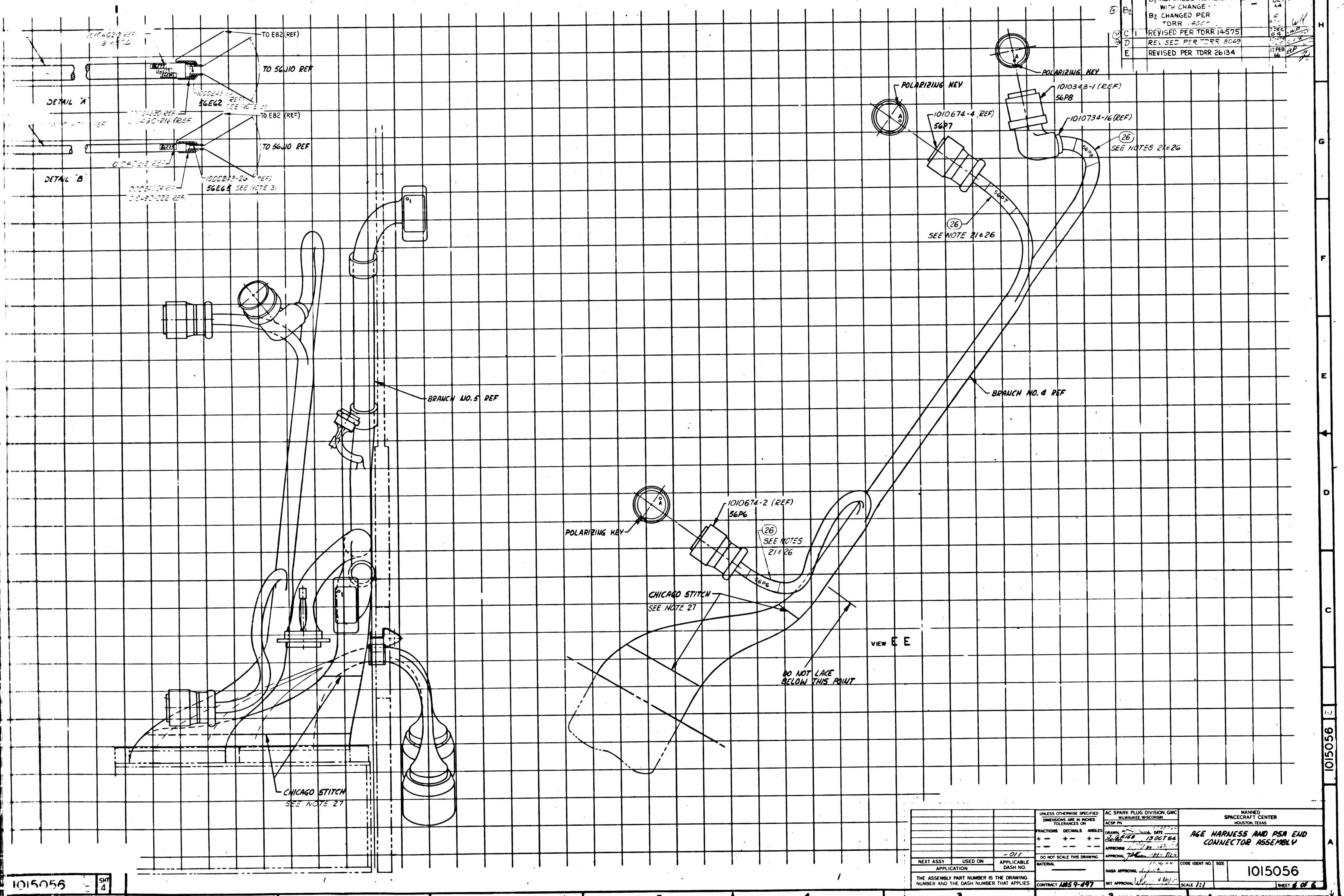
2/1015056


16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
56P2
CHICAGO STITCH
BRANCH NO. 3 REF
PARTIAL VIEW K K
56P3
56P5
56J5
PARTIAL VIEW J J
56J8
56J6
26
SEE NOTES 21&
VIEW G G
17
SEE NOTES 21&26
26
1010402-2(REF)
56J8
46 SEE NOTE 35
18
26 "MARK "56J6"
SEE NOTES 21&26
1010402-1(REF)
56E55
1010824-5(REF)
56J8 SEE NOTE 32
1010824-3(REF)
56J6 SEE NOTE 32

1015056 E SHT 3

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 1450-	—	20 OCT 64 4 NOV	FK WH
C	1	REVISED PER TDRR 14575		7 DEC 64	WP
D		REVISED PER TDRR 8049		12 APR 65	
E		REVISED PER TDRR 26134		17 FEB 66	RP


TO E82 (REF)
TO 56J10 REF
1010402-2 REF
3 REQD
1000243-34 (REF)
56E62 SEE NOTE 31
DETAIL "A"
1000242-30 REF
010490-216 (REF)
TO E82 (REF)
TO 56J10 REF
010490-2 REF
1000243-26 (REF)
56E65 SEE NOTE 31
1000242-24 REF
010-490-222 REF
DETAIL "B"
POLARIZING KEY
1010348-1 (REF)
56P8
POLARIZING KEY
1010674-4 (REF)
56P7
1010734-16 (REF)
26
SEE NOTES 21 & 26
26
SEE NOTE 21 & 26
56P7
56P8
BRANCH NO. 5 REF
BRANCH NO. 4 REF
1010674-2 (REF)
56P6
POLARIZING KEY
26
SEE NOTES 21 & 26
56P6
CHICAGO STITCH
SEE NOTE 27
VIEW E E
DO NOT LACE BELOW THIS POINT
CHICAGO STITCH
SEE NOTE 27

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

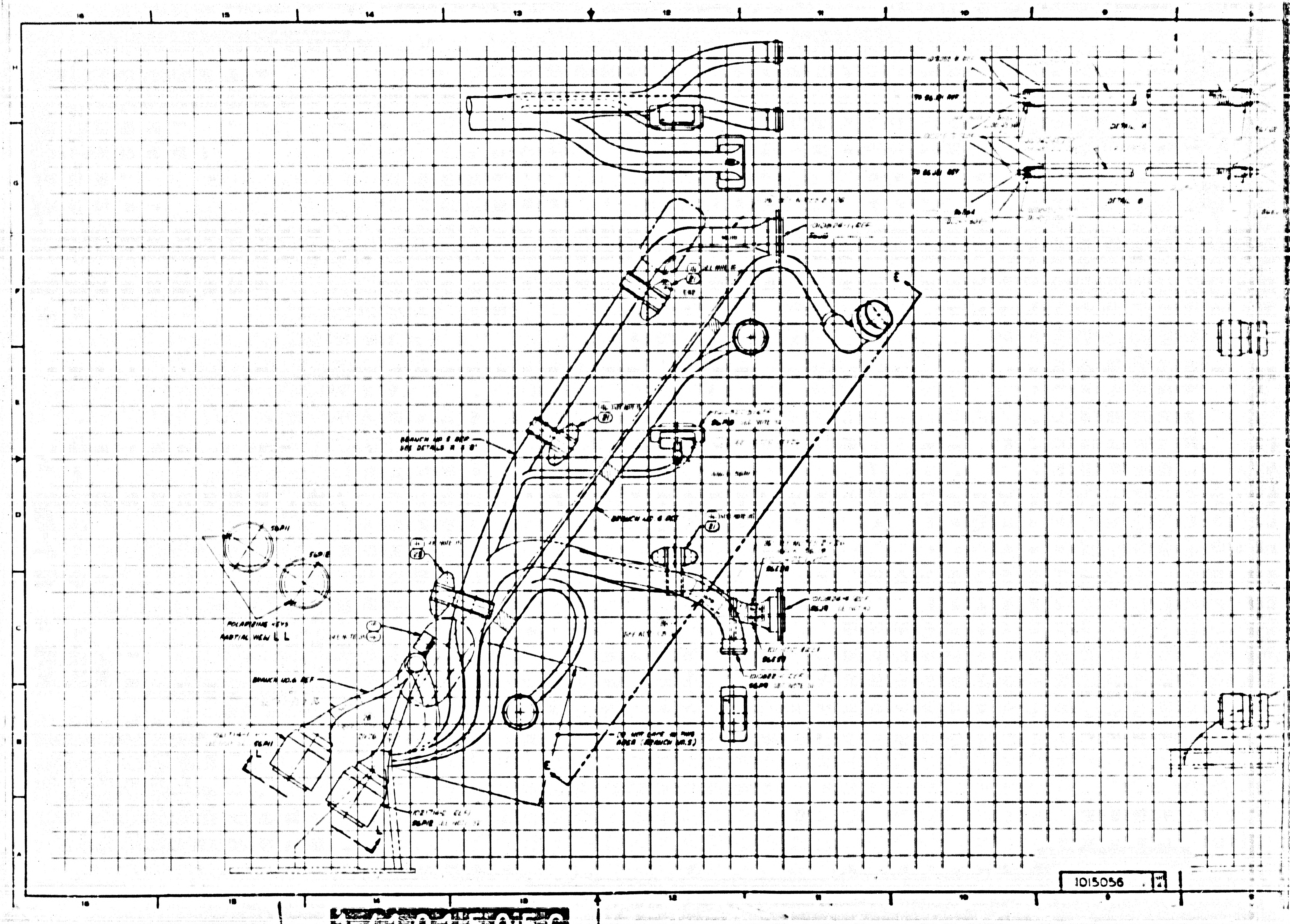
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — — — DECIMALS + — — — ANGLES + — — —
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED J. GRIEB 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

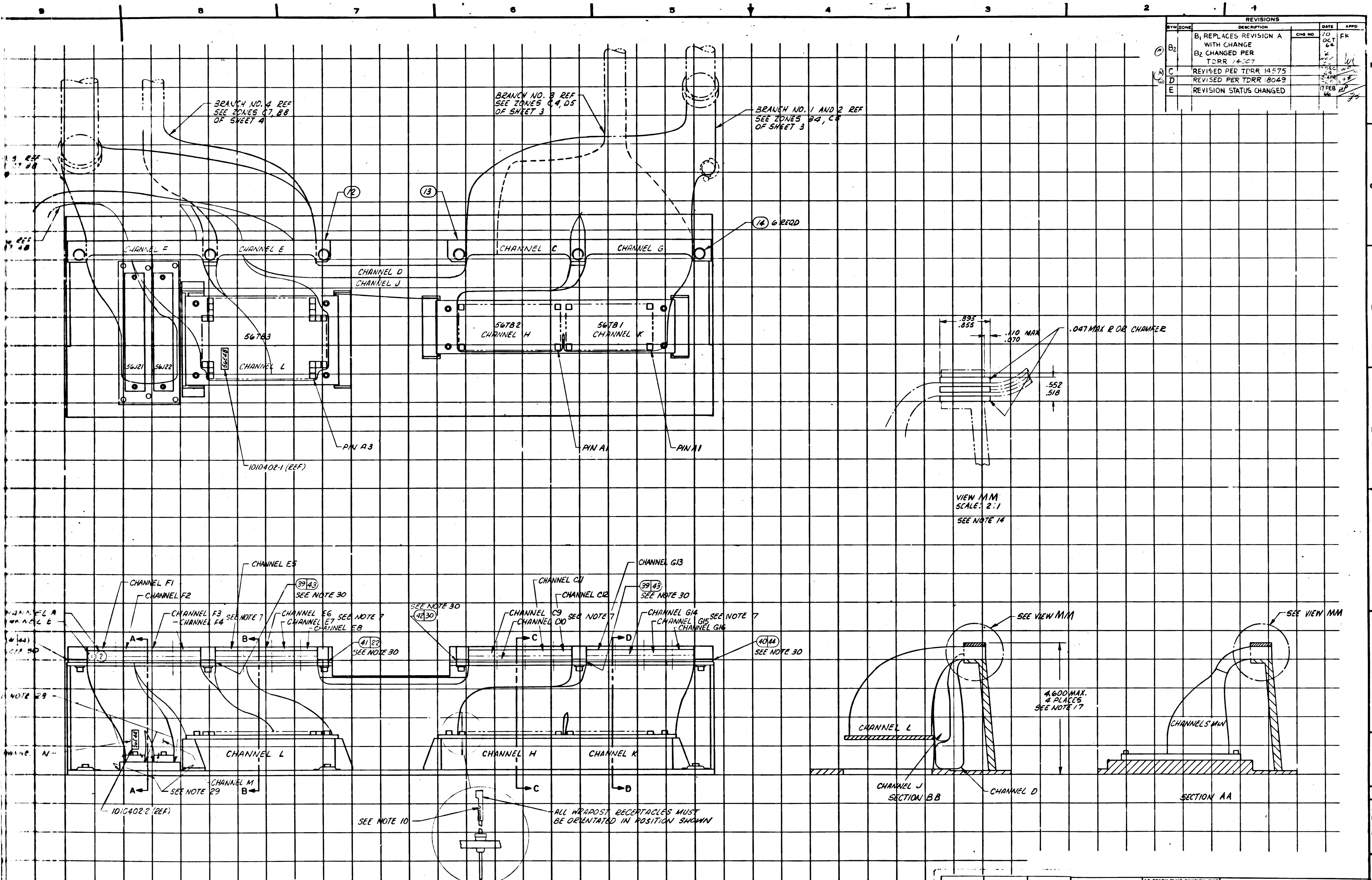
AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO. SIZE 1015056
SCALE 1:1 SHEET [illegible] OF 6



16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
TO 86J1 REF
TO 86J2 REF
DETAIL A
DETAIL B
BRANCH NO 5 REF
SEE DETAILS A & B
BRANCH NO 6 REF
BRANCH NO.6 REF
21
SEE NOTE 11
86J9
86E10
86E11
86J8
TO NOT COME IN THIS AREA (BRANCH NO.5)
POLARIZING KEYS
PARTIAL VIEW L L
86P11
86P12
L
℄
1015056

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14307		20 OCT 64 4 NOV 64	FK
C		REVISED PER TDRR 14575		7 DEC 64	
D		REVISED PER TDRR 18049		12-APR-65	
E		REVISION STATUS CHANGED		17 FEB 66	


BRANCH NO. 4 REF SEE ZONES C7, B8 OF SHEET 4
BRANCH NO. 3 REF SEE ZONES C4, D5 OF SHEET 3
BRANCH NO. 1 AND 2 REF SEE ZONES B4, C5 OF SHEET 3
12
13
14 6 REQD
CHANNEL F
CHANNEL E
CHANNEL C
CHANNEL G
CHANNEL D
CHANNEL J
56TB3
CHANNEL L
56J21
56J22
56E48
56TB2 CHANNEL H
56TB1 CHANNEL K
PIN A3
PIN A1
PIN A1
1010402-1 (REF)
.895 .855
.110 MAX .070
.047 MAX R OR CHAMFER
.552 .518
VIEW MM SCALE: 2:1
SEE NOTE 14
CHANNEL F1
CHANNEL F2
CHANNEL F3
CHANNEL F4
SEE NOTE 7
CHANNEL E5
39 43 SEE NOTE 30
CHANNEL E6
CHANNEL E7
SEE NOTE 7
CHANNEL E8
41 22 SEE NOTE 30
SEE NOTE 30
42 30
CHANNEL C9
CHANNEL C10
CHANNEL C11
CHANNEL C12
SEE NOTE 7
CHANNEL G13
39 43 SEE NOTE 30
CHANNEL G14
CHANNEL G15
CHANNEL G16
SEE NOTE 7
40 44 SEE NOTE 30
A
B
C
D
NOTE 29
CHANNEL L
CHANNEL M
SEE NOTE 29
1010402-2 (REF)
CHANNEL H
CHANNEL K
SEE NOTE 10
ALL WRAPOST RECEPTACLES MUST BE ORIENTATED IN POSITION SHOWN
SEE VIEW MM
4.600 MAX. 4 PLACES SEE NOTE 17
CHANNEL L
CHANNEL J
SECTION BB
CHANNEL D
SEE VIEW MM
CHANNELS M+N
SECTION AA

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. [illegible] DATE 5 OCT 64
CHECKED J. GRIEB 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

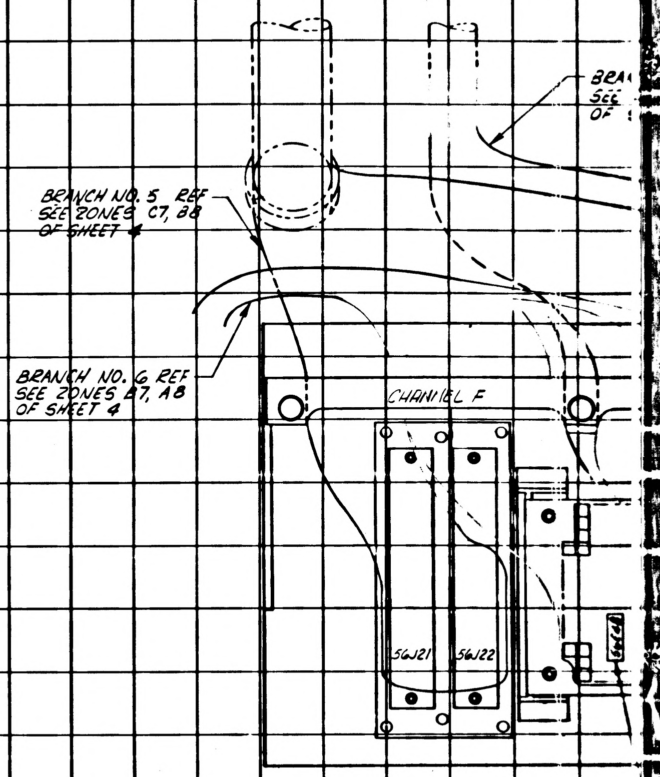
AGE HARNESS AND PSA END
CONNECTOR ASSEMBLY

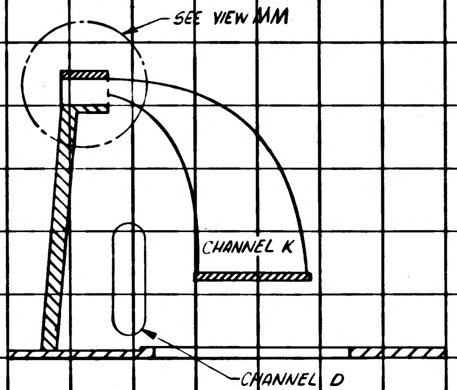
CODE IDENT NO.
SIZE J2
1015056
SCALE 1:1
SHEET 5 of 6

1015056 E

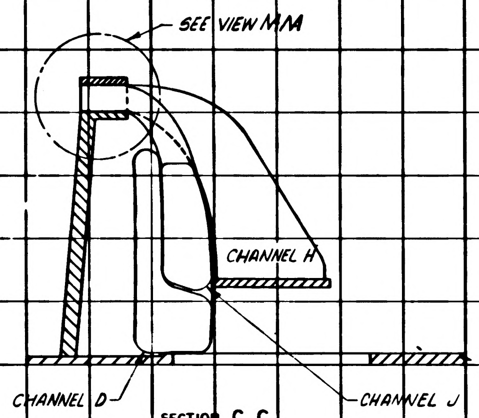
1015056 E SHT 5

27 1015056

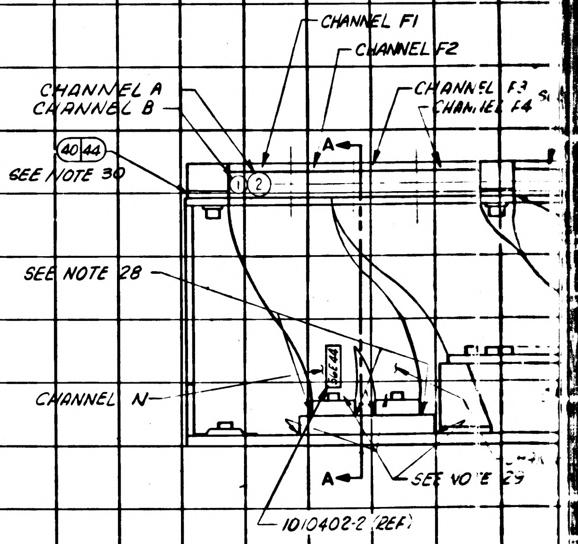

BRANCH NO. 5 REF
SEE ZONES C7, B8
OF SHEET 4
BRANCH NO. 6 REF
SEE ZONES B7, A8
OF SHEET 4
CHANNEL F
5W21
5W22
BRA
SEE
OF


SEE VIEW MM
CHANNEL K
CHANNEL D

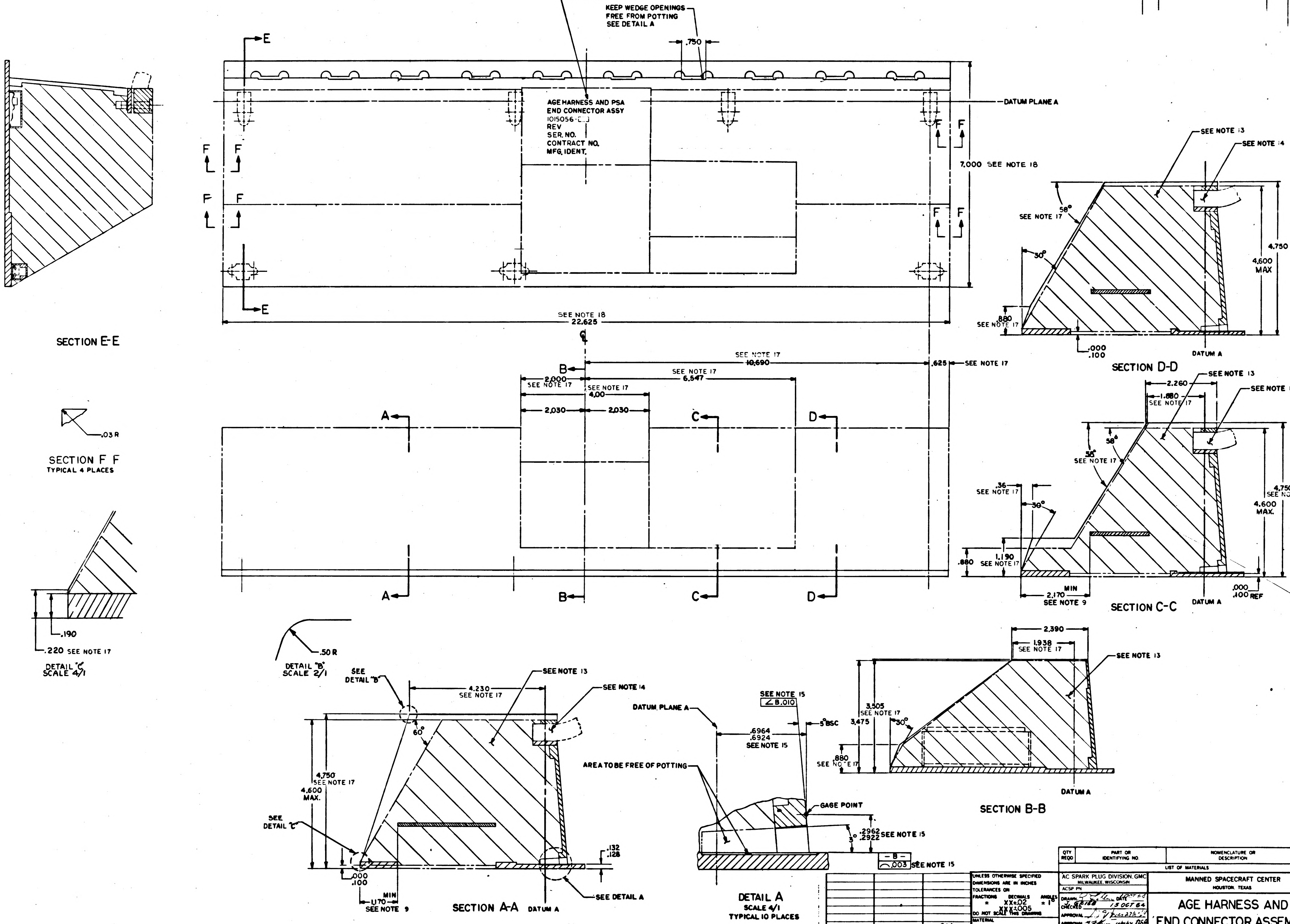
SECTION D D


SEE VIEW MM
CHANNEL H
CHANNEL D
CHANNEL J

SECTION C C


CHANNEL F1
CHANNEL F2
CHANNEL A
CHANNEL B
CHANNEL F3
CHANNEL F4
40
44
SEE NOTE 30
1
2
A
SEE NOTE 28
CHANNEL N
56E44
A
SEE NOTE 29
1010402-2 (REF)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B2	B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14001	20 OCT 64	FK
C	REVISED PER TDRR 14575	7 DEC 64	JWP
D	REVISED PER TDRR 18049	12-APR-65	
E	REVISION STATUS CHANGED	17 FEB 66	RDP



SEE NOTE 16
CENTRALLY LOCATE
KEEP WEDGE OPENINGS FREE FROM POTTING SEE DETAIL A
.750
E
E
AGE HARNESS AND PSA END CONNECTOR ASSY
1015056-□
REV
SER. NO.
CONTRACT NO.
MFG. IDENT.
DATUM PLANE A
F
F
7.000 SEE NOTE 18
SEE NOTE 18
22.625
SECTION E-E
SECTION F F
TYPICAL 4 PLACES
.03 R
SEE NOTE 17
10.690
.625 SEE NOTE 17
B
2.000
SEE NOTE 17
SEE NOTE 17
6.547
4.00
2.030
2.030
A
C
D
.190
.220 SEE NOTE 17
DETAIL "C"
SCALE 4/1
.50 R
DETAIL "B"
SCALE 2/1
SEE NOTE 13
SEE NOTE 14
58°
30°
4.750
4.600 MAX
.880
.000
.100
DATUM A
SECTION D-D
2.260
1.880
.36
1.190
2.170 MIN
SEE NOTE 9
4.750 SEE NOTE 17
4.600 MAX.
.000
.100 REF
SECTION C-C
2.390
1.938
3.505
3.475
.880
SECTION B-B
SEE DETAIL "B"
4.230
60°
SEE DETAIL "C"
.132
.128
1.170 MIN
SEE DETAIL A
SECTION A-A
DATUM PLANE A
SEE NOTE 15
∠ B .010
5° BSC
.6964
.6924
AREA TO BE FREE OF POTTING
GAGE POINT
3°
.2962
.2922
– B –
⌒ .003
DETAIL A
SCALE 4/1
TYPICAL 10 PLACES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 13 OCT 64
CHECKED J. GEIGER 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO | SIZE E | NASA DRAWING NO 1015056
SCALE 1/1 NOTED | NAS 9-497 | SHEET 6 OF 6

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MAXIMUM ENVELOPE AND "E" POINTS FOR ITEM (28) WIRE LIST ARE SHOWN ON SHEET 2.
3. BRANCHES 1, 2 & 3 OF ITEM (27) HARNESS ARE SHOWN ON SHEET 3.
4. BRANCHES 4, 5 & 6 OF ITEM (27) HARNESS ARE SHOWN ON SHEET 4.
5. MARRIAGE CONFIGURATION OF ITEMS 27 & 28 ARE SHOWN ON SHEET 5.
6. MOUNTING TORQUE FOR ITEM ② IS 6.5 IN/LBS.
7. TERMINATION NUMBERS ARE LISTED IN 1015055 OR 1023057 CONDUCTOR CHART.
8. ALL WIRING SHALL BE BELOW THE SURFACE OF THE ENCAPSULATING MATERIAL.
9. TERMINAL BOARDS ARE TO BE LOCATED TO THESE DIMENSIONS BEFORE POTTING.
10. WELD PER ND 1002225.
11. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING
12. ENCAPSULATION ENVELOPE IS SHOWN ON SHEET 6.
13. ENCAPSULATE PER ND 1002002 USING ITEMS (34) & (35)
14. ASSEMBLE AND ENCAPSULATE IN ACCORDANCE WITH ATP 1015056 USING ITEM (29) PER ND1002236. ~~AND ITEMS (32) & (33) PER ND1002009 METHOD B.~~
15. DIMENSIONS TO BE STABLE AFTER POTTING.
16. SERIALIZE & MARK CHARACTERS .12 HIGH, WHITE PER ND 1002023.
17. DIMENSION OR CHARACTERISTIC IS CONTROLLED BY ICDMH01-01003-116.
18. ICDM01-01003-116 ENVELOPE DIMENSIONS ARE 7.000 AND 22.690 RESPECTIVELY; ACTUAL VALUES MAY BE LESS. POTTING SHALL BE FLUSH TO .015 LESS THAN THE ENVELOPE DEFINED BY THE ACTUAL LENGTH AND WIDTH OF THE END CONNECTOR ASSEMBLY.
19. ~~INTERCONNECTION LIST OF AGE HARNESS & END CONNECTOR ASSEMBLY IS 1015057.~~
20. INTERCONNECTION DIAG OF AGE C/M, LOWER EQUIPMENT BAY IS 1015089.
21. SECURE TO ITEM (27) HARNESS USING ITEM (36) & (31)
22. ASSEMBLE AND TEST PER ATP 1015056.
23. INSPECT PER PS 1015056.
24. GRID MODULE ON SHEET 3, 4 & 5 IS 1 INCH TRUE POSITION.
25. UNLESS OTHERWISE SPECIFIED:
    FEATURE CENTERLINES ON SHEETS 3, 4 & 5 ARE LOCATED WITHIN ±.25. END OF HOOK UP WIRES OR ACCESSORIES ARE LOCATED WITHIN .12.
26. MARK IDENTIFICATION BAND WITH REFERENCE DESIGNATION AS SHOWN .12 HIGH, COLOR BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE.
27. CHICAGO STITCH AT APPROXIMATELY 1 INCH INTERVALS USING ITEMS (31) & (36) WIRES FROM THE DIFFERENT HARNESS BRANCHES MERGING INTO THE SAME WIRE HARNESS CLAMP CHANNEL GROUP SHOULD BE BLENDED TOGETHER WHEN CHICAGO STITCHING IS PERFORMED.

NOTES CONTINUED:
28. BEFORE WIRING APPLY SILICONE RUBBER PER ND1002009 METHOD B, USING ITEMS (32) AND (33), AROUND ENTIRE LENGTH OF CONNECTORS 56J21 AND 56J22 AND OVER THE PORTION OF ITEM 2 WITHIN THE END CONNECTOR.
29. APPLY EPOXY PER ND 1002187 USING ITEMS (37) AND (38) TO BOND ITEMS (15) AND (16) TO ITEM ①, AROUND ENTIRE LENGTH OF NOTED SURFACES, AT REAR OF CONNECTORS 56J21 AND 56J22 AND BEHIND CONNECTORS 56J11 THRU 56J20 TO HEIGHT SUFFICIENT TO COVER NYLON INSULATORS.
30. SELECT NOTED ITEMS IN ACCORDANCE WITH ATP REQUIREMENTS AT ENCAPSULATION PHASE OF END CONNECTOR BUILD UP.
31. CRIMP PER ND1002206
32. POT BACK OF CONNECTORS PER ND1002236 USING ITEM (29).
33. WIRE WRAP PSA END CONNECTOR ASSY PER ND1002031. - SEE DWG 1015091 FOR ROUTING.
34. LACE HARNESS PER ND1002032.
35. SELECT SIZES TO CONFORM TO BUNDLE DIAMETERS AT LOCATIONS SHOWN ON SHEETS 3 & 4.

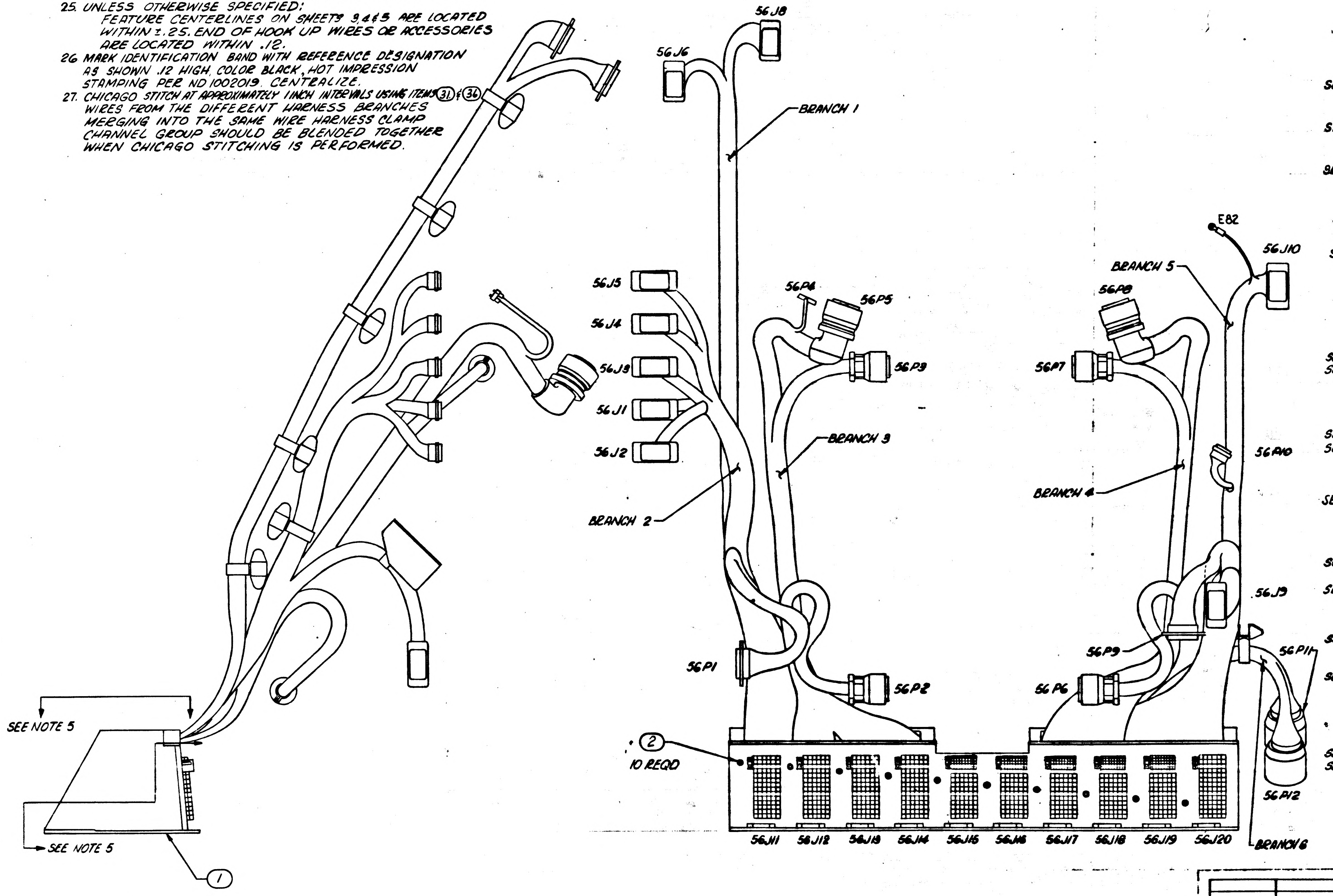
NOTES 36 THRU 41 ARE FOR -031 CONFIGURATION ONLY:

36. AFTER ENCAPSULATION APPLY PRIMER AND PR-1538 PER ND 1002236, USING ITEMS (29) AND (56) TO THE REWORKED TRAY SLOTS.
37. AFTER ENCAPSULATION REMOVE ANODIZE ALONG NOTED SURFACES.
38. AFTER ENCAPSULATION APPLY ECCOBOND NO. 45 AND CATALYST NO. 15 PER ND1002004, TYPE II USING ITEMS (57) AND (58) TO ENTIRE LENGTH OF NOTED SURFACE.

NOTES CONTINUED:
39. POT BACK OF CONNECTORS 56J1 THRU 56J5 PER ND 1002236 USING ITEM (29). INSIDE CENTER HARDWARE MUST BE FREE OF POTTING COMPOUND WITHIN DIMENSION SHOWN.
40. BOND ITEM (53) TO BACK SIDE OF CONNECTOR FLANGE FOR CONNECTORS 56J1 THRU 56J5 USING ITEM ~~NUMBERS~~ (54) AND (55) PER ND 1002151.
41. UNLESS OTHERWISE SPECIFIED ALL UNDERCUTS TO BE .12 × .12.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14007		20 OCT 64 4 NOV 64	FK
C		REVISED PER TDRR 14575		7 DEC 64	JWP
D		REVISED PER TDRR 18049		12-APR-65	
E		REVISED PER TDRR 26134		17 FEB 66	
F		REVISED PER TDRR 26377		6-APR-66	

B1 REPLACES REVISION A WITH CHANGE



	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
SEE NOTE 11	AR	-	-		58	1010686	CATALYST
	AR	-	-		57	1010657	EPOXY, RESIN
	AR	-	-		56	1012504	PRIMER, METAL PARTS
SEE NOTE 11	AR	-	-		55	1010718	PRIMER, SILICONE ADHESIVE
	AR	-	-		54	MIL-A-2545	ADHESIVE, SILICONE ADHESIVE
	5	-	-		53	1021307	GASKET, CONNECTOR
SEE NOTE 11	2	-	-		52	1010618-26	SCREW, BUTTON HD
	1	-	-		51	1008329	SPACER BLOCK
	1	-	-		50	1007461-021	END CONNECTOR ASSEMBLY, PSA
					49		
	X	X	-		48	1023056	INTERCONNECTION LIST
	1	1	-		47	1023057	WIRING HARNESS A
SEE NOTE 35	10	10	-		46	1010400-1 THRU -18	CLAMP, LOOP, HINGED
	-	-	X		45	1015057	INTERCONNECTION LIST
	2	2	2		44	1021253-6	SPACER
	2	2	2		43	1021253-5	SPACER
	1	1	1		42	1021253-4	SPACER
	1	1	1		41	1021253-3	SPACER
	2	2	2		40	1021253-2	SPACER
	2	2	2		39	1021253-1	SPACER
SEE NOTE 11	AR	AR	AR		38	1010679	ADHESIVE ACTIVATOR
SEE NOTE 11	AR	AR	AR		37	1010661	EPOXY RESIN
	AR	AR	AR		36	1012507-004	LACING TAPE
	AR	AR	AR		35	1010798-2	ACTIVATOR
	AR	AR	AR		34	1010798-1	RESIN
SEE NOTE 11	AR	AR	AR		33	1006835	AGENT, CURING
SEE NOTE 11	AR	AR	AR		32	1006834	COMPOUND, SILICONE RUBBER
	AR	AR	AR		31	1012507-002	LACING TAPE
	1	1	1		30	1021253-8	SPACER
	AR	AR	AR		29	1012503	COMPOUND, POTTING, POLYURETHANE
SEE NOTE 33	1	1	1		28	1015058	WIRE LIST AA
	-	-	1		27	1015055	WIRING HARNESS A
	21	21	21		26	1010811-001	BAND, IDENTIFICATION
	-	-	1		25	AN345C10	(1897146-110) NUT, PLAIN HEX
	-	-	1		24	1014609	BRACKET, CLAMP
SEE NOTE 11	-	-	1		23	1010400-8	CLAMP, LOOP, HINGED
	1	1	1		22	1021253-7	SPACER
SEE NOTE 11	-	-	3		21	1010400-3	CLAMP, LOOP, HINGED
	-	-	1		20	1010400-2	CLAMP, LOOP, HINGED
	-	-	1		19	1010400-7	CLAMP, LOOP, HINGED
	-	-	5		18	1010400-1	CLAMP, LOOP, HINGED
SEE NOTE 11	2	2	1		17	1010705-8	CLAMP, LOOP
	3	3	3		16	1008232	CAP, PROTECTIVE
	4	4	4		15	1008231	CAP, PROTECTIVE
SEE NOTE 11	6	6	6		14	1006783-47	SCREW, BUTTON HD
	1	1	1		13	1008164	CABLE CLAMP, LEFT
	1	1	1		12	1008165	CABLE CLAMP, RIGHT
	1	1	1		11	1008148	CONNECTOR PLATE ASSY (264 PIN)
	1	1	1		10	1008149	CONNECTOR PLATE ASSY (293 PIN)
	3	3	3		9	MS35649-44	NUT, PLAIN HEX
SEE NOTE 11	1	1	1		8	1010618-18	SCREW, BUTTON HD
SEE NOTE 11	3	3	3		7	1010618-14	SCREW, BUTTON HD
	4	4	4		6	MS35335-57	WASHER, LOCK
	1	1	1		5	MS35338-081	WASHER, LOCK
	8	6	8		4	MS16995-17	SCREW, HEX SOCKET HD
	4	4	4		3	MS16995-10	SCREW, HEX SOCKET HD
	10	10	10		2	1008163	PIN, LOCATING
	-	1	1		1	1007461-011	END CONNECTOR ASSY, PSA

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
		-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN R. Lelo 29 SEP 64
CHECKED J. GRIBB 15 OCT 64
APPROVAL 27 Oct 64
APPROVAL 10/27/64
NASA APPROVAL 11-4-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

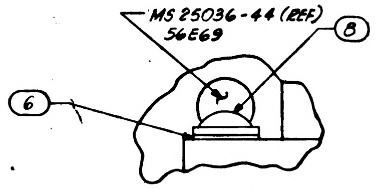
AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1015056
SCALE 1/2
SHEET 1 OF 7

MASTER

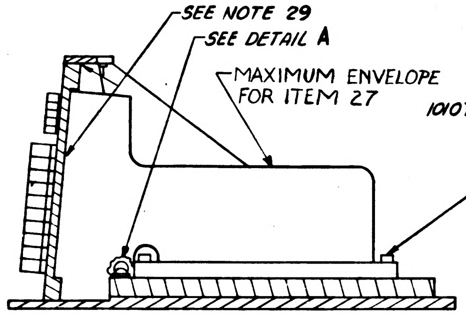
1015056

REVISIONS			
	DESCRIPTION	DATE	APPROVAL
B₂	B₁ REPLACES REVISION A WITH CHANGE B₂ CHANGED PER TDRR 18007	20 OCT 64	FK WK
C	REVISED PER TDRR 14575	7 DEC 64	JWP
D	REVISED PER TDRR 18049	12-APR-65	
E	REVISION STATUS CHANGED	17 FEB 66	RLP
F	REVISION STATUS CHANGED	4-APR-66	B.



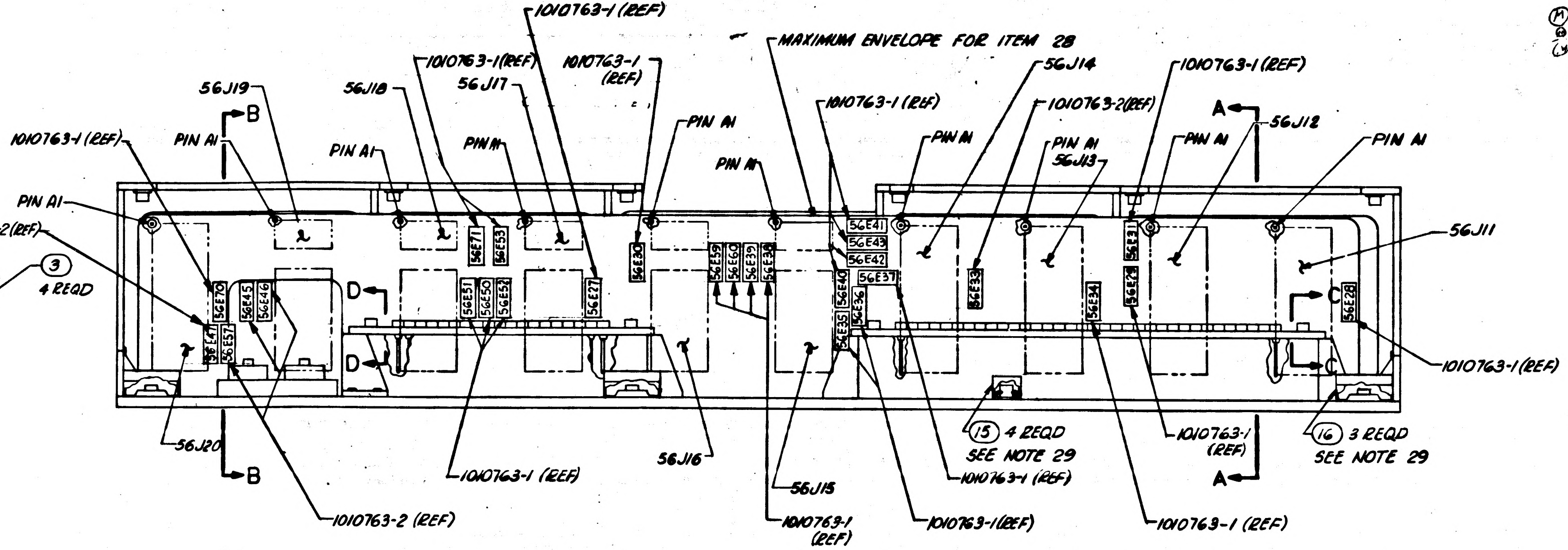
MS 25036-44 (REF)
56E69
8
6

DETAIL A
SCALE 4/1

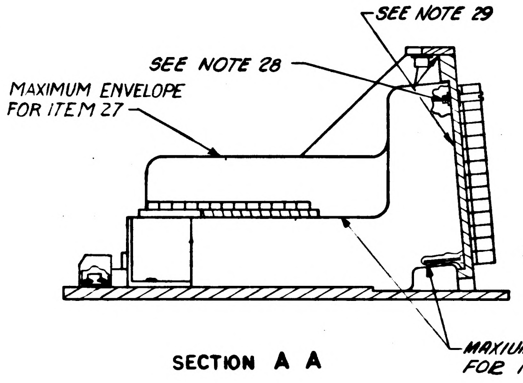


SEE NOTE 29
SEE DETAIL A
MAXIMUM ENVELOPE FOR ITEM 27
3
4 REQD

SECTION B B

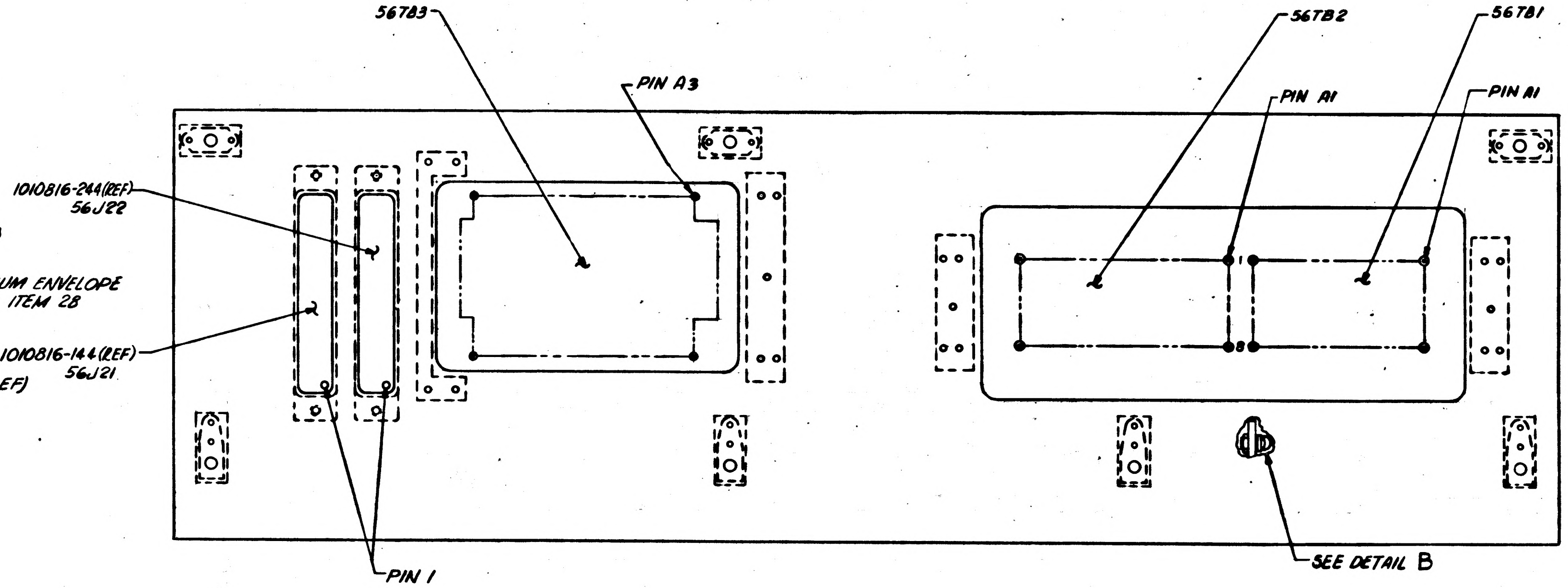


1010763-1 (REF)
MAXIMUM ENVELOPE FOR ITEM 28
56J14
1010763-1 (REF)
56J19
B
56J18
1010763-1(REF)
56J17
1010763-1 (REF)
1010763-1 (REF)
1010763-2(REF)
A
56J12
PIN A1
PIN A1
PIN A1
PIN A1
PIN A1
PIN A1
PIN A1
PIN A1
56J13
PIN A1
1010763-1 (REF)
PIN A1
1010763-2(REF)
56J11
56E70
56E47
56E57
56E45
56E46
D
D
56E51
56E50
56E52
56E71
56E53
56E27
56E30
56E59
56E60
56E39
56E38
56E41
56E43
56E42
56E40
56E37
56E36
56E35
56E33
56E34
56E31
56E29
56E28
C
C
1010763-1 (REF)
56J20
B
1010763-2 (REF)
1010763-1 (REF)
56J16
56J15
1010763-1 (REF)
15 4 REQD
SEE NOTE 29
1010763-1 (REF)
1010763-1(REF)
1010763-1 (REF)
A
16 3 REQD
SEE NOTE 29
1010763-1 (REF)

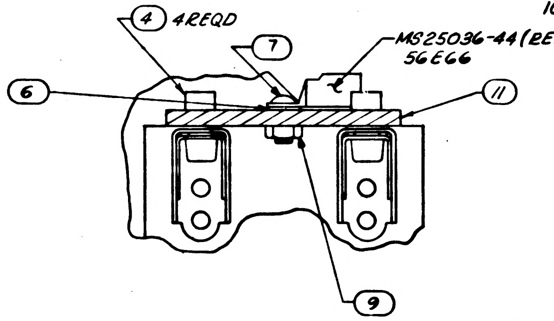


SEE NOTE 29
SEE NOTE 28
MAXIMUM ENVELOPE FOR ITEM 27
MAXIUM ENVELOPE FOR ITEM 28

SECTION A A

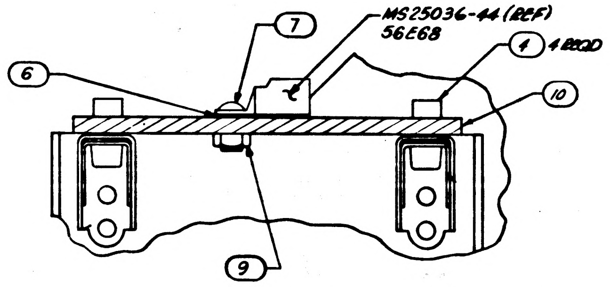


56783
PIN A3
56TB2
56TB1
PIN A1
PIN A1
1010816-244(REF)
56J22
1010816-146(REF)
56J21
PIN 1
SEE DETAIL B



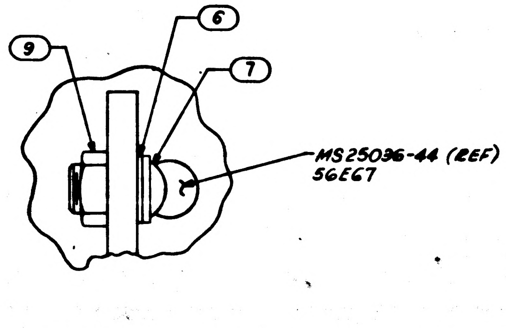
4 4 REQD
7
MS25036-44 (REF)
56E66
6
11
9

PARTIAL SECTION C C
SCALE 2/1



7
MS25036-44 (REF)
56E68
4 4 REQD
6
10
9

PARTIAL SECTION D D
SCALE 2/1



9
6
7
MS25036-44 (REF)
56E67

DETAIL B
SCALE 4/1

F. 1015056

MASTER

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

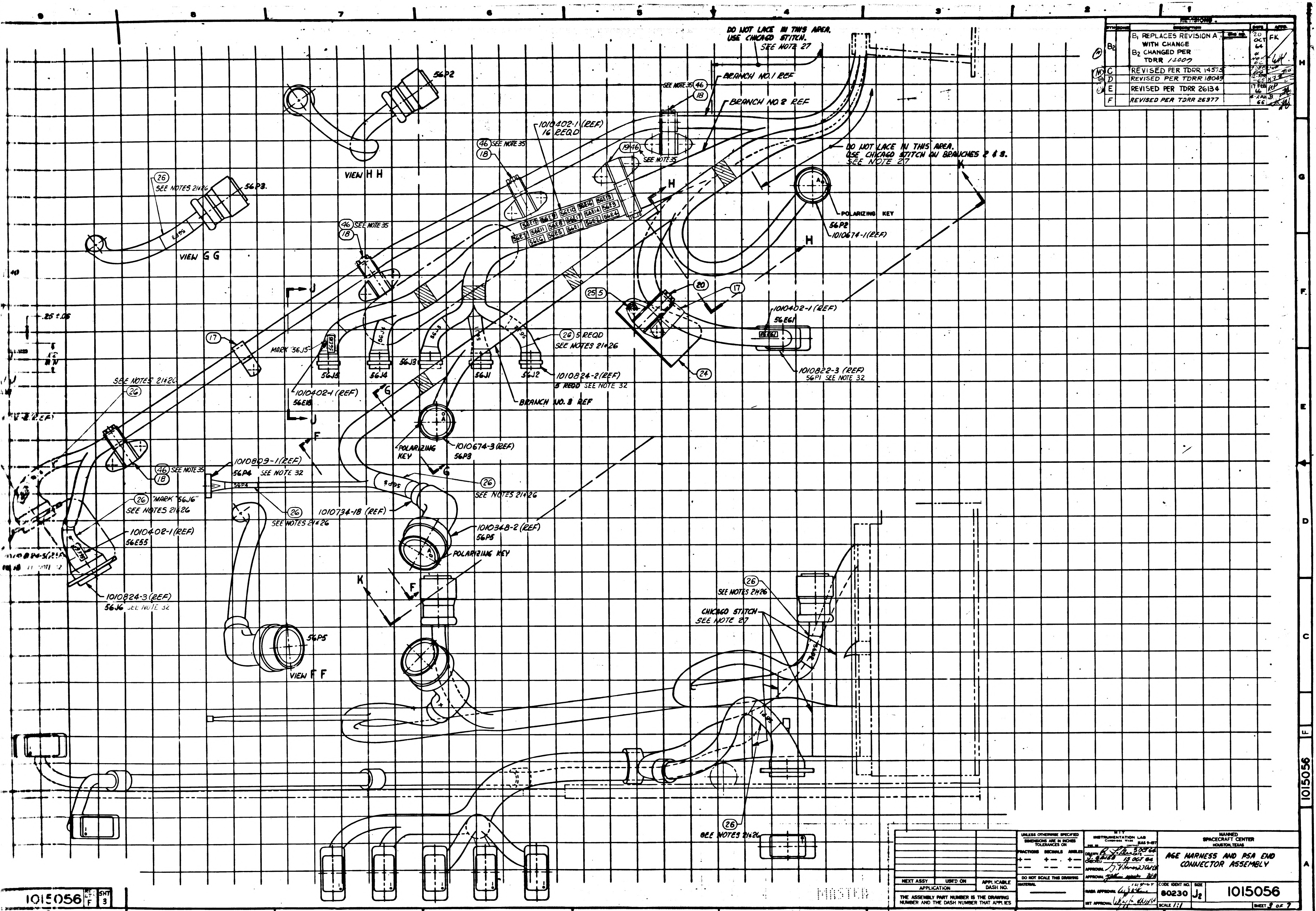
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS 9-497
DRAWN R. [illegible] DATE OCT 64
CHECKED J. [illegible] 15 OCT 64
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible] 11-4-64
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1015056
SCALE 1/1
SHEET 2 OF 7


DO NOT LACE IN THIS AREA. USE CHICAGO STITCH. SEE NOTE 27
BRANCH NO. 1 REF
BRANCH NO. 2 REF
SEE NOTE 35
46
18
56P2
VIEW H H
1010402-1 (REF) 16 REQD
46 SEE NOTE 35
18
19 46 SEE NOTE 35
DO NOT LACE IN THIS AREA. USE CHICAGO STITCH ON BRANCHES 2 & 3. SEE NOTE 27
K
H
56E1B 56E19 56E10 56E16 56E13
56E11 56E8 56E17 56E14 56E3
56E7 56E6 56E5 56E1 56E2 56E4
26 SEE NOTES 21 & 26
56P3.
VIEW G G
46 SEE NOTE 35
18
POLARIZING KEY
56P2
1010674-1 (REF)
H
J
20
17
25 5
1010402-1 (REF)
56E61
.25 ± .06
17
MARK "56J5"
26 5 REQD SEE NOTES 21 & 26
56J5 56J4 56J3 56J1 56J2
1010824-2 (REF) 5 REQD SEE NOTE 32
24
1010822-3 (REF) 56P1 SEE NOTE 32
SEE NOTES 21 & 26
26
1010402-1 (REF) 56E18
G
BRANCH NO. 3 REF
J
POLARIZING KEY
1010674-3 (REF) 56P3
F
46 SEE NOTE 35
18
1010809-1 (REF) 56P4 SEE NOTE 32
56P4
G
26 SEE NOTES 21 & 26
26 "MARK "56J6" SEE NOTES 21 & 26
26 SEE NOTES 21 & 26
1010734-18 (REF)
1010348-2 (REF) 56P5
POLARIZING KEY
1010402-1 (REF) 56E55
1010824-3 (REF) 56J6 SEE NOTE 32
K
F
56P5
VIEW F F
26 SEE NOTES 21 & 26
CHICAGO STITCH SEE NOTE 27
26 SEE NOTES 21 & 26

SYM	ZONE	DESCRIPTION	DATE	APPR.
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 12007	20 OCT 64 4 NOV 66	FK
C		REVISED PER TDRR 14575	9 SEP 65	
D		REVISED PER TDRR 18049	12-APR-65	
E		REVISED PER TDRR 26134	17 FEB 66	RP
F		REVISED PER TDRR 26377	4-APR 66	B.

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS 9-497
DRAWN 5 OCT 64
CHECKED J. GENGO 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 15-9-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END
CONNECTOR ASSEMBLY

CODE IDENT NO. 80230
SIZE J2
1015056
SCALE 1:1
SHEET 3 OF 7

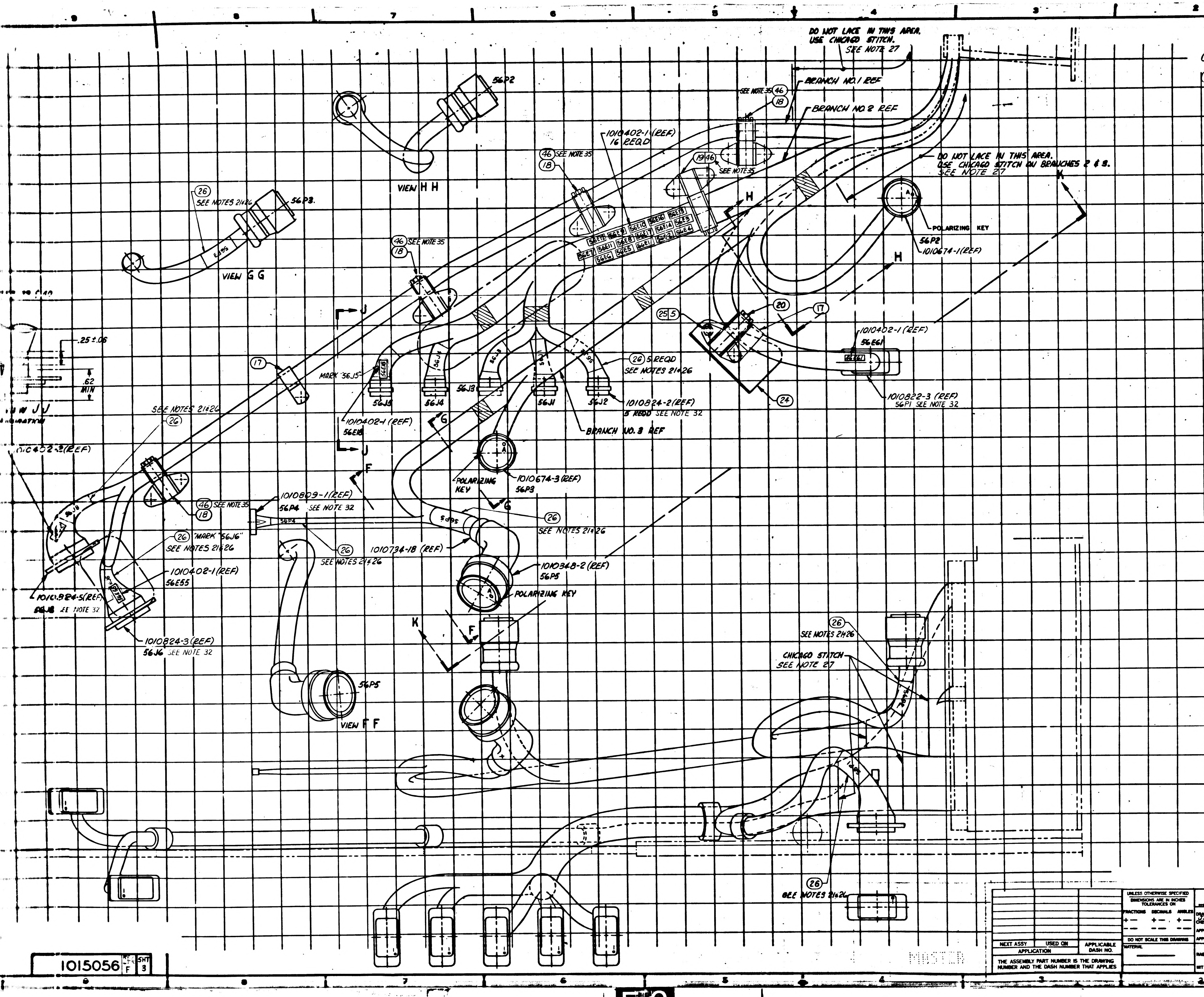
1015056

1015056 REV LTR F SHT 3

MASTER

(34)

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPR.
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 12007		20 OCT 64 4 NOV 66	FK
C		REVISED PER TDRR 14575		66	
D		REVISED PER TDRR 18049		12-APR-65	
E		REVISED PER TDRR 26134		17 FEB 66	RP
F		REVISED PER TDRR 26377		66	



DO NOT LACE IN THIS AREA. USE CHICAGO STITCH. SEE NOTE 27
BRANCH NO. 1 REF
BRANCH NO. 2 REF
BRANCH NO. 3 REF
56P2
VIEW H H
SEE NOTE 35
1010402-1 (REF) 16 REQD
DO NOT LACE IN THIS AREA. USE CHICAGO STITCH ON BRANCHES 2 & 3. SEE NOTE 27
SEE NOTES 21 & 26
56P3.
VIEW G G
POLARIZING KEY
56P2
1010674-1 (REF)
H
K
J
1010402-1 (REF)
56E61
.25 ± .06
.62 MIN
VIEW J J
MARK '56J5'
56J5 56J4 56J3 56J1 56J2
5 REQD
SEE NOTES 21 & 26
1010824-2 (REF) 5 REQD SEE NOTE 32
1010822-3 (REF) 56P1 SEE NOTE 32
1010402-1 (REF) 56E18
1010674-3 (REF) 56P3
POLARIZING KEY
G
F
1010809-1 (REF) 56P4 SEE NOTE 32
"MARK "56J6" SEE NOTES 21 & 26
1010402-1 (REF) 56E55
1010824-5 (REF) 56J8 SEE NOTE 32
1010824-3 (REF) 56J6 SEE NOTE 32
1010734-18 (REF)
1010348-2 (REF) 56P5
POLARIZING KEY
56P5
VIEW F F
CHICAGO STITCH SEE NOTE 27
SEE NOTES 21 & 26

MIT INSTRUMENTATION LAB
Cambridge Mass
CONTRACT NAS 9-497

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

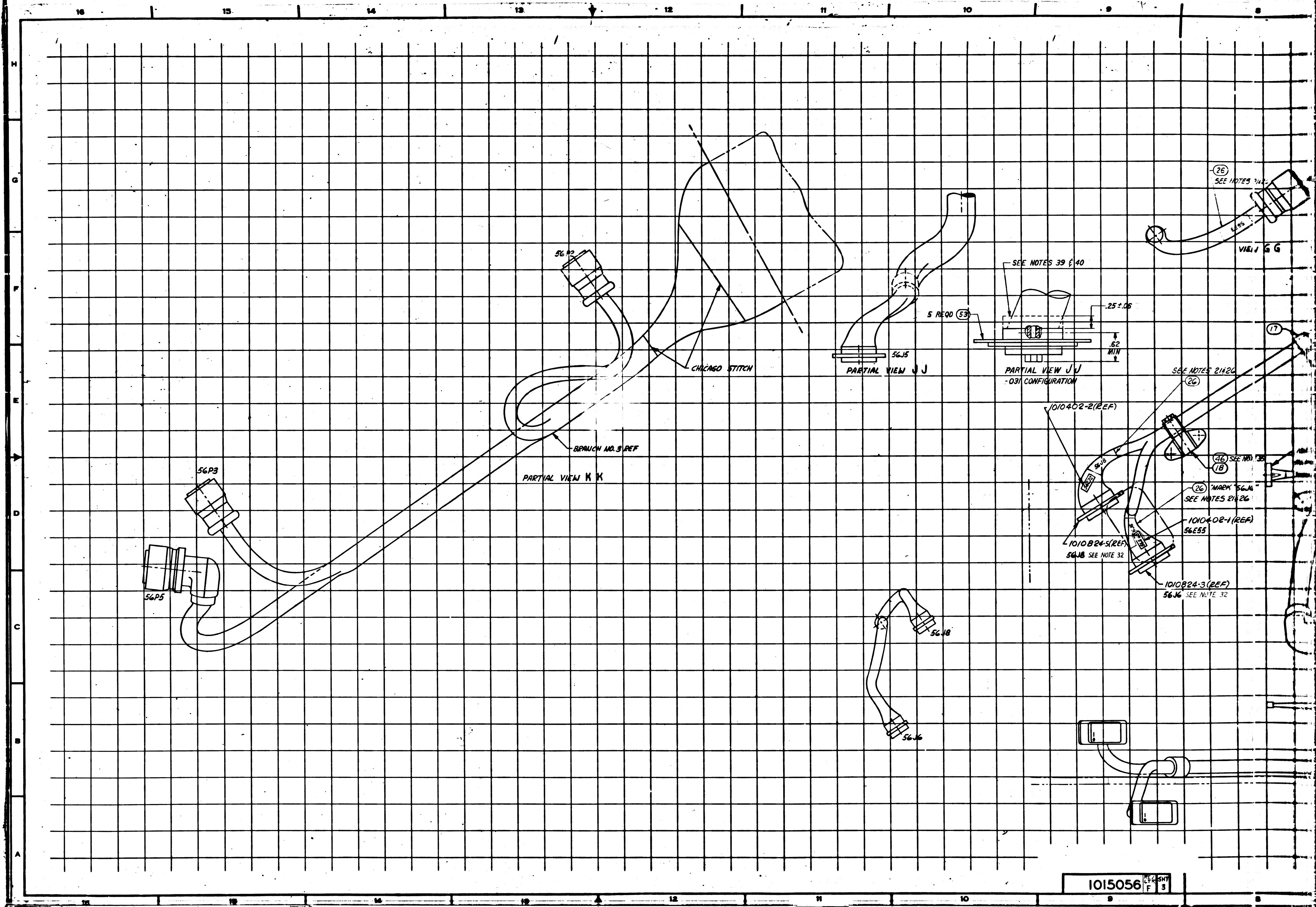
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

DRAWN R. L. 5 OCT 64
CHECKED J. GRIEB 13 OCT 64
APPROVAL 27 Oct 64
APPROVAL DEB
NASA APPROVAL 11-4-66
MIT APPROVAL

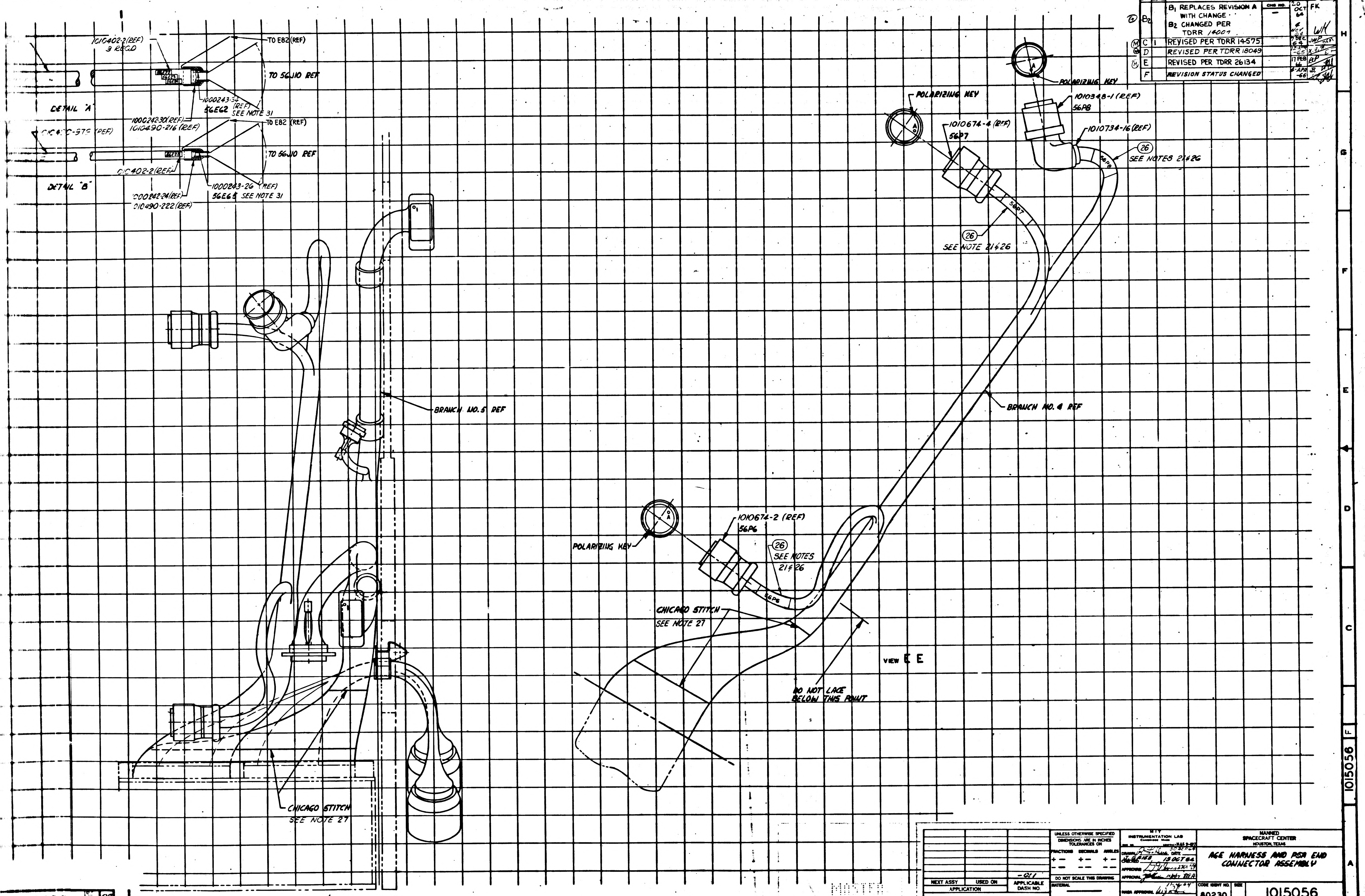
CODE IDENT NO. 80230 SIZE J2 1015056
SCALE 1:1 SHEET 3 OF 7

1015056 F SHT 3


16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
56P2
CHICAGO STITCH
BRANCH NO. 3 REF
PARTIAL VIEW K K
56P3
56P5
56J5
PARTIAL VIEW J J
SEE NOTES 39 & 40
5 REQD (53)
.25±.06
.62 MIN
PARTIAL VIEW J J
-031 CONFIGURATION
(26)
SEE NOTES 21&26
E655
VIEW G G
(17)
SEE NOTES 21&26
(26)
1010402-2(REF)
56J8
(46) SEE NOTE 35
(18)
(26) "MARK "56J6"
SEE NOTES 21&26
1010402-1(REF)
56E55
1010824-5(REF)
56J8 SEE NOTE 32
1010824-3(REF)
56J6 SEE NOTE 32
56J8
56J6

1015056 REV LTR F SHT 3

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓐ B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14007	—	20 OCT 64 4 NOV 64	FK WK
Ⓜ C	1	REVISED PER TDRR 14575		7 DEC 64	JWP
Ⓜ D		REVISED PER TDRR 18049		12-APR -65	
Ⓜ E		REVISED PER TDRR 26134		17 FEB 66	
F		REVISION STATUS CHANGED		-APR -66	


1010402-2(REF)
3 REQD
TO E82(REF)
TO 56J10 REF
56E22
56E23
56E24
1000243-34
56E62 (REF)
SEE NOTE 31
DETAIL "A"
1000242-30(REF)
1010490-216 (REF)
TO E82 (REF)
1010490-979 (REF)
TO 56J10 REF
56E25
1010402-2(REF)
1000243-26 (REF)
56E65 SEE NOTE 31
DETAIL "B"
1000242-24(REF)
1010490-222(REF)
BRANCH NO. 5 REF
CHICAGO STITCH
SEE NOTE 27
POLARIZING KEY
1010348-1 (REF)
56P8
1010734-16(REF)
26
SEE NOTES 21 & 26
56P8
POLARIZING KEY
1010674-4 (REF)
56P7
56P7
26
SEE NOTE 21 & 26
BRANCH NO. 4 REF
POLARIZING KEY
1010674-2 (REF)
56P6
26
SEE NOTES
21 & 26
56P6
CHICAGO STITCH
SEE NOTE 27
VIEW E E
DO NOT LACE
BELOW THIS POINT

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +− DECIMALS +− ANGLES +−
DO NOT SCALE THIS DRAWING
MATERIAL ——

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS 9-497
DRAWN DATE 30 SEP 64
CHECKED J. GRIBB 15 OCT 64
APPROVAL
APPROVAL 10 MAY MEA
NASA APPROVAL 12-4-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO. 80230
SIZE
1015056
SCALE 1/1
SHEET 4 OF 7

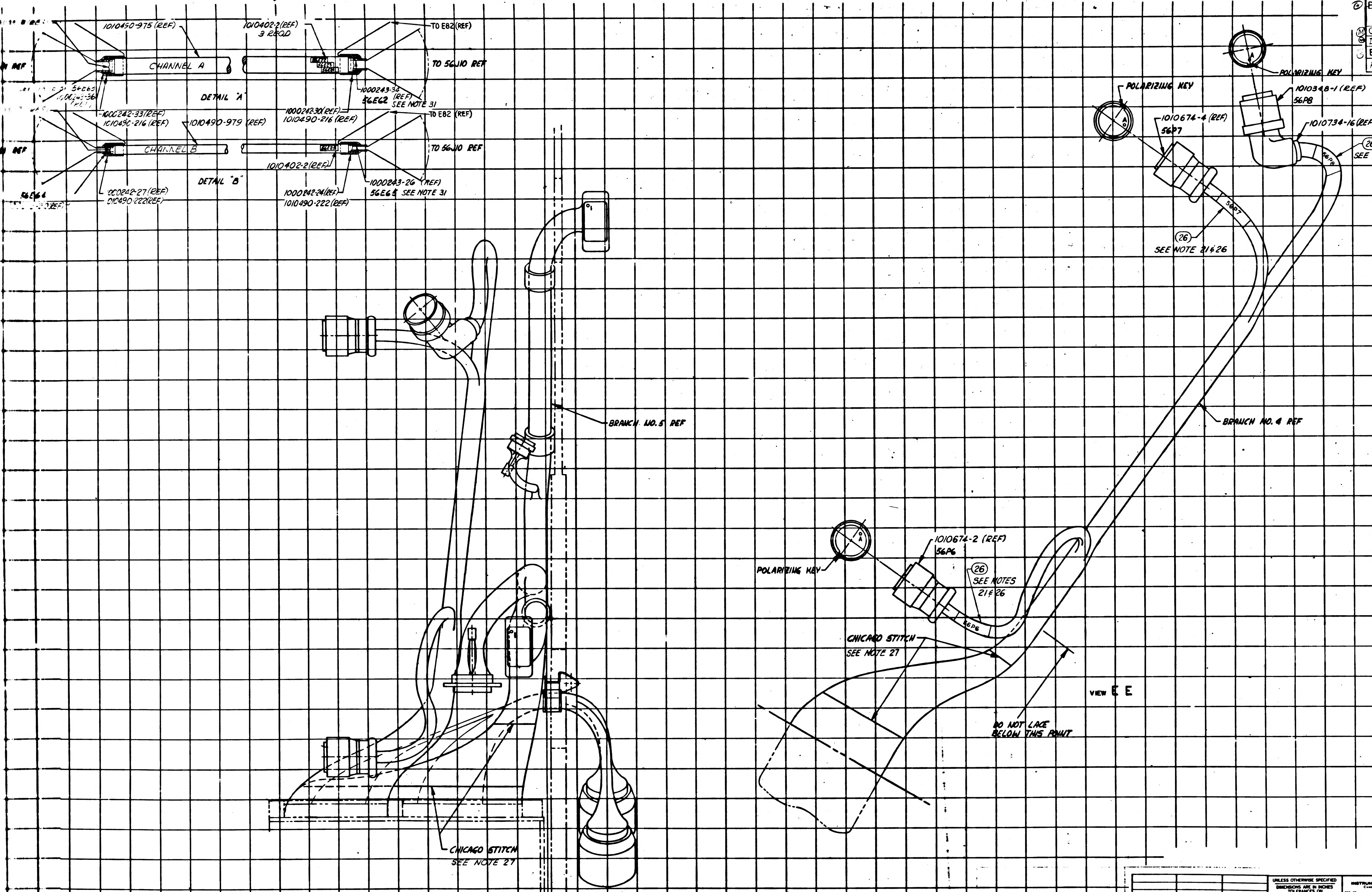
1015056 F

1015056 F SHT 4

3#

E3

SYM	ZONE	DESCRIPTION
B2		B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14004
C	1	REVISED PER TDRR 14575
D		REVISED PER TDRR 19049
E		REVISED PER TDRR 26134
F		REVISION STATUS CHANGED


1010490-975 (REF)
1010402-2(REF)
3 REQD
TO E82 (REF)
CHANNEL A
TO 56J10 REF
56E65
1000242-36 (REF)
1000243-34 (REF)
56E62
SEE NOTE 31
DETAIL "A"
1000242-33(REF)
1010490-216 (REF)
1010490-979 (REF)
1000242-30(REF)
1010490-216 (REF)
TO E82 (REF)
CHANNEL B
TO 56J10 REF
DETAIL "B"
1010402-2(REF)
1000243-26 (REF)
56E65 SEE NOTE 31
56E64
1000242-27(REF)
1010490-222(REF)
1000242-24(REF)
1010490-222(REF)
POLARIZING KEY
1010348-1 (REF)
56P8
POLARIZING KEY
1010674-4 (REF)
56P7
1010734-16(REF)
26
SEE NOTES 21 & 26
56P8
56P7
26
SEE NOTE 21 & 26
BRANCH NO. 5 REF
BRANCH NO. 4 REF
1010674-2 (REF)
56P6
POLARIZING KEY
26
SEE NOTES
21 & 26
56P6
CHICAGO STITCH
SEE NOTE 27
VIEW E E
DO NOT LACE
BELOW THIS POINT
CHICAGO STITCH
SEE NOTE 27

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS 9-497
DRAWN J. GRIEB DATE 15 OCT 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

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HOUSTON, TEXAS

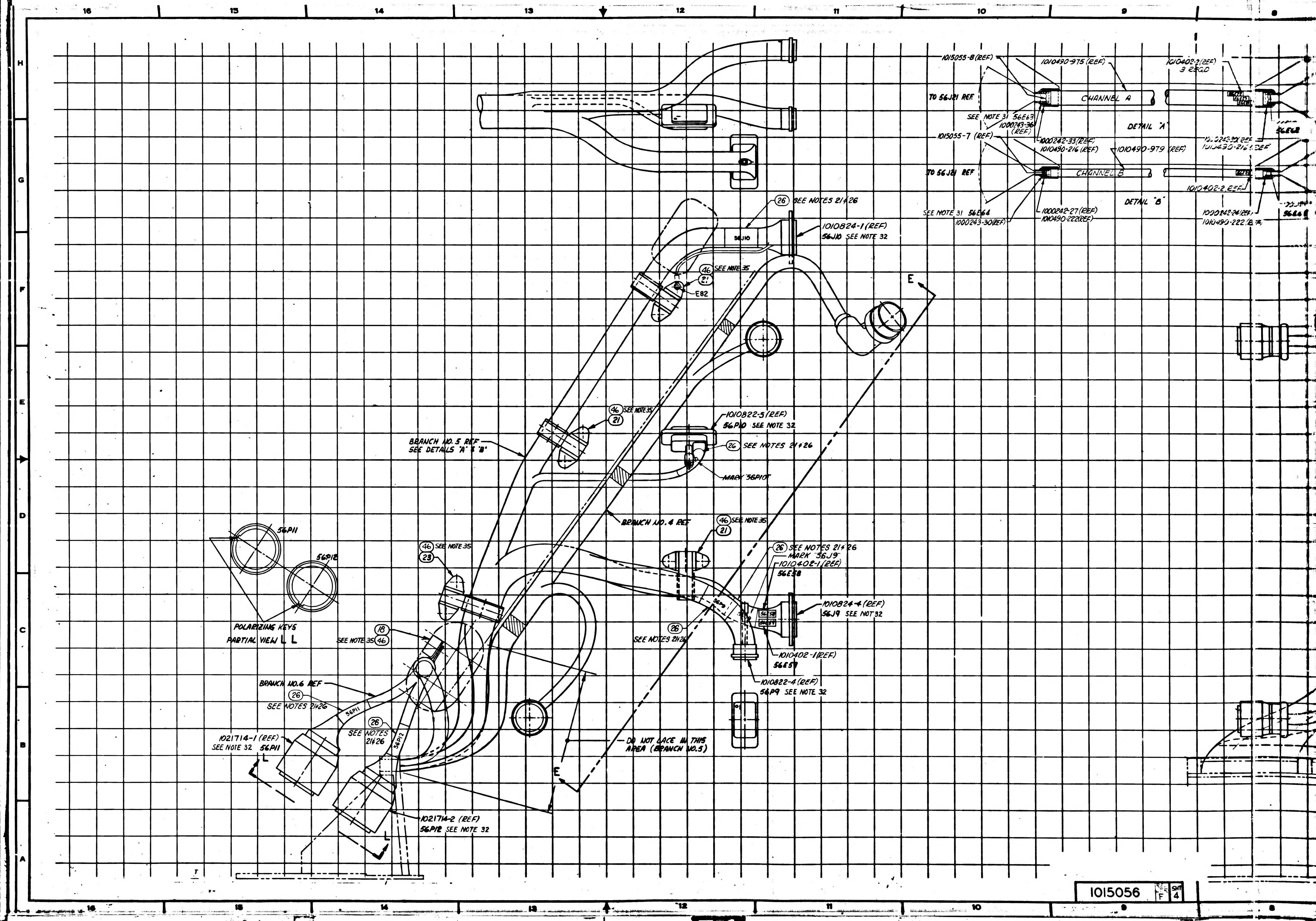
AGE HARNESS AND PSA ... CONNECTOR ASSEMBLY

CODE IDENT NO. 80230
SIZE
1015056
SCALE 1/1

1015056 REV LTR F SHT 4

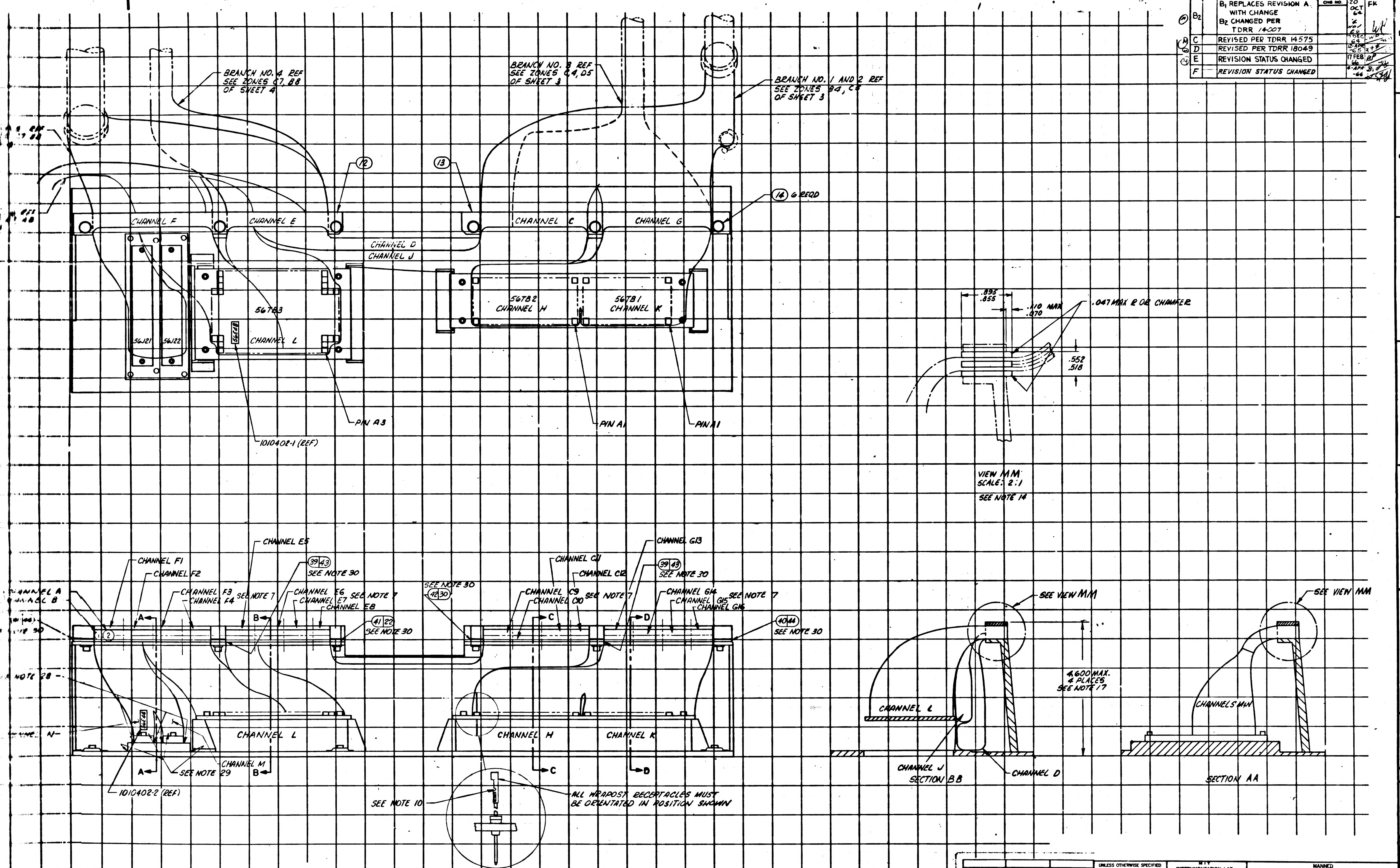
MASTER

F-12


16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
1015055-8 (REF)
1010490-975 (REF)
1010402-2 (REF)
3 REQD
TO 56J21 REF
CHANNEL A
SEE NOTE 31 56E63
1000243-36 (REF)
DETAIL "A"
56E62
1015055-7 (REF)
1000242-33 (REF)
1010490-216 (REF)
1010490-979 (REF)
1000242-32 (REF)
1010490-216 (REF)
TO 56J21 REF
CHANNEL B
1010402-2 REF
DETAIL "B"
SEE NOTE 31 56E64
1000243-30 (REF)
1000242-27 (REF)
1010490-222 (REF)
1000242-24 (REF)
1010490-222 (REF)
56E61
26 SEE NOTES 21 & 26
56J10
1010824-1 (REF)
56J10 SEE NOTE 32
46 SEE NOTE 35
21
E82
E
46 SEE NOTE 35
21
1010822-5 (REF)
56P10 SEE NOTE 32
BRANCH NO. 5 REF
SEE DETAILS "A" & "B"
26 SEE NOTES 21 & 26
MARK "56P10"
BRANCH NO. 4 REF
56P11
56P12
46 SEE NOTE 35
21
46 SEE NOTE 35
23
26 SEE NOTES 21 & 26
MARK "56J9"
1010402-1 (REF)
56E58
56P9
1010824-4 (REF)
56J9 SEE NOT 32
POLARIZING KEYS
PARTIAL VIEW L L
18
SEE NOTE 35 46
26
SEE NOTES 21 & 26
1010402-1 (REF)
56E57
1010822-4 (REF)
56P9 SEE NOTE 32
BRANCH NO. 6 REF
26
SEE NOTES 21 & 26
56P11
26
SEE NOTES 21 & 26
56P12
1021714-1 (REF)
SEE NOTE 32 56P11
L
DO NOT LACE IN THIS AREA (BRANCH NO. 5)
E
1021714-2 (REF)
56P12 SEE NOTE 32
L

1015056 F SHT 4

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B2		B1 REPLACES REVISION A. WITH CHANGE B2 CHANGED PER TDRR 14007		20 OCT 64 2 NOV 64	FK WH
C		REVISED PER TDRR 14575		7 DEC 64	
D		REVISED PER TDRR 18049		12-APR-65	
E		REVISION STATUS CHANGED		17 FEB 66	
F		REVISION STATUS CHANGED		4-APR-66	


BRANCH NO. 4 REF
SEE ZONES C7, B8
OF SHEET 4
BRANCH NO. 3 REF
SEE ZONES C4, D5
OF SHEET 3
BRANCH NO. 1 AND 2 REF
SEE ZONES B4, C5
OF SHEET 3
12
13
14 6 REQD
CHANNEL F
CHANNEL E
CHANNEL C
CHANNEL G
CHANNEL D
CHANNEL J
56783
56782
CHANNEL H
56781
CHANNEL K
56J21
56J22
CHANNEL L
PIN A3
PIN A1
PIN A1
1010402-1 (REF)
.895
.855
.110 MAX
.070
.047 MAX R OR CHAMFER
.552
.518
VIEW MM
SCALE: 2:1
SEE NOTE 14
CHANNEL F1
CHANNEL F2
CHANNEL F3
CHANNEL F4
SEE NOTE 7
CHANNEL E5
CHANNEL E6
CHANNEL E7
CHANNEL E8
SEE NOTE 7
39 43
SEE NOTE 30
41 22
SEE NOTE 30
SEE NOTE 30
42 30
CHANNEL C11
CHANNEL C12
CHANNEL C9
CHANNEL C10
SEE NOTE 7
CHANNEL G13
39 43
SEE NOTE 30
CHANNEL G14
CHANNEL G15
CHANNEL G16
SEE NOTE 7
40 44
SEE NOTE 30
CHANNEL A
CHANNEL B
NOTE 28
N
A
B
C
D
CHANNEL L
CHANNEL H
CHANNEL K
CHANNEL M
SEE NOTE 29
1010402-2 (REF)
SEE NOTE 10
ALL WRAPOST RECEPTACLES MUST
BE ORIENTATED IN POSITION SHOWN
SEE VIEW MM
4.600 MAX.
4 PLACES
SEE NOTE 17
CHANNEL L
CHANNEL J
SECTION BB
CHANNEL D
SEE VIEW MM
CHANNELS M+N
SECTION AA

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

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FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS 9-497
DRAWN R. Lalime DATE 5 OCT 64
CHECKED J. Gried 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

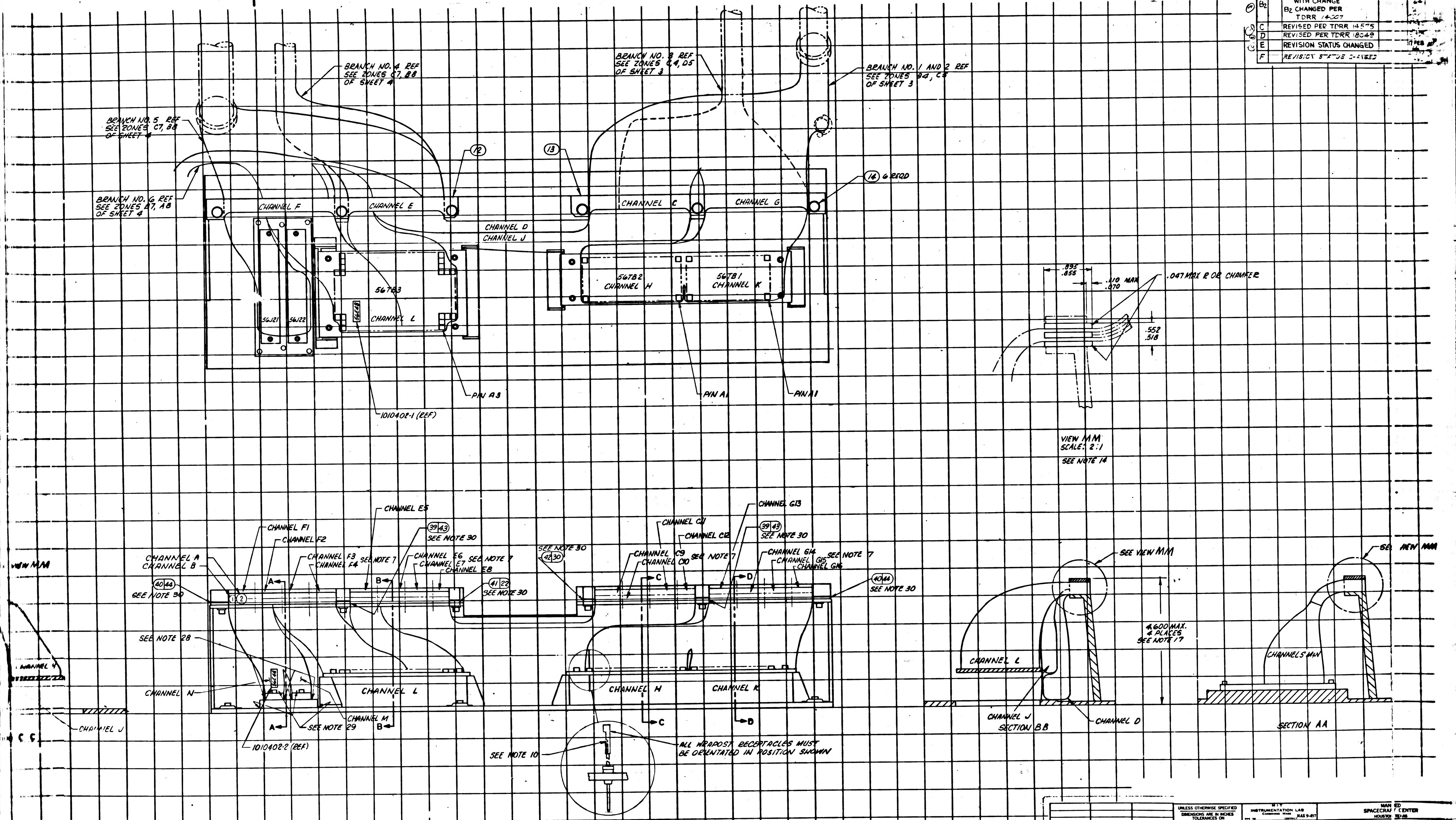
AGE HARNESS AND PSA END
CONNECTOR ASSEMBLY

CODE IDENT NO. 80230
SIZE J2
1015056
SCALE 1:1
SHEET 5 OF 7

1015056 F SHT 5

MASTER

		REVISIONS	
SYM	ZONE	DESCRIPTION	DATE
B2		B1 REPLACES REVISION A. WITH CHANGE B2 CHANGED PER TDRR 14307	OCT 64
C		REVISED PER TDRR 14575	
D		REVISED PER TDRR 18049	
E		REVISION STATUS CHANGED	17 FEB
F		REVISION STATUS CHANGED	



BRANCH NO. 4 REF SEE ZONES C7, B8 OF SHEET 4
BRANCH NO. 5 REF SEE ZONES C7, B8 OF SHEET 4
BRANCH NO. 6 REF SEE ZONES B7, A8 OF SHEET 4
BRANCH NO. 3 REF SEE ZONES C4, D5 OF SHEET 3
BRANCH NO. 1 AND 2 REF SEE ZONES B4, C5 OF SHEET 3
12
13
14 6 REQD
CHANNEL F
CHANNEL E
CHANNEL D
CHANNEL J
CHANNEL C
CHANNEL G
56J21
56J22
56TB3
56E48
CHANNEL L
56TB2 CHANNEL H
56TB1 CHANNEL K
PIN A3
PIN A1
PIN A1
1010402-1 (REF)
.895 .855
.110 MAX .070
.047 MAX R OR CHAMFER
.552 .518
VIEW MM SCALE: 2:1
SEE NOTE 14
CHANNEL F1
CHANNEL F2
CHANNEL E5
CHANNEL A
CHANNEL B
CHANNEL F3
CHANNEL F4
SEE NOTE 7
CHANNEL E6
CHANNEL E7
CHANNEL E8
SEE NOTE 7
39 43 SEE NOTE 30
40 44 SEE NOTE 30
41 22 SEE NOTE 30
42 30 SEE NOTE 30
1 2
A A
B B
SEE NOTE 28
CHANNEL N
56E44
CHANNEL M
SEE NOTE 29
1010402-2 (REF)
CHANNEL L
CHANNEL C11
CHANNEL C12
CHANNEL C9
CHANNEL C10
SEE NOTE 7
CHANNEL G13
39 43 SEE NOTE 30
CHANNEL G14
CHANNEL G15
CHANNEL G16
SEE NOTE 7
40 44 SEE NOTE 30
C C
D D
CHANNEL H
CHANNEL K
SEE NOTE 10
ALL WRAPOST RECEPTACLES MUST BE ORIENTATED IN POSITION SHOWN
SEE VIEW MM
SEE VIEW MM
4.600 MAX. 4 PLACES SEE NOTE 17
CHANNEL L
CHANNEL J
SECTION BB
CHANNEL D
CHANNELS M-N
SECTION AA
VIEW MM
CHANNEL 4
CHANNEL J
C C

NEXT ASSY	USED ON	APPLICABLE DASH NO.
		-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS 9-497
DRAWN R. LaDue DATE 5 OCT 64
J. GRIEB 15 OCT 64
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

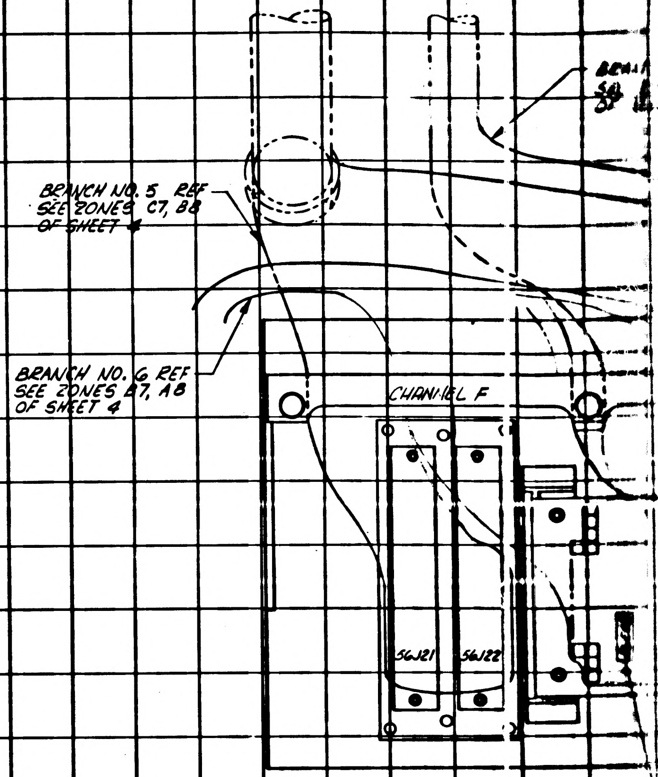
MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

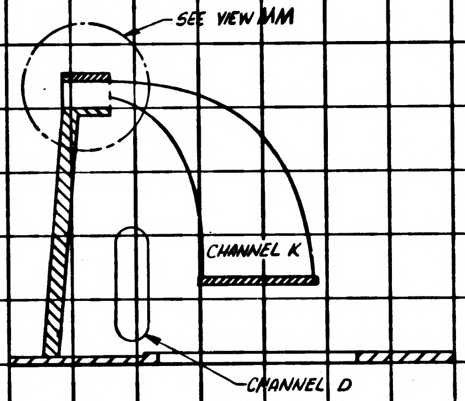
AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO. 80230
SIZE J2
1015056
SCALE 1:1

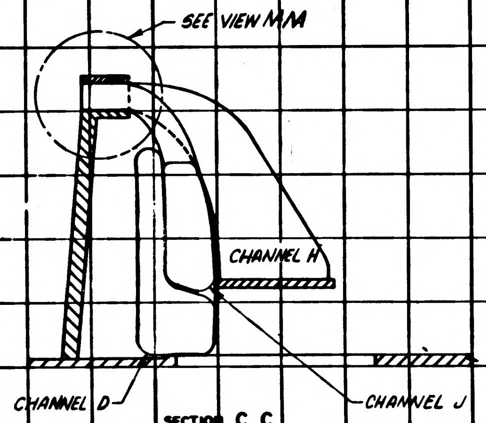
1015056	REV LTR F	SHT 5

MASTER

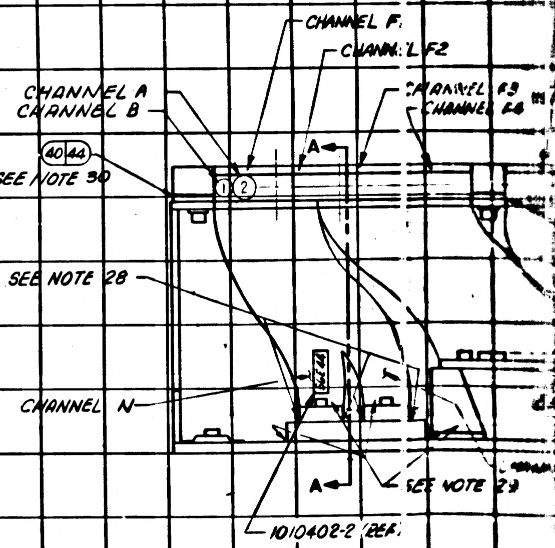

BRANCH NO. 5 REF
SEE ZONES C7, B8
OF SHEET 4
BRANCH NO. 6 REF
SEE ZONES B7, A8
OF SHEET 4
CHANNEL F
56J21
56J22


SEE VIEW MM
CHANNEL K
CHANNEL D

SECTION D D

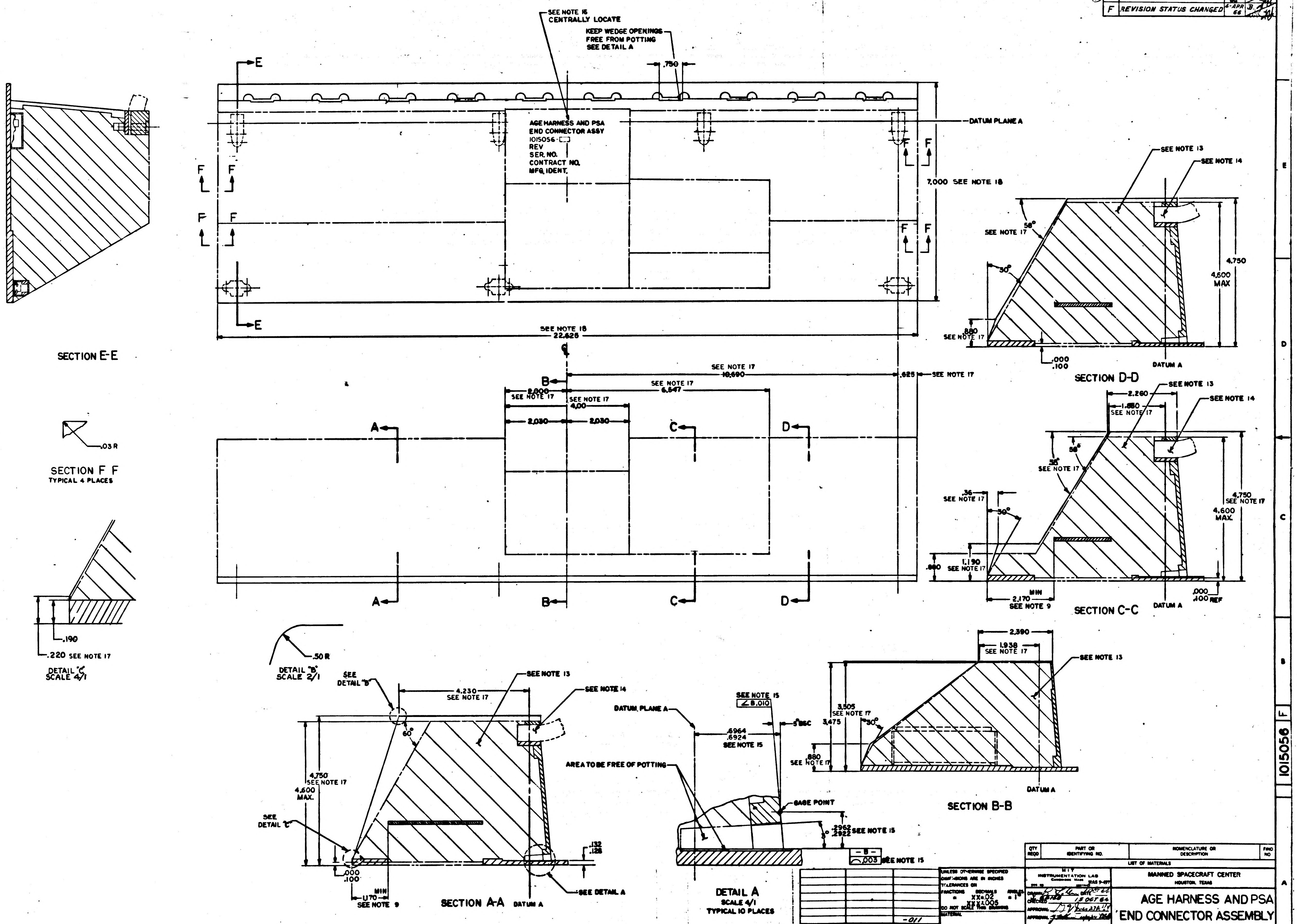

SEE VIEW MM
CHANNEL H
CHANNEL D
CHANNEL J

SECTION C C


CHANNEL F
CHANNEL F2
CHANNEL A
CHANNEL B
CHANNEL F3
CHANNEL F4
40
44
SEE NOTE 30
1
2
A
SEE NOTE 28
CHANNEL N
SEE 44
A
SEE NOTE 29
1010402-2 REF.

1015056 F SHT 5

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B2	B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 14008	20 OCT 64	FK
C	REVISED PER TDRR 14575	7 DEC 64	JWP
D	REVISED PER TDRR 18049	12-APR-65	
E	REVISION STATUS CHANGED	17 FEB 66	
F	REVISION STATUS CHANGED	4-APR 66	B.



SEE NOTE 16
CENTRALLY LOCATE
KEEP WEDGE OPENINGS FREE FROM POTTING SEE DETAIL A
.750
AGE HARNESS AND PSA END CONNECTOR ASSY 1015056-
REV
SER. NO.
CONTRACT NO.
MFG. IDENT.
DATUM PLANE A
7.000 SEE NOTE 18
SEE NOTE 18
22.625
SECTION E-E
SEE NOTE 17
10.690
.625
SEE NOTE 17
6.547
8.000
4.00
2.030
2.030
SECTION F F
TYPICAL 4 PLACES
.03 R
.190
.220 SEE NOTE 17
DETAIL "C"
SCALE 4/1
.50 R
DETAIL "B"
SCALE 2/1
SEE NOTE 13
SEE NOTE 14
58°
30°
4.750
4.600 MAX
.880
.000
.100
DATUM A
SECTION D-D
2.260
1.880
.36
1.190
2.170 MIN
SEE NOTE 9
SECTION C-C
.100 REF
4.230
SEE NOTE 17
SEE DETAIL "B"
SEE DETAIL "C"
60°
.132
.125
1.170 MIN
SECTION A-A
SEE DETAIL A
DATUM PLANE A
AREA TO BE FREE OF POTTING
SEE NOTE 15
∠ B .010
.6964
.6924
.3 BSC
GAGE POINT
.2962
.2922 SEE NOTE 15
-B-
⌒ .003 SEE NOTE 15
DETAIL A
SCALE 4/1
TYPICAL 10 PLACES
2.390
1.938
3.505
3.475
SECTION B-B

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
		-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
NAS 9-497
DRAWN DATE 14 OCT 64
CHECKED 15 OCT 64
APPROVAL
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL

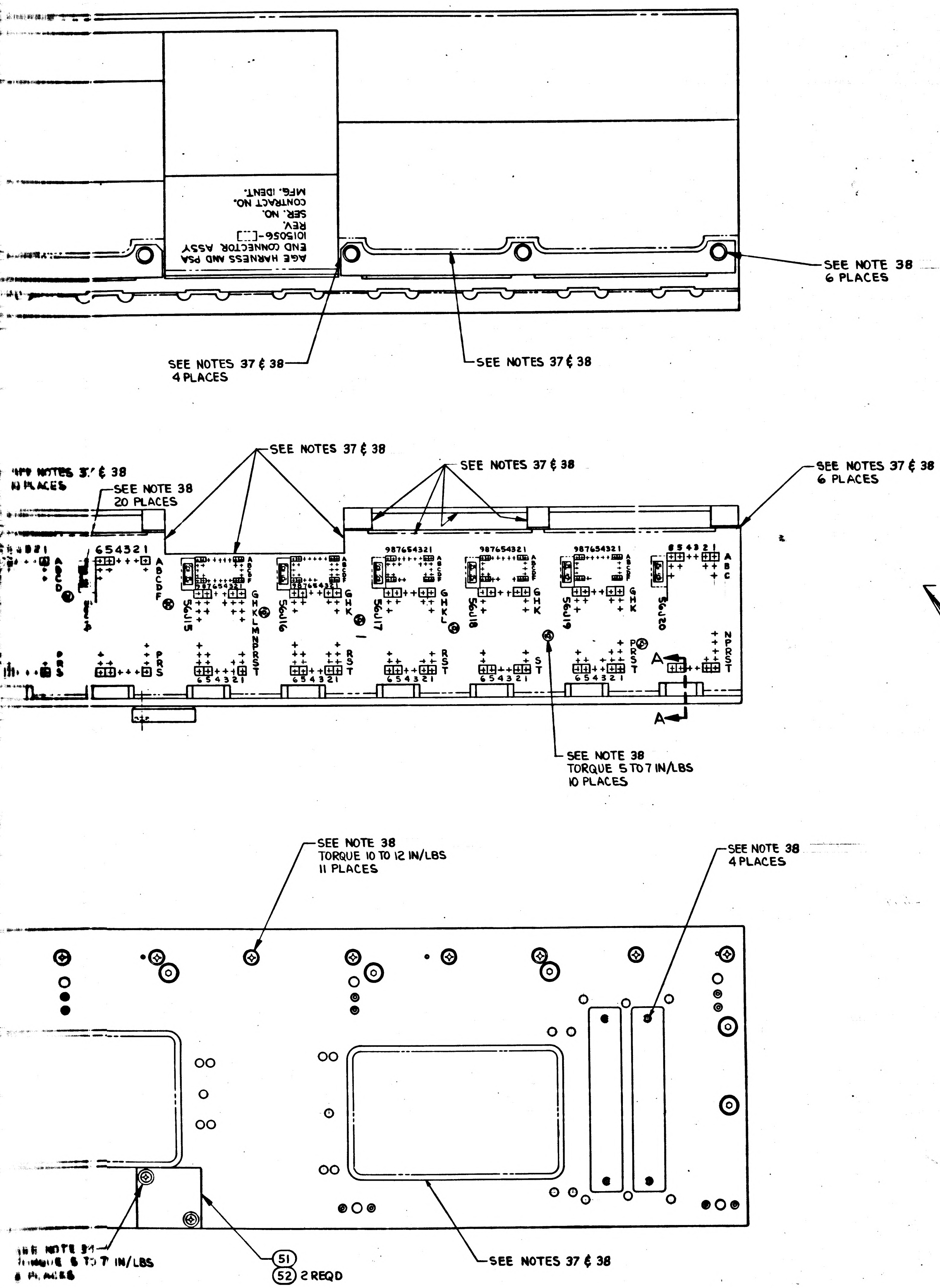
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

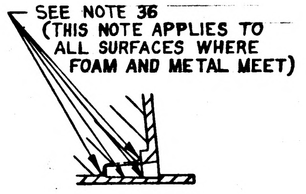
CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1015056
SCALE 1/1 & NOTED
SHEET 6 OF 7

1015056 F

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD
F		THIS SHEET ADDED PER TDRR 26377	4-APR 66	B.



AGE HARNESS AND PSA
END CONNECTOR ASSY
1015056-[ ]
REV.
SER. NO.
CONTRACT NO.
MFG. IDENT.
SEE NOTE 38
6 PLACES
SEE NOTES 37 & 38
4 PLACES
SEE NOTES 37 & 38
SEE NOTES 37 & 38
SEE NOTES 37 & 38
SEE NOTES 37 & 38
6 PLACES
NOTES 37 & 38
11 PLACES
SEE NOTE 38
20 PLACES
654321
987654321
S6J15
S6J16
S6J17
S6J18
S6J19
S6J20
A
A
SEE NOTE 38
TORQUE 5 TO 7 IN/LBS
10 PLACES
SEE NOTE 38
TORQUE 10 TO 12 IN/LBS
11 PLACES
SEE NOTE 38
4 PLACES
NOTE 34
TORQUE 5 TO 7 IN/LBS
PLACES
(51)
(52) 2 REQD
SEE NOTES 37 & 38



SEE NOTE 36
(THIS NOTE APPLIES TO
ALL SURFACES WHERE
FOAM AND METAL MEET)

SECTION A-A
TYP (10 PLACES)

FOR -031 CONFIGURATION

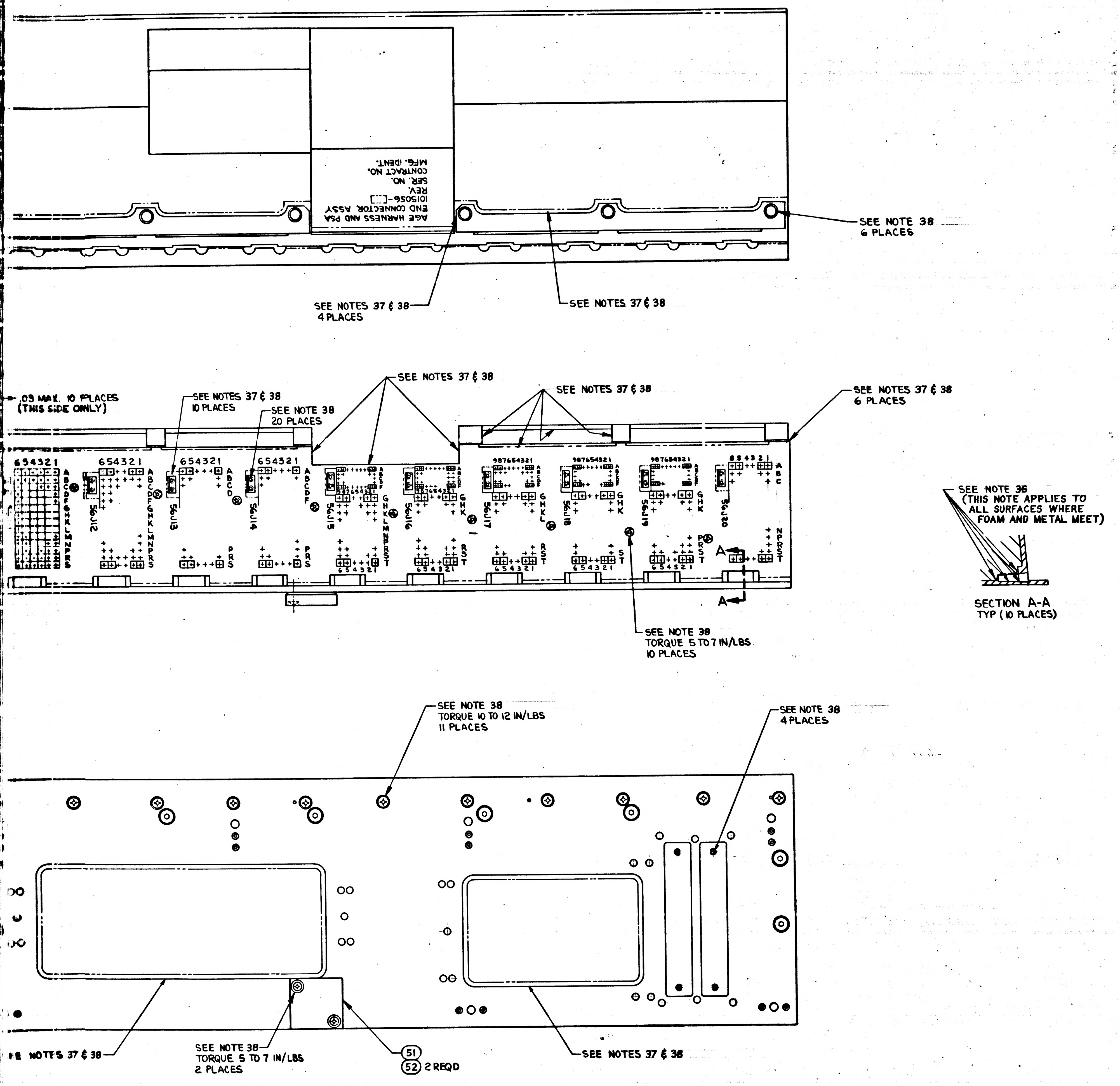
(F1) THIS SHEET ADDED

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE MASS NAS 9-497	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	DRAWN Bender 4 APR 66	AGE HARNESS AND PSA END CONNECTOR ASSEMBLY
	CHECKED J. Stokes 6 APR 66	
	APPROVAL 13 APR 66	
DO NOT SCALE THIS DRAWING	CONTRACT	
MATERIAL	NASA APPROVAL A. C. METZGER	SIZE J2 · CODE IDENT NO. 80230 · 1015056
	MIT APPROVAL	SCALE · SHEET 7 OF 7

1015056	REV	SH
	F	7

SYM	ZONE	DESCRIPTION
F		THIS SHEET ADDED PER TDR



AGE HARNESS AND PSA END CONNECTOR ASSY
1015056-[ ]
REV.
SER. NO.
CONTRACT NO.
MFG. IDENT.
SEE NOTE 38 6 PLACES
SEE NOTES 37 & 38 4 PLACES
SEE NOTES 37 & 38
.03 MAX. 10 PLACES (THIS SIDE ONLY)
SEE NOTES 37 & 38 10 PLACES
SEE NOTE 38 20 PLACES
SEE NOTES 37 & 38
SEE NOTES 37 & 38
SEE NOTES 37 & 38 6 PLACES
56J12
56J13
56J14
56J15
56J16
56J17
56J18
56J19
56J20
A
A
SEE NOTE 38 TORQUE 5 TO 7 IN/LBS 10 PLACES
SEE NOTE 36 (THIS NOTE APPLIES TO ALL SURFACES WHERE FOAM AND METAL MEET)
SECTION A-A TYP (10 PLACES)
SEE NOTE 38 TORQUE 10 TO 12 IN/LBS 11 PLACES
SEE NOTE 38 4 PLACES
SEE NOTES 37 & 38
SEE NOTE 38 TORQUE 5 TO 7 IN/LBS 2 PLACES
(51)
(52) 2 REQD
SEE NOTES 37 & 38

FOR -031 CONFIGURATION

Ⓕ THIS SHEET ADDED

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ±
3 PLACE DECIMALS ±
ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT NAS 9-497
DRAWN Bender 4 APR 66
CHECKED J. Stelma 4 APR 66
APPROVAL 4 APR 66
CONTRACT
A. C. METZGER
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

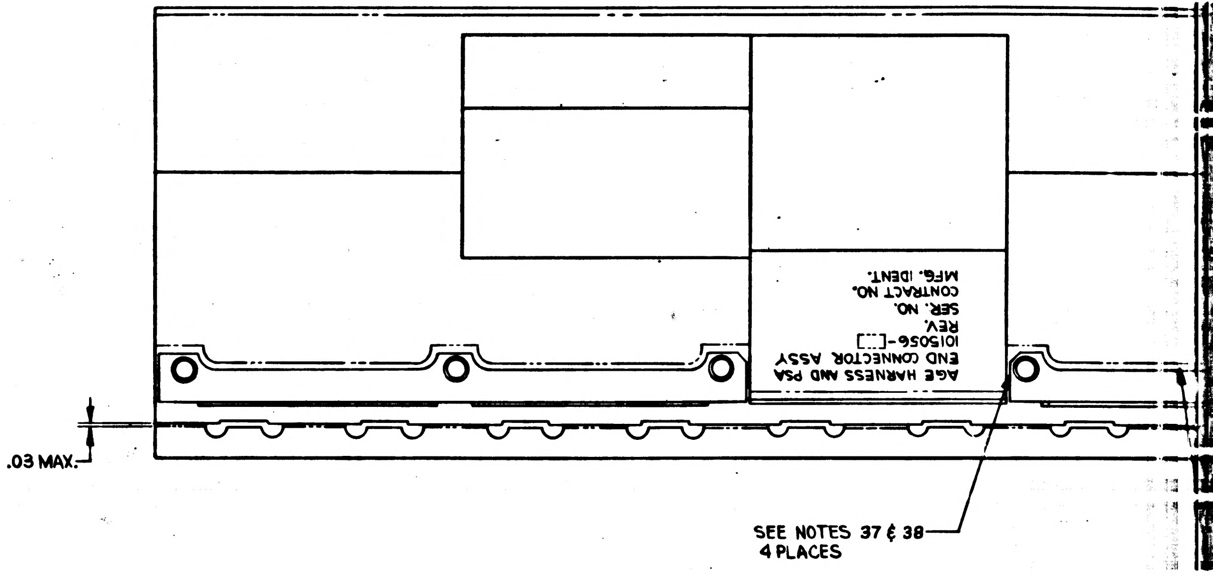
AGE HARNESS AND PSA
END CONNECTOR ASSY

SIZE J2
CODE IDENT NO. 80230
1015056
SCALE

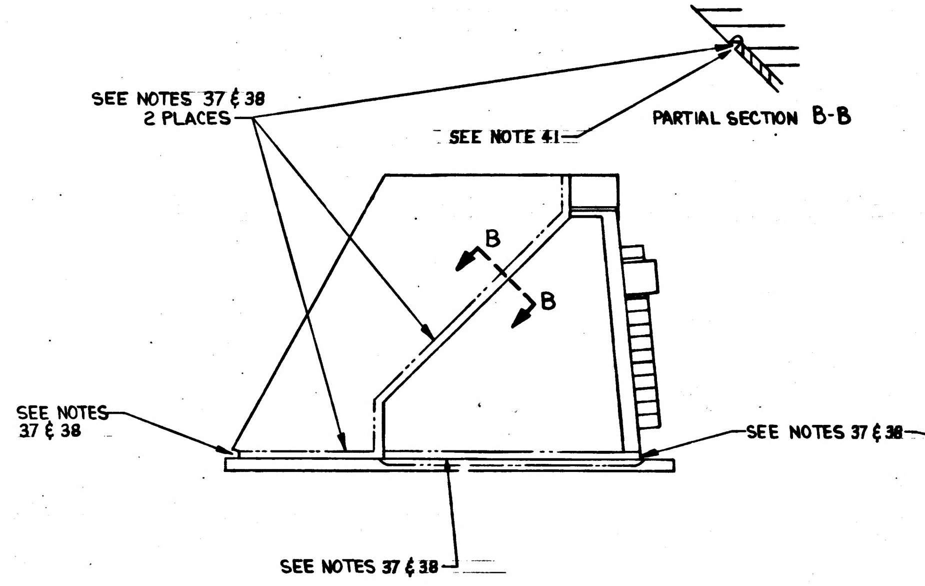
1015056	REV F	SH 7

MASTER

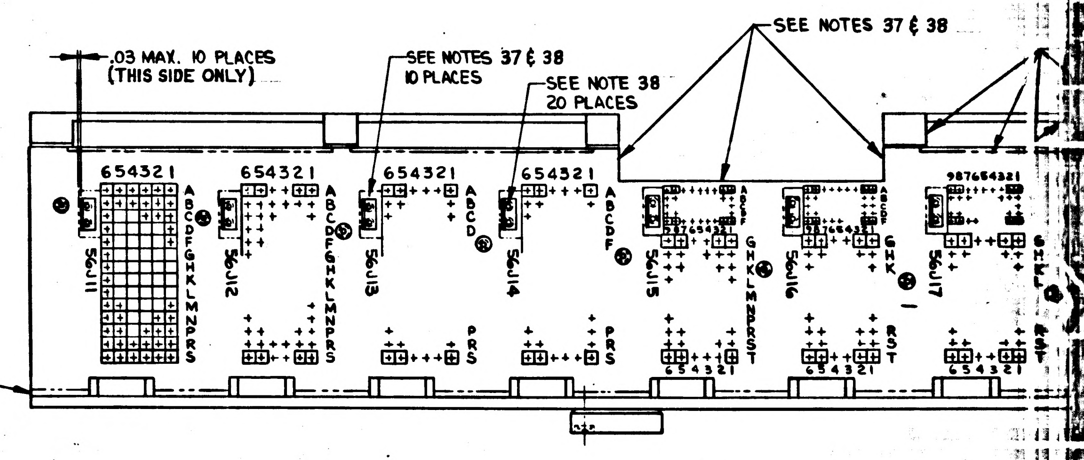
F2



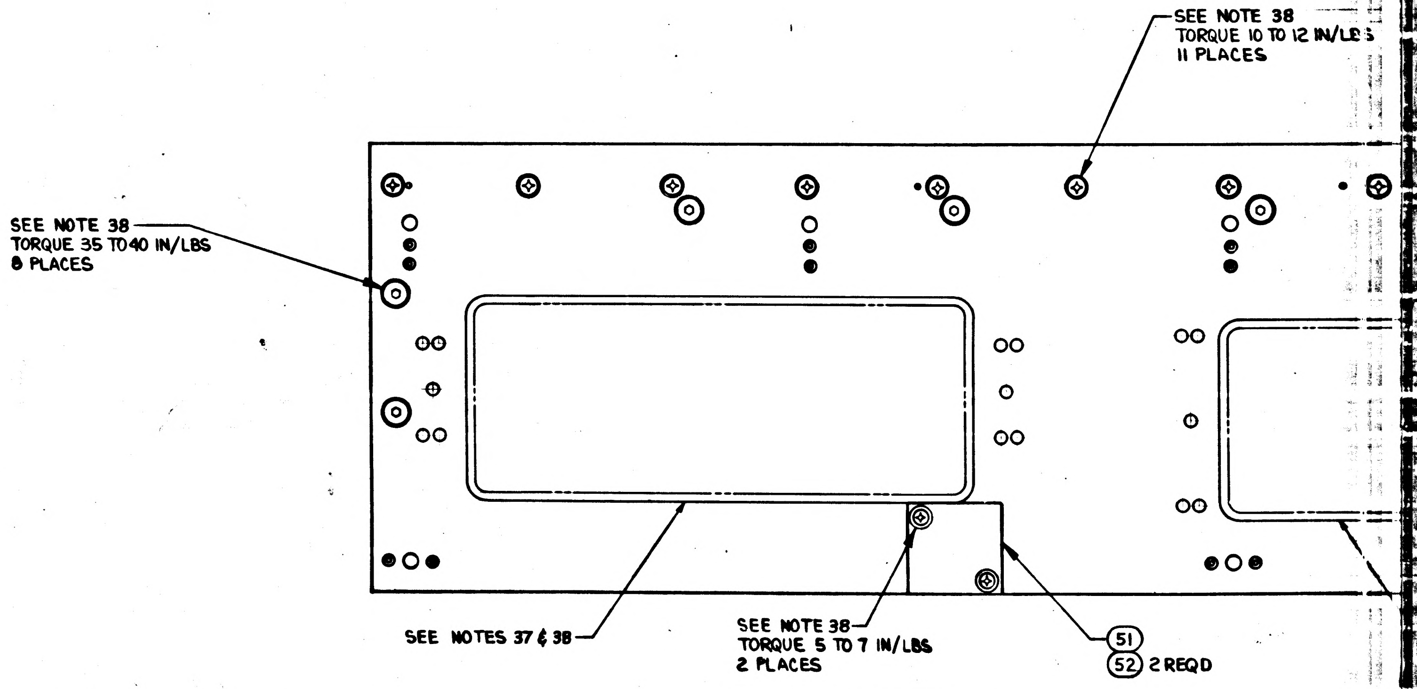
AGE HARNESS AND PSA
END CONNECTOR ASSY
1015056-[ ]
REV.
SER. NO.
CONTRACT NO.
MFG. IDENT.
.03 MAX.
SEE NOTES 37 & 38
4 PLACES



SEE NOTES 37 & 38
2 PLACES
SEE NOTE 41
PARTIAL SECTION B-B
B
B
SEE NOTES 37 & 38
SEE NOTES 37 & 38
SEE NOTES 37 & 38



.03 MAX. 10 PLACES
(THIS SIDE ONLY)
SEE NOTES 37 & 38
10 PLACES
SEE NOTE 38
20 PLACES
SEE NOTES 37 & 38
654321
654321
654321
654321
987654321
S6J11
S6J12
S6J13
S6J14
S6J15
S6J16
S6J17



SEE NOTE 38
TORQUE 10 TO 12 IN/LBS
11 PLACES
SEE NOTE 38
TORQUE 35 TO 40 IN/LBS
8 PLACES
SEE NOTES 37 & 38
SEE NOTE 38
TORQUE 5 TO 7 IN/LBS
2 PLACES
(51)
(52) 2 REQD

	REV	SH
1015056	F	7

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 13822

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

PART NO.	DESCRIPTION	REQ'D.
1007461-011	End Connector Ass'y PSA	1
1010809-1	Connector, Plug	1
1015055-1	Wire per 1010789-011 Yel. Jkt. 24 AWG Yel. 13 ft. 10.0 in. Total Length	1
1015055-2	Wire per 1010789-012 Yel. Jkt. 24 AWG Yel., Red 369 ft. 6.0 inches Total Length	1
1015055-3	Wire per 1010789-013 Yel. Jkt. 24 AWG Yel., Red, Green 30 ft. 4.0 inches Total Length	1
1015055-4	Wire per 1010789-001 24 AWG Yel. 857 ft. 11.0 inches Total Length	1
1015055-5	Wire per 1010789-006 22 AWG Yel. 142 ft. 11.0 inches Total Length	1
1015055-6	Wire per 1010707-1 Red Jkt. 29 AWG Blue, Red & White 26 ft. 6.0 inches Total Length	1
1010824-1	Connector Receptacle Electrical	4
1010824-2	Connector Receptacle Electrical	5
1010822-1	Connector Receptacle Electrical	1
1010822-3	Connector Receptacle Electrical	2
1010816-144	Connector Receptacle Electrical	1
1010816-244	Connector Receptacle Electrical	1
1015055-9	Wire per 1010789-002 24 AWG Black 118 ft. 0.0 inches Total Length	1
1015055-10	Wire per 1010789-003 24 AWG Yel., Red 395 ft. 7.0 inches Total Length	1
1015055-11	Wire per 1010789-004 24 AWG Yel., Red, Green 90 ft. 6.0 inches Total Length	1
1015055-12	Wire per 1010789-005 24 AWG Yel., Red, Green	1
1015055-13	Wire per 1010789-008 22 AWG Yel., Red 19 ft. 10.0 inches Total Length	1
1015055-14	Wire per 1010789-009 22 AWG Yel., Red, Green 4 ft. 6.0 inches Total Length	1
1015055-15	Wire per 1010789-010 22 AWG Yel., Red, Green, Brown 16 ft. 1.0 inch Total Length	1
1015058-1	Wire per 1010707-2 Red Jkt. 29 AWG White, Red, Blue 13 ft. 1.0 inch Total Length	1
1015058-3	Wire per 1010807-4 28 AWG White 182 ft. 10.0 inch Total Length	1
1015058-4	Wire per 1010807-5 24 AWG White 610 ft. 11.0 inch Total Length	1
1015058-5	Wire per 1010807-3 White Jkt. 24 AWG White, Red 103 ft. 8.0 inches Total Length	1

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

		DATE
DRAWN		
CHECKED		
APPROVED	D.V. [illegible]	10/20/64
APPROVED	D. A. Fest	10/20/64
APPROVED MIT		10/21/64
APPROVED MSC	W J Rhine	10-21-64

AGE HARNESS AND
PSA END CONNECTOR ASSY

CODE IDENT NO.
SIZE C
DRAWING NO. 1015056
SCALE
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

MASTER

APOLLO G&N Specification
PS1015056
Original Issue Date: 4 NOV 64
Release Authority: TDRR 14008
Class A Release

PROCUREMENT SPECIFICATION

FOR

AGE HARNESS & PSA END CONNECTOR ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page 1 to 5 inclusive.

APPROVALS	W J Rhine 11-4-64 NASA/MSC	27 Oct 64	MIT/IL	10/27/64	ACSP

PROCUREMENT SPECIFICATION

FOR

AGE HARNESS & PSA END CONNECTOR ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Age Harness & PSA End Connector Assembly, Drawing 1015056, hereafter called the assembly.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies.
ND1002214	General Specification for Preservation, Packaging, and Packing and Container Marking of APOLLO Guidance and Navigation Major Assemblies, Assemblies, Subassemblies, Parts and Associated Ground Support Equipment
FTM1015056	Final Test Method for Age Harness & PSA End Connector Assembly

DRAWINGS

APOLLO G&N

1015056	Age Harness & PSA End Connector Assembly
1015057	Interconnection List of Age Interconnect Harness & PSA End Connector Assembly (For Reference Only)

3. REQUIREMENTS

3.1 GENERAL SPECIFICATION. All of the requirements of Specification ND1002210 shall apply as requirements of this specification.

3.2 DESCRIPTION. The assembly shall be used to interconnect APOLLO Guidance and Navigation Equipment.

3.3 FUNCTIONAL REQUIREMENTS

3.3.1 Insulation Resistance. With 500±50 vdc applied, the insulation resistance between pin J11-L4 (structure ground) and all other pins of the assembly with the exception of those specified in Table I, and between each pin and all other pins not electrically connected including all spare pins shall be greater than or equal to 100 megohms.

TABLE I

PINS NOT TO BE MEASURED

PIN NUMBER	PIN NUMBER
J1-41	J16-N4
J2-41	J17-L6
J3-41	J18-R5
J4-41	J19-P3
J5-41	J20-G4
J6-91	P1-84
J8-29	P5-R
J9-91	P6-G
J12-K3	P8-4
J13-C6	P11-L
J14-H5	P12-L
J15-K3	P10-1

3.3.2 Continuity and DC Resistance. Continuity and dc resistance shall be in accordance with FTM1015056. (Reference Drawing 1015057).

3.4 PERFORMANCE AND PRODUCT CHARACTERISTICS

3.4.1 Service Life.

3.4.1.1 Operating Life. The assembly shall meet performance specifications for at least 2000 hours of operation, excluding the supplier's test time of the completed unit.

3.4.1.2 Shelf Life. The assembly shall have a life of at least 3 years, without operation when packaged in accordance with Specification ND-1002214 at ambient room temperature after final acceptance at the supplier's facility.

3.4.2 Reliability. Design objectives require maximum reliability of the assembly during its period of useful life. Every effort shall be made to design and produce units capable of meeting a maximum failure rate of 0.38 failures per million hours.

4. QUALITY ASSURANCE PROVISIONS

4.1 GENERAL SPECIFICATION. Unless otherwise specified herein, all the quality assurance provisions of Specification ND1002210 shall form a part of this specification.

4.2 NASA ACCEPTANCE INSPECTION. The NASA acceptance inspection shall be in accordance with Specification FTM1015056.

5. PREPARATION FOR DELIVERY

5.1 GENERAL. Preparation for delivery shall be in accordance with Specification ND1002210.

6. NOTES. None.

Notice: When APOLLO G&N drawings, specifications, or other data are used for any purpose other than in connection with a definitely related NASA procurement operation, NASA thereby incurs no responsibility nor any obligation whatsoever, and the fact that NASA may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

JW:mav

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		B2	B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 13890	27 Oct 1964	WLK

(B1) REPLACES REVISION A WITH CHANGE

SEE SHEET 2 FOR REVISION RECORDS

REV	
SHEET	
REV STATUS OF SHEETS	REV SHEET

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Wunderlich DATE 9-8-64
CHECKED A.E. [illegible] 10-26-64
APPROVAL [illegible]
APPROVAL [illegible] 10/27/64
NASA APPROVAL [illegible] 10-29-64
MIT APPROVAL [illegible] 27 Oct 64
CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTERCONNECTION LIST OF AGE INTERCONNECT HARNESS AND PSA END CONNECTOR

CODE IDENT NO.
SIZE A
1015057
REV B
SCALE —
SHEET 1 OF 127

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	B	37	B	73	B	109	B								
2	B	38	B	74	B	110	B								
3	B	39	B	75	B	111	B								
4	B	40	B	76	B	112	B								
5	B	41	B	77	B	113	B								
6	B	42	B	78	B	114	B								
7	B	43	B	79	B	115	B								
8	B	44	B	80	B	116	B								
9	B	45	B	81	B	117	B								
10	B	46	B	82	B	118	B								
11	B	47	B	83	B	119	B								
12	B	48	B	84	B	120	B								
13	B	49	B	85	B	121	B								
14	B	50	B	86	B	122	B								
15	B	51	B	87	B	123	B								
16	B	52	B	88	B	124	B								
17	B	53	B	89	B	125	B								
18	B	54	B	90	B	126	B								
19	B	55	B	91	B	127	B								
20	B	56	B	92	B										
21	B	57	B	93	B										
22	B	58	B	94	B										
23	B	59	B	95	B										
24	B	60	B	96	B										
25	B	61	B	97	B										
26	B	62	B	98	B										
27	B	63	B	99	B										
28	B	64	B	100	B										
29	B	65	B	101	B										
30	B	66	B	102	B										
31	B	67	B	103	B										
32	B	68	B	104	B										
33	B	69	B	105	B										
34	B	70	B	106	B										
35	B	71	B	107	B										
36	B	72	B	108	B										

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION B

NASA DRAWING NO. 1015057
SHEET 2 OF 127

INTERCONNECT LIST

GENERAL NOTES

1 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE
REV LTR B
SHEET 3

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	A 577R	E 1	TB2-G 4	800 CPS 28 V 1 PCT HI IMU
*	A 84R	E 1	J03- 1	800 CPS 28 V 1 PCT HI IMU
*	A 572R	E 1	J01- 1	800 CPS 28 V 1 PCT HI IMU
*	A 573G	E 1	J01- 11	800 CPS 28 V 1 PCT HI IMU
*	A 573R	E 1	J01- 25	800 CPS 28 V 1 PCT HI IMU
*	A 574R	E 1	J02- 1	800 CPS 28 V 1 PCT HI IMU
*	A 575G	E 1	J02- 11	800 CPS 28 V 1 PCT HI IMU
*	A 575R	E 1	J02- 25	800 CPS 28 V 1 PCT HI IMU
*	A 576G	E 1	J03- 11	800 CPS 28 V 1 PCT HI IMU
*	A 576R	E 1	J03- 25	800 CPS 28 V 1 PCT HI IMU
	A 577Y	E 2	TB2-H 4	800 CPS 28 V 1 PCT LO IMU
*	A 84Y	E 2	J03- 14	800 CPS 28 V 1 PCT LO IMU
*	A 572Y	E 2	J01- 14	800 CPS 28 V 1 PCT LO IMU
*	A 574Y	E 2	J02- 14	800 CPS 28 V 1 PCT LO IMU
	A 564R	E 3	TB1-G 4	25.6 KC LO IMU
*	A 46Y	E 3	J01- 60	25.6 KC LO IMU
*	A 70Y	E 3	J02- 60	25.6 KC LO IMU
*	A 93Y	E 3	J03- 60	25.6 KC LO IMU
	A 564Y	E 4	TB1-H 4	25.6 KC HI IMU
*	A 46R	E 4	J01- 50	25.6 KC HI IMU
*	A 70R	E 4	J02- 50	25.6 KC HI IMU
*	A 93R	E 4	J03- 50	25.6 KC HI IMU
	A 577G	E 5	TB2-H 5	ZEROING RSVR 800 CPS
*	A 573Y	E 5	J01- 12	ZEROING RSVR 800 CPS
*	A 575Y	E 5	J02- 12	ZEROING RSVR 800 CPS
*	A 576Y	E 5	J03- 12	ZEROING RSVR 800 CPS
*	A 48	E 6	J01- 16	+28 VDC IMU
*	A 72	E 6	J02- 16	+28 VDC IMU
*	A 559	E 6	TB3-S21	+28 VDC IMU
*	A 581	E 6	J03- 16	+28 VDC IMU
	A 567R	E 7	TB3-D 2	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 578R	E 7	J01- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 579R	E 7	J02- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 580R	E 7	J03- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	A 557	E 8	TB2-D 1	+28 VDC CDU NOT LOCK
*	A 50	E 8	J01- 15	+28 VDC CDU NOT LOCK
*	A 74	E 8	J02- 15	+28 VDC CDU NOT LOCK
*	A 582	E 8	J03- 15	+28 VDC CDU NOT LOCK

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE
REV LTR B
SHEET 4

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	A 561R	E 9	TB1-S 1	400 CPS VAR ILLUM PWR
*	A 53R	E 9	J01- 28	400 CPS VAR ILLUM PWR
*	A 77R	E 9	J02- 28	400 CPS VAR ILLUM PWR
*	A 98R	E 9	J03- 28	400 CPS VAR ILLUM PWR
*	A 123R	E 9	J04- 28	400 CPS VAR ILLUM PWR
*	A 146R	E 9	J05- 28	400 CPS VAR ILLUM PWR
	A 561Y	E 10	TB1-S 2	400 CPS 6 V LO
*	A 53Y	E 10	J01- 29	400 CPS 6 V LO
*	A 77Y	E 10	J02- 29	400 CPS 6 V LO
*	A 98Y	E 10	J03- 29	400 CPS 6 V LO
*	A 123Y	E 10	J04- 29	400 CPS 6 V LO
*	A 146Y	E 10	J05- 29	400 CPS 6 V LO
	A 567Y	E 11	TB3-C 3	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 578Y	E 11	J01- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 579Y	E 11	J02- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 580Y	E 11	J03- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 54	E 12	J01- 41	STRUCTURE GND
*	A 78	E 12	J02- 41	STRUCTURE GND
*	A 99	E 12	J03- 41	STRUCTURE GND
*	A 124	E 12	J04- 41	STRUCTURE GND
*	A 147	E 12	J05- 41	STRUCTURE GND
*	A 548	E 12	TB3-B20	STRUCTURE GND
	A 558Y	E 13	TB2-L 1	800 CPS 28 V 1 PCT LO OPTICS
*	A 104Y	E 13	J04- 14	800 CPS 28 V 1 PCT LO OPTICS
*	A 584R	E 13	J04- 25	800 CPS 28 V 1 PCT LO OPTICS
*	A 584Y	E 13	J04- 11	800 CPS 28 V 1 PCT LO OPTICS
*	A 585R	E 13	J05- 4	800 CPS 28 V 1 PCT LO OPTICS
*	A 585Y	E 13	J05- 18	800 CPS 28 V 1 PCT LO OPTICS
*	A 586Y	E 13	J05- 14	800 CPS 28 V 1 PCT LO OPTICS
	A 558R	E 14	TB2-K 1	800 CPS 28 V 1 PCT HI OPTICS
*	A 104R	E 14	J04- 1	800 CPS 28 V 1 PCT HI OPTICS
*	A 584G	E 14	J04- 12	800 CPS 28 V 1 PCT HI OPTICS
*	A 585G	E 14	J05- 17	800 CPS 28 V 1 PCT HI OPTICS
*	A 586R	E 14	J05- 1	800 CPS 28 V 1 PCT HI OPTICS
	A 560Y	E 16	TB1-G 7	25.6 KC LO OPTICS
*	A 117Y	E 16	J04- 60	25.6 KC LO OPTICS
*	A 583Y	E 16	J05- 60	25.6 KC LO OPTICS
	A 560R	E 17	TB1-H 7	25.6 KC HI OPTICS

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE
REV LTR B
SHEET 5

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 117R	E 17	J04- 50	25.6 KC HI OPTICS	
*	A 583R	E 17	J05- 50	25.6 KC HI OPTICS	
	A 132Y	E 18	TB3-L11	TRUNNION CDU 1/2X RSVR P3	
*	A 133	E 18	J05- 11	TRUNNION CDU 1/2X RSVR P3	
*	A 149	E 18	J05- 25	TRUNNION CDU 1/2X RSVR P3	
	A 494Y	E 22	J21-211	COMMONED RETURNS GROUND	214B
	A 495Y	E 22	J21-176	COMMONED RETURNS GROUND	215B
	A 496Y	E 22	J21-143	COMMONED RETURNS GROUND	216B
	A 497Y	E 22	J21-110	COMMONED RETURNS GROUND	217B
	A 498Y	E 22	J21- 77	COMMONED RETURNS GROUND	218B
	A 499Y	E 22	J21- 42	COMMONED RETURNS GROUND	219B
	A 500Y	E 22	J21-213	COMMONED RETURNS GROUND	221B
	A 501Y	E 22	J21-178	COMMONED RETURNS GROUND	222B
	A 502Y	E 22	J21-145	COMMONED RETURNS GROUND	223B
	A 505Y	E 22	J21- 5	COMMONED RETURNS GROUND	220B
*	A 554	E 22	E 23	COMMONED RETURNS GROUND	
	A 482Y	E 23	J21- 81	COMMONED RETURNS GROUND	232B
	A 483Y	E 23	J21- 7	COMMONED RETURNS GROUND	227B
	A 484Y	E 23	J21-215	COMMONED RETURNS GROUND	228B
	A 485Y	E 23	J21-180	COMMONED RETURNS GROUND	229B
	A 486Y	E 23	J21-147	COMMONED RETURNS GROUND	230B
	A 487Y	E 23	J21-114	COMMONED RETURNS GROUND	231B
	A 488Y	E 23	J21- 46	COMMONED RETURNS GROUND	233B
	A 503Y	E 23	J21-112	COMMONED RETURNS GROUND	224B
	A 504Y	E 23	J21- 44	COMMONED RETURNS GROUND	226B
	A 506Y	E 23	J21- 79	COMMONED RETURNS GROUND	225B
	A 554	E 23	E 22	COMMONED RETURNS GROUND	
	A 555	E 23	E 24	COMMONED RETURNS GROUND	
	A 470Y	E 24	J21- 48	COMMONED RETURNS GROUND	244B
	A 471Y	E 24	J21- 83	COMMONED RETURNS GROUND	242B
	A 489Y	E 24	J21- 9	COMMONED RETURNS GROUND	234B
	A 490Y	E 24	J21-217	COMMONED RETURNS GROUND	235B
	A 491Y	E 24	J21-182	COMMONED RETURNS GROUND	236B
	A 492Y	E 24	J21-149	COMMONED RETURNS GROUND	237B
	A 493Y	E 24	J21-116	COMMONED RETURNS GROUND	238B
	A 552	E 24	J10- 82	COMMONED RETURNS GROUND	330
*	A 555	E 24	E 23	COMMONED RETURNS GROUND	
	A 467Y	E 25	J21- 85	COMMONED RETURNS GROUND	205B

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SCALE - NONE
REV LTR B
SHEET 6

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 468R	E 25	J21- 13	COMMONED RETURNS GROUND	209B
	A 472Y	E 25	J21-151	COMMONED RETURNS GROUND	203B
	A 510Y	E 25	J21- 15	COMMONED RETURNS GROUND	207B
	A 511Y	E 25	J21-118	COMMONED RETURNS GROUND	204B
	A 514Y	E 25	J21-184	COMMONED RETURNS GROUND	202B
	A 515Y	E 25	J21-186	COMMONED RETURNS GROUND	210B
	A 516Y	E 25	J21-219	COMMONED RETURNS GROUND	201B
	A 517Y	E 25	J21-221	COMMONED RETURNS GROUND	208B
	A 551	E 25	J10- 69	COMMONED RETURNS GROUND	252
	AA 92B	E 27	SHLD AA 92	0 VDC IMU	
	AA500B	E 27	SHLD AA500	0 VDC IMU	
*	AA500W	E 27	J21-104	0 VDC IMU	155B
*	AA608	E 27	TB2-D 4	0 VDC IMU	
	AA503B	E 28	SHLD AA503	COMPUTER 3200 PPS SYNC RET	
	AA504B	E 28	SHLD AA504	COMPUTER 3200 PPS SYNC RET	
*	AA 36	E 28	J11-M5	COMPUTER 3200 PPS SYNC RET	
*	AA503W	E 28	J21-204	COMPUTER 3200 PPS SYNC RET	152B
*	AA504W	E 28	J21-242	COMPUTER 3200 PPS SYNC RET	151B
	AA490B	E 29	SHLD AA490	COMPUTER 25.6 KPPS SYNC RET	
	AA491B	E 29	SHLD AA491	COMPUTER 25.6 KPPS SYNC RET	
*	AA 69	E 29	J12-F2	COMPUTER 25.6 KPPS SYNC RET	
*	AA490R	E 29	J21-170	COMPUTER 25.6 KPPS SYNC RET	153B
*	AA491W	E 29	J21-137	COMPUTER 25.6 KPPS SYNC RET	154B
*	AA226A	E 30	SHLD AA226	0 VDC IMU	
*	AA227A	E 30	SHLD AA227	0 VDC IMU	
*	AA232A	E 30	SHLD AA232	0 VDC IMU	
	AA232B	E 31	SHLD AA232	0 VDC IMU	
*	AA 67	E 31	J12-F1	COMPUTER 800 PPS SYNC RET	
*	AA 91	E 31	J12-R4	0 VDC IMU	
*	AA232W	E 31	J16-L3	COMPUTER 800 PPS SYNC RET	
	AA129W	E 33	J21- 66	0 VDC IMU	142A
	AA130R	E 33	J21- 32	0 VDC IMU	143A
	AA131W	E 33	J21-239	0 VDC IMU	144A
	AA132W	E 33	J21-201	0 VDC IMU	145A
	AA134R	E 33	J21-167	0 VDC IMU	146A
	AA135W	E 33	J21-134	0 VDC IMU	147A
	AA655R	E 33	J21-101	0 VDC IMU	148A
*	AA137	E 33	J14-R6	0 VDC IMU	

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SCALE - NONE	REV LTR B		SHEET 7

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA 77	E 34	J12-B5	0 VDC IMU	
*	AA125	E 34	J13-R6	0 VDC IMU	
*	AA501R	E 34	J21-133	0 VDC IMU	139B
*	AA502R	E 34	J21-100	0 VDC IMU	140B
*	AA158	E 35	J15-L5	COMPUTER RET	
*	AA467R	E 35	J21-125	COMPUTER RET	132A
*	AA468R	E 35	J21- 92	COMPUTER RET	133A
*	AA159	E 36	J15-L5	COMPUTER RET	
*	AA469R	E 36	J21-194	COMPUTER RET	134A
*	AA470R	E 36	J21-160	COMPUTER RET	135A
*	AA160	E 37	J15-L5	COMPUTER RET	
*	AA471R	E 37	J21- 94	COMPUTER RET	137A
*	AA472R	E 37	J21-127	COMPUTER RET	136A
*	AA164	E 38	J15-A5	IG DAC MDA SIG LO	
*	AA475R	E 38	J21- 25	IG DAC MDA SIG LO	120B
*	AA476W	E 38	J21- 27	IG DAC MDA SIG LO	121B
	AA481B	E 39	SHLD AA481	IG DAC MDA SIG LO	
	AA482B	E 39	SHLD AA482	IG DAC MDA SIG LO	
*	AA167	E 39	J15-A5	IG DAC MDA SIG LO	
*	AA481R	E 39	J21-238	IG DAC MDA SIG LO	128B
*	AA482W	E 39	J21-200	IG DAC MDA SIG LO	129B
*	AA165	E 40	J15-A7	MG DAC MDA SIG LO	
*	AA477R	E 40	J21-233	MG DAC MDA SIG LO	122B
*	AA478W	E 40	J21-193	MG DAC MDA SIG LO	123B
	AA483B	E 41	SHLD AA483	MG DAC MDA SIG LO	
	AA484B	E 41	SHLD AA484	MG DAC MDA SIG LO	
*	AA168	E 41	J15-A7	MG DAC MDA SIG LO	
*	AA483R	E 41	J21-166	MG DAC MDA SIG LO	130B
*	AA484W	E 41	J21- 98	MG DAC MDA SIG LO	131B
*	AA166	E 42	J15-A9	OG DAC MDA SIG LO	
*	AA479R	E 42	J21- 57	OG DAC MDA SIG LO	118B
*	AA480W	E 42	J21- 59	OG DAC MDA SIG LO	119B
	AA485B	E 43	SHLD AA485	OG DAC MDA SIG LO	
	AA486B	E 43	SHLD AA486	OG DAC MDA SIG LO	
*	AA169	E 43	J15-A9	OG DAC MDA SIG LO	
*	AA485R	E 43	J21- 65	OG DAC MDA SIG LO	126B
*	AA486W	E 43	J21- 31	OG DAC MDA SIG LO	127B
	A 14B	E 44	SHLD A 14	AGC SIG 178 SHLD RET	

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SCALE - NONE	REV LTR B		SHEET 8

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 15B	E 44	SHLD A 15	AGC SIG 178 SHLD RET	
	A 16B	E 44	SHLD A 16	AGC SIG 178 SHLD RET	
	A 27B	E 44	SHLD A 27	AGC SIG 178 SHLD RET	
	A 156B	E 44	SHLD A 156	AGC SIG 178 SHLD RET	
	A 433B	E 44	SHLD A 433	AGC SIG 178 SHLD RET	
	A 434B	E 44	SHLD A 434	AGC SIG 178 SHLD RET	
	A 437B	E 44	SHLD A 437	AGC SIG 178 SHLD RET	
	A 449B	E 44	SHLD A 449	AGC SIG 178 SHLD RET	
	A 566	E 44	E 57	AGC SIG 178 SHLD RET	
*	A 440A	E 44	SHLD A 440	AGC SIG 178 SHLD RET	
	AA568	E 45	E 46	AGC SIG 180 SHLD RET	
*	AA473	E 45	J21- 23	AGC SIG 180 SHLD RET	180
*	AA494A	E 45	SHLD AA494	AGC SIG 180 SHLD RET	
*	AA495A	E 45	SHLD AA495	AGC SIG 180 SHLD RET	
*	AA498A	E 45	SHLD AA498	AGC SIG 180 SHLD RET	
*	AA499A	E 45	SHLD AA499	AGC SIG 180 SHLD RET	
*	AA467A	E 46	SHLD AA467	AGC SIG 180 SHLD RET	
*	AA468A	E 46	SHLD AA468	AGC SIG 180 SHLD RET	
*	AA469A	E 46	SHLD AA469	AGC SIG 180 SHLD RET	
*	AA470A	E 46	SHLD AA470	AGC SIG 180 SHLD RET	
*	AA471A	E 46	SHLD AA471	AGC SIG 180 SHLD RET	
*	AA472A	E 46	SHLD AA472	AGC SIG 180 SHLD RET	
*	AA568	E 46	E 45	AGC SIG 180 SHLD RET	
*	AA474	E 47	E 70	AGC SIG 179 SHLD RET	
*	AA475A	E 47	SHLD AA475	AGC SIG 179 SHLD RET	
*	AA476A	E 47	SHLD AA476	AGC SIG 179 SHLD RET	
*	AA477A	E 47	SHLD AA477	AGC SIG 179 SHLD RET	
*	AA478A	E 47	SHLD AA478	AGC SIG 179 SHLD RET	
*	AA479A	E 47	SHLD AA479	AGC SIG 179 SHLD RET	
*	AA480A	E 47	SHLD AA480	AGC SIG 179 SHLD RET	
	A 64B	E 48	SHLD A 64	0 VDC IMU	
	A 221B	E 48	SHLD A 221	0 VDC IMU	
	A 358B	E 48	SHLD A 358	0 VDC IMU	
*	A 458	E 48	TB2-D 5	0 VDC IMU	
*	AA348	E 50	J18-H3	TRUNNION CDU DAC LO	
*	AA496R	E 50	J21-236	TRUNNION CDU DAC LO	114B
*	AA497W	E 50	J21-198	TRUNNION CDU DAC LO	115B
*	AA243W	E 51	J17-H6	TRUNNION CDU DAC LO	

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SCALE - NONE	REV LTR B		SHEET 9

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA349	E 51	J18-H3	TRUNNION CDU DAC LO	
*	AA498R	E 51	J21-231	TRUNNION CDU DAC LO	108B
*	AA499R	E 51	J21-191	TRUNNION CDU DAC LO	109B
*	AA346	E 52	J18-H2	SHAFT CDU DAC LO	
*	AA492R	E 52	J21-164	SHAFT CDU DAC LO	116B
*	AA493W	E 52	J21-131	SHAFT CDU DAC LO	117B
*	AA242W	E 53	J17-H4	SHAFT CDU DAC LO	
*	AA347	E 53	J18-H2	SHAFT CDU DAC LO	
*	AA494R	E 53	J21-157	SHAFT CDU DAC LO	110B
*	AA495R	E 53	J21-124	SHAFT CDU DAC LO	111B
	A 155R	E 55	TB2-F 3		
	A 156R	E 55	J21-229		164B
*	A 415	E 56	J09- 42	AGC COMMON	
*	A 420	E 56	J09- 36	AGC COMMON	
*	A 440Y	E 56	J21-119	AGC COMMON	101A
*	A 566	E 57	E 44	AGC SIG 178 SHLD RET	
*	AA487A	E 57	SHLD AA487	AGC SIG 178 SHLD RET	
*	AA488A	E 57	SHLD AA488	AGC SIG 178 SHLD RET	
*	AA489A	E 57	SHLD AA489	AGC SIG 178 SHLD RET	
*	AA562	E 57	J21- 53	AGC SIG 178 SHLD RET	178
	A 433R	E 58	J21- 87		102B
	A 434R	E 58	J21- 89		103B
	A 437R	E 58	J21- 55		104B
	A 449Y	E 58	J21- 19		106B
*	A 440R	E 58	J21-120		101B
	AA176R	E 59	TB2-F 3		
*	AA488R	E 59	J21-189		160B
*	AA489R	E 60	J21-153		158B
*	AA569R	E 60	TB2-F 3		
	A 13R	E 61	TB2-F 3		
	A 14R	E 61	J21-155		159B
	A 15R	E 61	J21-223		161B
	A 16R	E 61	J21-227		163B
	A 27R	E 61	J21-225		162B
*	A 570	E 62	J10- 1	GROUP 2 SHIELD	245
*	A 571	E 63	J21-107	GROUP 2 SHIELD	245
*	A 568	E 64	J21-187	GROUP 3 SHIELD	250
*	A 569	E 65	J10- 27	GROUP 3 SHIELD	250

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SCALE - NONE	REV LTR B		SHEET 10

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* AA617	E 66	J11-L4	STRUCTURE GND	
* AA618	E 67	J11-L4	STRUCTURE GND	
* AA619	E 68	TB3-B20	STRUCTURE GND	
* AA620	E 69	TB3-B20	STRUCTURE GND	
AA474	E 70	E 47	AGC SIG 179 SHLD RET	
AA639B	E 70	SHLD AA639	AGC SIG 179 SHLD RET	
AA640B	E 70	SHLD AA640	AGC SIG 179 SHLD RET	
AA641B	E 70	SHLD AA641	AGC SIG 179 SHLD RET	
* AA642	E 70	J21- 22	AGC SIG 179 SHLD RET	179
AA492B	E 71	SHLD AA492	0 VDC OPTICS	
AA493B	E 71	SHLD AA493	0 VDC OPTICS	
AA496B	E 71	SHLD AA496	0 VDC OPTICS	
AA497B	E 71	SHLD AA497	0 VDC OPTICS	
* AA638	E 71	J18-T5	0 VDC OPTICS	
A 700	E 72	TB2-F 1	CONDITION LIGHT COMMON	
* A 693	E 72	J08- 30	ZERO ENCODER LIGHT LO	
* A 694	E 72	J08- 61	IMU FAIL LIGHT LO	
* A 695	E 72	J08- 83	CDU FAIL LIGHT LO	
* A 696	E 72	J08- 84	ACCEL FAIL LIGHT LO	
* A 697	E 72	J08- 70	SPARE FAIL LIGHT 1 LO	
* A 698	E 72	J08- 28	SPARE FAIL LIGHT 2 LO	
* A 699	E 72	J08- 17	SPARE FAIL LIGHT 3 LO	

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SIZE A
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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 572R	J01- 1	E 1	800 CPS 28 V 1 PCT HI IMU
A 578Y	J01- 2	E 11	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 578R	J01- 3	E 7	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 40Y	J01- 6	TB3-F13	COS AIG 1X RET P1
A 41Y	J01- 7	TB3-D14	SIN AIG 1X P2
A 573G	J01- 11	E 1	800 CPS 28 V 1 PCT HI IMU
A 573Y	J01- 12	E 5	ZEROING RSVR 800 CPS
A 572Y	J01- 14	E 2	800 CPS 28 V 1 PCT LO IMU
A 50	J01- 15	E 8	+28 VDC CDU NOT LOCK
A 48	J01- 16	E 6	+28 VDC IMU
A 40R	J01- 20	TB3-F14	COS AIG 1X P3
A 41R	J01- 21	TB3-D13	SIN AIG 1X RET P4
A 573R	J01- 25	E 1	800 CPS 28 V 1 PCT HI IMU
A 53R	J01- 28	E 9	400 CPS VAR ILLUM PWR
A 53Y	J01- 29	E 10	400 CPS 6 V LO
A 56	J01- 30	TB2-N 5	+28 VDC IMU FOR IG MDA
A 52G	J01- 31	TB2-L 5	IG CDU MDA OUTPUT
A 52Y	J01- 32	TB2-L 6	IG CDU MDA OUTPUT
A 55	J01- 34	TB2-W 1	IG CDU 1X RSVR LOAD S1
A 39R	J01- 35	TB2-H 2	IG CDU 1X ERROR SIG S2
A 54	J01- 41	E 12	STRUCTURE GND
A 52R	J01- 43	TB2-K 4	0 VDC IMU
A 39Y	J01- 45	TB2-G 2	IG CDU ERROR SIG RET
A 46R	J01- 50	E 4	25.6 KC HI IMU
A 38Y	J01- 57	TB2-G 3	IG CDU ERROR SIG RET S1
A 46Y	J01- 60	E 3	25.6 KC LO IMU
A 38R	J01- 67	TB2-H 3	IG CDU 1/2X ERROR SIG S3
A 43Y	J01- 86	TB2-W 7	COS AIG 16X TO CDU
A 44Y	J01- 87	TB2-C 8	SIN AIG 16X TO CDU
A 42Y	J01- 90	TB2-G 1	IG CDU ERROR SIG RET
A 51Y	J01- 92	TB2-T 7	IG CDU MDA INPUT RET
A 45R	J01- 94	TB2-A 5	IG CDU ENCODER COM
A 43R	J01-100	TB2-W 6	COS AIG 16X S3
A 44R	J01-101	TB2-B 8	SIN AIG 16X S4
A 42R	J01-104	TB2-H 1	IG CDU 16X ERROR SIG
A 51G	J01-105	TB2-T 6	IG CDU MDA SLEW SIG
A 51R	J01-106	TB2-U 6	IG CDU MDA TACH SIG
A 45Y	J01-107	TB2-B 5	IG CDU ENCODER PHASE 1

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REV LTR B
SHEET 12

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 45G	J01-108	TB2-C 5	IG CDU ENCODER PHASE 2

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
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SCALE - NONE
REV LTR B
SHEET 13

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 574R	J02- 1	E 1	800 CPS 28 V 1 PCT HI IMU
A 579Y	J02- 2	E 11	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 579R	J02- 3	E 7	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 64Y	J02- 6	TB3-N21	COS AMG 1X S1
A 65Y	J02- 7	TB3-C14	SIN AMG 1X
A 575G	J02- 11	E 1	800 CPS 28 V 1 PCT HI IMU
A 575Y	J02- 12	E 5	ZEROING RSVR 800 CPS
A 574Y	J02- 14	E 2	800 CPS 28 V 1 PCT LO IMU
A 74	J02- 15	E 8	+28 VDC CDU NOT LOCK
A 72	J02- 16	E 6	+28 VDC IMU
A 64R	J02- 20	TB3-N20	COS AMG 1X S3
A 65R	J02- 21	TB3-C13	SIN AMG 1X RET
A 575R	J02- 25	E 1	800 CPS 28 V 1 PCT HI IMU
A 77R	J02- 28	E 9	400 CPS VAR ILLUM PWR
A 77Y	J02- 29	E 10	400 CPS 6 V LO
A 80	J02- 30	TB2-R 5	+28 VDC IMU FOR MG MDA
A 76G	J02- 31	TB2-L 3	MG CDU MDA OUTPUT
A 76Y	J02- 32	TB2-K 3	MG CDU MDA OUTPUT
A 79	J02- 34	TB2-X 1	MG CDU 1X RSVR LOAD
A 63R	J02- 35	TB2-H 7	MG CDU 1X ERROR SIG
A 78	J02- 41	E 12	STRUCTURE GND
A 76R	J02- 43	TB2-K 4	0 VDC IMU
A 63Y	J02- 45	TB2-G 7	MG CDU ERROR SIG RET
A 70R	J02- 50	E 4	25.6 KC HI IMU
A 62Y	J02- 57	TB2-G 6	MG CDU ERROR SIG RET
A 70Y	J02- 60	E 3	25.6 KC LO IMU
A 62R	J02- 67	TB2-H 6	MG CDU 1/2X ERROR SIG
A 67Y	J02- 86	TB2-U 4	COS AMG 16X TO CDU
A 68Y	J02- 87	TB2-C 7	SIN AMG 16X TO CDU
A 66Y	J02- 90	TB2-G 8	MG CDU ERROR SIG RET
A 75Y	J02- 92	TB2-X 6	MG CDU MDA INPUT RET
A 69R	J02- 94	TB2-C 6	MG CDU ENCODER COM
A 67R	J02-100	TB2-U 5	COS AMG 16X S3
A 68R	J02-101	TB2-B 7	SIN AMG 16X S4
A 66R	J02-104	TB2-H 8	MG CDU 16X ERROR SIG
A 75G	J02-105	TB2-X 5	MG CDU MDA SLEW SIG
A 75R	J02-106	TB2-W 5	MG CDU MDA TACH SIG
A 69Y	J02-107	TB2-B 6	MG CDU ENCODER PHASE 1

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SHEET 14

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 69G	J02-108	TB2-A 6	MG CDU ENCODER PHASE 2

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
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SCALE - NONE
REV LTR B
SHEET 15

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 84R	J03- 1	E 1	800 CPS 28 V 1 PCT HI IMU
A 580Y	J03- 2	E 11	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 580R	J03- 3	E 7	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 87Y	J03- 6	TB2-N 7	COS AOG 1X S1
A 88Y	J03- 7	TB2-U 8	SIN AOG 1X S4
A 576G	J03- 11	E 1	800 CPS 28 V 1 PCT HI IMU
A 576Y	J03- 12	E 5	ZEROING RSVR 800 CPS
A 84Y	J03- 14	E 2	800 CPS 28 V 1 PCT LO IMU
A 582	J03- 15	E 8	+28 VDC CDU NOT LOCK
A 581	J03- 16	E 6	+28 VDC IMU
A 87R	J03- 20	TB2-R 8	COS AOG 1X TO CDU
A 88R	J03- 21	TB2-T 8	SIN AOG 1X TO CDU
A 576R	J03- 25	E 1	800 CPS 28 V 1 PCT HI IMU
A 98R	J03- 28	E 9	400 CPS VAR ILLUM PWR
A 98Y	J03- 29	E 10	400 CPS 6 V LO
A 102	J03- 30	TB2-K 8	+28 VDC IMU FOR OG MDA
A 97G	J03- 31	TB2-K 6	OG CDU MDA OUTPUT
A 97Y	J03- 32	TB2-K 5	OG CDU MDA OUTPUT
A 100	J03- 34	TB2-S 1	OG CDU 1X RSVR LOAD
A 86R	J03- 35	TB2-N 2	OG CDU 1X ERROR SIG
A 99	J03- 41	E 12	STRUCTURE GND
A 97R	J03- 43	TB2-K 4	0 VDC IMU
A 86Y	J03- 45	TB2-R 2	OG CDU ERROR SIG RET
A 93R	J03- 50	E 4	25.6 KC HI IMU
A 85Y	J03- 57	TB2-R 1	OG CDU ERROR SIG RET
A 93Y	J03- 60	E 3	25.6 KC LO IMU
A 85R	J03- 67	TB2-N 1	OG CDU 1/2X ERROR SIG
A 90Y	J03- 86	TB2-X 4	COS AOG 16X TO CDU
A 91Y	J03- 87	TB2-X 2	SIN AOG 16X TO CDU
A 101	J03- 89	TB2-T 1	OG CDU 16X RSVR LOAD
A 89Y	J03- 90	TB2-R 3	OG CDU ERROR SIG RET
A 96Y	J03- 92	TB2-R 7	OG CDU MDA INPUT RET
A 92R	J03- 94	TB2-A 4	OG CDU ENCODER COM
A 90R	J03-100	TB2-W 4	COS AOG 16X S3
A 91R	J03-101	TB2-W 2	SIN AOG 16X S4
A 89R	J03-104	TB2-N 3	OG CDU 16X ERROR SIG
A 96G	J03-105	TB2-R 6	OG CDU MDA SLEW SIG
A 96R	J03-106	TB2-N 6	OG CDU MDA TACH SIG

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 92Y	J03-107	TB2-B 4	OG CDU ENCODER PHASE 1
A 92G	J03-108	TB2-C 4	OG CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 104R	J04- 1	E 14	800 CPS 28 V 1 PCT HI OPTICS
A 599Y	J04- 2	TB2-T 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 599R	J04- 3	TB2-U 1	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 110R	J04- 6	TB3-K 7	SHAFT CDU 1X COS OUTPUT HI
A 111R	J04- 7	TB3-G13	SHAFT CDU 1X SIN OUTPUT LO
A 584Y	J04- 11	E 13	800 CPS 28 V 1 PCT LO OPTICS
A 584G	J04- 12	E 14	800 CPS 28 V 1 PCT HI OPTICS
A 104Y	J04- 14	E 13	800 CPS 28 V 1 PCT LO OPTICS
A 110Y	J04- 20	TB3-K 8	SHAFT CDU 1X COS OUTPUT LO
A 111Y	J04- 21	TB3-G14	SHAFT CDU 1X SIN OUTPUT HI
A 584R	J04- 25	E 13	800 CPS 28 V 1 PCT LO OPTICS
A 123R	J04- 28	E 9	400 CPS VAR ILLUM PWR
A 123Y	J04- 29	E 10	400 CPS 6 V LO
A 122G	J04- 31	TB3-D11	SHAFT CDU MOTOR CONTROL WINDING
A 122Y	J04- 32	TB3-C11	SHAFT CDU MOTOR CONTROL WINDING
A 109G	J04- 34	TB3-T12	SHAFT CDU 1X P1 (S1)
A 109Y	J04- 35	TB3-S12	SHAFT CDU 1X P2 (S2)
A 124	J04- 41	E 12	STRUCTURE GND
A 122R	J04- 43	TB3-B17	+28 VDC OPTICS SWITCHED
A 109R	J04- 45	TB3-R12	SHAFT CDU 1X P3 (S3)
A 117R	J04- 50	E 17	25.6 KC HI OPTICS
A 108Y	J04- 56	TB3-N14	SHAFT CDU 1/2X COS HI S2
A 107R	J04- 57	TB3-K11	SHAFT CDU 1/2X SIN LO S3
A 117Y	J04- 60	E 16	25.6 KC LO OPTICS
A 108R	J04- 66	TB3-N13	SHAFT CDU 1/2X COS LO S4
A 107Y	J04- 67	TB3-K10	SHAFT CDU 1/2X SIN HI S1
A 114Y	J04- 86	TB3-N 8	SHAFT CDU 16X RSVR COS HI P1
A 115Y	J04- 87	TB3-N10	SHAFT CDU 16X RSVR SIN HI P2
A 113	J04- 89	TB3-M18	SHAFT CDU 16X LOAD
A 112Y	J04- 90	TB3-H11	SHAFT CDU 16X ERROR SIG LO
A 121Y	J04- 92	TB3-L 8	SHAFT CDU TACH LO
A 116R	J04- 94	TB3-S 5	SHAFT CDU ENCODER COM
A 114R	J04-100	TB3-N 7	SHAFT CDU 16X RSVR COS LO P3
A 115R	J04-101	TB3-N11	SHAFT CDU 16X RSVR SIN LO P4
A 112R	J04-104	TB3-H10	SHAFT CDU 16X ERROR SIG HI
A 121R	J04-106	TB3-L 7	SHAFT CDU TACH HI
A 116Y	J04-107	TB3-S 6	SHAFT CDU ENCODER PHASE 1
A 116G	J04-108	TB3-S 4	SHAFT CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 586R	J05- 1	E 14	800 CPS 28 V 1 PCT HI OPTICS
A 600Y	J05- 2	TB2-T 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 600R	J05- 3	TB2-U 1	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 585R	J05- 4	E 13	800 CPS 28 V 1 PCT LO OPTICS
A 130R	J05- 8	TB3-G10	TRUNNION CDU 1/4X SIN HI
A 131R	J05- 9	TB3-F16	TRUNNION CDU 1/4X COS HI
A 131Y	J05- 10	TB3-G16	TRUNNION CDU 1/4X COS LO
A 133	J05- 11	E 18	TRUNNION CDU 1/2X RSVR P3
A 132R	J05- 12	TB3-L10	TRUNNION CDU 1/2X RSVR P2
A 586Y	J05- 14	E 13	800 CPS 28 V 1 PCT LO OPTICS
A 585G	J05- 17	E 14	800 CPS 28 V 1 PCT HI OPTICS
A 585Y	J05- 18	E 13	800 CPS 28 V 1 PCT LO OPTICS
A 130Y	J05- 22	TB3-F10	TRUNNION CDU 1/4X SIN LO
A 149	J05- 25	E 18	TRUNNION CDU 1/2X RSVR P3
A 146R	J05- 28	E 9	400 CPS VAR ILLUM PWR
A 146Y	J05- 29	E 10	400 CPS 6 V LO
A 145G	J05- 31	TB3-D12	TRUNNION CDU MOTOR CONTROL WINDING
A 145Y	J05- 32	TB3-C12	TRUNNION CDU MOTOR CONTROL WINDING
A 147	J05- 41	E 12	STRUCTURE GND
A 145R	J05- 43	TB3-B16	+28 VDC OPTICS SWITCHED
A 583R	J05- 50	E 17	25.6 KC HI OPTICS
A 148R	J05- 56	TB3-L12	TRUNNION CDU 1/2X RSVR LOAD HI
A 583Y	J05- 60	E 16	25.6 KC LO OPTICS
A 148Y	J05- 66	TB3-K12	TRUNNION CDU 1/2X RSVR LOAD LO
A 134Y	J05- 67	TB3-R13	TRUNNION CDU 1/2X RSVR S3
A 134R	J05- 68	TB3-R14	TRUNNION CDU 1/2X RSVR S1 PHASE CORR
A 137Y	J05- 86	TB3-T10	TRUNNION CDU 16X RSVR COS HI P1
A 138Y	J05- 87	TB3-S10	TRUNNION CDU 16X RSVR SIN HI P2
A 136	J05- 89	TB3-N18	TRUNNION CDU 16X LOAD
A 135Y	J05- 90	TB3-H 7	TRUNNION CDU 16X ERROR SIG LO
A 144Y	J05- 92	TB3-M 7	TRUNNION CDU TACH LO
A 139R	J05- 94	TB3-T 5	TRUNNION CDU ENCODER COM
A 137R	J05-100	TB3-T11	TRUNNION CDU 16X RSVR COS LO P3
A 138R	J05-101	TB3-S11	TRUNNION CDU 16X RSVR SIN LO P4
A 135R	J05-104	TB3-H 8	TRUNNION CDU 16X ERROR SIG HI
A 144R	J05-106	TB3-M 8	TRUNNION CDU TACH HI
A 139Y	J05-107	TB3-T 4	TRUNNION CDU ENCODER PHASE 1
A 139G	J05-108	TB3-T 6	TRUNNION CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 150R	J06- 1	P01- 1	PITCH ATTITUDE ERROR METER +
A 150Y	J06- 2	P01- 2	PITCH ATTITUDE ERROR METER -
A 161	J06- 6	P01- 6	ENTRY RELAY CONTROL RESET
A 160	J06- 9	P01- 9	MODE SWITCH INTERLOCK
A 154	J06- 12	TB1-K 7	MODE RELAY COMMON TO AGC
A 151R	J06- 14	P01- 14	YAW ATTITUDE ERROR METER +
A 151Y	J06- 15	P01- 15	YAW ATTITUDE ERROR METER -
A 157	J06- 18	P01- 18	MODE RELAY COMMON TO D AND C ELECT
A 175	J06- 22	P01- 22	ATTITUDE CONTROL MODE LIGHT
A 165	J06- 23	P01- 23	FINE ALIGN RELAY CONTROL
A 166	J06- 24	TB3-F 4	ATTITUDE CONTROL RELAY CONTROL
A 167	J06- 25	P01- 25	ENTRY RELAY CONTROL
A 152Y	J06- 28	P01- 28	ROLL ATTITUDE ERROR METER -
A 152R	J06- 29	P01- 29	ROLL ATTITUDE ERROR METER +
A 162	J06- 34	P01- 34	ZERO ENCODER RELAY CONTROL
A 163	J06- 35	P01- 35	COARSE ALIGN RELAY CONTROL
A 164	J06- 36	P01- 36	CDU MANUAL RELAY CONTROL
A 687	J06- 37	P01- 37	BACKUP MODE RELAY CONTROL
A 177	J06- 46	P01- 46	ATTITUDE CONTROL MODE INTERLOCK
A 170	J06- 56	P01- 56	MANUAL ALIGN
A 155Y	J06- 68	TB2-D 2	AGC COM
A 156Y	J06- 69	J21-228	TRANSFER SWITCH INDICATION TO AGC 164A
A 169	J06- 78	TB2-L 4	0 VDC IMU
A 176	J06- 79	P01- 79	ENTRY MODE LIGHT
A 158	J06- 81	TB1-F 8	ATTIT CONT MODE COMMAND FROM AGC
A 178	J06- 91	TB3-B21	STRUCTURE GND
A 172	J06- 92	P01- 92	COARSE ALIGN MODE LIGHT
A 168	J06- 93	P01- 93	MODE RELAY COMMON
A 174	J06- 94	P01- 94	FINE ALIGN MODE LIGHT
A 171	J06-104	P01-104	ZERO ENCODER MODE LIGHT
A 173	J06-105	P01-105	CDU MANUAL MODE LIGHT
A 153Y	J06-107	TB1-S 2	400 CPS 6 V LO
A 153R	J06-108	TB1-S 1	400 CPS VAR ILLUM PWR

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 699	J08- 17	E 72	SPARE FAIL LIGHT 3 LO
A 202	J08- 18	TB2-S 8	GIMBAL LOCK LIGHT HI
A 603N	J08- 19	TB1-R 2	400 CPS 6 V LO
A 698	J08- 28	E 72	SPARE FAIL LIGHT 2 LO
A 215	J08- 29	TB3-B21	STRUCTURE GND
A 693	J08- 30	E 72	ZERO ENCODER LIGHT LO
A 706	J08- 31	TB2-T 4	IMU DELAY LIGHT LO
A 712	J08- 32	TB2-F 6	MASTER CAUTION LIGHT HI
A 603Y	J08- 36	TB1-R 2	400 CPS 6 V LO
A 203	J08- 41	TB3-B 4	ZERO ENCODER LIGHT HI
A 193	J08- 42	TB1-U 2	IMU DELAY LIGHT HI
A 206	J08- 43	J22- 72	MASTER CAUTION LIGHT RET
A 603G	J08- 46	TB1-R 3	PROJECTION LAMP LO INTENSITY
A 565	J08- 50	TB1-F 1	SPARE FAIL LIGHT 1 HI
A 187	J08- 51	TB1-H 8	G+N ERROR LIGHT HI
A 702	J08- 52	TB2-V 1	G+N ERROR LIGHT LO
A 196	J08- 53	J22- 38	MASTER WARNING LIGHT RET
A 710	J08- 54	TB2-F 6	MASTER WARNING LIGHT HI
A 603R	J08- 55	TB1-N 3	PROJECTION LAMP HI INTENSITY
A 188	J08- 60	TB3-M 6	IMU FAIL LIGHT HI
A 694	J08- 61	E 72	IMU FAIL LIGHT LO
A 192	J08- 62	TB3-D 3	IMU TEMP CONT FAIL LIGHT HI
A 704	J08- 63	TB2-N 4	IMU TEMP CONT FAIL LIGHT LO
A 181	J08- 66	TB3-H 6	MDV SLEW CONTROL 1.5 V 400 CPS
A 179	J08- 67	TB1-G 1	+28 VDC MDV SERVO POWER
A 182R	J08- 68	TB3-B13	400 CPS 26 V MDV RSVR EXC
A 697	J08- 70	E 72	SPARE FAIL LIGHT 1 LO
A 198	J08- 71	TB1-H 6	AGC POWER SUPPLY FAIL LIGHT HI
A 200	J08- 72	TB3-B 3	CDU FAIL LIGHT HI
A 190	J08- 73	TB3-B 5	ACCEL FAIL LIGHT HI
A 184	J08- 78	TB2-S 7	STEP-UP-C
A 186	J08- 79	TB2-S 5	STEP-DOWN-C
A 182Y	J08- 81	TB3-B12	400 CPS 26 V SLEW
A 708	J08- 82	TB2-F 5	AGC POWER SUPPLY FAIL LIGHT LO
A 695	J08- 83	E 72	CDU FAIL LIGHT LO
A 696	J08- 84	E 72	ACCEL FAIL LIGHT LO
A 211	J08- 92	TB1-S 5	0 VDC IMU
A 185	J08- 93	TB2-S 4	STEP-DOWN-R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 199	J08- 95	TB3-B14	400 CPS 26 V LO
A 183	J08-106	TB2-S 6	STEP-UP-R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 429	J09- 1	TB3-L22	0 VDC OPTICS	
A 389Y	J09- 3	J22-193	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT	
A 387Y	J09- 4	J22-233	PITCH ATTIT IMPULSE CONTR OUTPUT UP	
A 387G	J09- 5	J22-232	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN	
A 388G	J09- 6	J22-197	YAW ATTIT IMPULSE CONTR OUTPUT LEFT	
A 388R	J09- 7	J22-235	YAW ATTIT IMPULSE CONTR INPUT	
A 425R	J09- 10	TB3-M10	RSVR DRIVE AMP TRUNNION SIG (RSVD) HI	
A 703	J09- 11	TB2-V 1	G+N ERROR LIGHT LO	
A 709	J09- 12	TB2-F 5	AGC POWER SUPPLY FAIL LIGHT LO	
A 705	J09- 13	TB2-N 4	IMU TEMP CONT FAIL LIGHT LO	
A 668	J09- 14	TB3-F 2	SPACECRAFT LAMP TEST	
A 667	J09- 15	TB3-F 1	0 VDC SPACECRAFT	
A 389R	J09- 16	J22-230	ROLL ATTIT IMPULSE CONTR INPUT	
A 389G	J09- 17	J22-192	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT	
A 387R	J09- 18	J22-195	PITCH ATTIT IMPULSE CONTR INPUT	
A 426R	J09- 19	TB3-G11	TRUNNION CDU MDA CONTROLLER SIG HI	
A 388Y	J09- 20	J22-198	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT	
A 425Y	J09- 23	TB3-M11	RSVR DRIVE AMP INPUT LO	
A 425G	J09- 24	TB3-M12	RSVR DRIVE AMP SHAFT SIG (RSVD) HI	
A 437Y	J09- 25	J21- 54	OPTICS ZERO ENCODER	104A
A 450	J09- 26	TB2-D 6	0 VDC IMU	
A 701	J09- 27	TB2-F 1	CONDITION LIGHT COMMON	
A 715	J09- 28	P10- 24	GIMBAL LOCK LIGHT HI	
A 714	J09- 29	TB2-S 8	GIMBAL LOCK LIGHT HI	
A 433Y	J09- 30	J21- 86	MARK	102A
A 434Y	J09- 31	J21- 88	NOT MARK	103A
A 431R	J09- 32	TB2-A 2	PANEL BRIGHTNESS CONTROL	
A 426Y	J09- 33	TB3-G12	TRUNNION CDU MDA CONTROLLER SIG LO	
A 427Y	J09- 34	TB3-F12	SHAFT CDU MDA CONTROLLER SIG LO	
A 427R	J09- 35	TB3-F11	SHAFT CDU MDA CONTROLLER SIG HI	
A 420	J09- 36	E 56	AGC COMMON	
A 449R	J09- 37	J21- 18	OPTICS MODE SW COMPUTER INDICATION	106A
A 670Y	J09- 38	TB3-B17	+28 VDC OPTICS SWITCHED	
A 707	J09- 39	TB2-T 4	IMU DELAY LIGHT LO	
A 393Y	J09- 40	J22-200	0 VDC FROM NAA	
A 393R	J09- 41	J22-237	+28 VDC FROM NAA	
A 415	J09- 42	E 56	AGC COMMON	
A 431Y	J09- 44	TB2-A 1	PANEL BRIGHTNESS CONTROL	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 604Y	J09- 46	TB1-R 3	PROJECTION LAMP LO INTENSITY
A 673	J09- 47	TB3-A10	+28 VDC OPTICS DAC POWER
A 671Y	J09- 48	TB3-G 8	SHAFT CDU DAC OUTPUT HI
A 670R	J09- 49	TB3-B16	+28 VDC OPTICS SWITCHED
A 393G	J09- 50	J22-238	ATTITUDE DISABLE SIG TO NAA
A 435	J09- 51	TB3-M22	+28 VDC MDV
A 606N	J09- 52	P10-108	400 CPS 6 V LO
A 606G	J09- 53	P10-107	400 CPS 6 V HI
A 605R	J09- 54	TB1-R 1	400 CPS VAR ILLUM PWR
A 604R	J09- 55	TB1-N 3	PROJECTION LAMP HI INTENSITY
A 672Y	J09- 56	TB3-G 7	TRUNNION CDU DAC OUTPUT HI
A 405	J09- 58	TB3-K18	0 DEG TRUNNION SCT OFFSET RELAY CONTROL
A 404	J09- 59	TB3-G18	25 DEG TRUNNION SCT OFFSET RELAY CONTROL
A 711	J09- 60	TB2-F 6	+28 VDC SPACECRAFT SWITCHED
A 606R	J09- 61	P10-106	400 CPS 6 V HI
A 606Y	J09- 62	P10- 93	400 CPS 6 V HI
A 605N	J09- 63	TB1-M 1	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
A 605G	J09- 64	TB1-N 1	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
A 448R	J09- 65	P10- 39	400 CPS 1.5 V PI PHASE
A 408	J09- 66	TB3-H 6	MDV SLEW CONTROL 1.5 V 400 CPS
A 410	J09- 67	TB1-G 1	+28 VDC MDV SERVO POWER
A 409R	J09- 68	TB3-B13	400 CPS 26 V MDV RSVR EXC
A 416Y	J09- 69	TB2-L 1	800 CPS 28 V 1 PCT LO OPTICS
A 713	J09- 70	J22- 37	+28 VDC SPACECRAFT
A 445	J09- 71	TB3-M20	+28 VDC OPTICS
A 394	J09- 72	TB3-B11	ZERO OPTICS RELAY CONTROL
A 390	J09- 73	TB3-F 3	CONDITION LAMP TEST
A 403	J09- 74	TB3-H 5	IMU TEMP ALARM AMP PIN 15
A 444	J09- 75	TB3-K 5	IMU TEMP ALARM AMP PIN 14
A 400	J09- 76	TB3-L 5	IMU TEMP CONT K2 PIN 6
A 448Y	J09- 77	P10- 38	400 CPS 1.5 V ZERO PHASE
A 414	J09- 78	TB2-S 7	STEP-UP-C
A 412	J09- 79	TB2-S 5	STEP-DOWN-C
A 416R	J09- 80	TB2-K 1	800 CPS 28 V 1 PCT HI OPTICS
A 409Y	J09- 81	TB3-B12	400 CPS 26 V SLEW
A 436	J09- 83	TB3-L15	0 VDC OPTICS
A 605Y	J09- 84	TB1-K 1	MODE LAMP TEST PWR
A 442	J09- 85	TB3-G 4	IRIG TEMP BRIDGE AMP PIN 6

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 398	J09- 86	TB3-L 1	IRIG TEMP GAIN SWITCH NC
A 401G	J09- 87	TB3-H 1	IMU TEMP CONT AMP PIN 5
A 401N	J09- 88	TB3-G 2	IMU TEMP CONT K2 PIN 5
A 443	J09- 89	TB3-G 3	IRIG ZERO DEVIATION CHECK
A 402	J09- 90	TB3-N 6	EMERG HTR CONT MODULE LO
A 451	J09- 91	TB3-F22	STRUCTURE GND
A 438	J09- 92	TB3-K 1	IMU TEMP ALARM AMP PIN 5
A 411	J09- 93	TB2-S 4	STEP-DOWN-R
A 439	J09- 94	TB3-D 1	0 VDC IMU
A 447	J09- 95	P10- 48	400 CPS 26 V HI
A 395	J09- 97	TB3-R 6	ACCEL INDICATING SENSOR HI
A 396	J09- 98	TB3-C 1	ACCEL BRIDGE AMP PIN 6
A 428	J09- 99	TB3-L18	COSECANT RELAY CONTROL
A 401R	J09-100	TB3-G 1	IMU HTR CURRENT AMP PIN 5
A 401Y	J09-101	TB3-H 2	IMU TEMP CONT K1 PIN 3
A 399	J09-102	TB3-H 3	IMU TEMP CONT -5 DEG GAIN CHECK
A 441	J09-103	TB3-M 5	IMU IMU TEMP CONT +5 DEG GAIN CHECK
A 397	J09-104	TB3-M 4	ACCEL ZERO DEVIATION CHECK
A 446	J09-105	TB3-K 2	IMU TEMP ALARM BIAS RESISTOR
A 413	J09-106	TB2-S 6	STEP-UP-R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 570	J10- 1	E 62	GROUP 2 SHIELD	245
A 464	J10- 2	TB3-F 3	CONDITION LAMP TEST	328
A 474Y	J10- 3	TB3-B 4	ZERO ENCODER LIGHT HI	301
A 474R	J10- 4	TB3-B 3	CDU FAIL LIGHT HI	302
A 474G	J10- 5	TB3-B 5	ACCEL FAIL LIGHT HI	303
A 465	J10- 6	TB3-M 6	IMU FAIL LIGHT HI	304
A 466	J10- 7	TB1-F 1	SPARE FAIL LIGHT 1 HI	305
A 507	J10- 8	TB3-M22	+28 VDC MDV	306
A 478	J10- 9	TB1-H 5	AGC FAIL SIG	326
A 716	J10- 10	TB3-M21	+28 VDC MDV	327
A 475	J10- 12	TB1-F 8	ATTIT CONT MODE COMMAND FROM AGC	314
A 521	J10- 13	TB1-K 7	MODE RELAY COMMON TO AGC	315
A 503R	J10- 14	J21-111	OUT 0 11	224A
A 506R	J10- 15	J21- 78	OUT 0 12	225A
A 504R	J10- 16	J21- 43	OUT 0 13	226A
A 483R	J10- 17	J21- 6	OUT 0 14	227A
A 484R	J10- 18	J21-214	OUT 0 15	228A
A 487R	J10- 19	J21-113	ALARM 3	231A
A 471R	J10- 20	J21- 82	POWER SYNC	242A
A 479Y	J10- 21	TB1-K 4	ZERO ENCODER MODE COMMAND FROM AGC	307
A 479G	J10- 22	TB1-K 3	COARSE ALIGN MODE COMMAND FROM AGC	308
A 480G	J10- 23	TB1-K 8	CDU MANUAL MODE COMMAND FROM AGC	309
A 479R	J10- 24	TB1-K 5	FINE ALIGN MODE COMMAND FROM AGC	310
A 480R	J10- 25	TB1-K 6	ENTRY MODE COMMAND FROM AGC	311
A 480Y	J10- 26	TB1-K 7	MODE RELAY COMMON TO AGC	312
A 569	J10- 27	E 65	GROUP 3 SHIELD	250
A 497R	J10- 28	J21-109	OUT 0 4	217A
A 498R	J10- 29	J21- 76	OUT 0 5	218A
A 499R	J10- 30	J21- 41	OUT 0 6	219A
A 505R	J10- 31	J21- 4	OUT 0 7	220A
A 482R	J10- 32	J21- 80	ALARM 4	232A
A 488R	J10- 33	J21- 45	ALARM 5	233A
A 516R	J10- 34	J21-218	KEY CODE 1	201A
A 514R	J10- 35	J21-183	KEY CODE 2	202A
A 472R	J10- 36	J21-150	KEY CODE 3	203A
A 511R	J10- 37	J21-117	KEY CODE 4	204A
A 467R	J10- 38	J21- 84	KEY CODE 5	205A
A 510R	J10- 39	J21- 14	TEST ALARM	207A

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 485R	J10- 40	J21-179	ALARM 1	229A
	A 486R	J10- 41	J21-146	ALARM 2	230A
	A 470R	J10- 42	J21- 47	TIMING (1.5 CPS)	244A
	A 490R	J10- 43	J21-216	ALARM 7	235A
	A 489R	J10- 44	J21- 8	ALARM 6	234A
	A 522	J10- 45	J21- 10	SPARE	248
	A 523	J10- 46	J21- 11	SPARE	249
	A 515R	J10- 47	J21-185	OR OF C1 THRU C33	210A
	A 517R	J10- 48	J21-220	ERROR RESET	208A
	A 468Y	J10- 49	J21- 12	KEY RESET NAV	209A
	A 492R	J10- 51	J21-148	ALARM 9	237A
	A 491R	J10- 53	J21-181	ALARM 8	236A
	A 513	J10- 55	J21-174	+3 V B	240
	A 512	J10- 56	J21-173	GND	239
	A 477	J10- 57	J21-108	+13 V B	241
	A 509	J10- 58	J21- 39	GND	239
	A 481	J10- 59	J21- 40	+28 VDC AGC	243
	A 496R	J10- 60	J21-142	OUT 0 3	216A
	A 500R	J10- 61	J21-212	OUT 0 8	221A
	A 501R	J10- 62	J21-177	OUT 0 9	222A
	A 502R	J10- 63	J21-144	OUT 0 10	223A
	A 493R	J10- 64	J21-115	ALARM 10	238A
*	A 551	J10- 69	E 25	COMMONED RETURNS GROUND	252
	A 476	J10- 70	J21- 3	SPARE	211
	A 473	J10- 71	J21- 75	SPARE	212
	A 469	J10- 72	J21-141	SPARE	213
	A 494R	J10- 73	J21-210	OUT 0 1	214A
	A 495R	J10- 74	J21-175	OUT 0 2	215A
	A 520	J10- 75	J21-209	SPARE	247
*	A 552	J10- 82	E 24	COMMONED RETURNS GROUND	330

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
AA 15W	J11-A1	TB2-H 2	IG CDU 1X ERROR SIG
AA 19W	J11-A2	TB2-H 7	MG CDU 1X ERROR SIG
AA 21W	J11-A3	TB2-N 2	OG CDU 1X ERROR SIG
AA 10R	J11-A5	J12-A2	IMU MG ERROR SIG
AA 29R	J11-A5	TB1-A 7	IMU MG ERROR SIG
AA 10L	J11-A6	J12-B1	IMU OG ERROR SIG
AA 29L	J11-A6	TB1-A 8	IMU OG ERROR SIG
AA 15R	J11-B1	TB2-G 2	IG CDU ERROR SIG RET
AA 16W	J11-B1	TB1-B 5	IG CDU ERROR SIG RET
AA 19R	J11-B2	TB2-G 7	MG CDU ERROR SIG RET
AA 20W	J11-B2	TB1-A 6	MG CDU ERROR SIG RET
AA 11R	J11-B3	J17-B1	OG CDU ERROR SIG RET
AA 21R	J11-B3	TB2-R 2	OG CDU ERROR SIG RET
AA 10K	J11-B5	J12-B2	IMU GIMBAL AND GYRO ERROR SIG LO
AA 29K	J11-B5	TB1-B 7	IMU GIMBAL AND GYRO ERROR SIG LO
AA 10W	J11-B6	J12-A1	IMU IG AND Y GYRO ERROR SIG
AA 29W	J11-B6	TB1-B 8	IMU IG AND Y GYRO ERROR SIG
AA 16R	J11-C1	TB1-C 5	IG CDU ATTITUDE STEERING ERROR
AA 20R	J11-C2	TB1-A 5	MG CDU ATTITUDE STEERING ERROR
AA 11W	J11-C3	J17-A1	OG CDU ATTITUDE STEERING ERROR
AA 30W	J11-D5	TB1-D 4	IG TORQUE MOTOR RET
AA 30R	J11-D6	TB1-D 3	IG TORQUE MOTOR HI
AA 23R	J11-F1	TB1-C 4	IG ADA
AA 42W	J11-F3	TB1-C 6	3200 CPS 2 V FEEDBACK HI
AA 32R	J11-F6	TB1-A 4	MG TORQUE MOTOR HI
AA 23K	J11-G1	TB1-C 3	OG ADA
AA 23W	J11-G2	TB1-B 3	0 VDC IMU
AA 24	J11-G2	J11-P6	0 VDC IMU
AA 42R	J11-G3	TB1-B 6	3200 CPS 2 V FEEDBACK LO
AA 32W	J11-G6	TB1-A 3	MG TORQUE MOTOR RET
AA 23L	J11-H1	TB1-B 4	MG ADA
AA 34W	J11-H5	TB1-B 2	OG TORQUE MOTOR RET
AA 34R	J11-H6	TB1-A 2	OG TORQUE MOTOR HI
AA 9W	J11-L1	J12-H2	3200 CPS 2 V HI
AA 28W	J11-L1	TB1-D 2	3200 CPS 2 V HI
AA 9R	J11-L2	J12-K2	3200 CPS 2 V LO
AA 28K	J11-L2	TB1-C 2	3200 CPS 2 V LO
AA 35	J11-L3	TB1-D 6	COARSE ALIGN RELAY CONTROL

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA 7	J11-L4	J12-K3	STRUCTURE GND
	AA617	J11-L4	E 66	STRUCTURE GND
	AA618	J11-L4	E 67	STRUCTURE GND
*	AA503R	J11-L6	J21-203	COMPUTER 3200 PPS OUT OF PHASE SYNC 152A
	AA 28R	J11-M1	TB1-D 2	3200 CPS 2 V HI
	AA 28L	J11-M2	TB1-C 2	3200 CPS 2 V LO
	AA 36	J11-M5	E 28	COMPUTER 3200 PPS SYNC RET
	AA 37	J11-M5	J11-P3	0 VDC IMU
*	AA504R	J11-M6	J21-241	COMPUTER 3200 PPS IN PHASE SYNC 151A
	AA 12R	J11-N1	J17-P2	3200 CPS 20 V CT
	AA 12L	J11-N2	J17-R2	3200 CPS 20 V LO
	AA610	J11-N3	J12-P4	COMPUTER 12.8 KPPS SYNC
	AA 5R	J11-N4	J12-P3	800 CPS 28 V 1 PCT LO IMU
	AA 5W	J11-N5	J12-N3	800 CPS 28 V 1 PCT HI IMU
	AA 14	J11-N6	J13-P6	-28 VDC
	AA 27	J11-N6	TB1-D 5	-28 VDC
	AA 12W	J11-P1	J17-N2	3200 CPS 20 V HI
	AA 38	J11-P2	J11-R3	0 VDC IMU
	AA 39	J11-P3	J11-R3	0 VDC IMU
*	AA 37	J11-P3	J11-M5	0 VDC IMU
	AA 18	J11-P4	J11-R4	0 VDC IMU
	AA 22	J11-P4	J11-P5	0 VDC IMU
*	AA 22	J11-P5	J11-P4	0 VDC IMU
	AA 26	J11-P6	J11-R6	0 VDC IMU
	AA 46	J11-P6	TB1-S 3	0 VDC IMU
*	AA 24	J11-P6	J11-G2	0 VDC IMU
	AA 41	J11-R1	J11-R2	0 VDC IMU
	AA 44	J11-R1	TB2-M 2	0 VDC IMU
	AA 45	J11-R2	TB2-M 3	0 VDC IMU
*	AA 41	J11-R2	J11-R1	0 VDC IMU
	AA 43	J11-R3	TB2-M 1	0 VDC IMU
*	AA 38	J11-R3	J11-P2	0 VDC IMU
*	AA 39	J11-R3	J11-P3	0 VDC IMU
	AA 17	J11-R4	J11-R5	0 VDC IMU
*	AA 18	J11-R4	J11-P4	0 VDC IMU
	AA 31	J11-R5	J11-R6	0 VDC IMU
*	AA 17	J11-R5	J11-R4	0 VDC IMU
	AA 33	J11-R6	J11-S6	0 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA 26	J11-R6	J11-P6	0 VDC IMU
*	AA 31	J11-R6	J11-R5	0 VDC IMU
	AA 2	J11-S1	J20-L1	+28 VDC IMU
	AA 40	J11-S1	J11-S2	+28 VDC IMU
	AA 3	J11-S2	J20-L2	+28 VDC IMU
*	AA 40	J11-S2	J11-S1	+28 VDC IMU
	AA 13	J11-S3	J17-R1	+28 VDC STBY
	AA 1	J11-S4	J15-S6	+28 VDC IMU
	AA 6	J11-S4	J12-S5	+28 VDC IMU
	AA 25	J11-S4	J11-S5	+28 VDC IMU
	AA 4	J11-S5	J20-K2	+28 VDC IMU
*	AA 25	J11-S5	J11-S4	+28 VDC IMU
*	AA 33	J11-S6	J11-R6	0 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA 10W	J12-A1	J11-B6	IMU IG AND Y GYRO ERROR SIG	
*	AA 10R	J12-A2	J11-A5	IMU MG ERROR SIG	
	AA 75	J12-A5	J13-D2	X PIP ERROR MONITOR	
	AA 76	J12-A6	J13-F2	Y PIP ERROR MONITOR	
*	AA 10L	J12-B1	J11-A6	IMU OG ERROR SIG	
*	AA 10K	J12-B2	J11-B5	IMU GIMBAL AND GYRO ERROR SIG LO	
	AA 77	J12-B5	E 34	0 VDC IMU	
	AA 47	J12-B6	J14-H6	Z PIP ERROR MONITOR	
	AA656	J12-C1	TB3-F 6	TRAY 2 THERMISTER HI	
	AA661	J12-C2	J13-C2	THERMISTER LO	
*	AA232L	J12-D1	J16-L4	COMPUTER 800 PPS OUT OF PHASE SYNC	
*	AA232R	J12-D2	J16-M4	COMPUTER 800 PPS IN PHASE SYNC	
	AA641W	J12-D4	J21- 60	ACCEL FAIL	138A
	AA640W	J12-D5	J21-158	CDU FAIL	124A
	AA639W	J12-D6	J21- 28	IMU FAIL	141A
	AA 67	J12-F1	E 31	COMPUTER 800 PPS SYNC RET	
	AA 68	J12-F1	J12-F2	COMPUTER 800 PPS SYNC RET	
	AA 69	J12-F2	E 29	COMPUTER 25.6 KPPS SYNC RET	
*	AA 68	J12-F2	J12-F1	COMPUTER 800 PPS SYNC RET	
	AA 97	J12-F3	J17-M3	0 VDC SPACECRAFT	
	AA641R	J12-F4	J21- 61	ACCEL FAIL RET	138B
	AA640R	J12-F5	J21-159	CDU FAIL RET	124B
	AA639R	J12-F6	J21- 29	IMU FAIL RET	141B
*	AA490W	J12-G1	J21-169	COMPUTER 25.6 KPPS IN PHASE SYNC	153A
*	AA491R	J12-G2	J21-136	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154A
	AA 74	J12-G3	J22-244	ERROR DETECT LIGHT MAIN PANEL	
	AA 53	J12-G4	J20-L6	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
	AA 59	J12-G5	J16-R2	0 VDC IMU	
	AA 71	J12-G5	J12-R5	0 VDC IMU	
	AA 58	J12-G6	J16-N3	OG CDU FAILURE INDICATION	
	AA 70R	J12-H1	J21- 71	COMPUTER 102.4 KPPS SYNC RET	156B
*	AA 70A	J12-H1	SHLD AA 70	COMPUTER 102.4 KPPS SYNC RET	
*	AA 9W	J12-H2	J11-L1	3200 CPS 2 V HI	
	AA 52W	J12-H4	J20-G5	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	AA 62	J12-H4	J12-N2	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	AA 56	J12-H5	J16-M2	IG CDU FAILURE INDICATION	
	AA 57	J12-H6	J16-M3	MG CDU FAILURE INDICATION	
	AA 70W	J12-K1	J21- 70	COMPUTER 102.4 KPPS SYNC	156A

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA 9R	J12-K2	J11-L2	3200 CPS 2 V LO	
	AA 72	J12-K3	J13-C6	STRUCTURE GND	
*	AA 7	J12-K3	J11-L4	STRUCTURE GND	
	AA 52R	J12-K4	J20-G6	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
	AA 73L	J12-K6	J14-R2	+12, +32, +120 VDC RET GYRO	
	AA 82	J12-L1	TB3-M22	+28 VDC MDV	
	AA 83	J12-L2	TB1-H 8	G+N ERROR LIGHT HI	
	AA 73R	J12-L6	J14-S2	+120 VDC GYRO	
	AA 80	J12-M1	TB1-H 6	AGC POWER SUPPLY FAIL SIG HI	
	AA 81	J12-M1	J21- 36	AGC POWER SUPPLY FAIL SIG HI	157A
	AA 78	J12-M3	TB1-H 5	AGC FAIL SIG	
	AA668	J12-M5	J13-S3	+32 VDC GYRO	
	AA 73W	J12-M6	J14-S3	+12 VDC GYRO	
	AA 61	J12-N1	J12-P1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	AA 62	J12-N2	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	AA 49W	J12-N3	J15-P6	800 CPS 28 V 1 PCT HI IMU	
*	AA 5W	J12-N3	J11-N5	800 CPS 28 V 1 PCT HI IMU	
	AA 64W	J12-N4	TB1-H 4	25.6 KC HI IMU	
	AA 65	J12-N4	J12-N5	25.6 KC HI IMU	
	AA 50W	J12-N5	J15-N6	25.6 KC HI IMU	
*	AA 65	J12-N5	J12-N4	25.6 KC HI IMU	
	AA 63R	J12-N6	TB1-G 7	25.6 KC LO OPTICS	
	AA 94R	J12-N6	J17-N3	25.6 KC LO OPTICS	
	AA643	J12-N6	J12-R6	0 VDC OPTICS	
	AA 60L	J12-P1	TB1-H 3	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	AA 61	J12-P1	J12-N1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
	AA 60W	J12-P2	TB1-G 2	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
	AA 49R	J12-P3	J15-P5	800 CPS 28 V 1 PCT LO IMU	
*	AA 5R	J12-P3	J11-N4	800 CPS 28 V 1 PCT LO IMU	
	AA 92R	J12-P4	J17-R3	COMPUTER 12.8 KPPS SYNC	
	AA 92W	J12-P4	J17-R3	COMPUTER 12.8 KPPS SYNC	
*	AA610	J12-P4	J11-N3	COMPUTER 12.8 KPPS SYNC	
	AA 50R	J12-P5	J15-N5	25.6 KC LO IMU	
	AA 64R	J12-P5	TB1-G 4	25.6 KC LO IMU	
	AA644	J12-P5	J12-R3	0 VDC IMU	
	AA 63W	J12-P6	TB1-H 7	25.6 KC HI OPTICS	
	AA 94W	J12-P6	J17-P3	25.6 KC HI OPTICS	
	AA 60R	J12-R1	TB1-H 2	800 CPS 28 V 5 PCT IMU WHEELS LO	

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SHEET 32

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA 89	J12-R2	J12-R3	0 VDC IMU
	AA 99	J12-R2	TB1-N 5	0 VDC IMU
	AA 90	J12-R3	J12-R4	0 VDC IMU
*	AA 89	J12-R3	J12-R2	0 VDC IMU
*	AA644	J12-R3	J12-P5	0 VDC IMU
	AA 91	J12-R4	E 31	0 VDC IMU
	AA100	J12-R4	TB1-N 8	0 VDC IMU
*	AA 90	J12-R4	J12-R3	0 VDC IMU
	AA 96	J12-R5	J13-R6	0 VDC IMU
	AA 98	J12-R5	TB1-S 6	0 VDC IMU
*	AA 71	J12-R5	J12-G5	0 VDC IMU
	AA 66	J12-R6	TB3-L20	0 VDC OPTICS
*	AA643	J12-R6	J12-N6	0 VDC OPTICS
	AA 54	J12-S1	J20-M1	+28 VDC IMU
	AA 87	J12-S1	J12-S3	+28 VDC IMU
	AA 55	J12-S2	J20-M2	+28 VDC IMU
	AA 88	J12-S2	J12-S4	+28 VDC IMU
*	AA 87	J12-S3	J12-S1	+28 VDC IMU
*	AA 88	J12-S4	J12-S2	+28 VDC IMU
*	AA 6	J12-S5	J11-S4	+28 VDC IMU
	AA 51	J12-S6	J20-N5	+28 VDC OPTICS

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SHEET 33

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA118W	J13-A1	TB1-M 7	X PIP ERROR HI	
	AA121W	J13-A3	TB1-M 3	Y PIP ERROR HI	
	AA104	J13-A6	J14-A6	X GYRO DC DIFF AMP OUTPUT	
	AA118R	J13-B1	TB1-M 6	X PIP ERROR LO	
	AA121R	J13-B3	TB1-N 2	Y PIP ERROR LO	
	AA657	J13-C1	TB3-G 6	TRAY 3 THERMISTER HI	
	AA662	J13-C2	J14-B2	THERMISTER LO	
*	AA661	J13-C2	J12-C2	THERMISTER LO	
	AA106	J13-C6	J14-H5	STRUCTURE GND	
*	AA 72	J13-C6	J12-K3	STRUCTURE GND	
	AA114	J13-D1	J15-L4	P X	
	AA120	J13-D2	TB1-L 2	X PIP ERROR MONITOR	
*	AA 75	J13-D2	J12-A5	X PIP ERROR MONITOR	
	AA116	J13-D3	J15-L3	P Y	
	AA124R	J13-D6	TB1-M 8	X GYRO TORQUE +	
	AA115	J13-F1	J15-M4	N X	
	AA123	J13-F2	TB1-M 2	Y PIP ERROR MONITOR	
*	AA 76	J13-F2	J12-A6	Y PIP ERROR MONITOR	
	AA117	J13-F3	J15-M3	N Y	
	AA124W	J13-F6	TB1-L 8	X GYRO TORQUE RET	
	AA124L	J13-G6	TB1-L 7	X GYRO TORQUE -	
	AA119R	J13-H1	TB1-M 5	X PIP TORQUE +	
	AA103	J13-H6	J14-G1	X GYRO CAL DUMMY	
	AA119W	J13-K1	TB1-L 6	X PIP TORQUE RET	
	AA105W	J13-K6	J14-H1	X GYRO TERNARY CUR SW TORQUE +	
	AA119L	J13-L1	TB1-L 5	X PIP TORQUE -	
	AA122R	J13-L3	TB1-L 4	Y PIP TORQUE +	
	AA105R	J13-L6	J14-K1	X GYRO TERNARY CUR SW TORQUE -	
	AA122W	J13-M3	TB1-L 3	Y PIP TORQUE RET	
	AA122L	J13-N3	TB1-M 4	Y PIP TORQUE -	
	AA101	J13-N5	J14-H3	PIPA INTERROGATE PULSE	
*	AA501W	J13-N5	J21-132	PIPA INTERROGATE PULSE	139A
	AA102	J13-N6	J14-K3	PIPA SWITCHING PULSE	
*	AA502W	J13-N6	J21- 99	PIPA SWITCHING PULSE	140A
	AA113	J13-P6	J14-P6	-28 VDC	
*	AA 14	J13-P6	J11-N6	-28 VDC	
	AA112R	J13-R1	J14-R2	+12, +32, +120 VDC RET GYRO	
	AA109R	J13-R2	J14-R1	+32, +120 VDC RET PIP	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA108	J13-R6	J14-R6	0 VDC IMU
	AA125	J13-R6	E 34	0 VDC IMU
*	AA 96	J13-R6	J12-R5	0 VDC IMU
	AA112W	J13-S1	J14-S2	+120 VDC GYRO
	AA109W	J13-S2	J14-S1	+120 VDC PIP
	AA669	J13-S3	J14-S5	+32 VDC GYRO
*	AA668	J13-S3	J12-M5	+32 VDC GYRO
	AA670	J13-S4	J14-S4	+32 VDC PIP
	AA107	J13-S6	J14-S6	+28 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA126W	J14-A1	TB1-T 5	Z PIP ERROR HI	
	AA126R	J14-A2	TB1-T 4	Z PIP ERROR LO	
*	AA104	J14-A6	J13-A6	X GYRO DC DIFF AMP OUTPUT	
	AA658	J14-B1	TB3-K 6	TRAY 4 THERMISTER HI	
	AA659	J14-B2	TB3-L 6	THERMISTER LO	
*	AA662	J14-B2	J13-C2	THERMISTER LO	
	AA129R	J14-D1	J21- 67	+ DX GYRO RATE	142B
	AA130W	J14-D2	J21- 33	- DX GYRO RATE	143B
	AA131R	J14-D3	J21-240	+ DY GYRO RATE	144B
	AA132R	J14-D4	J21-202	- DY GYRO RATE	145B
	AA134W	J14-D5	J21-168	+ DZ GYRO RATE	146B
	AA135R	J14-D6	J21-135	- DZ GYRO RATE	147B
	AA148	J14-F6	J15-L2	P Z	
*	AA103	J14-G1	J13-H6	X GYRO CAL DUMMY	
	AA149	J14-G6	J15-M2	N Z	
*	AA105W	J14-H1	J13-K6	X GYRO TERNARY CUR SW TORQUE +	
*	AA101	J14-H3	J13-N5	PIPA INTERROGATE PULSE	
	AA151	J14-H5	J15-K3	STRUCTURE GND	
*	AA106	J14-H5	J13-C6	STRUCTURE GND	
	AA128	J14-H6	TB1-T 7	Z PIP ERROR MONITOR	
*	AA 47	J14-H6	J12-B6	Z PIP ERROR MONITOR	
*	AA105R	J14-K1	J13-L6	X GYRO TERNARY CUR SW TORQUE -	
*	AA102	J14-K3	J13-N6	PIPA SWITCHING PULSE	
	AA655W	J14-K4	J21-102	GYRO RESET PULSE	148B
	AA136R	J14-L6	TB1-T 8	Z GYRO TORQUE +	
	AA133R	J14-M1	TB1-T 6	Y GYRO TORQUE +	
	AA133L	J14-M2	TB1-U 6	Y GYRO TORQUE -	
	AA133W	J14-M3	TB1-U 5	Y GYRO TORQUE RET	
	AA136L	J14-M6	TB1-U 8	Z GYRO TORQUE -	
	AA136W	J14-N6	TB1-U 7	Z GYRO TORQUE RET	
	AA127R	J14-P1	TB1-U 4	Z PIP TORQUE +	
	AA127L	J14-P2	TB1-U 3	Z PIP TORQUE -	
	AA127W	J14-P3	TB1-T 3	Z PIP TORQUE RET	
*	AA113	J14-P6	J13-P6	-28 VDC	
	AA653R	J14-R1	J17-L4	+32, +120 VDC RET PIP	
*	AA109R	J14-R1	J13-R2	+32, +120 VDC RET PIP	
*	AA 73L	J14-R2	J12-K6	+12, +32, +120 VDC RET GYRO	
*	AA112R	J14-R2	J13-R1	+12, +32, +120 VDC RET GYRO	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA137	J14-R6	E 33	0 VDC IMU
	AA153	J14-R6	J15-R2	0 VDC IMU
*	AA108	J14-R6	J13-R6	0 VDC IMU
	AA653W	J14-S1	J17-L5	+120 VDC PIP
*	AA109W	J14-S1	J13-S2	+120 VDC PIP
*	AA 73R	J14-S2	J12-L6	+120 VDC GYRO
*	AA112W	J14-S2	J13-S1	+120 VDC GYRO
*	AA 73W	J14-S3	J12-M6	+12 VDC GYRO
	AA671	J14-S4	J17-T5	+32 VDC PIP
*	AA670	J14-S4	J13-S4	+32 VDC PIP
*	AA669	J14-S5	J13-S3	+32 VDC GYRO
	AA152	J14-S6	J15-S2	+28 VDC IMU
*	AA107	J14-S5	J13-S6	+28 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA654W	J15-A1	TB1-C 8	Z GYRO ERROR SIG	
*	AA488W	J15-A3	J21-188	MANUAL CDU MODE INDICATION TO AGC	160A
	AA180R	J15-A4	J16-B2	IG DAC MDA SIG HI	
	AA164	J15-A5	E 38	IG DAC MDA SIG LO	
	AA167	J15-A5	E 39	IG DAC MDA SIG LO	
	AA180W	J15-A5	J16-B1	IG DAC MDA SIG LO	
	AA181R	J15-A6	J16-B4	MG DAC MQA SIG HI	
	AA165	J15-A7	E 40	MG DAC MDA SIG LO	
	AA168	J15-A7	E 41	MG DAC MDA SIG LO	
	AA181W	J15-A7	J16-B3	MG DAC MDA SIG LO	
	AA182R	J15-A8	J16-B6	OG DAC MDA SIG HI	
	AA166	J15-A9	E 42	OG DAC MDA SIG LO	
	AA169	J15-A9	E 43	OG DAC MDA SIG LO	
	AA182W	J15-A9	J16-B5	OG DAC MDA SIG LO	
	AA654L	J15-B1	TB1-C 7	X GYRO ERROR SIG	
	AA654R	J15-B2	TB1-B 7	IMU GIMBAL AND GYRO ERROR SIG LO	
	AA176W	J15-B3	TB2-D 2	AGC COM	
*	AA475W	J15-B4	J21- 24	IG ENCODER + DELTA THETA	120A
*	AA481W	J15-B5	J21-237	IG CDU + DELTA THETA COMMAND	128A
*	AA477W	J15-B6	J21-232	MG ENCODER + DELTA THETA	122A
*	AA483W	J15-B7	J21-165	MG CDU + DELTA THETA COMMAND	130A
*	AA479W	J15-B8	J21- 56	OG ENCODER + DELTA THETA	118A
*	AA485W	J15-B9	J21- 64	OG CDU + DELTA THETA COMMAND	126A
	AA161R	J15-C1	TB2-A 5	IG CDU ENCODER COM	
	AA161W	J15-C2	TB2-B 5	IG CDU ENCODER PHASE 1	
	AA163L	J15-C3	TB2-C 4	OG CDU ENCODER PHASE 2	
*	AA476R	J15-C4	J21- 26	IG ENCODER - DELTA THETA	121A
*	AA482R	J15-C5	J21-199	IG CDU - DELTA THETA COMMAND	129A
*	AA478R	J15-C6	J21-192	MG ENCODER - DELTA THETA	123A
*	AA484R	J15-C7	J21- 97	MG CDU - DELTA THETA COMMAND	131A
*	AA480R	J15-C8	J21- 58	OG ENCODER - DELTA THETA	119A
*	AA486R	J15-C9	J21- 30	OG CDU - DELTA THETA COMMAND	127A
	AA161L	J15-D1	TB2-C 5	IG CDU ENCODER PHASE 2	
	AA162R	J15-D2	TB2-A 6	MG CDU ENCODER PHASE 2	
	AA163R	J15-D3	TB2-A 4	OG CDU ENCODER COM	
	AA163W	J15-D4	TB2-B 4	OG CDU ENCODER PHASE 1	
	AA171R	J15-D7	TB2-B 8	SIN AIG 16X S4	
	AA171W	J15-D8	TB2-A 8	SIN AIG 16X S2	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA172L	J15-D9	TB2-C 7	SIN AMG 16X TO CDU	
	AA162W	J15-F1	TB2-B 6	MG CDU ENCODER PHASE 1	
	AA162L	J15-F2	TB2-C 6	MG CDU ENCODER COM	
	AA171L	J15-F7	TB2-C 8	SIN AIG 16X TO CDU	
	AA172W	J15-F8	TB2-A 7	SIN AMG 16X S2	
	AA172R	J15-F9	TB2-B 7	SIN AMG 16X S4	
	AA170	J15-H4	TB2-C 1	FINE ALIGN RELAY CONTROL	
	AA184	J15-H4	J16-L1	FINE ALIGN RELAY CONTROL	
	AA187	J15-K3	J16-N4	STRUCTURE GND	
*	AA151	J15-K3	J14-H5	STRUCTURE GND	
*	AA471W	J15-K4	J21- 95	- DELTA V Z	137B
*	AA472W	J15-K5	J21-128	+ DELTA V Z	136B
*	AA470W	J15-K6	J21-161	- DELTA V Y	135B
*	AA148	J15-L2	J14-F6	P Z	
*	AA116	J15-L3	J13-D3	P Y	
*	AA114	J15-L4	J13-D1	P X	
	AA158	J15-L5	E 35	COMPUTER RET	
	AA159	J15-L5	E 36	COMPUTER RET	
	AA160	J15-L5	E 37	COMPUTER RET	
*	AA469W	J15-L6	J21-195	+ DELTA V Y	134B
*	AA149	J15-M2	J14-G6	N Z	
*	AA117	J15-M3	J13-F3	N Y	
*	AA115	J15-M4	J13-F1	N X	
*	AA467W	J15-M5	J21-126	+ DELTA V X	132B
*	AA468W	J15-M6	J21- 93	- DELTA V X	133B
*	AA 50R	J15-N5	J12-P5	25.6 KC LO IMU	
*	AA 50W	J15-N6	J12-N5	25.6 KC HI IMU	
	AA185R	J15-P5	J16-S3	800 CPS 28 V 1 PCT LO IMU	
*	AA 49R	J15-P5	J12-P3	800 CPS 28 V 1 PCT LO IMU	
	AA185W	J15-P6	J16-S4	800 CPS 28 V 1 PCT HI IMU	
*	AA 49W	J15-P6	J12-N3	800 CPS 28 V 1 PCT HI IMU	
	AA637	J15-R2	TB2-F 4	0 VDC IMU	
*	AA153	J15-R2	J14-R6	0 VDC IMU	
	AA177	J15-R6	TB2-D 1	+28 VDC CDU NOT LOCK	
	AA173	J15-S1	TB2-B 2	ZERO ENCODER RELAY CONTROL	
	AA183	J15-S1	J16-L2	ZERO ENCODER RELAY CONTROL	
	AA179	J15-S2	J20-K1	+28 VDC IMU	
*	AA152	J15-S2	J14-S6	+28 VDC IMU	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA174	J15-S3	TB2-B 1	LOCK CDU RELAY CONTROL
	AA175	J15-S3	J22-227	LOCK CDU RELAY CONTROL
	AA186	J15-S6	J16-S2	+28 VDC IMU
*	AA 1	J15-S6	J11-S4	+28 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA197R	J16-A1	TB2-U 6	IG CDU MDA TACH SIG
	AA197W	J16-A2	TB2-T 6	IG CDU MDA SLEW SIG
	AA202R	J16-A3	TB2-W 5	MG CDU MDA TACH SIG
	AA202W	J16-A4	TB2-X 5	MG CDU MDA SLEW SIG
	AA214R	J16-A5	TB2-N 6	OG CDU MDA TACH SIG
	AA214W	J16-A6	TB2-R 6	OG CDU MDA SLEW SIG
*	AA489W	J16-A7	J21-152	ZERO ENCODER MODE INDICATION TO AGC 158A
	AA205W	J16-A8	TB2-U 7	SIN AOG 1X S2
	AA205R	J16-A9	TB2-U 8	SIN AOG 1X S4
	AA197L	J16-B1	TB2-T 7	IG CDU MDA INPUT RET
*	AA180W	J16-B1	J15-A5	IG DAC MDA SIG LO
*	AA197A	J16-B1	SHLD AA197	IG CDU MDA INPUT RET
*	AA180R	J16-B2	J15-A4	IG DAC MDA SIG HI
	AA202L	J16-B3	TB2-X 6	MG CDU MDA INPUT RET
*	AA181W	J16-B3	J15-A7	MG DAC MDA SIG LO
*	AA202A	J16-B3	SHLD AA202	MG CDU MDA INPUT RET
*	AA181R	J16-B4	J15-A6	MG DAC MDA SIG HI
	AA214L	J16-B5	TB2-R 7	OG CDU MDA INPUT RET
*	AA182W	J16-B5	J15-A9	OG DAC MDA SIG LO
*	AA214A	J16-B5	SHLD AA214	OG CDU MDA INPUT RET
*	AA182R	J16-B6	J15-A8	OG DAC MDA SIG HI
*	AA569W	J16-B7	TB2-D 2	AGC COM
	AA204W	J16-B8	TB2-N 8	COS AOG 1X S3
	AA205L	J16-B9	TB2-T 8	SIN AOG 1X TO CDU
	AA196W	J16-C1	TB2-H 1	IG CDU 16X ERROR SIG
	AA195W	J16-C2	TB2-H 2	IG CDU 1X ERROR SIG
	AA201W	J16-C3	TB2-H 8	MG CDU 16X ERROR SIG
	AA200W	J16-C4	TB2-H 7	MG CDU 1X ERROR SIG
	AA208R	J16-C5	TB2-N 3	OG CDU 16X ERROR SIG
	AA207W	J16-C6	TB2-N 2	OG CDU 1X ERROR SIG
	AA204R	J16-C8	TB2-N 7	COS AOG 1X S1
	AA204L	J16-C9	TB2-R 8	COS AOG 1X TO CDU
	AA194W	J16-D1	TB2-H 3	IG CDU 1/2X ERROR SIG
	AA194R	J16-D2	TB2-G 3	IG CDU ERROR SIG RET
	AA195R	J16-D2	TB2-G 2	IG CDU ERROR SIG RET
	AA196R	J16-D2	TB2-G 1	IG CDU ERROR SIG RET
	AA199W	J16-D3	TB2-H 6	MG CDU 1/2X ERROR SIG
	AA199R	J16-D4	TB2-G 6	MG CDU ERROR SIG RET

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA200R	J16-D4	TB2-G 7	MG CDU ERROR SIG RET	
	AA201R	J16-D4	TB2-G 8	MG CDU ERROR SIG RET	
	AA206W	J16-D5	TB2-N 1	OG CDU 1/2X ERROR SIG	
	AA206R	J16-D6	TB2-R 1	OG CDU ERROR SIG RET	
	AA207R	J16-D6	TB2-R 2	OG CDU ERROR SIG RET	
	AA208W	J16-D6	TB2-R 3	OG CDU ERROR SIG RET	
	AA209R	J16-D7	TB2-W 3	COS AOG 16X S1	
	AA213W	J16-D8	TB2-X 3	SIN AOG 16X S2	
	AA213R	J16-D9	TB2-W 2	SIN AOG 16X S4	
	AA216	J16-F2	TB2-W 1	IG CDU 1X RSVR LOAD	
	AA217	J16-F4	TB2-X 1	MG CDU 1X RSVR LOAD	
	AA219	J16-F5	TB2-T 1	OG CDU 16X RSVR LOAD	
	AA218	J16-F6	TB2-S 1	OG CDU 1X RSVR LOAD	
	AA209W	J16-F7	TB2-W 4	COS AOG 16X S3	
	AA209L	J16-F8	TB2-X 4	COS AOG 16X TO CDU	
	AA213L	J16-F9	TB2-X 2	SIN AOG 16X TO CDU	
	AA230W	J16-G1	TB2-W 6	COS AIG 16X S3	
	AA230L	J16-G2	TB2-W 7	COS AIG 16X TO CDU	
	AA231W	J16-G3	TB2-U 5	COS AMG 16X S3	
	AA231L	J16-G4	TB2-U 4	COS AMG 16X TO CDU	
	AA230R	J16-H1	TB2-X 7	COS AIG 16X S1	
	AA231R	J16-H3	TB2-T 5	COS AMG 16X S1	
	AA220	J16-L1	J22-228	FINE ALIGN RELAY CONTROL	
*	AA184	J16-L1	J15-H4	FINE ALIGN RELAY CONTROL	
*	AA183	J16-L2	J15-S1	ZERO ENCODER RELAY CONTROL	
	AA226W	J16-L3	J21- 35	COMPUTER 800 PPS SYNC RET	150B
	AA227W	J16-L3	J21- 69	COMPUTER 800 PPS SYNC RET	149B
	AA232W	J16-L3	E 31	COMPUTER 800 PPS SYNC RET	
	AA226R	J16-L4	J21- 34	COMPUTER 800 PPS OUT OF PHASE SYNC	150A
	AA232L	J16-L4	J12-D1	COMPUTER 800 PPS OUT OF PHASE SYNC	
	AA221	J16-M1	TB2-R 4	ENTRY RELAY CONTROL	
	AA664K	J16-M2	TB3-B 6	IG CDU FAILURE INDICATION	
*	AA 56	J16-M2	J12-H5	IG CDU FAILURE INDICATION	
	AA664L	J16-M3	TB3-C 6	MG CDU FAILURE INDICATION	
*	AA 57	J16-M3	J12-H6	MG CDU FAILURE INDICATION	
	AA227R	J16-M4	J21- 68	COMPUTER 800 PPS IN PHASE SYNC	149A
	AA232R	J16-M4	J12-D2	COMPUTER 800 PPS IN PHASE SYNC	
	AA215W	J16-N1	TB2-K 6	OG CDU MDA OUTPUT	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
AA215R	J16-N2	TB2-K 5	OG CDU MDA OUTPUT
AA664R	J16-N3	TB3-C 7	OG CDU FAILURE INDICATION
* AA 58	J16-N3	J12-G6	OG CDU FAILURE INDICATION
AA234	J16-N4	J17-L6	STRUCTURE GND
* AA187	J16-N4	J15-K3	STRUCTURE GND
AA191R	J16-N5	J20-L3	800 CPS 28 V 1 PCT LO OPTICS
AA224R	J16-N5	TB2-L 1	800 CPS 28 V 1 PCT LO OPTICS
AA233R	J16-N5	J18-S6	800 CPS 28 V 1 PCT LO OPTICS
AA192R	J16-N6	J20-M4	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
AA225R	J16-N6	TB2-T 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
AA198R	J16-P1	TB2-L 6	IG CDU MDA OUTPUT
AA223	J16-P2	TB2-K 4	0 VDC IMU
AA203R	J16-P3	TB2-K 3	MG CDU MDA OUTPUT
AA222W	J16-P4	TB2-G 5	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
AA191W	J16-P5	J20-K3	800 CPS 28 V 1 PCT HI OPTICS
AA224W	J16-P5	TB2-K 1	800 CPS 28 V 1 PCT HI OPTICS
AA233W	J16-P5	J18-T6	800 CPS 28 V 1 PCT HI OPTICS
AA192W	J16-P6	J20-L4	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
AA225W	J16-P6	TB2-U 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
AA198W	J16-R1	TB2-L 5	IG CDU MDA OUTPUT
AA664W	J16-R2	TB3-C 8	0 VDC IMU
* AA 59	J16-R2	J12-G5	0 VDC IMU
AA203W	J16-R3	TB2-L 3	MG CDU MDA OUTPUT
AA222K	J16-R4	TB2-H 5	ZEROING RSVR 800 CPS
AA228	J16-R5	TB3-L20	0 VDC OPTICS
AA229	J16-R6	TB3-L20	0 VDC OPTICS
AA210	J16-S1	TB2-N 5	+28 VDC IMU FOR IG MDA
AA193	J16-S2	J20-K2	+28 VDC IMU
* AA186	J16-S2	J15-S6	+28 VDC IMU
AA222L	J16-S3	TB2-H 4	800 CPS 28 V 1 PCT LO IMU
* AA185R	J16-S3	J15-P5	800 CPS 28 V 1 PCT LO IMU
AA222R	J16-S4	TB2-G 4	800 CPS 28 V 1 PCT HI IMU
* AA185W	J16-S4	J15-P6	800 CPS 28 V 1 PCT HI IMU
AA189	J16-S5	J20-N5	+28 VDC OPTICS
AA190	J16-S6	J20-N6	+28 VDC OPTICS
AA211	J16-T1	TB2-R 5	+28 VDC IMU FOR MG MDA
AA212	J16-T2	TB2-K 8	+28 VDC IMU FOR OG MDA

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* AA 11W	J17-A1	J11-C3	OG CDU ATTITUDE STEERING ERROR
* AA571W	J17-A2	TB2-N 3	OG CDU 16X ERROR SIG
AA287W	J17-A3	J22- 1	ROLL ERROR BODY OFFSET AXIS HI
AA244W	J17-A4	J22- 3	ROLL ERROR BODY AXIS HI
AA281W	J17-A6	TB3-T 4	TRUNNION CDU ENCODER PHASE 1
AA281R	J17-A7	TB3-T 5	TRUNNION CDU ENCODER COM
AA281L	J17-A8	TB3-T 6	TRUNNION CDU ENCODER PHASE 2
AA665	J17-A9	J17-B9	TRUNNION ENCODER SCALE SELECT
* AA 11R	J17-B1	J11-B3	OG CDU ERROR SIG RET
* AA571R	J17-B2	TB2-R 3	OG CDU ERROR SIG RET
AA287R	J17-B3	J22- 39	ROLL ERROR BODY OFFSET AXIS LO
AA244R	J17-B4	J22- 4	ROLL ERROR BODY AXIS LO
AA268	J17-B5	TB3-L 3	IRIG TEMP CONT SENSOR RET
AA267	J17-B6	TB3-L 4	IRIG TEMP CONT SENSOR HI
AA252	J17-B7	TB3-H 3	IMU TEMP CONT -5 DEG GAIN CHECK
AA253	J17-B8	TB3-G 3	IRIG ZERO DEVIATION CHECK
* AA665	J17-B9	J17-A9	TRUNNION ENCODER SCALE SELECT
AA288R	J17-C1	J22- 10	PITCH ERROR BODY AND BODY OFFSET AXIS LO
AA289W	J17-C1	TB3-M13	PITCH ERROR BODY AND BODY OFFSET AXIS LO
AA289R	J17-C2	TB3-M14	PITCH-YAW RSVR S4
AA246W	J17-C3	J22- 45	YAW ERROR BODY OFFSET AXIS HI
AA245W	J17-C4	J22- 6	YAW ERROR BODY AXIS HI
AA266	J17-C5	TB3-K 3	IRIG TEMP IND SENSOR RET
AA276	J17-C6	TB3-H 4	IRIG TEMP IND SENSOR HI
AA254	J17-C7	TB3-G 4	IRIG TEMP BRIDGE AMP PIN 6
AA290	J17-C8	TB3-L 1	IRIG TEMP GAIN SWITCH NC
AA284W	J17-C9	TB3-S 6	SHAFT CDU ENCODER PHASE 1
AA288W	J17-D1	J22- 48	PITCH ERROR BODY AND BODY OFFSET AXIS HI
AA247R	J17-D2	TB3-R 4	PITCH YAW RSVR S3
AA246R	J17-D3	J22- 46	YAW ERROR BODY OFFSET AXIS LO
AA247W	J17-D3	TB3-R 5	YAW ERROR BODY OFFSET AXIS LO
AA245R	J17-D4	J22- 43	YAW ERROR BODY AXIS LO
AA269	J17-D5	TB3-M 1	ACCEL TEMP IND SENSOR RET
AA255	J17-D6	TB3-M 5	IMU IMU TEMP CONT +5 DEG GAIN CHECK
AA256	J17-D7	TB3-M 4	ACCEL ZERO DEVIATION CHECK
AA284R	J17-D9	TB3-S 5	SHAFT CDU ENCODER COM
AA636	J17-F2	TB3-D 6	TEMPERATURE CONTROL SIG LO
AA274	J17-F3	TB3-D 5	HTR CURRENT (TELEMETRY)

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
AA273	J17-F4	TB3-C 5	IRIG TEMP (TELEMETRY)
AA272	J17-F5	TB3-D 4	ACCEL TEMP (TELEMETRY)
AA271	J17-F6	TB3-C 4	BLOWER CURRENT SENSOR (TELEMETERY)
AA257	J17-F7	TB3-C 1	ACCEL BRIDGE AMP PIN 6
AA284L	J17-F9	TB3-S 4	SHAFT CDU ENCODER PHASE 2
AA261	J17-G1	TB3-K 5	IMU TEMP ALARM AMP PIN 14
AA262	J17-G2	TB3-H 5	IMU TEMP ALARM AMP PIN 15
AA242R	J17-G4	J18-L1	SHAFT CDU ENCODER + DELTA THETA
AA243R	J17-G6	J18-L4	TRUNNION CDU ENCODER + DELTA THETA
AA259	J17-H1	TB3-K 2	IMU TEMP ALARM BIAS RESISTOR
AA260	J17-H2	TB3-K 1	IMU TEMP ALARM AMP PIN 5
AA242W	J17-H4	E 53	SHAFT CDU DAC LO
AA243W	J17-H6	E 51	TRUNNION CDU DAC LO
AA242L	J17-K4	J18-K1	SHAFT CDU ENCODER - DELTA THETA
AA243L	J17-K6	J18-K4	TRUNNION CDU ENCODER - DELTA THETA
AA263	J17-L1	TB3-L 5	IMU TEMP CONT K2 PIN 6
AA293	J17-L3	J22-243	IMU TEMP LIGHT (MAIN PANEL)
AA672W	J17-L4	TB3-A 5	+32, +120 VDC RET PIP
* AA653R	J17-L4	J14-R1	+32, +120 VDC RET PIP
AA672L	J17-L5	TB3-A 3	+120 VDC PIP
* AA653W	J17-L5	J14-S1	+120 VDC PIP
AA241	J17-L6	J18-R5	STRUCTURE GND
* AA234	J17-L6	J16-N4	STRUCTURE GND
AA264	J17-M1	TB3-D 1	0 VDC IMU
AA277	J17-M2	TB3-G 5	IMU TEMP SENSOR COM
AA278	J17-M3	TB3-F 1	0 VDC SPACECRAFT
AA292	J17-M3	J22-206	0 VDC SPACECRAFT
* AA 97	J17-M3	J12-F3	0 VDC SPACECRAFT
AA265W	J17-M4	TB3-N 1	IMU EMERGENCY HTR HI
AA258W	J17-M5	TB3-H 2	IMU TEMP CONT K1 PIN 3
AA258R	J17-M6	TB3-H 1	IMU TEMP CONT AMP PIN 5
AA270W	J17-N1	TB3-N 4	IMU CONTROL HTR LO
* AA 12W	J17-N2	J11-P1	3200 CPS 20 V HI
* AA 94R	J17-N3	J12-N6	25.6 KC LO OPTICS
AA265R	J17-N4	TB3-N 2	EMERGENCY HTR LO-OPER AND STBY
AA258L	J17-N5	TB3-G 2	IMU TEMP CONT K2 PIN 5
AA258K	J17-N6	TB3-G 1	IMU HTR CURRENT AMP PIN 5
AA270R	J17-P1	TB3-N 5	IMU CONTROL HTR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* AA 12R	J17-P2	J11-N1	3200 CPS 20 V CT
* AA 94W	J17-P3	J12-P6	25.6 KC HI OPTICS
AA250R	J17-P4	TB3-C 2	800 CPS 28 V 5 PCT L-90 DEG HI IMU
AA275	J17-P5	TB3-D 3	IMU TEMP CONT FAIL LIGHT HI
AA235	J17-P6	TB3-F 3	CONDITION LAMP TEST
* AA 13	J17-R1	J11-S3	+28 VDC STBY
* AA 12L	J17-R2	J11-N2	3200 CPS 20 V LO
* AA 92R	J17-R3	J12-P4	COMPUTER 12.8 KPPS SYNC
* AA 92W	J17-R3	J12-P4	COMPUTER 12.8 KPPS SYNC
* AA500R	J17-R3	J21-103	COMPUTER 12.8 KPPS SYNC 155A
AA250W	J17-R4	TB3-D 2	800 CPS 28 V 5 PCT L-90 DEG HI IMU
AA280	J17-R5	TB3-M21	+28 VDC MDV
AA282	J17-R6	TB3-L21	0 VDC OPTICS
AA283	J17-R6	J17-S6	0 VDC OPTICS
AA291	J17-S1	J17-S2	0 VDC IMU
AA296	J17-S1	TB3-S 3	0 VDC IMU
AA248	J17-S2	TB3-T 3	0 VDC IMU
* AA291	J17-S2	J17-S1	0 VDC IMU
AA295	J17-S3	TB3-N 3	0 VDC IMU
AA297	J17-S4	TB3-R 3	0 VDC IMU
* AA283	J17-S6	J17-R6	0 VDC OPTICS
AA238	J17-T1	J20-P3	+28 VDC STBY
AA294	J17-T1	J17-T2	+28 VDC STBY
AA239	J17-T2	J20-P4	+28 VDC STBY
* AA294	J17-T2	J17-T1	+28 VDC STBY
AA237	J17-T3	J20-M2	+28 VDC IMU
AA236	J17-T4	J20-M1	+28 VDC IMU
AA672R	J17-T5	TB3-A 4	+32 VDC PIP
* AA671	J17-T5	J14-S4	+32 VDC PIP
AA240	J17-T6	J18-S1	+28 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA308W	J18-A1	TB3-S 8	SXT AT 64X RSVR COS HI
	AA309W	J18-A2	TB3-T10	TRUNNION CDU 16X RSVR COS HI P1
	AA309R	J18-A3	TB3-T11	TRUNNION CDU 16X RSVR COS LO P3
	AA313W	J18-A4	TB3-N 8	SHAFT CDU 16X RSVR COS HI P1
	AA313R	J18-A5	TB3-N 7	SHAFT CDU 16X RSVR COS LO P3
	AA317W	J18-A6	TB3-L10	TRUNNION CDU 1/2X RSVR P2
	AA316R	J18-A7	TB3-L 8	SHAFT CDU TACH LO
	AA316W	J18-A8	TB3-L 7	SHAFT CDU TACH HI
	AA315W	J18-A9	TB3-M 8	TRUNNION CDU TACH HI
	AA308R	J18-B1	TB3-S 7	SXT AT 64X RSVR COS LO
	AA307R	J18-B2	TB3-T 7	SXT AT 64X RSVR SIN HI
	AA310W	J18-B3	TB3-S10	TRUNNION CDU 16X RSVR SIN HI P2
	AA310R	J18-B4	TB3-S11	TRUNNION CDU 16X RSVR SIN LO P4
	AA314W	J18-B5	TB3-N10	SHAFT CDU 16X RSVR SIN HI P2
	AA317R	J18-B6	TB3-L11	TRUNNION CDU 1/2X RSVR P3
	AA300W	J18-B8	J19-C1	TRUNNION CDU 16X ERROR SIG HI
	AA315R	J18-B9	TB3-M 7	TRUNNION CDU TACH LO
	AA312R	J18-C1	TB3-R11	SXT AS 16X RSVR COS HI
	AA307W	J18-C2	TB3-T 8	SXT AT 64X RSVR SIN LO
	AA314R	J18-C5	TB3-N11	SHAFT CDU 16X RSVR SIN LO P4
	AA334W	J18-C6	TB3-G14	SHAFT CDU 1X SIN OUTPUT HI
	AA335W	J18-C7	TB3-G11	TRUNNION CDU MDA CONTROLLER SIG HI
	AA300R	J18-C8	J19-B2	TRUNNION CDU 16X ERROR SIG LO
	AA301W	J18-C9	J19-A4	SHAFT CDU 16X ERROR SIG HI
	AA312W	J18-D1	TB3-R10	SXT AS 16X RSVR COS LO
	AA311W	J18-D2	TB3-R 8	SXT AS 16X RSVR SIN HI
	AA311R	J18-D3	TB3-R 7	SXT AS 16X RSVR SIN LO
	AA338R	J18-D4	TB3-K 7	SHAFT CDU 1X COS OUTPUT HI
	AA338W	J18-D5	TB3-K 8	SHAFT CDU 1X COS OUTPUT LO
	AA334R	J18-D6	TB3-G13	SHAFT CDU 1X SIN OUTPUT LO
	AA335R	J18-D7	TB3-G12	TRUNNION CDU MDA CONTROLLER SIG LO
	AA326W	J18-D8	TB3-M10	RSVR DRIVE AMP TRUNNION SIG (RSVD) HI
	AA301R	J18-D9	J19-B3	SHAFT CDU 16X ERROR SIG LO
	AA299W	J18-F1	J19-D4	TRUNNION CDU 1/4X SIN HI
	AA330W	J18-F1	TB3-G10	TRUNNION CDU 1/4X SIN HI
	AA299R	J18-F2	J19-F4	TRUNNION CDU 1/4X SIN LO
	AA330R	J18-F2	TB3-F10	TRUNNION CDU 1/4X SIN LO
	AA318W	J18-F3	TB3-L12	TRUNNION CDU 1/2X RSVR LOAD HI

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA318R	J18-F4	TB3-K12	TRUNNION CDU 1/2X RSVR LOAD LO	
	AA336W	J18-F6	TB3-F11	SHAFT CDU MDA CONTROLLER SIG HI	
	AA336R	J18-F7	TB3-F12	SHAFT CDU MDA CONTROLLER SIG LO	
	AA326R	J18-F8	TB3-M12	RSVR DRIVE AMP SHAFT SIG (RSVD) HI	
	AA326L	J18-F9	TB3-M11	RSVR DRIVE AMP INPUT LO	
	AA332W	J18-G1	TB3-K10	SHAFT CDU 1/2X SIN HI S1	
	AA345W	J18-G2	TB3-G 8	SHAFT CDU DAC OUTPUT HI	
	AA344W	J18-G3	TB3-G 7	TRUNNION CDU DAC OUTPUT HI	
	AA302K	J18-G5	J19-H6	COSECANT AMP FEEDBACK SIG HI	
	AA302W	J18-G6	J19-G6	COSECANT AMP OUTPUT HI	
	AA332R	J -H1	TB3-K11	SHAFT CDU 1/2X SIN LO S3	
	AA345R	J18-H2	TB3-F 8	SHAFT CDU DAC LO	
	AA346	J18-H2	E 52	SHAFT CDU DAC LO	
	AA347	J18-H2	E 53	SHAFT CDU DAC LO	
	AA344R	J18-H3	TB3-F 7	TRUNNION CDU DAC LO	
	AA348	J18-H3	E 50	TRUNNION CDU DAC LO	
	AA349	J18-H3	E 51	TRUNNION CDU DAC LO	
	AA302L	J18-H5	J19-H5	SHAFT CDU MDA COSECANT SIG	
	AA302R	J18-H6	J19-G5	COSECANT AMP FEEDBACK SIG LO	
*	AA242L	J18-K1	J17-K4	SHAFT CDU ENCODER - DELTA THETA	
*	AA495W	J18-K1	J21-123	SHAFT CDU ENCODER - DELTA THETA	111A
*	AA492W	J18-K2	J21-163	SHAFT CDU + DELTA THETA COMMAND	116A
*	AA496W	J18-K3	J21-235	TRUNNION CDU + DELTA THETA COMMAND	114A
*	AA243L	J18-K4	J17-K6	TRUNNION CDU ENCODER - DELTA THETA	
*	AA499W	J18-K4	J21-190	TRUNNION CDU ENCODER - DELTA THETA	109A
	AA328W	J18-K6	TB3-T12	SHAFT CDU 1X P1 (S1)	
*	AA242R	J18-L1	J17-G4	SHAFT CDU ENCODER + DELTA THETA	
*	AA494W	J18-L1	J21-156	SHAFT CDU ENCODER + DELTA THETA	110A
*	AA493R	J18-L2	J21-130	SHAFT CDU - DELTA THETA COMMAND	117A
*	AA497R	J18-L3	J21-197	TRUNNION CDU - DELTA THETA COMMAND	115A
*	AA243R	J18-L4	J17-G6	TRUNNION CDU ENCODER + DELTA THETA	
*	AA498W	J18-L4	J21-230	TRUNNION CDU ENCODER + DELTA THETA	108A
	AA328R	J18-L5	TB3-S12	SHAFT CDU 1X P2 (S2)	
	AA328L	J18-L6	TB3-R12	SHAFT CDU 1X P3 (S3)	
	AA350	J18-M1	J18-P3	0 VDC OPTICS	
	AA648	J18-M1	J18-M3	0 VDC OPTICS	
	AA663	J18-M1	J19-K6	0 VDC OPTICS	
	AA651R	J18-M2	J19-B6	BUFFERED TRUNNION CDU TACH HI	

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA353	J18-M3	J18-M4	0 VDC OPTICS
*	AA648	J18-M3	J18-M1	0 VDC OPTICS
	AA649	J18-M4	J18-M6	0 VDC OPTICS
*	AA353	J18-M4	J18-M3	0 VDC OPTICS
	AA652R	J18-M5	J19-D9	BUFFERED SHAFT CDU TACH HI
*	AA649	J18-M6	J18-M4	0 VDC OPTICS
	AA666W	J18-N1	TB3-D 7	DIRECT TRUNNION CONTROLLER HI (TEST)
	AA651W	J18-N2	J19-B8	BUFFERED TRUNNION CDU TACH LO
	AA666R	J18-N3	TB3-D 8	TRUNNION CDU MDA HI (TEST)
	AA666L	J18-N4	TB3-B 7	DIRECT SHAFT CONTROLLER HI (TEST)
	AA652W	J18-N5	J19-C8	BUFFERED SHAFT CDU TACH LO
	AA666K	J18-N6	TB3-D 9	SHAFT CDU MDA (TEST) HI
	AA319	J18-P1	TB3-D12	TRUNNION CDU MOTOR CONTROL WINDING
	AA322	J18-P2	TB3-D11	SHAFT CDU MOTOR CONTROL WINDING
	AA303	J18-P3	J19-R4	0 VDC OPTICS
*	AA350	J18-P3	J18-M1	0 VDC OPTICS
	AA320	J18-R1	TB3-C12	TRUNNION CDU MOTOR CONTROL WINDING
	AA321	J18-R2	TB3-C11	SHAFT CDU MOTOR CONTROL WINDING
	AA333	J18-R3	TB3-K20	0 VDC OPTICS
	AA337	J18-R4	TB3-B11	ZERO OPTICS RELAY CONTROL
	AA616	J18-R4	J19-M4	ZERO OPTICS RELAY CONTROL
	AA306	J18-R5	J19-P3	STRUCTURE GND
*	AA241	J18-R5	J17-L6	STRUCTURE GND
	AA298	J18-S1	J19-T1	+28 VDC OPTICS
*	AA240	J18-S1	J17-T6	+28 VDC OPTICS
	AA323	J18-S3	J18-S4	0 VDC OPTICS
	AA325	J18-S3	TB3-K20	0 VDC OPTICS
*	AA323	J18-S4	J18-S3	0 VDC OPTICS
	AA305	J18-S5	J19-P5	0 VDC OPTICS
	AA339	J18-S5	J18-T5	0 VDC OPTICS
	AA304R	J18-S6	J19-N6	800 CPS 28 V 1 PCT LO OPTICS
*	AA233R	J18-S6	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
	AA646	J18-T1	TB3-A10	+28 VDC OPTICS DAC POWER
	AA324	J18-T3	J18-T4	0 VDC OPTICS
	AA327	J18-T3	TB3-K20	0 VDC OPTICS
*	AA324	J18-T4	J18-T3	0 VDC OPTICS
	AA638	J18-T5	E 71	0 VDC OPTICS
*	AA339	J18-T5	J18-S5	0 VDC OPTICS

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA304W	J18-T6	J19-P6	800 CPS 28 V 1 PCT HI OPTICS
*	AA233W	J18-T6	J16-P5	800 CPS 28 V 1 PCT HI OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA370W	J19-A1	TB3-T16	SXT TRUNNION TACH HI
	AA371R	J19-A2	TB3-S16	SXT SHAFT TACH LO
	AA371W	J19-A3	TB3-S17	SXT SHAFT TACH HI
*	AA301W	J19-A4	J18-C9	SHAFT CDU 16X ERROR SIG HI
	AA375W	J19-A5	TB3-H16	SXT SHAFT 1/2X RSVR ERROR HI
	AA378	J19-A7	TB3-R18	SCT TRUNNION 1X RSVR LOAD
	AA372R	J19-A8	TB3-R16	SCT TRUNNION TACH LO
	AA372W	J19-A9	TB3-R17	SCT TRUNNION TACH HI
	AA370R	J19-B1	TB3-T17	SXT TRUNNION TACH LO
	AA329R	J19-B2	TB3-H 7	TRUNNION CDU 16X ERROR SIG LO
*	AA300R	J19-B2	J18-C8	TRUNNION CDU 16X ERROR SIG LO
	AA331R	J19-B3	TB3-H11	SHAFT CDU 16X ERROR SIG LO
*	AA301R	J19-B3	J18-D9	SHAFT CDU 16X ERROR SIG LO
	AA331W	J19-B4	TB3-H10	SHAFT CDU 16X ERROR SIG HI
	AA375R	J19-B5	TB3-H17	SXT SHAFT 1/2X RSVR ERROR LO
*	AA651R	J19-B6	J18-M2	BUFFERED TRUNNION CDU TACH HI
	AA377W	J19-B7	TB3-K16	SCT TRUNNION 1X RSVR ERROR HI
	AA377R	J19-B8	TB3-K17	SCT TRUNNION 1X RSVR ERROR LO
*	AA651W	J19-B8	J18-N2	BUFFERED TRUNNION CDU TACH LO
	AA373W	J19-B9	TB3-N16	SCT SHAFT TACH HI
*	AA300W	J19-C1	J18-B8	TRUNNION CDU 16X ERROR SIG HI
	AA329W	J19-C2	TB3-H 8	TRUNNION CDU 16X ERROR SIG HI
	AA384	J19-C3	TB3-N18	TRUNNION CDU 16X LOAD
	AA385	J19-C4	TB3-M18	SHAFT CDU 16X LOAD
	AA376	J19-C5	TB3-S18	SXT SHAFT 1/2X RSVR LOAD
	AA380	J19-C7	TB3-T18	SCT SHAFT 1/2X RSVR LOAD
	AA379R	J19-C8	TB3-L16	SCT SHAFT 1/2X RSVR ERROR LO
*	AA652W	J19-C8	J18-N5	BUFFERED SHAFT CDU TACH LO
	AA373R	J19-C9	TB3-N17	SCT SHAFT TACH LO
	AA374W	J19-D1	TB3-M16	SXT TRUNNION 1X RSVR ERROR HI
	AA374R	J19-D2	TB3-M17	SXT TRUNNION 1X RSVR ERROR LO
*	AA299W	J19-D4	J18-F1	TRUNNION CDU 1/4X SIN HI
	AA396W	J19-D5	TB3-N14	SHAFT CDU 1/2X COS HI S2
	AA396R	J19-D6	TB3-N13	SHAFT CDU 1/2X COS LO S4
	AA379W	J19-D8	TB3-L17	SCT SHAFT 1/2X RSVR ERROR HI
*	AA652R	J19-D9	J18-M5	BUFFERED SHAFT CDU TACH HI
*	AA299R	J19-F4	J18-F2	TRUNNION CDU 1/4X SIN LO
	AA381W	J19-F5	TB3-F16	TRUNNION CDU 1/4X COS HI

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA381R	J19-F6	TB3-G16	TRUNNION CDU 1/4X COS LO
	AA386R	J19-F8	TB3-R14	TRUNNION CDU 1/2X RSVR S1 PHASE CORR
	AA386W	J19-F9	TB3-R13	TRUNNION CDU 1/2X RSVR S3
	AA382R	J19-G1	TB3-T13	SCT TRUNNION 1X COS LO
	AA383R	J19-G2	TB3-S14	SCT TRUNNION 1X SIN HI
	AA383W	J19-G3	TB3-S13	SCT TRUNNION 1X SIN LO
*	AA302R	J19-G5	J18-H6	COSECANT AMP FEEDBACK SIG LO
*	AA302W	J19-G6	J18-G6	COSECANT AMP OUTPUT HI
	AA382W	J19-H1	TB3-T14	SCT TRUNNION 1X COS HI
*	AA302L	J19-H5	J18-H5	SHAFT CDU MDA COSECANT SIG
*	AA302K	J19-H6	J18-G5	COSECANT AMP FEEDBACK SIG HI
	AA398	J19-K1	J19-K2	0 VDC OPTICS
	AA399	J19-K2	J19-K3	0 VDC OPTICS
*	AA398	J19-K2	J19-K1	0 VDC OPTICS
	AA400	J19-K3	J19-K4	0 VDC OPTICS
*	AA399	J19-K3	J19-K2	0 VDC OPTICS
	AA401	J19-K4	J19-K5	0 VDC OPTICS
*	AA400	J19-K4	J19-K3	0 VDC OPTICS
	AA402	J19-K5	J19-K6	0 VDC OPTICS
*	AA401	J19-K5	J19-K4	0 VDC OPTICS
	AA667L	J19-K6	TB3-C10	0 VDC OPTICS
*	AA402	J19-K6	J19-K5	0 VDC OPTICS
*	AA663	J19-K6	J18-M1	0 VDC OPTICS
	AA667K	J19-L1	TB3-C 9	SXT TRUNNION MDA OUTPUT HI (TEST)
	AA667W	J19-L2	TB3-B10	TRUNNION CDU 16X RSVR OUTPUT HI (TEST)
	AA667R	J19-L3	TB3-B 9	SXT SHAFT MDA OUTPUT HI (TEST)
*	AA616	J19-M4	J18-R4	ZERO OPTICS RELAY CONTROL
	AA388	J19-M5	TB3-K18	0 DEG TRUNNION SCT OFFSET RELAY CONTROL
	AA387	J19-M6	TB3-G18	25 DEG TRUNNION SCT OFFSET RELAY CONTROL
	AA389	J19-N5	TB3-L18	COSECANT RELAY CONTROL
*	AA304R	J19-N6	J18-S6	800 CPS 28 V 1 PCT LO OPTICS
	AA359R	J19-P1	TB3-D18	SXT SHAFT MOTOR CONTROL WINDING
	AA361R	J19-P2	TB3-G17	SCT SHAFT MOTOR CONTROL WINDING
	AA356	J19-P3	J20-G4	STRUCTURE GND
*	AA306	J19-P3	J18-R5	STRUCTURE GND
	AA394	J19-P4	J19-P5	0 VDC OPTICS
	AA393	J19-P5	TB3-K21	0 VDC OPTICS
*	AA305	J19-P5	J18-S5	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA394	J19-P5	J19-P4	0 VDC OPTICS
*	AA304W	J19-P6	J18-T6	800 CPS 28 V 1 PCT HI OPTICS
	AA359W	J19-R1	TB3-F18	SXT SHAFT MOTOR CONTROL WINDING
	AA361W	J19-R2	TB3-F17	SCT SHAFT MOTOR CONTROL WINDING
	AA390	J19-R4	TB3-K21	0 VDC OPTICS
*	AA303	J19-R4	J18-P3	0 VDC OPTICS
	AA362	J19-R5	J19-S4	0 VDC OPTICS
	AA363	J19-R6	J19-T4	0 VDC OPTICS
	AA358R	J19-S2	TB3-D17	SXT TRUNNION MOTOR CONTROL WINDING
	AA358W	J19-S3	TB3-D16	SXT TRUNNION MOTOR CONTROL WINDING
	AA364	J19-S4	TB3-K22	0 VDC OPTICS
*	AA362	J19-S4	J19-R5	0 VDC OPTICS
	AA366	J19-S5	J19-S6	0 VDC OPTICS
	AA369	J19-S5	TB3-K22	0 VDC OPTICS
*	AA366	J19-S6	J19-S5	0 VDC OPTICS
	AA357	J19-T1	J20-M6	+28 VDC OPTICS
*	AA298	J19-T1	J18-S1	+28 VDC OPTICS
	AA360R	J19-T2	TB3-C17	SCT TRUNNION MOTOR CONTROL WINDING
	AA360W	J19-T3	TB3-C16	SCT TRUNNION MOTOR CONTROL WINDING
	AA365	J19-T4	TB3-L22	0 VDC OPTICS
*	AA363	J19-T4	J19-R6	0 VDC OPTICS
	AA368	J19-T5	J19-T6	0 VDC OPTICS
	AA367	J19-T6	TB3-L22	0 VDC OPTICS
*	AA368	J19-T6	J19-T5	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA416	J20-A1	TB3-G19	AGC TEMP MONITOR NO 1
	AA417	J20-A2	TB3-F19	AGC TEMP MONITOR NO 2
	AA419W	J20-A3	TB3-N20	COS AMG 1X S3
	AA414	J20-A4	TB3-K19	IMU PRESSURE MONITOR HI
	AA464R	J20-A6	TB3-L13	PRESSURE SENSOR +28 VDC HI
	AA418	J20-B1	TB3-D19	AGC TEMP MONITOR NO 3
	AA419R	J20-B3	TB3-N21	COS AMG 1X S1
	AA415	J20-B4	TB3-H19	IMU PRESSURE MONITOR LO
	AA427R	J20-B5	TB3-T19	+20 VDC CONDITIONING
	AA464W	J20-B6	TB3-K13	PRESSURE SENSOR +28 VDC LO
	AA427W	J20-C5	TB3-S19	0 VDC CONDITIONING
	AA425	J20-C6	TB3-L19	+13 VDC AGC
	AA463R	J20-D4	TB3-S20	+2.5 VDC CONDITIONING LO
	AA463W	J20-D5	TB3-R19	+2.5 VDC CONDITIONING HI
	AA426	J20-D6	TB3-M19	+3 VDC AGC
	AA409W	J20-F5	TB2-G 4	800 CPS 28 V 1 PCT HI IMU
	AA410W	J20-F5	TB3-B18	800 CPS 28 V 1 PCT HI IMU
	AA409R	J20-F6	TB2-H 4	800 CPS 28 V 1 PCT LO IMU
	AA410R	J20-F6	TB3-B19	800 CPS 28 V 1 PCT LO IMU
	AA458	J20-G1	J20-H1	0 VDC IMU
	AA460	J20-G1	TB2-M 7	0 VDC IMU
	AA465W	J20-G3	TB3-K14	400 CPS 115 V LO
	AA462	J20-G4	TB3-F22	STRUCTURE GND
*	AA356	J20-G4	J19-P3	STRUCTURE GND
	AA411	J20-G5	J20-H5	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	AA 52W	J20-G5	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	AA413	J20-G6	J20-H6	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	AA 52R	J20-G6	J12-K4	800 CPS 28 V 5 PCT L-90 DEG LO IMU
	AA459	J20-H1	J20-H2	0 VDC IMU
*	AA458	J20-H1	J20-G1	0 VDC IMU
	AA461	J20-H2	TB2-M 1	0 VDC IMU
*	AA459	J20-H2	J20-H1	0 VDC IMU
	AA465R	J20-H3	TB3-L14	400 CPS 115 V HI
	AA422	J20-H4	TB3-R20	+28 VDC AGC
	AA423	J20-H4	J21-234	+28 VDC AGC
	AA412W	J20-H5	TB3-D 2	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	AA411	J20-H5	J20-G5	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	AA412R	J20-H6	TB3-C 3	800 CPS 28 V 5 PCT L-90 DEG LO IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* AA413	J20-H6	J20-G6	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
AA454	J20-K1	TB3-T20	+28 VDC IMU	
AA455	J20-K1	TB3-T21	+28 VDC IMU	
* AA179	J20-K1	J15-S2	+28 VDC IMU	
AA456	J20-K2	TB3-S21	+28 VDC IMU	
* AA 4	J20-K2	J11-S5	+28 VDC IMU	
* AA193	J20-K2	J16-S2	+28 VDC IMU	
* AA191W	J20-K3	J16-P5	800 CPS 28 V 1 PCT HI OPTICS	
AA424	J20-K4	TB3-N19	0 VDC AGC	
AA420	J20-K5	TB3-G21	+28 VDC AGC BUSS A	
AA421	J20-K6	TB3-G22	+28 VDC AGC BUSS B	
AA438	J20-L1	J20-M1	+28 VDC IMU	
AA439	J20-L1	J20-L2	+28 VDC IMU	
* AA 2	J20-L1	J11-S1	+28 VDC IMU	
AA440	J20-L2	J20-M2	+28 VDC IMU	
* AA 3	J20-L2	J11-S2	+28 VDC IMU	
* AA439	J20-L2	J20-L1	+28 VDC IMU	
* AA191R	J20-L3	J16-N5	800 CPS 28 V 1 PCT LO OPTICS	
* AA192W	J20-L4	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
AA403	J20-L5	J21- 37	+28 VDC MDV	157B
AA404	J20-L5	TB3-M22	+28 VDC MDV	
* AA 53	J20-L6	J12-G4	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
* AA 54	J20-M1	J12-S1	+28 VDC IMU	
* AA236	J20-M1	J17-T4	+28 VDC IMU	
* AA438	J20-M1	J20-L1	+28 VDC IMU	
* AA 55	J20-M2	J12-S2	+28 VDC IMU	
* AA237	J20-M2	J17-T3	+28 VDC IMU	
* AA440	J20-M2	J20-L2	+28 VDC IMU	
* AA192R	J20-M4	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
AA405	J20-M5	TB3-M21	+28 VDC MDV	
AA457	J20-M6	TB3-M20	+28 VDC OPTICS	
* AA357	J20-M6	J19-T1	+28 VDC OPTICS	
AA428	J20-N1	TB3-C20	+28 VDC IMU BUSS A	
AA429	J20-N1	J20-P1	+28 VDC IMU BUSS A	
AA433	J20-N2	TB3-D20	+28 VDC IMU BUSS B	
AA434	J20-N2	J20-P2	+28 VDC IMU BUSS B	
AA408	J20-N3	TB3-K22	0 VDC OPTICS	
AA407	J20-N4	TB3-L21	0 VDC OPTICS	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* AA 51	J20-N5	J12-S6	+28 VDC OPTICS
* AA189	J20-N5	J16-S5	+28 VDC OPTICS
AA406	J20-N6	TB3-H20	+28 VDC OPTICS
* AA190	J20-N6	J16-S6	+28 VDC OPTICS
AA623	J20-P1	TB3-C21	+28 VDC IMU BUSS A
* AA429	J20-P1	J20-N1	+28 VDC IMU BUSS A
AA625	J20-P2	TB3-D21	+28 VDC IMU BUSS B
* AA434	J20-P2	J20-N2	+28 VDC IMU BUSS B
AA445	J20-P3	TB3-N22	+28 VDC STBY
* AA238	J20-P3	J17-T1	+28 VDC STBY
* AA239	J20-P4	J17-T2	+28 VDC STBY
AA446	J20-P5	TB3-H21	+28 VDC OPTICS BUSS A
AA447	J20-P5	J20-R5	+28 VDC OPTICS BUSS A
AA450	J20-P6	TB3-H22	+28 VDC OPTICS BUSS B
AA451	J20-P6	J20-R6	+28 VDC OPTICS BUSS B
AA431	J20-R1	J20-S1	+28 VDC IMU BUSS A
AA622	J20-R1	TB3-C20	+28 VDC IMU BUSS A
AA436	J20-R2	J20-S2	+28 VDC IMU BUSS B
AA624	J20-R2	TB3-D20	+28 VDC IMU BUSS B
AA441	J20-R3	TB3-D22	+28 VDC STBY BUSS A
AA442	J20-R3	J20-S3	+28 VDC STBY BUSS A
AA443	J20-R4	TB3-C22	+28 VDC STBY BUSS B
AA444	J20-R4	J20-S4	+28 VDC STBY BUSS B
AA448	J20-R5	J20-S5	+28 VDC OPTICS BUSS A
AA628	J20-R5	TB3-H21	+28 VDC OPTICS BUSS A
* AA447	J20-R5	J20-P5	+28 VDC OPTICS BUSS A
AA452	J20-R6	J20-S6	+28 VDC OPTICS BUSS B
AA629	J20-R6	TB3-H22	+28 VDC OPTICS BUSS B
* AA451	J20-R6	J20-P6	+28 VDC OPTICS BUSS B
AA432	J20-S1	TB3-C21	+28 VDC IMU BUSS A
* AA431	J20-S1	J20-R1	+28 VDC IMU BUSS A
AA437	J20-S2	TB3-D21	+28 VDC IMU BUSS B
* AA436	J20-S2	J20-R2	+28 VDC IMU BUSS B
AA626	J20-S3	TB3-D22	+28 VDC STBY BUSS A
* AA442	J20-S3	J20-R3	+28 VDC STBY BUSS A
AA627	J20-S4	TB3-C22	+28 VDC STBY BUSS B
* AA444	J20-S4	J20-R4	+28 VDC STBY BUSS B
AA449	J20-S5	TB3-H21	+28 VDC OPTICS BUSS A

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* AA448	J20-S5	J20-R5	+28 VDC OPTICS BUSS A
AA453	J20-S6	TB3-H22	+28 VDC OPTICS BUSS B
* AA452	J20-S6	J20-R6	+28 VDC OPTICS BUSS B

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* A 634	J21- 1	P11-A	+28 VDC AGC BUSS A	167
* A 639	J21- 2	P11-J	0 VDC AGC	169
* A 476	J21- 3	J10- 70	SPARE	211
* A 505R	J21- 4	J10- 31	OUT 0 7	220A
* A 505Y	J21- 5	E 22	COMMONED RETURNS GROUND	220B
* A 483R	J21- 6	J10- 17	OUT 0 14	227A
* A 483Y	J21- 7	E 23	COMMONED RETURNS GROUND	227B
* A 489R	J21- 8	J10- 44	ALARM 6	234A
* A 489Y	J21- 9	E 24	COMMONED RETURNS GROUND	234B
* A 522	J21- 10	J10- 45	SPARE	248
* A 523	J21- 11	J10- 46	SPARE	249
* A 468Y	J21- 12	J10- 49	KEY RESET NAV	209A
* A 468R	J21- 13	E 25	COMMONED RETURNS GROUND	209B
* A 510R	J21- 14	J10- 39	TEST ALARM	207A
* A 510Y	J21- 15	E 25	COMMONED RETURNS GROUND	207B
A 692	J21- 16	J21- 17	SXT PWR ON INDICATION	105
* A 692	J21- 17	J21- 16	SXT PWR ON INDICATION	105
* A 449R	J21- 18	J09- 37	OPTICS MODE SW COMPUTER INDICATION	106A
* A 449Y	J21- 19	E 58		106B
AA642	J21- 22	E 70	AGC SIG 179 SHLD RET	179
AA473	J21- 23	E 45	AGC SIG 180 SHLD RET	180
AA475W	J21- 24	J15-B4	IG ENCODER + DELTA THETA	120A
AA475R	J21- 25	E 38	IG DAC MDA SIG LO	120B
AA476R	J21- 26	J15-C4	IG ENCODER - DELTA THETA	121A
AA476W	J21- 27	E 38	IG DAC MDA SIG LO	121B
* AA639W	J21- 28	J12-D6	IMU FAIL	141A
* AA639R	J21- 29	J12-F6	IMU FAIL RET	141B
AA486R	J21- 30	J15-C9	OG CDU - DELTA THETA COMMAND	127A
AA486W	J21- 31	E 43	OG DAC MDA SIG LO	127B
* AA130R	J21- 32	E 33	0 VDC IMU	143A
* AA130W	J21- 33	J14-D2	- DX GYRO RATE	143B
* AA226R	J21- 34	J16-L4	COMPUTER 800 PPS OUT OF PHASE SYNC	150A
* AA226W	J21- 35	J16-L3	COMPUTER 800 PPS SYNC RET	150B
* AA 81	J21- 36	J12-M1	AGC POWER SUPPLY FAIL SIG HI	157A
* AA403	J21- 37	J20-L5	+28 VDC MDV	157B
AA674	J21- 38	TB3-F 3	CONDITION LAMP TEST	157T
* A 509	J21- 39	J10- 58	GND	239
* A 481	J21- 40	J10- 59	+28 VDC AGC	243

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 499R	J21- 41	J10- 30	OUT 0 6	219A
*	A 499Y	J21- 42	E 22	COMMONED RETURNS GROUND	219B
*	A 504R	J21- 43	J10- 16	OUT 0 13	226A
*	A 504Y	J21- 44	E 23	COMMONED RETURNS GROUND	226B
*	A 488R	J21- 45	J10- 33	ALARM 5	233A
*	A 488Y	J21- 46	E 23	COMMONED RETURNS GROUND	233B
*	A 470R	J21- 47	J10- 42	TIMING (1.5 CPS)	244A
*	A 470Y	J21- 48	E 24	COMMONED RETURNS GROUND	244B
	A 720	J21- 49	TB3-G21	+28 VDC AGC BUSS A	167
	A 721	J21- 50	TB3-G21	+28 VDC AGC BUSS A	167
	A 722	J21- 51	TB3-G22	+28 VDC AGC BUSS B	168
	A 723	J21- 52	TB3-G22	+28 VDC AGC BUSS B	168
	AA562	J21- 53	E 57	AGC SIG 178 SHLD RET	178
*	A 437Y	J21- 54	J09- 25	OPTICS ZERO ENCODER	104A
*	A 437R	J21- 55	E 58		104B
	AA479W	J21- 56	J15-B8	OG ENCODER + DELTA THETA	118A
	AA479R	J21- 57	E 42	OG DAC MDA SIG LO	118B
	AA480R	J21- 58	J15-C8	OG ENCODER - DELTA THETA	119A
	AA480W	J21- 59	E 42	OG DAC MDA SIG LO	119B
*	AA641W	J21- 60	J12-D4	ACCEL FAIL	138A
*	AA641R	J21- 61	J12-F4	ACCEL FAIL RET	138B
*	AA521	J21- 62	TB3-L19	+13 VDC AGC	176
*	AA522	J21- 63	TB3-N19	0 VDC AGC	177
	AA485W	J21- 64	J15-B9	OG CDU + DELTA THETA COMMAND	126A
	AA485R	J21- 65	E 43	OG DAC MDA SIG LO	126B
*	AA129W	J21- 66	E 33	0 VDC IMU	142A
*	AA129R	J21- 67	J14-D1	+ DX GYRO RATE	142B
*	AA227R	J21- 68	J16-M4	COMPUTER 800 PPS IN PHASE SYNC	149A
*	AA227W	J21- 69	J16-L3	COMPUTER 800 PPS SYNC RET	149B
*	AA 70W	J21- 70	J12-K1	COMPUTER 102.4 KPPS SYNC	156A
*	AA 70R	J21- 71	J12-H1	COMPUTER 102.4 KPPS SYNC RET	156B
*	A 635	J21- 73	P11-A	+28 VDC AGC BUSS A	167
*	A 640	J21- 74	P11-J	0 VDC AGC	169
*	A 473	J21- 75	J10- 71	SPARE	212
*	A 498R	J21- 76	J10- 29	OUT 0 5	218A
*	A 498Y	J21- 77	E 22	COMMONED RETURNS GROUND	218B
*	A 506R	J21- 78	J10- 15	OUT 0 12	225A
*	A 506Y	J21- 79	E 23	COMMONED RETURNS GROUND	225B

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 482R	J21- 80	J10- 32	ALARM 4	232A
*	A 482Y	J21- 81	E 23	COMMONED RETURNS GROUND	232B
*	A 471R	J21- 82	J10- 20	POWER SYNC	242A
*	A 471Y	J21- 83	E 24	COMMONED RETURNS GROUND	242B
*	A 467R	J21- 84	J10- 38	KEY CODE 5	205A
*	A 467Y	J21- 85	E 25	COMMONED RETURNS GROUND	205B
*	A 433Y	J21- 86	J09- 30	MARK	102A
*	A 433R	J21- 87	E 58		102B
*	A 434Y	J21- 88	J09- 31	NOT MARK	103A
*	A 434R	J21- 89	E 58		103B
	AA468R	J21- 92	E 35	COMPUTER RET	133A
	AA468W	J21- 93	J15-M6	- DELTA V X	133B
	AA471R	J21- 94	E 37	COMPUTER RET	137A
	AA471W	J21- 95	J15-K4	- DELTA V Z	137B
*	AA525	J21- 96	TB3-M19	+3 VDC AGC	175
	AA484R	J21- 97	J15-C7	MG CDU - DELTA THETA COMMAND	131A
	AA484W	J21- 98	E 41	MG DAC MDA SIG LO	131B
	AA502W	J21- 99	J13-N6	PIPA SWITCHING PULSE	140A
	AA502R	J21-100	E 34	0 VDC IMU	140B
*	AA655R	J21-101	E 33	0 VDC IMU	148A
*	AA655W	J21-102	J14-K4	GYRO RESET PULSE	148B
	AA500R	J21-103	J17-R3	COMPUTER 12.8 KPPS SYNC	155A
	AA500W	J21-104	E 27	0 VDC IMU	155B
	A 571	J21-107	E 63	GROUP 2 SHIELD	245
*	A 477	J21-108	J10- 57	+13 V B	241
*	A 497R	J21-109	J10- 28	OUT 0 4	217A
*	A 497Y	J21-110	E 22	COMMONED RETURNS GROUND	217B
*	A 503R	J21-111	J10- 14	OUT 0 11	224A
*	A 503Y	J21-112	E 23	COMMONED RETURNS GROUND	224B
*	A 487R	J21-113	J10- 19	ALARM 3	231A
*	A 487Y	J21-114	E 23	COMMONED RETURNS GROUND	231B
*	A 493R	J21-115	J10- 64	ALARM 10	238A
*	A 493Y	J21-116	E 24	COMMONED RETURNS GROUND	238B
*	A 511R	J21-117	J10- 37	KEY CODE 4	204A
*	A 511Y	J21-118	E 25	COMMONED RETURNS GROUND	204B
	A 440Y	J21-119	E 56	AGC COMMON	101A
	A 440R	J21-120	E 58		101B
	AA487W	J21-121	TB2-D 2	AGC COM	165A

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA487R	J21-122	TB2-F 3		165B
	AA495W	J21-123	J18-K1	SHAFT CDU ENCODER - DELTA THETA	111A
	AA495R	J21-124	E 53	SHAFT CDU DAC LO	111B
	AA467R	J21-125	E 35	COMPUTER RET	132A
	AA467W	J21-126	J15-M5	+ DELTA V X	132B
	AA472R	J21-127	E 37	COMPUTER RET	136A
	AA472W	J21-128	J15-K5	+ DELTA V Z	136B
*	AA526	J21-129	TB3-D19	AGC TEMP MONITOR NO 3	173
	AA493R	J21-130	J18-L2	SHAFT CDU - DELTA THETA COMMAND	117A
	AA493W	J21-131	E 52	SHAFT CDU DAC LO	117B
	AA501W	J21-132	J13-N5	PIPA INTERROGATE PULSE	139A
	AA501R	J21-133	E 34	0 VDC IMU	139B
*	AA135W	J21-134	E 33	0 VDC IMU	147A
*	AA135R	J21-135	J14-D6	- DZ GYRO RATE	147B
	AA491R	J21-136	J12-G2	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154A
	AA491W	J21-137	E 29	COMPUTER 25.6 KPPS SYNC RET	154B
	AA660	J21-138	TB3-L 6	THERMISTER LO	199B
*	A 637	J21-139	P12-A	+28 VDC AGC BUSS B	168
*	A 641	J21-140	P12-J	0 VDC AGC	170
*	A 469	J21-141	J10- 72	SPARE	213
*	A 496R	J21-142	J10- 60	OUT 0 3	216A
*	A 496Y	J21-143	E 22	COMMONED RETURNS GROUND	216B
*	A 502R	J21-144	J10- 63	OUT 0 10	223A
*	A 502Y	J21-145	E 22	COMMONED RETURNS GROUND	223B
*	A 486R	J21-146	J10- 41	ALARM 2	230A
*	A 486Y	J21-147	E 23	COMMONED RETURNS GROUND	230B
*	A 492R	J21-148	J10- 51	ALARM 9	237A
*	A 492Y	J21-149	E 24	COMMONED RETURNS GROUND	237B
*	A 472R	J21-150	J10- 36	KEY CODE 3	203A
*	A 472Y	J21-151	E 25	COMMONED RETURNS GROUND	203B
	AA489W	J21-152	J16-A7	ZERO ENCODER MODE INDICATION TO AGC	158A
	AA489R	J21-153	E 60		158B
*	A 14Y	J21-154	P01- 59	COARSE ALIGN MODE INDICATION TO AGC	159A
*	A 14R	J21-155	E 61		159B
	AA494W	J21-156	J18-L1	SHAFT CDU ENCODER + DELTA THETA	110A
	AA494R	J21-157	E 53	SHAFT CDU DAC LO	110B
*	AA640W	J21-158	J12-D5	CDU FAIL	124A
*	AA640R	J21-159	J12-F5	CDU FAIL RET	124B

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA470R	J21-160	E 36	COMPUTER RET	135A
	AA470W	J21-161	J15-K6	- DELTA V Y	135B
*	AA529	J21-162	TB3-F19	AGC TEMP MONITOR NO 2	172
	AA492W	J21-163	J18-K2	SHAFT CDU + DELTA THETA COMMAND	116A
	AA492R	J21-164	E 52	SHAFT CDU DAC LO	116B
	AA483W	J21-165	J15-B7	MG CDU + DELTA THETA COMMAND	130A
	AA483R	J21-166	E 41	MG DAC MDA SIG LO	130B
*	AA134R	J21-167	E 33	0 VDC IMU	146A
*	AA134W	J21-168	J14-D5	+ DZ GYRO RATE	146B
	AA490W	J21-169	J12-G1	COMPUTER 25.6 KPPS IN PHASE SYNC	153A
	AA490R	J21-170	E 29	COMPUTER 25.6 KPPS SYNC RET	153B
*	A 678	J21-171	P09- 49	AGC THERMISTER HI	199A
*	A 512	J21-173	J10- 56	GND	239
*	A 513	J21-174	J10- 55	+3 V B	240
*	A 495R	J21-175	J10- 74	OUT 0 2	215A
*	A 495Y	J21-176	E 22	COMMONED RETURNS GROUND	215B
*	A 501R	J21-177	J10- 62	OUT 0 9	222A
*	A 501Y	J21-178	E 22	COMMONED RETURNS GROUND	222B
*	A 485R	J21-179	J10- 40	ALARM 1	229A
*	A 485Y	J21-180	E 23	COMMONED RETURNS GROUND	229B
*	A 491R	J21-181	J10- 53	ALARM 8	236A
*	A 491Y	J21-182	E 24	COMMONED RETURNS GROUND	236B
*	A 514R	J21-183	J10- 35	KEY CODE 2	202A
*	A 514Y	J21-184	E 25	COMMONED RETURNS GROUND	202B
*	A 515R	J21-185	J10- 47	OK OF C1 THRU C33	210A
*	A 515Y	J21-186	E 25	COMMONED RETURNS GROUND	210B
	A 568	J21-187	E 64	GROUP 3 SHIELD	250
	AA488W	J21-188	J15-A3	MANUAL CDU MODE INDICATION TO AGC	160A
	AA488R	J21-189	E 59		160B
	AA499W	J21-190	J18-K4	TRUNNION CDU ENCODER - DELTA THETA	109A
	AA499R	J21-191	E 51	TRUNNION CDU DAC LO	109B
	AA478R	J21-192	J15-C6	MG ENCODER - DELTA THETA	123A
	AA478W	J21-193	E 40	MG DAC MDA SIG LO	123B
	AA469R	J21-194	E 36	COMPUTER RET	134A
	AA469W	J21-195	J15-L6	+ DELTA V Y	134B
*	AA530	J21-196	TB3-G19	AGC TEMP MONITOR NO 1	171
	AA497R	J21-197	J18-L3	TRUNNION CDU - DELTA THETA COMMAND	115A
	AA497W	J21-198	E 50	TRUNNION CDU DAC LO	115B

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA482R	J21-199	J15-C5	IG CDU - DELTA THETA COMMAND	129A
	AA482W	J21-200	E 39	IG DAC MDA SIG LO	129B
*	AA132W	J21-201	E 33	0 VDC IMU	145A
*	AA132R	J21-202	J14-D4	- DY GYRO RATE	145B
	AA503R	J21-203	J11-L6	COMPUTER 3200 PPS OUT OF PHASE SYNC	152A
	AA503W	J21-204	E 28	COMPUTER 3200 PPS SYNC RET	152B
*	A 638	J21-207	P12-A	+28 VDC AGC BUSS B	168
*	A 642	J21-208	P12-J	0 VDC AGC	170
*	A 520	J21-209	J10- 75	SPARE	247
*	A 494R	J21-210	J10- 73	OUT 0 1	214A
*	A 494Y	J21-211	E 22	COMMONED RETURNS GROUND	214B
*	A 500R	J21-212	J10- 61	OUT 0 8	221A
*	A 500Y	J21-213	E 22	COMMONED RETURNS GROUND	221B
*	A 484R	J21-214	J10- 18	OUT 0 15	228A
*	A 484Y	J21-215	E 23	COMMONED RETURNS GROUND	228B
*	A 490R	J21-216	J10- 43	ALARM 7	235A
*	A 490Y	J21-217	E 24	COMMONED RETURNS GROUND	235B
*	A 516R	J21-218	J10- 34	KEY CODE 1	201A
*	A 516Y	J21-219	E 25	COMMONED RETURNS GROUND	201B
*	A 517R	J21-220	J10- 48	ERROR RESET	208A
*	A 517Y	J21-221	E 25	COMMONED RETURNS GROUND	208B
*	A 15Y	J21-222	P01- 49	FINE ALIGN MODE INDICATION TO AGC	161A
*	A 15R	J21-223	E 61		161B
*	A 27Y	J21-224	P01- 76	ATTIT CONT MODE INDICATION TO AGC	162A
*	A 27R	J21-225	E 61		162B
*	A 16Y	J21-226	P01- 39	ENTRY MODE INDICATION TO AGC	163A
*	A 16R	J21-227	E 61		163B
*	A 156Y	J21-228	J06- 69	TRANSFER SWITCH INDICATION TO AGC	164A
*	A 156R	J21-229	E 55		164B
	AA498W	J21-230	J18-L4	TRUNNION CDU ENCODER + DELTA THETA	108A
	AA498R	J21-231	E 51	TRUNNION CDU DAC LO	108B
	AA477W	J21-232	J15-B6	MG ENCODER + DELTA THETA	122A
	AA477R	J21-233	E 40	MG DAC MDA SIG LO	122B
*	AA423	J21-234	J20-H4	+28 VDC AGC	166
	AA496W	J21-235	J18-K3	TRUNNION CDU + DELTA THETA COMMAND	114A
	AA496R	J21-236	E 50	TRUNNION CDU DAC LO	114B
	AA481W	J21-237	J15-B5	IG CDU + DELTA THETA COMMAND	128A
	AA481R	J21-238	E 39	IG DAC MDA SIG LO	128B

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA131W	J21-239	E 33	0 VDC IMU	144A
*	AA131R	J21-240	J14-D3	+ DY GYRO RATE	1449
	AA504R	J21-241	J11-M6	COMPUTER 3200 PPS IN PHASE SYNC	151A
	AA504W	J21-242	E 28	COMPUTER 3200 PPS SYNC RET	151B

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA287W	J22- 1	J17-A3	ROLL ERROR BODY OFFSET AXIS HI
	AA287B	J22- 2	SHLD AA287	
*	AA244W	J22- 3	J17-A	ROLL ERROR BODY AXIS HI
*	AA244R	J22- 4	J17-B4	ROLL ERROR BODY AXIS LO
	AA245B	J22- 5	SHLD AA245	
*	AA245W	J22- 6	J17-C4	YAW ERROR BODY AXIS HI
	AA246B	J22- 8	SHLD AA246	
*	AA288R	J22- 10	J17-C1	PITCH ERROR BODY AND BODY OFFSET AXIS LO
	AA288B	J22- 11	SHLD AA288	
*	A 713	J22- 37	J09- 70	+28 VDC SPACECRAFT
*	A 196	J22- 38	J08- 53	MASTER WARNING LIGHT RET
*	AA287R	J22- 39	J17-B3	ROLL ERROR BODY OFFSET AXIS LO
	AA244B	J22- 41	SHLD AA244	
*	AA245R	J22- 43	J17-D4	YAW ERROR BODY AXIS LO
*	AA246W	J22- 45	J17-C3	YAW ERROR BODY OFFSET AXIS HI
*	AA246R	J22- 46	J17-D3	YAW ERROR BODY OFFSET AXIS LO
*	AA288W	J22- 48	J17-D1	PITCH ERROR BODY AND BODY OFFSET AXIS HI
*	A 206	J22- 72	J08- 43	MASTER CAUTION LIGHT RET
	AA505R	J22-107	TB2-U 7	SIN AOG 1X S2
	AA507R	J22-111	TB3-C14	SIN AMG 1X
	AA508W	J22-113	TB3-N20	COS AMG 1X S3
	AA508R	J22-114	TB3-N21	COS AMG 1X S1
	AA509W	J22-116	TB3-D13	SIN AIG 1X RET
*	AA517R	J22-120	TB3-B19	800 CPS 28 V 1 PCT LO IMU
	AA505W	J22-139	TB2-U 8	SIN AOG 1X S4
	AA506W	J22-141	TB2-N 8	COS AOG 1X S3
	AA506R	J22-142	TB2-N 7	COS AOG 1X S1
	AA507W	J22-144	TB3-C13	SIN AMG 1X RET
	AA509R	J22-148	TB3-D14	SIN AIG 1X
	AA510W	J22-150	TB3-F13	COS AIG 1X RET
	AA510R	J22-151	TB3-F14	COS AIG 1X
*	AA517W	J22-153	TB3-B18	800 CPS 28 V 1 PCT HI IMU
*	A 461	J22-171	P10- 8	MAIN PANEL GIMBAL LOCK LIGHT
	AA647	J22-172	TB3-F 2	SPACECRAFT LAMP TEST
*	AA518	J22-190	TB3-F 4	ATTITUDE CONTROL RELAY CONTROL
*	A 389G	J22-192	J09- 17	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT
*	A 389Y	J22-193	J09- 3	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT
*	A 387R	J22-195	J09- 18	PITCH ATTIT IMPULSE CONTR INPUT

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 388G	J22-197	J09- 6	YAW ATTIT IMPULSE CONTR OUTPUT LEFT
*	A 388Y	J22-198	J09- 20	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT
*	A 393Y	J22-200	J09- 40	0 VDC FROM NAA
*	AA292	J22-206	J17-M3	0 VDC SPACECRAFT
*	AA175	J22- 7	J15-S3	LOCK CDU RELAY CONTROL
*	AA220	J22- 8	J16-L1	FINE ALIGN RELAY CONTROL
*	A 389R	J22-230	J09- 16	ROLL ATTIT IMPULSE CONTR INPUT
*	A 387G	J22-232	J09- 5	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN
*	A 387Y	J22-233	J09- 4	PITCH ATTIT IMPULSE CONTR OUTPUT UP
*	A 388R	J22-235	J09- 7	YAW ATTIT IMPULSE CONTR INPUT
*	A 393R	J22-237	J09- 41	+28 VDC FROM NAA
*	A 393G	J22-238	J09- 50	ATTITUDE DISABLE SIG TO NAA
*	AA293	J22-243	J17-L3	IMU TEMP LIGHT (MAIN PANEL)
*	AA 74	J22-244	J12-G3	ERROR DETECT LIGHT MAIN PANEL

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 150R	P01- 1	J06- 1	PITCH ATTITUDE ERROR METER +
* A 150Y	P01- 2	J06- 2	PITCH ATTITUDE ERROR METER -
A 26	P01- 4	TB1-D 6	COARSE ALIGN RELAY CONTROL
A 10	PC1- 5	TB2-C 1	FINE ALIGN RELAY CONTROL
* A 161	P01- 6	J06- 6	ENTRY RELAY CONTROL RESET
A 21	P01- 7	TB3-S21	+28 VDC IMU
* A 160	P01- 9	J06- 9	MODE SWITCH INTERLOCK
A 19Y	P01- 10	TB2-H 4	800 CPS 28 V 1 PCT LO IMU
A 19R	P01- 11	TB2-G 4	800 CPS 28 V 1 PCT HI IMU
A 8	P01- 12	TB2-B 2	ZERO ENCODER RELAY CONTROL
A 5	P01- 13	TB1-K 5	FINE ALIGN MODE COMMAND FROM AGC
* A 151R	P01- 14	J06- 14	YAW ATTITUDE ERROR METER +
* A 151Y	P01- 15	J06- 15	YAW ATTITUDE ERROR METER -
* A 157	P01- 18	J06- 18	MODE RELAY COMMON TO D AND C ELECT
* A 175	P01- 22	J06- 22	ATTITUDE CONTROL MODE LIGHT
* A 165	P01- 23	J06- 23	FINE ALIGN RELAY CONTROL
A 12	P01- 24	TB3-F 4	ATTITUDE CONTROL RELAY CONTROL
* A 167	P01- 25	J06- 25	ENTRY RELAY CONTROL
A 22	P01- 26	TB1-U 2	IMU DELAY LIGHT HI
A 6	P01- 27	TB1-K 8	CDU MANUAL MODE COMMAND FROM AGC
* A 152Y	P01- 28	J06- 28	ROLL ATTITUDE ERROR METER -
* A 152R	P01- 29	J06- 29	ROLL ATTITUDE ERROR METER +
* A 162	P01- 34	J06- 34	ZERO ENCODER RELAY CONTROL
* A 163	P01- 35	J06- 35	COARSE ALIGN RELAY CONTROL
* A 164	P01- 36	J06- 36	CDU MANUAL RELAY CONTROL
* A 687	P01- 37	J06- 37	BACKUP MODE RELAY CONTROL
A 3	P01- 38	TB1-K 4	ZERO ENCODER MODE COMMAND FROM AGC
A 16Y	P01- 39	J21-226	ENTRY MODE INDICATION TO AGC 163A
* A 177	P01- 46	J06- 46	ATTITUDE CONTROL MODE INTERLOCK
A 4	P01- 48	TB1-K 3	COARSE ALIGN MODE COMMAND FROM AGC
A 15Y	P01- 49	J21-222	FINE ALIGN MODE INDICATION TO AGC 161A
* A 170	P01- 56	J06- 56	MANUAL ALIGN
A 9	P01- 57	TB2-R 4	ENTRY RELAY CONTROL
A 7	P01- 58	TB1-K 6	ENTRY MODE COMMAND FROM AGC
A 14Y	P01- 59	J21-154	COARSE ALIGN MODE INDICATION TO AGC 159A
A 13Y	P01- 68	TB2-D 2	AGC COM
A 11	P01- 69	TB2-B 1	LOCK CDU RELAY CONTROL
A 24R	P01- 70	TB2-H 2	IG CDU 1X ERROR SIG

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 24Y	P01- 71	TB2-G 2	IG CDU ERROR SIG RET
A 27Y	P01- 76	J21-224	ATTIT CONT MODE INDICATION TO AGC 162A
A 20	P01- 78	TB2-M 4	0 VDC IMU
* A 176	P01- 79	J06- 79	ENTRY MODE LIGHT
A 1R	P01- 80	TB2-A 2	PANEL BRIGHTNESS CONTROL
A 25R	P01- 82	TB2-H 7	MG CDU 1X ERROR SIG
A 25Y	P01- 83	TB2-G 7	MG CDU ERROR SIG RET
A 33	P01- 84	TB3-B20	STRUCTURE GND
A 28	P01- 88	TB3-F 3	CONDITION LAMP TEST
A 29	P01- 89	TB3-M21	+28 VDC MDV
A 602N	P01- 90	TB1-M 1	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
A 18	P01- 91	TB1-K 1	MODE LAMP TEST PWR
* A 172	P01- 92	J06- 92	COARSE ALIGN MODE LIGHT
* A 168	P01- 93	J06- 93	MODE RELAY COMMON
* A 174	P01- 94	J06- 94	FINE ALIGN MODE LIGHT
A 1Y	P01- 95	TB2-A 1	PANEL BRIGHTNESS CONTROL
A 23R	P01- 96	TB2-N 2	OG CDU 1X ERROR SIG
A 23Y	P01- 97	TB2-R 2	OG CDU ERROR SIG RET
A 602R	P01-103	TB1-R 1	400 CPS VAR ILLUM PWR
* A 171	P01-104	J06-104	ZERO ENCODER MODE LIGHT
* A 173	P01-105	J06-105	CDU MANUAL MODE LIGHT
A 602G	P01-106	TB1-N 1	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
A 602Y	P01-108	TB1-T 1	400 CPS VAR ILLUM PWR

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 216R	P02-A	TB2-G 4	800 CPS 28 V 1 PCT HI IMU
A 227R	P02-A*	TB3-F14	COS AIG 1X S3
A 216Y	P02-B	TB2-G 5	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
A 227Y	P02-B*	TB3-F13	COS AIG 1X RET S1
A 217R	P02-C	TB2-W 4	COS AOG 16X S3
A 217Y	P02-D	TB2-W 3	COS AOG 16X S1
A 218R	P02-E	TB2-X 3	SIN AOG 16X S2
A 218Y	P02-F	TB2-W 2	SIN AOG 16X S4
A 228R	P02-F*	TB3-D13	SIN AIG 1X RET S2
A 219R	P02-G	TB2-U 5	COS AMG 16X S3
A 228Y	P02-G*	TB3-D14	SIN AIG 1X S4
A 219Y	P02-H	TB2-T 5	COS AMG 16X S1
A 220R	P02-J	TB2-A 7	SIN AMG 16X S2
A 220Y	P02-K	TB2-B 7	SIN AMG 16X S4
A 221R	P02-L	TB3-N20	COS AMG 1X S3
A 221Y	P02-M	TB3-N21	COS AMG 1X S1
A 222Y	P02-N	TB3-C13	SIN AMG 1X RET S2
A 222R	P02-P	TB3-C14	SIN AMG 1X S4
A 223R	P02-R	TB1-D 2	3200 CPS 2 V HI
A 223Y	P02-S	TB1-C 2	3200 CPS 2 V LO
A 224R	P02-T	TB1-C 6	3200 CPS 2 V FEEDBACK HI
A 224Y	P02-U	TB1-B 6	3200 CPS 2 V FEEDBACK LO
A 225R	P02-W	TB2-W 6	COS AIG 16X S3
A 225Y	P02-X	TB2-X 7	COS AIG 16X S1
A 226R	P02-Y	TB2-A 8	SIN AIG 16X S2
A 226Y	P02-Z	TB2-B 8	SIN AIG 16X S4

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 229Y	P03-A	TB1-C 7	X GYRO ERROR SIG
A 239Y	P03-A*	TB1-A 3	MG TORQUE MOTOR RET
A 230Y	P03-B	TB1-C 8	Z GYRO ERROR SIG
A 240R	P03-B*	TB1-A 3	MG TORQUE MOTOR RET
A 231R	P03-C	TB1-A 8	IMU OG ERROR SIG
A 240Y	P03-C*	TB1-A 4	MG TORQUE MOTOR HI
A 232R	P03-D	TB2-N 8	COS AOG 1X S3
A 241R	P03-D*	TB1-D 3	IG TORQUE MOTOR HI
A 232Y	P03-E	TB2-N 7	COS AOG 1X S1
A 241Y	P03-E*	TB1-D 4	IG TORQUE MOTOR RET
A 233R	P03-F	TB2-U 8	SIN AOG 1X S4
A 242R	P03-F*	TB1-D 4	IG TORQUE MOTOR RET
A 233Y	P03-G	TB2-U 7	SIN AOG 1X S2
A 242Y	P03-G*	TB1-D 3	IG TORQUE MOTOR HI
A 234Y	P03-H	TB1-C 5	IG CDU ATTITUDE STEERING ERROR
A 244	P03-H*	TB3-T20	+28 VDC IMU
A 234R	P03-J	TB1-B 5	IG CDU ERROR SIG RET
A 243	P03-J*	TB3-F 5	GIMBAL LOCK SIGNAL
A 235R	P03-K	TB1-A 6	MG CDU ERROR SIG RET
A 235Y	P03-L	TB1-A 5	MG CDU ATTITUDE STEERING ERROR
A 236Y	P03-M	TB3-R 5	YAW ERROR BODY OFFSET AXIS LO
A 236R	P03-N	TB3-R 4	PITCH YAW RSVR S3
A 237Y	P03-P	TB3-M13	PITCH ERROR BODY AND BODY OFFSET AXIS LO
A 237R	P03-R	TB3-M14	PITCH-YAW RSVR S4
A 231G	P03-U	TB1-B 8	IMU IG AND Y GYRO ERROR SIG
A 231Y	P03-V	TB1-B 7	IMU GIMBAL AND GYRO ERROR SIG LO
A 231N	P03-W	TB1-A 7	IMU MG ERROR SIG
A 238R	P03-X	TB1-B 2	OG TORQUE MOTOR RET
A 238Y	P03-Y	TB1-A 2	OG TORQUE MOTOR HI
A 239R	P03-Z	TB1-A 4	MG TORQUE MOTOR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 251R	P04-D1	P05-EE	AS 16X RSVR P2 TRIM
* A 251Y	P04-D2	P05-FF	AS 16X RSVR P4 TRIM
* A 268Y	P04-E1	P05-K	800 CPS 28 V 1 PCT HI OPTICS
* A 268R	P04-E2	P05-J	800 CPS 28 V 1 PCT LO OPTICS
* A 267Y	P04-F1	P05-W	AT 64X RSVR P4 TRIM
* A 267R	P04-F2	P05-X	AT 64X RSVR P2 TRIM

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 259Y	P05-A	TB3-D18	SXT SHAFT MOTOR CONTROL WINDING RED
A 253R	P05-A*	TB3-S 8	SXT AT 64X RSVR COS HI
A 264	P05-AA	TB3-S18	SXT SHAFT 1/2X RSVR LOAD
A 259R	P05-B	TB3-C18	+28 VDC OPTICS
A 253Y	P05-B*	TB3-S 7	SXT AT 64X RSVR COS LO
A 263Y	P05-BB	TB3-H17	SXT SHAFT 1/2X RSVR ERROR LO
A 259G	P05-C	TB3-F18	SXT SHAFT MOTOR CONTROL WINDING BLK
A 254R	P05-C*	TB3-M16	SXT TRUNNION 1X RSVR ERROR HI
A 265R	P05-CC	TB2-K 2	800 CPS 28 V 1 PCT HI OPTICS
* A 247R	P05-CC	P05-K	800 CPS 28 V 1 PCT HI OPTICS
A 598R	P05-D	TB2-U 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 254Y	P05-D*	TB3-M17	SXT TRUNNION 1X RSVR ERROR LO
A 265Y	P05-DD	TB2-L 2	800 CPS 28 V 1 PCT LO OPTICS
* A 247Y	P05-DD	P05-J	800 CPS 28 V 1 PCT LO OPTICS
A 598Y	P05-E	TB2-T 3	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 255Y	P05-E*	TB3-F16	TRUNNION CDU 1/4X COS HI
A 251R	P05-EE	P04-D1	AS 16X RSVR P2 TRIM
A 255R	P05-F*	TB3-G16	TRUNNION CDU 1/4X COS LO
A 251Y	P05-FF	P04-D2	AS 16X RSVR P4 TRIM
A 256R	P05-G*	TB3-G10	TRUNNION CDU 1/4X SIN HI
A 256Y	P05-H*	TB3-F10	TRUNNION CDU 1/4X SIN LO
A 263R	P05-HH	TB3-H16	SXT SHAFT 1/2X RSVR ERROR HI
A 246Y	P05-I*	TB3-D17	SXT TRUNNION MOTOR CONTROL WINDING RED
A 247Y	P05-J	P05-DD	800 CPS 28 V 1 PCT LO OPTICS
A 268R	P05-J	P04-E2	800 CPS 28 V 1 PCT LO OPTICS
A 246G	P05-J*	TB3-D16	SXT TRUNNION MOTOR CONTROL WINDING BLK
A 247R	P05-K	P05-CC	800 CPS 28 V 1 PCT HI OPTICS
A 268Y	P05-K	P04-E1	800 CPS 28 V 1 PCT HI OPTICS
A 257R	P05-K*	TB3-T16	SXT TRUNNION TACH HI
A 266R	P05-L	TB1-T 1	400 CPS VAR ILLUM PWR
A 266Y	P05-M	TB1-T 2	400 CPS 6 V LO
A 257Y	P05-M*	TB3-T17	SXT TRUNNION TACH LO
A 248Y	P05-N*	TB3-R 7	SXT AS 16X RSVR SIN LO
A 246R	P05-P	TB3-C18	+28 VDC OPTICS
A 248R	P05-P*	TB3-R 8	SXT AS 16X RSVR SIN HI
A 258R	P05-Q*	TB3-R10	SXT AS 16X RSVR COS LO
A 270	P05-R	TB3-F21	STRUCTURE GND
A 258Y	P05-R*	TB3-R11	SXT AS 16X RSVR COS HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 249	P05-S	TB3-K21	0 VDC OPTICS
A 250	P05-T	TB3-K21	0 VDC OPTICS
A 260R	P05-U*	TB3-S17	SXT SHAFT TACH HI
A 260Y	P05-V*	TB3-S16	SXT SHAFT TACH LO
A 267Y	P05-W	P04-F1	AT 64X RSVR P4 TRIM
A 261R	P05-W*	TB3-N13	SHAFT CDU 1/2X COS LO P4
A 267R	P05-X	P04-F2	AT 64X RSVR P2 TRIM
A 261Y	P05-X*	TB3-N14	SHAFT CDU 1/2X COS HI P2
A 252Y	P05-Y	TB3-T 7	SXT AT 64X RSVR SIN HI
A 262R	P05-Y*	TB3-K10	SHAFT CDU 1/2X SIN HI P1
A 252R	P05-Z	TB3-T 8	SXT AT 64X RSVR SIN LO
A 262Y	P05-Z*	TB3-K11	SHAFT CDU 1/2X SIN LO P3

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 271R	P06-A	TB1-H 3	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
A 286	P06-A*	TB3-K 3	IRIG TEMP IND SENSOR RET
A 271Y	P06-B	TB1-H 2	800 CPS 28 V 5 PCT IMU WHEELS LO
A 282R	P06-B*	TB3-L13	PRESSURE SENSOR +28 VDC HI
A 271G	P06-C	TB1-G 2	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
A 282Y	P06-C*	TB3-K13	PRESSURE SENSOR +28 VDC LO
A 284	P06-D	TB3-T20	+28 VDC IMU
A 283R	P06-D*	TB3-K19	IMU PRESSURE MONITOR HI
A 287	P06-E	TB2-D 4	0 VDC IMU
A 283Y	P06-E*	TB3-H19	IMU PRESSURE MONITOR LO
A 272	P06-F	TB1-D 5	-28 VDC
A 281R	P06-F*	TB3-C 2	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 288	P06-G	TB3-F21	STRUCTURE GND
A 281Y	P06-G*	TB3-C 3	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 273R	P06-H	TB1-A 2	OG TORQUE MOTOR HI
A 273Y	P06-J	TB1-B 2	OG TORQUE MOTOR RET
A 274	P06-K	TB3-G 5	IMU TEMP SENSOR COM
A 275Y	P06-L	TB3-L 3	IRIG TEMP CONT SENSOR RET
A 275R	P06-M	TB3-L 4	IRIG TEMP CONT SENSOR HI
A 276	P06-N	TB3-R 6	ACCEL INDICATING SENSOR HI
A 285	P06-P	TB3-M 1	ACCEL TEMP IND SENSOR RET
A 279Y	P06-R	TB3-N 2	EMERGENCY HTR LO-OPER AND STBY
A 278R	P06-V	TB3-N 5	IMU CONTROL HTR HI
A 278Y	P06-W	TB3-N 4	IMU CONTROL HTR LO
A 279R	P06-X	TB3-N 1	IMU EMERGENCY HTR HI
A 277	P06-Y	TB3-N 6	EMERG HTR CONT MODULE LO
A 280	P06-Z	TB3-H 4	IRIG TEMP IND SENSOR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 289R	P07-A	TB1-T 8	Z GYRO TORQUE +
A 296Y	P07-A*	TB1-N 2	Y PIP ERROR LO
A 289W	P07-B	TB1-U 7	Z GYRO TORQUE RET
A 297R	PC7-B*	TB1-T 5	Z PIP ERROR HI
A 289L	PC7-C	TB1-U 8	Z GYRO TORQUE -
A 297Y	P07-C*	TB1-T 4	Z PIP ERROR LO
A 290R	P07-D	TB1-M 8	X GYRO TORQUE +
A 290W	P07-E	TB1-L 8	X GYRO TORQUE RET
A 290L	P07-F	TB1-L 7	X GYRO TORQUE -
A 298R	P07-F*	TB1-C 3	OG ADA
A 291R	P07-G	TB1-T 6	Y GYRO TORQUE +
A 298G	P07-G*	TB1-B 4	MG ADA
A 291W	P07-H	TB1-U 5	Y GYRO TORQUE RET
A 298N	P07-H*	TB1-C 4	IG ADA
A 291L	P07-J	TB1-U 6	Y GYRO TORQUE -
A 298Y	P07-J*	TB1-B 3	0 VDC IMU
A 292R	P07-K	TB1-U 4	Z PIP TORQUE +
A 292W	P07-L	TB1-T 3	Z PIP TORQUE RET
A 292L	P07-M	TB1-U 3	Z PIP TCRQUE -
A 293R	P07-N	TB1-L 4	Y PIP TORQUE +
A 293W	P07-P	TB1-L 3	Y PIP TORQUE RET
A 293L	P07-R	TB1-M 4	Y PIP TORQUE -
A 294R	P07-U	TB1-M 5	X PIP TORQUE +
A 294W	P07-V	TB1-L 6	X PIP TORQUE RET
A 294L	P07-W	TB1-L 5	X PIP TORQUE -
A 295R	P07-X	TB1-M 7	X PIP ERROR HI
A 295Y	P07-Y	TB1-M 6	X PIP ERROR LO
A 296R	PC7-Z	TB1-M 3	Y PIP ERROR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 299R	P08-A	TB2-U 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 299Y	P08-B	TB2-T 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 315	P08-B*	TB3-K15	0 VDC OPTICS
A 308Y	P08-C*	TB3-G17	SCT SHAFT MOTOR CONTROL WINDING RED
A 308G	P08-D*	TB3-F17	SCT SHAFT MOTOR CONTROL WINDING BLK
A 300Y	P08-E	TB3-C17	SCT TRUNNION MOTOR CONTROL WINDING RED
A 309R	P08-E*	TB3-N16	SCT SHAFT TACH HI
A 300R	P08-F	TB3-C19	+28 VDC OPTICS
A 309Y	P08-F*	TB3-N17	SCT SHAFT TACH LO
A 300G	P08-G	TB3-C16	SCT TRUNNION MOTOR CONTROL WINDING BLK
A 310R	P08-G*	TB3-L16	SCT SHAFT 1/2X RSVR ERROR LO
A 308R	P08-H	TB3-C19	+28 VDC OPTICS
A 311	P08-H*	TB3-T18	SCT SHAFT 1/2X RSVR LOAD
A 310Y	P08-I*	TB3-L17	SCT SHAFT 1/2X RSVR ERROR HI
A 301R	P08-J	TB2-K 2	800 CPS 28 V 1 PCT HI OPTICS
A 312Y	P08-J*	TB3-K10	SHAFT CDU 1/2X SIN HI S1
A 301Y	P08-K	TB2-L 2	800 CPS 28 V 1 PCT LO OPTICS
A 312R	P08-K*	TB3-K11	SHAFT CDU 1/2X SIN LO P1
A 313Y	P08-M*	TB3-N13	SHAFT CDU 1/2X COS LO P2
A 302R	P08-N	TB3-R17	SCT TRUNNION TACH HI
A 313R	P08-N*	TB3-N14	SHAFT CDU 1/2X COS HI P4
A 302Y	P08-P	TB3-R16	SCT TRUNNION TACH LO
A 303	P08-R	TB3-K15	0 VDC OPTICS
A 314R	P08-R*	TB1-T 1	400 CPS VAR ILLUM PWR
A 304Y	P08-S	TB3-K16	SCT TRUNNION 1X RSVR ERROR HI
A 314Y	P08-S*	TB1-T 2	400 CPS 6 V LO
A 304R	P08-T	TB3-K17	SCT TRUNNION 1X RSVR ERROR LO
A 316	P08-T*	TB3-F22	STRUCTURE GND
A 305	P08-U	TB3-R18	SCT TRUNNION 1X RSVR LOAD
A 306R	P08-V	TB3-S13	SCT TRUNNION 1X SIN LO
A 306Y	P08-W	TB3-S14	SCT TRUNNION 1X SIN HI
A 307R	P08-X	TB3-T14	SCT TRUNNION 1X COS HI
A 307Y	P08-Y	TB3-T13	SCT TRUNNION 1X COS LO

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CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 355R	P09- 1	TB3-D13	SIN AIG 1X RET
A 356R	P09- 2	TB3-F13	COS AIG 1X RET
A 356Y	P09- 3	TB3-F14	COS AIG 1X
A 330	P09- 4	TB3-R20	+28 VDC AGC
A 719R	P09- 5	TB3-T19	+20 VDC CONDITIONING
A 719Y	P09- 6	TB3-S19	0 VDC CONDITIONING
A 386Y	P09- 7	TB3-R19	+2.5 VDC CONDITIONING HI
A 318Y	P09- 8	TB3-B19	800 CPS 28 V 1 PCT LO IMU
A 318R	P09- 9	TB3-B18	800 CPS 28 V 1 PCT HI IMU
A 342	P09- 10	TB3-F 5	GIMBAL LOCK SIGNAL
A 344	P09- 11	TB3-D 3	IMU TEMP CONT FAIL LIGHT HI
A 336	P09- 12	TB1-H 8	G+N ERROR LIGHT HI
A 332	P09- 13	TB1-H 6	AGC POWER SUPPLY FAIL SIG HI
A 355Y	P09- 14	TB3-D14	SIN AIG 1X
A 357R	P09- 15	TB3-C13	SIN AMG 1X RET
A 359R	P09- 16	TB2-U 7	SIN AOG 1X S2
A 359Y	P09- 17	TB2-U 8	SIN AOG 1X S4
A 331	P09- 18	TB3-N19	0 VDC AGC
A 718	P09- 19	TB3-T21	+28 VDC IMU
A 717	P09- 20	TB3-N22	+28 VDC STBY
A 386R	P09- 21	TB3-S20	+2.5 VDC CONDITIONING LO
A 320R	P09- 22	TB3-D 2	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 691	P09- 23	TB1-S 5	0 VDC IMU
A 684G	P09- 24	TB3-A 3	+120 VDC PIP
A 684R	P09- 25	TB3-A 4	+32 VDC PIP
A 358R	P09- 28	TB3-N20	COS AMG 1X S3
A 357Y	P09- 29	TB3-C14	SIN AMG 1X
A 360R	P09- 30	TB2-N 8	COS AOG 1X S3
A 360Y	P09- 31	TB2-N 7	COS AOG 1X S1
A 385	P09- 32	TB2-F 4	0 VDC IMU
A 349	P09- 33	TB1-L 2	X PIP ERROR MONITOR
A 320Y	P09- 34	TB3-C 3	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 683	P09- 35	TB1-D 5	-28 VDC
A 684Y	P09- 36	TB3-A 5	+32, +120 VDC RET PIP
A 679	P09- 37	TB3-G 6	TRAY 3 THERMISTER HI
A 680	P09- 38	TB3-K 6	TRAY 4 THERMISTER HI
A 358Y	P09- 40	TB3-N21	COS AMG 1X S1
A 361	P09- 41	TB1-C 8	Z GYRO ERROR SIG

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 379R	P09- 42	TB3-K19	IMU PRESSURE MONITOR HI	
A 350	P09- 43	TB1-M 2	Y PIP ERROR MONITOR	
A 351	P09- 44	TB1-T 7	Z PIP ERROR MONITOR	
A 321R	P09- 45	TB2-K 1	800 CPS 28 V 1 PCT HI OPTICS	
A 345	P09- 46	TB1-U 2	IMU DELAY LIGHT HI	
A 677	P09- 47	TB3-F 6	TRAY 2 THERMISTER HI	
A 681	P09- 48	TB3-L 6	THERMISTER LO	
A 678	P09- 49	J21-171	AGC THERMISTER HI	199A
A 363Y	P09- 50	TB1-A 8	IMU OG ERROR SIG	
A 363N	P09- 51	TB1-B 7	IMU GIMBAL AND GYRO ERROR SIG LO	
A 362	P09- 52	TB1-C 7	X GYRO ERROR SIG	
A 379Y	P09- 53	TB3-H19	IMU PRESSURE MONITOR LO	
A 381	P09- 54	TB3-M19	+3 VDC AGC	
A 321Y	P09- 55	TB2-L 1	800 CPS 28 V 1 PCT LO OPTICS	
A 322R	P09- 56	TB2-U 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
A 322Y	P09- 57	TB2-T 3	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
A 323Y	P09- 58	TB1-B 6	3200 CPS 2 V FEEDBACK LO	
A 323R	P09- 59	TB1-C 6	3200 CPS 2 V FEEDBACK HI	
A 363R	P09- 60	TB1-A 7	IMU MG ERROR SIG	
A 363G	P09- 61	TB1-B 8	IMU IG AND Y GYRO ERROR SIG	
A 380	P09- 62	TB3-L19	+13 VDC AGC	
A 382	P09- 63	TB3-N19	0 VDC AGC	
A 371G	P09- 64	TB3-G19	AGC TEMP MONITOR NO 1	
A 328	P09- 65	TB3-H20	+28 VDC OPTICS	
A 329	P09- 66	TB3-L21	0 VDC OPTICS	
A 319R	P09- 67	TB1-G 2	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
A 325R	P09- 68	TB1-H 7	25.6 KC HI OPTICS	
A 324R	P09- 69	TB1-H 4	25.6 KC HI IMU	
A 365R	P09- 70	TB2-H 7	MG CDU 1X ERROR SIG	
A 365Y	P09- 71	TB2-G 7	MG CDU ERROR SIG RET	
A 366R	P09- 72	TB2-N 2	OG CDU 1X ERROR SIG	
A 370	P09- 73	TB3-C 4	BLOWER CURRENT SENSOR (TELEMETERY)	
A 371R	P09- 74	TB3-F19	AGC TEMP MONITOR NO 2	
A 371Y	P09- 75	TB3-D19	AGC TEMP MONITOR NO 3	
A 378R	P09- 76	TB3-G17	SCT SHAFT MOTOR CONTROL WINDING	
A 378Y	P09- 77	TB3-F17	SCT SHAFT MOTOR CONTROL WINDING	
A 319G	P09- 78	TB1-H 2	800 CPS 28 V 5 PCT IMU WHEELS LO	
A 319Y	P09- 79	TB1-H 3	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 325Y	P09- 80	TB1-G 7	25.6 KC LO OPTICS
A 324Y	P09- 81	TB1-G 4	25.6 KC LO IMU
A 364Y	P09- 82	TB2-G 2	IG CDU ERROR SIG RET
A 366Y	P09- 83	TB2-R 2	OG CDU ERROR SIG RET
A 384	P09- 84	TB3-D 6	TEMPERATURE CONTROL SIG LO
A 368	P09- 85	TB3-C 5	IRIG TEMP (TELEMETRY)
A 682N	P09- 86	TB3-C 6	MG CDU FAILURE INDICATION
A 682R	P09- 87	TB3-C 7	OG CDU FAILURE INDICATION
A 689G	P09- 88	TB3-D 9	SHAFT CDU MDA (TEST) HI
A 689N	P09- 89	TB3-B 7	DIRECT SHAFT CONTROLLER HI (TEST)
A 690G	P09- 90	TB3-C 9	SXT TRUNNION MDA OUTPUT HI (TEST)
A 376R	P09- 91	TB3-C17	SCT TRUNNION MOTOR CONTROL WINDING
A 376Y	P09- 92	TB3-C16	SCT TRUNNION MOTOR CONTROL WINDING
A 352R	P09- 93	TB1-D 4	IG TORQUE MOTOR RET
A 354R	P09- 94	TB1-B 2	OG TORQUE MOTOR RET
A 354Y	P09- 95	TB1-A 2	OG TORQUE MOTOR HI
A 364R	P09- 96	TB2-H 2	IG CDU 1X ERROR SIG
A 369	P09- 97	TB3-D 5	HTR CURRENT (TELEMETERY)
A 367	P09- 98	TB3-D 4	ACCEL TEMP (TELEMETRY)
A 682G	P09- 99	TB3-B 6	IG CDU FAILURE INDICATION
A 682Y	P09-100	TB3-C 8	0 VDC IMU
A 689Y	P09-101	TB3-D 7	DIRECT TRUNNION CONTROLLER HI (TEST)
A 689R	P09-102	TB3-D 8	TRUNNION CDU MDA HI (TEST)
A 690N	P09-103	TB3-C10	0 VDC OPTICS
A 690R	P09-104	TB3-B 9	SXT SHAFT MDA OUTPUT HI (TEST)
A 690Y	P09-105	TB3-B10	TRUNNION CDU 16X RSVR OUTPUT HI (TEST)
A 352Y	P09-106	TB1-D 3	IG TORQUE MOTOR HI
A 353R	P09-107	TB1-A 3	MG TORQUE MOTOR RET
A 353Y	P09-108	TB1-A 4	MG TORQUE MOTOR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 665	P10- 1	TB3-B20	STRUCTURE GND
A 461	P10- 8	J22-171	MAIN PANEL GIMBAL LOCK LIGHT
A 462	P10- 9	TB3-F 1	0 VDC SPACECRAFT
A 454	P10- 12	TB3-F 5	GIMBAL LOCK SIGNAL
A 452	P10- 13	TB1-S 5	0 VDC IMU
* A 715	P10- 24	J09- 28	GIMBAL LOCK LIGHT HI
* A 448Y	P10- 38	J09- 77	400 CPS 1.5 V ZERO PHASE
* A 448R	P10- 39	J09- 65	400 CPS 1.5 V PI PHASE
* A 447	P10- 48	J09- 95	400 CPS 26 V HI
A 460	P10- 49	TB3-B14	400 CPS 26 V LO
A 607Y	P10- 68	TB3-K14	400 CPS 115 V LO
A 607R	P10- 69	TB3-L14	400 CPS 115 V HI
A 663G	P10- 81	TB1-T 2	400 CPS 6 V LO
* A 606Y	P10- 93	J09- 62	400 CPS 6 V HI
A 663R	P10- 94	TB1-R 2	400 CPS 6 V LO
A 663Y	P10- 95	TB1-S 2	400 CPS 6 V LO
* A 606R	P10-106	J09- 61	400 CPS 6 V HI
* A 606G	P10-107	J09- 53	400 CPS 6 V HI
* A 606N	P10-108	J09- 52	400 CPS 6 V LO

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 633	P11-A	TB3-G21	+28 VDC AGC BUSS A	
A 634	P11-A	J21- 1	+28 VDC AGC BUSS A	167
A 635	P11-A	J21- 73	+28 VDC AGC BUSS A	167
A 609	P11-B	TB3-C20	+28 VDC IMU BUSS A	
A 610	P11-B	TB3-C20	+28 VDC IMU BUSS A	
A 611	P11-B	TB3-C20	+28 VDC IMU BUSS A	
A 612	P11-C	TB3-C21	+28 VDC IMU BUSS A	
A 613	P11-C	TB3-C21	+28 VDC IMU BUSS A	
A 614	P11-C	TB3-C21	+28 VDC IMU BUSS A	
A 649	P11-D	TB1-N 8	0 VDC IMU	
A 650	P11-D	TB1-S 6	0 VDC IMU	
A 654	P11-E	TB2-M 7	0 VDC IMU	
A 655	P11-E	TB2-V 4	0 VDC IMU	
A 651	P11-F	TB2-M 3	0 VDC IMU	
A 652	P11-F	TB2-D 4	0 VDC IMU	
A 653	P11-F	TB3-N 3	0 VDC IMU	
A 643	P11-G	TB3-D15	0 VDC OPTICS	
A 644	P11-G	TB3-K20	0 VDC OPTICS	
A 645	P11-G	TB3-L21	0 VDC OPTICS	
A 625	P11-H	TB3-H21	+28 VDC OPTICS BUSS A	
A 626	P11-H	TB3-H21	+28 VDC OPTICS BUSS A	
A 627	P11-H	TB3-H21	+28 VDC OPTICS BUSS A	
A 639	P11-J	J21- 2	0 VDC AGC	169
A 640	P11-J	J21- 74	0 VDC AGC	169
A 724	P11-J	P12-J	0 VDC AGC	
A 608Y	P11-K	TB3-K14	400 CPS 115 V LO	
A 631	P11-L	TB3-F21	STRUCTURE GND	
A 623	P11-M	TB3-D22	+28 VDC STBY BUSS A	
A 624	P11-M	TB3-D22	+28 VDC STBY BUSS A	
A 608R	P11-N	TB3-L14	400 CPS 115 V HI	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 636	P12-A	TB3-G22	+28 VDC AGC BUSS B	
A 637	P12-A	J21-139	+28 VDC AGC BUSS B	168
A 638	P12-A	J21-207	+28 VDC AGC BUSS B	168
A 615	P12-B	TB3-D20	+28 VDC IMU BUSS B	
A 616	P12-B	TB3-D20	+28 VDC IMU BUSS B	
A 617	P12-B	TB3-D20	+28 VDC IMU BUSS B	
A 618	P12-C	TB3-D21	+28 VDC IMU BUSS B	
A 619	P12-C	TB3-D21	+28 VDC IMU BUSS B	
A 620	P12-C	TB3-D21	+28 VDC IMU BUSS B	
A 656	P12-D	TB1-N 4	0 VDC IMU	
A 657	P12-D	TB3-S 3	0 VDC IMU	
A 658	P12-E	TB3-T 3	0 VDC IMU	
A 659	P12-E	TB1-S 3	0 VDC IMU	
A 660	P12-F	TB2-M 1	0 VDC IMU	
A 661	P12-F	TB2-L 4	0 VDC IMU	
A 662	P12-F	TB1-D 7	0 VDC IMU	
A 646	P12-G	TB3-C15	0 VDC OPTICS	
A 647	P12-G	TB3-K22	0 VDC OPTICS	
A 648	P12-G	TB3-L20	0 VDC OPTICS	
A 628	P12-H	TB3-H22	+28 VDC OPTICS BUSS B	
A 629	P12-H	TB3-H22	+28 VDC OPTICS BUSS B	
A 630	P12-H	TB3-H22	+28 VDC OPTICS BUSS B	
A 641	P12-J	J21-140	0 VDC AGC	170
A 642	P12-J	J21-208	0 VDC AGC	170
* A 724	P12-J	P11-J	0 VDC AGC	
A 632	P12-L	TB3-F22	STRUCTURE GND	
A 621	P12-M	TB3-C22	+28 VDC STBY BUSS B	
A 622	P12-M	TB3-C22	+28 VDC STBY BUSS B	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 13B	SHLD A 13	TB2-D 3	AGC SIG 178 SHLD RET
*	A 14B	SHLD A 14	E 44	AGC SIG 178 SHLD RET
*	A 15B	SHLD A 15	E 44	AGC SIG 178 SHLD RET
*	A 16B	SHLD A 16	E 44	AGC SIG 178 SHLD RET
*	A 23B	SHLD A 23	TB2-S 2	OG CDU ERROR SIG RET
*	A 24B	SHLD A 24	TB2-F 2	IG CDU ERROR SIG RET
*	A 25B	SHLD A 25	TB2-F 7	MG CDU ERROR SIG RET
*	A 27B	SHLD A 27	E 44	AGC SIG 178 SHLD RET
*	A 39B	SHLD A 39	TB2-F 2	IG CDU ERROR SIG RET
*	A 40B	SHLD A 40	TB3-H14	0 VDC IMU
*	A 41B	SHLD A 41	TB3-H13	0 VDC IMU
*	A 42B	SHLD A 42	TB2-G 1	IG CDU ERROR SIG RET
*	A 43B	SHLD A 43	TB2-V 6	0 VDC IMU
*	A 44B	SHLD A 44	TB2-D 8	0 VDC IMU
*	A 45B	SHLD A 45	TB2-A 5	IG CDU ENCODER COM
*	A 51B	SHLD A 51	TB2-T 7	IG CDU MDA INPUT RET
*	A 63B	SHLD A 63	TB2-F 7	MG CDU ERROR SIG RET
*	A 64B	SHLD A 64	E 48	0 VDC IMU
*	A 65B	SHLD A 65	TB3-H12	0 VDC IMU
*	A 66B	SHLD A 66	TB2-G 8	MG CDU ERROR SIG RET
*	A 67B	SHLD A 67	TB2-V 5	0 VDC IMU
*	A 68B	SHLD A 68	TB2-D 7	0 VDC IMU
*	A 69B	SHLD A 69	TB2-C 6	MG CDU ENCODER COM
*	A 75B	SHLD A 75	TB2-X 6	MG CDU MDA INPUT RET
*	A 86B	SHLD A 86	TB2-S 2	OG CDU ERROR SIG RET
*	A 87B	SHLD A 87	TB2-M 8	0 VDC IMU
*	A 88B	SHLD A 88	TB2-V 8	0 VDC IMU
*	A 89B	SHLD A 89	TB2-S 3	OG CDU ERROR SIG RET
*	A 90B	SHLD A 90	TB2-V 4	0 VDC IMU
*	A 91B	SHLD A 91	TB2-V 2	0 VDC IMU
*	A 92B	SHLD A 92	TB2-A 4	OG CDU ENCODER COM
*	A 96B	SHLD A 96	TB2-R 7	OG CDU MDA INPUT RET
*	A 107B	SHLD A 107	TB3-H 9	0 VDC OPTICS
*	A 108B	SHLD A 108	TB3-N15	0 VDC OPTICS
*	A 110B	SHLD A 110	TB3-K 9	0 VDC OPTICS
*	A 111B	SHLD A 111	TB3-G15	0 VDC OPTICS
*	A 112B	SHLD A 112	TB3-H 9	0 VDC OPTICS
*	A 114B	SHLD A 114	TB3-N 9	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 115B	SHLD A 115	TB3-N 9	0 VDC OPTICS
*	A 116B	SHLD A 116	TB3-S 5	SHAFT CDU ENCODER COM
*	A 121B	SHLD A 121	TB3-L 9	0 VDC OPTICS
*	A 130B	SHLD A 130	TB3-G 9	0 VDC OPTICS
*	A 131B	SHLD A 131	TB3-K15	0 VDC OPTICS
*	A 132B	SHLD A 132	TB3-L 9	0 VDC OPTICS
*	A 134B	SHLD A 134	TB3-R15	0 VDC OPTICS
*	A 135B	SHLD A 135	TB3-H 9	0 VDC OPTICS
*	A 137B	SHLD A 137	TB3-T 9	0 VDC OPTICS
*	A 138B	SHLD A 138	TB3-S 9	0 VDC OPTICS
*	A 139B	SHLD A 139	TB3-T 5	TRUNNION CDU ENCODER COM
*	A 144B	SHLD A 144	TB3-M 9	0 VDC OPTICS
*	A 155B	SHLD A 155	TB2-D 3	AGC SIG 178 SHLD RET
*	A 156B	SHLD A 156	E 44	AGC SIG 178 SHLD RET
*	A 217B	SHLD A 217	TB2-V 3	0 VDC IMU
*	A 218B	SHLD A 218	TB2-V 2	0 VDC IMU
*	A 219B	SHLD A 219	TB2-V 5	0 VDC IMU
*	A 220B	SHLD A 220	TB2-D 7	0 VDC IMU
*	A 221B	SHLD A 221	E 48	0 VDC IMU
*	A 222B	SHLD A 222	TB3-H12	0 VDC IMU
*	A 224B	SHLD A 224	TB1-D 7	0 VDC IMU
*	A 225B	SHLD A 225	TB2-V 6	0 VDC IMU
*	A 226B	SHLD A 226	TB2-D 8	0 VDC IMU
*	A 227B	SHLD A 227	TB3-H14	0 VDC IMU
*	A 228B	SHLD A 228	TB3-H13	0 VDC IMU
*	A 229B	SHLD A 229	TB1-D 7	0 VDC IMU
*	A 230B	SHLD A 230	TB1-D 8	0 VDC IMU
*	A 232B	SHLD A 232	TB2-M 8	0 VDC IMU
*	A 233B	SHLD A 233	TB2-V 8	0 VDC IMU
*	A 234B	SHLD A 234	TB1-B 5	IG CDU ERROR SIG RET
*	A 235B	SHLD A 235	TB1-A 6	MG CDU ERROR SIG RET
*	A 236B	SHLD A 236	TB3-S 3	0 VDC IMU
*	A 237B	SHLD A 237	TB3-T 3	0 VDC IMU
*	A 248B	SHLD A 248	TB3-R 9	0 VDC OPTICS
*	A 252B	SHLD A 252	TB3-T 9	0 VDC OPTICS
*	A 253B	SHLD A 253	TB3-S 9	0 VDC OPTICS
*	A 254B	SHLD A 254	TB3-M15	0 VDC OPTICS
*	A 255B	SHLD A 255	TB3-H15	0 VDC OPTICS

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 256B	SHLD A 256	TB3-G 9	0 VDC OPTICS
*	A 257B	SHLD A 257	TB3-S15	0 VDC OPTICS
*	A 258B	SHLD A 258	TB3-R 9	0 VDC OPTICS
*	A 260B	SHLD A 260	TB3-S15	0 VDC OPTICS
*	A 261B	SHLD A 261	TB3-R15	0 VDC OPTICS
*	A 262B	SHLD A 262	TB3-K 9	0 VDC OPTICS
*	A 263B	SHLD A 263	TB3-H15	0 VDC OPTICS
*	A 278B	SHLD A 278	TB3-R 3	0 VDC IMU
*	A 279B	SHLD A 279	TB3-N 3	0 VDC IMU
*	A 289B	SHLD A 289	TB1-S 8	0 VDC IMU
*	A 290B	SHLD A 290	TB1-N 8	0 VDC IMU
*	A 291B	SHLD A 291	TB1-S 6	0 VDC IMU
*	A 292B	SHLD A 292	TB1-S 3	0 VDC IMU
*	A 293B	SHLD A 293	TB1-N 4	0 VDC IMU
*	A 294B	SHLD A 294	TB1-N 5	0 VDC IMU
*	A 302B	SHLD A 302	TB3-S15	0 VDC OPTICS
*	A 304B	SHLD A 304	TB3-H15	0 VDC OPTICS
*	A 306B	SHLD A 306	TB3-T15	0 VDC OPTICS
*	A 307B	SHLD A 307	TB3-T15	0 VDC OPTICS
*	A 309B	SHLD A 309	TB3-M15	0 VDC OPTICS
*	A 310B	SHLD A 310	TB3-M15	0 VDC OPTICS
*	A 312B	SHLD A 312	TB3-K 9	0 VDC OPTICS
*	A 313B	SHLD A 313	TB3-R15	0 VDC OPTICS
*	A 355B	SHLD A 355	TB3-H13	0 VDC IMU
*	A 356B	SHLD A 356	TB3-H14	0 VDC IMU
*	A 357B	SHLD A 357	TB3-H12	0 VDC IMU
*	A 358B	SHLD A 358	E 48	0 VDC IMU
*	A 359B	SHLD A 359	TB2-V 8	0 VDC IMU
*	A 360B	SHLD A 360	TB2-M 8	0 VDC IMU
*	A 364B	SHLD A 364	TB2-F 2	IG CDU ERROR SIG RET
*	A 365B	SHLD A 365	TB2-F 7	MG CDU ERROR SIG RET
*	A 366B	SHLD A 366	TB2-S 2	OG CDU ERROR SIG RET
*	A 425B	SHLD A 425	TB3-M 9	0 VDC OPTICS
*	A 426B	SHLD A 426	TB3-G12	TRUNNION CDU MDA CONTROLLER SIG LO
*	A 427B	SHLD A 427	TB3-F12	SHAFT CDU MDA CONTROLLER SIG LO
*	A 433B	SHLD A 433	E 44	AGC SIG 178 SHLD RET
*	A 434B	SHLD A 434	E 44	AGC SIG 178 SHLD RET
*	A 437B	SHLD A 437	E 44	AGC SIG 178 SHLD RET

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	A 440A	SHLD A 440	E 44	AGC SIG 178 SHLD RET
*	A 449B	SHLD A 449	E 44	AGC SIG 178 SHLD RET
*	A 671B	SHLD A 671	TB3-F 8	SHAFT CDU DAC LO
*	A 672B	SHLD A 672	TB3-F 7	TRUNNION CDU DAC LO
	AA 70A	SHLD AA 70	J12-H1	COMPUTER 102.4 KPPS SYNC RET
*	AA 92B	SHLD AA 92	E 27	0 VDC IMU
*	AA119B	SHLD AA119	TB1-N 5	0 VDC IMU
*	AA122B	SHLD AA122	TB1-N 4	0 VDC IMU
*	AA124B	SHLD AA124	TB1-N 8	0 VDC IMU
*	AA127B	SHLD AA127	TB1-S 4	0 VDC IMU
*	AA133B	SHLD AA133	TB1-S 5	0 VDC IMU
*	AA136B	SHLD AA136	TB1-S 8	0 VDC IMU
*	AA176B	SHLD AA176	TB2-D 3	AGC SIG 178 SHLD RET
	AA197A	SHLD AA197	J16-B1	IG CDU MDA INPUT RET
	AA202A	SHLD AA202	J16-B3	MG CDU MDA INPUT RET
	AA214A	SHLD AA214	J16-B5	OG CDU MDA INPUT RET
	AA226A	SHLD AA226	E 30	0 VDC IMU
	AA227A	SHLD AA227	E 30	0 VDC IMU
	AA232A	SHLD AA232	E 30	0 VDC IMU
*	AA232B	SHLD AA232	E 31	0 VDC IMU
*	AA244B	SHLD AA244	J22- 41	
*	AA245B	SHLD AA245	J22- 5	
*	AA246B	SHLD AA246	J22- 8	
*	AA265B	SHLD AA265	TB3-S 3	0 VDC IMU
*	AA270B	SHLD AA270	TB3-N 3	0 VDC IMU
*	AA287B	SHLD AA287	J22- 2	
*	AA288B	SHLD AA288	J22- 11	
*	AA307B	SHLD AA307	TB3-R 9	0 VDC OPTICS
*	AA308B	SHLD AA308	TB3-N 9	0 VDC OPTICS
*	AA309B	SHLD AA309	TB3-T 9	0 VDC OPTICS
*	AA310B	SHLD AA310	TB3-S 9	0 VDC OPTICS
*	AA315B	SHLD AA315	TB3-M 9	0 VDC OPTICS
*	AA316B	SHLD AA316	TB3-L 9	0 VDC OPTICS
*	AA329B	SHLD AA329	TB3-H 9	0 VDC OPTICS
*	AA331B	SHLD AA331	TB3-K 9	0 VDC OPTICS
	AA467A	SHLD AA467	E 46	AGC SIG 180 SHLD RET
	AA468A	SHLD AA468	E 46	AGC SIG 180 SHLD RET
	AA469A	SHLD AA469	E 46	AGC SIG 180 SHLD RET

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
AA470A	SHLD AA470	E 46	AGC SIG 180 SHLD RET
AA471A	SHLD AA471	E 46	AGC SIG 180 SHLD RET
AA472A	SHLD AA472	E 46	AGC SIG 180 SHLD RET
AA475A	SHLD AA475	E 47	AGC SIG 179 SHLD RET
AA476A	SHLD AA476	E 47	AGC SIG 179 SHLD RET
AA477A	SHLD AA477	E 47	AGC SIG 179 SHLD RET
AA478A	SHLD AA478	E 47	AGC SIG 179 SHLD RET
AA479A	SHLD AA479	E 47	AGC SIG 179 SHLD RET
AA480A	SHLD AA480	E 47	AGC SIG 179 SHLD RET
* AA481B	SHLD AA481	E 39	IG DAC MDA SIG LO
* AA482B	SHLD AA482	E 39	IG DAC MDA SIG LO
* AA483B	SHLD AA483	E 41	MG DAC MDA SIG LO
* AA484B	SHLD AA484	E 41	MG DAC MDA SIG LO
* AA485B	SHLD AA485	E 43	OG DAC MDA SIG LO
* AA486B	SHLD AA486	E 43	OG DAC MDA SIG LO
AA487A	SHLD AA487	E 57	AGC SIG 178 SHLD RET
* AA487B	SHLD AA487	TB2-D 3	AGC SIG 178 SHLD RET
AA488A	SHLD AA488	E 57	AGC SIG 178 SHLD RET
AA489A	SHLD AA489	E 57	AGC SIG 178 SHLD RET
* AA490B	SHLD AA490	E 29	COMPUTER 25.6 KPPS SYNC RET
* AA491B	SHLD AA491	E 29	COMPUTER 25.6 KPPS SYNC RET
* AA492B	SHLD AA492	E 71	0 VDC OPTICS
* AA493B	SHLD AA493	E 71	0 VDC OPTICS
AA494A	SHLD AA494	E 45	AGC SIG 180 SHLD RET
AA495A	SHLD AA495	E 45	AGC SIG 180 SHLD RET
* AA496B	SHLD AA496	E 71	0 VDC OPTICS
* AA497B	SHLD AA497	E 71	0 VDC OPTICS
AA498A	SHLD AA498	E 45	AGC SIG 180 SHLD RET
AA499A	SHLD AA499	E 45	AGC SIG 180 SHLD RET
* AA500B	SHLD AA500	E 27	0 VDC IMU
* AA503B	SHLD AA503	E 28	COMPUTER 3200 PPS SYNC RET
* AA504B	SHLD AA504	E 28	COMPUTER 3200 PPS SYNC RET
* AA505B	SHLD AA505	TB2-V 8	0 VDC IMU
* AA506B	SHLD AA506	TB2-M 8	0 VDC IMU
* AA507B	SHLD AA507	TB3-H12	0 VDC IMU
* AA508B	SHLD AA508	TB3-H14	0 VDC IMU
* AA509B	SHLD AA509	TB3-H13	0 VDC IMU
* AA510B	SHLD AA510	TB3-H14	0 VDC IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
AA569A	SHLD AA569	TB2-D 3	AGC SIG 178 SHLD RET
AA571A	SHLD AA571	TB2-S 3	OG CDU ERROR SIG RET
* AA639B	SHLD AA639	E 70	AGC SIG 179 SHLD RET
* AA640B	SHLD AA640	E 70	AGC SIG 179 SHLD RET
* AA641B	SHLD AA641	E 70	AGC SIG 179 SHLD RET

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 238Y	TB1-A 2	P03-Y	OG TORQUE MOTOR HI
* A 273R	TB1-A 2	P06-H	OG TORQUE MOTOR HI
* A 354Y	TB1-A 2	P09- 95	OG TORQUE MOTOR HI
* AA 34R	TB1-A 2	J11-H6	OG TORQUE MOTOR HI
* A 239Y	TB1-A 3	P03-A*	MG TORQUE MOTOR RET
* A 240R	TB1-A 3	P03-B*	MG TORQUE MOTOR RET
* A 353R	TB1-A 3	P09-107	MG TORQUE MOTOR RET
* AA 32W	TB1-A 3	J11-G6	MG TORQUE MOTOR RET
* A 239R	TB1-A 4	P03-Z	MG TORQUE MOTOR HI
* A 240Y	TB1-A 4	P03-C*	MG TORQUE MOTOR HI
* A 353Y	TB1-A 4	P09-108	MG TORQUE MOTOR HI
* AA 32R	TB1-A 4	J11-F6	MG TORQUE MOTOR HI
* A 235Y	TB1-A 5	P03-L	MG CDU ATTITUDE STEERING ERROR
* AA 20R	TB1-A 5	J11-C2	MG CDU ATTITUDE STEERING ERROR
A 235B	TB1-A 6	SHLD A 235	MG CDU ERROR SIG RET
* A 235R	TB1-A 6	P03-K	MG CDU ERROR SIG RET
* AA 20W	TB1-A 6	J11-B2	MG CDU ERROR SIG RET
* A 231N	TB1-A 7	P03-W	IMU MG ERROR SIG
* A 363R	TB1-A 7	P09- 60	IMU MG ERROR SIG
* AA 29R	TB1-A 7	J11-A5	IMU MG ERROR SIG
* A 231R	TB1-A 8	P03-C	IMU OG ERROR SIG
* A 363Y	TB1-A 8	P09- 50	IMU OG ERROR SIG
* AA 29L	TB1-A 8	J11-A6	IMU OG ERROR SIG
* A 238R	TB1-B 2	P03-X	OG TORQUE MOTOR RET
* A 273Y	TB1-B 2	P06-J	OG TORQUE MOTOR RET
* A 354R	TB1-B 2	P09- 94	OG TORQUE MOTOR RET
* AA 34W	TB1-B 2	J11-H5	OG TORQUE MOTOR RET
* A 298Y	TB1-B 3	P07-J*	0 VDC IMU
* AA 23W	TB1-B 3	J11-G2	0 VDC IMU
* A 298G	TB1-B 4	P07-G*	MG ADA
* AA 23L	TB1-B 4	J11-H1	MG ADA
A 234B	TB1-B 5	SHLD A 234	IG CDU ERROR SIG RET
* A 234R	TB1-B 5	P03-J	IG CDU ERROR SIG RET
* AA 16W	TB1-B 5	J11-B1	IG CDU ERROR SIG RET
* A 224Y	TB1-B 6	P02-U	3200 CPS 2 V FEEDBACK LO
* A 323Y	TB1-B 6	P09- 58	3200 CPS 2 V FEEDBACK LO
* AA 42R	TB1-B 6	J11-G3	3200 CPS 2 V FEEDBACK LO
* A 231Y	TB1-B 7	P03-V	IMU GIMBAL AND GYRO ERROR SIG LO

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 363N	TB1-B 7	P09- 51	IMU GIMBAL AND GYRO ERROR SIG LO
* AA 29K	TB1-B 7	J11-B5	IMU GIMBAL AND GYRO ERROR SIG LO
* AA654R	TB1-B 7	J15-B2	IMU GIMBAL AND GYRO ERROR SIG LO
* A 231G	TB1-B 8	P03-U	IMU IG AND Y GYRO ERROR SIG
* A 363G	TB1-B 8	P09- 61	IMU IG AND Y GYRO ERROR SIG
* AA 29W	TB1-B 8	J11-B6	IMU IG AND Y GYRO ERROR SIG
* A 223Y	TB1-C 2	P02-S	3200 CPS 2 V LO
* AA 28K	TB1-C 2	J11-L2	3200 CPS 2 V LO
* AA 28L	TB1-C 2	J11-M2	3200 CPS 2 V LO
* A 298R	TB1-C 3	P07-F*	OG ADA
* AA 23K	TB1-C 3	J11-G1	OG ADA
* A 298N	TB1-C 4	P07-H*	IG ADA
* AA 23R	TB1-C 4	J11-F1	IG ADA
* A 234Y	TB1-C 5	P03-H	IG CDU ATTITUDE STEERING ERROR
* AA 16R	TB1-C 5	J11-C1	IG CDU ATTITUDE STEERING ERROR
* A 224R	TB1-C 6	P02-T	3200 CPS 2 V FEEDBACK HI
* A 323R	TB1-C 6	P09- 59	3200 CPS 2 V FEEDBACK HI
* AA 42W	TB1-C 6	J11-F3	3200 CPS 2 V FEEDBACK HI
* A 229Y	TB1-C 7	P03-A	X GYRO ERROR SIG
* A 362	TB1-C 7	P09- 52	X GYRO ERROR SIG
* AA654L	TB1-C 7	J15-B1	X GYRO ERROR SIG
* A 230Y	TB1-C 8	P03-B	Z GYRO ERROR SIG
* A 361	TB1-C 8	P09- 41	Z GYRO ERROR SIG
* AA654W	TB1-C 8	J15-A1	Z GYRO ERROR SIG
* A 223R	TB1-D 2	P02-R	3200 CPS 2 V HI
* AA 28R	TB1-D 2	J11-M1	3200 CPS 2 V HI
* AA 28W	TB1-D 2	J11-L1	3200 CPS 2 V HI
* A 241R	TB1-D 3	P03-D*	IG TORQUE MOTOR HI
* A 242Y	TB1-D 3	P03-G*	IG TORQUE MOTOR HI
* A 352Y	TB1-D 3	P09-106	IG TORQUE MOTOR HI
* AA 30R	TB1-D 3	J11-D6	IG TORQUE MOTOR HI
* A 241Y	TB1-D 4	P03-E*	IG TORQUE MOTOR RET
* A 242R	TB1-D 4	P03-F*	IG TORQUE MOTOR RET
* A 352R	TB1-D 4	P09- 93	IG TORQUE MOTOR RET
* AA 30W	TB1-D 4	J11-D5	IG TORQUE MOTOR RET
* A 272	TB1-D 5	P06-F	-28 VDC
* A 683	TB1-D 5	P09- 35	-28 VDC
* AA 27	TB1-D 5	J11-N6	-28 VDC

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 26	TB1-D 6	P01- 4	COARSE ALIGN RELAY CONTROL	
*	AA 35	TB1-D 6	J11-L3	COARSE ALIGN RELAY CONTROL	
	A 224B	TB1-D 7	SHLD A 224	0 VDC IMU	
	A 229B	TB1-D 7	SHLD A 229	0 VDC IMU	
	AA572	TB1-D 7	TB1-D 8	0 VDC IMU	
	AA590	TB1-D 7	TB2-V 2	0 VDC IMU	
*	A 662	TB1-D 7	P12-F	0 VDC IMU	
	A 230B	TB1-D 8	SHLD A 230	0 VDC IMU	
	AA587	TB1-D 8	TB1-N 8	0 VDC IMU	
*	AA572	TB1-D 8	TB1-D 7	0 VDC IMU	
*	A 466	TB1-F 1	J10- 7	SPARE FAIL LIGHT 1 HI	305
*	A 565	TB1-F 1	J08- 50	SPARE FAIL LIGHT 1 HI	
*	A 158	TB1-F 8	J06- 81	ATTIT CONT MODE COMMAND FROM AGC	
*	A 475	TB1-F 8	J10- 12	ATTIT CONT MODE COMMAND FROM AGC	314
*	A 179	TB1-G 1	J08- 67	+28 VDC MDV SERVO POWER	
*	A 410	TB1-G 1	J09- 67	+28 VDC MDV SERVO POWER	
*	A 271G	TB1-G 2	P06-C	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
*	A 319R	TB1-G 2	P09- 67	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
*	AA 60W	TB1-G 2	J12-P2	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
*	A 324Y	TB1-G 4	P09- 81	25.6 KC LO IMU	
*	A 564R	TB1-G 4	E 3	25.6 KC LO IMU	
*	AA 64R	TB1-G 4	J12-P5	25.6 KC LO IMU	
*	A 325Y	TB1-G 7	P09- 80	25.6 KC LO OPTICS	
*	A 560Y	TB1-G 7	E 16	25.6 KC LO OPTICS	
*	AA 63R	TB1-G 7	J12-N6	25.6 KC LO OPTICS	
*	A 271Y	TB1-H 2	P06-B	800 CPS 28 V 5 PCT IMU WHEELS LO	
*	A 319G	TB1-H 2	P09- 78	800 CPS 28 V 5 PCT IMU WHEELS LO	
*	AA 60R	TB1-H 2	J12-R1	800 CPS 28 V 5 PCT IMU WHEELS LO	
*	A 271R	TB1-H 3	P06-A	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	A 319Y	TB1-H 3	P09- 79	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	AA 60L	TB1-H 3	J12-P1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	A 324R	TB1-H 4	P09- 69	25.6 KC HI IMU	
*	A 564Y	TB1-H 4	E 4	25.6 KC HI IMU	
*	AA 64W	TB1-H 4	J12-N4	25.6 KC HI IMU	
*	A 478	TB1-H 5	J10- 9	AGC FAIL SIG	326
*	AA 78	TB1-H 5	J12-M3	AGC FAIL SIG	
*	A 198	TB1-H 6	J08- 71	AGC POWER SUPPLY FAIL LIGHT HI	
*	A 332	TB1-H 6	P09- 13	AGC POWER SUPPLY FAIL SIG HI	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA 80	TB1-H 6	J12-M1	AGC POWER SUPPLY FAIL SIG HI	
*	A 325R	TB1-H 7	P09- 68	25.6 KC HI OPTICS	
*	A 560R	TB1-H 7	E 17	25.6 KC HI OPTICS	
*	AA 63W	TB1-H 7	J12-P6	25.6 KC HI OPTICS	
*	A 187	TB1-H 8	J08- 51	G+N ERROR LIGHT HI	
*	A 336	TB1-H 8	P09- 12	G+N ERROR LIGHT HI	
*	AA 83	TB1-H 8	J12-L2	G+N ERROR LIGHT HI	
*	A 18	TB1-K 1	P01- 91	MODE LAMP TEST PWR	
*	A 605Y	TB1-K 1	J09- 84	MODE LAMP TEST PWR	
*	A 4	TB1-K 3	P01- 48	COARSE ALIGN MODE COMMAND FROM AGC	
*	A 479G	TB1-K 3	J10- 22	COARSE ALIGN MODE COMMAND FROM AGC	308
*	A 3	TB1-K 4	P01- 38	ZERO ENCODER MODE COMMAND FROM AGC	
*	A 479Y	TB1-K 4	J10- 21	ZERO ENCODER MODE COMMAND FROM AGC	307
*	A 5	TB1-K 5	P01- 13	FINE ALIGN MODE COMMAND FROM AGC	
*	A 479R	TB1-K 5	J10- 24	FINE ALIGN MODE COMMAND FROM AGC	310
*	A 7	TB1-K 6	P01- 58	ENTRY MODE COMMAND FROM AGC	
*	A 480R	TB1-K 6	J10- 25	ENTRY MODE COMMAND FROM AGC	311
*	A 154	TB1-K 7	J06- 12	MODE RELAY COMMON TO AGC	
*	A 480Y	TB1-K 7	J10- 26	MODE RELAY COMMON TO AGC	312
*	A 521	TB1-K 7	J10- 13	MODE RELAY COMMON TO AGC	315
*	A 6	TB1-K 8	P01- 27	CDU MANUAL MODE COMMAND FROM AGC	
*	A 480G	TB1-K 8	J10- 23	CDU MANUAL MODE COMMAND FROM AGC	309
*	A 349	TB1-L 2	P09- 33	X PIP ERROR MONITOR	
*	AA120	TB1-L 2	J13-D2	X PIP ERROR MONITOR	
*	A 293W	TB1-L 3	P07-P	Y PIP TORQUE RET	
*	AA122W	TB1-L 3	J13-M3	Y PIP TORQUE RET	
*	A 293R	TB1-L 4	P07-N	Y PIP TORQUE +	
*	AA122R	TB1-L 4	J13-L3	Y PIP TORQUE +	
*	A 294L	TB1-L 5	P07-W	X PIP TORQUE -	
*	AA119L	TB1-L 5	J13-L1	X PIP TORQUE -	
*	A 294W	TB1-L 6	P07-V	X PIP TORQUE RET	
*	AA1 9W	TB1-L 6	J13-K1	X PIP TORQUE RET	
*	A 290L	TB1-L 7	P07-F	X GYRO TORQUE -	
*	AA124L	TB1-L 7	J13-G6	X GYRO TORQUE -	
*	A 290W	TB1-L 8	P07-E	X GYRO TORQUE RET	
*	AA124W	TB1-L 8	J13-F6	X GYRO TORQUE RET	
*	A 602N	TB1-M 1	P01- 90	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT	
*	A 605N	TB1-M 1	J09- 63	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT	

MANNED SPACECRAFT CENTER
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SIZE A
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SCALE - NONE
REV LTR B
SHEET 92

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 350	TB1-M 2	P09- 43	Y PIP ERROR MONITOR
*	AA123	TB1-M 2	J13-F2	Y PIP ERROR MONITOR
*	A 296R	TB1-M 3	P07-Z	Y PIP ERROR HI
*	AA121W	TB1-M 3	J13-A3	Y PIP ERROR HI
*	A 293L	TB1-M 4	P07-R	Y PIP TORQUE -
*	AA122L	TB1-M 4	J13-N3	Y PIP TORQUE -
*	A 294R	TB1-M 5	P07-U	X PIP TORQUE +
*	AA119R	TB1-M 5	J13-H1	X PIP TORQUE +
*	A 295Y	TB1-M 6	P07-Y	X PIP ERROR LO
*	AA118R	TB1-M 6	J13-B1	X PIP ERROR LO
*	A 295R	TB1-M 7	P07-X	X PIP ERROR HI
*	AA118W	TB1-M 7	J13-A1	X PIP ERROR HI
*	A 290R	TB1-M 8	P07-D	X GYRO TORQUE +
*	AA124R	TB1-M 8	J13-D6	X GYRO TORQUE +
*	A 602G	TB1-N 1	P01-106	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
*	A 605G	TB1-N 1	J09- 64	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
*	A 296Y	TB1-N 2	P07-A*	Y PIP ERROR LO
*	AA121R	TB1-N 2	J13-B3	Y PIP ERROR LO
*	A 603R	TB1-N 3	J08- 55	PROJECTION LAMP HI INTENSITY
*	A 604R	TB1-N 3	J09- 55	PROJECTION LAMP HI INTENSITY
	A 293B	TB1-N 4	SHLD A 293	0 VDC IMU
	A 587	TB1-N 4	TB1-N 5	0 VDC IMU
	AA122B	TB1-N 4	SHLD AA122	0 VDC IMU
	AA588	TB1-N 4	TB1-S 8	0 VDC IMU
	AA589	TB1-N 4	TB2-M 5	0 VDC IMU
*	A 656	TB1-N 4	P12-D	0 VDC IMU
	A 294B	TB1-N 5	SHLD A 294	0 VDC IMU
	A 588	TB1-N 5	TB1-N 8	0 VDC IMU
	AA119B	TB1-N 5	SHLD AA119	0 VDC IMU
*	A 587	TB1-N 5	TB1-N 4	0 VDC IMU
*	AA 99	TB1-N 5	J12-R2	0 VDC IMU
	A 290B	TB1-N 8	SHLD A 290	0 VDC IMU
	AA124B	TB1-N 8	SHLD AA124	0 VDC IMU
*	A 588	TB1-N 8	TB1-N 5	0 VDC IMU
*	A 649	TB1-N 8	P11-D	0 VDC IMU
*	AA100	TB1-N 8	J12-R4	0 VDC IMU
*	AA587	TB1-N 8	TB1-D 8	0 VDC IMU
	AA611	TB1-R 1	TB1-S 1	400 CPS VAR ILLUM PWR

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 602R	TB1-R 1	P01-103	400 CPS VAR ILLUM PWR
*	A 605R	TB1-R 1	J09- 54	400 CPS VAR ILLUM PWR
	AA512	TB1-R 2	TB1-S 2	400 CPS 6 V LO
*	A 603N	TB1-R 2	J08- 19	400 CPS 6 V LO
*	A 603Y	TB1-R 2	J08- 36	400 CPS 6 V LO
*	A 663R	TB1-R 2	P10- 94	400 CPS 6 V LO
*	A 603G	TB1-R 3	J08- 46	PROJECTION LAMP LO INTENSITY
*	A 604Y	TB1-R 3	J09- 46	PROJECTION LAMP LO INTENSITY
	AA612	TB1-S 1	TB1-T 1	400 CPS VAR ILLUM PWR
*	A 153R	TB1-S 1	J06-108	400 CPS VAR ILLUM PWR
*	A 561R	TB1-S 1	E 9	400 CPS VAR ILLUM PWR
*	AA611	TB1-S 1	TB1-R 1	400 CPS VAR ILLUM PWR
	AA511	TB1-S 2	TB1-T 2	400 CPS 6 V LO
*	A 153Y	TB1-S 2	J06-107	400 CPS 6 V LO
*	A 561Y	TB1-S 2	E 10	400 CPS 6 V LO
*	A 663Y	TB1-S 2	P10- 95	400 CPS 6 V LO
*	AA512	TB1-S 2	TB1-R 2	400 CPS 6 V LO
	A 292B	TB1-S 3	SHLD A 292	0 VDC IMU
	AA591	TB1-S 3	TB2-M 4	0 VDC IMU
	AA632	TB1-S 3	TB1-S 4	0 VDC IMU
*	A 659	TB1-S 3	P12-E	0 VDC IMU
*	AA 46	TB1-S 3	J11-P6	0 VDC IMU
	AA127B	TB1-S 4	SHLD AA127	0 VDC IMU
	AA633	TB1-S 4	TB1-S 5	0 VDC IMU
*	AA632	TB1-S 4	TB1-S 3	0 VDC IMU
	AA133B	TB1-S 5	SHLD AA133	0 VDC IMU
	AA634	TB1-S 5	TB1-S 6	0 VDC IMU
*	A 211	TB1-S 5	J08- 92	0 VDC IMU
*	A 452	TB1-S 5	P10- 13	0 VDC IMU
*	A 691	TB1-S 5	P09- 23	0 VDC IMU
*	AA633	TB1-S 5	TB1-S 4	0 VDC IMU
	A 291B	TB1-S 6	SHLD A 291	0 VDC IMU
*	A 650	TB1-S 6	P11-D	0 VDC IMU
*	AA 98	TB1-S 6	J12-R5	0 VDC IMU
*	AA601	TB1-S 6	TB1-S 7	0 VDC IMU
*	AA634	TB1-S 6	TB1-S 5	0 VDC IMU
	AA601	TB1-S 7	TB1-S 6	0 VDC IMU
	AA602	TB1-S 7	TB2-D 8	0 VDC IMU

MANNED SPACECRAFT CENTER
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REV LTR B
SHEET 94

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* AA600	TB1-S 7	TB1-S 8	0 VDC IMU
A 289B	TB1-S 8	SHLD A 289	0 VDC IMU
AA136B	TB1-S 8	SHLD AA136	0 VDC IMU
AA600	TB1-S 8	TB1-S 7	0 VDC IMU
* AA588	TB1-S 8	TB1-N 4	0 VDC IMU
* A 266R	TB1-T 1	P05-L	400 CPS VAR ILLUM PWR
* A 314R	TB1-T 1	P08-R*	400 CPS VAR ILLUM PWR
* A 602Y	TB1-T 1	P01-108	400 CPS VAR ILLUM PWR
* AA612	TB1-T 1	TB1-S 1	400 CPS VAR ILLUM PWR
* A 266Y	TB1-T 2	P05-M	400 CPS 6 V LO
* A 314Y	TB1-T 2	P08-S*	400 CPS 6 V LO
* A 663G	TB1-T 2	P10- 81	400 CPS 6 V LO
* AA511	TB1-T 2	TB1-S 2	400 CPS 6 V LO
* A 292W	TB1-T 3	P07-L	Z PIP TORQUE RET
* AA127W	TB1-T 3	J14-P3	Z PIP TORQUE RET
* A 297Y	TB1-T 4	P07-C*	Z PIP ERROR LO
* AA126R	TB1-T 4	J14-A2	Z PIP ERROR LO
* A 297R	TB1-T 5	P07-B*	Z PIP ERROR HI
* AA126W	TB1-T 5	J14-A1	Z PIP ERROR HI
* A 291R	TB1-T 6	P07-G	Y GYRO TORQUE +
* AA133R	TB1-T 6	J14-M1	Y GYRO TORQUE +
* A 351	TB1-T 7	P09- 44	Z PIP ERROR MONITOR
* AA128	TB1-T 7	J14-H6	Z PIP ERROR MONITOR
* A 289R	TB1-T 8	P07-A	Z GYRO TORQUE +
* AA136R	TB1-T 8	J14-L6	Z GYRO TORQUE +
* A 22	TB1-U 2	P01- 26	IMU DELAY LIGHT HI
* A 193	TB1-U 2	J08- 42	IMU DELAY LIGHT HI
* A 345	TB1-U 2	P09- 46	IMU DELAY LIGHT HI
* A 292L	TB1-U 3	P07-M	Z PIP TORQUE -
* AA127L	TB1-U 3	J14-P2	Z PIP TORQUE -
* A 292R	TB1-U 4	P07-K	Z PIP TORQUE +
* AA127R	TB1-U 4	J14-P1	Z PIP TORQUE +
* A 291W	TB1-U 5	P07-H	Y GYRO TORQUE RET
* AA133W	TB1-U 5	J14-M3	Y GYRO TORQUE RET
* A 291L	TB1-U 6	P07-J	Y GYRO TORQUE -
* AA133L	TB1-U 6	J14-M2	Y GYRO TORQUE -
* A 289W	TB1-U 7	P07-B	Z GYRO TORQUE RET
* AA136W	TB1-U 7	J14-N6	Z GYRO TORQUE RET

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 289L	TB1-U 8	P07-C	Z GYRO TORQUE -
* AA136L	TB1-U 8	J14-N6	Z GYRO TORQUE -

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 1Y	TB2-A 1	P01- 95	PANEL BRIGHTNESS CONTROL
* A 431Y	TB2-A 1	J09- 44	PANEL BRIGHTNESS CONTROL
* A 1R	TB2-A 2	P01- 80	PANEL BRIGHTNESS CONTROL
* A 431R	TB2-A 2	J09- 32	PANEL BRIGHTNESS CONTROL
A 92B	TB2-A 4	SHLD A 92	OG CDU ENCODER COM
* A 92R	TB2-A 4	J03- 94	OG CDU ENCODER COM
* AA163R	TB2-A 4	J15-D3	OG CDU ENCODER COM
A 45B	TB2-A 5	SHLD A 45	IG CDU ENCODER COM
* A 45R	TB2-A 5	J01- 94	IG CDU ENCODER COM
* AA161R	TB2-A 5	J15-C1	IG CDU ENCODER COM
* A 69G	TB2-A 6	J02-108	MG CDU ENCODER PHASE 2
* AA162R	TB2-A 6	J15-D2	MG CDU ENCODER PHASE 2
* A 220R	TB2-A 7	P02-J	SIN AMG 16X S2
* AA172W	TB2-A 7	J15-F8	SIN AMG 16X S2
* A 226R	TB2-A 8	P02-Y	SIN AIG 16X S2
* AA171W	TB2-A 8	J15-D8	SIN AIG 16X S2
* A 11	TB2-B 1	P01- 69	LOCK CDU RELAY CONTROL
* AA174	TB2-B 1	J15-S3	LOCK CDU RELAY CONTROL
* A 8	TB2-B 2	P01- 12	ZERO ENCODER RELAY CONTROL
* AA173	TB2-D 2	J15-S1	ZERO ENCODER RELAY CONTROL
* A 92Y	TB2-B 4	J03-107	OG CDU ENCODER PHASE 1
* AA163W	TB2-B 4	J15-D4	OG CDU ENCODER PHASE 1
* A 45Y	TB2-B 5	J01-107	IG CDU ENCODER PHASE 1
* AA161W	TB2-B 5	J15-C2	IG CDU ENCODER PHASE 1
* A 69Y	TB2-B 6	J02-107	MG CDU ENCODER PHASE 1
* AA162W	TB2-B 6	J15-F1	MG CDU ENCODER PHASE 1
* A 68R	TB2-B 7	J02-101	SIN AMG 16X S4
* A 220Y	TB2-B 7	P02-K	SIN AMG 16X S4
* AA172R	TB2-B 7	J15-F9	SIN AMG 16X S4
* A 44R	TB2-B 8	J01-101	SIN AIG 16X S4
* A 226Y	TB2-B 8	P02-Z	SIN AIG 16X S4
* AA171R	TB2-B 8	J15-D7	SIN AIG 16X S4
* A 10	TB2-C 1	P01- 5	FINE ALIGN RELAY CONTROL
* AA170	TB2-C 1	J15-H4	FINE ALIGN RELAY CONTROL
* A 92G	TB2-C 4	J03-108	OG CDU ENCODER PHASE 2
* AA163L	TB2-C 4	J15-C3	OG CDU ENCODER PHASE 2
* A 45G	TB2-C 5	J01-108	IG CDU ENCODER PHASE 2
* AA161L	TB2-C 5	J15-D1	IG CDU ENCODER PHASE 2

MANNED SPACECRAFT CENTER
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SCALE - NONE
REV LTR B
SHEET 97

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 69B	TB2-C 6	SHLD A 69	MG CDU ENCODER COM
* A 69R	TB2-C 6	J02- 94	MG CDU ENCODER COM
* AA162L	TB2-C 6	J15-F2	MG CDU ENCODER COM
* A 68Y	TB2-C 7	J02- 87	SIN AMG 16X TO CDU
* AA172L	TB2-C 7	J15-D9	SIN AMG 16X TO CDU
* A 44Y	TB2-C 8	J01- 87	SIN AIG 16X TO CDU
* AA171L	TB2-C 8	J15-F7	SIN AIG 16X TO CDU
* A 557	TB2-D 1	E 8	+28 VDC CDU NOT LOCK
* AA177	TB2-D 1	J15-R6	+28 VDC CDU NOT LOCK
AA569W	TB2-D 2	J16-B7	AGC COM
* A 13Y	TB2-D 2	P01- 68	AGC COM
* A 155Y	TB2-D 2	J06- 68	AGC COM
* AA176W	TB2-D 2	J15-B3	AGC COM
* AA487W	TB2-D 2	J21-121	AGC COM
A 13B	TB2-D 3	SHLD A 13	AGC SIG 178 SHLD RET
A 155B	TB2-D 3	SHLD A 155	AGC SIG 178 SHLD RET
AA176B	TB2-D 3	SHLD AA176	AGC SIG 178 SHLD RET
AA487B	TB2-D 3	SHLD AA487	AGC SIG 178 SHLD RET
* AA569A	TB2-D 3	SHLD AA569	AGC SIG 178 SHLD RET
AA608	TB2-D 4	E 27	0 VDC IMU
* A 287	TB2-D 4	P06-E	0 VDC IMU
* A 652	TB2-D 4	P11-F	0 VDC IMU
* AA605	TB2-D 4	TB2-D 5	0 VDC IMU
A 458	TB2-D 5	E 48	0 VDC IMU
AA605	TB2-D 5	TB2-D 4	0 VDC IMU
* AA604	TB2-D 5	TB2-D 6	0 VDC IMU
AA604	TB2-D 6	TB2-D 5	0 VDC IMU
* A 450	TB2-D 6	J09- 26	0 VDC IMU
* AA603	TB2-D 6	TB2-D 7	0 VDC IMU
A 68B	TB2-D 7	SHLD A 68	0 VDC IMU
A 220B	TB2-D 7	SHLD A 220	0 VDC IMU
AA577	TB2-D 7	TB2-D 8	0 VDC IMU
AA603	TB2-D 7	TB2-D 6	0 VDC IMU
A 44B	TB2-D 8	SHLD A 44	0 VDC IMU
A 226B	TB2-D 8	SHLD A 226	0 VDC IMU
* AA577	TB2-D 8	TB2-D 7	0 VDC IMU
* AA602	TB2-D 8	TB1-S 7	0 VDC IMU
* A 700	TB2-F 1	E 72	CONDITION LIGHT COMMON

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MANNED SPACECRAFT CENTER
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SCALE - NONE
REV LTR B
SHEET 98

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 701	TB2-F 1	J09- 27	CONDITION LIGHT COMMON
	A 24B	TB2-F 2	SHLD A 24	IG CDU ERROR SIG RET
	A 39B	TB2-F 2	SHLD A 39	IG CDU ERROR SIG RET
	A 364B	TB2-F 2	SHLD A 364	IG CDU ERROR SIG RET
	AA580	TB2-F 2	TB2-G 2	IG CDU ERROR SIG RET
	AA569R	TB2-F 3	E 60	
*	A 13R	TB2-F 3	E 61	
*	A 155R	TB2-F 3	E 55	
*	AA176R	TB2-F 3	E 59	
*	AA487R	TB2-F 3	J21-122	165B
*	A 385	TB2-F 4	P09- 32	0 VDC IMU
*	AA637	TB2-F 4	J15-R2	0 VDC IMU
*	A 708	TB2-F 5	J08- 82	AGC POWER SUPPLY FAIL LIGHT LO
*	A 709	TB2-F 5	J09- 12	AGC POWER SUPPLY FAIL LIGHT LO
*	A 710	TB2-F 6	J08- 54	MASTER WARNING LIGHT HI
*	A 711	TB2-F 6	J09- 60	+28 VDC SPACECRAFT SWITCHED
*	A 712	TB2-F 6	J08- 32	MASTER CAUTION LIGHT HI
	A 25B	TB2-F 7	SHLD A 25	MG CDU ERROR SIG RET
	A 63B	TB2-F 7	SHLD A 63	MG CDU ERROR SIG RET
	A 365B	TB2-F 7	SHLD A 365	MG CDU ERROR SIG RET
	AA579	TB2-F 7	TB2-G 7	MG CDU ERROR SIG RET
	A 42B	TB2-G 1	SHLD A 42	IG CDU ERROR SIG RET
*	A 42Y	TB2-G 1	J01- 90	IG CDU ERROR SIG RET
*	AA196R	TB2-G 1	J16-D2	IG CDU ERROR SIG RET
*	A 24Y	TB2-G 2	P01- 71	IG CDU ERROR SIG RET
*	A 39Y	TB2-G 2	J01- 45	IG CDU ERROR SIG RET
*	A 364Y	TB2-G 2	P09- 82	IG CDU ERROR SIG RET
*	AA 15R	TB2-G 2	J11-B1	IG CDU ERROR SIG RET
*	AA195R	TB2-G 2	J16-D2	IG CDU ERROR SIG RET
*	AA580	TB2-G 2	TB2-F 2	IG CDU ERROR SIG RET
*	A 38Y	TB2-G 3	J01- 57	IG CDU ERROR SIG RET S1
*	AA194R	TB2-G 3	J16-D2	IG CDU ERROR SIG RET
*	A 19R	TB2-G 4	P01- 11	800 CPS 28 V 1 PCT HI IMU
*	A 216R	TB2-G 4	P02-A	800 CPS 28 V 1 PCT HI IMU
*	A 577R	TB2-G 4	E 1	800 CPS 28 V 1 PCT HI IMU
*	AA222R	TB2-G 4	J16-S4	800 CPS 28 V 1 PCT HI IMU
*	AA409W	TB2-G 4	J20-F5	800 CPS 28 V 1 PCT HI IMU
*	A 216Y	TB2-G 5	P02-B	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU

MANNED
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CENTER
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SCALE - NONE
REV LTR B
SHEET 99

MIL 2064-4-64

INTERCONNECT LIST

	CONDJCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA222W	TB2-G 5	J16-P4	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
*	A 62Y	TB2-G 6	J02- 57	MG CDU ERROR SIG RET
*	AA199R	TB2-G 6	J16-D4	MG CDU ERROR SIG RET
*	A 25Y	TB2-G 7	P01- 83	MG CDU ERROR SIG RET
*	A 63Y	TB2-G 7	J02- 45	MG CDU ERROR SIG RET
*	A 365Y	TB2-G 7	P09- 71	MG CDU ERROR SIG RET
*	AA 19R	TB2-G 7	J11-B2	MG CDU ERROR SIG RET
*	AA200R	TB2-G 7	J16-D4	MG CDU ERROR SIG RET
*	AA579	TB2-G 7	TB2-F 7	MG CDU ERROR SIG RET
	A 66B	TB2-G 8	SHLD A 66	MG CDU ERROR SIG RET
*	A 66Y	TB2-G 8	J02- 90	MG CDU ERROR SIG RET
*	AA201R	TB2-G 8	J16-D4	MG CDU ERROR SIG RET
*	A 42R	TB2-H 1	J01-104	IG CDU 16X ERROR SIG
*	AA196W	TB2-H 1	J16-C1	IG CDU 16X ERROR SIG
*	A 24R	TB2-H 2	P01- 70	IG CDU 1X ERROR SIG
*	A 39R	TB2-H 2	J01- 35	IG CDU 1X ERROR SIG S2
*	A 364R	TB2-H 2	P09- 96	IG CDU 1X ERROR SIG
*	AA 15W	TB2-H 2	J11-A1	IG CDU 1X ERROR SIG
*	AA195W	TB2-H 2	J16-C2	IG CDU 1X ERROR SIG
*	A 38R	TB2-H 3	J01- 67	IG CDU 1/2X ERROR SIG S3
*	AA194W	TB2-H 3	J16-D1	IG CDU 1/2X ERROR SIG
*	A 19Y	TB2-H 4	P01- 10	800 CPS 28 V 1 PCT LO IMU
*	A 577Y	TB2-H 4	E 2	800 CPS 28 V 1 PCT LO IMU
*	AA222L	TB2-H 4	J16-S3	800 CPS 28 V 1 PCT LO IMU
*	AA409R	TB2-H 4	J20-F6	800 CPS 28 V 1 PCT LO IMU
*	A 577G	TB2-H 5	E 5	ZEROING RSVR 800 CPS
*	AA222K	TB2-H 5	J16-R4	ZEROING RSVR 800 CPS
*	A 62R	TB2-H 6	J02- 67	MG CDU 1/2X ERROR SIG
*	AA199W	TB2-H 6	J16-D3	MG CDU 1/2X ERROR SIG
*	A 25R	TB2-H 7	P01- 82	MG CDU 1X ERROR SIG
*	A 63R	TB2-H 7	J02- 35	MG CDU 1X ERROR SIG
*	A 365R	TB2-H 7	P09- 70	MG CDU 1X ERROR SIG
*	AA 19W	TB2-H 7	J11-A2	MG CDU 1X ERROR SIG
*	AA200W	TB2-H 7	J16-C4	MG CDU 1X ERROR SIG
*	A 66R	TB2-H 8	J02-104	MG CDU 16X ERROR SIG
*	AA201W	TB2-H 8	J16-C3	MG CDU 16X ERROR SIG
*	A 321R	TB2-K 1	P09- 45	800 CPS 28 V 1 PCT HI OPTICS
*	A 416R	TB2-K 1	J09- 80	800 CPS 28 V 1 PCT HI OPTICS

MANNED
SPACECRAFT
CENTER
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SCALE - NONE
REV LTR B
SHEET 100

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 558R	TB2-K 1	E 14	800 CPS 28 V 1 PCT HI OPTICS
*	AA224W	TB2-K 1	J16-P5	800 CPS 28 V 1 PCT HI OPTICS
*	AA557	TB2-K 1	TB2-K 2	800 CPS 28 V 1 PCT HI OPTICS
	AA557	TB2-K 2	TB2-K 1	800 CPS 28 V 1 PCT HI OPTICS
*	A 265R	TB2-K 2	P05-CC	800 CPS 28 V 1 PCT HI OPTICS
*	A 301R	TB2-K 2	P08-J	800 CPS 28 V 1 PCT HI OPTICS
*	A 76Y	TB2-K 3	J02- 32	MG CDU MDA OUTPUT
*	AA203R	TB2-K 3	J16-P3	MG CDU MDA OUTPUT
	AA555	TB2-K 4	TB2-L 4	0 VDC IMU
*	A 52R	TB2-K 4	J01- 43	0 VDC IMU
*	A 76R	TB2-K 4	J02- 43	0 VDC IMU
*	A 97R	TB2-K 4	J03- 43	0 VDC IMU
*	AA223	TB2-K 4	J16-P2	0 VDC IMU
*	A 97Y	TB2-K 5	J03- 32	OG CDU MDA OUTPUT
*	AA215R	TB2-K 5	J16-N2	OG CDU MDA OUTPUT
*	A 97G	TB2-K 6	J03- 31	OG CDU MDA OUTPUT
*	AA215W	TB2-K 6	J16-N1	OG CDU MDA OUTPUT
*	A 102	TB2-K 8	J03- 30	+28 VDC IMU FOR OG MDA
*	AA212	TB2-K 8	J16-T2	+28 VDC IMU FOR OG MDA
*	A 321Y	TB2-L 1	P09- 55	800 CPS 28 V 1 PCT LO OPTICS
*	A 416Y	TB2-L 1	J09- 69	800 CPS 28 V 1 PCT LO OPTICS
*	A 558Y	TB2-L 1	E 13	800 CPS 28 V 1 PCT LO OPTICS
*	AA224R	TB2-L 1	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
*	AA556	TB2-L 1	TB2-L 2	800 CPS 28 V 1 PCT LO OPTICS
	AA556	TB2-L 2	TB2-L 1	800 CPS 28 V 1 PCT LO OPTICS
*	A 265Y	TB2-L 2	P05-DD	800 CPS 28 V 1 PCT LO OPTICS
*	A 301Y	TB2-L 2	P08-K	800 CPS 28 V 1 PCT LO OPTICS
*	A 76G	TB2-L 3	J02- 31	MG CDU MDA OUTPUT
*	AA203W	TB2-L 3	J16-R3	MG CDU MDA OUTPUT
	A 601	TB2-L 4	TB2-M 4	0 VDC IMU
*	A 169	TB2-L 4	J06- 78	0 VDC IMU
*	A 661	TB2-L 4	P12-F	0 VDC IMU
*	AA555	TB2-L 4	TB2-K 4	0 VDC IMU
*	A 52G	TB2-L 5	J01- 31	IG CDU MDA OUTPUT
*	AA198W	TB2-L 5	J16-R1	IG CDU MDA OUTPUT
*	A 52Y	TB2-L 6	J01- 32	IG CDU MDA OUTPUT
*	AA198R	TB2-L 6	J16-P1	IG CDU MDA OUTPUT
	AA581	TB2-M 1	TB2-M 2	0 VDC IMU

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SIZE A
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SCALE - NONE
REV LTR B
SHEET 101

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 660	TB2-M 1	P12-F	0 VDC IMU
*	AA 43	TB2-M 1	J11-R3	0 VDC IMU
*	AA461	TB2-M 1	J20-H2	0 VDC IMU
	AA582	TB2-M 2	TB2-M 3	0 VDC IMU
*	AA 44	TB2-M 2	J11-R1	0 VDC IMU
*	AA581	TB2-M 2	TB2-M 1	0 VDC IMU
	AA583	TB2-M 3	TB2-M 4	0 VDC IMU
*	A 651	TB2-M 3	P11-F	0 VDC IMU
*	AA 45	TB2-M 3	J11-R2	0 VDC IMU
*	AA582	TB2-M 3	TB2-M 2	0 VDC IMU
	AA584	TB2-M 4	TB2-M 5	0 VDC IMU
*	A 20	TB2-M 4	P01- 78	0 VDC IMU
*	A 601	TB2-M 4	TB2-L 4	0 VDC IMU
*	AA583	TB2-M 4	TB2-M 3	0 VDC IMU
*	AA591	TB2-M 4	TB1-S 3	0 VDC IMU
	AA585	TB2-M 5	TB2-M 6	0 VDC IMU
*	AA584	TB2-M 5	TB2-M 4	0 VDC IMU
*	AA589	TB2-M 5	TB1-N 4	0 VDC IMU
	AA586	TB2-M 6	TB2-M 7	0 VDC IMU
	AA592	TB2-M 6	TB3-T 3	0 VDC IMU
*	AA585	TB2-M 6	TB2-M 5	0 VDC IMU
*	A 654	TB2-M 7	P11-E	0 VDC IMU
*	AA460	TB2-M 7	J20-G1	0 VDC IMU
*	AA539	TB2-M 7	TB2-M 8	0 VDC IMU
*	AA586	TB2-M 7	TB2-M 6	0 VDC IMU
	A 87B	TB2-M 8	SHLD A 87	0 VDC IMU
	A 232B	TB2-M 8	SHLD A 232	0 VDC IMU
	A 360B	TB2-M 8	SHLD A 360	0 VDC IMU
	AA506B	TB2-M 8	SHLD AA506	0 VDC IMU
	AA539	TB2-M 8	TB2-M 7	0 VDC IMU
*	A 85R	TB2-N 1	J03- 67	OG CDU 1/2X ERROR SIG
*	AA206W	TB2-N 1	J16-D5	OG CDU 1/2X ERROR SIG
*	A 23R	TB2-N 2	P01- 96	OG CDU 1X ERROR SIG
*	A 86R	TB2-N 2	J03- 35	OG CDU 1X ERROR SIG
*	A 366R	TB2-N 2	P09- 72	OG CDU 1X ERROR SIG
*	AA 21W	TB2-N 2	J11-A3	OG CDU 1X ERROR SIG
*	AA207W	TB2-N 2	J16-C6	OG CDU 1X ERROR SIG
	AA571W	TB2-N 3	J17-A2	OG CDU 16X ERROR SIG

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MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 89R	TB2-N 3	J03-104	OG CDU 16X ERROR SIG
*	AA208R	TB2-N 3	J16-C5	OG CDU 16X ERROR SIG
*	A 704	TB2-N 4	J08- 63	IMU TEMP CONT FAIL LIGHT LO
*	A 705	TB2-N 4	J09- 13	IMU TEMP CONT FAIL LIGHT LO
*	A 56	TB2-N 5	J01- 30	+28 VDC IMU FOR IG MDA
*	AA210	TB2-N 5	J16-S1	+28 VDC IMU FOR IG MDA
*	A 96R	TB2-N 6	J03-106	OG CDU MDA TACH SIG
*	AA214R	TB2-N 6	J16-A5	OG CDU MDA TACH SIG
*	A 87Y	TB2-N 7	J03- 6	COS AOG 1X S1
*	A 232Y	TB2-N 7	P03-E	COS AOG 1X S1
*	A 360Y	TB2-N 7	P09- 31	COS AOG 1X S1
*	AA204R	TB2-N 7	J16-C8	COS AOG 1X S1
*	AA506R	TB2-N 7	J22-142	COS AOG 1X S1
*	A 232R	TB2-N 8	P03-D	COS AOG 1X S3
*	A 360R	TB2-N 8	P09- 30	COS AOG 1X S3
*	AA204W	TB2-N 8	J16-B8	COS AOG 1X S3
*	AA506W	TB2-N 8	J22-141	COS AOG 1X S3
*	A 85Y	TB2-R 1	J03- 57	OG CDU ERROR SIG RET
*	AA206R	TB2-R 1	J16-D6	OG CDU ERROR SIG RET
*	A 23Y	TB2-R 2	P01- 97	OG CDU ERROR SIG RET
*	A 86Y	TB2-R 2	J03- 45	OG CDU ERROR SIG RET
*	A 366Y	TB2-R 2	P09- 83	OG CDU ERROR SIG RET
*	AA 21R	TB2-R 2	J11-B3	OG CDU ERROR SIG RET
*	AA207R	TB2-R 2	J16-D6	OG CDU ERROR SIG RET
*	AA578	TB2-R 2	TB2-S 2	OG CDU ERROR SIG RET
	AA571R	TB2-R 3	J17-B2	OG CDU ERROR SIG RET
	AA615	TB2-R 3	TB2-S 3	OG CDU ERROR SIG RET
*	A 89Y	TB2-R 3	J03- 90	OG CDU ERROR SIG RET
*	AA208W	TB2-R 3	J16-D6	OG CDU ERROR SIG RET
*	A 9	TB2-R 4	P01- 57	ENTRY RELAY CONTROL
*	AA221	TB2-R 4	J16-M1	ENTRY RELAY CONTROL
*	A 80	TB2-R 5	J02- 30	+28 VDC IMU FOR MG MDA
*	AA211	TB2-R 5	J16-T1	+28 VDC IMU FOR MG MDA
*	A 96G	TB2-R 6	J03-105	OG CDU MDA SLEW SIG
*	AA214W	TB2-R 6	J16-A6	OG CDU MDA SLEW SIG
	A 96B	TB2-R 7	SHLD A 96	OG CDU MDA INPUT RET
*	A 96Y	TB2-R 7	J03- 92	OG CDU MDA INPUT RET
*	AA214L	TB2-R 7	J16-B5	OG CDU MDA INPUT RET

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 87R	TB2-R 8	J03- 20	COS AOG 1X TO CDU
*	AA204L	TB2-R 8	J16-C9	COS AOG 1X TO CDU
*	A 100	TB2-S 1	J03- 34	OG CDU 1X RSVR LOAD
*	AA218	TB2-S 1	J16-F6	OG CDU 1X RSVR LOAD
	A 23B	TB2-S 2	SHLD A 23	OG CDU ERROR SIG RET
	A 86B	TB2-S 2	SHLD A 86	OG CDU ERROR SIG RET
	A 366B	TB2-S 2	SHLD A 366	OG CDU ERROR SIG RET
	AA578	TB2-S 2	TB2-R 2	OG CDU ERROR SIG RET
	A 89B	TB2-S 3	SHLD A 89	OG CDU ERROR SIG RET
*	AA571A	TB2-S 3	SHLD AA571	OG CDU ERROR SIG RET
*	AA615	TB2-S 3	TB2-R 3	OG CDU ERROR SIG RET
*	A 185	TB2-S 4	J08- 93	STEP-DOWN-R
*	A 411	TB2-S 4	J09- 93	STEP-DOWN-R
*	A 186	TB2-S 5	J08- 79	STEP-DOWN-C
*	A 412	TB2-S 5	J09- 79	STEP-DOWN-C
*	A 183	TB2-S 6	J08-106	STEP-UP-R
*	A 413	TB2-S 6	J09-106	STEP-UP-R
*	A 184	TB2-S 7	J08- 78	STEP-UP-C
*	A 414	TB2-S 7	J09- 78	STEP-UP-C
*	A 202	TB2-S 8	J08- 18	GIMBAL LOCK LIGHT HI
*	A 714	TB2-S 8	J09- 29	GIMBAL LOCK LIGHT HI
*	A 101	TB2-T 1	J03- 89	OG CDU 16X RSVR LOAD
*	AA219	TB2-T 1	J16-F5	OG CDU 16X RSVR LOAD
	AA621	TB2-T 2	TB2-T 3	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 299Y	TB2-T 2	P08-B	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 599Y	TB2-T 2	J04- 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 600Y	TB2-T 2	J05- 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	AA225R	TB2-T 2	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 322Y	TB2-T 3	P09- 57	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 598Y	TB2-T 3	P05-E	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	AA621	TB2-T 3	TB2-T 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 706	TB2-T 4	J08- 31	IMU DELAY LIGHT LO
*	A 707	TB2-T 4	J09- 39	IMU DELAY LIGHT LO
*	A 219Y	TB2-T 5	P02-H	COS AMG 16X S1
*	AA231R	TB2-T 5	J16-H3	COS AMG 16X S1
*	A 51G	TB2-T 6	J01-105	IG CDU MDA SLEW SIG
*	AA197W	TB2-T 6	J16-A2	IG CDU MDA SLEW SIG
	A 51B	TB2-T 7	SHLD A 51	IG CDU MDA INPUT RET

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REV LTR B
SHEET 104

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 51Y	TB2-T 7	J01- 92	IG CDU MDA INPUT RET
*	AA197L	TB2-T 7	J16-B1	IG CDU MDA INPUT RET
*	A 88R	TB2-T 8	J03- 21	SIN AOG 1X TO CDU
*	AA205L	TB2-T 8	J16-B9	SIN AOG 1X TO CDU
	AA645	TB2-U 1	TB2-U 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 599R	TB2-U 1	J04- 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 600R	TB2-U 1	J05- 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 299R	TB2-U 3	P08-A	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 322R	TB2-U 3	P09- 56	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 598R	TB2-U 3	P05-D	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	AA225W	TB2-U 3	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	AA645	TB2-U 3	TB2-U 1	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 67Y	TB2-U 4	J02- 86	COS AMG 16X TO CDU
*	AA231L	TB2-U 4	J16-G4	COS AMG 16X TO CDU
*	A 67R	TB2-U 5	J02-100	COS AMG 16X S3
*	A 219R	TB2-U 5	P02-G	COS AMG 16X S3
*	AA231W	TB2-U 5	J16-G3	COS AMG 16X S3
*	A 51R	TB2-U 6	J01-106	IG CDU MDA TACH SIG
*	AA197R	TB2-U 6	J16-A1	IG CDU MDA TACH SIG
*	A 233Y	TB2-U 7	P03-G	SIN AOG 1X S2
*	A 359R	TB2-U 7	P09- 16	SIN AOG 1X S2
*	AA205W	TB2-U 7	J16-A8	SIN AOG 1X S2
*	AA505R	TB2-U 7	J22-107	SIN AOG 1X S2
*	A 88Y	TB2-U 8	J03- 7	SIN AOG 1X S4
*	A 233R	TB2-U 8	P03-F	SIN AOG 1X S4
*	A 359Y	TB2-U 8	P09- 17	SIN AOG 1X S4
*	AA205R	TB2-U 8	J16-A9	SIN AOG 1X S4
*	AA505W	TB2-U 8	J22-139	SIN AOG 1X S4
*	A 702	TB2-V 1	J08- 52	G+N ERROR LIGHT LO
*	A 703	TB2-V 1	J09- 11	G+N ERROR LIGHT LO
	A 91B	TB2-V 2	SHLD A 91	0 VDC IMU
	A 218B	TB2-V 2	SHLD A 218	0 VDC IMU
	AA540	TB2-V 2	TB2-V 3	0 VDC IMU
*	AA590	TB2-V 2	TB1-D 7	0 VDC IMU
	A 217B	TB2-V 3	SHLD A 217	0 VDC IMU
	AA596	TB2-V 3	TB2-V 4	0 VDC IMU
*	AA540	TB2-V 3	TB2-V 2	0 VDC IMU
	A 90B	TB2-V 4	SHLD A 90	0 VDC IMU

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SIZE A
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REV LTR B
SHEET 105

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA597	TB2-V 4	TB2-V 5	0 VDC IMU
*	A 655	TB2-V 4	P11-E	0 VDC IMU
*	AA596	TB2-V 4	TB2-V 3	0 VDC IMU
	A 67B	TB2-V 5	SHLD A 67	0 VDC IMU
	A 219B	TB2-V 5	SHLD A 219	0 VDC IMU
	AA598	TB2-V 5	TB2-V 6	0 VDC IMU
*	AA597	TB2-V 5	TB2-V 4	0 VDC IMU
	A 43B	TB2-V 6	SHLD A 43	0 VDC IMU
	A 225B	TB2-V 6	SHLD A 225	0 VDC IMU
	AA599	TB2-V 6	TB2-V 8	0 VDC IMU
*	AA598	TB2-V 6	TB2-V 5	0 VDC IMU
	A 88B	TB2-V 8	SHLD A 88	0 VDC IMU
	A 233B	TB2-V 8	SHLD A 233	0 VDC IMU
	A 359B	TB2-V 8	SHLD A 359	0 VDC IMU
	AA505B	TB2-V 8	SHLD AA505	0 VDC IMU
*	AA599	TB2-V 8	TB2-V 6	0 VDC IMU
*	AA635	TB2-V 8	TB3-T 3	0 VDC IMU
*	A 55	TB2-W 1	J01- 34	IG CDU 1X RSVR LOAD S1
*	AA216	TB2-W 1	J16-F2	IG CDU 1X RSVR LOAD
*	A 91R	TB2-W 2	J03-101	SIN AOG 16X S4
*	A 218Y	TB2-W 2	P02-F	SIN AOG 16X S4
*	AA213R	TB2-W 2	J16-D9	SIN AOG 16X S4
*	A 217Y	TB2-W 3	P02-D	COS AOG 16X S1
*	AA209R	TB2-W 3	J16-D7	COS AOG 16X S1
*	A 90R	TB2-W 4	J03-100	COS AOG 16X S3
*	A 217R	TB2-W 4	P02-C	COS AOG 16X S3
*	AA209W	TB2-W 4	J16-F7	COS AOG 16X S3
*	A 75R	TB2-W 5	J02-106	MG CDU MDA TACH SIG
*	AA202R	TB2-W 5	J16-A3	MG CDU MDA TACH SIG
*	A 43R	TB2-W 6	J01-100	COS AIG 16X S3
*	A 225R	TB2-W 6	P02-W	COS AIG 16X S3
*	AA230W	TB2-W 6	J16-G1	COS AIG 16X S3
*	A 43Y	TB2-W 7	J01- 86	COS AIG 16X TO CDU
*	AA230L	TB2-W 7	J16-G2	COS AIG 16X TO CDU
*	A 79	TB2-X 1	J02- 34	MG CDU 1X RSVR LOAD
*	AA217	TB2-X 1	J16-F4	MG CDU 1X RSVR LOAD
*	A 91Y	TB2-X 2	J03- 87	SIN AOG 16X TO CDU
*	AA213L	TB2-X 2	J16-F9	SIN AOG 16X TO CDU

MANNED SPACECRAFT CENTER
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SIZE A
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SCALE - NONE
REV LTR B
SHEET 106

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 218R	TB2-X 3	P02-E	SIN AOG 16X S2
*	AA213W	TB2-X 3	J16-D8	SIN AOG 16X S2
*	A 90Y	TB2-X 4	J03- 86	COS AOG 16X TO CDU
*	AA209L	TB2-X 4	J16-F8	COS AOG 16X TO CDU
*	A 75G	TB2-X 5	J02-105	MG CDU MDA SLEW SIG
*	AA202W	TB2-X 5	J16-A4	MG CDU MDA SLEW SIG
	A 75B	TB2-X 6	SHLD A 75	MG CDU MDA INPUT RET
*	A 75Y	TB2-X 6	J02- 92	MG CDU MDA INPUT RET
*	AA202L	TB2-X 6	J16-B3	MG CDU MDA INPUT RET
*	A 225Y	TB2-X 7	P02-X	COS AIG 16X S1
*	AA230R	TB2-X 7	J16-H1	COS AIG 16X S1

MANNED
SPACECRAFT
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SIZE A
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SCALE-NONE
REV LTR B
SHEET 107

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 684G	TB3-A 3	P09- 24	+120 VDC PIP	
*	AA672L	TB3-A 3	J17-L5	+120 VDC PIP	
*	A 684R	TB3-A 4	P09- 25	+32 VDC PIP	
*	AA672R	TB3-A 4	J17-T5	+32 VDC PIP	
*	A 684Y	TB3-A 5	P09- 36	+32, +120 VDC RET PIP	
*	AA672W	TB3-A 5	J17-L4	+32, +120 VDC RET PIP	
*	A 673	TB3-A10	J09- 47	+28 VDC OPTICS DAC POWER	
*	AA646	TB3-A10	J18-T1	+28 VDC OPTICS DAC POWER	
*	A 200	TB3-B 3	J08- 72	CDU FAIL LIGHT HI	
*	A 474R	TB3-B 3	J10- 4	CDU FAIL LIGHT HI	302
*	A 203	TB3-B 4	J08- 41	ZERO ENCODER LIGHT HI	
*	A 474Y	TB3-B 4	J10- 3	ZERO ENCODER LIGHT HI	301
*	A 190	TB3-B 5	J08- 73	ACCEL FAIL LIGHT HI	
*	A 474G	TB3-B 5	J10- 5	ACCEL FAIL LIGHT HI	303
*	A 682G	TB3-B 6	P09- 99	IG CDU FAILURE INDICATION	
*	AA664K	TB3-B 6	J16-M2	IG CDU FAILURE INDICATION	
*	A 689N	TB3-B 7	P09- 89	DIRECT SHAFT CONTROLLER HI (TEST)	
*	AA666L	TB3-B 7	J18-N4	DIRECT SHAFT CONTROLLER HI (TEST)	
*	A 690R	TB3-B 9	P09-104	SXT SHAFT MDA OUTPUT HI (TEST)	
*	AA667R	TB3-B 9	J19-L3	SXT SHAFT MDA OUTPUT HI (TEST)	
*	A 690Y	TB3-B10	P09-105	TRUNNION CDU 16X RSVR OUTPUT HI (TEST)	
*	AA667W	TB3-B10	J19-L2	TRUNNION CDU 16X RSVR OUTPUT HI (TEST)	
*	A 394	TB3-B11	J09- 72	ZERO OPTICS RELAY CONTROL	
*	AA337	TB3-B11	J18-R4	ZERO OPTICS RELAY CONTROL	
*	A 182Y	TB3-B12	J08- 81	400 CPS 26 V SLEW	
*	A 409Y	TB3-B12	J09- 81	400 CPS 26 V SLEW	
*	A 182R	TB3-B13	J08- 68	400 CPS 26 V MDV RSVR EXC	
*	A 409R	TB3-B13	J09- 68	400 CPS 26 V MDV RSVR EXC	
*	A 199	TB3-B14	J08- 95	400 CPS 26 V LO	
*	A 460	TB3-B14	P10- 49	400 CPS 26 V LO	
	A 664	TB3-B15	TB3-T15	0 VDC OPTICS	
	AA514	TB3-B15	TB3-C15	0 VDC OPTICS	
*	AA538	TB3-B15	TB3-G 9	0 VDC OPTICS	
*	A 145R	TB3-B16	J05- 43	+28 VDC OPTICS SWITCHED	
*	A 670R	TB3-B16	J09- 49	+28 VDC OPTICS SWITCHED	
*	A 122R	TB3-B17	J04- 43	+28 VDC OPTICS SWITCHED	
*	A 670Y	TB3-B17	J09- 38	+28 VDC OPTICS SWITCHED	
	AA517W	TB3-B18	J22-153	800 CPS 28 V 1 PCT HI IMU	

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SIZE A
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SCALE-NONE
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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 318R	TB3-B18	P09- 9	800 CPS 28 V 1 PCT HI IMU
*	AA410W	TB3-B18	J20-F5	800 CPS 28 V 1 PCT HI IMU
	AA517R	TB3-B19	J22-120	800 CPS 28 V 1 PCT LO IMU
*	A 318Y	TB3-B19	P09- 8	800 CPS 28 V 1 PCT LO IMU
*	AA410R	TB3-B19	J20-F6	800 CPS 28 V 1 PCT LO IMU
	A 548	TB3-B20	E 12	STRUCTURE GND
	AA613	TB3-B20	TB3-B21	STRUCTURE GND
	AA619	TB3-B20	E 68	STRUCTURE GND
	AA620	TB3-B20	E 69	STRUCTURE GND
*	A 33	TB3-B20	P01- 84	STRUCTURE GND
*	A 665	TB3-B20	P10- 1	STRUCTURE GND
	AA614	TB3-B21	TB3-F21	STRUCTURE GND
*	A 178	TB3-B21	J06- 91	STRUCTURE GND
*	A 215	TB3-B21	J08- 29	STRUCTURE GND
*	AA613	TB3-B21	TB3-B20	STRUCTURE GND
*	A 396	TB3-C 1	J09- 98	ACCEL BRIDGE AMP PIN 6
*	AA257	TB3-C 1	J17-F7	ACCEL BRIDGE AMP PIN 6
*	A 281R	TB3-C 2	P06-F*	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	AA250R	TB3-C 2	J17-P4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 281Y	TB3-C 3	P06-G*	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 320Y	TB3-C 3	P09- 34	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 567Y	TB3-C 3	E 11	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	AA412R	TB3-C 3	J20-H6	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 370	TB3-C 4	P09- 73	BLOWER CURRENT SENSOR (TELEMETERY)
*	AA271	TB3-C 4	J17-F6	BLOWER CURRENT SENSOR (TELEMETERY)
*	A 368	TB3-C 5	P09- 85	IRIG TEMP (TELEMETRY)
*	AA273	TB3-C 5	J17-F4	IRIG TEMP (TELEMETRY)
*	A 682N	TB3-C 6	P09- 86	MG CDU FAILURE INDICATION
*	AA664L	TB3-C 6	J16-M3	MG CDU FAILURE INDICATION
*	A 682R	TB3-C 7	P09- 87	OG CDU FAILURE INDICATION
*	AA664R	TB3-C 7	J16-N3	OG CDU FAILURE INDICATION
*	A 682Y	TB3-C 8	P09-100	0 VDC IMU
*	AA664W	TB3-C 8	J16-R2	0 VDC IMU
*	A 690G	TB3-C 9	P09- 90	SXT TRUNNION MDA OUTPUT HI (TEST)
*	AA667K	TB3-C 9	J19-L1	SXT TRUNNION MDA OUTPUT HI (TEST)
*	A 690N	TB3-C10	P09-103	0 VDC OPTICS
*	AA667L	TB3-C10	J19-K6	0 VDC OPTICS
*	A 122Y	TB3-C11	J04- 32	SHAFT CDU MOTOR CONTROL WINDING

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA321	TB3-C11	J18-R2	SHAFT CDU MOTOR CONTROL WINDING
*	A 145Y	TB3-C12	J05- 32	TRUNNION CDU MOTOR CONTROL WINDING
*	AA320	TB3-C12	J18-R1	TRUNNION CDU MOTOR CONTROL WINDING
*	A 65R	TB3-C13	J02- 21	SIN AMG 1X RET
*	A 222Y	TB3-C13	P02-N	SIN AMG 1X RET S2
*	A 357R	TB3-C13	P09- 15	SIN AMG 1X RET
*	AA507W	TB3-C13	J22-144	SIN AMG 1X RET
*	A 65Y	TB3-C14	J02- 7	SIN AMG 1X
*	A 222R	TB3-C14	P02-P	SIN AMG 1X S4
*	A 357Y	TB3-C14	P09- 29	SIN AMG 1X
*	AA507R	TB3-C14	J22-111	SIN AMG 1X
	AA609	TB3-C15	TB3-D15	0 VDC OPTICS
*	A 595	TB3-C15	TB3-K20	0 VDC OPTICS
*	A 596	TB3-C15	TB3-K22	0 VDC OPTICS
*	A 646	TB3-C15	P12-G	0 VDC OPTICS
*	AA514	TB3-C15	TB3-B15	0 VDC OPTICS
*	AA566	TB3-C15	TB3-K21	0 VDC OPTICS
*	A 300G	TB3-C16	P08-G	SCT TRUNNION MOTOR CONTROL WINDING BLK
*	A 376Y	TB3-C16	P09- 92	SCT TRUNNION MOTOR CONTROL WINDING
*	AA360W	TB3-C16	J19-T3	SCT TRUNNION MOTOR CONTROL WINDING
*	A 300Y	TB3-C17	P08-E	SCT TRUNNION MOTOR CONTROL WINDING RED
*	A 376R	TB3-C17	P09- 91	SCT TRUNNION MOTOR CONTROL WINDING
*	AA360R	TB3-C17	J19-T2	SCT TRUNNION MOTOR CONTROL WINDING
*	A 246R	TB3-C18	P05-P	+28 VDC OPTICS
*	A 259R	TB3-C18	P05-B	+28 VDC OPTICS
*	AA515	TB3-C18	TB3-M20	+28 VDC OPTICS
*	A 300R	TB3-C19	P08-F	+28 VDC OPTICS
*	A 308R	TB3-C19	P08-H	+28 VDC OPTICS
*	AA558	TB3-C19	TB3-M20	+28 VDC OPTICS
*	A 609	TB3-C20	P11-B	+28 VDC IMU BUSS A
*	A 610	TB3-C20	P11-B	+28 VDC IMU BUSS A
*	A 611	TB3-C20	P11-B	+28 VDC IMU BUSS A
*	AA428	TB3-C20	J20-N1	+28 VDC IMU BUSS A
*	AA622	TB3-C20	J20-R1	+28 VDC IMU BUSS A
*	A 612	TB3-C21	P11-C	+28 VDC IMU BUSS A
*	A 613	TB3-C21	P11-C	+28 VDC IMU BUSS A
*	A 614	TB3-C21	P11-C	+28 VDC IMU BUSS A
*	AA432	TB3-C21	J20-S1	+28 VDC IMU BUSS A

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA623	TB3-C21	J20-P1	+28 VDC IMU BUSS A
*	A 621	TB3-C22	P12-M	+28 VDC STBY BUSS B
*	A 622	TB3-C22	P12-M	+28 VDC STBY BUSS B
*	AA443	TB3-C22	J20-R4	+28 VDC STBY BUSS B
*	AA627	TB3-C22	J20-S4	+28 VDC STBY BUSS B
*	A 439	TB3-D 1	J09- 94	0 VDC IMU
*	AA264	TB3-D 1	J17-M1	0 VDC IMU
*	A 320R	TB3-D 2	P09- 22	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 567R	TB3-D 2	E 7	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	AA250W	TB3-D 2	J17-R4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	AA412W	TB3-D 2	J20-H5	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 192	TB3-D 3	J08- 62	IMU TEMP CONT FAIL LIGHT HI
*	A 344	TB3-D 3	P09- 11	IMU TEMP CONT FAIL LIGHT HI
*	AA275	TB3-D 3	J17-P5	IMU TEMP CONT FAIL LIGHT HI
*	A 367	TB3-D 4	P09- 98	ACCEL TEMP (TELEMETRY)
*	AA272	TB3-D 4	J17-F5	ACCEL TEMP (TELEMETRY)
*	A 369	TB3-D 5	P09- 97	HTR CURRENT (TELEMETERY)
*	AA274	TB3-D 5	J17-F3	HTR CURRENT (TELEMETRY)
*	A 384	TB3-D 6	P09- 84	TEMPERATURE CONTROL SIG LO
*	AA636	TB3-D 6	J17-F2	TEMPERATURE CONTROL SIG LO
*	A 689Y	TB3-D 7	P09-101	DIRECT TRUNNION CONTROLLER HI (TEST)
*	AA666W	TB3-D 7	J18-N1	DIRECT TRUNNION CONTROLLER HI (TEST)
*	A 689R	TB3-D 8	P09-102	TRUNNION CDU MDA HI (TEST)
*	AA666R	TB3-D 8	J18-N3	TRUNNION CDU MDA HI (TEST)
*	A 689G	TB3-D 9	P09- 88	SHAFT CDU MDA (TEST) HI
*	AA666K	TB3-D 9	J18-N6	SHAFT CDU MDA (TEST) HI
*	A 122G	TB3-D11	J04- 31	SHAFT CDU MOTOR CONTROL WINDING
*	AA322	TB3-D11	J18-P2	SHAFT CDU MOTOR CONTROL WINDING
*	A 145G	TB3-D12	J05- 31	TRUNNION CDU MOTOR CONTROL WINDING
*	AA319	TB3-D12	J18-P1	TRUNNION CDU MOTOR CONTROL WINDING
*	A 41R	TB3-D13	J01- 21	SIN AIG 1X RET P4
*	A 228R	TB3-D13	P02-F*	SIN AIG 1X RET S2
*	A 355R	TB3-D13	P09- 1	SIN AIG 1X RET
*	AA509W	TB3-D13	J22-116	SIN AIG 1X RET
*	A 41Y	TB3-D14	J01- 7	SIN AIG 1X P2
*	A 228Y	TB3-D14	P02-G*	SIN AIG 1X S4
*	A 355Y	TB3-D14	P09- 14	SIN AIG 1X
*	AA509R	TB3-D14	J22-148	SIN AIG 1X

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 593	TB3-D15	TB3-L20	0 VDC OPTICS	
	AA630	TB3-D15	TB3-G15	0 VDC OPTICS	
*	A 594	TB3-D15	TB3-L22	0 VDC OPTICS	
*	A 643	TB3-D15	P11-G	0 VDC OPTICS	
*	AA563	TB3-D15	TB3-L21	0 VDC OPTICS	
*	AA609	TB3-D15	TB3-C15	0 VDC OPTICS	
*	A 246G	TB3-D16	P05-J*	SXT TRUNNION MOTOR CONTROL WINDING BLK	
*	AA358W	TB3-D16	J19-S3	SXT TRUNNION MOTOR CONTROL WINDING	
*	A 246Y	TB3-D17	P05-I*	SXT TRUNNION MOTOR CONTROL WINDING RED	
*	AA358R	TB3-D17	J19-S2	SXT TRUNNION MOTOR CONTROL WINDING	
*	A 259Y	TB3-D18	P05-A	SXT SHAFT MOTOR CONTROL WINDING RED	
*	AA359R	TB3-D18	J19-P1	SXT SHAFT MOTOR CONTROL WINDING	
	AA526	TB3-D19	J21-129	AGC TEMP MONITOR NO 3	173
*	A 371Y	TB3-D19	P09- 75	AGC TEMP MONITOR NO 3	
*	AA418	TB3-D19	J20-B1	AGC TEMP MONITOR NO 3	
*	A 615	TB3-D20	P12-B	+28 VDC IMU BUSS B	
*	A 616	TB3-D20	P12-B	+28 VDC IMU BUSS B	
*	A 617	TB3-D20	P12-B	+28 VDC IMU BUSS B	
*	AA433	TB3-D20	J20-N2	+28 VDC IMU BUSS B	
*	AA624	TB3-D20	J20-R2	+28 VDC IMU BUSS B	
*	A 618	TB3-D21	P12-C	+28 VDC IMU BUSS B	
*	A 619	TB3-D21	P12-C	+28 VDC IMU BUSS B	
*	A 620	TB3-D21	P12-C	+28 VDC IMU BUSS B	
*	AA437	TB3-D21	J20-S2	+28 VDC IMU BUSS B	
*	AA625	TB3-D21	J20-P2	+28 VDC IMU BUSS B	
*	A 623	TB3-D22	P11-M	+28 VDC STBY BUSS A	
*	A 624	TB3-D22	P11-M	+28 VDC STBY BUSS A	
*	AA441	TB3-D22	J20-R3	+28 VDC STBY BUSS A	
*	AA626	TB3-D22	J20-S3	+28 VDC STBY BUSS A	
*	A 462	TB3-F 1	P10- 9	0 VDC SPACECRAFT	
*	A 667	TB3-F 1	J09- 15	0 VDC SPACECRAFT	
*	AA278	TB3-F 1	J17-M3	0 VDC SPACECRAFT	
*	A 668	TB3-F 2	J09- 14	SPACECRAFT LAMP TEST	
*	AA647	TB3-F 2	J22-172	SPACECRAFT LAMP TEST	
*	A 28	TB3-F 3	P01- 88	CONDITION LAMP TEST	
*	A 390	TB3-F 3	J09- 73	CONDITION LAMP TEST	
*	A 464	TB3-F 3	J10- 2	CONDITION LAMP TEST	328
*	AA235	TB3-F 3	J17-P6	CONDITION LAMP TEST	

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA674	TB3-F 3	J21- 38	CONDITION LAMP TEST	157T
	AA518	TB3-F 4	J22-190	ATTITUDE CONTROL RELAY CONTROL	
*	A 12	TB3-F 4	P01- 24	ATTITUDE CONTROL RELAY CONTROL	
*	A 166	TB3-F 4	J06- 24	ATTITUDE CONTROL RELAY CONTROL	
*	A 243	TB3-F 5	P03-J*	GIMBAL LOCK SIGNAL	
*	A 342	TB3-F 5	P09- 10	GIMBAL LOCK SIGNAL	
*	A 454	TB3-F 5	P10- 12	GIMBAL LOCK SIGNAL	
*	A 677	TB3-F 6	P09- 47	TRAY 2 THERMISTER HI	
*	AA656	TB3-F 6	J12-C1	TRAY 2 THERMISTER HI	
	A 672B	TB3-F 7	SHLD A 672	TRUNNION CDU DAC LO	
*	AA344R	TB3-F 7	J18-H3	TRUNNION CDU DAC LO	
	A 671B	TB3-F 8	SHLD A 671	SHAFT CDU DAC LO	
*	AA345R	TB3-F 8	J18-H2	SHAFT CDU DAC LO	
*	A 130Y	TB3-F10	J05- 22	TRUNNION CDU 1/4X SIN LO	
*	A 256Y	TB3-F10	P05-H*	TRUNNION CDU 1/4X SIN LO	
*	AA330R	TB3-F10	J18-F2	TRUNNION CDU 1/4X SIN LO	
*	A 427R	TB3-F11	J09- 35	SHAFT CDU MDA CONTROLLER SIG HI	
*	AA336W	TB3-F11	J18-F6	SHAFT CDU MDA CONTROLLER SIG HI	
	A 427B	TB3-F12	SHLD A 427	SHAFT CDU MDA CONTROLLER SIG LO	
*	A 427Y	TB3-F12	J09- 34	SHAFT CDU MDA CONTROLLER SIG LO	
*	AA336R	TB3-F12	J18-F7	SHAFT CDU MDA CONTROLLER SIG LO	
*	A 40Y	TB3-F13	J01- 6	COS AIG 1X RET P1	
*	A 227Y	TB3-F13	P02-B*	COS AIG 1X RET S1	
*	A 356R	TB3-F13	P09- 2	COS AIG 1X RET	
*	AA510W	TB3-F13	J22-150	COS AIG 1X RET	
*	A 40R	TB3-F14	J01- 20	COS AIG 1X P3	
*	A 227R	TB3-F14	P02-A*	COS AIG 1X S3	
*	A 356Y	TB3-F14	P09- 3	COS AIG 1X	
*	AA510R	TB3-F14	J22-151	COS AIG 1X	
*	A 131R	TB3-F16	J05- 9	TRUNNION CDU 1/4X COS HI	
*	A 255Y	TB3-F16	P05-E*	TRUNNION CDU 1/4X COS HI	
*	AA381W	TB3-F16	J19-F5	TRUNNION CDU 1/4X COS HI	
*	A 308G	TB3-F17	P08-D*	SCT SHAFT MOTOR CONTROL WINDING BLK	
*	A 378Y	TB3-F17	P09- 77	SCT SHAFT MOTOR CONTROL WINDING	
*	AA361W	TB3-F17	J19-R2	SCT SHAFT MOTOR CONTROL WINDING	
*	A 259G	TB3-F18	P05-C	SXT SHAFT MOTOR CONTROL WINDING BLK	
*	AA359W	TB3-F18	J19-R1	SXT SHAFT MOTOR CONTROL WINDING	
	AA529	TB3-F19	J21-162	AGC TEMP MONITOR NO 2	172

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 371R	TB3-F19	P09- 74	AGC TEMP MONITOR NO 2
*	AA417	TB3-F19	J20-A2	AGC TEMP MONITOR NO 2
*	A 270	TB3-F21	P05-R	STRUCTURE GND
*	A 288	TB3-F21	P06-G	STRUCTURE GND
*	A 631	TB3-F21	P11-L	STRUCTURE GND
*	AA607	TB3-F21	TB3-F22	STRUCTURE GND
*	AA614	TB3-F21	TB3-B21	STRUCTURE GND
	AA607	TB3-F22	TB3-F21	STRUCTURE GND
*	A 316	TB3-F22	P08-T*	STRUCTURE GND
*	A 451	TB3-F22	J09- 91	STRUCTURE GND
*	A 632	TB3-F22	P12-L	STRUCTURE GND
*	AA462	TB3-F22	J20-G4	STRUCTURE GND
*	A 401R	TB3-G 1	J09-100	IMU HTR CURRENT AMP PIN 5
*	AA258K	TB3-G 1	J17-N6	IMU HTR CURRENT AMP PIN 5
*	A 401N	TB3-G 2	J09- 88	IMU TEMP CONT K2 PIN 5
*	AA258L	TB3-G 2	J17-N5	IMU TEMP CONT K2 PIN 5
*	A 443	TB3-G 3	J09- 89	IRIG ZERO DEVIATION CHECK
*	AA253	TB3-G 3	J17-B8	IRIG ZERO DEVIATION CHECK
*	A 442	TB3-G 4	J09- 85	IRIG TEMP BRIDGE AMP PIN 6
*	AA254	TB3-G 4	J17-C7	IRIG TEMP BRIDGE AMP PIN 6
*	A 274	TB3-G 5	P06-K	IMU TEMP SENSOR COM
*	AA277	TB3-G 5	J17-M2	IMU TEMP SENSOR COM
*	A 679	TB3-G 6	P09- 37	TRAY 3 THERMISTER HI
*	AA657	TB3-G 6	J13-C1	TRAY 3 THERMISTER HI
*	A 672Y	TB3-G 7	J09- 56	TRUNNION CDU DAC OUTPUT HI
*	AA344W	TB3-G 7	J18-G3	TRUNNION CDU DAC OUTPUT HI
*	A 671Y	TB3-G 8	J09- 48	SHAFT CDU DAC OUTPUT HI
*	AA345W	TB3-G 8	J18-G2	SHAFT CDU DAC OUTPUT HI
	A 130B	TB3-G 9	SHLD A 130	0 VDC OPTICS
	A 256B	TB3-G 9	SHLD A 256	0 VDC OPTICS
	AA538	TB3-G 9	TB3-B15	0 VDC OPTICS
	AA541	TB3-G 9	TB3-H 9	0 VDC OPTICS
*	A 130R	TB3-G10	J05- 8	TRUNNION CDU 1/4X SIN HI
*	A 256R	TB3-G10	P05-G*	TRUNNION CDU 1/4X SIN HI
*	AA330W	TB3-G10	J18-F1	TRUNNION CDU 1/4X SIN HI
*	A 426R	TB3-G11	J09- 19	TRUNNION CDU MDA CONTROLLER SIG HI
*	AA335W	TB3-G11	J18-C7	TRUNNION CDU MDA CONTROLLER SIG HI
	A 426B	TB3-G12	SHLD A 426	TRUNNION CDU MDA CONTROLLER SIG LO

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*	A 426Y	TB3-G12	J09- 33	TRUNNION CDU MDA CONTROLLER SIG LO	
*	AA335R	TB3-G12	J18-D7	TRUNNION CDU MDA CONTROLLER SIG LO	
*	A 111R	TB3-G13	J04- 7	SHAFT CDU 1X SIN OUTPUT LO	
*	AA334R	TB3-G13	J18-D6	SHAFT CDU 1X SIN OUTPUT LO	
*	A 111Y	TB3-G14	J04- 21	SHAFT CDU 1X SIN OUTPUT HI	
*	AA334W	TB3-G14	J18-C6	SHAFT CDU 1X SIN OUTPUT HI	
	A 111B	TB3-G15	SHLD A 111	0 VDC OPTICS	
	AA550	TB3-G15	TB3-H15	0 VDC OPTICS	
*	AA630	TB3-G15	TB3-D15	0 VDC OPTICS	
*	A 131Y	TB3-G16	J05- 10	TRUNNION CDU 1/4X COS LO	
*	A 255R	TB3-G16	P05-F*	TRUNNION CDU 1/4X COS LO	
*	AA381R	TB3-G16	J19-F6	TRUNNION CDU 1/4X COS LO	
*	A 308Y	TB3-G17	P08-C*	SCT SHAFT MOTOR CONTROL WINDING RED	
*	A 378R	TB3-G17	P09- 76	SCT SHAFT MOTOR CONTROL WINDING	
*	AA361R	TB3-G17	J19-P2	SCT SHAFT MOTOR CONTROL WINDING	
*	A 404	TB3-G18	J09- 59	25 DEG TRUNNION SCT OFFSET RELAY CONTROL	
*	AA387	TB3-G18	J19-M6	25 DEG TRUNNION SCT OFFSET RELAY CONTROL	
	AA530	TB3-G19	J21-196	AGC TEMP MONITOR NO 1	171
*	A 371G	TB3-G19	P09- 64	AGC TEMP MONITOR NO 1	
*	AA416	TB3-G19	J20-A1	AGC TEMP MONITOR NO 1	
*	A 633	TB3-G21	P11-A	+28 VDC AGC BUSS A	
*	A 720	TB3-G21	J21- 49	+28 VDC AGC BUSS A	167
*	A 721	TB3-C 1	J21- 50	+28 VDC AGC BUSS A	167
*	AA420	TB3-G21	J20-K5	+28 VDC AGC BUSS A	
*	A 636	TB3-G22	P12-A	+28 VDC AGC BUSS B	
*	A 722	TB3-G22	J21- 51	+28 VDC AGC BUSS B	168
*	A 723	TB3-G22	J21- 52	+28 VDC AGC BUSS B	168
*	AA421	TB3-G22	J20-K6	+28 VDC AGC BUSS B	
*	A 401G	TB3-H 1	J09- 87	IMU TEMP CONT AMP PIN 5	
*	AA258R	TB3-H 1	J17-M6	IMU TEMP CONT AMP PIN 5	
*	A 401Y	TB3-H 2	J09-101	IMU TEMP CONT K1 PIN 3	
*	AA258W	TB3-H 2	J17-M5	IMU TEMP CONT K1 PIN 3	
*	A 399	TB3-H 3	J09-102	IMU TEMP CONT -5 DEG GAIN CHECK	
*	AA252	TB3-H 3	J17-B7	IMU TEMP CONT -5 DEG GAIN CHECK	
*	A 280	TB3-H 4	P06-Z	IRIG TEMP IND SENSOR HI	
*	AA276	TB3-H 4	J17-C6	IRIG TEMP IND SENSOR HI	
*	A 403	TB3-H 5	J09- 74	IMU TEMP ALARM AMP PIN 15	
*	AA262	TB3-H 5	J17-G2	IMU TEMP ALARM AMP PIN 15	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 181	TB3-H 6	J08- 66	MDV SLEW CONTROL 1.5 V 400 CPS
*	A 408	TB3-H 6	J09- 66	MDV SLEW CONTROL 1.5 V 400 CPS
*	A 135Y	TB3-H 7	J05- 90	TRUNNION CDU 16X ERROR SIG LO
*	AA329R	TB3-H 7	J19-B2	TRUNNION CDU 16X ERROR SIG LO
*	A 135R	TB3-H 8	J05-104	TRUNNION CDU 16X ERROR SIG HI
*	AA329W	TB3-H 8	J19-C2	TRUNNION CDU 16X ERROR SIG HI
	A 107B	TB3-H 9	SHLD A 107	0 VDC OPTICS
	A 112B	TB3-H 9	SHLD A 112	0 VDC OPTICS
	A 135B	TB3-H 9	SHLD A 135	0 VDC OPTICS
	AA329B	TB3-H 9	SHLD AA329	0 VDC OPTICS
	AA542	TB3-H 9	TB3-K 9	0 VDC OPTICS
*	AA541	TB3-H 9	TB3-G 9	0 VDC OPTICS
*	A 112R	TB3-H10	J04-104	SHAFT CDU 16X ERROR SIG HI
*	AA331W	TB3-H10	J19-B4	SHAFT CDU 16X ERROR SIG HI
*	A 112Y	TB3-H11	J04- 90	SHAFT CDU 16X ERROR SIG LO
*	AA331R	TB3-H11	J19-B3	SHAFT CDU 16X ERROR SIG LO
	A 65B	TB3-H12	SHLD A 65	0 VDC IMU
	A 222B	TB3-H12	SHLD A 222	0 VDC IMU
	A 357B	TB3-H12	SHLD A 357	0 VDC IMU
	AA466	TB3-H12	TB3-R 3	0 VDC IMU
	AA507B	TB3-H12	SHLD AA507	0 VDC IMU
	AA513	TB3-H12	TB3-H13	0 VDC IMU
	A 41B	TB3-H13	SHLD A 41	0 VDC IMU
	A 228B	TB3-H13	SHLD A 228	0 VDC IMU
	A 355B	TB3-H13	SHLD A 355	0 VDC IMU
	AA509B	TB3-H13	SHLD AA509	0 VDC IMU
	AA554	TB3-H13	TB3-H14	0 VDC IMU
*	AA513	TB3-H13	TB3-H12	0 VDC IMU
	A 40B	TB3-H14	SHLD A 40	0 VDC IMU
	A 227B	TB3-H14	SHLD A 227	0 VDC IMU
	A 356B	TB3-H14	SHLD A 356	0 VDC IMU
	AA508B	TB3-H14	SHLD AA508	0 VDC IMU
	AA510B	TB3-H14	SHLD AA510	0 VDC IMU
*	AA554	TB3-H14	TB3-H13	0 VDC IMU
	A 255B	TB3-H15	SHLD A 255	0 VDC OPTICS
	A 263B	TB3-H15	SHLD A 263	0 VDC OPTICS
	A 304B	TB3-H15	SHLD A 304	0 VDC OPTICS
	AA551	TB3-H15	TB3-K15	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA550	TB3-H15	TB3-G15	0 VDC OPTICS
*	A 263R	TB3-H16	P05-HH	SXT SHAFT 1/2X RSVR ERROR HI
*	AA375W	TB3-H16	J19-A5	SXT SHAFT 1/2X RSVR ERROR HI
*	A 263Y	TB3-H17	P05-BB	SXT SHAFT 1/2X RSVR ERROR LO
*	AA375R	TB3-H17	J19-B5	SXT SHAFT 1/2X RSVR ERROR LO
*	A 283Y	TB3-H19	P06-E*	IMU PRESSURE MONITOR LO
*	A 379Y	TB3-H19	P09- 53	IMU PRESSURE MONITOR LO
*	AA415	TB3-H19	J20-B4	IMU PRESSURE MONITOR LO
*	A 328	TB3-H20	P09- 65	+28 VDC OPTICS
*	AA406	TB3-H20	J20-N6	+28 VDC OPTICS
*	A 625	TB3-H21	P11-H	+28 VDC OPTICS BUSS A
*	A 626	TB3-H21	P11-H	+28 VDC OPTICS BUSS A
*	A 627	TB3-H21	P11-H	+28 VDC OPTICS BUSS A
*	AA446	TB3-H21	J20-P5	+28 VDC OPTICS BUSS A
*	AA449	TB3-H21	J20-S5	+28 VDC OPTICS BUSS A
*	AA628	TB3-H21	J20-R5	+28 VDC OPTICS BUSS A
*	A 628	TB3-H22	P12-H	+28 VDC OPTICS BUSS B
*	A 629	TB3-H22	P12-H	+28 VDC OPTICS BUSS B
*	A 630	TB3-H22	P12-H	+28 VDC OPTICS BUSS B
*	AA450	TB3-H22	J20-P6	+28 VDC OPTICS BUSS B
*	AA453	TB3-H22	J20-S6	+28 VDC OPTICS BUSS B
*	AA629	TB3-H22	J20-R6	+28 VDC OPTICS BUSS B
*	A 438	TB3-K 1	J09- 92	IMU TEMP ALARM AMP PIN 5
*	AA260	TB3-K 1	J17-H2	IMU TEMP ALARM AMP PIN 5
*	A 446	TB3-K 2	J09-105	IMU TEMP ALARM BIAS RESISTOR
*	AA259	TB3-K 2	J17-H1	IMU TEMP ALARM BIAS RESISTOR
*	A 286	TB3-K 3	P06-A*	IRIG TEMP IND SENSOR RET
*	AA266	TB3-K 3	J17-C5	IRIG TEMP IND SENSOR RET
*	A 444	TB3-K 5	J09- 75	IMU TEMP ALARM AMP PIN 14
*	AA261	TB3-K 5	J17-G1	IMU TEMP ALARM AMP PIN 14
*	A 680	TB3-K 6	P09- 38	TRAY 4 THERMISTER HI
*	AA658	TB3-K 6	J14-B1	TRAY 4 THERMISTER HI
*	A 110R	TB3-K 7	J04- 6	SHAFT CDU 1X COS OUTPUT HI
*	AA338R	TB3-K 7	J18-D4	SHAFT CDU 1X COS OUTPUT HI
*	A 110Y	TB3-K 8	J04- 20	SHAFT CDU 1X COS OUTPUT LO
*	AA338W	TB3-K 8	J18-D5	SHAFT CDU 1X COS OUTPUT LO
	A 110B	TB3-K 9	SHLD A 110	0 VDC OPTICS
	A 262B	TB3-K 9	SHLD A 262	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	A 312B	TB3-K 9	SHLD A 312	0 VDC OPTICS
	AA331B	TB3-K 9	SHLD AA331	0 VDC OPTICS
	AA543	TB3-K 9	TB3-L 9	0 VDC OPTICS
*	AA542	TB3-K 9	TB3-H 9	0 VDC OPTICS
*	A 107Y	TB3-K10	J04- 67	SHAFT CDU 1/2X SIN HI S1
*	A 262R	TB3-K10	P05-Y*	SHAFT CDU 1/2X SIN HI P1
*	A 312Y	TB3-K10	P08-J*	SHAFT CDU 1/2X SIN HI S1
*	AA332W	TB3-K10	J18-G1	SHAFT CDU 1/2X SIN HI S1
*	A 107R	TB3-K11	J04- 57	SHAFT CDU 1/2X SIN LO S3
*	A 262Y	TB3-K11	P05-Z*	SHAFT CDU 1/2X SIN LO P3
*	A 312R	TB3-K11	P08-K*	SHAFT CDU 1/2X SIN LO P1
*	AA332R	TB3-K11	J18-H1	SHAFT CDU 1/2X SIN LO S3
*	A 148Y	TB3-K12	J05- 66	TRUNNION CDU 1/2X RSVR LOAD LO
*	AA318R	TB3-K12	J18-F4	TRUNNION CDU 1/2X RSVR LOAD LO
*	A 282Y	TB3-K13	P06-C*	PRESSURE SENSOR +28 VDC LO
*	AA464W	TB3-K13	J20-B6	PRESSURE SENSOR +28 VDC LO
*	A 607Y	TB3-K14	P10- 68	400 CPS 115 V LO
*	A 608Y	TB3-K14	P11-K	400 CPS 115 V LO
*	AA465W	TB3-K14	J20-G3	400 CPS 115 V LO
	A 131B	TB3-K15	SHLD A 131	0 VDC OPTICS
	AA552	TB3-K15	TB3-L15	0 VDC OPTICS
*	A 303	TB3-K15	P08-R	0 VDC OPTICS
*	A 315	TB3-K15	P08-B*	0 VDC OPTICS
*	AA551	TB3-K15	TB3-H15	0 VDC OPTICS
*	A 304Y	TB3-K16	P08-S	SCT TRUNNION 1X RSVR ERROR HI
*	AA377W	TB3-K16	J19-B7	SCT TRUNNION 1X RSVR ERROR HI
*	A 304R	TB3-K17	P08-T	SCT TRUNNION 1X RSVR ERROR LO
*	AA377R	TB3-K17	J19-B8	SCT TRUNNION 1X RSVR ERROR LO
*	A 405	TB3-K18	J09- 58	0 DEG TRUNNION SCT OFFSET RELAY CONTROL
*	AA388	TB3-K18	J19-M5	0 DEG TRUNNION SCT OFFSET RELAY CONTROL
*	A 283R	TB3-K19	P06-D*	IMU PRESSURE MONITOR HI
*	A 379R	TB3-K19	P09- 42	IMU PRESSURE MONITOR HI
*	AA414	TB3-K19	J20-A4	IMU PRESSURE MONITOR HI
	A 595	TB3-K20	TB3-C15	0 VDC OPTICS
*	A 644	TB3-K20	P11-G	0 VDC OPTICS
*	AA325	TB3-K20	J18-S3	0 VDC OPTICS
*	AA327	TB3-K20	J18-T3	0 VDC OPTICS
*	AA333	TB3-K20	J18-R3	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA566	TB3-K21	TB3-C15	0 VDC OPTICS	
*	A 249	TB3-K21	P05-S	0 VDC OPTICS	
*	A 250	TB3-K21	P05-T	0 VDC OPTICS	
*	AA390	TB3-K21	J19-R4	0 VDC OPTICS	
*	AA393	TB3-K21	J19-P5	0 VDC OPTICS	
	A 596	TB3-K22	TB3-C15	0 VDC OPTICS	
*	A 647	TB3-K22	P12-G	0 VDC OPTICS	
*	AA364	TB3-K22	J19-S4	0 VDC OPTICS	
*	AA369	TB3-K22	J19-S5	0 VDC OPTICS	
*	AA408	TB3-K22	J20-N3	0 VDC OPTICS	
*	A 398	TB3-L 1	J09- 86	IRIG TEMP GAIN SWITCH NC	
*	AA290	TB3-L 1	J17-C8	IRIG TEMP GAIN SWITCH NC	
*	A 275Y	TB3-L 3	P06-L	IRIG TEMP CONT SENSOR RET	
*	AA268	TB3-L 3	J17-B5	IRIG TEMP CONT SENSOR RET	
*	A 275R	TB3-L 4	P06-M	IRIG TEMP CONT SENSOR HI	
*	AA267	TB3-L 4	J17-B6	IRIG TEMP CONT SENSOR HI	
*	A 400	TB3-L 5	J09- 76	IMU TEMP CONT K2 PIN 6	
*	AA263	TB3-L 5	J17-L1	IMU TEMP CONT K2 PIN 6	
*	A 681	TB3-L 6	P09- 48	THERMISTER LO	
*	AA659	TB3-L 6	J14-B2	THERMISTER LO	
*	AA660	TB3-L 6	J21-138	THERMISTER LO	199B
*	A 121R	TB3-L 7	J04-106	SHAFT CDU TACH HI	
*	AA316W	TB3-L 7	J18-A8	SHAFT CDU TACH HI	
*	A 121Y	TB3-L 8	J04- 92	SHAFT CDU TACH LO	
*	AA316R	TB3-L 8	J18-A7	SHAFT CDU TACH LO	
	A 121B	TB3-L 9	SHLD A 121	0 VDC OPTICS	
	A 132B	TB3-L 9	SHLD A 132	0 VDC OPTICS	
	AA316B	TB3-L 9	SHLD AA316	0 VDC OPTICS	
	AA544	TB3-L 9	TB3-M 9	0 VDC OPTICS	
*	AA543	TB3-L 9	TB3-K 9	0 VDC OPTICS	
*	A 132R	TB3-L10	J05- 12	TRUNNION CDU 1/2X RSVR P2	
*	AA317W	TB3-L10	J18-A6	TRUNNION CDU 1/2X RSVR P2	
*	A 132Y	TB3-L11	E 18	TRUNNION CDU 1/2X RSVR P3	
*	AA317R	TB3-L11	J18-B6	TRUNNION CDU 1/2X RSVR P3	
*	A 148R	TB3-L12	J05- 56	TRUNNION CDU 1/2X RSVR LOAD HI	
*	AA318W	TB3-L12	J18-F3	TRUNNION CDU 1/2X RSVR LOAD HI	
*	A 282R	TB3-L13	P06-B*	PRESSURE SENSOR +28 VDC HI	
*	AA464R	TB3-L13	J20-A6	PRESSURE SENSOR +28 VDC HI	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 607R	TB3-L14	P10- 69	400 CPS 115 V HI	
*	A 608R	TB3-L14	P11-N	400 CPS 115 V HI	
*	AA465R	TB3-L14	J20-H3	400 CPS 115 V HI	
	AA533	TB3-L15	TB3-M15	0 VDC OPTICS	
*	A 436	TB3-L15	J09- 83	0 VDC OPTICS	
*	AA552	TB3-L15	TB3-K15	0 VDC OPTICS	
*	A 310R	TB3-L16	P08-G*	SCT SHAFT 1/2X RSVR ERROR LO	
*	AA379R	TB3-L16	J19-C8	SCT SHAFT 1/2X RSVR ERROR LO	
*	A 310Y	TB3-L17	P08-I*	SCT SHAFT 1/2X RSVR ERROR HI	
*	AA379W	TB3-L17	J19-D8	SCT SHAFT 1/2X RSVR ERROR HI	
*	A 428	TB3-L18	J09- 99	COSECANT RELAY CONTROL	
*	AA389	TB3-L18	J19-N5	COSECANT RELAY CONTROL	
	AA521	TB3-L19	J21- 62	+13 VDC AGC	176
*	A 380	TB3-L19	P09- 62	+13 VDC AGC	
*	AA425	TB3-L19	J20-C6	+13 VDC AGC	
*	A 593	TB3-L20	TB3-D15	0 VDC OPTICS	
*	A 648	TB3-L20	P12-G	0 VDC OPTICS	
*	AA 66	TB3-L20	J12-R6	0 VDC OPTICS	
*	AA228	TB3-L20	J16-R5	0 VDC OPTICS	
*	AA229	TB3-L20	J16-R6	0 VDC OPTICS	
	AA563	TB3-L21	TB3-D15	0 VDC OPTICS	
*	A 329	TB3-L21	P09- 66	0 VDC OPTICS	
*	A 645	TB3-L21	P11-G	0 VDC OPTICS	
*	AA282	TB3-L21	J17-R6	0 VDC OPTICS	
*	AA407	TB3-L21	J20-N4	0 VDC OPTICS	
	A 594	TB3-L22	TB3-D15	0 VDC OPTICS	
*	A 429	TB3-L22	J09- 1	0 VDC OPTICS	
*	AA365	TB3-L22	J19-T4	0 VDC OPTICS	
*	AA367	TB3-L22	J19-T6	0 VDC OPTICS	
*	A 285	TB3-M 1	P06-P	ACCEL TEMP IND SENSOR RET	
*	AA269	TB3-M 1	J17-D5	ACCEL TEMP IND SENSOR RET	
*	A 397	TB3-M 4	J09-104	ACCEL ZERO DEVIATION CHECK	
*	AA256	TB3-M 4	J17-D7	ACCEL ZERO DEVIATION CHECK	
*	A 441	TB3-M 5	J09-103	IMU IMU TEMP CONT +5 DEG GAIN CHECK	
*	AA255	TB3-M 5	J17-D6	IMU IMU TEMP CONT +5 DEG GAIN CHECK	
*	A 188	TB3-M 6	J08- 60	IMU FAIL LIGHT HI	
*	A 465	TB3-M 6	J10- 6	IMU FAIL LIGHT HI	304
*	A 144Y	TB3-M 7	J05- 92	TRUNNION CDU TACH LO	

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SCALE - NONE	REV LTR B	SHEET 120

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA315R	TB3-M 7	J18-B9	TRUNNION CDU TACH LO	
*	A 144R	TB3-M 8	J05-106	TRUNNION CDU TACH HI	
*	AA315W	TB3-M 8	J18-A9	TRUNNION CDU TACH HI	
	A 144B	TB3-M 9	SHLD A 144	0 VDC OPTICS	
	A 425B	TB3-M 9	SHLD A 425	0 VDC OPTICS	
	AA315B	TB3-M 9	SHLD AA315	0 VDC OPTICS	
	AA545	TB3-M 9	TB3-N 9	0 VDC OPTICS	
*	AA544	TB3-M 9	TB3-L 9	0 VDC OPTICS	
*	A 425R	TB3-M10	J09- 10	RSVR DRIVE AMP TRUNNION SIG (RSVD) HI	
*	AA326W	TB3-M10	J18-D8	RSVR DRIVE AMP TRUNNION SIG (RSVD) HI	
*	A 425Y	TB3-M11	J09- 23	RSVR DRIVE AMP INPUT LO	
*	AA326L	TB3-M11	J18-F9	RSVR DRIVE AMP INPUT LO	
*	A 425G	TB3-M12	J09- 24	RSVR DRIVE AMP SHAFT SIG (RSVD) HI	
*	AA326R	TB3-M12	J18-F8	RSVR DRIVE AMP SHAFT SIG (RSVD) HI	
*	A 237Y	TB3-M13	P03-P	PITCH ERROR BODY AND BODY OFFSET AXIS LO	
*	AA289W	TB3-M13	J17-C1	PITCH ERROR BODY AND BODY OFFSET AXIS LO	
*	A 237R	TB3-M14	P03-R	PITCH-YAW RSVR S4	
*	AA289R	TB3-M14	J17-C2	PITCH-YAW RSVR S4	
	A 254B	TB3-M15	SHLD A 254	0 VDC OPTICS	
	A 309B	TB3-M15	SHLD A 309	0 VDC OPTICS	
	A 310B	TB3-M15	SHLD A 310	0 VDC OPTICS	
	AA534	TB3-M15	TB3-N15	0 VDC OPTICS	
*	AA533	TB3-M15	TB3-L15	0 VDC OPTICS	
*	A 254R	TB3-M16	P05-C*	SXT TRUNNION 1X RSVR ERROR HI	
*	AA374W	TB3-M16	J19-D1	SXT TRUNNION 1X RSVR ERROR HI	
*	A 254Y	TB3-M17	P05-D*	SXT TRUNNION 1X RSVR ERROR LO	
*	AA374R	TB3-M17	J19-D2	SXT TRUNNION 1X RSVR ERROR LO	
*	A 113	TB3-M18	J04- 89	SHAFT CDU 16X LOAD	
*	AA385	TB3-M18	J19-C4	SHAFT CDU 16X LOAD	
	AA525	TB3-M19	J21- 96	+3 VDC AGC	175
*	A 381	TB3-M19	P09- 54	+3 VDC AGC	
*	AA426	TB3-M19	J20-D6	+3 VDC AGC	
	AA515	TB3-M20	TB3-C18	+28 VDC OPTICS	
	AA558	TB3-M20	TB3-C19	+28 VDC OPTICS	
*	A 445	TB3-M20	J09- 71	+28 VDC OPTICS	
*	AA457	TB3-M20	J20-M6	+28 VDC OPTICS	
	AA673	TB3-M21	TB3-M22	+28 VDC MDV	
*	A 29	TB3-M21	P01- 89	+28 VDC MDV	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 716	TB3-M21	J10- 10	+28 VDC MDV	327
*	AA280	TB3-M21	J17-R5	+28 VDC MDV	
*	AA405	TB3-M21	J20-M5	+28 VDC MDV	
*	A 435	TB3-M22	J09- 51	+28 VDC MDV	
*	A 507	TB3-M22	J10- 8	+28 VDC MDV	306
*	AA 82	TB3-M22	J12-L1	+28 VDC MDV	
*	AA404	TB3-M22	J20-L5	+28 VDC MDV	
*	AA673	TB3-M22	TB3-M21	+28 VDC MDV	
*	A 279R	TB3-N 1	P06-X	IMU EMERGENCY HTR HI	
*	AA265W	TB3-N 1	J17-M4	IMU EMERGENCY HTR HI	
*	A 279Y	TB3-N 2	P06-R	EMERGENCY HTR LO-OPER AND STBY	
*	AA265R	TB3-N 2	J17-N4	EMERGENCY HTR LO-OPER AND STBY	
	A 279B	TB3-N 3	SHLD A 279	0 VDC IMU	
	AA270B	TB3-N 3	SHLD AA270	0 VDC IMU	
*	A 592	TB3-N 3	TB3-R 3	0 VDC IMU	
*	A 653	TB3-N 3	P11-F	0 VDC IMU	
*	AA295	TB3-N 3	J17-S3	0 VDC IMU	
*	A 278Y	TB3-N 4	P06-W	IMU CONTROL HTR LO	
*	AA270W	TB3-N 4	J17-N1	IMU CONTROL HTR LO	
*	A 278R	TB3-N 5	P06-V	IMU CONTROL HTR HI	
*	AA270R	TB3-N 5	J17-P1	IMU CONTROL HTR HI	
*	A 277	TB3-N 6	P06-Y	EMERG HTR CONT MODULE LO	
*	A 402	TB3-N 6	J09- 90	EMERG HTR CONT MODULE LO	
*	A 114R	TB3-N 7	J04-100	SHAFT CDU 16X RSVR COS LO P3	
*	AA313R	TB3-N 7	J18-A5	SHAFT CDU 16X RSVR COS LO P3	
*	A 114Y	TB3-N 8	J04- 86	SHAFT CDU 16X RSVR COS HI P1	
*	AA313W	TB3-N 8	J18-A4	SHAFT CDU 16X RSVR COS HI P1	
	A 114B	TB3-N 9	SHLD A 114	0 VDC OPTICS	
	A 115B	TB3-N 9	SHLD A 115	0 VDC OPTICS	
	AA308B	TB3-N 9	SHLD AA308	0 VDC OPTICS	
	AA546	TB3-N 9	TB3-R 9	0 VDC OPTICS	
*	AA545	TB3-N 9	TB3-M 9	0 VDC OPTICS	
*	A 115Y	TB3-N10	J04- 87	SHAFT CDU 16X RSVR SIN HI P2	
*	AA314W	TB3-N10	J18-B5	SHAFT CDU 16X RSVR SIN HI P2	
*	A 115R	TB3-N11	J04-101	SHAFT CDU 16X RSVR SIN LO P4	
*	AA314R	TB3-N11	J18-C5	SHAFT CDU 16X RSVR SIN LO P4	
*	A 108R	TB3-N13	J04- 66	SHAFT CDU 1/2X COS LO S4	
*	A 261R	TB3-N13	P05-W*	SHAFT CDU 1/2X COS LO P4	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 313Y	TB3-N13	P08-M*	SHAFT CDU 1/2X COS LO P2
*	AA396R	TB3-N13	J19-D6	SHAFT CDU 1/2X COS LO S4
*	A 108Y	TB3-N14	J04- 56	SHAFT CDU 1/2X COS HI S2
*	A 261Y	TB3-N14	P05-X*	SHAFT CDU 1/2X COS HI P2
*	A 313R	TB3-N14	P08-N*	SHAFT CDU 1/2X COS HI P4
*	AA396W	TB3-N14	J19-D5	SHAFT CDU 1/2X COS HI S2
	A 108B	TB3-N15	SHLD A 108	0 VDC OPTICS
	AA535	TB3-N15	TB3-R15	0 VDC OPTICS
*	AA534	TB3-N15	TB3-M15	0 VDC OPTICS
*	A 309R	TB3-N16	P08-E*	SCT SHAFT TACH HI
*	AA373W	TB3-N16	J19-B9	SCT SHAFT TACH HI
*	A 309Y	TB3-N17	P08-F*	SCT SHAFT TACH LO
*	AA373R	TB3-N17	J19-C9	SCT SHAFT TACH LO
*	A 136	TB3-N18	J05- 89	TRUNNION CDU 16X LOAD
*	AA384	TB3-N18	J19-C3	TRUNNION CDU 16X LOAD
	AA522	TB3-N19	J21- 63	0 VDC AGC
*	A 331	TB3-N19	P09- 18	0 VDC AGC
*	A 382	TB3-N19	P09- 63	0 VDC AGC
*	AA424	TB3-N19	J20-K4	0 VDC AGC
*	A 64R	TB3-N20	J02- 20	COS AMG 1X S3
*	A 221R	TB3-N20	P02-L	COS AMG 1X S3
*	A 358R	TB3-N20	P09- 28	COS AMG 1X S3
*	AA419W	TB3-N20	J20-A3	COS AMG 1X S3
*	AA508W	TB3-N20	J22-113	COS AMG 1X S3
*	A 64Y	TB3-N21	J02- 6	COS AMG 1X S1
*	A 221Y	TB3-N21	P02-M	COS AMG 1X S1
*	A 358Y	TB3-N21	P09- 40	COS AMG 1X S1
*	AA419R	TB3-N21	J20-B3	COS AMG 1X S1
*	AA508R	TB3-N21	J22-114	COS AMG 1X S1
*	A 717	TB3-N22	P09- 20	+28 VDC STBY
*	AA445	TB3-N22	J20-P3	+28 VDC STBY
	A 278B	TB3-R 3	SHLD A 278	0 VDC IMU
	A 592	TB3-R 3	TB3-N 3	0 VDC IMU
	AA631	TB3-R 3	TB3-S 3	0 VDC IMU
*	A 591	TB3-R 3	TB3-T 3	0 VDC IMU
*	AA297	TB3-R 3	J17-S4	0 VDC IMU
*	AA466	TB3-R 3	TB3-H12	0 VDC IMU
*	A 236R	TB3-R 4	P03-N	PITCH YAW RSVR S3

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MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE
REV LTR B
SHEET 123

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA247R	TB3-R 4	J17-D2	PITCH YAW RSVR S3
*	A 236Y	TB3-R 5	P03-M	YAW ERROR BODY OFFSET AXIS LO
*	AA247W	TB3-R 5	J17-D3	YAW ERROR BODY OFFSET AXIS LO
*	A 276	TB3-R 6	P06-N	ACCEL INDICATING SENSOR HI
*	A 395	TB3-R 6	J09- 97	ACCEL INDICATING SENSOR HI
*	A 248Y	TB3-R 7	P05-N*	SXT AS 16X RSVR SIN LO
*	AA311R	TB3-R 7	J18-D3	SXT AS 16X RSVR SIN LO
*	A 248R	TB3-R 8	P05-P*	SXT AS 16X RSVR SIN HI
*	AA311W	TB3-R 8	J18-D2	SXT AS 16X RSVR SIN HI
	A 248B	TB3-R 9	SHLD A 248	0 VDC OPTICS
	A 258B	TB3-R 9	SHLD A 258	0 VDC OPTICS
	AA307B	TB3-R 9	SHLD AA307	0 VDC OPTICS
	AA547	TB3-R 9	TB3-S 9	0 VDC OPTICS
*	AA546	TB3-R 9	TB3-N 9	0 VDC OPTICS
*	A 258R	TB3-R10	P05-Q*	SXT AS 16X RSVR COS LO
*	AA312W	TB3-R10	J18-D1	SXT AS 16X RSVR COS LO
*	A 258Y	TB3-R11	P05-R*	SXT AS 16X RSVR COS HI
*	AA312R	TB3-R11	J18-C1	SXT AS 16X RSVR COS HI
*	A 109R	TB3-R12	J04- 45	SHAFT CDU 1X P3 (S3)
*	AA328L	TB3-R12	J18-L6	SHAFT CDU 1X P3 (S3)
*	A 134Y	TB3-R13	J05- 67	TRUNNION CDU 1/2X RSVR S3
*	AA386W	TB3-R13	J19-F9	TRUNNION CDU 1/2X RSVR S3
*	A 134R	TB3-R14	J05- 68	TRUNNION CDU 1/2X RSVR S1 PHASE CORR
*	AA386R	TB3-R14	J19-F8	TRUNNION CDU 1/2X RSVR S1 PHASE CORR
	A 134B	TB3-R15	SHLD A 134	0 VDC OPTICS
	A 261B	TB3-R15	SHLD A 261	0 VDC OPTICS
	A 313B	TB3-R15	SHLD A 313	0 VDC OPTICS
	AA553	TB3-R15	TB3-S15	0 VDC OPTICS
*	AA535	TB3-R15	TB3-N15	0 VDC OPTICS
*	A 302Y	TB3-R16	P08-P	SCT TRUNNION TACH LO
*	AA372R	TB3-R16	J19-A8	SCT TRUNNION TACH LO
*	A 302R	TB3-R17	P08-N	SCT TRUNNION TACH HI
*	AA372W	TB3-R17	J19-A9	SCT TRUNNION TACH HI
*	A 305	TB3-R18	P08-U	SCT TRUNNION 1X RSVR LOAD
*	AA378	TB3-R18	J19-A7	SCT TRUNNION 1X RSVR LOAD
*	A 386Y	TB3-R19	P09- 7	+2.5 VDC CONDITIONING HI
*	AA463W	TB3-R19	J20-D5	+2.5 VDC CONDITIONING HI
*	A 330	TB3-R20	P09- 4	+28 VDC AGC

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE
REV LTR B
SHEET 124

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA422	TB3-R20	J20-H4	+28 VDC AGC
	A 236B	TB3-S 3	SHLD A 236	0 VDC IMU
	AA265B	TB3-S 3	SHLD AA265	0 VDC IMU
*	A 657	TB3-S 3	P12-D	0 VDC IMU
*	AA296	TB3-S 3	J17-S1	0 VDC IMU
*	AA631	TB3-S 3	TB3-R 3	0 VDC IMU
*	A 116G	TB3-S 4	J04-108	SHAFT CDU ENCODER PHASE 2
*	AA284L	TB3-S 4	J17-F9	SHAFT CDU ENCODER PHASE 2
	A 116B	TB3-S 5	SHLD A 116	SHAFT CDU ENCODER COM
*	A 116R	TB3-S 5	J04- 94	SHAFT CDU ENCODER COM
*	AA284R	TB3-S 5	J17-D9	SHAFT CDU ENCODER COM
*	A 116Y	TB3-S 6	J04-107	SHAFT CDU ENCODER PHASE 1
*	AA284W	TB3-S 6	J17-C9	SHAFT CDU ENCODER PHASE 1
*	A 253Y	TB3-S 7	P05-B*	SXT AT 64X RSVR COS LO
*	AA308R	TB3-S 7	J18-B1	SXT AT 64X RSVR COS LO
*	A 253R	TB3-S 8	P05-A*	SXT AT 64X RSVR COS HI
*	AA308W	TB3-S 8	J18-A1	SXT AT 64X RSVR COS HI
	A 138B	TB3-S 9	SHLD A 138	0 VDC OPTICS
	A 253B	TB3-S 9	SHLD A 253	0 VDC OPTICS
	AA310B	TB3-S 9	SHLD AA310	0 VDC OPTICS
	AA548	TB3-S 9	TB3-T 9	0 VDC OPTICS
*	AA547	TB3-S 9	TB3-R 9	0 VDC OPTICS
*	A 138Y	TB3-S10	J05- 87	TRUNNION CDU 16X RSVR SIN HI P2
*	AA310W	TB3-S10	J18-B3	TRUNNION CDU 16X RSVR SIN HI P2
*	A 138R	TB3-S11	J05-101	TRUNNION CDU 16X RSVR SIN LO P4
*	AA310R	TB3-S11	J18-B4	TRUNNION CDU 16X RSVR SIN LO P4
*	A 109Y	TB3-S12	J04- 35	SHAFT CDU 1X P2 (S2)
*	AA328R	TB3-S12	J18-L5	SHAFT CDU 1X P2 (S2)
*	A 306R	TB3-S13	P08-V	SCT TRUNNION 1X SIN LO
*	AA383W	TB3-S13	J19-G3	SCT TRUNNION 1X SIN LO
*	A 306Y	TB3-S14	P08-W	SCT TRUNNION 1X SIN HI
*	AA383R	TB3-S14	J19-G2	SCT TRUNNION 1X SIN HI
	A 257B	TB3-S15	SHLD A 257	0 VDC OPTICS
	A 260B	TB3-S15	SHLD A 260	0 VDC OPTICS
	A 302B	TB3-S15	SHLD A 302	0 VDC OPTICS
	AA536	TB3-S15	TB3-T15	0 VDC OPTICS
*	AA553	TB3-S15	TB3-R15	0 VDC OPTICS
*	A 260Y	TB3-S16	P05-V*	SXT SHAFT TACH LO

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE
REV LTR B
SHEET 125

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA371R	TB3-S16	J19-A2	SXT SHAFT TACH LO
*	A 260R	TB3-S17	P05-U*	SXT SHAFT TACH HI
*	AA371W	TB3-S17	J19-A3	SXT SHAFT TACH HI
*	A 264	TB3-S18	P05-AA	SXT SHAFT 1/2X RSVR LOAD
*	AA376	TB3-S18	J19-C5	SXT SHAFT 1/2X RSVR LOAD
*	A 719Y	TB3-S19	P09- 6	0 VDC CONDITIONING
*	AA427W	TB3-S19	J20-C5	0 VDC CONDITIONING
*	A 386R	TB3-S20	P09- 21	+2.5 VDC CONDITIONING LO
*	AA463R	TB3-S20	J20-D4	+2.5 VDC CONDITIONING LO
	A 559	TB3-S21	E 6	+28 VDC IMU
	AA560	TB3-S21	TB3-T21	+28 VDC IMU
*	A 21	TB3-S21	P01- 7	+28 VDC IMU
*	AA456	TB3-S21	J20-K2	+28 VDC IMU
	A 237B	TB3-T 3	SHLD A 237	0 VDC IMU
	A 591	TB3-T 3	TB3-R 3	0 VDC IMU
	AA635	TB3-T 3	TB2-V 8	0 VDC IMU
*	A 658	TB3-T 3	P12-E	0 VDC IMU
*	AA248	TB3-T 3	J17-S2	0 VDC IMU
*	AA592	TB3-T 3	TB2-M 6	0 VDC IMU
*	A 139Y	TB3-T 4	J05-107	TRUNNION CDU ENCODER PHASE 1
*	AA281W	TB3-T 4	J17-A6	TRUNNION CDU ENCODER PHASE 1
	A 139B	TB3-T 5	SHLD A 139	TRUNNION CDU ENCODER COM
*	A 139R	TB3-T 5	J05- 94	TRUNNION CDU ENCODER COM
*	AA281R	TB3-T 5	J17-A7	TRUNNION CDU ENCODER COM
*	A 139G	TB3-T 6	J05-108	TRUNNION CDU ENCODER PHASE 2
*	AA281L	TB3-T 6	J17-A8	TRUNNION CDU ENCODER PHASE 2
*	A 252Y	TB3-T 7	P05-Y	SXT AT 64X RSVR SIN HI
*	AA307R	TB3-T 7	J18-B2	SXT AT 64X RSVR SIN HI
*	A 252R	TB3-T 8	P05-Z	SXT AT 64X RSVR SIN LO
*	AA307W	TB3-T 8	J18-C2	SXT AT 64X RSVR SIN LO
	A 137B	TB3-T 9	SHLD A 137	0 VDC OPTICS
	A 252B	TB3-T 9	SHLD A 252	0 VDC OPTICS
	AA309B	TB3-T 9	SHLD AA309	0 VDC OPTICS
	AA549	TB3-T 9	TB3-T15	0 VDC OPTICS
*	AA548	TB3-T 9	TB3-S 9	0 VDC OPTICS
*	A 137Y	TB3-T10	J05- 86	TRUNNION CDU 16X RSVR COS HI P1
*	AA309W	TB3-T10	J18-A2	TRUNNION CDU 16X RSVR COS HI P1
*	A 137R	TB3-T11	J05-100	TRUNNION CDU 16X RSVR COS LO P3

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE
REV LTR B
SHEET 126

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
●	AA309R	TB3-T11	J18-A3	TRUNNION CDU 16X RSVR COS LO P3
●	A 109G	TB3-T12	J04- 34	SHAFT CDU 1X P1 (S1)
●	AA328W	TB3-T12	J18-K6	SHAFT CDU 1X P1 (S1)
●	A 307Y	TB3-T13	P08-Y	SCT TRUNNION 1X COS LO
●	AA382R	TB3-T13	J19-G1	SCT TRUNNION 1X COS LO
●	A 307R	TB3-T14	P08-X	SCT TRUNNION 1X COS HI
●	AA382W	TB3-T14	J19-H1	SCT TRUNNION 1X COS HI
	A 306B	TB3-T15	SHLD A 306	0 VDC OPTICS
	A 307B	TB3-T15	SHLD A 307	0 VDC OPTICS
●	A 664	TB3-T15	TB3-B15	0 VDC OPTICS
●	AA536	TB3-T15	TB3-S15	0 VDC OPTICS
●	AA549	TB3-T15	TB3-T 9	0 VDC OPTICS
●	A 257R	TB3-T16	P05-K*	SXT TRUNNION TACH HI
●	AA370W	TB3-T16	J19-A1	SXT TRUNNION TACH HI
●	A 257Y	TB3-T17	P05-M*	SXT TRUNNION TACH LO
●	AA370R	TB3-T17	J19-B1	SXT TRUNNION TACH LO
●	A 311	TB3-T18	P08-H*	SCT SHAFT 1/2X RSVR LOAD
●	AA380	TB3-T18	J19-C7	SCT SHAFT 1/2X RSVR LOAD
●	A 719R	TB3-T19	P09- 5	+20 VDC CONDITIONING
●	AA427R	TB3-T19	J20-B5	+20 VDC CONDITIONING
	AA559	TB3-T20	TB3-T21	+28 VDC IMU
●	A 244	TB3-T20	P03-H*	+28 VDC IMU
●	A 284	TB3-T20	P06-D	+28 VDC IMU
●	AA454	TB3-T20	J20-K1	+28 VDC IMU
●	A 718	TB3-T21	P09- 19	+28 VDC IMU
●	AA455	TB3-T21	J20-K1	+28 VDC IMU
●	AA559	TB3-T21	TB3-T20	+28 VDC IMU
●	AA560	TB3-T21	TB3-S21	+28 VDC IMU

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057
SCALE - NONE	REV LTR B	SHEET 127

MIL 2084-4-64

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		B2	B1 REPLACES REVISION A WITH CHANGE B2 CHANGED PER TDRR 13890	27 Oct 1964	WLK
		C	REPLACED WITH CHANGE BY REV. D PER TDRR 16372	15 FEB 65	JJJ / CAP

Ⓜ

Ⓒ REPLACED WITH CHANGE BY REV D

Ⓑ₁ REPLACES REVISION A WITH CHANGE

SEE SHEET 2 FOR REVISION RECORDS

REV	
SHEET	
REV STATUS OF SHEETS	REV SHEET

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN WUNDERLICH DATE 9-8-64
CHECKED AE. Albrecht 10-26-64
APPROVAL 12/4/64
APPROVAL 10/27/64

NASA APPROVAL 10-29-64
MIT APPROVAL 27 Oct 64

CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTERCONNECTION LIST
OF AGE INTERCONNECT HARNESS
AND PSA END CONNECTOR

CODE IDENT NO.	SIZE		REV
	A	1015057	C
SCALE —		SHEET 1 OF 127	

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	C	37	C	73	C	109	C								
2	C	38	C	74	C	110	C								
3	C	39	C	75	C	111	C								
4	C	40	C	76	C	112	C								
5	C	41	C	77	C	113	C								
6	C	42	C	78	C	114	C								
7	C	43	C	79	C	115	C								
8	C	44	C	80	C	116	C								
9	C	45	C	81	C	117	C								
10	C	46	C	82	C	118	C								
11	C	47	C	83	C	119	C								
12	C	48	C	84	C	120	C								
13	C	49	C	85	C	121	C								
14	C	50	C	86	C	122	C								
15	C	51	C	87	C	123	C								
16	C	52	C	88	C	124	C								
17	C	53	C	89	C	125	C								
18	C	54	C	90	C	126	C								
19	C	55	C	91	C	127	C								
20	C	56	C	92	C										
21	C	57	C	93	C										
22	C	58	C	94	C										
23	C	59	C	95	C										
24	C	60	C	96	C										
25	C	61	C	97	C										
26	C	62	C	98	C										
27	C	63	C	99	C										
28	C	64	C	100	C										
29	C	65	C	101	C										
30	C	66	C	102	C										
31	C	67	C	103	C										
32	C	68	C	104	C										
33	C	69	C	105	C										
34	C	70	C	106	C										
35	C	71	C	107	C										
36	C	72	C	108	C										

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION
C

NASA DRAWING NO.
1015057
SHEET 2 OF 127

TDRR 12530 SEP 9 1964

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL

SEE SHEET 2 FOR REVISION RECORD

REV	
SHEET	
REV STATUS OF SHEETS REV	
REV STATUS OF SHEETS SHEET	

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Wunderlich DATE 8 SEPT 64
CHECKED Alderson 9-8-64
APPROVAL 9/8/64
APPROVAL

NASA APPROVAL 9-9-64
MIT APPROVAL

CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTERCONNECTION LIST OF AGE INTERCONNECT HARNESS AND PSA END CONNECTOR

CODE IDENT NO.
SIZE A
1015057
REV +
SCALE
SHEET 1 OF 125

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	+	37	+	73	+	109	+								
2	+	38	+	74	+	110	+								
3	+	39	+	75	+	111	+								
4	+	40	+	76	+	112	+								
5	+	41	+	77	+	113	+								
6	+	42	+	78	+	114	+								
7	+	43	+	79	+	115	+								
8	+	44	+	80	+	116	+								
9	+	45	+	81	+	117	+								
10	+	46	+	82	+	118	+								
11	+	47	+	83	+	119	+								
12	+	48	+	84	+	120	+								
13	+	49	+	85	+	121	+								
14	+	50	+	86	+	122	+								
15	+	51	+	87	+	123	+								
16	+	52	+	88	+	124	+								
17	+	53	+	89	+	125	+								
18	+	54	+	90	+										
19	+	55	+	91	+										
20	+	56	+	92	+										
21	+	57	+	93	+										
22	+	58	+	94	+										
23	+	59	+	95	+										
24	+	60	+	96	+										
25	+	61	+	97	+										
26	+	62	+	98	+										
27	+	63	+	99	+										
28	+	64	+	100	+										
29	+	65	+	101	+										
30	+	66	+	102	+										
31	+	67	+	103	+										
32	+	68	+	104	+										
33	+	69	+	105	+										
34	+	70	+	106	+										
35	+	71	+	107	+										
36	+	72	+	108	+										

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION +

NASA DRAWING NO. 1015057
SHEET 2 OF 125

INCHES
0 1 2
PHOTOGRAPHIC SCALE CHART

INTERCONNECT LIST

GENERAL NOTES

1 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE REV LTR + SHEET 3

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 577R	E 1	TB2-G 4	800 CPS 28 V 1 PCT HI IMU
* A 84R	E 1	J03- 1	800 CPS 28 V 1 PCT HI IMU
* A 572R	E 1	J01- 1	800 CPS 28 V 1 PCT HI IMU
* A 573G	E 1	J01- 11	800 CPS 28 V 1 PCT HI IMU
* A 573R	E 1	J01- 25	800 CPS 28 V 1 PCT HI IMU
* A 574R	E 1	J02- 1	800 CPS 28 V 1 PCT HI IMU
* A 575G	E 1	J02- 11	800 CPS 28 V 1 PCT HI IMU
* A 575R	E 1	J02- 25	800 CPS 28 V 1 PCT HI IMU
* A 576G	E 1	J03- 11	800 CPS 28 V 1 PCT HI IMU
* A 576R	E 1	J03- 25	800 CPS 28 V 1 PCT HI IMU
A 577Y	E 2	TB2-H 4	800 CPS 28 V 1 PCT LO IMU
* A 84Y	E 2	J03- 14	800 CPS 28 V 1 PCT LO IMU
* A 572Y	E 2	J01- 14	800 CPS 28 V 1 PCT LO IMU
* A 574Y	E 2	J02- 14	800 CPS 28 V 1 PCT LO IMU
A 564R	E 3	TB1-G 4	25.6 KC LO IMU
* A 46Y	E 3	J01- 60	25.6 KC LO IMU
* A 70Y	E 3	J02- 60	25.6 KC LO IMU
* A 93Y	E 3	J03- 60	25.6 KC LO IMU
A 564Y	E 4	TB1-H 4	25.6 KC HI IMU
* A 46R	E 4	J01- 50	25.6 KC HI IMU
* A 70R	E 4	J02- 50	25.6 KC HI IMU
* A 93R	E 4	J03- 50	25.6 KC HI IMU
A 577G	E 5	TB2-H 5	ZEROING RSVR 800 CPS
* A 573Y	E 5	J01- 12	ZEROING RSVR 800 CPS
* A 575Y	E 5	J02- 12	ZEROING RSVR 800 CPS
* A 576Y	E 5	J03- 12	ZEROING RSVR 800 CPS
* A 48	E 6	J01- 16	+28 VDC IMU
* A 72	E 6	J02- 16	+28 VDC IMU
* A 559	E 6	TB3-S21	+28 VDC IMU
* A 581	E 6	J03- 16	+28 VDC IMU
A 567R	E 7	TB3-D 2	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 578R	E 7	J01- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 579R	E 7	J02- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 580R	E 7	J03- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 557	E 8	TB2-D 1	+28 VDC CDU NOT LOCK
* A 50	E 8	J01- 15	+28 VDC CDU NOT LOCK
* A 74	E 8	J02- 15	+28 VDC CDU NOT LOCK
* A 582	E 8	J03- 15	+28 VDC CDU NOT LOCK

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE REV LTR + SHEET 4

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 561R	E 9	TB1-S 1	400 CPS VAR ILLUM PWR
* A 53R	E 9	J01- 28	400 CPS VAR ILLUM PWR
* A 77R	E 9	J02- 28	400 CPS VAR ILLUM PWR
* A 98R	E 9	J03- 28	400 CPS VAR ILLUM PWR
* A 123R	E 9	J04- 28	400 CPS VAR ILLUM PWR
* A 146R	E 9	J05- 28	400 CPS VAR ILLUM PWR
A 561Y	E 10	TB1-S 2	400 CPS 6 V LO
* A 53Y	E 10	J01- 29	400 CPS 6 V LO
* A 77Y	E 10	J02- 29	400 CPS 6 V LO
* A 98Y	E 10	J03- 29	400 CPS 6 V LO
* A 123Y	E 10	J04- 29	400 CPS 6 V LO
* A 146Y	E 10	J05- 29	400 CPS 6 V LO
A 567Y	E 11	TB3-C 3	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 578Y	E 11	J01- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 579Y	E 11	J02- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 580Y	E 11	J03- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 54	E 12	J01- 41	STRUCTURE GND
* A 78	E 12	J02- 41	STRUCTURE GND
* A 99	E 12	J03- 41	STRUCTURE GND
* A 124	E 12	J04- 41	STRUCTURE GND
* A 147	E 12	J05- 41	STRUCTURE GND
* A 548	E 12	TB3-B20	STRUCTURE GND
A 558Y	E 13	TB2-L 1	800 CPS 28 V 1 PCT LO OPTICS
* A 104Y	E 13	J04- 14	800 CPS 28 V 1 PCT LO OPTICS
* A 584R	E 13	J04- 25	800 CPS 28 V 1 PCT LO OPTICS
* A 584Y	E 13	J04- 11	800 CPS 28 V 1 PCT LO OPTICS
* A 585R	E 13	J05- 4	800 CPS 28 V 1 PCT LO OPTICS
* A 585Y	E 13	J05- 18	800 CPS 28 V 1 PCT LO OPTICS
* A 586Y	E 13	J05- 14	800 CPS 28 V 1 PCT LO OPTICS
A 558R	E 14	TB2-K 1	800 CPS 28 V 1 PCT HI OPTICS
* A 104R	E 14	J04- 1	800 CPS 28 V 1 PCT HI OPTICS
* A 584G	E 14	J04- 12	800 CPS 28 V 1 PCT HI OPTICS
* A 585G	E 14	J05- 17	800 CPS 28 V 1 PCT HI OPTICS
* A 586R	E 14	J05- 1	800 CPS 28 V 1 PCT HI OPTICS
A 560Y	E 16	TB1-G 7	25.6 KC LO OPTICS
* A 117Y	E 16	J04- 60	25.6 KC LO OPTICS
* A 583Y	E 16	J05- 60	25.6 KC LO OPTICS
A 560R	E 17	TB1-H 7	25.6 KC HI OPTICS

MANNED SPACECRAFT CENTER
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SCALE - NONE REV LTR + SHEET 5

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* A 117R	E 17	J04- 50	25.6 KC HI OPTICS	
* A 583R	E 17	J05- 50	25.6 KC HI OPTICS	
A 132Y	E 18	TB3-L11	TRUNNION CDU 1/2X RSVR P3	
* A 133	E 18	J05- 11	TRUNNION CDU 1/2X RSVR P3	
* A 149	E 18	J05- 25	TRUNNION CDU 1/2X RSVR P3	
A 556	E 19	TB1-S 7	0 VDC IMU	
* A 194	E 19	J08- 31	0 VDC IMU	
* A 195	E 19	J08- 70	0 VDC IMU	
* A 204	E 19	J08- 30	0 VDC IMU	
* A 205	E 19	J08- 28	0 VDC IMU	
* A 208	E 19	J08- 17	0 VDC IMU	
* A 212	E 19	J08- 52	0 VDC IMU	
A 549	E 20	TB2-D 6	0 VDC IMU	
* A 189	E 20	J08- 61	0 VDC IMU	
* A 191	E 20	J08- 84	0 VDC IMU	
* A 201	E 20	J08- 83	0 VDC IMU	
* A 213	E 20	J08- 63	0 VDC IMU	
A 494Y	E 22	J21-211	COMMONED RETURNS GROUND	214B
A 495Y	E 22	J21-176	COMMONED RETURNS GROUND	215B
A 496Y	E 22	J21-143	COMMONED RETURNS GROUND	216B
A 497Y	E 22	J21-110	COMMONED RETURNS GROUND	217B
A 498Y	E 22	J21- 77	COMMONED RETURNS GROUND	218B
A 499Y	E 22	J21- 42	COMMONED RETURNS GROUND	219B
A 500Y	E 22	J21-213	COMMONED RETURNS GROUND	221B
A 501Y	E 22	J21-178	COMMONED RETURNS GROUND	222B
A 502Y	E 22	J21-145	COMMONED RETURNS GROUND	223B
A 505Y	E 22	J21- 5	COMMONED RETURNS GROUND	220B
* A 554	E 22	E 23	COMMONED RETURNS GROUND	
A 482Y	E 23	J21- 81	COMMONED RETURNS GROUND	232B
A 483Y	E 23	J21- 7	COMMONED RETURNS GROUND	227B
A 484Y	E 23	J21-215	COMMONED RETURNS GROUND	228B
A 485Y	E 23	J21-180	COMMONED RETURNS GROUND	229B
A 486Y	E 23	J21-147	COMMONED RETURNS GROUND	230B
A 487Y	E 23	J21-114	COMMONED RETURNS GROUND	231B
A 488Y	E 23	J21- 46	COMMONED RETURNS GROUND	233B
A 503Y	E 23	J21-112	COMMONED RETURNS GROUND	224B
A 504Y	E 23	J21- 44	COMMONED RETURNS GROUND	226B
A 506Y	E 23	J21- 79	COMMONED RETURNS GROUND	225B

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INCHES
0 1 2
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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 554	E 23	E 22	COMMONED RETURNS GROUND	
A 555	E 23	E 24	COMMONED RETURNS GROUND	
A 470Y	E 24	J21- 48	COMMONED RETURNS GROUND	244B
A 471Y	E 24	J21- 83	COMMONED RETURNS GROUND	242B
A 489Y	E 24	J21- 9	COMMONED RETURNS GROUND	234B
A 490Y	E 24	J21-217	COMMONED RETURNS GROUND	235B
A 491Y	E 24	J21-182	COMMONED RETURNS GROUND	236B
A 492Y	E 24	J21-149	COMMONED RETURNS GROUND	237B
A 493Y	E 24	J21-116	COMMONED RETURNS GROUND	238B
A 552	E 24	J10- 82	COMMONED RETURNS GROUND	330
* A 555	E 24	E 23	COMMONED RETURNS GROUND	
A 467Y	E 25	J21- 85	COMMONED RETURNS GROUND	205B
A 468R	E 25	J21- 13	COMMONED RETURNS GROUND	209B
A 472Y	E 25	J21-151	COMMONED RETURNS GROUND	203B
A 510Y	E 25	J21- 15	COMMONED RETURNS GROUND	207B
A 511Y	E 25	J21-118	COMMONED RETURNS GROUND	204B
A 514Y	E 25	J21-184	COMMONED RETURNS GROUND	202B
A 515Y	E 25	J21-186	COMMONED RETURNS GROUND	210B
A 516Y	E 25	J21-219	COMMONED RETURNS GROUND	201B
A 517Y	E 25	J21-221	COMMONED RETURNS GROUND	208B
A 551	E 25	J10- 69	COMMONED RETURNS GROUND	252
AA 92B	E 27	SHLD AA 92	0 VDC IMU	
AA500B	E 27	SHLD AA500	0 VDC IMU	
* AA500W	E 27	J21-104	0 VDC IMU	155B
* AA608	E 27	TB2-D 4	0 VDC IMU	
AA503B	E 28	SHLD AA503	COMPUTER 3200 PPS SYNC RET	
AA504B	E 28	SHLD AA504	COMPUTER 3200 PPS SYNC RET	
* AA 36	E 28	J11-M5	COMPUTER 3200 PPS SYNC RET	
* AA503W	E 28	J21-204	COMPUTER 3200 PPS SYNC RET	152B
* AA504W	E 28	J21-242	COMPUTER 3200 PPS SYNC RET	151B
AA490B	E 29	SHLD AA490	COMPUTER 25.6 KPPS SYNC RET	
AA491B	E 29	SHLD AA491	COMPUTER 25.6 KPPS SYNC RET	
* AA 69	E 29	J12-F2	COMPUTER 25.6 KPPS SYNC RET	
* AA490R	E 29	J21-170	COMPUTER 25.6 KPPS SYNC RET	153B
* AA491W	E 29	J21-137	COMPUTER 25.6 KPPS SYNC RET	154B
* AA226A	E 30	SHLD AA226	0 VDC IMU	
* AA227A	E 30	SHLD AA227	0 VDC IMU	
* AA232A	E 30	SHLD AA232	0 VDC IMU	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
AA232B	E 31	SHLD AA232	0 VDC IMU	
* AA 67	E 31	J12-F1	COMPUTER 800 PPS SYNC RET	
* AA 91	E 31	J12-R4	0 VDC IMU	
* AA232W	E 31	J16-L3	COMPUTER 800 PPS SYNC RET	
AA129W	E 33	J21- 66	0 VDC IMU	142A
AA130R	E 33	J21- 32	0 VDC IMU	143A
AA131W	E 33	J21-239	0 VDC IMU	144A
AA132W	E 33	J21-201	0 VDC IMU	145A
AA134R	E 33	J21-167	0 VDC IMU	146A
AA135W	E 33	J21-134	0 VDC IMU	147A
AA655R	E 33	J21-101	0 VDC IMU	148A
* AA137	E 33	J14-R6	0 VDC IMU	
* AA 77	E 34	J12-B5	0 VDC IMU	
* AA125	E 34	J13-R6	0 VDC IMU	
* AA501R	E 34	J21-133	0 VDC IMU	139B
* AA502R	E 34	J21-100	0 VDC IMU	140B
* AA158	E 35	J15-L5	COMPUTER RET	
* AA467R	E 35	J21-125	COMPUTER RET	132A
* AA468R	E 35	J21- 92	COMPUTER RET	133A
* AA159	E 36	J15-L5	COMPUTER RET	
* AA469R	E 36	J21-194	COMPUTER RET	134A
* AA470R	E 36	J21-160	COMPUTER RET	135A
* AA160	E 37	J15-L5	COMPUTER RET	
* AA471R	E 37	J21- 94	COMPUTER RET	137A
* AA472R	E 37	J21-127	COMPUTER RET	136A
* AA164	E 38	J15-A5	IG DAC MDA SIG LO	
* AA475R	E 38	J21- 25	IG DAC MDA SIG LO	120B
* AA476W	E 38	J21- 27	IG DAC MDA SIG LO	121B
AA481B	E 39	SHLD AA481	IG DAC MDA SIG LO	
AA482B	E 39	SHLD AA482	IG DAC MDA SIG LO	
* AA167	E 39	J15-A5	IG DAC MDA SIG LO	
* AA481R	E 39	J21-238	IG DAC MDA SIG LO	128B
* AA482W	E 39	J21-200	IG DAC MDA SIG LO	129B
* AA165	E 40	J15-A7	MG DAC MDA SIG LO	
* AA477R	E 40	J21-233	MG DAC MDA SIG LO	122B
* AA478W	E 40	J21-193	MG DAC MDA SIG LO	123B
AA483B	E 41	SHLD AA483	MG DAC MDA SIG LO	
AA484B	E 41	SHLD AA484	MG DAC MDA SIG LO	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* AA168	E 41	J15-A7	MG DAC MDA SIG LO	
* AA483R	E 41	J21-166	MG DAC MDA SIG LO	130B
* AA484W	E 41	J21- 98	MG DAC MDA SIG LO	131B
* AA166	E 42	J15-A9	OG DAC MDA SIG LO	
* AA479R	E 42	J21- 57	OG DAC MDA SIG LO	118B
* AA480W	E 42	J21- 59	OG DAC MDA SIG LO	119B
AA485B	E 43	SHLD AA485	OG DAC MDA SIG LO	
AA486B	E 43	SHLD AA486	OG DAC MDA SIG LO	
* AA169	E 43	J15-A9	OG DAC MDA SIG LO	
* AA485R	E 43	J21- 65	OG DAC MDA SIG LO	126B
* AA486W	E 43	J21- 31	OG DAC MDA SIG LO	127B
A 14B	E 44	SHLD A 14	AGC SIG 178 SHLD RET	
A 15B	E 44	SHLD A 15	AGC SIG 178 SHLD RET	
A 16B	E 44	SHLD A 16	AGC SIG 178 SHLD RET	
A 27B	E 44	SHLD A 27	AGC SIG 178 SHLD RET	
A 156B	E 44	SHLD A 156	AGC SIG 178 SHLD RET	
A 433B	E 44	SHLD A 433	AGC SIG 178 SHLD RET	
A 434B	E 44	SHLD A 434	AGC SIG 178 SHLD RET	
A 437B	E 44	SHLD A 437	AGC SIG 178 SHLD RET	
A 449B	E 44	SHLD A 449	AGC SIG 178 SHLD RET	
A 566	E 44	E 57	AGC SIG 178 SHLD RET	
* A 440A	E 44	SHLD A 440	AGC SIG 178 SHLD RET	
AA568	E 45	E 46	AGC SIG 180 SHLD RET	
* AA473	E 45	J21- 23	AGC SIG 180 SHLD RET	180
* AA494A	E 45	SHLD AA494	AGC SIG 180 SHLD RET	
* AA495A	E 45	SHLD AA495	AGC SIG 180 SHLD RET	
* AA498A	E 45	SHLD AA498	AGC SIG 180 SHLD RET	
* AA499A	E 45	SHLD AA499	AGC SIG 180 SHLD RET	
* AA467A	E 46	SHLD AA467	AGC SIG 180 SHLD RET	
* AA468A	E 46	SHLD AA468	AGC SIG 180 SHLD RET	
* AA469A	E 46	SHLD AA469	AGC SIG 180 SHLD RET	
* AA470A	E 46	SHLD AA470	AGC SIG 180 SHLD RET	
* AA471A	E 46	SHLD AA471	AGC SIG 180 SHLD RET	
* AA472A	E 46	SHLD AA472	AGC SIG 180 SHLD RET	
* AA568	E 46	E 45	AGC SIG 180 SHLD RET	
* AA474	E 47	E 70	AGC SIG 179 SHLD RET	
* AA475A	E 47	SHLD AA475	AGC SIG 179 SHLD RET	
* AA476A	E 47	SHLD AA476	AGC SIG 179 SHLD RET	

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SCALE - NONE	REV LTR +	SHEET 9

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* AA477A	E 47	SHLD AA477	AGC SIG 179 SHLD RET	
* AA478A	E 47	SHLD AA478	AGC SIG 179 SHLD RET	
* AA479A	E 47	SHLD AA479	AGC SIG 179 SHLD RET	
* AA480A	E 47	SHLD AA480	AGC SIG 179 SHLD RET	
A 64B	E 48	SHLD A 64	0 VDC IMU	
A 221B	E 48	SHLD A 221	0 VDC IMU	
A 358B	E 48	SHLD A 358	0 VDC IMU	
* A 458	E 48	TB2-D 5	0 VDC IMU	
* AA348	E 50	J18-H3	TRUNNION CDU DAC LO	
* AA496R	E 50	J21-236	TRUNNION CDU DAC LO	114B
* AA497W	E 50	J21-198	TRUNNION CDU DAC LO	115B
* AA243W	E 51	J17-H6	TRUNNION CDU DAC LO	
* AA349	E 51	J18-H3	TRUNNION CDU DAC LO	
* AA498R	E 51	J21-231	TRUNNION CDU DAC LO	108B
* AA499R	E 51	J21-191	TRUNNION CDU DAC LO	109B
* AA346	E 52	J18-H2	SHAFT CDU DAC LO	
* AA492R	E 52	J21-164	SHAFT CDU DAC LO	116B
* AA493W	E 52	J21-131	SHAFT CDU DAC LO	117B
* AA242W	E 53	J17-H4	SHAFT CDU DAC LO	
* AA347	E 53	J18-H2	SHAFT CDU DAC LO	
* AA494R	E 53	J21-157	SHAFT CDU DAC LO	110B
* AA495R	E 53	J21-124	SHAFT CDU DAC LO	111B
A 155R	E 55	TB2-F 3		
A 156R	E 55	J21-229		164B
* A 415	E 56	J09- 42	AGC COMMON	
* A 420	E 56	J09- 36	AGC COMMON	
* A 440Y	E 56	J21-119	AGC COMMON	101A
* A 566	E 57	E 44	AGC SIG 178 SHLD RET	
* AA487A	E 57	SHLD AA487	AGC SIG 178 SHLD RET	
* AA488A	E 57	SHLD AA488	AGC SIG 178 SHLD RET	
* AA489A	E 57	SHLD AA489	AGC SIG 178 SHLD RET	
* AA562	E 57	J21- 53	AGC SIG 178 SHLD RET	178
A 433R	E 58	J21- 87		102B
A 434R	E 58	J21- 89		103B
A 437R	E 58	J21- 55		104B
A 449Y	E 58	J21- 19		106B
* A 440R	E 58	J21-120		101B
AA176R	E 59	TB2-F 3		

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INCHES
0 1 2

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* AA488R	E 59	J21-189		160B
* AA489R	E 60	J21-153		158B
* AA569R	E 60	TB2-F 3		
A 13R	E 61	TB2-F 3		
A 14R	E 61	J21-155		159B
A 15R	E 61	J21-223		161B
A 16R	E 61	J21-227		163B
A 27R	E 61	J21-225		162B
* A 570	E 62	J10- 1	GROUP 2 SHIELD	245
* A 571	E 63	J21-107	GROUP 2 SHIELD	245
* A 568	E 64	J21-187	GROUP 3 SHIELD	250
* A 569	E 65	J10- 27	GROUP 3 SHIELD	250
* AA617	E 66	J11-L4	STRUCTURE GND	
* AA618	E 67	J11-L4	STRUCTURE GND	
* AA619	E 68	TB3-B20	STRUCTURE GND	
* AA620	E 69	TB3-B20	STRUCTURE GND	
AA474	E 70	E 47	AGC SIG 179 SHLD RET	
AA639B	E 70	SHLD AA639	AGC SIG 179 SHLD RET	
AA640B	E 70	SHLD AA640	AGC SIG 179 SHLD RET	
AA641B	E 70	SHLD AA641	AGC SIG 179 SHLD RET	
* AA642	E 70	J21- 22	AGC SIG 179 SHLD RET	179
AA492B	E 71	SHLD AA492	0 VDC OPTICS	
AA493B	E 71	SHLD AA493	0 VDC OPTICS	
AA496B	E 71	SHLD AA496	0 VDC OPTICS	
AA497B	E 71	SHLD AA497	0 VDC OPTICS	
* AA638	E 71	J18-T5	0 VDC OPTICS	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 572R	J01- 1	E 1	800 CPS 28 V 1 PCT HI IMU
A 578Y	J01- 2	E 11	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 578R	J01- 3	E 7	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 40Y	J01- 6	TB3-F13	COS AIG 1X RET P1
A 41Y	J01- 7	TB3-D14	SIN AIG 1X P2
A 573G	J01- 11	E 1	800 CPS 28 V 1 PCT HI IMU
A 573Y	J01- 12	E 5	ZEROING RSVR 800 CPS
A 572Y	J01- 14	E 2	800 CPS 28 V 1 PCT LO IMU
A 50	J01- 15	E 8	+28 VDC CDU NOT LOCK
A 48	J01- 16	E 6	+28 VDC IMU
A 40R	J01- 20	TB3-F14	COS AIG 1X P3
A 41R	J01- 21	TB3-D13	SIN AIG 1X RET P4
A 573R	J01- 25	E 1	800 CPS 28 V 1 PCT HI IMU
A 53R	J01- 28	E 9	400 CPS VAR ILLUM PWR
A 53Y	J01- 29	E 10	400 CPS 6 V LO
A 56	J01- 30	TB2-N 5	+28 VDC IMU FOR IG MDA
A 52G	J01- 31	TB2-L 5	IG CDU MDA OUTPUT
A 52Y	J01- 32	TB2-L 6	IG CDU MDA OUTPUT
A 55	J01- 34	TB2-W 1	IG CDU 1X RSVR LOAD S1
A 39R	J01- 35	TB2-H 2	IG CDU 1X ERROR SIG S2
A 54	J01- 41	E 12	STRUCTURE GND
A 52R	J01- 43	TB2-K 4	0 VDC IMU
A 39Y	J01- 45	TB2-G 2	IG CDU ERROR SIG RET
A 46R	J01- 50	E 4	25.6 KC HI IMU
A 38Y	J01- 57	TB2-G 3	IG CDU ERROR SIG RET S1
A 46Y	J01- 60	E 3	25.6 KC LO IMU
A 38R	J01- 67	TB2-H 3	IG CDU 1/2X ERROR SIG S3
A 43Y	J01- 86	TB2-W 7	COS AIG 16X TO CDU
A 44Y	J01- 87	TB2-C 8	SIN AIG 16X TO CDU
A 42Y	J01- 90	TB2-G 1	IG CDU ERROR SIG RET
A 51Y	J01- 92	TB2-T 7	IG CDU MDA INPUT RET
A 45R	J01- 94	TB2-A 5	IG CDU ENCODER COM
A 43R	J01-100	TB2-W 6	COS AIG 16X S3
A 44R	J01-101	TB2-B 8	SIN AIG 16X S4
A 42R	J01-104	TB2-H 1	IG CDU 16X ERROR SIG
A 51G	J01-105	TB2-T 6	IG CDU MDA SLEW SIG
A 51R	J01-106	TB2-U 6	IG CDU MDA TACH SIG
A 45Y	J01-107	TB2-B 5	IG CDU ENCODER PHASE 1

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 45G	J01-108	TB2-C 5	IG CDU ENCODER PHASE 2

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SCALE-NONE
REV LTR
SHEET 13

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 574R	J02- 1	E 1	800 CPS 28 V 1 PCT HI IMU
A 579Y	J02- 2	E 11	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 579R	J02- 3	E 7	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 64Y	J02- 6	TB3-N21	COS AMG 1X S1
A 65Y	J02- 7	TB3-C14	SIN AMG 1X
A 575G	J02- 11	E 1	800 CPS 28 V 1 PCT HI IMU
A 575Y	J02- 12	E 5	ZEROING RSVR 800 CPS
A 574Y	J02- 14	E 2	800 CPS 28 V 1 PCT LO IMU
A 74	J02- 15	E 8	+28 VDC CDU NOT LOCK
A 72	J02- 16	E 6	+28 VDC IMU
A 64R	J02- 20	TB3-N20	COS AMG 1X S3
A 65R	J02- 21	TB3-C13	SIN AMG 1X RET
A 575R	J02- 25	E 1	800 CPS 28 V 1 PCT HI IMU
A 77R	J02- 28	E 9	400 CPS VAR ILLUM PWR
A 77Y	J02- 29	E 10	400 CPS 6 V LO
A 80	J02- 30	TB2-R 5	+28 VDC IMU FOR MG MDA
A 76G	J02- 31	TB2-L 3	MG CDU MDA OUTPUT
A 76Y	J02- 32	TB2-K 3	MG CDU MDA OUTPUT
A 79	J02- 34	TB2-X 1	MG CDU 1X RSVR LOAD
A 63R	J02- 35	TB2-H 7	MG CDU 1X ERROR SIG
A 78	J02- 41	E 12	STRUCTURE GND
A 76R	J02- 43	TB2-K 4	0 VDC IMU
A 63Y	J02- 45	TB2-G 7	MG CDU ERROR SIG RET
A 70R	J02- 50	E 4	25.6 KC HI IMU
A 62Y	J02- 57	TB2-G 6	MG CDU ERROR SIG RET
A 70Y	J02- 60	E 3	25.6 KC LO IMU
A 62R	J02- 67	TB2-H 6	MG CDU 1/2X ERROR SIG
A 67Y	J02- 86	TB2-U 4	COS AMG 16X TO CDU
A 68Y	J02- 87	TB2-C 7	SIN AMG 16X TO CDU
A 66Y	J02- 90	TB2-G 8	MG CDU ERROR SIG RET
A 75Y	J02- 92	TB2-X 6	MG CDU MDA INPUT RET
A 69R	J02- 94	TB2-C 6	MG CDU ENCODER COM
A 67R	J02-100	TB2-U 5	COS AMG 16X S3
A 68R	J02-101	TB2-B 7	SIN AMG 16X S4
A 66R	J02-104	TB2-H 8	MG CDU 16X ERROR SIG
A 75G	J02-105	TB2-X 5	MG CDU MDA SLEW SIG
A 75R	J02-106	TB2-W 5	MG CDU MDA TACH SIG
A 69Y	J02-107	TB2-B 6	MG CDU ENCODER PHASE 1

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE-NONE
REV LTR
SHEET 14

MIL 2084-4-64

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 69G	J02-108	TB2-A 6	MG CDU ENCODER PHASE 2

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057	
SCALE-NONE	REV LTR		SHEET 15

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 84R	J03- 1	E 1	800 CPS 28 V 1 PCT HI IMU
A 580Y	J03- 2	E 11	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 580R	J03- 3	E 7	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 87Y	J03- 6	TB2-N 7	COS AOG 1X S1
A 88Y	J03- 7	TB2-U 8	SIN AOG 1X S4
A 576G	J03- 11	E 1	800 CPS 28 V 1 PCT HI IMU
A 576Y	J03- 12	E 5	ZEROING RSVR 800 CPS
A 84Y	J03- 14	E 2	800 CPS 28 V 1 PCT LO IMU
A 582	J03- 15	E 8	+28 VDC CDU NOT LOCK
A 581	J03- 16	E 6	+28 VDC IMU
A 87R	J03- 20	TB2-R 8	COS AOG 1X TO CDU
A 88R	J03- 21	TB2-T 8	SIN AOG 1X TO CDU
A 576R	J03- 25	E 1	800 CPS 28 V 1 PCT HI IMU
A 98R	J03- 28	E 9	400 CPS VAR ILLUM PWR
A 98Y	J03- 29	E 10	400 CPS 6 V LO
A 102	J03- 30	TB2-K 8	+28 VDC IMU FOR OG MDA
A 97G	J03- 31	TB2-K 6	OG CDU MDA OUTPUT
A 97Y	J03- 32	TB2-K 5	OG CDU MDA OUTPUT
A 100	J03- 34	TB2-S 1	OG CDU 1X RSVR LOAD
A 86R	J03- 35	TB2-N 2	OG CDU 1X ERROR SIG
A 99	J03- 41	E 12	STRUCTURE GND
A 97R	J03- 43	TB2-K 4	0 VDC IMU
A 86Y	J03- 45	TB2-R 2	OG CDU ERROR SIG RET
A 93R	J03- 50	E 4	25.6 KC HI IMU
A 85Y	J03- 57	TB2-R 1	OG CDU ERROR SIG RET
A 93Y	J03- 60	E 3	25.6 KC LO IMU
A 85R	J03- 67	TB2-N 1	OG CDU 1/2X ERROR SIG
A 90Y	J03- 86	TB2-X 4	COS AOG 16X TO CDU
A 91Y	J03- 87	TB2-X 2	SIN AOG 16X TO CDU
A 101	J03- 89	TB2-T 1	OG CDU 16X RSVR LOAD
A 89Y	J03- 90	TB2-R 3	OG CDU ERROR SIG RET
A 96Y	J03- 92	TB2-R 7	OG CDU MDA INPUT RET
A 92R	J03- 94	TB2-A 4	OG CDU ENCODER COM
A 90R	J03-100	TB2-W 4	COS AOG 16X S3
A 91R	J03-101	TB2-W 2	SIN AOG 16X S4
A 89R	J03-104	TB2-N 3	OG CDU 16X ERROR SIG
A 96G	J03-105	TB2-R 6	OG CDU MDA SLEW SIG
A 96R	J03-106	TB2-N 6	OG CDU MDA TACH SIG

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057	
SCALE-NONE	REV LTR		SHEET 16

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 92Y	J03-107	TB2-B 4	OG CDU ENCODER PHASE 1
A 92G	J03-108	TB2-C 4	OG CDU ENCODER PHASE 2

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057	
SCALE-NONE	REV LTR		SHEET 17

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 104R	J04- 1	E 14	800 CPS 28 V 1 PCT HI OPTICS
A 599Y	J04- 2	TB2-T 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 599R	J04- 3	TB2-U 1	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 110R	J04- 6	TB3-K 7	SHAFT CDU 1X COS OUTPUT HI
A 111R	J04- 7	TB3-G13	SHAFT CDU 1X SIN OUTPUT LO
A 584Y	J04- 11	E 13	800 CPS 2G V 1 PCT LO OPTICS
A 584G	J04- 12	E 14	800 CPS 28 V 1 PCT HI OPTICS
A 104Y	J04- 14	E 13	800 CPS 28 V 1 PCT LO OPTICS
A 110Y	J04- 20	TB3-K 8	SHAFT CDU 1X COS OUTPUT LO
A 111Y	J04- 21	TB3-G14	SHAFT CDU 1X SIN OUTPUT HI
A 584R	J04- 25	E 13	800 CPS 28 V 1 PCT LO OPTICS
A 123R	J04- 28	E 9	400 CPS VAR ILLUM PWR
A 123Y	J04- 29	E 10	400 CPS 6 V LO
A 122G	J04- 31	TB3-D11	SHAFT CDU MOTOR CONTROL WINDING
A 122Y	J04- 32	TB3-C11	SHAFT CDU MOTOR CONTROL WINDING
A 109G	J04- 34	TB3-T12	SHAFT CDU 1X P1 (S1)
A 109Y	J04- 35	TB3-S12	SHAFT CDU 1X P2 (S2)
A 124	J04- 41	E 12	STRUCTURE GND
A 122R	J04- 43	TB3-B17	+28 VDC OPTICS SWITCHED
A 109R	J04- 45	TB3-R12	SHAFT CDU 1X P3 (S3)
A 117R	J04- 50	E 17	25.6 KC HI OPTICS
A 108Y	J04- 56	TB3-N14	SHAFT CDU 1/2X COS HI S2
A 107R	J04- 57	TB3-K11	SHAFT CDU 1/2X SIN LO S3
A 117Y	J04- 60	E 16	25.6 KC LO OPTICS
A 108R	J04- 66	TB3-N13	SHAFT CDU 1/2X COS LO S4
A 107Y	J04- 67	TB3-K10	SHAFT CDU 1/2X SIN HI S1
A 114Y	J04- 86	TB3-N 8	SHAFT CDU 16X RSVR COS HI P1
A 115Y	J04- 87	TB3-N10	SHAFT CDU 16X RSVR SIN HI P2
A 113	J04- 89	TB3-M18	SHAFT CDU 16X LOAD
A 112Y	J04- 90	TB3-H11	SHAFT CDU 16X ERROR SIG LO
A 121Y	J04- 92	TB3-L 8	SHAFT CDU TACH LO
A 116R	J04- 94	TB3-S 5	SHAFT CDU ENCODER COM
A 114R	J04-100	TB3-N 7	SHAFT CDU 16X RSVR COS LO P3
A 115R	J04-101	TB3-N11	SHAFT CDU 16X RSVR SIN LO P4
A 112R	J04-104	TB3-H10	SHAFT CDU 16X ERROR SIG HI
A 121R	J04-106	TB3-L 7	SHAFT CDU TACH HI
A 116Y	J04-107	TB3-S 6	SHAFT CDU ENCODER PHASE 1
A 116G	J04-108	TB3-S 4	SHAFT CDU ENCODER PHASE 2

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057	
SCALE-NONE	REV LTR		SHEET 18

MIL 2064-4-64

INCHES
0 1 2

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 586R	J05- 1	E 14	800 CPS 28 V 1 PCT HI OPTICS
A 600Y	J05- 2	TB2-T 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 600R	J05- 3	TB2-U 1	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 585R	J05- 4	E 13	800 CPS 28 V 1 PCT LO OPTICS
A 130R	J05- 8	TB3-G10	TRUNNION CDU 1/4X SIN HI
A 131R	J05- 9	TB3-F16	TRUNNION CDU 1/4X COS HI
A 131Y	J05- 10	TB3-G16	TRUNNION CDU 1/4X COS LO
A 133	J05- 11	E 18	TRUNNION CDU 1/2X RSVR P3
A 132R	J05- 12	TB3-L10	TRUNNION CDU 1/2X RSVR P2
A 586Y	J05- 14	E 13	800 CPS 28 V 1 PCT LO OPTICS
A 585G	J05- 17	E 14	800 CPS 28 V 1 PCT HI OPTICS
A 585Y	J05- 18	E 13	800 CPS 28 V 1 PCT LO OPTICS
A 130Y	J05- 22	TB3-F10	TRUNNION CDU 1/4X SIN LO
A 149	J05- 25	E 18	TRUNNION CDU 1/2X RSVR P3
A 146R	J05- 28	E 9	400 CPS VAR ILLUM PWR
A 146Y	J05- 29	E 10	400 CPS 6 V LO
A 145G	J05- 31	TB3-D12	TRUNNION CDU MOTOR CONTROL WINDING
A 145Y	J05- 32	TB3-C12	TRUNNION CDU MOTOR CONTROL WINDING
A 147	J05- 41	E 12	STRUCTURE GND
A 145R	J05- 43	TB3-B16	+28 VDC OPTICS SWITCHED
A 583R	J05- 50	E 17	25.6 KC HI OPTICS
A 148R	J05- 56	TB3-L12	TRUNNION CDU 1/2X RSVR LOAD HI
A 583Y	J05- 60	E 16	25.6 KC LO OPTICS
A 148Y	J05- 66	TB3-K12	TRUNNION CDU 1/2X RSVR LOAD LO
A 134Y	J05- 67	TB3-R13	TRUNNION CDU 1/2X RSVR S3
A 134R	J05- 68	TB3-R14	TRUNNION CDU 1/2X RSVR S1 PHASE CORR
A 137Y	J05- 86	TB3-T10	TRUNNION CDU 16X RSVR COS HI P1
A 138Y	J05- 87	TB3-S10	TRUNNION CDU 16X RSVR SIN HI P2
A 136	J05- 89	TB3-N18	TRUNNION CDU 16X LOAD
A 135Y	J05- 90	TB3-H 7	TRUNNION CDU 16X ERROR SIG LO
A 144Y	J05- 92	TB3-M 7	TRUNNION CDU TACH LO
A 139R	J05- 94	TB3-T 5	TRUNNION CDU ENCODER COM
A 137R	J05-100	TB3-T11	TRUNNION CDU 16X RSVR COS LO P3
A 138R	J05-101	TB3-S11	TRUNNION CDU 16X RSVR SIN LO P4
A 135R	J05-104	TB3-H 8	TRUNNION CDU 16X ERROR SIG HI
A 144R	J05-106	TB3-M 8	TRUNNION CDU TACH HI
A 139Y	J05-107	TB3-T 4	TRUNNION CDU ENCODER PHASE 1
A 139G	J05-108	TB3-T 6	TRUNNION CDU ENCODER PHASE 2

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
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SCALE - NONE
REV LTR
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MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 150R	J06- 1	P01- 1	PITCH ATTITUDE ERROR METER +
A 150Y	J06- 2	P01- 2	PITCH ATTITUDE ERROR METER -
A 161	J06- 6	P01- 6	ENTRY RELAY CONTROL RESET
A 160	J06- 9	P01- 9	MODE SWITCH INTERLOCK
A 154	J06- 12	TB1-K 7	MODE RELAY COMMON TO AGC
A 151R	J06- 14	P01- 14	YAW ATTITUDE ERROR METER +
A 151Y	J06- 15	P01- 15	YAW ATTITUDE ERROR METER -
A 157	J06- 18	P01- 18	MODE RELAY COMMON TO D AND C ELECT
A 175	J06- 22	P01- 22	ATTITUDE CONTROL MODE LIGHT
A 165	J06- 23	P01- 23	FINE ALIGN RELAY CONTROL
A 166	J06- 24	TB3-F 4	ATTITUDE CONTROL RELAY CONTROL
A 167	J06- 25	P01- 25	ENTRY RELAY CONTROL
A 152Y	J06- 28	P01- 28	ROLL ATTITUDE ERROR METER -
A 152R	J06- 29	P01- 29	ROLL ATTITUDE ERROR METER +
A 162	J06- 34	P01- 34	ZERO ENCODER RELAY CONTROL
A 163	J06- 35	P01- 35	COARSE ALIGN RELAY CONTROL
A 164	J06- 36	P01- 36	CDU MANUAL RELAY CONTROL
A 687	J06- 37	P01- 37	BACKUP MODE RELAY CONTROL
A 177	J06- 46	P01- 46	ATTITUDE CONTROL MODE INTERLOCK
A 170	J06- 56	P01- 56	MANUAL ALIGN
A 155Y	J06- 68	TB2-D 2	AGC COM
A 156Y	J06- 69	J21-228	TRANSFER SWITCH INDICATION TO AGC 164A
A 169	J06- 78	TB2-L 4	0 VDC IMU
A 176	J06- 79	P01- 79	ENTRY MODE LIGHT
A 158	J06- 81	TB1-F 8	ATTIT CONT MODE COMMAND FROM AGC
A 178	J06- 91	TB3-B21	STRUCTURE GND
A 172	J06- 92	P01- 92	COARSE ALIGN MODE LIGHT
A 168	J06- 93	P01- 93	MODE RELAY COMMON
A 174	J06- 94	P01- 94	FINE ALIGN MODE LIGHT
A 171	J06-104	P01-104	ZERO ENCODER MODE LIGHT
A 173	J06-105	P01-105	CDU MANUAL MODE LIGHT
A 153Y	J06-107	TB1-S 2	400 CPS 6 V LO
A 153R	J06-108	TB1-S 1	400 CPS VAR ILLUM PWR

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE
REV LTR
SHEET 20

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 675R	J08- 1	TB3-R21	+28 VDC STBY
A 675Y	J08- 2	TB3-N22	+28 VDC STBY
A 676R	J08- 14	TB1-S 6	0 VDC IMU
A 676Y	J08- 15	TB1-S 4	0 VDC IMU
A 208	J08- 17	E 19	0 VDC IMU
A 202	J08- 18	TB2-S 8	GIMBAL LOCK LIGHT HI
A 603N	J08- 19	TB1-R 2	400 CPS 6 V LO
A 205	J08- 28	E 19	0 VDC IMU
A 215	J08- 29	TB3-B21	STRUCTURE GND
A 204	J08- 30	E 19	0 VDC IMU
A 194	J08- 31	E 19	0 VDC IMU
A 207	J08- 32	J22- 71	+28 VDC SPACECRAFT
A 603Y	J08- 36	TB1-R 2	400 CPS 6 V LO
A 203	J08- 41	TB3-B 4	ZERO ENCODER LIGHT HI
A 193	J08- 42	TB1-U 2	IMU DELAY LIGHT HI
A 206	J08- 43	J22- 72	MASTER CAUTION LIGHT RET
A 603G	J08- 46	TB1-R 3	PROJECTION LAMP LO INTENSITY
A 565	J08- 50	TB1-F 1	SPARE FAIL LIGHT HI
A 187	J08- 51	TB1-H 8	ERROR DETECT LIGHT HI
A 212	J08- 52	E 19	0 VDC IMU
A 196	J08- 53	J22- 38	MASTER WARNING LIGHT RET
A 197	J08- 54	J22- 37	+28 VDC SPACECRAFT
A 603R	J08- 55	TB1-N 3	PROJECTION LAMP HI INTENSITY
A 188	J08- 60	TB3-M 6	IMU FAIL LIGHT HI
A 189	J08- 61	E 20	0 VDC IMU
A 192	J08- 62	TB3-D 3	IMU TEMP CONT FAIL LIGHT HI
A 213	J08- 63	E 20	0 VDC IMU
A 181	J08- 66	TB3-H 6	MDV SLEW CONTROL 1.5 V 400 CPS
A 179	J08- 67	TB1-G 1	+28 VDC MDV
A 182R	J08- 68	TB3-B13	400 CPS 26 V MDV RSVR EXC
A 195	J08- 70	E 19	0 VDC IMU
A 198	J08- 71	TB1-H 6	AGC POWER SUPPLY FAIL SIG HI
A 200	J08- 72	TB3-B 3	CDU FAIL LIGHT HI
A 190	J08- 73	TB3-B 5	ACCEL FAIL LIGHT HI
A 184	J08- 78	TB2-S 7	STEP-UP-C
A 186	J08- 79	TB2-S 5	STEP-DOWN-C
A 182Y	J08- 81	TB3-B12	400 CPS 26 V SLEW
A 214	J08- 82	TB2-D 6	0 VDC IMU

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
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SCALE - NONE
REV LTR
SHEET 21

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 201	J08- 83	E 20	0 VDC IMU
A 191	J08- 84	E 20	0 VDC IMU
A 211	J08- 92	TB1-S 5	0 VDC IMU
A 185	J08- 93	TB2-S 4	STEP-DOWN-R
A 199	J08- 95	TB3-B14	400 CPS 26 V LO
A 183	J08-106	TB2-S 6	STEP-UP-R

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE
REV LTR
SHEET 22

MIL 2064-4-64

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 429	J09- 1	TB3-L22	0 VDC OPTICS	
A 389Y	J09- 3	J22-193	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT	
A 387Y	J09- 4	J22-233	PITCH ATTIT IMPULSE CONTR OUTPUT UP	
A 387G	J09- 5	J22-232	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN	
A 388G	J09- 6	J22-197	YAW ATTIT IMPULSE CONTR OUTPUT LEFT	
A 388R	J09- 7	J22-235	YAW ATTIT IMPULSE CONTR INPUT	
A 425R	J09- 10	TB3-M10	RSVR DRIVE AMP TRUNNION SIG (RSVD) HI	
A 668	J09- 14	TB3-F 2	SPACECRAFT LAMP TEST	
A 667	J09- 15	TB3-F 1	0 VDC SPACECRAFT	
A 389R	J09- 16	J22-230	ROLL ATTIT IMPULSE CONTR INPUT	
A 389G	J09- 17	J22-192	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT	
A 387R	J09- 18	J22-195	PITCH ATTIT IMPULSE CONTR INPUT	
A 426R	J09- 19	TB3-G11	TRUNNION CDU MDA CONTROLLER SIG HI	
A 388Y	J09- 20	J22-198	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT	
A 425Y	J09- 23	TB3-M11	RSVR DRIVE AMP INPUT LO	
A 425G	J09- 24	TB3-M12	RSVR DRIVE AMP SHAFT SIG (RSVD) HI	
A 437Y	J09- 25	J21- 54	OPTICS ZERO ENCODER	104A
A 450	J09- 26	TB2-D 6	0 VDC IMU	
* A 453	J09- 29	P10- 10	GIMBAL LOCK LIGHT CONDITION LAMP TEST	
A 433Y	J09- 30	J21- 86	MARK	102A
A 434Y	J09- 31	J21- 88	NOT MARK	103A
A 431R	J09- 32	TB2-A 2	PANEL BRIGHTNESS CONTROL	
A 426Y	J09- 33	TB3-G12	TRUNNION CDU MDA CONTROLLER SIG LO	
A 427Y	J09- 34	TB3-F12	SHAFT CDU MDA CONTROLLER SIG LO	
A 427R	J09- 35	TB3-F11	SHAFT CDU MDA CONTROLLER SIG HI	
A 420	J09- 36	E 56	AGC COMMON	
A 449R	J09- 37	J21- 18	OPTICS MODE SW COMPUTER INDICATION	106A
A 670Y	J09- 38	TB3-B17	+28 VDC OPTICS SWITCHED	
A 393Y	J09- 40	J22-200	0 VDC FROM NAA	
A 393R	J09- 41	J22-237	+28 VDC FROM NAA	
A 415	J09- 42	E 56	AGC COMMON	
A 431Y	J09- 44	TB2-A 1	PANEL BRIGHTNESS CONTROL	
A 604Y	J09- 46	TB1-R 3	PROJECTION LAMP LO INTENSITY	
A 673	J09- 47	TB3-A10	+28 VDC OPTICS DAC POWER	
A 671Y	J09- 48	TB3-G 8	SHAFT CDU DAC OUTPUT HI	
A 670R	J09- 49	TB3-B16	+28 VDC OPTICS SWITCHED	
A 393G	J09- 50	J22-238	ATTITUDE DISABLE SIG TO NAA	
A 435	J09- 51	TB3-M22	+28 VDC MDV	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
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SCALE - NONE
REV LTR +
SHEET 23

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 606N	J09- 52	P10-108	400 CPS 6 V LO
A 606G	J09- 53	P10-107	400 CPS 6 V HI
A 605R	J09- 54	TB1-R 1	400 CPS VAR ILLUM PWR
A 604R	J09- 55	TB1-N 3	PROJECTION LAMP HI INTENSITY
A 672Y	J09- 56	TB3-G 7	TRUNNION CDU DAC OUTPUT HI
A 405	J09- 58	TB3-K18	0 DEG TRUNNION SCT OFFSET RELAY CONTROL
A 404	J09- 59	TB3-G18	25 DEG TRUNNION SCT OFFSET RELAY CONTROL
A 606R	J09- 61	P10-106	400 CPS 6 V HI
A 606Y	J09- 62	P10- 93	400 CPS 6 V HI
A 605N	J09- 63	TB1-M 1	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
A 605G	J09- 64	TB1-N 1	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
A 448R	J09- 65	P10- 39	400 CPS 1.5 V PI PHASE
A 408	J09- 66	TB3-H 6	MDV SLEW CONTROL 1.5 V 400 CPS
A 410	J09- 67	TB1-G 1	+28 VDC MDV
A 409R	J09- 68	TB3-B13	400 CPS 26 V MDV RSVR EXC
A 416Y	J09- 69	TB2-L 1	800 CPS 28 V 1 PCT LO OPTICS
A 445	J09- 71	TB3-M20	+28 VDC OPTICS
A 394	J09- 72	TB3-B11	ZERO OPTICS RELAY CONTROL
A 390	J09- 73	TB3-F 3	CONDITION LAMP TEST
A 403	J09- 74	TB3-H 5	IMU TEMP ALARM AMP PIN 15
A 444	J09- 75	TB3-K 5	IMU TEMP ALARM AMP PIN 14
A 400	J09- 76	TB3-L 5	IMU TEMP CONT K2 PIN 6
A 448Y	J09- 77	P10- 38	400 CPS 1.5 V ZERO PHASE
A 414	J09- 78	TB2-S 7	STEP-UP-C
A 412	J09- 79	TB2-S 5	STEP-DOWN-C
A 416R	J09- 80	TB2-K 1	800 CPS 28 V 1 PCT HI OPTICS
A 409Y	J09- 81	TB3-B12	400 CPS 26 V SLEW
A 436	J09- 83	TB3-L15	0 VDC OPTICS
A 605Y	J09- 84	TB1-K 1	MODE LAMP TEST PWR
A 442	J09- 85	TB3-G 4	IRIG TEMP BRIDGE AMP PIN 6
A 398	J09- 86	TB3-L 1	IRIG TEMP GAIN SWITCH NC
A 401G	J09- 87	TB3-H 1	IMU TEMP CONT AMP PIN 5
A 401N	J09- 88	TB3-G 2	IMU TEMP CONT K2 PIN 5
A 443	J09- 89	TB3-G 3	IRIG ZERO DEVIATION CHECK
A 402	J09- 90	TB3-N 6	EMERG HTR CONT MODULE LO
A 451	J09- 91	TB3-F22	STRUCTURE GND
A 438	J09- 92	TB3-K 1	IMU TEMP ALARM AMP PIN 5
A 411	J09- 93	TB2-S 4	STEP-DOWN-R

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
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SCALE - NONE
REV LTR +
SHEET 24

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 439	J09- 94	TB3-D 1	0 VDC IMU
A 447	J09- 95	P10- 48	400 CPS 26 V HI
A 395	J09- 97	TB3-R 6	ACCEL INDICATING SENSOR HI
A 396	J09- 98	TB3-C 1	ACCEL BRIDGE AMP PIN 6
A 428	J09- 99	TB3-L18	COSECANT RELAY CONTROL
A 401R	J09-100	TB3-G 1	IMU HTR CURRENT AMP PIN 5
A 401Y	J09-101	TB3-H 2	IMU TEMP CONT K1 PIN 3
A 399	J09-102	TB3-H 3	IMU TEMP CONT -5 DEG GAIN CHECK
A 441	J09-103	TB3-M 5	IMU IMU TEMP CONT +5 DEG GAIN CHECK
A 397	J09-104	TB3-M 4	ACCEL ZERO DEVIATION CHECK
A 446	J09-105	TB3-K 2	IMU TEMP ALARM BIAS RESISTOR
A 413	J09-106	TB2-S 6	STEP-UP-R

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE
REV LTR +
SHEET 25

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 570	J10- 1	E 62	GROUP 2 SHIELD	245
A 464	J10- 2	TB3-F 3	CONDITION LAMP TEST	328
A 474Y	J10- 3	TB3-B 4	ZERO ENCODER LIGHT HI	301
A 474R	J10- 4	TB3-B 3	CDU FAIL LIGHT HI	302
A 474G	J10- 5	TB3-B 5	ACCEL FAIL LIGHT HI	303
A 465	J10- 6	TB3-M 6	IMU FAIL LIGHT HI	304
A 466	J10- 7	TB1-F 1	SPARE FAIL LIGHT HI	305
A 507	J10- 8	TB3-M22	+28 VDC MDV	306
A 478	J10- 9	TB1-H 5	AGC FAIL SIG	326
A 508	J10- 10	TB1-G 5	+28 VDC TO COMPUTER RELAY	327
A 475	J10- 12	TB1-F 8	ATTIT CONT MODE COMMAND FROM AGC	314
A 521	J10- 13	TB1-K 7	MODE RELAY COMMON TO AGC	315
A 503R	J10- 14	J21-111	OUT 0 11	224A
A 506R	J10- 15	J21- 78	OUT 0 12	225A
A 504R	J10- 16	J21- 43	OUT 0 13	226A
A 483R	J10- 17	J21- 6	OUT 0 14	227A
A 484R	J10- 18	J21-214	OUT 0 15	228A
A 487R	J10- 19	J21-113	ALARM 3	231A
A 471R	J10- 20	J21- 82	POWER SYNC	242A
A 479Y	J10- 21	TB1-K 4	ZERO ENCODER MODE COMMAND FROM AGC	307
A 479G	J10- 22	TB1-K 3	COARSE ALIGN MODE COMMAND FROM AGC	308
A 480G	J10- 23	TB1-K 8	CDU MANUAL MODE COMMAND FROM AGC	309
A 479R	J10- 24	TB1-K 5	FINE ALIGN MODE COMMAND FROM AGC	310
A 480R	J10- 25	TB1-K 6	ENTRY MODE COMMAND FROM AGC	311
A 480Y	J10- 26	TB1-K 7	MODE RELAY COMMON TO AGC	312
A 569	J10- 27	E 65	GROUP 3 SHIELD	250
A 497R	J10- 28	J21-109	OUT 0 4	217A
A 498R	J10- 29	J21- 76	OUT 0 5	218A
A 499R	J10- 30	J21- 41	OUT 0 6	219A
A 505R	J10- 31	J21- 4	OUT 0 7	220A
A 482R	J10- 32	J21- 80	ALARM 4	232A
A 488R	J10- 33	J21- 45	ALARM 5	233A
A 516R	J10- 34	J21-218	KEY CODE 1	201A
A 514R	J10- 35	J21-183	KEY CODE 2	202A
A 472R	J10- 36	J21-150	KEY CODE 3	203A
A 511R	J10- 37	J21-117	KEY CODE 4	204A
A 467R	J10- 38	J21- 84	KEY CODE 5	205A
A 510R	J10- 39	J21- 14	TEST ALARM	207A

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 485R	J10- 40	J21-179	ALARM 1	229A
	A 486R	J10- 41	J21-146	ALARM 2	230A
	A 470R	J10- 42	J21- 47	TIMING (1.5 CPS)	244A
	A 490R	J10- 43	J21-216	ALARM 7	235A
	A 489R	J10- 44	J21- 8	ALARM 6	234A
	A 522	J10- 45	J21- 10	SPARE	248
	A 523	J10- 46	J21- 11	SPARE	249
	A 515R	J10- 47	J21-185	OR OF C1 THRU C33	210A
	A 517R	J10- 48	J21-220	ERROR RESET	208A
	A 468Y	J10- 49	J21- 12	KEY RESET NAV	209A
	A 492R	J10- 51	J21-148	ALARM 9	237A
	A 491R	J10- 53	J21-181	ALARM 8	236A
	A 513	J10- 55	J21-174	+3 V B	240
	A 512	J10- 56	J21-173	GND	239
	A 477	J10- 57	J21-108	+13 V B	241
	A 509	J10- 58	J21- 39	GND	239
	A 481	J10- 59	J21- 40	+28 VDC AGC	243
	A 496R	J10- 60	J21-142	OUT 0 3	216A
	A 500R	J10- 61	J21-212	OUT 0 8	221A
	A 501R	J10- 62	J21-177	OUT 0 9	222A
	A 502R	J10- 63	J21-144	OUT 0 10	223A
	A 493R	J10- 64	J21-115	ALARM 10	238A
*	A 551	J10- 69	E 25	COMMONED RETURNS GROUND	252
	A 476	J10- 70	J21- 3	SPARE	211
	A 473	J10- 71	J21- 75	SPARE	212
	A 469	J10- 72	J21-141	SPARE	213
	A 494R	J10- 73	J21-210	OUT 0 1	214A
	A 495R	J10- 74	J21-175	OUT 0 2	215A
	A 520	J10- 75	J21-209	SPARE	247
*	A 552	J10- 82	E 24	COMMONED RETURNS GROUND	330

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
AA 15W	J11-A1	TB2-H 2	IG CDU 1X ERROR SIG
AA 19W	J11-A2	TB2-H 7	MG CDU 1X ERROR SIG
AA 21W	J11-A3	TB2-N 2	OG CDU 1X ERROR SIG
AA 10R	J11-A5	J12-A2	IMU MG ERROR SIG
AA 29R	J11-A5	TB1-A 7	IMU MG ERROR SIG
AA 10L	J11-A6	J12-B1	IMU OG ERROR SIG
AA 29L	J11-A6	TB1-A 8	IMU OG ERROR SIG
AA 15R	J11-B1	TB2-G 2	IG CDU ERROR SIG RET
AA 16W	J11-B1	TB1-B 5	IG CDU ERROR SIG RET
AA 19R	J11-B2	TB2-G 7	MG CDU ERROR SIG RET
AA 20W	J11-B2	TB1-A 6	MG CDU ERROR SIG RET
AA 11R	J11-B3	J17-B1	OG CDU ERROR SIG RET
AA 21R	J11-B3	TB2-R 2	OG CDU ERROR SIG RET
AA 10K	J11-B5	J12-B2	IMU GIMBAL AND GYRO ERROR SIG LO
AA 29K	J11-B5	TB1-B 7	IMU GIMBAL AND GYRO ERROR SIG LO
AA 10W	J11-B6	J12-A1	IMU IG AND Y GYRO ERROR SIG
AA 29W	J11-B6	TB1-B 8	IMU IG AND Y GYRO ERROR SIG
AA 16R	J11-C1	TB1-C 5	IG CDU ATTITUDE STEERING ERROR
AA 20R	J11-C2	TB1-A 5	MG CDU ATTITUDE STEERING ERROR
AA 11W	J11-C3	J17-A1	OG CDU ATTITUDE STEERING ERROR
AA 30W	J11-D5	TB1-D 4	IG TORQUE MOTOR RET
AA 30R	J11-D6	TB1-D 3	IG TORQUE MOTOR HI
AA 23R	J11-F1	TB1-C 4	IG ADA
AA 42W	J11-F3	TB1-C 6	3200 CPS 2 V FEEDBACK HI
AA 32R	J11-F6	TB1-A 4	MG TORQUE MOTOR HI
AA 23K	J11-G1	TB1-C 3	OG ADA
AA 23W	J11-G2	TB1-B 3	0 VDC IMU
AA 24	J11-G2	J11-P6	0 VDC IMU
AA 42R	J11-G3	TB1-B 6	3200 CPS 2 V FEEDBACK LO
AA 32W	J11-G6	TB1-A 3	MG TORQUE MOTOR RET
AA 23L	J11-H1	TB1-B 4	MG ADA
AA 34W	J11-H5	TB1-B 2	OG TORQUE MOTOR RET
AA 34R	J11-H6	TB1-A 2	OG TORQUE MOTOR HI
AA 9W	J11-L1	J12-H2	3200 CPS 2 V HI
AA 28W	J11-L1	TB1-D 2	3200 CPS 2 V HI
AA 9R	J11-L2	J12-K2	3200 CPS 2 V LO
AA 28K	J11-L2	TB1-C 2	3200 CPS 2 V LO
AA 35	J11-L3	TB1-D 6	COARSE ALIGN RELAY CONTROL

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA 7	J11-L4	J12-K3	STRUCTURE GND	
	AA617	J11-L4	E 66	STRUCTURE GND	
	AA618	J11-L4	E 67	STRUCTURE GND	
*	AA503R	J11-L6	J21-203	COMPUTER 3200 PPS OUT OF PHASE SYNC	152A
	AA 28R	J11-M1	TB1-D 2	3200 CPS 2 V HI	
	AA 28L	J11-M2	TB1-C 2	3200 CPS 2 V LO	
	AA 36	J11-M5	E 28	COMPUTER 3200 PPS SYNC RET	
	AA 37	J11-M5	J11-P3	0 VDC IMU	
*	AA504R	J11-M6	J21-241	COMPUTER 3200 PPS IN PHASE SYNC	151A
	AA 12R	J11-N1	J17-P2	3200 CPS 20 V CT	
	AA 12L	J11-N2	J17-R2	3200 CPS 20 V LO	
	AA610	J11-N3	J12-P4	COMPUTER 12.8 KPPS SYNC	
	AA 5R	J11-N4	J12-P3	800 CPS 28 V 1 PCT LO IMU	
	AA 5W	J11-N5	J12-N3	800 CPS 28 V 1 PCT HI IMU	
	AA 14	J11-N6	J13-P6	-28 VDC	
	AA 27	J11-N6	TB1-D 5	-28 VDC	
	AA 12W	J11-P1	J17-N2	3200 CPS 20 V HI	
	AA 38	J11-P2	J11-R3	0 VDC IMU	
	AA 39	J11-P3	J11-R3	0 VDC IMU	
*	AA 37	J11-P3	J11-M5	0 VDC IMU	
	AA 18	J11-P4	J11-R4	0 VDC IMU	
	AA 22	J11-P4	J11-P5	0 VDC IMU	
*	AA 22	J11-P5	J11-P4	0 VDC IMU	
	AA 26	J11-P6	J11-R6	0 VDC IMU	
	AA 46	J11-P6	TB1-S 3	0 VDC IMU	
*	AA 24	J11-P6	J11-G2	0 VDC IMU	
	AA 41	J11-R1	J11-R2	0 VDC IMU	
	AA 44	J11-R1	TB2-M 2	0 VDC IMU	
	AA 45	J11-R2	TB2-M 3	0 VDC IMU	
*	AA 41	J11-R2	J11-R1	0 VDC IMU	
	AA 43	J11-R3	TB2-M 1	0 VDC IMU	
*	AA 38	J11-R3	J11-P2	0 VDC IMU	
*	AA 39	J11-R3	J11-P3	0 VDC IMU	
	AA 17	J11-R4	J11-R5	0 VDC IMU	
*	AA 18	J11-R4	J11-P4	0 VDC IMU	
	AA 31	J11-R5	J11-R6	0 VDC IMU	
*	AA 17	J11-R5	J11-R4	0 VDC IMU	
	AA 33	J11-R6	J11-S6	0 VDC IMU	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA 26	J11-R6	J11-P6	0 VDC IMU
*	AA 31	J11-R6	J11-R5	0 VDC IMU
	AA 2	J11-S1	J20-L1	+28 VDC IMU
	AA 40	J11-S1	J11-S2	+28 VDC IMU
	AA 3	J11-S2	J20-L2	+28 VDC IMU
*	AA 40	J11-S2	J11-S1	+28 VDC IMU
	AA 13	J11-S3	J17-R1	+28 VDC STBY
	AA 1	J11-S4	J15-S6	+28 VDC IMU
	AA 6	J11-S4	J12-S5	+28 VDC IMU
	AA 25	J11-S4	J11-S5	+28 VDC IMU
	AA 4	J11-S5	J20-K2	+28 VDC IMU
*	AA 25	J11-S5	J11-S4	+28 VDC IMU
*	AA 33	J11-S6	J11-R6	0 VDC IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* AA 10W	J12-A1	J11-B6	IMU IG AND Y GYRO ERROR SIG	
* AA 10R	J12-A2	J11-A5	IMU MG ERROR SIG	
AA 75	J12-A5	J13-D2	X PIP ERROR MONITOR	
AA 76	J12-A6	J13-F2	Y PIP ERROR MONITOR	
* AA 10L	J12-B1	J11-A6	IMU OG ERROR SIG	
* AA 10K	J12-B2	J11-B5	IMU GIMBAL AND GYRO ERROR SIG LO	
AA 77	J12-B5	E 34	0 VDC IMU	
AA 47	J12-B6	J14-H6	Z PIP ERROR MONITOR	
AA656	J12-C1	TB3-F 6	TRAY 2 THERMISTER HI	
AA661	J12-C2	J13-C2	THERMISTER LO	
* AA232L	J12-D1	J16-L4	COMPUTER 800 PPS OUT OF PHASE SYNC	
* AA232R	J12-D2	J16-M4	COMPUTER 800 PPS IN PHASE SYNC	
AA641W	J12-D4	J21- 60	ACCEL FAIL	138A
AA640W	J12-D5	J21-158	CDU FAIL	124A
AA639W	J12-D6	J21- 28	IMU FAIL	141A
AA 67	J12-F1	E 31	COMPUTER 800 PPS SYNC RET	
AA 68	J12-F1	J12-F2	COMPUTER 800 PPS SYNC RET	
AA 69	J12-F2	E 29	COMPUTER 25.6 KPPS SYNC RET	
* AA 68	J12-F2	J12-F1	COMPUTER 800 PPS SYNC RET	
AA 97	J12-F3	J17-M3	0 VDC SPACECRAFT	
AA641R	J12-F4	J21- 61	ACCEL FAIL RET	138B
AA640R	J12-F5	J21-159	CDU FAIL RET	124B
AA639R	J12-F6	J21- 29	IMU FAIL RET	141B
* AA490W	J12-G1	J21-169	COMPUTER 25.6 KPPS IN PHASE SYNC	153A
* AA491R	J12-G2	J21-136	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154A
AA 74	J12-G3	J22-244	ERROR DETECT LIGHT MAIN PANEL	
AA 53	J12-G4	J20-L6	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
AA 59	J12-G5	J16-R2	0 VDC IMU	
AA 71	J12-G5	J12-R5	0 VDC IMU	
AA 58	J12-G6	J16-N3	OG CDU FAILURE INDICATION	
AA 70R	J12-H1	J21- 71	COMPUTER 102.4 KPPS SYNC RET	156B
* AA 70A	J12-H1	SHLD AA 70	COMPUTER 102.4 KPPS SYNC RET	
* AA 9W	J12-H2	J11-L1	3200 CPS 2 V HI	
AA 52W	J12-H4	J20-G5	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
AA 62	J12-H4	J12-N2	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
AA 56	J12-H5	J16-M2	IG CDU FAILURE INDICATION	
AA 57	J12-H6	J16-M3	MG CDU FAILURE INDICATION	
AA 70W	J12-K1	J21- 70	COMPUTER 102.4 KPPS SYNC	156A

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* AA 9R	J12-K2	J11-L2	3200 CPS 2 V LO	
AA 72	J12-K3	J13-C6	STRUCTURE GND	
* AA 7	J12-K3	J11-L4	STRUCTURE GND	
AA 52R	J12-K4	J20-G6	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
AA 73L	J12-K6	J14-R2	+12, +32, +120 VDC RET GYRO	
AA 82	J12-L1	TB3-M22	+28 VDC MDV	
AA 83	J12-L2	TB1-H 8	ERROR DETECT LIGHT HI	
AA 73R	J12-L6	J14-S2	+120 VDC GYRO	
AA 80	J12-M1	TB1-H 6	AGC POWER SUPPLY FAIL SIG HI	
AA 81	J12-M1	J21- 36	AGC POWER SUPPLY FAIL SIG HI	157A
AA 78	J12-M3	TB1-H 5	AGC FAIL SIG	
AA 79	J12-M4	TB1-G 5	+28 VDC TO COMPUTER RELAY	
AA668	J12-M5	J13-S3	+32 VDC GYRO	
AA 73W	J12-M6	J14-S3	+12 VDC GYRO	
AA 61	J12-N1	J12-P1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
* AA 62	J12-N2	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
AA 49W	J12-N3	J15-P6	800 CPS 28 V 1 PCT HI IMU	
* AA 5W	J12-N3	J11-N5	800 CPS 28 V 1 PCT HI IMU	
AA 64W	J12-N4	TB1-H 4	25.6 KC HI IMU	
AA 65	J12-N4	J12-N5	25.6 KC HI IMU	
AA 50W	J12-N5	J15-N6	25.6 KC HI IMU	
* AA 65	J12-N5	J12-N4	25.6 KC HI IMU	
AA 63R	J12-N6	TB1-G 7	25.6 KC LO OPTICS	
AA 94R	J12-N6	J17-N3	25.6 KC LO OPTICS	
AA643	J12-N6	J12-R6	0 VDC OPTICS	
AA 60L	J12-P1	TB1-H 3	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
* AA 61	J12-P1	J12-N1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
AA 60W	J12-P2	TB1-G 2	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
AA 49R	J12-P3	J15-P5	800 CPS 28 V 1 PCT LO IMU	
* AA 5R	J12-P3	J11-N4	800 CPS 28 V 1 PCT LO IMU	
AA 92R	J12-P4	J17-R3	COMPUTER 12.8 KPPS SYNC	
AA 92W	J12-P4	J17-R3	COMPUTER 12.8 KPPS SYNC	
* AA610	J12-P4	J11-N3	COMPUTER 12.8 KPPS SYNC	
AA 50R	J12-P5	J15-N5	25.6 KC LO IMU	
AA 64R	J12-P5	TB1-G 4	25.6 KC LO IMU	
AA644	J12-P5	J12-R3	0 VDC IMU	
AA 63W	J12-P6	TB1-H 7	25.6 KC HI OPTICS	
AA 94W	J12-P6	J17-P3	25.6 KC HI OPTICS	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
AA 60R	J12-R1	TB1-H 2	800 CPS 28 V 5 PCT IMU WHEELS LO
AA 89	J12-R2	J12-R3	0 VDC IMU
AA 99	J12-R2	TB1-N 5	0 VDC IMU
AA 90	J12-R3	J12-R4	0 VDC IMU
* AA 89	J12-R3	J12-R2	0 VDC IMU
* AA644	J12-R3	J12-P5	0 VDC IMU
AA 91	J12-R4	E 31	0 VDC IMU
AA100	J12-R4	TB1-N 8	0 VDC IMU
* AA 90	J12-R4	J12-R3	0 VDC IMU
AA 96	J12-R5	J13-R6	0 VDC IMU
AA 98	J12-R5	TB1-S 6	0 VDC IMU
* AA 71	J12-R5	J12-G5	0 VDC IMU
AA 66	J12-R6	TB3-L20	0 VDC OPTICS
* AA643	J12-R6	J12-N6	0 VDC OPTICS
AA 54	J12-S1	J20-M1	+28 VDC IMU
AA 87	J12-S1	J12-S3	+28 VDC IMU
AA 55	J12-S2	J20-M2	+28 VDC IMU
AA 88	J12-S2	J12-S4	+28 VDC IMU
* AA 87	J12-S3	J12-S1	+28 VDC IMU
* AA 88	J12-S4	J12-S2	+28 VDC IMU
* AA 6	J12-S5	J11-S4	+28 VDC IMU
AA 51	J12-S6	J20-N5	+28 VDC OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
AA118W	J13-A1	TB1-M 7	X PIP ERROR HI	
AA121W	J13-A3	TB1-M 3	Y PIP ERROR HI	
AA104	J13-A6	J14-A6	X GYRO DC DIFF AMP OUTPUT	
AA118R	J13-B1	TB1-M 6	X PIP ERROR LO	
AA121R	J13-B3	TB1-N 2	Y PIP ERROR LO	
AA657	J13-C1	TB3-G 6	TRAY 3 THERMISTER HI	
AA662	J13-C2	J14-B2	THERMISTER LO	
* AA661	J13-C2	J12-C2	THERMISTER LO	
AA106	J13-C6	J14-H5	STRUCTURE GND	
* AA 72	J13-C6	J12-K3	STRUCTURE GND	
AA114	J13-D1	J15-L4	P X	
AA120	J13-D2	TB1-L 2	X PIP ERROR MONITOR	
* AA 75	J13-D2	J12-A5	X PIP ERROR MONITOR	
AA116	J13-D3	J15-L3	P Y	
AA124R	J13-D6	TB1-M 8	X GYRO TORQUE +	
AA115	J13-F1	J15-M4	N X	
AA123	J13-F2	TB1-M 2	Y PIP ERROR MONITOR	
* AA 76	J13-F2	J12-A6	Y PIP ERROR MONITOR	
AA117	J13-F3	J15-M3	N Y	
AA124W	J13-F6	TB1-L 8	X GYRO TORQUE RET	
AA124L	J13-G6	TB1-L 7	X GYRO TORQUE -	
AA119R	J13-H1	TB1-M 5	X PIP TORQUE +	
AA103	J13-H6	J14-G1	X GYRO CAL DUMMY	
AA119W	J13-K1	TB1-L 6	X PIP TORQUE RET	
AA105W	J13-K6	J14-H1	X GYRO TERNARY CUR SW TORQUE +	
AA119L	J13-L1	TB1-L 5	X PIP TORQUE -	
AA122R	J13-L3	TB1-L 4	Y PIP TORQUE +	
AA105R	J13-L6	J14-K1	X GYRO TERNARY CUR SW TORQUE -	
AA122W	J13-M3	TB1-L 3	Y PIP TORQUE RET	
AA122L	J13-N3	TB1-M 4	Y PIP TORQUE -	
AA101	J13-N5	J14-H3	PIPA INTERROGATE PULSE	
* AA501W	J13-N5	J21-132	PIPA INTERROGATE PULSE	139A
AA102	J13-N6	J14-K3	PIPA SWITCHING PULSE	
* AA502W	J13-N6	J21- 99	PIPA SWITCHING PULSE	140A
AA113	J13-P6	J14-P6	-28 VDC	
* AA 14	J13-P6	J11-N6	-28 VDC	
AA112R	J13-R1	J14-R2	+12, +32, +120 VDC RET GYRO	
AA109R	J13-R2	J14-R1	+32, +120 VDC RET PIP	

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0 1 2
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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA108	J13-R6	J14-R6	0 VDC IMU
	AA125	J13-R6	E 34	0 VDC IMU
*	AA 96	J13-R6	J12-R5	0 VDC IMU
	AA112W	J13-S1	J14-S2	+120 VDC GYRO
	AA109W	J13-S2	J14-S1	+120 VDC PIP
	AA669	J13-S3	J14-S5	+32 VDC GYRO
*	AA668	J13-S3	J12-M5	+32 VDC GYRO
	AA670	J13-S4	J14-S4	+32 VDC PIP
	AA107	J13-S6	J14-S6	+28 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA126W	J14-A1	TB1-T 5	Z PIP ERROR HI	
	AA126R	J14-A2	TB1-T 4	Z PIP ERROR LO	
*	AA104	J14-A6	J13-A6	X GYRO DC DIFF AMP OUTPUT	
	AA658	J14-B1	TB3-K 6	TRAY 4 THERMISTER HI	
	AA659	J14-B2	TB3-L 6	THERMISTER LO	
*	AA662	J14-B2	J13-C2	THERMISTER LO	
	AA129R	J14-D1	J21- 67	+ DX GYRO RATE	142B
	AA130W	J14-D2	J21- 33	- DX GYRO RATE	143B
	AA131R	J14-D3	J21-240	+ DY GYRO RATE	144B
	AA132R	J14-D4	J21-202	- DY GYRO RATE	145B
	AA134W	J14-D5	J21-168	+ DZ GYRO RATE	146B
	AA135R	J14-D6	J21-135	- DZ GYRO RATE	147B
	AA148	J14-F6	J15-L2	P Z	
*	AA103	J14-G1	J13-H6	X GYRO CAL DUMMY	
	AA149	J14-G6	J15-M2	N Z	
*	AA105W	J14-H1	J13-K6	X GYRO TERNARY CUR SW TORQUE +	
*	AA101	J14-H3	J13-N5	PIPA INTERROGATE PULSE	
	AA151	J14-H5	J15-K3	STRUCTURE GND	
*	AA106	J14-H5	J13-C6	STRUCTURE GND	
	AA128	J14-H6	TB1-T 7	Z PIP ERROR MONITOR	
*	AA 47	J14-H6	J12-B6	Z PIP ERROR MONITOR	
*	AA105R	J14-K1	J13-L6	X GYRO TERNARY CUR SW TORQUE -	
*	AA102	J14-K3	J13-N6	PIPA SWITCHING PULSE	
	AA655W	J14-K4	J21-102	GYRO RESET PULSE	148B
	AA136R	J14-L6	TB1-T 8	Z GYRO TORQUE +	
	AA133R	J14-M1	TB1-T 6	Y GYRO TORQUE +	
	AA133L	J14-M2	TB1-U 6	Y GYRO TORQUE -	
	AA133W	J14-M3	TB1-U 5	Y GYRO TORQUE RET	
	AA136L	J14-M6	TB1-U 8	Z GYRO TORQUE -	
	AA136W	J14-N6	TB1-U 7	Z GYRO TORQUE RET	
	AA127R	J14-P1	TB1-U 4	Z PIP TORQUE +	
	AA127L	J14-P2	TB1-U 3	Z PIP TORQUE -	
	AA127W	J14-P3	TB1-T 3	Z PIP TORQUE RET	
*	AA113	J14-P6	J13-P6	-28 VDC	
	AA653R	J14-R1	J17-L4	+32, +120 VDC RET PIP	
*	AA109R	J14-R1	J13-R2	+32, +120 VDC RET PIP	
*	AA 73L	J14-R2	J12-K6	+12, +32, +120 VDC RET GYRO	
*	AA112R	J14-R2	J13-R1	+12, +32, +120 VDC RET GYRO	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA137	J14-R6	E 33	0 VDC IMU
	AA153	J14-R6	J15-R2	0 VDC IMU
*	AA108	J14-R6	J13-R6	0 VDC IMU
	AA653W	J14-S1	J17-L5	+120 VDC PIP
*	AA109W	J14-S1	J13-S2	+120 VDC PIP
*	AA 73R	J14-S2	J12-L6	+120 VDC GYRO
*	AA112W	J14-S2	J13-S1	+120 VDC GYRO
*	AA 73W	J14-S3	J12-M6	+12 VDC GYRO
	AA671	J14-S4	J17-T5	+32 VDC PIP
*	AA670	J14-S4	J13-S4	+32 VDC PIP
*	AA669	J14-S5	J13-S3	+32 VDC GYRO
	AA152	J14-S6	J15-S2	+28 VDC IMU
*	AA107	J14-S6	J13-S6	+28 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA654W	J15-A1	TB1-C 8	Z GYRO ERROR SIG	
*	AA488W	J15-A3	J21-188	MANUAL CDU MODE INDICATION TO AGC	160A
	AA180R	J15-A4	J16-B2	IG DAC MDA SIG HI	
	AA164	J15-A5	E 38	IG DAC MDA SIG LO	
	AA167	J15-A5	E 39	IG DAC MDA SIG LO	
	AA180W	J15-A5	J16-B1	IG DAC MDA SIG LO	
	AA181R	J15-A6	J16-B4	MG DAC MDA SIG HI	
	AA165	J15-A7	E 40	MG DAC MDA SIG LO	
	AA168	J15-A7	E 41	MG DAC MDA SIG LO	
	AA181W	J15-A7	J16-B3	MG DAC MDA SIG LO	
	AA182R	J15-A8	J16-B6	OG DAC MDA SIG HI	
	AA166	J15-A9	E 42	OG DAC MDA SIG LO	
	AA169	J15-A9	E 43	OG DAC MDA SIG LO	
	AA182W	J15-A9	J16-B5	OG DAC MDA SIG LO	
	AA654L	J15-B1	TB1-C 7	X GYRO ERROR SIG	
	AA654R	J15-B2	TB1-B 7	IMU GIMBAL AND GYRO ERROR SIG LO	
	AA176W	J15-B3	TB2-D 2	AGC COM	
*	AA475W	J15-B4	J21- 24	IG ENCODER + DELTA THETA	120A
*	AA481W	J15-B5	J21-237	IG CDU + DELTA THETA COMMAND	128A
*	AA477W	J15-B6	J21-232	MG ENCODER + DELTA THETA	122A
*	AA483W	J15-B7	J21-165	MG CDU + DELTA THETA COMMAND	130A
*	AA479W	J15-B8	J21- 56	OG ENCODER + DELTA THETA	118A
*	AA485W	J15-B9	J21- 64	OG CDU + DELTA THETA COMMAND	126A
	AA161R	J15-C1	TB2-A 5	IG CDU ENCODER COM	
	AA161W	J15-C2	TB2-B 5	IG CDU ENCODER PHASE 1	
	AA163L	J15-C3	TB2-C 4	OG CDU ENCODER PHASE 2	
*	AA476R	J15-C4	J21- 26	IG ENCODER - DELTA THETA	121A
*	AA482R	J15-C5	J21-199	IG CDU - DELTA THETA COMMAND	129A
*	AA478R	J15-C6	J21-192	MG ENCODER - DELTA THETA	123A
*	AA484R	J15-C7	J21- 97	MG CDU - DELTA THETA COMMAND	131A
*	AA480R	J15-C8	J21- 58	OG ENCODER - DELTA THETA	119A
*	AA486R	J15-C9	J21- 30	OG CDU - DELTA THETA COMMAND	127A
	AA161L	J15-D1	TB2-C 5	IG CDU ENCODER PHASE 2	
	AA162R	J15-D2	TB2-A 6	MG CDU ENCODER PHASE 2	
	AA163R	J15-D3	TB2-A 4	OG CDU ENCODER COM	
	AA163W	J15-D4	TB2-B 4	OG CDU ENCODER PHASE 1	
	AA171R	J15-D7	TB2-B 8	SIN AIG 16X S4	
	AA171W	J15-D8	TB2-A 8	SIN AIG 16X S2	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA172L	J15-D9	TB2-C 7	SIN AMG 16X TO CDU	
	AA162W	J15-F1	TB2-B 6	MG CDU ENCODER PHASE 1	
	AA162L	J15-F2	TB2-C 6	MG CDU ENCODER COM	
	AA171L	J15-F7	TB2-C 8	SIN AIG 16X TO CDU	
	AA172W	J15-F8	TB2-A 7	SIN AMG 16X S2	
	AA172R	J15-F9	TB2-B 7	SIN AMG 16X S4	
	AA170	J15-H4	TB2-C 1	FINE ALIGN RELAY CONTROL	
	AA184	J15-H4	J16-L1	FINE ALIGN RELAY CONTROL	
	AA187	J15-K3	J16-N4	STRUCTURE GND	
*	AA151	J15-K3	J14-H5	STRUCTURE GND	
*	AA471W	J15-K4	J21- 95	- DELTA V Z	137B
*	AA472W	J15-K5	J21-128	+ DELTA V Z	136B
*	AA470W	J15-K6	J21-161	- DELTA V Y	135B
*	AA148	J15-L2	J14-F6	P Z	
*	AA116	J15-L3	J13-D3	P Y	
*	AA114	J15-L4	J13-D1	P X	
	AA158	J15-L5	E 35	COMPUTER RET	
	AA159	J15-L5	E 36	COMPUTER RET	
	AA160	J15-L5	E 37	COMPUTER RET	
*	AA469W	J15-L6	J21-195	+ DELTA V Y	134B
*	AA149	J15-M2	J14-G6	N Z	
*	AA117	J15-M3	J13-F3	N Y	
*	AA115	J15-M4	J13-F1	N X	
*	AA467W	J15-M5	J21-126	+ DELTA V X	132B
*	AA468W	J15-M6	J21- 93	- DELTA V X	133B
*	AA 50R	J15-N5	J12-P5	25.6 KC LO IMU	
*	AA 50W	J15-N6	J12-N5	25.6 KC HI IMU	
	AA185R	J15-P5	J16-S3	800 CPS 28 V 1 PCT LO IMU	
*	AA 49R	J15-P5	J12-P3	800 CPS 28 V 1 PCT LO IMU	
	AA185W	J15-P6	J16-S4	800 CPS 28 V 1 PCT HI IMU	
*	AA 49W	J15-P6	J12-N3	800 CPS 28 V 1 PCT HI IMU	
	AA637	J15-R2	TB2-F 4	0 VDC IMU	
*	AA153	J15-R2	J14-R6	0 VDC IMU	
	AA177	J15-R6	TB2-D 1	+28 VDC CDU NOT LOCK	
	AA173	J15-S1	TB2-B 2	ZERO ENCODER RELAY CONTROL	
	AA183	J15-S1	J16-L2	ZERO ENCODER RELAY CONTROL	
	AA179	J15-S2	J20-K1	+28 VDC IMU	
*	AA152	J15-S2	J14-S6	+28 VDC IMU	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA174	J15-S3	TB2-B 1	LOCK CDU RELAY CONTROL
	AA175	J15-S3	J22-227	LOCK CDU RELAY CONTROL
	AA186	J15-S6	J16-S2	+28 VDC IMU
*	AA 1	J15-S6	J11-S4	+28 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA197R	J16-A1	TB2-U 6	IG CDU MDA TACH SIG
	AA197W	J16-A2	TB2-T 6	IG CDU MDA SLEW SIG
	AA202R	J16-A3	TB2-W 5	MG CDU MDA TACH SIG
	AA202W	J16-A4	TB2-X 5	MG CDU MDA SLEW SIG
	AA214R	J16-A5	TB2-N 6	OG CDU MDA TACH SIG
	AA214W	J16-A6	TB2-R 6	OG CDU MDA SLEW SIG
*	AA489W	J16-A7	J21-152	ZERO ENCODER MODE INDICATION TO AGC 158A
	AA205W	J16-A8	TB2-U 7	SIN AOG 1X S2
	AA205R	J16-A9	TB2-U 8	SIN AOG 1X S4
	AA197L	J16-B1	TB2-T 7	IG CDU MDA INPUT RET
*	AA180W	J16-B1	J15-A5	IG DAC MDA SIG LO
*	AA197A	J16-B1	SHLD AA197	IG CDU MDA INPUT RET
*	AA180R	J16-B2	J15-A4	IG DAC MDA SIG HI
	AA202L	J16-B3	TB2-X 6	MG CDU MDA INPUT RET
*	AA181W	J16-B3	J15-A7	MG DAC MDA SIG LO
*	AA202A	J16-B3	SHLD AA202	MG CDU MDA INPUT RET
*	AA181R	J16-B4	J15-A6	MG DAC MDA SIG HI
	AA214L	J16-B5	TB2-R 7	OG CDU MDA INPUT RET
*	AA182W	J16-B5	J15-A9	OG DAC MDA SIG LO
*	AA214A	J16-B5	SHLD AA214	OG CDU MDA INPUT RET
*	AA182R	J16-B6	J15-A8	OG DAC MDA SIG HI
*	AA569W	J16-B7	TB2-D 2	AGC COM
	AA204W	J16-B8	TB2-N 8	COS AOG 1X S3
	AA205L	J16-B9	TB2-T 8	SIN AOG 1X TO CDU
	AA196W	J16-C1	TB2-H 1	IG CDU 16X ERROR SIG
	AA195W	J16-C2	TB2-H 2	IG CDU 1X ERROR SIG
	AA201W	J16-C3	TB2-H 8	MG CDU 16X ERROR SIG
	AA200W	J16-C4	TB2-H 7	MG CDU 1X ERROR SIG
	AA208R	J16-C5	TB2-N 3	OG CDU 16X ERROR SIG
	AA207W	J16-C6	TB2-N 2	OG CDU 1X ERROR SIG
	AA204R	J16-C8	TB2-N 7	COS AOG 1X S1
	AA204L	J16-C9	TB2-R 8	COS AOG 1X TO CDU
	AA194W	J16-D1	TB2-H 3	IG CDU 1/2X ERROR SIG
	AA194R	J16-D2	TB2-G 3	IG CDU ERROR SIG RET
	AA195R	J16-D2	TB2-G 2	IG CDU ERROR SIG RET
	AA196R	J16-D2	TB2-G 1	IG CDU ERROR SIG RET
	AA199W	J16-D3	TB2-H 6	MG CDU 1/2X ERROR SIG
	AA199R	J16-D4	TB2-G 6	MG CDU ERROR SIG RET

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA200R	J16-D4	TB2-G 7	MG CDU ERROR SIG RET	
	AA201R	J16-D4	TB2-G 8	MG CDU ERROR SIG RET	
	AA206W	J16-D5	TB2-N 1	OG CDU 1/2X ERROR SIG	
	AA206R	J16-D6	TB2-R 1	OG CDU ERROR SIG RET	
	AA207R	J16-D6	TB2-R 2	OG CDU ERROR SIG RET	
	AA208W	J16-D6	TB2-R 3	OG CDU ERROR SIG RET	
	AA209R	J16-D7	TB2-W 3	COS AOG 16X S1	
	AA213W	J16-D8	TB2-X 3	SIN AOG 16X S2	
	AA213R	J16-D9	TB2-W 2	SIN AOG 16X S4	
	AA216	J16-F2	TB2-W 1	IG CDU 1X RSVR LOAD	
	AA217	J16-F4	TB2-X 1	MG CDU 1X RSVR LOAD	
	AA219	J16-F5	TB2-T 1	OG CDU 16X RSVR LOAD	
	AA218	J16-F6	TB2-S 1	OG CDU 1X RSVR LOAD	
	AA209W	J16-F7	TB2-W 4	COS AOG 16X S3	
	AA209L	J16-F8	TB2-X 4	COS AOG 16X TO CDU	
	AA213L	J16-F9	TB2-X 2	SIN AOG 16X TO CDU	
	AA230W	J16-G1	TB2-W 6	COS AIG 16X S3	
	AA230L	J16-G2	TB2-W 7	COS AIG 16X TO CDU	
	AA231W	J16-G3	TB2-U 5	COS AMG 16X S3	
	AA231L	J16-G4	TB2-U 4	COS AMG 16X TO CDU	
	AA230R	J16-H1	TB2-X 7	COS AIG 16X S1	
	AA231R	J16-H3	TB2-T 5	COS AMG 16X S1	
	AA220	J16-L1	J22-228	FINE ALIGN RELAY CONTROL	
*	AA184	J16-L1	J15-H4	FINE ALIGN RELAY CONTROL	
*	AA183	J16-L2	J15-S1	ZERO ENCODER RELAY CONTROL	
	AA226W	J16-L3	J21- 35	COMPUTER 800 PPS SYNC RET	150B
	AA227W	J16-L3	J21- 69	COMPUTER 800 PPS SYNC RET	149B
	AA232W	J16-L3	E 31	COMPUTER 800 PPS SYNC RET	
	AA226R	J16-L4	J21- 34	COMPUTER 800 PPS OUT OF PHASE SYNC	150A
	AA232L	J16-L4	J12-D1	COMPUTER 800 PPS OUT OF PHASE SYNC	
	AA221	J16-M1	TB2-R 4	ENTRY RELAY CONTROL	
	AA664K	J16-M2	TB3-B 6	IG CDU FAILURE INDICATION	
*	AA 56	J16-M2	J12-H5	IG CDU FAILURE INDICATION	
	AA664L	J16-M3	TB3-C 6	MG CDU FAILURE INDICATION	
*	AA 57	J16-M3	J12-H6	MG CDU FAILURE INDICATION	
	AA227R	J16-M4	J21- 68	COMPUTER 800 PPS IN PHASE SYNC	149A
	AA232R	J16-M4	J12-D2	COMPUTER 800 PPS IN PHASE SYNC	
	AA215W	J16-N1	TB2-K 6	OG CDU MDA OUTPUT	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA215R	J16-N2	TB2-K 5	OG CDU MDA OUTPUT
	AA664R	J16-N3	TB3-C 7	OG CDU FAILURE INDICATION
*	AA 58	J16-N3	J12-G6	OG CDU FAILURE INDICATION
	AA234	J16-N4	J17-L6	STRUCTURE GND
*	AA187	J16-N4	J15-K3	STRUCTURE GND
	AA191R	J16-N5	J20-L3	800 CPS 28 V 1 PCT LO OPTICS
	AA224R	J16-N5	TB2-L 1	800 CPS 28 V 1 PCT LO OPTICS
	AA233R	J16-N5	J18-S6	800 CPS 28 V 1 PCT LO OPTICS
	AA192R	J16-N6	J20-M4	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
	AA225R	J16-N6	TB2-T 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
	AA198R	J16-P1	TB2-L 6	IG CDU MDA OUTPUT
	AA223	J16-P2	TB2-K 4	0 VDC IMU
	AA203R	J16-P3	TB2-K 3	MG CDU MDA OUTPUT
	AA222W	J16-P4	TB2-G 5	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
	AA191W	J16-P5	J20-K3	800 CPS 28 V 1 PCT HI OPTICS
	AA224W	J16-P5	TB2-K 1	800 CPS 28 V 1 PCT HI OPTICS
	AA233W	J16-P5	J18-T6	800 CPS 28 V 1 PCT HI OPTICS
	AA192W	J16-P6	J20-L4	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
	AA225W	J16-P6	TB2-U 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
	AA198W	J16-R1	TB2-L 5	IG CDU MDA OUTPUT
	AA664W	J16-R2	TB3-C 8	0 VDC IMU
*	AA 59	J16-R2	J12-G5	0 VDC IMU
	AA203W	J16-R3	TB2-L 3	MG CDU MDA OUTPUT
	AA222K	J16-R4	TB2-H 5	ZEROING RSVR 800 CPS
	AA228	J16-R5	TB3-L20	0 VDC OPTICS
	AA229	J16-R6	TB3-L20	0 VDC OPTICS
	AA210	J16-S1	TB2-N 5	+28 VDC IMU FOR IG MDA
	AA193	J16-S2	J20-K2	+28 VDC IMU
*	AA186	J16-S2	J15-S6	+28 VDC IMU
	AA222L	J16-S3	TB2-H 4	800 CPS 28 V 1 PCT LO IMU
*	AA185R	J16-S3	J15-P5	800 CPS 28 V 1 PCT LO IMU
	AA222R	J16-S4	TB2-G 4	800 CPS 28 V 1 PCT HI IMU
*	AA185W	J16-S4	J15-P6	800 CPS 28 V 1 PCT HI IMU
	AA189	J16-S5	J20-N5	+28 VDC OPTICS
	AA190	J16-S6	J20-N6	+28 VDC OPTICS
	AA211	J16-T1	TB2-R 5	+28 VDC IMU FOR MG MDA
	AA212	J16-T2	TB2-K 8	+28 VDC IMU FOR OG MDA

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA 11W	J17-A1	J11-C3	OG CDU ATTITUDE STEERING ERROR
*	AA571W	J17-A2	TB2-N 3	OG CDU 16X ERROR SIG
	AA287W	J17-A3	J22- 1	ROLL ERROR BODY OFFSET AXIS HI
	AA244W	J17-A4	J22- 3	ROLL ERROR BODY AXIS HI
	AA281W	J17-A6	TB3-T 4	TRUNNION CDU ENCODER PHASE 1
	AA281R	J17-A7	TB3-T 5	TRUNNION CDU ENCODER COM
	AA281L	J17-A8	TB3-T 6	TRUNNION CDU ENCODER PHASE 2
	AA665	J17-A9	J17-B9	TRUNNION ENCODER SCALE SELECT
*	AA 11R	J17-B1	J11-B3	OG CDU ERROR SIG RET
*	AA571R	J17-B2	TB2-R 3	OG CDU ERROR SIG RET
	AA287R	J17-B3	J22- 39	ROLL ERROR BODY OFFSET AXIS LO
	AA244R	J17-B4	J22- 4	ROLL ERROR BODY AXIS LO
	AA268	J17-B5	TB3-L 3	IRIG TEMP CONT SENSOR RET
	AA267	J17-B6	TB3-L 4	IRIG TEMP CONT SENSOR HI
	AA252	J17-B7	TB3-H 3	IMU TEMP CONT -5 DEG GAIN CHECK
	AA253	J17-B8	TB3-G 3	IRIG ZERO DEVIATION CHECK
*	AA665	J17-B9	J17-A9	TRUNNION ENCODER SCALE SELECT
	AA288R	J17-C1	J22- 10	PITCH ERROR BODY AND BODY OFFSET AXIS LO
	AA289W	J17-C1	TB3-M13	PITCH ERROR BODY AND BODY OFFSET AXIS LO
	AA289R	J17-C2	TB3-M14	PITCH-YAW RSVR S4
	AA246W	J17-C3	J22- 45	YAW ERROR BODY OFFSET AXIS HI
	AA245W	J17-C4	J22- 6	YAW ERROR BODY AXIS HI
	AA266	J17-C5	TB3-K 3	IRIG TEMP IND SENSOR RET
	AA276	J17-C6	TB3-H 4	IRIG TEMP IND SENSOR HI
	AA254	J17-C7	TB3-G 4	IRIG TEMP BRIDGE AMP PIN 6
	AA290	J17-C8	TB3-L 1	IRIG TEMP GAIN SWITCH NC
	AA284W	J17-C9	TB3-S 6	SHAFT CDU ENCODER PHASE 1
	AA288W	J17-D1	J22- 48	PITCH ERROR BODY AND BODY OFFSET AXIS HI
	AA247R	J17-D2	TB3-R 4	PITCH YAW RSVR S3
	AA246R	J17-D3	J22- 46	YAW ERROR BODY OFFSET AXIS LO
	AA247W	J17-D3	TB3-R 5	YAW ERROR BODY OFFSET AXIS LO
	AA245R	J17-D4	J22- 43	YAW ERROR BODY AXIS LO
	AA269	J17-D5	TB3-M 1	ACCEL TEMP IND SENSOR RET
	AA255	J17-D6	TB3-M 5	IMU IMU TEMP CONT +5 DEG GAIN CHECK
	AA256	J17-D7	TB3-M 4	ACCEL ZERO DEVIATION CHECK
	AA251	J17-D8	TB3-M 2	IMU TD RELAY C
	AA284R	J17-D9	TB3-S 5	SHAFT CDU ENCODER COM
	AA636	J17-F2	TB3-D 6	TEMPERATURE CONTROL SIG LO

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA274	J17-F3	TB3-D 5	HTR CURRENT (TELEMETRY)
	AA273	J17-F4	TB3-C 5	IRIG TEMP (TELEMETRY)
	AA272	J17-F5	TB3-D 4	ACCEL TEMP (TELEMETRY)
	AA271	J17-F6	TB3-C 4	BLOWER CURRENT SENSOR (TELEMETERY)
	AA257	J17-F7	TB3-C 1	ACCEL BRIDGE AMP PIN 6
	AA249	J17-F8	TB3-L 2	IMU TD RELAY NO
	AA284L	J17-F9	TB3-S 4	SHAFT CDU ENCODER PHASE 2
	AA261	J17-G1	TB3-K 5	IMU TEMP ALARM AMP PIN 14
	AA262	J17-G2	TB3-H 5	IMU TEMP ALARM AMP PIN 15
	AA242R	J17-G4	J18-L1	SHAFT CDU ENCODER + DELTA THETA
	AA243R	J17-G6	J18-L4	TRUNNION CDU ENCODER + DELTA THETA
	AA259	J17-H1	TB3-K 2	IMU TEMP ALARM BIAS RESISTOR
	AA260	J17-H2	TB3-K 1	IMU TEMP ALARM AMP PIN 5
	AA242W	J17-H4	E 53	SHAFT CDU DAC LO
	AA243W	J17-H6	E 51	TRUNNION CDU DAC LO
	AA242L	J17-K4	J18-K1	SHAFT CDU ENCODER - DELTA THETA
	AA243L	J17-K6	J18-K4	TRUNNION CDU ENCODER - DELTA THETA
	AA263	J17-L1	TB3-L 5	IMU TEMP CONT K2 PIN 6
	AA293	J17-L3	J22-243	IMU TEMP LIGHT (MAIN PANEL)
	AA672W	J17-L4	TB3-A 5	+32, +120 VDC RET PIP
*	AA653R	J17-L4	J14-R1	+32, +120 VDC RET PIP
	AA672L	J17-L5	TB3-A 3	+120 VDC PIP
*	AA653W	J17-L5	J14-S1	+120 VDC PIP
	AA241	J17-L6	J18-R5	STRUCTURE GND
*	AA234	J17-L6	J16-N4	STRUCTURE GND
	AA264	J17-M1	TB3-D 1	0 VDC IMU
	AA277	J17-M2	TB3-G 5	IMU TEMP SENSOR COM
	AA278	J17-M3	TB3-F 1	0 VDC SPACECRAFT
	AA292	J17-M3	J22-206	0 VDC SPACECRAFT
*	AA 97	J17-M3	J12-F3	0 VDC SPACECRAFT
	AA265W	J17-M4	TB3-N 1	IMU EMERGENCY HTR HI
	AA258W	J17-M5	TB3-H 2	IMU TEMP CONT K1 PIN 3
	AA258R	J17-M6	TB3-H 1	IMU TEMP CONT AMP PIN 5
	AA270W	J17-N1	TB3-N 4	IMU CONTROL HTR LO
*	AA 12W	J17-N2	J11-P1	3200 CPS 20 V HI
*	AA 94R	J17-N3	J12-N6	25.6 KC LO OPTICS
	AA265R	J17-N4	TB3-N 2	EMERGENCY HTR LO-OPER AND STBY
	AA258L	J17-N5	TB3-G 2	IMU TEMP CONT K2 PIN 5

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA258K	J17-N6	TB3-G 1	IMU HTR CURRENT AMP PIN 5	
	AA270R	J17-P1	TB3-N 5	IMU CONTROL HTR HI	
*	AA 12R	J17-P2	J11-N1	3200 CPS 20 V CT	
*	AA 94W	J17-P3	J12-P6	25.6 KC HI OPTICS	
	AA250R	J17-P4	TB3-C 2	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	AA275	J17-P5	TB3-D 3	IMU TEMP CONT FAIL LIGHT HI	
	AA235	J17-P6	TB3-F 3	CONDITION LAMP TEST	
*	AA 13	J17-R1	J11-S3	+28 VDC STBY	
*	AA 12L	J17-R2	J11-N2	3200 CPS 20 V LO	
*	AA 92R	J17-R3	J12-P4	COMPUTER 12.8 KPPS SYNC	
*	AA 92W	J17-R3	J12-P4	COMPUTER 12.8 KPPS SYNC	
*	AA500R	J17-R3	J21-103	COMPUTER 12.8 KPPS SYNC	155A
	AA250W	J17-R4	TB3-D 2	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	AA280	J17-R5	TB3-M21	+28 VDC MDV	
	AA282	J17-R6	TB3-L21	0 VDC OPTICS	
	AA283	J17-R6	J17-S6	0 VDC OPTICS	
	AA291	J17-S1	J17-S2	0 VDC IMU	
	AA296	J17-S1	TB3-S 3	0 VDC IMU	
	AA248	J17-S2	TB3-T 3	0 VDC IMU	
*	AA291	J17-S2	J17-S1	0 VDC IMU	
	AA295	J17-S3	TB3-N 3	0 VDC IMU	
	AA297	J17-S4	TB3-R 3	0 VDC IMU	
*	AA283	J17-S6	J17-R6	0 VDC OPTICS	
	AA238	J17-T1	J20-P3	+28 VDC STBY	
	AA294	J17-T1	J17-T2	+28 VDC STBY	
	AA239	J17-T2	J20-P4	+28 VDC STBY	
*	AA294	J17-T2	J17-T1	+28 VDC STBY	
	AA237	J17-T3	J20-M2	+28 VDC IMU	
	AA236	J17-T4	J20-M1	+28 VDC IMU	
	AA672R	J17-T5	TB3-A 4	+32 VDC PIP	
*	AA671	J17-T5	J14-S4	+32 VDC PIP	
	AA240	J17-T6	J18-S1	+28 VDC OPTICS	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
AA308W	J18-A1	TB3-S 8	SXT AT 64X RSVR COS HI
AA309W	J18-A2	TB3-T10	TRUNNION CDU 16X RSVR COS HI P1
AA309R	J18-A3	TB3-T11	TRUNNION CDU 16X RSVR COS LO P3
AA313W	J18-A4	TB3-N 8	SHAFT CDU 16X RSVR COS HI P1
AA313R	J18-A5	TB3-N 7	SHAFT CDU 16X RSVR COS LO P3
AA317W	J18-A6	TB3-L10	TRUNNION CDU 1/2X RSVR P2
AA316R	J18-A7	TB3-L 8	SHAFT CDU TACH LO
AA316W	J18-A8	TB3-L 7	SHAFT CDU TACH HI
AA315W	J18-A9	TB3-M 8	TRUNNION CDU TACH HI
AA308R	J18-B1	TB3-S 7	SXT AT 64X RSVR COS LO
AA307R	J18-B2	TB3-T 7	SXT AT 64X RSVR SIN HI
AA310W	J18-B3	TB3-S10	TRUNNION CDU 16X RSVR SIN HI P2
AA310R	J18-B4	TB3-S11	TRUNNION CDU 16X RSVR SIN LO P4
AA314W	J18-B5	TB3-N10	SHAFT CDU 16X RSVR SIN HI P2
AA317R	J18-B6	TB3-L11	TRUNNION CDU 1/2X RSVR P3
AA300W	J18-B8	J19-C1	TRUNNION CDU 16X ERROR SIG HI
AA315R	J18-B9	TB3-M 7	TRUNNION CDU TACH LO
AA312R	J18-C1	TB3-R11	SXT AS 16X RSVR COS HI
AA307W	J18-C2	TB3-T 8	SXT AT 64X RSVR SIN LO
AA314R	J18-C5	TB3-N11	SHAFT CDU 16X RSVR SIN LO P4
AA334W	J18-C6	TB3-G14	SHAFT CDU 1X SIN OUTPUT HI
AA335W	J18-C7	TB3-G11	TRUNNION CDU MDA CONTROLLER SIG HI
AA300R	J18-C8	J19-B2	TRUNNION CDU 16X ERROR SIG LO
AA301W	J18-C9	J19-A4	SHAFT CDU 16X ERROR SIG HI
AA312W	J18-D1	TB3-R10	SXT AS 16X RSVR COS LO
AA311W	J18-D2	TB3-R 8	SXT AS 16X RSVR SIN HI
AA311R	J18-D3	TB3-R 7	SXT AS 16X RSVR SIN LO
AA338R	J18-D4	TB3-K 7	SHAFT CDU 1X COS OUTPUT HI
AA338W	J18-D5	TB3-K 8	SHAFT CDU 1X COS OUTPUT LO
AA334R	J18-D6	TB3-G13	SHAFT CDU 1X SIN OUTPUT LO
AA335R	J18-D7	TB3-G12	TRUNNION CDU MDA CONTROLLER SIG LO
AA326W	J18-D8	TB3-M10	RSVR DRIVE AMP TRUNNION SIG (RSVD) HI
AA301R	J18-D9	J19-B3	SHAFT CDU 16X ERROR SIG LO
AA299W	J18-F1	J19-D4	TRUNNION CDU 1/4X SIN HI
AA330W	J18-F1	TB3-G10	TRUNNION CDU 1/4X SIN HI
AA299R	J18-F2	J19-F4	TRUNNION CDU 1/4X SIN LO
AA330R	J18-F2	TB3-F10	TRUNNION CDU 1/4X SIN LO
AA318W	J18-F3	TB3-L12	TRUNNION CDU 1/2X RSVR LOAD HI

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA318R	J18-F4	TB3-K12	TRUNNION CDU 1/2X RSVR LOAD LO	
	AA336W	J18-F6	TB3-F11	SHAFT CDU MDA CONTROLLER SIG HI	
	AA336R	J18-F7	TB3-F12	SHAFT CDU MDA CONTROLLER SIG LO	
	AA326R	J18-F8	TB3-M12	RSVR DRIVE AMP SHAFT SIG (RSVD) HI	
	AA326L	J18-F9	TB3-M11	RSVR DRIVE AMP INPUT LO	
	AA332W	J18-G1	TB3-K10	SHAFT CDU 1/2X SIN HI S1	
	AA345W	J18-G2	TB3-G 8	SHAFT CDU DAC OUTPUT HI	
	AA344W	J18-G3	TB3-G 7	TRUNNION CDU DAC OUTPUT HI	
	AA302K	J18-G5	J19-H6	COSECANT AMP FEEDBACK SIG HI	
	AA302W	J18-G6	J19-G6	COSECANT AMP OUTPUT HI	
	AA332R	J18-H1	TB3-K11	SHAFT CDU 1/2X SIN LO S3	
	AA345R	J18-H2	TB3-F 8	SHAFT CDU DAC LO	
	AA346	J18-H2	E 52	SHAFT CDU DAC LO	
	AA347	J18-H2	E 53	SHAFT CDU DAC LO	
	AA344R	J18-H3	TB3-F 7	TRUNNION CDU DAC LO	
	AA348	J18-H3	E 50	TRUNNION CDU DAC LO	
	AA349	J18-H3	E 51	TRUNNION CDU DAC LO	
	AA302L	J18-H5	J19-H5	SHAFT CDU MDA COSECANT SIG	
	AA302R	J18-H6	J19-G5	COSECANT AMP FEEDBACK SIG LO	
*	AA242L	J18-K1	J17-K4	SHAFT CDU ENCODER - DELTA THETA	
*	AA495W	J18-K1	J21-123	SHAFT CDU ENCODER - DELTA THETA	111A
*	AA492W	J18-K2	J21-163	SHAFT CDU + DELTA THETA COMMAND	116A
*	AA496W	J18-K3	J21-235	TRUNNION CDU + DELTA THETA COMMAND	114A
*	AA243L	J18-K4	J17-K6	TRUNNION CDU ENCODER - DELTA THETA	
*	AA499W	J18-K4	J21-190	TRUNNION CDU ENCODER - DELTA THETA	109A
	AA328W	J18-K6	TB3-T12	SHAFT CDU 1X P1 (S1)	
*	AA242R	J18-L1	J17-G4	SHAFT CDU ENCODER + DELTA THETA	
*	AA494W	J18-L1	J21-156	SHAFT CDU ENCODER + DELTA THETA	110A
*	AA493R	J18-L2	J21-130	SHAFT CDU - DELTA THETA COMMAND	117A
*	AA497R	J18-L3	J21-197	TRUNNION CDU - DELTA THETA COMMAND	115A
*	AA243R	J18-L4	J17-G6	TRUNNION CDU ENCODER + DELTA THETA	
*	AA498W	J18-L4	J21-230	TRUNNION CDU ENCODER + DELTA THETA	108A
	AA328R	J18-L5	TB3-S12	SHAFT CDU 1X P2 (S2)	
	AA328L	J18-L6	TB3-R12	SHAFT CDU 1X P3 (S3)	
	AA350	J18-M1	J18-P3	0 VDC OPTICS	
	AA648	J18-M1	J18-M3	0 VDC OPTICS	
	AA663	J18-M1	J19-K6	0 VDC OPTICS	
	AA651R	J18-M2	J19-B6	BUFFERED TRUNNION CDU TACH HI	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA353	J18-M3	J18-M4	0 VDC OPTICS
*	AA648	J18-M3	J18-M1	0 VDC OPTICS
	AA649	J18-M4	J18-M6	0 VDC OPTICS
*	AA353	J18-M4	J18-M3	0 VDC OPTICS
	AA652R	J18-M5	J19-D9	BUFFERED SHAFT CDU TACH HI
*	AA649	J18-M6	J18-M4	0 VDC OPTICS
	AA666W	J18-N1	TB3-D 7	DIRECT TRUNNION CONTROLLER HI (TEST)
	AA651W	J18-N2	J19-B8	BUFFERED TRUNNION CDU TACH LO
	AA666R	J18-N3	TB3-D 8	TRUNNION CDU MDA HI (TEST)
	AA666L	J18-N4	TB3-B 7	DIRECT SHAFT CONTROLLER HI (TEST)
	AA652W	J18-N5	J19-C8	BUFFERED SHAFT CDU TACH LO
	AA666K	J18-N6	TB3-D 9	SHAFT CDU MDA (TEST) HI
	AA319	J18-P1	TB3-D12	TRUNNION CDU MOTOR CONTROL WINDING
	AA322	J18-P2	TB3-D11	SHAFT CDU MOTOR CONTROL WINDING
	AA303	J18-P3	J19-R4	0 VDC OPTICS
*	AA350	J18-P3	J18-M1	0 VDC OPTICS
	AA320	J18-R1	TB3-C12	TRUNNION CDU MOTOR CONTROL WINDING
	AA321	J18-R2	TB3-C11	SHAFT CDU MOTOR CONTROL WINDING
	AA333	J18-R3	TB3-K20	0 VDC OPTICS
	AA337	J18-R4	TB3-B11	ZERO OPTICS RELAY CONTROL
	AA616	J18-R4	J19-M4	ZERO OPTICS RELAY CONTROL
	AA306	J18-R5	J19-P3	STRUCTURE GND
*	AA241	J18-R5	J17-L6	STRUCTURE GND
	AA298	J18-S1	J19-T1	+28 VDC OPTICS
*	AA240	J18-S1	J17-T6	+28 VDC OPTICS
	AA323	J18-S3	J18-S4	0 VDC OPTICS
	AA325	J18-S3	TB3-K20	0 VDC OPTICS
*	AA323	J18-S4	J18-S3	0 VDC OPTICS
	AA305	J18-S5	J19-P5	0 VDC OPTICS
	AA339	J18-S5	J18-T5	0 VDC OPTICS
	AA304R	J18-S6	J19-N6	800 CPS 28 V 1 PCT LO OPTICS
*	AA233R	J18-S6	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
	AA646	J18-T1	TB3-A10	+28 VDC OPTICS DAC POWER
	AA324	J18-T3	J18-T4	0 VDC OPTICS
	AA327	J18-T3	TB3-K20	0 VDC OPTICS
*	AA324	J18-T4	J18-T3	0 VDC OPTICS
	AA638	J18-T5	E 71	0 VDC OPTICS
*	AA339	J18-T5	J18-S5	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA304W	J18-T6	J19-P6	800 CPS 28 V 1 PCT HI OPTICS
*	AA233W	J18-T6	J16-P5	800 CPS 28 V 1 PCT HI OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA370W	J19-A1	TB3-T16	SXT TRUNNION TACH HI
	AA371R	J19-A2	TB3-S16	SXT SHAFT TACH LO
	AA371W	J19-A3	TB3-S17	SXT SHAFT TACH HI
*	AA301W	J19-A4	J18-C9	SHAFT CDU 16X ERROR SIG HI
	AA375W	J19-A5	TB3-H16	SXT SHAFT 1/2X RSVR ERROR HI
	AA378	J19-A7	TB3-R18	SCT TRUNNION 1X RSVR LOAD
	AA372R	J19-A8	TB3-R16	SCT TRUNNION TACH LO
	AA372W	J19-A9	TB3-R17	SCT TRUNNION TACH HI
	AA370R	J19-B1	TB3-T17	SXT TRUNNION TACH LO
	AA329R	J19-B2	TB3-H 7	TRUNNION CDU 16X ERROR SIG LO
*	AA300R	J19-B2	J18-C8	TRUNNION CDU 16X ERROR SIG LO
	AA331R	J19-B3	TB3-H11	SHAFT CDU 16X ERROR SIG LO
*	AA301R	J19-B3	J18-D9	SHAFT CDU 16X ERROR SIG LO
	AA331W	J19-B4	TB3-H10	SHAFT CDU 16X ERROR SIG HI
	AA375R	J19-B5	TB3-H17	SXT SHAFT 1/2X RSVR ERROR LO
*	AA651R	J19-B6	J18-M2	BUFFERED TRUNNION CDU TACH HI
	AA377W	J19-B7	TB3-K16	SCT TRUNNION 1X RSVR ERROR HI
	AA377R	J19-B8	TB3-K17	SCT TRUNNION 1X RSVR ERROR LO
*	AA651W	J19-B8	J18-N2	BUFFERED TRUNNION CDU TACH LO
	AA373W	J19-B9	TB3-N16	SCT SHAFT TACH HI
*	AA300W	J19-C1	J18-B8	TRUNNION CDU 16X ERROR SIG HI
	AA329W	J19-C2	TB3-H 8	TRUNNION CDU 16X ERROR SIG HI
	AA384	J19-C3	TB3-N18	TRUNNION CDU 16X LOAD
	AA385	J19-C4	TB3-M18	SHAFT CDU 16X LOAD
	AA376	J19-C5	TB3-S18	SXT SHAFT 1/2X RSVR LOAD
	AA380	J19-C7	TB3-T18	SCT SHAFT 1/2X RSVR LOAD
	AA379R	J19-C8	TB3-L16	SCT SHAFT 1/2X RSVR ERROR LO
*	AA652W	J19-C8	J18-N5	BUFFERED SHAFT CDU TACH LO
	AA373R	J19-C9	TB3-N17	SCT SHAFT TACH LO
	AA374W	J19-D1	TB3-M16	SXT TRUNNION 1X RSVR ERROR HI
	AA374R	J19-D2	TB3-M17	SXT TRUNNION 1X RSVR ERROR LO
*	AA299W	J19-D4	J18-F1	TRUNNION CDU 1/4X SIN HI
	AA396W	J19-D5	TB3-N14	SHAFT CDU 1/2X COS HI S2
	AA396R	J19-D6	TB3-N13	SHAFT CDU 1/2X COS LO S4
	AA379W	J19-D8	TB3-L17	SCT SHAFT 1/2X RSVR ERROR HI
*	AA652R	J19-D9	J18-M5	BUFFERED SHAFT CDU TACH HI
*	AA299R	J19-F4	J18-F2	TRUNNION CDU 1/4X SIN LO
	AA381W	J19-F5	TB3-F16	TRUNNION CDU 1/4X COS HI

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA381R	J19-F6	TB3-G16	TRUNNION CDU 1/4X COS LO
	AA386R	J19-F8	TB3-R14	TRUNNION CDU 1/2X RSVR S1 PHASE CORR
	AA386W	J19-F9	TB3-R13	TRUNNION CDU 1/2X RSVR S3
	AA382R	J19-G1	TB3-T13	SCT TRUNNION 1X COS LO
	AA383R	J19-G2	TB3-S14	SCT TRUNNION 1X SIN HI
	AA383W	J19-G3	TB3-S13	SCT TRUNNION 1X SIN LO
*	AA302R	J19-G5	J18-H6	COSECANT AMP FEEDBACK SIG LO
*	AA302W	J19-G6	J18-G6	COSECANT AMP OUTPUT HI
	AA382W	J19-H1	TB3-T14	SCT TRUNNION 1X COS HI
*	AA302L	J19-H5	J18-H5	SHAFT CDU MDA COSECANT SIG
*	AA302K	J19-H6	J18-G5	COSECANT AMP FEEDBACK SIG HI
	AA398	J19-K1	J19-K2	0 VDC OPTICS
	AA399	J19-K2	J19-K3	0 VDC OPTICS
*	AA398	J19-K2	J19-K1	0 VDC OPTICS
	AA400	J19-K3	J19-K4	0 VDC OPTICS
*	AA399	J19-K3	J19-K2	0 VDC OPTICS
	AA401	J19-K4	J19-K5	0 VDC OPTICS
*	AA400	J19-K4	J19-K3	0 VDC OPTICS
	AA402	J19-K5	J19-K6	0 VDC OPTICS
*	AA401	J19-K5	J19-K4	0 VDC OPTICS
	AA667L	J19-K6	TB3-C10	0 VDC OPTICS
*	AA402	J19-K6	J19-K5	0 VDC OPTICS
*	AA663	J19-K6	J18-M1	0 VDC OPTICS
	AA667K	J19-L1	TB3-C 9	SXT TRUNNION MDA OUTPUT HI (TEST)
	AA667W	J19-L2	TB3-B10	TRUNNION CDU 16X RSVR OUTPUT HI (TEST)
	AA667R	J19-L3	TB3-B 9	SXT SHAFT MDA OUTPUT HI (TEST)
*	AA616	J19-M4	J18-R4	ZERO OPTICS RELAY CONTROL
	AA388	J19-M5	TB3-K18	0 DEG TRUNNION SCT OFFSET RELAY CONTROL
	AA387	J19-M6	TB3-G18	25 DEG TRUNNION SCT OFFSET RELAY CONTROL
	AA389	J19-N5	TB3-L18	COSECANT RELAY CONTROL
*	AA304R	J19-N6	J18-S6	800 CPS 28 V 1 PCT LO OPTICS
	AA359R	J19-P1	TB3-D18	SXT SHAFT MOTOR CONTROL WINDING
	AA361R	J19-P2	TB3-G17	SCT SHAFT MOTOR CONTROL WINDING
	AA356	J19-P3	J20-G4	STRUCTURE GND
*	AA306	J19-P3	J18-R5	STRUCTURE GND
	AA394	J19-P4	J19-P5	0 VDC OPTICS
	AA393	J19-P5	TB3-K21	0 VDC OPTICS
*	AA305	J19-P5	J18-S5	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA394	J19-P5	J19-P4	0 VDC OPTICS
*	AA304W	J19-P6	J18-T6	800 CPS 28 V 1 PCT HI OPTICS
	AA359W	J19-R1	TB3-F18	SXT SHAFT MOTOR CONTROL WINDING
	AA361W	J19-R2	TB3-F17	SCT SHAFT MOTOR CONTROL WINDING
	AA390	J19-R4	TB3-K21	0 VDC OPTICS
*	AA303	J19-R4	J18-P3	0 VDC OPTICS
	AA362	J19-R5	J19-S4	0 VDC OPTICS
	AA363	J19-R6	J19-T4	0 VDC OPTICS
	AA358R	J19-S2	TB3-D17	SXT TRUNNION MOTOR CONTROL WINDING
	AA358W	J19-S3	TB3-D16	SXT TRUNNION MOTOR CONTROL WINDING
	AA364	J19-S4	TB3-K22	0 VDC OPTICS
*	AA362	J19-S4	J19-R5	0 VDC OPTICS
	AA366	J19-S5	J19-S6	0 VDC OPTICS
	AA369	J19-S5	TB3-K22	0 VDC OPTICS
*	AA366	J19-S6	J19-S5	0 VDC OPTICS
	AA357	J19-T1	J20-M6	+28 VDC OPTICS
*	AA298	J19-T1	J18-S1	+28 VDC OPTICS
	AA360R	J19-T2	TB3-C17	SCT TRUNNION MOTOR CONTROL WINDING
	AA360W	J19-T3	TB3-C16	SCT TRUNNION MOTOR CONTROL WINDING
	AA365	J19-T4	TB3-L22	0 VDC OPTICS
*	AA363	J19-T4	J19-R6	0 VDC OPTICS
	AA368	J19-T5	J19-T6	0 VDC OPTICS
	AA367	J19-T6	TB3-L22	0 VDC OPTICS
*	AA368	J19-T6	J19-T5	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA416	J20-A1	TB3-G19	AGC TEMP MONITOR NO 1
	AA417	J20-A2	TB3-F19	AGC TEMP MONITOR NO 2
	AA419W	J20-A3	TB3-N20	COS AMG 1X S3
	AA414	J20-A4	TB3-K19	IMU PRESSURE MONITOR HI
	AA464R	J20-A6	TB3-L13	PRESSURE SENSOR +28 VDC HI
	AA418	J20-B1	TB3-D19	AGC TEMP MONITOR NO 3
	AA419R	J20-B3	TB3-N21	COS AMG 1X S1
	AA415	J20-B4	TB3-H19	IMU PRESSURE MONITOR LO
	AA427R	J20-B5	TB3-T19	+20 VDC CONDITIONING
	AA464W	J20-B6	TB3-K13	PRESSURE SENSOR +28 VDC LO
	AA427W	J20-C5	TB3-S19	0 VDC CONDITIONING
	AA425	J20-C6	TB3-L19	+13 VDC AGC
	AA463R	J20-D4	TB3-S20	+2.5 VDC CONDITIONING LO
	AA463W	J20-D5	TB3-R19	+2.5 VDC CONDITIONING HI
	AA426	J20-D6	TB3-M19	+3 VDC AGC
	AA409W	J20-F5	TB2-G 4	800 CPS 28 V 1 PCT HI IMU
	AA410W	J20-F5	TB3-B18	800 CPS 28 V 1 PCT HI IMU
	AA409R	J20-F6	TB2-H 4	800 CPS 28 V 1 PCT LO IMU
	AA410R	J20-F6	TB3-B19	800 CPS 28 V 1 PCT LO IMU
	AA458	J20-G1	J20-H1	0 VDC IMU
	AA460	J20-G1	TB2-M 7	0 VDC IMU
	AA465W	J20-G3	TB3-K14	400 CPS 115 V LO
	AA462	J20-G4	TB3-F22	STRUCTURE GND
*	AA356	J20-G4	J19-P3	STRUCTURE GND
	AA411	J20-G5	J20-H5	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	AA 52W	J20-G5	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	AA413	J20-G6	J20-H6	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	AA 52R	J20-G6	J12-K4	800 CPS 28 V 5 PCT L-90 DEG LO IMU
	AA459	J20-H1	J20-H2	0 VDC IMU
*	AA458	J20-H1	J20-G1	0 VDC IMU
	AA461	J20-H2	TB2-M 1	0 VDC IMU
*	AA459	J20-H2	J20-H1	0 VDC IMU
	AA465R	J20-H3	TB3-L14	400 CPS 115 V HI
	AA422	J20-H4	TB3-R20	+28 VDC AGC
	AA423	J20-H4	J21-234	+28 VDC AGC
	AA412W	J20-H5	TB3-D 2	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	AA411	J20-H5	J20-G5	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	AA412R	J20-H6	TB3-C 3	800 CPS 28 V 5 PCT L-90 DEG LO IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA413	J20-H6	J20-G6	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
	AA454	J20-K1	TB3-T20	+28 VDC IMU	
	AA455	J20-K1	TB3-T21	+28 VDC IMU	
*	AA179	J20-K1	J15-S2	+28 VDC IMU	
	AA456	J20-K2	TB3-S21	+28 VDC IMU	
*	AA 4	J20-K2	J11-S5	+28 VDC IMU	
*	AA193	J20-K2	J16-S2	+28 VDC IMU	
*	AA191W	J20-K3	J16-P5	800 CPS 28 V 1 PCT HI OPTICS	
	AA424	J20-K4	TB3-N19	0 VDC AGC	
	AA420	J20-K5	TB3-G21	+28 VDC AGC BUSS A	
	AA421	J20-K6	TB3-G22	+28 VDC AGC BUSS B	
	AA438	J20-L1	J20-M1	+28 VDC IMU	
	AA439	J20-L1	J20-L2	+28 VDC IMU	
*	AA 2	J20-L1	J11-S1	+28 VDC IMU	
	AA440	J20-L2	J20-M2	+28 VDC IMU	
*	AA 3	J20-L2	J11-S2	+28 VDC IMU	
*	AA439	J20-L2	J20-L1	+28 VDC IMU	
*	AA191R	J20-L3	J16-N5	800 CPS 28 V 1 PCT LO OPTICS	
*	AA192W	J20-L4	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
	AA403	J20-L5	J21- 37	+28 VDC MDV	157B
	AA404	J20-L5	TB3-M22	+28 VDC MDV	
*	AA 53	J20-L6	J12-G4	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
*	AA 54	J20-M1	J12-S1	+28 VDC IMU	
*	AA236	J20-M1	J17-T4	+28 VDC IMU	
*	AA438	J20-M1	J20-L1	+28 VDC IMU	
*	AA 55	J20-M2	J12-S2	+28 VDC IMU	
*	AA237	J20-M2	J17-T3	+28 VDC IMU	
*	AA440	J20-M2	J20-L2	+28 VDC IMU	
*	AA192R	J20-M4	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
	AA405	J20-M5	TB3-M21	+28 VDC MDV	
	AA457	J20-M6	TB3-M20	+28 VDC OPTICS	
*	AA357	J20-M6	J19-T1	+28 VDC OPTICS	
	AA428	J20-N1	TB3-C20	+28 VDC IMU BUSS A	
	AA429	J20-N1	J20-P1	+28 VDC IMU BUSS A	
	AA433	J20-N2	TB3-D20	+28 VDC IMU BUSS B	
	AA434	J20-N2	J20-P2	+28 VDC IMU BUSS B	
	AA408	J20-N3	TB3-K22	0 VDC OPTICS	
	AA407	J20-N4	TB3-L21	0 VDC OPTICS	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA 51	J20-N5	J12-S6	+28 VDC OPTICS
*	AA189	J20-N5	J16-S5	+28 VDC OPTICS
	AA406	J20-N6	TB3-H20	+28 VDC OPTICS
*	AA190	J20-N6	J16-S6	+28 VDC OPTICS
	AA623	J20-P1	TB3-C21	+28 VDC IMU BUSS A
*	AA429	J20-P1	J20-N1	+28 VDC IMU BUSS A
	AA625	J20-P2	TB3-D21	+28 VDC IMU BUSS B
*	AA434	J20-P2	J20-N2	+28 VDC IMU BUSS B
	AA445	J20-P3	TB3-N22	+28 VDC STBY
*	AA238	J20-P3	J17-T1	+28 VDC STBY
	AA650	J20-P4	TB3-R21	+28 VDC STBY
*	AA239	J20-P4	J17-T2	+28 VDC STBY
	AA446	J20-P5	TB3-H21	+28 VDC OPTICS BUSS A
	AA447	J20-P5	J20-R5	+28 VDC OPTICS BUSS A
	AA450	J20-P6	TB3-H22	+28 VDC OPTICS BUSS B
	AA451	J20-P6	J20-R6	+28 VDC OPTICS BUSS B
	AA431	J20-R1	J20-S1	+28 VDC IMU BUSS A
	AA622	J20-R1	TB3-C20	+28 VDC IMU BUSS A
	AA436	J20-R2	J20-S2	+28 VDC IMU BUSS B
	AA624	J20-R2	TB3-D20	+28 VDC IMU BUSS B
	AA441	J20-R3	TB3-D22	+28 VDC STBY BUSS A
	AA442	J20-R3	J20-S3	+28 VDC STBY BUSS A
	AA443	J20-R4	TB3-C22	+28 VDC STBY BUSS B
	AA444	J20-R4	J20-S4	+28 VDC STBY BUSS B
	AA448	J20-R5	J20-S5	+28 VDC OPTICS BUSS A
	AA628	J20-R5	TB3-H21	+28 VDC OPTICS BUSS A
*	AA447	J20-R5	J20-P5	+28 VDC OPTICS BUSS A
	AA452	J20-R6	J20-S6	+28 VDC OPTICS BUSS B
	AA629	J20-R6	TB3-H22	+28 VDC OPTICS BUSS B
*	AA451	J20-R6	J20-P6	+28 VDC OPTICS BUSS B
	AA432	J20-S1	TB3-C21	+28 VDC IMU BUSS A
*	AA431	J20-S1	J20-R1	+28 VDC IMU BUSS A
	AA437	J20-S2	TB3-D21	+28 VDC IMU BUSS B
*	AA436	J20-S2	J20-R2	+28 VDC IMU BUSS B
	AA626	J20-S3	TB3-D22	+28 VDC STBY BUSS A
*	AA442	J20-S3	J20-R3	+28 VDC STBY BUSS A
	AA627	J20-S4	TB3-C22	+28 VDC STBY BUSS B
*	AA444	J20-S4	J20-R4	+28 VDC STBY BUSS B

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA449	J20-S5	TB3-H21	+28 VDC OPTICS BUSS A
*	AA448	J20-S5	J20-R5	+28 VDC OPTICS BUSS A
	AA453	J20-S6	TB3-H22	+28 VDC OPTICS BUSS B
*	AA452	J20-S6	J20-R6	+28 VDC OPTICS BUSS B

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 634	J21- 1	P11-A	+28 VDC AGC BUSS A	167
*	A 639	J21- 2	P11-J	0 VDC AGC	169
*	A 476	J21- 3	J10- 70	SPARE	211
*	A 505R	J21- 4	J10- 31	OUT 0 7	220A
*	A 505Y	J21- 5	E 22	COMMONED RETURNS GROUND	220B
*	A 483R	J21- 6	J10- 17	OUT 0 14	227A
*	A 483Y	J21- 7	E 23	COMMONED RETURNS GROUND	227B
*	A 489R	J21- 8	J10- 44	ALARM 6	234A
*	A 489Y	J21- 9	E 24	COMMONED RETURNS GROUND	234B
*	A 522	J21- 10	J10- 45	SPARE	248
*	A 523	J21- 11	J10- 46	SPARE	249
*	A 468Y	J21- 12	J10- 49	KEY RESET NAV	209A
*	A 468R	J21- 13	E 25	COMMONED RETURNS GROUND	209B
*	A 510R	J21- 14	J10- 39	TEST ALARM	207A
*	A 510Y	J21- 15	E 25	COMMONED RETURNS GROUND	207B
*	A 449R	J21- 18	J09- 37	OPTICS MODE SW COMPUTER INDICATION	106A
*	A 449Y	J21- 19	E 58		106B
	AA642	J21- 22	E 70	AGC SIG 179 SHLD RET	179
	AA473	J21- 23	E 45	AGC SIG 180 SHLD RET	180
	AA475W	J21- 24	J15-B4	IG ENCODER + DELTA THETA	120A
	AA475R	J21- 25	E 38	IG DAC MDA SIG LO	120B
	AA476R	J21- 26	J15-C4	IG ENCODER - DELTA THETA	121A
	AA476W	J21- 27	E 38	IG DAC MDA SIG LO	121B
*	AA639W	J21- 28	J12-D6	IMU FAIL	141A
*	AA639R	J21- 29	J12-F6	IMU FAIL RET	141B
	AA486R	J21- 30	J15-C9	OG CDU - DELTA THETA COMMAND	127A
	AA486W	J21- 31	E 43	OG DAC MDA SIG LO	127B
*	AA130R	J21- 32	E 33	0 VDC IMU	143A
*	AA130W	J21- 33	J14-D2	- DX GYRO RATE	143B
*	AA226R	J21- 34	J16-L4	COMPUTER 800 PPS OUT OF PHASE SYNC	150A
*	AA226W	J21- 35	J16-L3	COMPUTER 800 PPS SYNC RET	150B
*	AA 81	J21- 36	J12-M1	AGC POWER SUPPLY FAIL SIG HI	157A
*	AA403	J21- 37	J20-L5	+28 VDC MDV	157B
*	A 509	J21- 39	J10- 58	GND	239
*	A 481	J21- 40	J10- 59	+28 VDC AGC	243
*	A 499R	J21- 41	J10- 30	OUT 0 6	219A
*	A 499Y	J21- 42	E 22	COMMONED RETURNS GROUND	219B
*	A 504R	J21- 43	J10- 16	OUT 0 13	226A

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 504Y	J21- 44	E 23	COMMONED RETURNS GROUND	226B
*	A 488R	J21- 45	J10- 33	ALARM 5	233A
*	A 488Y	J21- 46	E 23	COMMONED RETURNS GROUND	233B
*	A 470R	J21- 47	J10- 42	TIMING (1.5 CPS)	244A
*	A 470Y	J21- 48	E 24	COMMONED RETURNS GROUND	244B
	AA562	J21- 53	E 57	AGC SIG 178 SHLD RET	178
*	A 437Y	J21- 54	J09- 25	OPTICS ZERO ENCODER	104A
*	A 437R	J21- 55	E 58		104B
	AA479W	J21- 56	J15-B8	OG ENCODER + DELTA THETA	118A
	AA479R	J21- 57	E 42	OG DAC MDA SIG LO	118B
	AA480R	J21- 58	J15-C8	OG ENCODER - DELTA THETA	119A
	AA480W	J21- 59	E 42	OG DAC MDA SIG LO	119B
*	AA641W	J21- 60	J12-D4	ACCEL FAIL	138A
*	AA641R	J21- 61	J12-F4	ACCEL FAIL RET	138B
*	AA521	J21- 62	TB3-L19	+13 VDC AGC	176
*	AA522	J21- 63	TB3-N19	0 VDC AGC	177
	AA485W	J21- 64	J15-B9	OG CDU + DELTA THETA COMMAND	126A
	AA485R	J21- 65	E 43	OG DAC MDA SIG LO	126B
*	AA129W	J21- 66	E 33	0 VDC IMU	142A
*	AA129R	J21- 67	J14-D1	+ DX GYRO RATE	142B
*	AA227R	J21- 68	J16-M4	COMPUTER 800 PPS IN PHASE SYNC	149A
*	AA227W	J21- 69	J16-L3	COMPUTER 800 PPS SYNC RET	149B
*	AA 70W	J21- 70	J12-K1	COMPUTER 102.4 KPPS SYNC	156A
*	AA 70R	J21- 71	J12-H1	COMPUTER 102.4 KPPS SYNC RET	156B
*	A 635	J21- 73	P11-A	+28 VDC AGC BUSS A	167
*	A 640	J21- 74	P11-J	0 VDC AGC	169
*	A 473	J21- 75	J10- 71	SPARE	212
*	A 498R	J21- 76	J10- 29	OUT 0 5	218A
*	A 498Y	J21- 77	E 22	COMMONED RETURNS GROUND	218B
*	A 506R	J21- 78	J10- 15	OUT 0 12	225A
*	A 506Y	J21- 79	E 23	COMMONED RETURNS GROUND	225B
*	A 482R	J21- 80	J10- 32	ALARM 4	232A
*	A 482Y	J21- 81	E 23	COMMONED RETURNS GROUND	232B
*	A 471R	J21- 82	J10- 20	POWER SYNC	242A
*	A 471Y	J21- 83	E 24	COMMONED RETURNS GROUND	242B
*	A 467R	J21- 84	J10- 38	KEY CODE 5	205A
*	A 467Y	J21- 85	E 25	COMMONED RETURNS GROUND	205B
*	A 433Y	J21- 86	J09- 30	MARK	102A

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 433R	J21- 87	E 58		102B
*	A 434Y	J21- 88	J09- 31	NOT MARK	103A
*	A 434R	J21- 89	E 58		103B
	AA468R	J21- 92	E 35	COMPUTER RET	133A
	AA468W	J21- 93	J15-M6	- DELTA V X	133B
	AA471R	J21- 94	E 37	COMPUTER RET	137A
	AA471W	J21- 95	J15-K4	- DELTA V Z	137B
*	AA525	J21- 96	TB3-M19	+3 VDC AGC	175
	AA484R	J21- 97	J15-C7	MG CDU - DELTA THETA COMMAND	131A
	AA484W	J21- 98	E 41	MG DAC MDA SIG LO	131B
	AA502W	J21- 99	J13-N6	PIPA SWITCHING PULSE	140A
	AA502R	J21-100	E 34	0 VDC IMU	140B
*	AA655R	J21-101	E 33	0 VDC IMU	148A
*	AA655W	J21-102	J14-K4	GYRO RESET PULSE	148B
	AA500R	J21-103	J17-R3	COMPUTER 12.8 KPPS SYNC	155A
	AA500W	J21-104	E 27	0 VDC IMU	155B
	A 571	J21-107	E 63	GROUP 2 SHIELD	245
*	A 477	J21-108	J10- 57	+13 V B	241
*	A 497R	J21-109	J10- 28	OUT 0 4	217A
*	A 497Y	J21-110	E 22	COMMONED RETURNS GROUND	217B
*	A 503R	J21-111	J10- 14	OUT 0 11	224A
*	A 503Y	J21-112	E 23	COMMONED RETURNS GROUND	224B
*	A 487R	J21-113	J10- 19	ALARM 3	231A
*	A 487Y	J21-114	E 23	COMMONED RETURNS GROUND	231B
*	A 493R	J21-115	J10- 64	ALARM 10	238A
*	A 493Y	J21-116	E 24	COMMONED RETURNS GROUND	238B
*	A 511R	J21-117	J10- 37	KEY CODE 4	204A
*	A 511Y	J21-118	E 25	COMMONED RETURNS GROUND	204B
	A 440Y	J21-119	E 56	AGC COMMON	101A
	A 440R	J21-120	E 58		101B
	AA487W	J21-121	TB2-D 2	AGC COM	165A
	AA487R	J21-122	TB2-F 3		165B
	AA495W	J21-123	J18-K1	SHAFT CDU ENCODER - DELTA THETA	111A
	AA495R	J21-124	E 53	SHAFT CDU DAC LO	111B
	AA467R	J21-125	E 35	COMPUTER RET	132A
	AA467W	J21-126	J15-M5	+ DELTA V X	132B
	AA472R	J21-127	E 37	COMPUTER RET	136A
	AA472W	J21-128	J15-K5	+ DELTA V Z	136B

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA526	J21-129	TB3-D19	AGC TEMP MONITOR NO 3	173
	AA493R	J21-130	J18-L2	SHAFT CDU - DELTA THETA COMMAND	117A
	AA493W	J21-131	E 52	SHAFT CDU DAC LO	117B
	AA501W	J21-132	J13-N5	PIPA INTERROGATE PULSE	139A
	AA501R	J21-133	E 34	0 VDC IMU	139B
*	AA135W	J21-134	E 33	0 VDC IMU	147A
*	AA135R	J21-135	J14-D6	- DZ GYRO RATE	147B
	AA491R	J21-136	J12-G2	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154A
	AA491W	J21-137	E 29	COMPUTER 25.6 KPPS SYNC RET	154B
	AA660	J21-138	TB3-L 6	THERMISTER LO	199B
*	A 637	J21-139	P12-A	+28 VDC AGC BUSS B	168
*	A 641	J21-140	P12-J	0 VDC AGC	170
*	A 469	J21-141	J10- 72	SPARE	213
*	A 496R	J21-142	J10- 60	OUT 0 3	216A
*	A 496Y	J21-143	E 22	COMMONED RETURNS GROUND	216B
*	A 502R	J21-144	J10- 63	OUT 0 10	223A
*	A 502Y	J21-145	E 22	COMMONED RETURNS GROUND	223B
*	A 486R	J21-146	J10- 41	ALARM 2	230A
*	A 486Y	J21-147	E 23	COMMONED RETURNS GROUND	230B
*	A 492R	J21-148	J10- 51	ALARM 9	237A
*	A 492Y	J21-149	E 24	COMMONED RETURNS GROUND	237B
*	A 472R	J21-150	J10- 36	KEY CODE 3	203A
*	A 472Y	J21-151	E 25	COMMONED RETURNS GROUND	203B
	AA489W	J21-152	J16-A7	ZERO ENCODER MODE INDICATION TO AGC	158A
	AA489R	J21-153	E 60		158B
*	A 14Y	J21-154	P01- 59	COARSE ALIGN MODE INDICATION TO AGC	159A
*	A 14R	J21-155	E 61		159B
	AA494W	J21-156	J18-L1	SHAFT CDU ENCODER + DELTA THETA	110A
	AA494R	J21-157	E 53	SHAFT CDU DAC LO	110B
*	AA640W	J21-158	J12-D5	CDU FAIL	124A
*	AA640R	J21-159	J12-F5	CDU FAIL RET	124B
	AA470R	J21-160	E 36	COMPUTER RET	135A
	AA470W	J21-161	J15-K6	- DELTA V Y	135B
*	AA529	J21-162	TB3-F19	AGC TEMP MONITOR NO 2	172
	AA492W	J21-163	J18-K2	SHAFT CDU + DELTA THETA COMMAND	116A
	AA492R	J21-164	E 52	SHAFT CDU DAC LO	116B
	AA483W	J21-165	J15-B7	MG CDU + DELTA THETA COMMAND	130A
	AA483R	J21-166	E 41	MG DAC MDA SIG LO	130B

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057
SCALE-NONE	REV LTR	SHEET 61

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA134R	J21-167	E 33	0 VDC IMU	146A
*	AA134W	J21-168	J14-D5	+ DZ GYRO RATE	146B
	AA490W	J21-169	J12-G1	COMPUTER 25.6 KPPS IN PHASE SYNC	153A
	AA490R	J21-170	E 29	COMPUTER 25.6 KPPS SYNC RET	153B
*	A 678	J21-171	P09- 49	AGC THERMISTER HI	199A
*	A 512	J21-173	J10- 56	GND	239
*	A 513	J21-174	J10- 55	+3 V B	240
*	A 495R	J21-175	J10- 74	OUT 0 2	215A
*	A 495Y	J21-176	E 22	COMMONED RETURNS GROUND	215B
*	A 501R	J21-177	J10- 62	OUT 0 9	222A
*	A 501Y	J21-178	E 22	COMMONED RETURNS GROUND	222B
*	A 485R	J21-179	J10- 40	ALARM 1	229A
*	A 485Y	J21-180	E 23	COMMONED RETURNS GROUND	229B
*	A 491R	J21-181	J10- 53	ALARM 8	236A
*	A 491Y	J21-182	E 24	COMMONED RETURNS GROUND	236B
*	A 514R	J21-183	J10- 35	KEY CODE 2	202A
*	A 514Y	J21-184	E 25	COMMONED RETURNS GROUND	202B
*	A 515R	J21-185	J10- 47	OR OF C1 THRU C33	210A
*	A 515Y	J21-186	E 25	COMMONED RETURNS GROUND	210B
	A 568	J21-187	E 64	GROUP 3 SHIELD	250
	AA488W	J21-188	J15-A3	MANUAL CDU MODE INDICATION TO AGC	160A
	AA488R	J21-189	E 59		160B
	AA499W	J21-190	J18-K4	TRUNNION CDU ENCODER - DELTA THETA	109A
	AA499R	J21-191	E 51	TRUNNION CDU DAC LO	109B
	AA478R	J21-192	J15-C6	MG ENCODER - DELTA THETA	123A
	AA478W	J21-193	E 40	MG DAC MDA SIG LO	123B
	AA469R	J21-194	E 36	COMPUTER RET	134A
	AA469W	J21-195	J15-L6	+ DELTA V Y	134B
*	AA530	J21-196	TB3-G19	AGC TEMP MONITOR NO 1	171
	AA497R	J21-197	J18-L3	TRUNNION CDU - DELTA THETA COMMAND	115A
	AA497W	J21-198	E 50	TRUNNION CDU DAC LO	115B
	AA482R	J21-199	J15-C5	IG CDU - DELTA THETA COMMAND	129A
	AA482W	J21-200	E 39	IG DAC MDA SIG LO	129B
*	AA132W	J21-201	E 33	0 VDC IMU	145A
*	AA132R	J21-202	J14-D4	- DY GYRO RATE	145B
	AA503R	J21-203	J11-L6	COMPUTER 3200 PPS OUT OF PHASE SYNC	152A
	AA503W	J21-204	E 28	COMPUTER 3200 PPS SYNC RET	152B
*	A 638	J21-207	P12-A	+28 VDC AGC BUSS B	168

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SCALE-NONE	REV LTR	SHEET 62

MIL 2084-4-64

INCHES
0 1 2
PHOTOGRAPHIC SCALE CHART

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* A 642	J21-208	P12-J	0 VDC AGC	170
* A 520	J21-209	J10- 75	SPARE	247
* A 494R	J21-210	J10- 73	OUT 0 1	214A
* A 494Y	J21-211	E 22	COMMONED RETURNS GROUND	214B
* A 500R	J21-212	J10- 61	OUT 0 8	221A
* A 500Y	J21-213	E 22	COMMONED RETURNS GROUND	221B
* A 484R	J21-214	J10- 18	OUT 0 15	228A
* A 484Y	J21-215	E 23	COMMONED RETURNS GROUND	228B
* A 490R	J21-216	J10- 43	ALARM 7	235A
* A 490Y	J21-217	E 24	COMMONED RETURNS GROUND	235B
* A 516R	J21-218	J10- 34	KEY CODE 1	201A
* A 516Y	J21-219	E 25	COMMONED RETURNS GROUND	201B
* A 517R	J21-220	J10- 48	ERROR RESET	208A
* A 517Y	J21-221	E 25	COMMONED RETURNS GROUND	208B
* A 15Y	J21-222	P01- 49	FINE ALIGN MODE INDICATION TO AGC	161A
* A 15R	J21-223	E 61		161B
* A 27Y	J21-224	P01- 76	ATTIT CONT MODE INDICATION TO AGC	162A
* A 27R	J21-225	E 61		162B
* A 16Y	J21-226	P01- 39	ENTRY MODE INDICATION TO AGC	163A
* A 16R	J21-227	E 61		163B
* A 156Y	J21-228	J06- 69	TRANSFER SWITCH INDICATION TO AGC	164A
* A 156R	J21-229	E 55		164B
AA498W	J21-230	J18-L4	TRUNNION CDU ENCODER + DELTA THETA	108A
AA498R	J21-231	E 51	TRUNNION CDU DAC LO	108B
AA477W	J21-232	J15-B6	MG ENCODER + DELTA THETA	122A
AA477R	J21-233	E 40	MG DAC MDA SIG LO	122B
* AA423	J21-234	J20-H4	+28 VDC AGC	166
AA496W	J21-235	J18-K3	TRUNNION CDU + DELTA THETA COMMAND	114A
AA496R	J21-236	E 50	TRUNNION CDU DAC LO	114B
AA481W	J21-237	J15-B5	IG CDU + DELTA THETA COMMAND	128A
AA481R	J21-238	E 39	IG DAC MDA SIG LO	128B
* AA131W	J21-239	E 33	0 VDC IMU	144A
* AA131R	J21-240	J14-D3	+ DY GYRO RATE	144B
AA504R	J21-241	J11-M6	COMPUTER 3200 PPS IN PHASE SYNC	151A
AA504W	J21-242	E 28	COMPUTER 3200 PPS SYNC RET	151B

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
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SCALE - NONE
REV LTR +
SHEET 63

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* AA287W	J22- 1	J17-A3	ROLL ERROR BODY OFFSET AXIS HI
AA287B	J22- 2	SHLD AA287	
* AA244W	J22- 3	J17-A4	ROLL ERROR BODY AXIS HI
* AA244R	J22- 4	J17-B4	ROLL ERROR BODY AXIS LO
AA245B	J22- 5	SHLD AA245	
* AA245W	J22- 6	J17-C4	YAW ERROR BODY AXIS HI
AA246B	J22- 8	SHLD AA246	
* AA288R	J22- 10	J17-C1	PITCH ERROR BODY AND BODY OFFSET AXIS LO
AA288B	J22- 11	SHLD AA288	
* A 197	J22- 37	J08- 54	+28 VDC SPACECRAFT
* A 196	J22- 38	J08- 53	MASTER WARNING LIGHT RET
* AA287R	J22- 39	J17-B3	ROLL ERROR BODY OFFSET AXIS LO
AA244B	J22- 41	SHLD AA244	
* AA245R	J22- 43	J17-D4	YAW ERROR BODY AXIS LO
* AA246W	J22- 45	J17-C3	YAW ERROR BODY OFFSET AXIS HI
* AA246R	J22- 46	J17-D3	YAW ERROR BODY OFFSET AXIS LO
* AA288W	J22- 48	J17-D1	PITCH ERROR BODY AND BODY OFFSET AXIS HI
* A 207	J22- 71	J08- 32	+28 VDC SPACECRAFT
* A 206	J22- 72	J08- 43	MASTER CAUTION LIGHT RET
AA505R	J22-107	TB2-U 7	SIN AOG 1X S2
AA507R	J22-111	TB3-C14	SIN AMG 1X
AA508W	J22-113	TB3-N20	COS AMG 1X S3
AA508R	J22-114	TB3-N21	COS AMG 1X S1
AA509W	J22-116	TB3-D13	SIN AIG 1X RET
* AA517R	J22-120	TB3-B19	800 CPS 28 V 1 PCT LO IMU
AA505W	J22-139	TB2-U 8	SIN AOG 1X S4
AA506W	J22-141	TB2-N 8	COS AOG 1X S3
AA506R	J22-142	TB2-N 7	COS AOG 1X S1
AA507W	J22-144	TB3-C13	SIN AMG 1X RET
AA509R	J22-148	TB3-D14	SIN AIG 1X
AA510W	J22-150	TB3-F13	COS AIG 1X RET
AA510R	J22-151	TB3-F14	COS AIG 1X
* AA517W	J22-153	TB3-B18	800 CPS 28 V 1 PCT HI IMU
* A 461	J22-171	P10- 8	MAIN PANEL GIMBAL LOCK LIGHT
AA647	J22-172	TB3-F 2	SPACECRAFT LAMP TEST
* AA518	J22-190	TB3-F 4	ATTITUDE CONTROL RELAY CONTROL
* A 389G	J22-192	J09- 17	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT
* A 389Y	J22-193	J09- 3	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
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SCALE - NONE
REV LTR +
SHEET 64

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 387R	J22-195	J09- 18	PITCH ATTIT IMPULSE CONTR INPUT
* A 388G	J22-197	J09- 6	YAW ATTIT IMPULSE CONTR OUTPUT LEFT
* A 388Y	J22-198	J09- 20	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT
* A 393Y	J22-200	J09- 40	0 VDC FROM NAA
* AA292	J22-206	J17-M3	0 VDC SPACECRAFT
* AA175	J22-227	J15-S3	LOCK CDU RELAY CONTROL
* AA220	J22-228	J16-L1	FINE ALIGN RELAY CONTROL
* A 389R	J22-230	J09- 16	ROLL ATTIT IMPULSE CONTR INPUT
* A 387G	J22-232	J09- 5	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN
* A 387Y	J22-233	J09- 4	PITCH ATTIT IMPULSE CONTR OUTPUT UP
* A 388R	J22-235	J09- 7	YAW ATTIT IMPULSE CONTR INPUT
* A 393R	J22-237	J09- 41	+28 VDC FROM NAA
* A 393G	J22-238	J09- 50	ATTITUDE DISABLE SIG TO NAA
* AA293	J22-243	J17-L3	IMU TEMP LIGHT (MAIN PANEL)
* AA 74	J22-244	J12-G3	ERROR DETECT LIGHT MAIN PANEL

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE
REV LTR +
SHEET 65

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* A 150R	P01- 1	J06- 1	PITCH ATTITUDE ERROR METER +	
* A 150Y	P01- 2	J06- 2	PITCH ATTITUDE ERROR METER -	
A 26	P01- 4	TB1-D 6	COARSE ALIGN RELAY CONTROL	
A 10	P01- 5	TB2-C 1	FINE ALIGN RELAY CONTROL	
* A 161	P01- 6	J06- 6	ENTRY RELAY CONTROL RESET	
A 21	P01- 7	TB3-S21	+28 VDC IMU	
* A 160	P01- 9	J06- 9	MODE SWITCH INTERLOCK	
A 19Y	P01- 10	TB2-H 4	800 CPS 28 V 1 PCT LO IMU	
A 19R	P01- 11	TB2-G 4	800 CPS 28 V 1 PCT HI IMU	
A 8	P01- 12	TB2-B 2	ZERO ENCODER RELAY CONTROL	
A 5	P01- 13	TB1-K 5	FINE ALIGN MODE COMMAND FROM AGC	
* A 151R	P01- 14	J06- 14	YAW ATTITUDE ERROR METER +	
* A 151Y	P01- 15	J06- 15	YAW ATTITUDE ERROR METER -	
* A 157	P01- 18	J06- 18	MODE RELAY COMMON TO D AND C ELECT	
* A 175	P01- 22	J06- 22	ATTITUDE CONTROL MODE LIGHT	
* A 165	P01- 23	J06- 23	FINE ALIGN RELAY CONTROL	
A 12	P01- 24	TB3-F 4	ATTITUDE CONTROL RELAY CONTROL	
* A 167	P01- 25	J06- 25	ENTRY RELAY CONTROL	
A 22	P01- 26	TB1-U 2	IMU DELAY LIGHT HI	
A 6	P01- 27	TB1-K 8	CDU MANUAL MODE COMMAND FROM AGC	
* A 152Y	P01- 28	J06- 28	ROLL ATTITUDE ERROR METER -	
* A 152R	P01- 29	J06- 29	ROLL ATTITUDE ERROR METER +	
* A 162	P01- 34	J06- 34	ZERO ENCODER RELAY CONTROL	
* A 163	P01- 35	J06- 35	COARSE ALIGN RELAY CONTROL	
* A 164	P01- 36	J06- 36	CDU MANUAL RELAY CONTROL	
* A 687	P01- 37	J06- 37	BACKUP MODE RELAY CONTROL	
A 3	P01- 38	TB1-K 4	ZERO ENCODER MODE COMMAND FROM AGC	
A 16Y	P01- 39	J21-226	ENTRY MODE INDICATION TO AGC	163A
A 31	P01- 45	TB3-M 2	IMU TD RELAY C	
* A 177	P01- 46	J06- 46	ATTITUDE CONTROL MODE INTERLOCK	
A 4	P01- 48	TB1-K 3	COARSE ALIGN MODE COMMAND FROM AGC	
A 15Y	P01- 49	J21-222	FINE ALIGN MODE INDICATION TO AGC	161A
A 32	P01- 55	TB3-L 2	IMU TD RELAY NO	
* A 170	P01- 56	J06- 56	MANUAL ALIGN	
A 9	P01- 57	TB2-R 4	ENTRY RELAY CONTROL	
A 7	P01- 58	TB1-K 6	ENTRY MODE COMMAND FROM AGC	
A 14Y	P01- 59	J21-154	COARSE ALIGN MODE INDICATION TO AGC	159A
A 2	P01- 65	TB3-L 1	IRIG TEMP GAIN SWITCH NC	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
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SCALE - NONE
REV LTR +
SHEET 66

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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 13Y	P01- 68	TB2-D 2	AGC COM
A 11	P01- 69	TB2-B 1	LOCK CDU RELAY CONTROL
A 24R	P01- 70	TB2-H 2	IG CDU 1X ERROR SIG
A 24Y	P01- 71	TB2-G 2	IG CDU ERROR SIG RET
A 27Y	P01- 76	J21-224	ATTIT CONT MODE INDICATION TO AGC 162A
A 20	P01- 78	TB2-M 4	0 VDC IMU
* A 176	P01- 79	J06- 79	ENTRY MODE LIGHT
A 1R	P01- 80	TB2-A 2	PANEL BRIGHTNESS CONTROL
A 25R	P01- 82	TB2-H 7	MG CDU 1X ERROR SIG
A 25Y	P01- 83	TB2-G 7	MG CDU ERROR SIG RET
A 33	P01- 84	TB3-B20	STRUCTURE GND
A 28	P01- 88	TB3-F 3	CONDITION LAMP TEST
A 29	P01- 89	TB3-M21	+28 VDC MDV
A 602N	P01- 90	TB1-M 1	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
A 18	P01- 91	TB1-K 1	MODE LAMP TEST PWR
* A 172	P01- 92	J06- 92	COARSE ALIGN MODE LIGHT
* A 168	P01- 93	J06- 93	MODE RELAY COMMON
* A 174	P01- 94	J06- 94	FINE ALIGN MODE LIGHT
A 1Y	P01- 95	TB2-A 1	PANEL BRIGHTNESS CONTROL
A 23R	P01- 96	TB2-N 2	OG CDU 1X ERROR SIG
A 23Y	P01- 97	TB2-R 2	OG CDU ERROR SIG RET
A 602R	P01-103	TB1-R 1	400 CPS VAR ILLUM PWR
* A 171	P01-104	J06-104	ZERO ENCODER MODE LIGHT
* A 173	P01-105	J06-105	CDU MANUAL MODE LIGHT
A 602G	P01-106	TB1-N 1	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
A 602Y	P01-108	TB1-T 1	400 CPS VAR ILLUM PWR

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057	
SCALE - NONE	REV LTR		SHEET 67

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 216R	P02-A	TB2-G 4	800 CPS 28 V 1 PCT HI IMU
A 227R	P02-A*	TB3-F14	COS AIG 1X S3
A 216Y	P02-B	TB2-G 5	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
A 227Y	P02-B*	TB3-F13	COS AIG 1X RET S1
A 217R	P02-C	TB2-W 4	COS AOG 16X S3
A 217Y	P02-D	TB2-W 3	COS AOG 16X S1
A 218R	P02-E	TB2-X 3	SIN AOG 16X S2
A 218Y	P02-F	TB2-W 2	SIN AOG 16X S4
A 228R	P02-F*	TB3-D13	SIN AIG 1X RET S2
A 219R	P02-G	TB2-U 5	COS AMG 16X S3
A 228Y	P02-G*	TB3-D14	SIN AIG 1X S4
A 219Y	P02-H	TB2-T 5	COS AMG 16X S1
A 220R	P02-J	TB2-A 7	SIN AMG 16X S2
A 220Y	P02-K	TB2-B 7	SIN AMG 16X S4
A 221R	P02-L	TB3-N20	COS AMG 1X S3
A 221Y	P02-M	TB3-N21	COS AMG 1X S1
A 222Y	P02-N	TB3-C13	SIN AMG 1X RET S2
A 222R	P02-P	TB3-C14	SIN AMG 1X S4
A 223R	P02-R	TB1-D 2	3200 CPS 2 V HI
A 223Y	P02-S	TB1-C 2	3200 CPS 2 V LO
A 224R	P02-T	TB1-C 6	3200 CPS 2 V FEEDBACK HI
A 224Y	P02-U	TB1-B 6	3200 CPS 2 V FEEDBACK LO
A 225R	P02-W	TB2-W 6	COS AIG 16X S3
A 225Y	P02-X	TB2-X 7	COS AIG 16X S1
A 226R	P02-Y	TB2-A 8	SIN AIG 16X S2
A 226Y	P02-Z	TB2-B 8	SIN AIG 16X S4

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057	
SCALE - NONE	REV LTR		SHEET 68

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 229Y	P03-A	TB1-C 7	X GYRO ERROR SIG
A 239Y	P03-A*	TB1-A 3	MG TORQUE MOTOR RET
A 230Y	P03-B	TB1-C 8	Z GYRO ERROR SIG
A 240R	P03-B*	TB1-A 3	MG TORQUE MOTOR RET
A 231R	P03-C	TB1-A 8	IMU OG ERROR SIG
A 240Y	P03-C*	TB1-A 4	MG TORQUE MOTOR HI
A 232R	P03-D	TB2-N 8	COS AOG 1X S3
A 241R	P03-D*	TB1-D 3	IG TORQUE MOTOR HI
A 232Y	P03-E	TB2-N 7	COS AOG 1X S1
A 241Y	P03-E*	TB1-D 4	IG TORQUE MOTOR RET
A 233R	P03-F	TB2-U 8	SIN AOG 1X S4
A 242R	P03-F*	TB1-D 4	IG TORQUE MOTOR RET
A 233Y	P03-G	TB2-U 7	SIN AOG 1X S2
A 242Y	P03-G*	TB1-D 3	IG TORQUE MOTOR HI
A 234Y	P03-H	TB1-C 5	IG CDU ATTITUDE STEERING ERROR
A 244	P03-H*	TB3-T20	+28 VDC IMU
A 234R	P03-J	TB1-B 5	IG CDU ERROR SIG RET
A 243	P03-J*	TB3-F 5	GIMBAL LOCK SIGNAL
A 235R	P03-K	TB1-A 6	MG CDU ERROR SIG RET
A 235Y	P03-L	TB1-A 5	MG CDU ATTITUDE STEERING ERROR
A 236Y	P03-M	TB3-R 5	YAW ERROR BODY OFFSET AXIS LO
A 236R	P03-N	TB3-R 4	PITCH YAW RSVR S3
A 237Y	P03-P	TB3-M13	PITCH ERROR BODY AND BODY OFFSET AXIS LO
A 237R	P03-R	TB3-M14	PITCH-YAW RSVR S4
A 231G	P03-U	TB1-B 8	IMU IG AND Y GYRO ERROR SIG
A 231Y	P03-V	TB1-B 7	IMU GIMBAL AND GYRO ERROR SIG LO
A 231N	P03-W	TB1-A 7	IMU MG ERROR SIG
A 238R	P03-X	TB1-B 2	OG TORQUE MOTOR RET
A 238Y	P03-Y	TB1-A 2	OG TORQUE MOTOR HI
A 239R	P03-Z	TB1-A 4	MG TORQUE MOTOR HI

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057	
SCALE - NONE	REV LTR		SHEET 69

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 268Y	P04-A	P05-K	800 CPS 28 V 1 PCT HI OPTICS
* A 268R	P04-C	P05-J	800 CPS 28 V 1 PCT LO OPTICS
* A 251Y	P04-F	P05-FF	AS 16X RSVR P4 TRIM
* A 251R	P04-H	P05-EE	AS 16X RSVR P2 TRIM
* A 267Y	P04-J	P05-W	AT 64X RSVR P4 TRIM
* A 267R	P04-K	P05-X	AT 64X RSVR P2 TRIM

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057	
SCALE - NONE	REV LTR		SHEET 70

MIL 2084-4-64

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 259Y	P05-A	TB3-D18	SXT SHAFT MOTOR CONTROL WINDING RED
A 253R	P05-A*	TB3-S 8	SXT AT 64X RSVR COS HI
A 264	P05-AA	TB3-S18	SXT SHAFT 1/2X RSVR LOAD
A 259R	P05-B	TB3-C18	+28 VDC OPTICS
A 253Y	P05-B*	TB3-S 7	SXT AT 64X RSVR COS LO
A 263Y	P05-BB	TB3-H17	SXT SHAFT 1/2X RSVR ERROR LO
A 259G	P05-C	TB3-F18	SXT SHAFT MOTOR CONTROL WINDING BLK
A 254R	P05-C*	TB3-M16	SXT TRUNNION 1X RSVR ERROR HI
A 265R	P05-CC	TB2-K 2	800 CPS 28 V 1 PCT HI OPTICS
* A 247R	P05-CC	P05-K	800 CPS 28 V 1 PCT HI OPTICS
A 598R	P05-D	TB2-U 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 254Y	P05-D*	TB3-M17	SXT TRUNNION 1X RSVR ERROR LO
A 265Y	P05-DD	TB2-L 2	800 CPS 28 V 1 PCT LO OPTICS
* A 247Y	P05-DD	P05-J	800 CPS 28 V 1 PCT LO OPTICS
A 598Y	P05-E	TB2-T 3	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 255Y	P05-E*	TB3-F16	TRUNNION CDU 1/4X COS HI
A 251R	P05-EE	P04-H	AS 16X RSVR P2 TRIM
A 255R	P05-F*	TB3-G16	TRUNNION CDU 1/4X COS LO
A 251Y	P05-FF	P04-F	AS 16X RSVR P4 TRIM
A 256R	P05-G*	TB3-G10	TRUNNION CDU 1/4X SIN HI
A 256Y	P05-H*	TB3-F10	TRUNNION CDU 1/4X SIN LO
A 263R	P05-HH	TB3-H16	SXT SHAFT 1/2X RSVR ERROR HI
A 246Y	P05-I*	TB3-D17	SXT TRUNNION MOTOR CONTROL WINDING RED
A 247Y	P05-J	P05-DD	800 CPS 28 V 1 PCT LO OPTICS
A 268R	P05-J	P04-C	800 CPS 28 V 1 PCT LO OPTICS
A 246G	P05-J*	TB3-D16	SXT TRUNNION MOTOR CONTROL WINDING BLK
A 247R	P05-K	P05-CC	800 CPS 28 V 1 PCT HI OPTICS
A 268Y	P05-K	P04-A	800 CPS 28 V 1 PCT HI OPTICS
A 257R	P05-K*	TB3-T16	SXT TRUNNION TACH HI
A 266R	P05-L	TB1-T 1	400 CPS VAR ILLUM PWR
A 266Y	P05-M	TB1-T 2	400 CPS 6 V LO
A 257Y	P05-M*	TB3-T17	SXT TRUNNION TACH LO
A 248Y	P05-N*	TB3-R 7	SXT AS 16X RSVR SIN LO
A 246R	P05-P	TB3-C18	+28 VDC OPTICS
A 248R	P05-P*	TB3-R 8	SXT AS 16X RSVR SIN HI
A 258R	P05-Q*	TB3-R10	SXT AS 16X RSVR COS LO
A 270	P05-R	TB3-F21	STRUCTURE GND
A 258Y	P05-R*	TB3-R11	SXT AS 16X RSVR COS HI

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SCALE - NONE | REV LTR | SHEET 71

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 249	P05-S	TB3-K21	0 VDC OPTICS
A 250	P05-T	TB3-K21	0 VDC OPTICS
A 260R	P05-U*	TB3-S17	SXT SHAFT TACH HI
A 260Y	P05-V*	TB3-S16	SXT SHAFT TACH LO
A 267Y	P05-W	P04-J	AT 64X RSVR P4 TRIM
A 261R	P05-W*	TB3-N13	SHAFT CDU 1/2X COS LO P4
A 267R	P05-X	P04-K	AT 64X RSVR P2 TRIM
A 261Y	P05-X*	TB3-N14	SHAFT CDU 1/2X COS HI P2
A 252Y	P05-Y	TB3-T 7	SXT AT 64X RSVR SIN HI
A 262R	P05-Y*	TB3-K10	SHAFT CDU 1/2X SIN HI P1
A 252R	P05-Z	TB3-T 8	SXT AT 64X RSVR SIN LO
A 262Y	P05-Z*	TB3-K11	SHAFT CDU 1/2X SIN LO P3

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SCALE - NONE | REV LTR | SHEET 72

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 271R	P06-A	TB1-H 3	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
A 286	P06-A*	TB3-K 3	IRIG TEMP IND SENSOR RET
A 271Y	P06-B	TB1-H 2	800 CPS 28 V 5 PCT IMU WHEELS LO
A 282R	P06-B*	TB3-L13	PRESSURE SENSOR +28 VDC HI
A 271G	P06-C	TB1-G 2	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
A 282Y	P06-C*	TB3-K13	PRESSURE SENSOR +28 VDC LO
A 284	P06-D	TB3-T20	+28 VDC IMU
A 283R	P06-D*	TB3-K19	IMU PRESSURE MONITOR HI
A 287	P06-E	TB2-D 4	0 VDC IMU
A 283Y	P06-E*	TB3-H19	IMU PRESSURE MONITOR LO
A 272	P06-F	TB1-D 5	-28 VDC
A 281R	P06-F*	TB3-C 2	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 288	P06-G	TB3-F21	STRUCTURE GND
A 281Y	P06-G*	TB3-C 3	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 273R	P06-H	TB1-A 2	OG TORQUE MOTOR HI
A 273Y	P06-J	TB1-B 2	OG TORQUE MOTOR RET
A 274	P06-K	TB3-G 5	IMU TEMP SENSOR COM
A 275Y	P06-L	TB3-L 3	IRIG TEMP CONT SENSOR RET
A 275R	P06-M	TB3-L 4	IRIG TEMP CONT SENSOR HI
A 276	P06-N	TB3-R 6	ACCEL INDICATING SENSOR HI
A 285	P06-P	TB3-M 1	ACCEL TEMP IND SENSOR RET
A 279Y	P06-R	TB3-N 2	EMERGENCY HTR LO-OPER AND STBY
A 278R	P06-V	TB3-N 5	IMU CONTROL HTR HI
A 278Y	P06-W	TB3-N 4	IMU CONTROL HTR LO
A 279R	P06-X	TB3-N 1	IMU EMERGENCY HTR HI
A 277	P06-Y	TB3-N 6	EMERG HTR CONT MODULE LO
A 280	P06-Z	TB3-H 4	IRIG TEMP IND SENSOR HI

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SCALE - NONE | REV LTR | SHEET 73

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 289R	P07-A	TB1-T 8	Z GYRO TORQUE +
A 296Y	P07-A*	TB1-N 2	Y PIP ERROR LO
A 289W	P07-B	TB1-U 7	Z GYRO TORQUE RET
A 297R	P07-B*	TB1-T 5	Z PIP ERROR HI
A 289L	P07-C	TB1-U 8	Z GYRO TORQUE -
A 297Y	P07-C*	TB1-T 4	Z PIP ERROR LO
A 290R	P07-D	TB1-M 8	X GYRO TORQUE +
A 290W	P07-E	TB1-L 8	X GYRO TORQUE RET
A 290L	P07-F	TB1-L 7	X GYRO TORQUE -
A 298R	P07-F*	TB1-C 3	OG ADA
A 291R	P07-G	TB1-T 6	Y GYRO TORQUE +
A 298G	P07-G*	TB1-B 4	MG ADA
A 291W	P07-H	TB1-U 5	Y GYRO TORQUE RET
A 298N	P07-H*	TB1-C 4	IG ADA
A 291L	P07-J	TB1-U 6	Y GYRO TORQUE -
A 298Y	P07-J*	TB1-B 3	0 VDC IMU
A 292R	P07-K	TB1-U 4	Z PIP TORQUE +
A 292W	P07-L	TB1-T 3	Z PIP TORQUE RET
A 292L	P07-M	TB1-U 3	Z PIP TORQUE -
A 293R	P07-N	TB1-L 4	Y PIP TORQUE +
A 293W	P07-P	TB1-L 3	Y PIP TORQUE RET
A 293L	P07-R	TB1-M 4	Y PIP TORQUE -
A 294R	P07-U	TB1-M 5	X PIP TORQUE +
A 294W	P07-V	TB1-L 6	X PIP TORQUE RET
A 294L	P07-W	TB1-L 5	X PIP TORQUE -
A 295R	P07-X	TB1-M 7	X PIP ERROR HI
A 295Y	P07-Y	TB1-M 6	X PIP ERROR LO
A 296R	P07-Z	TB1-M 3	Y PIP ERROR HI

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SCALE - NONE | REV LTR | SHEET 74

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 299R	P08-A	TB2-U 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 299Y	P08-B	TB2-T 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 315	P08-B*	TB3-K15	0 VDC OPTICS
A 308Y	P08-C*	TB3-G17	SCT SHAFT MOTOR CONTROL WINDING RED
A 308G	P08-D*	TB3-F17	SCT SHAFT MOTOR CONTROL WINDING BLK
A 300Y	P08-E	TB3-C17	SCT TRUNNION MOTOR CONTROL WINDING RED
A 309R	P08-E*	TB3-N16	SCT SHAFT TACH HI
A 300R	P08-F	TB3-C19	+28 VDC OPTICS
A 309Y	P08-F*	TB3-N17	SCT SHAFT TACH LO
A 300G	P08-G	TB3-C16	SCT TRUNNION MOTOR CONTROL WINDING BLK
A 310R	P08-G*	TB3-L16	SCT SHAFT 1/2X RSVR ERROR LO
A 308R	P08-H	TB3-C19	+28 VDC OPTICS
A 311	P08-H*	TB3-T18	SCT SHAFT 1/2X RSVR LOAD
A 310Y	P08-I*	TB3-L17	SCT SHAFT 1/2X RSVR ERROR HI
A 301R	P08-J	TB2-K 2	800 CPS 28 V 1 PCT HI OPTICS
A 312Y	P08-J*	TB3-K10	SHAFT CDU 1/2X SIN HI S1
A 301Y	P08-K	TB2-L 2	800 CPS 28 V 1 PCT LO OPTICS
A 312R	P08-K*	TB3-K11	SHAFT CDU 1/2X SIN LO P1
A 313Y	P08-M*	TB3-N13	SHAFT CDU 1/2X COS LO P2
A 302R	P08-N	TB3-R17	SCT TRUNNION TACH HI
A 313R	P08-N*	TB3-N14	SHAFT CDU 1/2X COS HI P4
A 302Y	P08-P	TB3-R16	SCT TRUNNION TACH LO
A 303	P08-R	TB3-K15	0 VDC OPTICS
A 314R	P08-R*	TB1-T 1	400 CPS VAR ILLUM PWR
A 304Y	P08-S	TB3-K16	SCT TRUNNION 1X RSVR ERROR HI
A 314Y	P08-S*	TB1-T 2	400 CPS 6 V LO
A 304R	P08-T	TB3-K17	SCT TRUNNION 1X RSVR ERROR LO
A 316	P08-T*	TB3-F22	STRUCTURE GND
A 305	P08-U	TB3-R18	SCT TRUNNION 1X RSVR LOAD
A 306R	P08-V	TB3-S13	SCT TRUNNION 1X SIN LO
A 306Y	P08-W	TB3-S14	SCT TRUNNION 1X SIN HI
A 307R	P08-X	TB3-T14	SCT TRUNNION 1X COS HI
A 307Y	P08-Y	TB3-T13	SCT TRUNNION 1X COS LO

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057
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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 355R	P09- 1	TB3-D13	SIN AIG 1X RET
A 356R	P09- 2	TB3-F13	COS AIG 1X RET
A 356Y	P09- 3	TB3-F14	COS AIG 1X
A 330	P09- 4	TB3-R20	+28 VDC AGC
A 317R	P09- 5	TB3-T19	+20 VDC CONDITIONING
A 317Y	P09- 6	TB3-S19	0 VDC CONDITIONING
A 386Y	P09- 7	TB3-R19	+2.5 VDC CONDITIONING HI
A 318Y	P09- 8	TB3-B19	800 CPS 28 V 1 PCT LO IMU
A 318R	P09- 9	TB3-B18	800 CPS 28 V 1 PCT HI IMU
A 342	P09- 10	TB3-F 5	GIMBAL LOCK SIGNAL
A 344	P09- 11	TB3-D 3	IMU TEMP CONT FAIL LIGHT HI
A 336	P09- 12	TB1-H 8	ERROR DETECT LIGHT HI
A 332	P09- 13	TB1-H 6	AGC POWER SUPPLY FAIL SIG HI
A 355Y	P09- 14	TB3-D14	SIN AIG 1X
A 357R	P09- 15	TB3-C13	SIN AMG 1X RET
A 359R	P09- 16	TB2-U 7	SIN AOG 1X S2
A 359Y	P09- 17	TB2-U 8	SIN AOG 1X S4
A 331	P09- 18	TB3-N19	0 VDC AGC
A 327	P09- 19	TB3-T21	+28 VDC IMU
A 326	P09- 20	TB3-N22	+28 VDC STBY
A 386R	P09- 21	TB3-S20	+2.5 VDC CONDITIONING LO
A 320R	P09- 22	TB3-D 2	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 691	P09- 23	TB1-S 5	0 VDC IMU
A 684G	P09- 24	TB3-A 3	+120 VDC PIP
A 684R	P09- 25	TB3-A 4	+32 VDC PIP
A 358R	P09- 28	TB3-N20	COS AMG 1X S3
A 357Y	P09- 29	TB3-C14	SIN AMG 1X
A 360R	P09- 30	TB2-N 8	COS AOG 1X S3
A 360Y	P09- 31	TB2-N 7	COS AOG 1X S1
A 385	P09- 32	TB2-F 4	0 VDC IMU
A 349	P09- 33	TB1-L 2	X PIP ERROR MONITOR
A 320Y	P09- 34	TB3-C 3	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 683	P09- 35	TB1-D 5	-28 VDC
A 684Y	P09- 36	TB3-A 5	+32, +120 VDC RET PIP
A 679	P09- 37	TB3-G 6	TRAY 3 THERMISTER HI
A 680	P09- 38	TB3-K 6	TRAY 4 THERMISTER HI
A 358Y	P09- 40	TB3-N21	COS AMG 1X S1
A 361	P09- 41	TB1-C 8	Z GYRO ERROR SIG

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 379R	P09- 42	TB3-K19	IMU PRESSURE MONITOR HI	
A 350	P09- 43	TB1-M 2	Y PIP ERROR MONITOR	
A 351	P09- 44	TB1-T 7	Z PIP ERROR MONITOR	
A 321R	P09- 45	TB2-K 1	800 CPS 28 V 1 PCT HI OPTICS	
A 345	P09- 46	TB1-U 2	IMU DELAY LIGHT HI	
A 677	P09- 47	TB3-F 6	TRAY 2 THERMISTER HI	
A 681	P09- 48	TB3-L 6	THERMISTER LO	
A 678	P09- 49	J21-171	AGC THERMISTER HI	199A
A 363Y	P09- 50	TB1-A 8	IMU OG ERROR SIG	
A 363N	P09- 51	TB1-B 7	IMU GIMBAL AND GYRO ERROR SIG LO	
A 362	P09- 52	TB1-C 7	X GYRO ERROR SIG	
A 379Y	P09- 53	TB3-H19	IMU PRESSURE MONITOR LO	
A 381	P09- 54	TB3-M19	+3 VDC AGC	
A 321Y	P09- 55	TB2-L 1	800 CPS 28 V 1 PCT LO OPTICS	
A 322R	P09- 56	TB2-U 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
A 322Y	P09- 57	TB2-T 3	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
A 323Y	P09- 58	TB1-B 6	3200 CPS 2 V FEEDBACK LO	
A 323R	P09- 59	TB1-C 6	3200 CPS 2 V FEEDBACK HI	
A 363R	P09- 60	TB1-A 7	IMU MG ERROR SIG	
A 363G	P09- 61	TB1-B 8	IMU IG AND Y GYRO ERROR SIG	
A 380	P09- 62	TB3-L19	+13 VDC AGC	
A 382	P09- 63	TB3-N19	0 VDC AGC	
A 371G	P09- 64	TB3-G19	AGC TEMP MONITOR NO 1	
A 328	P09- 65	TB3-H20	+28 VDC OPTICS	
A 329	P09- 66	TB3-L21	0 VDC OPTICS	
A 319R	P09- 67	TB1-G 2	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
A 325R	P09- 68	TB1-H 7	25.6 KC HI OPTICS	
A 324R	P09- 69	TB1-H 4	25.6 KC HI IMU	
A 365R	P09- 70	TB2-H 7	MG CDU 1X ERROR SIG	
A 365Y	P09- 71	TB2-G 7	MG CDU ERROR SIG RET	
A 366R	P09- 72	TB2-N 2	OG CDU 1X ERROR SIG	
A 370	P09- 73	TB3-C 4	BLOWER CURRENT SENSOR (TELEMETERY)	
A 371R	P09- 74	TB3-F19	AGC TEMP MONITOR NO 2	
A 371Y	P09- 75	TB3-D19	AGC TEMP MONITOR NO 3	
A 378R	P09- 76	TB3-G17	SCT SHAFT MOTOR CONTROL WINDING	
A 378Y	P09- 77	TB3-F17	SCT SHAFT MOTOR CONTROL WINDING	
A 319G	P09- 78	TB1-H 2	800 CPS 28 V 5 PCT IMU WHEELS LO	
A 319Y	P09- 79	TB1-H 3	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 325Y	P09- 80	TB1-G 7	25.6 KC LO OPTICS
A 324Y	P09- 81	TB1-G 4	25.6 KC LO IMU
A 364Y	P09- 82	TB2-G 2	IG CDU ERROR SIG RET
A 366Y	P09- 83	TB2-R 2	OG CDU ERROR SIG RET
A 384	P09- 84	TB3-D 6	TEMPERATURE CONTROL SIG LO
A 368	P09- 85	TB3-C 5	IRIG TEMP (TELEMETRY)
A 682N	P09- 86	TB3-C 6	MG CDU FAILURE INDICATION
A 682R	P09- 87	TB3-C 7	OG CDU FAILURE INDICATION
A 689G	P09- 88	TB3-D 9	SHAFT CDU MDA (TEST) HI
A 689N	P09- 89	TB3-B 7	DIRECT SHAFT CONTROLLER HI (TEST)
A 690G	P09- 90	TB3-C 9	SXT TRUNNION MDA OUTPUT HI (TEST)
A 376R	P09- 91	TB3-C17	SCT TRUNNION MOTOR CONTROL WINDING
A 376Y	P09- 92	TB3-C16	SCT TRUNNION MOTOR CONTROL WINDING
A 352R	P09- 93	TB1-D 4	IG TORQUE MOTOR RET
A 354R	P09- 94	TB1-B 2	OG TORQUE MOTOR RET
A 354Y	P09- 95	TB1-A 2	OG TORQUE MOTOR HI
A 364R	P09- 96	TB2-H 2	IG CDU 1X ERROR SIG
A 369	P09- 97	TB3-D 5	HTR CURRENT (TELEMETERY)
A 367	P09- 98	TB3-D 4	ACCEL TEMP (TELEMETRY)
A 682G	P09- 99	TB3-B 6	IG CDU FAILURE INDICATION
A 682Y	P09-100	TB3-C 8	0 VDC IMU
A 689Y	P09-101	TB3-D 7	DIRECT TRUNNION CONTROLLER HI (TEST)
A 689R	P09-102	TB3-D 8	TRUNNION CDU MDA HI (TEST)
A 690N	P09-103	TB3-C10	0 VDC OPTICS
A 690R	P09-104	TB3-B 9	SXT SHAFT MDA OUTPUT HI (TEST)
A 690Y	P09-105	TB3-B10	TRUNNION CDU 16X RSVR OUTPUT HI (TEST)
A 352Y	P09-106	TB1-D 3	IG TORQUE MOTOR HI
A 353R	P09-107	TB1-A 3	MG TORQUE MOTOR RET
A 353Y	P09-108	TB1-A 4	MG TORQUE MOTOR HI

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SCALE - NONE	REV LTR	SHEET 78

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 665	P10- 1	TB3-B20	STRUCTURE GND
A 461	P10- 8	J22-171	MAIN PANEL GIMBAL LOCK LIGHT
A 462	P10- 9	TB3-F 1	0 VDC SPACECRAFT
A 453	P10- 10	J09- 29	GIMBAL LOCK LIGHT CONDITION LAMP TEST
A 454	P10- 12	TB3-F 5	GIMBAL LOCK SIGNAL
A 452	P10- 13	TB1-S 5	0 VDC IMU
A 455	P10- 24	TB2-S 8	GIMBAL LOCK LIGHT HI
* A 448Y	P10- 38	J09- 77	400 CPS 1.5 V ZERO PHASE
* A 448R	P10- 39	J09- 65	400 CPS 1.5 V PI PHASE
* A 447	P10- 48	J09- 95	400 CPS 26 V HI
A 460	P10- 49	TB3-B14	400 CPS 26 V LO
A 607Y	P10- 68	TB3-K14	400 CPS 115 V LO
A 607R	P10- 69	TB3-L14	400 CPS 115 V HI
A 663G	P10- 81	TB1-T 2	400 CPS 6 V LO
* A 606Y	P10- 93	J09- 62	400 CPS 6 V HI
A 663R	P10- 94	TB1-R 2	400 CPS 6 V LO
A 663Y	P10- 95	TB1-S 2	400 CPS 6 V LO
* A 606R	P10-106	J09- 61	400 CPS 6 V HI
* A 606G	P10-107	J09- 53	400 CPS 6 V HI
* A 606N	P10-108	J09- 52	400 CPS 6 V LO

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 633	P11-A	TB3-G21	+28 VDC AGC BUSS A	
A 634	P11-A	J21- 1	+28 VDC AGC BUSS A	167
A 635	P11-A	J21- 73	+28 VDC AGC BUSS A	167
A 609	P11-B	TB3-C20	+28 VDC IMU BUSS A	
A 610	P11-B	TB3-C20	+28 VDC IMU BUSS A	
A 611	P11-B	TB3-C20	+28 VDC IMU BUSS A	
A 612	P11-C	TB3-C21	+28 VDC IMU BUSS A	
A 613	P11-C	TB3-C21	+28 VDC IMU BUSS A	
A 614	P11-C	TB3-C21	+28 VDC IMU BUSS A	
A 649	P11-D	TB1-N 8	0 VDC IMU	
A 650	P11-D	TB1-S 6	0 VDC IMU	
A 654	P11-E	TB2-M 7	0 VDC IMU	
A 655	P11-E	TB2-V 4	0 VDC IMU	
A 651	P11-F	TB2-M 3	0 VDC IMU	
A 652	P11-F	TB2-D 4	0 VDC IMU	
A 653	P11-F	TB3-N 3	0 VDC IMU	
A 643	P11-G	TB3-D15	0 VDC OPTICS	
A 644	P11-G	TB3-K20	0 VDC OPTICS	
A 645	P11-G	TB3-L21	0 VDC OPTICS	
A 625	P11-H	TB3-H21	+28 VDC OPTICS BUSS A	
A 626	P11-H	TB3-H21	+28 VDC OPTICS BUSS A	
A 627	P11-H	TB3-H21	+28 VDC OPTICS BUSS A	
A 639	P11-J	J21- 2	0 VDC AGC	169
A 640	P11-J	J21- 74	0 VDC AGC	169
A 608Y	P11-K	TB3-K14	400 CPS 115 V LO	
A 631	P11-L	TB3-F21	STRUCTURE GND	
A 623	P11-M	TB3-D22	+28 VDC STBY BUSS A	
A 624	P11-M	TB3-D22	+28 VDC STBY BUSS A	
A 608R	P11-N	TB3-L14	400 CPS 115 V HI	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 636	P12-A	TB3-G22	+28 VDC AGC BUSS B	
A 637	P12-A	J21-139	+28 VDC AGC BUSS B	168
A 638	P12-A	J21-207	+28 VDC AGC BUSS B	168
A 615	P12-B	TB3-D20	+28 VDC IMU BUSS B	
A 616	P12-B	TB3-D20	+28 VDC IMU BUSS B	
A 617	P12-B	TB3-D20	+28 VDC IMU BUSS B	
A 618	P12-C	TB3-D21	+28 VDC IMU BUSS B	
A 619	P12-C	TB3-D21	+28 VDC IMU BUSS B	
A 620	P12-C	TB3-D21	+28 VDC IMU BUSS B	
A 656	P12-D	TB1-N 4	0 VDC IMU	
A 657	P12-D	TB3-S 3	0 VDC IMU	
A 658	P12-E	TB3-T 3	0 VDC IMU	
A 659	P12-E	TB1-S 3	0 VDC IMU	
A 660	P12-F	TB2-M 1	0 VDC IMU	
A 661	P12-F	TB2-L 4	0 VDC IMU	
A 662	P12-F	TB1-D 7	0 VDC IMU	
A 646	P12-G	TB3-C15	0 VDC OPTICS	
A 647	P12-G	TB3-K22	0 VDC OPTICS	
A 648	P12-G	TB3-L20	0 VDC OPTICS	
A 628	P12-H	TB3-H22	+28 VDC OPTICS BUSS B	
A 629	P12-H	TB3-H22	+28 VDC OPTICS BUSS B	
A 630	P12-H	TB3-H22	+28 VDC OPTICS BUSS B	
A 641	P12-J	J21-140	0 VDC AGC	170
A 642	P12-J	J21-208	0 VDC AGC	170
A 632	P12-L	TB3-F22	STRUCTURE GND	
A 621	P12-M	TB3-C22	+28 VDC STBY BUSS B	
A 622	P12-M	TB3-C22	+28 VDC STBY BUSS B	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 13B	SHLD A 13	TB2-D 3	AGC SIG 178 SHLD RET
* A 14B	SHLD A 14	E 44	AGC SIG 178 SHLD RET
* A 15B	SHLD A 15	E 44	AGC SIG 178 SHLD RET
* A 16B	SHLD A 16	E 44	AGC SIG 178 SHLD RET
* A 23B	SHLD A 23	TB2-S 2	OG CDU ERROR SIG RET
* A 24B	SHLD A 24	TB2-F 2	IG CDU ERROR SIG RET
* A 25B	SHLD A 25	TB2-F 7	MG CDU ERROR SIG RET
* A 27B	SHLD A 27	E 44	AGC SIG 178 SHLD RET
* A 39B	SHLD A 39	TB2-F 2	IG CDU ERROR SIG RET
* A 40B	SHLD A 40	TB3-H14	0 VDC IMU
* A 41B	SHLD A 41	TB3-H13	0 VDC IMU
* A 42B	SHLD A 42	TB2-G 1	IG CDU ERROR SIG RET
* A 43B	SHLD A 43	TB2-V 6	0 VDC IMU
* A 44B	SHLD A 44	TB2-D 8	0 VDC IMU
* A 45B	SHLD A 45	TB2-A 5	IG CDU ENCODER COM
* A 51B	SHLD A 51	TB2-T 7	IG CDU MDA INPUT RET
* A 63B	SHLD A 63	TB2-F 7	MG CDU ERROR SIG RET
* A 64B	SHLD A 64	E 48	0 VDC IMU
* A 65B	SHLD A 65	TB3-H12	0 VDC IMU
* A 66B	SHLD A 66	TB2-G 8	MG CDU ERROR SIG RET
* A 67B	SHLD A 67	TB2-V 5	0 VDC IMU
* A 68B	SHLD A 68	TB2-D 7	0 VDC IMU
* A 69B	SHLD A 69	TB2-C 6	MG CDU ENCODER COM
* A 75B	SHLD A 75	TB2-X 6	MG CDU MDA INPUT RET
* A 86B	SHLD A 86	TB2-S 2	OG CDU ERROR SIG RET
* A 87B	SHLD A 87	TB2-M 8	0 VDC IMU
* A 88B	SHLD A 88	TB2-V 8	0 VDC IMU
* A 89B	SHLD A 89	TB2-S 3	OG CDU ERROR SIG RET
* A 90B	SHLD A 90	TB2-V 4	0 VDC IMU
* A 91B	SHLD A 91	TB2-V 2	0 VDC IMU
* A 92B	SHLD A 92	TB2-A 4	OG CDU ENCODER COM
* A 96B	SHLD A 96	TB2-R 7	OG CDU MDA INPUT RET
* A 107B	SHLD A 107	TB3-H 9	0 VDC OPTICS
* A 108B	SHLD A 108	TB3-N15	0 VDC OPTICS
* A 110B	SHLD A 110	TB3-K 9	0 VDC OPTICS
* A 111B	SHLD A 111	TB3-G15	0 VDC OPTICS
* A 112B	SHLD A 112	TB3-H 9	0 VDC OPTICS
* A 114B	SHLD A 114	TB3-N 9	0 VDC OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 115B	SHLD A 115	TB3-N 9	0 VDC OPTICS
* A 116B	SHLD A 116	TB3-S 5	SHAFT CDU ENCODER COM
* A 121B	SHLD A 121	TB3-L 9	0 VDC OPTICS
* A 130B	SHLD A 130	TB3-G 9	0 VDC OPTICS
* A 131B	SHLD A 131	TB3-K15	0 VDC OPTICS
* A 132B	SHLD A 132	TB3-L 9	0 VDC OPTICS
* A 134B	SHLD A 134	TB3-R15	0 VDC OPTICS
* A 135B	SHLD A 135	TB3-H 9	0 VDC OPTICS
* A 137B	SHLD A 137	TB3-T 9	0 VDC OPTICS
* A 138B	SHLD A 138	TB3-S 9	0 VDC OPTICS
* A 139B	SHLD A 139	TB3-T 5	TRUNNION CDU ENCODER COM
* A 144B	SHLD A 144	TB3-M 9	0 VDC OPTICS
* A 155B	SHLD A 155	TB2-D 3	AGC SIG 178 SHLD RET
* A 156B	SHLD A 156	E 44	AGC SIG 178 SHLD RET
* A 217B	SHLD A 217	TB2-V 3	0 VDC IMU
* A 218B	SHLD A 218	TB2-V 2	0 VDC IMU
* A 219B	SHLD A 219	TB2-V 5	0 VDC IMU
* A 220B	SHLD A 220	TB2-D 7	0 VDC IMU
* A 221B	SHLD A 221	E 48	0 VDC IMU
* A 222B	SHLD A 222	TB3-H12	0 VDC IMU
* A 224B	SHLD A 224	TB1-D 7	0 VDC IMU
* A 225B	SHLD A 225	TB2-V 6	0 VDC IMU
* A 226B	SHLD A 226	TB2-D 8	0 VDC IMU
* A 227B	SHLD A 227	TB3-H14	0 VDC IMU
* A 228B	SHLD A 228	TB3-H13	0 VDC IMU
* A 229B	SHLD A 229	TB1-D 7	0 VDC IMU
* A 230B	SHLD A 230	TB1-D 8	0 VDC IMU
* A 232B	SHLD A 232	TB2-M 8	0 VDC IMU
* A 233B	SHLD A 233	TB2-V 8	0 VDC IMU
* A 234B	SHLD A 234	TB1-B 5	IG CDU ERROR SIG RET
* A 235B	SHLD A 235	TB1-A 6	MG CDU ERROR SIG RET
* A 236B	SHLD A 236	TB3-S 3	0 VDC IMU
* A 237B	SHLD A 237	TB3-T 3	0 VDC IMU
* A 248B	SHLD A 248	TB3-R 9	0 VDC OPTICS
* A 252B	SHLD A 252	TB3-T 9	0 VDC OPTICS
* A 253B	SHLD A 253	TB3-S 9	0 VDC OPTICS
* A 254B	SHLD A 254	TB3-M15	0 VDC OPTICS
* A 255B	SHLD A 255	TB3-H15	0 VDC OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 256B	SHLD A 256	TB3-G 9	0 VDC OPTICS
* A 257B	SHLD A 257	TB3-S15	0 VDC OPTICS
* A 258B	SHLD A 258	TB3-R 9	0 VDC OPTICS
* A 260B	SHLD A 260	TB3-S15	0 VDC OPTICS
* A 261B	SHLD A 261	TB3-R15	0 VDC OPTICS
* A 262B	SHLD A 262	TB3-K 9	0 VDC OPTICS
* A 263B	SHLD A 263	TB3-H15	0 VDC OPTICS
* A 278B	SHLD A 278	TB3-R 3	0 VDC IMU
* A 279B	SHLD A 279	TB3-N 3	0 VDC IMU
* A 289B	SHLD A 289	TB1-S 8	0 VDC IMU
* A 290B	SHLD A 290	TB1-N 8	0 VDC IMU
* A 291B	SHLD A 291	TB1-S 6	0 VDC IMU
* A 292B	SHLD A 292	TB1-S 3	0 VDC IMU
* A 293B	SHLD A 293	TB1-N 4	0 VDC IMU
* A 294B	SHLD A 294	TB1-N 5	0 VDC IMU
* A 302B	SHLD A 302	TB3-S15	0 VDC OPTICS
* A 304B	SHLD A 304	TB3-H15	0 VDC OPTICS
* A 306B	SHLD A 306	TB3-T15	0 VDC OPTICS
* A 307B	SHLD A 307	TB3-T15	0 VDC OPTICS
* A 309B	SHLD A 309	TB3-M15	0 VDC OPTICS
* A 310B	SHLD A 310	TB3-M15	0 VDC OPTICS
* A 312B	SHLD A 312	TB3-K 9	0 VDC OPTICS
* A 313B	SHLD A 313	TB3-R15	0 VDC OPTICS
* A 355B	SHLD A 355	TB3-H13	0 VDC IMU
* A 356B	SHLD A 356	TB3-H14	0 VDC IMU
* A 357B	SHLD A 357	TB3-H12	0 VDC IMU
* A 358B	SHLD A 358	E 48	0 VDC IMU
* A 359B	SHLD A 359	TB2-V 8	0 VDC IMU
* A 360B	SHLD A 360	TB2-M 8	0 VDC IMU
* A 364B	SHLD A 364	TB2-F 2	IG CDU ERROR SIG RET
* A 365B	SHLD A 365	TB2-F 7	MG CDU ERROR SIG RET
* A 366B	SHLD A 366	TB2-S 2	OG CDU ERROR SIG RET
* A 425B	SHLD A 425	TB3-M 9	0 VDC OPTICS
* A 426B	SHLD A 426	TB3-G12	TRUNNION CDU MDA CONTROLLER SIG LO
* A 427B	SHLD A 427	TB3-F12	SHAFT CDU MDA CONTROLLER SIG LO
* A 433B	SHLD A 433	E 44	AGC SIG 178 SHLD RET
* A 434B	SHLD A 434	E 44	AGC SIG 178 SHLD RET
* A 437B	SHLD A 437	E 44	AGC SIG 178 SHLD RET

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 440A	SHLD A 440	E 44	AGC SIG 178 SHLD RET
* A 449B	SHLD A 449	E 44	AGC SIG 178 SHLD RET
* A 671B	SHLD A 671	TB3-F 8	SHAFT CDU DAC LO
* A 672B	SHLD A 672	TB3-F 7	TRUNNION CDU DAC LO
AA 70A	SHLD AA 70	J12-H1	COMPUTER 102.4 KPPS SYNC RET
* AA 92B	SHLD AA 92	E 27	0 VDC IMU
* AA119B	SHLD AA119	TB1-N 5	0 VDC IMU
* AA122B	SHLD AA122	TB1-N 4	0 VDC IMU
* AA124B	SHLD AA124	TB1-N 8	0 VDC IMU
* AA127B	SHLD AA127	TB1-S 4	0 VDC IMU
* AA133B	SHLD AA133	TB1-S 5	0 VDC IMU
* AA136B	SHLD AA136	TB1-S 8	0 VDC IMU
* AA176B	SHLD AA176	TB2-D 3	AGC SIG 178 SHLD RET
AA197A	SHLD AA197	J16-B1	IG CDU MDA INPUT RET
AA202A	SHLD AA202	J16-B3	MG CDU MDA INPUT RET
AA214A	SHLD AA214	J16-B5	OG CDU MDA INPUT RET
AA226A	SHLD AA226	E 30	0 VDC IMU
AA227A	SHLD AA227	E 30	0 VDC IMU
AA232A	SHLD AA232	E 30	0 VDC IMU
* AA232B	SHLD AA232	E 31	0 VDC IMU
* AA244B	SHLD AA244	J22- 41	
* AA245B	SHLD AA245	J22- 5	
* AA246B	SHLD AA246	J22- 8	
* AA265B	SHLD AA265	TB3-S 3	0 VDC IMU
* AA270B	SHLD AA270	TB3-N 3	0 VDC IMU
* AA287B	SHLD AA287	J22- 2	
* AA288B	SHLD AA288	J22- 11	
* AA307B	SHLD AA307	TB3-R 9	0 VDC OPTICS
* AA308B	SHLD AA308	TB3-N 9	0 VDC OPTICS
* AA309B	SHLD AA309	TB3-T 9	0 VDC OPTICS
* AA310B	SHLD AA310	TB3-S 9	0 VDC OPTICS
* AA315B	SHLD AA315	TB3-M 9	0 VDC OPTICS
* AA316B	SHLD AA316	TB3-L 9	0 VDC OPTICS
* AA329B	SHLD AA329	TB3-H 9	0 VDC OPTICS
* AA331B	SHLD AA331	TB3-K 9	0 VDC OPTICS
AA467A	SHLD AA467	E 46	AGC SIG 180 SHLD RET
AA468A	SHLD AA468	E 46	AGC SIG 180 SHLD RET
AA469A	SHLD AA469	E 46	AGC SIG 180 SHLD RET

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
AA470A	SHLD AA470	E 46	AGC SIG 180 SHLD RET
AA471A	SHLD AA471	E 46	AGC SIG 180 SHLD RET
AA472A	SHLD AA472	E 46	AGC SIG 180 SHLD RET
AA475A	SHLD AA475	E 47	AGC SIG 179 SHLD RET
AA476A	SHLD AA476	E 47	AGC SIG 179 SHLD RET
AA477A	SHLD AA477	E 47	AGC SIG 179 SHLD RET
AA478A	SHLD AA478	E 47	AGC SIG 179 SHLD RET
AA479A	SHLD AA479	E 47	AGC SIG 179 SHLD RET
AA480A	SHLD AA480	E 47	AGC SIG 179 SHLD RET
* AA481B	SHLD AA481	E 39	IG DAC MDA SIG LO
* AA482B	SHLD AA482	E 39	IG DAC MDA SIG LO
* AA483B	SHLD AA483	E 41	MG DAC MDA SIG LO
* AA484B	SHLD AA484	E 41	MG DAC MDA SIG LO
* AA485B	SHLD AA485	E 43	OG DAC MDA SIG LO
* AA48	SHLD AA486	E 43	OG DAC MDA SIG LO
AA487A	SHLD AA487	E 57	AGC SIG 178 SHLD RET
* AA487B	SHLD AA487	TB2-D 3	AGC SIG 178 SHLD RET
AA488A	SHLD AA488	E 57	AGC SIG 178 SHLD RET
AA489A	SHLD AA489	E 57	AGC SIG 178 SHLD RET
* AA490B	SHLD AA490	E 29	COMPUTER 25.6 KPPS SYNC RET
* AA491B	SHLD AA491	E 29	COMPUTER 25.6 KPPS SYNC RET
* AA492B	SHLD AA492	E 71	0 VDC OPTICS
* AA493B	SHLD AA493	E 71	0 VDC OPTICS
AA494A	SHLD AA494	E 45	AGC SIG 180 SHLD RET
AA495A	SHLD AA495	E 45	AGC SIG 180 SHLD RET
* AA496B	SHLD AA496	E 71	0 VDC OPTICS
* AA497B	SHLD AA497	E 71	0 VDC OPTICS
AA498A	SHLD AA498	E 45	AGC SIG 180 SHLD RET
AA499A	SHLD AA499	E 45	AGC SIG 180 SHLD RET
* AA500B	SHLD AA500	E 27	0 VDC IMU
* AA503B	SHLD AA503	E 28	COMPUTER 3200 PPS SYNC RET
* AA504B	SHLD AA504	E 28	COMPUTER 3200 PPS SYNC RET
* AA505B	SHLD AA505	TB2-V 8	0 VDC IMU
* AA506B	SHLD AA506	TB2-M 8	0 VDC IMU
* AA507B	SHLD AA507	TB3-H12	0 VDC IMU
* AA508B	SHLD AA508	TB3-H14	0 VDC IMU
* AA509B	SHLD AA509	TB3-H13	0 VDC IMU
* AA510B	SHLD AA510	TB3-H14	0 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA569A	SHLD AA569	TB2-D 3	AGC SIG 178 SHLD RET
	AA571A	SHLD AA571	TB2-S 3	OG CDU ERROR SIG RET
*	AA639B	SHLD AA639	E 70	AGC SIG 179 SHLD RET
*	AA640B	SHLD AA640	E 70	AGC SIG 179 SHLD RET
*	AA641B	SHLD AA641	E 70	AGC SIG 179 SHLD RET

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 238Y	TB1-A 2	P03-Y	OG TORQUE MOTOR HI
*	A 273R	TB1-A 2	P06-H	OG TORQUE MOTOR HI
*	A 354Y	TB1-A 2	P09- 95	OG TORQUE MOTOR HI
*	AA 34R	TB1-A 2	J11-H6	OG TORQUE MOTOR HI
*	A 239Y	TB1-A 3	P03-A*	MG TORQUE MOTOR RET
*	A 240R	TB1-A 3	P03-B*	MG TORQUE MOTOR RET
*	A 353R	TB1-A 3	P09-107	MG TORQUE MOTOR RET
*	AA 32W	TB1-A 3	J11-G6	MG TORQUE MOTOR RET
*	A 239R	TB1-A 4	P03-Z	MG TORQUE MOTOR HI
*	A 240Y	TB1-A 4	P03-C*	MG TORQUE MOTOR HI
*	A 353Y	TB1-A 4	P09-108	MG TORQUE MOTOR HI
*	AA 32R	TB1-A 4	J11-F6	MG TORQUE MOTOR HI
*	A 235Y	TB1-A 5	P03-L	MG CDU ATTITUDE STEERING ERROR
*	AA 20R	TB1-A 5	J11-C2	MG CDU ATTITUDE STEERING ERROR
	A 235B	TB1-A 6	SHLD A 235	MG CDU ERROR SIG RET
*	A 235R	TB1-A 6	P03-K	MG CDU ERROR SIG RET
*	AA 20W	TB1-A 6	J11-B2	MG CDU ERROR SIG RET
*	A 231N	TB1-A 7	P03-W	IMU MG ERROR SIG
*	A 363R	TB1-A 7	P09- 60	IMU MG ERROR SIG
*	AA 29R	TB1-A 7	J11-A5	IMU MG ERROR SIG
*	A 231R	TB1-A 8	P03-C	IMU OG ERROR SIG
*	A 363Y	TB1-A 8	P09- 50	IMU OG ERROR SIG
*	AA 29L	TB1-A 8	J11-A6	IMU OG ERROR SIG
*	A 238R	TB1-B 2	P03-X	OG TORQUE MOTOR RET
*	A 273Y	TB1-B 2	P06-J	OG TORQUE MOTOR RET
*	A 354R	TB1-B 2	P09- 94	OG TORQUE MOTOR RET
*	AA 34W	TB1-B 2	J11-H5	OG TORQUE MOTOR RET
*	A 298Y	TB1-B 3	P07-J*	0 VDC IMU
*	AA 23W	TB1-B 3	J11-G2	0 VDC IMU
*	A 298G	TB1-B 4	P07-G*	MG ADA
*	AA 23L	TB1-B 4	J11-H1	MG ADA
	A 234B	TB1-B 5	SHLD A 234	IG CDU ERROR SIG RET
*	A 234R	TB1-B 5	P03-J	IG CDU ERROR SIG RET
*	AA 16W	TB1-B 5	J11-B1	IG CDU ERROR SIG RET
*	A 224Y	TB1-B 6	P02-U	3200 CPS 2 V FEEDBACK LO
*	A 323Y	TB1-B 6	P09- 58	3200 CPS 2 V FEEDBACK LO
*	AA 42R	TB1-B 6	J11-G3	3200 CPS 2 V FEEDBACK LO
*	A 231Y	TB1-B 7	P03-V	IMU GIMBAL AND GYRO ERROR SIG LO

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 363N	TB1-B 7	P09- 51	IMU GIMBAL AND GYRO ERROR SIG LO
*	AA 29K	TB1-B 7	J11-B5	IMU GIMBAL AND GYRO ERROR SIG LO
*	AA654R	TB1-B 7	J15-B2	IMU GIMBAL AND GYRO ERROR SIG LO
*	A 231G	TB1-B 8	P03-U	IMU IG AND Y GYRO ERROR SIG
*	A 363G	TB1-B 8	P09- 61	IMU IG AND Y GYRO ERROR SIG
*	AA 29W	TB1-B 8	J11-B6	IMU IG AND Y GYRO ERROR SIG
*	A 223Y	TB1-C 2	P02-S	3200 CPS 2 V LO
*	AA 28K	TB1-C 2	J11-L2	3200 CPS 2 V LO
*	AA 28L	TB1-C 2	J11-M2	3200 CPS 2 V LO
*	A 298R	TB1-C 3	P07-F*	OG ADA
*	AA 23K	TB1-C 3	J11-G1	OG ADA
*	A 298N	TB1-C 4	P07-H*	IG ADA
*	AA 23R	TB1-C 4	J11-F1	IG ADA
*	A 234Y	TB1-C 5	P03-H	IG CDU ATTITUDE STEERING ERROR
*	AA 16R	TB1-C 5	J11-C1	IG CDU ATTITUDE STEERING ERROR
*	A 224R	TB1-C 6	P02-T	3200 CPS 2 V FEEDBACK HI
*	A 323R	TB1-C 6	P09- 59	3200 CPS 2 V FEEDBACK HI
*	AA 42W	TB1-C 6	J11-F3	3200 CPS 2 V FEEDBACK HI
*	A 229Y	TB1-C 7	P03-A	X GYRO ERROR SIG
*	A 362	TB1-C 7	P09- 52	X GYRO ERROR SIG
*	AA654L	TB1-C 7	J15-B1	X GYRO ERROR SIG
*	A 230Y	TB1-C 8	P03-B	Z GYRO ERROR SIG
*	A 361	TB1-C 8	P09- 41	Z GYRO ERROR SIG
*	AA654W	TB1-C 8	J15-A1	Z GYRO ERROR SIG
*	A 223R	TB1-D 2	P02-R	3200 CPS 2 V HI
*	AA 28R	TB1-D 2	J11-M1	3200 CPS 2 V HI
*	AA 28W	TB1-D 2	J11-L1	3200 CPS 2 V HI
*	A 241R	TB1-D 3	P03-D*	IG TORQUE MOTOR HI
*	A 242Y	TB1-D 3	P03-G*	IG TORQUE MOTOR HI
*	A 352Y	TB1-D 3	P09-106	IG TORQUE MOTOR HI
*	AA 30R	TB1-D 3	J11-D6	IG TORQUE MOTOR HI
*	A 241Y	TB1-D 4	P03-E*	IG TORQUE MOTOR RET
*	A 242R	TB1-D 4	P03-F*	IG TORQUE MOTOR RET
*	A 352R	TB1-D 4	P09- 93	IG TORQUE MOTOR RET
*	AA 30W	TB1-D 4	J11-D5	IG TORQUE MOTOR RET
*	A 272	TB1-D 5	P06-F	-28 VDC
*	A 683	TB1-D 5	P09- 35	-28 VDC
*	AA 27	TB1-D 5	J11-N6	-28 VDC

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 26	TB1-D 6	P01- 4	COARSE ALIGN RELAY CONTROL	
*	AA 35	TB1-D 6	J11-L3	COARSE ALIGN RELAY CONTROL	
	A 224B	TB1-D 7	SHLD A 224	0 VDC IMU	
	A 229B	TB1-D 7	SHLD A 229	0 VDC IMU	
	AA572	TB1-D 7	TB1-D 8	0 VDC IMU	
	AA590	TB1-D 7	TB2-V 2	0 VDC IMU	
*	A 662	TB1-D 7	P12-F	0 VDC IMU	
	A 230B	TB1-D 8	SHLD A 230	0 VDC IMU	
	AA587	TB1-D 8	TB1-N 8	0 VDC IMU	
*	AA572	TB1-D 8	TB1-D 7	0 VDC IMU	
*	A 466	TB1-F 1	J10- 7	SPARE FAIL LIGHT HI	305
*	A 565	TB1-F 1	J08- 50	SPARE FAIL LIGHT HI	
*	A 158	TB1-F 8	J06- 81	ATTIT CONT MODE COMMAND FROM AGC	
*	A 475	TB1-F 8	J10- 12	ATTIT CONT MODE COMMAND FROM AGC	314
*	A 179	TB1-G 1	J08- 67	+28 VDC MDV	
*	A 410	TB1-G 1	J09- 67	+28 VDC MDV	
*	A 271G	TB1-G 2	P06-C	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
*	A 319R	TB1-G 2	P09- 67	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
*	AA 60W	TB1-G 2	J12-P2	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
*	A 324Y	TB1-G 4	P09- 81	25.6 KC LO IMU	
*	A 564R	TB1-G 4	E 3	25.6 KC LO IMU	
*	AA 64R	TB1-G 4	J12-P5	25.6 KC LO IMU	
*	A 508	TB1-G 5	J10- 10	+28 VDC TO COMPUTER RELAY	327
*	AA 79	TB1-G 5	J12-M4	+28 VDC TO COMPUTER RELAY	
*	A 325Y	TB1-G 7	P09- 80	25.6 KC LO OPTICS	
*	A 560Y	TB1-G 7	E 16	25.6 KC LO OPTICS	
*	AA 63R	TB1-G 7	J12-N6	25.6 KC LO OPTICS	
*	A 271Y	TB1-H 2	P06-B	800 CPS 28 V 5 PCT IMU WHEELS LO	
*	A 319G	TB1-H 2	P09- 78	800 CPS 28 V 5 PCT IMU WHEELS LO	
*	AA 60R	TB1-H 2	J12-R1	800 CPS 28 V 5 PCT IMU WHEELS LO	
*	A 271R	TB1-H 3	P06-A	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	A 319Y	TB1-H 3	P09- 79	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	AA 60L	TB1-H 3	J12-P1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	A 324R	TB1-H 4	P09- 69	25.6 KC HI IMU	
*	A 564Y	TB1-H 4	E 4	25.6 KC HI IMU	
*	AA 64W	TB1-H 4	J12-N4	25.6 KC HI IMU	
*	A 478	TB1-H 5	J10- 9	AGC FAIL SIG	326
*	AA 78	TB1-H 5	J12-M3	AGC FAIL SIG	

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SIZE A
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SCALE - NONE
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INCHES
0 1 2
PHOTOGRAPHIC SCALE

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* A 198	TB1-H 6	J08- 71	AGC POWER SUPPLY FAIL SIG HI	
* A 332	TB1-H 6	P09- 13	AGC POWER SUPPLY FAIL SIG HI	
* AA 80	TB1-H 6	J12-M1	AGC POWER SUPPLY FAIL SIG HI	
* A 325R	TB1-H 7	P09- 68	25.6 KC HI OPTICS	
* A 560R	TB1-H 7	E 17	25.6 KC HI OPTICS	
* AA 63W	TB1-H 7	J12-P6	25.6 KC HI OPTICS	
* A 187	TB1-H 8	J08- 51	ERROR DETECT LIGHT HI	
* A 336	TB1-H 8	P09- 12	ERROR DETECT LIGHT HI	
* AA 83	TB1-H 8	J12-L2	ERROR DETECT LIGHT HI	
* A 18	TB1-K 1	P01- 91	MODE LAMP TEST PWR	
* A 605Y	TB1-K 1	J09- 84	MODE LAMP TEST PWR	
* A 4	TB1-K 3	P01- 48	COARSE ALIGN MODE COMMAND FROM AGC	
* A 479G	TB1-K 3	J10- 22	COARSE ALIGN MODE COMMAND FROM AGC	308
* A 3	TB1-K 4	P01- 38	ZERO ENCODER MODE COMMAND FROM AGC	
* A 479Y	TB1-K 4	J10- 21	ZERO ENCODER MODE COMMAND FROM AGC	307
* A 5	TB1-K 5	P01- 13	FINE ALIGN MODE COMMAND FROM AGC	
* A 479R	TB1-K 5	J10- 24	FINE ALIGN MODE COMMAND FROM AGC	310
* A 7	TB1-K 6	P01- 58	ENTRY MODE COMMAND FROM AGC	
* A 480R	TB1-K 6	J10- 25	ENTRY MODE COMMAND FROM AGC	311
* A 154	TB1-K 7	J06- 12	MODE RELAY COMMON TO AGC	
* A 480Y	TB1-K 7	J10- 26	MODE RELAY COMMON TO AGC	312
* A 521	TB1-K 7	J10- 13	MODE RELAY COMMON TO AGC	315
* A 6	TB1-K 8	P01- 27	CDU MANUAL MODE COMMAND FROM AGC	
* A 480G	TB1-K 8	J10- 23	CDU MANUAL MODE COMMAND FROM AGC	309
* A 349	TB1-L 2	P09- 33	X PIP ERROR MONITOR	
* AA120	TB1-L 2	J13-D2	X PIP ERROR MONITOR	
* A 293W	TB1-L 3	P07-P	Y PIP TORQUE RET	
* AA122W	TB1-L 3	J13-M3	Y PIP TORQUE RET	
* A 293R	TB1-L 4	P07-N	Y PIP TORQUE +	
* AA122R	TB1-L 4	J13-L3	Y PIP TORQUE +	
* A 294L	TB1-L 5	P07-W	X PIP TORQUE -	
* AA119L	TB1-L 5	J13-L1	X PIP TORQUE -	
* A 294W	TB1-L 6	P07-V	X PIP TORQUE RET	
* AA119W	TB1-L 6	J13-K1	X PIP TORQUE RET	
* A 290L	TB1-L 7	P07-F	X GYRO TORQUE -	
* AA124L	TB1-L 7	J13-G6	X GYRO TORQUE -	
* A 290W	TB1-L 8	P07-E	X GYRO TORQUE RET	
* AA124W	TB1-L 8	J13-F6	X GYRO TORQUE RET	

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SIZE A | 1015057

SCALE - NONE | REV LTR + | SHEET 91

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 602N	TB1-M 1	P01- 90	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
* A 605N	TB1-M 1	J09- 63	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
* A 350	TB1-M 2	P09- 43	Y PIP ERROR MONITOR
* AA123	TB1-M 2	J13-F2	Y PIP ERROR MONITOR
* A 296R	TB1-M 3	P07-Z	Y PIP ERROR HI
* AA121W	TB1-M 3	J13-A3	Y PIP ERROR HI
* A 293L	TB1-M 4	P07-R	Y PIP TORQUE -
* AA122L	TB1-M 4	J13-N3	Y PIP TORQUE -
* A 294R	TB1-M 5	P07-U	X PIP TORQUE +
* AA119R	TB1-M 5	J13-H1	X PIP TORQUE +
* A 295Y	TB1-M 6	P07-Y	X PIP ERROR LO
* AA118R	TB1-M 6	J13-B1	X PIP ERROR LO
* A 295R	TB1-M 7	P07-X	X PIP ERROR HI
* AA118W	TB1-M 7	J13-A1	X PIP ERROR HI
* A 290R	TB1-M 8	P07-D	X GYRO TORQUE +
* AA124R	TB1-M 8	J13-D6	X GYRO TORQUE +
* A 602G	TB1-N 1	P01-106	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
* A 605G	TB1-N 1	J09- 64	400 CPS 6 V HI TO PANEL BRIGHTNESS CONT
* A 296Y	TB1-N 2	P07-A*	Y PIP ERROR LO
* AA121R	TB1-N 2	J13-B3	Y PIP ERROR LO
* A 603R	TB1-N 3	J08- 55	PROJECTION LAMP HI INTENSITY
* A 604R	TB1-N 3	J09- 55	PROJECTION LAMP HI INTENSITY
A 293B	TB1-N 4	SHLD A 293	0 VDC IMU
A 587	TB1-N 4	TB1-N 5	0 VDC IMU
AA122B	TB1-N 4	SHLD AA122	0 VDC IMU
AA588	TB1-N 4	TB1-S 8	0 VDC IMU
AA589	TB1-N 4	TB2-M 5	0 VDC IMU
* A 656	TB1-N 4	P12-D	0 VDC IMU
A 294B	TB1-N 5	SHLD A 294	0 VDC IMU
A 588	TB1-N 5	TB1-N 8	0 VDC IMU
AA119B	TB1-N 5	SHLD AA119	0 VDC IMU
* A 587	TB1-N 5	TB1-N 4	0 VDC IMU
* AA 99	TB1-N 5	J12-R2	0 VDC IMU
A 290B	TB1-N 8	SHLD A 290	0 VDC IMU
AA124B	TB1-N 8	SHLD AA124	0 VDC IMU
* A 588	TB1-N 8	TB1-N 5	0 VDC IMU
* A 649	TB1-N 8	P11-D	0 VDC IMU
* AA100	TB1-N 8	J12-R4	0 VDC IMU

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SIZE A | 1015057

SCALE - NONE | REV LTR + | SHEET 92

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* AA587	TB1-N 8	TB1-D 8	0 VDC IMU
AA611	TB1-R 1	TB1-S 1	400 CPS VAR ILLUM PWR
* A 602R	TB1-R 1	P01-103	400 CPS VAR ILLUM PWR
* A 605R	TB1-R 1	J09- 54	400 CPS VAR ILLUM PWR
AA512	TB1-R 2	TB1-S 2	400 CPS 6 V LO
* A 603N	TB1-R 2	J08- 19	400 CPS 6 V LO
* A 603Y	TB1-R 2	J08- 36	400 CPS 6 V LO
* A 663R	TB1-R 2	P10- 94	400 CPS 6 V LO
* A 603G	TB1-R 3	J08- 46	PROJECTION LAMP LO INTENSITY
* A 604Y	TB1-R 3	J09- 46	PROJECTION LAMP LO INTENSITY
AA612	TB1-S 1	TB1-T 1	400 CPS VAR ILLUM PWR
* A 153R	TB1-S 1	J06-108	400 CPS VAR ILLUM PWR
* A 561R	TB1-S 1	E 9	400 CPS VAR ILLUM PWR
* AA611	TB1-S 1	TB1-R 1	400 CPS VAR ILLUM PWR
AA511	TB1-S 2	TB1-T 2	400 CPS 6 V LO
* A 153Y	TB1-S 2	J06-107	400 CPS 6 V LO
* A 561Y	TB1-S 2	E 10	400 CPS 6 V LO
* A 663Y	TB1-S 2	P10- 95	400 CPS 6 V LO
* AA512	TB1-S 2	TB1-R 2	400 CPS 6 V LO
A 292B	TB1-S 3	SHLD A 292	0 VDC IMU
AA591	TB1-S 3	TB2-M 4	0 VDC IMU
AA632	TB1-S 3	TB1-S 4	0 VDC IMU
* A 659	TB1-S 3	P12-E	0 VDC IMU
* AA 46	TB1-S 3	J11-P6	0 VDC IMU
AA127B	TB1-S 4	SHLD AA127	0 VDC IMU
AA633	TB1-S 4	TB1-S 5	0 VDC IMU
* A 676Y	TB1-S 4	J08- 15	0 VDC IMU
* AA632	TB1-S 4	TB1-S 3	0 VDC IMU
AA133B	TB1-S 5	SHLD AA133	0 VDC IMU
AA634	TB1-S 5	TB1-S 6	0 VDC IMU
* A 211	TB1-S 5	J08- 92	0 VDC IMU
* A 452	TB1-S 5	P10- 13	0 VDC IMU
* A 691	TB1-S 5	P09- 23	0 VDC IMU
* AA633	TB1-S 5	TB1-S 4	0 VDC IMU
A 291B	TB1-S 6	SHLD A 291	0 VDC IMU
* A 650	TB1-S 6	P11-D	0 VDC IMU
* A 676R	TB1-S 6	J08- 14	0 VDC IMU
* AA 98	TB1-S 6	J12-R5	0 VDC IMU

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SIZE A | 1015057

SCALE - NONE | REV LTR + | SHEET 93

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* AA601	TB1-S 6	TB1-S 7	0 VDC IMU
* AA634	TB1-S 6	TB1-S 5	0 VDC IMU
AA601	TB1-S 7	TB1-S 6	0 VDC IMU
AA602	TB1-S 7	TB2-D 8	0 VDC IMU
* A 556	TB1-S 7	E 19	0 VDC IMU
* AA600	TB1-S 7	TB1-S 8	0 VDC IMU
A 289B	TB1-S 8	SHLD A 289	0 VDC IMU
AA136B	TB1-S 8	SHLD AA136	0 VDC IMU
AA600	TB1-S 8	TB1-S 7	0 VDC IMU
* AA588	TB1-S 8	TB1-N 4	0 VDC IMU
* A 266R	TB1-T 1	P05-L	400 CPS VAR ILLUM PWR
* A 314R	TB1-T 1	P08-R*	400 CPS VAR ILLUM PWR
* A 602Y	TB1-T 1	P01-108	400 CPS VAR ILLUM PWR
* AA612	TB1-T 1	TB1-S 1	400 CPS VAR ILLUM PWR
* A 266Y	TB1-T 2	P05-M	400 CPS 6 V LO
* A 314Y	TB1-T 2	P08-S*	400 CPS 6 V LO
* A 663G	TB1-T 2	P10- 81	400 CPS 6 V LO
* AA511	TB1-T 2	TB1-S 2	400 CPS 6 V LO
* A 292W	TB1-T 3	P07-L	Z PIP TORQUE RET
* AA127W	TB1-T 3	J14-P3	Z PIP TORQUE RET
* A 297Y	TB1-T 4	P07-C*	Z PIP ERROR LO
* AA126R	TB1-T 4	J14-A2	Z PIP ERROR LO
* A 297R	TB1-T 5	P07-B*	Z PIP ERROR HI
* AA126W	TB1-T 5	J14-A1	Z PIP ERROR HI
* A 291R	TB1-T 6	P07-G	Y GYRO TORQUE +
* AA133R	TB1-T 6	J14-M1	Y GYRO TORQUE +
* A 351	TB1-T 7	P09- 44	Z PIP ERROR MONITOR
* AA128	TB1-T 7	J14-H6	Z PIP ERROR MONITOR
* A 289R	TB1-T 8	P07-A	Z GYRO TORQUE +
* AA136R	TB1-T 8	J14-L6	Z GYRO TORQUE +
* A 22	TB1-U 2	P01- 26	IMU DELAY LIGHT HI
* A 193	TB1-U 2	J08- 42	IMU DELAY LIGHT HI
* A 345	TB1-U 2	P09- 46	IMU DELAY LIGHT HI
* A 292L	TB1-U 3	P07-M	Z PIP TORQUE -
* AA127L	TB1-U 3	J14-P2	Z PIP TORQUE -
* A 292R	TB1-U 4	P07-K	Z PIP TORQUE +
* AA127R	TB1-U 4	J14-P1	Z PIP TORQUE +
* A 291W	TB1-U 5	P07-H	Y GYRO TORQUE RET

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SIZE A | 1015057

SCALE - NONE | REV LTR + | SHEET 94

MIL 2084-4-64

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA133W	TB1-U 5	J14-M3	Y GYRO TORQUE RET
*	A 291L	TB1-U 6	P07-J	Y GYRO TORQUE -
*	AA133L	TB1-U 6	J14-M2	Y GYRO TORQUE -
*	A 289W	TB1-U 7	P07-B	Z GYRO TORQUE RET
*	AA136W	TB1-U 7	J14-N6	Z GYRO TORQUE RET
*	A 289L	TB1-U 8	P07-C	Z GYRO TORQUE -
*	AA136L	TB1-U 8	J14-M6	Z GYRO TORQUE -

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SIZE A
1015057
SCALE - NONE
REV LTR +
SHEET 95

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 1Y	TB2-A 1	P01- 95	PANEL BRIGHTNESS CONTROL
*	A 431Y	TB2-A 1	J09- 44	PANEL BRIGHTNESS CONTROL
*	A 1R	TB2-A 2	P01- 80	PANEL BRIGHTNESS CONTROL
*	A 431R	TB2-A 2	J09- 32	PANEL BRIGHTNESS CONTROL
	A 92B	TB2-A 4	SHLD A 92	OG CDU ENCODER COM
*	A 92R	TB2-A 4	J03- 94	OG CDU ENCODER COM
*	AA163R	TB2-A 4	J15-D3	OG CDU ENCODER COM
	A 45B	TB2-A 5	SHLD A 45	IG CDU ENCODER COM
*	A 45R	TB2-A 5	J01- 94	IG CDU ENCODER COM
*	AA161R	TB2-A 5	J15-C1	IG CDU ENCODER COM
*	A 69G	TB2-A 6	J02-108	MG CDU ENCODER PHASE 2
*	AA162R	TB2-A 6	J15-D2	MG CDU ENCODER PHASE 2
*	A 220R	TB2-A 7	P02-J	SIN AMG 16X S2
*	AA172W	TB2-A 7	J15-F8	SIN AMG 16X S2
*	A 226R	TB2-A 8	P02-Y	SIN AIG 16X S2
*	AA171W	TB2-A 8	J15-D8	SIN AIG 16X S2
*	A 11	TB2-B 1	P01- 69	LOCK CDU RELAY CONTROL
*	AA174	TB2-B 1	J15-S3	LOCK CDU RELAY CONTROL
*	A 8	TB2-B 2	P01- 12	ZERO ENCODER RELAY CONTROL
*	AA173	TB2-B 2	J15-S1	ZERO ENCODER RELAY CONTROL
*	A 92Y	TB2-B 4	J03-107	OG CDU ENCODER PHASE 1
*	AA163W	TB2-B 4	J15-D4	OG CDU ENCODER PHASE 1
*	A 45Y	TB2-B 5	J01-107	IG CDU ENCODER PHASE 1
*	AA161W	TB2-B 5	J15-C2	IG CDU ENCODER PHASE 1
*	A 69Y	TB2-B 6	J02-107	MG CDU ENCODER PHASE 1
*	AA162W	TB2-B 6	J15-F1	MG CDU ENCODER PHASE 1
*	A 68R	TB2-B 7	J02-101	SIN AMG 16X S4
*	A 220Y	TB2-B 7	P02-K	SIN AMG 16X S4
*	AA172R	TB2-B 7	J15-F9	SIN AMG 16X S4
*	A 44R	TB2-B 8	J01-101	SIN AIG 16X S4
*	A 226Y	TB2-B 8	P02-Z	SIN AIG 16X S4
*	AA171R	TB2-B 8	J15-D7	SIN AIG 16X S4
*	A 10	TB2-C 1	P01- 5	FINE ALIGN RELAY CONTROL
*	AA170	TB2-C 1	J15-H4	FINE ALIGN RELAY CONTROL
*	A 92G	TB2-C 4	J03-108	OG CDU ENCODER PHASE 2
*	AA163L	TB2-C 4	J15-C3	OG CDU ENCODER PHASE 2
*	A 45G	TB2-C 5	J01-108	IG CDU ENCODER PHASE 2
*	AA161L	TB2-C 5	J15-D1	IG CDU ENCODER PHASE 2

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SCALE - NONE
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SHEET 96

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	A 69B	TB2-C 6	SHLD A 69	MG CDU ENCODER COM
*	A 69R	TB2-C 6	J02- 94	MG CDU ENCODER COM
*	AA162L	TB2-C 6	J15-F2	MG CDU ENCODER COM
*	A 68Y	TB2-C 7	J02- 87	SIN AMG 16X TO CDU
*	AA172L	TB2-C 7	J15-D9	SIN AMG 16X TO CDU
*	A 44Y	TB2-C 8	J01- 87	SIN AIG 16X TO CDU
*	AA171L	TB2-C 8	J15-F7	SIN AIG 16X TO CDU
*	A 557	TB2-D 1	E 8	+28 VDC CDU NOT LOCK
*	AA177	TB2-D 1	J15-R6	+28 VDC CDU NOT LOCK
	AA569W	TB2-D 2	J16-B7	AGC COM
*	A 13Y	TB2-D 2	P01- 68	AGC COM
*	A 155Y	TB2-D 2	J06- 68	AGC COM
*	AA176W	TB2-D 2	J15-B3	AGC COM
*	AA487W	TB2-D 2	J21-121	AGC COM
	A 13B	TB2-D 3	SHLD A 13	AGC SIG 178 SHLD RET
	A 155B	TB2-D 3	SHLD A 155	AGC SIG 178 SHLD RET
	AA176B	TB2-D 3	SHLD AA176	AGC SIG 178 SHLD RET
	AA487B	TB2-D 3	SHLD AA487	AGC SIG 178 SHLD RET
*	AA569A	TB2-D 3	SHLD AA569	AGC SIG 178 SHLD RET
	AA608	TB2-D 4	E 27	0 VDC IMU
*	A 287	TB2-D 4	P06-E	0 VDC IMU
*	A 652	TB2-D 4	P11-F	0 VDC IMU
*	AA605	TB2-D 4	TB2-D 5	0 VDC IMU
	A 458	TB2-D 5	E 48	0 VDC IMU
	AA605	TB2-D 5	TB2-D 4	0 VDC IMU
*	AA604	TB2-D 5	TB2-D 6	0 VDC IMU
	AA604	TB2-D 6	TB2-D 5	0 VDC IMU
*	A 214	TB2-D 6	J08- 82	0 VDC IMU
*	A 450	TB2-D 6	J09- 26	0 VDC IMU
*	A 549	TB2-D 6	E 20	0 VDC IMU
*	AA603	TB2-D 6	TB2-D 7	0 VDC IMU
	A 68B	TB2-D 7	SHLD A 68	0 VDC IMU
	A 220B	TB2-D 7	SHLD A 220	0 VDC IMU
	AA577	TB2-D 7	TB2-D 8	0 VDC IMU
	AA603	TB2-D 7	TB2-D 6	0 VDC IMU
	A 44B	TB2-D 8	SHLD A 44	0 VDC IMU
•	A 226B	TB2-D 8	SHLD A 226	0 VDC IMU
*	AA577	TB2-D 8	TB2-D 7	0 VDC IMU

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MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE
REV LTR +
SHEET 97

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA602	TB2-D 8	TB1-S 7	0 VDC IMU
	A 24B	TB2-F 2	SHLD A 24	IG CDU ERROR SIG RET
	A 39B	TB2-F 2	SHLD A 39	IG CDU ERROR SIG RET
	A 364B	TB2-F 2	SHLD A 364	IG CDU ERROR SIG RET
	AA580	TB2-F 2	TB2-G 2	IG CDU ERROR SIG RET
	AA569R	TB2-F 3	E 60	
*	A 13R	TB2-F 3	E 61	
*	A 155R	TB2-F 3	E 55	
*	AA176R	TB2-F 3	E 59	
*	AA487R	TB2-F 3	J21-122	
*	A 385	TB2-F 4	P09- 32	0 VDC IMU
*	AA637	TB2-F 4	J15-R2	0 VDC IMU
	A 25B	TB2-F 7	SHLD A 25	MG CDU ERROR SIG RET
	A 63B	TB2-F 7	SHLD A 63	MG CDU ERROR SIG RET
	A 365B	TB2-F 7	SHLD A 365	MG CDU ERROR SIG RET
	AA579	TB2-F 7	TB2-G 7	MG CDU ERROR SIG RET
	A 42B	TB2-G 1	SHLD A 42	IG CDU ERROR SIG RET
*	A 42Y	TB2-G 1	J01- 90	IG CDU ERROR SIG RET
*	AA196R	TB2-G 1	J16-D2	IG CDU ERROR SIG RET
*	A 24Y	TB2-G 2	P01- 71	IG CDU ERROR SIG RET
*	A 39Y	TB2-G 2	J01- 45	IG CDU ERROR SIG RET
*	A 364Y	TB2-G 2	P09- 82	IG CDU ERROR SIG RET
*	AA 15R	TB2-G 2	J11-B1	IG CDU ERROR SIG RET
*	AA195R	TB2-G 2	J16-D2	IG CDU ERROR SIG RET
*	AA580	TB2-G 2	TB2-F 2	IG CDU ERROR SIG RET
*	A 38Y	TB2-G 3	J01- 57	IG CDU ERROR SIG RET S1
*	AA194R	TB2-G 3	J16-D2	IG CDU ERROR SIG RET
*	A 19R	TB2-G 4	P01- 11	800 CPS 28 V 1 PCT HI IMU
*	A 216R	TB2-G 4	P02-A	800 CPS 28 V 1 PCT HI IMU
*	A 577R	TB2-G 4	E 1	800 CPS 28 V 1 PCT HI IMU
*	AA222R	TB2-G 4	J16-S4	800 CPS 28 V 1 PCT HI IMU
*	AA409W	TB2-G 4	J20-F5	800 CPS 28 V 1 PCT HI IMU
*	A 216Y	TB2-G 5	P02-B	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
*	AA222W	TB2-G 5	J16-P4	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
*	A 62Y	TB2-G 6	J02- 57	MG CDU ERROR SIG RET
*	AA199R	TB2-G 6	J16-D4	MG CDU ERROR SIG RET
*	A 25Y	TB2-G 7	P01- 83	MG CDU ERROR SIG RET
*	A 63Y	TB2-G 7	J02- 45	MG CDU ERROR SIG RET

165B

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE - NONE
REV LTR +
SHEET 98

MIL 2064-4-64

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 365Y	TB2-G 7	P09- 71	MG CDU ERROR SIG RET
*	AA 19R	TB2-G 7	J11-B2	MG CDU ERROR SIG RET
*	AA200R	TB2-G 7	J16-D4	MG CDU ERROR SIG RET
*	AA579	TB2-G 7	TB2-F 7	MG CDU ERROR SIG RET
	A 66B	TB2-G 8	SHLD A 66	MG CDU ERROR SIG RET
*	A 66Y	TB2-G 8	J02- 90	MG CDU ERROR SIG RET
*	AA201R	TB2-G 8	J16-D4	MG CDU ERROR SIG RET
*	A 42R	TB2-H 1	J01-104	IG CDU 16X ERROR SIG
*	AA196W	TB2-H 1	J16-C1	IG CDU 16X ERROR SIG
*	A 24R	TB2-H 2	P01- 70	IG CDU 1X ERROR SIG
*	A 39R	TB2-H 2	J01- 35	IG CDU 1X ERROR SIG S2
*	A 364R	TB2-H 2	P09- 96	IG CDU 1X ERROR SIG
*	AA 15W	TB2-H 2	J11-A1	IG CDU 1X ERROR SIG
*	AA195W	TB2-H 2	J16-C2	IG CDU 1X ERROR SIG
*	A 38R	TB2-H 3	J01- 67	IG CDU 1/2X ERROR SIG S3
*	AA194W	TB2-H 3	J16-D1	IG CDU 1/2X ERROR SIG
*	A 19Y	TB2-H 4	P01- 10	800 CPS 28 V 1 PCT LO IMU
*	A 577Y	TB2-H 4	E 2	800 CPS 28 V 1 PCT LO IMU
*	AA222L	TB2-H 4	J16-S3	800 CPS 28 V 1 PCT LO IMU
*	AA409R	TB2-H 4	J20-F6	800 CPS 28 V 1 PCT LO IMU
*	A 577G	TB2-H 5	E 5	ZEROING RSVR 800 CPS
*	AA222K	TB2-H 5	J16-R4	ZEROING RSVR 800 CPS
*	A 62R	TB2-H 6	J02- 67	MG CDU 1/2X ERROR SIG
*	AA199W	TB2-H 6	J16-D3	MG CDU 1/2X ERROR SIG
*	A 25R	TB2-H 7	P01- 82	MG CDU 1X ERROR SIG
*	A 63R	TB2-H 7	J02- 35	MG CDU 1X ERROR SIG
*	A 365R	TB2-H 7	P09- 70	MG CDU 1X ERROR SIG
*	AA 19W	TB2-H 7	J11-A2	MG CDU 1X ERROR SIG
*	AA200W	TB2-H 7	J16-C4	MG CDU 1X ERROR SIG
*	A 66R	TB2-H 8	J02-104	MG CDU 16X ERROR SIG
*	AA201W	TB2-H 8	J16-C3	MG CDU 16X ERROR SIG
*	A 321R	TB2-K 1	P09- 45	800 CPS 28 V 1 PCT HI OPTICS
*	A 416R	TB2-K 1	J09- 80	800 CPS 28 V 1 PCT HI OPTICS
*	A 558R	TB2-K 1	E 14	800 CPS 28 V 1 PCT HI OPTICS
*	AA224W	TB2-K 1	J16-P5	800 CPS 28 V 1 PCT HI OPTICS
*	AA557	TB2-K 1	TB2-K 2	800 CPS 28 V 1 PCT HI OPTICS
	AA557	TB2-K 2	TB2-K 1	800 CPS 28 V 1 PCT HI OPTICS
*	A 265R	TB2-K 2	P05-CC	800 CPS 28 V 1 PCT HI OPTICS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057
SCALE - NONE	REV LTR	SHEET 99

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 301R	TB2-K 2	P08-J	800 CPS 28 V 1 PCT HI OPTICS
*	A 76Y	TB2-K 3	J02- 32	MG CDU MDA OUTPUT
*	AA203R	TB2-K 3	J16-P3	MG CDU MDA OUTPUT
	AA555	TB2-K 4	TB2-L 4	0 VDC IMU
*	A 52R	TB2-K 4	J01- 43	0 VDC IMU
*	A 76R	TB2-K 4	J02- 43	0 VDC IMU
*	A 97R	TB2-K 4	J03- 43	0 VDC IMU
*	AA223	TB2-K 4	J16-P2	0 VDC IMU
*	A 97Y	TB2-K 5	J03- 32	OG CDU MDA OUTPUT
*	AA215R	TB2-K 5	J16-N2	OG CDU MDA OUTPUT
*	A 97G	TB2-K 6	J03- 31	OG CDU MDA OUTPUT
*	AA215W	TB2-K 6	J16-N1	OG CDU MDA OUTPUT
*	A 102	TB2-K 8	J03- 30	+28 VDC IMU FOR OG MDA
*	AA212	TB2-K 8	J16-T2	+28 VDC IMU FOR OG MDA
*	A 321Y	TB2-L 1	P09- 55	800 CPS 28 V 1 PCT LO OPTICS
*	A 416Y	TB2-L 1	J09- 69	800 CPS 28 V 1 PCT LO OPTICS
*	A 558Y	TB2-L 1	E 13	800 CPS 28 V 1 PCT LO OPTICS
*	AA224R	TB2-L 1	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
*	AA556	TB2-L 1	TB2-L 2	800 CPS 28 V 1 PCT LO OPTICS
	AA556	TB2-L 2	TB2-L 1	800 CPS 28 V 1 PCT LO OPTICS
*	A 265Y	TB2-L 2	P05-DD	800 CPS 28 V 1 PCT LO OPTICS
*	A 301Y	TB2-L 2	P08-K	800 CPS 28 V 1 PCT LO OPTICS
*	A 76G	TB2-L 3	J02- 31	MG CDU MDA OUTPUT
*	AA203W	TB2-L 3	J16-R3	MG CDU MDA OUTPUT
	A 601	TB2-L 4	TB2-M 4	0 VDC IMU
*	A 169	TB2-L 4	J06- 78	0 VDC IMU
*	A 661	TB2-L 4	P12-F	0 VDC IMU
*	AA555	TB2-L 4	TB2-K 4	0 VDC IMU
*	A 52G	TB2-L 5	J01- 31	IG CDU MDA OUTPUT
*	AA198W	TB2-L 5	J16-R1	IG CDU MDA OUTPUT
*	A 52Y	TB2-L 6	J01- 32	IG CDU MDA OUTPUT
*	AA198R	TB2-L 6	J16-P1	IG CDU MDA OUTPUT
	AA581	TB2-M 1	TB2-M 2	0 VDC IMU
*	A 660	TB2-M 1	P12-F	0 VDC IMU
*	AA 43	TB2-M 1	J11-R3	0 VDC IMU
*	AA461	TB2-M 1	J20-H2	0 VDC IMU
	AA582	TB2-M 2	TB2-M 3	0 VDC IMU
*	AA 44	TB2-M 2	J11-R1	0 VDC IMU

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057
SCALE - NONE	REV LTR	SHEET 100

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA581	TB2-M 2	TB2-M 1	0 VDC IMU
	AA583	TB2-M 3	TB2-M 4	0 VDC IMU
*	A 651	TB2-M 3	P11-F	0 VDC IMU
*	AA 45	TB2-M 3	J11-R2	0 VDC IMU
*	AA582	TB2-M 3	TB2-M 2	0 VDC IMU
	AA584	TB2-M 4	TB2-M 5	0 VDC IMU
*	A 20	TB2-M 4	P01- 78	0 VDC IMU
*	A 601	TB2-M 4	TB2-L 4	0 VDC IMU
*	AA583	TB2-M 4	TB2-M 3	0 VDC IMU
*	AA591	TB2-M 4	TB1-S 3	0 VDC IMU
	AA585	TB2-M 5	TB2-M 6	0 VDC IMU
*	AA584	TB2-M 5	TB2-M 4	0 VDC IMU
*	AA589	TB2-M 5	TB1-N 4	0 VDC IMU
	AA586	TB2-M 6	TB2-M 7	0 VDC IMU
	AA592	TB2-M 6	TB3-T 3	0 VDC IMU
*	AA585	TB2-M 6	TB2-M 5	0 VDC IMU
*	A 654	TB2-M 7	P11-E	0 VDC IMU
*	AA460	TB2-M 7	J20-G1	0 VDC IMU
*	AA539	TB2-M 7	TB2-M 8	0 VDC IMU
*	AA586	TB2-M 7	TB2-M 6	0 VDC IMU
	A 87B	TB2-M 8	SHLD A 87	0 VDC IMU
	A 232B	TB2-M 8	SHLD A 232	0 VDC IMU
	A 360B	TB2-M 8	SHLD A 360	0 VDC IMU
	AA506B	TB2-M 8	SHLD AA506	0 VDC IMU
	AA539	TB2-M 8	TB2-M 7	0 VDC IMU
*	A 85R	TB2-N 1	J03- 67	OG CDU 1/2X ERROR SIG
*	AA206W	TB2-N 1	J16-D5	OG CDU 1/2X ERROR SIG
*	A 23R	TB2-N 2	P01- 96	OG CDU 1X ERROR SIG
*	A 86R	TB2-N 2	J03- 35	OG CDU 1X ERROR SIG
*	A 366R	TB2-N 2	P09- 72	OG CDU 1X ERROR SIG
*	AA 21W	TB2-N 2	J11-A3	OG CDU 1X ERROR SIG
*	AA207W	TB2-N 2	J16-C6	OG CDU 1X ERROR SIG
	AA571W	TB2-N 3	J17-A2	OG CDU 16X ERROR SIG
*	A 89R	TB2-N 3	J03-104	OG CDU 16X ERROR SIG
*	AA208R	TB2-N 3	J16-C5	OG CDU 16X ERROR SIG
*	A 56	TB2-N 5	J01- 30	+28 VDC IMU FOR IG MDA
*	AA210	TB2-N 5	J16-S1	+28 VDC IMU FOR IG MDA
*	A 96R	TB2-N 6	J03-106	OG CDU MDA TACH SIG

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057
SCALE - NONE	REV LTR	SHEET 101

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA214R	TB2-N 6	J16-A5	OG CDU MDA TACH SIG
*	A 87Y	TB2-N 7	J03- 6	COS AOG 1X S1
*	A 232Y	TB2-N 7	P03-E	COS AOG 1X S1
*	A 360Y	TB2-N 7	P09- 31	COS AOG 1X S1
*	AA204R	TB2-N 7	J16-C8	COS AOG 1X S1
*	AA506R	TB2-N 7	J22-142	COS AOG 1X S1
*	A 232R	TB2-N 8	P03-D	COS AOG 1X S3
*	A 360R	TB2-N 8	P09- 30	COS AOG 1X S3
*	AA204W	TB2-N 8	J16-B8	COS AOG 1X S3
*	AA506W	TB2-N 8	J22-141	COS AOG 1X S3
*	A 85Y	TB2-R 1	J03- 57	OG CDU ERROR SIG RET
*	AA206R	TB2-R 1	J16-D6	OG CDU ERROR SIG RET
*	A 23Y	TB2-R 2	P01- 97	OG CDU ERROR SIG RET
*	A 86Y	TB2-R 2	J03- 45	OG CDU ERROR SIG RET
*	A 366Y	TB2-R 2	P09- 83	OG CDU ERROR SIG RET
*	AA 21R	TB2-R 2	J11-B3	OG CDU ERROR SIG RET
*	AA207R	TB2-R 2	J16-D6	OG CDU ERROR SIG RET
*	AA578	TB2-R 2	TB2-S 2	OG CDU ERROR SIG RET
	AA571R	TB2-R 3	J17-B2	OG CDU ERROR SIG RET
	AA615	TB2-R 3	TB2-S 3	OG CDU ERROR SIG RET
*	A 89Y	TB2-R 3	J03- 90	OG CDU ERROR SIG RET
*	AA208W	TB2-R 3	J16-D6	OG CDU ERROR SIG RET
*	A 9	TB2-R 4	P01- 57	ENTRY RELAY CONTROL
*	AA221	TB2-R 4	J16-M1	ENTRY RELAY CONTROL
*	A 80	TB2-R 5	J02- 30	+28 VDC IMU FOR MG MDA
*	AA211	TB2-R 5	J16-T1	+28 VDC IMU FOR MG MDA
*	A 96G	TB2-R 6	J03-105	OG CDU MDA SLEW SIG
*	AA214W	TB2-R 6	J16-A6	OG CDU MDA SLEW SIG
	A 96B	TB2-R 7	SHLD A 96	OG CDU MDA INPUT RET
*	A 96Y	TB2-R 7	J03- 92	OG CDU MDA INPUT RET
*	AA214L	TB2-R 7	J16-B5	OG CDU MDA INPUT RET
*	A 87R	TB2-R 8	J03- 20	COS AOG 1X TO CDU
*	AA204L	TB2-R 8	J16-C9	COS AOG 1X TO CDU
*	A 100	TB2-S 1	J03- 34	OG CDU 1X RSVR LOAD
*	AA218	TB2-S 1	J16-F6	OG CDU 1X RSVR LOAD
	A 23B	TB2-S 2	SHLD A 23	OG CDU ERROR SIG RET
	A 86B	TB2-S 2	SHLD A 86	OG CDU ERROR SIG RET
	A 366B	TB2-S 2	SHLD A 366	OG CDU ERROR SIG RET

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057
SCALE - NONE	REV LTR	SHEET 102

MIL 2084-4-64

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
AA578	TB2-S 2	TB2-R 2	OG CDU ERROR SIG RET
A 89B	TB2-S 3	SHLD A 89	OG CDU ERROR SIG RET
* AA571A	TB2-S 3	SHLD AA571	OG CDU ERROR SIG RET
* AA615	TB2-S 3	TB2-R 3	OG CDU ERROR SIG RET
* A 185	TB2-S 4	J08- 93	STEP-DOWN-R
* A 411	TB2-S 4	J09- 93	STEP-DOWN-R
* A 186	TB2-S 5	J08- 79	STEP-DOWN-C
* A 412	TB2-S 5	J09- 79	STEP-DOWN-C
* A 183	TB2-S 6	J08-106	STEP-UP-R
* A 413	TB2-S 6	J09-106	STEP-UP-R
* A 184	TB2-S 7	J08- 78	STEP-UP-C
* A 414	TB2-S 7	J09- 78	STEP-UP-C
* A 202	TB2-S 8	J08- 18	GIMBAL LOCK LIGHT HI
* A 455	TB2-S 8	P10- 24	GIMBAL LOCK LIGHT HI
* A 101	TB2-T 1	J03- 89	OG CDU 16X RSVR LOAD
* AA219	TB2-T 1	J16-F5	OG CDU 16X RSVR LOAD
AA621	TB2-T 2	TB2-T 3	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 299Y	TB2-T 2	P08-B	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 599Y	TB2-T 2	J04- 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 600Y	TB2-T 2	J05- 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* AA225R	TB2-T 2	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 322Y	TB2-T 3	P09- 57	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 598Y	TB2-T 3	P05-E	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* AA621	TB2-T 3	TB2-T 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 219Y	TB2-T 5	P02-H	COS AMG 16X S1
* AA231R	TB2-T 5	J16-H3	COS AMG 16X S1
* A 51G	TB2-T 6	J01-105	IG CDU MDA SLEW SIG
* AA197W	TB2-T 6	J16-A2	IG CDU MDA SLEW SIG
A 51B	TB2-T 7	SHLD A 51	IG CDU MDA INPUT RET
* A 51Y	TB2-T 7	J01- 92	IG CDU MDA INPUT RET
* AA197L	TB2-T 7	J16-B1	IG CDU MDA INPUT RET
* A 88R	TB2-T 8	J03- 21	SIN AOG 1X TO CDU
* AA205L	TB2-T 8	J16-B9	SIN AOG 1X TO CDU
AA645	TB2-U 1	TB2-U 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 599R	TB2-U 1	J04- 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 600R	TB2-U 1	J05- 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 299R	TB2-U 3	P08-A	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 322R	TB2-U 3	P09- 56	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057
SCALE - NONE	REV LTR	SHEET 103

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 598R	TB2-U 3	P05-D	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* AA225W	TB2-U 3	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* AA645	TB2-U 3	TB2-U 1	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 67Y	TB2-U 4	J02- 86	COS AMG 16X TO CDU
* AA231L	TB2-U 4	J16-G4	COS AMG 16X TO CDU
* A 67R	TB2-U 5	J02-100	COS AMG 16X S3
* A 219R	TB2-U 5	P02-G	COS AMG 16X S3
* AA231W	TB2-U 5	J16-G3	COS AMG 16X S3
* A 51R	TB2-U 6	J01-106	IG CDU MDA TACH SIG
* AA197R	TB2-U 6	J16-A1	IG CDU MDA TACH SIG
* A 233Y	TB2-U 7	P03-G	SIN AOG 1X S2
* A 359R	TB2-U 7	P09- 16	SIN AOG 1X S2
* AA205W	TB2-U 7	J16-A8	SIN AOG 1X S2
* AA505R	TB2-U 7	J22-107	SIN AOG 1X S2
* A 88Y	TB2-U 8	J03- 7	SIN AOG 1X S4
* A 233R	TB2-U 8	P03-F	SIN AOG 1X S4
* A 359Y	TB2-U 8	P09- 17	SIN AOG 1X S4
* AA205R	TB2-U 8	J16-A9	SIN AOG 1X S4
* AA505W	TB2-U 8	J22-139	SIN AOG 1X S4
A 91B	TB2-V 2	SHLD A 91	0 VDC IMU
A 218B	TB2-V 2	SHLD A 218	0 VDC IMU
AA540	TB2-V 2	TB2-V 3	0 VDC IMU
* AA590	TB2-V 2	TB1-D 7	0 VDC IMU
A 217B	TB2-V 3	SHLD A 217	0 VDC IMU
AA596	TB2-V 3	TB2-V 4	0 VDC IMU
* AA540	TB2-V 3	TB2-V 2	0 VDC IMU
A 90B	TB2-V 4	SHLD A 90	0 VDC IMU
AA597	TB2-V 4	TB2-V 5	0 VDC IMU
* A 655	TB2-V 4	P11-E	0 VDC IMU
* AA596	TB2-V 4	TB2-V 3	0 VDC IMU
A 67B	TB2-V 5	SHLD A 67	0 VDC IMU
A 219B	TB2-V 5	SHLD A 219	0 VDC IMU
AA598	TB2-V 5	TB2-V 6	0 VDC IMU
* AA597	TB2-V 5	TB2-V 4	0 VDC IMU
A 43B	TB2-V 6	SHLD A 43	0 VDC IMU
A 225B	TB2-V 6	SHLD A 225	0 VDC IMU
AA599	TB2-V 6	TB2-V 8	0 VDC IMU
* AA598	TB2-V 6	TB2-V 5	0 VDC IMU

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057
SCALE - NONE	REV LTR	SHEET 104

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 88B	TB2-V 8	SHLD A 88	0 VDC IMU
A 233B	TB2-V 8	SHLD A 233	0 VDC IMU
A 359B	TB2-V 8	SHLD A 359	0 VDC IMU
AA505B	TB2-V 8	SHLD AA505	0 VDC IMU
* AA599	TB2-V 8	TB2-V 6	0 VDC IMU
* AA635	TB2-V 8	TB3-T 3	0 VDC IMU
* A 55	TB2-W 1	J01- 34	IG CDU 1X RSVR LOAD S1
* AA216	TB2-W 1	J16-F2	IG CDU 1X RSVR LOAD
* A 91R	TB2-W 2	J03-101	SIN AOG 16X S4
* A 218Y	TB2-W 2	P02-F	SIN AOG 16X S4
* AA213R	TB2-W 2	J16-D9	SIN AOG 16X S4
* A 217Y	TB2-W 3	P02-D	COS AOG 16X S1
* AA209R	TB2-W 3	J16-D7	COS AOG 16X S1
* A 90R	TB2-W 4	J03-100	COS AOG 16X S3
* A 217R	TB2-W 4	P02-C	COS AOG 16X S3
* AA209W	TB2-W 4	J16-F7	COS AOG 16X S3
* A 75R	TB2-W 5	J02-106	MG CDU MDA TACH SIG
* AA202R	TB2-W 5	J16-A3	MG CDU MDA TACH SIG
* A 43R	TB2-W 6	J01-100	COS AIG 16X S3
* A 225R	TB2-W 6	P02-W	COS AIG 16X S3
* AA230W	TB2-W 6	J16-G1	COS AIG 16X S3
* A 43Y	TB2-W 7	J01- 86	COS AIG 16X TO CDU
* AA230L	TB2-W 7	J16-G2	COS AIG 16X TO CDU
* A 79	TB2-X 1	J02- 34	MG CDU 1X RSVR LOAD
* AA217	TB2-X 1	J16-F4	MG CDU 1X RSVR LOAD
* A 91Y	TB2-X 2	J03- 87	SIN AOG 16X TO CDU
* AA213L	TB2-X 2	J16-F9	SIN AOG 16X TO CDU
* A 218R	TB2-X 3	P02-E	SIN AOG 16X S2
* AA213W	TB2-X 3	J16-D8	SIN AOG 16X S2
* A 90Y	TB2-X 4	J03- 86	COS AOG 16X TO CDU
* AA209L	TB2-X 4	J16-F8	COS AOG 16X TO CDU
* A 75G	TB2-X 5	J02-105	MG CDU MDA SLEW SIG
* AA202W	TB2-X 5	J16-A4	MG CDU MDA SLEW SIG
A 75B	TB2-X 6	SHLD A 75	MG CDU MDA INPUT RET
* A 75Y	TB2-X 6	J02- 92	MG CDU MDA INPUT RET
* AA202L	TB2-X 6	J16-B3	MG CDU MDA INPUT RET
* A 225Y	TB2-X 7	P02-X	COS AIG 16X S1
* AA230R	TB2-X 7	J16-H1	COS AIG 16X S1

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057
SCALE - NONE	REV LTR	SHEET 105

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* A 684G	TB3-A 3	P09- 24	+120 VDC PIP	
* AA672L	TB3-A 3	J17-L5	+120 VDC PIP	
* A 684R	TB3-A 4	P09- 25	+32 VDC PIP	
* AA672R	TB3-A 4	J17-T5	+32 VDC PIP	
* A 684Y	TB3-A 5	P09- 36	+32, +120 VDC RET PIP	
* AA672W	TB3-A 5	J17-L4	+32, +120 VDC RET PIP	
* A 673	TB3-A10	J09- 47	+28 VDC OPTICS DAC POWER	
* AA646	TB3-A10	J18-T1	+28 VDC OPTICS DAC POWER	
* A 200	TB3-B 3	J08- 72	CDU FAIL LIGHT HI	
* A 474R	TB3-B 3	J10- 4	CDU FAIL LIGHT HI	302
* A 203	TB3-B 4	J08- 41	ZERO ENCODER LIGHT HI	
* A 474Y	TB3-B 4	J10- 3	ZERO ENCODER LIGHT HI	301
* A 190	TB3-B 5	J08- 73	ACCEL FAIL LIGHT HI	
* A 474G	TB3-B 5	J10- 5	ACCEL FAIL LIGHT HI	303
* A 682G	TB3-B 6	P09- 99	IG CDU FAILURE INDICATION	
* AA664K	TB3-B 6	J16-M2	IG CDU FAILURE INDICATION	
* A 689N	TB3-B 7	P09- 89	DIRECT SHAFT CONTROLLER HI (TEST)	
* AA666L	TB3-B 7	J18-N4	DIRECT SHAFT CONTROLLER HI (TEST)	
* A 690R	TB3-B 9	P09-104	SXT SHAFT MDA OUTPUT HI (TEST)	
* AA667R	TB3-B 9	J19-L3	SXT SHAFT MDA OUTPUT HI (TEST)	
* A 690Y	TB3-B10	P09-105	TRUNNION CDU 16X RSVR OUTPUT HI (TEST)	
* AA667W	TB3-B10	J19-L2	TRUNNION CDU 16X RSVR OUTPUT HI (TEST)	
* A 394	TB3-B11	J09- 72	ZERO OPTICS RELAY CONTROL	
* AA337	TB3-B11	J18-R4	ZERO OPTICS RELAY CONTROL	
* A 182Y	TB3-B12	J08- 81	400 CPS 26 V SLEW	
* A 409Y	TB3-B12	J09- 81	400 CPS 26 V SLEW	
* A 182R	TB3-B13	J08- 68	400 CPS 26 V MDV RSVR EXC	
* A 409R	TB3-B13	J09- 68	400 CPS 26 V MDV RSVR EXC	
* A 199	TB3-B14	J08- 95	400 CPS 26 V LO	
* A 460	TB3-B14	P10- 49	400 CPS 26 V LO	
A 664	TB3-B15	TB3-T15	0 VDC OPTICS	
AA514	TB3-B15	TB3-C15	0 VDC OPTICS	
* AA538	TB3-B15	TB3-G 9	0 VDC OPTICS	
* A 145R	TB3-B16	J05- 43	+28 VDC OPTICS SWITCHED	
* A 670R	TB3-B16	J09- 49	+28 VDC OPTICS SWITCHED	
* A 122R	TB3-B17	J04- 43	+28 VDC OPTICS SWITCHED	
* A 670Y	TB3-B17	J09- 38	+28 VDC OPTICS SWITCHED	
AA517W	TB3-B18	J22-153	800 CPS 28 V 1 PCT HI IMU	

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SCALE - NONE	REV LTR	SHEET 106

INCHES
1 2
0 1
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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 318R	TB3-B18	P09- 9	800 CPS 28 V 1 PCT HI IMU
* AA410W	TB3-B18	J20-F5	800 CPS 28 V 1 PCT HI IMU
AA517R	TB3-B19	J22-120	800 CPS 28 V 1 PCT LO IMU
* A 318Y	TB3-B19	P09- 8	800 CPS 28 V 1 PCT LO IMU
* AA410R	TB3-B19	J20-F6	800 CPS 28 V 1 PCT LO IMU
A 548	TB3-B20	E 12	STRUCTURE GND
AA613	TB3-B20	TB3-B21	STRUCTURE GND
AA619	TB3-B20	E 68	STRUCTURE GND
AA620	TB3-B20	E 69	STRUCTURE GND
* A 33	TB3-B20	P01- 84	STRUCTURE GND
* A 665	TB3-B20	P10- 1	STRUCTURE GND
AA614	TB3-B21	TB3-F21	STRUCTURE GND
* A 178	TB3-B21	J06- 91	STRUCTURE GND
* A 215	TB3-B21	J08- 29	STRUCTURE GND
* AA613	TB3-B21	TB3-B20	STRUCTURE GND
* A 396	TB3-C 1	J09- 98	ACCEL BRIDGE AMP PIN 6
* AA257	TB3-C 1	J17-F7	ACCEL BRIDGE AMP PIN 6
* A 281R	TB3-C 2	P06-F*	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* AA250R	TB3-C 2	J17-P4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 281Y	TB3-C 3	P06-G*	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 320Y	TB3-C 3	P09- 34	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 567Y	TB3-C 3	E 11	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* AA412R	TB3-C 3	J20-H6	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 370	TB3-C 4	P09- 73	BLOWER CURRENT SENSOR (TELEMETERY)
* AA271	TB3-C 4	J17-F6	BLOWER CURRENT SENSOR (TELEMETERY)
* A 368	TB3-C 5	P09- 85	IRIG TEMP (TELEMETRY)
* AA273	TB3-C 5	J17-F4	IRIG TEMP (TELEMETRY)
* A 682N	TB3-C 6	P09- 86	MG CDU FAILURE INDICATION
* AA664L	TB3-C 6	J16-M3	MG CDU FAILURE INDICATION
* A 682R	TB3-C 7	P09- 87	OG CDU FAILURE INDICATION
* AA664R	TB3-C 7	J16-N3	OG CDU FAILURE INDICATION
* A 682Y	TB3-C 8	P09-100	0 VDC IMU
* AA664W	TB3-C 8	J16-R2	0 VDC IMU
* A 690G	TB3-C 9	P09- 90	SXT TRUNNION MDA OUTPUT HI (TEST)
* AA667K	TB3-C 9	J19-L1	SXT TRUNNION MDA OUTPUT HI (TEST)
* A 690N	TB3-C10	P09-103	0 VDC OPTICS
* AA667L	TB3-C10	J19-K6	0 VDC OPTICS
* A 122Y	TB3-C11	J04- 32	SHAFT CDU MOTOR CONTROL WINDING

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* AA321	TB3-C11	J18-R2	SHAFT CDU MOTOR CONTROL WINDING
* A 145Y	TB3-C12	J05- 32	TRUNNION CDU MOTOR CONTROL WINDING
* AA320	TB3-C12	J18-R1	TRUNNION CDU MOTOR CONTROL WINDING
* A 65R	TB3-C13	J02- 21	SIN AMG 1X RET
* A 222Y	TB3-C13	P02-N	SIN AMG 1X RET S2
* A 357R	TB3-C13	P09- 15	SIN AMG 1X RET
* AA507W	TB3-C13	J22-144	SIN AMG 1X RET
* A 65Y	TB3-C14	J02- 7	SIN AMG 1X
* A 222R	TB3-C14	P02-P	SIN AMG 1X S4
* A 357Y	TB3-C14	P09- 29	SIN AMG 1X
* AA507R	TB3-C14	J22-111	SIN AMG 1X
AA609	TB3-C15	TB3-D15	0 VDC OPTICS
* A 595	TB3-C15	TB3-K20	0 VDC OPTICS
* A 596	TB3-C15	TB3-K22	0 VDC OPTICS
* A 646	TB3-C15	P12-G	0 VDC OPTICS
* AA514	TB3-C15	TB3-B15	0 VDC OPTICS
* AA566	TB3-C15	TB3-K21	0 VDC OPTICS
* A 300G	TB3-C16	P08-G	SCT TRUNNION MOTOR CONTROL WINDING BLK
* A 376Y	TB3-C16	P09- 92	SCT TRUNNION MOTOR CONTROL WINDING
* AA360W	TB3-C16	J19-T3	SCT TRUNNION MOTOR CONTROL WINDING
* A 300Y	TB3-C17	P08-E	SCT TRUNNION MOTOR CONTROL WINDING RED
* A 376R	TB3-C17	P09- 91	SCT TRUNNION MOTOR CONTROL WINDING
* AA360R	TB3-C17	J19-T2	SCT TRUNNION MOTOR CONTROL WINDING
* A 246R	TB3-C18	P05-P	+28 VDC OPTICS
* A 259R	TB3-C18	P05-B	+28 VDC OPTICS
* AA515	TB3-C18	TB3-M20	+28 VDC OPTICS
* A 300R	TB3-C19	P08-F	+28 VDC OPTICS
* A 308R	TB3-C19	P08-H	+28 VDC OPTICS
* AA558	TB3-C19	TB3-M20	+28 VDC OPTICS
* A 609	TB3-C20	P11-B	+28 VDC IMU BUSS A
* A 610	TB3-C20	P11-B	+28 VDC IMU BUSS A
* A 611	TB3-C20	P11-B	+28 VDC IMU BUSS A
* AA428	TB3-C20	J20-N1	+28 VDC IMU BUSS A
* AA622	TB3-C20	J20-R1	+28 VDC IMU BUSS A
* A 612	TB3-C21	P11-C	+28 VDC IMU BUSS A
* A 613	TB3-C21	P11-C	+28 VDC IMU BUSS A
* A 614	TB3-C21	P11-C	+28 VDC IMU BUSS A
* AA432	TB3-C21	J20-S1	+28 VDC IMU BUSS A

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* AA623	TB3-C21	J20-P1	+28 VDC IMU BUSS A
* A 621	TB3-C22	P12-M	+28 VDC STBY BUSS B
* A 622	TB3-C22	P12-M	+28 VDC STBY BUSS B
* AA443	TB3-C22	J20-R4	+28 VDC STBY BUSS B
* AA627	TB3-C22	J20-S4	+28 VDC STBY BUSS B
* A 439	TB3-D 1	J09- 94	0 VDC IMU
* AA264	TB3-D 1	J17-M1	0 VDC IMU
* A 320R	TB3-D 2	P09- 22	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 567R	TB3-D 2	E 7	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* AA250W	TB3-D 2	J17-R4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* AA412W	TB3-D 2	J20-H5	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 192	TB3-D 3	J08- 62	IMU TEMP CONT FAIL LIGHT HI
* A 344	TB3-D 3	P09- 11	IMU TEMP CONT FAIL LIGHT HI
* AA275	TB3-D 3	J17-P5	IMU TEMP CONT FAIL LIGHT HI
* A 367	TB3-D 4	P09- 98	ACCEL TEMP (TELEMETRY)
* AA272	TB3-D 4	J17-F5	ACCEL TEMP (TELEMETRY)
* A 369	TB3-D 5	P09- 97	HTR CURRENT (TELEMETERY)
* AA274	TB3-D 5	J17-F3	HTR CURRENT (TELEMETRY)
* A 384	TB3-D 6	P09- 84	TEMPERATURE CONTROL SIG LO
* AA636	TB3-D 6	J17-F2	TEMPERATURE CONTROL SIG LO
* A 689Y	TB3-D 7	P09-101	DIRECT TRUNNION CONTROLLER HI (TEST)
* AA666W	TB3-D 7	J18-N1	DIRECT TRUNNION CONTROLLER HI (TEST)
* A 689R	TB3-D 8	P09-102	TRUNNION CDU MDA HI (TEST)
* AA666R	TB3-D 8	J18-N3	TRUNNION CDU MDA HI (TEST)
* A 689G	TB3-D 9	P09- 88	SHAFT CDU MDA (TEST) HI
* AA666K	TB3-D 9	J18-N6	SHAFT CDU MDA (TEST) HI
* A 122G	TB3-D11	J04- 31	SHAFT CDU MOTOR CONTROL WINDING
* AA322	TB3-D11	J18-P2	SHAFT CDU MOTOR CONTROL WINDING
* A 145G	TB3-D12	J05- 31	TRUNNION CDU MOTOR CONTROL WINDING
* AA319	TB3-D12	J18-P1	TRUNNION CDU MOTOR CONTROL WINDING
* A 41R	TB3-D13	J01- 21	SIN AIG 1X RET P4
* A 228R	TB3-D13	P02-F*	SIN AIG 1X RET S2
* A 355R	TB3-D13	P09- 1	SIN AIG 1X RET
* AA509W	TB3-D13	J22-116	SIN AIG 1X RET
* A 41Y	TB3-D14	J01- 7	SIN AIG 1X P2
* A 228Y	TB3-D14	P02-G*	SIN AIG 1X S4
* A 355Y	TB3-D14	P09- 14	SIN AIG 1X
* AA509R	TB3-D14	J22-148	SIN AIG 1X

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 593	TB3-D15	TB3-L20	0 VDC OPTICS	
AA630	TB3-D15	TB3-G15	0 VDC OPTICS	
* A 594	TB3-D15	TB3-L22	0 VDC OPTICS	
* A 643	TB3-D15	P11-G	0 VDC OPTICS	
* AA563	TB3-D15	TB3-L21	0 VDC OPTICS	
* AA609	TB3-D15	TB3-C15	0 VDC OPTICS	
* A 246G	TB3-D16	P05-J*	SXT TRUNNION MOTOR CONTROL WINDING BLK	
* AA358W	TB3-D16	J19-S3	SXT TRUNNION MOTOR CONTROL WINDING	
* A 246Y	TB3-D17	P05-I*	SXT TRUNNION MOTOR CONTROL WINDING RED	
* AA358R	TB3-D17	J19-S2	SXT TRUNNION MOTOR CONTROL WINDING	
* A 259Y	TB3-D18	P05-A	SXT SHAFT MOTOR CONTROL WINDING RED	
* AA359R	TB3-D18	J19-P1	SXT SHAFT MOTOR CONTROL WINDING	
AA526	TB3-D19	J21-129	AGC TEMP MONITOR NO 3	173
* A 371Y	TB3-D19	P09- 75	AGC TEMP MONITOR NO 3	
* AA418	TB3-D19	J20-B1	AGC TEMP MONITOR NO 3	
* A 615	TB3-D20	P12-B	+28 VDC IMU BUSS B	
* A 616	TB3-D20	P12-B	+28 VDC IMU BUSS B	
* A 617	TB3-D20	P12-B	+28 VDC IMU BUSS B	
* AA433	TB3-D20	J20-N2	+28 VDC IMU BUSS B	
* AA624	TB3-D20	J20-R2	+28 VDC IMU BUSS B	
* A 618	TB3-D21	P12-C	+28 VDC IMU BUSS B	
* A 619	TB3-D21	P12-C	+28 VDC IMU BUSS B	
* A 620	TB3-D21	P12-C	+28 VDC IMU BUSS B	
* AA437	TB3-D21	J20-S2	+28 VDC IMU BUSS B	
* AA625	TB3-D21	J20-P2	+28 VDC IMU BUSS B	
* A 623	TB3-D22	P11-M	+28 VDC STBY BUSS A	
* A 624	TB3-D22	P11-M	+28 VDC STBY BUSS A	
* AA441	TB3-D22	J20-R3	+28 VDC STBY BUSS A	
* AA626	TB3-D22	J20-S3	+28 VDC STBY BUSS A	
* A 462	TB3-F 1	P10- 9	0 VDC SPACECRAFT	
* A 667	TB3-F 1	J09- 15	0 VDC SPACECRAFT	
* AA278	TB3-F 1	J17-M3	0 VDC SPACECRAFT	
* A 668	TB3-F 2	J09- 14	SPACECRAFT LAMP TEST	
* AA647	TB3-F 2	J22-172	SPACECRAFT LAMP TEST	
* A 28	TB3-F 3	P01- 88	CONDITION LAMP TEST	
* A 390	TB3-F 3	J09- 73	CONDITION LAMP TEST	
* A 464	TB3-F 3	J10- 2	CONDITION LAMP TEST	328
* AA235	TB3-F 3	J17-P6	CONDITION LAMP TEST	

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SCALE - NONE
REV LTR
SHEET 110

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
AA518	TB3-F 4	J22-190	ATTITUDE CONTROL RELAY CONTROL
* A 12	TB3-F 4	P01- 24	ATTITUDE CONTROL RELAY CONTROL
* A 166	TB3-F 4	J06- 24	ATTITUDE CONTROL RELAY CONTROL
* A 243	TB3-F 5	P03-J*	GIMBAL LOCK SIGNAL
* A 342	TB3-F 5	P09- 10	GIMBAL LOCK SIGNAL
* A 454	TB3-F 5	P10- 12	GIMBAL LOCK SIGNAL
* A 677	TB3-F 6	P09- 47	TRAY 2 THERMISTER HI
* AA656	TB3-F 6	J12-C1	TRAY 2 THERMISTER HI
A 672B	TB3-F 7	SHLD A 672	TRUNNION CDU DAC LO
* AA344R	TB3-F 7	J18-H3	TRUNNION CDU DAC LO
A 671B	TB3-F 8	SHLD A 671	SHAFT CDU DAC LO
* AA345R	TB3-F 8	J18-H2	SHAFT CDU DAC LO
* A 130Y	TB3-F10	J05- 22	TRUNNION CDU 1/4X SIN LO
* A 256Y	TB3-F10	P05-H*	TRUNNION CDU 1/4X SIN LO
* AA330R	TB3-F10	J18-F2	TRUNNION CDU 1/4X SIN LO
* A 427R	TB3-F11	J09- 35	SHAFT CDU MDA CONTROLLER SIG HI
* AA336W	TB3-F11	J18-F6	SHAFT CDU MDA CONTROLLER SIG HI
A 427B	TB3-F12	SHLD A 427	SHAFT CDU MDA CONTROLLER SIG LO
* A 427Y	TB3-F12	J09- 34	SHAFT CDU MDA CONTROLLER SIG LO
* AA336R	TB3-F12	J18-F7	SHAFT CDU MDA CONTROLLER SIG LO
* A 40Y	TB3-F13	J01- 6	COS AIG 1X RET P1
* A 227Y	TB3-F13	P02-B*	COS AIG 1X RET S1
* A 356R	TB3-F13	P09- 2	COS AIG 1X RET
* AA510W	TB3-F13	J22-150	COS AIG 1X RET
* A 40R	TB3-F14	J01- 20	COS AIG 1X P3
* A 227R	TB3-F14	P02-A*	COS AIG 1X S3
* A 356Y	TB3-F14	P09- 3	COS AIG 1X
* AA510R	TB3-F14	J22-151	COS AIG 1X
* A 131R	TB3-F16	J05- 9	TRUNNION CDU 1/4X COS HI
* A 255Y	TB3-F16	P05-E*	TRUNNION CDU 1/4X COS HI
* AA381W	TB3-F16	J19-F5	TRUNNION CDU 1/4X COS HI
* A 308G	TB3-F17	P08-D*	SCT SHAFT MOTOR CONTROL WINDING BLK
* A 378Y	TB3-F17	P09- 77	SCT SHAFT MOTOR CONTROL WINDING
* AA361W	TB3-F17	J19-R2	SCT SHAFT MOTOR CONTROL WINDING
* A 259G	TB3-F18	P05-C	SXT SHAFT MOTOR CONTROL WINDING BLK
* AA359W	TB3-F18	J19-R1	SXT SHAFT MOTOR CONTROL WINDING
AA529	TB3-F19	J21-162	AGC TEMP MONITOR NO 2 172
* A 371R	TB3-F19	P09- 74	AGC TEMP MONITOR NO 2

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SCALE - NONE	REV LTR +	SHEET 111

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* AA417	TB3-F19	J20-A2	AGC TEMP MONITOR NO 2
* A 270	TB3-F21	P05-R	STRUCTURE GND
* A 288	TB3-F21	P06-G	STRUCTURE GND
* A 631	TB3-F21	P11-L	STRUCTURE GND
* AA607	TB3-F21	TB3-F22	STRUCTURE GND
* AA614	TB3-F21	TB3-B21	STRUCTURE GND
AA607	TB3-F22	TB3-F21	STRUCTURE GND
* A 316	TB3-F22	P08-T*	STRUCTURE GND
* A 451	TB3-F22	J09- 91	STRUCTURE GND
* A 632	TB3-F22	P12-L	STRUCTURE GND
* AA462	TB3-F22	J20-G4	STRUCTURE GND
* A 401R	TB3-G 1	J09-100	IMU HTR CURRENT AMP PIN 5
* AA258K	TB3-G 1	J17-N6	IMU HTR CURRENT AMP PIN 5
* A 401N	TB3-G 2	J09- 88	IMU TEMP CONT K2 PIN 5
* AA258L	TB3-G 2	J17-N5	IMU TEMP CONT K2 PIN 5
* A 443	TB3-G 3	J09- 89	IRIG ZERO DEVIATION CHECK
* AA253	TB3-G 3	J17-B8	IRIG ZERO DEVIATION CHECK
* A 442	TB3-G 4	J09- 85	IRIG TEMP BRIDGE AMP PIN 6
* AA254	TB3-G 4	J17-C7	IRIG TEMP BRIDGE AMP PIN 6
* A 274	TB3-G 5	P06-K	IMU TEMP SENSOR COM
* AA277	TB3-G 5	J17-M2	IMU TEMP SENSOR COM
* A 679	TB3-G 6	P09- 37	TRAY 3 THERMISTER HI
* AA657	TB3-G 6	J13-C1	TRAY 3 THERMISTER HI
* A 672Y	TB3-G 7	J09- 56	TRUNNION CDU DAC OUTPUT HI
* AA344W	TB3-G 7	J18-G3	TRUNNION CDU DAC OUTPUT HI
* A 671Y	TB3-G 8	J09- 48	SHAFT CDU DAC OUTPUT HI
* AA345W	TB3-G 8	J18-G2	SHAFT CDU DAC OUTPUT HI
A 130B	TB3-G 9	SHLD A 130	0 VDC OPTICS
A 256B	TB3-G 9	SHLD A 256	0 VDC OPTICS
AA538	TB3-G 9	TB3-B15	0 VDC OPTICS
AA541	TB3-G 9	TB3-H 9	0 VDC OPTICS
* A 130R	TB3-G10	J05- 8	TRUNNION CDU 1/4X SIN HI
* A 256R	TB3-G10	P05-G*	TRUNNION CDU 1/4X SIN HI
* AA330W	TB3-G10	J18-F1	TRUNNION CDU 1/4X SIN HI
* A 426R	TB3-G11	J09- 19	TRUNNION CDU MDA CONTROLLER SIG HI
* AA335W	TB3-G11	J18-C7	TRUNNION CDU MDA CONTROLLER SIG HI
A 426B	TB3-G12	SHLD A 426	TRUNNION CDU MDA CONTROLLER SIG LO
* A 426Y	TB3-G12	J09- 33	TRUNNION CDU MDA CONTROLLER SIG LO

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SCALE - NONE	REV LTR +	SHEET 112

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* AA335R	TB3-G12	J18-D7	TRUNNION CDU MDA CONTROLLER SIG LO
* A 111R	TB3-G13	J04- 7	SHAFT CDU 1X SIN OUTPUT LO
* AA334R	TB3-G13	J18-D6	SHAFT CDU 1X SIN OUTPUT LO
* A 111Y	TB3-G14	J04- 21	SHAFT CDU 1X SIN OUTPUT HI
* AA334W	TB3-G14	J18-C6	SHAFT CDU 1X SIN OUTPUT HI
A 111B	TB3-G15	SHLD A 111	0 VDC OPTICS
AA550	TB3-G15	TB3-H15	0 VDC OPTICS
* AA630	TB3-G15	TB3-D15	0 VDC OPTICS
* A 131Y	TB3-G16	J05- 10	TRUNNION CDU 1/4X COS LO
* A 255R	TB3-G16	P05-F*	TRUNNION CDU 1/4X COS LO
* AA381R	TB3-G16	J19-F6	TRUNNION CDU 1/4X COS LO
* A 308Y	TB3-G17	P08-C*	SCT SHAFT MOTOR CONTROL WINDING RED
* A 378R	TB3-G17	P09- 76	SCT SHAFT MOTOR CONTROL WINDING
* AA361R	TB3-G17	J19-P2	SCT SHAFT MOTOR CONTROL WINDING
* A 404	TB3-G18	J09- 59	25 DEG TRUNNION SCT OFFSET RELAY CONTROL
* AA387	TB3-G18	J19-M6	25 DEG TRUNNION SCT OFFSET RELAY CONTROL
AA530	TB3-G19	J21-196	AGC TEMP MONITOR NO 1 171
* A 371G	TB3-G19	P09- 64	AGC TEMP MONITOR NO 1
* AA416	TB3-G19	J20-A1	AGC TEMP MONITOR NO 1
* A 633	TB3-G21	P11-A	+28 VDC AGC BUSS A
* AA420	TB3-G21	J20-K5	+28 VDC AGC BUSS A
* A 636	TB3-G22	P12-A	+28 VDC AGC BUSS B
* AA421	TB3-G22	J20-K6	+28 VDC AGC BUSS B
* A 401G	TB3-H 1	J09- 87	IMU TEMP CONT AMP PIN 5
* AA258R	TB3-H 1	J17-M6	IMU TEMP CONT AMP PIN 5
* A 401Y	TB3-H 2	J09-101	IMU TEMP CONT K1 PIN 3
* AA258W	TB3-H 2	J17-M5	IMU TEMP CONT K1 PIN 3
* A 399	TB3-H 3	J09-102	IMU TEMP CONT -5 DEG GAIN CHECK
* AA252	TB3-H 3	J17-B7	IMU TEMP CONT -5 DEG GAIN CHECK
* A 280	TB3-H 4	P06-Z	IRIG TEMP IND SENSOR HI
* AA276	TB3-H 4	J17-C6	IRIG TEMP IND SENSOR HI
* A 403	TB3-H 5	J09- 74	IMU TEMP ALARM AMP PIN 15
* AA262	TB3-H 5	J17-G2	IMU TEMP ALARM AMP PIN 15
* A 181	TB3-H 6	J08- 66	MDV SLEW CONTROL 1.5 V 400 CPS
* A 408	TB3-H 6	J09- 66	MDV SLEW CONTROL 1.5 V 400 CPS
* A 135Y	TB3-H 7	J05- 90	TRUNNION CDU 16X ERROR SIG LO
* AA329R	TB3-H 7	J19-B2	TRUNNION CDU 16X ERROR SIG LO
* A 135R	TB3-H 8	J05-104	TRUNNION CDU 16X ERROR SIG HI

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057
SCALE - NONE	REV LTR +	SHEET 113

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* AA329W	TB3-H 8	J19-C2	TRUNNION CDU 16X ERROR SIG HI
A 107B	TB3-H 9	SHLD A 107	0 VDC OPTICS
A 112B	TB3-H 9	SHLD A 112	0 VDC OPTICS
A 135B	TB3-H 9	SHLD A 135	0 VDC OPTICS
AA329B	TB3-H 9	SHLD AA329	0 VDC OPTICS
AA542	TB3-H 9	TB3-K 9	0 VDC OPTICS
* AA541	TB3-H 9	TB3-G 9	0 VDC OPTICS
* A 112R	TB3-H10	J04-104	SHAFT CDU 16X ERROR SIG HI
* AA331W	TB3-H10	J19-B4	SHAFT CDU 16X ERROR SIG HI
* A 112Y	TB3-H11	J04- 90	SHAFT CDU 16X ERROR SIG LO
* AA331R	TB3-H11	J19-B3	SHAFT CDU 16X ERROR SIG LO
A 65B	TB3-H12	SHLD A 65	0 VDC IMU
A 222B	TB3-H12	SHLD A 222	0 VDC IMU
A 357B	TB3-H12	SHLD A 357	0 VDC IMU
AA466	TB3-H12	TB3-R 3	0 VDC IMU
AA507B	TB3-H12	SHLD AA507	0 VDC IMU
AA513	TB3-H12	TB3-H13	0 VDC IMU
A 41B	TB3-H13	SHLD A 41	0 VDC IMU
A 228B	TB3-H13	SHLD A 228	0 VDC IMU
A 355B	TB3-H13	SHLD A 355	0 VDC IMU
AA509B	TB3-H13	SHLD AA509	0 VDC IMU
AA554	TB3-H13	TB3-H14	0 VDC IMU
* AA513	TB3-H13	TB3-H12	0 VDC IMU
A 40B	TB3-H14	SHLD A 40	0 VDC IMU
A 227B	TB3-H14	SHLD A 227	0 VDC IMU
A 356B	TB3-H14	SHLD A 356	0 VDC IMU
AA508B	TB3-H14	SHLD AA508	0 VDC IMU
AA510B	TB3-H14	SHLD AA510	0 VDC IMU
* AA554	TB3-H14	TB3-H13	0 VDC IMU
A 255B	TB3-H15	SHLD A 255	0 VDC OPTICS
A 263B	TB3-H15	SHLD A 263	0 VDC OPTICS
A 304B	TB3-H15	SHLD A 304	0 VDC OPTICS
AA551	TB3-H15	TB3-K15	0 VDC OPTICS
* AA550	TB3-H15	TB3-G15	0 VDC OPTICS
* A 263R	TB3-H16	P05-HH	SXT SHAFT 1/2X RSVR ERROR HI
* AA375W	TB3-H16	J19-A5	SXT SHAFT 1/2X RSVR ERROR HI
* A 263Y	TB3-H17	P05-BB	SXT SHAFT 1/2X RSVR ERROR LO
* AA375R	TB3-H17	J19-B5	SXT SHAFT 1/2X RSVR ERROR LO

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057
SCALE - NONE	REV LTR +	SHEET 114

MIL 2084-4-64

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 283Y	TB3-H19	P06-E*	IMU PRESSURE MONITOR O
*	A 379Y	TB3-H19	P09- 53	IMU PRESSURE MONITOR O
*	AA415	TB3-H19	J20-B4	IMU PRESSURE MONITOR O
*	A 328	TB3-H20	P09- 65	+28 VDC OPTICS
*	AA406	TB3-H20	J20-N6	+28 VDC OPTICS
*	A 625	TB3-H21	P11-H	+28 VDC OPTICS BUSS A
*	A 626	TB3-H21	P11-H	+28 VDC OPTICS BUSS A
*	A 627	TB3-H21	P11-H	+28 VDC OPTICS BUSS A
*	AA446	TB3-H21	J20-P5	+28 VDC OPTICS BUSS A
*	AA449	TB3-H21	J20-S5	+28 VDC OPTICS BUSS A
*	AA628	TB3-H21	J20-R5	+28 VDC OPTICS BUSS A
*	A 628	TB3-H22	P12-H	+28 VDC OPTICS BUSS B
*	A 629	TB3-H22	P12-H	+28 VDC OPTICS BUSS B
*	A 630	TB3-H22	P12-H	+28 VDC OPTICS BUSS B
*	AA450	TB3-H22	J20-P6	+28 VDC OPTICS BUSS B
*	AA453	TB3-H22	J20-S6	+28 VDC OPTICS BUSS B
*	AA629	TB3-H22	J20-R6	+28 VDC OPTICS BUSS B
*	A 438	TB3-K 1	J09- 92	IMU TEMP ALARM AMP PI 5
*	AA260	TB3-K 1	J17-H2	IMU TEMP ALARM AMP PI 5
*	A 446	TB3-K 2	J09-105	IMU TEMP ALARM BIAS R SISTOR
*	AA259	TB3-K 2	J17-H1	IMU TEMP ALARM BIAS R SISTOR
*	A 286	TB3-K 3	P06-A*	IRIG TEMP IND SENSOR ET
*	AA266	TB3-K 3	J17-C5	IRIG TEMP IND SENSOR ET
*	A 444	TB3-K 5	J09- 75	IMU TEMP ALARM AMP PI 14
*	AA261	TB3-K 5	J17-G1	IMU TEMP ALARM AMP PI 14
*	A 680	TB3-K 6	P09- 38	TRAY 4 THERMISTER HI
*	AA658	TB3-K 6	J14-B1	TRAY 4 THERMISTER HI
*	A 110R	TB3-K 7	J04- 6	SHAFT CDU 1X COS OUTP T HI
*	AA338R	TB3-K 7	J18-D4	SHAFT CDU 1X COS OUTP T HI
*	A 110Y	TB3-K 8	J04- 20	SHAFT CDU 1X COS OUTP T LO
*	AA338W	TB3-K 8	J18-D5	SHAFT CDU 1X COS OUTP T LO
	A 110B	TB3-K 9	SHLD A 110	0 VDC OPTICS
	A 262B	TB3-K 9	SHLD A 262	0 VDC OPTICS
	A 312B	TB3-K 9	SHLD A 312	0 VDC OPTICS
	AA331B	TB3-K 9	SHLD AA331	0 VDC OPTICS
	AA543	TB3-K 9	TB3-L 9	0 VDC OPTICS
*	AA542	TB3-K 9	TB3-H 9	0 VDC OPTICS
*	A 107Y	TB3-K10	J04- 67	SHAFT CDU 1/2X SIN HI S1

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 262R	TB3-K10	P05-Y*	SHAFT CDU 1/2X SIN HI P1
*	A 312Y	TB3-K10	P08-J*	SHAFT CDU 1/2X SIN HI S1
*	AA332W	TB3-K10	J18-G1	SHAFT CDU 1/2X SIN HI S1
*	A 107R	TB3-K11	J04- 57	SHAFT CDU 1/2X SIN LO S3
*	A 262Y	TB3-K11	P05-Z*	SHAFT CDU 1/2X SIN LO P3
*	A 312R	TB3-K11	P08-K*	SHAFT CDU 1/2X SIN LO P1
*	AA332R	TB3-K11	J18-H1	SHAFT CDU 1/2X SIN LO S3
*	A 148Y	TB3-K12	J05- 66	TRUNNION CDU 1/2X RSVR LOAD LO
*	AA318R	TB3-K12	J18-F4	TRUNNION CDU 1/2X RSVR LOAD LO
*	A 282Y	TB3-K13	P06-C*	PRESSURE SENSOR +28 VDC LO
*	AA464W	TB3-K13	J20-B6	PRESSURE SENSOR +28 VDC LO
*	A 607Y	TB3-K14	P10- 68	400 CPS 115 V LO
*	A 608Y	TB3-K14	P11-K	400 CPS 115 V LO
*	AA465W	TB3-K14	J20-G3	400 CPS 115 V LO
	A 131B	TB3-K15	SHLD A 131	0 VDC OPTICS
	AA552	TB3-K15	TB3-L15	0 VDC OPTICS
*	A 303	TB3-K15	P08-R	0 VDC OPTICS
*	A 315	TB3-K15	P08-B*	0 VDC OPTICS
*	AA551	TB3-K15	TB3-H15	0 VDC OPTICS
*	A 304Y	TB3-K16	P08-S	SCT TRUNNION 1X RSVR ERROR HI
*	AA377W	TB3-K16	J19-B7	SCT TRUNNION 1X RSVR ERROR HI
*	A 304R	TB3-K17	P08-T	SCT TRUNNION 1X RSVR ERROR LO
*	AA377R	TB3-K17	J19-B8	SCT TRUNNION 1X RSVR ERROR LO
*	A 405	TB3-K18	J09- 58	0 DEG TRUNNION SCT OFFSET RELAY CONTROL
*	AA388	TB3-K18	J19-M5	0 DEG TRUNNION SCT OFFSET RELAY CONTROL
*	A 283R	TB3-K19	P06-D*	IMU PRESSURE MONITOR HI
*	A 379R	TB3-K19	P09- 42	IMU PRESSURE MONITOR HI
*	AA414	TB3-K19	J20-A4	IMU PRESSURE MONITOR HI
	A 595	TB3-K20	TB3-C15	0 VDC OPTICS
*	A 644	TB3-K20	P11-G	0 VDC OPTICS
*	AA325	TB3-K20	J18-S3	0 VDC OPTICS
*	AA327	TB3-K20	J18-T3	0 VDC OPTICS
*	AA333	TB3-K20	J18-R3	0 VDC OPTICS
	AA566	TB3-K21	TB3-C15	0 VDC OPTICS
*	A 249	TB3-K21	P05-S	0 VDC OPTICS
*	A 250	TB3-K21	P05-T	0 VDC OPTICS
*	AA390	TB3-K21	J19-R4	0 VDC OPTICS
*	AA393	TB3-K21	J19-P5	0 VDC OPTICS

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SCALE-NONE
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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 596	TB3-K22	TB3-C15	0 VDC OPTICS	
*	A 647	TB3-K22	P12-G	0 VDC OPTICS	
*	AA364	TB3-K22	J19-S4	0 VDC OPTICS	
*	AA369	TB3-K22	J19-S5	0 VDC OPTICS	
*	AA408	TB3-K22	J20-N3	0 VDC OPTICS	
*	A 2	TB3-L 1	P01- 65	IRIG TEMP GAIN SWITCH NC	
*	A 398	TB3-L 1	J09- 86	IRIG TEMP GAIN SWITCH NC	
*	AA290	TB3-L 1	J17-C8	IRIG TEMP GAIN SWITCH NC	
*	A 32	TB3-L 2	P01- 55	IMU TD RELAY NO	
*	AA249	TB3-L 2	J17-F8	IMU TD RELAY NO	
*	A 275Y	TB3-L 3	P06-L	IRIG TEMP CONT SENSOR RET	
*	AA268	TB3-L 3	J17-B5	IRIG TEMP CONT SENSOR RET	
*	A 275R	TB3-L 4	P06-M	IRIG TEMP CONT SENSOR HI	
*	AA267	TB3-L 4	J17-B6	IRIG TEMP CONT SENSOR HI	
*	A 400	TB3-L 5	J09- 76	IMU TEMP CONT K2 PIN 6	
*	AA263	TB3-L 5	J17-L1	IMU TEMP CONT K2 PIN 6	
*	A 681	TB3-L 6	P09- 48	THERMISTER LO	
*	AA659	TB3-L 6	J14-B2	THERMISTER LO	
*	AA660	TB3-L 6	J21-138	THERMISTER LO	199B
*	A 121R	TB3-L 7	J04-106	SHAFT CDU TACH HI	
*	AA316W	TB3-L 7	J18-A8	SHAFT CDU TACH HI	
*	A 121Y	TB3-L 8	J04- 92	SHAFT CDU TACH LO	
*	AA316R	TB3-L 8	J18-A7	SHAFT CDU TACH LO	
	A 121B	TB3-L 9	SHLD A 121	0 VDC OPTICS	
	A 132B	TB3-L 9	SHLD A 132	0 VDC OPTICS	
	AA316B	TB3-L 9	SHLD AA316	0 VDC OPTICS	
	AA544	TB3-L 9	TB3-M 9	0 VDC OPTICS	
*	AA543	TB3-L 9	TB3-K 9	0 VDC OPTICS	
*	A 132R	TB3-L10	J05- 12	TRUNNION CDU 1/2X RSVR P2	
*	AA317W	TB3-L10	J18-A6	TRUNNION CDU 1/2X RSVR P2	
*	A 132Y	TB3-L11	E 18	TRUNNION CDU 1/2X RSVR P3	
*	AA317R	TB3-L11	J18-B6	TRUNNION CDU 1/2X RSVR P3	
*	A 148R	TB3-L12	J05- 56	TRUNNION CDU 1/2X RSVR LOAD HI	
*	AA318W	TB3-L12	J18-F3	TRUNNION CDU 1/2X RSVR LOAD HI	
*	A 282R	TB3-L13	P06-B*	PRESSURE SENSOR +28 VDC HI	
*	AA464R	TB3-L13	J20-A6	PRESSURE SENSOR +28 VDC HI	
*	A 607R	TB3-L14	P10- 69	400 CPS 115 V HI	
*	A 608R	TB3-L14	P11-N	400 CPS 115 V HI	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015057
SCALE-NONE
REV LTR +
SHEET 117

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA465R	TB3-L14	J20-H3	400 CPS 115 V HI	
	AA533	TB3-L15	TB3-M15	0 VDC OPTICS	
*	A 436	TB3-L15	J09- 83	0 VDC OPTICS	
*	AA552	TB3-L15	TB3-K15	0 VDC OPTICS	
*	A 310R	TB3-L16	P08-G*	SCT SHAFT 1/2X RSVR ERROR LO	
*	AA379R	TB3-L16	J19-C8	SCT SHAFT 1/2X RSVR ERROR LO	
*	A 310Y	TB3-L17	P08-I*	SCT SHAFT 1/2X RSVR ERROR HI	
*	AA379W	TB3-L17	J19-D8	SCT SHAFT 1/2X RSVR ERROR HI	
*	A 428	TB3-L18	J09- 99	COSECANT RELAY CONTROL	
*	AA389	TB3-L18	J19-N5	COSECANT RELAY CONTROL	
	AA521	TB3-L19	J21- 62	+13 VDC AGC	176
*	A 380	TB3-L19	P09- 62	+13 VDC AGC	
*	AA425	TB3-L19	J20-C6	+13 VDC AGC	
*	A 593	TB3-L20	TB3-D15	0 VDC OPTICS	
*	A 648	TB3-L20	P12-G	0 VDC OPTICS	
*	AA 66	TB3-L20	J12-R6	0 VDC OPTICS	
*	AA228	TB3-L20	J16-R5	0 VDC OPTICS	
*	AA229	TB3-L20	J16-R6	0 VDC OPTICS	
	AA563	TB3-L21	TB3-D15	0 VDC OPTICS	
*	A 329	TB3-L21	P09- 66	0 VDC OPTICS	
*	A 645	TB3-L21	P11-G	0 VDC OPTICS	
*	AA282	TB3-L21	J17-R6	0 VDC OPTICS	
*	AA407	TB3-L21	J20-N4	0 VDC OPTICS	
	A 594	TB3-L22	TB3-D15	0 VDC OPTICS	
*	A 429	TB3-L22	J09- 1	0 VDC OPTICS	
*	AA365	TB3-L22	J19-T4	0 VDC OPTICS	
*	AA367	TB3-L22	J19-T6	0 VDC OPTICS	
*	A 285	TB3-M 1	P06-P	ACCEL TEMP IND SENSOR RET	
*	AA269	TB3-M 1	J17-D5	ACCEL TEMP IND SENSOR RET	
*	A 31	TB3-M 2	P01- 45	IMU TD RELAY C	
*	AA251	TB3-M 2	J17-D8	IMU TD RELAY C	
*	A 397	TB3-M 4	J09-104	ACCEL ZERO DEVIATION CHECK	
*	AA256	TB3-M 4	J17-D7	ACCEL ZERO DEVIATION CHECK	
*	A 441	TB3-M 5	J09-103	IMU IMU TEMP CONT +5 DEG GAIN CHECK	
*	AA255	TB3-M 5	J17-D6	IMU IMU TEMP CONT +5 DEG GAIN CHECK	
*	A 188	TB3-M 6	J08- 60	IMU FAIL LIGHT HI	
*	A 465	TB3-M 6	J10- 6	IMU FAIL LIGHT HI	304
*	A 144Y	TB3-M 7	J05- 92	TRUNNION CDU TACH LO	

MANNED SPACECRAFT CENTER
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SIZE A
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SCALE-NONE
REV LTR +
SHEET 118

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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA315R	TB3-M 7	J18-B9	TRUNNION CDU TACH LO	
*	A 144R	TB3-M 8	J05-106	TRUNNION CDU TACH HI	
*	AA315W	TB3-M 8	J18-A9	TRUNNION CDU TACH HI	
	A 144B	TB3-M 9	SHLD A 144	0 VDC OPTICS	
	A 425B	TB3-M 9	SHLD A 425	0 VDC OPTICS	
	AA315B	TB3-M 9	SHLD AA315	0 VDC OPTICS	
	AA545	TB3-M 9	TB3-N 9	0 VDC OPTICS	
*	AA544	TB3-M 9	TB3-L 9	0 VDC OPTICS	
*	A 425R	TB3-M10	J09- 10	RSVR DRIVE AMP TRUNNION SIG (RSVD) HI	
*	AA326W	TB3-M10	J18-D8	RSVR DRIVE AMP TRUNNION SIG (RSVD) HI	
*	A 425Y	TB3-M11	J09- 23	RSVR DRIVE AMP INPUT LO	
*	AA326L	TB3-M11	J18-F9	RSVR DRIVE AMP INPUT LO	
*	A 425G	TB3-M12	J09- 24	RSVR DRIVE AMP SHAFT SIG (RSVD) HI	
*	AA326R	TB3-M12	J18-F8	RSVR DRIVE AMP SHAFT SIG (RSVD) HI	
*	A 237Y	TB3-M13	P03-P	PITCH ERROR BODY AND BODY OFFSET AXIS LO	
*	AA289W	TB3-M13	J17-C1	PITCH ERROR BODY AND BODY OFFSET AXIS LO	
*	A 237R	TB3-M14	P03-R	PITCH-YAW RSVR S4	
*	AA289R	TB3-M14	J17-C2	PITCH-YAW RSVR S4	
	A 254B	TB3-M15	SHLD A 254	0 VDC OPTICS	
	A 309B	TB3-M15	SHLD A 309	0 VDC OPTICS	
	A 310B	TB3-M15	SHLD A 310	0 VDC OPTICS	
	AA534	TB3-M15	TB3-N15	0 VDC OPTICS	
*	AA533	TB3-M15	TB3-L15	0 VDC OPTICS	
*	A 254R	TB3-M16	P05-C*	SXT TRUNNION 1X RSVR ERROR HI	
*	AA374W	TB3-M16	J19-D1	SXT TRUNNION 1X RSVR ERROR HI	
*	A 254Y	TB3-M17	P05-D*	SXT TRUNNION 1X RSVR ERROR LO	
*	AA374R	TB3-M17	J19-D2	SXT TRUNNION 1X RSVR ERROR LO	
*	A 113	TB3-M18	J04- 89	SHAFT CDU 16X LOAD	
*	AA385	TB3-M18	J19-C4	SHAFT CDU 16X LOAD	
	AA525	TB3-M19	J21- 96	+3 VDC AGC	175
*	A 381	TB3-M19	P09- 54	+3 VDC AGC	
*	AA426	TB3-M19	J20-D6	+3 VDC AGC	
	AA515	TB3-M20	TB3-C18	+28 VDC OPTICS	
	AA558	TB3-M20	TB3-C19	+28 VDC OPTICS	
*	A 445	TB3-M20	J09- 71	+28 VDC OPTICS	
*	AA457	TB3-M20	J20-M6	+28 VDC OPTICS	
*	A 29	TB3-M21	P01- 89	+28 VDC MDV	
*	AA280	TB3-M21	J17-R5	+28 VDC MDV	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057	
SCALE - NONE	REV LTR		SHEET 119

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	AA405	TB3-M21	J20-M5	+28 VDC MDV	
*	A 435	TB3-M22	J09- 51	+28 VDC MDV	
*	A 507	TB3-M22	J10- 8	+28 VDC MDV	306
*	AA 82	TB3-M22	J12-L1	+28 VDC MDV	
*	AA404	TB3-M22	J20-L5	+28 VDC MDV	
*	A 279R	TB3-N 1	P06-X	IMU EMERGENCY HTR HI	
*	AA265W	TB3-N 1	J17-M4	IMU EMERGENCY HTR HI	
*	A 279Y	TB3-N 2	P06-R	EMERGENCY HTR LO-OPER AND STBY	
*	AA265R	TB3-N 2	J17-N4	EMERGENCY HTR LO-OPER AND STBY	
	A 279B	TB3-N 3	SHLD A 279	0 VDC IMU	
	AA270B	TB3-N 3	SHLD AA270	0 VDC IMU	
*	A 592	TB3-N 3	TB3-R 3	0 VDC IMU	
*	A 653	TB3-N 3	P11-F	0 VDC IMU	
*	AA295	TB3-N 3	J17-S3	0 VDC IMU	
*	A 278Y	TB3-N 4	P06-W	IMU CONTROL HTR LO	
*	AA270W	TB3-N 4	J17-N1	IMU CONTROL HTR LO	
*	A 278R	TB3-N 5	P06-V	IMU CONTROL HTR HI	
*	AA270R	TB3-N 5	J17-P1	IMU CONTROL HTR HI	
*	A 277	TB3-N 6	P06-Y	EMERG HTR CONT MODULE LO	
*	A 402	TB3-N 6	J09- 90	EMERG HTR CONT MODULE LO	
*	A 114R	TB3-N 7	J04-100	SHAFT CDU 16X RSVR COS LO P3	
*	AA313R	TB3-N 7	J18-A5	SHAFT CDU 16X RSVR COS LO P3	
*	A 114Y	TB3-N 8	J04- 86	SHAFT CDU 16X RSVR COS HI P1	
*	AA313W	TB3-N 8	J18-A4	SHAFT CDU 16X RSVR COS HI P1	
	A 114B	TB3-N 9	SHLD A 114	0 VDC OPTICS	
	A 115B	TB3-N 9	SHLD A 115	0 VDC OPTICS	
	AA308B	TB3-N 9	SHLD AA308	0 VDC OPTICS	
	AA546	TB3-N 9	TB3-R 9	0 VDC OPTICS	
*	AA545	TB3-N 9	TB3-M 9	0 VDC OPTICS	
*	A 115Y	TB3-N10	J04- 87	SHAFT CDU 16X RSVR SIN HI P2	
*	AA314W	TB3-N10	J18-B5	SHAFT CDU 16X RSVR SIN HI P2	
*	A 115R	TB3-N11	J04-101	SHAFT CDU 16X RSVR SIN LO P4	
*	AA314R	TB3-N11	J18-C5	SHAFT CDU 16X RSVR SIN LO P4	
*	A 108R	TB3-N13	J04- 66	SHAFT CDU 1/2X COS LO S4	
*	A 261R	TB3-N13	P05-W*	SHAFT CDU 1/2X COS LO P4	
*	A 313Y	TB3-N13	P08-M*	SHAFT CDU 1/2X COS LO P2	
*	AA396R	TB3-N13	J19-D6	SHAFT CDU 1/2X COS LO S4	
*	A 108Y	TB3-N14	J04- 56	SHAFT CDU 1/2X COS HI S2	

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SCALE - NONE	REV LTR		SHEET 120

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 261Y	TB3-N14	P05-X*	SHAFT CDU 1/2X COS HI P2	
*	A 313R	TB3-N14	P08-N*	SHAFT CDU 1/2X COS HI P4	
*	AA396W	TB3-N14	J19-D5	SHAFT CDU 1/2X COS HI S2	
	A 108B	TB3-N15	SHLD A 108	0 VDC OPTICS	
	AA535	TB3-N15	TB3-R15	0 VDC OPTICS	
*	AA534	TB3-N15	TB3-M15	0 VDC OPTICS	
*	A 309R	TB3-N16	P08-E*	SCT SHAFT TACH HI	
*	AA373W	TB3-N16	J19-B9	SCT SHAFT TACH HI	
*	A 309Y	TB3-N17	P08-F*	SCT SHAFT TACH LO	
*	AA373R	TB3-N17	J19-C9	SCT SHAFT TACH LO	
*	A 136	TB3-N18	J05- 89	TRUNNION CDU 16X LOAD	
*	AA384	TB3-N18	J19-C3	TRUNNION CDU 16X LOAD	
	AA522	TB3-N19	J21- 63	0 VDC AGC	177
*	A 331	TB3-N19	P09- 18	0 VDC AGC	
*	A 382	TB3-N19	P09- 63	0 VDC AGC	
*	AA424	TB3-N19	J20-K4	0 VDC AGC	
*	A 64R	TB3-N20	J02- 20	COS AMG 1X S3	
*	A 221R	TB3-N20	P02-L	COS AMG 1X S3	
*	A 358R	TB3-N20	P09- 28	COS AMG 1X S3	
*	AA419W	TB3-N20	J20-A3	COS AMG 1X S3	
*	AA508W	TB3-N20	J22-113	COS AMG 1X S3	
*	A 64Y	TB3-N21	J02- 6	COS AMG 1X S1	
*	A 221Y	TB3-N21	P02-M	COS AMG 1X S1	
*	A 358Y	TB3-N21	P09- 40	COS AMG 1X S1	
*	AA419R	TB3-N21	J20-B3	COS AMG 1X S1	
*	AA508R	TB3-N21	J22-114	COS AMG 1X S1	
*	A 326	TB3-N22	P09- 20	+28 VDC STBY	
*	A 675Y	TB3-N22	J08- 2	+28 VDC STBY	
*	AA445	TB3-N22	J20-P3	+28 VDC STBY	
	A 278B	TB3-R 3	SHLD A 278	0 VDC IMU	
	A 592	TB3-R 3	TB3-N 3	0 VDC IMU	
	AA631	TB3-R 3	TB3-S 3	0 VDC IMU	
*	A 591	TB3-R 3	TB3-T 3	0 VDC IMU	
*	AA297	TB3-R 3	J17-S4	0 VDC IMU	
*	AA466	TB3-R 3	TB3-H12	0 VDC IMU	
*	A 236R	TB3-R 4	P03-N	PITCH YAW RSVR S3	
*	AA247R	TB3-R 4	J17-D2	PITCH YAW RSVR S3	
*	A 236Y	TB3-R 5	P03-M	YAW ERROR BODY OFFSET AXIS LO	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057	
SCALE - NONE	REV LTR		SHEET 121

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA247W	TB3-R 5	J17-D3	YAW ERROR BODY OFFSET AXIS LO
*	A 276	TB3-R 6	P06-N	ACCEL INDICATING SENSOR HI
*	A 395	TB3-R 6	J09- 97	ACCEL INDICATING SENSOR HI
*	A 248Y	TB3-R 7	P05-N*	SXT AS 16X RSVR SIN LO
*	AA311R	TB3-R 7	J18-D3	SXT AS 16X RSVR SIN LO
*	A 248R	TB3-R 8	P05-P*	SXT AS 16X RSVR SIN HI
*	AA311W	TB3-R 8	J18-D2	SXT AS 16X RSVR SIN HI
	A 248B	TB3-R 9	SHLD A 248	0 VDC OPTICS
	A 258B	TB3-R 9	SHLD A 258	0 VDC OPTICS
	AA307B	TB3-R 9	SHLD AA307	0 VDC OPTICS
	AA547	TB3-R 9	TB3-S 9	0 VDC OPTICS
*	AA546	TB3-R 9	TB3-N 9	0 VDC OPTICS
*	A 258R	TB3-R10	P05-Q*	SXT AS 16X RSVR COS LO
*	AA312W	TB3-R10	J18-D1	SXT AS 16X RSVR COS LO
*	A 258Y	TB3-R11	P05-R*	SXT AS 16X RSVR COS HI
*	AA312R	TB3-R11	J18-C1	SXT AS 16X RSVR COS HI
*	A 109R	TB3-R12	J04- 45	SHAFT CDU 1X P3 (S3)
*	AA328L	TB3-R12	J18-L6	SHAFT CDU 1X P3 (S3)
*	A 134Y	TB3-R13	J05- 67	TRUNNION CDU 1/2X RSVR S3
*	AA386W	TB3-R13	J19-F9	TRUNNION CDU 1/2X RSVR S3
*	A 134R	TB3-R14	J05- 68	TRUNNION CDU 1/2X RSVR S1 PHASE CORR
*	AA386R	TB3-R14	J19-F8	TRUNNION CDU 1/2X RSVR S1 PHASE CORR
	A 134B	TB3-R15	SHLD A 134	0 VDC OPTICS
	A 261B	TB3-R15	SHLD A 261	0 VDC OPTICS
	A 313B	TB3-R15	SHLD A 313	0 VDC OPTICS
	AA553	TB3-R15	TB3-S15	0 VDC OPTICS
*	AA535	TB3-R15	TB3-N15	0 VDC OPTICS
*	A 302Y	TB3-R16	P08-P	SCT TRUNNION TACH LO
*	AA372R	TB3-R16	J19-A8	SCT TRUNNION TACH LO
*	A 302R	TB3-R17	P08-N	SCT TRUNNION TACH HI
*	AA372W	TB3-R17	J19-A9	SCT TRUNNION TACH HI
*	A 305	TB3-R18	P08-U	SCT TRUNNION 1X RSVR LOAD
*	AA378	TB3-R18	J19-A7	SCT TRUNNION 1X RSVR LOAD
*	A 386Y	TB3-R19	P09- 7	+2.5 VDC CONDITIONING HI
*	AA463W	TB3-R19	J20-D5	+2.5 VDC CONDITIONING HI
*	A 330	TB3-R20	P09- 4	+28 VDC AGC
*	AA422	TB3-R20	J20-H4	+28 VDC AGC
*	A 675R	TB3-R21	J08- 1	+28 VDC STBY

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015057	
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INCHES

0 1 2

PHOTOGRAPHIC SCALE ONLY

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA650	TB3-R21	J20-P4	+28 VDC STBY
	A 236B	TB3-S 3	SHLD A 236	0 VDC IMU
	AA265B	TB3-S 3	SHLD AA265	0 VDC IMU
*	A 657	TB3-S 3	P12-D	0 VDC IMU
*	AA296	TB3-S 3	J17-S1	0 VDC IMU
*	AA631	TB3-S 3	TB3-R 3	0 VDC IMU
*	A 116G	TB3-S 4	J04-108	SHAFT CDU ENCODER PHA E 2
*	AA284L	TB3-S 4	J17-F9	SHAFT CDU ENCODER PHA E 2
	A 116B	TB3-S 5	SHLD A 116	SHAFT CDU ENCODER COM
*	A 116R	TB3-S 5	J04- 94	SHAFT CDU ENCODER COM
*	AA284R	TB3-S 5	J17-D9	SHAFT CDU ENCODER COM
*	A 116Y	TB3-S 6	J04-107	SHAFT CDU ENCODER PHA E 1
*	AA284W	TB3-S 6	J17-C9	SHAFT CDU ENCODER PHA E 1
*	A 253Y	TB3-S 7	P05-B*	SXT AT 64X RSVR COS L
*	AA308R	TB3-S 7	J18-B1	SXT AT 64X RSVR COS L
*	A 253R	TB3-S 8	P05-A*	SXT AT 64X RSVR COS H
*	AA308W	TB3-S 8	J18-A1	SXT AT 64X RSVR COS H
	A 138B	TB3-S 9	SHLD A 138	0 VDC OPTICS
	A 253B	TB3-S 9	SHLD A 253	0 VDC OPTICS
	AA310B	TB3-S 9	SHLD AA310	0 VDC OPTICS
	AA548	TB3-S 9	TB3-T 9	0 VDC OPTICS
*	AA547	TB3-S 9	TB3-R 9	0 VDC OPTICS
*	A 138Y	TB3-S10	J05- 87	TRUNNION CDU 16X RSVR SIN HI P2
*	AA310W	TB3-S10	J18-B3	TRUNNION CDU 16X RSVR SIN HI P2
*	A 138R	TB3-S11	J05-101	TRUNNION CDU 16X RSVR SIN LO P4
*	AA310R	TB3-S11	J18-B4	TRUNNION CDU 16X RSVR SIN LO P4
*	A 109Y	TB3-S12	J04- 35	SHAFT CDU 1X P2 (S2)
*	AA328R	TB3-S12	J18-L5	SHAFT CDU 1X P2 (S2)
*	A 306R	TB3-S13	P08-V	SCT TRUNNION 1X SIN L
*	AA383W	TB3-S13	J19-G3	SCT TRUNNION 1X SIN L
*	A 306Y	TB3-S14	P08-W	SCT TRUNNION 1X SIN H
*	AA383R	TB3-S14	J19-G2	SCT TRUNNION 1X SIN H
	A 257B	TB3-S15	SHLD A 257	0 VDC OPTICS
	A 260B	TB3-S15	SHLD A 260	0 VDC OPTICS
	A 302B	TB3-S15	SHLD A 302	0 VDC OPTICS
	AA536	TB3-S15	TB3-T15	0 VDC OPTICS
*	AA553	TB3-S15	TB3-R15	0 VDC OPTICS
*	A 260Y	TB3-S16	P05-V*	SXT SHAFT TACH LO

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA371R	TB3-S16	J19-A2	SXT SHAFT TACH LO
*	A 260R	TB3-S17	P05-U*	SXT SHAFT TACH HI
*	AA371W	TB3-S17	J19-A3	SXT SHAFT TACH HI
*	A 264	TB3-S18	P05-AA	SXT SHAFT 1/2X RSVR L AD
*	AA376	TB3-S18	J19-C5	SXT SHAFT 1/2X RSVR L AD
*	A 317Y	TB3-S19	P09- 6	0 VDC CONDITIONING
*	AA427W	TB3-S19	J20-C5	0 VDC CONDITIONING
*	A 386R	TB3-S20	P09- 21	+2.5 VDC CONDITIONING LO
*	AA463R	TB3-S20	J20-D4	+2.5 VDC CONDITIONING LO
	A 559	TB3-S21	E 6	+28 VDC IMU
	AA560	TB3-S21	TB3-T21	+28 VDC IMU
*	A 21	TB3-S21	P01- 7	+28 VDC IMU
*	AA456	TB3-S21	J20-K2	+28 VDC IMU
	A 237B	TB3-T 3	SHLD A 237	0 VDC IMU
	A 591	TB3-T 3	TB3-R 3	0 VDC IMU
	AA635	TB3-T 3	TB2-V 8	0 VDC IMU
*	A 658	TB3-T 3	P12-E	0 VDC IMU
*	AA248	TB3-T 3	J17-S2	0 VDC IMU
*	AA592	TB3-T 3	TB2-M 6	0 VDC IMU
*	A 139Y	TB3-T 4	J05-107	TRUNNION CDU ENCODER HASE 1
*	AA281W	TB3-T 4	J17-A6 .	TRUNNION CDU ENCODER HASE 1
	A 139B	TB3-T 5	SHLD A 139	TRUNNION CDU ENCODER OM
*	A 139R	TB3-T 5	J05- 94	TRUNNION CDU ENCODER OM
*	AA281R	TB3-T 5	J17-A7	TRUNNION CDU ENCODER OM
*	A 139G	TB3-T 6	J05-108	TRUNNION CDU ENCODER HASE 2
*	AA281L	TB3-T 6	J17-A8	TRUNNION CDU ENCODER HASE 2
*	A 252Y	TB3-T 7	P05-Y	SXT AT 64X RSVR SIN H
*	AA307R	TB3-T 7	J18-B2	SXT AT 64X RSVR SIN H
*	A 252R	TB3-T 8	P05-Z	SXT AT 64X RSVR SIN L
*	AA307W	TB3-T 8	J18-C2	SXT AT 64X RSVR SIN L
	A 137B	TB3-T 9	SHLD A 137	0 VDC OPTICS
	A 252B	TB3-T 9	SHLD A 252	0 VDC OPTICS
	AA309B	TB3-T 9	SHLD AA309	0 VDC OPTICS
	AA549	TB3-T 9	TB3-T15	0 VDC OPTICS
*	AA548	TB3-T 9	TB3-S 9	0 VDC OPTICS
*	A 137Y	TB3-T10	J05- 86	TRUNNION CDU 16X RSVR COS HI P1
*	AA309W	TB3-T10	J18-A2	TRUNNION CDU 16X RSVR COS HI P1
*	A 137R	TB3-T11	J05-100	TRUNNION CDU 16X RSVR COS LO P3

MANNED
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REV LTR +
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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA309R	TB3-T11	J18-A3	TRUNNION CDU 16X RSVR COS LO P3
*	A 109G	TB3-T12	J04- 34	SHAFT CDU 1X P1 (S1)
*	AA328W	TB3-T12	J18-K6	SHAFT CDU 1X P1 (S1)
*	A 307Y	TB3-T13	P08-Y	SCT TRUNNION 1X COS L
*	AA382R	TB3-T13	J19-G1	SCT TRUNNION 1X COS L
*	A 307R	TB3-T14	P08-X	SCT TRUNNION 1X COS H
*	AA382W	TB3-T14	J19-H1	SCT TRUNNION 1X COS H
	A 306B	TB3-T15	SHLD A 306	0 VDC OPTICS
	A 307B	TB3-T15	SHLD A 307	0 VDC OPTICS
*	A 664	TB3-T15	TB3-B15	0 VDC OPTICS
*	AA536	TB3-T15	TB3-S15	0 VDC OPTICS
*	AA549	TB3-T15	TB3-T 9	0 VDC OPTICS
*	A 257R	TB3-T16	P05-K*	SXT TRUNNION TACH HI
*	AA370W	TB3-T16	J19-A1	SXT TRUNNION TACH HI
*	A 257Y	TB3-T17	P05-M*	SXT TRUNNION TACH LO
*	AA370R	TB3-T17	J19-B1	SXT TRUNNION TACH LO
*	A 311	TB3-T18	P08-H*	SCT SHAFT 1/2X RSVR L AD
*	AA380	TB3-T18	J19-C7	SCT SHAFT 1/2X RSVR L AD
*	A 317R	TB3-T19	P09- 5	+20 VDC CONDITIONING
*	AA427R	TB3-T19	J20-B5	+20 VDC CONDITIONING
	AA559	TB3-T20	TB3-T21	+28 VDC IMU
*	A 244	TB3-T20	P03-H*	+28 VDC IMU
*	A 284	TB3-T20	P06-D	+28 VDC IMU
*	AA454	TB3-T20	J20-K1	+28 VDC IMU
*	A 327	TB3-T21	P09- 19	+28 VDC IMU
*	AA455	TB3-T21	J20-K1	+28 VDC IMU
*	AA559	TB3-T21	TB3-T20	+28 VDC IMU
*	AA560	TB3-T21	TB3-S21	+28 VDC IMU

MANNED
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SCALE - NONE
REV LTR +
SHEET 125

MIL 2064-4-64

INCHES
0 1 2
PHOTOGRAPHIC SCALE

APPLICATION		REVISIONS TDCR 14008			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		A	REVISED PER TDRR 16376	15-Feb-65	JN MEM

SEE SHEET 2 FOR REVISION RECORD

REV		
SHEET		
REV STATUS OF SHEETS	REV	
	SHEET	

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN E. B. DATE Oct 2 '64
CHECKED 10-26-64
APPROVAL
APPROVAL 10/27/64

NASA APPROVAL
MIT APPROVAL

CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRE LIST AA
AGE HARNESS AND PSA END CONNECTOR ASSY

CODE IDENT NO.	SIZE		REV
	A	1015058	A
SCALE —		SHEET 1 OF 62	

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	A	37	+												
2	A	38	+												
3	+	39	+												
4	+	40	+												
5	A	41	+												
6	+	42	+												
7	+	43	+												
8	+	44	+												
9	+	45	+												
10	+	46	+												
11	+	47	+												
12	+	48	+												
13	+	49	+												
14	+	50	+												
15	+	51	+												
16	+	52	+												
17	+	53	+												
18	+	54	+												
19	+	55	+												
20	+	56	+												
21	+	57	+												
22	+	58	+												
23	+	59	+												
24	+	60	+												
25	+	61	+												
26	+	62	A												
27	+														
28	+														
29	+														
30	+														
31	+														
32	+														
33	+														
34	+														
35	+														
36	+														

	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	REVISION A	NASA DRAWING NO. 1015058 SHEET 2 OF 62

WIRE LIST AA

GENERAL NOTES

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

4 CONDUCTORS WITH THE SAME NUMBER ARE TWISTED TOGETHER.

5 TWISTED CONDUCTORS ARE TO BE TWISTED PER ND1002032.

6 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING

7 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, OR TWISTING
- A - FROM END SHIELD
- B - TO END SHIELD
- K - BLACK
- L - BLUE
- R - RED
- W - WHITE

8 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

MANNED SPACECRAFT CENTER
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SIZE A
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SCALE - NONE
REV LTR +
SHEET 3

MIL 2084-4-64

WIRE LIST AA

GENERAL NOTES

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 4

MIL 2084-4-64

GXD

WIRE LIST AA

A 1015058

PENNANT

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015058- 1	WIRE PER 1010707-2 RED JKT 29 AWG WHT, RED, BLUE, 13 FT 1.0 INCHES TOTAL LENGTH.
	3	1	1015058- 3	WIRE PER 1010807-4 28 AWG WHITE 180 FT. 6.0 INCHES TOTAL LENGTH.
	4	1	1015058- 4	WIRE PER 1010807-5 24AWG WHITE 620 FEET 1.0 INCHES TOTAL LENGTH
	5	1	1015058- 5	WIRE PER 1010807-3 WHT JKT 24 AWG WHT, RED 103 FT. 8.0 INCHES TOTAL LENGTH.
6	6	488	1010738- 6	CONTACT, SOCKET
6	7	27	1010763- 1	SLEEVE, SOLDER
6	8	78	1010763- 2	SLEEVE, SOLDER
6	9	64	1010490-110	INSULATION-SLEEVING, ELEC
6	10	9	1010490-112	INSULATION-SLEEVING, ELEC
	12	4	MS-25036-44	TERMINAL LUG

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
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1015058
SCALE - NONE
REV LTR A
SHEET 5

MIL 2084 4-63

WIRE LIST AA

CONDUCTOR			FROM						TO						
	INDIVIDUAL LENGTH		CUT WIRE OR SHIELD			TERMINATION			CUT WIRE OR SHIELD			TERMINATION			
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	ITEM NO.	SPEC. 1	NO.	STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	ITEM NO.	SPEC 1	NO.	ROUTING
AA 1	4		J11-S4	138	N				J15-S6	138	N				3 D27
AA 2	4		J11-S1	138	N				J20-L1	138	N				6 F
AA 3	4		J11-S2	138	N				J20-L2	138	N				5 E79
AA 4	4		J11-S5	138	N				J20-K2	138	N				2 G
AA 5R	4		J11-N4	138	N				J12-P3	138	N				D
AA 5W	4		J11-N5	138	N				J12-N3	138	N				D
AA 6	4		J11-S4	138	N				J12-S5	138	N				B
AA 7	4		J11-L4	138	N				J12-K3	138	N				G
AA 9R	4		J11-L2	138	N				J12-K2	138	N				G12
AA 9W	4		J11-L1	138	N				J12-H2	138	N				G12
AA 10K	4		J11-B5	138	N				J12-B2	138	N				T
AA 10L	4		J11-A6	138	N				J12-B1	138	N				T
AA 10R	4		J11-A5	138	N				J12-A2	138	N				T
AA 10W	4		J11-B6	138	N				J12-A1	138	N				T
AA 11R	3		J11-B3	163	N				J17-B1	88	N				R55
AA 11W	3		J11-C3	163	N				J17-A1	88	N				R55
AA 12L	4		J11-N2	138	N				J17-R2	138	N				D
AA 12R	4		J11-N1	138	N				J17-P2	138	N				D

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
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SCALE - NONE
REV LTR +
SHEET 6

MIL 2088-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	2	T I N	FROM TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	2	T I N	TO TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA 12W	4	J11-P1	138	N			J17-N2	138	N			D
AA 13	4	J11-S3	138	N			J17-R1	138	N			4 C
AA 14	4	J11-N6	138	N			J13-P6	138	N			E14
AA 15R	4	J11-B1	138	N			TB2-G 2	138	N			7HH
AA 15W	4	J11-A1	138	N			TB2-H 2	138	N			7HH
AA 16R	4	J11-C1	138	N			TB1-C 5	138	N			7DD
AA 16W	4	J11-B1	138	N			TB1-B 5	138	N			7DD
AA 17	4	J11-R4	138	N			J11-R5	138	N			
AA 18	4	J11-P4	138	N			J11-R4	138	N			
AA 19R	4	J11-B2	138	N			TB2-G 7	138	N			6BB
AA 19W	4	J11-A2	138	N			TB2-H 7	138	N			6BB
AA 20R	4	J11-C2	138	N			TB1-A 5	138	N			6DD
AA 20W	4	J11-B2	138	N			TB1-A 6	138	N			6DD
AA 21R	4	J11-B3	138	N			TB2-R 2	138	N			5GG
AA 21W	4	J11-A3	138	N			TB2-N 2	138	N			5GG
AA 22	4	J11-P4	138	N			J11-P5	138	N			
AA 23K	4	J11-G1	138	N			TB1-C 3	138	N			7FF
AA 23L	4	J11-H1	138	N			TB1-B 4	138	N			7FF

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058		
SCALE - NONE	REV LTR	+	SHEET	7

MIL 2065-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	2	T I N	FROM TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	2	T I N	TO TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA 23R	4	J11-F1	138	N			TB1-C 4	138	N			7FF
AA 23W	4	J11-G2	138	N			TB1-B 3	138	N			7FF
AA 24	4	J11-G2	138	N			J11-P6	138	N			6 C
AA 25	4	J11-S4	138	N			J11-S5	138	N			
AA 26	4	J11-P6	138	N			J11-R6	138	N			
AA 27	4	J11-N6	138	N			TB1-D 5	138	N			2EE
AA 28K	4	J11-L2	138	N			TB1-C 2	138	N			6GG
AA 28L	4	J11-M2	138	N			TB1-C 2	138	N			6GG
AA 28R	4	J11-M1	138	N			TB1-D 2	138	N			6GG
AA 28W	4	J11-L1	138	N			TB1-D 2	138	N			6GG
AA 29K	4	J11-B5	138	N			TB1-B 7	138	N			2
AA 29L	4	J11-A6	138	N			TB1-A 8	138	N			2
AA 29R	4	J11-A5	138	N			TB1-A 7	138	N			2
AA 29W	4	J11-B6	138	N			TB1-B 8	138	N			2
AA 30R	4	J11-D6	138	N			TB1-D 3	138	N			2FF
AA 30W	4	J11-D5	138	N			TB1-D 4	138	N			2FF
AA 31	4	J11-R5	138	N			J11-R6	138	N			
AA 32R	4	J11-F6	138	N			TB1-A 4	138	N			2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058		
SCALE - NONE	REV LTR	+	SHEET	8

MIL 2065-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	2	T I N	FROM TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	2	T I N	TO TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA 32W	4	J11-G6	138	N			TB1-A 3	138	N			2
AA 33	4	J11-R6	138	N			J11-S6	138	N			
AA 34R	4	J11-H6	138	N			TB1-A 2	138	N			2
AA 34W	4	J11-H5	138	N			TB1-B 2	138	N			2
AA 35	4	J11-L3	138	N			TB1-D 6	138	N			5
AA 36	4	J11-M5	138	N			E 28	20	N	8		E 1
AA 37	4	J11-M5	138	N			J11-P3	138	N			F 4
AA 38	4	J11-P2	138	N			J11-R3	138	N			C
AA 39	4	J11-P3	138	N			J11-R3	138	N			
AA 40	4	J11-S1	138	N			J11-S2	138	N			
AA 41	4	J11-R1	138	N			J11-R2	138	N			
AA 42R	4	J11-G3	138	N			TB1-B 6	138	N			5CC
AA 42W	4	J11-F3	138	N			TB1-C 6	138	N			5CC
AA 43	4	J11-R3	138	N			TB2-M 1	138	N			5HH
AA 44	4	J11-R1	138	N			TB2-M 2	138	N			7GG
AA 45	4	J11-R2	138	N			TB2-M 3	138	N			6FF
AA 46	4	J11-P6	138	N			TB1-S 3	138	N			2FF
AA 47	4	J12-B6	138	N			J14-H6	138	N			8 H

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058		
SCALE - NONE	REV LTR	+	SHEET	9

MIL 2065-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	2	T I N	FROM TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	2	T I N	TO TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA 49R	4	J12-P3	138	N			J15-P5	138	N			D
AA 49W	4	J12-N3	138	N			J15-P6	138	N			D
AA 50R	4	J12-P5	138	N			J15-N5	138	N			E
AA 50W	4	J12-N5	138	N			J15-N6	138	N			E
AA 51	4	J12-S6	138	N			J20-N5	138	N			7 D
AA 52R	4	J12-K4	138	N			J20-G6	138	N			K
AA 52W	4	J12-H4	138	N			J20-G5	138	N			K
AA 53	4	J12-G4	138	N			J20-L6	138	N			10 F
AA 54	4	J12-S1	138	N			J20-M1	138	N			12 E
AA 55	4	J12-S2	138	N			J20-M2	138	N			11 E
AA 56	4	J12-H5	138	N			J16-M2	138	N			K42
AA 57	4	J12-H6	138	N			J16-M3	138	N			M40
AA 58	4	J12-G6	138	N			J16-N3	138	N			L40
AA 59	4	J12-G5	138	N			J16-R2	138	N			L42
AA 60L	4	J12-P1	138	N			TB1-H 3	138	N			12GG
AA 60R	4	J12-R1	138	N			TB1-H 2	138	N			12GG
AA 60W	4	J12-P2	138	N			TB1-G 2	138	N			12GG
AA 61	4	J12-N1	138	N			J12-P1	138	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058		
SCALE - NONE	REV LTR	+	SHEET	10

MIL 2065-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA 62	4		J12-H4	138	N				J12-N2	138	N				10 D
AA 63R	4		J12-N6	138	N				TB1-G 7	138	N				7
AA 63W	4		J12-P6	138	N				TB1-H 7	138	N				7
AA 64R	4		J12-P5	138	N				TB1-G 4	138	N				9EE
AA 64W	4		J12-N4	138	N				TB1-H 4	138	N				9EE
AA 65	4		J12-N4	138	N				J12-N5	138	N				
AA 66	4		J12-R6	138	N				TB3-L20	138	N				7AA70
AA 67	4		J12-F1	138	N				E 31	20	N		7		13
AA 68	4		J12-F1	138	N				J12-F2	138	N				
AA 69	4		J12-F2	138	N				E 29	20	N		8		11 N13
AA 70	5			300		275	8			100		75	9		13AA74
AA 70A	4		SHLD AA 70	20	N				J12-H1	138	N				13
AA 70R			J12-H1	138	N				J21- 71	10	N		6		
AA 70W			J12-K1	138	N				J21- 70	10	N		6		
AA 71	4		J12-G5	138	N				J12-R5	138	N				9
AA 72	4		J12-K3	138	N				J13-C6	138	N				H15
AA 73L	4		J12-K6	138	N				J14-R2	138	N				F24
AA 73R	4		J12-L6	138	N				J14-S2	138	N				F24

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058

SCALE - NONE | REV LTR + | SHEET 11

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA 73W	4		J12-M6	138	N				J14-S3	138	N				F24
AA 74	4		J12-G3	138	N				J22-244	10	N		6		L65
AA 75	4		J12-A5	138	N				J13-D2	138	N				9 M
AA 76	4		J12-A6	138	N				J13-F2	138	N				8 L
AA 77	4		J12-B5	138	N				E 34	20	N		7		9 N14
AA 78	4		J12-M3	138	N				TB1-H 5	138	N				11DD
AA 80	4		J12-M1	138	N				TB1-H 6	138	N				13CC
AA 81	4		J12-M1	138	N				J21- 36	10	N		6		F74
AA 82	4		J12-L1	138	N				TB3-M22	138	N				13FF
AA 83	4		J12-L2	138	N				TB1-H 8	138	N				12BB
AA 87	4		J12-S1	138	N				J12-S3	138	N				A
AA 88	4		J12-S2	138	N				J12-S4	138	N				A
AA 89	4		J12-R2	138	N				J12-R3	138	N				
AA 90	4		J12-R3	138	N				J12-R4	138	N				
AA 91	4		J12-R4	138	N				E 31	20	N				9 T13
AA 92	5			300		275	9			300		275	8		D
AA 92B	4		E 27	20	N		7		SHLD AA 92	20	N				46
AA 92R			J12-P4	138	N				J17-R3	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058

SCALE - NONE | REV LTR + | SHEET 12

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA 92W			J12-P4	138	N				J17-R3	138	N				
AA 94R	4		J12-N6	138	N				J17-N3	138	N				7 F
AA 94W	4		J12-P6	138	N				J17-P3	138	N				7 F
AA 96	4		J12-R5	138	N				J13-R6	138	N				C
AA 97	4		J12-F3	138	N				J17-M3	138	N				11 H50
AA 98	4		J12-R5	138	N				TB1-S 6	138	N				9CC
AA 99	4		J12-R2	138	N				TB1-N 5	138	N				12
AA100	4		J12-R4	138	N				TB1-N 8	138	N				10BB
AA101	4		J13-N5	138	N				J14-H3	138	N				E24
AA102	4		J13-N6	138	N				J14-K3	138	N				E24
AA103	4		J13-H6	138	N				J14-G1	138	N				K
AA104	4		J13-A6	138	N				J14-A6	138	N				T
AA105R	4		J13-L6	138	N				J14-K1	138	N				G
AA105W	4		J13-K6	138	N				J14-H1	138	N				G
AA106	4		J13-C6	138	N				J14-H5	138	N				15 H
AA107	4		J13-S6	138	N				J14-S6	138	N				A
AA108	4		J13-R6	138	N				J14-R6	138	N				B
AA109R	4		J13-R2	138	N				J14-R1	138	N				A

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058

SCALE - NONE | REV LTR + | SHEET 13

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA109W	4		J13-S2	138	N				J14-S1	138	N				A
AA112R	4		J13-R1	138	N				J14-R2	138	N				A
AA112W	4		J13-S1	138	N				J14-S2	138	N				A
AA113	4		J13-P6	138	N				J14-P6	138	N				D
AA114	4		J13-D1	138	N				J15-L4	138	N				19 N30
AA115	4		J13-F1	138	N				J15-M4	138	N				19 M31
AA116	4		J13-D3	138	N				J15-L3	138	N				18 M31
AA117	4		J13-F3	138	N				J15-M3	138	N				18 L31
AA118R	4		J13-B1	138	N				TB1-M 6	138	N				19CC
AA118W	4		J13-A1	138	N				TB1-M 7	138	N				19CC
AA119	1			300		275	10			300		275	7		H10
AA119B	4		TB1-N 5	138	N				SHLD AA119	20	N				DD10
AA119L			J13-L1	163	N				TB1-L 5	163	N				
AA119R			J13-H1	163	N				TB1-M 5	163	N				
AA119W			J13-K1	163	N				TB1-L 6	163	N				
AA120	4		J13-D2	138	N				TB1-L 2	138	N				18 H10
AA121R	4		J13-B3	138	N				TB1-N 2	138	N				17 F11
AA121W	4		J13-A3	138	N				TB1-M 3	138	N				17 F11

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058

SCALE - NONE | REV LTR + | SHEET 14

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA122	1			300		275	10			300		275	7		E10
AA122B	4		TB1-N 4	138	N				SHLD AA122	20	N				EE10
AA122L			J13-N3	163	N				TB1-M 4	163	N				
AA122R			J13-L3	163	N				TB1-L 4	163	N				
AA122W			J13-M3	163	N				TB1-L 3	163	N				
AA123	4		J13-F2	138	N				TB1-M 2	138	N				18 H10
AA124	1			300		275	10			300		275	7		L10
AA124B	4		TB1-N 8	138	N				SHLD AA124	20	N				BB10
AA124L			J13-G6	163	N				TB1-L 7	163	N				
AA124R			J13-D6	163	N				TB1-M 8	163	N				
AA124W			J13-F6	163	N				TB1-L 8	163	N				
AA125	4		J13-R6	138	N				E 34	20	N				14
AA126R	4		J14-A2	138	N				TB1-T 4	138	N				25 K14
AA126W	4		J14-A1	138	N				TB1-T 5	138	N				25 K14
AA127	1			300		275	10			300		275	7		D15
AA127B	4		TB1-S 4	138	N				SHLD AA127	20	N				15EE
AA127L			J14-P2	163	N				TB1-U 3	163	N				
AA127R			J14-P1	163	N				TB1-U 4	163	N				

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058	
SCALE - NONE	REV LTR	+	SHEET 15

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA127W			J14-P3	163	N				TB1-T 3	163	N				
AA128	4		J14-H6	138	N				TB1-T 7	138	N				H14
AA129R	4		J14-D1	138	N				J21- 67	10	N		6		M74
AA129W	4		E 33	20	N		8		J21- 66	10	N		6		20 M74
AA130R	4		E 33	20	N				J21- 32	10	N		6		20 M74
AA130W	4		J14-D2	138	N				J21- 33	10	N		6		M74
AA131R	4		J14-D3	138	N				J21-240	10	N		6		M74
AA131W	4		E 33	20	N				J21-239	10	N		6		20 M74
AA132R	4		J14-D4	138	N				J21-202	10	N		6		M74
AA132W	4		E 33	20	N				J21-201	10	N		6		20 M74
AA133	1			300		275	10			300		275	7		F15
AA133B	4		TB1-S 5	138	N				SHLD AA133	20	N				DD15
AA133L			J14-M2	163	N				TB1-U 6	163	N				
AA133R			J14-M1	163	N				TB1-T 6	163	N				
AA133W			J14-M3	163	N				TB1-U 5	163	N				
AA134R	4		E 33	20	N				J21-167	10	N		6		20 M74
AA134W	4		J14-D5	138	N				J21-168	10	N		6		M74
AA135R	4		J14-D6	138	N				J21-135	10	N		6		M74

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058	
SCALE - NONE	REV LTR	+	SHEET 16

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA135W	4		E 33	20	N				J21-134	10	N		6		20 M74
AA136	1			300		275	10			300		275	7		20 G15
AA136B	4		TB1-S 8	138	N				SHLD AA136	20	N				BB15
AA136L			J14-M6	163	N				TB1-U 8	163	N				
AA136R			J14-L6	163	N				TB1-T 8	163	N				
AA136W			J14-N6	163	N				TB1-U 7	163	N				
AA137	4		J14-R6	138	N				E 33	20	N				20
AA148	4		J14-F6	138	N				J15-L2	138	N				21 G
AA149	4		J14-G6	138	N				J15-M2	138	N				21 F
AA151	4		J14-H5	138	N				J15-K3	138	N				K
AA152	4		J14-S6	138	N				J15-S2	138	N				B
AA153	4		J14-R6	138	N				J15-R2	138	N				C
AA158	4		J15-L5	138	N				E 35	20	N		7		G27
AA159	4		J15-L5	138	N				E 36	20	N		7		H27
AA160	4		J15-L5	138	N				E 37	20	N		7		K27
AA161L	3		J15-D1	88	N				TB2-C 5	163	N				35DD
AA161R	3		J15-C1	88	N				TB2-A 5	163	N				35DD
AA161W	3		J15-C2	88	N				TB2-B 5	163	N				35DD

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058	
SCALE - NONE	REV LTR	+	SHEET 17

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA162L	3		J15-F2	88	N				TB2-C 6	163	N				35CC
AA162R	3		J15-D2	88	N				TB2-A 6	163	N				35CC
AA162W	3		J15-F1	88	N				TB2-B 6	163	N				35CC
AA163L	3		J15-C3	88	N				TB2-C 4	163	N				33EE
AA163R	3		J15-D3	88	N				TB2-A 4	163	N				33EE
AA163W	3		J15-D4	88	N				TB2-B 4	163	N				33EE
AA164	3		J15-A5	88	N				E 38	20	N		7		T36
AA165	3		J15-A7	88	N				E 40	20	N		7		29 N
AA166	3		J15-A9	88	N				E 42	20	N		7		27
AA167	3		J15-A5	88	N				E 39	20	N		8		32 N
AA168	3		J15-A7	88	N				E 41	20	N		8		T27
AA169	3		J15-A9	88	N				E 43	20	N		8		27
AA170	4		J15-H4	138	N				TB2-C 1	138	N				31HH
AA171L	3		J15-F7	88	N				TB2-C 8	163	N				30BB
AA171R	3		J15-D7	88	N				TB2-B 8	163	N				30BB
AA171W	3		J15-D8	88	N				TB2-A 8	163	N				30BB
AA172L	3		J15-D9	88	N				TB2-C 7	163	N				28BB
AA172R	3		J15-F9	88	N				TB2-B 7	163	N				28BB

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058	
SCALE - NONE	REV LTR	+	SHEET 18

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
AA172W	3		J15-F8	88	N				TB2-A 7	163	N				28BB
AA173	4		J15-S1	138	N				TB2-B 2	138	N				B18
AA174	4		J15-S3	138	N				TB2-B 1	138	N				B18
AA175	4		J15-S3	138	N				J22-227	10	N		6		C65
AA176	5			225		200	9			300		275	8		36AA21
AA176B	4		TB2-D 3	138	N				SHLD AA176	20	N				R35
AA176R			E 59	20	N		7		TB2-F 3	138	N				
AA176W			J15-B3	88	N	175			TB2-D 2	138	N				
AA177	4		J15-R6	138	N				TB2-D 1	138	N				C20
AA179	4		J15-S2	138	N				J20-K1	138	N				33 G
AA180R	3		J15-A4	88	N				J16-B2	88	N				T
AA180W	3		J15-A5	88	N				J16-B1	88	N				T
AA181R	3		J15-A6	88	N				J16-B4	88	N				T
AA181W	3		J15-A7	88	N				J16-B3	88	N				T
AA182R	3		J15-A8	88	N				J16-B6	88	N				T
AA182W	3		J15-A9	88	N				J16-B5	88	N				T
AA183	4		J15-S1	138	N				J16-L2	138	N				C44
AA184	4		J15-H4	138	N				J16-L1	138	N				31 G

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 19

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
AA185R	4		J15-P5	138	N				J16-S3	138	N				30 B
AA185W	4		J15-P6	138	N				J16-S4	138	N				28 B
AA186	4		J15-S6	138	N				J16-S2	138	N				C
AA187	4		J15-K3	138	N				J16-N4	138	N				33 E
AA189	4		J16-S5	138	N				J20-N5	138	N				37 D
AA190	4		J16-S6	138	N				J20-N6	138	N				C75
AA191R	4		J16-N5	138	N				J20-L3	138	N				F
AA191W	4		J16-P5	138	N				J20-K3	138	N				37 F78
AA192R	4		J16-N6	138	N				J20-M4	138	N				E
AA192W	4		J16-P6	138	N				J20-L4	138	N				E77
AA193	4		J16-S2	138	N				J20-K2	138	N				42 G
AA194R	3		J16-D2	88	N				TB2-G 3	163	N				44 K23
AA194W	3		J16-D1	88	N				TB2-H 3	163	N				44 K23
AA195R	3		J16-D2	88	N				TB2-G 2	163	N				44 L23
AA195W	3		J16-C2	88	N				TB2-H 2	163	N				44 L23
AA196R	3		J16-D2	88	N				TB2-G 1	163	N				44 K23
AA196W	3		J16-C1	88	N				TB2-H 1	163	N				44 K23
AA197	1			225		200	7			300		275	10		44 H33

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 20

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
AA197A	4		SHLD AA197	20	N				J16-B1	88	N				44
AA197L			J16-B1	88	N				TB2-T 7	163	N				
AA197R			J16-A1	88	N				TB2-U 6	163	N				
AA197W			J16-A2	88	N				TB2-T 6	163	N				
AA198R	4		J16-P1	138	N				TB2-L 6	138	N				D25
AA198W	4		J16-R1	138	N				TB2-L 5	138	N				D25
AA199R	3		J16-D4	88	N				TB2-G 6	163	N				42 M23
AA199W	3		J16-D3	88	N				TB2-H 6	163	N				42 M23
AA200R	3		J16-D4	88	N				TB2-G 7	163	N				42 G23
AA200W	3		J16-C4	88	N				TB2-H 7	163	N				42 G23
AA201R	3		J16-D4	88	N				TB2-G 8	163	N				42 G23
AA201W	3		J16-C3	88	N				TB2-H 8	163	N				42 G23
AA202	1			225		200	7			300		275	10		42AA37
AA202A	4		SHLD AA202	20	N				J16-B3	88	N				42
AA202L			J16-B3	88	N				TB2-X 6	163	N				
AA202R			J16-A3	88	N				TB2-W 5	163	N				
AA202W			J16-A4	88	N				TB2-X 5	163	N				
AA203R	4		J16-P3	138	N				TB2-K 3	138	N				D25

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 21

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
AA203W	4		J16-R3	138	N				TB2-L 3	138	N				D25
AA204L	3		J16-C9	88	N				TB2-R 8	163	N				37BB
AA204R	3		J16-C8	88	N				TB2-N 7	163	N				37BB
AA204W	3		J16-B8	88	N				TB2-N 8	163	N				37BB
AA205L	3		J16-B9	88	N				TB2-T 8	163	N				37 M33
AA205R	3		J16-A9	88	N				TB2-U 8	163	N				37 M33
AA205W	3		J16-A8	88	N				TB2-U 7	163	N				37 M33
AA206R	3		J16-D6	88	N				TB2-R 1	163	N				40 G28
AA206W	3		J16-D5	88	N				TB2-N 1	163	N				40 G28
AA207R	3		J16-D6	88	N				TB2-R 2	163	N				40 H28
AA207W	3		J16-C6	88	N				TB2-N 2	163	N				40 H28
AA208R	3		J16-C5	88	N				TB2-N 3	163	N				40 F28
AA208W	3		J16-D6	88	N				TB2-R 3	163	N				40 F28
AA209L	3		J16-F8	88	N				TB2-X 4	163	N				39 F37
AA209R	3		J16-D7	88	N				TB2-W 3	163	N				39 F37
AA209W	3		J16-F7	88	N				TB2-W 4	163	N				39 F37
AA210	4		J16-S1	138	N				TB2-N 5	138	N				44 G27
AA211	4		J16-T1	138	N				TB2-R 5	138	N				44 H28

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 22

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM							TO							ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION			CUT WIRE OR SHIELD				TERMINATION			
NUMBER	ITEM NO.	[2]	STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	[2]	ITEM NO.	SPEC. [1]	NO.	STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	[2]	ITEM NO.	SPEC [1]	NO.	
AA212	4		J16-T2	138	N					TB2-K 8	138	N					42 K24
AA213L	3		J16-F9	88	N					TB2-X 2	163	N					37
AA213R	3		J16-D9	88	N					TB2-W 2	163	N					37
AA213W	3		J16-D8	88	N					TB2-X 3	163	N					37
AA214	1			225		200	7				300		275	10			40 L28
AA214A	4		SHLD AA214	20	N					J16-B5	88	N					40
AA214L			J16-B5	88	N					TB2-R 7	163	N					
AA214R			J16-A5	88	N					TB2-N 6	163	N					
AA214W			J16-A6	88	N					TB2-R 6	163	N					
AA215R	4		J16-N2	138	N					TB2-K 5	138	N					E24
AA215W	4		J16-N1	138	N					TB2-K 6	138	N					E24
AA216	3		J16-F2	88	N					TB2-W 1	163	N					44 H36
AA217	3		J16-F4	88	N					TB2-X 1	163	N					42 F37
AA218	3		J16-F6	88	N					TB2-S 1	163	N					40 D30
AA219	3		J16-F5	88	N					TB2-T 1	163	N					40 E31
AA220	4		J16-L1	138	N					J22-228	10	N		6			H65
AA221	4		J16-M1	138	N					TB2-R 4	138	N					F28
AA222K	4		J16-R4	138	N					TB2-H 5	138	N					C23

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015058

SCALE - NONE

REV LTR +

SHEET 23

MIL 2005-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM							TO							ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION			CUT WIRE OR SHIELD				TERMINATION			
NUMBER	ITEM NO.	[2]	STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	[2]	ITEM NO.	SPEC. [1]	NO.	STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	[2]	ITEM NO.	SPEC [1]	NO.	
AA222L	4		J16-S3	138	N					TB2-H 4	138	N					C23
AA222R	4		J16-S4	138	N					TB2-G 4	138	N					C23
AA222W	4		J16-P4	138	N					TB2-G 5	138	N					C23
AA223	4		J16-P2	138	N					TB2-K 4	138	N					D24
AA224R	4		J16-N5	138	N					TB2-L 1	138	N					37HH
AA224W	4		J16-P5	138	N					TB2-K 1	138	N					37HH
AA225R	4		J16-N6	138	N					TB2-T 2	138	N					37GG
AA225W	4		J16-P6	138	N					TB2-U 3	138	N					37GG
AA226	5			300		275	8				100		75	9			40AA74
AA226A	4		SHLD AA226	20	N					E 30	20	N		7			40 H
AA226R			J16-L4	138	N					J21- 34	10	N		6			
AA226W			J16-L3	138	N					J21- 35	10	N		6			
AA227	5			300		275	8				100		75	9			40AA74
AA227A	4		SHLD AA227	20	N					E 30	20	N					40 G
AA227R			J16-M4	138	N					J21- 68	10	N		6			
AA227W			J16-L3	138	N					J21- 69	10	N		6			
AA228	4		J16-R5	138	N					TB3-L20	138	N					40GG
AA229	4		J16-R6	138	N					TB3-L20	138	N					40GG

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015058

SCALE - NONE

REV LTR +

SHEET 24

MIL 2005-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM							TO							ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION			CUT WIRE OR SHIELD				TERMINATION			
NUMBER	ITEM NO.	[2]	STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	[2]	ITEM NO.	SPEC. [1]	NO.	STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	[2]	ITEM NO.	SPEC [1]	NO.	
AA230L	4		J16-G2	138	N					TB2-W 7	138	N					L37
AA230R	4		J16-H1	138	N					TB2-X 7	138	N					L37
AA230W	4		J16-G1	138	N					TB2-W 6	138	N					L37
AA231L	4		J16-G4	138	N					TB2-U 4	138	N					L33
AA231R	4		J16-H3	138	N					TB2-T 5	138	N					L33
AA231W	4		J16-G3	138	N					TB2-U 5	138	N					L33
AA232	1			300		275	7				300		275	7			G13
AA232A	4		SHLD AA232	20	N					E 30	20	N					G45
AA232B	4		E 31	20	N					SHLD AA232	20	N					13
AA232L			J16-L4	163	N					J12-D1	163	N					
AA232R			J16-M4	163	N					J12-D2	163	N					
AA232W			J16-L3	163	N					E 31	20	N					
AA233R	4		J16-N5	138	N					J18-S6	138	N					37 B
AA233W	4		J16-P5	138	N					J18-T6	138	N					37 B
AA234	4		J16-N4	138	N					J17-L6	138	N					F47
AA235	4		J17-P6	138	N					TB3-F 3	138	N					46LL
AA236	4		J17-T4	138	N					J20-M1	138	N					49 D80
AA237	4		J17-T3	138	N					J20-M2	138	N					50 D79

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015058

SCALE - NONE

REV LTR +

SHEET 25

MIL 2005-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM							TO							ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION			CUT WIRE OR SHIELD				TERMINATION			
NUMBER	ITEM NO.	[2]	STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	[2]	ITEM NO.	SPEC. [1]	NO.	STRIP WIRE OR JACKET CIRCUIT POINT	[2]	TIN	[2]	ITEM NO.	SPEC [1]	NO.	
AA238	4		J17-T1	138	N					J20-P3	138	N					54 C
AA239	4		J17-T2	138	N					J20-P4	138	N					52 C
AA240	4		J17-T6	138	N					J18-S1	138	N					B
AA241	4		J17-L6	138	N					J18-R5	138	N					47 C
AA242L	4		J17-K4	138	N					J18-K1	138	N					50 H
AA242R	4		J17-G4	138	N					J18-L1	138	N					50 H
AA242W	4		J17-H4	138	N					E 53	20	N		7			50 H
AA243L	4		J17-K6	138	N					J18-K4	138	N					47 H
AA243R	4		J17-G6	138	N					J18-L4	138	N					47 H
AA243W	4		J17-H6	138	N					E 51	20	N		7			47 H65
AA244	5			225		200	9				100		75	8			U60
AA244B	4		J22- 41	10	N		6			SHLD AA244	20	N					60
AA244R			J17-B4	88	N					J22- 4	10	N		6			
AA244W			J17-A4	88	N					J22- 3	10	N		6			
AA245	5			225		200	9				100		75	8			R65
AA245B	4		J22- 5	10	N		6			SHLD AA245	20	N					65
AA245R			J17-D4	88	N					J22- 43	10	N		6			
AA245W			J17-C4	88	N					J22- 6	10	N		6			

[1] THE STD CONDUCTOR TERMINATION FIGURES ARE PER

[2] DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015058

SCALE - NONE

REV LTR +

SHEET 26

MIL 2005-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET	T I N	2	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET	T I N	2	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA246	5		225		200	9			100		75	8		R65
AA246B	4	J22- 8	10	N		6		SHLD AA246	20	N				65
AA246R		J17-D3	88	N				J22- 46	10	N		6		
AA246W		J17-C3	88	N				J22- 45	10	N		6		
AA247R	3	J17-D2	88	N				TB3-R 4	163	N				R46
AA247W	3	J17-D3	88	N				TB3-R 5	163	N				R46
AA248	4	J17-S2	138	N				TB3-T 3	138	N				C44
AA250R	4	J17-P4	138	N				TB3-C 2	138	N				D42
AA250W	4	J17-R4	138	N				TB3-D 2	138	N				D42
AA252	3	J17-B7	88	N				TB3-H 3	163	N				49HH
AA253	3	J17-B8	88	N				TB3-G 3	163	N				T44
AA254	3	J17-C7	88	N				TB3-G 4	163	N				49KK
AA255	3	J17-D6	88	N				TB3-M 5	163	N				50EE
AA256	3	J17-D7	88	N				TB3-M 4	163	N				49EE
AA257	3	J17-F7	88	N				TB3-C 1	163	N				49NN
AA258K	4	J17-N6	138	N				TB3-G 1	138	N				49KK
AA258L	4	J17-N5	138	N				TB3-G 2	138	N				49KK
AA258R	4	J17-M6	138	N				TB3-H 1	138	N				49KK

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 27

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET	T I N	2	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET	T I N	2	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA258W	4	J17-M5	138	N				TB3-H 2	138	N				49KK
AA259	4	J17-H1	138	N				TB3-K 2	138	N				55GG
AA260	4	J17-H2	138	N				TB3-K 1	138	N				54GG
AA261	4	J17-G1	138	N				TB3-K 5	138	N				55GG
AA262	4	J17-G2	138	N				TB3-H 5	138	N				54HH
AA263	4	J17-L1	138	N				TB3-L 5	138	N				55FF
AA264	4	J17-M1	138	N				TB3-D 1	138	N				55MM
AA265	5		300		275	9			300		275	8		50DD
AA265B	4	TB3-S 3	138	N				SHLD AA265	20	N				DD45
AA265R		J17-N4	138	N				TB3-N 2	138	N				
AA265W		J17-M4	138	N				TB3-N 1	138	N				
AA266	3	J17-C5	88	N				TB3-K 3	163	N				50GG
AA267	3	J17-B6	88	N				TB3-L 4	163	N				50FF
AA268	3	J17-B5	88	N				TB3-L 3	163	N				50FF
AA269	3	J17-D5	88	N				TB3-M 1	163	N				50EE
AA270	5		300		275	9			300		275	8		54DD
AA270B	4	TB3-N 3	138	N				SHLD AA270	20	N				DD
AA270R		J17-P1	138	N				TB3-N 5	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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REV LTR +
SHEET 28

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET	T I N	2	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET	T I N	2	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA270W		J17-N1	138	N				TB3-N 4	138	N				
AA271	3	J17-F6	88	N				TB3-C 4	163	N				50NN
AA272	3	J17-F5	88	N				TB3-D 4	163	N				50 M46
AA273	3	J17-F4	88	N				TB3-C 5	163	N				52NN
AA274	3	J17-F3	88	N				TB3-D 5	163	N				52MM
AA275	4	J17-P5	138	N				TB3-D 3	138	N				49MM
AA276	3	J17-C6	88	N				TB3-H 4	163	N				50HH
AA277	4	J17-M2	138	N				TB3-G 5	138	N				54KK
AA278	4	J17-M3	138	N				TB3-F 1	138	N				52LL
AA280	4	J17-R5	138	N				TB3-M21	138	N				49EE
AA281L	3	J17-A8	88	N				TB3-T 6	163	N				49BB
AA281R	3	J17-A7	88	N				TB3-T 5	163	N				49BB
AA281W	3	J17-A6	88	N				TB3-T 4	163	N				49BB
AA282	4	J17-R6	138	N				TB3-L21	138	N				47FF
AA283	4	J17-R6	138	N				J17-S6	138	N				
AA284L	3	J17-F9	88	N				TB3-S 4	163	N				46
AA284R	3	J17-D9	88	N				TB3-S 5	163	N				46
AA284W	3	J17-C9	88	N				TB3-S 6	163	N				46

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE - NONE
REV LTR +
SHEET 29

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET	T I N	2	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET	T I N	2	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA287	5		225		200	9			100		75	8		T65
AA287B	4	J22- 2	10	N		6		SHLD AA287	20	N				65
AA287R		J17-B3	88	N				J22- 39	10	N		6		
AA287W		J17-A3	88	N				J22- 1	10	N		6		
AA288	5		225		200	9			100		75	8		R65
AA288B	4	J22- 11	10	N		6		SHLD AA288	20	N				65
AA288R		J17-C1	88	N				J22- 10	10	N		6		
AA288W		J17-D1	88	N				J22- 48	10	N		6		
AA289R	3	J17-C2	88	N				TB3-M14	163	N				54EE
AA289W	3	J17-C1	88	N				TB3-M13	163	N				54EE
AA290	3	J17-C8	88	N				TB3-L 1	163	N				47FF
AA291	4	J17-S1	138	N				J17-S2	138	N				
AA292	4	J17-M3	138	N				J22-206	10	N		6		G65
AA293	4	J17-L3	138	N				J22-243	10	N		6		52 F65
AA294	4	J17-T1	138	N				J17-T2	138	N				
AA295	4	J17-S3	138	N				TB3-N 3	138	N				52DD
AA296	4	J17-S1	138	N				TB3-S 3	138	N				55BB
AA297	4	J17-S4	138	N				TB3-R 3	138	N				50CC

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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SCALE - NONE
REV LTR +
SHEET 30

MIL 2068-4-64 WIR

WIRE LIST AA

NUMBER	ITEM NO.	FROM CIRCUIT POINT	FROM STRIP WIRE OR JACKET	FROM TIN	FROM TERMINATION SPEC ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO STRIP WIRE OR JACKET	TO TIN	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
AA298	4	J18-S1	138	N			J19-T1	138	N			63 D73
AA299R	3	J18-F2	88	N			J19-F4	88	N			P
AA299W	3	J18-F1	88	N			J19-D4	88	N			P
AA300R	3	J18-C8	88	N			J19-B2	88	N			R73
AA300W	3	J18-B8	88	N			J19-C1	88	N			57 R
AA301R	3	J18-D9	88	N			J19-B3	88	N			R71
AA301W	3	J18-C9	88	N			J19-A4	88	N			R71
AA302K	4	J18-G5	138	N			J19-H6	138	N			L
AA302L	4	J18-H5	138	N			J19-H5	138	N			L
AA302R	4	J18-H6	138	N			J19-G5	138	N			L
AA302W	4	J18-G6	138	N			J19-G6	138	N			L
AA303	4	J18-P3	138	N			J19-R4	138	N			59 E68
AA304R	4	J18-S6	138	N			J19-N6	138	N			55 E
AA304W	4	J18-T6	138	N			J19-P6	138	N			55 E
AA305	4	J18-S5	138	N			J19-P5	138	N			56 D
AA306	4	J18-R5	138	N			J19-P3	138	N			D
AA307	5		225		200	9		300		275	8	S50
AA307B	4	TB3-R 9	138	N			SHLD AA307	20	N			50DD

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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REV LTR +
SHEET 31

MIL 2088-4-64 WIR

WIRE LIST AA

NUMBER	ITEM NO.	FROM CIRCUIT POINT	FROM STRIP WIRE OR JACKET	FROM TIN	FROM TERMINATION SPEC ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO STRIP WIRE OR JACKET	TO TIN	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
AA307R		J18-B2	88	N			TB3-T 7	138	N			
AA307W		J18-C2	88	N			TB3-T 8	138	N			
AA308	5		225		200	9		300		275	8	T50
AA308B	4	TB3-N 9	138	N			SHLD AA308	20	N			50EE
AA308R		J18-B1	88	N			TB3-S 7	138	N			
AA308W		J18-A1	88	N			TB3-S 8	138	N			
AA309	5		225		200	9		300		275	8	T55
AA309B	4	TB3-T 9	138	N			SHLD AA309	20	N			55BB
AA309R		J18-A3	88	N			TB3-T11	138	N			
AA309W		J18-A2	88	N			TB3-T10	138	N			
AA310	5		225		200	9		300		275	8	S55
AA310B	4	TB3-S 9	138	N			SHLD AA310	20	N			55BB
AA310R		J18-B4	88	N			TB3-S11	138	N			
AA310W		J18-B3	88	N			TB3-S10	138	N			
AA311R	3	J18-D3	88	N			TB3-R 7	163	N			P50
AA311W	3	J18-D2	88	N			TB3-R 8	163	N			P50
AA312R	3	J18-C1	88	N			TB3-R11	163	N			64 M55
AA312W	3	J18-D1	88	N			TB3-R10	163	N			64 M55

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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SCALE - NONE
REV LTR +
SHEET 32

MIL 2088-4-64 WIR

WIRE LIST AA

NUMBER	ITEM NO.	FROM CIRCUIT POINT	FROM STRIP WIRE OR JACKET	FROM TIN	FROM TERMINATION SPEC ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO STRIP WIRE OR JACKET	TO TIN	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
AA313R	3	J18-A5	88	N			TB3-N 7	163	N			T50
AA313W	3	J18-A4	88	N			TB3-N 8	163	N			T50
AA314R	3	J18-C5	88	N			TB3-N11	163	N			S55
AA314W	3	J18-B5	88	N			TB3-N10	163	N			S55
AA315	5		225		200	9		300		275	8	T50
AA315B	4	TB3-M 9	138	N			SHLD AA315	20	N			50FF
AA315R		J18-B9	88	N			TB3-M 7	138	N			
AA315W		J18-A9	88	N			TB3-M 8	138	N			
AA316	5		225		200	9		300		275	8	T50
AA316B	4	TB3-L 9	138	N			SHLD AA316	20	N			50GG
AA316R		J18-A7	88	N			TB3-L 8	138	N			
AA316W		J18-A8	88	N			TB3-L 7	138	N			
AA317R	3	J18-B6	88	N			TB3-L11	163	N			S54
AA317W	3	J18-A6	88	N			TB3-L10	163	N			S54
AA318R	3	J18-F4	88	N			TB3-K12	163	N			N56
AA318W	3	J18-F3	88	N			TB3-L12	163	N			N56
AA319	4	J18-P1	138	N			TB3-D12	138	N			C56
AA320	4	J18-R1	138	N			TB3-C12	138	N			C56

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE - NONE
REV LTR +
SHEET 33

MIL 2088-4-64 WIR

WIRE LIST AA

NUMBER	ITEM NO.	FROM CIRCUIT POINT	FROM STRIP WIRE OR JACKET	FROM TIN	FROM TERMINATION SPEC ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO STRIP WIRE OR JACKET	TO TIN	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
AA321	4	J18-R2	138	N			TB3-C11	138	N			C55
AA322	4	J18-P2	138	N			TB3-D11	138	N			D55
AA323	4	J18-S3	138	N			J18-S4	138	N			
AA324	4	J18-T3	138	N			J18-T4	138	N			
AA325	4	J18-S3	138	N			TB3-K20	138	N			61GG
AA326L	3	J18-F9	88	N			TB3-M11	163	N			56
AA326R	3	J18-F8	88	N			TB3-M12	163	N			56
AA326W	3	J18-D8	88	N			TB3-M10	163	N			56
AA327	4	J18-T3	138	N			TB3-K20	138	N			61GG
AA328L	4	J18-L6	138	N			TB3-R12	138	N			56
AA328R	4	J18-L5	138	N			TB3-S12	138	N			56
AA328W	4	J18-K6	138	N			TB3-T12	138	N			56
AA329	5		225		200	9		300		275	8	73HH
AA329B	4	TB3-H 9	138	N			SHLD AA329	20	N			HH
AA329R		J19-B2	88	N			TB3-H 7	138	N			
AA329W		J19-C2	88	N			TB3-H 8	138	N			
AA330R	3	J18-F2	88	N			TB3-F10	163	N			63LL
AA330W	3	J18-F1	88	N			TB3-G10	163	N			63LL

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A
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SCALE - NONE
REV LTR +
SHEET 34

MIL 2088-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
AA331	5			225		200	9			300		275	8		71HH
AA331B	4		TB3-K 9	138	N				SHLD AA331	20	N				HH
AA331R			J19-B3	88	N				TB3-H11	138	N				
AA331W			J19-B4	88	N				TB3-H10	138	N				
AA332R	4		J18-H1	138	N				TB3-K11	138	N				64GG
AA332W	4		J18-G1	138	N				TB3-K10	138	N				64GG
AA333	4		J18-R3	138	N				TB3-K20	138	N				61GG
AA334R	3		J18-D6	88	N				TB3-G13	163	N				59
AA334W	3		J18-C6	88	N				TB3-G14	163	N				59
AA335R	3		J18-D7	88	N				TB3-G12	163	N				58
AA335W	3		J18-C7	88	N				TB3-G11	163	N				58
AA336R	3		J18-F7	88	N				TB3-F12	163	N				58
AA336W	3		J18-F6	88	N				TB3-F11	163	N				58
AA337	4		J18-R4	138	N				TB3-B11	138	N				59PP
AA338R	3		J18-D4	88	N				TB3-K 7	163	N				59GG
AA338W	3		J18-D5	88	N				TB3-K 8	163	N				59GG
AA339	4		J18-S5	138	N				J18-T5	138	N				
AA344R	4		J18-H3	138	N				TB3-F 7	138	N				61LL

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A

1015058

SCALE - NONE
REV LTR
SHEET 35

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
AA344W	4		J18-G3	138	N				TB3-G 7	138	N				61LL
AA345R	4		J18-H2	138	N				TB3-F 8	138	N				63LL
AA345W	4		J18-G2	138	N				TB3-G 8	138	N				63LL
AA346	4		J18-H2	138	N				E 52	20	N		7		K55
AA347	4		J18-H2	138	N				E 53	20	N				K55
AA348	4		J18-H3	138	N				E 50	20	N		7		K55
AA349	4		J18-H3	138	N				E 51	20	N				K55
AA350	4		J18-M1	138	N				J18-P3	138	N				64 D
AA353	4		J18-M3	138	N				J18-M4	138	N				
AA356	4		J19-P3	138	N				J20-G4	138	N				E77
AA357	4		J19-T1	138	N				J20-M6	138	N				B75
AA358R	4		J19-S2	138	N				TB3-D17	138	N				B64
AA358W	4		J19-S3	138	N				TB3-D16	138	N				B64
AA359R	4		J19-P1	138	N				TB3-D18	138	N				D64
AA359W	4		J19-R1	138	N				TB3-F18	138	N				D64
AA360R	4		J19-T2	138	N				TB3-C17	138	N				71 G64
AA360W	4		J19-T3	138	N				TB3-C16	138	N				71 G64
AA361R	4		J19-P2	138	N				TB3-G17	138	N				D64

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A

1015058

SCALE - NONE
REV LTR
SHEET 36

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
AA361W	4		J19-R2	138	N				TB3-F17	138	N				D64
AA362	4		J19-R5	138	N				J19-S4	138	N				68
AA363	4		J19-R6	138	N				J19-T4	138	N				66 A
AA364	4		J19-S4	138	N				TB3-K22	138	N				68GG
AA365	4		J19-T4	138	N				TB3-L22	138	N				68FF
AA366	4		J19-S5	138	N				J19-S6	138	N				
AA367	4		J19-T6	138	N				TB3-L22	138	N				66FF
AA368	4		J19-T5	138	N				J19-T6	138	N				
AA369	4		J19-S5	138	N				TB3-K22	138	N				66GG
AA370R	3		J19-B1	88	N				TB3-T17	163	N				73BB
AA370W	3		J19-A1	88	N				TB3-T16	163	N				73BB
AA371R	3		J19-A2	88	N				TB3-S16	163	N				73BB
AA371W	3		J19-A3	88	N				TB3-S17	163	N				73BB
AA372R	3		J19-A8	88	N				TB3-R16	163	N				66
AA372W	3		J19-A9	88	N				TB3-R17	163	N				66
AA373R	3		J19-C9	88	N				TB3-N17	163	N				66
AA373W	3		J19-B9	88	N				TB3-N16	163	N				66
AA374R	3		J19-D2	88	N				TB3-M17	163	N				73EE

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE - NONE
REV LTR
SHEET 37

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
AA374W	3		J19-D1	88	N				TB3-M16	163	N				73EE
AA375R	3		J19-B5	88	N				TB3-H17	163	N				70HH
AA375W	3		J19-A5	88	N				TB3-H16	163	N				70HH
AA376	3		J19-C5	88	N				TB3-S18	163	N				70CC
AA377R	3		J19-B8	88	N				TB3-K17	163	N				68GG
AA377W	3		J19-B7	88	N				TB3-K16	163	N				68GG
AA378	3		J19-A7	88	N				TB3-R18	163	N				68
AA379R	3		J19-C8	88	N				TB3-L16	163	N				66
AA379W	3		J19-D8	88	N				TB3-L17	163	N				66
AA380	3		J19-C7	88	N				TB3-T18	163	N				68
AA381R	3		J19-F6	88	N				TB3-G16	163	N				70LL
AA381W	3		J19-F5	88	N				TB3-F16	163	N				70LL
AA382R	4		J19-G1	138	N				TB3-T13	138	N				L59
AA382W	4		J19-H1	138	N				TB3-T14	138	N				L59
AA383R	4		J19-G2	138	N				TB3-S14	138	N				L59
AA383W	4		J19-G3	138	N				TB3-S13	138	N				L59
AA384	3		J19-C3	88	N				TB3-N18	163	N				71DD
AA385	3		J19-C4	88	N				TB3-M18	163	N				71EE

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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CENTER
HOUSTON, TEXAS

SIZE A

1015058

SCALE - NONE
REV LTR
SHEET 38

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA386R	3		J19-F8	88	N			TB3-R14	163	N			61
AA386W	3		J19-F9	88	N			TB3-R13	163	N			N61
AA387	4		J19-M6	138	N			TB3-G18	138	N			66
AA388	4		J19-M5	138	N			TB3-K18	138	N			66
AA389	4		J19-N5	138	N			TB3-L18	138	N			66
AA390	4		J19-R4	138	N			TB3-K21	138	N			C71
AA393	4		J19-P5	138	N			TB3-K21	138	N			D71
AA394	4		J19-P4	138	N			J19-P5	138	N			
AA396R	3		J19-D6	88	N			TB3-N13	163	N			P59
AA396W	3		J19-D5	88	N			TB3-N14	163	N			P59
AA398	4		J19-K1	138	N			J19-K2	138	N			
AA399	4		J19-K2	138	N			J19-K3	138	N			
AA400	4		J19-K3	138	N			J19-K4	138	N			
AA401	4		J19-K4	138	N			J19-K5	138	N			
AA402	4		J19-K5	138	N			J19-K6	138	N			
AA403	4		J20-L5	138	N			J21- 37	10	N	6		F74
AA404	4		J20-L5	138	N			TB3-M22	138	N			75
AA405	4		J20-M5	138	N			TB3-M21	138	N			75EE

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 39

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA406	4		J20-N6	138	N			TB3-H20	138	N			75HH
AA407	4		J20-N4	138	N			TB3-L21	138	N			77 C71
AA408	4		J20-N3	138	N			TB3-K22	138	N			78 C75
AA409R	4		J20-F6	138	N			TB2-H 4	138	N			L24
AA409W	4		J20-F5	138	N			TB2-G 4	138	N			L24
AA410R	4		J20-F6	138	N			TB3-B19	138	N			75PP
AA410W	4		J20-F5	138	N			TB3-B18	138	N			75PP
AA411	4		J20-G5	138	N			J20-H5	138	N			
AA412R	4		J20-H6	138	N			TB3-C 3	138	N			75NN
AA412W	4		J20-H5	138	N			TB3-D 2	138	N			75NN
AA413	4		J20-G6	138	N			J20-H6	138	N			
AA414	4		J20-A4	138	N			TB3-K19	138	N			77 E68
AA415	4		J20-B4	138	N			TB3-H19	138	N			77 E68
AA416	4		J20-A1	138	N			TB3-G19	138	N			80 M68
AA417	4		J20-A2	138	N			TB3-F19	138	N			79 F68
AA418	4		J20-B1	138	N			TB3-D19	138	N			80 M68
AA419R	4		J20-B3	138	N			TB3-N21	138	N			78 F71
AA419W	4		J20-A3	138	N			TB3-N20	138	N			78 F71

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 40

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA420	4		J20-K5	138	N			TB3-G21	138	N			76KK
AA421	4		J20-K6	138	N			TB3-G22	138	N			75KK
AA422	4		J20-H4	138	N			TB3-R20	138	N			77 E71
AA423	4		J20-H4	138	N			J21-234	10	N	6		H74
AA424	4		J20-K4	138	N			TB3-N19	138	N			77 G70
AA425	4		J20-C6	138	N			TB3-L19	138	N			75FF
AA426	4		J20-D6	138	N			TB3-M19	138	N			75EE
AA427R	4		J20-B5	138	N			TB3-T19	138	N			76BB
AA427W	4		J20-C5	138	N			TB3-S19	138	N			76BB
AA428	4		J20-N1	138	N			TB3-C20	138	N			D70
AA429	4		J20-N1	138	N			J20-P1	138	N			
AA431	4		J20-R1	138	N			J20-S1	138	N			
AA432	4		J20-S1	138	N			TB3-C21	138	N			79 K73
AA433	4		J20-N2	138	N			TB3-D20	138	N			D70
AA434	4		J20-N2	138	N			J20-P2	138	N			
AA436	4		J20-R2	138	N			J20-S2	138	N			
AA437	4		J20-S2	138	N			TB3-D21	138	N			78 G71
AA438	4		J20-L1	138	N			J20-M1	138	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 41

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA439	4		J20-L1	138	N			J20-L2	138	N			
AA440	4		J20-L2	138	N			J20-M2	138	N			
AA441	4		J20-R3	138	N			TB3-D22	138	N			77 L75
AA442	4		J20-R3	138	N			J20-S3	138	N			
AA443	4		J20-R4	138	N			TB3-C22	138	N			76 F75
AA444	4		J20-R4	138	N			J20-S4	138	N			
AA445	4		J20-P3	138	N			TB3-N22	138	N			77 E75
AA446	4		J20-P5	138	N			TB3-H21	138	N			75HH
AA447	4		J20-P5	138	N			J20-R5	138	N			
AA448	4		J20-R5	138	N			J20-S5	138	N			
AA449	4		J20-S5	138	N			TB3-H21	138	N			75HH
AA450	4		J20-P6	138	N			TB3-H22	138	N			75
AA451	4		J20-P6	138	N			J20-R6	138	N			
AA452	4		J20-R6	138	N			J20-S6	138	N			
AA453	4		J20-S6	138	N			TB3-H22	138	N			75
AA454	4		J20-K1	138	N			TB3-T20	138	N			80 F70
AA455	4		J20-K1	138	N			TB3-T21	138	N			80 E71
AA456	4		J20-K2	138	N			TB3-S21	138	N			79 D71

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 42

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
AA457	4		J20-M6	138	N				TB3-M20	138	N				75EE
AA458	4		J20-G1	138	N				J20-H1	138	N				
AA459	4		J20-H1	138	N				J20-H2	138	N				
AA460	4		J20-G1	138	N				TB2-M 7	138	N				K26
AA461	4		J20-H2	138	N				TB2-M 1	138	N				H26
AA462	4		J20-G4	138	N				TB3-F22	138	N				77 E75
AA463R	4		J20-D4	138	N				TB3-S20	138	N				75CC
AA463W	4		J20-D5	138	N				TB3-R19	138	N				75CC
AA464R	4		J20-A6	138	N				TB3-L13	138	N				75GG
AA464W	4		J20-B6	138	N				TB3-K13	138	N				75GG
AA465R	4		J20-H3	138	N				TB3-L14	138	N				78 F61
AA465W	4		J20-G3	138	N				TB3-K14	138	N				78 F61
AA466	4		TB3-H12	138	N				TB3-R 3	138	N				58DD
AA467	5			100		75	8			300		275	9		74AA27
AA467A	4		SHLD AA467	20	N				E 46	20	N		8		
AA467R			J21-125	10	N		6		E 35	20	N				
AA467W			J21-126	10	N		6		J15-M5	138	N	250			G
AA468	5			100		75	8			300		275	9		74AA27

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR
SHEET 43

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
AA468A	4		SHLD AA468	20	N				E 46	20	N				74
AA468R			J21- 92	10	N		6		E 35	20	N				
AA468W			J21- 93	10	N		6		J15-M6	138	N	250			
AA469	5			100		75	8			300		275	9		74AA27
AA469A	4		SHLD AA469	20	N				E 46	20	N				74
AA469R			J21-194	10	N		6		E 36	20	N				
AA469W			J21-195	10	N		6		J15-L6	138	N	250			
AA470	5			100		75	8			300		275	9		74AA27
AA470A	4		SHLD AA470	20	N				E 46	20	N				74
AA470R			J21-160	10	N		6		E 36	20	N				
AA470W			J21-161	10	N		6		J15-K6	138	N	250			
AA471	5			100		75	8			300		275	9		74AA27
AA471A	4		SHLD AA471	20	N				E 46	20	N				74
AA471R			J21- 94	10	N		6		E 37	20	N				
AA471W			J21- 95	10	N		6		J15-K4	138	N	250			K
AA472	5			100		75	8			300		275	9		74AA27
AA472A	4		SHLD AA472	20	N				E 46	20	N				74
AA472R			J21-127	10	N		6		E 37	20	N				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR
SHEET 44

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
AA472W			J21-128	10	N		6		J15-K5	138	N	250			K
AA473	4		J21- 23	10	N		6		E 45	20	N		8		74
AA474	4		E 70	20	N		8		E 47	20	N		8		74
AA475	5			100		75	8			225		200	9		74AA36
AA475A	4		SHLD AA475	20	N				E 47	20	N				74
AA475R			J21- 25	10	N		6		E 38	20	N				
AA475W			J21- 24	10	N		6		J15-B4	88	N	175			S
AA476	5			100		75	8			225		200	9		74AA36
AA476A	4		SHLD AA476	20	N				E 47	20	N				74
AA476R			J21- 26	10	N		6		J15-C4	88	N	175			S
AA476W			J21- 27	10	N		6		E 38	20	N				
AA477	5			100		75	8			225		200	9		74AA36
AA477A	4		SHLD AA477	20	N				E 47	20	N				74
AA477R			J21-233	10	N		6		E 40	20	N				M
AA477W			J21-232	10	N		6		J15-B6	88	N	175			31 M
AA478	5			100		75	8			225		200	9		74AA36
AA478A	4		SHLD AA478	20	N				E 47	20	N				74
AA478R			J21-192	10	N		6		J15-C6	88	N	175			M31

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR
SHEET 45

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
AA478W			J21-193	10	N		6		E 40	20	N				M
AA479	5			100		75	8			225		200	9		74AA27
AA479A	4		SHLD AA479	20	N				E 47	20	N				74
AA479R			J21- 57	10	N		6		E 42	20	N				
AA479W			J21- 56	10	N		6		J15-B8	88	N	175			S
AA480	5			100		75	8			225		200	9		74AA27
AA480A	4		SHLD AA480	20	N				E 47	20	N				74
AA480R			J21- 58	10	N		6		J15-C8	88	N	175			R
AA480W			J21- 59	10	N		6		E 42	20	N				
AA481	5			100		75	9			225		200	8		74AA36
AA481B	4		E 39	20	N				SHLD AA481	20	N				N
AA481R			J21-238	10	N		6		E 39	20	N				N
AA481W			J21-237	10	N		6		J15-B5	88	N	175			N32
AA482	5			100		75	9			225		200	8		74AA36
AA482B	4		E 39	20	N				SHLD AA482	20	N				N
AA482R			J21-199	10	N		6		J15-C5	88	N	175			N32
AA482W			J21-200	10	N		6		E 39	20	N				N
AA483	5			100		75	9			225		200	8		74AA27

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR
SHEET 46

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA483B	4		E 41	20	N				SHLD AA483	20	N				27
AA483R			J21-166	10	N		6		E 41	20	N				
AA483W			J21-165	10	N		6		J15-B7	88	N	175			S
AA484	5			100		75	9			225		200	8		74AA27
AA484B	4		E 41	20	N				SHLD AA484	20	N				27
AA484R			J21- 97	10	N		6		J15-C7	88	N	175			S
AA484W			J21- 98	10	N		6		E 41	20	N				
AA485	5			100		75	9			225		200	8		74AA27
AA485B	4		E 43	20	N				SHLD AA485	20	N				27
AA485R			J21- 65	10	N		6		E 43	20	N				
AA485W			J21- 64	10	N		6		J15-B9	88	N	175			
AA486	5			100		75	9			225		200	8		74AA27
AA486B	4		E 43	20	N				SHLD AA486	20	N				27
AA486R			J21- 30	10	N		6		J15-C9	88	N	175			
AA486W			J21- 31	10	N		6		E 43	20	N				
AA487	5			100		75	8			300		275	8		74AA21
AA487A	4		SHLD AA487	20	N				E 57	20	N		8		74
AA487B	4		TB2-D 3	138	N				SHLD AA487	20	N				21

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 47

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA487R			J21-122	10	N		6		TB2-F 3	138	N				
AA487W			J21-121	10	N		6		TB2-D 2	138	N				
AA488	5			100		75	8			225		200	9		74AA36
AA488A	4		SHLD AA488	20	N				E 57	20	N				74
AA488R			J21-189	10	N		6		E 59	20	N				
AA488W			J21-188	10	N		6		J15-A3	88	N				T
AA489	5			100		75	8			225		200	9		74AA36
AA489A	4		SHLD AA489	20	N				E 57	20	N				74
AA489R			J21-153	10	N		6		E 60	20	N		7		
AA489W			J21-152	10	N		6		J16-A7	88	N	175			U
AA490	5			100		75	9			300		275	8		74AA13
AA490B	4		E 29	20	N				SHLD AA490	20	N				13
AA490R			J21-170	10	N		6		E 29	20	N				
AA490W			J21-169	10	N		6		J12-G1	138	N	250			
AA491	5			100		75	9			300		275	8		74AA13
AA491B	4		E 29	20	N				SHLD AA491	20	N				13
AA491R			J21-136	10	N		6		J12-G2	138	N	250			L
AA491W			J21-137	10	N		6		E 29	20	N				

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 48

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA492	5			100		75	9			300		275	8		74 R61
AA492B	4		E 71	20	N				SHLD AA492	20	N				55 K
AA492R			J21-164	10	N		6		E 52	20	N				K55
AA492W			J21-163	10	N		6		J18-K2	138	N	250			
AA493	5			100		75	9			300		275	8		74 S59
AA493B	4		E 71	20	N				SHLD AA493	20	N				55 K
AA493R			J21-130	10	N		6		J18-L2	138	N	250			H
AA493W			J21-131	10	N		6		E 52	20	N				K55
AA494	5			100		75	8			300		275	9		74 P63
AA494A	4		SHLD AA494	20	N				E 45	20	N				74
AA494R			J21-157	10	N		6		E 53	20	N				H55
AA494W			J21-156	10	N		6		J18-L1	138	N	250			
AA495	5			100		75	8			300		275	9		74 N64
AA495A	4		SHLD AA495	20	N				E 45	20	N				74
AA495R			J21-124	10	N		6		E 53	20	N				H55
AA495W			J21-123	10	N		6		J18-K1	138	N	250			
AA496	5			100		75	9			300		275	8		74 T58
AA496B	4		E 71	20	N				SHLD AA496	20	N				H55

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 49

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA496R			J21-236	10	N		6		E 50	20	N				H55
AA496W			J21-235	10	N		6		J18-K3	138	N	250			
AA497	5			100		75	9			300		275	8		74 U58
AA497B	4		E 71	20	N		8		SHLD AA497	20	N				H55
AA497R			J21-197	10	N		6		J18-L3	138	N	250			
AA497W			J21-198	10	N		6		E 50	20	N				H55
AA498	5			100		75	8			300		275	9		74 U55
AA498A	4		SHLD AA498	20	N				E 45	20	N				74
AA498R			J21-231	10	N		6		E 51	20	N				
AA498W			J21-230	10	N		6		J18-L4	138	N	250			H
AA499	5			100		75	8			300		275	9		74 U55
AA499A	4		SHLD AA499	20	N				E 45	20	N				74
AA499R			J21-191	10	N		6		E 51	20	N				
AA499W			J21-190	10	N		6		J18-K4	138	N	250			K
AA500	5			100		75	9			300		275	8		74AA46
AA500B	4		E 27	20	N				SHLD AA500	20	N				46
AA500R			J21-103	10	N		6		J17-R3	138	N	250			C
AA500W			J21-104	10	N		6		E 27	20	N				

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 50

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR INDIVIDUAL LENGTH		FROM				TO				
NUMBER	ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	ROUTING
AA501R	4	J21-133	10N		6	E 34	20N			74 E14
AA501W	4	J21-132	10N		6	J13-N5	138N			74 E
AA502R	4	J21-100	10N		6	E 34	20N			74 E14
AA502W	4	J21- 99	10N		6	J13-N6	138N			74 E
AA503	5		100	75	9		300	275	8	74AA 1
AA503B	4	E 28	20N			SHLD AA503	20N			1
AA503R		J21-203	10N		6	J11-L6	138N	250		
AA503W		J21-204	10N		6	E 28	20N			
AA504	5		100	75	9		300	275	8	74AA 1
AA504B	4	E 28	20N			SHLD AA504	20N			1
AA504R		J21-241	10N		6	J11-M6	138N	250		
AA504W		J21-242	10N		6	E 28	20N			
AA505	5		100	75	9		300	275	8	65AA35
AA505B	4	TB2-V 8	138N			SHLD AA505	20N			35
AA505R		J22-107	10N		6	TB2-U 7	138N			
AA505W		J22-139	10N		6	TB2-U 8	138N			
AA506	5		100	75	9		300	275	8	65AA27
AA506B	4	TB2-M 8	138N			SHLD AA506	20N			27

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058
SCALE - NONE	REV LTR +	SHEET 51

MIL 2088-4-64 WIR

WIRE LIST AA

CONDUCTOR INDIVIDUAL LENGTH		FROM				TO				
NUMBER	ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	ROUTING
AA506R		J22-142	10N		6	TB2-N 7	138N			
AA506W		J22-141	10N		6	TB2-N 8	138N			
AA507	5		100	75	9		300	275	8	65AA58
AA507B	4	TB3-H12	138N			SHLD AA507	20N			58
AA507R		J22-111	10N		6	TB3-C14	138N			
AA507W		J22-144	10N		6	TB3-C13	138N			
AA508	5		100	75	9		300	275	8	65AA71
AA508B	4	TB3-H14	138N			SHLD AA508	20N			71HH
AA508R		J22-114	10N		6	TB3-N21	138N			
AA508W		J22-113	10N		6	TB3-N20	138N			
AA509	5		100	75	9		300	275	8	65AA61
AA509B	4	TB3-H13	138N			SHLD AA509	20N			61HH
AA509R		J22-148	10N		6	TB3-D14	138N			
AA509W		J22-116	10N		6	TB3-D13	138N			MM
AA510	5		100	75	9		300	275	8	65AA61
AA510B	4	TB3-H14	138N			SHLD AA510	20N			61
AA510R		J22-151	10N		6	TB3-F14	138N			
AA510W		J22-150	10N		6	TB3-F13	138N			MM

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058
SCALE - NONE	REV LTR +	SHEET 52

MIL 2088-4-64 WIR

WIRE LIST AA

CONDUCTOR INDIVIDUAL LENGTH		FROM				TO				
NUMBER	ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	ROUTING
AA511	4	TB1-S 2	138N			TB1-T 2	138N			
AA512	4	TB1-R 2	138N			TB1-S 2	138N			
AA513	4	TB3-H12	138N			TB3-H13	138N			
AA514	4	TB3-B15	138N			TB3-C15	138N			
AA515	4	TB3-M20	138N			TB3-C18	138N			FF68
AA517R	4	TB3-B19	138N			J22-120	10N		6	66AA65
AA517W	4	TB3-B18	138N			J22-153	10N		6	66AA65
AA518	4	TB3-F 4	138N			J22-190	10N		6	45AA65
AA521	4	TB3-L19	138N			J21- 62	10N		6	70AA74
AA522	4	TB3-N19	138N			J21- 63	10N		6	70AA74
AA525	4	TB3-M19	138N			J21- 96	10N		6	70AA74
AA526	4	TB3-D19	138N			J21-129	10N		6	70AA74
AA529	4	TB3-F19	138N			J21-162	10N		6	70AA74
AA530	4	TB3-G19	138N			J21-196	10N		6	70AA74
AA533	4	TB3-L15	138N			TB3-M15	138N			
AA534	4	TB3-M15	138N			TB3-N15	138N			
AA535	4	TB3-N15	138N			TB3-R15	138N			
AA536	4	TB3-S15	138N			TB3-T15	138N			

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058
SCALE - NONE	REV LTR +	SHEET 53

MIL 2088-4-64 WIR

WIRE LIST AA

CONDUCTOR INDIVIDUAL LENGTH		FROM				TO				
NUMBER	ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	ROUTING
AA538	4	TB3-G 9	138N			TB3-B15	138N			54RR
AA539	4	TB2-M 8	138N			TB2-M 7	138N			
AA540	4	TB2-V 2	138N			TB2-V 3	138N			
AA541	4	TB3-G 9	138N			TB3-H 9	138N			
AA542	4	TB3-H 9	138N			TB3-K 9	138N			
AA543	4	TB3-K 9	138N			TB3-L 9	138N			
AA544	4	TB3-L 9	138N			TB3-M 9	138N			
AA545	4	TB3-M 9	138N			TB3-N 9	138N			
AA546	4	TB3-N 9	138N			TB3-R 9	138N			
AA547	4	TB3-R 9	138N			TB3-S 9	138N			
AA548	4	TB3-S 9	138N			TB3-T 9	138N			
AA549	4	TB3-T 9	138N			TB3-T15	138N			BB
AA550	4	TB3-G15	138N			TB3-H15	138N			
AA551	4	TB3-H15	138N			TB3-K15	138N			
AA552	4	TB3-K15	138N			TB3-L15	138N			
AA553	4	TB3-R15	138N			TB3-S15	138N			
AA554	4	TB3-H13	138N			TB3-H14	138N			
AA555	4	TB2-K 4	138N			TB2-L 4	138N			

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058
SCALE - NONE	REV LTR +	SHEET 54

MIL 2088-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1	NO.	CUT WIRE OR SHIELD				TERMINATION SPEC 1	NO.	
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		
AA556	4		TB2-L 2	138	N				TB2-L 1	138	N				
AA557	4		TB2-K 2	138	N				TB2-K 1	138	N				
AA558	4		TB3-M20	138	N				TB3-C19	138	N				70
AA559	4		TB3-T20	138	N				TB3-T21	138	N				
AA560	4		TB3-S21	138	N				TB3-T21	138	N				
AA562	4		J21- 53	10	N		6		E 57	20	N				74
AA563	4		TB3-L21	138	N				TB3-D15	138	N				73MM
AA566	4		TB3-K21	138	N				TB3-C15	138	N				73NN
AA568	4		E 45	20	N				E 46	20	N				74
AA569	5			300		275	8			225		200	9		GG39
AA569A	4		SHLD AA569	20	N				TB2-D 3	138	N				GG
AA569R			TB2-F 3	138	N				E 60	20	N				U
AA569W			TB2-D 2	138	N				J16-B7	88	N	175			
AA571	5			300		275	8			225		200	9		T45
AA571A	4		SHLD AA571	20	N				TB2-S 3	138	N				45
AA571R			TB2-R 3	138	N				J17-B2	88	N				
AA571W			TB2-N 3	138	N				J17-A2	88	N				
AA572	4		TB1-D 7	138	N				TB1-D 8	138	N				

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 55

MIL 2065-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1	NO.	CUT WIRE OR SHIELD				TERMINATION SPEC 1	NO.	
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		
AA577	4		TB2-D 7	138	N				TB2-D 8	138	N				
AA578	4		TB2-S 2	138	N				TB2-R 2	138	N				
AA579	4		TB2-F 7	138	N				TB2-G 7	138	N				
AA580	4		TB2-F 2	138	N				TB2-G 2	138	N				
AA581	4		TB2-M 1	138	N				TB2-M 2	138	N				
AA582	4		TB2-M 2	138	N				TB2-M 3	138	N				
AA583	4		TB2-M 3	138	N				TB2-M 4	138	N				
AA584	4		TB2-M 4	138	N				TB2-M 5	138	N				
AA585	4		TB2-M 5	138	N				TB2-M 6	138	N				
AA586	4		TB2-M 6	138	N				TB2-M 7	138	N				
AA587	4		TB1-D 8	138	N				TB1-N 8	138	N				BB
AA588	4		TB1-N 4	138	N				TB1-S 8	138	N				12BB
AA589	4		TB1-N 4	138	N				TB2-M 5	138	N				EE
AA590	4		TB1-D 7	138	N				TB2-V 2	138	N				5HH
AA591	4		TB1-S 3	138	N				TB2-M 4	138	N				FF
AA592	4		TB2-M 6	138	N				TB3-T 3	138	N				26AA44
AA596	4		TB2-V 3	138	N				TB2-V 4	138	N				
AA597	4		TB2-V 4	138	N				TB2-V 5	138	N				

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 56

MIL 2065-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1	NO.	CUT WIRE OR SHIELD				TERMINATION SPEC 1	NO.	
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		
AA598	4		TB2-V 5	138	N				TB2-V 6	138	N				
AA599	4		TB2-V 6	138	N				TB2-V 8	138	N				36
AA600	4		TB1-S 8	138	N				TB1-S 7	138	N				
AA601	4		TB1-S 7	138	N				TB1-S 6	138	N				
AA602	4		TB1-S 7	138	N				TB2-D 8	138	N				BB
AA603	4		TB2-D 7	138	N				TB2-D 6	138	N				
AA604	4		TB2-D 6	138	N				TB2-D 5	138	N				
AA605	4		TB2-D 5	138	N				TB2-D 4	138	N				
AA607	4		TB3-F22	138	N				TB3-F21	138	N				
AA608	4		TB2-D 4	138	N				E 27	20	N				21 E46
AA609	4		TB3-C15	138	N				TB3-D15	138	N				
AA610	4		J11-N3	138	N				J12-P4	138	N				E 9
AA611	4		TB1-R 1	138	N				TB1-S 1	138	N				
AA612	4		TB1-S 1	138	N				TB1-T 1	138	N				
AA613	4		TB3-B20	138	N				TB3-B21	138	N				
AA614	4		TB3-B21	138	N				TB3-F21	138	N				71
AA615	4		TB2-R 3	138	N				TB2-S 3	138	N				
AA616	4		J18-R4	138	N				J19-M4	138	N				58 F

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 57

MIL 2065-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1	NO.	CUT WIRE OR SHIELD				TERMINATION SPEC 1	NO.	
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	ITEM NO.		
AA617	4		J11-L4	138	N				E 66	20	N		12		G 7
AA618	4		J11-L4	138	N				E 67	20	N		12		G13
AA619	4		TB3-B20	138	N				E 68	20	N		12		70AA65
AA620	4		TB3-B20	138	N				E 69	20	N		12		70AA74
AA621	4		TB2-T 2	138	N				TB2-T 3	138	N				
AA622	4		J20-R1	138	N				TB3-C20	138	N				B71
AA623	4		J20-P1	138	N				TB3-C21	138	N				C73
AA624	4		J20-R2	138	N				TB3-D20	138	N				B71
AA625	4		J20-P2	138	N				TB3-D21	138	N				C73
AA626	4		J20-S3	138	N				TB3-D22	138	N				A75
AA627	4		J20-S4	138	N				TB3-C22	138	N				A75
AA628	4		J20-R5	138	N				TB3-H21	138	N				75HH
AA629	4		J20-R6	138	N				TB3-H22	138	N				75
AA630	4		TB3-D15	138	N				TB3-G15	138	N				63
AA631	4		TB3-R 3	138	N				TB3-S 3	138	N				
AA632	4		TB1-S 3	138	N				TB1-S 4	138	N				
AA633	4		TB1-S 4	138	N				TB1-S 5	138	N				
AA634	4		TB1-S 5	138	N				TB1-S 6	138	N				

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 58

MIL 2065-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA635	4		TB3-T 3	138	N				TB2-V 8	138	N				44AA36
AA636	4		J17-F2	88	N				TB3-D 6	138	N				54MM
AA637	4		J15-R2	138	N				TB2-F 4	138	N				33 F21
AA638	4		J18-T5	138	N				E 71	20	N				A55
AA639	5			300		275	9			100		75	8		1AA74
AA639B	4		E 70	20	N				SHLD AA639	20	N				74
AA639R			J12-F6	138	N				J21- 29	10	N		6		
AA639W			J12-D6	138	N				J21- 28	10	N		6		
AA640	5			300		275	9			100		75	8		2AA74
AA640B	4		E 70	20	N				SHLD AA640	20	N				74
AA640R			J12-F5	138	N				J21-159	10	N		6		
AA640W			J12-D5	138	N				J21-158	10	N		6		
AA641	5			300		275	9			100		75	8		3AA74
AA641B	4		E 70	20	N				SHLD AA641	20	N				74
AA641R			J12-F4	138	N				J21- 61	10	N		6		
AA641W			J12-D4	138	N				J21- 60	10	N		6		
AA642	4		J21- 22	10	N		6		E 70	20	N				74
AA643	4		J12-N6	138	N				J12-R6	138	N				8

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 59

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA644	4		J12-P5	138	N				J12-R3	138	N				C
AA645	4		TB2-U 1	138	N				TB2-U 3	138	N				33
AA646	4		J18-T1	138	N				TB3-A10	138	N				63RR
AA647	4		J22-172	10	N		6		TB3-F 2	138	N				65AA42
AA648	4		J18-M1	138	N				J18-M3	138	N				G
AA649	4		J18-M4	138	N				J18-M6	138	N				G
AA651R	4		J18-M2	138	N				J19-B6	88	N				F66
AA651W	4		J18-N2	138	N				J19-B8	88	N				F66
AA652R	4		J18-M5	138	N				J19-D9	88	N				F66
AA652W	4		J18-N5	138	N				J19-C8	88	N				F66
AA653R	4		J14-R1	138	N				J17-L4	138	N				B49
AA653W	4		J14-S1	138	N				J17-L5	138	N				B49
AA654L	3		J15-B1	88	N				TB1-C 7	163	N				35BB
AA654R	3		J15-B2	88	N				TB1-B 7	163	N				35BB
AA654W	3		J15-A1	88	N				TB1-C 8	163	N				35BB
AA655R	4		E 33	20	N				J21-101	10	N		6		20 H74
AA655W	4		J14-K4	138	N				J21-102	10	N		6		H74
AA656	4		J12-C1	138	N				TB3-F 6	138	N				N47

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 60

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA657	4		J13-C1	138	N				TB3-G 6	138	N				N47
AA658	4		J14-B1	138	N				TB3-K 6	138	N				R47
AA659	4		J14-B2	138	N				TB3-L 6	138	N				R47
AA660	4		J21-138	10	N		6		TB3-L 6	138	N				49AA74
AA661	4		J12-C2	138	N				J13-C2	138	N				R
AA662	4		J13-C2	138	N				J14-B2	138	N				R
AA663	4		J18-M1	138	N				J19-K6	138	N				G65
AA664K	4		J16-M2	138	N				TB3-B 6	138	N				42PP
AA664L	4		J16-M3	138	N				TB3-C 6	138	N				42PP
AA664R	4		J16-N3	138	N				TB3-C 7	138	N				42PP
AA664W	4		J16-R2	138	N				TB3-C 8	138	N				42PP
AA665	3		J17-A9	88	N				J17-B9	88	N				
AA666K	4		J18-N6	138	N				TB3-D 9	138	N				59NN
AA666L	4		J18-N4	138	N				TB3-B 7	138	N				59NN
AA666R	4		J18-N3	138	N				TB3-D 8	138	N				59NN
AA666W	4		J18-N1	138	N				TB3-D 7	138	N				59NN
AA667K	4		J19-L1	138	N				TB3-C 9	138	N				70PP
AA667L	4		J19-K6	138	N				TB3-C10	138	N				70PP

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 61

MIL 2085-4-64 WIR

GXD

WIRE LIST AA

A 1015058

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA667R	4	150	J19-L3	138	N				TB3-B 9	138	N				70PP
AA667W	4	150	J19-L2	138	N				TB3-B10	138	N				70PP
AA668	4	90	J12-M5	138	N				J13-S3	138	N				9 B
AA669	4	90	J13-S3	138	N				J14-S5	138	N				B
AA670	4	90	J13-S4	138	N				J14-S4	138	N				B
AA671	4	140	J14-S4	138	N				J17-T5	138	N				A
AA672L	4	140	J17-L5	138	N				TB3-A 3	138	N				49RR
AA672R	4	140	J17-T5	138	N				TB3-A 4	138	N				49RR
AA672W	4	140	J17-L4	138	N				TB3-A 5	138	N				49RR
AA673	4	60	TB3-M21	138	N				TB3-M22	138	N				
AA674	4	170	J21- 38	10	N		6		TB3-F 3	138	N				74AA44
AA675	4		J22-37	10	N		6		TB2-F6	138	N				
AA676	4		J13-S6	138	N				TB3-T20	138	N				
AA677	4		TB1-N5	138	N				TB1-R2	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE - NONE | REV LTR A | SHEET 62

MIL 2085 - 4-65 WIR

APPLICATION		REVISIONS TDRR 14008			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		A	REVISED PER TDRR 16376	15-FEB 65	JN MEM
		B	REPLACED WITH CHANGE BY REV C PER TDRR 18051	9 APR 65	J J J MEM

Ⓑ REPLACED WITH CHANGE BY REV C

SEE SHEET 2 FOR REVISION RECORD

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN E.E. Lea DATE 64
CHECKED 10-26-64
APPROVAL
APPROVAL 10/27/64

NASA APPROVAL
MIT APPROVAL

CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRE LIST AA
AGE HARNESS AND PSA END
CONNECTOR ASSY

CODE IDENT NO.
SIZE A
1015058
REV B

SCALE —
SHEET 1 OF 62

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	B	37	B												
2	B	38	B												
3	B	39	B												
4	B	40	B												
5	B	41	B												
6	B	42	B												
7	B	43	B												
8	B	44	B												
9	B	45	B												
10	B	46	B												
11	B	47	B												
12	B	48	B												
13	B	49	B												
14	B	50	B												
15	B	51	B												
16	B	52	B												
17	B	53	B												
18	B	54	B												
19	B	55	B												
20	B	56	B												
21	B	57	B												
22	B	58	B												
23	B	59	B												
24	B	60	B												
25	B	61	B												
26	B	62	B												
27	B														
28	B														
29	B														
30	B														
31	B														
32	B														
33	B														
34	B														
35	B														
36	B														

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION B

NASA DRAWING NO.
1015058
SHEET 2 OF 62

APPLICATION	
NEXT ASSY	USED ON

18051

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES REV. B WITH CHANGE PER TDRR	19 FEB 65	

REPLACES REV (B) WITH CHANGE

SEE SHEET 2 FOR REVISION RECORD

REV
SHEET
REV STATUS OF SHEETS
REV
SHEET

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R. F. OTKA DATE 24 OCT 64
CHECKED A.E. ALDERSON
APPROVAL
APPROVAL

NASA APPROVAL
MIT APPROVAL
CONTRACT

WIRE LIST AA
AGE HARNESS AND PSA END
CONNECTOR ASSY

SIZE A CODE IDENT NO. 1015058 REV C

SCALE — SHEET 1 OF 91

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	C	37	C	73	C														
2	C	38	C	74	C														
3	C	39	C	75	C														
4	C	40	C	76	C														
5	C	41	C	77	C														
6	C	42	C	78	C														
7	C	43	C	79	C														
8	C	44	C	80	C														
9	C	45	C	81	C														
10	C	46	C	82	C														
11	C	47	C	83	C														
12	C	48	C	84	C														
13	C	49	C	85	C														
14	C	50	C	86	C														
15	C	51	C	87	C														
16	C	52	C	88	C														
17	C	53	C	89	C														
18	C	54	C	90	C														
19	C	55	C	91	C														
20	C	56	C																
21	C	57	C																
22	C	58	C																
23	C	59	C																
24	C	60	C																
25	C	61	C																
26	C	62	C																
27	C	63	C																
28	C	64	C																
29	C	65	C																
30	C	66	C																
31	C	67	C																
32	C	68	C																
33	C	69	C																
34	C	70	C																
35	C	71	C																
36	C	72	C																

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION C

NASA DRAWING NO. 1015058
SHEET 2 OF 91

NOTE NUMBER	GENERAL NOTES DESCRIPTION
1	NOT APPLICABLE
2	DELETED
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	DELETED
5	LEADS WITH THE SAME NUMBER ARE TWISTED TOGETHER
6	THE SUFFIX LETTER OF A LEAD IDENTIFICATION NUMBER INDICATES LEAD SHIELDING, COLOR, OR TWISTING
7	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING
8	THE SUFFIX LETTER OF A LEAD ~~CONDUCTOR~~ IDENTIFICATION NUMBER INDICATES LEAD ~~CONDUCTOR~~ SHIELDING, COLOR, OR TWISTING A - FROM END SHIELD B - TO END SHIELD K - BLACK L - BLUE R - RED W - WHITE
9	PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS — SIZE A — 1015058

SCALE-NONE — REV LTR C — SHEET 3 OF 91

MIL 2064 4-63

NOTE NUMBER — GENERAL NOTES DESCRIPTION

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS — SIZE A — 1015058

SCALE-NONE — REV LTR C — SHEET 4 OF 91

MIL 2064 4-63

SEE NOTE LIST OF MATERIALS

NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	1015058-001	WIRE PER 1010707-2 RED JKT 29 AWG WHT, RED, BLUE, 13 FT 1.0 INCHES TOTAL LENGTH.
	3	1	1015058-003	WIRE PER 1010807-4 28 AWG WHITE 180 FT. 6.0 INCHES TOTAL LENGTH.
	4	1	1015058-004	WIRE PER 1010807-5 24 AWG WHITE 615 FT. 6.0 INCHES TOTAL LENGTH.
	5	1	1015058-005	WIRE PER 1010807-3 WHT JKT 24 AWG WHT, RED 103 FT. 8.0 INCHES TOTAL LENGTH.
7	6	488	1010738- 6	CONTACT, SOCKET
7	7	27	1010763- 1	SLEEVE, SOLDER
7	8	78	1010763- 2	SLEEVE, SOLDER
7	9	64	1010490-110	INSULATION-SLEEVING, ELEC
7	10	9	1010490-112	INSULATION-SLEEVING, ELEC
	12	4	MS25036-44	TERMINAL LUG

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE-NONE REV LTR C SHEET 5 OF 91

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 1	4		J11-S4 J15-S6					1.38 1.38	NO NO			3D27
AA 2	4		J11-S1 J20-L1					1.38 1.38	NO NO			6F
AA 3	4		J11-S2 J20-L2					1.38 1.38	NO NO			5E79
AA 4	4		J11-S5 J20-K2					1.38 1.38	NO NO			2G
AA 5R	4		J11-N4 J12-P3					1.38 1.38	NO NO			D
AA 5W	4		J11-N5 J12-N3					1.38 1.38	NO NO			D
AA 6	4		J11-S4 J12-S5					1.38 1.38	NO NO			B
AA 7	4		J11-L4 J12-K3					1.38 1.38	NO NO			G
AA 9R	4		J11-L2 J12-K2					1.38 1.38	NO NO			G12
AA 9W	4		J11-L1 J12-H2					1.38 1.38	NO NO			G12
AA 10K	4		J11-B5 J12-B2					1.38 1.38	NO NO			T
AA 10L	4		J11-A6 J12-B1					1.38 1.38	NO NO			T

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE-NONE REV LTR C SHEET 6 OF 91

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 10R	4		J11-A5 J12-A2					1.38 1.38	NO NO			T
AA 10W	4		J11-B6 J12-A1					1.38 1.38	NO NO			T
AA 11R	3		J11-B3 J17-B1					1.63 .88	NO NO			R55
AA 11W	3		J11-C3 J17-A1					1.63 .88	NO NO			R55
AA 12L	4		J11-N2 J17-R2					1.38 1.38	NO NO			D
AA 12R	4		J11-N1 J17-P2					1.38 1.38	NO NO			D
AA 12W	4		J11-P1 J17-N2					1.38 1.38	NO NO			D
AA 13	4		J11-S3 J17-R1					1.38 1.38	NO NO			4C
AA 14	4		J11-N6 J13-P6					1.38 1.38	NO NO			E14
AA 15R	4		J11-B1 TB2-G-2					1.38 1.38	NO NO			T18 24
AA 15W	4		J11-A1 TB2-H-2					1.38 1.38	NO NO			T18 24
AA 16R	4		J11-C1 TB1-C-5					1.38 1.38	NO NO			7 3

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE-NONE REV LTR C SHEET 7 OF 91

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 16W	4		J11-B1 TB1-B-5					1.38 1.38	NO NO			7 3
AA 17	4		J11-R4 J11-R5					1.38 1.38	NO NO			
AA 18	4		J11-P4 J11-R4					1.38 1.38	NO NO			
AA 19R	4		J11-B2 TB2-G-7					1.38 1.38	NO NO			6K16 23
AA 19W	4		J11-A2 TB2-H-7					1.38 1.38	NO NO			6K16 23
AA 20R	4		J11-C2 TB1-A-5					1.38 1.38	NO NO			6 2
AA 20W	4		J11-B2 TB1-A-6					1.38 1.38	NO NO			6 2
AA 21R	4		J11-B3 TB2-R-2					1.38 1.38	NO NO			5G21 30
AA 21W	4		J11-A3 TB2-N-2					1.38 1.38	NO NO			5G21 30
AA 22	4		J11-P4 J11-P5					1.38 1.38	NO NO			
AA 23K	4		J11-G1 TB1-C-3					1.38 1.38	NO NO			K7 3
AA 23L	4		J11-H1 TB1-B-4					1.38 1.38	NO NO			K7 3

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE-NONE REV LTR C SHEET 8 OF 91

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 23R	4		J11-F1 TB1-C-4					1.38 1.38	NO NO			K7 3
AA 23W	4		J11-G2 TB1-B-3					1.38 1.38	NO NO			K7 3
AA 24	4		J11-G2 J11-P6					1.38 1.38	NO NO			6D
AA 25	4		J11-S4 J11-S5					1.38 1.38	NO NO			
AA 26	4		J11-P6 J11-R6					1.38 1.38	NO NO			
AA 27	4		J11-N6 TB1-D-5					1.38 1.38	NO NO			E7 5
AA 28K	4		J11-L2 TB1-C-2					1.38 1.38	NO NO			F7 4
AA 28L	4		J11-M2 TB1-C-2					1.38 1.38	NO NO			F7 4
AA 28R	4		J11-M1 TB1-D-2					1.38 1.38	NO NO			F7 4
AA 28W	4		J11-L1 TB1-D-2					1.38 1.38	NO NO			F7 4
AA 29K	4		J11-B5 TB1-B-7					1.38 1.38	NO NO			T7 2
AA 29L	4		J11-A6 TB1-A-8					1.38 1.38	NO NO			T7 2

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE-NONE | REV LTR C | SHEET 9 OF 91

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 29R	4		J11-A5 TB1-A-7					1.38 1.38	NO NO			T7 2
AA 29W	4		J11-B6 TB1-B-8					1.38 1.38	NO NO			T7 2
AA 30R	4		J11-D6 TB1-D-3					1.38 1.38	NO NO			F7 5
AA 30W	4		J11-D5 TB1-D-4					1.38 1.38	NO NO			F7 5
AA 31	4		J11-R5 J11-R6					1.38 1.38	NO NO			
AA 32R	4		J11-F6 TB1-A-4					1.38 1.38	NO NO			H7 2
AA 32W	4		J11-G6 TB1-A-3					1.38 1.38	NO NO			H7 2
AA 33	4		J11-R6 J11-S6					1.38 1.38	NO NO			
AA 34R	4		J11-H6 TB1-A-2					1.38 1.38	NO NO			K6 2
AA 34W	4		J11-H5 TB1-B-2					1.38 1.38	NO NO			K6 2
AA 35	4		J11-L3 TB1-D-6					1.38 1.38	NO NO			E7 5
AA 36	4		J11-M5 E28					1.38 .20	NO NO		8	E1

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE-NONE | REV LTR C | SHEET 10 OF 91

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 37	4		J11-M5 J11-P3					1.38 1.38	NO NO			F4
AA 38	4		J11-P2 J11-R3					1.38 1.38	NO NO			C
AA 39	4		J11-P3 J11-R3					1.38 1.38	NO NO			
AA 40	4		J11-S1 J11-S2					1.38 1.38	NO NO			
AA 41	4		J11-R1 J11-R2					1.38 1.38	NO NO			
AA 42R	4		J11-G3 TB1-B-6					1.38 1.38	NO NO			L7 3
AA 42W	4		J11-F3 TB1-C-6					1.38 1.38	NO NO			L7 3
AA 43	4		J11-R3 TB2-M-1					1.38 1.38	NO NO			R20 27
AA 44	4		J11-R1 TB2-M-2					1.38 1.38	NO NO			R20 27
AA 45	4		J11-R2 TB2-M-3					1.38 1.38	NO NO			R20 27
AA 46	4		J11-P6 TB1-S-3					1.38 1.38	NO NO			D13 14
AA 47	4		J12-B6 J14-H6					1.38 1.38	NO NO			8H

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE-NONE | REV LTR C | SHEET 11 OF 91

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 49R	4		J12-P3 J15-P5					1.38 1.38	NO NO			D
AA 49W	4		J12-N3 J15-P6					1.38 1.38	NO NO			D
AA 50R	4		J12-P5 J15-N5					1.38 1.38	NO NO			E
AA 50W	4		J12-N5 J15-N6					1.38 1.38	NO NO			E
AA 51	4		J12-S6 J20-N5					1.38 1.38	NO NO			7D
AA 52R	4		J12-K4 J20-G6					1.38 1.38	NO NO			K
AA 52W	4		J12-H4 J20-G5					1.38 1.38	NO NO			K
AA 53	4		J12-G4 J20-L6					1.38 1.38	NO NO			10F
AA 54	4		J12-S1 J20-M1					1.38 1.38	NO NO			12E
AA 55	4		J12-S2 J20-M2					1.38 1.38	NO NO			11E
AA 56	4		J12-H5 J16-M2					1.38 1.38	NO NO			K42
AA 57	4		J12-H6 J16-M3					1.38 1.38	NO NO			K40

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE-NONE | REV LTR C | SHEET 12 OF 91

WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 58	4		J12-G6 J16-N3					1.38 1.38	NO NO			L40
AA 59	4		J12-G5 J16-R2					1.38 1.38	NO NO			L42
AA 60L	4		J12-P1 TB1-H-3					1.38 1.38	NO NO			B10 7
AA 60R	4		J12-R1 TB1-H-2					1.38 1.38	NO NO			B10 7
AA 60W	4		J12-P2 TB1-G-2					1.38 1.38	NO NO			B10 7
AA 61	4		J12-N1 J12-P1					1.38 1.38	NO NO			
AA 62	4		J12-H4 J12-N2					1.38 1.38	NO NO			10D
AA 63R	4		J12-N6 TB1-G-7					1.38 1.38	NO NO			8 7
AA 63W	4		J12-P6 TB1-H-7					1.38 1.38	NO NO			8 7
AA 64R	4		J12-P5 TB1-G-4					1.38 1.38	NO NO			9 7
AA 64W	4		J12-N4 TB1-H-4					1.38 1.38	NO NO			9 7
AA 65	4		J12-N4 J12-N5					1.38 1.38	NO NO			

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 66	4		J12-R6 TB3-L20					1.38 1.38	NO NO			8L59 71
AA 67	4		J12-F1 E31					1.38 .20	NO NO		7	13
AA 68	4		J12-F1 J12-F2					1.38 1.38	NO NO			
AA 69	4		J12-F2 E29					1.38 .20	NO NO		8	11N13
AA 70	5				3.00 1.00	2.75 .75					8 9	13G74
AA 70A	4		SHLD AA70 J12-H1					.20 1.38	NO NO			
AA 70R			J12-H1 J21-71					1.38 .10	NO NO		6	
AA 70W			J12-K1 J21-70					1.38 .10	NO NO		6	
AA 71	4		J12-G5 J12-R5					1.38 1.38	NO NO			9
AA 72	4		J12-K3 J13-C6					1.38 1.38	NO NO			H15
AA 73L	4		J12-K6 J14-R2					1.38 1.38	NO NO			F24
AA 73R	4		J12-L6 J14-S2					1.38 1.38	NO NO			F24

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 73W	4		J12-M6 J14-S3					1.38 1.38	NO NO			F24
AA 74	4		J12-G3 J22-244					1.38 .10	NO NO		6	L65
AA 75	4		J12-A5 J13-D2					1.38 1.38	NO NO			9M
AA 76	4		J12-A6 J13-F2					1.38 1.38	NO NO			8L
AA 77	4		J12-B5 E34					1.38 .20	NO NO		7	9N14
AA 78	4		J12-M3 TB1-H-5					1.38 1.38	NO NO			11 8
AA 80	4		J12-M1 TB1-H-6					1.38 1.38	NO NO			13 8
AA 81	4		J12-M1 J21-36					1.38 .10	NO NO		6	F74
AA 82	4		J12-L1 TB3-M22					1.38 1.38	NO NO			13M61 75
AA 83	4		J12-L2 TB1-H-8					1.38 1.38	NO NO			12 8
AA 87	4		J12-S1 J12-S3					1.38 1.38	NO NO			A
AA 88	4		J12-S2 J12-S4					1.38 1.38	NO NO			A

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 89	4		J12-R2 J12-R3					1.38 1.38	NO NO			
AA 90	4		J12-R3 J12-R4					1.38 1.38	NO NO			
AA 91	4		J12-R4 E31					1.38 .20	NO NO			9T13
AA 92	5				3.00 3.00	2.75 2.75					9 8	D
AA 92B	4		E27 SHLD AA92					.20 .20	NO NO		7	46
AA 92R			J12-P4 J17-R3					1.38 1.38	NO NO			
AA 92W			J12-P4 J17-R3					1.38 1.38	NO NO			
AA 94R	4		J12-N6 J17-N3					1.38 1.38	NO NO			7E
AA 94W	4		J12-P6 J17-P3					1.38 1.38	NO NO			7E
AA 96	4		J12-R5 J13-R6					1.38 1.38	NO NO			C
AA 97	4		J12-F3 J17-M3					1.38 1.38	NO NO			11F
AA 98	4		J12-R5 TB1-S-6					1.38 1.38	NO NO			9 14

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 99	4		J12-R2					1.38	NO			12 12
			TB1-N-5					1.38	NO			
AA 100	4		J12-R4					1.38	NO			10 12
			TB1-N-8					1.38	NO			
AA 101	4		J13-N5					1.38	NO			E24
			J14-H3					1.38	NO			
AA 102	4		J13-N6					1.38	NO			E24
			J14-K3					1.38	NO			
AA 103	4		J13-H6					1.38	NO			K
			J14-G1					1.38	NO			
AA 104	4		J13-A6					1.38	NO			T
			J14-A6					1.38	NO			
AA 105R	4		J13-L6					1.38	NO			G
			J14-K1					1.38	NO			
AA 105W	4		J13-K6					1.38	NO			G
			J14-H1					1.38	NO			
AA 106	4		J13-C6					1.38	NO			15H
			J14-H5					1.38	NO			
AA 107	4		J13-S6					1.38	NO			A
			J14-S6					1.38	NO			
AA 108	4		J13-R6					1.38	NO			B
			J14-R6					1.38	NO			
AA 109R	4		J13-R2					1.38	NO			A
			J14-R1					1.38	NO			

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 109W	4		J13-S2					1.38	NO			A
			J14-S1					1.38	NO			
AA 112R	4		J13-R1					1.38	NO			A
			J14-R2					1.38	NO			
AA 112W	4		J13-S1					1.38	NO			A
			J14-S2					1.38	NO			
AA 113	4		J13-P6					1.38	NO			D
			J14-P6					1.38	NO			
AA 114	4		J13-D1					1.38	NO			G20
			J15-L4					1.38	NO			
AA 115	4		J13-F1					1.38	NO			19M31
			J15-M4					1.38	NO			
AA 116	4		J13-D3					1.38	NO			18M31
			J15-L3					1.38	NO			
AA 117	4		J13-F3					1.38	NO			18L31
			J15-M3					1.38	NO			
AA 118R	4		J13-B1					1.38	NO			19D13 11
			TB1-M-6					1.38	NO			
AA 118W	4		J13-A1					1.38	NO			19D13 11
			TB1-M-7					1.38	NO			
AA 119	1				3.00	2.75					10	H11 10
					3.00	2.75					7	
AA 119B	4		TB1-N-5					1.38	NO			
			SHLD AA119					.20	NO			

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACOESSORY ITEMS	REMARKS ROUTING
AA 119L			J13-L1					1.63	NO			
			TB1-L-5					1.63	NO			
AA 119R			J13-H1					1.63	NO			
			TB1-M-5					1.63	NO			
AA 119W			J13-K1					1.63	NO			
			TB1-L-6					1.63	NO			
AA 120	4		J13-D2					1.38	NO			M11 10
			TB1-L-2					1.38	NO			
AA 121R	4		J13-B3					1.38	NO			18G13 11
			TB1-N-2					1.38	NO			
AA 121W	4		J13-A3					1.38	NO			18G13 11
			TB1-M-3					1.38	NO			
AA 122	1				3.00	2.75					10	G14 10
					3.00	2.75					7	
AA 122B	4		TB1-N-4					1.38	NO			
			SHLD AA122					.20	NO			
AA 122L			J13-N3					1.63	NO			
			TB1-M-4					1.63	NO			
AA 122R			J13-L3					1.63	NO			
			TB1-L-4					1.63	NO			
AA 122W			J13-M3					1.63	NO			
			TB1-L-3					1.63	NO			
AA 123	4		J13-F2					1.38	NO			L12 11
			TB1-M-2					1.38	NO			

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 124	1				3.00	2.75					10	L10 9
					3.00	2.75					7	
AA 124B	4		TB1-N-8					1.38	NO			
			SHLD AA124					.20	NO			
AA 124L			J13-G6					1.63	NO			
			TB1-L-7					1.63	NO			
AA 124R			J13-D6					1.63	NO			
			TB1-M-8					1.63	NO			
AA 124W			J13-F6					1.63	NO			
			TB1-L-8					1.63	NO			
AA 125	4		J13-R6					1.38	NO			14
			E34					.20	NO			
AA 126R	4		J14-A2					1.38	NO			25N13 15
			TB1-T-4					1.38	NO			
AA 126W	4		J14-A1					1.38	NO			25N13 15
			TB1-T-5					1.38	NO			
AA 127	1				3.00	2.75					10	C13 14
					3.00	2.75					7	
AA 127B	4		TB1-S-4					1.38	NO			
			SHLD AA127					.20	NO			
AA 127L			J14-P2					1.63	NO			
			TB1-U-3					1.63	NO			
AA 127R			J14-P1					1.63	NO			
			TB1-U-4					1.63	NO			

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 127W			J14-P3					1.63	NO			
			TB1-T-3					1.63	NO			
AA 128	4		J14-H6					1.38	NO			H13 15
			TB1-T-7					1.38	NO			
AA 129R	4		J14-D1					1.38	NO			M74
			J21-67					.10	NO		6	
AA 129W	4		E33					.20	NO		8	20M74
			J21-66					.10	NO		6	
AA 130R	4		E33					.20	NO			20M74
			J21-32					.10	NO		6	
AA 130W	4		J14-D2					1.38	NO			M74
			J21-33					.10	NO		6	
AA 131R	4		J14-D3					1.38	NO			M74
			J21-240					.10	NO		6	
AA 131W	4		E33					.20	NO			20M74
			J21-239					.10	NO		6	
AA 132R	4		J14-D4					1.38	NO			M74
			J21-202					.10	NO		6	
AA 132W	4		E33					.20	NO			20M74
			J21-201					.10	NO		6	
AA 133	1				3.00	2.75					10	E13 10
					3.00	2.75					7	
AA 133B	4		TB1-S-5					1.38	NO			
			SHLD AA133					.20	NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 133L			J14-M2					1.63	NO			
			TB1-U-6					1.63	NO			
AA 133R			J14-M1					1.63	NO			
			TB1-T-6					1.63	NO			
AA 133W			J14-M3					1.63	NO			
			TB1-U-5					1.63	NO			
AA 134R	4		E33					.20	NO			20M74
			J21-167					.10	NO		6	
AA 134W	4		J14-D5					1.38	NO			M74
			J21-168					.10	NO		6	
AA 135R	4		J14-D6					1.38	NO			M74
			J21-135					.10	NO		6	
AA 135W	4		E33					.20	NO			20M74
			J21-134					.10	NO		6	
AA 136	1				3.00	2.75					10	F13 15
					3.00	2.75					7	
AA 136B	4		TB1-S-8					1.38	NO			
			SHLD AA136					.20	NO			
AA 136L			J14-M6					1.63	NO			
			TB1-U-8					1.63	NO			
AA 136R			J14-L6					1.63	NO			
			TB1-T-8					1.63	NO			
AA 136W			J14-N6					1.63	NO			
			TB1-U-7					1.63	NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 137	4		J14-R6					1.38	NO			20
			E33					.20	NO			
AA 148	4		J14-F6					1.38	NO			21G
			J15-L2					1.38	NO			
AA 149	4		J14-G6					1.38	NO			21F
			J15-M2					1.38	NO			
AA 151	4		J14-H5					1.38	NO			K
			J15-K3					1.38	NO			
AA 152	4		J14-S6					1.38	NO			B
			J15-S2					1.38	NO			
AA 153	4		J14-R6					1.38	NO			C
			J15-R2					1.38	NO			
AA 158	4		J15-L5					1.38	NO			G27
			E35					.20	NO		7	
AA 159	4		J15-L5					1.38	NO			H27
			E36					.20	NO		7	
AA 160	4		J15-L5					1.38	NO			K27
			E37					.20	NO		7	
AA 161L	3		J15-D1					.88	NO			36F16 19
			TB2-C-5					1.63	NO			
AA 161R	3		J15-C1					.88	NO			36F16 19
			TB2-A-5					1.63	NO			
AA 161W	3		J15-C2					.88	NO			36F16 19
			TB2-B-5					1.63	NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 162L	3		J15-F2					.88	NO			44G16 20
			TB2-C-6					1.63	NO			
AA 162R	3		J15-D2					.88	NO			44G16 20
			TB2-A-6					1.63	NO			
AA 162W	3		J15-F1					.88	NO			44G16 20
			TB2-B-6					1.63	NO			
AA 163L	3		J15-C3					.88	NO			H16 19
			TB2-C-4					1.63	NO			
AA 163R	3		J15-D3					.88	NO			H16 19
			TB2-A-4					1.63	NO			
AA 163W	3		J15-D4					.88	NO			H16 19
			TB2-B-4					1.63	NO			
AA 164	3		J15-A5					.88	NO			T36
			E38					.20	NO		7	
AA 165	3		J15-A7					.88	NO			29N
			E40					.20	NO		7	
AA 166	3		J15-A9					.88	NO			27
			E42					.20	NO		7	
AA 167	3		J15-A5					.88	NO			32N
			E39					.20	NO		8	
AA 168	3		J15-A7					.88	NO			T27
			E41					.20	NO		8	
AA 169	3		J15-A9					.88	NO			27
			E43					.20	NO		8	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 170	4		J15-H4 TB2-C-1					1.38 1.38	NO NO			K16 20
AA 171L	3		J15-F7 TB2-C-8					.88 1.63	NO NO			39F16 20
AA 171R	3		J15-D7 TB2-B-8					.88 1.63	NO NO			39F16 20
AA 171W	3		J15-D8 TB2-A-8					.88 1.63	NO NO			39F16 20
AA 172L	3		J15-D9 TB2-C-7					.88 1.63	NO NO			28K16 20
AA 172R	3		J15-F9 TB2-B-7					.88 1.63	NO NO			28K16 20
AA 172W	3		J15-F8 TB2-A-7					.88 1.63	NO NO			28K16 20
AA 173	4		J15-S1 TB2-B-2					1.38 1.38	NO NO			B15 19
AA 174	4		J15-S3 TB2-B-1					1.38 1.38	NO NO			B15 19
AA 175	4		J15-S3 J22-227					1.38 .10	NO NO		6	C65
AA 176	5				2.25 3.00	2.00 2.75					9 8	34P18 21
AA 176B	4		TB2-D-3 SHLD AA176					1.38 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 176R			E59 TB2-F-3					.20 1.38	NO NO		7	
AA 176W			J15-B3 TB2-D-2				1.75	.88 1.38	NO NO			
AA 177	4		J15-R6 TB2-D-1					1.38 1.38	NO NO			C16 21
AA 179	4		J15-S2 J20-K1					1.38 1.38	NO NO			33G
AA 180R	3		J15-A4 J16-B2					.88 .88	NO NO			T
AA 180W	3		J15-A5 J16-B1					.88 .88	NO NO			T
AA 181R	3		J15-A6 J16-B4					.88 .88	NO NO			T
AA 181W	3		J15-A7 J16-B3					.88 .88	NO NO			T
AA 182R	3		J15-A8 J16-B6					.88 .88	NO NO			T
AA 182W	3		J15-A9 J16-B5					.88 .88	NO NO			T
AA 183	4		J15-S1 J16-L2					1.38 1.38	NO NO			C44
AA 184	4		J15-H4 J16-L1					1.38 1.38	NO NO			31F

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 185R	4		J15-P5 J16-S3					1.38 1.38	NO NO			30B
AA 185W	4		J15-P6 J16-S4					1.38 1.38	NO NO			30B
AA 186	4		J15-S6 J16-S2					1.38 1.38	NO NO			B
AA 187	4		J15-K3 J16-N4					1.38 1.38	NO NO			33D
AA 189	4		J16-S5 J20-N5					1.38 1.38	NO NO			37D
AA 190	4		J16-S6 J20-N6					1.38 1.38	NO NO			C75
AA 191R	4		J16-N5 J20-L3					1.38 1.38	NO NO			F
AA 191W	4		J16-P5 J20-K3					1.38 1.38	NO NO			37F78
AA 192R	4		J16-N6 J20-M4					1.38 1.38	NO NO			E
AA 192W	4		J16-P6 J20-L4					1.38 1.38	NO NO			E77
AA 193	4		J16-S2 J20-K2					1.38 1.38	NO NO			42G
AA 194R	3		J16-D2 TB2-G-3					.88 1.63	NO NO			44K19 24

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 194W	3		J16-D1 TB2-H-3					.88 1.63	NO NO			44K19 24
AA 195R	3		J16-D2 TB2-G-2					.88 1.63	NO NO			44L18 24
AA 195W	3		J16-C2 TB2-H-2					.88 1.63	NO NO			44L18 24
AA 196R	3		J16-D2 TB2-G-1					.88 1.63	NO NO			44K18 24
AA 196W	3		J16-C1 TB2-H-1					.88 1.63	NO NO			44K18 24
AA 197	1				2.25 3.00	2.00 2.75					7 10	45M26 33
AA 197A	4		SHLD AA197 J16-B1					.20 .88	NO NO			
AA 197L			J16-B1 TB2-T-7					.88 1.63	NO NO			
AA 197R			J16-A1 TB2-U-6					.88 1.63	NO NO			
AA 197W			J16-A2 TB2-T-6					.88 1.63	NO NO			
AA 198R	4		J16-P1 TB2-L-6					1.38 1.38	NO NO			D20 26
AA 198W	4		J16-R1 TB2-L-5					1.38 1.38	NO NO			D20 26

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 199R	3		J16-D4 TB2-G-6					.88 1.63	NO NO			42M20 23
AA 199W	3		J16-D3 TB2-H-6					.88 1.63	NO NO			42M20 23
AA 200R	3		J16-D4 TB2-G-7					.88 1.63	NO NO			42G20 23
AA 200W	3		J16-C4 TB2-H-7					.88 1.63	NO NO			42G20 23
AA 201R	3		J16-D4 TB2-G-8					.88 1.63	NO NO			42G20 23
AA 201W	3		J16-C3 TB2-H-8					.88 1.63	NO NO			42G20 23
AA 202	1				2.25 3.00	2.00 2.75					7 10	42L26 37
AA 202A	4		SHLD AA202 J16-B3					.20 .88	NO NO			
AA 202L			J16-B3 TB2-X-6					.88 1.63	NO NO			
AA 202R			J16-A3 TB2-W-5					.88 1.63	NO NO			
AA 202W			J16-A4 TB2-X-5					.88 1.63	NO NO			
AA 203R	4		J16-P3 TB2-K-3					1.38 1.38	NO NO			D20 25

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 203W	4		J16-R3 TB2-L-3					1.38 1.38	NO NO			D20 25
AA 204L	3		J16-C9 TB2-R-8					.88 1.63	NO NO			K22 28
AA 204R	3		J16-C8 TB2-N-7					.88 1.63	NO NO			K22 28
AA 204W	3		J16-B8 TB2-N-8					.88 1.63	NO NO			K22 28
AA 205L	3		J16-B9 TB2-T-8					.88 1.63	NO NO			37L23 33
AA 205R	3		J16-A9 TB2-U-8					.88 1.63	NO NO			37L23 33
AA 205W	3		J16-A8 TB2-U-7					.88 1.63	NO NO			37L23 33
AA 206R	3		J16-D6 TB2-R-1					.88 1.63	NO NO			40G20 30
AA 206W	3		J16-D5 TB2-N-1					.88 1.63	NO NO			40G20 30
AA 207R	3		J16-D6 TB2-R-2					.88 1.63	NO NO			40H20 30
AA 207W	3		J16-C6 TB2-N-2					.88 1.63	NO NO			40H20 30
AA 208R	3		J16-C5 TB2-N-3					.88 1.63	NO NO			41F21 28

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 208W	3		J16-D6 TB2-R-3					.88 1.63	NO NO			41F21 28
AA 209L	3		J16-F8 TB2-X-4					.88 1.63	NO NO			38G26 37
AA 209R	3		J16-D7 TB2-W-3					.88 1.63	NO NO			38G26 37
AA 209W	3		J16-F7 TB2-W-4					.88 1.63	NO NO			38G26 37
AA 210	4		J16-S1 TB2-N-5					1.38 1.38	NO NO			44G20 28
AA 211	4		J16-T1 TB2-R-5					1.38 1.38	NO NO			44H21 30
AA 212	4		J16-T2 TB2-K-8					1.38 1.38	NO NO			42K20 25
AA 213L	3		J16-F9 TB2-X-2					.88 1.63	NO NO			37F26 38
AA 213R	3		J16-D9 TB2-W-2					.88 1.63	NO NO			37F26 38
AA 213W	3		J16-D8 TB2-X-3					.88 1.63	NO NO			37F26 38
AA 214	1				2.25 3.00	2.00 2.75					7 10	K26 28
AA 214A	4		SHLD AA214 J16-B5					.20 .88	NO NO			

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 214L			J16-B5 TB2-R-7					.88 1.63	NO NO			
AA 214R			J16-A5 TB2-N-6					.88 1.63	NO NO			
AA 214W			J16-A6 TB2-R-6					.88 1.63	NO NO			
AA 215R	4		J16-N2 TB2-K-5					1.38 1.38	NO NO			E20 25
AA 215W	4		J16-N1 TB2-K-6					1.38 1.38	NO NO			E20 25
AA 216	3		J16-F2 TB2-W-1					.88 1.63	NO NO			44H25 37
AA 217	3		J16-F4 TB2-X-1					.88 1.63	NO NO			42F26 39
AA 218	3		J16-F6 TB2-S-1					.88 1.63	NO NO			40D22 31
AA 219	3		J16-F5 TB2-T-1					.88 1.63	NO NO			40E23 33
AA 220	4		J16-L1 J22-228					1.38 .10	NO NO		6	H65
AA 221	4		J16-M1 TB2-R-4					1.38 1.38	NO NO			F21 30
AA 222K	4		J16-R4 TB2-H-5					1.38 1.38	NO NO			D19 24

WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 222L	4		J16-S3 TB2-H-4					1.38 1.38	NO NO			D19 24
AA 222R	4		J16-S4 TB2-G-4					1.38 1.38	NO NO			D19 24
AA 222W	4		J16-P4 TB2-G-5					1.38 1.38	NO NO			D19 24
AA 223	4		J16-P2 TB2-K-4					1.38 1.38	NO NO			D20 25
AA 224R	4		J16-N5 TB2-L-1					1.38 1.38	NO NO			E20 25
AA 224W	4		J16-P5 TB2-K-1					1.38 1.38	NO NO			E20 25
AA 225R	4		J16-N6 TB2-T-2					1.38 1.38	NO NO			D23 33
AA 225W	4		J16-P6 TB2-U-3					1.38 1.38	NO NO			D23 33
AA 226	5				3.00 1.00	2.75 .75					8 9	H74
AA 226A	4		SHLD AA226 E30					.20 .20	NO NO		 7	
AA 226R			J16-L4 J21-34					1.38 .10	NO NO		 6	
AA 226W			J16-L3 J21-35					1.38 .10	NO NO		 6	

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 227	5				3.00 1.00	2.75 .75					8 9	G74
AA 227A	4		SHLD AA227 E30					.20 .20	NO NO			
AA 227R			J16-M4 J21-68					1.38 .10	NO NO		 6	
AA 227W			J16-L3 J21-69					1.38 .10	NO NO		 6	
AA 228	4		J16-R5 TB3-L20					1.38 1.38	NO NO			D59 71
AA 229	4		J16-R6 TB3-L20					1.38 1.38	NO NO			D59 71
AA 230L	4		J16-G2 TB2-W-7					1.38 1.38	NO NO			44G25 37
AA 230R	4		J16-H1 TB2-X-7					1.38 1.38	NO NO			44G25 37
AA 230W	4		J16-G1 TB2-W-6					1.38 1.38	NO NO			44G25 37
AA 231L	4		J16-G4 TB2-U-4					1.38 1.38	NO NO			40K24 33
AA 231R	4		J16-H3 TB2-T-5					1.38 1.38	NO NO			40K24 33
AA 231W	4		J16-G3 TB2-U-5					1.38 1.38	NO NO			40K24 33

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 232	1				3.00 3.00	2.75 2.75					7 7	G13
AA 232A	4		SHLD AA232 E30					.20 .20	NO NO			G45
AA 232B	4		E31 SHLD AA232					.20 .20	NO NO			13
AA 232L			J16-L4 J12-D1					1.63 1.63	NO NO			
AA 232R			J16-M4 J12-D2					1.63 1.63	NO NO			
AA 232W			J16-L3 E31					1.63 .20	NO NO			
AA 233R	4		J16-N5 J18-S6					1.38 1.38	NO NO			37B
AA 233W	4		J16-P5 J18-T6					1.38 1.38	NO NO			37B
AA 234	4		J16-N4 J17-L6					1.38 1.38	NO NO			F47
AA 235	4		J17-P6 TB3-F-3					1.38 1.38	NO NO			D46 45
AA 236	4		J17-T4 J20-M1					1.38 1.38	NO NO			49D80
AA 237	4		J17-T3 J20-M2					1.38 1.38	NO NO			50D79

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 238	4		J17-T1 J20-P3					1.38 1.38	NO NO			54C
AA 239	4		J17-T2 J20-P4					1.38 1.38	NO NO			52C
AA 240	4		J17-T6 J18-S1					1.38 1.38	NO NO			B
AA 241	4		J17-L6 J18-R5					1.38 1.38	NO NO			47C
AA 242L	4		J17-K4 J18-K1					1.38 1.38	NO NO			50H
AA 242R	4		J17-G4 J18-L1					1.38 1.38	NO NO			50H
AA 242W	4		J17-H4 E53					1.38 .20	NO NO		 7	50H
AA 243L	4		J17-K6 J18-K4					1.38 1.38	NO NO			47H
AA 243R	4		J17-G6 J18-L4					1.38 1.38	NO NO			47H
AA 243W	4		J17-H6 E51					1.38 .20	NO NO		 7	47H65
AA 244	5				2.25 1.00	2.00 .75					9 8	S65
AA 244B	4		J22-41 SHLD AA244					.10 .20	NO NO		6	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 244R			J17-B4 J22-4					.88 .10	NO NO		6	
AA 244W			J17-A4 J22-3					.88 .10	NO NO		6	
AA 245	5				2.25 1.00	2.00 .75					9 8	P65
AA 245B	4		J22-5 SHLD AA245					.10 .20	NO NO		6	
AA 245R			J17-D4 J22-43					.88 .10	NO NO		6	
AA 245W			J17-C4 J22-6					.88 .10	NO NO		6	
AA 246	5				2.25 1.00	2.00 .75					9 8	R65
AA 246B	4		J22-8 SHLD AA246					.10 .20	NO NO		6	
AA 246R			J17-D3 J22-46					.88 .10	NO NO		6	
AA 246W			J17-C3 J22-45					.88 .10	NO NO		6	
AA 247R	3		J17-D2 TB3-R-4					.88 1.63	NO NO			54L47 46
AA 247W	3		J17-D3 TB3-R-5					.88 1.63	NO NO			54L47 46

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 248	4		J17-S2 TB3-T-3					1.38 1.38	NO NO			C46 45
AA 250R	4		J17-P4 TB3-C-2					1.38 1.38	NO NO			50 44
AA 250W	4		J17-R4 TB3-D-2					1.38 1.38	NO NO			50 44
AA 252	3		J17-B7 TB3-H-3					.88 1.63	NO NO			T46 45
AA 253	3		J17-B8 TB3-G-3					.88 1.63	NO NO			T46 45
AA 254	3		J17-C7 TB3-G-4					.88 1.63	NO NO			S46 46
AA 255	3		J17-D6 TB3-M-5					.88 1.63	NO NO			R46 47
AA 256	3		J17-D7 TB3-M-4					.88 1.63	NO NO			R46 46
AA 257	3		J17-F7 TB3-C-1					.88 1.63	NO NO			P46 42
AA 258K	4		J17-N6 TB3-G-1					1.38 1.38	NO NO			49 42
AA 258L	4		J17-N5 TB3-G-2					1.38 1.38	NO NO			49 42
AA 258R	4		J17-M6 TB3-H-1					1.38 1.38	NO NO			49 42

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 258W	4		J17-M5 TB3-H-2					1.38 1.38	NO NO			49 42
AA 259	4		J17-H1 TB3-K-2					1.38 1.38	NO NO			L46 44
AA 260	4		J17-H2 TB3-K-1					1.38 1.38	NO NO			L46 42
AA 261	4		J17-G1 TB3-K-5					1.38 1.38	NO NO			M46 47
AA 262	4		J17-G2 TB3-H-5					1.38 1.38	NO NO			M46 47
AA 263	4		J17-L1 TB3-L-5					1.38 1.38	NO NO			H46 47
AA 264	4		J17-M1 TB3-D-1					1.38 1.38	NO NO			G46 42
AA 265	5				3.00 3.00	2.75 2.75					9 8	50 42
AA 265B	4		TB3-S-3 SHLD AA265					1.38 .20	NO NO			
AA 265R			J17-N4 TB3-N-2					1.38 1.38	NO NO			
AA 265W			J17-M4 TB3-N-1					1.38 1.38	NO NO			
AA 266	3		J17-C5 TB3-K-3					.88 1.63	NO NO			S46 45

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 267	3		J17-B6 TB3-L-4					.88 1.63	NO NO			T46 46
AA 268	3		J17-B5 TB3-L-3					.88 1.63	NO NO			T46 45
AA 269	3		J17-D5 TB3-M-1					.88 1.63	NO NO			R46 42
AA 270	5				3.00 3.00	2.75 2.75					9 8	55 46
AA 270B	4		TB3-N-3 SHLD AA270					1.38 .20	NO NO			
AA 270R			J17-P1 TB3-N-5					1.38 1.38	NO NO			
AA 270W			J17-N1 TB3-N-4					1.38 1.38	NO NO			
AA 271	3		J17-F6 TB3-C-4					.88 1.63	NO NO			P46 46
AA 272	3		J17-F5 TB3-D-4					.88 1.63	NO NO			P46 46
AA 273	3		J17-F4 TB3-C-5					.88 1.63	NO NO			P46 47
AA 274	3		J17-F3 TB3-D-5					.88 1.63	NO NO			P46 47
AA 275	4		J17-P5 TB3-D-3					1.38 1.38	NO NO			D46 45

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 276	3		J17-C6 TB3-H-4					.88 1.63	NO NO			S46 46
AA 277	4		J17-M2 TB3-G-5					1.38 1.38	NO NO			G46 47
AA 278	4		J17-M3 TB3-F-1					1.38 1.38	NO NO			G46 42
AA 280	4		J17-R5 TB3-M21					1.38 1.38	NO NO			C61 73
AA 281L	3		J17-A8 TB3-T-6					.88 1.63	NO NO			49 47
AA 281R	3		J17-A7 TB3-T-5					.88 1.63	NO NO			49 47
AA 281W	3		J17-A6 TB3-T-4					.88 1.63	NO NO			49 47
AA 282	4		J17-R6 TB3-L21					1.38 1.38	NO NO			C61 73
AA 283	4		J17-R6 J17-S6					1.38 1.38	NO NO			
AA 284L	3		J17-F9 TB3-S-4					.88 1.63	NO NO			47 47
AA 284R	3		J17-D9 TB3-S-5					.88 1.63	NO NO			47 47
AA 284W	3		J17-C9 TB3-S-6					.88 1.63	NO NO			47 47

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 287	5				2.25 1.00	2.00 .75					9 8	S65
AA 287B	4		J22-2 SHLD AA287					.10 .20	NO NO		6	
AA 287R			J17-B3 J22-39					.88 .10	NO NO		6	
AA 287W			J17-A3 J22-1					.88 .10	NO NO		6	
AA 288	5				2.25 1.00	2.00 .75					9 8	R65
AA 288B	4		J22-11 SHLD AA288					.10 .20	NO NO		6	
AA 288R			J17-C1 J22-10					.88 .10	NO NO		6	
AA 288W			J17-D1 J22-48					.88 .10	NO NO		6	
AA 289R	3		J17-C2 TB3-M14					.88 1.63	NO NO			54 59
AA 289W	3		J17-C1 TB3-M13					.88 1.63	NO NO			54 59
AA 290	3		J17-C8 TB3-L-1					.88 1.63	NO NO			S46 42
AA 291	4		J17-S1 J17-S2					1.38 1.38	NO NO			

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WIRE LIST AA ▼ 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 292	4		J17-M3 J22-206					1.38 .10	NO NO		6	G65
AA 293	4		J17-L3 J22-243					1.38 .10	NO NO		6	52F65
AA 294	4		J17-T1 J17-T2					1.38 1.38	NO NO			
AA 295	4		J17-S3 TB3-N-3					1.38 1.38	NO NO			C46 45
AA 296	4		J17-S1 TB3-S-3					1.38 1.38	NO NO			C46 45
AA 297	4		J17-S4 TB3-R-3					1.38 1.38	NO NO			C46 45
AA 298	4		J18-S1 J19-T1					1.38 1.38	NO NO			63D73
AA 299R	3		J18-F2 J19-F4					.88 .88	NO NO			P
AA 299W	3		J18-F1 J19-D4					.88 .88	NO NO			P
AA 300R	3		J18-C8 J19-B2					.88 .88	NO NO			R73
AA 300W	3		J18-B8 J19-C1					.88 .88	NO NO			57R
AA 301R	3		J18-D9 J19-B3					.88 .88	NO NO			R71

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WIRE LIST AA ▼ 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 301W	3		J18-C9 J19-A4					.88 .88	NO NO			R71
AA 302K	4		J18-G5 J19-H6					1.38 1.38	NO NO			L
AA 302L	4		J18-H5 J19-H5					1.38 1.38	NO NO			L
AA 302R	4		J18-H6 J19-G5					1.38 1.38	NO NO			L
AA 302W	4		J18-G6 J19-G6					1.38 1.38	NO NO			L
AA 303	4		J18-P3 J19-R4					1.38 1.38	NO NO			59E68
AA 304R	4		J18-S6 J19-N6					1.38 1.38	NO NO			55E
AA 304W	4		J18-T6 J19-P6					1.38 1.38	NO NO			55E
AA 305	4		J18-S5 J19-P5					1.38 1.38	NO NO			56D
AA 306	4		J18-R5 J19-P3					1.38 1.38	NO NO			D
AA 307	5				2.25 3.00	2.00 2.75					9 8	63 50
AA 307B	4		TB3-R-9 SHLD AA307					1.38 .20	NO NO			

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 307R			J18-B2 TB3-T-7					.88 1.38	NO NO			
AA 307W			J18-C2 TB3-T-8					.88 1.38	NO NO			
AA 308	5				2.25 3.00	2.00 2.75					9 8	64 50
AA 308B	4		TB3-N-9 SHLD AA308					1.38 .20	NO NO			
AA 308R			J18-B1 TB3-S-7					.88 1.38	NO NO			
AA 308W			J18-A1 TB3-S-8					.88 1.38	NO NO			
AA 309	5				2.25 3.00	2.00 2.75					9 8	61 55
AA 309B	4		TB3-T-9 SHLD AA309					1.38 .20	NO NO			
AA 309R			J18-A3 TB3-T11					.88 1.38	NO NO			
AA 309W			J18-A2 TB3-T10					.88 1.38	NO NO			
AA 310	5				2.25 3.00	2.00 2.75					9 8	59 55
AA 310B	4		TB3-S-9 SHLD AA310					1.38 .20	NO NO			

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 310R			J18-B4 TB3-S11					.88 1.38	NO NO			
AA 310W			J18-B3 TB3-S10					.88 1.38	NO NO			
AA 311R	3		J18-D3 TB3-R-7					.88 1.63	NO NO			61H49 50
AA 311W	3		J18-D2 TB3-R-8					.88 1.63	NO NO			61H49 50
AA 312R	3		J18-C1 TB3-R11					.88 1.63	NO NO			64K55 55
AA 312W	3		J18-D1 TB3-R10					.88 1.63	NO NO			64K55 55
AA 313R	3		J18-A5 TB3-N-7					.88 1.63	NO NO			55B47 50
AA 313W	3		J18-A4 TB3-N-8					.88 1.63	NO NO			55B47 50
AA 314R	3		J18-C5 TB3-N11					.88 1.63	NO NO			S47 55
AA 314W	3		J18-B5 TB3-N10					.88 1.63	NO NO			S47 55
AA 315	5				2.25 3.00	2.00 2.75					9 8	56 50
AA 315B	4		TB3-M-9 SHLD AA315					1.38 .20	NO NO			

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 315R			J18-B9 TB3-M-7					.88 1.38	NO NO			
AA 315W			J18-A9 TB3-M-8					.88 1.38	NO NO			
AA 316	5				2.25 3.00	2.00 2.75					9 8	58 50
AA 316B	4		TB3-L-9 SHLD AA316					1.38 .20	NO NO			
AA 316R			J18-A7 TB3-L-8					.88 1.38	NO NO			
AA 316W			J18-A8 TB3-L-7					.88 1.38	NO NO			
AA 317R	3		J18-B6 TB3-L11					.88 1.63	NO NO			59L50 55
AA 317W	3		J18-A6 TB3-L10					.88 1.63	NO NO			59L50 55
AA 318R	3		J18-F4 TB3-K12					.88 1.63	NO NO			61K54 58
AA 318W	3		J18-F3 TB3-L12					.88 1.63	NO NO			61K54 58
AA 319	4		J18-P1 TB3-D12					1.38 1.38	NO NO			E54 58
AA 320	4		J18-R1 TB3-C12					1.38 1.38	NO NO			D54 58

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 321	4		J18-R2 TB3-C11					1.38 1.38	NO NO			D52 56
AA 322	4		J18-P2 TB3-D11					1.38 1.38	NO NO			E52 56
AA 323	4		J18-S3 J18-S4					1.38 1.38	NO NO			
AA 324	4		J18-T3 J18-T4					1.38 1.38	NO NO			
AA 325	4		J18-S3 TB3-K20					1.38 1.38	NO NO			59 71
AA 326L	3		J18-F9 TB3-M11					.88 1.63	NO NO			56M50 56
AA 326R	3		J18-F8 TB3-M12					.88 1.63	NO NO			56M50 56
AA 326W	3		J18-D8 TB3-M10					.88 1.63	NO NO			56M50 56
AA 327	4		J18-T3 TB3-K20					1.38 1.38	NO NO			59 71
AA 328L	4		J18-L6 TB3-R12					1.38 1.38	NO NO			H50 58
AA 328R	4		J18-L5 TB3-S12					1.38 1.38	NO NO			H50 58
AA 328W	4		J18-K6 TB3-T12					1.38 1.38	NO NO			H50 58

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 329	5				2.25 3.00	2.00 2.75					9 8	S55 50
AA 329B	4		TB3-H-9 SHLD AA329					1.38 .20	NO NO			
AA 329R			J19-B2 TB3-H-7					.88 1.38	NO NO			
AA 329W			J19-C2 TB3-H-8					.88 1.38	NO NO			
AA 330R	3		J18-F2 TB3-F10					.88 1.63	NO NO			63H50 55
AA 330W	3		J18-F1 TB3-G10					.88 1.63	NO NO			63H50 55
AA 331	5				2.25 3.00	2.00 2.75					9 8	S55 55
AA 331B	4		TB3-K-9 SHLD AA331					1.38 .20	NO NO			
AA 331R			J19-B3 TB3-H11					.88 1.38	NO NO			
AA 331W			J19-B4 TB3-H10					.88 1.38	NO NO			
AA 332R	4		J18-H1 TB3-K11					1.38 1.38	NO NO			L55 55
AA 332W	4		J18-G1 TB3-K10					1.38 1.38	NO NO			L55 55

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 333	4		J18-R3 TB3-K20					1.38 1.38	NO NO			59 71
AA 334R	3		J18-D6 TB3-G13					.88 1.63	NO NO			59K54 61
AA 334W	3		J18-C6 TB3-G14					.88 1.63	NO NO			59K54 61
AA 335R	3		J18-D7 TB3-G12					.88 1.63	NO NO			58G52 56
AA 335W	3		J18-C7 TB3-G11					.88 1.63	NO NO			58G52 56
AA 336R	3		J18-F7 TB3-F12					.88 1.63	NO NO			58H52 56
AA 336W	3		J18-F6 TB3-F11					.88 1.63	NO NO			58H52 56
AA 337	4		J18-R4 TB3-B11					1.38 1.38	NO NO			D52 56
AA 338R	3		J18-D4 TB3-K-7					.88 1.63	NO NO			59G49 50
AA 338W	3		J18-D5 TB3-K-8					.88 1.63	NO NO			59G49 50
AA 339	4		J18-S5 J18-T5					1.38 1.38	NO NO			
AA 344R	4		J18-H3 TB3-F-7					1.38 1.38	NO NO			L55 50

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 344W	4		J18-G3 TB3-G-7					1.38 1.38	NO NO			L55 50
AA 345R	4		J18-H2 TB3-F-8					1.38 1.38	NO NO			L55 52
AA 345W	4		J18-G2 TB3-G-8					1.38 1.38	NO NO			L55 52
AA 346	4		J18-H2 E52					1.38 .20	NO NO		 7	K55
AA 347	4		J18-H2 E53					1.38 .20	NO NO			K55
AA 348	4		J18-H3 E50					1.38 .20	NO NO		 7	K55
AA 349	4		J18-H3 E51					1.38 .20	NO NO			K55
AA 350	4		J18-M1 J18-P3					1.38 1.38	NO NO			64E
AA 353	4		J18-M3 J18-M4					1.38 1.38	NO NO			
AA 356	4		J19-P3 J20-G4					1.38 1.38	NO NO			E77
AA 357	4		J19-T1 J20-M6					1.38 1.38	NO NO			B75
AA 358R	4		J19-S2 TB3-D17					1.38 1.38	NO NO			B56 64

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 358W	4		J19-S3 TB3-D16					1.38 1.38	NO NO			B56 64
AA 359R	4		J19-P1 TB3-D18					1.38 1.38	NO NO			D55 68
AA 359W	4		J19-R1 TB3-F18					1.38 1.38	NO NO			D55 68
AA 360R	4		J19-T2 TB3-C17					1.38 1.38	NO NO			A55 64
AA 360W	4		J19-T3 TB3-C16					1.38 1.38	NO NO			A55 64
AA 361R	4		J19-P2 TB3-G17					1.38 1.38	NO NO			D56 66
AA 361W	4		J19-R2 TB3-F17					1.38 1.38	NO NO			D56 66
AA 362	4		J19-R5 J19-S4					1.38 1.38	NO NO			68
AA 363	4		J19-R6 J19-T4					1.38 1.38	NO NO			66A
AA 364	4		J19-S4 TB3-K22					1.38 1.38	NO NO			B63 75
AA 365	4		J19-T4 TB3-L22					1.38 1.38	NO NO			68E63 75
AA 366	4		J19-S5 J19-S6					1.38 1.38	NO NO			

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 367	4		J19-T6 TB3-L22					1.38 1.38	NO NO			65B63 75
AA 368	4		J19-T5 J19-T6					1.38 1.38	NO NO			
AA 369	4		J19-S5 TB3-K22					1.38 1.38	NO NO			B63 75
AA 370R	3		J19-B1 TB3-T17					.88 1.63	NO NO			74E55 66
AA 370W	3		J19-A1 TB3-T16					.88 1.63	NO NO			74E55 66
AA 371R	3		J19-A2 TB3-S16					.88 1.63	NO NO			72M55 66
AA 371W	3		J19-A3 TB3-S17					.88 1.63	NO NO			72M55 66
AA 372R	3		J19-A8 TB3-R16					.88 1.63	NO NO			66G55 64
AA 372W	3		J19-A9 TB3-R17					.88 1.63	NO NO			66G55 64
AA 373R	3		J19-C9 TB3-N17					.88 1.63	NO NO			66H55 64
AA 373W	3		J19-B9 TB3-N16					.88 1.63	NO NO			66H55 64
AA 374R	3		J19-D2 TB3-M17					.88 1.63	NO NO			73G55 64

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 374W	3		J19-D1 TB3-M16					.88 1.63	NO NO			73G55 64
AA 375R	3		J19-B5 TB3-H17					.88 1.63	NO NO			70K55 64
AA 375W	3		J19-A5 TB3-H16					.88 1.63	NO NO			70K55 64
AA 376	3		J19-C5 TB3-S18					.88 1.63	NO NO			70H58 68
AA 377R	3		J19-B8 TB3-K17					.88 1.63	NO NO			67M55 64
AA 377W	3		J19-B7 TB3-K16					.88 1.63	NO NO			67M55 64
AA 378	3		J19-A7 TB3-R18					.88 1.63	NO NO			70M64 68
AA 379R	3		J19-C8 TB3-L16					.88 1.63	NO NO			67M55 64
AA 379W	3		J19-D8 TB3-L17					.88 1.63	NO NO			67M55 64
AA 380	3		J19-C7 TB3-T18					.88 1.63	NO NO			68G58 68
AA 381R	3		J19-F6 TB3-G16					.88 1.63	NO NO			M55 64
AA 381W	3		J19-F5 TB3-F16					.88 1.63	NO NO			M55 64

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 382R	4		J19-G1 TB3-T13					1.38 1.38	NO NO			L55 59
AA 382W	4		J19-H1 TB3-T14					1.38 1.38	NO NO			L55 59
AA 383R	4		J19-G2 TB3-S14					1.38 1.38	NO NO			L55 59
AA 383W	4		J19-G3 TB3-S13					1.38 1.38	NO NO			L55 59
AA 384	3		J19-C3 TB3-N18					.88 1.63	NO NO			70M64 68
AA 385	3		J19-C4 TB3-M18					.88 1.63	NO NO			70H58 68
AA 386R	3		J19-F8 TB3-R14					.88 1.63	NO NO			M54 59
AA 386W	3		J19-F9 TB3-R13					.88 1.63	NO NO			M54 59
AA 387	4		J19-M6 TB3-G18					1.38 1.38	NO NO			F58 68
AA 388	4		J19-M5 TB3-K18					1.38 1.38	NO NO			F58 68
AA 389	4		J19-N5 TB3-L18					1.38 1.38	NO NO			E58 68
AA 390	4		J19-R4 TB3-K21					1.38 1.38	NO NO			C63 73

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 393	4		J19-P5 TB3-K21					1.38 1.38	NO NO			D63 73
AA 394	4		J19-P4 J19-P5					1.38 1.38	NO NO			
AA 396R	3		J19-D6 TB3-N13					.88 1.63	NO NO			M54 59
AA 396W	3		J19-D5 TB3-N14					.88 1.63	NO NO			M54 59
AA 398	4		J19-K1 J19-K2					1.38 1.38	NO NO			
AA 399	4		J19-K2 J19-K3					1.38 1.38	NO NO			
AA 400	4		J19-K3 J19-K4					1.38 1.38	NO NO			
AA 401	4		J19-K4 J19-K5					1.38 1.38	NO NO			
AA 402	4		J19-K5 J19-K6					1.38 1.38	NO NO			
AA 403	4		J20-L5 J21-37					1.38 .10	NO NO		 6	F74
AA 404	4		J20-L5 TB3-M22					1.38 1.38	NO NO			F64 75
AA 405	4		J20-M5 TB3-M21					1.38 1.38	NO NO			E64 73

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 406	4		J20-N6 TB3-H20					1.38 1.38	NO NO			D64 71
AA 407	4		J20-N4 TB3-L21					1.38 1.38	NO NO			D64 73
AA 408	4		J20-N3 TB3-K22					1.38 1.38	NO NO			D64 75
AA 409R	4		J20-F6 TB2-H-4					1.38 1.38	NO NO			L19 24
AA 409W	4		J20-F5 TB2-G-4					1.38 1.38	NO NO			L19 24
AA 410R	4		J20-F6 TB3-B19					1.38 1.38	NO NO			E56 68
AA 410W	4		J20-F5 TB3-B18					1.38 1.38	NO NO			E56 68
AA 411	4		J20-G5 J20-H5					1.38 1.38	NO NO			
AA 412R	4		J20-H6 TB3-C-3					1.38 1.38	NO NO			H47 44
AA 412W	4		J20-H5 TB3-D-2					1.38 1.38	NO NO			H47 44
AA 413	4		J20-G6 J20-H6					1.38 1.38	NO NO			
AA 414	4		J20-A4 TB3-K19					1.38 1.38	NO NO			77M58 70

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 415	4		J20-B4 TB3-H19					1.38 1.38	NO NO			77M59 70
AA 416	4		J20-A1 TB3-G19					1.38 1.38	NO NO			80M58 70
AA 417	4		J20-A2 TB3-F19					1.38 1.38	NO NO			79M58 70
AA 418	4		J20-B1 TB3-D19					1.38 1.38	NO NO			80M58 70
AA 419R	4		J20-B3 TB3-N21					1.38 1.38	NO NO			78K63 71
AA 419W	4		J20-A3 TB3-N20					1.38 1.38	NO NO			78K63 71
AA 420	4		J20-K5 TB3-G21					1.38 1.38	NO NO			H64 73
AA 421	4		J20-K6 TB3-G22					1.38 1.38	NO NO			G64 75
AA 422	4		J20-H4 TB3-R20					1.38 1.38	NO NO			H61 71
AA 423	4		J20-H4 J21-234					1.38 .10	NO NO		6	H74
AA 424	4		J20-K4 TB3-N19					1.38 1.38	NO NO			H58 70
AA 425	4		J20-C6 TB3-L19					1.38 1.38	NO NO			75M59 70

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 426	4		J20-D6 TB3-M19					1.38 1.38	NO NO			M59 70
AA 427R	4		J20-B5 TB3-T19					1.38 1.38	NO NO			G58 70
AA 427W	4		J20-C5 TB3-S19					1.38 1.38	NO NO			G58 70
AA 428	4		J20-N1 TB3-C20					1.38 1.38	NO NO			D64 71
AA 429	4		J20-N1 J20-P1					1.38 1.38	NO NO			
AA 431	4		J20-R1 J20-S1					1.38 1.38	NO NO			
AA 432	4		J20-S1 TB3-C21					1.38 1.38	NO NO			79G64 73
AA 433	4		J20-N2 TB3-D20					1.38 1.38	NO NO			D64 71
AA 434	4		J20-N2 J20-P2					1.38 1.38	NO NO			
AA 436	4		J20-R2 J20-S2					1.38 1.38	NO NO			
AA 437	4		J20-S2 TB3-D21					1.38 1.38	NO NO			78G64 73
AA 438	4		J20-L1 J20-M1					1.38 1.38	NO NO			

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	TERM.JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 439	4		J20-L1 J20-L2					1.38 1.38	NO NO			
AA 440	4		J20-L2 J20-M2					1.38 1.38	NO NO			
AA 441	4		J20-R3 TB3-D22					1.38 1.38	NO NO			B63 75
AA 442	4		J20-R3 J20-S5					1.38 1.38	NO NO			
AA 443	4		J20-R4 TB3-C22					1.38 1.38	NO NO			B61 75
AA 444	4		J20-R4 J20-S4					1.38 1.38	NO NO			
AA 445	4		J20-P3 TB3-N22					1.38 1.38	NO NO			77E64 75
AA 446	4		J20-P5 TB3-H21					1.38 1.38	NO NO			75G64 73
AA 447	4		J20-P5 J20-R5					1.38 1.38	NO NO			
AA 448	4		J20-R5 J20-S5					1.38 1.38	NO NO			
AA 449	4		J20-S5 TB3-H21					1.38 1.38	NO NO			75G64 73
AA 450	4		J20-P6 TB3-H22					1.38 1.38	NO NO			73G63 75

WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 451	4		J20-P6 J20-R6					1.38 1.38	NO NO			
AA 452	4		J20-R6 J20-S6					1.38 1.36	NO NO			
AA 453	4		J20-S6 TB3-H22					1.38 1.38	NO NO			68D64 75
AA 454	4		J20-K1 TB3-T20					1.38 1.38	NO NO			G61 71
AA 455	4		J20-K1 TB3-T21					1.38 1.38	NO NO			G63 73
AA 456	4		J20-K2 TB3-S21					1.38 1.38	NO NO			G63 73
AA 457	4		J20-M6 TB3-M20					1.38 1.38	NO NO			E64 71
AA 458	4		J20-G1 J20-H1					1.38 1.38	NO NO			
AA 459	4		J20-H1 J20-H2					1.38 1.38	NO NO			
AA 460	4		J20-G1 TB2-M-7					1.38 1.38	NO NO			K20 27
AA 461	4		J20-H2 TB2-M-1					1.38 1.38	NO NO			H20 27
AA 462	4		J20-G4 TB3-F22					1.38 1.38	NO NO			K64 75

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 463R	4		J20-D4 TB3-S20					1.38 1.38	NO NO			76F58 70
AA 463W	4		J20-D5 TB3-R19					1.38 1.38	NO NO			76F58 70
AA 464R	4		J20-A6 TB3-L13					1.38 1.38	NO NO			H55 61
AA 464W	4		J20-B6 TB3-K13					1.38 1.38	NO NO			H55 61
AA 465R	4		J20-H3 TB3-L14					1.38 1.38	NO NO			K55 61
AA 465W	4		J20-G3 TB3-K14					1.38 1.38	NO NO			K55 61
AA 466	4		TB3-H12 TB3-R-3					1.38 1.38	NO NO			58DD
AA 467	5				1.00 3.00	.75 2.75					8 9	G74
AA 467A	4		SHLD AA467 E46					.20 .20	NO NO		 8	
AA 467R			J21-125 E35					.10 .20	NO NO		6	
AA 467W			J21-126 J15-M5				 2.50	.10 1.38	NO NO		6	
AA 468	5				1.00 3.00	.75 2.75					8 9	G74

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 468A	4		SHLD AA468 E46					.20 .20	NO NO			
AA 468R			J21-92 E35					.10 .20	NO NO		6	
AA 468W			J21-93 J15-M6				 2.50	.10 1.38	NO NO		6	
AA 469	5				1.00 3.00	.75 2.75					8 9	H74
AA 469A	4		SHLD AA469 E46					.20 .20	NO NO			
AA 469R			J21-194 E36					.10 .20	NO NO		6	
AA 469W			J21-195 J15-L6				 2.50	.10 1.38	NO NO		6	
AA 470	5				1.00 3.00	.75 2.75					8 9	K74
AA 470A	4		SHLD AA470 E46					.20 .20	NO NO			
AA 470R			J21-160 E36					.10 .20	NO NO		6	
AA 470W			J21-161 J15-K6				 2.50	.10 1.38	NO NO		6	
AA 471	5				1.00 3.00	.75 2.75					8 9	K74

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 471A	4		SHLD AA471 E46					.20 .20	NO NO			
AA 471R			J21-94 E37					.10 .20	NO NO		6	
AA 471W			J21-95 J15-K4				 2.50	.10 1.38	NO NO		6	
AA 472	5				1.00 3.00	.75 2.75					8 9	K74
AA 472A	4		SHLD AA472 E46					.20 .20	NO NO			K74
AA 472R			J21-127 E37					.10 .20	NO NO		6	
AA 472W			J21-128 J15-K5				 2.50	.10 1.38	NO NO		6	
AA 473	4		J21-23 E45					.10 .20	NO NO		6 8	74
AA 474	4		E70 E47					.20 .20	NO NO		8 8	74
AA 475	5				1.00 2.25	.75 2.00					8 9	33K74
AA 475A	4		SHLD AA475 E47					.20 .20	NO NO			
AA 475R			J21-25 E38					.10 .20	NO NO		6	

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LEAD IDBNT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 475W			J21-24 J15-B4				1.75	.10 .88	NO NO		6	
AA 476	5				1.00 2.25	.75 2.00					8 9	S74
AA 476A	4		SHLD AA476 E47					.20 .20	NO NO			
AA 476R			J21-26 J15-C4				1.75	.10 .88	NO NO		6	
AA 476W			J21-27 E38					.10 .20	NO NO		6	
AA 477	5				1.00 2.25	.75 2.00					8 9	31L74
AA 477A	4		SHLD AA477 E47					.20 .20	NO NO			
AA 477R			J21-233 E40					.10 .20	NO NO		6	
AA 477W			J21-232 J15-B6				1.75	.10 .88	NO NO		6	
AA 478	5				1.00 2.25	.75 2.00					8 9	31P74
AA 478A	4		SHLD AA478 E47					.20 .20	NO NO			
AA 478R			J21-192 J15-C6				1.75	.10 .88	NO NO		6	

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LEAD IDBNT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 478W			J21-193 E40					.10 .20	NO NO		6	
AA 479	5				1.00 2.25	.75 2.00					8 9	29M74
AA 479A	4		SHLD AA479 E47					.20 .20	NO NO			
AA 479R			J21-57 E42					.10 .20	NO NO		6	
AA 479W			J21-56 J15-B8				1.75	.10 .88	NO NO		6	
AA 480	5				1.00 2.25	.75 2.00					8 9	29M74
AA 480A	4		SHLD AA480 E47					.20 .20	NO NO			
AA 480R			J21-58 J15-C8				1.75	.10 .88	NO NO		6	
AA 480W			J21-59 E42					.10 .20	NO NO		6	
AA 481	5				1.00 2.25	.75 2.00					9 8	32L74
AA 481B	4		E39 SHLD AA481					.20 .20	NO NO			
AA 481R			J21-238 E39					.10 .20	NO NO		6	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 481W			J21-237 J15-B5				1.75	.10 .88	NO NO		6	
AA 482	5				1.00 2.25	.75 2.00					9 8	32R74
AA 482B	4		E39 SHLD AA482					.20 .20	NO NO			
AA 482R			J21-199 J15-C5				1.75	.10 .88	NO NO		6	
AA 482W			J21-200 E39					.10 .20	NO NO		6	
AA 483	5				1.00 2.25	.75 2.00					9 8	30N74
AA 483B	4		E41 SHLD AA483					.20 .20	NO NO			
AA 483R			J21-166 E41					.10 .20	NO NO		6	
AA 483W			J21-165 J15-B7				1.75	.10 .88	NO NO		6	
AA 484	5				1.00 2.25	.75 2.00					9 8	30N74
AA 484B	4		E41 SHLD AA484					.20 .20	NO NO			
AA 484R			J21-97 J15-C7				1.75	.10 .88	NO NO		6	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 484W			J21-98 E41					.10 .20	NO NO		6	
AA 485	5				1.00 2.25	.75 2.00					9 8	28M74
AA 485B	4		E43 SHLD AA485					.20 .20	NO NO			
AA 485R			J21-65 E43					.10 .20	NO NO		6	
AA 485W			J21-64 J15-B9				1.75	.10 .88	NO NO		6	
AA 486	5				1.00 2.25	.75 2.00					9 8	28M74
AA 486B	4		E43 SHLD AA486					.20 .20	NO NO			
AA 486R			J21-30 J15-C9				1.75	.10 .88	NO NO		6	
AA 486W			J21-31 E43					.10 .20	NO NO		6	
AA 487	5				1.00 3.00	.75 2.75					8 8	74AA21
AA 487A	4		SHLD AA487 E57					.20 .20	NO NO		8	
AA 487B	4		TB2-D-3 SHLD AA487					1.38 .20	NO NO			21

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 487R			J21-122 TB2-F-3					.10 1.38	NO NO		6	21
AA 487W			J21-121 TB2-D-2					.10 1.38	NO NO		6	21
AA 488	5				1.00 2.25	.75 2.00					8 9	34K74
AA 488A	4		SHLD AA488 E57					.20 .20	NO NO			
AA 488R			J21-189 E59					.10 .20	NO NO		6	
AA 488W			J21-188 J15-A3					.10 .88	NO NO		6	
AA 489	5				1.00 2.25	.75 2.00					8 9	39N74
AA 489A	4		SHLD AA489 E57					.20 .20	NO NO			
AA 489R			J21-153 E60					.10 .20	NO NO		6 7	
AA 489W			J21-152 J16-A7				1.75	.10 .88	NO NO		6	
AA 490	5				1.00 3.00	.75 2.75					9 8	L74
AA 490B	4		E29 SHLD AA490					.20 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 490R			J21-170 E29					.10 .20	NO NO		6	
AA 490W			J21-169 J12-G1				2.50	.10 1.38	NO NO		6	
AA 491	5				1.00 3.00	.75 2.75					9 8	L74
AA 491B	4		E29 SHLD AA491					.20 .20	NO NO			
AA 491R			J21-136 J12-G2				2.50	.10 1.38	NO NO		6	
AA 491W			J21-137 E29					.10 .20	NO NO		6	
AA 492	5				1.00 3.00	.75 2.75					9 8	K74
AA 492B	4		E71 SHLD AA492					.20 .20	NO NO			
AA 492R			J21-164 E52					.10 .20	NO NO		6	
AA 492W			J21-163 J18-K2				2.50	.10 1.38	NO NO		6	
AA 493	5				1.00 3.00	.75 2.75					9 8	G74
AA 493B	4		E71 SHLD AA493					.20 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 493R			J21-130 J18-L2				2.50	.10 1.38	NO NO		6	
AA 493W			J21-131 E52					.10 .20	NO NO		6	
AA 494	5				1.00 3.00	.75 2.75					8 9	G74
AA 494A	4		SHLD AA494 E45					.20 .20	NO NO			
AA 494R			J21-157 E53					.10 .20	NO NO		6	
AA 494W			J21-156 J18-L1				2.50	.10 1.38	NO NO		6	
AA 495	5				1.00 3.00	.75 2.75					8 9	K74
AA 495A	4		SHLD AA495 E45					.20 .20	NO NO			
AA 495R			J21-124 E53					.10 .20	NO NO		6	
AA 495W			J21-123 J18-K1				2.50	.10 1.38	NO NO		6	
AA 496	5				1.00 3.00	.75 2.75					9 8	61H74
AA 496B	4		E71 SHLD AA496					.20 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 496R			J21-236 E50					.10 .20	NO NO		6	
AA 496W			J21-235 J18-K3				2.50	.10 1.38	NO NO		6	
AA 497	5				1.00 3.00	.75 2.75					9 8	G74
AA 497B	4		E71 SHLD AA497					.20 .20	NO NO		8	
AA 497R			J21-197 J18-L3				2.50	.10 1.38	NO NO		6	
AA 497W			J21-198 E50					.10 .20	NO NO		6	
AA 498	5				1.00 3.00	.75 2.75					8 9	H74
AA 498A	4		SHLD AA498 E45					.20 .20	NO NO			
AA 498R			J21-231 E51					.10 .20	NO NO		6	
AA 498W			J21-230 J18-L4				2.50	.10 1.38	NO NO		6	
AA 499	5				1.00 3.00	.75 2.75					8 9	59H74
AA 499A	4		SHLD AA499 E45					.20 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 499R			J21-191 E51					.10 .20	NO NO		6	
AA 499W			J21-190 J18-K4				 2.50	.10 1.38	NO NO		6	
AA 500	5				1.00 3.00	.75 2.75					9 8	50H74
AA 500B	4		E27 SHLD AA500					.20 .20	NO NO			
AA 500R			J21-103 J17-R3				 2.50	.10 1.38	NO NO		6	
AA 500W			J21-104 E27					.10 .20	NO NO		6	
AA 501R	4		J21-133 E34					.10 .20	NO NO		6	74E14
AA 501W	4		J21-132 J13-N5					.10 1.38	NO NO		6	74E
AA 502R	4		J21-100 E34					.10 .20	NO NO		6	74E14
AA 502W	4		J21-99 J13-N6					.10 1.38	NO NO		6	74E
AA 503	5				1.00 3.00	.75 2.75					9 8	2F74
AA 503B	4		E28 SHLD AA503					.20 .20	NO NO			2F74

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 503R			J21-203 J11-L6				 2.50	.10 1.38	NO NO		6	2F74
AA 503W			J21-204 E28					.10 .20	NO NO		6	2F74
AA 504	5				1.00 3.00	.75 2.75					9 8	2E74
AA 504B	4		E28 SHLD AA504					.20 .20	NO NO			2E74
AA 504R			J21-241 J11-M6				 2.50	.10 1.38	NO NO		6	2E74
AA 504W			J21-242 E28					.10 .20	NO NO		6	2E74
AA 505	5				1.00 3.00	.75 2.75					9 8	65AA35 35
AA 505B	4		TB2-V-8 SHLD AA505					1.38 .20	NO NO			
AA 505R			J22-107 TB2-U-7					.10 1.38	NO NO		6	
AA 505W			J22-139 TB2-U-8					.10 1.38	NO NO		6	
AA 506	5				1.00 3.00	.75 2.75					9 8	28AA65 27
AA 506B	4		TB2-M-8 SHLD AA506					1.38 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 506R			J22-142 TB2-N-7					.10 1.38	NO NO		6	
AA 506W			J22-141 TB2-N-8					.10 1.38	NO NO		6	
AA 507	5				1.00 3.00	.75 2.75					9 8	65AA58 58
AA 507B	4		TB3-H12 SHLD AA507					1.38 .20	NO NO			
AA 507R			J22-111 TB3-C14					.10 1.38	NO NO		6	
AA 507W			J22-144 TB3-C13					.10 1.38	NO NO		6	
AA 508	5				1.00 3.00	.75 2.75					9 8	65AA74 71
AA 508B	4		TB3-H14 SHLD AA508					1.38 .20	NO NO			
AA 508R			J22-114 TB3-N21					.10 1.38	NO NO		6	
AA 508W			J22-113 TB3-N20					.10 1.38	NO NO		6	
AA 509	5				1.00 3.00	.75 2.75					9 8	65AA61 59
AA 509B	4		TB3-H13 SHLD AA509					1.38 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 509R			J22-148 TB3-D14					.10 1.38	NO NO		6	
AA 509W			J22-116 TB3-D13					.10 1.38	NO NO		6	
AA 510	5				1.00 3.00	.75 2.75					9 8	65AA61 59
AA 510B	4		TB3-H14 SHLD AA510					1.38 .20	NO NO			61
AA 510R			J22-151 TB3-F14					.10 1.38	NO NO		6	
AA 510W			J22-150 TB3-F13					.10 1.38	NO NO		6	MM
AA 511	4		TB1-S-2 TB1-T-2					1.38 1.38	NO NO			
AA 512	4		TB1-R-2 TB1-S-2					1.38 1.38	NO NO			
AA 513	4		TB3-H12 TB3-H13					1.38 1.38	NO NO			
AA 514	4		TB3-B15 TB3-C15					1.38 1.38	NO NO			
AA 515	4		TB3-M20 TB3-C18					1.38 1.38	NO NO			FF68
AA 517R	4		TB3-B19 J22-120					1.38 .10	NO NO		 6	66AA65 68

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 517W	4		TB3-B18 J22-153					1.38 .10	NO NO		6	66AA65 68
AA 518	4		TB3-F-4 J22-190					1.38 .10	NO NO		6	45AA65 46
AA 521	4		TB3-L19 J21-62					1.38 .10	NO NO		6	70AA74 70
AA 522	4		TB3-N19 J21-63					1.38 .10	NO NO		6	70AA74 70
AA 525	4		TB3-M19 J21-96					1.38 .10	NO NO		6	70AA74 70
AA 526	4		TB3-D19 J21-129					1.38 .10	NO NO		6	70AA74 70
AA 529	4		TB3-F19 J21-162					1.38 .10	NO NO		6	70AA74 70
AA 530	4		TB3-G19 J21-196					1.38 .10	NO NO		6	70AA74 70
AA 533	4		TB3-L15 TB3-M15					1.38 1.38	NO NO			
AA 534	4		TB3-M15 TB3-N15					1.38 1.38	NO NO			
AA 535	4		TB3-N15 TB3-R15					1.38 1.38	NO NO			
AA 536	4		TB3-S15 TB3-T15					1.38 1.38	NO NO			

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WIRE LIST AA

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 538	4		TB3-G-9 TB3-B15					1.38 1.38	NO NO			54RR
AA 539	4		TB2-M-8 TB2-M-7					1.38 1.38	NO NO			
AA 540	4		TB2-V-2 TB2-V-3					1.38 1.38	NO NO			
AA 541	4		TB3-G-9 TB3-H-9					1.38 1.38	NO NO			
AA 542	4		TB3-H-9 TB3-K-9					1.38 1.38	NO NO			
AA 543	4		TB3-K-9 TB3-L-9					1.38 1.38	NO NO			
AA 544	4		TB3-L-9 TB3-M-9					1.38 1.38	NO NO			
AA 545	4		TB3-M-9 TB3-N-9					1.38 1.38	NO NO			
AA 546	4		TB3-N-9 TB3-R-9					1.38 1.38	NO NO			
AA 547	4		TB3-R-9 TB3-S-9					1.38 1.38	NO NO			
AA 548	4		TB3-S-9 TB3-T-9					1.38 1.38	NO NO			
AA 549	4		TB3-T-9 TB3-T15					1.38 1.38	NO NO			BB

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 550	4		TB3-G15 TB3-H15					1.38 1.38	NO NO			
AA 551	4		TB3-H15 TB3-K15					1.38 1.38	NO NO			
AA 552	4		TB3-K15 TB3-L15					1.38 1.38	NO NO			
AA 553	4		TB3-R15 TB3-S15					1.38 1.38	NO NO			
AA 554	4		TB3-H13 TB3-H14					1.38 1.38	NO NO			
AA 555	4		TB2-K-4 TB2-L-4					1.38 1.38	NO NO			
AA 556	4		TB2-L-2 TB2-L-1					1.38 1.38	NO NO			
AA 557	4		TB2-K-2 TB2-K-1					1.38 1.38	NO NO			
AA 558	4		TB3-M20 TB3-C19					1.38 1.38	NO NO			70
AA 559	4		TB3-T20 TB3-T21					1.38 1.38	NO NO			
AA 560	4		TB3-S21 TB3-T21					1.38 1.38	NO NO			
AA 562	4		J21-53 E57					.10 .20	NO NO		6	74

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 563	4		TB3-L21 TB3-D15					1.38 1.38	NO NO			73MM
AA 566	4		TB3-K21 TB3-C15					1.38 1.38	NO NO			73NN
AA 568	4		E45 E46					.20 .20	NO NO			74
AA 569	5				3.00 2.25	2.75 2.00					8 9	R19 21
AA 569A	4		SHLD AA569 TB2-D-3					.20 1.38	NO NO			
AA 569R			TB2-F-3 E60					1.38 .20	NO NO			
AA 569W			TB2-D-2 J16-B7				1.75	1.38 .88	NO NO			
AA 571	5				3.00 2.25	2.75 2.00					8 9	54M20 30
AA 571A	4		SHLD AA571 TB2-S-3					.20 1.38	NO NO			
AA 571R			TB2-R-3 J17-B2					1.38 .88	NO NO			
AA 571W			TB2-N-3 J17-A2					1.38 .88	NO NO			
AA 572	4		TB1-D-7 TB1-D-8					1.38 1.38	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 577	4		TB2-D-7					1.38	NO			
			TB2-D-8					1.38	NO			
AA 578	4		TB2-S-2					1.38	NO			
			TB2-R-2					1.38	NO			
AA 579	4		TB2-F-7					1.38	NO			
			TB2-G-7					1.38	NO			
AA 580	4		TB2-F-2					1.38	NO			
			TB2-G-2					1.38	NO			
AA 581	4		TB2-M-1					1.38	NO			
			TB2-M-2					1.38	NO			
AA 582	4		TB2-M-2					1.38	NO			
			TB2-M-3					1.38	NO			
AA 583	4		TB2-M-3					1.38	NO			
			TB2-M-4					1.38	NO			
AA 584	4		TB2-M-4					1.38	NO			
			TB2-M-5					1.38	NO			
AA 585	4		TB2-M-5					1.38	NO			
			TB2-M-6					1.38	NO			
AA 586	4		TB2-M-6					1.38	NO			
			TB2-M-7					1.38	NO			
AA 587	4		TB1-D-8					1.38	NO			BB
			TB1-N-8					1.38	NO			
AA 588	4		TB1-N-4					1.38	NO			12BB
			TB1-S-8					1.38	NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 589	4		TB1-N-4					1.38	NO			EE
			TB2-M-5					1.38	NO			
AA 590	4		TB1-D-7					1.38	NO			5HH
			TB2-V-2					1.38	NO			
AA 591	4		TB1-S-3					1.38	NO			FF
			TB2-M-4					1.38	NO			
AA 592	4		TB2-M-6					1.38	NO			27AA45 45
			TB3-T-3					1.38	NO			
AA 596	4		TB2-V-3					1.38	NO			
			TB2-V-4					1.38	NO			
AA 597	4		TB2-V-4					1.38	NO			
			TB2-V-5					1.38	NO			
AA 598	4		TB2-V-5					1.38	NO			
			TB2-V-6					1.38	NO			
AA 599	4		TB2-V-6					1.38	NO			36
			TB2-V-8					1.38	NO			
AA 600	4		TB1-S-8					1.38	NO			
			TB1-S-7					1.38	NO			
AA 601	4		TB1-S-7					1.38	NO			
			TB1-S-6					1.38	NO			
AA 602	4		TB1-S-7					1.38	NO			BB
			TB2-D-8					1.38	NO			
AA 603	4		TB2-D-7					1.38	NO			
			TB2-D-6					1.38	NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 604	4		TB2-D-6					1.38	NO			
			TB2-D-5					1.38	NO			
AA 605	4		TB2-D-5					1.38	NO			
			TB2-D-4					1.38	NO			
AA 607	4		TB3-F22					1.38	NO			
			TB3-F21					1.38	NO			
AA 608	4		TB2-D-4					1.38	NO			H16 21
			E27					.20	NO			
AA 609	4		TB3-C15					1.38	NO			
			TB3-D15					1.38	NO			
AA 610	4		J11-N3					1.38	NO			E9
			J12-P4					1.38	NO			
AA 611	4		TB1-R-1					1.38	NO			
			TB1-S-1					1.38	NO			
AA 612	4		TB1-S-1					1.38	NO			
			TB1-T-1					1.38	NO			
AA 613	4		TB3-B20					1.38	NO			
			TB3-B21					1.38	NO			
AA 614	4		TB3-B21					1.38	NO			71
			TB3-F21					1.38	NO			
AA 615	4		TB2-R-3					1.38	NO			
			TB2-S-3					1.38	NO			
AA 616	4		J18-R4					1.38	NO			58F
			J19-M4					1.38	NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 617	4		J11-L4					1.38	NO			G7
			E66					.20	NO		12	
AA 618	4		J11-L4					1.38	NO			G13
			E67					.20	NO		12	
AA 619	4		TB3-B20					1.38	NO			70AA65 71
			E68					.20	NO		12	
AA 620	4		TB3-B20					1.38	NO			70AA74 71
			E69					.20	NO		12	
AA 621	4		TB2-T-2					1.38	NO			
			TB2-T-3					1.38	NO			
AA 622	4		J20-R1					1.38	NO			79H63 71
			TB3-C20					1.38	NO			
AA 623	4		J20-P1					1.38	NO			79F64 73
			TB3-C21					1.38	NO			
AA 624	4		J20-R2					1.38	NO			C63 71
			TB3-D20					1.38	NO			
AA 625	4		J20-P2					1.38	NO			78F64 73
			TB3-D21					1.38	NO			
AA 626	4		J20-S3					1.38	NO			77G64 75
			TB3-D22					1.38	NO			
AA 627	4		J20-S4					1.38	NO			76G64 75
			TB3-C22					1.38	NO			
AA 628	4		J20-R5					1.38	NO			B61 73
			TB3-H21					1.38	NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 629	4		J20-R6 TB3-H22					1.38 1.38	NO NO			B59 75
AA 630	4		TB3-D15 TB3-G15					1.38 1.38	NO NO			63
AA 631	4		TB3-R-3 TB3-S-3					1.38 1.38	NO NO			
AA 632	4		TB1-S-3 TB1-S-4					1.38 1.38	NO NO			
AA 633	4		TB1-S-4 TB1-S-5					1.38 1.38	NO NO			
AA 634	4		TB1-S-5 TB1-S-6					1.38 1.38	NO NO			
AA 635	4		TB3-T-3 TB2-V-8					1.38 1.38	NO NO			38AA45 45
AA 636	4		J17-F2 TB3-D-6					.88 1.38	NO NO			P46 49
AA 637	4		J15-R2 TB2-F-4					1.38 1.38	NO NO			33F18 22
AA 638	4		J18-T5 E71					1.38 .20	NO NO			A55
AA 639	5				3.00 1.00	2.75 .75					9 8	8H74
AA 639B	4		E70 SHLD AA639					.20 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 639R			J12-F6 J21-29					1.38 .10	NO NO		 6	
AA 639W			J12-D6 J21-28					1.38 .10	NO NO		 6	
AA 640	5				3.00 1.00	2.75 .75					9 8	9K74
AA 640B	4		E70 SHLD AA640					.20 .20	NO NO			
AA 640R			J12-F5 J21-159					1.38 .10	NO NO		 6	
AA 640W			J12-D5 J21-158					1.38 .10	NO NO		 6	
AA 641	5				3.00 1.00	2.75 .75					9 8	10K74
AA 641B	4		E70 SHLD AA641					.20 .20	NO NO			
AA 641R			J12-F4 J21-61					1.38 .10	NO NO		 6	
AA 641W			J12-D4 J21-60					1.38 .10	NO NO		 6	
AA 642	4		J21-22 E70					.10 .20	NO NO		6	74
AA 643	4		J12-N6 J12-R6					1.38 1.38	NO NO			8

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 644	4		J12-P5 J12-R3					1.38 1.38	NO NO			C
AA 645	4		TB2-U-1 TB2-U-3					1.38 1.38	NO NO			33
AA 646	4		J18-T1 TB3-A10					1.38 1.38	NO NO			B50 55
AA 647	4		J22-172 TB3-F-2					.10 1.38	NO NO		6	65AA42 44
AA 648	4		J18-M1 J18-M3					1.38 1.38	NO NO			F
AA 649	4		J18-M4 J18-M6					1.38 1.38	NO NO			F
AA 651R	4		J18-M2 J19-B6					1.38 .88	NO NO			F66
AA 651W	4		J18-N2 J19-B8					1.38 .88	NO NO			F66
AA 652R	4		J18-M5 J19-D9					1.38 .88	NO NO			F66
AA 652W	4		J18-N5 J19-C8					1.38 .88	NO NO			F66
AA 653R	4		J14-R1 J17-L4					1.38 1.38	NO NO			B49
AA 653W	4		J14-S1 J17-L5					1.38 1.38	NO NO			B49

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 654L	3		J15-B1 TB1-C-7					.88 1.63	NO NO			36G7 4
AA 654R	3		J15-B2 TB1-B-7					.88 1.63	NO NO			36G7 4
AA 654W	3		J15-A1 TB1-C-8					.88 1.63	NO NO			36G7 4
AA 655R	4		E33 J21-101					.20 .10	NO NO		 6	20H74
AA 655W	4		J14-K4 J21-102					1.38 .10	NO NO		 6	H74
AA 656	4		J12-C1 TB3-F-6					1.38 1.38	NO NO			N46 49
AA 657	4		J13-C1 TB3-G-6					1.38 1.38	NO NO			26M46 49
AA 658	4		J14-B1 TB3-K-6					1.38 1.38	NO NO			26M46 49
AA 659	4		J14-B2 TB3-L-6					1.38 1.38	NO NO			25L46 49
AA 660	4		J21-138 TB3-L-6					.10 1.38	NO NO		6	49AA74 49
AA 661	4		J12-C2 J13-C2					1.38 1.38	NO NO			R
AA 662	4		J13-C2 J14-B2					1.38 1.38	NO NO			R

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WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 663	4		J18-M1 J19-K6					1.38 1.38	NO NO			G65
AA 664K	4		J16-M2 TB3-B-6					1.38 1.38	NO NO			F49 50
AA 664L	4		J16-M3 TB3-C-6					1.38 1.38	NO NO			F49 50
AA 664R	4		J16-N3 TB3-C-7					1.38 1.38	NO NO			F49 50
AA 664W	4		J16-R2 TB3-C-8					1.38 1.38	NO NO			F49 50
AA 665	3		J17-A9 J17-B9					.88 .88	NO NO			
AA 666K	4		J18-N6 TB3-D-9					1.38 1.38	NO NO			E49 52
AA 666L	4		J18-N4 TB3-B-7					1.38 1.38	NO NO			E49 52
AA 666R	4		J18-N3 TB3-D-8					1.38 1.38	NO NO			E49 52
AA 666W	4		J18-N1 TB3-D-7					1.38 1.38	NO NO			E49 52
AA 667K	4		J19-L1 TB3-C-9					1.38 1.38	NO NO			G55 54
AA 667L	4		J19-K6 TB3-C10					1.38 1.38	NO NO			G55 54

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE-NONE
REV LTR C
SHEET 89 OF 91

MIL 2084 4-63

WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 667R	4		J19-L3 TB3-B-9					1.38 1.38	NO NO			G55 54
AA 667W	4		J19-L2 TB3-B10					1.38 1.38	NO NO			G55 54
AA 668	4		J12-M5 J13-S3					1.38 1.38	NO NO			19F
AA 669	4		J13-S3 J14-S5					1.38 1.38	NO NO			B
AA 670	4		J13-S4 J14-S4					1.38 1.38	NO NO			B
AA 671	4		J14-S4 J17-T5					1.38 1.38	NO NO			A
AA 672L	4		J17-L5 TB3-A-3					1.38 1.38	NO NO			49 46
AA 672R	4		J17-T5 TB3-A-4					1.38 1.38	NO NO			49 46
AA 672W	4		J17-L4 TB3-A-5					1.38 1.38	NO NO			49 46
AA 673	4		TB3-M21 TB3-M22					1.38 1.38	NO NO			
AA 674	4		J21-38 TB3-F-3					.10 1.38	NO NO		6	74AA44 45
AA 675	4		J22-37 TB2-F6					.10 1.38	NO NO		6	65AA22 22

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE-NONE
REV LTR C
SHEET 90 OF 91

MIL 2084 4-63

WIRE LIST AA 1015058 C

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM.JKT AREA NO.	STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
AA 676	4		J13-S6 TB3-T20					1.38 1.38	NO NO			14D59 71
AA 677	4		TB1-N5 TB1-R2					1.38 1.38	NO NO			12

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE-NONE
REV LTR C
SHEET 91 OF 91

MIL 2084 4-63

APPLICATION		REVISIONS TORR 14008			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL

SEE SHEET 2 FOR REVISION RECORD

REV	
SHEET	
REV STATUS OF SHEETS REV	
SHEET	

AC SPARK PLUG DIVISION , GMC
MILWAUKEE,WISCONSIN

ACSP PN

DRAWN E. Botke DATE Oct 24 64
CHECKED 10-26-64
APPROVAL J Green 10/26/64
APPROVAL 10/27/64
NASA APPROVAL 11-4-64
MIT APPROVAL 4 Nov 64
CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON,TEXAS

WIRE LIST AA
AGE HARNESS AND PSA END CONNECTOR ASSY

CODE IDENT NO. SIZE A 1015058 REV +

SCALE — SHEET 1 OF 62

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	+	37	+												
2	+	38	+												
3	+	39	+												
4	+	40	+												
5	+	41	+												
6	+	42	+												
7	+	43	+												
8	+	44	+												
9	+	45	+												
10	+	46	+												
11	+	47	+												
12	+	48	+												
13	+	49	+												
14	+	50	+												
15	+	51	+												
16	+	52	+												
17	+	53	+												
18	+	54	+												
19	+	55	+												
20	+	56	+												
21	+	57	+												
22	+	58	+												
23	+	59	+												
24	+	60	+												
25	+	61	+												
26	+	62	+												
27	+														
28	+														
29	+														
30	+														
31	+														
32	+														
33	+														
34	+														
35	+														
36	+														

MANNED
SPACECRAFT CENTER
HOUSTON,TEXAS

REVISION +

NASA DRAWING NO. 1015058
SHEET 2 OF 62

WIRE LIST AA

GENERAL NOTES

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

4 CONDUCTORS WITH THE SAME NUMBER ARE TWISTED TOGETHER.

5 TWISTED CONDUCTORS ARE TO BE TWISTED PER ND1002032.

6 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING

7 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, OR TWISTING
A - FROM END SHIELD
B - TO END SHIELD
K - BLACK
L - BLUE
R - RED
W - WHITE

8 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE-NONE | REV LTR + | SHEET 3

MIL 2064-4-64

WIRE LIST AA

GENERAL NOTES

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE-NONE | REV LTR + | SHEET 4

MIL 2064-4-64

INCHES
0 1 2

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA 1	4		J11-S4	1	38	N			J15-S6	1	38	N			3 D27
AA 2	4		J11-S1	1	38	N			J20-L1	1	38	N			6 F
AA 3	4		J11-S2	1	38	N			J20-L2	1	38	N			5 E79
AA 4	4		J11-S5	1	38	N			J20-K2	1	38	N			2 G
AA 5R	4		J11-N4	1	38	N			J12-P3	1	38	N			D
AA 5W	4		J11-N5	1	38	N			J12-N3	1	38	N			D
AA 6	4		J11-S4	1	38	N			J12-S5	1	38	N			B
AA 7	4		J11-L4	1	38	N			J12-K3	1	38	N			G
AA 9R	4		J11-L2	1	38	N			J12-K2	1	38	N			G12
AA 9W	4		J11-L1	1	38	N			J12-H2	1	38	N			G12
AA 10K	4		J11-B5	1	38	N			J12-B2	1	38	N			T
AA 10L	4		J11-A6	1	38	N			J12-B1	1	38	N			T
AA 10R	4		J11-A5	1	38	N			J12-A2	1	38	N			T
AA 10W	4		J11-B6	1	38	N			J12-A1	1	38	N			T
AA 11R	3		J11-B3	1	63	N			J17-B1		88	N			R55
AA 11W	3		J11-C3	1	63	N			J17-A1		88	N			R55
AA 12L	4		J11-N2	1	38	N			J17-R2	1	38	N			D
AA 12R	4		J11-N1	1	38	N			J17-P2	1	38	N			D

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058	
SCALE - NONE	REV LTR	+	SHEET 6

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA 12W	4		J11-P1	1	38	N			J17-N2	1	38	N			D
AA 13	4		J11-S3	1	38	N			J17-R1	1	38	N			4 C
AA 14	4		J11-N6	1	38	N			J13-P6	1	38	N			E14
AA 15R	4		J11-B1	1	38	N			TB2-G 2	1	38	N			7HH
AA 15W	4		J11-A1	1	38	N			TB2-H 2	1	38	N			7HH
AA 16R	4		J11-C1	1	38	N			TB1-C 5	1	38	N			7DD
AA 16W	4		J11-B1	1	38	N			TB1-B 5	1	38	N			7DD
AA 17	4		J11-R4	1	38	N			J11-R5	1	38	N			
AA 18	4		J11-P4	1	38	N			J11-R4	1	38	N			
AA 19R	4		J11-B2	1	38	N			TB2-G 7	1	38	N			6BB
AA 19W	4		J11-A2	1	38	N			TB2-H 7	1	38	N			6BB
AA 20R	4		J11-C2	1	38	N			TB1-A 5	1	38	N			6DD
AA 20W	4		J11-B2	1	38	N			TB1-A 6	1	38	N			6DD
AA 21R	4		J11-B3	1	38	N			TB2-R 2	1	38	N			5GG
AA 21W	4		J11-A3	1	38	N			TB2-N 2	1	38	N			5GG
AA 22	4		J11-P4	1	38	N			J11-P5	1	38	N			
AA 23K	4		J11-G1	1	38	N			TB1-C 3	1	38	N			7FF
AA 23L	4		J11-H1	1	38	N			TB1-B 4	1	38	N			7FF

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058	
SCALE - NONE	REV LTR	+	SHEET 7

MIL 2085-4-64 WIR

WIRE LIST AA

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015058- 1	WIRE PER 1010707-2 RED JKT 29 AWG WHT, RED, BLUE, 13 FT 1.0 INCHES TOTAL LENGTH.
	3	1	1015058- 3	WIRE PER 1010807-4 28 AWG WHITE 180 FT. 6.0 INCHES TOTAL LENGTH.
	4	1	1015058- 4	WIRE PER 1010807-5 24 AWG WHITE 615 FT. 6.0 INCHES TOTAL LENGTH.
	5	1	1015058- 5	WIRE PER 1010807-3 WHT JKT 24 AWG WHT, RED 103 FT. 8.0 INCHES TOTAL LENGTH.
6	6	488	1010738- 6	CONTACT, SOCKET
6	7	27	1010763- 1	SLEEVE, SOLDER
6	8	78	1010763- 2	SLEEVE, SOLDER
6	9	64	1010490-110	INSULATION-SLEEVING, ELEC
6	10	9	1010490-112	INSULATION-SLEEVING, ELEC
	12	4	MS-25036-44	TERMINAL LUG

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058	
SCALE - NONE	REV LTR +		SHEET 5

MIL 2084-4-64

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA 23R	4		J11-F1	1	38	N			TB1-C 4	1	38	N			7FF
AA 23W	4		J11-G2	1	38	N			TB1-B 3	1	38	N			7FF
AA 24	4		J11-G2	1	38	N			J11-P6	1	38	N			6 C
AA 25	4		J11-S4	1	38	N			J11-S5	1	38	N			
AA 26	4		J11-P6	1	38	N			J11-R6	1	38	N			
AA 27	4		J11-N6	1	38	N			TB1-D 5	1	38	N			2EE
AA 28K	4		J11-L2	1	38	N			TB1-C 2	1	38	N			6GG
AA 28L	4		J11-M2	1	38	N			TB1-C 2	1	38	N			6GG
AA 28R	4		J11-M1	1	38	N			TB1-D 2	1	38	N			6GG
AA 28W	4		J11-L1	1	38	N			TB1-D 2	1	38	N			6GG
AA 29K	4		J11-B5	1	38	N			TB1-B 7	1	38	N			2
AA 29L	4		J11-A6	1	38	N			TB1-A 8	1	38	N			2
AA 29R	4		J11-A5	1	38	N			TB1-A 7	1	38	N			2
AA 29W	4		J11-B6	1	38	N			TB1-B 8	1	38	N			2
AA 30R	4		J11-D6	1	38	N			TB1-D 3	1	38	N			2FF
AA 30W	4		J11-D5	1	38	N			TB1-D 4	1	38	N			2FF
AA 31	4		J11-R5	1	38	N			J11-R6	1	38	N			
AA 32R	4		J11-F6	1	38	N			TB1-A 4	1	38	N			2

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058	
SCALE - NONE	REV LTR	+	SHEET 8

MIL 2085-4-64 WIR

INCHES
0 1 2
[illegible] SCALE [illegible]

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	T I N	2	FROM TERMINATION SPEC. 1 ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	T I N	2	TO TERMINATION SPEC 1 ITEM NO.	TO NO.	ROUTING
AA 49R	4		J12-P3	138	N				J15-P5	138	N				D
AA 49W	4		J12-N3	138	N				J15-P6	138	N				D
AA 50R	4		J12-P5	138	N				J15-N5	138	N				E
AA 50W	4		J12-N5	138	N				J15-N6	138	N				E
AA 51	4		J12-S6	138	N				J20-N5	138	N				7 D
AA 52R	4		J12-K4	138	N				J20-G6	138	N				K
AA 52W	4		J12-H4	138	N				J20-G5	138	N				K
AA 53	4		J12-G4	138	N				J20-L6	138	N				10 F
AA 54	4		J12-S1	138	N				J20-M1	138	N				12 E
AA 55	4		J12-S2	138	N				J20-M2	138	N				11 E
AA 56	4		J12-H5	138	N				J16-M2	138	N				K42
AA 57	4		J12-H6	138	N				J16-M3	138	N				M40
AA 58	4		J12-G6	138	N				J16-N3	138	N				L40
AA 59	4		J12-G5	138	N				J16-R2	138	N				L42
AA 60L	4		J12-P1	138	N				TB1-H 3	138	N				12GG
AA 60R	4		J12-R1	138	N				TB1-H 2	138	N				12GG
AA 60W	4		J12-P2	138	N				TB1-G 2	138	N				12GG
AA 61	4		J12-N1	138	N				J12-P1	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 10

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	T I N	2	FROM TERMINATION SPEC. 1 ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	T I N	2	TO TERMINATION SPEC 1 ITEM NO.	TO NO.	ROUTING
AA 62	4		J12-H4	138	N				J12-N2	138	N				10 D
AA 63R	4		J12-N6	138	N				TB1-G 7	138	N				7
AA 63W	4		J12-P6	138	N				TB1-H 7	138	N				7
AA 64R	4		J12-P5	138	N				TB1-G 4	138	N				9EE
AA 64W	4		J12-N4	138	N				TB1-H 4	138	N				9EE
AA 65	4		J12-N4	138	N				J12-N5	138	N				
AA 66	4		J12-R6	138	N				TB3-L20	138	N				7AA70
AA 67	4		J12-F1	138	N				E 31	20	N		7		13
AA 68	4		J12-F1	138	N				J12-F2	138	N				
AA 69	4		J12-F2	138	N				E 29	20	N		8		11 N13
AA 70	5			300		275	8			100		75	9		13AA74
AA 70A	4		SHLD AA 70	20	N				J12-H1	138	N				13
AA 70R			J12-H1	138	N				J21- 71	10	N		6		
AA 70W			J12-K1	138	N				J21- 70	10	N		6		
AA 71	4		J12-G5	138	N				J12-R5	138	N				9
AA 72	4		J12-K3	138	N				J13-C6	138	N				H15
AA 73L	4		J12-K6	138	N				J14-R2	138	N				F24
AA 73R	4		J12-L6	138	N				J14-S2	138	N				F24

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 11

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	T I N	2	FROM TERMINATION SPEC. 1 ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	T I N	2	TO TERMINATION SPEC 1 ITEM NO.	TO NO.	ROUTING
AA 32W	4		J11-G6	138	N				TB1-A 3	138	N				2
AA 33	4		J11-R6	138	N				J11-S6	138	N				
AA 34R	4		J11-H6	138	N				TB1-A 2	138	N				2
AA 34W	4		J11-H5	138	N				TB1-B 2	138	N				2
AA 35	4		J11-L3	138	N				TB1-D 6	138	N				5
AA 36	4		J11-M5	138	N				E 28	20	N		8		E 1
AA 37	4		J11-M5	138	N				J11-P3	138	N				F 4
AA 38	4		J11-P2	138	N				J11-R3	138	N				C
AA 39	4		J11-P3	138	N				J11-R3	138	N				
AA 40	4		J11-S1	138	N				J11-S2	138	N				
AA 41	4		J11-R1	138	N				J11-R2	138	N				
AA 42R	4		J11-G3	138	N				TB1-B 6	138	N				5CC
AA 42W	4		J11-F3	138	N				TB1-C 6	138	N				5CC
AA 43	4		J11-R3	138	N				TB2-M 1	138	N				5HH
AA 44	4		J11-R1	138	N				TB2-M 2	138	N				7GG
AA 45	4		J11-R2	138	N				TB2-M 3	138	N				6FF
AA 46	4		J11-P6	138	N				TB1-S 3	138	N				2FF
AA 47	4		J12-B6	138	N				J14-H6	138	N				8 H

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 9

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	T I N	2	FROM TERMINATION SPEC. 1 ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	T I N	2	TO TERMINATION SPEC 1 ITEM NO.	TO NO.	ROUTING
AA 73W	4		J12-M6	138	N				J14-S3	138	N				F24
AA 74	4		J12-G3	138	N				J22-244	10	N		6		L65
AA 75	4		J12-A5	138	N				J13-D2	138	N				9 M
AA 76	4		J12-A6	138	N				J13-F2	138	N				8 L
AA 77	4		J12-B5	138	N				E 34	20	N		7		9 N14
AA 78	4		J12-M3	138	N				TB1-H 5	138	N				11DD
AA 80	4		J12-M1	138	N				TB1-H 6	138	N				13CC
AA 81	4		J12-M1	138	N				J21- 36	10	N		6		F74
AA 82	4		J12-L1	138	N				TB3-M22	138	N				13FF
AA 83	4		J12-L2	138	N				TB1-H 8	138	N				12BB
AA 87	4		J12-S1	138	N				J12-S3	138	N				A
AA 88	4		J12-S2	138	N				J12-S4	138	N				A
AA 89	4		J12-R2	138	N				J12-R3	138	N				
AA 90	4		J12-R3	138	N				J12-R4	138	N				
AA 91	4		J12-R4	138	N				E 31	20	N				9 T13
AA 92	5			300		275	9			300		275	8		D
AA 92B	4		E 27	20	N		7		SHLD AA 92	20	N				46
AA 92R			J12-P4	138	N				J17-R3	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 12

MIL 2068-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2▷	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD 2▷	FROM TIN	FROM STRIP WIRE OR JACKET 2▷	FROM TERMINATION SPEC. 1▷ ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD 2▷	TO TIN	TO STRIP WIRE OR JACKET 2▷	TO TERMINATION SPEC 1▷ ITEM NO.	TO NO.	ROUTING
AA109W	4		J13-S2	138	N				J14-S1	138	N				A
AA112R	4		J13-R1	138	N				J14-R2	138	N				A
AA112W	4		J13-S1	138	N				J14-S2	138	N				A
AA113	4		J13-P6	138	N				J14-P6	138	N				D
AA114	4		J13-D1	138	N				J15-L4	138	N				19 N30
AA115	4		J13-F1	138	N				J15-M4	138	N				19 M31
AA116	4		J13-D3	138	N				J15-L3	138	N				18 M31
AA117	4		J13-F3	138	N				J15-M3	138	N				18 L31
AA118R	4		J13-B1	138	N				TB1-M 6	138	N				19CC
AA118W	4		J13-A1	138	N				TB1-M 7	138	N				19CC
AA119	1			300		275	10			300		275	7		H10
AA119B	4		TB1-N 5	138	N				SHLD AA119	20	N				DD10
AA119L			J13-L1	163	N				TB1-L 5	163	N				
AA119R			J13-H1	163	N				TB1-M 5	163	N				
AA119W			J13-K1	163	N				TB1-L 6	163	N				
AA120	4		J13-D2	138	N				TB1-L 2	138	N				18 H10
AA121R	4		J13-B3	138	N				TB1-N 2	138	N				17 F11
AA121W	4		J13-A3	138	N				TB1-M 3	138	N				17 F11

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 14

MIL 2088-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2▷	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD 2▷	FROM TIN	FROM STRIP WIRE OR JACKET 2▷	FROM TERMINATION SPEC. 1▷ ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD 2▷	TO TIN	TO STRIP WIRE OR JACKET 2▷	TO TERMINATION SPEC 1▷ ITEM NO.	TO NO.	ROUTING
AA122	1			300		275	10			300		275	7		E10
AA122B	4		TB1-N 4	138	N				SHLD AA122	20	N				EE10
AA122L			J13-N3	163	N				TB1-M 4	163	N				
AA122R			J13-L3	163	N				TB1-L 4	163	N				
AA122W			J13-M3	163	N				TB1-L 3	163	N				
AA123	4		J13-F2	138	N				TB1-M 2	138	N				18 H10
AA124	1			300		275	10			300		275	7		L10
AA124B	4		TB1-N 8	138	N				SHLD AA124	20	N				BB10
AA124L			J13-G6	163	N				TB1-L 7	163	N				
AA124R			J13-D6	163	N				TB1-M 8	163	N				
AA124W			J13-F6	163	N				TB1-L 8	163	N				
AA125	4		J13-R6	138	N				E 34	20	N				14
AA126R	4		J14-A2	138	N				TB1-T 4	138	N				25 K14
AA126W	4		J14-A1	138	N				TB1-T 5	138	N				25 K14
AA127	1			300		275	10			300		275	7		D15
AA127B	4		TB1-S 4	138	N				SHLD AA127	20	N				15EE
AA127L			J14-P2	163	N				TB1-U 3	163	N				
AA127R			J14-P1	163	N				TB1-U 4	163	N				

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 15

MIL 2088-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2▷	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD 2▷	FROM TIN	FROM STRIP WIRE OR JACKET 2▷	FROM TERMINATION SPEC. 1▷ ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD 2▷	TO TIN	TO STRIP WIRE OR JACKET 2▷	TO TERMINATION SPEC 1▷ ITEM NO.	TO NO.	ROUTING
AA 92W			J12-P4	138	N				J17-R3	138	N				
AA 94R	4		J12-N6	138	N				J17-N3	138	N				7 F
AA 94W	4		J12-P6	138	N				J17-P3	138	N				7 F
AA 96	4		J12-R5	138	N				J13-R6	138	N				C
AA 97	4		J12-F3	138	N				J17-M3	138	N				11 H50
AA 98	4		J12-R5	138	N				TB1-S 6	138	N				9CC
AA 99	4		J12-R2	138	N				TB1-N 5	138	N				12
AA100	4		J12-R4	138	N				TB1-N 8	138	N				10BB
AA101	4		J13-N5	138	N				J14-H3	138	N				E24
AA102	4		J13-N6	138	N				J14-K3	138	N				E24
AA103	4		J13-H6	138	N				J14-G1	138	N				K
AA104	4		J13-A6	138	N				J14-A6	138	N				T
AA105R	4		J13-L6	138	N				J14-K1	138	N				G
AA105W	4		J13-K6	138	N				J14-H1	138	N				G
AA106	4		J13-C6	138	N				J14-H5	138	N				15 H
AA107	4		J13-S6	138	N				J14-S6	138	N				A
AA108	4		J13-R6	138	N				J14-R6	138	N				B
AA109R	4		J13-R2	138	N				J14-R1	138	N				A

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 13

MIL 2088-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2▷	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD 2▷	FROM TIN	FROM STRIP WIRE OR JACKET 2▷	FROM TERMINATION SPEC. 1▷ ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD 2▷	TO TIN	TO STRIP WIRE OR JACKET 2▷	TO TERMINATION SPEC 1▷ ITEM NO.	TO NO.	ROUTING
AA127W			J14-P3	163	N				TB1-T 3	163	N				
AA128	4		J14-H6	138	N				TB1-T 7	138	N				H14
AA129R	4		J14-D1	138	N				J21- 67	10	N		6		M74
AA129W	4		E 33	20	N		8		J21- 66	10	N		6		20 M74
AA130R	4		E 33	20	N				J21- 32	10	N		6		20 M74
AA130W	4		J14-D2	138	N				J21- 33	10	N		6		M74
AA131R	4		J14-D3	138	N				J21-240	10	N		6		M74
AA131W	4		E 33	20	N				J21-239	10	N		6		20 M74
AA132R	4		J14-D4	138	N				J21-202	10	N		6		M74
AA132W	4		E 33	20	N				J21-201	10	N		6		20 M74
AA133	1			300		275	10			300		275	7		F15
AA133B	4		TB1-S 5	138	N				SHLD AA133	20	N				DD15
AA133L			J14-M2	163	N				TB1-U 6	163	N				
AA133R			J14-M1	163	N				TB1-T 6	163	N				
AA133W			J14-M3	163	N				TB1-U 5	163	N				
AA134R	4		E 33	20	N				J21-167	10	N		6		20 M74
AA134W	4		J14-D5	138	N				J21-168	10	N		6		M74
AA135R	4		J14-D6	138	N				J21-135	10	N		6		M74

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 16

MIL 2088-4-64 WIR

INCHES

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	
AA162L	3		J15-F2	88	N				TB2-C 6	163	N				35CC
AA162R	3		J15-D2	88	N				TB2-A 6	163	N				35CC
AA162W	3		J15-F1	88	N				TB2-B 6	163	N				35CC
AA163L	3		J15-C3	88	N				TB2-C 4	163	N				33EE
AA163R	3		J15-D3	88	N				TB2-A 4	163	N				33EE
AA163W	3		J15-D4	88	N				TB2-B 4	163	N				33EE
AA164	3		J15-A5	88	N				E 38	20	N		7		T36
AA165	3		J15-A7	88	N				E 40	20	N		7		29 N
AA166	3		J15-A9	88	N				E 42	20	N		7		27
AA167	3		J15-A5	88	N				E 39	20	N		8		32 N
AA168	3		J15-A7	88	N				E 41	20	N		8		T27
AA169	3		J15-A9	88	N				E 43	20	N		8		27
AA170	4		J15-H4	138	N				TB2-C 1	138	N				31HH
AA171L	3		J15-F7	88	N				TB2-C 8	163	N				30BB
AA171R	3		J15-D7	88	N				TB2-B 8	163	N				30BB
AA171W	3		J15-D8	88	N				TB2-A 8	163	N				30BB
AA172L	3		J15-D9	88	N				TB2-C 7	163	N				28BB
AA172R	3		J15-F9	88	N				TB2-B 7	163	N				28BB

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 18

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	
AA172W	3		J15-F8	88	N				TB2-A 7	163	N				28BB
AA173	4		J15-S1	138	N				TB2-B 2	138	N				B18
AA174	4		J15-S3	138	N				TB2-B 1	138	N				B18
AA175	4		J15-S3	138	N				J22-227	10	N		6		C65
AA176	5			225		200	9			300		275	8		36AA21
AA176B	4		TB2-D 3	138	N				SHLD AA176	20	N				R35
AA176R			E 59	20	N		7		TB2-F 3	138	N				
AA176W			J15-B3	88	N	175			TB2-D 2	138	N				
AA177	4		J15-R6	138	N				TB2-D 1	138	N				C20
AA179	4		J15-S2	138	N				J20-K1	138	N				33 G
AA180R	3		J15-A4	88	N				J16-B2	88	N				T
AA180W	3		J15-A5	88	N				J16-B1	88	N				T
AA181R	3		J15-A6	88	N				J16-B4	88	N				T
AA181W	3		J15-A7	88	N				J16-B3	88	N				T
AA182R	3		J15-A8	88	N				J16-B6	88	N				T
AA182W	3		J15-A9	88	N				J16-B5	88	N				T
AA183	4		J15-S1	138	N				J16-L2	138	N				C44
AA184	4		J15-H4	138	N				J16-L1	138	N				31 G

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 19

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	
AA135W	4		E 33	20	N				J21-134	10	N		6		20 M74
AA136	1			300		275	10			300		275	7		20 G15
AA136B	4		TB1-S 8	138	N				SHLD AA136	20	N				BB15
AA136L			J14-M6	163	N				TB1-U 8	163	N				
AA136R			J14-L6	163	N				TB1-T 8	163	N				
AA136W			J14-N6	163	N				TB1-U 7	163	N				
AA137	4		J14-R6	138	N				E 33	20	N				20
AA148	4		J14-F6	138	N				J15-L2	138	N				21 G
AA149	4		J14-G6	138	N				J15-M2	138	N				21 F
AA151	4		J14-H5	138	N				J15-K3	138	N				K
AA152	4		J14-S6	138	N				J15-S2	138	N				B
AA153	4		J14-R6	138	N				J15-R2	138	N				C
AA158	4		J15-L5	138	N				E 35	20	N		7		G27
AA159	4		J15-L5	138	N				E 36	20	N		7		H27
AA160	4		J15-L5	138	N				E 37	20	N		7		K27
AA161L	3		J15-D1	88	N				TB2-C 5	163	N				35DD
AA161R	3		J15-C1	88	N				TB2-A 5	163	N				35DD
AA161W	3		J15-C2	88	N				TB2-B 5	163	N				35DD

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 17

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.	NO.	
AA185R	4		J15-P5	138	N				J16-S3	138	N				30 B
AA185W	4		J15-P6	138	N				J16-S4	138	N				28 B
AA186	4		J15-S6	138	N				J16-S2	138	N				C
AA187	4		J15-K3	138	N				J16-N4	138	N				33 E
AA189	4		J16-S5	138	N				J20-N5	138	N				37 D
AA190	4		J16-S6	138	N				J20-N6	138	N				C75
AA191R	4		J16-N5	138	N				J20-L3	138	N				F
AA191W	4		J16-P5	138	N				J20-K3	138	N				37 F78
AA192R	4		J16-N6	138	N				J20-M4	138	N				E
AA192W	4		J16-P6	138	N				J20-L4	138	N				E77
AA193	4		J16-S2	138	N				J20-K2	138	N				42 G
AA194R	3		J16-D2	88	N				TB2-G 3	163	N				44 K23
AA194W	3		J16-D1	88	N				TB2-H 3	163	N				44 K23
AA195R	3		J16-D2	88	N				TB2-G 2	163	N				44 L23
AA195W	3		J16-C2	88	N				TB2-H 2	163	N				44 L23
AA196R	3		J16-D2	88	N				TB2-G 1	163	N				44 K23
AA196W	3		J16-C1	88	N				TB2-H 1	163	N				44 K23
AA197	1			225		200	7			300		275	10		44 H33

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 20

MIL 2085-4-64 WIR

INCHES

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA203W	4		J16-R3	138	N				TB2-L 3	138	N				D25
AA204L	3		J16-C9	88	N				TB2-R 8	163	N				37BB
AA204R	3		J16-C8	88	N				TB2-N 7	163	N				37BB
AA204W	3		J16-B8	88	N				TB2-N 8	163	N				37BB
AA205L	3		J16-B9	88	N				TB2-T 8	163	N				37 M33
AA205R	3		J16-A9	88	N				TB2-U 8	163	N				37 M33
AA205W	3		J16-A8	88	N				TB2-U 7	163	N				37 M33
AA206R	3		J16-D6	88	N				TB2-R 1	163	N				40 G28
AA206W	3		J16-D5	88	N				TB2-N 1	163	N				40 G28
AA207R	3		J16-D6	88	N				TB2-R 2	163	N				40 H28
AA207W	3		J16-C6	88	N				TB2-N 2	163	N				40 H28
AA208R	3		J16-C5	88	N				TB2-N 3	163	N				40 F28
AA208W	3		J16-D6	88	N				TB2-R 3	163	N				40 F28
AA209L	3		J16-F8	88	N				TB2-X 4	163	N				39 F37
AA209R	3		J16-D7	88	N				TB2-W 3	163	N				39 F37
AA209W	3		J16-F7	88	N				TB2-W 4	163	N				39 F37
AA210	4		J16-S1	138	N				TB2-N 5	138	N				44 G27
AA211	4		J16-T1	138	N				TB2-R 5	138	N				44 H28

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058
SCALE - NONE	REV LTR +	SHEET 22

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA212	4		J16-T2	138	N				TB2-K 8	138	N				42 K24
AA213L	3		J16-F9	88	N				TB2-X 2	163	N				37
AA213R	3		J16-D9	88	N				TB2-W 2	163	N				37
AA213W	3		J16-D8	88	N				TB2-X 3	163	N				37
AA214	1			225		200	7			300		275	10		40 L28
AA214A	4		SHLD AA214	20	N				J16-B5	88	N				40
AA214L			J16-B5	88	N				TB2-R 7	163	N				
AA214R			J16-A5	88	N				TB2-N 6	163	N				
AA214W			J16-A6	88	N				TB2-R 6	163	N				
AA215R	4		J16-N2	138	N				TB2-K 5	138	N				E24
AA215W	4		J16-N1	138	N				TB2-K 6	138	N				E24
AA216	3		J16-F2	88	N				TB2-W 1	163	N				44 H36
AA217	3		J16-F4	88	N				TB2-X 1	163	N				42 F37
AA218	3		J16-F6	88	N				TB2-S 1	163	N				40 D30
AA219	3		J16-F5	88	N				TB2-T 1	163	N				40 E31
AA220	4		J16-L1	138	N				J22-228	10	N		6		H65
AA221	4		J16-M1	138	N				TB2-R 4	138	N				F28
AA222K	4		J16-R4	138	N				TB2-H 5	138	N				C23

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058
SCALE - NONE	REV LTR +	SHEET 23

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA197A	4		SHLD AA197	20	N				J16-B1	88	N				44
AA197L			J16-B1	88	N				TB2-T 7	163	N				
AA197R			J16-A1	88	N				TB2-U 6	163	N				
AA197W			J16-A2	88	N				TB2-T 6	163	N				
AA198R	4		J16-P1	138	N				TB2-L 6	138	N				D25
AA198W	4		J16-R1	138	N				TB2-L 5	138	N				D25
AA199R	3		J16-D4	88	N				TB2-G 6	163	N				42 M23
AA199W	3		J16-D3	88	N				TB2-H 6	163	N				42 M23
AA200R	3		J16-D4	88	N				TB2-G 7	163	N				42 G23
AA200W	3		J16-C4	88	N				TB2-H 7	163	N				42 G23
AA201R	3		J16-D4	88	N				TB2-G 8	163	N				42 G23
AA201W	3		J16-C3	88	N				TB2-H 8	163	N				42 G23
AA202	1			225		200	7			300		275	10		42AA37
AA202A	4		SHLD AA202	20	N				J16-B3	88	N				42
AA202L			J16-B3	88	N				TB2-X 6	163	N				
AA202R			J16-A3	88	N				TB2-W 5	163	N				
AA202W			J16-A4	88	N				TB2-X 5	163	N				
AA203R	4		J16-P3	138	N				TB2-K 3	138	N				D25

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058
SCALE - NONE	REV LTR +	SHEET 21

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA222L	4		J16-S3	138	N				TB2-H 4	138	N				C23
AA222R	4		J16-S4	138	N				TB2-G 4	138	N				C23
AA222W	4		J16-P4	138	N				TB2-G 5	138	N				C23
AA223	4		J16-P2	138	N				TB2-K 4	138	N				D24
AA224R	4		J16-N5	138	N				TB2-L 1	138	N				37HH
AA224W	4		J16-P5	138	N				TB2-K 1	138	N				37HH
AA225R	4		J16-N6	138	N				TB2-T 2	138	N				37GG
AA225W	4		J16-P6	138	N				TB2-U 3	138	N				37GG
AA226	5			300		275	8			100		75	9		40AA74
AA226A	4		SHLD AA226	20	N				E 30	20	N		7		40 H
AA226R			J16-L4	138	N				J21- 34	10	N		6		
AA226W			J16-L3	138	N				J21- 35	10	N		6		
AA227	5			300		275	8			100		75	9		40AA74
AA227A	4		SHLD AA227	20	N				E 30	20	N				40 G
AA227R			J16-M4	138	N				J21- 68	10	N		6		
AA227W			J16-L3	138	N				J21- 69	10	N		6		
AA228	4		J16-R5	138	N				TB3-L20	138	N				40GG
AA229	4		J16-R6	138	N				TB3-L20	138	N				40GG

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015058
SCALE - NONE	REV LTR +	SHEET 24

MIL 2085-4-64 WIR

INCHES
0 1 2

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA238	4		J17-T1	138	N				J20-P3	138	N				54 C
AA239	4		J17-T2	138	N				J20-P4	138	N				52 C
AA240	4		J17-T6	138	N				J18-S1	138	N				B
AA241	4		J17-L6	138	N				J18-R5	138	N				47 C
AA242L	4		J17-K4	138	N				J18-K1	138	N				50 H
AA242R	4		J17-G4	138	N				J18-L1	138	N				50 H
AA242W	4		J17-H4	138	N				E 53	20	N		7		50 H
AA243L	4		J17-K6	138	N				J18-K4	138	N				47 H
AA243R	4		J17-G6	138	N				J18-L4	138	N				47 H
AA243W	4		J17-H6	138	N				E 51	20	N		7		47 H65
AA244	5			225		200	9			100		75	8		U60
AA244B	4		J22- 41	10	N		6		SHLD AA244	20	N				60
AA244R			J17-B4	88	N				J22- 4	10	N		6		
AA244W			J17-A4	88	N				J22- 3	10	N		6		
AA245	5			225		200	9			100		75	8		R65
AA245B	4		J22- 5	10	N		6		SHLD AA245	20	N				65
AA245R			J17-D4	88	N				J22- 43	10	N		6		
AA245W			J17-C4	88	N				J22- 6	10	N		6		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 26

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA246	5			225		200	9			100		75	8		R65
AA246B	4		J22- 8	10	N		6		SHLD AA246	20	N				65
AA246R			J17-D3	88	N				J22- 46	10	N		6		
AA246W			J17-C3	88	N				J22- 45	10	N		6		
AA247R	3		J17-D2	88	N				TB3-R 4	163	N				R46
AA247W	3		J17-D3	88	N				TB3-R 5	163	N				R46
AA248	4		J17-S2	138	N				TB3-T 3	138	N				C44
AA250R	4		J17-P4	138	N				TB3-C 2	138	N				D42
AA250W	4		J17-R4	138	N				TB3-D 2	138	N				D42
AA252	3		J17-B7	88	N				TB3-H 3	163	N				49HH
AA253	3		J17-B8	88	N				TB3-G 3	163	N				T44
AA254	3		J17-C7	88	N				TB3-G 4	163	N				49KK
AA255	3		J17-D6	88	N				TB3-M 5	163	N				50EE
AA256	3		J17-D7	88	N				TB3-M 4	163	N				49EE
AA257	3		J17-F7	88	N				TB3-C 1	163	N				49NN
AA258K	4		J17-N6	138	N				TB3-G 1	138	N				49KK
AA258L	4		J17-N5	138	N				TB3-G 2	138	N				49KK
AA258R	4		J17-M6	138	N				TB3-H 1	138	N				49KK

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 27

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA230L	4		J16-G2	138	N				TB2-W 7	138	N				L37
AA230R	4		J16-H1	138	N				TB2-X 7	138	N				L37
AA230W	4		J16-G1	138	N				TB2-W 6	138	N				L37
AA231L	4		J16-G4	138	N				TB2-U 4	138	N				L33
AA231R	4		J16-H3	138	N				TB2-T 5	138	N				L33
AA231W	4		J16-G3	138	N				TB2-U 5	138	N				L33
AA232	1			300		275	7			300		275	7		G13
AA232A	4		SHLD AA232	20	N				E 30	20	N				G45
AA232B	4		E 31	20	N				SHLD AA232	20	N				13
AA232L			J16-L4	163	N				J12-D1	163	N				
AA232R			J16-M4	163	N				J12-D2	163	N				
AA232W			J16-L3	163	N				E 31	20	N				
AA233R	4		J16-N5	138	N				J18-S6	138	N				37 B
AA233W	4		J16-P5	138	N				J18-T6	138	N				37 B
AA234	4		J16-N4	138	N				J17-L6	138	N				F47
AA235	4		J17-P6	138	N				TB3-F 3	138	N				46LL
AA236	4		J17-T4	138	N				J20-M1	138	N				49 D80
AA237	4		J17-T3	138	N				J20-M2	138	N				50 D79

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 25

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA258W	4		J17-M5	138	N				TB3-H 2	138	N				49KK
AA259	4		J17-H1	138	N				TB3-K 2	138	N				55GG
AA260	4		J17-H2	138	N				TB3-K 1	138	N				54GG
AA261	4		J17-G1	138	N				TB3-K 5	138	N				55GG
AA262	4		J17-G2	138	N				TB3-H 5	138	N				54HH
AA263	4		J17-L1	138	N				TB3-L 5	138	N				55FF
AA264	4		J17-M1	138	N				TB3-D 1	138	N				55MM
AA265	5			300		275	9			300		275	8		50DD
AA265B	4		TB3-S 3	138	N				SHLD AA265	20	N				DD45
AA265R			J17-N4	138	N				TB3-N 2	138	N				
AA265W			J17-M4	138	N				TB3-N 1	138	N				
AA266	3		J17-C5	88	N				TB3-K 3	163	N				50GG
AA267	3		J17-B6	88	N				TB3-L 4	163	N				50FF
AA268	3		J17-B5	88	N				TB3-L 3	163	N				50FF
AA269	3		J17-D5	88	N				TB3-M 1	163	N				50EE
AA270	5			300		275	9			300		275	8		54DD
AA270B	4		TB3-N 3	138	N				SHLD AA270	20	N				DD
AA270R			J17-P1	138	N				TB3-N 5	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 28

MIL 2085-4-64 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE GRAY

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA287	5			225		200	9			100		75	8		T65
AA287B	4		J22- 2	10	N		6		SHLD AA287	20	N				65
AA287R			J17-B3	88	N				J22- 39	10	N		6		
AA287W			J17-A3	88	N				J22- 1	10	N		6		
AA288	5			225		200	9			100		75	8		R65
AA288B	4		J22- 11	10	N		6		SHLD AA288	20	N				65
AA288R			J17-C1	88	N				J22- 10	10	N		6		
AA288W			J17-D1	88	N				J22- 48	10	N		6		
AA289R	3		J17-C2	88	N				TB3-M14	163	N				54EE
AA289W	3		J17-C1	88	N				TB3-M13	163	N				54EE
AA290	3		J17-C8	88	N				TB3-L 1	163	N				47FF
AA291	4		J17-S1	138	N				J17-S2	138	N				
AA292	4		J17-M3	138	N				J22-206	10	N		6		G65
AA293	4		J17-L3	138	N				J22-243	10	N		6		52 F65
AA294	4		J17-T1	138	N				J17-T2	138	N				
AA295	4		J17-S3	138	N				TB3-N 3	138	N				52DD
AA296	4		J17-S1	138	N				TB3-S 3	138	N				55BB
AA297	4		J17-S4	138	N				TB3-R 3	138	N				50CC

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015058

SCALE - NONE | REV LTR + | SHEET 30

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA298	4		J18-S1	138	N				J19-T1	138	N				63 D73
AA299R	3		J18-F2	88	N				J19-F4	88	N				P
AA299W	3		J18-F1	88	N				J19-D4	88	N				P
AA300R	3		J18-C8	88	N				J19-B2	88	N				R73
AA300W	3		J18-B8	88	N				J19-C1	88	N				57 R
AA301R	3		J18-D9	88	N				J19-B3	88	N				R71
AA301W	3		J18-C9	88	N				J19-A4	88	N				R71
AA302K	4		J18-G5	138	N				J19-H6	138	N				L
AA302L	4		J18-H5	138	N				J19-H5	138	N				L
AA302R	4		J18-H6	138	N				J19-G5	138	N				L
AA302W	4		J18-G6	138	N				J19-G6	138	N				L
AA303	4		J18-P3	138	N				J19-R4	138	N				59 E68
AA304R	4		J18-S6	138	N				J19-N6	138	N				55 E
AA304W	4		J18-T6	138	N				J19-P6	138	N				55 E
AA305	4		J18-S5	138	N				J19-P5	138	N				56 D
AA306	4		J18-R5	138	N				J19-P3	138	N				D
AA307	5			225		200	9			300		275	8		S50
AA307B	4		TB3-R 9	138	N				SHLD AA307	20	N				50DD

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015058

SCALE - NONE | REV LTR + | SHEET 31

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA270W			J17-N1	138	N				TB3-N 4	138	N				
AA271	3		J17-F6	88	N				TB3-C 4	163	N				50NN
AA272	3		J17-F5	83	N				TB3-D 4	163	N				50 M46
AA273	3		J17-F4	88	N				TB3-C 5	163	N				52NN
AA274	3		J17-F3	88	N				TB3-D 5	163	N				52MM
AA275	4		J17-P5	138	N				TB3-D 3	138	N				49MM
AA276	3		J17-C6	88	N				TB3-H 4	163	N				50HH
AA277	4		J17-M2	138	N				TB3-G 5	138	N				54KK
AA278	4		J17-M3	138	N				TB3-F 1	138	N				52LL
AA280	4		J17-R5	138	N				TB3-M21	138	N				49EE
AA281L	3		J17-A8	88	N				TB3-T 6	163	N				49BB
AA281R	3		J17-A7	88	N				TB3-T 5	163	N				49BB
AA281W	3		J17-A6	88	N				TB3-T 4	163	N				49BB
AA282	4		J17-R6	138	N				TB3-L21	138	N				47FF
AA283	4		J17-R6	138	N				J17-S6	138	N				
AA284L	3		J17-F9	88	N				TB3-S 4	163	N				46
AA284R	3		J17-D9	88	N				TB3-S 5	163	N				46
AA284W	3		J17-C9	88	N				TB3-S 6	163	N				46

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015058

SCALE - NONE | REV LTR + | SHEET 29

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA307R			J18-B2	88	N				TB3-T 7	138	N				
AA307W			J18-C2	88	N				TB3-T 8	138	N				
AA308	5			225		200	9			300		275	8		T50
AA308B	4		TB3-N 9	138	N				SHLD AA308	20	N				50EE
AA308R			J18-B1	88	N				TB3-S 7	138	N				
AA308W			J18-A1	88	N				TB3-S 8	138	N				
AA309	5			225		200	9			300		275	8		T55
AA309B	4		TB3-T 9	138	N				SHLD AA309	20	N				55BB
AA309R			J18-A3	88	N				TB3-T11	138	N				
AA309W			J18-A2	88	N				TB3-T10	138	N				
AA310	5			225		200	9			300		275	8		S55
AA310B	4		TB3-S 9	138	N				SHLD AA310	20	N				55BB
AA310R			J18-B4	88	N				TB3-S11	138	N				
AA310W			J18-B3	88	N				TB3-S10	138	N				
AA311R	3		J18-D3	88	N				TB3-R 7	163	N				P50
AA311W	3		J18-D2	88	N				TB3-R 8	163	N				P50
AA312R	3		J18-C1	88	N				TB3-R11	163	N				64 M55
AA312W	3		J18-D1	88	N				TB3-R10	163	N				64 M55

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015058

SCALE - NONE | REV LTR + | SHEET 32

MIL 2085-4-64 WIR

INCHES

0 1 2

WIRE LIST AA

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION			TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION			ROUTING
NUMBER	ITEM NO.	▷2	CIRCUIT POINT	▷2	TIN	▷2	ITEM NO.	SPEC. ▷1	NO.	CIRCUIT POINT	▷2	TIN	▷2	ITEM NO.	SPEC ▷1	NO.	
AA321	4		J18-R2	138	N					TB3-C11	138	N					C55
AA322	4		J18-P2	138	N					TB3-D11	138	N					D55
AA323	4		J18-S3	138	N					J18-S4	138	N					
AA324	4		J18-T3	138	N					J18-T4	138	N					
AA325	4		J18-S3	138	N					TB3-K20	138	N					61GG
AA326L	3		J18-F9	88	N					TB3-M11	163	N					56
AA326R	3		J18-F8	88	N					TB3-M12	163	N					56
AA326W	3		J18-D8	88	N					TB3-M10	163	N					56
AA327	4		J18-T3	138	N					TB3-K20	138	N					61GG
AA328L	4		J18-L6	138	N					TB3-R12	138	N					56
AA328R	4		J18-L5	138	N					TB3-S12	138	N					56
AA328W	4		J18-K6	138	N					TB3-T12	138	N					56
AA329	5			225		200	9				300		275	8			73HH
AA329B	4		TB3-H 9	138	N					SHLD AA329	20	N					HH
AA329R			J19-B2	88	N					TB3-H 7	138	N					
AA329W			J19-C2	88	N					TB3-H 8	138	N					
AA330R	3		J18-F2	88	N					TB3-F10	163	N					63LL
AA330W	3		J18-F1	88	N					TB3-G10	163	N					63LL

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015058

SCALE - NONE REV LTR + SHEET 34

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION			TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION			ROUTING
NUMBER	ITEM NO.	▷2	CIRCUIT POINT	▷2	TIN	▷2	ITEM NO.	SPEC. ▷1	NO.	CIRCUIT POINT	▷2	TIN	▷2	ITEM NO.	SPEC ▷1	NO.	
AA331	5			225		200	9				300		275	8			71HH
AA331B	4		TB3-K 9	138	N					SHLD AA331	20	N					HH
AA331R			J19-B3	88	N					TB3-H11	138	N					
AA331W			J19-B4	88	N					TB3-H10	138	N					
AA332R	4		J18-H1	138	N					TB3-K11	138	N					64GG
AA332W	4		J18-G1	138	N					TB3-K10	138	N					64GG
AA333	4		J18-R3	138	N					TB3-K20	138	N					61GG
AA334R	3		J18-D6	88	N					TB3-G13	163	N					59
AA334W	3		J18-C6	88	N					TB3-G14	163	N					59
AA335R	3		J18-D7	88	N					TB3-G12	163	N					58
AA335W	3		J18-C7	88	N					TB3-G11	163	N					58
AA336R	3		J18-F7	88	N					TB3-F12	163	N					58
AA336W	3		J18-F6	88	N					TB3-F11	163	N					58
AA337	4		J18-R4	138	N					TB3-B11	138	N					59PP
AA338R	3		J18-D4	88	N					TB3-K 7	163	N					59GG
AA338W	3		J18-D5	88	N					TB3-K 8	163	N					59GG
AA339	4		J18-S5	138	N					J18-T5	138	N					
AA344R	4		J18-H3	138	N					TB3-F 7	138	N					61LL

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015058

SCALE - NONE REV LTR + SHEET 35

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION			TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION			ROUTING
NUMBER	ITEM NO.	▷2	CIRCUIT POINT	▷2	TIN	▷2	ITEM NO.	SPEC. ▷1	NO.	CIRCUIT POINT	▷2	TIN	▷2	ITEM NO.	SPEC ▷1	NO.	
AA313R	3		J18-A5	88	N					TB3-N 7	163	N					T50
AA313W	3		J18-A4	88	N					TB3-N 8	163	N					T50
AA314R	3		J18-C5	88	N					TB3-N11	163	N					S55
AA314W	3		J18-B5	88	N					TB3-N10	163	N					S55
AA315	5			225		200	9				300		275	8			T50
AA315B	4		TB3-M 9	138	N					SHLD AA315	20	N					50FF
AA315R			J18-B9	88	N					TB3-M 7	138	N					
AA315W			J18-A9	88	N					TB3-M 8	138	N					
AA316	5			225		200	9				300		275	8			T50
AA316B	4		TB3-L 9	138	N					SHLD AA316	20	N					50GG
AA316R			J18-A7	88	N					TB3-L 8	138	N					
AA316W			J18-A8	88	N					TB3-L 7	138	N					
AA317R	3		J18-B6	88	N					TB3-L11	163	N					S54
AA317W	3		J18-A6	88	N					TB3-L10	163	N					S54
AA318R	3		J18-F4	88	N					TB3-K12	163	N					N56
AA318W	3		J18-F3	88	N					TB3-L12	163	N					N56
AA319	4		J18-P1	138	N					TB3-D12	138	N					C56
AA320	4		J18-R1	138	N					TB3-C12	138	N					C56

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015058

SCALE - NONE REV LTR + SHEET 33

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION			TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TERMINATION			ROUTING
NUMBER	ITEM NO.	▷2	CIRCUIT POINT	▷2	TIN	▷2	ITEM NO.	SPEC. ▷1	NO.	CIRCUIT POINT	▷2	TIN	▷2	ITEM NO.	SPEC ▷1	NO.	
AA344W	4		J18-G3	138	N					TB3-G 7	138	N					61LL
AA345R	4		J18-H2	138	N					TB3-F 8	138	N					63LL
AA345W	4		J18-G2	138	N					TB3-G 8	138	N					63LL
AA346	4		J18-H2	138	N					E 52	20	N		7			K55
AA347	4		J18-H2	138	N					E 53	20	N					K55
AA348	4		J18-H3	138	N					E 50	20	N		7			K55
AA349	4		J18-H3	138	N					E 51	20	N					K55
AA350	4		J18-M1	138	N					J18-P3	138	N					64 D
AA353	4		J18-M3	138	N					J18-M4	138	N					
AA356	4		J19-P3	138	N					J20-G4	138	N					E77
AA357	4		J19-T1	138	N					J20-M6	138	N					B75
AA358R	4		J19-S2	138	N					TB3-D17	138	N					B64
AA358W	4		J19-S3	138	N					TB3-D16	138	N					B64
AA359R	4		J19-P1	138	N					TB3-D18	138	N					D64
AA359W	4		J19-R1	138	N					TB3-F18	138	N					D64
AA360R	4		J19-T2	138	N					TB3-C17	138	N					71 G64
AA360W	4		J19-T3	138	N					TB3-C16	138	N					71 G64
AA361R	4		J19-P2	138	N					TB3-G17	138	N					D64

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015058

SCALE - NONE REV LTR + SHEET 36

MIL 2085-4-64 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

WIRE LIST AA

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA374W	3		J19-D1	88	N				TB3-M16	163	N				73EE
AA375R	3		J19-B5	88	N				TB3-H17	163	N				70HH
AA375W	3		J19-A5	88	N				TB3-H16	163	N				70HH
AA376	3		J19-C5	88	N				TB3-S18	163	N				70CC
AA377R	3		J19-B8	88	N				TB3-K17	163	N				68GG
AA377W	3		J19-B7	88	N				TB3-K16	163	N				68GG
AA378	3		J19-A7	88	N				TB3-R18	163	N				68
AA379R	3		J19-C8	88	N				TB3-L16	163	N				66
AA379W	3		J19-D8	88	N				TB3-L17	163	N				66
AA380	3		J19-C7	88	N				TB3-T18	163	N				68
AA381R	3		J19-F6	88	N				TB3-G16	163	N				70LL
AA381W	3		J19-F5	88	N				TB3-F16	163	N				70LL
AA382R	4		J19-G1	138	N				TB3-T13	138	N				L59
AA382W	4		J19-H1	138	N				TB3-T14	138	N				L59
AA383R	4		J19-G2	138	N				TB3-S14	138	N				L59
AA383W	4		J19-G3	138	N				TB3-S13	138	N				L59
AA384	3		J19-C3	88	N				TB3-N18	163	N				71DD
AA385	3		J19-C4	88	N				TB3-M18	163	N				71EE

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 38

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA386R	3		J19-F8	88	N				TB3-R14	163	N				61
AA386W	3		J19-F9	88	N				TB3-R13	163	N				N61
AA387	4		J19-M6	138	N				TB3-G18	138	N				66
AA388	4		J19-M5	138	N				TB3-K18	138	N				66
AA389	4		J19-N5	138	N				TB3-L18	138	N				66
AA390	4		J19-R4	138	N				TB3-K21	138	N				C71
AA393	4		J19-P5	138	N				TB3-K21	138	N				D71
AA394	4		J19-P4	138	N				J19-P5	138	N				
AA396R	3		J19-D6	88	N				TB3-N13	163	N				P59
AA396W	3		J19-D5	88	N				TB3-N14	163	N				P59
AA398	4		J19-K1	138	N				J19-K2	138	N				
AA399	4		J19-K2	138	N				J19-K3	138	N				
AA400	4		J19-K3	138	N				J19-K4	138	N				
AA401	4		J19-K4	138	N				J19-K5	138	N				
AA402	4		J19-K5	138	N				J19-K6	138	N				
AA403	4		J20-L5	138	N				J21- 37	10	N		6		F74
AA404	4		J20-L5	138	N				TB3-M22	138	N				75
AA405	4		J20-M5	138	N				TB3-M21	138	N				75EE

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 39

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA361W	4		J19-R2	138	N				TB3-F17	138	N				D64
AA362	4		J19-R5	138	N				J19-S4	138	N				68
AA363	4		J19-R6	138	N				J19-T4	138	N				66 A
AA364	4		J19-S4	138	N				TB3-K22	138	N				68GG
AA365	4		J19-T4	138	N				TB3-L22	138	N				68FF
AA366	4		J19-S5	138	N				J19-S6	138	N				
AA367	4		J19-T6	138	N				TB3-L22	138	N				66FF
AA368	4		J19-T5	138	N				J19-T6	138	N				
AA369	4		J19-S5	138	N				TB3-K22	138	N				66GG
AA370R	3		J19-B1	88	N				TB3-T17	163	N				73BB
AA370W	3		J19-A1	88	N				TB3-T16	163	N				73BB
AA371R	3		J19-A2	88	N				TB3-S16	163	N				73BB
AA371W	3		J19-A3	88	N				TB3-S17	163	N				73BB
AA372R	3		J19-A8	88	N				TB3-R16	163	N				66
AA372W	3		J19-A9	88	N				TB3-R17	163	N				66
AA373R	3		J19-C9	88	N				TB3-N17	163	N				66
AA373W	3		J19-B9	88	N				TB3-N16	163	N				66
AA374R	3		J19-D2	88	N				TB3-M17	163	N				73EE

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 37

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA406	4		J20-N6	138	N				TB3-H20	138	N				75HH
AA407	4		J20-N4	138	N				TB3-L21	138	N				77 C71
AA408	4		J20-N3	138	N				TB3-K22	138	N				78 C75
AA409R	4		J20-F6	138	N				TB2-H 4	138	N				L24
AA409W	4		J20-F5	138	N				TB2-G 4	138	N				L24
AA410R	4		J20-F6	138	N				TB3-B19	138	N				75PP
AA410W	4		J20-F5	138	N				TB3-B18	138	N				75PP
AA411	4		J20-G5	138	N				J20-H5	138	N				
AA412R	4		J20-H6	138	N				TB3-C 3	138	N				75NN
AA412W	4		J20-H5	138	N				TB3-D 2	138	N				75NN
AA413	4		J20-G6	138	N				J20-H6	138	N				
AA414	4		J20-A4	138	N				TB3-K19	138	N				77 E68
AA415	4		J20-B4	138	N				TB3-H19	138	N				77 E68
AA416	4		J20-A1	138	N				TB3-G19	138	N				80 M68
AA417	4		J20-A2	138	N				TB3-F19	138	N				79 F68
AA418	4		J20-B1	138	N				TB3-D19	138	N				80 M68
AA419R	4		J20-B3	138	N				TB3-N21	138	N				78 F71
AA419W	4		J20-A3	138	N				TB3-N20	138	N				78 F71

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 40

MIL 2085-4-64 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA439	4		J20-L1	138	N				J20-L2	138	N				
AA440	4		J20-L2	138	N				J20-M2	138	N				
AA441	4		J20-R3	138	N				TB3-D22	138	N				77 L75
AA442	4		J20-R3	138	N				J20-S3	138	N				
AA443	4		J20-R4	138	N				TB3-C22	138	N				76 F75
AA444	4		J20-R4	138	N				J20-S4	138	N				
AA445	4		J20-P3	138	N				TB3-N22	138	N				77 E75
AA446	4		J20-P5	138	N				TB3-H21	138	N				75HH
AA447	4		J20-P5	138	N				J20-R5	138	N				
AA448	4		J20-R5	138	N				J20-S5	138	N				
AA449	4		J20-S5	138	N				TB3-H21	138	N				75HH
AA450	4		J20-P6	138	N				TB3-H22	138	N				75
AA451	4		J20-P6	138	N				J20-R6	138	N				
AA452	4		J20-R6	138	N				J20-S6	138	N				
AA453	4		J20-S6	138	N				TB3-H22	138	N				75
AA454	4		J20-K1	138	N				TB3-T20	138	N				80 F70
AA455	4		J20-K1	138	N				TB3-T21	138	N				80 E71
AA456	4		J20-K2	138	N				TB3-S21	138	N				79 D71

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 42

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA457	4		J20-M6	138	N				TB3-M20	138	N				75EE
AA458	4		J20-G1	138	N				J20-H1	138	N				
AA459	4		J20-H1	138	N				J20-H2	138	N				
AA460	4		J20-G1	138	N				TB2-M 7	138	N				K26
AA461	4		J20-H2	138	N				TB2-M 1	138	N				H26
AA462	4		J20-G4	138	N				TB3-F22	138	N				77 E75
AA463R	4		J20-D4	138	N				TB3-S20	138	N				75CC
AA463W	4		J20-D5	138	N				TB3-R19	138	N				75CC
AA464R	4		J20-A6	138	N				TB3-L13	138	N				75GG
AA464W	4		J20-B6	138	N				TB3-K13	138	N				75GG
AA465R	4		J20-H3	138	N				TB3-L14	138	N				78 F61
AA465W	4		J20-G3	138	N				TB3-K14	138	N				78 F61
AA466	4		TB3-H12	138	N				TB3-R 3	138	N				58DD
AA467	5			100		75	8			300		275	9		74AA27
AA467A	4		SHLD AA467	20	N				E 46	20	N		8		
AA467R			J21-125	10	N		6		E 35	20	N				
AA467W			J21-126	10	N		6		J15-M5	138	N	250			G
AA468	5			100		75	8			300		275	9		74AA27

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 43

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA420	4		J20-K5	138	N				TB3-G21	138	N				76KK
AA421	4		J20-K6	138	N				TB3-G22	138	N				75KK
AA422	4		J20-H4	138	N				TB3-R20	138	N				77 E71
AA423	4		J20-H4	138	N				J21-234	10	N		6		H74
AA424	4		J20-K4	138	N				TB3-N19	138	N				77 G70
AA425	4		J20-C6	138	N				TB3-L19	138	N				75FF
AA426	4		J20-D6	138	N				TB3-M19	138	N				75EE
AA427R	4		J20-B5	138	N				TB3-T19	138	N				76BB
AA427W	4		J20-C5	138	N				TB3-S19	138	N				76BB
AA428	4		J20-N1	138	N				TB3-C20	138	N				D70
AA429	4		J20-N1	138	N				J20-P1	138	N				
AA431	4		J20-R1	138	N				J20-S1	138	N				
AA432	4		J20-S1	138	N				TB3-C21	138	N				79 K73
AA433	4		J20-N2	138	N				TB3-D20	138	N				D70
AA434	4		J20-N2	138	N				J20-P2	138	N				
AA436	4		J20-R2	138	N				J20-S2	138	N				
AA437	4		J20-S2	138	N				TB3-D21	138	N				78 G71
AA438	4		J20-L1	138	N				J20-M1	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 41

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA468A	4		SHLD AA468	20	N				E 46	20	N				74
AA468R			J21- 92	10	N		6		E 35	20	N				
AA468W			J21- 93	10	N		6		J15-M6	138	N	250			
AA469	5			100		75	8			300		275	9		74AA27
AA469A	4		SHLD AA469	20	N				E 46	20	N				74
AA469R			J21-194	10	N		6		E 36	20	N				
AA469W			J21-195	10	N		6		J15-L6	138	N	250			
AA470	5			100		75	8			300		275	9		74AA27
AA470A	4		SHLD AA470	20	N				E 46	20	N				74
AA470R			J21-160	10	N		6		E 36	20	N				
AA470W			J21-161	10	N		6		J15-K6	138	N	250			
AA471	5			100		75	8			300		275	9		74AA27
AA471A	4		SHLD AA471	20	N				E 46	20	N				74
AA471R			J21- 94	10	N		6		E 37	20	N				
AA471W			J21- 95	10	N		6		J15-K4	138	N	250			K
AA472	5			100		75	8			300		275	9		74AA27
AA472A	4		SHLD AA472	20	N				E 46	20	N				74
AA472R			J21-127	10	N		6		E 37	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 44

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	T/N	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	T/N	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA478W			J21-193	10	N		6		E 40	20	N				M
AA479	5			100		75	8			225		200	9		74AA27
AA479A	4		SHLD AA479	20	N				E 47	20	N				74
AA479R			J21- 57	10	N		6		E 42	20	N				
AA479W			J21- 56	10	N		6		J15-B8	88	N	175			S
AA480	5			100		75	8			225		200	9		74AA27
AA480A	4		SHLD AA480	20	N				E 47	20	N				74
AA480R			J21- 58	10	N		6		J15-C8	88	N	175			R
AA480W			J21- 59	10	N		6		E 42	20	N				
AA481	5			100		75	9			225		200	8		74AA36
AA481B	4		E 39	20	N				SHLD AA481	20	N				N
AA481R			J21-238	10	N		6		E 39	20	N				N
AA481W			J21-237	10	N		6		J15-B5	88	N	175			N32
AA482	5			100		75	9			225		200	8		74AA36
AA482B	4		E 39	20	N				SHLD AA482	20	N				N
AA482R			J21-199	10	N		6		J15-C5	86	N	175			N32
AA482W			J21-200	10	N		6		E 39	20	N				N
AA483	5			100		75	9			225		200	8		74AA27

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 46

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	T/N	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	T/N	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA483B	4		E 41	20	N				SHLD AA483	20	N				27
AA483R			J21-166	10	N		6		E 41	20	N				
AA483W			J21-165	10	N		6		J15-B7	88	N	175			S
AA484	5			100		75	9			225		200	8		74AA27
AA484B	4		E 41	20	N				SHLD AA484	20	N				27
AA484R			J21- 97	10	N		6		J15-C7	88	N	175			S
AA484W			J21- 98	10	N		6		E 41	20	N				
AA485	5			100		75	9			225		200	8		74AA27
AA485B	4		E 43	20	N				SHLD AA485	20	N				27
AA485R			J21- 65	10	N		6		E 43	20	N				
AA485W			J21- 64	10	N		6		J15-B9	88	N	175			
AA486	5			100		75	9			225		200	8		74AA27
AA486B	4		E 43	20	N				SHLD AA486	20	N				27
AA486R			J21- 30	10	N		6		J15-C9	88	N	175			
AA486W			J21- 31	10	N		6		E 43	20	N				
AA487	5			100		75	8			300		275	8		74AA21
AA487A	4		SHLD AA487	20	N				E 57	20	N		8		74
AA487B	4		TB2-D 3	138	N				SHLD AA487	20	N				21

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 47

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	T/N	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	T/N	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA472W			J21-128	10	N		6		J15-K5	138	N	250			K
AA473	4		J21- 23	10	N		6		E 45	20	N		8		74
AA474	4		E 70	20	N		8		E 47	20	N		8		74
AA475	5			100		75	8			225		200	9		74AA36
AA475A	4		SHLD AA475	20	N				E 47	20	N				74
AA475R			J21- 25	10	N		6		E 38	20	N				
AA475W			J21- 24	10	N		6		J15-B4	88	N	175			S
AA476	5			100		75	8			225		200	9		74AA36
AA476A	4		SHLD AA476	20	N				E 47	20	N				74
AA476R			J21- 26	10	N		6		J15-C4	88	N	175			S
AA476W			J21- 27	10	N		6		E 38	20	N				
AA477	5			100		75	8			225		200	9		74AA36
AA477A	4		SHLD AA477	20	N				E 47	20	N				74
AA477R			J21-233	10	N		6		E 40	20	N				M
AA477W			J21-232	10	N		6		J15-B6	88	N	175			31 M
AA478	5			100		75	8			225		200	9		74AA36
AA478A	4		SHLD AA478	20	N				E 47	20	N				74
AA478R			J21-192	10	N		6		J15-C6	88	N	175			M31

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 45

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	T/N	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	T/N	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.	NO.	ROUTING
AA487R			J21-122	10	N		6		TB2-F 3	138	N				
AA487W			J21-121	10	N		6		TB2-D 2	138	N				
AA488	5			100		75	8			225		200	9		74AA36
AA488A	4		SHLD AA488	20	N				E 57	20	N				74
AA488R			J21-189	10	N		6		E 59	20	N				
AA488W			J21-188	10	N		6		J15-A3	88	N				T
AA489	5			100		75	8			225		200	9		74AA36
AA489A	4		SHLD AA489	20	N				E 57	20	N				74
AA489R			J21-153	10	N		6		E 60	20	N		7		
AA489W			J21-152	10	N		6		J16-A7	88	N	175			U
AA490	5			100		75	9			300		275	8		74AA13
AA490B	4		E 29	20	N				SHLD AA490	20	N				13
AA490R			J21-170	10	N		6		E 29	20	N				
AA490W			J21-169	10	N		6		J12-G1	138	N	250			
AA491	5			100		75	9			300		275	8		74AA13
AA491B	4		E 29	20	N				SHLD AA491	20	N				13
AA491R			J21-136	10	N		6		J12-G2	138	N	250			L
AA491W			J21-137	10	N		6		E 29	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR +
SHEET 48

MIL 2085-4-64 WIR

INCHES

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA496R			J21-236	10	N		6		E 50	20	N				H55
AA496W			J21-235	10	N		6		J18-K3	138	N	250			
AA497	5			100		75	9			300		275	8		74 U58
AA497B	4		E 71	20	N		8		SHLD AA497	20	N				H55
AA497R			J21-197	10	N		6		J18-L3	138	N	250			
AA497W			J21-198	10	N		6		E 50	20	N				H55
AA498	5			100		75	8			300		275	9		74 U55
AA498A	4		SHLD AA498	20	N				E 45	20	N				74
AA498R			J21-231	10	N		6		E 51	20	N				
AA498W			J21-230	10	N		6		J18-L4	138	N	250			H
AA499	5			100		75	8			300		275	9		74 U55
AA499A	4		SHLD AA499	20	N				E 45	20	N				74
AA499R			J21-191	10	N		6		E 51	20	N				
AA499W			J21-190	10	N		6		J18-K4	138	N	250			K
AA500	5			100		75	9			300		275	8		74AA46
AA500B	4		E 27	20	N				SHLD AA500	20	N				46
AA500R			J21-103	10	N		6		J17-R3	138	N	250			C
AA500W			J21-104	10	N		6		E 27	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR
SHEET 50

MIL 2088-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA501R	4		J21-133	10	N		6		E 34	20	N				74 E14
AA501W	4		J21-132	10	N		6		J13-N5	138	N				74 E
AA502R	4		J21-100	10	N		6		E 34	20	N				74 E14
AA502W	4		J21- 99	10	N		6		J13-N6	138	N				74 E
AA503	5			100		75	9			300		275	8		74AA 1
AA503B	4		E 28	20	N				SHLD AA503	20	N				1
AA503R			J21-203	10	N		6		J11-L6	138	N	250			
AA503W			J21-204	10	N		6		E 28	20	N				
AA504	5			100		75	9			300		275	8		74AA 1
AA504B	4		E 28	20	N				SHLD AA504	20	N				1
AA504R			J21-241	10	N		6		J11-M6	138	N	250			
AA504W			J21-242	10	N		6		E 28	20	N				
AA505	5			100		75	9			300		275	8		65AA35
AA505B	4		TB2-V 8	138	N				SHLD AA505	20	N				35
AA505R			J22-107	10	N		6		TB2-U 7	138	N				
AA505W			J22-139	10	N		6		TB2-U 8	138	N				
AA506	5			100		75	9			300		275	8		65AA27
AA506B	4		TB2-M 8	138	N				SHLD AA506	20	N				27

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR
SHEET 51

MIL 2088-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA492	5			100		75	9			300		275	8		74 R61
AA492B	4		E 71	20	N				SHLD AA492	20	N				55 K
AA492R			J21-164	10	N		6		E 52	20	N				K55
AA492W			J21-163	10	N		6		J18-K2	138	N	250			
AA493	5			100		75	9			300		275	8		74 S59
AA493B	4		E 71	20	N				SHLD AA493	20	N				55 K
AA493R			J21-130	10	N		6		J18-L2	138	N	250			H
AA493W			J21-131	10	N		6		E 52	20	N				K55
AA494	5			100		75	8			300		275	9		74 P63
AA494A	4		SHLD AA494	20	N				E 45	20	N				74
AA494R			J21-157	10	N		6		E 53	20	N				H55
AA494W			J21-156	10	N		6		J18-L1	138	N	250			
AA495	5			100		75	8			300		275	9		74 N64
AA495A	4		SHLD AA495	20	N				E 45	20	N				74
AA495R			J21-124	10	N		6		E 53	20	N				H55
AA495W			J21-123	10	N		6		J18-K1	138	N	250			
AA496	5			100		75	9			300		275	8		74 T58
AA496B	4		E 71	20	N				SHLD AA496	20	N				H55

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR
SHEET 49

MIL 2088-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
AA506R			J22-142	10	N		6		TB2-N 7	138	N				
AA506W			J22-141	10	N		6		TB2-N 8	138	N				
AA507	5			100		75	9			300		275	8		65AA58
AA507B	4		TB3-H12	138	N				SHLD AA507	20	N				58
AA507R			J22-111	10	N		6		TB3-C14	138	N				
AA507W			J22-144	10	N		6		TB3-C13	138	N				
AA508	5			100		75	9			300		275	8		65AA71
AA508B	4		TB3-H14	138	N				SHLD AA508	20	N				71HH
AA508R			J22-114	10	N		6		TB3-N21	138	N				
AA508W			J22-113	10	N		6		TB3-N20	138	N				
AA509	5			100		75	9			300		275	8		65AA61
AA509B	4		TB3-H13	138	N				SHLD AA509	20	N				61HH
AA509R			J22-148	10	N		6		TB3-D14	138	N				
AA509W			J22-116	10	N		6		TB3-D13	138	N				MM
AA510	5			100		75	9			300		275	8		65AA61
AA510B	4		TB3-H14	138	N				SHLD AA510	20	N				61
AA510R			J22-151	10	N		6		TB3-F14	138	N				
AA510W			J22-150	10	N		6		TB3-F13	138	N				MM

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015058
SCALE - NONE
REV LTR
SHEET 52

MIL 2088-4-64 WIR

INCHES

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD	T/N	FROM STRIP WIRE OR JACKET	FROM TERMINATION SPEC. ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD	T/N	TO STRIP WIRE OR JACKET	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
AA538	4		TB3-G 9	138	N				TB3-B15	138	N				54RR
AA539	4		TB2-M 8	138	N				TB2-M 7	138	N				
AA540	4		TB2-V 2	138	N				TB2-V 3	138	N				
AA541	4		TB3-G 9	138	N				TB3-H 9	138	N				
AA542	4		TB3-H 9	138	N				TB3-K 9	138	N				
AA543	4		TB3-K 9	138	N				TB3-L 9	138	N				
AA544	4		TB3-L 9	138	N				TB3-M 9	138	N				
AA545	4		TB3-M 9	138	N				TB3-N 9	138	N				
AA546	4		TB3-N 9	138	N				TB3-R 9	138	N				
AA547	4		TB3-R 9	138	N				TB3-S 9	138	N				
AA548	4		TB3-S 9	138	N				TB3-T 9	138	N				
AA549	4		TB3-T 9	138	N				TB3-T15	138	N				BB
AA550	4		TB3-G15	138	N				TB3-H15	138	N				
AA551	4		TB3-H15	138	N				TB3-K15	138	N				
AA552	4		TB3-K15	138	N				TB3-L15	138	N				
AA553	4		TB3-R15	138	N				TB3-S15	138	N				
AA554	4		TB3-H13	138	N				TB3-H14	138	N				
AA555	4		TB2-K 4	138	N				TB2-L 4	138	N				

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015058
SCALE - NONE REV LTR + SHEET 54

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD	T/N	FROM STRIP WIRE OR JACKET	FROM TERMINATION SPEC. ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD	T/N	TO STRIP WIRE OR JACKET	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
AA556	4		TB2-L 2	138	N				TB2-L 1	138	N				
AA557	4		TB2-K 2	138	N				TB2-K 1	138	N				
AA558	4		TB3-M20	138	N				TB3-C19	138	N				70
AA559	4		TB3-T20	138	N				TB3-T21	138	N				
AA560	4		TB3-S21	138	N				TB3-T21	138	N				
AA562	4		J21- 53	10	N		6		E 57	20	N				74
AA563	4		TB3-L21	138	N				TB3-D15	138	N				73MM
AA566	4		TB3-K21	138	N				TB3-C15	138	N				73NN
AA568	4		E 45	20	N				E 46	20	N				74
AA569	5			300		275	8			225		200	9		GG39
AA569A	4		SHLD AA569	20	N				TB2-D 3	138	N				GG
AA569R			TB2-F 3	138	N				E 60	20	N				U
AA569W			TB2-D 2	138	N				J16-B7	88	N	175			
AA571	5			300		275	8			225		200	9		T45
AA571A	4		SHLD AA571	20	N				TB2-S 3	138	N				45
AA571R			TB2-R 3	138	N				J17-B2	88	N				
AA571W			TB2-N 3	138	N				J17-A2	88	N				
AA572	4		TB1-D 7	138	N				TB1-D 8	138	N				

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015058
SCALE - NONE REV LTR + SHEET 55

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD	T/N	FROM STRIP WIRE OR JACKET	FROM TERMINATION SPEC. ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD	T/N	TO STRIP WIRE OR JACKET	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
AA511	4		TB1-S 2	138	N				TB1-T 2	138	N				
AA512	4		TB1-R 2	138	N				TB1-S 2	138	N				
AA513	4		TB3-H12	138	N				TB3-H13	138	N				
AA514	4		TB3-B15	138	N				TB3-C15	138	N				
AA515	4		TB3-M20	138	N				TB3-C18	138	N				FF68
AA517R	4		TB3-B19	138	N				J22-120	10	N		6		66AA65
AA517W	4		TB3-B18	138	N				J22-153	10	N		6		66AA65
AA518	4		TB3-F 4	138	N				J22-190	10	N		6		45AA65
AA521	4		TB3-L19	138	N				J21- 62	10	N		6		70AA74
AA522	4		TB3-N19	138	N				J21- 63	10	N		6		70AA74
AA525	4		TB3-M19	138	N				J21- 96	10	N		6		70AA74
AA526	4		TB3-D19	138	N				J21-129	10	N		6		70AA74
AA529	4		TB3-F19	138	N				J21-162	10	N		6		70AA74
AA530	4		TB3-G19	138	N				J21-196	10	N		6		70AA74
AA533	4		TB3-L15	138	N				TB3-M15	138	N				
AA534	4		TB3-M15	138	N				TB3-N15	138	N				
AA535	4		TB3-N15	138	N				TB3-R15	138	N				
AA536	4		TB3-S15	138	N				TB3-T15	138	N				

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015058
SCALE - NONE REV LTR + SHEET 53

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD	T/N	FROM STRIP WIRE OR JACKET	FROM TERMINATION SPEC. ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD	T/N	TO STRIP WIRE OR JACKET	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
AA577	4		TB2-D 7	138	N				TB2-D 8	138	N				
AA578	4		TB2-S 2	138	N				TB2-R 2	138	N				
AA579	4		TB2-F 7	138	N				TB2-G 7	138	N				
AA580	4		TB2-F 2	138	N				TB2-G 2	138	N				
AA581	4		TB2-M 1	138	N				TB2-M 2	138	N				
AA582	4		TB2-M 2	138	N				TB2-M 3	138	N				
AA583	4		TB2-M 3	138	N				TB2-M 4	138	N				
AA584	4		TB2-M 4	138	N				TB2-M 5	138	N				
AA585	4		TB2-M 5	138	N				TB2-M 6	138	N				
AA586	4		TB2-M 6	138	N				TB2-M 7	138	N				
AA587	4		TB1-D 8	138	N				TB1-N 8	138	N				BB
AA588	4		TB1-N 4	138	N				TB1-S 8	138	N				12BB
AA589	4		TB1-N 4	138	N				TB2-M 5	138	N				EE
AA590	4		TB1-D 7	138	N				TB2-V 2	138	N				5HH
AA591	4		TB1-S 3	138	N				TB2-M 4	138	N				FF
AA592	4		TB2-M 6	138	N				TB3-T 3	138	N				26AA44
AA596	4		TB2-V 3	138	N				TB2-V 4	138	N				
AA597	4		TB2-V 4	138	N				TB2-V 5	138	N				

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015058
SCALE - NONE REV LTR + SHEET 56

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	NO.	ROUTING
AA617	4	J11-L4	138	N				E 66	20	N		12		G 7
AA618	4	J11-L4	138	N				E 67	20	N		12		G13
AA619	4	TB3-B20	138	N				E 68	20	N		12		70AA65
AA620	4	TB3-B20	138	N				E 69	20	N		12		70AA74
AA621	4	TB2-T 2	138	N				TB2-T 3	138	N				
AA622	4	J20-R1	138	N				TB3-C20	138	N				B71
AA623	4	J20-P1	138	N				TB3-C21	138	N				C73
AA624	4	J20-R2	138	N				TB3-D20	138	N				B71
AA625	4	J20-P2	138	N				TB3-D21	138	N				C73
AA626	4	J20-S3	138	N				TB3-D22	138	N				A75
AA627	4	J20-S4	138	N				TB3-C22	138	N				A75
AA628	4	J20-R5	138	N				TB3-H21	138	N				75HH
AA629	4	J20-R6	138	N				TB3-H22	138	N				75
AA630	4	TB3-D15	138	N				TB3-G15	138	N				63
AA631	4	TB3-R 3	138	N				TB3-S 3	138	N				
AA632	4	TB1-S 3	138	N				TB1-S 4	138	N				
AA633	4	TB1-S 4	138	N				TB1-S 5	138	N				
AA634	4	TB1-S 5	138	N				TB1-S 6	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 58

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	NO.	ROUTING
AA635	4	TB3-T 3	138	N				TB2-V 8	138	N				44AA36
AA636	4	J17-F2	88	N				TB3-D 6	138	N				54MM
AA637	4	J15-R2	138	N				TB2-F 4	138	N				33 F21
AA638	4	J18-T5	138	N				E 71	20	N				A55
AA639	5		300		275	9			100		75	8		1AA74
AA639B	4	E 70	20	N				SHLD AA639	20	N				74
AA639R		J12-F6	138	N				J21- 29	10	N		6		
AA639W		J12-D6	138	N				J21- 28	10	N		6		
AA640	5		300		275	9			100		75	8		2AA74
AA640B	4	E 70	20	N				SHLD AA640	20	N				74
AA640R		J12-F5	138	N				J21-159	10	N		6		
AA640W		J12-D5	138	N				J21-158	10	N		6		
AA641	5		300		275	9			100		75	8		3AA74
AA641B	4	E 70	20	N				SHLD AA641	20	N				74
AA641R		J12-F4	138	N				J21- 61	10	N		6		
AA641W		J12-D4	138	N				J21- 60	10	N		6		
AA642	4	J21- 22	10	N		6		E 70	20	N				74
AA643	4	J12-N6	138	N				J12-R6	138	N				8

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 59

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	NO.	ROUTING
AA598	4	TB2-V 5	138	N				TB2-V 6	138	N				
AA599	4	TB2-V 6	138	N				TB2-V 8	138	N				36
AA600	4	TB1-S 8	138	N				TB1-S 7	138	N				
AA601	4	TB1-S 7	138	N				TB1-S 6	138	N				
AA602	4	TB1-S 7	138	N				TB2-D 8	138	N				BB
AA603	4	TB2-D 7	138	N				TB2-D 6	138	N				
AA604	4	TB2-D 6	138	N				TB2-D 5	138	N				
AA605	4	TB2-D 5	138	N				TB2-D 4	138	N				
AA607	4	TB3-F22	138	N				TB3-F21	138	N				
AA608	4	TB2-D 4	138	N				E 27	20	N				21 E46
AA609	4	TB3-C15	138	N				TB3-D15	138	N				
AA610	4	J11-N3	138	N				J12-P4	138	N				E 9
AA611	4	TB1-R 1	138	N				TB1-S 1	138	N				
AA612	4	TB1-S 1	138	N				TB1-T 1	138	N				
AA613	4	TB3-B20	138	N				TB3-B21	138	N				
AA614	4	TB3-B21	138	N				TB3-F21	138	N				71
AA615	4	TB2-R 3	138	N				TB2-S 3	138	N				
AA616	4	J18-R4	138	N				J19-M4	138	N				58 F

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 57

MIL 2085-4-64 WIR

WIRE LIST AA

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	NO.	ROUTING
AA644	4	J12-P5	138	N				J12-R3	138	N				C
AA645	4	TB2-U 1	138	N				TB2-U 3	138	N				33
AA646	4	J18-T1	138	N				TB3-A10	138	N				63RR
AA647	4	J22-172	10	N		6		TB3-F 2	138	N				65AA42
AA648	4	J18-M1	138	N				J18-M3	138	N				G
AA649	4	J18-M4	138	N				J18-M6	138	N				G
AA651R	4	J18-M2	138	N				J19-B6	88	N				F66
AA651W	4	J18-N2	138	N				J19-B8	88	N				F66
AA652R	4	J18-M5	138	N				J19-D9	88	N				F66
AA652W	4	J18-N5	138	N				J19-C8	88	N				F66
AA653R	4	J14-R1	138	N				J17-L4	138	N				B49
AA653W	4	J14-S1	138	N				J17-L5	138	N				B49
AA654L	3	J15-B1	88	N				TB1-C 7	163	N				35BB
AA654R	3	J15-B2	88	N				TB1-B 7	163	N				35BB
AA654W	3	J15-A1	88	N				TB1-C 8	163	N				35BB
AA655R	4	E 33	20	N				J21-101	10	N		6		20 H74
AA655W	4	J14-K4	138	N				J21-102	10	N		6		H74
AA656	4	J12-C1	138	N				TB3-F 6	138	N				N47

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015058
SCALE - NONE | REV LTR + | SHEET 60

MIL 2085-4-64 WIR

INCHES
10
PHOTOGRAPHIC SCALE ONLY

WIRE LIST AA

CONDUCTOR			FROM					TO					ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD			TERMINATION SPEC. 1		CUT WIRE OR SHIELD			TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	ITEM NO.	NO.	STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	ITEM NO.	NO.	
AA657	4		J13-C1	138	N			TB3-G 6	138	N			N47
AA658	4		J14-B1	138	N			TB3-K 6	138	N			R47
AA659	4		J14-B2	138	N			TB3-L 6	138	N			R47
AA660	4		J21-138	10	N	6		TB3-L 6	138	N			49AA74
AA661	4		J12-C2	138	N			J13-C2	138	N			R
AA662	4		J13-C2	138	N			J14-B2	138	N			R
AA663	4		J18-M1	138	N			J19-K6	138	N			G65
AA664K	4		J16-M2	138	N			TB3-B 6	138	N			42PP
AA664L	4		J16-M3	138	N			TB3-C 6	138	N			42PP
AA664R	4		J16-N3	138	N			TB3-C 7	138	N			42PP
AA664W	4		J16-R2	138	N			TB3-C 8	138	N			42PP
AA665	3		J17-A9	88	N			J17-B9	88	N			
AA666K	4		J18-N6	138	N			TB3-D 9	138	N			59NN
AA666L	4		J18-N4	138	N			TB3-B 7	138	N			59NN
AA666R	4		J18-N3	138	N			TB3-D 8	138	N			59NN
AA666W	4		J18-N1	138	N			TB3-D 7	138	N			59NN
AA667K	4		J19-L1	138	N			TB3-C 9	138	N			70PP
AA667L	4		J19-K6	138	N			TB3-C10	138	N			70PP

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A 1015058

SCALE - NONE REV LTR + SHEET 61

MIL 2088-4-64 WIR

WIRE LIST AA

CONDUCTOR			FROM					TO					ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD			TERMINATION SPEC. 1		CUT WIRE OR SHIELD			TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	ITEM NO.	NO.	STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	ITEM NO.	NO.	
AA667R	4		J19-L3	138	N			TB3-B 9	138	N			70PP
AA667W	4		J19-L2	138	N			TB3-B10	138	N			70PP
AA668	4		J12-M5	138	N			J13-S3	138	N			9 B
AA669	4		J13-S3	138	N			J14-S5	138	N			B
AA670	4		J13-S4	138	N			J14-S4	138	N			B
AA671	4		J14-S4	138	N			J17-T5	138	N			A
AA672L	4		J17-L5	138	N			TB3-A 3	138	N			49RR
AA672R	4		J17-T5	138	N			TB3-A 4	138	N			49RR
AA672W	4		J17-L4	138	N			TB3-A 5	138	N			49RR
AA673	4		TB3-M21	138	N			TB3-M22	138	N			
AA674	4		J21- 38	10	N	6		TB3-F 3	138	N			74AA44

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A 1015058

SCALE - NONE REV LTR + SHEET 62

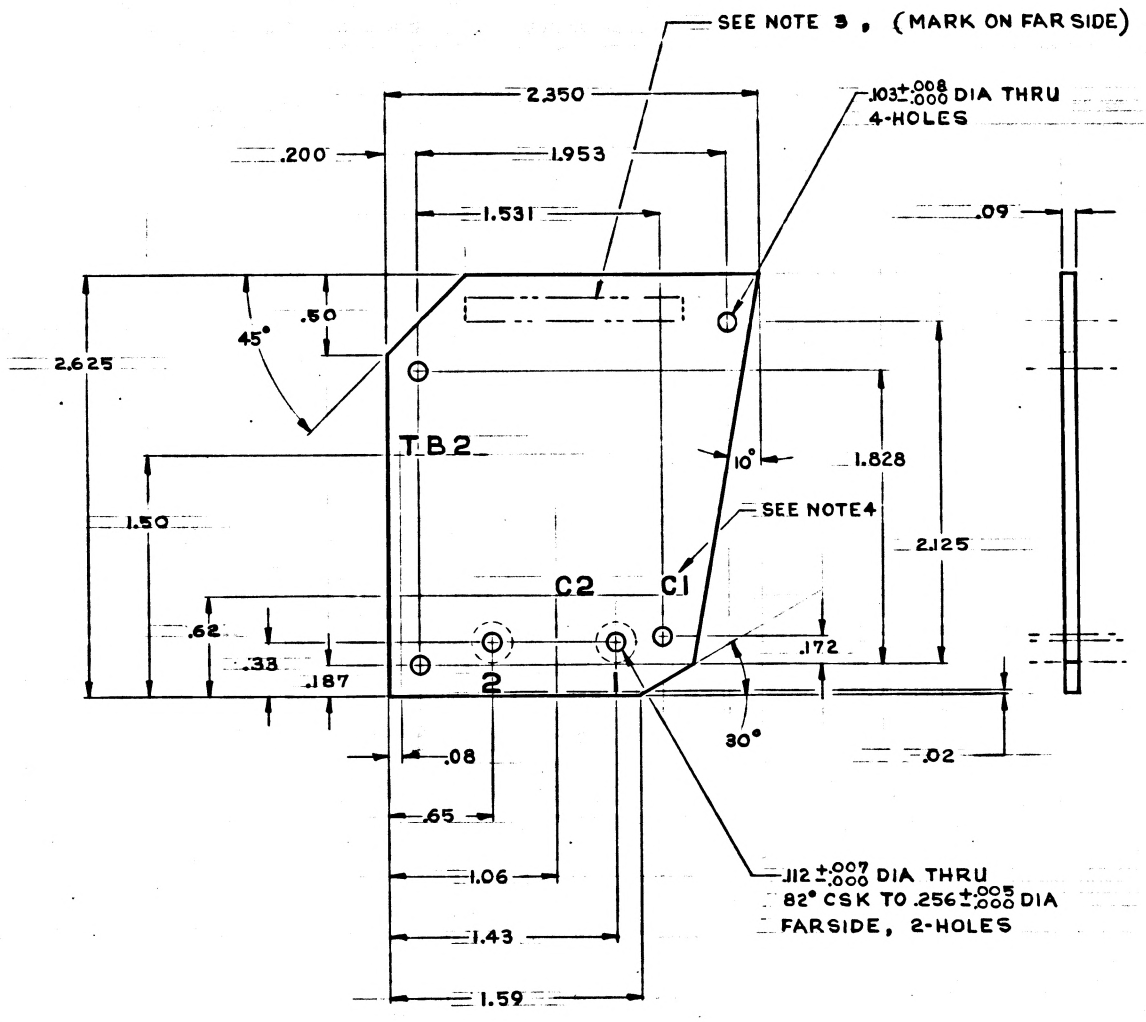
MIL 2088-4-64 WIR

1015063 | 2

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD.
		INITIAL CLASS A RELEASE TDRR NO. 13028 — CHG NO.		

NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STD PRESCRIBED BY MIL-D-70327.
2. REMOVE ALL BURRS, .005 TO .015 RAD. OR CHAMFER.
3. IDENTIFY USING DWG NO. AND REV. LETTER PER ND 1002019.
4. MARK CHARACTERS PER ND 1002019, .12 HIGH, COLOR BLACK.
5. MATERIAL: GLASS CLOTH EPOXY RESIN, LAMINATED, PER MIL-P-18177, TYPE GEB (ES-2744, TYPE II).
6. SURFACE ROUGHNESS NOT TO EXCEED $\overset{250}{\surd}$.


SEE NOTE 3, (MARK ON FAR SIDE)
.103 +.008/−.000 DIA THRU
4-HOLES
2.350
.200
1.953
1.531
.09
2.625
45°
.50
TB2
10°
1.828
SEE NOTE4
1.50
2.125
C2
C1
.62
.33
.187
.172
2
1
30°
.08
.02
.65
1.06
1.43
1.59
.112 +.007/−.000 DIA THRU
82° CSK TO .256 +.005/−.000 DIA
FARSIDE, 2-HOLES

MASTER

1021718-011	1021700-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
.XX DEC. ± .02 .XXX DEC. ± .005 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 9 SEPT 64
CHECKED J. Petrans 23 SEPT 64
APPROVAL E. Mutz 23 SEPT 64
APPROVAL 9-23-64
NASA APPROVAL 9-29-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

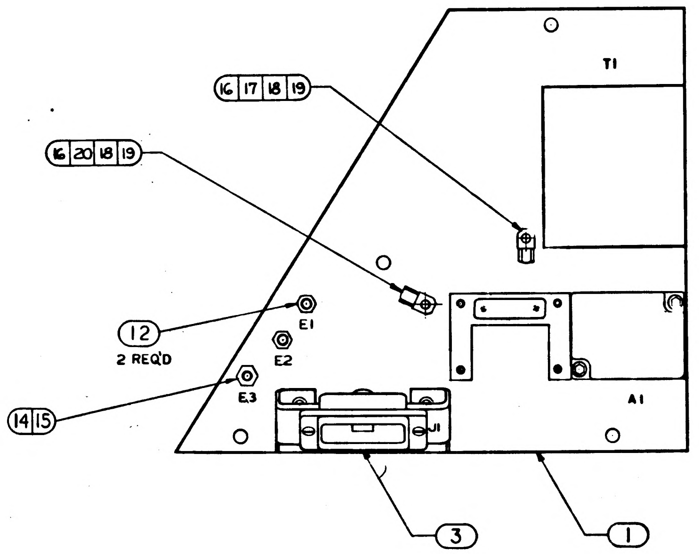
BOARD, TERMINAL

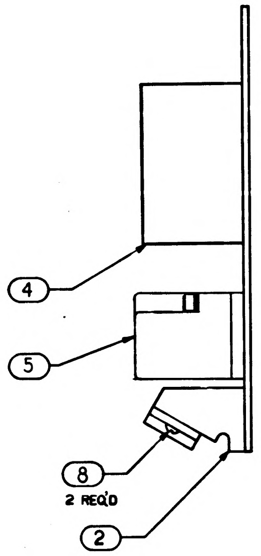
CODE IDENT NO. | SIZE D | 1015063
SCALE 2/1 | SHEET 1 OF 1

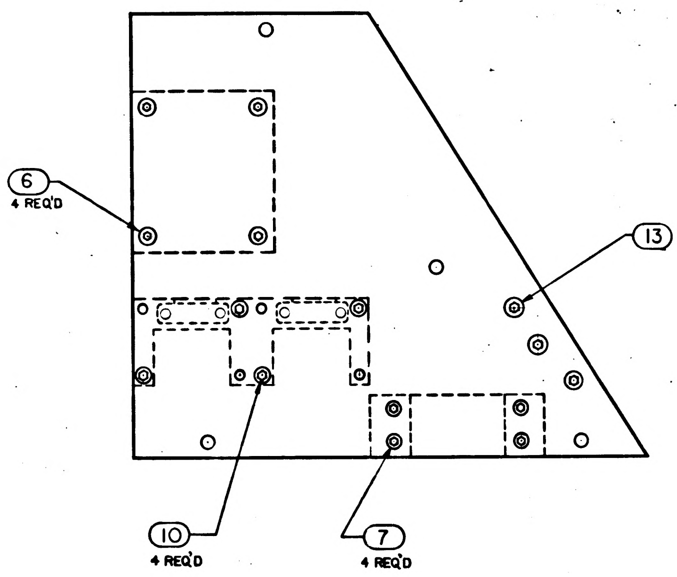
SYM	DESCRIPTION	DATE	APPROVAL
A.	COMPLETELY REVISED DO6851	3 OCT	WF
	TDRR 13815		

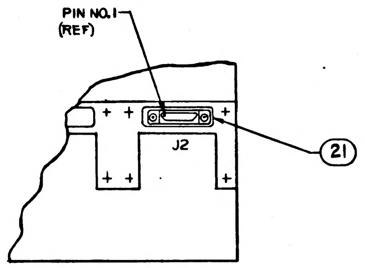
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. INSPECT PER PS 1015064.
3. SERIALIZE PER ND 1002023.
4. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.
5. APPLY THIN FILM OF ITEM (22) TO BOTH SURFACES OF ITEM (2).
6. ASSEMBLE AND MOISTUREPROOF PER ATP 1015064.









				011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
				AR		27	1012504-2	PRIMER, METAL
				AR		26	1012504-1	PRIMER, METAL
				AR		25	1012503-2	COMPOUND POLYURETHANE
				AR		24	1012503-1	COMPOUND POLYURETHANE
				X		23	1015066	SCHEMATIC, CONTROL ELECTRONICS
SEE NOTE 5				AR		22	1012051	GREASE, SILICONE
				1		21	1015078-1	GASKET, CONNECTOR MODULE
SEE NOTE 4				1		20	1000220-5	CLAMP, CABLE
				2		19	1011750-8	NUT
				2		18	1011918-1	WASHER
				1		17	1000220-4	CLAMP, CABLE
SEE NOTE 4				2		16	1010630-15	SCREW, FLAT HD, SOC HEX
				1		15	MS35649-64	NUT, PLAIN HEX
SEE NOTE 4				1		14	1010477-24	SCREW, FLAT HD, SOC HEX
SEE NOTE 4				2		13	1010477-12	SCREW, FLAT HD, SOC HEX
SEE NOTE 4				2		12	1010676-1	TERMINAL STUD
						11		
SEE NOTE 4				4		10	1010477-13	SCREW, FLAT HD, SOC HEX
						9		
SEE NOTE 4				2		8	1006783-19	SCREW, BUTTON HD. SOC HEX
SEE NOTE 4				4		7	1010630-14	SCREW, FLAT HD, SOC HEX
SEE NOTE 4				4		6	1010284-2	SCREW, FLAT HD. SOC HEX
				1		5	1015039	RELAY DIODE MODULE
SEE NOTE 4				1		4	1010486-2	TRANSFORMER
				1		3	1015037	WIRING HARNESS A
				1		2	1015002	MOUNTING BRACKET CONNECTOR
				1		1	1015082	PLATE

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 9 SEP 64
CHECKED W. Viehl 2 OCT 64
APPROVAL 2 OCT. '64
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CONTROL ELECTRONICS ASSEMBLY

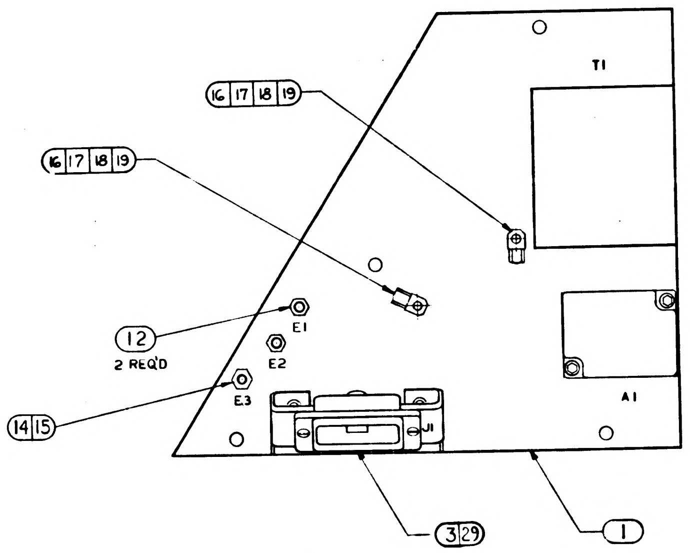
CODE IDENT NO.
SIZE E
1015064
SCALE FULL
SHEET 1 OF 1

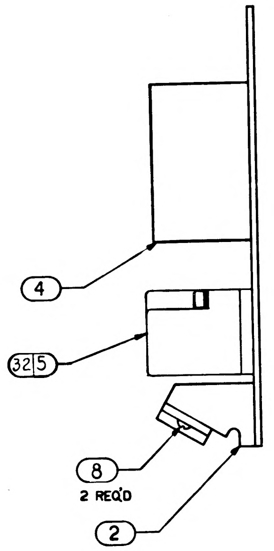
1015064 A

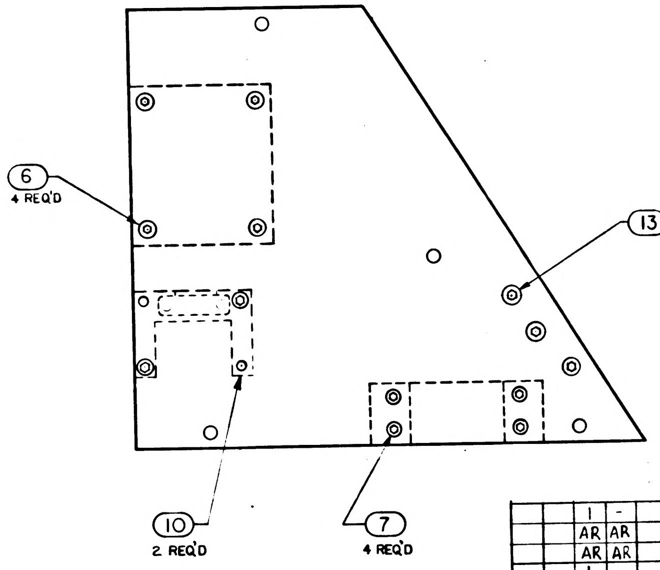
SYM	DESCRIPTION	DATE	APPROVAL
A.	COMPLETELY REVISED D0585 8	3 OCT 64	
B	REVISED PER TDRR 14578	18 DEC 64	MEM

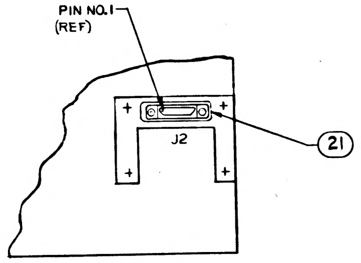
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. INSPECT PER PS 1015003.
3. SERIALIZE PER ND 1002023.
4. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.
5. APPLY THIN FILM OF ITEM (22) TO BOTH SURFACES OF ITEM (2).
6. ASSEMBLE AND MOISTUREPROOF PER ATP 1015064.
7. SOLDER PER ND 1002071 USING ITEMS (30) AND (31).









			021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			1	-		32	1015097-011	RELAY & DIODE MODULE
			AR	AR		31	MIL-F-14256	FLUX
			AR	AR		30	QQ-S-571 SN60 WRAP2	SOLDER
			1			29	1021703	WIRING HARNESS "A"
			X			28	1021738	SCHEMATIC, CONTROL ELECTRONICS
			AR	AR		27	1012504-2	PRIMER, METAL
			AR	AR		26	1012504-1	PRIMER, METAL
			AR	AR		25	1012503-2	COMPOUND POLYURETHANE
			AR	AR		24	1012503-1	COMPOUND POLYURETHANE
			-	X		23	1015066	SCHEMATIC, CONTROL, ELECTRONICS
SEE NOTE 5			AR	AR		22	1012051	GREASE, SILICONE
			1	1		21	1015078-1	GASKET, CONNECTOR MODULE
SEE NOTE 4			~~1~~	~~1~~		~~20~~	~~1000220-5~~	~~CLAMP, CABLE~~
			2	2		19	1011750-8	NUT
			2	2		18	1011918-1	WASHER
			2	2		17	1000220-4THRU-6	CLAMP, CABLE
SEE NOTE 4			2	2		16	1010630-15	SCREW, FLAT HD, SOC HEX
			1	1		15	MS35649-64	NUT, PLAIN HEX
SEE NOTE 4			1	1		14	1010477-24	SCREW, FLAT HD, SOC HEX
SEE NOTE 4			2	2		13	1010477-12	SCREW, FLAT HD, SOC HEX
SEE NOTE 4			2	2		12	1010676-1	TERMINAL STUD
						11		
SEE NOTE 4			2	2		10	1010477-13	SCREW, FLAT HD, SOC HEX
						9		
SEE NOTE 4			2	2		8	1006783-19	SCREW, BUTTON HD, SOC HEX
SEE NOTE 4			4	4		7	1010630-14	SCREW, FLAT HD SOC HEX
SEE NOTE 4			4	4		6	1010284-2	SCREW, FLAT HD, SOC HEX
			-	1		5	1015039-011	RELAY DIODE MODULE
SEE NOTE 4			1	1		4	1010486-2	TRANSFORMER
			-	1		3	1015037	WIRING HARNESS A
			1	1		2	1015002	MOUNTING BRACKET CONNECTOR
			1	1		1	1015082	PLATE

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-021	1015023-021	-021
1015023-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN DATE 9 SEP 64
CHECKED 2 OCT 64
APPROVAL 2 OCT 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CONTROL ELECTRONICS
ASSEMBLY

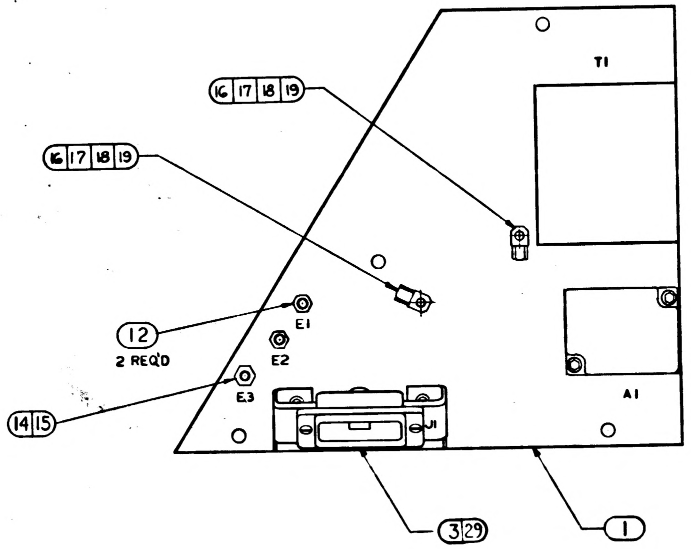
CODE IDENT NO.
SIZE E
1015064
SCALE
SHEET 1 OF 1

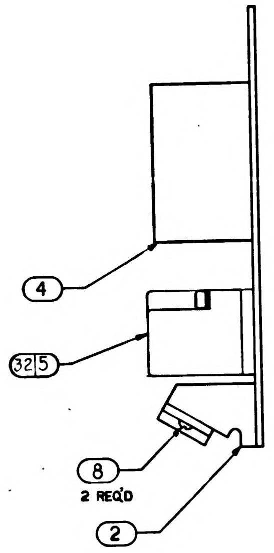
1015064 B

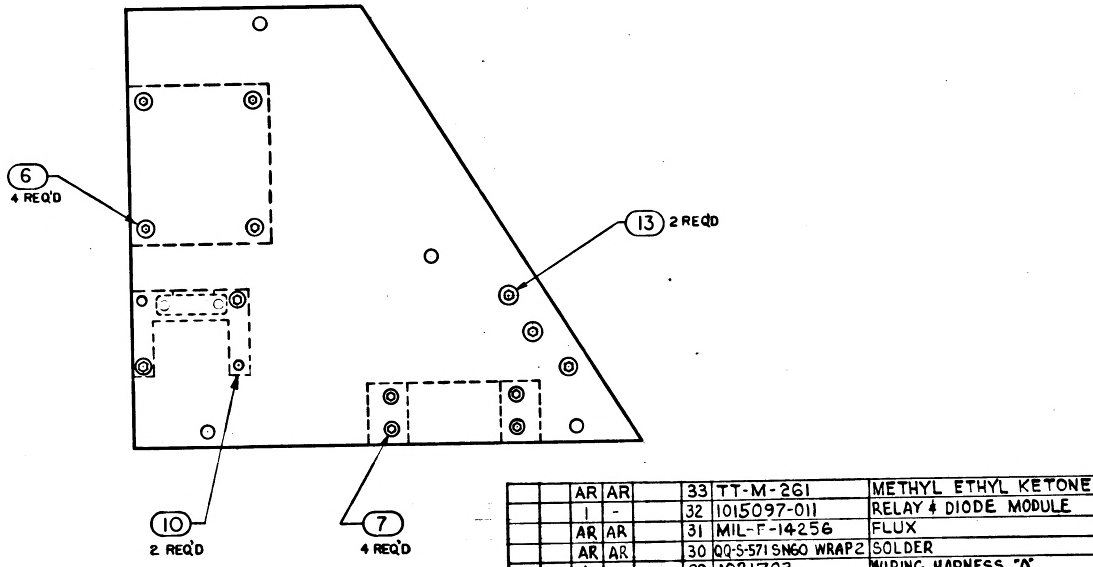
SYM	DESCRIPTION	DATE	APPROVAL
REVISIONS TDRE 1950			
Ⓐ A,	COMPLETELY REVISED D068518	3 OCT 64	WF / W.K.
Ⓜ B	REVISED PER TDRR 14578	8 DEC 64	J.W.P. / MEM
C	REVISED PER TDRR 15908	9 FEB 65	J.J. / E.F.

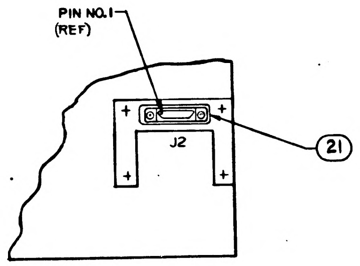
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. INSPECT PER PS 1015003.
3. SERIALIZE PER ND 1002023.
4. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.
5. APPLY THIN FILM OF ITEM (22) TO BOTH SURFACES OF ITEM (21).
6. ~~ASSEMBLE AND MOISTUREPROOF PER ATP 1015064.~~
7. SOLDER PER ND 1002071 USING ITEMS (30) AND (31).
8. ENCAPSULATE ALL SOLDERED CONNECTIONS ON T1, E1, AND E2 PER ND 1002236 USING ITEMS (24), (25), (26), (27), AND (33).
   a. ON T1, THE ENCAPSULANT MATERIAL SHALL FORM A CYLINDER WHOSE WALLS EXTEND .12 ±.06 RADIALLY BEYOND THE HEADER DIAMETER AND WHOSE HEIGHT SHALL BE SUCH THAT THE ENDS OF THE INSULATION ON THE LEADS ARE EMBEDDED IN THE ENCAPSULANT .18 ±.06.
   b. ON E1 AND E2, THE ENCAPSULANT SHALL FORM A VOLUME AROUND THE TERMINAL WHICH SHALL EXTEND A MINIMUM OF .12 BEYOND THE SIDES OF THE TERMINAL AND SHALL EXTEND TO THE PLATE, ITEM (1), ON ONE END AND SHALL EXTEND .12 ±.06 BEYOND THE TOP END OF THE TERMINAL. THE ENCAPSULANT SHALL ALSO COVER THE ENDS OF THE INSULATION ON THE LEADS .18 ±.06.









			021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			AR	AR		33	TT-M-261	METHYL ETHYL KETONE
			1	-		32	1015097-011	RELAY & DIODE MODULE
			AR	AR		31	MIL-F-14256	FLUX
			AR	AR		30	QQ-S-571 SN60 WRAP 2	SOLDER
			1			29	1021703	WIRING HARNESS "A"
			X			28	1021738	SCHEMATIC, CONTROL ELECTRONICS
			AR	AR		27	1012504-2	PRIMER, METAL
			AR	AR		26	1012504-1	PRIMER, METAL
			AR	AR		25	1012503-2	COMPOUND POLYURETHANE
			AR	AR		24	1012503-1	COMPOUND POLYURETHANE
			-	☒		23	1015066	SCHEMATIC, CONTROL, ELECTRONICS
SEE NOTE 5			AR	AR		22	1012051	GREASE, SILICONE
			1	1		21	1015078-1	GASKET, CONNECTOR MODULE
SEE NOTE 4			~~1~~	~~1~~		~~20~~	~~1000220-5~~	~~CLAMP, CABLE~~
			2	2		19	1011750-8	NUT
			2	2		18	1011918-1	WASHER
			2	2		17	1000220-4 THRU-6	CLAMP, CABLE
SEE NOTE 4			2	2		16	1010630-15	SCREW, FLAT HD, SOC HEX
			1	1		15	MS35649-64	NUT, PLAIN HEX
SEE NOTE 4			1	1		14	1010477-24	SCREW, FLAT HD, SOC HEX
SEE NOTE 4			2	2		13	1010477-12	SCREW, FLAT HD, SOC HEX
SEE NOTE 4			2	2		12	1010676-1	TERMINAL STUD
						11		
SEE NOTE 4			2	2		10	1010477-13	SCREW, FLAT HD, SOC HEX
						9		
SEE NOTE 4			2	2		8	1006783-19	SCREW, BUTTON HD. SOC HEX
SEE NOTE 4			4	4		7	1010630-14	SCREW, FLAT HD SOC HEX
SEE NOTE 4			4	4		6	1010284-2	SCREW, FLAT HD, SOC HEX
			-	1		5	1015039-011	RELAY DIODE MODULE
SEE NOTE 4			1	1		4	1010486-2	TRANSFORMER
			-	1		3	1015037	WIRING HARNESS A
			1	1		2	1015002	MOUNTING BRACKET CONNECTOR
			1	1		1	1015082	PLATE

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-021	1015023-021	-021
1015023-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 9 SEP 64
CHECKED 26-8-64
APPROVAL 2 OCT '64
APPROVAL
NASA APPROVAL 15-2-65
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CONTROL ELECTRONICS
ASSEMBLY

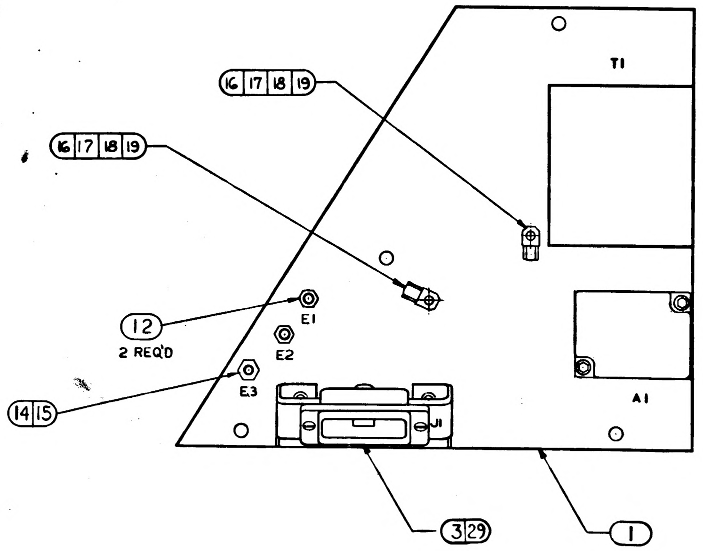
CODE IDENT NO.
SIZE E
1015064
SCALE FULL
SHEET 1 OF 1

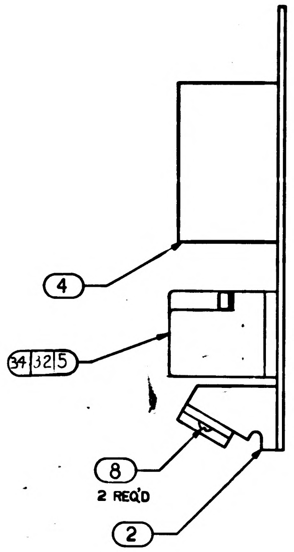
1015064 C

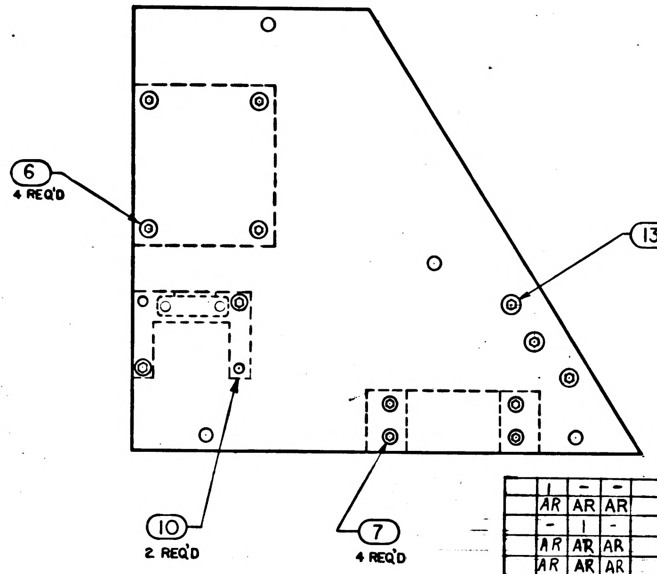
REVISIONS TDLL 1951			
SYM	DESCRIPTION	DATE	APPROVAL
A	COMPLETELY REVISED D058518	3 OCT 64	WF W.A.
B	REVISED PER TDRR 14578	8 DEC 64	J.W.P. MEM
C	REVISED PER TDRR 15908	9 FEB 65	JJ EF
D	REVISED PER TDRR 32250	10 DEC 66	REF JAC

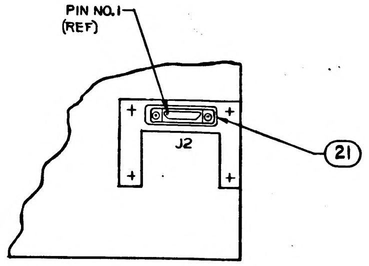
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. INSPECT PER PS 1015003.
3. SERIALIZE PER ND 1002023.
4. VENDOR ITEM: SEE SPECIFICATION CONTROL DRAWING.
5. APPLY THIN FILM OF ITEM (22) TO BOTH SURFACES OF ITEM (21).
6. ~~ASSEMBLE AND MOISTUREPROOF PER ATP 1015064.~~
7. SOLDER PER ND 1002071 USING ITEMS (30) AND (31).
8. ENCAPSULATE ALL SOLDERED CONNECTIONS ON T1, E1, AND E2 PER ND 1002236 USING ITEMS (24), (25), (26), (27), AND (33).
   a. ON T1, THE ENCAPSULANT MATERIAL SHALL FORM A CYLINDER WHOSE WALLS EXTEND .12 ±.06 RADIALLY BEYOND THE HEADER DIAMETER AND WHOSE HEIGHT SHALL BE SUCH THAT THE ENDS OF THE INSULATION ON THE LEADS ARE EMBEDDED IN THE ENCAPSULANT .18 ±.06.
   b. ON E1 AND E2, THE ENCAPSULANT SHALL FORM A VOLUME AROUND THE TERMINAL WHICH SHALL EXTEND A MINIMUM OF .12 BEYOND THE SIDES OF THE TERMINAL AND SHALL EXTEND TO THE PLATE, ITEM ( ), ON ONE END AND SHALL EXTEND .12 ±.06 BEYOND THE TOP END OF THE TERMINAL. THE ENCAPSULANT SHALL ALSO COVER THE ENDS OF THE INSULATION ON THE LEADS .18 ±.06.









	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	1	-	-		34	1015097-021	RELAY & DIODE MODULE
	AR	AR	AR		33	TT-M-261	METHYL ETHYL KETONE
	-	1	-		32	1015097-011	RELAY & DIODE MODULE
	AR	AR	AR		31	MIL-F-14256	FLUX
	AR	AR	AR		30	QQ-S-571 SN60 WRAP2	SOLDER
	1	1			29	1021703	WIRING HARNESS "A"
	X	X			28	1021738	SCHEMATIC, CONTROL ELECTRONICS
	AR	AR	AR		27	1012504-2	PRIMER, METAL
	AR	AR	AR		26	1012504-1	PRIMER, METAL
	AR	AR	AR		25	1012503-2	COMPOUND POLYURETHANE
	AR	AR	AR		24	1012503-1	COMPOUND POLYURETHANE
	-	-	☒		23	1015066	SCHEMATIC, CONTROL, ELECTRONICS
SEE NOTE 5	AR	AR	AR		22	1012051	GREASE, SILICONE
	1	1	1		21	1015078-1	GASKET, CONNECTOR MODULE
SEE NOTE 4		~~1~~	~~1~~		~~20~~	~~1000220-5~~	~~CLAMP, CABLE~~
	2	2	2		19	1011750-8	NUT
	2	2	2		18	1011918-1	WASHER
	2	2	2		17	1000220-4THRU-6	CLAMP, CABLE
SEE NOTE 4	2	2	2		16	1010630-15	SCREW, FLAT HD, SOC HEX
	1	1	1		15	MS35649-64	NUT, PLAIN HEX
SEE NOTE 4	1	1	1		14	1010477-24	SCREW, FLAT HD, SOC HEX
SEE NOTE 4	2	2	2		13	1010477-12	SCREW, FLAT HD, SOC HEX
SEE NOTE 4	2	2	2		12	1010676-1	TERMINAL STUD
					11		
SEE NOTE 4	2	2	2		10	1010477-13	SCREW, FLAT HD, SOC HEX
					9		
SEE NOTE 4	2	2	2		8	1006783-19	SCREW, BUTTON HD, SOC HEX
SEE NOTE 4	4	4	4		7	1010630-14	SCREW, FLAT HD, SOC HEX
SEE NOTE 4	4	4	4		6	1010284-2	SCREW, FLAT HD, SOC HEX
	-	-	1		5	1015039-011	RELAY DIODE MODULE
SEE NOTE 4	1	1	1		4	1010486-2	TRANSFORMER
	-	-	1		3	1015037	WIRING HARNESS A
	1	1	1		2	1015002	MOUNTING BRACKET CONNECTOR
	1	1	1		1	1015082	PLATE

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-021	1015023-021	-021
1015023-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 9 SEP 64 DATE
CHECKED W. Viehl 2 OCT 64
APPROVAL 2 OCT '64
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

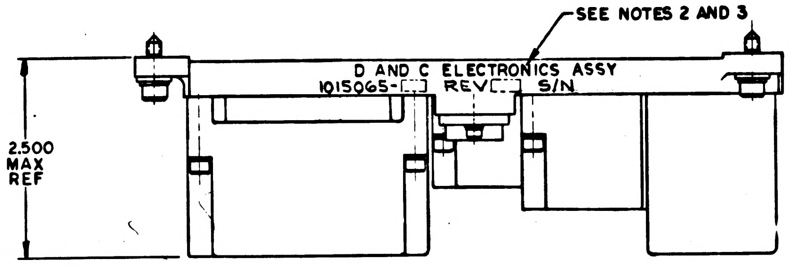
CONTROL ELECTRONICS
ASSEMBLY

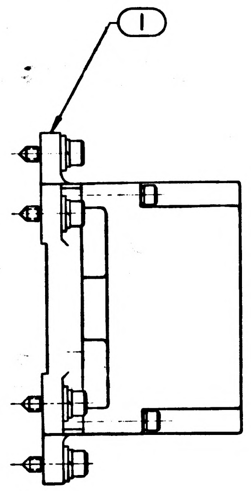
CODE IDENT NO.
SIZE E
1015064
SCALE FULL
SHEET 1 OF 1

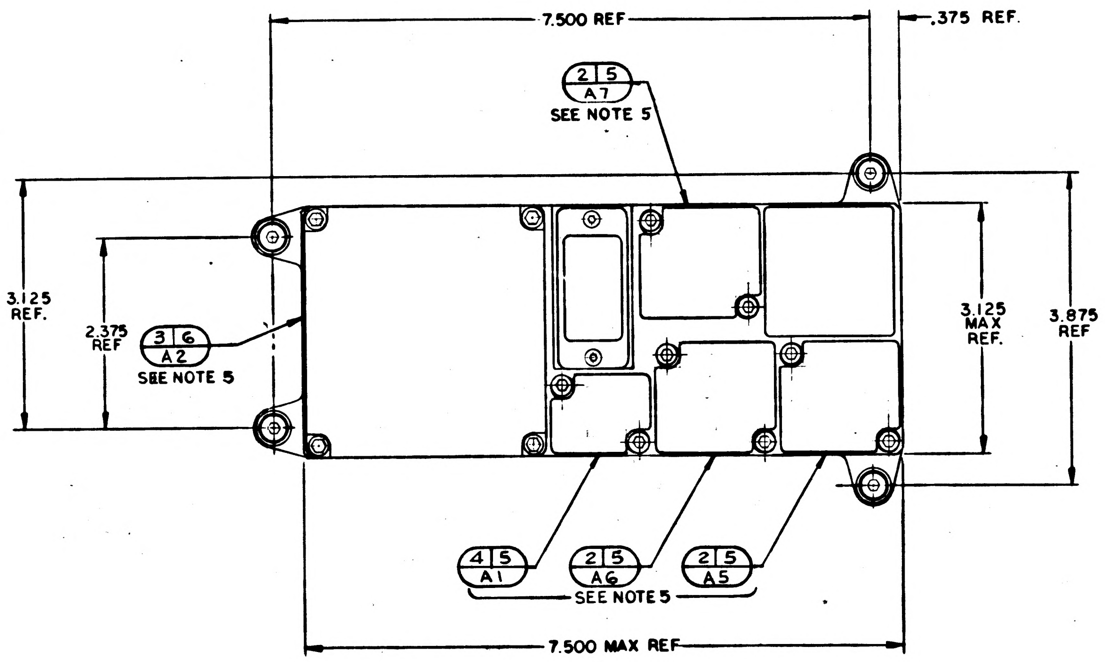
REVISIONS	14078		
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER DO.58518	3 OCT 64	JRS

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK .110 TO .140 HIGH WHITE PER ND1002019 AND SERIALIZE PER ND1002023.
3. PIECEMARK TO BE CENTRALLY LOCATED ON SURFACE INDICATED.
4. INSPECT PER PS1007059.
5. APPLY THIN FILM OF ITEM ⑦ TO BOTH SURFACES OF ITEM ⑤ AND ITEM ⑥.


SEE NOTES 2 AND 3
D AND C ELECTRONICS ASSY
1015065-[ ] REV[ ] S/N
2.500
MAX
REF




7.500 REF
.375 REF.
2 5
A7
SEE NOTE 5
3.125
REF.
2.375
REF
3 6
A2
SEE NOTE 5
3.125
MAX
REF.
3.875
REF
4 5
A1
2 5
A6
2 5
A5
SEE NOTE 5
7.500 MAX REF

			AR		7	1012051	GREASE, SILICONE
			1		6	1015078-002	GASKET, CONNECTOR, MODULE
			4		5	1015078-003	GASKET, CONNECTOR, MODULE
			1		4	1015038-011	40 SECOND TIME DELAY ASSY
			1		3	1015036-011	RELAY AND DIODE MODULE
			3		2	1007034	DEMODULATOR ATTITUDE ERROR
			1		1	1015076-011	BASE ASSEMBLY
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

MASTER

1015023-011	1015023-011	011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN
DRAWN DATE 9 SEP 64
CHECKED W. DIEHL 3 OCT. '64
APPROVAL
APPROVAL
NASA APPROVAL 11-12-64
MIT APPROVAL 10 NOV 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

D AND C ELECTRONICS
ASSEMBLY

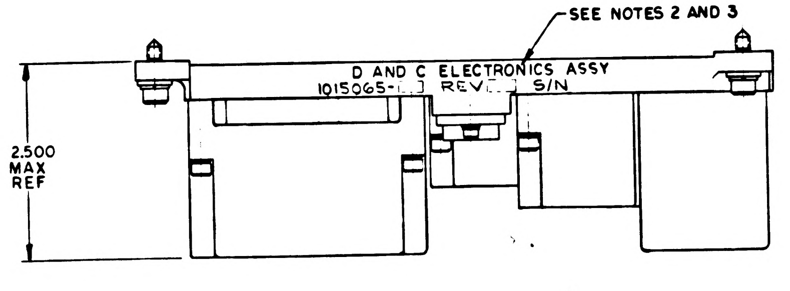
CODE IDENT NO.
SIZE
1015065
SCALE FULL
SHEET 1 OF 1

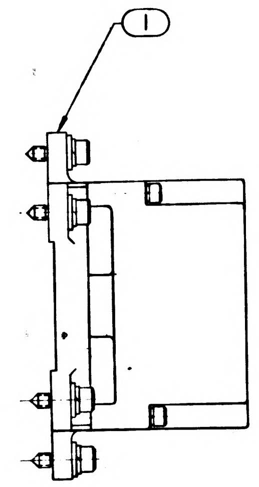
INCHES
0 1 2

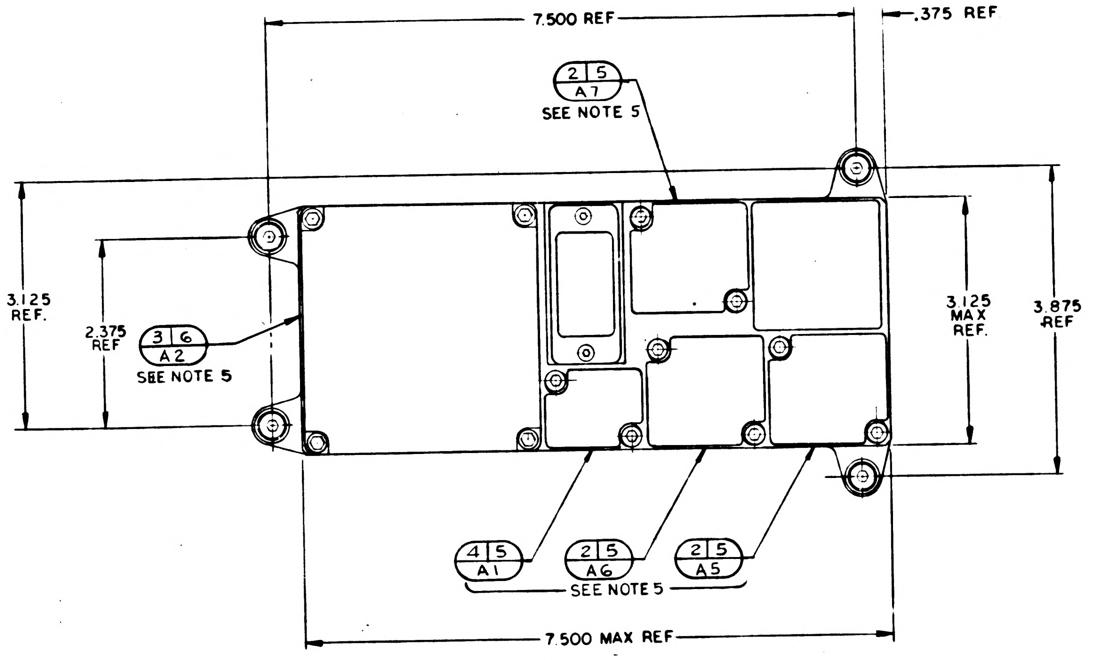
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER DO.58518	3 OCT 64	JRS / WF
B	REVISED PER TDRR 14862	21 DEC 64	J.C. / J.S.

REVISIONS 14078

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK .110 TO .140 HIGH WHITE PER ND1002019 AND SERIALIZE PER ND1002023.
3. PIECEMARK TO BE CENTRALLY LOCATED ON SURFACE INDICATED.
4. INSPECT PER PS1007059.
5. APPLY THIN FILM OF ITEM ⑦ TO BOTH SURFACES OF ITEM ⑤ AND ITEM ⑥.


SEE NOTES 2 AND 3
D AND C ELECTRONICS ASSY
1015065-☐ REV☐ S/N
2.500
MAX
REF




7.500 REF
.375 REF
2 5
A7
SEE NOTE 5
3.125
REF.
2.375
REF
3 6
A2
SEE NOTE 5
3.125
MAX
REF.
3.875
REF
4 5
A1
2 5
A6
2 5
A5
SEE NOTE 5
7.500 MAX REF

		—	☒		10	1015069	SCHEMATIC
		☒	—		9	1021705	SCHEMATIC
		3	—		8	1014638-011	DEMODULATOR ATT. ERROR
		AR	AR		7	1012051	GREASE SILICONE
		1	1		6	1015078-002	GASKET, CONNECTOR, MODULE
		4	4		5	1015078-003	GASKET, CONNECTOR, MODULE
		1	1		4	1015038-011	40 SECOND TIME DELAY ASSY
		1	1		3	1015036-011	RELAY AND DIODE MODULE
		-	3		2	1007034	DEMODULATOR ATTITUDE ERROR
		1	1		1	1015076-011	BASE ASSEMBLY
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-021	1015023-021	-021
1015023-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +— −— DECIMALS +— −— ANGLES +— −—
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 9 SEP 64
CHECKED 3 OCT 64
APPROVAL 3 Oct 64
APPROVAL L.C.
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

D AND C ELECTRONICS
ASSEMBLY

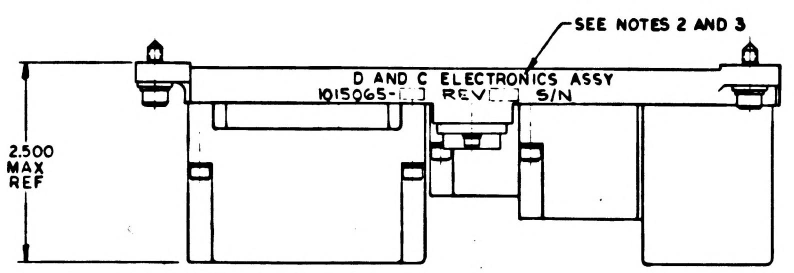
CODE IDENT NO.
SIZE
1015065
SCALE
SHEET 1 OF 1

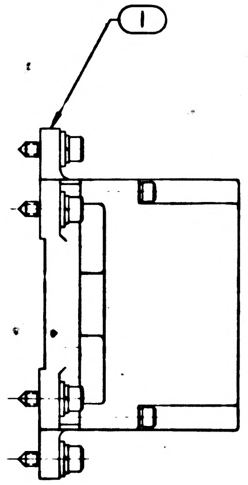
1015065 B

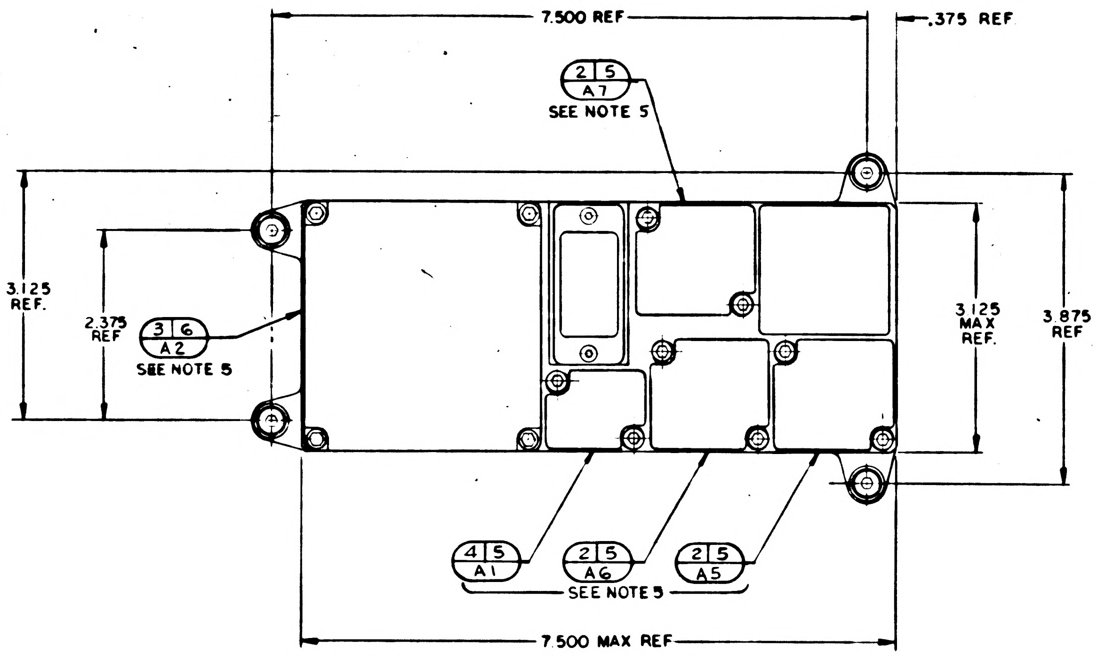
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MARK .110 TO .140 HIGH WHITE PER ND1002019 AND SERIALIZE PER ND1002023.
3. PIECEMARK TO BE CENTRALLY LOCATED ON SURFACE INDICATED.
4. INSPECT PER PS1007059.
5. APPLY THIN FILM OF ITEM ⑦ TO BOTH SURFACES OF ITEM ⑤ AND ITEM ⑥.

REVISIONS		14078	
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER DO.58518	3 OCT 64	JRS RF
Ⓜ B	REVISED PER TDRR 14862	21 DEC 64	J.K. J.K.
Ⓜ C	REVISED PER TDRR 15497	18 JAN 65	JJJ Y.M.


SEE NOTES 2 AND 3
D AND C ELECTRONICS ASSY
1015065-[ ] REV[ ] S/N
2.500
MAX
REF




7.500 REF
.375 REF
2 5
A7
SEE NOTE 5
3.125
REF.
2.375
REF
3 6
A2
SEE NOTE 5
3.125
MAX
REF.
3.875
REF
4 5
A1
2 5
A6
2 5
A5
SEE NOTE 5
7.500 MAX REF

1015065 C

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		021	011				
		—	☒		10	1015069	SCHEMATIC
		☒	—		9	1021705	SCHEMATIC
		3	—		8	1014638-011	DEMODULATOR ATT. ERROR
		AR	AR		7	1012051	GREASE, SILICONE
		1	1		6	1015078-002	GASKET, CONNECTOR, MODULE
		4	4		5	1015078-003	GASKET, CONNECTOR, MODULE
		1	1		4	1015038-011	40 SECOND TIME DELAY ASSY
		1	1		3	1015036-011	RELAY AND DIODE MODULE
		-	3		2	1007034-011	DEMODULATOR ATTITUDE ERROR
		1	1		1	1015076-011	BASE ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-021	1015023-021	-021
1015023-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 5 SEP 64
CHECKED W. DIEHL 3 OCT. 64
APPROVAL [illegible] 3 Oct 64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 10 Nov

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

D AND C ELECTRONICS
ASSEMBLY

CODE IDENT NO.
SIZE
1015065
SCALE FULL
SHEET 1 OF 1

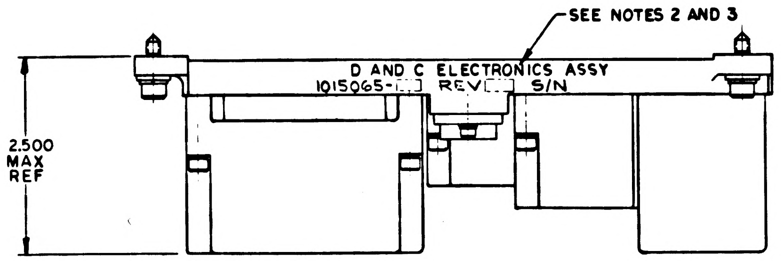
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. MARK .110 TO .140 HIGH WHITE PER ND1002019 AND SERIALIZE PER ND1002023.

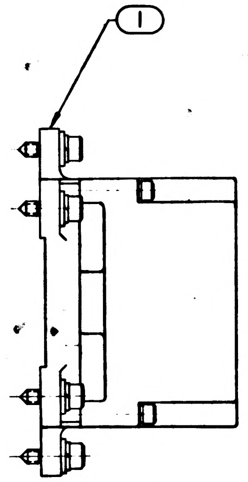
3. PIECEMARK TO BE CENTRALLY LOCATED ON SURFACE INDICATED.

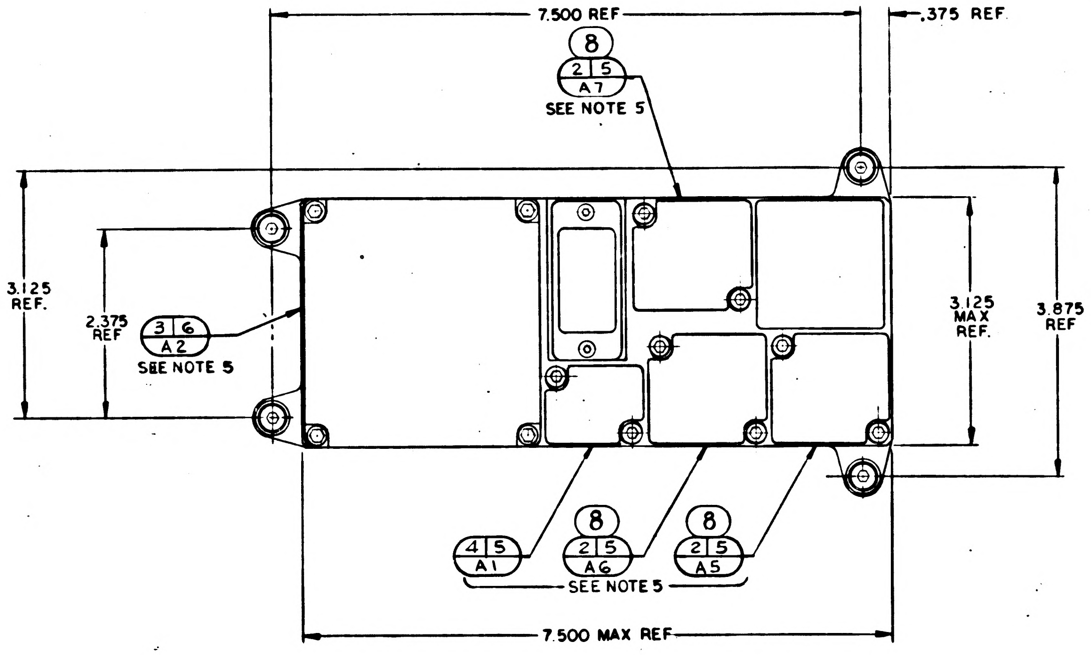
4. INSPECT PER PS1007059.

5. APPLY THIN FILM OF ITEM ⑦ TO BOTH SURFACES OF ITEM ⑤ AND ITEM ⑥.


SEE NOTES 2 AND 3
D AND C ELECTRONICS ASSY
1015065-[ ] REV[ ] S/N
2.500
MAX
REF

REVISIONS 14078			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER DC.58518	3 OCT 64	JRS WF
Ⓜ B	REVISED PER TDRR 14862	21 DEC 64	J.K. W.S.
Ⓜ C	REVISED PER TDRR 15497	18 JAN 65	J J J Y.M.
D	REVISED PER TDRR 16979	8 MAR 65	R.W.T. E.F.




7.500 REF
.375 REF
8
2 5
A7
SEE NOTE 5
3.125
REF.
2.375
REF
3 6
A2
SEE NOTE 5
3.125
MAX
REF.
3.875
REF
4 5
A1
8
2 5
A6
8
2 5
A5
SEE NOTE 5
7.500 MAX REF

1015065 D

		—	☒		10	1015069	SCHEMATIC
		☒	—		9	1021705	SCHEMATIC
		3	—		8	1014638-011	DEMODULATOR ATT. ERROR
		AR	AR		7	1012051	GREASE, SILICONE
		1	1		6	1015078-002	GASKET, CONNECTOR, MODULE
		4	4		5	1015078-003	GASKET, CONNECTOR, MODULE
		1	1		4	1015038-011	40 SECOND TIME DELAY ASSY
		1	1		3	1015036-011	RELAY AND DIODE MODULE
		-	3		2	1007034-011	DEMODULATOR ATTITUDE ERROR
		1	1		1	1015076-011	BASE ASSEMBLY
		-021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-021	1015023-021	-021
1015023-011	1015023-011	-011
APPLICATION		

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UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 9 SEP 64
CHECKED W. DIEHL 3 OCT. 64
APPROVAL [illegible] 3 Oct 64
APPROVAL L. C. [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 10 [illegible]

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HOUSTON, TEXAS

D AND C ELECTRONICS
ASSEMBLY

CODE IDENT NO. SIZE 1015065
SCALE FULL SHEET 1 OF 1

NOTES:

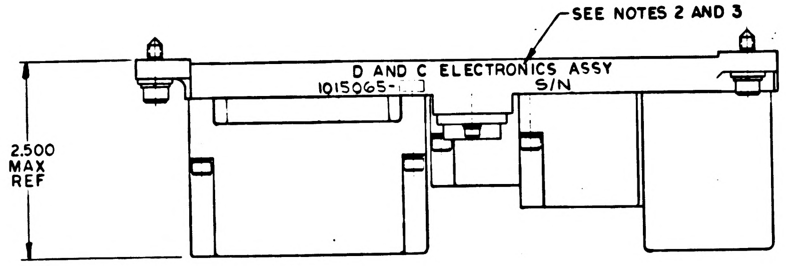
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

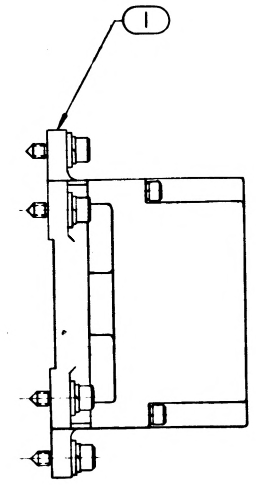
2. MARK .110 TO .140 HIGH WHITE PER ND1002019 AND SERIALIZE PER ND1002023.

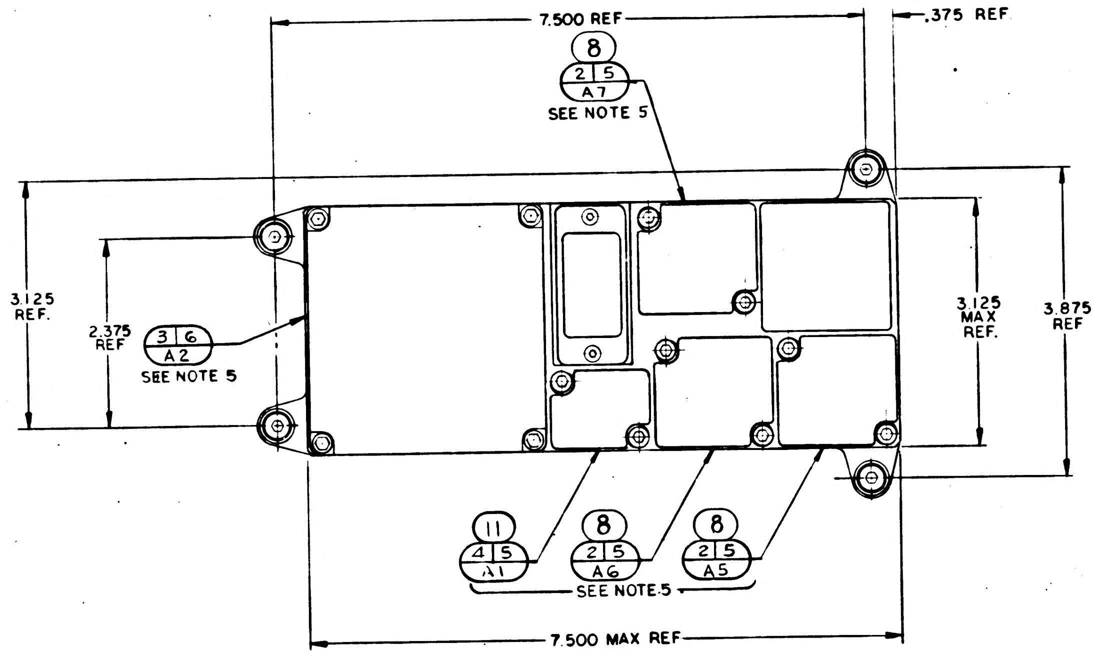
3. PIECEMARK TO BE CENTRALLY LOCATED ON SURFACE INDICATED.

4. INSPECT PER PS1007059.

5. APPLY THIN FILM OF ITEM ⑦ TO BOTH SURFACES OF ITEM ⑤ AND ITEM ⑥.







REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER DO.58518	3 OCT 64	JRS WF
Ⓜ B	REVISED PER TDRR 14862	21 DEC 64	J.C.
Ⓜ C	REVISED PER TDRR 15497	18 JAN 65	JJJ W.
Ⓜ D	REVISED PER TDRR 16979	8 MAR 65	RW EF
E	REVISED PER TDRR 22363	16 SEP 65	EF

041	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
☒	—	—	—		13	1023024	SCHEMATIC
—	☒	—	—		12	1023023	SCHEMATIC
1	1	—	—		11	1015038-021	TIME DELAY ASSEMBLY
—	—	—	☒		10	1015069	SCHEMATIC
—	—	☒	—		9	1021705	SCHEMATIC
3	—	3	—		8	1014638-011	DEMODULATOR ATT. ERROR
AR	AR	AR	AR		7	1012051	GREASE, SILICONE
1	1	1	1		6	1015078-002	GASKET, CONNECTOR, MODULE
4	4	4	4		5	1015078-003	GASKET, CONNECTOR, MODULE
-	—	1	1		4	1015038-011	40 SECOND TIME DELAY ASSY
1	1	1	1		3	1015036-011	RELAY AND DIODE MODULE
-	3	-	3		2	1007034-011	DEMODULATOR ATTITUDE ERROR
1	1	1	1		1	1015076-011	BASE ASSEMBLY

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-021	1015023-021	-021
1015023-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN DATE 3 SEP 64
CHECKED W. Diehl 3 OCT. 64
APPROVAL 3 Oct 64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

D AND C ELECTRONICS
ASSEMBLY

CODE IDENT NO. 80230
SIZE D
1015065

SCALE FULL
SHEET 1 OF 1

1015065 E

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. MARK .110 TO .140 HIGH WHITE PER ND1002019 AND SERIALIZE PER ND1002023.

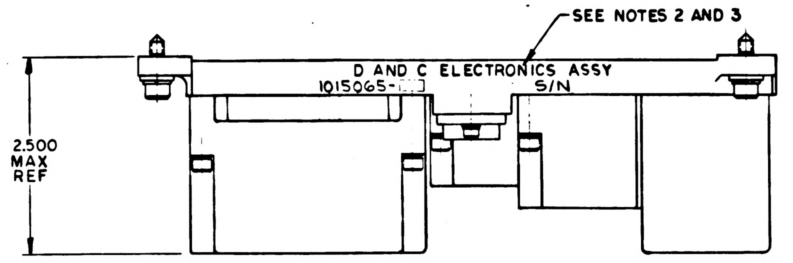
3. PIECEMARK TO BE CENTRALLY LOCATED ON SURFACE INDICATED.

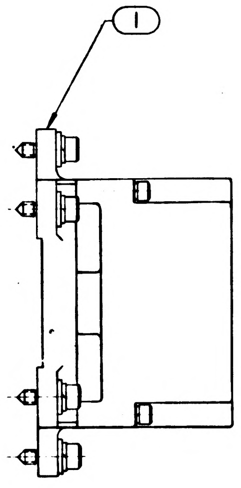
4. INSPECT PER PS1007059.

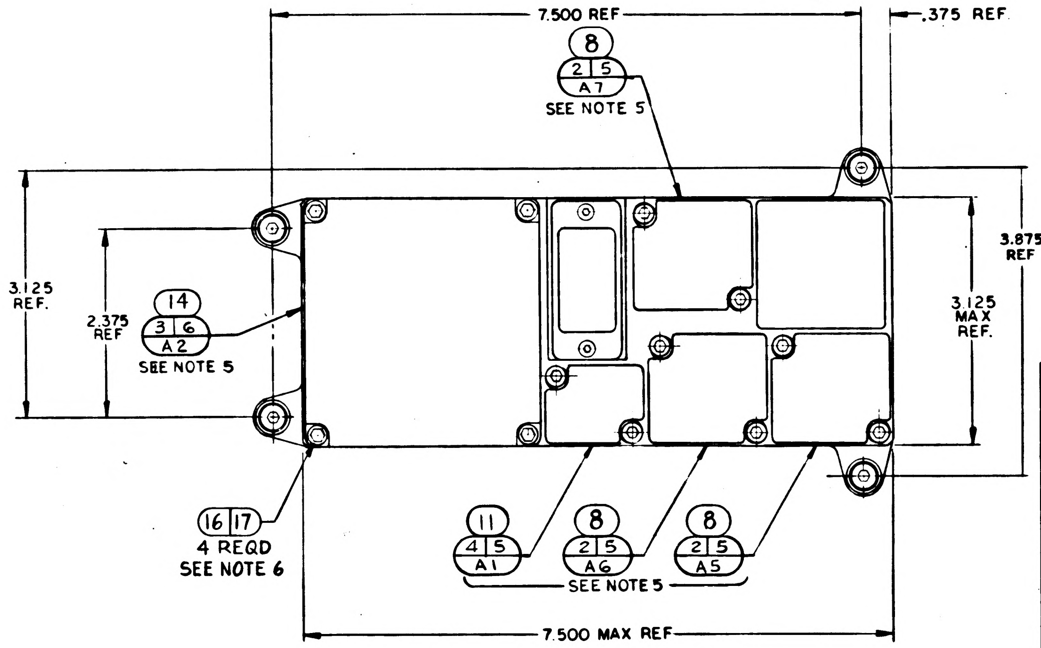
5. APPLY THIN FILM OF ITEM ⑦ TO BOTH SURFACES OF ITEM ⑤ AND ITEM ⑥.

6. SECURE THREADS OF ITEM ⑯ USING ITEM ⑮ PER ND 1002211.

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER DO.58518	3 OCT 64	JRS RIF
Ⓜ B	REVISED PER TDRR 14862	21 DEC 64	
Ⓜ C	REVISED PER TDRR 15497	18 JAN 65	JJJ
Ⓜ D	REVISED PER TDRR 16979	8 MAR 65	RWT EF
Ⓜ E	REVISED PER TDRR 22363	6 SEP 65	
F	REVISED PER TDRR 25466	27 JAN 66	LK







061	051	041	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
4	4	—	—	—	—		17	MS15795-303	WASHER, FLAT
4	4	—	—	—	—		16	1023032	SCREW, SOCKET HD SPECIAL
AR	AR	—	—	—	—		15	MIL-S-22473	SEALING COMP, RETAINING GRADE C
1	1	—	—	—	—		14	1023036-011	RELAY AND DIODE MODULE
X	X	X	—	—	—		13	1023024	SCHEMATIC
—	—	—	X	—	—		12	1023023	SCHEMATIC
1	1	1	1	—	—		11	1015038-021	TIME DELAY ASSEMBLY
—	—	—	—	—	X		10	1015069	SCHEMATIC
—	—	—	—	X	—		9	1021705	SCHEMATIC
3	—	3	—	3	—		8	1014638-011	DEMODULATOR ATT. ERROR
AR	AR	AR	AR	AR	AR		7	1012051	GREASE, SILICONE
1	1	1	1	1	1		6	1015078-002	GASKET, CONNECTOR, MODULE
4	4	4	4	4	4		5	1015078-003	GASKET, CONNECTOR, MODULE
—	—	—	—	1	1		4	1015038-011	40 SECOND TIME DELAY ASSY
—	—	1	1	1	1		3	1015036-011	RELAY AND DIODE MODULE
—	3	-	3	-	3		2	1007034-011	DEMODULATOR ATTITUDE ERROR
1	1	1	1	1	1		1	1015076-011	BASE ASSEMBLY

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-021	1015023-021	-021
1015023-011	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +— DECIMALS +— ANGLES +—
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN [illegible] DATE 9 SEP 64
CHECKED W. Diehl 3 OCT. 64
APPROVAL [illegible] 3 Oct 64
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

D AND C ELECTRONICS
ASSEMBLY

CODE IDENT NO. 80230
SIZE D
1015065
SCALE —
SHEET 1 OF 1

F 1015065

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

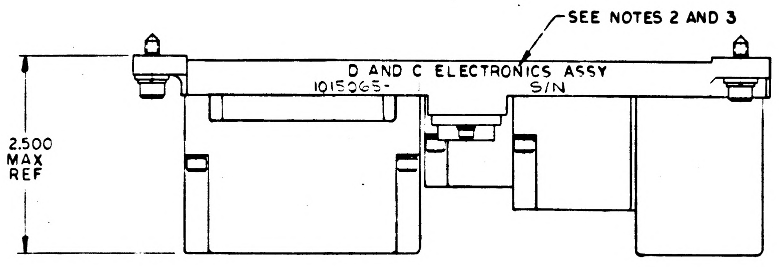
2. MARK .110 TO .140 HIGH WHITE PER ND1002019 AND SERIALIZE PER ND1002023.

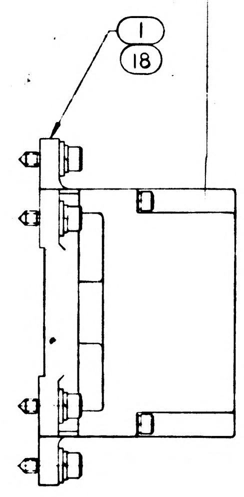
3. PIECEMARK TO BE CENTRALLY LOCATED ON SURFACE INDICATED.

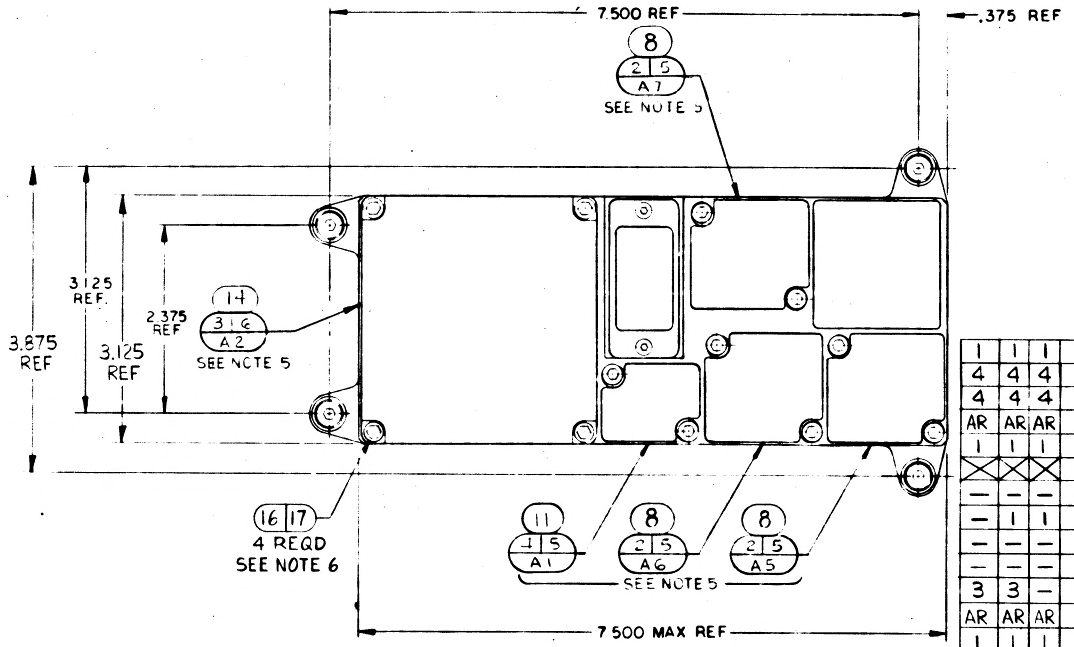
4. INSPECT PER PS1007059.

5. APPLY THIN FILM OF ITEM (7) TO BOTH SURFACES OF ITEM (5) AND ITEM (6).

6. SECURE THREADS OF ITEM (16) USING ITEM (15) PER ND1002211.







REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER 20.58518	3 OCT 64	JRS WF
B	REVISED PER TDRR 14862	21 DEC 64	JC
C	REVISED PER TDRR 15497	8 JAN 65	JJJ JM
D	REVISED PER TDRR 16979	8 MAR 65	R.W.T. EF
E	REVISED PER TDRR 22363	6 SEP 65	EF
F	REVISED PER TDRR 25466	27 JAN 66	LK
G	REVISED PER TDRR 26167	5 FEB 66	RLP

101	091	081	071	061	051	041	031	021	011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1	1	1		—	—	—	—	—	—		18	1015076-021	BASE ASSEMBLY
4	4	4		4	4	—	—	—	—		17	MS15795-303	WASHER, FLAT
4	4	4		4	4	—	—	—	—		16	1023032	SCREW, SOCKET HD SPECIAL
AR	AR	AR		AR	AR	—	—	—	—		15	MIL-S-22473	SEALING COMP, RETAINING GRADE C
1	1	1		1	1	—	—	—	—		14	1023036-011	RELAY AND DIODE MODULE
☒	☒	☒		☒	☒	☒	—	—	—		13	1023024	SCHEMATIC
—	—	—		—	—	—	☒	—	—		12	1023023	SCHEMATIC
—	1	1		1	1	1	1	—	—		11	1015038-021	TIME DELAY ASSEMBLY
—	—	—		—	—	—	—	—	☒		10	1015069	SCHEMATIC
—	—	—		—	—	—	—	☒	—		9	1021705	SCHEMATIC
3	3	—		3	—	3	—	3	—		8	1014638-011	DEMODULATOR ATT. ERROR
AR	AR	AR		AR	AR	AR	AR	AR	AR		7	1012051	GREASE SILICONE
1	1	1		1	1	1	1	1	1		6	1015078-002	GASKET CONNECTOR MODULE
4	4	4		4	4	4	4	4	4		5	1015078-003	GASKET CONNECTOR MODULE
1	—	—		—	—	—	—	1	1		4	1015038-011	40 SECOND TIME DELAY ASSY
—	—	—		—	—	1	1	1	1		3	1015036-011	RELAY AND DIODE MODULE
—	—	3		—	3	-	3	-	3		2	1007034-011	DEMODULATOR ATTITUDE ERROR
—	—	—		1	1	1	1	1	1		1	1015076-011	BASE ASSEMBLY
QUANTITY REQUIRED											LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023-021	1015023-021	-021
1015023-011	1015023-011	-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-4[illegible]

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

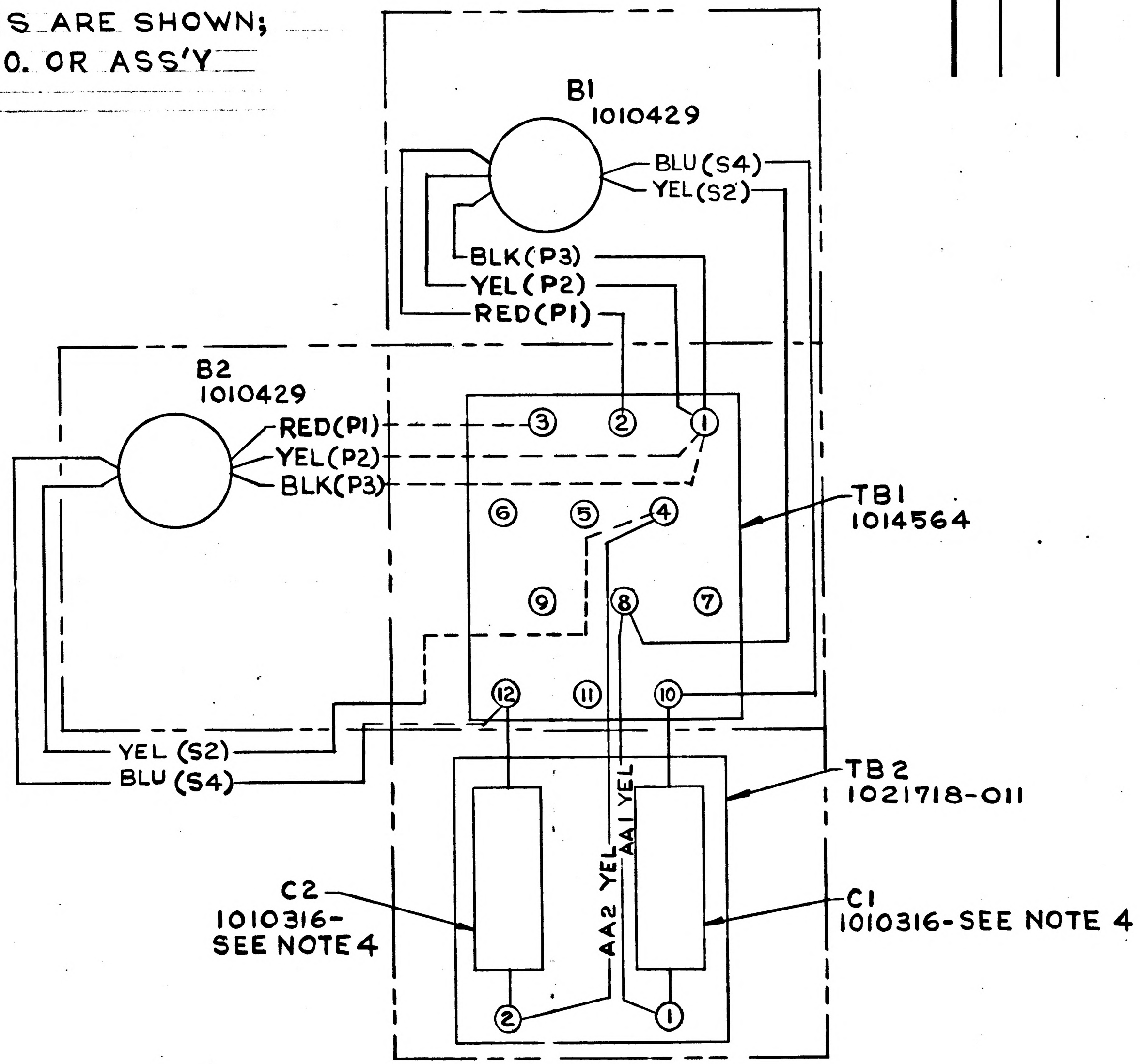
D AND C ELECTRONICS
ASSEMBLY

CODE IDENT NO 80230
SIZE D
1015065
SCALE
SHEET 1 OF 1

REVISIONS					
SYM	ZONE	DESCRIPTION		DATE	APPD.
		INITIAL CLASS A RELEASE TDRR NO. 13028	CHG NO.		

NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STD PRESCRIBED BY MIL-D-70327.
2. ALL PT NO'S. ARE FOR REF ONLY.
3. DWGS FOR REF :
   A. 1021700 SEXTANT HAND CONTROLLER ASS'Y.
   B. 1015075 SCHEMATIC DIAGRAM ELECTRICAL.
4. C1 AND C2 SELECTED, SEE ASS'Y DWG 1021700 FOR APPLICABLE DASH NO'S.
5. PARTIAL REF DESIGNATIONS ARE SHOWN; PREFIX THEM WITH UNIT NO. OR ASS'Y DESIGNATION OR BOTH.


B1
1010429
BLU (S4)
YEL (S2)
BLK (P3)
YEL (P2)
RED (P1)
B2
1010429
RED (P1)
YEL (P2)
BLK (P3)
③ ② ①
⑥ ⑤ ④
⑨ ⑧ ⑦
⑫ ⑪ ⑩
TB1
1014564
YEL (S2)
BLU (S4)
TB2
1021718-011
AA1 YEL
AA2 YEL
C2
1010316-
SEE NOTE 4
C1
1010316-SEE NOTE 4
②
①

	1021700-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL ~
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 9 Sept 64
CHECKED J. Petrany 23 SEPT 64
APPROVAL E. Mertz 23 SEPT 64
APPROVAL [illegible] 9/26/64
NASA APPROVAL W.J. Rhine 9-29-64
MIT APPROVAL [illegible] 29 Sep 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING DIAGRAM
SEXTANT HAND CONTROLLER

CODE IDENT NO. SIZE C 1015074
SCALE ~ SHEET 1 OF 1

MIL 1077C—F

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

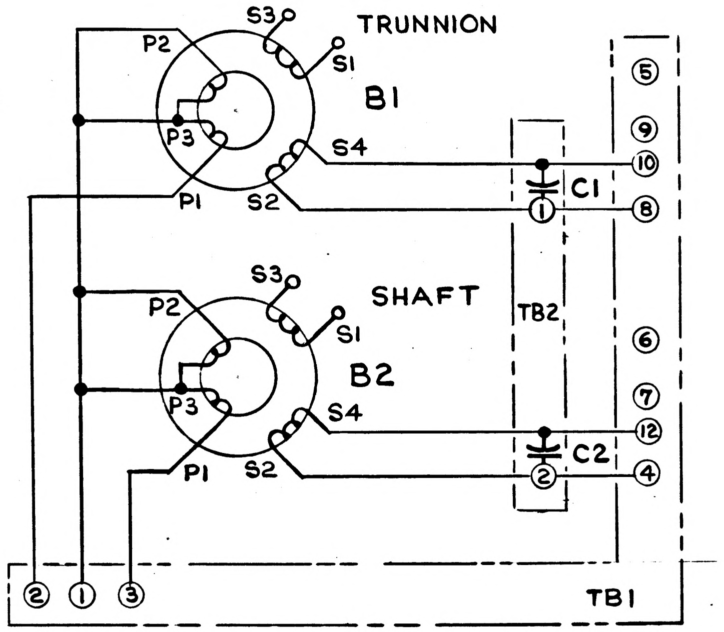
1015075

NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH STD PRESCRIBED BY MIL-D-70327.
2. PARTIAL REF DESIGNATIONS ARE SHOWN. PREFIX THEM WITH UNIT NO. OR ASS'Y DESIGNATION OR BOTH.
3. PT NO'S. ARE FOR REF ONLY.
4. C1 AND C2 SELECTED, SEE ASS'Y DWG 1021700 FOR APPLICABLE DASH NO'S.

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		INITIAL CLASS A RELEASE TDRR NO. 13028			



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
B1	1010429	RESOLVER			
B2	1010429	RESOLVER			
TB1	1014564	TERMINAL BOARD			
TB2	1021718-011	TERMINAL BOARD			
C1	1010316-	CAPCITOR	NOTE4	1%	100V
C2	1010316-	CAPACITOR	NOTE4	1%	100V

NEXT ASSY	USED ON
	1021700-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~

DO NOT SCALE THIS DRAWING

MATERIAL ~

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN J P B DATE 9 SEPT 64
CHECKED J Petrany 23 SEPT 64
APPROVAL E. Mertz 23 SEPT 64
APPROVAL 9/26/64
NASA APPROVAL W J 9-29-64
MIT APPROVAL 29 Sept 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
SEXTANT HAND CONTROLLER

CODE IDENT NO. | SIZE C | 1015075

SCALE ~ | SHEET 1 OF 1

MIL 1077C—P

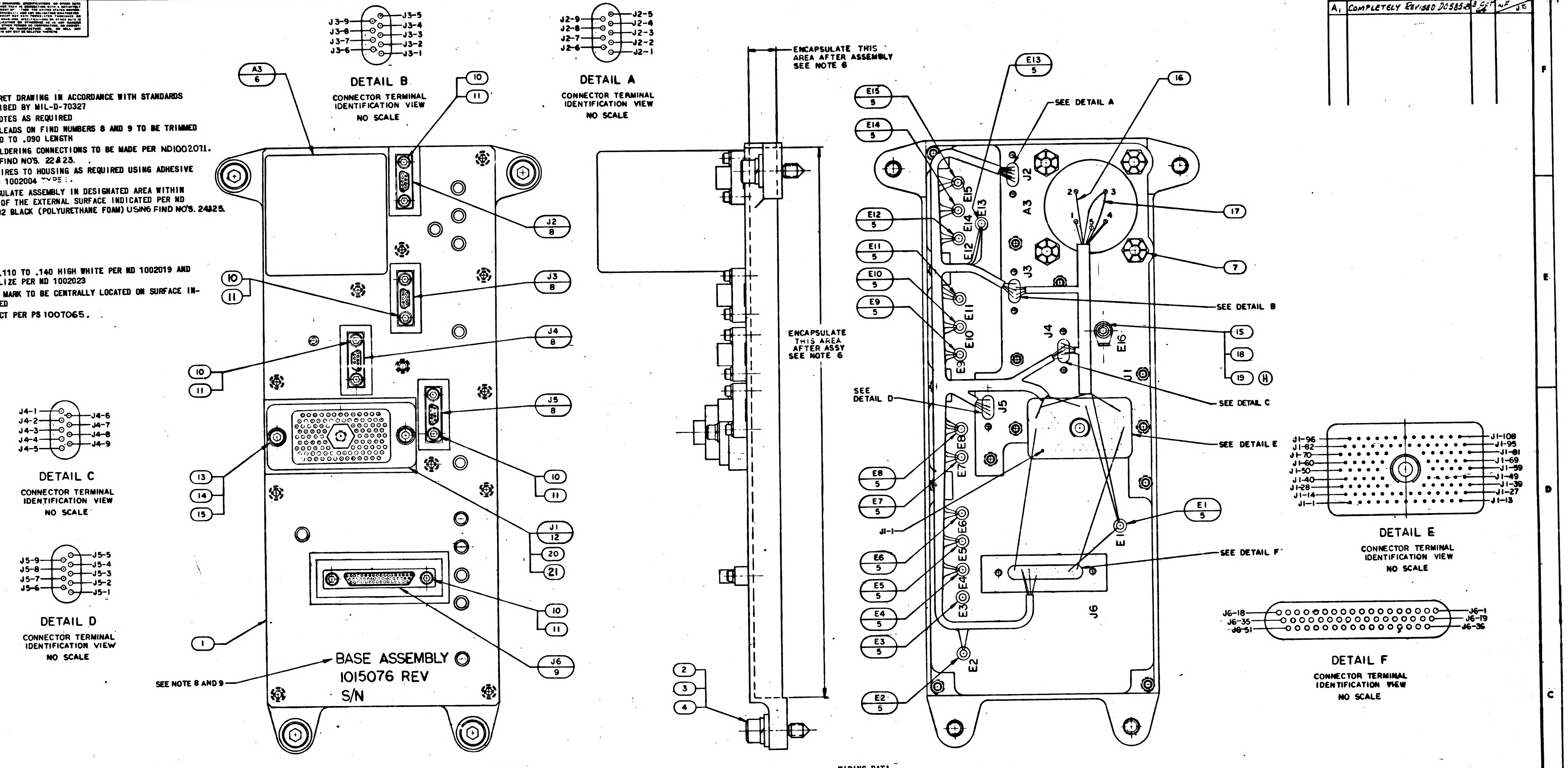
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

[illegible] RELATED GOVERNMENT PROCUREMENT OP[illegible]TION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A1	COMPLETELY REVISED DC585-B	3 OCT 64	NF / J.S.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. SPARE LEADS ON FIND NUMBERS 8 AND 9 TO BE TRIMMED TO .030 TO .090 LENGTH
4. ALL SOLDERING CONNECTIONS TO BE MADE PER ND1002071. USING FIND NO'S. 22 & 23.
5. BOND WIRES TO HOUSING AS REQUIRED USING ADHESIVE PER ND 1002004 TYPE I.
6. ENCAPSULATE ASSEMBLY IN DESIGNATED AREA WITHIN ±.015 OF THE EXTERNAL SURFACE INDICATED PER ND 1002002 BLACK (POLYURETHANE FOAM) USING FIND NO'S. 24 & 25.
7.
8. MARK .110 TO .140 HIGH WHITE PER ND 1002019 AND SERIALIZE PER ND 1002023
9. PIECE MARK TO BE CENTRALLY LOCATED ON SURFACE INDICATED
10. INSPECT PER PS 1007065.
11.


J3-9
J3-8
J3-7
J3-6
J3-5
J3-4
J3-3
J3-2
J3-1
DETAIL B
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
J2-9
J2-8
J2-7
J2-6
J2-5
J2-4
J2-3
J2-2
J2-1
DETAIL A
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
J4-1
J4-2
J4-3
J4-4
J4-5
J4-6
J4-7
J4-8
J4-9
DETAIL C
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
J5-9
J5-8
J5-7
J5-6
J5-5
J5-4
J5-3
J5-2
J5-1
DETAIL D
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
A3 6
J2 8
J3 8
J4 8
J5 8
J6 9
J1 12
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4
BASE ASSEMBLY
1015076 REV
S/N
SEE NOTE 8 AND 9
ENCAPSULATE THIS AREA AFTER ASSEMBLY SEE NOTE 6
ENCAPSULATE THIS AREA AFTER ASSY SEE NOTE 6
E13 5
E15 5
E14 5
E12 5
E11 5
E10 5
E9 5
E8 5
E7 5
E6 5
E5 5
E4 5
E3 5
E2 5
E1 5
16
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7
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18
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SEE DETAIL A
SEE DETAIL B
SEE DETAIL C
SEE DETAIL D
SEE DETAIL E
SEE DETAIL F
J1-1
J2
J3
J4
J5
J6
J1
A3
E16
J1-96
J1-82
J1-70
J1-60
J1-50
J1-40
J1-28
J1-14
J1-1
J1-108
J1-95
J1-81
J1-69
J1-59
J1-49
J1-39
J1-27
J1-13
DETAIL E
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
J6-18
J6-35
J6-51
J6-1
J6-19
J6-36
DETAIL F
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE

WIRING DATA

FROM CIRCUIT POINT	TO CIRCUIT POINT	CONDUCTOR SIZE AWG	COLOR	FIND NO.	CIRCUIT FUNCTION
J2-1	J1-96	26	BLK	8	INPUT ROLL ATTITUDE ERROR
J2-2	J1-97	26	BRN		INPUT ROLL ATTITUDE ERROR
J2-3	E12	26	RED		0 VDC
J2-4	J1-28	26	ORN		-ROLL OUTPUT ATT. ERROR METER (IMU)
J2-5	E11	26	YEL		+28 VDC
J2-6	E15	26	GRN		LO 28V RMS 800 CPS ±1%
J2-7	E14	26	BLU		HI 28V RMS 800 CPS ±1%
J2-8	J1-29	26	VIO		+ROLL OUTPUT ATT. ERROR METER (IMU)
J2-9	SPARE	--	GY		---
J3-1	J1-70	26	BLK		INPUT PITCH ATTITUDE ERROR
J3-2	J1-71	26	BRN		INPUT PITCH ATTITUDE ERROR
J3-3	E12	26	RED		0 VDC
J3-4	J1-2	26	ORN		-PITCH OUTPUT ATT. ERROR METER (IMU)
J3-5	E11	26	YEL		+28 VDC
J3-6	E15	26	GRN		LO 28V RMS 800 CPS ±1%
J3-7	E14	26	BLU		HI 28V RMS 800 CPS ±1%
J3-8	J1-1	26	VIO		+PITCH OUTPUT ATT. ERROR METER (IMU)
J3-9	SPARE	--	GY		---
J4-1	J1-82	26	BLK		INPUT YAW ATTITUDE ERROR
J4-2	J1-83	26	BRN		INPUT YAW ATTITUDE ERROR
J4-3	E7	26	RED		0 VDC
J4-4	J1-15	26	ORN		-YAW OUTPUT ATT. ERROR METER (IMU)
J4-5	E8	26	YEL		+28 VDC
J4-6	E10	26	GRN		LO 28V RMS 800 CPS ±1%
J4-7	E9	26	BLU		HI 28V RMS 800 CPS ±1%
J4-8	J1-14	26	VIO		+YAW OUTPUT ATT. ERROR METER (IMU)
J4-9	SPARE	26	GY		---
J5-1	SPARE	--	BLK		---
J5-2	E5	26	BRN		+28 VDC
J5-3	E2	26	RED		28 VDC GND
J5-4	SPARE	--	ORN		---
J5-5	E6	26	YEL		0 VDC
J5-6	SPARE	--	GRN		---
J5-7	SPARE	--	BLU		---
J5-8	SPARE	--	VIO		---
J5-9	SPARE	--	GY	8	---
J6-1	J1-12	26	BLK	9	ZERO ENCODER RELAY CONT (AGC)
J6-2	J1-18	26	BRN		MANUAL MODE RELAY COMMON LINE (IMU)
J6-3	J1-46	26	RED		ATTITUDE CONT SIGNAL (IMU)
J6-4	J1-35	26	ORN		COARSE ALIGN RELAY CONT (IMU)
J6-5	J1-56	26	YEL		MANUAL ALIGN (IMU)
J6-6	J1-36	26	GRN	9	CDU MANUAL RELAY CONT (IMU)

WIRING DATA

FROM CIRCUIT POINT	TO CIRCUIT POINT	CONDUCTOR SIZE AWG	COLOR	FIND NO.	CIRCUIT FUNCTION
J6-7	SPARE		BLU	9	
J6-8	J1-5	26	VIO		FINE ALIGN RELAY CONT (AGC)
J6-9	J1-23	26	GY		FINE ALIGN RELAY CONT (IMU)
J6-10	J1-13	26	WH		FINE ALIGN RELAY COMMAND (AGC)
J6-11	J1-58	26	WH/BLK		ENTRY RELAY COMMAND (AGC)
J6-12	J1-25	26	WH/BRN		ENTRY RELAY CONT (IMU)
J6-13	J1-9	26	WH/RED		MODE SW INTERLOCK (IMU)
J6-14	E4	26	WH/ORN		0 VDC
J6-15	J1-55	26	WH/YEL		TO TEMP CONTROL
J6-16	E2	26	WH/GRN		28 VDC GND
J6-17	J1-65	26	WH/BLU		TO TEMP CONTROL
J6-18	J1-45	26	WH/VIO		TO TEMP CONTROL
J6-19	J1-38	26	WH/GY		ZERO ENCODER RELAY COMMAND (AGC)
J6-20	J1-34	26	WH/BLK/BRN		ZERO ENCODER RELAY CONT (IMU)
J6-21	E1	26	WH/BLK/RED		VAR ILLUM & IND LAMP PWR 400 CPS
J6-22	SPARE	--	WH/BLK/ORN		---
J6-23	J1-69	26	WH/BLK/YEL		CDU MANUAL RELAY CONT (AGC)
J6-24	J1-105	26	WH/BLK/GRN		CDU MANUAL LT (IMU)
J6-25	J1-92	26	WH/BLK/BLU		COARSE ALIGN MODE LT (IMU)
J6-26	SPARE	--	WH/BLK/VIO		---
J6-27	J1-49	26	WH/BLK/GY		AGC FINE ALIGN
J6-28	SPARE	--	WH/BRN/RED		---
J6-29	J1-57	26	WH/BRN/ORN		ENTRY RELAY CONT (AGC)
J6-30	SPARE	--	WH/BRN/YEL		---
J6-31	J1-6	26	WH/BRN/GRN		ENTRY RELAY CONT RESET (IMU)
J6-32	SPARE	--	WH/BRN/BLU		---
J6-33	J1-93	26	WH/BRN/VIO		MODE RELAY COMMON LINE (IMU)
J6-34	J1-24	26	WH/BRN/GY		ATTITUDE CONT RELAY CONT (IMU)
J6-35	J1-76	26	WH/RED/ORN		ATTITUDE CONT MODE SWITCH IND (AGC)
J6-36	J1-104	26	WH/RED/YEL		ZERO ENCODER MODE LT (IMU)
J6-37	J1-48	26	WH/RED/GRN		COARSE ALIGN RELAY COMMAND (AGC)
J6-38	J1-27	26	WH/RED/BLU		CDU MANUAL RELAY COMMAND (AGC)
J6-39	J1-91	26	WH/RED/VIO		MODE LAMP TEST (G & N PANEL)
J6-40	J1-37	26	WH/RED/GY		BACKUP ELECTRONICS RELAY (PSA)
J6-41	J1-4	26	WH/ORN/YEL		COARSE ALIGN RELAY
J6-42	J1-59	26	WH/ORN/GRN		AGC COARSE ALIGN
J6-43	E8	26	WH/ORN/BLU		+28 VDC
J6-44	J1-26	26	WH/ORN/VIO		IMU DELAY LT
J6-45	J1-94	26	WH/ORN/GY		FINE ALIGN MODE LT (IMU)
J6-46	E5	26	WH/YEL/GRN		+28 VDC
J6-47	J1-88	26	WH/YEL/BLU		CONDITION LAMP TEST
J6-48	J1-39	26	WH/YEL/VIO	9	AGC HI SPEED ROOL

WIRING DATA

FROM CIRCUIT POINT	TO CIRCUIT POINT	CONDUCTOR SIZE AWG	COLOR	FIND NO.	CIRCUIT FUNCTION
J6-49	J1-79	26	WH/YEL/GY	9	ENTRY MODE LT (IMU)
J6-50	J1-68	26	WH/GRN/BLU	9	AGC COMMON
J6-51	J1-22	26	WH/GRN/VIO	9	ATTITUDE CONT LT SIGNAL (IMU)
A3-1	J1-89	26	WH	16	+28 VDC
J1-7	E13	26	WH	16	+28 VDC
A3-2	J1-80	26	WH	16	PANEL BRIGHTNESS CONTROL
A3-3	J1-108	22	WH	17	VAR ILLUM & IND LAMP PWR 400 CPS
A3-3	E1	22	WH	17	VAR ILLUM & IND LAMP PWR 400 CPS
A3-4	J1-90	22	WH	17	6 V 400 CPS HI
A3-4	J1-106	22	WH	17	6 V 400 CPS HI
A3-5	J1-95	26	WH	16	PANEL BRIGHTNESS CONTROL
J1-10	E9	26	WH	16	HI 28 VRMS 800 CPS ±1%
J1-11	E10	26	WH	16	LO 28 VRMS 800 CPS ±1%
J1-78	E4	26	WH	16	0 VDC
J1-103	E1	22	WH	17	VAR ILLUM & IND LAMP PWR 400 CPS
E4	E6	26	WH	16	0 VDC
E5	E8	26	WH	16	+28 VDC
E6	E7	26	WH	16	0 VDC
E7	E12	26	WH	16	0 VDC
E8	E13	26	WH	16	+28 VDC
E9	E14	26	WH	16	HI 28 V RMS 800 CPS ±1%
E10	E15	26	WH	16	LO 28 V RMS 800 CPS ±1%
E11	E13	26	WH	16	+28 VDC
E16	J1-84	22	WH	16	CHASSIS GND

QUANTITY REQUIRED					EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
				011				
						1015069	SCHEMATIC D AND C ELECTRONICS	REF
			AR			1010798-1	POLYURETHANE FOAM	25
			AR			1010798-2	POLYURETHANE FOAM	24
			AR			MIL-F-14256	FLUX (ES-2798)	23
			AR			QQ-S-571, SN60WRAP2	SOLDER	22
			1			1010812-3	GASKET	21
			108			1010738-5	PIN, CONTACT	20
			1			1014636	SCREW SOCKET HEAD CAP	19
			1			MS25036-44	TERMINAL LUG	18
			AR			1010416-30	WIRE, ELECTRICAL STRD INSULATED	17
			AR			1010416-20	WIRE, ELECTRICAL STRD INSULATED	16
			3			MS35338-78	WASHER, LOCK	15
			2			MS15795-304	WASHER, FLAT	14
			2			MS16995-10	SCREW, SOCKET HEAD CAP	13
			1			1010823-1	CONNECTOR, PLUG, ELECTRICAL	12
			10			MS35338-77	WASHER, LOCK	11
			10			MS16995-3	SCREW, SOCKET HEAD CAP	10
			1			1010615-1	CONNECTOR, PLUG, ELECTRICAL	9
			4			1010613-1	CONNECTOR, PLUG, ELECTRICAL	8
			4			NAS1022-C06	NUT, SELF-LOCKING	7
			1			1010455	SATURABLE REACTOR	6
			15			1010623-6	TERMINAL, TURRET	5
			4			MS35338-81	WASHER, LOCK	4
			4			MS15795-308	WASHER, FLAT	3
			4			1008083	SCREW, SOC HD EXT RELIEVED BODY	2
			1			1015080	HOUSING, BASE ASSEMBLY	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015065-011	1015023-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN E. McG[illegible] DATE 15 SEP 64
CHECKED W. Diehl 2 OCT '64
APPROVAL [illegible] 3 OCT 64
APPROVAL [illegible] 10-4-64
NASA APPROVAL [illegible] 11-12-64
MIT APPROVAL [illegible] 10 NOV 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BASE ASSEMBLY
D AND C ELECTRONICS

CODE IDENT NO. SIZE E NASA DRAWING NO. 1015076
SCALE 2/1 WT SHEET 1 OF 1

2. [illegible] 2 OCT 64

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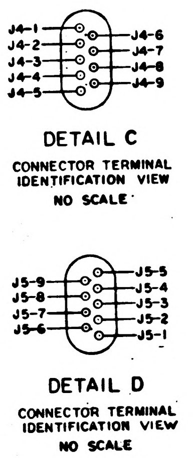
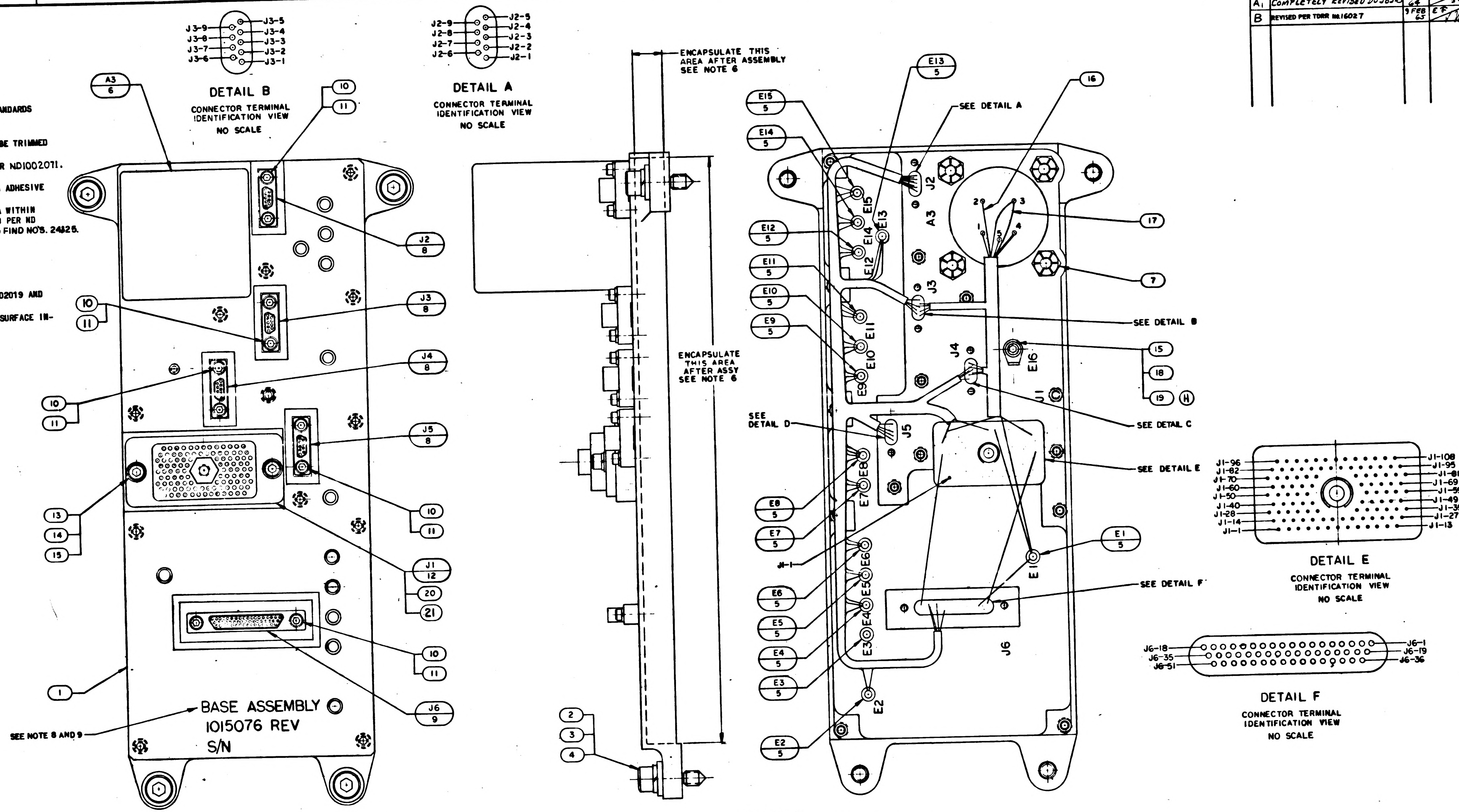
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A1	COMPLETELY REVISED D058518	3 OCT 64	
B	REVISED PER TDRR NO. 16027	9 FEB 65	EF

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. SPARE LEADS ON FIND NUMBERS 8 AND 9 TO BE TRIMMED TO .030 TO .090 LENGTH
4. ALL SOLDERING CONNECTIONS TO BE MADE PER ND1002071. USING FIND NO'S. 22 & 23.
5. BOND WIRES TO HOUSING AS REQUIRED USING ADHESIVE PER ND 1002004 TYPE I.
6. ENCAPSULATE ASSEMBLY IN DESIGNATED AREA WITHIN ±.015 OF THE EXTERNAL SURFACE INDICATED PER ND 1002002 BLACK (POLYURETHANE FOAM) USING FIND NO'S. 24 & 25.
7.
8. MARK .110 TO .140 HIGH WHITE PER ND 1002019 AND SERIALIZE PER ND 1002023
9. PIECE MARK TO BE CENTRALLY LOCATED ON SURFACE INDICATED
10. INSPECT PER PS 1007065.
11.



J4-1
J4-2
J4-3
J4-4
J4-5
J4-6
J4-7
J4-8
J4-9
DETAIL C
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
J5-9
J5-8
J5-7
J5-6
J5-5
J5-4
J5-3
J5-2
J5-1
DETAIL D
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE



J3-9
J3-8
J3-7
J3-6
J3-5
J3-4
J3-3
J3-2
J3-1
DETAIL B
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
J2-9
J2-8
J2-7
J2-6
J2-5
J2-4
J2-3
J2-2
J2-1
DETAIL A
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
A3
6
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J2
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J6
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1
BASE ASSEMBLY
1015076 REV
S/N
SEE NOTE 8 AND 9
ENCAPSULATE THIS AREA AFTER ASSEMBLY SEE NOTE 6
ENCAPSULATE THIS AREA AFTER ASSY SEE NOTE 6
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SEE DETAIL A
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SEE DETAIL D
SEE DETAIL E
SEE DETAIL F
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J2
J3
J4
J5
J6
J1
A3
E16
J1-96
J1-82
J1-70
J1-60
J1-50
J1-40
J1-28
J1-14
J1-1
J1-108
J1-95
J1-81
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J1-59
J1-49
J1-39
J1-27
J1-13
DETAIL E
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
J6-18
J6-35
J6-51
J6-1
J6-19
J6-36
DETAIL F
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE

WIRING DATA

FROM CIRCUIT POINT	TO CIRCUIT POINT	CONDUCTOR SIZE AWG	CONDUCTOR COLOR	CONDUCTOR FIND NO.	CONDUCTOR CIRCUIT FUNCTION
J2-1	J1-96	26	BLK	8	INPUT ROLL ATTITUDE ERROR
J2-2	J1-97	26	BRN		INPUT ROLL ATTITUDE ERROR
J2-3	E12	26	RED		0 VDC
J2-4	J1-28	26	ORN		-ROLL OUTPUT ATT. ERROR METER (IMU)
J2-5	E11	26	YEL		+28 VDC
J2-6	E15	26	GRN		LO 28V RMS 800 CPS ±1%
J2-7	E14	26	BLU		HI 28V RMS 800 CPS ±1%
J2-8	J1-29	26	VIO		+ROLL OUTPUT ATT. ERROR METER (IMU)
J2-9	SPARE	--	GY		---
J3-1	J1-70	26	BLK		INPUT PITCH ATTITUDE ERROR
J3-2	J1-71	26	BRN		INPUT PITCH ATTITUDE ERROR
J3-3	E12	26	RED		0 VDC
J3-4	J1-2	26	ORN		-PITCH OUTPUT ATT. ERROR METER (IMU)
J3-5	E11	26	YEL		+28 VDC
J3-6	E15	26	GRN		LO 28V RMS 800 CPS ±1%
J3-7	E14	26	BLU		HI 28V RMS 800 CPS ±1%
J3-8	J1-1	26	VIO		+PITCH OUTPUT ATT. ERROR METER (IMU)
J3-9	SPARE	--	GY		---
J4-1	J1-82	26	BLK		INPUT YAW ATTITUDE ERROR
J4-2	J1-83	26	BRN		INPUT YAW ATTITUDE ERROR
J4-3	E7	26	RED		0 VDC
J4-4	J1-15	26	ORN		-YAW OUTPUT ATT. ERROR METER (IMU)
J4-5	E8	26	YEL		+28 VDC
J4-6	E10	26	GRN		LO 28V RMS 800 CPS ±1%
J4-7	E9	26	BLU		HI 28V RMS 800 CPS ±1%
J4-8	J1-14	26	VIO		+YAW OUTPUT ATT. ERROR METER (IMU)
J4-9	SPARE	26	GY		---
J5-1	SPARE	--	BLK		---
J5-2	E5	26	BRN		+28 VDC
J5-3	E2	26	RED		28 VDC GND
J5-4	SPARE	--	ORN		---
J5-5	E6	26	YEL		0 VDC
J5-6	SPARE	--	GRN		---
J5-7	SPARE	--	BLU		---
J5-8	SPARE	--	VIO		---
J5-9	SPARE	--	GY	8	---
J6-1	J1-12	26	BLK	9	ZERO ENCODER RELAY CONT (AGC)
J6-2	J1-18	26	BRN		MANUAL MODE RELAY COMMON LINE (IMU)
J6-3	J1-46	26	RED		ATTITUDE CONT SIGNAL (IMU)
J6-4	J1-35	26	ORN		COARSE ALIGN RELAY CONT (IMU)
J6-5	J1-56	26	YEL		MANUAL ALIGN (IMU)
J6-6	J1-36	26	GRN	9	CDU MANUAL RELAY CONT (IMU)

WIRING DATA

FROM CIRCUIT POINT	TO CIRCUIT POINT	CONDUCTOR SIZE AWG	CONDUCTOR COLOR	CONDUCTOR FIND NO.	CONDUCTOR CIRCUIT FUNCTION
J6-7	SPARE		BLU	9	
J6-8	J1-5	26	VIO		FINE ALIGN RELAY CONT (AGC)
J6-9	J1-23	26	GY		FINE ALIGN RELAY CONT (IMU)
J6-10	J1-13	26	WH		FINE ALIGN RELAY COMMAND (AGC)
J6-11	J1-58	26	WH/BLK		ENTRY RELAY COMMAND (AGC)
J6-12	J1-25	26	WH/BRN		ENTRY RELAY CONT (IMU)
J6-13	J1-9	26	WH/RED		MODE SW INTERLOCK (IMU)
J6-14	E4	26	WH/ORN		0 VDC
J6-15	J1-55	26	WH/YEL		TO TEMP CONTROL
J6-16	E2	26	WH/GRN		28 VDC GND
J6-17	J1-65	26	WH/BLU		TO TEMP CONTROL
J6-18	J1-45	26	WH/VIO		TO TEMP CONTROL
J6-19	J1-38	26	WH/GY		ZERO ENCODER RELAY COMMAND (AGC)
J6-20	J1-34	26	WH/BLK/BRN		ZERO ENCODER RELAY CONT (IMU)
J6-21	E1	26	WH/BLK/RED		VAR ILLUM & IND LAMP PWR 400 CPS
J6-22	SPARE	--	WH/BLK/ORN		---
J6-23	J1-69	26	WH/BLK/YEL		CDU MANUAL RELAY CONT (AGC)
J6-24	J1-105	26	WH/BLK/GRN		CDU MANUAL LT (IMU)
J6-25	J1-92	26	WH/BLK/BLU		COARSE ALIGN MODE LT (IMU)
J6-26	SPARE	--	WH/BLK/VIO		---
J6-27	J1-49	26	WH/BLK/GY		AGC FINE ALIGN
J6-28	SPARE	--	WH/BRN/RED		---
J6-29	J1-57	26	WH/BRN/ORN		ENTRY RELAY CONT (AGC)
J6-30	SPARE	--	WH/BRN/YEL		---
J6-31	J1-6	26	WH/BRN/GRN		ENTRY RELAY CONT RESET (IMU)
J6-32	SPARE	--	WH/BRN/BLU		---
J6-33	J1-93	26	WH/BRN/VIO		MODE RELAY COMMON LINE (IMU)
J6-34	J1-24	26	WH/BRN/GY		ATTITUDE CONT RELAY CONT (IMU)
J6-35	J1-76	26	WH/RED/ORN		ATTITUDE CONT MODE SWITCH IND (AGC)
J6-36	J1-104	26	WH/RED/YEL		ZERO ENCODER MODE LT (IMU)
J6-37	J1-48	26	WH/RED/GRN		COARSE ALIGN RELAY COMMAND (AGC)
J6-38	J1-27	26	WH/RED/BLU		CDU MANUAL RELAY COMMAND (AGC)
J6-39	J1-91	26	WH/RED/VIO		MODE LAMP TEST (G & N PANEL)
J6-40	J1-37	26	WH/RED/GY		BACKUP ELECTRONICS RELAY (PSA)
J6-41	J1-4	26	WH/ORN/YEL		COARSE ALIGN RELAY
J6-42	J1-59	26	WH/ORN/GRN		AGC COARSE ALIGN
J6-43	E8	26	WH/ORN/BLU		+28 VDC
J6-44	J1-26	26	WH/ORN/VIO		IMU DELAY LT
J6-45	J1-94	26	WH/ORN/GY		FINE ALIGN MODE LT (IMU)
J6-46	E5	26	WH/YEL/GRN		+28 VDC
J6-47	J1-88	26	WH/YEL/BLU		CONDITION LAMP TEST
J6-48	J1-39	26	WH/YEL/VIO	9	AGC HI SPEED ROOL

WIRING DATA

FROM CIRCUIT POINT	TO CIRCUIT POINT	CONDUCTOR SIZE AWG	CONDUCTOR COLOR	CONDUCTOR FIND NO.	CONDUCTOR CIRCUIT FUNCTION
J6-49	J1-79	26	WH/YEL/GY	9	ENTRY MODE LT (IMU)
J6-50	J1-68	26	WH/GRN/BLU	9	AGC COMMON
J6-51	J1-22	26	WH/GRN/VIO	9	ATTITUDE CONT LT SIGNAL (IMU)
A3-1	J1-89	26	WH	16	+28 VDC
J1-7	E13	26	WH	16	+28 VDC
A3-2	J1-80	26	WH	16	PANEL BRIGHTNESS CONTROL
A3-3	J1-108	22	WH	17	VAR ILLUM & IND LAMP PWR 400 CPS
A3-3	E1	22	WH	17	VAR ILLUM & IND LAMP PWR 400 CPS
A3-4	J1-90	22	WH	17	6 V 400 CPS HI
A3-4	J1-106	22	WH	17	6 V 400 CPS HI
A3-5	J1-95	26	WH	16	PANEL BRIGHTNESS CONTROL
J1-10	E9	26	WH	16	HI 28 VRMS 800 CPS ±1%
J1-11	E10	26	WH	16	LO 28 VRMS 800 CPS ±1%
J1-78	E4	26	WH	16	0 VDC
J1-103	E1	22	WH	17	VAR ILLUM & IND LAMP PWR 400 CPS
E4	E6	26	WH	16	0 VDC
E5	E8	26	WH	16	+28 VDC
E6	E7	26	WH	16	0 VDC
E7	E12	26	WH	16	0 VDC
E8	E13	26	WH	16	+28 VDC
E9	E14	26	WH	16	HI 28 V RMS 800 CPS ±1%
E10	E15	26	WH	16	LO 28 V RMS 800 CPS ±1%
E11	E13	26	WH	16	+28 VDC
E16	J1-84	22	WH	16	CHASSIS GND

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
			011				
					1015069	SCHEMATIC D AND C ELECTRONICS	REF
			AR		1010798-1	POLYURETHANE FOAM	25
			AR		1010798-2	POLYURETHANE FOAM	24
			AR		MIL-F-14256	FLUX (ES-2798)	23
			AR		QQ-S-571, SN60 WRAP 2	SOLDER	22
			1		1010812-3	GASKET	21
			108		1010738-5	PIN, CONTACT	20
			1		1014636	SCREW SOCKET HEAD CAP	19
			1		MS25036-44	TERMINAL LUG	18
			AR		1010416-30	WIRE, ELECTRICAL STRD INSULATED	17
			AR		1010416-20	WIRE, ELECTRICAL STRD INSULATED	16
			3		MS35338-78	WASHER, LOCK	15
			2		MS15795-304	WASHER, FLAT	14
			2		MS16995-10	SCREW, SOCKET HEAD CAP	13
			1		1010823-1	CONNECTOR, PLUG, ELECTRICAL	12
			10		MS35338-77	WASHER, LOCK	11
			10		MS16995-3	SCREW, SOCKET HEAD CAP	10
			1		1010615-1	CONNECTOR, PLUG, ELECTRICAL	9
			4		1010613-1	CONNECTOR, PLUG, ELECTRICAL	8
			4		NAS1022-C06	NUT, SELF-LOCKING	7
			1		1010455	SATURABLE REACTOR	6
			15		1010623-3	TERMINAL, TURRET	5
			4		MS35338-81	WASHER, LOCK	4
			4		MS15795-308	WASHER, FLAT	3
			4		1008083	SCREW, SOC HD EXT RELIEVED BODY	2
			1		1015080	HOUSING, BASE ASSEMBLY	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015065-011	1015023-011

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ± .02
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN E. Miller DATE 15 SEP 64
CHECKED W. Diehl 2 OCT 64
APPROVAL DeVries 3 OCT 64
APPROVAL S. C. Smith 10-4-64
NASA APPROVAL W J [illegible] 1-12-64
W Kupfer 10 Nov 64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BASE ASSEMBLY
D AND C ELECTRONICS

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015076
SCALE 2/1
WT
SHEET 1 OF 1

1015076

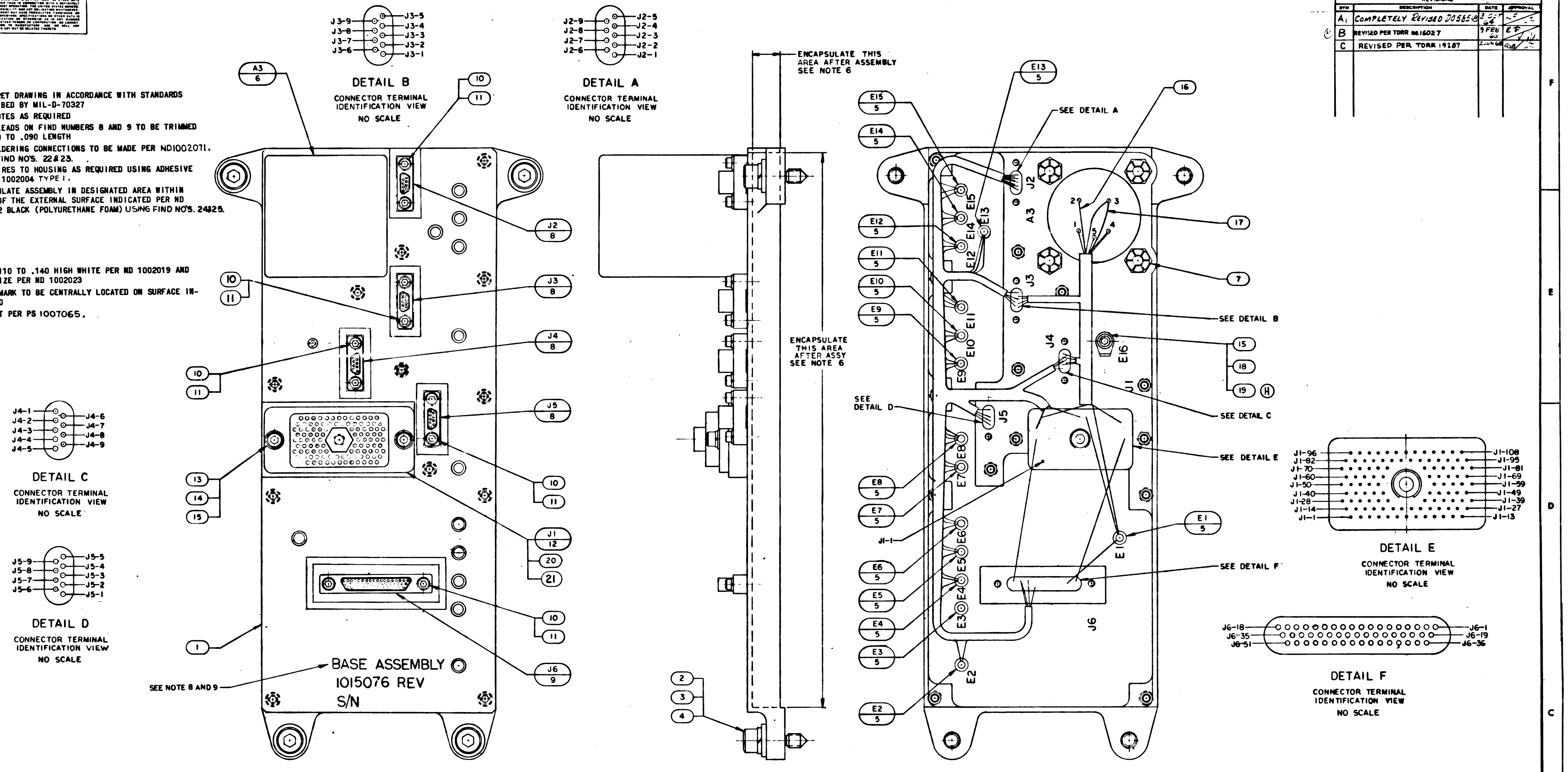
[illegible] 2 OCT 64

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A1	COMPLETELY REVISED D058518	3 OCT 64	
B	REVISED PER TDRR NO. 16027	9 FEB 65	EF
C	REVISED PER TDRR 19287	2 JUN 66	EGB

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. AR DENOTES AS REQUIRED
3. SPARE LEADS ON FIND NUMBERS 8 AND 9 TO BE TRIMMED TO .030 TO .090 LENGTH
4. ALL SOLDERING CONNECTIONS TO BE MADE PER ND1002071. USING FIND NO'S. 22 & 23.
5. BOND WIRES TO HOUSING AS REQUIRED USING ADHESIVE PER ND 1002004 TYPE I.
6. ENCAPSULATE ASSEMBLY IN DESIGNATED AREA WITHIN ±.015 OF THE EXTERNAL SURFACE INDICATED PER ND 1002002 BLACK (POLYURETHANE FOAM) USING FIND NO'S. 24 & 25.
7.
8. MARK .110 TO .140 HIGH WHITE PER ND 1002019 AND SERIALIZE PER ND 1002023
9. PIECE MARK TO BE CENTRALLY LOCATED ON SURFACE INDICATED
10. INSPECT PER PS 1007065.
11.


J3-9 J3-8 J3-7 J3-6 J3-5 J3-4 J3-3 J3-2 J3-1
DETAIL B
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
J2-9 J2-8 J2-7 J2-6 J2-5 J2-4 J2-3 J2-2 J2-1
DETAIL A
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
A3 6
J2 8
J3 8
J4 8
J5 8
J1 12
J6 9
10
11
13
14
15
20
21
1
J4-1 J4-2 J4-3 J4-4 J4-5 J4-6 J4-7 J4-8 J4-9
DETAIL C
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
J5-9 J5-8 J5-7 J5-6 J5-5 J5-4 J5-3 J5-2 J5-1
DETAIL D
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
BASE ASSEMBLY
1015076 REV
S/N
SEE NOTE 8 AND 9
ENCAPSULATE THIS AREA AFTER ASSEMBLY SEE NOTE 6
ENCAPSULATE THIS AREA AFTER ASSY SEE NOTE 6
2
3
4
E13 5
E15 5
E14 5
E12 5
E11 5
E10 5
E9 5
E8 5
E7 5
E6 5
E5 5
E4 5
E3 5
E2 5
E1 5
16
17
7
15
18
19 (H)
SEE DETAIL A
SEE DETAIL B
SEE DETAIL C
SEE DETAIL D
SEE DETAIL E
SEE DETAIL F
J1-1
A3
J2
J3
J4
J5
J6
J1
E16
J1-96 J1-82 J1-70 J1-60 J1-50 J1-40 J1-28 J1-14 J1-1
J1-108 J1-95 J1-81 J1-69 J1-59 J1-49 J1-39 J1-27 J1-13
DETAIL E
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE
J6-18 J6-35 J6-51
J6-1 J6-19 J6-36
DETAIL F
CONNECTOR TERMINAL IDENTIFICATION VIEW
NO SCALE

WIRING DATA

FROM CIRCUIT POINT	TO CIRCUIT POINT	CONDUCTOR			
		SIZE AWG	COLOR	FIND NO.	CIRCUIT FUNCTION
J2-1	J1-96	26	BLK	8	INPUT ROLL ATTITUDE ERROR
J2-2	J1-97	26	BRN		INPUT ROLL ATTITUDE ERROR
J2-3	E12	26	RED		0 VDC
J2-4	J1-28	26	ORN		-ROLL OUTPUT ATT. ERROR METER (IMU)
J2-5	E11	26	YEL		+28 VDC
J2-6	E15	26	GRN		LO 28V RMS 800 CPS ±1%
J2-7	E14	26	BLU		HI 28V RMS 800 CPS ±1%
J2-8	J1-29	26	VIO		+ROLL OUTPUT ATT. ERROR METER (IMU)
J2-9	SPARE	--	GY		---
J3-1	J1-70	26	BLK		INPUT PITCH ATTITUDE ERROR
J3-2	J1-71	26	BRN		INPUT PITCH ATTITUDE ERROR
J3-3	E12	26	RED		0 VDC
J3-4	J1-2	26	ORN		-PITCH OUTPUT ATT. ERROR METER (IMU)
J3-5	E11	26	YEL		+28 VDC
J3-6	E15	26	GRN		LO 28V RMS 800 CPS ±1%
J3-7	E14	26	BLU		HI 28V RMS 800 CPS ±1%
J3-8	J1-1	26	VIO		+PITCH OUTPUT ATT. ERROR METER (IMU)
J3-9	SPARE	--	GY		---
J4-1	J1-82	26	BLK		INPUT YAW ATTITUDE ERROR
J4-2	J1-83	26	BRN		INPUT YAW ATTITUDE ERROR
J4-3	E7	26	RED		0 VDC
J4-4	J1-15	26	ORN		-YAW OUTPUT ATT. ERROR METER (IMU)
J4-5	E8	26	YEL		+28 VDC
J4-6	E10	26	GRN		LO 28V RMS 800 CPS ±1%
J4-7	E9	26	BLU		HI 28V RMS 800 CPS ±1%
J4-8	J1-14	26	VIO		+YAW OUTPUT ATT. ERROR METER (IMU)
J4-9	SPARE	26	GY		---
J5-1	SPARE	--	BLK		---
J5-2	E5	26	BRN		+28 VDC
J5-3	E2	26	RED		28 VDC GND
J5-4	SPARE	--	ORN		---
J5-5	E6	26	YEL		0 VDC
J5-6	SPARE	--	GRN		---
J5-7	SPARE	--	BLU		---
J5-8	SPARE	--	VIO		---
J5-9	SPARE	--	GY	8	---
J6-1	J1-12	26	BLK	9	ZERO ENCODER RELAY CONT (AGC)
J6-2	J1-18	26	BRN		MANUAL MODE RELAY COMMON LINE (IMU)
J6-3	J1-46	26	RED		ATTITUDE CONT SIGNAL (IMU)
J6-4	J1-35	26	ORN		COARSE ALIGN RELAY CONT (IMU)
J6-5	J1-56	26	YEL		MANUAL ALIGN (IMU)
J6-6	J1-36	26	GRN	9	CDU MANUAL RELAY CONT (IMU)

WIRING DATA

FROM CIRCUIT POINT	TO CIRCUIT POINT	CONDUCTOR			
		SIZE AWG	COLOR	FIND NO.	CIRCUIT FUNCTION
J6-7	SPARE		BLU	9	
J6-8	J1-5	26	VIO		FINE ALIGN RELAY CONT (AGC)
J6-9	J1-23	26	GY		FINE ALIGN RELAY CONT (IMU)
J6-10	J1-13	26	WH		FINE ALIGN RELAY COMMAND (AGC)
J6-11	J1-58	26	WH/BLK		ENTRY RELAY COMMAND (AGC)
J6-12	J1-25	26	WH/BRN		ENTRY RELAY CONT (IMU)
J6-13	J1-9	26	WH/RED		MODE SW INTERLOCK (IMU)
J6-14	E4	26	WH/ORN		0 VDC
J6-15	J1-55	26	WH/YEL		TO TEMP CONTROL
J6-16	E2	26	WH/GRN		28 VDC GND
J6-17	J1-65	26	WH/BLU		TO TEMP CONTROL
J6-18	J1-45	26	WH/VIO		TO TEMP CONTROL
J6-19	J1-38	26	WH/GY		ZERO ENCODER RELAY COMMAND (AGC)
J6-20	J1-34	26	WH/BLK/BRN		ZERO ENCODER RELAY CONT (IMU)
J6-21	E1	26	WH/BLK/RED		VAR ILLUM & IND LAMP PWR 400 CPS
J6-22	SPARE	--	WH/BLK/ORN		---
J6-23	J1-69	26	WH/BLK/YEL		CDU MANUAL RELAY CONT (AGC)
J6-24	J1-105	26	WH/BLK/GRN		CDU MANUAL LT (IMU)
J6-25	J1-92	26	WH/BLK/BLU		COARSE ALIGN MODE LT (IMU)
J6-26	SPARE	--	WH/BLK/VIO		---
J6-27	J1-49	26	WH/BLK/GY		AGC FINE ALIGN
J6-28	SPARE	--	WH/BRN/RED		---
J6-29	J1-57	26	WH/BRN/ORN		ENTRY RELAY CONT (AGC)
J6-30	SPARE	--	WH/BRN/YEL		---
J6-31	J1-6	26	WH/BRN/GRN		ENTRY RELAY CONT RESET (IMU)
J6-32	SPARE	--	WH/BRN/BLU		---
J6-33	J1-93	26	WH/BRN/VIO		MODE RELAY COMMON LINE (IMU)
J6-34	J1-24	26	WH/BRN/GY		ATTITUDE CONT RELAY CONT (IMU)
J6-35	J1-76	26	WH/RED/ORN		ATTITUDE CONT MODE SWITCH IND (AGC)
J6-36	J1-104	26	WH/RED/YEL		ZERO ENCODER MODE LT (IMU)
J6-37	J1-48	26	WH/RED/GRN		COARSE ALIGN RELAY COMMAND (AGC)
J6-38	J1-27	26	WH/RED/BLU		CDU MANUAL RELAY COMMAND (AGC)
J6-39	J1-91	26	WH/RED/VIO		MODE LAMP TEST (G & N PANEL)
J6-40	J1-37	26	WH/RED/GY		BACKUP ELECTRONICS RELAY (PSA)
J6-41	J1-4	26	WH/ORN/YEL		COARSE ALIGN RELAY
J6-42	J1-59	26	WH/ORN/GRN		AGC COARSE ALIGN
J6-43	E8	26	WH/ORN/BLU		+28 VDC
J6-44	J1-26	26	WH/ORN/VIO		IMU DELAY LT
J6-45	J1-94	26	WH/ORN/GY		FINE ALIGN MODE LT (IMU)
J6-46	E5	26	WH/YEL/GRN		+28 VDC
J6-47	J1-88	26	WH/YEL/BLU		CONDITION LAMP TEST
J6-48	J1-39	26	WH/YEL/VIO	9	AGC HI SPEED ROOL

WIRING DATA

FROM CIRCUIT POINT	TO CIRCUIT POINT	CONDUCTOR			
		SIZE AWG	COLOR	FIND NO.	CIRCUIT FUNCTION
J6-49	J1-79	26	WH/YEL/GY	9	ENTRY MODE LT (IMU)
J6-50	J1-68	26	WH/GRN/BLU	9	AGC COMMON
J6-51	J1-22	26	WH/GRN/VIO	9	ATTITUDE CONT LT SIGNAL (IMU)
A3-1	J1-89	26	WH	16	+28 VDC
J1-7	E13	26	WH	16	+28 VDC
A3-2	J1-80	26	WH	16	PANEL BRIGHTNESS CONTROL
A3-3	J1-108	22	WH	17	VAR ILLUM & IND LAMP PWR 400 CPS
A3-3	E1	22	WH	17	VAR ILLUM & IND LAMP PWR 400 CPS
A3-4	J1-90	22	WH	17	6 V 400 CPS HI
A3-4	J1-106	22	WH	17	6 V 400 CPS HI
A3-5	J1-95	26	WH	16	PANEL BRIGHTNESS CONTROL
J1-10	E9	26	WH	16	HI 28 VRMS 800 CPS ±1%
J1-11	E10	26	WH	16	LO 28 VRMS 800 CPS ±1%
J1-78	E4	26	WH	16	0 VDC
J1-103	E1	22	WH	17	VAR ILLUM & IND LAMP PWR 400 CPS
E4	E6	26	WH	16	0 VDC
E5	E8	26	WH	16	+28 VDC
E6	E7	26	WH	16	0 VDC
E7	E12	26	WH	16	0 VDC
E8	E13	26	WH	16	+28 VDC
E9	E14	26	WH	16	HI 28 V RMS 800 CPS ±1%
E10	E15	26	WH	16	LO 28 V RMS 800 CPS ±1%
E11	E13	26	WH	16	+28 VDC
E16	J1-84	22	WH	16	CHASSIS GND

QUANTITY REQUIRED				EFFECTIVITY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
			011				
					1015069	SCHEMATIC D AND C ELECTRONICS	REF
			AR		1010798-1	POLYURETHANE FOAM	25
			AR		1010798-2	POLYURETHANE FOAM	24
			AR		MIL-F-14256	FLUX (ES-2798)	23
			AR		QQ-S-571, SN60 WRAP2	SOLDER	22
			1		1010812-3	GASKET	21
			108		1010738-5	PIN, CONTACT	20
			1		1014636	SCREW SOCKET HEAD CAP	19
			1		MS25036-44	TERMINAL LUG	18
			AR		1010416-30	WIRE, ELECTRICAL STRD INSULATED	17
			AR		1010416-20	WIRE, ELECTRICAL STRD INSULATED	16
			3		MS35338-78	WASHER, LOCK	15
			2		MS15795-304	WASHER, FLAT	14
			2		MS16995-10	SCREW, SOCKET HEAD CAP	13
			1		1010823-1	CONNECTOR, PLUG, ELECTRICAL	12
			10		MS35338-77	WASHER, LOCK	11
			10		MS16995-3	SCREW, SOCKET HEAD CAP	10
			1		1010615-1	CONNECTOR, PLUG, ELECTRICAL	9
			4		1010613-1	CONNECTOR, PLUG, ELECTRICAL	8
			4		NAS1022-C06	NUT, SELF-LOCKING	7
			1		1010455	SATURABLE REACTOR	6
			15		1010623-3	TERMINAL, TURRET	5
			4		MS35338-81	WASHER, LOCK	4
			4		MS15795-308	WASHER, FLAT	3
			4		1008083-1	SCREW, SOC HD EXT RELIEVED BODY	2
			1		1015080	HOUSING, BASE ASSEMBLY	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015065-011	1015023-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
Contract NAS 9-497
DRAWN E Miller DATE 15 SEP 64
CHECKED W. Diehl 2 Oct '64
APPROVAL 3 Oct 64
APPROVAL L. C. Smith 10-4-64
NASA APPROVAL 11-12-64
W Kapryan 10 Nov 64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BASE ASSEMBLY
D AND C ELECTRONICS

CODE IDENT NO. 80230
SIZE E
NASA DRAWING NO. 1015076
SCALE 2/1
WT
SHEET 1 OF 1

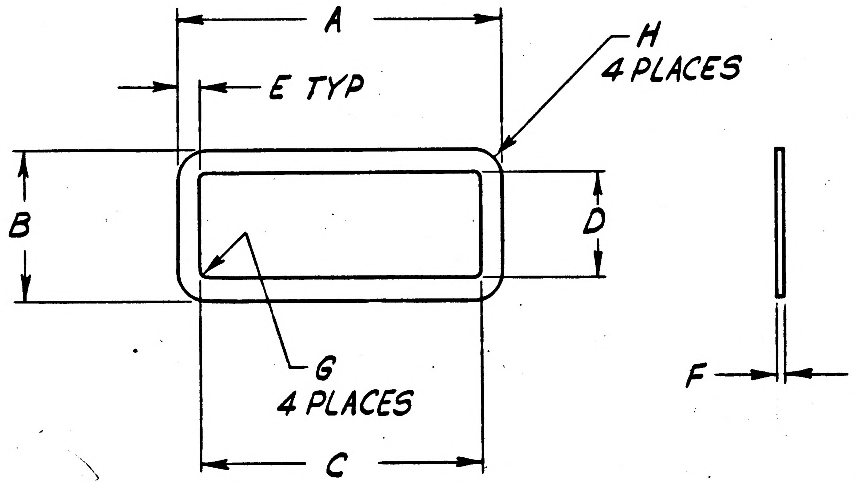
1015076 C

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: MIL-R-5847 CLASS 3 GRADE 50 COLOR RED SILICONE RUBBER.
3. IDENTIFY USING DRAWING NUMBER WITH APPLICABLE DASH NO. AND REVISION LETTER PER ND 1002019.
4. EDGES MUST BE FREE FROM TEARS.
5. PART NUMBER IS THE DRAWING NUMBER, PLUS THE APPLICABLE DASH NUMBER.

REVISIONS 14078

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A,		COMPLETELY REVISED	DO 58518	3 OCT 64	W.B.



DASH NO.	DIMENSIONS							
	A	B	C	D	E	F	G	H
-001	1.300 1.290	.489 .479	—	—	.098 .095	.034 .028	.015R	.062R
-002	—	—	1.639 1.636	.494 .491	.150 .147	.034 .028	—	—
-003	—	—	.746 .743	.226 .223	.088 .085	.034 .028	—	—

NEXT ASSY	USED ON
1015065-011	1015023-021
1015065-011	1015023-011
1015064-021	1015023-021
1015064-011	1015023-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — + — + —
- — - — - —
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 2

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN John A. Kudnecki DATE 26 SEPT 64
CHECKED W. Diehl 2 Oct '64
APPROVAL L. Saje 2 Oct. '64
APPROVAL S.C. Smith 10-4-64
NASA APPROVAL W.J. Rhine 11-12-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GASKET, CONNECTOR MODULE

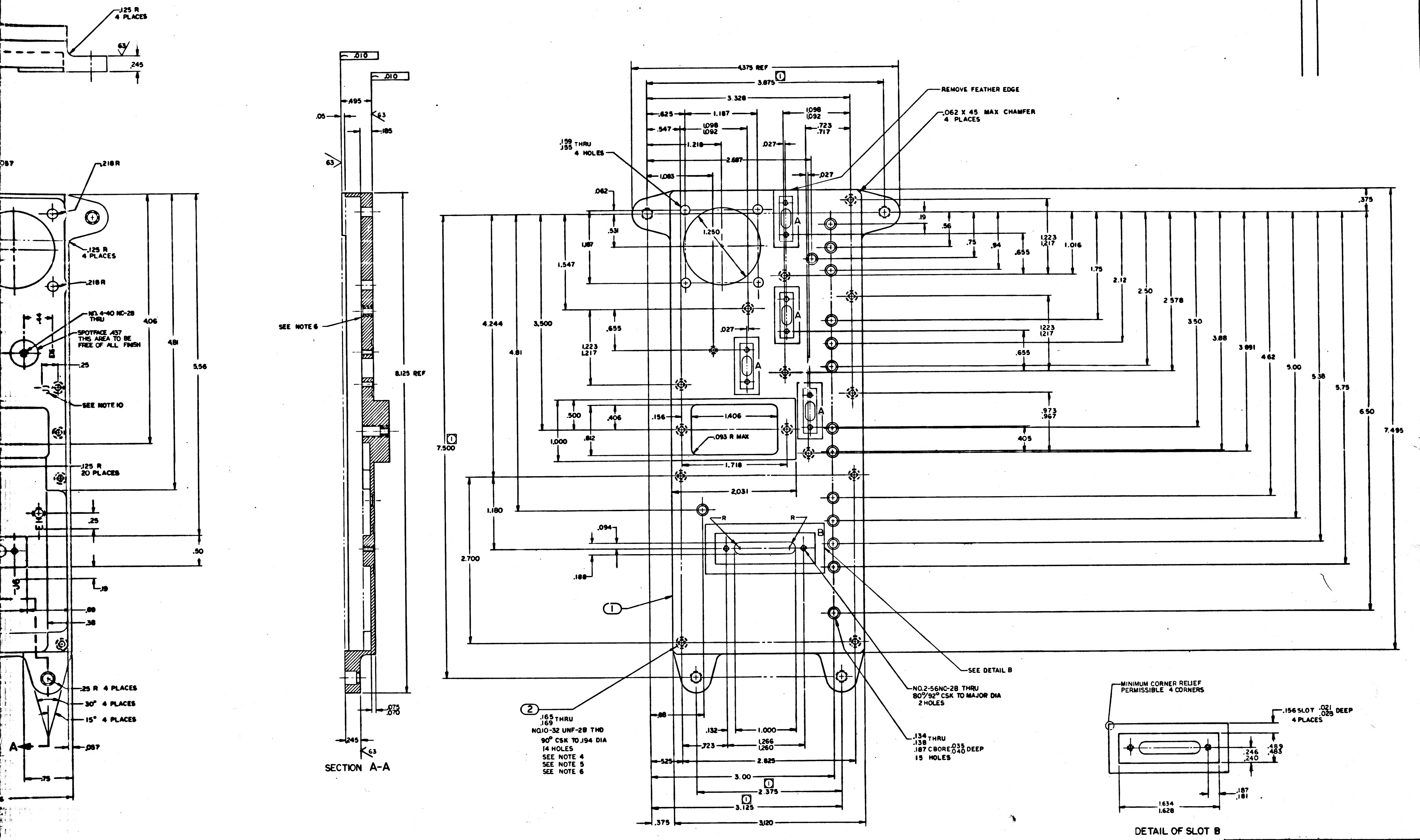
CODE IDENT NO.
SIZE C
1015078
SCALE NONE
SHEET 1 OF 1

Charlestone 2 Oct. 64

MIL 1077C-P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A.	REVISED PER D.O. 58518	3 OCT 64	JES



.125 R 4 PLACES
.245
.010
.495
.05
.185
63
.218 R
.125 R 4 PLACES
.218 R
NO. 4-40 NC-2B THRU
SPOTFACE .437 THIS AREA TO BE FREE OF ALL FINISH
SEE NOTE 10
.125 R 20 PLACES
.25 R 4 PLACES
30° 4 PLACES
15° 4 PLACES
.087
.75
A
4.06
4.81
5.56
.25
.50
.19
.88
.38
SEE NOTE 6
8.125 REF
.075
.070
.245
SECTION A-A
4.375 REF
3.875
3.328
.625
1.187
.547
1.098
1.092
1.218
2.687
1.083
.027
.723
.717
.159
.155 THRU 4 HOLES
REMOVE FEATHER EDGE
.062 X 45 MAX CHAMFER 4 PLACES
.062
.531
1.187
1.250
1.547
4.244
3.500
4.81
.655
1.223
1.217
.500
.406
.156
1.406
.093 R MAX
1.000
.812
1.718
7.500
2.031
1.180
2.700
.094
.188
R
B
1.000
1.266
1.260
2.825
.132
.723
.525
.86
3.00
2.375
3.125
3.120
.375
.19
.56
.75
.94
.655
1.016
1.75
2.12
2.50
2.578
3.50
3.88
3.891
4.62
5.00
5.38
5.75
6.50
7.495
.375
.973
.967
.405
SEE DETAIL B
NO.2-56NC-2B THRU 80°/92° CSK TO MAJOR DIA 2 HOLES
.134
.138 THRU
.187 C BORE .035 .040 DEEP 15 HOLES
② .165 .169 THRU NO.10-32 UNF-2B THD 90° CSK TO .194 DIA 14 HOLES SEE NOTE 4 SEE NOTE 5 SEE NOTE 6
①
MINIMUM CORNER RELIEF PERMISSIBLE 4 CORNERS
.156 SLOT .021 .023 DEEP 4 PLACES
.489
.483
.246
.240
.187
.181
1.634
1.628
DETAIL OF SLOT B

2	14	1000115-2	INSERT, THREADED, SELF LOCKING
1	1	1015080-1	BASE, HOUSING
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

1015076-011	1015065-011
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS ±.02 ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN H. Snider DATE 30 SEP 64
CHECKED W. Deene 3 OCT 64
APPROVAL 3 OCT 64
APPROVAL 11-4-64
NASA APPROVAL 4-12-66
MIT APPROVAL 10 NOV

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BASE, HOUSING
(INSEPARABLE ASSEMBLY)
D AND C ELECTRONICS

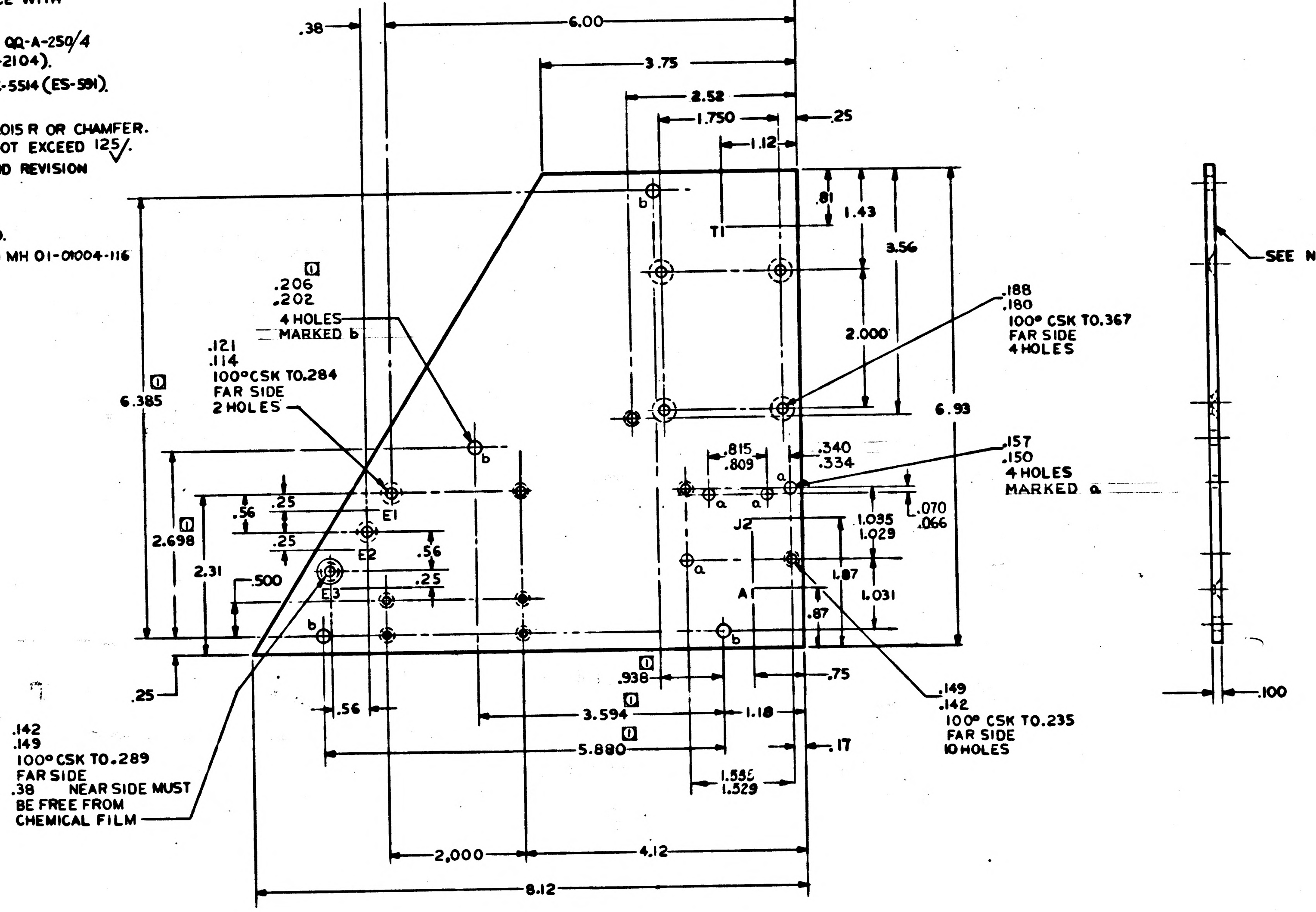
CODE IDENT NO. SIZE J 1015080
SCALE 2/1 SHEET 1 OF 1

1015080

REVISIONS 4019			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER D.O. 58518	3 OCT 64	JCS / U.S.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. MATERIAL: ALUMINUM ALLOY PER QQ-A-250/4 TEMPER-T3 (TYPE 2024-T3) (ES-2104).
3. FINISH: CHEMICAL FILM PER MIL-C-5514 (ES-591).
4. UNLESS OTHERWISE SPECIFIED:
   ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
   SURFACE ROUGHNESS MUST NOT EXCEED 125√.
5. IDENTIFY USING PART NUMBER AND REVISION LETTER PER ND 1002019.
6. CHARACTERS TO BE MARKED IN .12 HIGH BLACK PER ND 1002019.
7. ☐1 DIMENSIONS CONTROLLED BY ICD MH 01-01004-116
8. MUST BE FREE FROM BURRS.



.38
6.00
3.75
2.52
1.750
.25
1.12
.81
1.43
3.56
T1
b
☐1
.206
.202
4 HOLES
MARKED b
.121
.114
100°CSK TO.284
FAR SIDE
2 HOLES
☐1
6.385
.188
.180
100° CSK TO.367
FAR SIDE
4 HOLES
2.000
6.93
SEE NOTE 5
.815
.809
.340
.334
.157
.150
4 HOLES
MARKED a
.070
.066
a
J2
1.035
1.029
1.87
1.031
A
.87
.25
.56
E1
.25
E2
.56
.25
E3
☐1
2.698
2.31
.500
.25
.142
.149
100° CSK TO.289
FAR SIDE
.38 NEAR SIDE MUST
BE FREE FROM
CHEMICAL FILM
☐1
.938
.75
.56
☐1
3.594
1.18
☐1
5.880
.17
1.535
1.529
.149
.142
100° CSK TO.235
FAR SIDE
10 HOLES
.100
2,000
4.12
8.12

MASTER

1015064-011	1015023-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ±.02
3 PLACE DECIMALS ±.005
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT —
FINAL FINISH SEE NOTE 3

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 29 Sept 64
CHECKED W. Diehl 2 Oct. 64
APPROVAL L. Daje 2 Oct '64
APPROVAL 10/26/64
NASA APPROVAL W. J. Rhine 11-4-64
MIT APPROVAL W. Gruffer 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PLATE -
CONTROL ELECTRONICS

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015082
SCALE FULL
WT
SHEET 1 OF 1

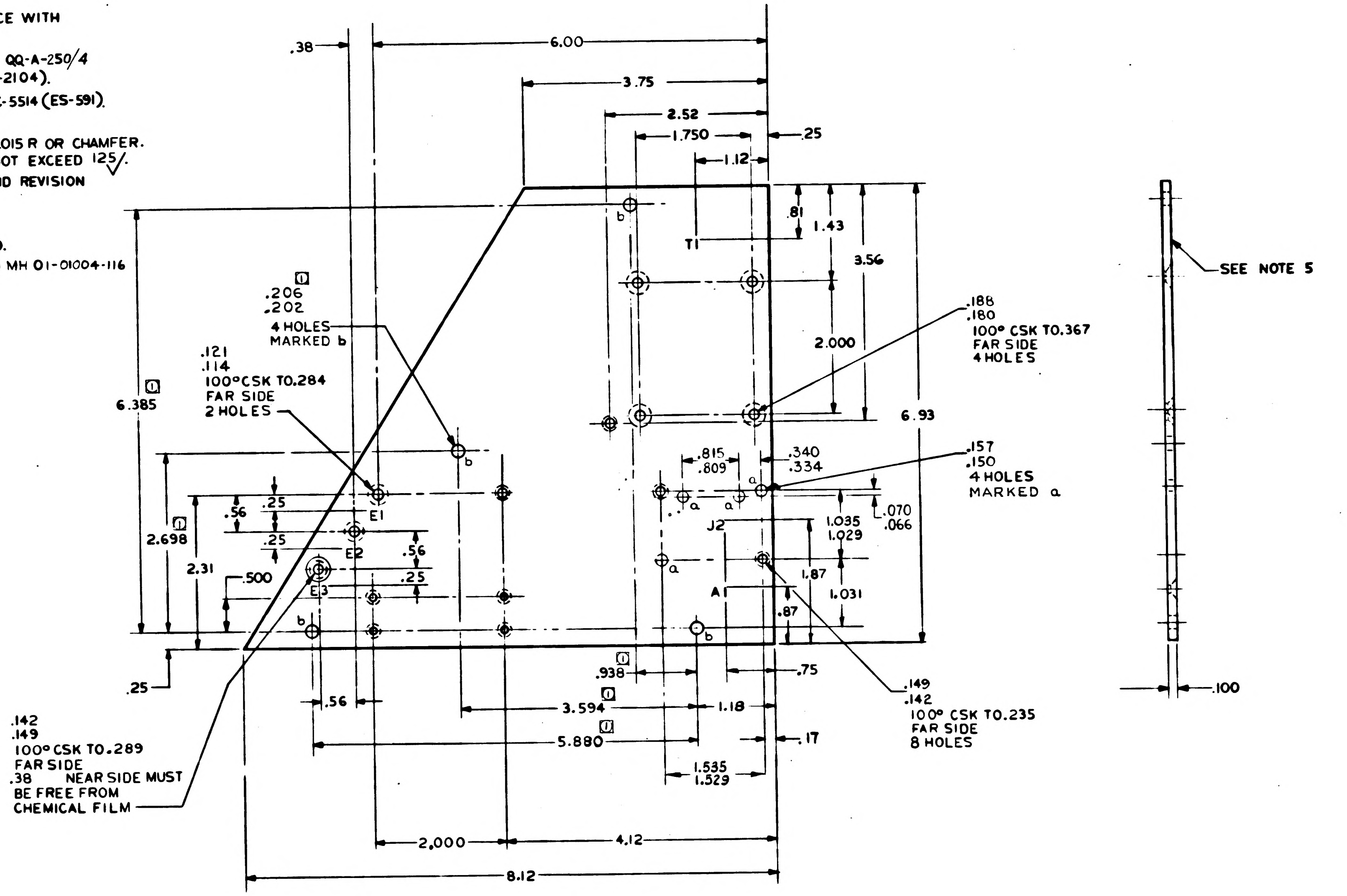
3 Chenbam 2-Oct-64

1015082 A

REVISIONS 4019			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER D.O. 58518	3 OCT 64	JRS
B	REVISED PER TORR 16875	4 MAR. 65	R.W.T.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. MATERIAL: ALUMINUM ALLOY PER QQ-A-250/4 TEMPER-T3 (TYPE 2024-T3) (ES-2104).
3. FINISH: CHEMICAL FILM PER MIL-C-5514 (ES-591).
4. UNLESS OTHERWISE SPECIFIED:
   ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
   SURFACE ROUGHNESS MUST NOT EXCEED 125√.
5. IDENTIFY USING PART NUMBER AND REVISION LETTER PER ND 1002019.
6. CHARACTERS TO BE MARKED IN .12 HIGH BLACK PER ND 1002019.
7. ⓵ DIMENSIONS CONTROLLED BY ICD MH 01-01004-116
8. MUST BE FREE FROM BURRS.



.38
6.00
3.75
2.52
1.750
.25
1.12
.81
1.43
3.56
T1
b
⓵ .206 .202 4 HOLES MARKED b
.121 .114 100°CSK TO.284 FAR SIDE 2 HOLES
⓵ 6.385
2.000
.188 .180 100° CSK TO.367 FAR SIDE 4 HOLES
6.93
.815 .809
.340 .334
.157 .150 4 HOLES MARKED a
a
.070 .066
J2
1.035 1.029
1.87
1.031
A1
.87
.25
.56
E1
⓵ 2.698
.25
E2
.56
2.31
.500
.25
E3
.25
.56
⓵ .938
.75
⓵ 3.594
1.18
⓵ 5.880
.17
1.535 1.529
.149 .142 100° CSK TO.235 FAR SIDE 8 HOLES
.142 .149 100° CSK TO.289 FAR SIDE .38 NEAR SIDE MUST BE FREE FROM CHEMICAL FILM
2,000
4.12
8.12
SEE NOTE 5
.100

1015064-011	1015023-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ±.02
3 PLACE DECIMALS ±.005
ANGLES ±1°
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 2

HEAT TREATMENT
—

FINAL FINISH
SEE NOTE 3

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J. Kudanowski DATE 29 Sept 64
CHECKED W. Diehl 2 OCT. 64
APPROVAL L. Daje 2 Oct '64
APPROVAL
NASA APPROVAL 11-4-64
MIT APPROVAL 4 Nov 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PLATE -
CONTROL ELECTRONICS

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015082
SCALE FULL
WT
SHEET 1 OF 1

1015082 B

3 2 Oct 64

D.O.
58760

APPLICATION		REVISIONS 15658			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		A	REVISED & UPGRADED TO CLASS A PER TDRR 16221	10 FEB 65	CWF / WD.

Ⓐ REPLACED WITH CHANGE BY REV Ⓑ

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. THIS IS AN INCOMPLETE DRAWING.
3. VENDOR ITEM-SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

REV STATUS	REV	A	A	A	A
OF SHEETS	SHEET	1	2	3	4

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN
DRAWN R.Becker DATE 18 DEC 64
CHECKED 18 DEC 64
APPROVAL D. Boste 22 DEC 64
APPROVAL 21 DEC 64
NASA APPROVAL 1-19-65
MIT APPROVAL
CONTRACT NAS 9-497

WIRING HARNESS A
AGE INTERCONNECT

CODE IDENT NO.
SIZE
1015085
REV A
SCALE NONE
SHEET 1 OF 4

NOTE	QTY	PART NUMBER	NOMENCLATURE
	1	1015085-1	WIRE PER 1010789-011 YEL JKT 24 AWG YEL 13 FT 0.0 IN. TOTAL LG
	1	1015085-2	WIRE PER 1010789-012 YEL JKT 24 AWG YEL, RED 370 FT 0.0 IN. TOTAL LG
	1	1015085-3	WIRE PER 1010789-013 YEL JKT 24 AWG YEL, RED, GRN 31 FT 0.0 IN. TOTAL LG
	1	1015085-4	WIRE PER 1010789-001 24 AWG YEL 865 FT 0.0 IN. TOTAL LG.
	1	1015085-5	WIRE PER 1010789-006 22 AWG YEL 165 FT 0.0 IN. TOTAL LG
	1	1015085-6	WIRE PER 1010707-1 RED JKT 29 AWG BLU, RED, WHT 26 FT 6.0 IN. TOTAL LG
	1	1015085-7	WIRE PER 1010789-002 24 AWG BLK 118 FT 0.0 IN. TOTAL LG
	1	1015085-8	WIRE PER 1010789-003 24 AWG YEL, RED 393 FT 0.0 IN. TOTAL LG
	1	1015085-9	WIRE PER 1010789-004 24 AWG YEL, RED, GRN 91 FT 0.0 IN. TOTAL LG
	1	1015085-10	WIRE PER 1010789-005 24 AWG YEL, RED, GRN,BRN 25 FT 11.0 IN. TOTAL LG
	1	1015085-11	WIRE PER 1010789-008 22 AWG YEL, RED 13 FT 9.0 IN. TOTAL LG.
	1	1015085-12	WIRE PER 1010789-009 22 AWG YEL, RED, GRN 4 FT 6.0 IN. TOTAL LG.
	1	1015085-13	WIRE PER 1010789-010 22 AWG YEL, RED, GRN, BRN 16 FT 1.0 IN. TOTAL LG
	1	1015085-14	WIRE, BRAID PER QQ-B-575 (COPPER, TIN-COATED, TUBULAR) SIZE 3/8 ID, 36 GA, 2 FT 5.0 IN. TOTAL LG

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE
REV LTR A
SHEET 2 of 4

NOTE	QTY	PART NUMBER	NOMENCLATURE
	1	1015085-15	WIRE, BRAID PER QQ-B-575 (COPPER, TIN-COATED, TUBULAR) SIZE 1/2 ID, 36 GA, 2 FT 5.0 IN. TOTAL LG
3	1	1010671-1	CONNECTOR PLUG ELECTRICAL
3	1	1010671-2	CONNECTOR PLUG ELECTRICAL
3	1	1010674-1	CONNECTOR PLUG ELECTRICAL
3	1	1010674-2	CONNECTOR PLUG ELECTRICAL
3	1	1010674-3	CONNECTOR PLUG ELECTRICAL
3	1	1010674-4	CONNECTOR PLUG ELECTRICAL
	1	1010771-201	CONNECTOR PLUG ELECTRICAL
	1	1010771-207	CONNECTOR PLUG ELECTRICAL
	1	1010809-1	CONNECTOR RECP ELECTRICAL
3	1	1010860-1	CONNECTOR RECP ELECTRICAL
3	1	1010822-3	CONNECTOR RECP ELECTRICAL
3	1	1010856-1	CONNECTOR RECP ELECTRICAL
3	1	1010822-5	CONNECTOR RECP ELECTRICAL
3	1	1010824-1	CONNECTOR RECP ELECTRICAL
3	5	1010824-2	CONNECTOR RECP ELECTRICAL
3	1	1010824-3	CONNECTOR RECP ELECTRICAL
3	1	1010824-4	CONNECTOR RECP ELECTRICAL
3	1	1010824-5	CONNECTOR RECP ELECTRICAL
	1	1010844-1	CONNECTOR RECP ELECTRICAL
	1	1010844-2	CONNECTOR RECP ELECTRICAL
	1	1010844-3	CONNECTOR RECP ELECTRICAL
	1	1010844-4	CONNECTOR RECP ELECTRICAL
3	1358	1010738-6	CONTACT, SOCKET

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE
REV LTR A
SHEET 3 of 4

NOTE	QTY	PART NUMBER	NOMENCLATURE
3	528	1010770-2	CONTACT, SOCKET
3	270	1010743-1	WRAPOST RECEPTACLE
3	137	1010743-2	WRAPOST RECEPTACLE
3	80	1010743-3	WRAPOST RECEPTACLE
3	16	1010402-1	SLEEVE, SOLDER
3	130	1010402-2	SLEEVE, SOLDER
3	1	1000242-24	FERRULE, OUTER ELEC COND
3	1	1000242-27	FERRULE, OUTER ELEC COND
3	1	1000242-31	FERRULE, OUTER ELEC COND
3	1	1000242-33	FERRULE, OUTER ELEC COND
3	1	1000243-26	FERRULE, INNER ELEC COND
3	1	1000243-30	FERRULE, INNER ELEC COND
3	1	1000243-33	FERRULE, INNER ELEC COND
3	1	1000243-36	FERRULE, INNER ELEC COND
3	30	1010490-108	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	286	1010490-110	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	238	1010490-112	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	2	1010490-216	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	2	1010490-222	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	1	1010490-975	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	1	1010490-979	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	24	1010476-112	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (BROWN)

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE
REV LTR A
SHEET 4 of 4

1015085

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES WORD DWG REV A PER TDRR 16221	4/13/65	WK

APPLICATION

NEXT ASSY	USED ON

Ⓑ REPLACES WORD DWG REV A

REV	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
SHEET	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
REV STATUS REV							B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
OF SHEETS SHEET							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN H. Snider 18 JAN 65 DATE
CHECKED C. Pioyda 19 JAN 65
APPROVAL D. Boyter 20 JAN 65
APPROVAL J. Henley 20 JAN 65
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]
CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS 'A'
AGE INTERCONNECT

CODE IDENT NO.
SIZE A
1015085
REV B
SCALE NONE
SHEET 1 OF 88

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
47	B	83	B														
48	B	84	B														
49	B	85	B														
50	B	86	B														
51	B	87	B														
52	B	88	B														
53	B																
54	B																
55	B																
56	B																
57	B																
58	B																
59	B																
60	B																
61	B																
62	B																
63	B																
64	B																
65	B																
66	B																
67	B																
68	B																
69	B																
70	B																
71	B																
72	B																
73	B																
74	B																
75	B																
76	B																
77	B																
78	B																
79	B																
80	B																
81	B																
32	B																

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION B

NASA DRAWING NO.
1015085
SHEET 2 OF 88

GENERAL NOTES

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 MARK SLEEVING OF MULTI-CONDUCTORS WITH THE CONDUCTOR NUMBER .12 INCH HIGH, AND SLEEVING OF SINGLE CONDUCTORS WITH CONDUCTOR NUMBER .08 INCH HIGH COLOR BLACK, PER ND1002019

6 PARTIAL CIRCUIT POINTS ARE SHOWN, PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

7 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

8 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

9 LACE HARNESS PER ND1002032 USING ITEMS 65 AND 66.

10 CONDUCTORS LISTED WITH AN A OR B IN THE ROUTING COLUMN ARE TO BE ASSEMBLED PER DETAIL A OR B AS SHOWN ON THE CONFIGURATION DRAWING (1015086 REF).

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A
1015085
SCALE-NONE
REV LTR B
SHEET 3

GENERAL NOTES

11 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, MARKING, OR TWISTING
A - FROM END SHIELD
B - TO END SHIELD
G - GREEN
K - BLACK
L - BLUE
N - BROWN
R - RED
W - WHITE
Y - YELLOW

12 ASSEMBLE HARNESS AS SHOWN PER CONFIGURATION DRAWING (1015086 REF).

13 SERIALIZE PER ND1002023.

14 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE			
	STRIP		CUT	
	WIRE	JACKET	WIRE	SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A
1015085
SCALE-NONE
REV LTR B
SHEET 4

WIRING HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
14	1	1	1015085-001	WIRE PER 1010789-011 YEL JKT 24AWG YEL 13 FT 0 IN. TOTAL LG
14	2	1	1015085-002	WIRE PER 1010789-012 YEL JKT 24AWG YEL, RED 370 FT 0 IN. TOTAL LG
14	3	1	1015085-003	WIRE PER 1010789-013 YEL JKT 24AWG YEL,RED,GRN 31 FT 0 IN. TOTAL LG
14	4	1	1015085-004	WIRE PER 1010789-001 24AWG YEL 865 FT 0 IN. TOTAL LG
14	5	1	1015085-005	WIRE PER 1010789-006 22AWG YEL 165 FT 0 IN. TOTAL LG
14	6	1	1015085-006	WIRE PER 1010707- 1 RED JKT 29AWG BLU,RED,WHT 26 FT 6 IN. TOTAL LG
14	7	1	1015085-007	WIRE PER 1010789-002 24AWG BLK 118 FT 0 IN. TOTAL LG
14	8	1	1015085-008	WIRE PER 1010789-003 24AWG YEL,RED 393 FT 0 IN. TOTAL LG
14	9	1	1015085-009	WIRE PER 1010789-004 24AWG YEL,RED,GRN 91 FT 0 IN. TOTAL LG
14	10	1	1015085-010	WIRE PER 1010789-005 24AWG YEL,RED,GRN,BRN 25 FT 11 IN. TOTAL LG
14	11	1	1015085-011	WIRE PER 1010789-008 22AWG YEL,RED 13 FT 9 IN. TOTAL LG
14	12	1	1015085-012	WIRE PER 1010789-009 22AWG YEL,RED,GRN

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE-NONE	REV LTR B		SHEET 5

MIL 2084-4-64

WIRING HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
				4 FT 6 IN. TOTAL LG
14	13	1	1015085-013	WIRE PER 1010789-010 22AWG YEL,RED,GRN,BRN 16 FT 1 IN. TOTAL LG
	14	1	1015085-014	WIRE, BRAID PER QQ-B-575(COPPER,TIN-COATED, TUBLAR) SIZE 3/8 ID, 36GA, 3FT 0 IN. TOTAL LG
	15	1	1015085-015	WIRE, BRAID PER QQ-B-575 (COPPER,TIN-COATED, TUBULAR) SIZE 1/2 ID, 36GA, 3 FT 0 IN. TOTAL LG
14	16	1	1010671- 1	CONNECTOR PLUG, ELECTRICAL
14	17	1	1010671- 2	CONNECTOR PLUG, ELECTRICAL
14	18	1	1010674- 1	CONNECTOR PLUG, ELECTRICAL
14	19	1	1010674- 2	CONNECTOR PLUG, ELECTRICAL
14	20	1	1010674- 3	CONNECTOR PLUG, ELECTRICAL
14	21	1	1010674- 4	CONNECTOR PLUG, ELECTRICAL
14	22	1	1010771-201	CONNECTOR PLUG, ELECTRICAL
14	23	1	1010771-207	CONNECTOR PLUG, ELECTRICAL
14	24	1	1010809-001	CONNECTOR RECP, ELECTRICAL
14	25	1	1010822- 3	CONNECTOR RECP, ELECTRICAL
14	26	1	1010822- 5	CONNECTOR RECP, ELECTRICAL
14	27	1	1010824- 1	CONNECTOR RECP, ELECTRICAL
14	28	5	1010824- 2	CONNECTOR RECP, ELECTRICAL

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE-NONE	REV LTR B		SHEET 6

MIL 2084-4-64

WIRING HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
14	29	1	1010824- 3	CONNECTOR RECP, ELECTRICAL
14	30	1	1010824- 4	CONNECTOR RECP, ELECTRICAL
14	31	1	1010824- 5	CONNECTOR RECP, ELECTRICAL
14	32	1	1010844-002	CONNECTOR RECP, ELECTRICAL
14	36	1	1010856- 1	CONNECTOR RECP, ELECTRICAL
14	37	1	1010860- 1	CONNECTOR RECP, ELECTRICAL
14	38	1358	1010738- 6	CONTACT, SOCKET
14	39	255	1010770- 2	CONTACT, SOCKET
14	40	288	1010743- 1	WRAPOST RECEPTACLE
14	41	172	1010743- 2	WRAPOST RECEPTACLE
14	42	93	1010743- 3	WRAPOST RECEPTACLE
14	43	30	1010402- 1	SLEEVE, SOLDER
14	44	135	1010402- 2	SLEEVE, SOLDER
14	45	1	1000242- 24	FERRULE, OUTER ELEC COND
14	46	1	1000242- 27	FERRULE, OUTER ELEC COND
14	47	1	1000242- 31	FERRULE, OUTER ELEC COND
14	48	1	1000242- 33	FERRULE, OUTER ELEC COND
14	49	1	1000243- 26	FERRULE, INNER ELEC COND

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE-NONE	REV LTR B		SHEET 7

MIL 2084-4-64

WIRING HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
14	50	1	1000243- 30	FERRULE, INNER ELEC COND
14	51	1	1000243- 33	FERRULE, INNER ELEC COND
14	52	1	1000243- 36	FERRULE, INNER ELEC COND
14	53	269	1010490-118	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (WHITE)
14	54	94	1010490-110	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (WHITE)
14	55	216	1010490-112	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (WHITE)
14	56	4	1010911-066	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR)
14	58	4	1010911-069	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR)
14	60	24	1010476-112	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (BROWN)
	61			CONTACT SOCKETS SUPPLIED WITH 1010671.
	62			CONTACT SOCKETS SUPPLIED WITH 1010674.
14	63	1	1010911-902	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR) 3 FT. 0.0 IN. TOTAL LENGTH
14	64	1	1010911-905	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR) 3 FT. 0.0 IN. TOTAL LENGTH

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE-NONE	REV LTR B		SHEET 8

MIL 2084-4-64

WIRING HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
14	65	AR	1012507- 2	LACING TAPE, DACRON, BLACK, 0.05 INCHES WIDE
14	66	AR	1012507- 4	LACING TAPE, DACRON, BLACK 0.09 INCHES WIDE
14	67	1	1023012- 1	COUPLING, ADAPTER
14	68	1	1023012- 2	COUPLING, ADAPTER
~~14~~	~~69~~	~~2~~	~~1010896-002~~	~~BOOT, DUST AND MOISTURE SEAL~~
14	70	253	1010911-036	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR)
14	71	161	1010911-035	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR)
14	72	152	1010911-034	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR)

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 9

MIL 2084-4-64

WIRING HARNESS A

	CONDUCTOR			FROM							TO							ROUTING
	NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.	
A	1	8						71							55			
A	1R			J01- 1	10	N		38			TB1-A8	18	N		42			
A	1Y			J01- 14	10	N		38			TB1-B8	18	N		42			
A	2	8						71							55			
A	2R			J01- 3	10	N		38			TB1-D1	18	N		42			
A	2Y			J01- 2	10	N		38			TB1-D2	18	N		42			
A	3	2			100		75	72				125		100	54	44		
A	3B	7		TB1-A12	18	N		42			SHLD A 3	20	N					
A	3R			J01- 20	10	N		38			TB1-A13	18	N		42			
A	3Y			J01- 6	10	N		38			TB1-A14	18	N		42			
A	4	2			100		75	72				125		100	54	44		
A	4B	7		TB1-A17	18	N		42			SHLD A 4	20	N					
A	4R			J01- 21	10	N		38			TB1-A15	18	N		42			
A	4Y			J01- 7	10	N		38			TB1-A16	18	N		42			
A	5	9						71							55			
A	5G			J01- 11	10	N		38			TB1-A6	18	N		42			
A	5R			J01- 25	10	N		38			TB1-A6	18	N					
A	5Y			J01- 12	10	N		38			TB1-B6	18	N		42			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 10

MIL 2085-4-64 WIR

WIRING HARNESS A

	CONDUCTOR			FROM							TO							ROUTING
	NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.	
A	6	4		J01- 15	10	N		38	70		TB1-B53	18	N		42	53		
A	7	4		J01- 16	10	N		38	70		TB1-G6	18	N		42	53		
A	8	8						71							55			
A	8R			J01- 28	10	N		38			TB1-A1	18	N		42			
A	8Y			J01- 29	10	N		38			TB1-B1	18	N		42			
A	9	4		J01- 30	10	N		38	70		TB1-C53	18	N		40	53		
A	10	9						71							55			
A	10G			J01- 31	10	N		38			TB1-K18	18	N		40			
A	10R			J01- 43	10	N		38			TB1-K20	18	N		40			
A	10Y			J01- 32	10	N		38			TB1-K19	18	N		40			
A	11	4		J01- 34	10	N		38	70		TB1-K35	18	N		40	53		
A	12	2			100		75	72				125		100	54	44		
A	12B	7		TB1-K32	18	N		42			SHLD A 12	20	N					
A	12R			J01- 35	10	N		38			TB1-K33	18	N		42			
A	12Y			J01- 45	10	N		38			TB1-K34	18	N		42			
A	13	4		J01- 41	10	N		38	70		TB1-G9	18	N		41	53		
A	14	8						71							55			
A	14R			J01- 50	10	N		38			TB1-G1	18	N		41			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 11

MIL 2085-4-64 WIR

WIRING HARNESS A

	CONDUCTOR			FROM							TO							ROUTING
	NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.	
A	14Y			J01- 60	10	N		38			TB1-G2	18	N		41			
A	15	8						71							55			
A	15R			J01- 67	10	N		38			TB1-A31	18	N		40			
A	15Y			J01- 57	10	N		38			TB1-B31	18	N		40			
A	16	2			100		75	72				125		100	54	44		
A	16B	7		TB1-H17	18	N		41			SHLD A 16	20	N					
A	16R			J01-100	10	N		38			TB1-H15	18	N		41			
A	16Y			J01- 86	10	N		38			TB1-H16	18	N		40			
A	17	2			100		75	72				125		100	54	44		
A	17B	7		TB1-K17	18	N		41			SHLD A 17	20	N					
A	17R			J01-101	10	N		38			TB1-K15	18	N		41			
A	17Y			J01- 87	10	N		38			TB1-K16	18	N		40			
A	18	2			100		75	72				125		100	54	44		
A	18B	7		TB1-K30	18	N		41			SHLD A 18	20	N					
A	18R			J01-104	10	N		38			TB1-K31	18	N		40			
A	18Y			J01- 90	10	N		38			TB1-K30	18	N					
A	19	3			100		75	72				125		100	54	44		
A	19B	7		TB1-F30	18	N		41			SHLD A 19	20	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 12

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	CONDUCTOR ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	FROM STRIP WIRE OR JACKET 2	FROM TIN	FROM CUT WIRE OR SHIELD 2	FROM TERMINATION SPEC. 1 ITEM NO.			FROM NO.	TO CIRCUIT POINT	TO STRIP WIRE OR JACKET 2	TO TIN	TO CUT WIRE OR SHIELD 2	TO TERMINATION SPEC 1 ITEM NO.			TO NO.	ROUTING
A 19G			J01-105	10	N		38				TB1-F31	18	N		40				
A 19R			J01-106	10	N		38				TB1-F29	18	N		40				
A 19Y			J01- 92	10	N		38				TB1-F30	18	N						
A 20	3			100		75	72					125		100	54	44			
A 20B	7		TB1-F34	18	N		41				SHLD A 20	20	N						
A 20G			J01-107	10	N		38				TB1-F35	18	N		40				
A 20R			J01-108	10	N		38				TB1-F33	18	N		40				
A 20Y			J01- 94	10	N		38				TB1-F34	18	N						
A 21	8						71								55				
A 21R			J02- 1	10	N		38				TB1-A8	18	N						
A 21Y			J02- 14	10	N		38				TB1-B8	18	N						
A 22	8						71								55				
A 22R			J02- 3	10	N		38				TB1-D1	18	N						
A 22Y			J02- 2	10	N		38				TB1-D2	18	N						
A 23	2			100		75	72					125		100	54	44			
A 23B	7		TB1-B12	18	N		42				SHLD A 23	20	N						
A 23R			J02- 20	10	N		38				TB1-B13	18	N		42				
A 23Y			J02- 6	10	N		38				TB1-B14	18	N		42				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 13

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	CONDUCTOR ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	FROM STRIP WIRE OR JACKET 2	FROM TIN	FROM CUT WIRE OR SHIELD 2	FROM TERMINATION SPEC. 1 ITEM NO.			FROM NO.	TO CIRCUIT POINT	TO STRIP WIRE OR JACKET 2	TO TIN	TO CUT WIRE OR SHIELD 2	TO TERMINATION SPEC 1 ITEM NO.			TO NO.	ROUTING
A 24	2			100		75	72					125		100	54	44			
A 24B	7		TB1-B17	18	N		42				SHLD A 24	20	N						
A 24R			J02- 21	10	N		38				TB1-B15	18	N		42				
A 24Y			J02- 7	10	N		38				TB1-B16	18	N		42				
A 25	9						71								55				
A 25G			J02- 11	10	N		38				TB1-A5	18	N		42				
A 25R			J02- 25	10	N		38				TB1-A5	18	N						
A 25Y			J02- 12	10	N		38				TB1-B6	18	N						
A 26	4		J02- 15	10	N		38		70		TB1-B53	18	N				53		
A 27	4		J02- 16	10	N		38		70		TB1-G6	18	N				53		
A 28	8						71								55				
A 28R			J02- 28	10	N		38				TB1-A1	18	N						
A 28Y			J02- 29	10	N		38				TB1-B1	18	N						
A 29	4		J02- 30	10	N		38		70		TB1-C52	18	N		40		53		
A 30	9						71								55				
A 30G			J02- 31	10	N		38				TB1-H19	18	N		40				
A 30R			J02- 43	10	N		38				TB1-H20	18	N		40				
A 30Y			J02- 32	10	N		38				TB1-H18	18	N		40				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 14

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	CONDUCTOR ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	FROM STRIP WIRE OR JACKET 2	FROM TIN	FROM CUT WIRE OR SHIELD 2	FROM TERMINATION SPEC. 1 ITEM NO.			FROM NO.	TO CIRCUIT POINT	TO STRIP WIRE OR JACKET 2	TO TIN	TO CUT WIRE OR SHIELD 2	TO TERMINATION SPEC 1 ITEM NO.			TO NO.	ROUTING
A 31	4		J02- 34	10	N		38		70		TB1-H35	18	N		40		53		
A 32	2			100		75	72					125		100	54	44			
A 32B	7		TB1-H32	18	N		42				SHLD A 32	20	N						
A 32R			J02- 35	10	N		38				TB1-H33	18	N		42				
A 32Y			J02- 45	10	N		38				TB1-H34	18	N		42				
A 33	4		J02- 41	10	N		38		70		TB1-G9	18	N				53		
A 34	8						71								55				
A 34R			J02- 50	10	N		38				TB1-G1	18	N						
A 34Y			J02- 60	10	N		38				TB1-G2	18	N						
A 35	8						71								55				
A 35R			J02- 67	10	N		38				TB1-A30	18	N		40				
A 35Y			J02- 57	10	N		38				TB1-B30	18	N		40				
A 36	2			100		75	72					125		100	54	44			
A 36B	7		TB1-H12	18	N		42				SHLD A 36	20	N						
A 36R			J02-100	10	N		38				TB1-H10	18	N		41				
A 36Y			J02- 86	10	N		38				TB1-H11	18	N		40				
A 37	2			100		75	72					125		100	54	44			
A 37B	7		TB1-K12	18	N		41				SHLD A 37	20	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 15

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	CONDUCTOR ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	FROM STRIP WIRE OR JACKET 2	FROM TIN	FROM CUT WIRE OR SHIELD 2	FROM TERMINATION SPEC. 1 ITEM NO.			FROM NO.	TO CIRCUIT POINT	TO STRIP WIRE OR JACKET 2	TO TIN	TO CUT WIRE OR SHIELD 2	TO TERMINATION SPEC 1 ITEM NO.			TO NO.	ROUTING
A 37R			J02-101	10	N		38				TB1-K10	18	N		41				
A 37Y			J02- 87	10	N		38				TB1-K11	18	N		40				
A 38	2			100		75	72					125		100	54	44			
A 38B	7		TB1-H30	18	N		41				SHLD A 38	20	N						
A 38R			J02-104	10	N		38				TB1-H31	18	N		40				
A 38Y			J02- 90	10	N		38				TB1-H30	18	N						
A 39	3			100		75	72					125		100	54	44			
A 39B	7		TB1-D30	18	N		41				SHLD A 39	20	N						
A 39G			J02-105	10	N		38				TB1-D31	18	N		40				
A 39R			J02-106	10	N		38				TB1-D29	18	N		40				
A 39Y			J02- 92	10	N		38				TB1-D30	18	N						
A 40	3			100		75	72					125		100	54	44			
A 40B	7		TB1-D34	18	N		41				SHLD A 40	20	N						
A 40G			J02-107	10	N		38				TB1-D35	18	N		40				
A 40R			J02-108	10	N		38				TB1-D33	18	N		40				
A 40Y			J02- 94	10	N		38				TB1-D34	18	N						
A 41	8						71								55				
A 41R			J03- 1	10	N		38				TB1-A8	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 16

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 41Y			J03- 14	10	N		38				TB1-B8	18	N						
A 42	8						71								55				
A 42R			J03- 3	10	N		38				TB1-D1	18	N						
A 42Y			J03- 2	10	N		38				TB1-D2	18	N						
A 43	2			100		75	72					125		100	54	44			
A 43B	7		TB1-C17	18	N		42				SHLD A 43	20	N						
A 43R			J03- 20	10	N		38				TB1-C16	18	N		40				
A 43Y			J03- 6	10	N		38				TB1-C15	18	N		42				
A 44	2			100		75	72					125		100	54	44			
A 44B	7		TB1-D17	18	N		42				SHLD A 44	20	N						
A 44R			J03- 21	10	N		38				TB1-D16	18	N		40				
A 44Y			J03- 7	10	N		38				TB1-D15	18	N		42				
A 45	9						71								55				
A 45G			J03- 11	10	N		38				TB1-A7	18	N		42				
A 45R			J03- 25	10	N		38				TB1-A6	18	N						
A 45Y			J03- 12	10	N		38				TB1-B6	18	N						
A 46	4		J03- 15	10	N		38		70		TB1-B53	18	N				53		
A 47	4		J03- 16	10	N		38		70		TB1-G6	18	N				53		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A | 1015085

SCALE - NONE | REV LTR B | SHEET 17

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 48	8						71								55				
A 48R			J03- 28	10	N		38				TB1-A1	18	N						
A 48Y			J03- 29	10	N		38				TB1-B1	18	N						
A 49	4		J03- 30	10	N		38		70		TB1-C51	18	N		40		53		
A 50	9						71								55				
A 50G			J03- 31	10	N		38				TB1-G19	18	N		40				
A 50R			J03- 43	10	N		38				TB1-G20	18	N		40				
A 50Y			J03- 32	10	N		38				TB1-G18	18	N		40				
A 51	4		J03- 34	10	N		38		70		TB1-G35	18	N		40		53		
A 52	2			100		75	72					125		100	54	44			
A 52B	7		TB1-G32	18	N		42				SHLD A 52	20	N						
A 52R			J03- 35	10	N		38				TB1-G33	18	N		42				
A 52Y			J03- 45	10	N		38				TB1-G34	18	N		42				
A 53	4		J03- 41	10	N		38		70		TB1-G10	18	N		41		53		
A 54	8						71								55				
A 54R			J03- 50	10	N		38				TB1-H1	18	N		41				
A 54Y			J03- 60	10	N		38				TB1-H2	18	N		41				
A 55	8						71								55				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A | 1015085

SCALE - NONE | REV LTR B | SHEET 18

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 55R			J03- 67	10	N		38				TB1-A29	18	N		40				
A 55Y			J03- 57	10	N		38				TB1-B29	18	N		40				
A 56	2			100		75	72					125		100	54	44			
A 56B	7		TB1-F17	18	N		41				SHLD A 56	20	N						
A 56R			J03-100	10	N		38				TB1-F15	10	N		41				
A 56Y			J03- 86	10	N		38				TB1-F16	10	N		40				
A 57	2			100		75	72					125		100	54	44			
A 57B	7		TB1-G17	18	N		41				SHLD A 57	20	N						
A 57R			J03-101	10	N		38				TB1-G15	18	N		41				
A 57Y			J03- 87	10	N		38				TB1-G16	18	N		40				
A 58	4		J03- 89	10	N		38		70		TB1-G29	18	N		40		53		
A 59	2			100		75	72					125		100	54	44			
A 59B	7		TB1-F32	18	N		42				SHLD A 59	20	N						
A 59R			J03-104	10	N		38				TB1-G31	18	N		41				
A 59Y			J03- 90	10	N		38				TB1-G30	18	N		42				
A 60	3			100		75	72					125		100	54	44			
A 60B	7		TB1-C30	18	N		41				SHLD A 60	20	N						
A 60G			J03-105	10	N		38				TB1-C31	18	N		40				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A | 1015085

SCALE - NONE | REV LTR B | SHEET 19

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 60R			J03-106	10	N		38				TB1-C29	18	N		40				
A 60Y			J03- 92	10	N		38				TB1-C30	18	N						
A 61	3			100		75	72					125		100	54	44			
A 61B	7		TB1-C34	18	N		41				SHLD A 61	20	N						
A 61G			J03-107	10	N		38				TB1-C35	18	N		40				
A 61R			J03-108	10	N		38				TB1-C33	18	N		40				
A 61Y			J03- 94	10	N		38				TB1-C34	18	N						
A 62	8						71								55				
A 62R			J04- 1	10	N		38				TB1-D5	18	N		41				
A 62Y			J04- 14	10	N		38				TB1-F5	18	N		41				
A 63	8						71								55				
A 63R			J04- 5	10	N		38				TB1-D8	18	N		42				
A 63Y			J04- 2	10	N		38				TB1-F8	18	N		42				
A 64	2			100		75	72					125		100	54	44			
A 64B	7		TB1-H47	18	N		40				SHLD A 64	20	N						
A 64R			J04- 20	10	N		38				TB1-H45	18	N		40				
A 64Y			J04- 6	10	N		38				TB1-H46	18	N		40				
A 65	2			100		75	72					125		100	54	44			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A | 1015085

SCALE - NONE | REV LTR B | SHEET 20

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 65B	7		TB1-K47	18	N		40				SHLD A 65	20	N						
A 65R			J04- 7	10	N		38				TB1-K46	18	N		40				
A 65Y			J04- 21	10	N		38				TB1-K45	18	N		40				
A 66	2			100		75	72					125		100	54	44			
A 66B	7		TB1-H39	18	N		40				SHLD A 66	20	N						
A 66R			J04- 25	10	N		38				TB1-H41	18	N		40				
A 66Y			J04- 11	10	N		38				TB1-H40	18	N		40				
A 67	8						71								55				
A 67R			J04- 28	10	N		38				TB1-A2	18	N		42				
A 67Y			J04- 29	10	N		38				TB1-B2	18	N		42				
A 68	9						71								55				
A 68G			J04- 43	10	N		38				TB1-H50	18	N		41				
A 68R			J04- 32	10	N		38				TB1-H49	18	N		40				
A 68Y			J04- 31	10	N		38				TB1-H48	18	N		40				
A 69	9						71								55				
A 69G			J04- 35	10	N		38				TB1-F48	18	N		40				
A 69R			J04- 45	10	N		38				TB1-F49	18	N		40				
A 69Y			J04- 34	10	N		38				TB1-F50	18	N		40				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 21

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 70	4		J04- 41	10	N		38		70		TB1-G10	18	N				53		
A 71	8						71								55				
A 71R			J04- 50	10	N		38				TB1-K1	18	N		42				
A 71Y			J04- 60	10	N		38				TB1-K2	18	N		42				
A 72	2			100		75	72					125		100	54	44			
A 72B	7		TB1-C47	18	N						SHLD A 72	20	N		41				
A 72R			J04- 56	10	N		38				TB1-C45	18	N		41				
A 72Y			J04- 66	10	N		38				TB1-C46	18	N		41				
A 73	2			100		75	72					125		100	54	44			
A 73B	7		TB1-D47	18	N		41				SHLD A 73	20	N						
A 73R			J04- 57	10	N		38				TB1-D45	18	N		41				
A 73Y			J04- 67	10	N		38				TB1-D46	18	N		41				
A 74	2			100		75	72					125		100	54	44			
A 74B	7		TB1-A47	18	N		41				SHLD A 74	20	N						
A 74R			J04-100	10	N		38				TB1-A46	18	N		41				
A 74Y			J04- 86	10	N		38				TB1-A45	18	N		41				
A 75	2			100		75	72					125		100	54	44			
A 75B	7		TB1-B47	18	N		41				SHLD A 75	20	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 22

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 75R			J04- 87	10	N		38				TB1-B45	18	N		41				
A 75Y			J04-101	10	N		38				TB1-B46	18	N		41				
A 76	2			100		75	72					125		100	54	44			
A 76B	7		TB1-G39	18	N		40				SHLD A 76	20	N						
A 76R			J04- 90	10	N		38				TB1-G41	18	N		40				
A 76Y			J04-104	10	N		38				TB1-G40	18	N		40				
A 77	2			100		75	72					125		100	54	44			
A 77B	7		TB1-G36	18	N		40				SHLD A 77	20	N						
A 77R			J04-106	10	N		38				TB1-G37	18	N		40				
A 77Y			J04- 92	10	N		38				TB1-G38	18	N		40				
A 78	3			100		75	72					125		100	54	44			
A 78B	7		TB1-A34	18	N		41				SHLD A 78	20	N						
A 78G			J04-107	10	N		38				TB1-A35	18	N		40				
A 78R			J04-108	10	N		38				TB1-A33	18	N		40				
A 78Y			J04- 94	10	N		38				TB1-A34	18	N						
A 79	8						71								55				
A 79R			J05- 1	10	N		38				TB1-D5	18	N						
A 79Y			J05- 14	10	N		38				TB1-F5	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 23

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 80	8						71								55				
A 80R			J05- 5	10	N		38				TB1-D8	18	N						
A 80Y			J05- 2	10	N		38				TB1-F8	18	N						
A 81	2			100		75	72					125		100	54	44			
A 81B	7		TB1-D39	18	N		40				SHLD A 81	20	N						
A 81R			J05- 17	10	N		38				TB1-D40	18	N		40				
A 81Y			J05- 4	10	N		38				TB1-D41	18	N		40				
A 82	2			100		75	72					125		100	54	44			
A 82B	7		TB1-D42	18	N		41				SHLD A 82	20	N						
A 82R			J05- 22	10	N		38				TB1-D43	18	N		41				
A 82Y			J05- 8	10	N		38				TB1-D44	18	N						
A 83	2			100		75	72					125		100	54	44			
A 83B	7		TB1-C42	18	N		42				SHLD A 83	20	N						
A 83R			J05- 9	10	N		38				TB1-C44	18	N		41				
A 83Y			J05- 10	10	N		38				TB1-C43	18	N		41				
A 84	9						71								55				
A 84G			J05- 11	10	N		38				TB1-B19	18	N		41				
A 84R			J05- 25	10	N		38				TB1-B19	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 24

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1			NO.	CUT WIRE OR SHIELD				TERMINATION SPEC 1			NO.	ROUTING
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	ITEM NO.				STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	ITEM NO.				
A 84Y			J05- 12	10	N		38				TB1-B18	18	N		40				
A 85	8						71								55				
A 85R			J05- 28	10	N		38				TB1-A2	18	N						
A 85Y			J05- 29	10	N		38				TB1-B2	18	N						
A 86	9						71								55				
A 86G			J05- 43	10	N		38				TB1-K50	18	N		42				
A 86R			J05- 32	10	N		38				TB1-K49	18	N		40				
A 86Y			J05- 31	10	N		38				TB1-K48	18	N		40				
A 87	4		J05- 41	10	N		38		70		TB1-G11	18	N		41		53		
A 88	8						71								55				
A 88R			J05- 50	10	N		38				TB1-K1	18	N						
A 88Y			J05- 60	10	N		38				TB1-K2	18	N						
A 89	2			100		75	72					125		100	54	44			
A 89B	7		TB1-H42	18	N		40				SHLD A 89	20	N						
A 89R			J05- 56	10	N		38				TB1-H44	18	N		40				
A 89Y			J05- 66	10	N		38				TB1-H43	18	N		40				
A 90	2			100		75	72					125		100	54	44			
A 90B	7		TB1-K42	18	N		40				SHLD A 90	20	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE - NONE | REV LTR B | SHEET 25

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1			NO.	CUT WIRE OR SHIELD				TERMINATION SPEC 1			NO.	ROUTING
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	ITEM NO.				STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	ITEM NO.				
A 90R			J05- 57	10	N		38				TB1-K44	18	N		40				
A 90Y			J05- 67	10	N		38				TB1-K43	18	N		40				
A 91	2			100		75	72					125		100	54	44			
A 91B	7		TB1-A42	18	N		41				SHLD A 91	20	N						
A 91R			J05-100	10	N		38				TB1-A43	18	N		41				
A 91Y			J05- 86	10	N		38				TB1-A44	18	N						
A 92	2			100		75	72					125		100	54	44			
A 92B	7		TB1-B42	18	N		41				SHLD A 92	20	N						
A 92R			J05-101	10	N		38				TB1-B43	18	N		41				
A 92Y			J05- 87	10	N		38				TB1-B44	18	N						
A 93	2			100		75	72					125		100	54	44			
A 93B	7		TB1-C42	18	N						SHLD A 93	20	N						
A 93R			J05- 90	10	N		38				TB1-C41	18	N		40				
A 93Y			J05-104	10	N		38				TB1-C40	18	N		40				
A 94	2			100		75	72					125		100	54	44			
A 94B	7		TB1-C36	18	N		40				SHLD A 94	20	N						
A 94R			J05-106	10	N		38				TB1-C37	18	N		40				
A 94Y			J05- 92	10	N		38				TB1-C38	18	N		40				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE - NONE | REV LTR B | SHEET 26

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1			NO.	CUT WIRE OR SHIELD				TERMINATION SPEC 1			NO.	ROUTING
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	ITEM NO.				STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	ITEM NO.				
A 95	3			100		75	72					125		100	54	44			
A 95B	7		TB1-B34	18	N		41				SHLD A 95	20	N						
A 95G			J05-107	10	N		38				TB1-B35	18	N		40				
A 95R			J05-108	10	N		38				TB1-B33	18	N		40				
A 95Y			J05- 94	10	N		38				TB1-B34	18	N						
A 96	8						71								55				
A 96R			J06- 1	10	N		38				P01- 1	10	N		38				
A 96Y			J06- 2	10	N		38				P01- 2	10	N		38				
A 97	4		J06- 6	10	N		38		70		P01- 6	10	N		38		53		
A 98	4		J06- 9	10	N		38		70		P01- 9	10	N		38		53		
A 99	2			100		75	72					125		100	54	44			
A 99B	7		TB1-A49	18	N		42				SHLD A 99	20	N						
A 99R			J06- 81	10	N		38				TB1-B48	18	N		41				
A 99Y			J06- 12	10	N		38				TB1-A48	18	N		42				
A 100	8						71								55				
A 100R			J06- 14	10	N		38				P01- 14	10	N		38				
A 100Y			J06- 15	10	N		38				P01- 15	10	N		38				
A 101	4		J06- 18	10	N		38		70		P01- 18	10	N		38		53		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE - NONE | REV LTR B | SHEET 27

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1			NO.	CUT WIRE OR SHIELD				TERMINATION SPEC 1			NO.	ROUTING
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	ITEM NO.				STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	ITEM NO.				
A 102	4		J06- 22	10	N		38		70		P01- 22	10	N		38		53		
A 103	4		J06- 23	10	N		38		70		P01- 23	10	N		38		53		
A 104	1			100		75	72					125		100	55	43			
A 104B	7		TB1-H4	18	N		40				SHLD A 104	20	N						
A 104Y			J06- 24	10	N		38				TB1-G3	18	N		41				
A 105	4		J06- 25	10	N		38		70		P01- 25	10	N		38		53		
A 106	8						71								55				
A 106R			J06- 29	10	N		38				P01- 29	10	N		38				
A 106Y			J06- 28	10	N		38				P01- 28	10	N		38				
A 107	4		J06- 34	10	N		38		70		P01- 34	10	N		38		53		
A 108	4		J06- 35	10	N		38		70		P01- 35	10	N		38		53		
A 109	4		J06- 36	10	N		38		70		P01- 36	10	N		38		53		
A 110	4		J06- 37	10	N		38		70		P01- 37	10	N		38		53		
A 111	4		J06- 46	10	N		38		70		P01- 46	10	N		38		53		
A 112	4		J06- 56	10	N		38		70		P01- 56	10	N		38		53		
A 113	1			100		75	72					125		100	55	43			
A 113B	7		TB1-D56	18	N		41				SHLD A 113	20	N						
A 113Y			J06- 68	10	N		38				TB1-C56	18	N		41				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE - NONE | REV LTR B | SHEET 28

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								ROUTING
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CIRCUIT POINT 2	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT 2	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 114	1			100		75	72					125		100	55	43			
A 114B	7		E22	20	N		44				SHLD A 114	20	N						
A 114Y			J06- 69	10	N		38				J24- 12	13	N		39				
A 115	4		J06- 78	10	N		38		70		TB1-D3	18	N		41		53		
A 116	4		J06- 79	10	N		38		70		P01- 79	10	N		38		53		
A 117	4		J06- 91	10	N		38		70		TB1-G8	10	N		42		53		
A 118	4		J06- 92	10	N		38		70		P01- 92	10	N		38		53		
A 119	4		J06- 93	10	N		38		70		P01- 93	10	N		38		53		
A 120	4		J06- 94	10	N		38		70		P01- 94	10	N		38		53		
A 121	4		J06-104	10	N		38		70		P01-104	10	N		38		53		
A 122	4		J06-105	10	N		38		70		P01-105	10	N		38		53		
A 123	8						71								55				
A 123R			J06-108	10	N		38				TB1-A3	18	N		42				
A 123Y			J06-107	10	N		38				TB1-B3	18	N		41				
A 124	3			100		75	72					125		100	54	44			
A 124B	7		TB1-K4	18	N		40				SHLD A 124	20	N						
A 124G			P01- 4	10	N		38				TB1-K3	18	N		40				
A 124R			P01- 5	10	N		38				TB1-H5	18	N		40				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE | REV LTR B | SHEET 29

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								ROUTING
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CIRCUIT POINT 2	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT 2	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 124Y			P01- 12	10	N		38				TB1-K5	18	N		40				
A 125	4		P01- 7	10	N		38		70		TB1-G7	18	N		41		53		
A 126	8						71								55				
A 126R			P01- 11	10	N		38				TB1-A7	18	N						
A 126Y			P01- 10	10	N		38				TB1-B7	18	N		41				
A 127	3			100		75	72					125		100	54	44			
A 127B	7		TB1-A49	18	N						SHLD A 127	20	N						
A 127G			P01- 48	10	N		38				TB1-A50	18	N		41				
A 127R			P01- 13	10	N		38				TB1-B50	18	N		41				
A 127Y			P01- 38	10	N		38				TB1-C50	18	N		41				
A 128	3			100		75	72					125		100	54	44			
A 128B	7		TB1-G4	18	N		40				SHLD A 128	20	N						
A 128G			P01- 57	10	N		38				TB1-H3	18	N		40				
A 128R			P01- 69	10	N		38				TB1-G5	18	N		40				
A 128Y			P01- 24	10	N		38				TB1-G3	18	N						
A 129	4		P01- 26	10	N		38		70		TB1-A26	18	N		42		53		
A 130	2			100		75	72					125		100	54	44			
A 130B	7		TB1-B49	18	N		42				SHLD A 130	20	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE | REV LTR B | SHEET 30

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								ROUTING
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CIRCUIT POINT 2	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT 2	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 130R			P01- 58	10	N		38				TB1-C49	18	N		41				
A 130Y			P01- 27	10	N		38				TB1-C48	18	N		41				
A 131	1			100		75	72					125		100	55	43			
A 131B	7		E22	20	N						SHLD A 131	20	N						
A 131Y			P01- 39	10	N		38				J24- 29	13	N		39				
A 132	1			100		75	72					125		100	55	43			
A 132B	7		E22	20	N						SHLD A 132	20	N						
A 132Y			P01- 49	10	N		38				J24- 4	13	N		39				
A 133	1			100		75	72					125		100	55	43			
A 133B	7		E22	20	N						SHLD A 133	20	N						
A 133Y			P01- 59	10	N		38				J24- 14	13	N		39				
A 134	1			100		75	72					125		100	55	43			
A 134B	7		TB1-D56	18	N						SHLD A 134	20	N						
A 134Y			P01- 68	10	N		38				TB1-C56	18	N						
A 135	2			100		75	72					125		100	54	44			
A 135B	7		TB1-K32	18	N						SHLD A 135	20	N						
A 135R			P01- 70	10	N		38				TB1-K33	18	N						
A 135Y			P01- 71	10	N		38				TB1-K34	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE | REV LTR B | SHEET 31

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								ROUTING
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CIRCUIT POINT 2	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT 2	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 136	1			100		75	72					125		100	55	43			
A 136B	7		E22	20	N						SHLD A 136	20	N						
A 136Y			P01- 76	10	N		38				J24- 13	13	N		39				
A 137	4		P01- 78	10	N		38		70		TB1-D3	18	N				53		
A 138	8						71								55				
A 138R			P01- 80	10	N		38				TB1-A54	18	N		41				
A 138Y			P01- 95	10	N		38				TB1-A55	18	N		41				
A 139	2			100		75	72					125		100	54	44			
A 139B	7		TB1-H32	18	N						SHLD A 139	20	N						
A 139R			P01- 82	10	N		38				TB1-H33	18	N						
A 139Y			P01- 83	10	N		38				TB1-H34	18	N						
A 140	4		P01- 84	10	N		38		70		TB1-G8	18	N				53		
A 141	4		P01- 88	10	N		38		70		TB1-D71	18	N		41		53		
A 142	4		P01- 89	10	N		38		70		TB1-K72	18	N		41		53		
A 143	13						71								55				
A 143G			P01-106	10	N		38				TB1-C1	18	N		41				
A 143N			P01- 90	10	N		38				TB1-C2	18	N		41				
A 143R			P01-103	10	N		38				TB1-A2	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE | REV LTR B | SHEET 32

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET			2	TERMINATION SPEC. 1			NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET			2	TERMINATION SPEC 1			NO.	ROUTING
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N		ITEM NO.				CIRCUIT POINT	2	T I N		ITEM NO.				
A 143Y			P01-108	10	N		38				TB1-A4	18	N		42				
A 144	4		P01- 91	10	N		38		70		TB1-C3	18	N		41		53		
A 145	2			100		75	72					125		100	54	44			
A 145B	7		TB1-G32	18	N						SHLD A 145	20	N						
A 145R			P01- 96	10	N		38				TB1-G33	18	N						
A 145Y			P01- 97	10	N		38				TB1-G34	18	N						
A 146	4		J08- 17	10	N		38		70		TB1-B21	18	N		42		53		
A 147	4		J08- 18	10	N		38		70		TB1-A23	18	N		41		53		
A 148	5		J08- 19	10	N		38		70		TB1-B21	18	N				53		
A 149	4		J08- 28	10	N		38		70		TB1-B21	18	N				53		
A 150	4		J08- 29	10	N		38		70		TB1-G8	18	N				53		
A 151	4		J08- 30	10	N		38		70		TB1-B22	18	N		42		53		
A 152	4		J08- 31	10	N		38		70		TB1-A25	18	N		40		53		
A 153	4		J08- 32	10	N		38		70		TB1-C4	18	N		41		53		
A 154	12						71								55				
A 154G			J08- 46	10	N		38				TB1-B77	18	N		41				
A 154R			J08- 55	10	N		38				TB1-B76	18	N		41				
A 154Y			J08- 36	10	N		38				TB1-B75	18	N		41				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 33

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET			2	TERMINATION SPEC. 1			NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET			2	TERMINATION SPEC 1			NO.	ROUTING
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N		ITEM NO.				CIRCUIT POINT	2	T I N		ITEM NO.				
A 155	4		J08- 41	10	N		38		70		TB1-A21	18	N		41		53		
A 156	4		J08- 42	10	N		38		70		TB1-A26	18	N				53		
A 157	4		J08- 43	10	N		38		70		J22- 40	18	N		39		53		
A 158	4		J08- 50	10	N		38		70		TB1-A20	18	N		41		53		
A 159	8						71								55				
A 159R			J08- 52	10	N		38				TB1-C25	18	N		40				
A 159Y			J08- 51	10	N		38				TB1-C26	18	N		41				
A 160	4		J08- 53	10	N		38		70		J22- 65	13	N		39		53		
A 161	4		J08- 54	10	N		38		70		TB1-C4	18	N				53		
A 162	4		J08- 60	10	N		38		70		TB1-A22	18	N		41		53		
A 163	4		J08- 61	10	N		38		70		TB1-B22	18	N				53		
A 164	8						71								55				
A 164R			J08- 62	10	N		38				TB1-B26	18	N		41				
A 164Y			J08- 63	10	N		38				TB1-B25	18	N						
A 165	10						71								55				
A 165G			J08- 66	10	N		38				TB1-A76	18	N		41				
A 165N			J08- 95	10	N		38				TB1-A75	18	N		41				
A 165R			J08- 68	10	N		38				TB1-A77	18	N		41				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 34

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET			2	TERMINATION SPEC. 1			NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET			2	TERMINATION SPEC 1			NO.	ROUTING
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N		ITEM NO.				CIRCUIT POINT	2	T I N		ITEM NO.				
A 165Y			J08- 81	10	N		38				TB1-A78	18	N		41				
A 166	4		J08- 67	10	N		38		70		TB1-A53	18	N		41		53		
A 167	4		J08- 70	10	N		38		70		TB1-B22	18	N				53		
A 168	8						71								55				
A 168R			J08- 71	10	N		38				TB1-D26	18	N		41				
A 168Y			J08- 82	10	N		38				TB1-D25	18	N		40				
A 169	4		J08- 72	10	N		38		70		TB1-A24	18	N		41		53		
A 170	4		J08- 73	10	N		38		70		TB1-B24	18	N		42		53		
A 171	4		J08- 78	10	N		38		70		TB1-B52	18	N		41		53		
A 172	4		J08- 79	10	N		38		70		TB1-A52	18	N		41		53		
A 173	4		J08- 83	10	N		38		70		TB1-B23	18	N		42		53		
A 174	4		J08- 84	10	N		38		70		TB1-B23	18	N				53		
A 175	4		J08- 92	10	N		38		70		TB1-D4	18	N		40		53		
A 176	4		J08- 93	10	N		38		70		TB1-A51	18	N		41		53		
A 177	4		J08-106	10	N		38		70		TB1-B51	18	N		41		53		
A 178	8						71								55				
A 178R			P02-A	20	N		62				TB1-A5	18	N						
A 178Y			P02-B	20	N		62				TB1-B5	18	N		40				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 35

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET			2	TERMINATION SPEC. 1			NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET			2	TERMINATION SPEC 1			NO.	ROUTING
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N		ITEM NO.				CIRCUIT POINT	2	T I N		ITEM NO.				
A 179	2			150		125	72					125		100	54	44			
A 179B	7		TB1-A12	18	N						SHLD A 179	20	N						
A 179R			P02-A*	20	N		62				TB1-A13	18	N						
A 179Y			P02-B*	20	N		62				TB1-A14	18	N						
A 180	2			150		125	72					125		100	54	44			
A 180B	7		TB1-F17	18	N						SHLD A 180	20	N						
A 180R			P02-C	20	N		62				TB1-F15	18	N						
A 180Y			P02-D	20	N		62				TB1-F14	18	N		40				
A 181	2			150		125	72					125		100	54	44			
A 181B	7		TB1-G17	18	N						SHLD A 181	20	N						
A 181R			P02-E	20	N		62				TB1-G14	18	N		40				
A 181Y			P02-F	20	N		62				TB1-G15	18	N						
A 182	2			150		125	72					125		100	54	44			
A 182B	7		TB1-A17	18	N						SHLD A 182	20	N						
A 182R			P02-F*	20	N		62				TB1-A15	18	N						
A 182Y			P02-G*	20	N		62				TB1-A16	18	N						
A 183	2			150		125	72					125		100	54	44			
A 183B	7		TB1-H12	18	N						SHLD A 183	20	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 36

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 183R			P02-G	20	N		62				TB1-H10	18	N						
A 183Y			P02-H	20	N		62				TB1-H9	18	N		40				
A 184	2			150		125	72					125		100	54	44			
A 184B	7		TB1-K12	18	N						SHLD A 184	20	N						
A 184R			P02-J	20	N		62				TB1-K9	18	N		40				
A 184Y			P02-K	20	N		62				TB1-K10	18	N						
A 185	2			150		125	72					125		100	54	44			
A 185B	7		TB1-B12	18	N						SHLD A 185	20	N						
A 185R			P02-L	20	N		62				TB1-B13	18	N						
A 185Y			P02-M	20	N		62				TB1-B14	18	N						
A 186	2			150		125	72					125		100	54	44			
A 186B	7		TB1-B17	18	N						SHLD A 186	20	N						
A 186R			P02-P	20	N		62				TB1-B16	18	N						
A 186Y			P02-N	20	N		62				TB1-B15	18	N						
A 187	11						71								55				
A 187R			P02-R	20	N		62				TB1-K7	18	N		40				
A 187Y			P02-S	20	N		62				TB1-H7	18	N		40				
A 188	2			150		125	72					125		100	54	44			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 37

MIL 2088-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 188B	7		TB1-H12	18	N						SHLD A 188	20	N						
A 188R			P02-T	20	N		62				TB1-K8	18	N		41				
A 188Y			P02-U	20	N		62				TB1-H8	18	N		41				
A 189	2			150		125	72					125		100	54	44			
A 189B	7		TB1-H17	18	N						SHLD A 189	20	N						
A 189R			P02-W	20	N		62				TB1-H15	18	N						
A 189Y			P02-X	20	N		62				TB1-H14	18	N		40				
A 190	2			150		125	72					125		100	54	44			
A 190B	7		TB1-K17	18	N						SHLD A 190	20	N						
A 190R			P02-Y	20	N		62				TB1-K14	18	N		40				
A 190Y			P02-Z	20	N		62				TB1-K15	18	N						
A 191	1			150		125	72					125		100	55	43			
A 191B	7		TB1-G27	18	N		41				SHLD A 191	20	N						
A 191Y			P03-A	20	N		62				TB1-G28	18	N		41				
A 192	8						71								55				
A 192R			P03-Z	20	N		62				TB1-D18	18	N		42				
A 192Y			P03-A*	20	N		62				TB1-D19	18	N		42				
A 193	1			150		125	72					125		100	55	43			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 38

MIL 2088-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 193B	7		TB1-G27	18	N						SHLD A 193	20	N						
A 193Y			P03-B	20	N		62				TB1-F28	18	N		41				
A 194	8						71								55				
A 194R			P03-C*	20	N		62				TB1-D18	18	N						
A 194Y			P03-B*	20	N		62				TB1-D19	18	N						
A 195	10						71								55				
A 195G			P03-U	20	N		62				TB1-C28	18	N		41				
A 195N			P03-W	20	N		62				TB1-B28	18	N		42				
A 195R			P03-C	20	N		62				TB1-A28	18	N		41				
A 195Y			P03-V	20	N		62				TB1-D28	18	N		41				
A 196	2			150		125	72					125		100	54	44			
A 196B	7		TB1-C17	18	N						SHLD A 196	20	N						
A 196R			P03-D	20	N		62				TB1-C14	18	N		41				
A 196Y			P03-E	20	N		62				TB1-C15	18	N						
A 197	8						71								55				
A 197R			P03-D*	20	N		62				TB1-F18	18	N		42				
A 197Y			P03-E*	20	N		62				TB1-F19	18	N		42				
A 198	2			150		125	72					125		100	54	44			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 39

MIL 2088-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 198B	7		TB1-D17	18	N						SHLD A 198	20	N						
A 198R			P03-F	20	N		62				TB1-D15	18	N						
A 198Y			P03-G	20	N		62				TB1-D14	18	N		41				
A 199	8						71								55				
A 199R			P03-G*	20	N		62				TB1-F18	18	N						
A 199Y			P03-F*	20	N		62				TB1-F19	18	N						
A 200	2			150		125	72					125		100	54	44			
A 200B	7		TB1-K28	18	N		41				SHLD A 200	20	N						
A 200R			P03-J	20	N		62				TB1-K28	18	N						
A 200Y			P03-H	20	N		62				TB1-K29	18	N		40				
A 201	4		P03-H*	20	N		62		70		TB1-G7	18	N				53		
A 202	4		P03-J*	20	N		62		70		TB1-A56	18	N		42		53		
A 203	2			150		125	72					125		100	54	44			
A 203B	7		TB1-H28	18	N		41				SHLD A 203	20	N						
A 203R			P03-K	20	N		62				TB1-H28	18	N						
A 203Y			P03-L	20	N		62				TB1-H29	18	N		40				
A 204	2			150		125	72					125		100	54	44			
A 204B	7		TB1-G12	18	N		40				SHLD A 204	20	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 40

MIL 2088-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC. ▷1				CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC ▷1				ROUTING
NUMBER	ITEM NO.	▷2	CIRCUIT POINT	▷2	T I N	▷2	ITEM NO.			NO.	CIRCUIT POINT	▷2	T I N	▷2	ITEM NO.			NO.	
A 204R			P03-N	20	N		62				TB1-H13	18	N		40				
A 204Y			P03-M	20	N		62				TB1-K13	18	N		40				
A 205	2			150		125	72					125		100	54	44			
A 205B	7		TB1-F12	18	N		40				SHLD A 205	20	N						
A 205R			P03-R	20	N		62				TB1-F13	18	N		40				
A 205Y			P03-P	20	N		62				TB1-G13	18	N		40				
A 206	8						71								55				
A 206R			P03-Y	20	N		62				TB1-C18	18	N		42				
A 206Y			P03-X	20	N		62				TB1-C19	18	N		42				
A 207	8						71								55				
A 207R			P04-D2	13	N		39				P05- 30	13	N		39				
A 207Y			P04-D1	13	N		39				P05- 27	13	N		39				
A 208	8						71								55				
A 208R			P04-E1	13	N		39				TB1-D6	18	N		41				
A 208Y			P04-E2	13	N		39				TB1-F6	18	N		42				
A 209	8						71								55				
A 209R			P04-F1	13	N		39				P05- 59	13	N		39				
A 209Y			P04-F2	13	N		39				P05- 58	13	N		39				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015085

SCALE - NONE | REV LTR B | SHEET 41

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC. ▷1				CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC ▷1				ROUTING
NUMBER	ITEM NO.	▷2	CIRCUIT POINT	▷2	T I N	▷2	ITEM NO.			NO.	CIRCUIT POINT	▷2	T I N	▷2	ITEM NO.			NO.	
A 210	4		P05- 1	13	N		39		70		TB1-G11	18	N				53		
A 211	2			200		175	72					125		100	54	44			
A 211B	7		TB1-C47	18	N						SHLD A 211	20	N						
A 211R			P05- 3	13	N		39				TB1-C45	18	N						
A 211Y			P05- 2	13	N		39				TB1-C46	18	N						
A 212	9						71								55				
A 212G			P05- 16	13	N		39				TB1-G50	18	N		42				
A 212R			P05- 5	13	N		39				TB1-G51	18	N		40				
A 212Y			P05- 33	13	N		39				TB1-G52	18	N		40				
A 213	2			200		175	72					125		100	54				
A 213B	7		TB1-D47	18	N						SHLD A 213	20	N						
A 213R			P05- 7	13	N		39				TB1-D45	18	N						
A 213Y			P05- 6	13	N		39				TB1-D46	18	N						
A 214	9						71								55				
A 214G			P05- 19	13	N		39				TB1-G50	18	N						
A 214R			P05- 8	13	N		39				TB1-G49	18	N		40				
A 214Y			P05- 36	13	N		39				TB1-G48	18	N		40				
A 215	4		P05- 9	13	N		39		70		TB1-B67	18	N		42		53		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015085

SCALE - NONE | REV LTR B | SHEET 42

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC. ▷1				CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC ▷1				ROUTING
NUMBER	ITEM NO.	▷2	CIRCUIT POINT	▷2	T I N	▷2	ITEM NO.			NO.	CIRCUIT POINT	▷2	T I N	▷2	ITEM NO.			NO.	
A 216	2			200		175	72					125		100	54	44			
A 216B	7		TB1-A67	18	N		41				SHLD A 216	20	N						
A 216R			P05- 11	13	N		39				TB1-A66	18	N		41				
A 216Y			P05- 10	13	N		39				TB1-A65	18	N		41				
A 217	9						71								55				
A 217G			P05- 14	13	N		39				TB1-F6	18	N						
A 217R			P05- 12	13	N		39				TB1-D6	18	N						
A 217Y			P05- 13	13	N		39				TB1-F6	18	N						
A 218	2			200		175	72					125		100	54	44			
A 218B	7		TB1-B67	18	N						SHLD A 218	20	N						
A 218R			P05- 17	13	N		39				TB1-B66	18	N		41				
A 218Y			P05- 18	13	N		39				TB1-B65	18	N		41				
A 219	2			200		175	72					125		100	54	44			
A 219B	7		TB1-H36	18	N		40				SHLD A 219	20	N						
A 219R			P05- 23	13	N		39				TB1-H37	18	N		40				
A 219Y			P05- 24	13	N		39				TB1-H38	18	N		40				
A 220	8						71								55				
A 220R			P05- 32	13	N		39				TB1-D7	18	N		42				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015085

SCALE - NONE | REV LTR B | SHEET 43

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC. ▷1				CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC ▷1				ROUTING
NUMBER	ITEM NO.	▷2	CIRCUIT POINT	▷2	T I N	▷2	ITEM NO.			NO.	CIRCUIT POINT	▷2	T I N	▷2	ITEM NO.			NO.	
A 220Y			P05- 55	13	N		39				TB1-F7	18	N		42				
A 221	2			200		175	72					125		100	54	44			
A 221B	7		TB1-D36	18	N		40				SHLD A 221	20	N						
A 221R			P05- 34	13	N		39				TB1-D37	18	N		40				
A 221Y			P05- 35	13	N		39				TB1-D38	18	N		40				
A 222	4		P05- 37	13	N		39		70		TB1-C67	18	N		42		53		
A 223	2			200		175	72					125		100	54	44			
A 223B	7		TB1-D42	18	N						SHLD A 223	20	N						
A 223R			P05- 38	13	N		39				TB1-D43	18	N						
A 223Y			P05- 39	13	N		39				TB1-D44	18	N						
A 224	2			200		175	72					125		100	54	44			
A 224B	7		TB1-C42	18	N						SHLD A 224	20	N						
A 224R			P05- 41	13	N		39				TB1-C44	18	N						
A 224Y			P05- 40	13	N		39				TB1-C43	18	N						
A 225	8						71								55				
A 225R			P05- 43	13	N		39				TB1-A3	18	N						
A 225Y			P05- 44	13	N		39				TB1-B3	18	N						
A 226	2			200		175	72					125		100	54	44			

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A 1015085

SCALE - NONE | REV LTR B | SHEET 44

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								ROUTING
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 226B	7		TB1-G47	18	N		41				SHLD A 226	20	N						
A 226R			P05- 52	13	N		39				TB1-G46	18	N		41				
A 226Y			P05- 51	13	N		39				TB1-G45	18	N		41				
A 227	2			200		175	72					125		100	54	44			
A 227B	7		TB1-F47	18	N		41				SHLD A 227	20	N						
A 227R			P05- 53	13	N		39				TB1-F46	18	N		41				
A 227Y			P05- 54	13	N		39				TB1-F45	18	N		41				
A 228	2			200		175	72					125		100	54	44			
A 228B	7		TB1-D67	18	N		41				SHLD A 228	20	N						
A 228R			P05- 64	13	N		39				TB1-D66	18	N		41				
A 228Y			P05- 65	13	N		39				TB1-D65	18	N		41				
A 229	4		P05- 68	13	N		39		70		TB1-B71	18	N		42		53		
A 230	4		P05- 69	13	N		39		70		TB1-D78	18	N		41		53		
A 231	8						71								55				
A 231R			P05- 71	13	N		39				TB1-D7	18	N						
A 231Y			P05- 70	13	N		39				TB1-F7	18	N						
A 232	2			200		175	72					125		100	54	44			
A 232B	7		TB1-C67	18	N						SHLD A 232	20	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 45

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								ROUTING
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 232R			P05- 72	13	N		39				TB1-C66	18	N		41				
A 232Y			P05- 73	13	N		39				TB1-C65	18	N		41				
A 233	8						71								55				
A 233R			P05- 76	13	N		39				TB1-D8	18	N						
A 233Y			P05- 77	13	N		39				TB1-F8	18	N						
A 234	2			200		175	72					125		100	54				
A 234B	7		TB1-B47	18	N						SHLD A 234	20	N						
A 234R			P05- 79	13	N		39				TB1-B45	18	N						
A 234Y			P05- 78	13	N		39				TB1-B46	18	N						
A 235	2			200		175	72					125		100	54				
A 235B	7		TB1-K67	18	N		42				SHLD A 235	20	N						
A 235R			P05- 80	13	N		39				TB1-K66	18	N		40				
A 235Y			P05- 81	13	N		39				TB1-K65	18	N		40				
A 236	2			200		175	72					125		100	54				
A 236B	7		TB1-A47	18	N						SHLD A 236	20	N						
A 236R			P05- 83	13	N		39				TB1-A46	18	N						
A 236Y			P05- 82	13	N		39				TB1-A45	18	N						
A 237	8						71								55				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 46

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								ROUTING
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 237R			P05- 84	13	N		39				TB1-D7	18	N						
A 237Y			P05- 85	13	N		39				TB1-F7	18	N						
A 238	2			200		175	72					125		100	54	44			
A 238B	7		TB1-A42	18	N						SHLD A 238	20	N						
A 238R			P05- 87	13	N		39				TB1-A43	18	N						
A 238Y			P05- 86	13	N		39				TB1-A44	18	N						
A 239	2			200		175	72					125		100	54	44			
A 239B	7		TB1-H67	18	N		41				SHLD A 239	20	N						
A 239R			P05- 88	13	N		39				TB1-H66	18	N		40				
A 239Y			P05- 89	13	N		39				TB1-H65	18	N		40				
A 240	2			200		175	72					125		100	54	44			
A 240B	7		TB1-B42	18	N						SHLD A 240	20	N						
A 240R			P05- 91	13	N		39				TB1-B43	18	N						
A 240Y			P05- 90	13	N		39				TB1-B44	18	N						
A 241	9						71								55				
A 241G			P06-A	20	N		62				TB1-C74	18	N		41				
A 241R			P06-C	20	N		62				TB1-C72	18	N		41				
A 241Y			P06-B	20	N		62				TB1-C73	18	N		41				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 47

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								ROUTING
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 242	8						71								55				
A 242R			P06-Z	20	N		62				TB1-K63	18	N		40				
A 242Y			P06-A*	20	N		62				TB1-K64	18	N		40				
A 243	8						71								55				
A 243R			P06-B*	20	N		62				TB1-K74	18	N		40				
A 243Y			P06-C*	20	N		62				TB1-K73	18	N		40				
A 244	4		P06-D	20	N		62		70		TB1-G71	18	N		41		53		
A 245	8						71								55				
A 245R			P06-D*	20	N		62				TB1-D68	18	N		41				
A 245Y			P06-E*	20	N		62				TB1-D69	18	N		41				
A 246	4		P06-E	20	N		62		70		TB1-H26	18	N		41		53		
A 247	4		P06-F	20	N		62		70		TB1-C54	18	N		41		53		
A 248	8						71								55				
A 248R			P06-F*	20	N		62				TB1-C77	18	N		40				
A 248Y			P06-G*	20	N		62				TB1-C76	18	N		41				
A 249	4		P06-G	20	N		62		70		TB1-G70	18	N		42		53		
A 250	8						71								55				
A 250R			P06-H	20	N		62				TB1-C18	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 48

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 250Y			P06-J	20	N		62				TB1-C19	18	N						
A 251	4		P06-K	20	N		62		70		TB1-H61	18	N		40		53		
A 252	8						71								55				
A 252R			P06-M	20	N		62				TB1-H63	18	N		40				
A 252Y			P06-L	20	N		62				TB1-H64	18	N		40				
A 253	8						71								55				
A 253R			P06-N	20	N		62				TB1-H62	18	N		41				
A 253Y			P06-P	20	N		62				TB1-G61	18	N		40				
A 254	2			150		125	72					125		100					
A 254B	7		TB1-C59	18	N		41				SHLD A 254	20	N						
A 254R			P06-X	20	N		62				TB1-C60	18	N		40				
A 254Y			P06-R	20	N		62				TB1-C61	18	N		40				
A 255	2			150		125	72					125		100					
A 255B	7		TB1-C59	18	N						SHLD A 255	20	N						
A 255R			P06-V	20	N		62				TB1-D60	18	N		40				
A 255Y			P06-W	20	N		62				TB1-D61	18	N		40				
A 256	4		P06-Y	20	N		62		70		TB1-D62	18	N		41		53		
A 257	6			175		150	72					125		100	55	44			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A | 1015085

SCALE - NONE | REV LTR B | SHEET 49

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 257B	7		TB1-C24	18	N		40				SHLD A 257	20	N						
A 257L			P07-A	40	N		62				TB1-C23	18	N		40				
A 257R			P07-C	40	N		62				TB1-C21	18	N		40				
A 257W			P07-B	40	N		62				TB1-C22	18	N		40				
A 258	8						71								55				
A 258R			P07-Z	20	N		62				TB1-D11	18	N		40				
A 258Y			P07-A*	20	N		62				TB1-D10	18	N		40				
A 259	8						71								55				
A 259R			P07-B*	20	N		62				TB1-C11	18	N		40				
A 259Y			P07-C*	20	N		62				TB1-C10	18	N		40				
A 260	6			175		150	72					125		100	55	44			
A 260B	7		TB1-F24	18	N		40				SHLD A 260	20	N						
A 260L			P07-D	40	N		62				TB1-F23	18	N		40				
A 260R			P07-F	40	N		62				TB1-F21	18	N		40				
A 260W			P07-E	40	N		62				TB1-F22	18	N		40				
A 261	10						71								55				
A 261G			P07-F*	20	N		62				TB1-A10	18	N		40				
A 261N			P07-G*	20	N		62				TB1-A11	18	N		40				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A | 1015085

SCALE - NONE | REV LTR B | SHEET 50

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 261R			P07-H*	20	N		62				TB1-B11	18	N		40				
A 261Y			P07-J*	20	N		62				TB1-B10	18	N		40				
A 262	6			175		150	72					125		100	55				
A 262B	7		TB1-D24	18	N		41				SHLD A 262	20	N						
A 262L			P07-G	40	N		62				TB1-D23	18	N		40				
A 262R			P07-J	40	N		62				TB1-D21	18	N		40				
A 262W			P07-H	40	N		62				TB1-D22	18	N		40				
A 263	6			175		150	72					125		100	55				
A 263B	7		TB1-G24	18	N		40				SHLD A 263	20	N						
A 263L			P07-K	40	N		62				TB1-G23	18	N		40				
A 263R			P07-M	40	N		62				TB1-G21	18	N		40				
A 263W			P07-L	40	N		62				TB1-G22	18	N		40				
A 264	6			175		150	72					125		100	55				
A 264B	7		TB1-H24	18	N		40				SHLD A 264	20	N						
A 264L			P07-N	40	N		62				TB1-H23	18	N		40				
A 264R			P07-R	40	N		62				TB1-H21	18	N		40				
A 264W			P07-P	40	N		62				TB1-H22	18	N		40				
A 265	6			175		150	72					125		100	55				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A | 1015085

SCALE - NONE | REV LTR B | SHEET 51

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	
A 265B	7		TB1-K24	18	N		40				SHLD A 265	20	N						
A 265L			P07-U	40	N		62				TB1-K23	18	N		40				
A 265R			P07-W	40	N		62				TB1-K21	18	N		40				
A 265W			P07-V	40	N		62				TB1-K22	18	N		40				
A 266	8						71								55				
A 266R			P07-X	20	N		62				TB1-F11	18	N		40				
A 266Y			P07-Y	20	N		62				TB1-F10	18	N		40				
A 267	9						71								55				
A 267G			P08- 1	13	N		39				TB1-K50	18	N						
A 267R			P08- 2	13	N		39				TB1-K51	18	N		40				
A 267Y			P08- 3	13	N		39				TB1-K52	18	N		40				
A 268	9						71								55				
A 268G			P08- 7	13	N		39				TB1-H50	18	N						
A 268R			P08- 5	13	N		39				TB1-H51	18	N		40				
A 268Y			P08- 6	13	N		39				TB1-H52	18	N		40				
A 269	2			200		175	72					125		100	54	44			
A 269B	7		TB1-F42	18	N		40				SHLD A 269	20	N						
A 269R			P08- 9	13	N		39				TB1-F44	18	N		40				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A | 1015085

SCALE - NONE | REV LTR B | SHEET 52

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC. 1				CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC 1				
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	2	ITEM NO.			NO.	CIRCUIT POINT	2	T I N	2	ITEM NO.			NO.	ROUTING
A 269Y			P08- 10	13	N		39				TB1-F43	18	N		40				
A 270	2			200		175	72					125		100	54	44			
A 270B	7		TB1-G42	18	N		40				SHLD A 270	20	N						
A 270R			P08- 12	13	N		39				TB1-G43	18	N		40				
A 270Y			P08- 13	13	N		39				TB1-G44	18	N		40				
A 271	2			200		175	72					125		100	54	44			
A 271B	7		TB1-F39	18	N		40				SHLD A 271	20	N						
A 271R			P08- 19	13	N		39				TB1-F41	18	N		40				
A 271Y			P08- 18	13	N		39				TB1-F40	18	N		40				
A 272	8						71								55				
A 272R			P08- 21	13	N		39				TB1-A74	18	N		42				
A 272Y			P08- 22	13	N		39				TB1-B74	18	N		42				
A 273	8						71								55				
A 273R			P08- 24	13	N		39				TB1-A74	18	N						
A 273Y			P08- 25	13	N		39				TB1-B74	18	N						
A 274	8						71								55				
A 274R			P08- 27	13	N		39				TB1-A73	18	N		41				
A 274Y			P08- 28	13	N		39				TB1-B73	18	N		41				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 53

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC. 1				CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC 1				
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	2	ITEM NO.			NO.	CIRCUIT POINT	2	T I N	2	ITEM NO.			NO.	ROUTING
A 275	8						71								55				
A 275R			P08- 30	13	N		39				TB1-A73	18	N						
A 275Y			P08- 31	13	N		39				TB1-B73	18	N						
A 276	2			200		175	72	44				125		100	54	44			
A 276A	7		SHLD A 276	20	N						P08- 35	13	N		39				
A 276B	7		TB1-F36	18	N		40				SHLD A 276	20	N						
A 276R			P08- 33	13	N		39				TB1-F37	18	N		40				
A 276Y			P08- 34	13	N		39				TB1-F38	18	N		40				
A 278	2			200		175	72	44				125		100	54	44			
A 278A	7		SHLD A 278	20	N						P08- 37	13	N		39				
A 278B	7		TB1-K36	18	N		40				SHLD A 278	20	N						
A 278R			P08- 38	13	N		39				TB1-K37	18	N		40				
A 278Y			P08- 39	13	N		39				TB1-K38	18	N		40				
A 279	2			200		175	72					125		100	54	44			
A 279B	7		TB1-G47	18	N						SHLD A 279	20	N						
A 279R			P08- 41	13	N		39				TB1-G46	18	N						
A 279Y			P08- 42	13	N		39				TB1-G45	18	N						
A 280	2			200		175	72					125		100	54	44			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 54

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC. 1				CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC 1				
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	2	ITEM NO.			NO.	CIRCUIT POINT	2	T I N	2	ITEM NO.			NO.	ROUTING
A 280B	7		TB1-F47	18	N						SHLD A 280	20	N						
A 280R			P08- 44	13	N		39				TB1-F46	18	N						
A 280Y			P08- 45	13	N		39				TB1-F45	18	N						
A 281	2			200		175	72					125		100	54	44			
A 281B	7		TB1-K39	18	N		40				SHLD A 281	20	N						
A 281R			P08- 50	13	N		39				TB1-K41	18	N		40				
A 281Y			P08- 51	13	N		39				TB1-K40	18	N		40				
A 282	8						71								55				
A 282R			P08- 53	13	N		39				TB1-A4	18	N						
A 282Y			P08- 54	13	N		39				TB1-B4	18	N		42				
A 283	8						71								55				
A 283R			P08- 56	13	N		39				TB1-A4	18	N						
A 283Y			P08- 57	13	N		39				TB1-B4	18	N						
A 284	4		P08- 59	13	N		39		70		TB1-G70	18	N				53		
A 285	4		J09- 1	10	N				70		TB1-F77	18	N		40		53		
A 286	3			100		75	72					125		100	54	44			
A 286B	7		TB1-A59	18	N		41				SHLD A 286	20	N						
A 286G			J09- 70	10	N		38				TB1-B59	18	N		41				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 55

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC. 1				CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC 1				
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	2	ITEM NO.			NO.	CIRCUIT POINT	2	T I N	2	ITEM NO.			NO.	ROUTING
A 286R			J09- 2	10	N		38				TB1-A61	18	N		41				
A 286Y			J09- 72	10	N		38				TB1-B60	18	N		41				
A 287	9						71								55				
A 287G			J09- 16	10	N		38				J22- 90	13	N		39				
A 287R			J09- 17	10	N		38				J22- 60	13	N		39				
A 287Y			J09- 3	10	N		38				J22- 89	13	N		39				
A 288	9						71								55				
A 288G			J09- 18	10	N		38				J22- 36	13	N		39				
A 288R			J09- 5	10	N		38				J22- 35	13	N		39				
A 288Y			J09- 4	10	N		38				J22- 18	13	N		39				
A 289	9						71								55				
A 289G			J09- 7	10	N						J22- 88	13	N		39				
A 289R			J09- 6	10	N		38				J22- 87	13	N		39				
A 289Y			J09- 20	10	N		38				J22- 58	13	N		39				
A 290	2			100		75	72					125		100	54	44			
A 290B	7		TB1-K67	18	N						SHLD A 290	20	N						
A 290R			J09- 8	10	N		38				TB1-K68	18	N		40				
A 290Y			J09- 22	10	N		38				TB1-K69	18	N		40				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 56

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR		FROM								TO								
NUMBER	INDIVIDUAL LENGTH ITEM NO. ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.			NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.			NO.	ROUTING
A 291	2		100		75	72					125		100	54	44			
A 291B	7	TB1-H67	18	N						SHLD A 291	20	N						
A 291R		J09- 10	10	N		38				TB1-H68	18	N		40				
A 291Y		J09- 24	10	N		38				TB1-H69	18	N		40				
A 292	5	J09- 99	10	N		38		70		TB1-B23	18	N				53		
A 295	4	J09- 14	10	N		38		70		J22- 64	13	N		39		53		
A 296	4	J09- 15	10	N		38		70		TB1-D70	18	N		41		53		
A 297	4	J09- 26	10	N		38		70		TB1-C62	18	N		41		53		
A 298	1		125		100	72	43				100		75	55				
A 298A	7	SHLD A 298	18	N						E24	20	N		43				
A 298Y		J09- 30	10	N		38				P10- 32	10	N		38				
A 299	4	J09- 31	10	N		38		70		P10- 16	10	N		38		53		
A 300	8					71								55				
A 300R		J09- 32	10	N		38				TB1-A54	18	N						
A 300Y		J09- 44	10	N		38				TB1-A55	18	N						
A 301	1		125		100	72	43				100		75	55				
A 301A	7	SHLD A 301	20	N						E 24	20	N		43				
A 301Y		J09- 33	10	N		38				P10- 33	10	N		38				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE NONE	REV LTR B	SHEET 57	

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR		FROM								TO								
NUMBER	INDIVIDUAL LENGTH ITEM NO. ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.			NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.			NO.	ROUTING
A 302	2		100		75	72					125		100	54	44			
A 302B	7	TB1-F67	18	N		41				SHLD A 302	20	N						
A 302R		J09- 34	10	N		38				TB1-F68	18	N		40				
A 302Y		J09- 35	10	N		38				TB1-F69	18	N		40				
A 303	9					71								55				
A 303G		J09- 50	10	N		38				J22- 2	13	N		39				
A 303R		J09- 41	10	N		38				J22- 7	13	N		39				
A 303Y		J09- 40	10	N		38				J22- 8	13	N		39				
A 304	1		100		75	72	43				200		175	55	43			
A 304B	7	E 23	20	N		44				SHLD A 304	20	N						
A 304Y		J09- 42	10	N		38				J24- 31	13	N		39				
A 305	2		100		75	72					125		100	54	44			
A 305B	7	TB1-G67	18	N		41				SHLD A 305	20	N						
A 305R		J09- 43	10	N		38				TB1-G68	18	N		40				
A 305Y		J09- 60	10	N		38				TB1-G69	18	N		40				
A 306	9					71								55				
A 306G		J09- 45	10	N		38				TB1-A71	18	N		40				
A 306R		J09- 80	10	N		38				TB1-A72	18	N		41				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE - NONE	REV LTR B	SHEET 58	

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR		FROM								TO								
NUMBER	INDIVIDUAL LENGTH ITEM NO. ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.			NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.			NO.	ROUTING
A 306Y		J09- 69	10	N		38				TB1-B72	18	N		41				
A 307	11					71								55				
A 307R		J09- 55	10	N		38				TB1-B76	18	N						
A 307Y		J09- 46	10	N		38				TB1-B77	18	N						
A 308	2		125		100	72	44				125		100	54	44			
A 308A	7	SHLD A 308	20	N						E 23	20	N						
A 308B	7	TB1-A70	18	N		42				SHLD A 308	20	N						
A 308R		J09- 48	10	N		38				TB1-A69	18	N		42				
A 308Y		J09- 47	10	N		38				TB1-A68	18	N		42				
A 309	1		125		100	72	43				200		175	55	43			
A 309A	7	SHLD A 309	20	N						E 23	20	N						
A 309B	7	E 24	20	N						SHLD A 309	20	N						
A 309Y		J09- 49	10	N		38				J24- 54	13	N		39				
A 310	4	J09- 51	10	N		38		70		TB1-K72	18	N				53		
A 311	12					71								55				
A 311G		J09- 61	10	N		38				P10-105	10	N		38				
A 311R		J09- 53	10	N		38				P10-106	10	N		38				
A 311Y		J09- 52	10	N		38				P10- 92	10	N		38				

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE - NONE	REV LTR B	SHEET 59	

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR		FROM								TO								
NUMBER	INDIVIDUAL LENGTH ITEM NO. ▷2	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.			NO.	CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.			NO.	ROUTING
A 312	11					71								55				
A 312R		J09- 54	10	N		38				TB1-A3	18	N						
A 312Y		J09- 84	10	N		38				TB1-C3	18	N						
A 313	3					72								54	44			
A 313B	7	TB1-A58	18	N		41				SHLD A 313	20	N						
A 313G		J09- 82	10	N		38				TB1-A57	18	N		40				
A 313R		J09- 59	10	N		38				TB1-B58	18	N		40				
A 313Y		J09- 58	10	N		38				TB1-B57	18	N		40				
A 314	9					71								55				
A 314G		J09- 95	10	N		38				P10- 48	10	N		38				
A 314R		J09- 65	10	N		38				P10- 39	10	N		38				
A 314Y		J09- 77	10	N		38				P10- 38	10	N		38				
A 315	9					71								55				
A 315G		J09- 66	10	N		38				TB1-A76	18	N						
A 315R		J09- 68	10	N		38				TB1-A77	18	N						
A 315Y		J09- 81	10	N		38				TB1-A78	18	N						
A 316	4	J09- 67	10	N		38		70		TB1-A53	18	N				53		
A 317	4	J09- 71	10	N		38		70		TB1-H71	18	N		42		53		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE - NONE	REV LTR B	SHEET 60	

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 318	4		J09- 73	10	N		38	70		TB1-D72	18	N		42		53		
A 319	9						71							55				
A 319G			J09-105	10	N		38			TB1-F61	18	N		40				
A 319R			J09- 74	10	N		38			TB1-F60	18	N		40				
A 319Y			J09- 92	10	N		38			TB1-F62	18	N		40				
A 320	4		J09- 75	10	N		38	70		TB1-F59	18	N		40		53		
A 321	9						71							55				
A 321G			J09- 94	10	N		38			TB1-F63	18	N		40				
A 321R			J09- 90	10	N		38			TB1-D62	18	N						
A 321Y			J09- 76	10	N		38			TB1-D63	18	N		40				
A 322	4		J09- 78	10	N		38	70		TB1-B52	18	N				53		
A 323	4		J09- 79	10	N		38	70		TB1-A52	18	N				53		
A 324	10						71							55				
A 324G			J09- 85	10	N		38			TB1-K62	18	N		40				
A 324N			J09- 89	10	N		38			TB1-K61	18	N		40				
A 324R			J09- 86	10	N		38			TB1-K60	18	N		40				
A 324Y			J09-102	10	N		38			TB1-K59	18	N		40				
A 325	10						71							55				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 61

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 325G			J09- 87	10	N		38			TB1-H60	18	N		40				
A 325N			J09- 88	10	N		38			TB1-G60	18	N		40				
A 325R			J09-100	10	N		38			TB1-G59	18	N		40				
A 325Y			J09-101	10	N		38			TB1-H59	18	N		40				
A 326	4		J09- 91	10	N		38	70		TB1-H70	18	N		42		53		
A 327	4		J09- 93	10	N		38	70		TB1-A51	18	N				53		
A 328	4		J09- 96	10	N		38	70		TB1-B71	18	N				53		
A 329	10						71							55				
A 329G			J09-103	10	N		38			TB1-G64	18	N		40				
A 329N			J09- 98	10	N		38			TB1-G62	18	N		40				
A 329R			J09-104	10	N		38			TB1-G63	18	N		40				
A 329Y			J09- 97	10	N		38			TB1-H62	18	N						
A 330	4		J09-106	10	N		38	70		TB1-B51	18	N				53		
A 331	4		J09-108	10	N		38	70		TB1-C71	18	N		40		53		
A 332	2			100		75	72				125		100	54	44			
A 332B	7		TB1-A17	18	N					SHLD A 332	20	N						
A 332R			P09- 23	10	N		38			TB1-A15	18	N						
A 332Y			P09- 1	10	N		38			TB1-A16	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 62

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 333	2			100		75	72				125		100	54	44			
A 333B	7		TB1-A12	18	N					SHLD A 333	20	N						
A 333R			P09- 3	10	N		38			TB1-A14	18	N						
A 333Y			P09- 2	10	N		38			TB1-A13	18	N						
A 334	2			100		75	72				125		100	54	44			
A 334B	7		TB1-D17	18	N					SHLD A 334	20	N						
A 334R			P09- 26	10	N		38			TB1-D14	18	N						
A 334Y			P09- 4	10	N		38			TB1-D15	18	N						
A 335	4		P09- 5	10	N		38	70		TB1-D77	18	N		40		53		
A 336	4		P09- 6	10	N		38	70		TB1-H71	18	N				53		
A 337	9						71							55				
A 337G			P09- 28	10	N		38			TB1-C63	18	N		40				
A 337R			P09- 7	10	N		38			TB1-A63	18	N		40				
A 337Y			P09- 29	10	N		38			TB1-B63	18	N		40				
A 338	2			100		75	72				125		100	54	44			
A 338B	7		TB1-F32	18	N					SHLD A 338	20	N						
A 338R			P09- 9	10	N		38			TB1-G31	18	N						
A 338Y			P09- 31	10	N		38			TB1-G30	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 63

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	T I N	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 339	4		P09- 10	10	N		38	70		TB1-H70	18	N				53		
A 340	8						71							55				
A 340R			P09- 11	10	N		38			TB1-A7	18	N						
A 340Y			P09- 12	10	N		38			TB1-B7	18	N						
A 341	8						71							55				
A 341R			P09- 13	10	N		38			TB1-C75	18	N		40				
A 341Y			P09- 14	10	N		38			TB1-C76	18	N						
A 342	4		P09- 19	10	N		38	70		TB1-G57	18	N		40		53		
A 343	4		P09- 20	10	N		38	70		TB1-H58	18	N		40		53		
A 344	4		P09- 21	10	N		38	70		TB1-H55	18	N		40		53		
A 345	4		P09- 22	10	N		38	70		TB1-H57	18	N		40		53		
A 346	2			100		75	72				125		100	54	44			
A 346B	7		TB1-B17	18	N					SHLD A 346	20	N						
A 346R			P09- 42	10	N		38			TB1-B15	18	N						
A 346Y			P09- 24	10	N		38			TB1-B16	18	N						
A 347	2			100		75	72				125		100	54	44			
A 347B	7		TB1-B12	18	N					SHLD A 347	20	N						
A 347R			P09- 25	10	N		38			TB1-B13	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 64

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 347Y			P09- 44	10	N		38				TB1-B14	18	N						
A 348	2			100		75	72					125		100	54	44			
A 348B	7		TB1-C17	18	N						SHLD A 348	20	N						
A 348R			P09- 45	10	N		38				TB1-C14	18	N						
A 348Y			P09- 27	10	N		38				TB1-C15	18	N						
A 349	9						71								55				
A 349G			P09- 32	10	N		38				TB1-C74	18	N						
A 349R			P09- 33	10	N		38				TB1-C72	18	N						
A 349Y			P09- 50	10	N		38				TB1-C73	18	N						
A 350	4		P09- 37	10	N		38		70		TB1-K57	18	N		40		53		
A 351	4		P09- 38	10	N		38		70		TB1-H54	18	N		40		53		
A 352	4		P09- 39	10	N		38		70		TB1-G58	18	N		40		53		
A 353	4		P09- 40	10	N		38		70		TB1-F58	18	N		40		53		
A 354	2			100		75	72					125		100	54	44			
A 354B	7		TB1-K32	18	N						SHLD A 354	20	N						
A 354R			P09- 59	10	N		38				TB1-K33	18	N						
A 354Y			P09- 41	10	N		38				TB1-K34	18	N						
A 355	2			100		75	72					125		100	54	44			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 65

MIL 2088-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 355B	7		TB1-H32	20	N						SHLD A 355	20	N						
A 355R			P09- 60	10	N		38				TB1-H33	18	N						
A 355Y			P09- 43	10	N		38				TB1-H34	18	N						
A 356	4		P09- 46	10	N		38		70		TB1-G73	18	N		40		53		
A 357	5		P09- 47	10	N		38		70		TB1-H72	18	N		40		53		
A 358	5		P09- 48	10	N		38		70		TB1-B62	18	N		41		53		
A 359	5		P09- 49	10	N		38		70		TB1-G71	18	N				53		
A 360	4		P09- 54	10	N		38		70		TB1-G55	18	N		41		53		
A 361	4		P09- 55	10	N		38		70		TB1-G54	18	N		41		53		
A 362	4		P09- 56	10	N		38		70		TB1-F57	18	N		41		53		
A 363	4		P09- 57	10	N		38		70		TB1-K55	18	N		40		53		
A 364	4		P09- 58	10	N		38		70		TB1-K54	18	N		40		53		
A 365	2			100		75	72					125		100	54	44			
A 365B	7		TB1-G32	18	N						SHLD A 365	20	N						
A 365R			P09- 77	10	N		38				TB1-G33	18	N						
A 365Y			P09- 61	10	N		38				TB1-G34	18	N						
A 366	4		P09- 62	10	N		38		70		TB1-G74	18	N		40		53		
A 367	4		P09- 63	10	N		38		70		TB1-H73	18	N		40		53		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 66

MIL 2088-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 368	4		P09- 64	10	N		38		70		TB1-H74	18	N		40		53		
A 369	8						71								55				
A 369R			P09- 65	10	N		38				TB1-F70	18	N		40				
A 369Y			P09- 81	10	N		38				TB1-F71	18	N		40				
A 370	4		P09- 66	10	N		38		70		TB1-C54	18	N				53		
A 371	4		P09- 67	10	N		38		70		TB1-D26	18	N				53		
A 372	5		P09- 68	10	N		38		70		TB1-B62	18	N				53		
A 373	4		P09- 69	10	N		38		70		TB1-A26	18	N				53		
A 374	8						71								55				
A 374R			P09- 70	10	N		38				TB1-K8	18	N						
A 374Y			P09- 88	10	N		38				TB1-H8	18	N						
A 375	4		P09- 71	10	N		38		70		TB1-G56	18	N		41		53		
A 376	4		P09- 72	10	N		38		70		TB1-K58	18	N		40		53		
A 377	4		P09- 73	10	N		38		70		TB1-H56	18	N		40		53		
A 378	4		P09- 74	10	N		38		70		TB1-K56	18	N		40		53		
A 379	1			100		75	72					125		100	55	43			
A 379B	7		TB1-F27	18	N		41				SHLD A 379	20	N						
A 379Y			P09- 75	10	N		38				TB1-F28	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 67

MIL 2088-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT 2	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 380	1			100		75	72					125		100	55	43			
A 380B	7		TB1-F27	18	N						SHLD A 380	20	N						
A 380Y			P09- 76	10	N		38				TB1-G28	18	N						
A 381	8						71								55				
A 381R			P09- 79	10	N		38				TB1-D68	18	N						
A 381Y			P09- 78	10	N		38				TB1-D69	18	N						
A 382	4		P09- 80	10	N		38		70		TB1-D52	18	N		40		53		
A 383	11						71								55				
A 383R			P09- 82	10	N		38				TB1-G72	18	N		40				
A 383Y			P09- 83	10	N		38				TB1-F72	18	N		42				
A 384	4		P09- 84	10	N		38		70		TB1-C26	18	N				53		
A 385	4		P09- 85	10	N		38		70		TB1-A56	18	N				53		
A 386	4		P09- 86	10	N		38		70		TB1-B26	18	N				53		
A 387	8						71								55				
A 387R			P09-105	10	N		38				TB1-H1	18	N						
A 387Y			P09- 87	10	N		38				TB1-H2	18	N						
A 388	10						71								55				
A 388G			P09- 89	10	N		38				TB1-C58	18	N		40				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 68

MIL 2088-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.			NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 388N			P09- 90	10	N		38				TB1-C57	18	N		40				
A 388R			P09-130	10	N		38				TB1-D57	18	N		40				
A 388Y			P09-108	10	N		38				TB1-D58	18	N		40				
A 389	8						71								55				
A 389R			P09- 92	10	N		38				TB1-F18	18	N						
A 389Y			P09- 91	10	N		38				TB1-F19	18	N						
A 390	10						71								55				
A 390G			P09- 94	10	N		38				TB1-C28	18	N						
A 390N			P09- 93	10	N		38				TB1-D28	18	N						
A 390R			P09-112	10	N		38				TB1-B28	18	N						
A 390Y			P09-111	10	N		38				TB1-A28	18	N						
A 391	10						71								55				
A 391G			P09- 95	10	N		38				TB1-B40	18	N		40				
A 391N			P09-114	10	N		38				TB1-B41	18	N		40				
A 391R			P09- 96	10	N		38				TB1-A40	18	N		40				
A 391Y			P09-113	10	N		38				TB1-A41	18	N						
A 392	4		P09- 97	10	N		38		70		TB1-F52	18	N		40		53		
A 393	4		P09- 98	10	N		38		70		TB1-D51	18	N		40		53		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A 1015085

SCALE - NONE | REV LTR B | SHEET 69

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.			NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 394	8						71								55				
A 394R			P09-103	10	N		38				TB1-A74	18	N						
A 394Y			P09-102	10	N		38				TB1-B74	18	N						
A 395	8						71								55				
A 395R			P09-126	10	N		38				TB1-K1	18	N						
A 395Y			P09-104	10	N		38				TB1-K2	18	N						
A 396	4		P09-106	10	N		38		70		TB1-F64	18	N		40		53		
A 397	4		P09-107	10	N		38		70		TB1-A64	18	N		40		53		
A 398	8						71								55				
A 398R			P09-131	10	N		38				TB1-C18	18	N						
A 398Y			P09-109	10	N		38				TB1-C19	18	N						
A 399	8						71								55				
A 399R			P09-132	10	N		38				TB1-D18	18	N						
A 399Y			P09-110	10	N		38				TB1-D19	18	N						
A 400	4		P09-115	10	N		38		70		J23- 58	13	N		39		53		
A 401	4		P09-116	10	N		38		70		TB1-F51	18	N		40		53		
A 402	8						71								55				
A 402R			P09-125	10	N		38				TB1-A72	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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HOUSTON, TEXAS

SIZE A 1015085

SCALE - NONE | REV LTR B | SHEET 70

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.			NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 402Y			P09-124	10	N		38				TB1-B72	18	N						
A 403	4		P09-127	10	N		38		70		TB1-D64	18	N		40		53		
A 404	4		P09-128	10	N		38		70		TB1-C64	18	N		40		53		
A 405	4		P09-129	10	N		38		70		TB1-B64	18	N		40		53		
A 406	4		P10- 1	10	N		38		70		TB1-H70	18	N				53		
A 407	4		P10- 8	10	N		38		70		J22- 62	13	N		39		53		
A 408	4		P10- 9	10	N		38		70		TB1-D70	18	N				53		
A 409	4		P10- 10	10	N		38		70		TB1-D72	18	N				53		
A 410	4		P10- 12	10	N		38		70		TB1-A56	18	N				53		
A 411	4		P10- 13	10	N		38		70		TB1-C62	18	N				53		
A 412	4		P10- 14	10	N		38		70		TB1-H71	18	N				53		
A 413	1			100		75	72					125		100	55	43			
A 413B	7		TB1-A58	18	N						SHLD A 413	20	N						
A 413Y			P10- 15	10	N		38				TB1-B61	18	N		40				
A 414	1			100		75	72					200		175	55	43			
A 414B	7		E 23	20	N						SHLD A 414	20	N						
A 414Y			P10- 19	10	N		38				J24- 32	13	N		39				
A 415	4		P10- 24	10	N		38		70		TB1-A23	18	N				53		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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HOUSTON, TEXAS

SIZE A 1015085

SCALE - NONE | REV LTR B | SHEET 71

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR			FROM								TO								
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIPCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.			NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 416	1			100		75	72					125		100	55	43			
A 416B	7		TB1-A70	18	N						SHLD A 416	20	N						
A 416Y			P10- 43	10	N		38				TB1-A69	18	N						
A 417	1			100		75	72					200		175	55	43			
A 417B	7		E 23	20	N						SHLD A 417	20	N						
A 417Y			P10- 44	10	N		38				J24- 55	13	N		39				
A 418	8						71								55				
A 418R			P10- 49	10	N		38				TB1-A75	18	N						
A 418Y			P10- 95	10	N		38				TB1-B75	18	N						
A 419	11						71								55				
A 419R			P10- 69	10	N		38				TB1-B78	18	N		41				
A 419Y			P10- 68	10	N		38				TB1-C78	18	N		41				
A 420	13						71								55				
A 420G			P10-107	10	N		38				TB1-C1	18	N						
A 420N			P10-108	10	N		38				TB1-C2	18	N						
A 420R			P10- 93	10	N		38				TB1-B2	18	N						
A 420Y			P10- 94	10	N		38				TB1-B4	18	N						
A 421	4		P10-104	10	N		38		70		TB1-K71	18	N		42		53		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A 1015085

SCALE - NONE | REV LTR B | SHEET 72

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN 2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN 2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 422	8					71					55		A
A 422R			J10- 42	10	N	38		J21- 5	13	N	39		
A 422Y			E 28	20	N	44		J21- 4	13	N	39		
A 423	8					71					55		A
A 423R			J10- 32	10	N	38		J21- 34	13	N	39		
A 423Y			E 28	20	N			J21- 17	13	N	39		
A 424	8					71					55		A
A 424R			J10- 17	10	N	38		J21- 35	13	N	39		
A 424Y			E 28	20	N			J21- 18	13	N	39		
A 425	8					71					55		A
A 425R			J10- 18	10	N	38		J21- 7	13	N	39		
A 425Y			E 28	20	N			J21- 2	13	N	39		
A 426	8					71					55		A
A 426R			J10- 40	10	N	38		J21- 10	13	N	39		
A 426Y			E 28	20	N			J21- 24	13	N	39		
A 427	8					71					55		A
A 427R			J10- 41	10	N	38		J21- 44	13	N	39		
A 427Y			E 29	20	N	44		J21- 69	13	N	39		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE - NONE	REV LTR B	SHEET 73	

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN 2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN 2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 428	8					71					55		A
A 428R			J10- 19	10	N	38		J21- 86	13	N	39		
A 428Y			E 29	20	N			J21- 57	13	N	39		
A 429	8					71					55		A
A 429R			J10- 33	10	N	38		J21- 6	13	N	39		
A 429Y			E 29	20	N			J21- 1	13	N	39		
A 430	8					71					55		A
A 430R			J10- 44	10	N	38		J21- 3	13	N	39		
A 430Y			E 29	20	N			J21- 11	13	N	39		
A 431	8					71					55		A
A 431R			J10- 43	10	N	38		J21- 25	13	N	39		
A 431Y			E 29	20	N			J21- 45	13	N	39		
A 432	8					71					55		A
A 432R			J10- 53	10	N	38		J21- 71	13	N	39		
A 432Y			E 30	20	N	44		J21- 70	13	N	39		
A 433	8					71					55		A
A 433R			J10- 51	10	N	38		J21- 85	13	N	39		
A 433Y			E 30	20	N			J21- 56	13	N	39		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE - NONE	REV LTR B	SHEET 74	

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN 2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN 2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 434	8					71					55		A
A 434R			J10- 64	10	N	38		J21- 33	13	N	39		
A 434Y			E 30	20	N			J21- 16	13	N	39		
A 435	8					71					55		A
A 435R			J10- 73	10	N	38		J21- 90	13	N	39		
A 435Y			E 30	20	N			J21- 61	13	N	39		
A 436	8					71					55		A
A 436R			J10- 74	10	N	38		J21- 38	13	N	39		
A 436Y			E 31	20	N	44		J21- 39	13	N	39		
A 437	8					71					55		A
A 437R			J10- 60	10	N	38		J21- 40	13	N	39		
A 437Y			E 31	20	N			J21- 41	13	N	39		
A 438	8					71					55		A
A 438R			J10- 28	10	N	38		J21- 67	13	N	39		
A 438Y			E 31	20	N			J21- 66	13	N	39		
A 439	8					71					55		A
A 439R			J10- 29	10	N	38		J21- 89	13	N	39		
A 439Y			E 31	20	N			J21- 60	13	N	39		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE - NONE	REV LTR B	SHEET 75	

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN 2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN 2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 440	8					71					55		A
A 440R			J10- 30	10	N			J21- 37	13	N	39		
A 440Y			E 32	20	N	44		J21- 20	13	N	39		
A 441	8					71					55		A
A 441R			J10- 61	10	N			J21- 42	13	N	39		
A 441Y			E 32	20	N			J21- 68	13	N	39		
A 442	8					71					55		A
A 442R			J10- 62	10	N			J21- 88	13	N	39		
A 442Y			E 32	20	N			J21- 59	13	N	39		
A 443	8					71					55		A
A 443R			J10- 63	10	N			J21- 36	13	N	39		
A 443Y			E 32	20	N			J21- 19	13	N	39		
A 444	8					71					55		A
A 444R			J10- 14	10	N			J21- 8	13	N	39		
A 444Y			E 33	20	N	44		J21- 9	13	N	39		
A 445	8					71					55		A
A 445R			J10- 16	10	N			J21- 87	13	N	39		
A 445Y			E 33	20	N			J21- 58	13	N	39		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE - NONE	REV LTR B	SHEET 76	

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR	INDIVIDUAL LENGTH		FROM								TO								
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.			NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 446	8						71								55				A
A 446R			J10- 31	10	N		38				J21- 21	13	N		39				
A 446Y			E 33	20	N						J21- 22	13	N		39				
A 447	8						71								55				A
A 447R			J10- 15	10	N		38				J21- 23	13	N		39				
A 447Y			E 33	20	N						J21- 43	13	N		39				
A 448	4		J10- 72	10	N		38		70		J21- 46	13	N		39		53		A
A 449	4		J10- 71	10	N		38		70		J21- 26	13	N		39		53		A
A 450	4		J10- 70	10	N		38		70		J21- 12	13	N		39		53		A
A 451	4		J10- 75	10	N		38		70		J21- 72	13	N		39		53		A
A 452	4		J10- 82	10	N		38		70		E 34	20	N		44		53		A
A 453	4		E 28	20	N				70		E 34	20	N				53		A
A 454	4		E 29	20	N				70		E 34	20	N				53		A
A 455	4		E 30	20	N				70		E 34	20	N				53		A
A 456	4		E 31	20	N				70		E 34	20	N				53		A
A 457	4		E 32	20	N				70		E 34	20	N				53		A
A 458	4		E 33	20	N				70		E 34	20	N				53		A
A 459	8						71								55				B

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 77

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR	INDIVIDUAL LENGTH		FROM								TO								
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.			NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 459R			J10- 38	10	N		38				J21- 32	13	N		39				
A 459Y			E 27	20	N		44				J21- 15	13	N		39				
A 460	8						71								55				B
A 460R			J10- 49	10	N		38				J21- 83	13	N		39				
A 460Y			E 27	20	N						J21- 54	13	N		39				
A 461	8						71								55				B
A 461R			J10- 36	10	N		38				J21- 82	13	N		39				
A 461Y			E 27	20	N						J21- 53	13	N		39				
A 462	8						71								55				B
A 462R			J10- 39	10	N		38				J21- 31	13	N		39				
A 462Y			E 27	20	N						J21- 30	13	N		39				
A 463	8						71								55				B
A 463R			J10- 37	10	N		38				J21- 52	13	N		39				
A 463Y			E 27	20	N						J21- 51	13	N		39				
A 464	8						71								55				B
A 464R			J10- 35	10	N		38				J21- 48	13	N		39				
A 464Y			E 26	20	N		44				J21- 74	13	N		39				
A 465	8						71								55				B

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
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CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 78

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR	INDIVIDUAL LENGTH		FROM								TO								
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.			NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 465R			J10- 47	10	N		38				J21- 27	13	N		39				
A 465Y			E 26	20	N						J21- 47	13	N		39				
A 466	8						71								55				B
A 466R			J10- 34	10	N		38				J21- 29	13	N		39				
A 466Y			E 26	20	N						J21- 28	13	N		39				
A 467	8						71								55				B
A 467R			J10- 48	10	N		38				J21- 14	13	N		39				
A 467Y			E 26	20	N						J21- 13	13	N		39				
A 468	4		J10- 45	10	N		38		70		J21- 84	13	N		39		53		B
A 469	4		J10- 46	10	N		38		70		J21- 55	13	N		39		53		B
A 470	4		J10- 69	10	N		38		70		E 26	20	N				53		B
A 471	4		E 26	20	N				70		E 27	20	N				53		B
A 472	3			100		75	72								54	44			
A 472B	7		TB1-A59	18	N						SHLD A 472	20	N						
A 472G			J10- 67	10	N		38				TB1-B59	18	N						
A 472R			J10- 66	10	N		38				TB1-A61	18	N						
A 472Y			J10- 65	10	N		38				TB1-B60	18	N						
A 473	9						71								55				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 79

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR	INDIVIDUAL LENGTH		FROM								TO								
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.			NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 473G			J10- 3	10	N		38				TB1-A21	18	N						
A 473R			J10- 4	10	N		38				TB1-A24	18	N						
A 473Y			J10- 5	10	N		38				TB1-B24	18	N						
A 474	3			100		75	72					125		100	54	44			
A 474B	7		TB1-A49	18	N						SHLD A 474	20	N						
A 474G			J10- 12	10	N		38				TB1-B48	18	N						
A 474R			J10- 26	10	N		38				TB1-A48	18	N						
A 474Y			J10- 13	10	N		38				TB1-A48	18	N						
A 475	3			100		75	72					125		100	54	44			
A 475B	7		TB1-B49	18	N						SHLD A 475	20	N						
A 475G			J10- 22	10	N		38				TB1-A50	18	N						
A 475R			J10- 24	10	N		38				TB1-B50	18	N						
A 475Y			J10- 21	10	N		38				TB1-C50	18	N						
A 476	2			100		75	72					125		100	54	44			
A 476B	7		TB1-B49	18	N						SHLD A 476	20	N						
A 476R			J10- 25	10	N		38				TB1-C49	18	N						
A 476Y			J10- 23	10	N		38				TB1-C48	18	N						
A 477	4		J10- 2	10	N		38		70		TB1-D72	18	N				53		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 80

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 478	4		J10- 6	10	N		38		70		TB1-A22	18	N				53		
A 479	4		J10- 7	10	N		38		70		TB1-A20	18	N				53		
A 480	4		J10- 57	10	N		38		70		J21- 64	13	N		39		53		
A 481	4		J10- 9	10	N		38		70		TB1-B56	18	N		40		53		
A 482	4		J10- 59	10	N		38		70		J21- 65	13	N		39		53		
A 483	4		J10- 8	10	N		38		70		TB1-K71	18	N				53		
A 484	4		J10- 58	10	N		38		70		J21- 62	13	N		39		53		
A 485	4		J10- 56	10	N		38		70		J21- 91	13	N		39		53		
A 486	4		J10- 55	10	N		38		70		J21- 63	13	N		39		53		
A 487	4		J10- 27	10	N		38		70		E 36	20	N		43		53		
A 488	4		J10- 1	10	N		38		70		E 38	20	N		43		53		
A 489	4		J10- 10	10	N		38		70		TB1-K71	18	N				53		
A 490	2			100		75	72					125		100	54	44			
A 490B	7		TB1-C67								SHLD A 490								
A 490R			P13- 1	10	N		38				TB1-C66	18	N						
A 490Y			E 25	20	N		43				TB1-C65	18	N						
A 491	2			100		75	72					125		100	54	44			
A 491B	7		TB1-D67	18	N						SHLD A 491	20	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 81

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 491R			P13- 2	10	N		38				TB1-D66	18	N						
A 491Y			E 25	20	N						TB1-D65	18	N						
A 492	4		P13- 10	10	N		38		70		E 25	20	N				53		
A 493	8						71								55				
A 493R			P13- 5	10	N		38				TB1-G55	18	N						
A 493Y			P13- 13	10	N		38				TB1-F56	18	N		41				
A 494	8						71								55				
A 494R			P13- 6	10	N		38				TB1-G54	18	N						
A 494Y			P13- 14	10	N		38				TB1-F56	18	N						
A 495	8						71								55				
A 495R			P13- 15	10	N		38				TB1-G56	18	N						
A 495Y			P13- 7	10	N		38				TB1-F57	18	N						
A 496	2			100		75	72					125		100	54	44			
A 496B	7		TB1-F67	18	N						SHLD A 496	20	N						
A 496R			P13- 31	10	N		38				TB1-F66	18	N		40				
A 496Y			P13- 23	10	N		38				TB1-F65	18	N		40				
A 497	2			100		75	72					125		100	54	44			
A 497B	7		TB1-G67	18	N						SHLD A 497	20	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 82

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 497R			P13- 32	10	N		38				TB1-G66	18	N		40				
A 497Y			P13- 24	10	N		38				TB1-G65	18	N		40				
A 498	2			100		75	72					125		100	54	44			
A 498B	7		TB1-A67	18	N						SHLD A 498	20	N						
A 498R			P13- 28	10	N		38				TB1-A66	18	N						
A 498Y			P13- 27	10	N		38				TB1-A65	18	N						
A 499	2			100		75	72					125		100	54	44			
A 499B	7		TB1-B67	18	N						SHLD A 499	20	N						
A 499R			P13- 35	10	N		38				TB1-B66	18	N						
A 499Y			P13- 36	10	N		38				TB1-B65	18	N						
A 500	4		P13- 37	10	N		38		70		TB1-K70	18	N		41		53		
A 501	4		P13- 38	10	N		38		70		TB1-B71	18	N				53		
A 502	5		P11-A	25	N		61	60	70		TB1-K78	18	N		42		53		
A 503	5		P11-A	25	N				70		J23- 38	13	N		39		53		
A 504	5		P11-A	25	N				70		J23- 61	13	N		39		53		
A 505	5		P11-B	25	N		61	60	70		TB1-K76	18	N		42		53		
A 506	5		P11-B	25	N				70		TB1-K76	18	N				53		
A 507	5		P11-B	25	N				70		TB1-K76	18	N				53		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 83

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 508	5		P11-C	25	N		61	60	70		TB1-H76	18	N		42		53		
A 509	5		P11-C	25	N				70		TB1-H76	18	N				53		
A 510	5		P11-C	25	N				70		TB1-H76	18	N				53		
A 511	5		P11-D	25	N		61	60	70		TB1-F75	18	N		41		53		
A 512	5		P11-D	25	N				70		TB1-B68	18	N		41		53		
A 513	5		P11-E	25	N		61	60	70		TB1-C69	18	N		40		53		
A 514	5		P11-E	25	N				70		TB1-D74	18	N		40		53		
A 515	5		P11-F	25	N		61	60	70		TB1-F73	18	N				53		
A 516	5		P11-F	25	N				70		TB1-B70	18	N		41		53		
A 517	5		P11-G	25	N		61	60	70		TB1-F78	18	N		40		53		
A 518	5		P11-G	25	N				70		TB1-K53	18	N		40		53		
A 519	5		P11-G	25	N				70		TB1-K50	18	N				53		
A 520	5		P11-H	25	N		61	60	70		TB1-G78	18	N		41		53		
A 521	5		P11-H	25	N				70		TB1-G78	18	N				53		
A 522	5		P11-H	25	N				70		TB1-H78	18	N		40		53		
A 523	5		P11-J	25	N		61	60	70		J23- 90	13	N		39		53		
A 524	5		P11-J	25	N				70		J23- 91	13	N		39		53		
A 525	5		P11-J	25	N				70		P12-J	25	N				53		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR B | SHEET 84

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.			NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.			NO.	ROUTING
A 526	11						71												
A 526R			P11-N	25	N		61	60			TB1-B78	18	N						
A 526Y			P11-K	25	N		61	60			TB1-C78	18	N						
A 527	5		P11-L	25	N		61	60	70		TB1-G70	18	N				53		
A 528	5		P11-M	25	N		61	60	70		TB1-G76	18	N		41		53		
A 529	5		P11-M	25	N				70		TB1-G76	18	N				53		
A 530	5		P12-A	25	N		61	60	70		TB1-K77	18	N		42		53		
A 531	5		P12-A	25	N				70		J23- 39	13	N		39		53		
A 532	5		P12-A	25	N				70		J23- 40	13	N		39		53		
A 533	5		P12-B	25	N		61	60	70		TB1-K75	18	N		42		53		
A 534	5		P12-B	25	N				70		TB1-K75	18	N				53		
A 535	5		P12-B	25	N				70		TB1-K75	18	N				53		
A 536	5		P12-C	25	N		61	60	70		TB1-H75	18	N		42		53		
A 537	5		P12-C	25	N				70		TB1-H75	18	N				53		
A 538	5		P12-C	25	N				70		TB1-H75	18	N				53		
A 539	5		P12-D	25	N		61	60	70		TB1-C70	18	N		41		53		
A 540	5		P12-D	25	N				70		TB1-D73	18	N		41		53		
A 541	5		P12-E	25	N		61	60	70		TB1-F74	18	N		40		53		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 85

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.			NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.			NO.	ROUTING
A 542	5		P12-E	25	N				70		TB1-B69	18	N		40		53		
A 543	5		P12-F	25	N		61	60	70		TB1-C68	18	N		41		53		
A 544	5		P12-F	25	N				70		TB1-D75	18	N		41		53		
A 545	5		P12-G	25	N		61	60	70		TB1-D78	18	N				53		
A 546	5		P12-G	25	N				70		TB1-G53	18	N		40		53		
A 547	5		P12-G	25	N				70		TB1-G50	18	N				53		
A 548	5		P12-H	25	N		61	60	70		TB1-G77	18	N		41		53		
A 549	5		P12-H	25	N				70		TB1-G77	18	N				53		
A 550	5		P12-H	25	N				70		TB1-H77	18	N		40		53		
A 551	5		P12-J	25	N		61	60	70		J23- 41	13	N		39		53		
A 552	5		P12-J	25	N				70		J23- 66	13	N		39		53		
A 553	5		P12-L	25	N		61	60	70		TB1-K70	18	N				53		
A 554	5		P12-M	25	N		61	60	70		TB1-G75	18	N		41		53		
A 555	5		P12-M	25	N				70		TB1-G75	18	N				53		
A 556	4		J21- 50	13	N		39		70		E 35	20	N		43		53		
A 557	4		J21- 73	13	N		39		70		E 37	20	N		43		53		
A 558	5		J23- 62	13	N		39		70		TB1-K78	18	N				53		
A 559	5		J23- 63	13	N		39		70		TB1-K78	18	N				53		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 86

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.			NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.			NO.	ROUTING
A 560	5		J23- 64	13	N		39		70		TB1-K77	18	N				53		
A 561	5		J23- 65	13	N		39		70		TB1-K77	18	N				53		
A 562	4		J23- 48	13	N		39		70		TB1-D71	18	N				53		
A 563	4		J24- 51	13	N		39		70		E 23	20	N				53		
A 564	2			200		175	72					125		100	54	44			
A 564B	7		TB1-A70	18	N						SHLD A 564	20	N						
A 564R			J24- 15	13	N		39				TB1-A69	18	N						
A 564Y			J24- 84	13	N		39				TB1-A68	18	N						
A 566	1			200		175	72					125		100	55	43			
A 566B	7		E 23	20	N						SHLD A 566	20	N						
A 566Y			J24- 83	13	N		39				TB1-A68	18	N						
A 567	4		TB1-D24	18	N				53		TB1-D59	18	N		40		53		
A 570	5		TB1-H26	18	N				53		TB1-K26	18	N		40		53		
A 571	4		TB1-G30	18	N				53		TB1-F32	18	N				53		
A 573	5		TB1-B68	18	N				53		TB1-C68	18	N				53		
A 577	5		TB1-C70	18	N				53		TB1-F73	18	N				53		
A 578	5		TB1-B70	18	N				53		TB1-D73	18	N				53		
A 583	5		TB1-D75	18	N				53		TB1-F75	18	N		40		53		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 87

MIL 2085-4-64 WIR

WIRING HARNESS A

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.			NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.			NO.	ROUTING
A 586	5		TB1-D76	18	N		40		53		TB1-K67	18	N				53		
A 589	4		J09-107	10	N		38		70		TB1-A25						53		
590	4		J09- 62	10	N		38		70		TB1-C25						53		
A 591	4		J09- 38	10	N		38		70		TB1-B25	18	N				53		
A 592	4		J09- 39	10	N		38		70		TB1-D25	18	N				53		

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR B
SHEET 88

MIL 2085-4-64 WIR

1015085

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		B	REPLACES WORD DWG REV A PER TDRR 16221	2/3/65	WK
		C	REVISED PER TDRR 17764	30 MAR 64	M.G.

Ⓑ REPLACES WORD DWG REV A

REV	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
SHEET	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
REV STATUS		REV					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
OF SHEETS		SHEET					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN S. Snider DATE 18 JAN 65
CHECKED C. Piojda 19 JAN 65
APPROVAL D. Borta 20 JAN 65
APPROVAL 20 JAN 65

NASA APPROVAL
MIT APPROVAL

CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
AGE INTERCONNECT

CODE IDENT NO.
SIZE A
1015085
REV C

SCALE NONE
SHEET 1 OF 88

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
47	C	83	C												
48	C	84	C												
49	C	85	C												
50	C	86	C												
51	C	87	C												
52	C	88	C												
53	C														
54	C														
55	C														
56	C														
57	C														
58	C														
59	C														
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73	C														
74	C														
75	C														
76	C														
77	C														
78	C														
79	C														
80	C														
81	C														
82	C														

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION C

NASA DRAWING NO. 1015085
SHEET 2 OF 88

PENNANT GENERAL NOTES

NOTE

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 MARK SLEEVING OF MULTI-CONDUCTORS WITH THE CONDUCTOR NUMBER .12 INCH HIGH, AND SLEEVING OF SINGLE CONDUCTORS WITH CONDUCTOR NUMBER .08 INCH HIGH COLOR BLACK, PER ND1002019

6 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

7 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

8 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

9 LACE HARNESS PER ND1002032 USING ITEMS 65 AND 66.

10 CONDUCTORS LISTED WITH AN A OR B IN THE ROUTING COLUMN ARE TO BE ASSEMBLED PER DETAIL A OR B AS SHOWN ON THE CONFIGURATION DRAWING (1015086 REF).

CODE IDENT NO.	SIZE	
99974	A	1015085
SCALE - NONE	REV LTR C	SHEET 3 OF 88

PENNANT GENERAL NOTES

NOTE

11 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, MARKING, OR TWISTING

A - FROM END SHIELD
B - TO END SHIELD
G - GREEN
K - BLACK
L - BLUE
N - BROWN
R - RED
W - WHITE
Y - YELLOW

12 ASSEMBLE HARNESS AS SHOWN PER CONFIGURATION DRAWING (1015086 REF).

13 SERIALIZE PER ND1002023.

14 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE			
	STRIP		CUT	
	WIRE	JACKET	WIRE	SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50

CODE IDENT NO.	SIZE	
99974	A	1015085
SCALE - NONE	REV LTR C	SHEET 4 OF 88

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
14	1	1	1015085-001	WIRE PER 1010789-011 YEL JKT 24AWG YEL 13 FT 0 IN. TOTAL LENGTH
14	2	1	1015085-002	WIRE PER 1010789-012 YEL JKT 24AWG YEL, RED 370 FT 0 IN. TOTAL LENGTH
14	3	1	1015085-003	WIRE PER 1010789-013 YEL JKT 24AWG YEL,RED,GRN 31 FT 0 IN. TOTAL LENGTH
14	4	1	1015085-004	WIRE PER 1010789-001 24AWG YEL 865 FT 0 IN. TOTAL LENGTH
14	5	1	1015085-005	WIRE PER 1010789-006 22AWG YEL 165 FT 0 IN. TOTAL LENGTH
14	6	1	1015085-006	WIRE PER 1010707- 1 RED·JKT 29AWG BLU,RED,WHT 26 FT 6.0 IN. TOTAL LENGTH
14	7	1	1015085-007	WIRE PER 1010789-002 24AWG BLK 118 FT 0 IN. TOTAL LENGTH
14	8	1	1015085-008	WIRE PER 1010789-003 24AWG YEL,RED 393 FT 0 IN. TOTAL LENGTH
14	9	1	1015085-009	WIRE PER 1010789-004 24AWG YEL,RED,GRN 91 FT 0 IN. TOTAL LENGTH
14	10	1	1015085-010	WIRE PER 1010789-005 24AWG YEL,RED,GRN,BRN 25 FT 11 IN. TOTAL LENGTH
14	11	1	1015085-011	WIRE PER 1010789-008 22AWG YEL,RED 13 FT 9 IN. TOTAL LENGTH
14	12	1	1015085-012	WIRE PER 1010789-009 22AWG YEL,RED,GRN 4 FT 6 IN. TOTAL LENGTH

CODE IDENT NO.	SIZE	
99974	A	1015085
SCALE - NONE	REV LTR C	SHEET 5 OF 88

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
14	13	1	1015085-013	WIRE PER 1010789-010 22AWG YEL,RED,GRN,BRN 16 FT 1 IN. TOTAL LENGTH
	14	1	1015085-014	WIRE, BRAID PER QQ-B-575(COPPER,TIN-COATED, TUBLAR) SIZE 3/8 ID, 36GA, 3FT 0 IN. TOTAL LG
	15	1	1015085-015	WIRE, BRAID PER QQ-B-575 (COPPER,TIN-COATED, TUBULAR) SIZE 1/2 ID, 36GA, 3 FT 0 IN. TOTAL LG
14	16	1	1010671- 1	CONNECTOR PLUG, ELECTRICAL
14	17	1	1010671- 2	CONNECTOR PLUG, ELECTRICAL
14	18	1	1010674- 1	CONNECTOR PLUG, ELECTRICAL
14	19	1	1010674- 2	CONNECTOR PLUG, ELECTRICAL
14	20	1	1010674- 3	CONNECTOR PLUG, ELECTRICAL
14	21	1	1010674- 4	CONNECTOR PLUG, ELECTRICAL
14	22	1	1010771-201	CONNECTOR PLUG, ELECTRICAL
14	23	1	1010771-207	CONNECTOR PLUG, ELECTRICAL
14	24	1	1010809-001	CONNECTOR RECP, ELECTRICAL
14	25	1	1010822- 3	CONNECTOR RECP, ELECTRICAL
14	26	1	1010822- 5	CONNECTOR RECP, ELECTRICAL
14	27	1	1010824- 1	CONNECTOR RECP, ELECTRICAL
14	28	5	1010824- 2	CONNECTOR RECP, ELECTRICAL
14	29	1	1010824- 3	CONNECTOR RECP, ELECTRICAL

CODE IDENT NO.	SIZE	
99974	A	1015085
SCALE - NONE	REV LTR C	SHEET 6 OF 88

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
14	30	1	1010824- 4	CONNECTOR RECP, ELECTRICAL
14	31	1	1010824- 5	CONNECTOR RECP, ELECTRICAL
14	32	1	1010844-002	CONNECTOR RECP, ELECTRICAL
14	36	1	1010856- 1	CONNECTOR RECP, ELECTRICAL
14	37	1	1010860- 1	CONNECTOR RECP, ELECTRICAL
14	38	1358	1010738- 6	CONTACT, SOCKET
14	39	255	1010770- 2	CONTACT, SOCKET
14	40	290	1010743- 1	WRAPOST RECEPTACLE
14	41	172	1010743- 2	WRAPOST RECEPTACLE
14	42	93	1010743- 3	WRAPOST RECEPTACLE
14	43	30	1010402- 1	SLEEVE, SOLDER
14	44	135	1010402- 2	SLEEVE, SOLDER
14	45	1	1000242- 24	FERRULE, OUTER ELEC COND
14	46	1	1000242- 27	FERRULE, OUTER ELEC COND
14	47	1	1000242- 31	FERRULE, OUTER ELEC COND
14	48	1	1000242- 33	FERRULE, OUTER ELEC COND
14	49	1	1000243- 26	FERRULE, INNER ELEC COND
14	50	1	1000243- 30	FERRULE, INNER ELEC COND

CODE IDENT NO.	SIZE	
99974	A	1015085
SCALE - NONE	REV LTR C	SHEET 7 OF 88

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
14	51	1	1000243- 33	FERRULE, INNER ELEC COND
14	52	1	1000243- 36	FERRULE, INNER ELEC COND
14	53	269	1010490-118	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (WHITE)
14	54	94	1010490-110	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (WHITE)
14	55	216	1010490-112	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (WHITE)
14	56	4	1010911-066	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR)
14	58	4	1010911-069	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR)
14	60	24	1010476-112	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (BROWN)
	61			CONTACT SOCKETS SUPPLIED WITH 1010671.
	62			CONTACT SOCKETS SUPPLIED WITH 1010674.
14	63	1	1010911-902	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR) 3 FT. 0.0 IN. TOTAL LENGTH
14	64	1	1010911-905	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR) 3 FT. 0.0 IN. TOTAL LENGTH

CODE IDENT NO.	SIZE	
99974	A	1015085
SCALE - NONE	REV LTR C	SHEET 8 OF 88

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
14	65	AR	1012507- 2	LACING TAPE, DACRON, BLACK, 0.05 INCHES WIDE
14	66	AR	1012507- 4	LACING TAPE, DACRON, BLACK 0.09 INCHES WIDE
14	67	1	1023012- 1	COUPLING, ADAPTER
14	68	1	1023012- 2	COUPLING, ADAPTER
14	70	253	1010911-036	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR)
14	71	161	1010911-035	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR)
14	72	152	1010911-034	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR)

CODE IDENT NO.	SIZE	
99974	A	1015085
SCALE - NONE	REV LTR C	SHEET 9 OF 88

CONDUCTOR NUMBER	CONDUCTOR ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	FROM TIN	FROM 2	FROM TERMINATION ITEM NO.		FROM TERMINATION SPEC. 1	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TO TIN	TO 2	TO TERMINATION ITEM NO.		TO TERMINATION SPEC 1	TO NO.	ROUTING
A 1	8						71								55				
A 1R			J01- 1	10	N		38				TB1-A8	18	N		42				
A 1Y			J01- 14	10	N		38				TB1-B8	18	N		42				
A 2	8						71								55				
A 2R			J01- 3	10	N		38				TB1-D1	18	N		42				
A 2Y			J01- 2	10	N		38				TB1-D2	18	N		42				
A 3	2			100		75	72					125		100	54	44			
A 3B	7		TB1-A12	18	N		42				SHLD A 3	20	N						
A 3R			J01- 20	10	N		38				TB1-A13	18	N		42				
A 3Y			J01- 6	10	N		38				TB1-A14	18	N		42				
A 4	2			100		75	72					125		100	54	44			
A 4B	7		TB1-A17	18	N		42				SHLD A 4	20	N						
A 4R			J01- 21	10	N		38				TB1-A15	18	N		42				
A 4Y			J01- 7	10	N		38				TB1-A16	18	N		42				
A 5	9						71								55				
A 5G			J01- 11	10	N		38				TB1-A6	18	N		42				
A 5R			J01- 25	10	N		38				TB1-A6	18	N						
A 5Y			J01- 12	10	N		38				TB1-B6	18	N		42				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE	
	A	1015085
SCALE - NONE	REV LTR C	SHEET 10 OF 88

MIL 2085 - 4-65 WIN

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 6	4	J01- 15	10	N		38 70		TB1-B53	18	N		42 53		
A 7	4	J01- 16	10	N		38 70		TB1-G6	18	N		42 53		
A 8	8					71						55		
A 8R		J01- 28	10	N		38		TB1-A1	18	N		42		
A 8Y		J01- 29	10	N		38		TB1-B1	18	N		42		
A 9	4	J01- 30	10	N		38 70		TB1-C53	18	N		40 53		
A 10	9					71						55		
A 10G		J01- 31	10	N		38		TB1-K18	18	N		40		
A 10R		J01- 43	10	N		38		TB1-K20	18	N		40		
A 10Y		J01- 32	10	N		38		TB1-K19	18	N		40		
A 11	4	J01- 34	10	N		38 70		TB1-K35	18	N		40 53		
A 12	2		100		75	72			125		100	54 44		
A 12B	7	TB1-K32	18	N		42		SHLD A 12	20	N				
A 12R		J01- 35	10	N		38		TB1-K33	18	N		42		
A 12Y		J01- 45	10	N		38		TB1-K34	18	N		42		
A 13	4	J01- 41	10	N		38 70		TB1-G9	18	N		41 53		
A 14	8					71						55		
A 14R		J01- 50	10	N		38		TB1-G1	18	N		41		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 11 OF 88

MIL 2085 · 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 14Y		J01- 60	10	N		38		TB1-G2	18	N		41		
A 15	8					71						55		
A 15R		J01- 67	10	N		38		TB1-A31	18	N		40		
A 15Y		J01- 57	10	N		38		TB1-B31	18	N		40		
A 16	2		100		75	72			125		100	54 44		
A 16B	7	TB1-H17	18	N		41		SHLD A 16	20	N				
A 16R		J01-100	10	N		38		TB1-H15	18	N		41		
A 16Y		J01- 86	10	N		38		TB1-H16	18	N		40		
A 17	2		100		75	72			125		100	54 44		
A 17B	7	TB1-K17	18	N		41		SHLD A 17	20	N				
A 17R		J01-101	10	N		38		TB1-K15	18	N		41		
A 17Y		J01- 87	10	N		38		TB1-K16	18	N		40		
A 18	2		100		75	72			125		100	54 44		
A 18B	7	TB1-K30	18	N		41		SHLD A 18	20	N				
A 18R		J01-104	10	N		38		TB1-K31	18	N		40		
A 18Y		J01- 90	10	N		38		TB1-K30	18	N				
A 19	3		100		75	72			125		100	54 44		
A 19B	7	TB1-F30	18	N		41		SHLD A 19	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 12 OF 88

MIL 2085 · 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 19G		J01-105	10	N		38		TB1-F31	18	N		40		
A 19R		J01-106	10	N		38		TB1-F29	18	N		40		
A 19Y		J01- 92	10	N		38		TB1-F30	18	N				
A 20	3		100		75	72			125		100	54 44		
A 20B	7	TB1-F34	18	N		41		SHLD A 20	20	N				
A 20G		J01-107	10	N		38		TB1-F35	18	N		40		
A 20R		J01-108	10	N		38		TB1-F33	18	N		40		
A 20Y		J01- 94	10	N		38		TB1-F34.	18	N				
A 21	8					71						55		
A 21R		J02- 1	10	N		38		TB1-A8	18	N				
A 21Y		J02- 14	10	N		38		TB1-B8	18	N				
A 22	8					71						55		
A 22R		J02- 3	10	N		38		TB1-D1	18	N				
A 22Y		J02- 2	10	N		38		TB1-D2	18	N				
A 23	2		100		75	72			125		100	54 44		
A 23B	7	TB1-B12	18	N		42		SHLD A 23	20	N				
A 23R		J02- 20	10	N		38		TB1-B13	18	N		42		
A 23Y		J02- 6	10	N		38		TB1-B14	18	N		42		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 13 OF 88

MIL 2085 · 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 24	2		100		75	72			125		100	54 44		
A 24B	7	TB1-B17	18	N		42		SHLD A 24	20	N				
A 24R		J02- 21	10	N		38		TB1-B15	18	N		42		
A 24Y		J02- 7	10	N		38		TB1-B16	18	N		42		
A 25	9					71						55		
A 25G		J02- 11	10	N		38		TB1-A5	18	N		42		
A 25R		J02- 25	10	N		38		TB1-A5	18	N				
A 25Y		J02- 12	10	N		38		TB1-B6	18	N				
A 26	4	J02- 15	10	N		38 70		TB1-B53	18	N		53		
A 27	4	J02- 16	10	N		38 70		TB1-G6	18	N		53		
A 28	8					71						55		
A 28R		J02- 28	10	N		38		TB1-A1	18	N				
A 28Y		J02- 29	10	N		38		TB1-B1	18	N				
A 29	4	J02- 30	10	N		38 70		TB1-C52	18	N		40 53		
A 30	9					71						55		
A 30G		J02- 31	10	N		38		TB1-H19	18	N		40		
A 30R		J02- 43	10	N		38		TB1-H20	18	N		40		
A 30Y		J02- 32	10	N		38		TB1-H18	18	N		40		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 14 OF 88

MIL 2085 · 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.		NO.	ROUTING
A 31	4		J02- 34	10	N		38	70		TB1-H35	18	N		40	53		
A 32	2			100		75	72				125		100	54	44		
A 32B	7		TB1-H32	18	N		42			SHLD A 32	20	N					
A 32R			J02- 35	10	N		38			TB1-H33	18	N		42			
A 32Y			J02- 45	10	N		38			TB1-H34	18	N		42			
A 33	4		J02- 41	10	N		38	70		TB1-G9	18	N		53			
A 34	8						71							55			
A 34R			J02- 50	10	N		38			TB1-G1	18	N					
A 34Y			J02- 60	10	N		38			TB1-G2	18	N					
A 35	8						71							55			
A 35R			J02- 67	10	N		38			TB1-A30	18	N		40			
A 35Y			J02- 57	10	N		38			TB1-B30	18	N		40			
A 36	2			100		75	72				125		100	54	44		
A 36B	7		TB1-H12	18	N		42			SHLD A 36	20	N					
A 36R			J02-100	10	N		38			TB1-H10	18	N		41			
A 36Y			J02- 86	10	N		38			TB1-H11	18	N		40			
A 37	2			100		75	72				125		100	54	44		
A 37B	7		TB1-K12	18	N		41			SHLD A 37	20	N					

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE REV LTR C SHEET 15 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.		NO.	ROUTING
A 37R			J02-101	10	N		38			TB1-K10	18	N		41			
A 37Y			J02- 87	10	N		38			TB1-K11	18	N		40			
A 38	2			100		75	72				125		100	54	44		
A 38B	7		TB1-H30	18	N		41			SHLD A 38	20	N					
A 38R			J02-104	10	N		38			TB1-H31	18	N		40			
A 38Y			J02- 90	10	N		38			TB1-H30	18	N					
A 39	3			100		75	72				125		100	54	44		
A 39B	7		TB1-D30	18	N		41			SHLD A 39	20	N					
A 39G			J02-105	10	N		38			TB1-D31	18	N		40			
A 39R			J02-106	10	N		38			TB1-D29	18	N		40			
A 39Y			J02- 92	10	N		38			TB1-D30	18	N					
A 40	3			100		75	72				125		100	54	44		
A 40B	7		TB1-D34	18	N		41			SHLD A 40	20	N					
A 40G			J02-107	10	N		38			TB1-D35	18	N		40			
A 40R			J02-108	10	N		38			TB1-D33	18	N		40			
A 40Y			J02- 94	10	N		38			TB1-D34	18	N					
A 41	8						71							55			
A 41R			J03- 1	10	N		38			TB1-A8	18	N					

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE REV LTR C SHEET 16 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.		NO.	ROUTING
A 41Y			J03- 14	10	N		38			TB1-B8	18	N					
A 42	8						71							55			
A 42R			J03- 3	10	N		38			TB1-D1	18	N					
A 42Y			J03- 2	10	N		38			TB1-D2	18	N					
A 43	2			100		75	72				125		100	54	44		
A 43B	7		TB1-C17	18	N		42			SHLD A 43	20	N					
A 43R			J03- 20	10	N		38			TB1-C16	18	N		40			
A 43Y			J03- 6	10	N		38			TB1-C15	18	N		42			
A 44	2			100		75	72				125		100	54	44		
A 44B	7		TB1-D17	18	N		42			SHLD A 44	20	N					
A 44R			J03- 21	10	N		38			TB1-D16	18	N		40			
A 44Y			J03- 7	10	N		38			TB1-D15	18	N		42			
A 45	9						71							55			
A 45G			J03- 11	10	N		38			TB1-A7	18	N		42			
A 45R			J03- 25	10	N		38			TB1-A6	18	N					
A 45Y			J03- 12	10	N		38			TB1-B6	18	N					
A 46	4		J03- 15	10	N		38	70		TB1-B53	18	N		53			
A 47	4		J03- 16	10	N		38	70		TB1-G6	18	N		53			

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE REV LTR C SHEET 17 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC. ▷1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET ▷2	TIN	CUT WIRE OR SHIELD ▷2	TERMINATION SPEC ▷1 ITEM NO.		NO.	ROUTING
A 48	8						71							55			
A 48R			J03- 28	10	N		38			TB1-A1	18	N					
A 48Y			J03- 29	10	N		38			TB1-B1	18	N					
A 49	4		J03- 30	10	N		38	70		TB1-C51	18	N		40	53		
A 50	9						71							55			
A 50G			J03- 31	10	N		38			TB1-G19	18	N		40			
A 50R			J03- 43	10	N		38			TB1-G20	18	N		40			
A 50Y			J03- 32	10	N		38			TB1-G18	18	N		40			
A 51	4		J03- 34	10	N		38	70		TB1-G35	18	N		40	53		
A 52	2			100		75	72				125		100	54	44		
A 52B	7		TB1-G32	18	N		42			SHLD A 52	20	N					
A 52R			J03- 35	10	N		38			TB1-G33	18	N		42			
A 52Y			J03- 45	10	N		38			TB1-G34	18	N		42			
A 53	4		J03- 41	10	N		38	70		TB1-G10	18	N		41	53		
A 54	8						71							55			
A 54R			J03- 50	10	N		38			TB1-H1	18	N		41			
A 54Y			J03- 60	10	N		38			TB1-H2	18	N		41			
A 55	8						71							55			

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE REV LTR C SHEET 18 OF 88

MIL 2085 · 4-65 WIR

CONDUCTOR			FROM							TO							ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION SPEC. 1> ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION SPEC 1> ITEM NO.		NO.	
A 55R			J03- 67	10	N		38			TB1-A29	18	N		40			
A 55Y			J03- 57	10	N		38			TB1-B29	18	N		40			
A 56	2			100		75	72				125		100	54	44		
A 56B	7		TB1-F17	18	N		41			SHLD A 56	20	N					
A 56R			J03-100	10	N		38			TB1-F15	10	N		41			
A 56Y			J03- 86	10	N		38			TB1-F16	10	N		40			
A 57	2			100		75	72				125		100	54	44		
A 57B	7		TB1-G17	18	N		41			SHLD A 57	20	N					
A 57R			J03-101	10	N		38			TB1-G15	18	N		41			
A 57Y			J03- 87	10	N		38			TB1-G16	18	N		40			
A 58	4		J03- 89	10	N		38	70		TB1-G29	18	N		40	53		
A 59	2			100		75	72				125		100	54	44		
A 59B	7		TB1-F32	18	N		42			SHLD A 59	20	N					
A 59R			J03-104	10	N		38			TB1-G31	18	N		41			
A 59Y			J03- 90	10	N		38			TB1-G30	18	N		42			
A 60	3			100		75	72				125		100	54	44		
A 60B	7		TB1-C30	18	N		41			SHLD A 60	20	N					
A 60G			J03-105	10	N		38			TB1-C31	18	N		40			

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 19 OF 88

MIL 2085 · 4-83 WIR

CONDUCTOR			FROM							TO							ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION SPEC. 1> ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION SPEC 1> ITEM NO.		NO.	
A 60R			J03-106	10	N		38			TB1-C29	18	N		40			
A 60Y			J03- 92	10	N		38			TB1-C30	18	N					
A 61	3			100		75	72				125		100	54	44		
A 61B	7		TB1-C34	18	N		41			SHLD A 61	20	N					
A 61G			J03-107	10	N		38			TB1-C35	18	N		40			
A 61R			J03-108	10	N		38			TB1-C33	18	N		40			
A 61Y			J03- 94	10	N		38			TB1-C34	18	N					
A 62	8						71							55			
A 62R			J04- 1	10	N		38			TB1-D5	18	N		41			
A 62Y			J04- 14	10	N		38			TB1-F5	18	N		41			
A 63	8						71							55			
A 63R			J04- 5	10	N		38			TB1-D8	18	N		42			
A 63Y			J04- 2	10	N		38			TB1-F8	18	N		42			
A 64	2			100		75	72				125		100	54	44		
A 64B	7		TB1-H47	18	N		40			SHLD A 64	20	N					
A 64R			J04- 20	10	N		38			TB1-H45	18	N		40			
A 64Y			J04- 6	10	N		38			TB1-H46	18	N		40			
A 65	2			100		75	72				125		100	54	44		

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 20 OF 88

MIL 2085 · 4-83 WIR

CONDUCTOR			FROM							TO							ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION SPEC. 1> ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION SPEC 1> ITEM NO.		NO.	
A 65B	7		TB1-K47	18	N		40			SHLD A 65	20	N					
A 65R			J04- 7	10	N		38			TB1-K46	18	N		40			
A 65Y			J04- 21	10	N		38			TB1-K45	18	N		40			
A 66	2			100		75	72				125		100	54	44		
A 66B	7		TB1-H39	18	N		40			SHLD A 66	20	N					
A 66R			J04- 25	10	N		38			TB1-H41	18	N		40			
A 66Y			J04- 11	10	N		38			TB1-H40	18	N		40			
A 67	8						71							55			
A 67R			J04- 28	10	N		38			TB1-A2	18	N		42			
A 67Y			J04- 29	10	N		38			TB1-B2	18	N		42			
A 68	13						71							55			
A 68G			J04- 43	10	N		38			TB1-H50	18	N		41			
A 68N			J04- 44	10	N		38			TB1-D49	18	N		40			
A 68R			J04- 32	10	N		38			TB1-H49	18	N		40			
A 68Y			J04- 31	10	N		38			TB1-H48	18	N		40			
A 69	9						71							55			
A 69G			J04- 35	10	N		38			TB1-F48	18	N		40			
A 69R			J04- 45	10	N		38			TB1-F49	18	N		40			

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 21 OF 88

MIL 2085 · 4-83 WIR

CONDUCTOR			FROM							TO							ROUTING
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION SPEC. 1> ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	CUT WIRE OR SHIELD 2>	TERMINATION SPEC 1> ITEM NO.		NO.	
A 69Y			J04- 34	10	N		38			TB1-F50	18	N		40			
A 70	4		J04- 41	10	N		38	70		TB1-G10	18	N		53			
A 71	8						71							55			
A 71R			J04- 50	10	N		38			TB1-K1	18	N		42			
A 71Y			J04- 60	10	N		38			TB1-K2	18	N		42			
A 72	2			100		75	72				125		100	54	44		
A 72B	7		TB1-C47	18	N					SHLD A 72	20	N		41			
A 72R			J04- 56	10	N		38			TB1-C45	18	N		41			
A 72Y			J04- 66	10	N		38			TB1-C46	18	N		41			
A 73	2			100		75	72				125		100	54	44		
A 73B	7		TB1-D47	18	N		41			SHLD A 73	20	N					
A 73R			J04- 57	10	N		38			TB1-D45	18	N		41			
A 73Y			J04- 67	10	N		38			TB1-D46	18	N		41			
A 74	2			100		75	72				125		100	54	44		
A 74B	7		TB1-A47	18	N		41			SHLD A 74	20	N					
A 74R			J04-100	10	N		38			TB1-A46	18	N		41			
A 74Y			J04- 86	10	N		38			TB1-A45	18	N		41			
A 75	2			100		75	72				125		100	54	44		

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 22 OF 88

MIL 2085 · 4-83 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 75B	7		TB1-B47	18	N		41				SHLD A 75	20	N						
A 75R			J04- 87	10	N		38				TB1-B45	18	N		41				
A 75Y			J04-101	10	N		38				TB1-B46	18	N		41				
A 76	2			100		75	72					125		100	54	44			
A 76B	7		TB1-G39	18	N		40				SHLD A 76	20	N						
A 76R			J04- 90	10	N		38				TB1-G41	18	N		40				
A 76Y			J04-104	10	N		38				TB1-G40	18	N		40				
A 77	2			100		75	72					125		100	54	44			
A 77B	7		TB1-G36	18	N		40				SHLD A 77	20	N						
A 77R			J04-106	10	N		38				TB1-G37	18	N		40				
A 77Y			J04- 92	10	N		38				TB1-G38	18	N		40				
A 78	3			100		75	72					125		100	54	44			
A 78B	7		TB1-A34	18	N		41				SHLD A 78	20	N						
A 78G			J04-107	10	N		38				TB1-A35	18	N		40				
A 78R			J04-108	10	N		38				TB1-A33	18	N		40				
A 78Y			J04- 94	10	N		38				TB1-A34	18	N						
A 79	8						71								55				
A 79R			J05- 1	10	N		38				TB1-D5	18	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE-NONE | REV LTR C | SHEET 23 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 79Y			J05- 14	10	N		38				TB1-F5	18	N						
A 80	8						71								55				
A 80R			J05- 5	10	N		38				TB1-D8	18	N						
A 80Y			J05- 2	10	N		38				TB1-F8	18	N						
A 81	2			100		75	72					125		100	54	44			
A 81B	7		TB1-D39	18	N		40				SHLD A 81	20	N						
A 81R			J05- 17	10	N		38				TB1-D40	18	N		40				
A 81Y			J05- 4	10	N		38				TB1-D41	18	N		40				
A 82	2			100		75	72					125		100	54	44			
A 82B	7		TB1-D42	18	N		41				SHLD A 82	20	N						
A 82R			J05- 22	10	N		38				TB1-D43	18	N		41				
A 82Y			J05- 8	10	N		38				TB1-D44	18	N						
A 83	2			100		75	72					125		100	54	44			
A 83B	7		TB1-C42	18	N		42				SHLD A 83	20	N						
A 83R			J05- 9	10	N		38				TB1-C44	18	N		41				
A 83Y			J05- 10	10	N		38				TB1-C43	18	N		41				
A 84	9						71								55				
A 84G			J05- 11	10	N		38				TB1-B19	18	N		41				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE-NONE | REV LTR C | SHEET 24 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 84R			J05- 25	10	N		38				TB1-B19	18	N						
A 84Y			J05- 12	10	N		38				TB1-B18	18	N		40				
A 85	8						71								55				
A 85R			J05- 28	10	N		38				TB1-A2	18	N						
A 85Y			J05- 29	10	N		38				TB1-B2	18	N						
A 86	13						71								55				
A 86G			J05- 43	10	N		38				TB1-K50	18	N		42				
A 86N			J05- 44	10	N		38				TB1-D50	18	N		40				
A 86R			J05- 32	10	N		38				TB1-K49	18	N		40				
A 86Y			J05- 31	10	N		38				TB1-K48	18	N		40				
A 87	4		J05- 41	10	N		38		70		TB1-G11	18	N		41		53		
A 88	8						71								55				
A 88R			J05- 50	10	N		38				TB1-K1	18	N						
A 88Y			J05- 60	10	N		38				TB1-K2	18	N						
A 89	2			100		75	72					125		100	54	44			
A 89B	7		TB1-H42	18	N		40				SHLD A 89	20	N						
A 89R			J05- 56	10	N		38				TB1-H44	18	N		40				
A 89Y			J05- 66	10	N		38				TB1-H43	18	N		40				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE-NONE | REV LTR C | SHEET 25 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.			NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.			NO.	ROUTING
A 90	2			100		75	72					125		100	54	44			
A 90B	7		TB1-K42	18	N		40				SHLD A 90	20	N						
A 90R			J05- 57	10	N		38				TB1-K44	18	N		40				
A 90Y			J05- 67	10	N		38				TB1-K43	18	N		40				
A 91	2			100		75	72					125		100	54	44			
A 91B	7		TB1-A42	18	N		41				SHLD A 91	20	N						
A 91R			J05-100	10	N		38				TB1-A43	18	N		41				
A 91Y			J05- 86	10	N		38				TB1-A44	18	N						
A 92	2			100		75	72					125		100	54	44			
A 92B	7		TB1-B42	18	N		41				SHLD A 92	20	N						
A 92R			J05-101	10	N		38				TB1-B43	18	N		41				
A 92Y			J05- 87	10	N		38				TB1-B44	18	N						
A 93	2			100		75	72					125		100	54	44			
A 93B	7		TB1-C42	18	N						SHLD A 93	20	N						
A 93R			J05- 90	10	N		38				TB1-C41	18	N		40				
A 93Y			J05-104	10	N		38				TB1-C40	18	N		40				
A 94	2			100		75	72					125		100	54	44			
A 94B	7		TB1-C36	18	N		40				SHLD A 94	20	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE-NONE | REV LTR C | SHEET 26 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 94R			J05-106	10	N		38		TB1-C37	18	N		40		
A 94Y			J05- 92	10	N		38		TB1-C38	18	N		40		
A 95	3			100		75	72			125		100	54 44		
A 95B	7		TB1-B34	18	N		41		SHLD A 95	20	N				
A 95G			J05-107	10	N		38		TB1-B35	18	N		40		
A 95R			J05-108	10	N		38		TB1-B33	18	N		40		
A 95Y			J05- 94	10	N		38		TB1-B34	18	N				
A 96	8						71						55		
A 96R			J06- 1	10	N		38		P01- 1	10	N		38		
A 96Y			J06- 2	10	N		38		P01- 2	10	N		38		
A 97	4		J06- 6	10	N		38 70		P01- 6	10	N		38 53		
A 98	4		J06- 9	10	N		38 70		P01- 9	10	N		38 53		
A 99	2			100		75	72			125		100	54 44		
A 99B	7		TB1-A49	18	N		42		SHLD A 99	20	N				
A 99R			J06- 81	10	N		38		TB1-B48	18	N		41		
A 99Y			J06- 12	10	N		38		TB1-A48	18	N		42		
A 100	8						71						55		
A 100R			J06- 14	10	N		38		P01- 14	10	N		38		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE REV LTR C SHEET 27 OF 88

MIL 2085 - 4-83 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 100Y			J06- 15	10	N		38		P01- 15	10	N		38		
A 101	4		J06- 18	10	N		38 70		P01- 18	10	N		38 53		
A 102	4		J06- 22	10	N		38 70		P01- 22	10	N		38 53		
A 103	4		J06- 23	10	N		38 70		P01- 23	10	N		38 53		
A 104	1			100		75	72			125		100	55 43		
A 104B	7		TB1-H4	18	N		40		SHLD A 104	20	N				
A 104Y			J06- 24	10	N		38		TB1-G3	18	N		41		
A 105	4		J06- 25	10	N		38 70		P01- 25	10	N		38 53		
A 106	8						71						55		
A 106R			J06- 29	10	N		38		P01- 29	10	N		38		
A 106Y			J06- 28	10	N		38		P01- 28	10	N		38		
A 107	4		J06- 34	10	N		38 70		P01- 34	10	N		38 53		
A 108	4		J06- 35	10	N		38 70		P01- 35	10	N		38 53		
A 109	4		J06- 36	10	N		38 70		P01- 36	10	N		38 53		
A 110	4		J06- 37	10	N		38 70		P01- 37	10	N		38 53		
A 111	4		J06- 46	10	N		38 70		P01- 46	10	N		38 53		
A 112	4		J06- 56	10	N		38 70		P01- 56	10	N		38 53		
A 113	1			100		75	72			125		100	55 43		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE REV LTR C SHEET 28 OF 88

MIL 2085 - 4-83 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 113B	7		TB1-D56	18	N		41		SHLD A 113	20	N				
A 113Y			J06- 68	10	N		38		TB1-C56	18	N		41		
A 114	1			100		75	72			125		100	55 43		
A.114B	7		E22	20	N		44		SHLD A 114	20	N				
A 114Y			J06- 69	10	N		38		J24- 12	13	N		39		
A 115	4		J06- 78	10	N		38 70		TB1-D3	18	N		41 53		
A 116	4		J06- 79	10	N		38 70		P01- 79	10	N		38 53		
A 117	4		J06- 91	10	N		38 70		TB1-G8	10	N		42 53		
A 118	4		J06- 92	10	N		38 70		P01- 92	10	N		38 53		
A 119	4		J06- 93	10	N		38 70		P01- 93	10	N		38 53		
A 120	4		J06- 94	10	N		38 70		P01- 94	10	N		38 53		
A 121	4		J06-104	10	N		38 70		P01-104	10	N		38 53		
A 122	4		J06-105	10	N		38 70		P01-105	10	N		38 53		
A 123	8						71						55		
A 123R			J06-108	10	N		38		TB1-A3	18	N		42		
A 123Y			J06-107	10	N		38		TB1-B3	18	N		41		
A 124	3			100		75	72			125		100	54 44		
A 124B	7		TB1-K4	18	N		40		SHLD A 124	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE PEV LTR C SHEET 29 OF 88

MIL 2085 - 4-83 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TO TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 124G			P01- 4	10	N		38		TB1-K3	18	N		40		
A 124R			P01- 5	10	N		38		TB1-H5	18	N		40		
A 124Y			P01- 12	10	N		38		TB1-K5	18	N		40		
A 125	4		P01- 7	10	N		38 70		TB1-G7	18	N		41 53		
A 126	8						71						55		
A 126R			P01- 11	10	N		38		TB1-A7	18	N				
A 126Y			P01- 10	10	N		38		TB1-B7	18	N		41		
A 127	3			100		75	72			125		100	54 44		
A 127B	7		TB1-A49	18	N				SHLD A 127	20	N				
A 127G			P01- 48	10	N		38		TB1-A50	18	N		41		
A 127R			P01- 13	10	N		38		TB1-B50	18	N		41		
A 127Y			P01- 38	10	N		38		TB1-C50	18	N		41		
A 128	3			100		75	72			125		100	54 44		
A 128B	7		TB1-G4	18	N		40		SHLD A 128	20	N				
A 128G			P01- 57	10	N		38		TB1-H3	18	N		40		
A 128R			P01- 69	10	N		38		TB1-G5	18	N		40		
A 128Y			P01- 24	10	N		38		TB1-G3	18	N				
A 129	4		P01- 26	10	N		38 70		TB1-A26	18	N		42 53		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE REV LTR C SHEET 30 OF 88

MIL 2085 - 4-83 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.		SPEC. 1	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.		SPEC 1	NO.	ROUTING
A 130	2			100		75	72					125		100	54	44			
A 130B	7		TB1-B49	18	N		42				SHLD A 130	20	N						
A 130R			P01- 58	10	N		38				TB1-C49	18	N		41				
A 130Y			P01- 27	10	N		38				TB1-C48	18	N		41				
A 131	1			100		75	72					125		100	55	43			
A 131B	7		E22	20	N						SHLD A 131	20	N						
A 131Y			P01- 39	10	N		38				J24- 29	13	N		39				
A 132	1			100		75	72					125		100	55	43			
A 132B	7		E22	20	N						SHLD A 132	20	N						
A 132Y			P01- 49	10	N		38				J24- 4	13	N		39				
A 133	1			100		75	72					125		100	55	43			
A 133B	7		E22	20	N						SHLD A 133	20	N						
A 133Y			P01- 59	10	N		38				J24- 14	13	N		39				
A 134	1			100		75	72					125		100	55	43			
A 134B	7		TB1-D56	18	N						SHLD A 134	20	N						
A 134Y			P01- 68	10	N		38				TB1-C56	18	N						
A 135	2			100		75	72					125		100	54	44			
A 135B	7		TB1-K32	18	N						SHLD A 135	20	N						

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015085
SCALE-NONE REV LTR C SHEET 31 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.		SPEC. 1	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.		SPEC 1	NO.	ROUTING
A 135R			P01- 70	10	N		38				TB1-K33	18	N						
A 135Y			P01- 71	10	N		38				TB1-K34	18	N						
A 136	1			100		75	72					125		100	55	43			
A 136B	7		E22	20	N						SHLD A 136	20	N						
A 136Y			P01- 76	10	N		38				J24- 13	13	N		39				
A 137	4		P01- 78	10	N		38	70			TB1-D3	18	N		53				
A 138	8						71								55				
A 138R			P01- 80	10	N		38				TB1-A54	18	N		41				
A 138Y			P01- 95	10	N		38				TB1-A55	18	N		41				
A 139	2			100		75	72					125		100	54	44			
A 139B	7		TB1-H32	18	N						SHLD A 139	20	N						
A 139R			P01- 82	10	N		38				TB1-H33	18	N						
A 139Y			P01- 83	10	N		38				TB1-H34	18	N						
A 140	4		P01- 84	10	N		38	70			TB1-G8	18	N		53				
A 141	4		P01- 88	10	N		38	70			TB1-D71	18	N		41	53			
A 142	4		P01- 89	10	N		38	70			TB1-K72	18	N		41	53			
A 143	13						71								55				
A 143G			P01-106	10	N		38				TB1-C1	18	N		41				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015085
SCALE-NONE REV LTR C SHEET 32 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.		SPEC. 1	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.		SPEC 1	NO.	ROUTING
A 143N			P01- 90	10	N		38				TB1-C2	18	N		41				
A 143R			P01-103	10	N		38				TB1-A2	18	N						
A 143Y			P01-108	10	N		38				TB1-A4	18	N		42				
A 144	4		P01- 91	10	N		38	70			TB1-C3	18	N		41	53			
A 145	2			100		75	72					125		100	54	44			
A 145B	7		TB1-G32	18	N						SHLD A 145	20	N						
A 145R			P01- 96	10	N		38				TB1-G33	18	N						
A 145Y			P01- 97	10	N		38				TB1-G34	18	N						
A 146	4		J08- 17	10	N		38	70			TB1-B21	18	N		42	53			
A 147	4		J08- 18	10	N		38	70			TB1-A23	18	N		41	53			
A 148	5		J08- 19	10	N		38	70			TB1-B21	18	N		53				
A 149	4		J08- 28	10	N		38	70			TB1-B21	18	N		53				
A 150	4		J08- 29	10	N		38	70			TB1-G8	18	N		53				
A 151	4		J08- 30	10	N		38	70			TB1-B22	18	N		42	53			
A 152	4		J08- 31	10	N		38	70			TB1-A25	18	N		40	53			
A 153	4		J08- 32	10	N		38	70			TB1-C4	18	N		41	53			
A 154	12						71								55				
A 154G			J08- 46	10	N		38				TB1-B77	18	N		41				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015085
SCALE-NONE REV LTR C SHEET 33 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.		SPEC. 1	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION ITEM NO.		SPEC 1	NO.	ROUTING
A 154R			J08- 55	10	N		38				TB1-B76	18	N		41				
A 154Y			J08- 36	10	N		38				TB1-B75	18	N		41				
A 155	4		J08- 41	10	N		38	70			TB1-A21	18	N		41	53			
A 156	4		J08- 42	10	N		38	70			TB1-A26	18	N		53				
A 157	4		J08- 43	10	N		38	70			J22- 40	18	N		39	53			
A 158	4		J08- 50	10	N		38	70			TB1-A20	18	N		41	53			
A 159	8						71								55				
A 159R			J08- 52	10	N		38				TB1-C25	18	N		40				
A 159Y			J08- 51	10	N		38				TB1-C26	18	N		41				
A 160	4		J08- 53	10	N		38	70			J22- 65	13	N		39	53			
A 161	4		J08- 54	10	N		38	70			TB1-C4	18	N		53				
A 162	4		J08- 60	10	N		38	70			TB1-A22	18	N		41	53			
A 163	4		J08- 61	10	N		38	70			TB1-B22	18	N		53				
A 164	8						71								55				
A 164R			J08- 62	10	N		38				TB1-B26	18	N		41				
A 164Y			J08- 63	10	N		38				TB1-B25	18	N						
A 165	10						71								55				
A 165G			J08- 66	10	N		38				TB1-A76	18	N		41				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015085
SCALE-NONE REV LTR C SHEET 34 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							ROUTING
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 165N			J08- 95	10	N		38			TB1-A75	18	N		41			
A 165R			J08- 68	10	N		38			TB1-A77	18	N		41			
A 165Y			J08- 81	10	N		38			TB1-A78	18	N		41			
A 166	4		J08- 67	10	N		38	70		TB1-A53	18	N		41	53		
A 167	4		J08- 70	10	N		38	70		TB1-B22	18	N		53			
A 168	8						71							55			
A 168R			J08- 71	10	N		38			TB1-D26	18	N		41			
A 168Y			J08- 82	10	N		38			TB1-D25	18	N		40			
A 169	4		J08- 72	10	N		38	70		TB1-A24	18	N		41	53		
A 170	4		J08- 73	10	N		38	70		TB1-B24	18	N		42	53		
A 171	4		J08- 78	10	N		38	70		TB1-B52	18	N		41	53		
A 172	4		J08- 79	10	N		38	70		TB1-A52	18	N		41	53		
A 173	4		J08- 83	10	N		38	70		TB1-B23	18	N		42	53		
A 174	4		J08- 84	10	N		38	70		TB1-B23	18	N		53			
A 175	4		J08- 92	10	N		38	70		TB1-D4	18	N		40	53		
A 176	4		J08- 93	10	N		38	70		TB1-A51	18	N		41	53		
A 177	4		J08-106	10	N		38	70		TB1-B51	18	N		41	53		
A 178	8						71							55			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR C
SHEET 35 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							ROUTING
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 178R			P02-A	20	N		62			TB1-A5	18	N					
A 178Y			P02-B	20	N		62			TB1-B5	18	N		40			
A 179	2			150		125	72				125		100	54	44		
A 179B	7		TB1-A12	18	N					SHLD A 179	20	N					
A 179R			P02-A*	20	N		62			TB1-A13	18	N					
A 179Y			P02-B*	20	N		62			TB1-A14	18	N					
A 180	2			150		125	72				125		100	54	44		
A 180B	7		TB1-F17	18	N					SHLD A 180	20	N					
A 180R			P02-C	20	N		62			TB1-F15	18	N					
A 180Y			P02-D	20	N		62			TB1-F14	18	N		40			
A 181	2			150		125	72				125		100	54	44		
A 181B	7		TB1-G17	18	N					SHLD A 181	20	N					
A 181R			P02-E	20	N		62			TB1-G14	18	N		40			
A 181Y			P02-F	20	N		62			TB1-G15	18	N					
A 182	2			150		125	72				125		100	54	44		
A 182B	7		TB1-A17	18	N					SHLD A 182	20	N					
A 182R			P02-F*	20	N		62			TB1-A15	18	N					
A 182Y			P02-G*	20	N		62			TB1-A16	18	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR C
SHEET 36 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							ROUTING
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 183	2			150		125	72				125		100	54	44		
A 183B	7		TB1-H12	18	N					SHLD A 183	20	N					
A 183R			P02-G	20	N		62			TB1-H10	18	N					
A 183Y			P02-H	20	N		62			TB1-H9	18	N		40			
A 184	2			150		125	72				125		100	54	44		
A 184B	7		TB1-K12	18	N					SHLD A 184	20	N					
A 184R			P02-J	20	N		62			TB1-K9	18	N		40			
A 184Y			P02-K	20	N		62			TB1-K10	18	N					
A 185	2			150		125	72				125		100	54	44		
A 185B	7		TB1-B12	18	N					SHLD A 185	20	N					
A 185R			P02-L	20	N		62			TB1-B13	18	N					
A 185Y			P02-M	20	N		62			TB1-B14	18	N					
A 186	2			150		125	72				125		100	54	44		
A 186B	7		TB1-B17	18	N					SHLD A 186	20	N					
A 186R			P02-P	20	N		62			TB1-B16	18	N					
A 186Y			P02-N	20	N		62			TB1-B15	18	N					
A 187	11						71							55			
A 187R			P02-R	20	N		62			TB1-K7	18	N		40			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR C
SHEET 37 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							ROUTING
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 187Y			P02-S	20	N		62			TB1-H7	18	N		40			
A 188	2			150		125	72				125		100	54	44		
A 188B	7		TB1-H12	18	N					SHLD A 188	20	N					
A 188R			P02-T	20	N		62			TB1-K8	18	N		41			
A 188Y			P02-U	20	N		62			TB1-H8	18	N		41			
A 189	2			150		125	72				125		100	54	44		
A 189B	7		TB1-H17	18	N					SHLD A 189	20	N					
A 189R			P02-W	20	N		62			TB1-H15	18	N					
A 189Y			P02-X	20	N		62			TB1-H14	18	N		40			
A 190	2			150		125	72				125		100	54	44		
A 190B	7		TB1-K17	18	N					SHLD A 190	20	N					
A 190R			P02-Y	20	N		62			TB1-K14	18	N		40			
A 190Y			P02-Z	20	N		62			TB1-K15	18	N					
A 191	1			150		125	72				125		100	55	43		
A 191B	7		TB1-G27	18	N		41			SHLD A 191	20	N					
A 191Y			P03-A	20	N		62			TB1-G28	18	N		41			
A 192	8						71							55			
A 192R			P03-Z	20	N		62			TB1-D18	18	N		42			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR C
SHEET 38 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
A 192Y			P03-A*	20	N		62			TB1-D19	18	N		42			
A 193	1			150		125	72				125		100	55	43		
A 193B	7		TB1-G27	18	N					SHLD A 193	20	N					
A 193Y			P03-B	20	N		62			TB1-F28	18	N		41			
A 194	8						71							55			
A 194R			P03-C*	20	N		62			TB1-D18	18	N					
A 194Y			P03-B*	20	N		62			TB1-D19	18	N					
A 195	10						71							55			
A 195G			P03-U	20	N		62			TB1-C28	18	N		41			
A 195N			P03-W	20	N		62			TB1-B28	18	N		42			
A 195R			P03-C	20	N		62			TB1-A28	18	N		41			
A 195Y			P03-V	20	N		62			TB1-D28	18	N		41			
A 196	2			150		125	72				125		100	54	44		
A 196B	7		TB1-C17	18	N					SHLD A 196	20	N					
A 196R			P03-D	20	N		62			TB1-C14	18	N		41			
A 196Y			P03-E	20	N		62			TB1-C15	18	N					
A 197	8						71							55			
A 197R			P03-D*	20	N		62			TB1-F18	18	N		42			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE-NONE | REV LTR C | SHEET 39 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
A 197Y			P03-E*	20	N		62			TB1-F19	18	N		42			
A 198	2			150		125	72				125		100	54	44		
A 198B	7		TB1-D17	18	N					SHLD A 198	20	N					
A 198R			P03-F	20	N		62			TB1-D15	18	N					
A 198Y			P03-G	20	N		62			TB1-D14	18	N		41			
A 199	8						71							55			
A 199R			P03-G*	20	N		62			TB1-F18	18	N					
A 199Y			P03-F*	20	N		62			TB1-F19	18	N					
A 200	2			150		125	72				125		100	54	44		
A 200B	7		TB1-K28	18	N		41			SHLD A 200	20	N					
A 200R			P03-J	20	N		62			TB1-K28	18	N					
A 200Y			P03-H	20	N		62			TB1-K29	18	N		40			
A 201	4		P03-H*	20	N		62	70		TB1-G7	18	N		53			
A 202	4		P03-J*	20	N		62	70		TB1-A56	18	N		42	53		
A 203	2			150		125	72				125		100	54	44		
A 203B	7		TB1-H28	18	N		41			SHLD A 203	20	N					
A 203R			P03-K	20	N		62			TB1-H28	18	N					
A 203Y			P03-L	20	N		62			TB1-H29	18	N		40			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE-NONE | REV LTR C | SHEET 40 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
A 204	2			150		125	72				125		100	54	44		
A 204B	7		TB1-G12	18	N		40			SHLD A 204	20	N					
A 204R			P03-N	20	N		62			TB1-H13	18	N		40			
A 204Y			P03-M	20	N		62			TB1-K13	18	N		40			
A 205	2			150		125	72				125		100	54	44		
A 205B	7		TB1-F12	18	N		40			SHLD A 205	20	N					
A 205R			P03-R	20	N		62			TB1-F13	18	N		40			
A 205Y			P03-P	20	N		62			TB1-G13	18	N		40			
A 206	8						71							55			
A 206R			P03-Y	20	N		62			TB1-C18	18	N		42			
A 206Y			P03-X	20	N		62			TB1-C19	18	N		42			
A 207	8						71							55			
A 207R			P04-D2	13	N		39			P05- 30	13	N		39			
A 207Y			P04-D1	13	N		39			P05- 27	13	N		39			
A 208	8						71							55			
A 208R			P04-E1	13	N		39			TB1-D6	18	N		41			
A 208Y			P04-E2	13	N		39			TB1-F6	18	N		42			
A 209	8						71							55			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE-NONE | REV LTR C | SHEET 41 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
A 209R			P04-F1	13	N		39			P05- 59	13	N		39			
A 209Y			P04-F2	13	N		39			P05- 58	13	N		39			
A 210	4		P05- 1	13	N		39	70		TB1-G11	18	N		53			
A 211	2			200		175	72				125		100	54	44		
A 211B	7		TB1-C47	18	N					SHLD A 211	20	N					
A 211R			P05- 3	13	N		39			TB1-C45	18	N					
A 211Y			P05- 2	13	N		39			TB1-C46	18	N					
A 212	9						71							55			
A 212G			P05- 16	13	N		39			TB1-G50	18	N		42			
A 212R			P05- 5	13	N		39			TB1-G51	18	N		40			
A 212Y			P05- 33	13	N		39			TB1-G52	18	N		40			
A 213	2			200		175	72				125		100	54			
A 213B	7		TB1-D47	18	N					SHLD A 213	20	N					
A 213R			P05- 7	13	N		39			TB1-D45	18	N					
A 213Y			P05- 6	13	N		39			TB1-D46	18	N					
A 214	9						71							55			
A 214G			P05- 19	13	N		39			TB1-G50	18	N					
A 214R			P05- 8	13	N		39			TB1-G49	18	N		40			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE-NONE | REV LTR C | SHEET 42 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR		FROM							TO							ROUTING
NUMBER	ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.		NO.	
A 214Y		P05- 36	13	N		39			TB1-G48	18	N		40			
A 215	4	P05- 9	13	N		39	70		TB1-B67	18	N		42	53		
A 216	2		200		175	72				125		100	54	44		
A 216B	7	TB1-A67	18	N		41			SHLD A 216	20	N					
A 216R		P05- 11	13	N		39			TB1-A66	18	N		41			
A 216Y		P05- 10	13	N		39			TB1-A65	18	N		41			
A 217	9					71							55			
A 217G		P05- 14	13	N		39			TB1-F6	18	N					
A 217R		P05- 12	13	N		39			TB1-D6	18	N					
A 217Y		P05- 13	13	N		39			TB1-F6	18	N					
A 218	2		200		175	72				125		100	54	44		
A 218B	7	TB1-B67	18	N					SHLD A 218	20	N					
A 218R		P05- 17	13	N		39			TB1-B66	18	N		41			
A 218Y		P05- 18	13	N		39			TB1-B65	18	N		41			
A 219	2		200		175	72				125		100	54	44		
A 219B	7	TB1-H36	18	N		40			SHLD A 219	20	N					
A 219R		P05- 23	13	N		39			TB1-H37	18	N		40			
A 219Y		P05- 24	13	N		39			TB1-H38	18	N		40			

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 43 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR		FROM							TO							ROUTING
NUMBER	ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.		NO.	
A 220	8					71							55			
A 220R		P05- 32	13	N		39			TB1-D7	18	N		42			
A 220Y		P05- 55	13	N		39			TB1-F7	18	N		42			
A 221	2		200		175	72				125		100	54	44		
A 221B	7	TB1-D36	18	N		40			SHLD A 221	20	N					
A 221R		P05- 34	13	N		39			TB1-D37	18	N		40			
A 221Y		P05- 35	13	N		39			TB1-D38	18	N		40			
A 222	4	P05- 37	13	N		39	70		TB1-C67	18	N		42	53		
A 223	2		200		175	72				125		100	54	44		
A 223B	7	TB1-D42	18	N					SHLD A 223	20	N					
A 223R		P05- 38	13	N		39			TB1-D43	18	N					
A 223Y		P05- 39	13	N		39			TB1-D44	18	N					
A 224	2		200		175	72				125		100	54	44		
A 224B	7	TB1-C42	18	N					SHLD A 224	20	N					
A 224R		P05- 41	13	N		39			TB1-C44	18	N					
A 224Y		P05- 40	13	N		39			TB1-C43	18	N					
A 225	8					71							55			
A 225R		P05- 43	13	N		39			TB1-A3	18	N					

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 44 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR		FROM							TO							ROUTING
NUMBER	ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.		NO.	
A 225Y		P05- 44	13	N		39			TB1-B3	18	N					
A 226	2		200		175	72				125		100	54	44		
A 226B	7	TB1-G47	18	N		41			SHLD A 226	20	N					
A 226R		P05- 52	13	N		39			TB1-G46	18	N		41			
A 226Y		P05- 51	13	N		39			TB1-G45	18	N		41			
A 227	2		200		175	72				125		100	54	44		
A 227B	7	TB1-F47	18	N		41			SHLD A 227	20	N					
A 227R		P05- 53	13	N		39			TB1-F46	18	N		41			
A 227Y		P05- 54	13	N		39			TB1-F45	18	N		41			
A 228	2		200		175	72				125		100	54	44		
A 228B	7	TB1-D67	18	N		41			SHLD A 228	20	N					
A 228R		P05- 64	13	N		39			TB1-D66	18	N		41			
A 228Y		P05- 65	13	N		39			TB1-D65	18	N		41			
A 229	4	P05- 68	13	N		39	70		TB1-B71	18	N		42	53		
A 230	4	P05- 69	13	N		39	70		TB1-D78	18	N		41	53		
A 231	8					71							55			
A 231R		P05- 71	13	N		39			TB1-D7	18	N					
A 231Y		P05- 70	13	N		39			TB1-F7	18	N					

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 45 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR		FROM							TO							ROUTING
NUMBER	ITEM NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC. ITEM NO.		NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	CUT WIRE OR SHIELD	TERMINATION SPEC ITEM NO.		NO.	
A 232	2		200		175	72				125		100	54	44		
A 232B	7	TB1-C67	18	N					SHLD A 232	20	N					
A 232R		P05- 72	13	N		39			TB1-C66	18	N		41			
A 232Y		P05- 73	13	N		39			TB1-C65	18	N		41			
A 233	8					71							55			
A 233R		P05- 76	13	N		39			TB1-D8	18	N					
A 233Y		P05- 77	13	N		39			TB1-F8	18	N					
A 234	2		200		175	72				125		100	54			
A 234B	7	TB1-B47	18	N					SHLD A 234	20	N					
A 234R		P05- 79	13	N		39			TB1-B45	18	N					
A 234Y		P05- 78	13	N		39			TB1-B46	18	N					
A 235	2		200		175	72				125		100	54			
A 235B	7	TB1-K67	18	N		42			SHLD A 235	20	N					
A 235R		P05- 80	13	N		39			TB1-K66	18	N		40			
A 235Y		P05- 81	13	N		39			TB1-K65	18	N		40			
A 236	2		200		175	72				125		100	54			
A 236B	7	TB1-A47	18	N					SHLD A 236	20	N					
A 236R		P05- 83	13	N		39			TB1-A46	18	N					

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 46 OF 88

MIL 2085 · 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							ROUTING
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 236Y			P05- 82	13	N		39			TB1-A45	18	N					
A 237	8						71							55			
A 237R			P05- 84	13	N		39			TB1-D7	18	N					
A 237Y			P05- 85	13	N		39			TB1-F7	18	N					
A 238	2			200		175	72				125		100	54	44		
A 238B	7		TB1-A42	18	N					SHLD A 238	20	N					
A 238R			P05- 87	13	N		39			TB1-A43	18	N					
A 238Y			P05- 86	13	N		39			TB1-A44	18	N					
A 239	2			200		175	72				125		100	54	44		
A 239B	7		TB1-H67	18	N		41			SHLD A 239	20	N					
A 239R			P05- 88	13	N		39			TB1-H66	18	N		40			
A 239Y			P05- 89	13	N		39			TB1-H65	18	N		40			
A 240	2			200		175	72				125		100	54	44		
A 240B	7		TB1-B42	18	N					SHLD A 240	20	N					
A 240R			P05- 91	13	N		39			TB1-B43	18	N					
A 240Y			P05- 90	13	N		39			TB1-B44	18	N					
A 241	9						71							55			
A 241G			P06-A	20	N		62			TB1-C74	18	N		41			

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR C | SHEET 47 OF 88

MIL 2085 · 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							ROUTING
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 241R			P06-C	20	N		62			TB1-C72	18	N		41			
A 241Y			P06-B	20	N		62			TB1-C73	18	N		41			
A 242	8						71							55			
A 242R			P06-Z	20	N		62			TB1-K63	18	N		40			
A 242Y			P06-A*	20	N		62			TB1-K64	18	N		40			
A 243	8						71							55			
A 243R			P06-B*	20	N		62			TB1-K74	18	N		40			
A 243Y			P06-C*	20	N		62			TB1-K73	18	N		40			
A 244	4		P06-D	20	N		62	70		TB1-G71	18	N		41	53		
A 245	8						71							55			
A 245R			P06-D*	20	N		62			TB1-D68	18	N		41			
A 245Y			P06-E*	20	N		62			TB1-D69	18	N		41			
A 246	4		P06-E	20	N		62	70		TB1-H26	18	N		41	53		
A 247	4		P06-F	20	N		62	70		TB1-C54	18	N		41	53		
A 248	8						71							55			
A 248R			P06-F*	20	N		62			TB1-C77	18	N		40			
A 248Y			P06-G*	20	N		62			TB1-C76	18	N		41			
A 249	4		P06-G	20	N		62	70		TB1-G70	18	N		42	53		

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR C | SHEET 48 OF 88

MIL 2085 · 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							ROUTING
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 250	8						71							55			
A 250R			P06-H	20	N		62			TB1-C18	18	N					
A 250Y			P06-J	20	N		62			TB1-C19	18	N					
A 251	4		P06-K	20	N		62	70		TB1-H61	18	N		40	53		
A 252	8						71							55			
A 252R			P06-M	20	N		62			TB1-H63	18	N		40			
A 252Y			P06-L	20	N		62			TB1-H64	18	N		40			
A 253	8						71							55			
A 253R			P06-N	20	N		62			TB1-H62	18	N		41			
A 253Y			P06-P	20	N		62			TB1-G61	18	N		40			
A 254	2			150		125	72				125		100				
A 254B	7		TB1-C59	18	N		41			SHLD A 254	20	N					
A 254R			P06-X	20	N		62			TB1-C60	18	N		40			
A 254Y			P06-R	20	N		62			TB1-C61	18	N		40			
A 255	2			150		125	72				125		100				
A 255B	7		TB1-C59	18	N					SHLD A 255	20	N					
A 255R			P06-V	20	N		62			TB1-D60	18	N		40			
A 255Y			P06-W	20	N		62			TB1-D61	18	N		40			

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR C | SHEET 49 OF 88

MIL 2085 · 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							ROUTING
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	
A 256	4		P06-Y	20	N		62	70		TB1-D62	18	N		41	53		
A 257	6			175		150	72				125		100	55	44		
A 257B	7		TB1-C24	18	N		40			SHLD A 257	20	N					
A 257L			P07-A	40	N		62			TB1-C23	18	N		40			
A 257R			P07-C	40	N		62			TB1-C21	18	N		40			
A 257W			P07-B	40	N		62			TB1-C22	18	N		40			
A 258	8						71							55			
A 258R			P07-Z	20	N		62			TB1-D11	18	N		40			
A 258Y			P07-A*	20	N		62			TB1-D10	18	N		40			
A 259	8						71							55			
A 259R			P07-B*	20	N		62			TB1-C11	18	N		40			
A 259Y			P07-C*	20	N		62			TB1-C10	18	N		40			
A 260	6			175		150	72				125		100	55	44		
A 260B	7		TB1-F24	18	N		40			SHLD A 260	20	N					
A 260L			P07-D	40	N		62			TB1-F23	18	N		40			
A 260R			P07-F	40	N		62			TB1-F21	18	N		40			
A 260W			P07-E	40	N		62			TB1-F22	18	N		40			
A 261	10						71							55			

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR C | SHEET 50 OF 88

MIL 2085 · 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM								TO								
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CIRCUIT POINT	CUT WIRE OR SHIELD 2>	TIN	STRIP WIRE OR JACKET 2>	TERMINATION SPEC. ITEM NO.		1>	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2>	TIN	STRIP WIRE OR JACKET 2>	TERMINATION SPEC ITEM NO.		1>	NO.	ROUTING
A 261G			P07-F*	20	N		62				TB1-A10	18	N		40				
A 261N			P07-G*	20	N		62				TB1-A11	18	N		40				
A 261R			P07-H*	20	N		62				TB1-B11	18	N		40				
A 261Y			P07-J*	20	N		62				TB1-B10	18	N		40				
A 262	6			175		150	72					125		100	55				
A 262B	7		TB1-D24	18	N		41				SHLD A 262	20	N						
A 262L			P07-G	40	N		62				TB1-D23	18	N		40				
A 262R			P07-J	40	N		62				TB1-D21	18	N		40				
A 262W			P07-H	40	N		62				TB1-D22	18	N		40				
→ A 263	6			175		150	72					125		100	55				←
A 263B	7		TB1-G24	18	N		40				SHLD A 263	20	N						
A 263L			P07-K	40	N		62				TB1-G23	18	N		40				
A 263R			P07-M	40	N		62				TB1-G21	18	N		40				
A 263W			P07-L	40	N		62				TB1-G22	18	N		40				
A 264	6			175		150	72					125		100	55				
A 264B	7		TB1-H24	18	N		40				SHLD A 264	20	N						
A 264L			P07-N	40	N		62				TB1-H23	18	N		40				
A 264R			P07-R	40	N		62				TB1-H21	18	N		40				

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR C | SHEET 51 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM								TO								
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CIRCUIT POINT	CUT WIRE OR SHIELD 2>	TIN	STRIP WIRE OR JACKET 2>	TERMINATION SPEC. ITEM NO.		1>	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2>	TIN	STRIP WIRE OR JACKET 2>	TERMINATION SPEC ITEM NO.		1>	NO.	ROUTING
A 264W			P07-P	40	N		62				TB1-H22	18	N		40				
A 265	6			175		150	72					125		100	55				
A 265B	7		TB1-K24	18	N		40				SHLD A 265	20	N						
A 265L			P07-U	40	N		62				TB1-K23	18	N		40				
A 265R			P07-W	40	N		62				TB1-K21	18	N		40				
A 265W			P07-V	40	N		62				TB1-K22	18	N		40				
A 266	8						71								55				
A 266R			P07-X	20	N		62				TB1-F11	18	N		40				
A 266Y			P07-Y	20	N		62				TB1-F10	18	N		40				
→ A 267	9						71								55				←
A 267G			P08- 1	13	N		39				TB1-K50	18	N						
A 267R			P08- 2	13	N		39				TB1-K51	18	N		40				
A 267Y			P08- 3	13	N		39				TB1-K52	18	N		40				
A 268	9						71								55				
A 268G			P08- 7	13	N		39				TB1-H50	18	N						
A 268R			P08- 5	13	N		39				TB1-H51	18	N		40				
A 268Y			P08- 6	13	N		39				TB1-H52	18	N		40				
A 269	2			200		175	72					125		100	54	44			

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR C | SHEET 52 OF 88

MIL 2085 - 4-65 WIR

GXS' WIRING HARNESS A C 1015085

CONDUCTOR			FROM								TO								
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CIRCUIT POINT	CUT WIRE OR SHIELD 2>	TIN	STRIP WIRE OR JACKET 2>	TERMINATION SPEC. ITEM NO.		1>	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2>	TIN	STRIP WIRE OR JACKET 2>	TERMINATION SPEC ITEM NO.		1>	NO.	ROUTING
A 269B	7		TB1-F42	18	N		40				SHLD A 269	20	N						
A 269R			P08- 9	13	N		39				TB1-F44	18	N		40				
A 269Y			P08- 10	13	N		39				TB1-F43	18	N		40				
A 270	2			200		175	72					125		100	54	44			
A 270B	7		TB1-G42	18	N		40				SHLD A 270	20	N						
A 270R			P08- 12	13	N		39				TB1-G43	18	N		40				
A 270Y			P08- 13	13	N		39				TB1-G44	18	N		40				
A 271	2			200		175	72					125		100	54	44			
A 271B	7		TB1-F39	18	N		40				SHLD A 271	20	N						
→ A 271R			P08- 19	13	N		39				TB1-F41	18	N		40				←
A 271Y			P08- 18	13	N		39				TB1-F40	18	N		40				
A 272	8						71								55				
A 272R			P08- 21	13	N		39				TB1-A74	18	N		42				
A 272Y			P08- 22	13	N		39				TB1-B74	18	N		42				
A 273	8						71								55				
A 273R			P08- 24	13	N		39				TB1-A74	18	N						
A 273Y			P08- 25	13	N		39				TB1-B74	18	N						
A 274	8						71								55				

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR C | SHEET 53 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM								TO								
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CIRCUIT POINT	CUT WIRE OR SHIELD 2>	TIN	STRIP WIRE OR JACKET 2>	TERMINATION SPEC. ITEM NO.		1>	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2>	TIN	STRIP WIRE OR JACKET 2>	TERMINATION SPEC ITEM NO.		1>	NO.	ROUTING
A 274R			P08- 27	13	N		39				TB1-A73	18	N		41				
A 274Y			P08- 28	13	N		39				TB1-B73	18	N		41				
A 275	8						71								55				
A 275R			P08- 30	13	N		39				TB1-A73	18	N						
A 275Y			P08- 31	13	N		39				TB1-B73	18	N						
A 276	2			200		175	72	44				125		100	54	44			
A 276A	7		SHLD A 276	20	N						P08- 35	13	N		39				
A 276B	7		TB1-F36	18	N		40				SHLD A 276	20	N						
A 276R			P08- 33	13	N		39				TB1-F37	18	N		40				
→ A 276Y			P08- 34	13	N		39				TB1-F38	18	N		40				←
A 278	2			200		175	72	44				125		100	54	44			
A 278A	7		SHLD A 278	20	N						P08- 37	13	N		39				
A 278B	7		TB1-K36	18	N		40				SHLD A 278	20	N						
A 278R			P08- 38	13	N		39				TB1-K37	18	N		40				
A 278Y			P08- 39	13	N		39				TB1-K38	18	N		40				
A 279	2			200		175	72					125		100	54	44			
A 279B	7		TB1-G47	18	N						SHLD A 279	20	N						
A 279R			P08- 41	13	N		39				TB1-G46	18	N						

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR C | SHEET 54 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	2	T I N	2	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 279Y		P08- 42	13	N		39		TB1-G45	18	N				
A 280	2		200		175	72			125		100	54 44		
A 280B	7	TB1-F47	18	N				SHLD A 280	20	N				
A 280R		P08- 44	13	N		39		TB1-F46	18	N				
A 280Y		P08- 45	13	N		39		TB1-F45	18	N				
A 281	2		200		175	72			125		100	54 44		
A 281B	7	TB1-K39	18	N		40		SHLD A 281	20	N				
A 281R		P08- 50	13	N		39		TB1-K41	18	N		40		
A 281Y		P08- 51	13	N		39		TB1-K40	18	N		40		
A 282	8					71						55		
A 282R		P08- 53	13	N		39		TB1-A4	18	N				
A 282Y		P08- 54	13	N		39		TB1-B4	18	N		42		
A 283	8					71						55		
A 283R		P08- 56	13	N		39		TB1-A4	18	N				
A 283Y		P08- 57	13	N		39		TB1-B4	18	N				
A 284	4	P08- 59	13	N		39 70		TB1-G70	18	N		53		
A 285	4	J09- 1	10	N		70		TB1-F77	18	N		40 53		
A 286	3		100		75	72			125		100	54 44		

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR C
SHEET 55 OF 88

MIL 2085 - 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	2	T I N	2	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 286B	7	TB1-A59	18	N		41		SHLD A 286	20	N				
A 286G		J09- 70	10	N		38		TB1-B59	18	N		41		
A 286R		J09- 2	10	N		38		TB1-A61	18	N		41		
A 286Y		J09- 72	10	N		38		TB1-B60	18	N		41		
A 287	9					71						55		
A 287G		J09- 16	10	N		38		J22- 90	13	N		39		
A 287R		J09- 17	10	N		38		J22- 60	13	N		39		
A 287Y		J09- 3	10	N		38		J22- 89	13	N		39		
A 288	9					71						55		
A 288G		J09- 18	10	N		38		J22- 36	13	N		39		
A 288R		J09- 5	10	N		38		J22- 35	13	N		39		
A 288Y		J09- 4	10	N		38		J22- 18	13	N		39		
A 289	9					71						55		
A 289G		J09- 7	10	N				J22- 88	13	N		39		
A 289R		J09- 6	10	N		38		J22- 87	13	N		39		
A 289Y		J09- 20	10	N		38		J22- 58	13	N		39		
A 290	2		100		75	72			125		100	54 44		
A 290B	7	TB1-K67	18	N				SHLD A 290	20	N				

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR C
SHEET 56 OF 88

MIL 2085 - 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	2	T I N	2	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 290R		J09- 8	10	N		38		TB1-K68	18	N		40		
A 290Y		J09- 22	10	N		38		TB1-K69	18	N		40		
A 291	2		100		75	72			125		100	54 44		
A 291B	7	TB1-H67	18	N				SHLD A 291	20	N				
A 291R		J09- 10	10	N		38		TB1-H68	18	N		40		
A 291Y		J09- 24	10	N		38		TB1-H69	18	N		40		
A 292	5	J09- 99	10	N		38 70		TB1-B23	18	N		53		
A 295	4	J09- 14	10	N		38 70		J22- 64	13	N		39 53		
A 296	4	J09- 15	10	N		38 70		TB1-D70	18	N		41 53		
A 297	4	J09- 26	10	N		38 70		TB1-C62	18	N		41 53		
A 298	1		125		100	72 43			100		75	55		
A 298A	7	SHLD A 298	18	N				E24	20	N		43		
A 298Y		J09- 30	10	N		38		P10- 32	10	N		38		
A 299	4	J09- 31	10	N		38 70		P10- 16	10	N		38 53		
A 300	8					71						55		
A 300R		J09- 32	10	N		38		TB1-A54	18	N				
A 300Y		J09- 44	10	N		38		TB1-A55	18	N				
A 301	1		125		100	72 43			100		75	55		

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR C
SHEET 57 OF 88

MIL 2085 - 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	2	T I N	2	TERMINATION SPEC ITEM NO.	NO.	ROUTING
A 301A	7	SHLD A 301	20	N				E 24	20	N		43		
A 301Y		J09- 33	10	N		38		P10- 33	10	N		38		
A 302	2		100		75	72			125		100	54 44		
A 302B	7	TB1-F67	18	N		41		SHLD A 302	20	N				
A 302R		J09- 34	10	N		38		TB1-F68	18	N		40		
A 302Y		J09- 35	10	N		38		TB1-F69	18	N		40		
A 303	9					71						55		
A 303G		J09- 50	10	N		38		J22- 2	13	N		39		
A 303R		J09- 41	10	N		38		J22- 7	13	N		39		
A 303Y		J09- 40	10	N		38		J22- 8	13	N		39		
A 304	1		100		75	72 43			200		175	55 43		
A 304B	7	E 23	20	N		44		SHLD A 304	20	N				
A 304Y		J09- 42	10	N		38		J24- 31	13	N		39		
A 305	2		100		75	72			125		100	54 44		
A 305B	7	TB1-G67	18	N		41		SHLD A 305	20	N				
A 305R		J09- 43	10	N		38		TB1-G68	18	N		40		
A 305Y		J09- 60	10	N		38		TB1-G69	18	N		40		
A 306	9					71						55		

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR C
SHEET 58 OF 88

MIL 2085 - 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM						TO						ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1		CUT WIRE OR SHIELD				TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	NO.	
A 306G			J09- 45	10	N		38		TB1-A71	18	N		40		
A 306R			J09- 80	10	N		38		TB1-A72	18	N		41		
A 306Y			J09- 69	10	N		38		TB1-B72	18	N		41		
A 307	11						71						55		
A 307R			J09- 55	10	N		38		TB1-B76	18	N				
A 307Y			J09- 46	10	N		38		TB1-B77	18	N				
A 308	2			125		100	72 44			125		100	54 44		
A 308A	7		SHLD A 308	20	N				E 23	20	N				
A 308B	7		TB1-A70	18	N		42		SHLD A 308	20	N				
A 308R			J09- 48	10	N		38		TB1-A69	18	N		42		
A 308Y			J09- 47	10	N		38		TB1-A68	18	N		42		
A 309	1			125		100	72 43			200		175	55 43		
A 309A	7		SHLD A 309	20	N				E 23	20	N				
A 309B	7		E 24	20	N				SHLD A 309	20	N				
A 309Y			J09- 49	10	N		38		J24- 54	13	N		39		
A 310	4		J09- 51	10	N		38 70		TB1-K72	18	N		53		
A 311	12						71						55		
A 311G			J09- 61	10	N		38		P10-105	10	N		38		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR C | SHEET 59 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM						TO						ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1		CUT WIRE OR SHIELD				TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	NO.	
A 311R			J09- 53	10	N		38		P10-106	10	N		38		
A 311Y			J09- 52	10	N		38		P10- 92	10	N		38		
A 312	11						71						55		
A 312R			J09- 54	10	N		38		TB1-A3	18	N				
A 312Y			J09- 84	10	N		38		TB1-C3	18	N				
A 313	3						72						54 44		
A 313B	7		TB1-A58	18	N		41		SHLD A 313	20	N				
A 313G			J09- 82	10	N		38		TB1-A57	18	N		40		
A 313R			J09- 59	10	N		38		TB1-B58	18	N		40		
A 313Y			J09- 58	10	N		38		TB1-B57	18	N		40		
A 314	9						71						55		
A 314G			J09- 95	10	N		38		P10- 48	10	N		38		
A 314R			J09- 65	10	N		38		P10- 39	10	N		38		
A 314Y			J09- 77	10	N		38		P10- 38	10	N		38		
A 315	9						71						55		
A 315G			J09- 66	10	N		38		TB1-A76	18	N				
A 315R			J09- 68	10	N		38		TB1-A77	18	N				
A 315Y			J09- 81	10	N		38		TB1-A78	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR C | SHEET 60 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM						TO						ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1		CUT WIRE OR SHIELD				TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	NO.	
A 316	4		J09- 67	10	N		38 70		TB1-A53	18	N		53		
A 317	4		J09- 71	10	N		38 70		TB1-H71	18	N		42 53		
A 318	4		J09- 73	10	N		38 70		TB1-D72	18	N		42 53		
A 319	9						71						55		
A 319G			J09-105	10	N		38		TB1-F61	18	N		40		
A 319R			J09- 74	10	N		38		TB1-F60	18	N		40		
A 319Y			J09- 92	10	N		38		TB1-F62	18	N		40		
A 320	4		J09- 75	10	N		38 70		TB1-F59	18	N		40 53		
A 321	9						71						55		
A 321G			J09- 94	10	N		38		TB1-F63	18	N		40		
A 321R			J09- 90	10	N		38		TB1-D62	18	N				
A 321Y			J09- 76	10	N		38		TB1-D63	18	N		40		
A 322	4		J09- 78	10	N		38 70		TB1-B52	18	N		53		
A 323	4		J09- 79	10	N		38 70		TB1-A52	18	N		53		
A 324	10						71						55		
A 324G			J09- 85	10	N		38		TB1-K62	18	N		40		
A 324N			J09- 89	10	N		38		TB1-K61	18	N		40		
A 324R			J09- 86	10	N		38		TB1-K60	18	N		40		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR C | SHEET 61 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM						TO						ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1		CUT WIRE OR SHIELD				TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	2	ITEM NO.	NO.	
A 324Y			J09-102	10	N		38		TB1-K59	18	N		40		
A 325	10						71						55		
A 325G			J09- 87	10	N		38		TB1-H60	18	N		40		
A 325N			J09- 88	10	N		38		TB1-G60	18	N		40		
A 325R			J09-100	10	N		38		TB1-G59	18	N		40		
A 325Y			J09-101	10	N		38		TB1-H59	18	N		40		
A 326	4		J09- 91	10	N		38 70		TB1-H70	18	N		42 53		
A 327	4		J09- 93	10	N		38 70		TB1-A51	18	N		53		
A 328	4		J09- 96	10	N		38 70		TB1-B71	18	N		53		
A 329	10						71						55		
A 329G			J09-103	10	N		38		TB1-G64	18	N		40		
A 329N			J09- 98	10	N		38		TB1-G62	18	N		40		
A 329R			J09-104	10	N		38		TB1-G63	18	N		40		
A 329Y			J09- 97	10	N		38		TB1-H62	18	N				
A 330	4		J09-106	10	N		38 70		TB1-B51	18	N		53		
A 331	4		J09-108	10	N		38 70		TB1-C71	18	N		40 53		
A 332	2			100		75	72			125		100	54 44		
A 332B	7		TB1-A17	18	N				SHLD A 332	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE - NONE | REV LTR C | SHEET 62 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 332R			P09- 23	10	N		38		TB1-A15	18	N				
A 332Y			P09- 1	10	N		38		TB1-A16	18	N				
A 333	2			100		75	72			125		100	54 44		
A 333B	7		TB1-A12	18	N				SHLD A 333	20	N				
A 333R			P09- 3	10	N		38		TB1-A14	18	N				
A 333Y			P09- 2	10	N		38		TB1-A13	18	N				
A 334	2			100		75	72			125		100	54 44		
A 334B	7		TB1-D17	18	N				SHLD A 334	20	N				
A 334R			P09- 26	10	N		38		TB1-D14	18	N				
A 334Y			P09- 4	10	N		38		TB1-D15	18	N				
A 335	4		P09- 5	10	N		38 70		TB1-D77	18	N		40 53		
A 336	4		P09- 6	10	N		38 70		TB1-H71	18	N		53		
A 337	9						71						55		
A 337G			P09- 28	10	N		38		TB1-C63	18	N		40		
A 337R			P09- 7	10	N		38		TB1-A63	18	N		40		
A 337Y			P09- 29	10	N		38		TB1-B63	18	N		40		
A 338	2			100		75	72			125		100	54 44		
A 338B	7		TB1-F32	18	N				SHLD A 338	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 63 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 338R			P09- 9	10	N		38		TB1-G31	18	N				
A 338Y			P09- 31	10	N		38		TB1-G30	18	N				
A 339	4		P09- 10	10	N		38 70		TB1-H70	18	N		53		
A 340	8						71						55		
A 340R			P09- 11	10	N		38		TB1-A7	18	N				
A 340Y			P09- 12	10	N		38		TB1-B7	18	N				
A 341	8						71						55		
A 341R			P09- 13	10	N		38		TB1-C75	18	N		40		
A 341Y			P09- 14	10	N		38		TB1-C76	18	N				
A 342	4		P09- 19	10	N		38 70		TB1-G57	18	N		40 53		
A 343	4		P09- 20	10	N		38 70		TB1-H58	18	N		40 53		
A 344	4		P09- 21	10	N		38 70		TB1-H55	18	N		40 53		
A 345	4		P09- 22	10	N		38 70		TB1-H57	18	N		40 53		
A 346	2			100		75	72			125		100	54 44		
A 346B	7		TB1-B17	18	N				SHLD A 346	20	N				
A 346R			P09- 42	10	N		38		TB1-B15	18	N				
A 346Y			P09- 24	10	N		38		TB1-B16	18	N				
A 347	2			100		75	72			125		100	54 44		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 64 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 347B	7		TB1-B12	18	N				SHLD A 347	20	N				
A 347R			P09- 25	10	N		38		TB1-B13	18	N				
A 347Y			P09- 44	10	N		38		TB1-B14	18	N				
A 348	2			100		75	72			125		100	54 44		
A 348B	7		TB1-C17	18	N				SHLD A 348	20	N				
A 348R			P09- 45	10	N		38		TB1-C14	18	N				
A 348Y			P09- 27	10	N		38		TB1-C15	18	N				
A 349	9						71						55		
A 349G			P09- 32	10	N		38		TB1-C74	18	N				
A 349R			P09- 33	10	N		38		TB1-C72	18	N				
A 349Y			P09- 50	10	N		38		TB1-C73	18	N				
A 350	4		P09- 37	10	N		38 70		TB1-K57	18	N		40 53		
A 351	4		P09- 38	10	N		38 70		TB1-H54	18	N		40 53		
A 352	4		P09- 39	10	N		38 70		TB1-G58	18	N		40 53		
A 353	4		P09- 40	10	N		38 70		TB1-F58	18	N		40 53		
A 354	2			100		75	72			125		100	54 44		
A 354B	7		TB1-K32	18	N				SHLD A 354	20	N				
A 354R			P09- 59	10	N		38		TB1-K33	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 65 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
A 354Y			P09- 41	10	N		38		TB1-K34	18	N				
A 355	2			100		75	72			125		100	54 44		
A 355B	7		TB1-H32	20	N				SHLD A 355	20	N				
A 355R			P09- 60	10	N		38		TB1-H33	18	N				
A 355Y			P09- 43	10	N		38		TB1-H34	18	N				
A 356	4		P09- 46	10	N		38 70		TB1-G73	18	N		40 53		
A 357	5		P09- 47	10	N		38 70		TB1-H72	18	N		40 53		
A 358	5		P09- 48	10	N		38 70		TB1-B62	18	N		41 53		
A 359	5		P09- 49	10	N		38 70		TB1-G71	18	N		53		
A 360	4		P09- 54	10	N		38 70		TB1-G55	18	N		41 53		
A 361	4		P09- 55	10	N		38 70		TB1-G54	18	N		41 53		
A 362	4		P09- 56	10	N		38 70		TB1-F57	18	N		41 53		
A 363	4		P09- 57	10	N		38 70		TB1-K55	18	N		40 53		
A 364	4		P09- 58	10	N		38 70		TB1-K54	18	N		40 53		
A 365	2			100		75	72			125		100	54 44		
A 365B	7		TB1-G32	18	N				SHLD A 365	20	N				
A 365R			P09- 77	10	N		38		TB1-G33	18	N				
A 365Y			P09- 61	10	N		38		TB1-G34	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 66 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM							TO							ROUTING
	INDIVIDUAL LENGTH		CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC. 1			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC 1			
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	2	ITEM NO.		NO.	CIRCUIT POINT	2	T I N	2	ITEM NO.		NO.	
A 366	4		P09- 62	10	N		38	70		TB1-G74	18	N		40	53		
A 367	4		P09- 63	10	N		38	70		TB1-H73	18	N		40	53		
A 368	4		P09- 64	10	N		38	70		TB1-H74	18	N		40	53		
A 369	8						71							55			
A 369R			P09- 65	10	N		38			TB1-F70	18	N		40			
A 369Y			P09- 81	10	N		38			TB1-F71	18	N		40			
A 370	4		P09- 66	10	N		38	70		TB1-C54	18	N		53			
A 371	4		P09- 67	10	N		38	70		TB1-D26	18	N		53			
A 372	5		P09- 68	10	N		38	70		TB1-B62	18	N		53			
A 373	4		P09- 69	10	N		38	70		TB1-A26	18	N		53			
A 374	8						71							55			
A 374R			P09- 70	10	N		38			TB1-K8	18	N					
A 374Y			P09- 88	10	N		38			TB1-H8	18	N					
A 375	4		P09- 71	10	N		38	70		TB1-G56	18	N		41	53		
A 376	4		P09- 72	10	N		38	70		TB1-K58	18	N		40	53		
A 377	4		P09- 73	10	N		38	70		TB1-H56	18	N		40	53		
A 378	4		P09- 74	10	N		38	70		TB1-K56	18	N		40	53		
A 379	1			100		75	72				125		100	55	43		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE - NONE	REV LTR C		SHEET 67 OF 88

MIL 2085 - 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM							TO							ROUTING
	INDIVIDUAL LENGTH		CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC. 1			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC 1			
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	2	ITEM NO.		NO.	CIRCUIT POINT	2	T I N	2	ITEM NO.		NO.	
A 379B	7		TB1-F27	18	N		41			SHLD A 379	20	N					
A 379Y			P09- 75	10	N		38			TB1-F28	18	N					
A 380	1			100		75	72				125		100	55	43		
A 380B	7		TB1-F27	18	N					SHLD A 380	20	N					
A 380Y			P09- 76	10	N		38			TB1-G28	18	N					
A 381	8						71							55			
A 381R			P09- 79	10	N		38			TB1-D68	18	N					
A 381Y			P09- 78	10	N		38			TB1-D69	18	N					
A 382	4		P09- 80	[illegible]	N		38	70		TB1-D52	18	N		40	53		
A 383	11						71							55			
A 383R			P09- 82	10	N		38			TB1-G72	18	N		40			
A 383Y			P09- 83	10	N		38			TB1-F72	18	N		42			
A 384	4		P09- 84	10	N		38	70		TB1-C26	18	N		53			
A 385	4		P09- 85	10	N		38	70		TB1-A56	18	N		53			
A 386	4		P09- 86	10	N		38	70		TB1-B26	18	N		53			
A 387	8						71							55			
A 387R			P09-105	10	N		38			TB1-H1	18	N					
A 387Y			P09- 87	10	N		38			TB1-H2	18	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE - NONE	REV LTR C		SHEET 68 OF 88

MIL 2085 - 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM							TO							ROUTING
	INDIVIDUAL LENGTH		CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC. 1			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC 1			
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	2	ITEM NO.		NO.	CIRCUIT POINT	2	T I N	2	ITEM NO.		NO.	
A 388	10						71							55			
A 388G			P09- 89	10	N		38			TB1-C58	18	N		40			
A 388N			P09- 90	10	N		38			TB1-C57	18	N		40			
A 388R			P09-130	10	N		38			TB1-D57	18	N		40			
A 388Y			P09-108	10	N		38			TB1-D58	18	N		40			
A 389	8						71							55			
A 389R			P09- 92	10	N		38			TB1-F18	18	N					
A 389Y			P09- 91	10	N		38			TB1-F19	18	N					
A 390	10						71							55			
A 390G			P09- 94	10	N		38			TB1-C28	18	N					
A 390N			P09- 93	10	N		38			TB1-D28	18	N					
A 390R			P09-112	10	N		38			TB1-B28	18	N					
A 390Y			P09-111	10	N		38			TB1-A28	18	N					
A 391	10						71							55			
A 391G			P09- 95	10	N		38			TB1-B40	18	N		40			
A 391N			P09-114	10	N		38			TB1-B41	18	N		40			
A 391R			P09- 96	10	N		38			TB1-A40	18	N		40			
A 391Y			P09-113	10	N		38			TB1-A41	18	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE - NONE	REV LTR C		SHEET 69 OF 88

MIL 2085 - 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM							TO							ROUTING
	INDIVIDUAL LENGTH		CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC. 1			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET				TERMINATION SPEC 1			
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	2	ITEM NO.		NO.	CIRCUIT POINT	2	T I N	2	ITEM NO.		NO.	
A 392	4		P09- 97	10	N		38	70		TB1-F52	18	N		40	53		
A 393	4		P09- 98	10	N		38	70		TB1-D51	18	N		40	53		
A 394	8						71							55			
A 394R			P09-103	10	N		38			TB1-A74	18	N					
A 394Y			P09-102	10	N		38			TB1-B74	18	N					
A 395	8						71							55			
A 395R			P09-126	10	N		38			TB1-K1	18	N					
A 395Y			P09-104	10	N		38			TB1-K2	18	N					
A 396	4		P09-106	10	N		38	70		TB1-F64	18	N		40	53		
A 397	4		P09-107	10	N		38	70		TB1-A64	18	N		40	53		
A 398	8						71							55			
A 398R			P09-131	10	N		38			TB1-C18	18	N					
A 398Y			P09-109	10	N		38			TB1-C19	18	N					
A 399	8						71							55			
A 399R			P09-132	10	N		38			TB1-D18	18	N					
A 399Y			P09-110	10	N		38			TB1-D19	18	N					
A 400	4		P09-115	10	N		38	70		J23- 58	13	N		39	53		
A 401	4		P09-116	10	N		38	70		TB1-F51	18	N		40	53		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE - NONE	REV LTR C		SHEET 70 OF 88

MIL 2085 - 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC. 1> ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC 1> ITEM NO.		NO.	ROUTING
A 402	8						71							55			
A 402R			P09-125	10	N		38			TB1-A72	18	N					
A 402Y			P09-124	10	N		38			TB1-B72	18	N					
A 403	4		P09-127	10	N		38	70		TB1-D64	18	N		40	53		
A 404	4		P09-128	10	N		38	70		TB1-C64	18	N		40	53		
A 405	4		P09-129	10	N		38	70		TB1-B64	18	N		40	53		
A 406	4		P10- 1	10	N		38	70		TB1-H70	18	N		53			
A 407	4		P10- 8	10	N		38	70		J22- 62	13	N		39	53		
A 408	4		P10- 9	10	N		38	70		TB1-D70	18	N		53			
A 409	4		P10- 10	10	N		38	70		TB1-D72	18	N		53			
A 410	4		P10- 12	10	N		38	70		TB1-A56	18	N		53			
A 411	4		P10- 13	10	N		38	70		TB1-C62	18	N		53			
A 412	4		P10- 14	10	N		38	70		TB1-H71	18	N		53			
A 413	1			100		75	72				125		100	55	43		
A 413B	7		TB1-A58	18	N					SHLD A 413	20	N					
A 413Y			P10- 15	10	N		38			TB1-B61	18	N		40			
A 414	1			100		75	72				200		175	55	43		
A 414B	7		E 23	20	N					SHLD A 414	20	N					

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
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HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE
REV LTR C
SHEET 71 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC. 1> ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC 1> ITEM NO.		NO.	ROUTING
A 414Y			P10- 19	10	N		38			J24- 32	13	N		39			
A 415	4		P10- 24	10	N		38	70		TB1-A23	18	N		53			
A 416	1			100		75	72				125		100	55	43		
A 416B	7		TB1-A70	18	N					SHLD A 416	20	N					
A 416Y			P10- 43	10	N		38			TB1-A69	18	N					
A 417	1			100		75	72				200		175	55	43		
A 417B	7		E 23	20	N					SHLD A 417	20	N					
A 417Y			P10- 44	10	N		38			J24- 55	13	N		39			
A 418	8						71							55			
A 418R			P10- 49	10	N		38			TB1-A75	18	N					
A 418Y			P10- 95	10	N		38			TB1-B75	18	N					
A 419	11						71							55			
A 419R			P10- 69	10	N		38			TB1-B78	18	N		41			
A 419Y			P10- 68	10	N		38			TB1-C78	18	N		41			
A 420	13						71							55			
A 420G			P10-107	10	N		38			TB1-C1	18	N					
A 420N			P10-108	10	N		38			TB1-C2	18	N					
A 420R			P10- 93	10	N		38			TB1-B2	18	N					

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE
REV LTR C
SHEET 72 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC. 1> ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC 1> ITEM NO.		NO.	ROUTING
A 420Y			P10- 94	10	N		38			TB1-B4	18	N					
A 421	4		P10-104	10	N		38	70		TB1-K71	18	N		42	53		
A 422	8						71							55			A
A 422R			J10- 42	10	N		38			J21- 5	13	N		39			
A 422Y			E 28	20	N		44			J21- 4	13	N		39			
A 423	8						71							55			A
A 423R			J10- 32	10	N		38			J21- 34	13	N		39			
A 423Y			E 28	20	N					J21- 17	13	N		39			
A 424	8						71							55			A
A 424R			J10- 17	10	N		38			J21- 35	13	N		39			
A 424Y			E 28	20	N					J21- 18	13	N		39			
A 425	8						71							55			A
A 425R			J10- 18	10	N		38			J21- 7	13	N		39			
A 425Y			E 28	20	N					J21- 2	13	N		39			
A 426	8						71							55			A
A 426R			J10- 40	10	N		38			J21- 10	13	N		39			
A 426Y			E 28	20	N					J21- 24	13	N		39			
A 427	8						71							55			A

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A
1015085
SCALE-NONE
REV LTR C
SHEET 73 OF 88

MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC. 1> ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC 1> ITEM NO.		NO.	ROUTING
A 427R			J10- 41	10	N		38			J21- 44	13	N		39			
A 427Y			E 29	20	N		44			J21- 69	13	N		39			
A 428	8						71							55			A
A 428R			J10- 19	10	N		38			J21- 86	13	N		39			
A 428Y			E 29	20	N					J21- 57	13	N		39			
A 429	8						71							55			A
A 429R			J10- 33	10	N		38			J21- 6	13	N		39			
A 429Y			E 29	20	N					J21- 1	13	N		39			
A 430	8						71							55			A
A 430R			J10- 44	10	N		38			J21- 3	13	N		39			
A 430Y			E 29	20	N					J21- 11	13	N		39			
A 431	8						71							55			A
A 431R			J10- 43	10	N		38			J21- 25	13	N		39			
A 431Y			E 29	20	N					J21- 45	13	N		39			
A 432	8						71							55			A
A 432R			J10- 53	10	N		38			J21- 71	13	N		39			
A 432Y			E 30	20	N		44			J21- 70	13	N		39			
A 433	8						71							55			A

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A
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SCALE-NONE
REV LTR C
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MIL 2085 - 4-65 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	FROM TERMINATION SPEC. 1 ITEM NO.		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	TO TERMINATION SPEC 1 ITEM NO.		ROUTING
A 433R		J10- 51	10	N	38		J21- 85	13	N	39		
A 433Y		E 30	20	N			J21- 56	13	N	39		
A 434	8				71					55		A
A 434R		J10- 64	10	N	38		J21- 33	13	N	39		
A 434Y		E 30	20	N			J21- 16	13	N	39		
A 435	8				71					55		A
A 435R		J10- 73	10	N	38		J21- 90	13	N	39		
A 435Y		E 30	20	N			J21- 61	13	N	39		
A 436	8				71					55		A
A 436R		J10- 74	10	N	38		J21- 38	13	N	39		
A 436Y		E 31	20	N	44		J21- 39	13	N	39		
A 437	8				71					55		A
A 437R		J10- 60	10	N	38		J21- 40	13	N	39		
A 437Y		E 31	20	N			J21- 41	13	N	39		
A 438	8				71					55		A
A 438R		J10- 28	10	N	38		J21- 67	13	N	39		
A 438Y		E 31	20	N			J21- 66	13	N	39		
A 439	8				71					55		A

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR C
SHEET 75 OF 88

MIL 2085 - 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	FROM TERMINATION SPEC. 1 ITEM NO.		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	TO TERMINATION SPEC 1 ITEM NO.		ROUTING
A 439R		J10- 29	10	N	38		J21- 89	13	N	39		
A 439Y		E 31	20	N			J21- 60	13	N	39		
A 440	8				71					55		A
A 440R		J10- 30	10	N			J21- 37	13	N	39		
A 440Y		E 32	20	N	44		J21- 20	13	N	39		
A 441	8				71					55		A
A 441R		J10- 61	10	N			J21- 42	13	N	39		
A 441Y		E 32	20	N			J21- 68	13	N	39		
A 442	8				71					55		A
A 442R		J10- 62	10	N			J21- 88	13	N	39		
A 442Y		E 32	20	N			J21- 59	13	N	39		
A 443	8				71					55		A
A 443R		J10- 63	10	N			J21- 36	13	N	39		
A 443Y		E 32	20	N			J21- 19	13	N	39		
A 444	8				71					55		A
A 444R		J10- 14	10	N			J21- 8	13	N	39		
A 444Y		E 33	20	N	44		J21- 9	13	N	39		
A 445	8				71					55		A

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR C
SHEET 76 OF 88

MIL 2085 - 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	FROM TERMINATION SPEC. 1 ITEM NO.		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	TO TERMINATION SPEC 1 ITEM NO.		ROUTING
A 445R		J10- 16	10	N			J21- 87	13	N	39		
A 445Y		E 33	20	N			J21- 58	13	N	39		
A 446	8				71					55		A
A 446R		J10- 31	10	N	38		J21- 21	13	N	39		
A 446Y		E 33	20	N			J21- 22	13	N	39		
A 447	8				71					55		A
A 447R		J10- 15	10	N	38		J21- 23	13	N	39		
A 447Y		E 33	20	N			J21- 43	13	N	39		
A 448	4	J10- 72	10	N	38	70	J21- 46	13	N	39	53	A
A 449	4	J10- 71	10	N	38	70	J21- 26	13	N	39	53	A
A 450	4	J10- 70	10	N	38	70	J21- 12	13	N	39	53	A
A 451	4	J10- 75	10	N	38	70	J21- 72	13	N	39	53	A
A 452	4	J10- 82	10	N	38	70	E 34	20	N	44	53	A
A 453	4	E 28	20	N	70		E 34	20	N	53		A
A 454	4	E 29	20	N	70		E 34	20	N	53		A
A 455	4	E 30	20	N	70		E 34	20	N	53		A
A 456	4	E 31	20	N	70		E 34	20	N	53		A
A 457	4	E 32	20	N	70		E 34	20	N	53		A

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR C
SHEET 77 OF 88

MIL 2085 - 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	FROM TERMINATION SPEC. 1 ITEM NO.		TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	TO TERMINATION SPEC 1 ITEM NO.		ROUTING
A 458	4	E 33	20	N	70		E 34	20	N	53		A
A 459	8				71					55		B
A 459R		J10- 38	10	N	38		J21- 32	13	N	39		
A 459Y		E 27	20	N	44		J21- 15	13	N	39		
A 460	8				71					55		B
A 460R		J10- 49	10	N	38		J21- 83	13	N	39		
A 460Y		E 27	20	N			J21- 54	13	N	39		
A 461	8				71					55		B
A 461R		J10- 36	10	N	38		J21- 82	13	N	39		
A 461Y		E 27	20	N			J21- 53	13	N	39		
A 462	8				71					55		B
A 462R		J10- 39	10	N	38		J21- 31	13	N	39		
A 462Y		E 27	20	N			J21- 30	13	N	39		
A 463	8				71					55		B
A 463R		J10- 37	10	N	38		J21- 52	13	N	39		
A 463Y		E 27	20	N			J21- 51	13	N	39		
A 464	8				71					55		B
A 464R		J10- 35	10	N	38		J21- 48	13	N	39		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE - NONE
REV LTR C
SHEET 78 OF 88

MIL 2085 - 4-63 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH			FROM						TO						ROUTING
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 464Y			E 26	20	N		44		J21- 74	13	N		39		
A 465	8						71						55		B
A 465R			J10- 47	10	N		38		J21- 27	13	N		39		
A 465Y			E 26	20	N				J21- 47	13	N		39		
A 466	8						71						55		B
A 466R			J10- 34	10	N		38		J21- 29	13	N		39		
A 466Y			E 26	20	N				J21- 28	13	N		39		
A 467	8						71						55		B
A 467R			J10- 48	10	N		38		J21- 14	13	N		39		
A 467Y			E 26	20	N				J21- 13	13	N		39		
A 468	4		J10- 45	10	N		38 70		J21- 84	13	N		39 53		B
A 469	4		J10- 46	10	N		38 70		J21- 55	13	N		39 53		B
A 470	4		J10- 69	10	N		38 70		E 26	20	N		53		B
A 471	4		E 26	20	N		70		E 27	20	N		53		B
A 472	3			100		75	72						54 44		
A 472B	7		TB1-A59	18	N				SHLD A 472	20	N				
A 472G			J10- 67	10	N		38		TB1-B59	18	N				
A 472R			J10- 66	10	N		38		TB1-A61	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 79 OF 88

MIL 2085 - 4-65 WIN

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH			FROM						TO						ROUTING
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 472Y			J10- 65	10	N		38		TB1-B60	18	N				
A 473	9						71						55		
A 473G			J10- 3	10	N		38		TB1-A21	18	N				
A 473R			J10- 4	10	N		38		TB1-A24	18	N				
A 473Y			J10- 5	10	N		38		TB1-B24	18	N				
A 474	3			100		75	72			125		100	54 44		
A 474B	7		TB1-A49	18	N				SHLD A 474	20	N				
A 474G			J10- 12	10	N		38		TB1-B48	18	N				
A 474R			J10- 26	10	N		38		TB1-A48	18	N				
A 474Y			J10- 13	10	N		38		TB1-A48	18	N				
A 475	3			100		75	72			125		100	54 44		
A 475B	7		TB1-B49	18	N				SHLD A 475	20	N				
A 475G			J10- 22	10	N		38		TB1-A50	18	N				
A 475R			J10- 24	10	N		38		TB1-B50	18	N				
A 475Y			J10- 21	10	N		38		TB1-C50	18	N				
A 476	2			100		75	72			125		100	54 44		
A 476B	7		TB1-B49	18	N				SHLD A 476	20	N				
A 476R			J10- 25	10	N		38		TB1-C49	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 80 OF 88

MIL 2085 - 4-65 WIN

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH			FROM						TO						ROUTING
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 476Y			J10- 23	10	N		38		TB1-C48	18	N				
A 477	4		J10- 2	10	N		38 70		TB1-D72	18	N		53		
A 478	4		J10- 6	10	N		38 70		TB1-A22	18	N		53		
A 479	4		J10- 7	10	N		38 70		TB1-A20	18	N		53		
A 480	4		J10- 57	10	N		38 70		J21- 64	13	N		39 53		
A 481	4		J10- 9	10	N		38 70		TB1-B56	18	N		40 53		
A 482	4		J10- 59	10	N		38 70		J21- 65	13	N		39 53		
A 483	4		J10- 8	10	N		38 70		TB1-K71	18	N		53		
A 484	4		J10- 58	10	N		38 70		J21- 62	13	N		39 53		
A 485	4		J10- 56	10	N		38 70		J21- 91	13	N		39 53		
A 486	4		J10- 55	10	N		38 70		J21- 63	13	N		39 53		
A 487	4		J10- 27	10	N		38 70		E 36	20	N		43 53		
A 488	4		J10- 1	10	N		38 70		E 38	20	N		43 53		
A 489	4		J10- 10	10	N		38 70		TB1-K71	18	N		53		
A 490	2			100		75	72			125		100	54 44		
A 490B	7		TB1-C67						SHLD A 490						
A 490R			P13- 1	10	N		38		TB1-C66	18	N				
A 490Y			E 25	20	N		43		TB1-C65	18	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 81 OF 88

MIL 2085 - 4-65 WIN

GXS WIRING HARNESS A C 1015085

CONDUCTOR INDIVIDUAL LENGTH			FROM						TO						ROUTING
NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 491	2			100		75	72			125		100	54 44		
A 491B	7		TB1-D67	18	N				SHLD A 491	20	N				
A 491R			P13- 2	10	N		38		TB1-D66	18	N				
A 491Y			E 25	20	N				TB1-D65	18	N				
A 492	4		P13- 10	10	N		38 70		E 25	20	N		53		
A 493	8						71						55		
A 493R			P13- 5	10	N		38		TB1-G55	18	N				
A 493Y			P13- 13	10	N		38		TB1-F56	18	N		41		
A 494	8						71						55		
A 494R			P13- 6	10	N		38		TB1-G54	18	N				
A 494Y			P13- 14	10	N		38		TB1-F56	18	N				
A 495	8						71						55		
A 495R			P13- 15	10	N		38		TB1-G56	18	N				
A 495Y			P13- 7	10	N		38		TB1-F57	18	N				
A 496	2			100		75	72			125		100	54 44		
A 496B	7		TB1-F67	18	N				SHLD A 496	20	N				
A 496R			P13- 31	10	N		38		TB1-F66	18	N		40		
A 496Y			P13- 23	10	N		38		TB1-F65	18	N		40		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR C | SHEET 82 OF 88

MIL 2085 - 4-65 WIN

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM								TO								ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1>				CUT WIRE OR SHIELD				TERMINATION SPEC 1>				
NUMBER	ITEM NO.	2>	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	2>	ITEM NO.			NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	2>	ITEM NO.			NO.	
A 497	2			100		75	72					125		100	54	44			
A 497B	7		TB1-G67	18	N						SHLD A 497	20	N						
A 497R			P13- 32	10	N		38				TB1-G66	18	N		40				
A 497Y			P13- 24	10	N		38				TB1-G65	18	N		40				
A 498	2			100		75	72					125		100	54	44			
A 498B	7		TB1-A67	18	N						SHLD A 498	20	N						
A 498R			P13- 28	10	N		38				TB1-A66	18	N						
A 498Y			P13- 27	10	N		38				TB1-A65	18	N						
A 499	2			100		75	72					125		100	54	44			
A 499B	7		TB1-B67	18	N						SHLD A 499	20	N						
A 499R			P13- 35	10	N		38				TB1-B66	18	N						
A 499Y			P13- 36	10	N		38				TB1-B65	18	N						
A 500	4		P13- 37	10	N		38	70			TB1-K70	18	N		41	53			
A 501	4		P13- 38	10	N		38	70			TB1-B71	18	N		53				
A 502	5		P11-A	25	N		61	60	70		TB1-K78	18	N		42	53			
A 503	5		P11-A	25	N		70				U23- 38	13	N		39	53			
A 504	5		P11-A	25	N		70				U23- 61	13	N		39	53			
A 505	5		P11-B	25	N		61	60	70		TB1-K76	18	N		42	53			

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE
REV LTR C
SHEET 83 OF 88

MIL 2085 - 4-65 WIN

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM								TO								ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1>				CUT WIRE OR SHIELD				TERMINATION SPEC 1>				
NUMBER	ITEM NO.	2>	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	2>	ITEM NO.			NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	2>	ITEM NO.			NO.	
A 506	5		P11-B	25	N		70				TB1-K76	18	N		53				
A 507	5		P11-B	25	N		70				TB1-K76	18	N		53				
A 508	5		P11-C	25	N		61	60	70		TB1-H76	18	N		42	53			
A 509	5		P11-C	25	N		70				TB1-H76	18	N		53				
A 510	5		P11-C	25	N		70				TB1-H76	18	N		53				
A 511	5		P11-D	25	N		61	60	70		TB1-F75	18	N		41	53			
A 512	5		P11-D	25	N		70				TB1-B68	18	N		41	53			
A 513	5		P11-E	25	N		61	60	70		TB1-C69	18	N		40	53			
A 514	5		P11-E	25	N		70				TB1-D74	18	N		40	53			
A 515	5		P11-F	25	N		61	60	70		TB1-F73	18	N		53				
A 516	5		P11-F	25	N		70				TB1-B70	18	N		41	53			
A 517	5		P11-G	25	N		61	60	70		TB1-F78	18	N		40	53			
A 518	5		P11-G	25	N		70				TB1-K53	18	N		40	53			
A 519	5		P11-G	25	N		70				TB1-K50	18	N		53				
A 520	5		P11-H	25	N		61	60	70		TB1-G78	18	N		41	53			
A 521	5		P11-H	25	N		70				TB1-G78	18	N		53				
A 522	5		P11-H	25	N		70				TB1-H78	18	N		40	53			
A 523	5		P11-J	25	N		61	60	70		U23- 90	13	N		39	53			

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE
REV LTR C
SHEET 84 OF 88

MIL 2085 - 4-65 WIN

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM								TO								ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1>				CUT WIRE OR SHIELD				TERMINATION SPEC 1>				
NUMBER	ITEM NO.	2>	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	2>	ITEM NO.			NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	2>	ITEM NO.			NO.	
A 524	5		P11-J	25	N		70				U23- 91	13	N		39	53			
A 525	5		P11-J	25	N		70				P12-J	25	N		53				
A 526	11						71												
A 526R			P11-N	25	N		61	60			TB1-B78	18	N						
A 526Y			P11-K	25	N		61	60			TB1-C78	18	N						
A 527	5		P11-L	25	N		61	60	70		TB1-G70	18	N		53				
A 528	5		P11-M	25	N		61	60	70		TB1-G76	18	N		41	53			
A 529	5		P11-M	25	N		70				TB1-G76	18	N		53				
A 530	5		P12-A	25	N		61	60	70		TB1-K77	18	N		42	53			
A 531	5		P12-A	25	N		70				U23- 39	13	N		39	53			
A 532	5		P12-A	25	N		70				U23- 40	13	N		39	53			
A 533	5		P12-B	25	N		61	60	70		TB1-K75	18	N		42	53			
A 534	5		P12-B	25	N		70				TB1-K75	18	N		53				
A 535	5		P12-B	25	N		70				TB1-K75	18	N		53				
A 536	5		P12-C	25	N		61	60	70		TB1-H75	18	N		42	53			
A 537	5		P12-C	25	N		70				TB1-H75	18	N		53				
A 538	5		P12-C	25	N		70				TB1-H75	18	N		53				
A 539	5		P12-D	25	N		61	60	70		TB1-C70	18	N		41	53			

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE
REV LTR C
SHEET 85 OF 88

MIL 2085 - 4-65 WIN

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM								TO								ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1>				CUT WIRE OR SHIELD				TERMINATION SPEC 1>				
NUMBER	ITEM NO.	2>	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	2>	ITEM NO.			NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	2>	ITEM NO.			NO.	
A 540	5		P12-D	25	N		70				TB1-D73	18	N		41	53			
A 541	5		P12-E	25	N		61	60	70		TB1-F74	18	N		40	53			
A 542	5		P12-E	25	N		70				TB1-B69	18	N		40	53			
A 543	5		P12-F	25	N		61	60	70		TB1-C68	18	N		41	53			
A 544	5		P12-F	25	N		70				TB1-D75	18	N		41	53			
A 545	5		P12-G	25	N		61	60	70		TB1-D78	18	N		53				
A 546	5		P12-G	25	N		70				TB1-G53	18	N		40	53			
A 547	5		P12-G	25	N		70				TB1-G50	18	N		53				
A 548	5		P12-H	25	N		61	60	70		TB1-G77	18	N		41	53			
A 549	5		P12-H	25	N		70				TB1-G77	18	N		53				
A 550	5		P12-H	25	N		70				TB1-H77	18	N		40	53			
A 551	5		P12-J	25	N		61	60	70		U23- 41	13	N		39	53			
A 552	5		P12-J	25	N		70				U23- 66	13	N		39	53			
A 553	5		P12-L	25	N		61	60	70		TB1-K70	18	N		53				
A 554	5		P12-M	25	N		61	60	70		TB1-G75	18	N		41	53			
A 555	5		P12-M	25	N		70				TB1-G75	18	N		53				
A 556	4		U21- 50	13	N		39	70			E 35	20	N		43	53			
A 557	4		U21- 73	13	N		39	70			E 37	20	N		43	53			

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE
REV LTR C
SHEET 86 OF 88

MIL 2085 - 4-65 WIN

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM								TO								ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1>				CUT WIRE OR SHIELD				TERMINATION SPEC 1>				
			STRIP WIRE OR JACKET			2>				NO.	STRIP WIRE OR JACKET			2>				NO.	
NUMBER	ITEM NO.	2>	CIRCUIT POINT	2>	TIN		ITEM NO.				CIRCUIT POINT	2>	TIN		ITEM NO.				
A 558	5		J23- 62	13	N		39	70			TB1-K78	18	N		53				
A 559	5		J23- 63	13	N		39	70			TB1-K78	18	N		53				
A 560	5		J23- 64	13	N		39	70			TB1-K77	18	N		53				
A 561	5		J23- 65	13	N		39	70			TB1-K77	18	N		53				
A 562	4		J23- 48	13	N		39	70			TB1-D71	18	N		53				
A 563	4		J24- 51	13	N		39	70			E 23	20	N		53				
A 564	2			200		175	72					125		100	54	44			
A 564B	7		TB1-A70	18	N						SHLD A 564	20	N						
A 564R			J24- 15	13	N		39				TB1-A69	18	N						
A 564Y			J24- 84	13	N		39				TB1-A68	18	N						
A 566	1			200		175	72					125		100	55	43			
A 566B	7		E 23	20	N						SHLD A 566	20	N						
A 566Y	-		J24- 83	13	N		39				TB1-A68	18	N						
A 567	4		TB1-D24	18	N				53		TB1-D59	18	N		40		53		
A 570	5		TB1-H26	18	N				53		TB1-K26	18	N		40		53		
A 571	4		TB1-G30	18	N				53		TB1-F32	18	N				53		
A 573	5		TB1-B68	18	N				53		TB1-C68	18	N				53		
A 577	5		TB1-C70	18	N				53		TB1-F73	18	N				53		

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015085

SCALE - NONE REV LTR C SHEET 87 OF 88

MIL 2085 - 4-83 WIR

GXS WIRING HARNESS A C 1015085

CONDUCTOR			FROM								TO								ROUTING
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1>				CUT WIRE OR SHIELD				TERMINATION SPEC 1>				
			STRIP WIRE OR JACKET			2>				NO.	STRIP WIRE OR JACKET			2>				NO.	
NUMBER	ITEM NO.	2>	CIRCUIT POINT	2>	TIN		ITEM NO.				CIRCUIT POINT	2>	TIN		ITEM NO.				
A 578	5		TB1-B70	18	N				53		TB1-D73	18	N				53		
A 583	5		TB1-D75	18	N				53		TB1-F75	18	N		40		53		
A 586	5		TB1-D76	18	N		40		53		TB1-K67	18	N				53		
A 589	4		J09-107	10	N		38	70			TB1-A25				53				
A 590	4		J09- 62	10	N		38	70			TB1-C25				53				
A 591	4		J09- 38	10	N		38	70			TB1-B25	18	N		53				
A 592	4		J09- 39	10	N		38	70			TB1-D25	18	N		53				

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015085

SCALE - NONE REV LTR C SHEET 88 OF 88

MIL 2085 - 4-83 WIR

1015085

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		B	REPLACES WORD DWG REV A PER TDRR 16221	2/3/65	WK
		Ⓜ C	REVISED PER TDRR 17764	30 MAR 65	M.G.
		D	REPLACED WITH CHANGE BY REV. E PER TDRR 20552	3 JUL 65	RLP MGM

Ⓑ REPLACES WORD DWG REV A

Ⓓ REPLACED WITH CHANGE BY REV Ⓔ

REV	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
SHEET	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
REV STATUS		REV					D	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
OF SHEETS		SHEET					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN S. Lruide DATE 18 JAN 65
CHECKED C. Piojda 19 JAN 65
APPROVAL D. Barta 20 JAN 65
APPROVAL 20 JAN 65

WIRING HARNESS "A"
AGE INTERCONNECT

NASA APPROVAL
MIT APPROVAL

CODE IDENT NO. | SIZE A | 1015085 | REV D

CONTRACT NAS 9-497

SCALE NONE

SHEET 1 OF 88

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1015086	1015086	E	REPLACES REVISION D WITH CHANGE PER TDRR 20552	12 MAY 65	DHD WK

Ⓔ **REPLACES REV(D) WITH CHANGE**

CHARLESTON
27 APR 65

REV	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
SHEET	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
REV STATUS OF SHEETS REV								E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
SHEET								1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN A.FLUDER DATE 23 FEB 65
CHECKED W. DIEHL 15 MAR65
APPROVAL G. HICKS 16 MAR65
APPROVAL JJ Nein 6/28/65

NASA APPROVAL
MIT APPROVAL 28 Jun 65

CONTRACT NAS9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A

CODE IDENT NO. | SIZE A | 1015085 | REV E

SCALE — | SHEET 1 OF 127

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
46	E	82	E	118	E										
47	E	83	E	119	E										
48	E	84	E	120	E										
49	E	85	E	121	E										
50	E	86	E	122	E										
51	E	87	E	123	E										
52	E	88	E	124	E										
53	E	89	E	125	E										
54	E	90	E	126	E										
55	E	91	E	127	E										
56	E	92	E												
57	E	93	E												
58	E	94	E												
59	E	95	E												
60	E	96	E												
61	E	97	E												
62	E	98	E												
63	E	99	E												
64	E	100	E												
65	E	101	E												
66	E	102	E												
67	E	103	E												
68	E	104	E												
69	E	105	E												
70	E	106	E												
71	E	107	E												
72	E	108	E												
73	E	109	E												
74	E	110	E												
75	E	111	E												
76	E	112	E												
77	E	113	E												
78	E	114	E												
79	E	115	E												
80	E	116	E												
81	E	117	E												

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION E

NASA DRAWING NO.
1015085
SHEET 2 OF 127

GENERAL NOTES

NOTE NUMBER	DESCRIPTION
1	SHIELD TERMINATION FIGURES 6A AND 6B ARE PER ND1002071. FIGURE 7 IS PER ND1002032.
2	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3	SERIALIZE PER ND1002023.
4	MARK LEAD IDENTIFICATION PER ND1002019.
5	MARK SLEEVING OF MULTI SHIELDED LEADS .12 INCH HIGH, AND SLEEVING OF SINGLE SHIELDED LEADS WITH LEAD NUMBER .08 INCH HIGH COLOR BALCK, PER ND1002019.
6	PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 55 FOR COMPLETE CIRCUIT POINT.
7	A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.
8	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING
9	LACE HARNESS PER ND1002032 USING ITEMS 65 AND 66.
10	POSITION A SHRINK SLEEVE OVER EXPOSED SHIELD BRAID AFTER TERMINATION OF SOLDER SLEEVE.
11	LEAD IDENTIFICATION SUFFIX LETTERS, OTHER THAN A AND B, OF INDIVIDUAL LEADS OF SAME LEAD NO. ARE TWISTED PER ND1002032.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR E | SHEET 3 OF 127

GENERAL NOTES

NOTE NUMBER — DESCRIPTION

12 THE SUFFIX LETTER OF A SHIELDED LEAD IDENTIFICATION NUMBER INDICATES SHIELDING, OR COLOR.

A - FROM END SHIELD
B - TO END SHIELD
G - GREEN
K - BLACK
L - BLUE
N - BROWN
R - RED
W - WHITE
Y - YELLOW

13 ASSEMBLE HARNESS AS SHOWN PER CONFIGURATION DRAWING (1015086 REF).

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	TOLERANCE STRIP JACKET	TOLERANCE CUT WIRE	TOLERANCE CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR E | SHEET 4 OF 127

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	1	1	1015085-001	WIRE PER 1010789-011 YEL JKT 24AWG YEL 67FT 4 IN. TOTAL LENGTH
	2	1	1015085-002	WIRE PER 1010789-012 YEL JKT 24AWG YEL, RED 338 FT 4 IN. TOTAL LENGTH
	3	1	1015085-003	WIRE PER 1010789-013 YEL JKT 24AWG YEL,RED,GRN 47 FT 0 IN. TOTAL LENGTH
	4	1	1015085-004	WIRE PER 1010789-001 24AWG YEL 610 FT 11 IN. TOTAL LENGTH
	5	1	1015085-005	WIRE PER 1010789-006 22AWG YEL 128 FT 1 IN. TOTAL LENGTH
	6	1	1015085-006	WIRE PER 1010707- 1 RED JKT 29AWG BLU,RED,WHT 22 FT 0 IN. TOTAL LENGTH
	7	1	1015085-007	WIRE PER 1010789-002 24AWG BLK 156 FT 0 IN. TOTAL LENGTH
	8	1	1015085-008	WIRE PER 1010789-003 24AWG YEL,RED 362 FT 2 IN. TOTAL LENGTH
	9	1	1015085-009	WIRE PER 1010789-004 24AWG YEL,RED,GRN 72 FT 9 IN. TOTAL LENGTH
	10	1	1015085-010	WIRE PER 1010789-005 24AWG YEL,RED,GRN,BRN 30 FT 4 IN. TOTAL LENGTH
	11	1	1015085-011	WIRE PER 1010789-008 22AWG YEL,RED 16 FT 0 IN. TOTAL LENGTH
	12	1	1015085-012	WIRE PER 1010789-009 22AWG YEL,RED,GRN 6 FT 8 IN. TOTAL LENGTH

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
	13	1	1015085-013	WIRE PER 1010789-010 22AWG YEL,RED,GRN,BRN 12 FT 8 IN. TOTAL LENGTH
	14	1	1015085-014	WIRE, BRAID PER QQ-B-575(COPPER,TIN-COATED, TUBLAR) SIZE 3/8 ID, 36GA, 3FT 0 IN. TOTAL LG
	15	1	1015085-015	WIRE, BRAID PER QQ-B-575 (COPPER,TIN-COATED, TUBULAR) SIZE 1/2 ID, 36GA, 3 FT 0 IN. TOTAL LG
	16	1	1021714- 1	CONNECTOR PLUG, ELECTRICAL
	17	1	1021714- 2	CONNECTOR PLUG, ELECTRICAL
8	18	1	1010674- 1	CONNECTOR PLUG, ELECTRICAL
8	19	1	1010674- 2	CONNECTOR PLUG, ELECTRICAL
8	20	1	1010674- 3	CONNECTOR PLUG, ELECTRICAL
8	21	1	1010674- 4	CONNECTOR PLUG, ELECTRICAL
8	22	1	1010771-201	CONNECTOR PLUG, ELECTRICAL
8	23	1	1010771-207	CONNECTOR PLUG, ELECTRICAL
8	24	1	1010809-001	CONNECTOR RECP, ELECTRICAL
8	25	1	1010822- 3	CONNECTOR RECP, ELECTRICAL
8	26	1	1010822- 5	CONNECTOR RECP, ELECTRICAL
8	27	1	1010824- 1	CONNECTOR RECP, ELECTRICAL
8	28	5	1010824- 2	CONNECTOR RECP, ELECTRICAL
8	29	1	1010824- 3	CONNECTOR RECP, ELECTRICAL

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	30	1	1010824- 4	CONNECTOR RECP, ELECTRICAL
8	31	1	1010824- 5	CONNECTOR RECP, ELECTRICAL
8	32	1	1010844-002	CONNECTOR RECP, ELECTRICAL
8	36	1	1010856- 1	CONNECTOR RECP, ELECTRICAL
8	37	1	1010860- 1	CONNECTOR RECP, ELECTRICAL
8	38	1358	1010738- 6	CONTACT, SOCKET
8	39	255	1010770- 2	CONTACT, SOCKET
8	40	292	1010743- 1	WRAPOST RECEPTACLE
8	41	172	1010743- 2	WRAPOST RECEPTACLE
8	42	93	1010743- 3	WRAPOST RECEPTACLE
8	43	26	1010402- 1	SLEEVE, SOLDER
8	44	135	1010402- 2	SLEEVE, SOLDER
8	45	1	1000242- 24	FERRULE, OUTER ELEC COND
8	46	1	1000242- 27	FERRULE, OUTER ELEC COND
8	47	1	1000242- 30	FERRULE, OUTER ELEC COND
8	48	1	1000242- 33	FERRULE, OUTER ELEC COND
8	49	1	1000243- 26	FERRULE, INNER ELEC COND
8	50	1	1000243- 30	FERRULE, INNER ELEC COND

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	51	1	1000243- 34	FERRULE, INNER ELEC COND
8	52	1	1000243- 36	FERRULE, INNER ELEC COND
	53			DELETED
8	54	124	1010490-110	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (WHITE)
8	55	27	1010490-112	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (WHITE)
	56			DELETED
	58			DELETED
	61			CONTACT SOCKETS SUPPLIED WITH 1021714.
	62			CONTACT SOCKETS SUPPLIED WITH 1010674.
	63			DELETED
	64			DELETED
8	65	AR	1012507- 2	LACING TAPE, DACRON, BLACK, 0.05 INCHES WIDE
8	66	AR	1012507- 4	LACING TAPE, DACRON, BLACK 0.09 INCHES WIDE
8	67	1	1023012- 1	COUPLING, ADAPTER
8	68	1	1023012- 2	COUPLING, ADAPTER

LIST OF MATERIALS

SEE NOTE NUMBER	ITEM	QTY	PART NO.	DESCRIPTION
8	70	270	1010911-044	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR)
8	72	315	1010911-052	INSULATION-SLEEVING, ELEC HEAT SHRINKABLE (CLEAR)
	73	6	1012534-005	INSULATION-SLEEVING ELEC HEAT SHRINKABLE
	74	AR	MIL-T-23594	TAPE TEFLON TYPE II
	75	66	1010958- 1	PLUGS, SEALING

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 1	8										72	F3A
A 1R			J1-1 TB1-A8					.10 .18	NO NO		38 42	
A 1Y			J1-14 TB1-B8					.10 .18	NO NO		38 42	
A 2	8										72	F4A
A 2R			J1-3 TB1-D1					.10 .18	NO NO		38 42	
A 2Y			J1-2 TB1-D2					.10 .18	NO NO		38 42	
A 3	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	F2A
A 3B	7		TB1-A12 SHLD A3					.18 .20	NO NO		42	
A 3R			J1-20 TB1-A13					.10 .18	NO NO		38 42	
A 3Y			J1-6 TB1-A14					.10 .18	NO NO		38 42	
A 4	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	F2A
A 4B	7		TB1-A17 SHLD A4					.18 .20	NO NO		42	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 4R			J1-21 TB1-A15					.10 .18	NO NO		38 42	
A 4Y			J1-7 TB1-A16					.10 .18	NO NO		38 42	
A 5	9										72	F3A
A 5G			J1-11 TB1-A6					.10 .18	NO NO		38 42	
A 5R			J1-25 TB1-A6					.10 .18	NO NO		38	
A 5Y			J1-12 TB1-B6					.10 .18	NO NO		38 42	
A 6	4		J1-15 TB1-B53					.10 .18	NO NO		38, 70 42	F4B
A 7	4		J1-16 TB1-G6					.10 .18	NO NO		38, 70 42	F3A
A 8	8										72	F4A
A 8R			J1-28 TB1-A1					.10 .18	NO NO		38 42	
A 8Y			J1-29 TB1-B1					.10 .18	NO NO		38 42	
A 9	4		J1-30 TB1-C53					.10 .18	NO NO		38, 70 40	F4B

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 10	9										72	F2A
A 10G			J1-31 TB1-K18					.10 .18	NO NO		38 40	
A 10R			J1-43 TB1-K20					.10 .18	NO NO		38 40	
A 10Y			J1-32 TB1-K19					.10 .18	NO NO		38 40	
A 11	4		J1-34 TB1-K35					.10 .18	NO NO		38, 70 40	E3A
A 12	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E3A
A 12B	7		TB1-K32 SHLD A12					.18 .20	NO NO		42	
A 12R			J1-35 TB1-K33					.10 .18	NO NO		38 42	
A 12Y			J1-45 TB1-K34					.10 .18	NO NO		38 42	
A 13	4		J1-41 TB1-G9					.10 .18	NO NO		38, 70 41	F3A
A 14	8										72	F4B
A 14R			J1-50 TB1-G1					.10 .18	NO NO		38 41	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 14Y			J1-60 TB1-G2					.10 .18	NO NO		38 41	
A 15	8										72	E3A
A 15R			J1-67 TB1-A31					.10 .18	NO NO		38 40	
A 15Y			J1-57 TB1-B31					.10 .18	NO NO		38 40	
A 16	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	F2A
A 16B	7		TB1-H17 SHLD A16					.18 .20	NO NO		41	
A 16R			J1-100 TB1-H15					.10 .18	NO NO		38 41	
A 16Y			J1-86 TB1-H16					.10 .18	NO NO		38 40	
A 17	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	F2A
A 17B	7		TB1-K17 SHLD A17					.18 .20	NO NO		41	
A 17R			J1-101 TB1-K15					.10 .18	NO NO		38 41	
A 17Y			J1-87 TB1-K16					.10 .18	NO NO		38 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 18	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E4A
A 18B	7		TB1-K30 SHLD A18					.18 .20	NO NO		41	
A 18R			J1-104 TB1-K31					.10 .18	NO NO		38 40	
A 18Y			J1-90 TB1-K30					.10 .18	NO NO		38	
A 19	3				1.00 2.50	.75 1.75				7 6B	72 54, 44	E4A
A 19B	7		TB1-F30 SHLD A19					.18 .20	NO NO		41	
A 19G			J1-105 TB1-F31					.10 .18	NO NO		38 40	
A 19R			J1-106 TB1-F29					.10 .18	NO NO		38 40	
A 19Y			J1-92 TB1-F30					.10 .18	NO NO		38	
A 20	3				1.00 2.50	.75 1.75				7 6B	72 54, 44	E3A
A 20B	7		TB1-F34 SHLD A20					.18 .20	NO NO		41	
A 20G			J1-107 TB1-F35					.10 .18	NO NO		38 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 20R			J1-108 TB1-F33					.10 .18	NO NO		38 40	
A 20Y			J1-94 TB1-F34					.10 .18	NO NO		38	
A 21	8										72	F3A
A 21R			J2-1 TB1-A8					.10 .18	NO NO		38	
A 21Y			J2-14 TB1-B8					.10 .18	NO NO		38	
A 22	8										72	F4A
A 22R			J2-3 TB1-D1					.10 .18	NO NO		38	
A 22Y			J2-2 TB1-D2					.10 .18	NO NO		38	
A 23	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	F2A
A 23B	7		TB1-B12 SHLD A23					.18 .20	NO NO		42	
A 23R			J2-20 TB1-B13					.10 .18	NO NO		38 42	
A 23Y			J2-6 TB1-B14					.10 .18	NO NO		38 42	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 24	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	F2A
A 24B	7		TB1-B17 SHLD A24					.18 .20	NO NO		42	
A 24R			J2-21 TB1-B15					.10 .18	NO NO		38 42	
A 24Y			J2-7 TB1-B16					.10 .18	NO NO		38 42	
A 25	9										72	F4A
A 25G			J2-11 TB1-A5					.10 .18	NO NO		38 42	
A 25R			J2-25 TB1-A5					.10 .18	NO NO		38	
A 25Y			J2-12 TB1-B6					.10 .18	NO NO		38	
A 26	4		J2-15 TB1-B53					.10 .18	NO NO		38, 70	F4B
A 27	4		J2-16 TB1-G6					.10 .18	NO NO		38, 70	F3A
A 28	8										72	F4A
A 28R			J2-28 TB1-A1					.10 .18	NO NO		38	

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LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A	28Y			J2-29 TB1-B1					.10 .18	NO NO		38	
A	29	4		J2-30 TB1-C52					.10 .18	NO NO		38, 70 40	F4B
A	30	9										72	F2A
A	30G			J2-31 TB1-H19					.10 .18	NO NO		38 40	
A	30R			J2-43 TB1-H20					.10 .18	NO NO		38 40	
A	30Y			J2-32 TB1-H18					.10 .18	NO NO		38 40	
A	31	4		J2-34 TB1-H35					.10 .18	NO NO		38, 70 40	E3A
A	32	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E3A
A	32B	7		TB1-H32 SHLD A32					.18 .20	NO NO		42	
A	32R			J2-35 TB1-H33					.10 .18	NO NO		38 42	
A	32Y			J2-45 TB1-H34					.10 .18	NO NO		38 42	
A	33	4		J2-41 TB1-G9					.10 .18	NO NO		38, 70	F3A

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LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A	34	8										72	F4A
A	34R			J2-50 TB1-G1					.10 .18	NO NO		38	
A	34Y			J2-60 TB1-G2					.10 .18	NO NO		38	
A	35	8										72	E4A
A	35R			J2-67 TB1-A30					.10 .18	NO NO		38 40	
A	35Y			J2-57 TB1-B30					.10 .18	NO NO		38 40	
A	36	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	F3A
A	36B	7		TB1-H12 SHLD A36					.18 .20	NO NO		42	
A	36R			J2-100 TB1-H10					.10 .18	NO NO		38 41	
A	36Y			J2-86 TB1-H11					.10 .18	NO NO		38 40	
A	37	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	F3A
A	37B	7		TB1-K12 SHLD A37					.18 .20	NO NO		41	

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LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A	37R			J2-101 TB1-K10					.10 .18	NO NO		38 41	
A	37Y			J2-87 TB1-K11					.10 .18	NO NO		38 40	
A	38	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E4A
A	38B	7		TB1-H30 SHLD A38					.18 .20	NO NO		41	
A	38R			J2-104 TB1-H31					.10 .18	NO NO		38 40	
A	38Y			J2-90 TB1-H30					.10 .18	NO NO		38	
A	39	3				1.00 2.50	.75 1.75				7 6B	72 54, 44	E4A
A	39B	7		TB1-D30 SHLD A39					.18 .20	NO NO		41	
A	39G			J2-105 TB1-D31					.10 .18	NO NO		38 40	
A	39R			J2-106 TB1-D29					.10 .18	NO NO		38 40	
A	39Y			J2-92 TB1-D30					.10 .18	NO NO		38	
A	40	3				1.00 2.50	.75 1.75				7 6B	72 54, 44	E3A

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LEAD IDENT		WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A	40B	7		TB1-D34 SHLD A40					.18 .20	NO NO		41	
A	40G			J2-107 TB1-D35					.10 .18	NO NO		38 40	
A	40R			J2-108 TB1-D33					.10 .18	NO NO		38 40	
A	40Y			J2-94 TB1-D34					.10 .18	NO NO		38	
A	41	8										72	F3A
A	41R			J3-1 TB1-A8					.10 .18	NO NO		38	
A	41Y			J3-14 TB1-B8					.10 .18	NO NO		38	
A	42	8										72	F4A
A	42R			J3-3 TB1-D1					.10 .18	NO NO		38	
A	42Y			J3-2 TB1-D2					.10 .18	NO NO		38	
A	43	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	F2A
A	43B	7		TB1-C17 SHLD A43					.18 .20	NO NO		42	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 43R			J3-20 TB1-C16					.10 .18	NO NO		38 40	
A 43Y			J3-6 TB1-C15					.10 .18	NO NO		38 42	
A 44	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	F2A
A 44B	7		TB1-D17 SHLD A44					.18 .20	NO NO		42	
A 44R			J3-21 TB1-D16					.10 .18	NO NO		38 40	
A 44Y			J3-7 TB1-D15					.10 .18	NO NO		38 42	
A 45	9										72	F3A
A 45G			J3-11 TB1-A7					.10 .18	NO NO		38 42	
A 45R			J3-25 TB1-A6					.10 .18	NO NO		38	
A 45Y			J3-12 TB1-B6					.10 .18	NO NO		38	
A 46	4		J3-15 TB1-B53					.10 .18	NO NO		38, 70	F4B
A 47	4		J3-16 TB1-G6					.10 .18	NO NO		38, 70	F3A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 48	8										72	F4A
A 48R			J3-28 TB1-A1					.10 .18	NO NO		38	
A 48Y			J3-29 TB1-B1					.10 .18	NO NO		38	
A 49	4		J3-30 TB1-C51					.10 .18	NO NO		38, 70 40	F4B
A 50	9										72	F2A
A 50G			J3-31 TB1-G19					.10 .18	NO NO		38 40	
A 50R			J3-43 TB1-G20					.10 .18	NO NO		38 40	
A 50Y			J3-32 TB1-G18					.10 .18	NO NO		38 40	
A 51	4		J3-34 TB1-G35					.10 .18	NO NO		38, 70 40	E3A
A 52	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E3A
A 52B	7		TB1-G32 SHLD A52					.18 .20	NO NO		42	
A 52R			J3-35 TB1-G33					.10 .18	NO NO		38 42	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 52Y			J3-45 TB1-G34					.10 .18	NO NO		38 42	
A 53	4		J3-41 TB1-G10					.10 .18	NO NO		38, 70 41	F3A
A 54	8										72	F4A
A 54R			J3-50 TB1-H1					.10 .18	NO NO		38 41	
A 54Y			J3-60 TB1-H2					.10 .18	NO NO		38 41	
A 55	8										72	E4A
A 55R			J3-67 TB1-A29					.10 .18	NO NO		38 40	
A 55Y			J3-57 TB1-B29					.10 .18	NO NO		38 40	
A 56	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	F2A
A 56B	7		TB1-F17 SHLD A56					.18 .20	NO NO		41	
A 56R			J3-100 TB1-F15					.10 .10	NO NO		38 41	
A 56Y			J3-86 TB1-F16					.10 .10	NO NO		38 40	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 57	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	F2A
A 57B	7		TB1-G17 SHLD A57					.18 .20	NO NO		41	
A 57R			J3-101 TB1-G15					.10 .18	NO NO		38 41	
A 57Y			J3-87 TB1-G16					.10 .18	NO NO		38 40	
A 58	4		J3-89 TB1-G29					.10 .18	NO NO		38, 70 40	E4A
A 59	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E4A
A 59B	7		TB1-F32 SHLD A59					.18 .20	NO NO		42	
A 59R			J3-104 TB1-G31					.10 .18	NO NO		38 41	
A 59Y			J3-90 TB1-G30					.10 .18	NO NO		38 42	
A 60	3				1.00 2.50	.75 1.75				7 6B	72 54, 44	E4A
A 60B	7		TB1-C30 SHLD A60					.18 .20	NO NO		41	
A 60G			J3-105 TB1-C31					.10 .18	NO NO		38 40	

WIRING HARNESS A 1015085 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 60R			J3-106 TB1-C29					.10 .18	NO NO		38 40	
A 60Y			J3-92 TB1-C30					.10 .18	NO NO		38	
A 61	3				1.00 2.50	.75 1.75				7 6B	72 54, 44	E3A
A 61B	7		TB1-C34 SHLD A61					.18 .20	NO NO		41	
A 61G			J3-107 TB1-C35					.10 .18	NO NO		38 40	
A 61R			J3-108 TB1-C33					.10 .18	NO NO		38 40	
A 61Y			J3-94 TB1-C34					.10 .18	NO NO		38	
A 62	8										72	F4A
A 62R			J4-1 TB1-D5					.10 .18	NO NO		38 41	
A 62Y			J4-14 TB1-F5					.10 .18	NO NO		38 41	
A 63	8										72	F3A
A 63R			J4-5 TB1-D8					.10 .18	NO NO		38 42	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE
REV LTR E
SHEET 25 OF 127

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WIRING HARNESS A 1015085 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 63Y			J4-2 TB1-F8					.10 .18	NO NO		38 42	
A 64	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E1A
A 64B	7		TB1-H47 SHLD A64					.18 .20	NO NO		40	
A 64R			J4-20 TB1-H45					.10 .18	NO NO		38 40	
A 64Y			J4-6 TB1-H46					.10 .18	NO NO		38 40	
A 65	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E1A
A 65B	7		TB1-K47 SHLD A65					.18 .20	NO NO		40	
A 65R			J4-7 TB1-K46					.10 .18	NO NO		38 40	
A 65Y			J4-21 TB1-K45					.10 .18	NO NO		38 40	
A 66	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E2
A 66B	7		TB1-H39 SHLD A66					.18 .20	NO NO		40	
A 66R			J4-25 TB1-H41					.10 .18	NO NO		38 40	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE
REV LTR E
SHEET 26 OF 127

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WIRING HARNESS A 1015085 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 66Y			J4-11 TB1-H40					.10 .18	NO NO		38 40	
A 67	8										72	F4A
A 67R			J4-28 TB1-A2					.10 .18	NO NO		38 42	
A 67Y			J4-29 TB1-B2					.10 .18	NO NO		38 42	
A 68	13										72	E1A
A 68G			J4-43 TB1-H50					.10 .18	NO NO		38 41	
A 68N			J4-44 TB1-D49					.10 .18	NO NO		38 40	
A 68R			J4-32 TB1-H49					.10 .18	NO NO		38 40	
A 68Y			J4-31 TB1-H48					.10 .18	NO NO		38 40	
A 69	9										72	E1A
A 69G			J4-35 TB1-F48					.10 .18	NO NO		38 40	
A 69R			J4-45 TB1-F49					.10 .18	NO NO		38 40	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE
REV LTR E
SHEET 27 OF 127

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WIRING HARNESS A 1015085 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 69Y			J4-34 TB1-F50					.10 .18	NO NO		38 40	
A 70	4		J4-41 TB1-G10					.10 .18	NO NO		38, 70	F2B
A 71	8										72	F4A
A 71R			J4-50 TB1-K1					.10 .18	NO NO		38 42	
A 71Y			J4-60 TB1-K2					.10 .18	NO NO		38 42	
A 72	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E1A
A 72B	7		TB1-C47 SHLD A72					.18 .20	NO NO		41	
A 72R			J4-56 TB1-C45					.10 .18	NO NO		38 41	
A 72Y			J4-66 TB1-C46					.10 .18	NO NO		38 41	
A 73	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E1A
A 73B	7		TB1-D47 SHLD A73					.18 .20	NO NO		41	
A 73R			J4-57 TB1-D45					.10 .18	NO NO		38 41	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015085
SCALE-NONE
REV LTR E
SHEET 28 OF 127

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 73Y			J4-67 TB1-D46					.10 .18	NO NO		38 41	
A 74	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E1A
A 74B	7		TB1-A47 SHLD A74					.18 .20	NO NO		41	
A 74R			J4-100 TB1-A46					.10 .18	NO NO		38 41	
A 74Y			J4-86 TB1-A45					.10 .18	NO NO		38 41	
A 75	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E1A
A 75B	7		TB1-B47 SHLD A75					.18 .20	NO NO		41	
A 75R			J4-87 TB1-B45					.10 .18	NO NO		38 41	
A 75Y			J4-101 TB1-B46					.10 .18	NO NO		38 41	
A 76	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E2
A 76B	7		TB1-G39 SHLD A76					.18 .20	NO NO		40	
A 76R			J4-90 TB1-G41					.10 .18	NO NO		38 40	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085
SCALE-NONE	REV LTR E	SHEET 29 OF 127

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 76Y			J4-104 TB1-G40					.10 .18	NO NO		38 40	
A 77	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E2
A 77B	7		TB1-G36 SHLD A77					.18 .20	NO NO		40	
A 77R			J4-106 TB1-G37					.10 .18	NO NO		38 40	
A 77Y			J4-92 TB1-G38					.10 .18	NO NO		38 40	
A 78	3				1.00 2.50	.75 1.75				7 6B	72 54, 44	E3A
A 78B	7		TB1-A34 SHLD A78					.18 .20	NO NO		41	
A 78G			J4-107 TB1-A35					.10 .18	NO NO		38 40	
A 78R			J4-108 TB1-A33					.10 .18	NO NO		38 40	
A 78Y			J4-94 TB1-A34					.10 .18	NO NO		38	
A 79	8										72	F4A
A 79R			J5-1 TB1-D5					.10 .18	NO NO		38	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085
SCALE-NONE	REV LTR E	SHEET 30 OF 127

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 79Y			J5-14 TB1-F5					.10 .18	NO NO		38	
A 80	8										72	F3A
A 80R			J5-5 TB1-D8					.10 .18	NO NO		38	
A 80Y			J5-2 TB1-F8					.10 .18	NO NO		38	
A 81	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E2
A 81B	7		TB1-D39 SHLD A81					.18 .20	NO NO		40	
A 81R			J5-17 TB1-D40					.10 .18	NO NO		38 40	
A 81Y			J5-4 TB1-D41					.10 .18	NO NO		38 40	
A 82	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E2
A 82B	7		TB1-D42 SHLD A82					.18 .20	NO NO		41	
A 82R			J5-22 TB1-D43					.10 .18	NO NO		38 41	
A 82Y			J5-8 TB1-D44					.10 .18	NO NO		38	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085
SCALE-NONE	REV LTR E	SHEET 31 OF 127

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 83	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E2
A 83B	7		TB1-C42 SHLD A83					.18 .20	NO NO		42	
A 83R			J5-9 TB1-C44					.10 .18	NO NO		38 41	
A 83Y			J5-10 TB1-C43					.10 .18	NO NO		38 41	
A 84	9										72	F2A
A 84G			J5-11 TB1-B19					.10 .18	NO NO		38 41	
A 84R			J5-25 TB1-B19					.10 .18	NO NO		38	
A 84Y			J5-12 TB1-B18					.10 .18	NO NO		38 40	
A 85	8										72	F4A
A 85R			J5-28 TB1-A2					.10 .18	NO NO		38	
A 85Y			J5-29 TB1-B2					.10 .18	NO NO		38	
A 86	13										72	E1A

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085
SCALE-NONE	REV LTR E	SHEET 32 OF 127

WIRING HARNESS A 1015085 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 86G			J5-43 TB1-K50					.10 .18	NO NO		38 42	
A 86N			J5-44 TB1-D50					.10 .18	NO NO		38 40	
A 86R			J5-32 TB1-K49					.10 .18	NO NO		38 40	
A 86Y			J5-31 TB1-K48					.10 .18	NO NO		38 40	
A 87	4		J5-41 TB1-G11					.10 .18	NO NO		38, 70 41	F2A
A 88	8										72	F4A
A 88R			J5-50 TB1-K1					.10 .18	NO NO		38	
A 88Y			J5-60 TB1-K2					.10 .18	NO NO		38	
A 89	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E2
A 89B	7		TB1-H42 SHLD A89					.18 .20	NO NO		40	
A 89R			J5-56 TB1-H44					.10 .18	NO NO		38 40	
A 89Y			J5-66 TB1-H43					.10 .18	NO NO		38 40	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE-NONE | REV LTR E | SHEET 33 OF 127

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WIRING HARNESS A 1015085 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 90	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E2
A 90B	7		TB1-K42 SHLD A90					.18 .20	NO NO		40	
A 90R			J5-68 TB1-K44					.10 .18	NO NO		38 40	
A 90Y			J5-67 TB1-K43					.10 .18	NO NO		38 40	
A 91	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E2
A 91B	7		TB1-A42 SHLD A91					.18 .20	NO NO		41	
A 91R			J5-100 TB1-A43					.10 .18	NO NO		38 41	
A 91Y			J5-86 TB1-A44					.10 .18	NO NO		38	
A 92	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E2
A 92B	7		TB1-B42 SHLD A92					.18 .20	NO NO		41	
A 92R			J5-101 TB1-B43					.10 .18	NO NO		38 41	
A 92Y			J5-87 TB1-B44					.10 .18	NO NO		38	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE-NONE | REV LTR E | SHEET 34 OF 127

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WIRING HARNESS A 1015085 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 93	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E2
A 93B	7		TB1-C42 SHLD A93					.18 .20	NO NO			
A 93R			J5-90 TB1-C41					.10 .18	NO NO		38 40	
A 93Y			J5-104 TB1-C40					.10 .18	NO NO		38 40	
A 94	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E2
A 94B	7		TB1-C36 SHLD A94					.18 .20	NO NO		40	
A 94R			J5-106 TB1-C37					.10 .18	NO NO		38 40	
A 94Y			J5-92 TB1-C38					.10 .18	NO NO		38 40	
A 95	3				1.00 2.50	.75 1.75				7 6B	72 54, 44	E3A
A 95B	7		TB1-B34 SHLD A95					.18 .20	NO NO		41	
A 95G			J5-107 TB1-B35					.10 .18	NO NO		38 40	
A 95R			J5-108 TB1-B33					.10 .18	NO NO		38 40	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE-NONE | REV LTR E | SHEET 35 OF 127

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WIRING HARNESS A 1015085 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 95Y			J5-94 TB1-B34					.10 .18	NO NO		38	
A 96	8										72 72	
A 96R			J6-1 P1-1					.10 .10	NO NO		38 38	
A 96Y			J6-2 P1-2					.10 .10	NO NO		38 38	
A 97	4		J6-6 P1-6					.10 .10	NO NO		38, 70 38, 20	
A 98	4		J6-9 P1-9					.10 .10	NO NO		38, 70 38, 70	
A 99	2				1.25 2.50	1.00 1.75				7 6B	72 54, 44	E1A
A 99B	7		TB1-A49 SHLD A99					.18 .20	NO NO		42	
A 99R			J6-81 TB1-B48					.10 .10	NO NO		38 41	
A 99Y			J6-12 TB1-A48					.10 .10	NO NO		38 42	
A 100	8										72 72	
A 100R			J6-14 P1-14					.10 .10	NO NO		38 38	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085

SCALE-NONE | REV LTR E | SHEET 36 OF 127

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WIRING HARNESS A   1015085   E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 100Y			J6-15 P1-15					.10 .10	NO NO		38 38	
A 101	4		J6-18 P1-18					.10 .10	NO NO		38, 70 38, 70	
A 102	4		J6-22 P1-22					.10 .10	NO NO		38, 70 38, 70	
A 103	4		J6-23 P1-23					.10 .10	NO NO		38, 70 38, 70	
A 104	1				1.00 2.50	.75 1.75				7 6B	72 55, 43	F4A
A 104B	7		TB1-H4 SHLD A104					.18 .20	NO NO		40	
A 104Y			J6-24 TB1-G3					.10 .18	NO NO		38 41	
A 105	4		J6-25 P1-25					.10 .10	NO NO		38, 70 38, 70	
A 106	8										72 72	
A 106R			J6-29 P1-29					.10 .10	NO NO		38 38	
A 106Y			J6-28 P1-28					.10 .10	NO NO		38 38	
A 107	4		J6-34 P1-34					.10 .10	NO NO		38, 70 38, 70	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE-NONE	REV LTR	E	SHEET 37 OF 127

MIL 2084 4-63

WIRING HARNESS A   1015085   E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 108	4		J6-35 P1-35					.10 .10	NO NO		38, 70 38, 70	
A 109	4		J6-36 P1-36					.10 .10	NO NO		38, 70 38, 70	
A 110	4		J6-37 P1-37					.10 .10	NO NO		38, 70 38, 70	
A 111	4		J6-46 P1-46					.10 .10	NO NO		38, 70 38, 70	
A 112	4		J6-56 P1-56					.10 .10	NO NO		38, 70 38, 70	
A 113	1				1.00 2.50	.75 1.75				7 6B	72 55, 43	F4B
A 113B	7		TB1-D56 SHLD A113					.18 .20	NO NO		41	
A 113Y			J6-68 TB1-C56					.10 .18	NO NO		38 41	
A 114	1				1.00 2.50	.75 1.75				7 6B	72 55, 43	F4B
A 114B	7		E22 SHLD A114					.20 .20	NO NO		44	
A 114Y			J6-69 J24-12					.10 .13	NO NO		38 39	
A 115	4		J6-78 TB1-D3					.10 .18	NO NO		38, 70 41	F4A

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE-NONE	REV LTR	E	SHEET 38 OF 127

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WIRING HARNESS A   1015085   E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 116	4		J6-79 P1-79					.10 .10	NO NO		38, 70 38, 70	
A 117	4		J6-91 TB1-G8					.10 .10	NO NO		38, 70 42	F3A
A 118	4		J6-92 P1-92					.10 .10	NO NO		38, 70 38, 70	
A 119	4		J6-93 P1-93					.10 .10	NO NO		38, 70 38, 70	
A 120	4		J6-94 P1-94					.10 .10	NO NO		38, 70 38, 70	
A 121	4		J6-104 P1-104					.10 .10	NO NO		38, 70 38, 70	
A 122	4		J6-105 P1-105					.10 .10	NO NO		38, 70 38, 70	
A 123	8										72	F4A
A 123R			J6-108 TB1-A3					.10 .18	NO NO		38 42	
A 123Y			J6-107 TB1-B3					.10 .18	NO NO		38 41	
A 124	3				1.00 2.50	.75 1.75				7 6B	72 54, 44	F4A
A 124B	7		TB1-K4 SHLD A124					.18 .20	NO NO		40	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE-NONE	REV LTR	E	SHEET 39 OF 127

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WIRING HARNESS A   1015085   E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 124G			P1-4 TB1-K3					.10 .18	NO NO		38 40	
A 124R			P1-5 TB1-H5					.10 .18	NO NO		38 40	
A 124Y			P1-12 TB1-K5					.10 .18	NO NO		38 40	
A 125	4		P1-7 TB1-G7					.10 .18	NO NO		38, 70 41	F3A
A 126	8										72	F3A
A 126R			P1-11 TB1-A7					.10 .18	NO NO		38	
A 126Y			P1-10 TB1-B7					.10 .18	NO NO		38 41	
A 127	3				1.00 2.50	.75 1.75				7 6B	72 54, 44	E1A
A 127B	7		TB1-A49 SHLD A127					.18 .20	NO NO			
A 127G			P1-48 TB1-A50					.10 .18	NO NO		38 41	
A 127R			P1-13 TB1-B50					.10 .18	NO NO		38 41	
A 127Y			P1-38 TB1-C50					.10 .18	NO NO		38 41	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085	
SCALE-NONE	REV LTR	E	SHEET 40 OF 127

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 128	3				1.25 2.50	1.00 1.75				7 6B	72 54, 44	F4A
A 128B	7		TB1-G4 SHLD A128					.18 .20	NO NO		40	
A 128G			P1-57 TB1-H3					.10 .10	NO NO		38 40	
A 128R			P1-69 TB1-G5					.10 .10	NO NO		38 40	
A 128Y			P1-24 TB1-G3					.10 .10	NO NO		38	
A 129	4		P1-26 TB1-A26					.10 .18	NO NO		38, 70 42	E4A
A 130	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E1A
A 130B	7		TB1-B49 SHLD A130					.18 .20	NO NO		42	
A 130R			P1-58 TB1-C49					.10 .18	NO NO		38 41	
A 130Y			P1-27 TB1-C48					.10 .18	NO NO		38 41	
A 131	1				1.00 2.50	.75 1.75				7 6B	72 55, 43	F4B
A 131B	7		E22 SHLD A131					.20 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 131Y			P1-39 J24-29					.10 .13	NO NO		38 39	
A 132	1				1.00 2.50	.75 1.75				7 6B	72 55, 43	F4B
A 132B	7		E22 SHLD A132					.20 .20	NO NO			
A 132Y			P1-49 J24-4					.10 .13	NO NO		38 39	
A 133	1				1.00 2.50	.75 1.75				7 6B	72 55, 43	F4B
A 133B	7		E22 SHLD A133					.20 .20	NO NO			
A 133Y			P1-59 J24-14					.10 .13	NO NO		38 39	
A 134	1				1.00 2.50	.75 1.75				7 6B	72 55, 43	F4B
A 134B	7		TB1-D56 SHLD A134					.18 .20	NO NO			
A 134Y			P1-68 TB1-C56					.10 .18	NO NO		38	
A 135	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E3A
A 135B	7		TB1-K32 SHLD A135					.18 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 135R			P1-70 TB1-K33					.10 .18	NO NO		38	
A 135Y			P1-71 TB1-K34					.10 .18	NO NO		38	
A 136	1				1.00 2.50	.75 1.75				7 6B	72 55, 43	F4B
A 136B	7		E22 SHLD A136					.20 .20	NO NO			
A 136Y			P1-76 J24-13					.10 .13	NO NO		38 39	
A 137	4		P1-78 TB1-D3					.10 .18	NO NO		38, 70	F4A
A 138	8										72	F4B
A 138R			P1-80 TB1-A54					.10 .18	NO NO		38 41	
A 138Y			P1-95 TB1-A55					.10 .18	NO NO		38 41	
A 139	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E3A
A 139B	7		TB1-H32 SHLD A139					.18 .20	NO NO			
A 139R			P1-82 TB1-H33					.10 .18	NO NO		38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 139Y			P1-83 TB1-H34					.10 .18	NO NO		38	
A 140	4		P1-84 TB1-G8					.10 .18	NO NO		38, 70	F3A
A 141	4		P1-88 TB1-D71					.10 .18	NO NO		38, 70 41	F4B
A 142	4		P1-89 TB1-K72					.10 .18	NO NO		38, 70 41	F4B
A 143	13										72	F4A
A 143G			P1-106 TB1-C1					.10 .10	NO NO		38 41	
A 143N			P1-90 TB1-C2					.10 .10	NO NO		38 41	
A 143R			P1-103 TB1-A2					.10 .10	NO NO		38	
A 143Y			P1-108 TB1-A4					.10 .10	NO NO		38 42	
A 144	4		P1-91 TB1-C3					.10 .18	NO NO		38, 70 41	F4A
A 145	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	E3A
A 145B	7		TB1-G32 SHLD A145					.18 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 145R			P1-96 TB1-G33					.10 .18	NO NO		38	
A 145Y			P1-97 TB1-G34					.10 .18	NO NO		38	
A 146	4		J8-17 TB1-B21					.10 .18	NO NO		38, 70 42	E4A
A 147	4		J8-18 TB1-A23					.10 .18	NO NO		38, 70 41	E4A
A 148	5		J8-19 TB1-B21					.10 .18	NO NO		38, 70	E4A
A 149	4		J8-28 TB1-B21					.10 .18	NO NO		38, 70	E4A
A 150	4		J8-29 TB1-G8					.10 .18	NO NO		38, 70	F3A
A 151	4		J8-30 TB1-B22					.10 .18	NO NO		38, 70 42	E4A
A 152	4		J8-31 TB1-A25					.10 .18	NO NO		38, 70 40	E4A
A 153	4		J8-32 TB1-C4					.10 .18	NO NO		38, 70 41	F4A
A 154	12										72	F4B
A 154G			J8-46 TB1-B77					.10 .18	NO NO		38 41	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 154R			J8-55 TB1-B76					.10 .18	NO NO		38 41	
A 154Y			J8-36 TB1-B75					.10 .18	NO NO		38 41	
A 155	4		J8-41 TB1-A21					.10 .18	NO NO		38, 70 41	E4A
A 156	4		J8-42 TB1-A26					.10 .18	NO NO		38, 70	E4A
A 157	4		J8-43 J22-40					.10 .18	NO NO		38, 70 39	F4B
A 158	4		J8-50 TB1-A20					.10 .18	NO NO		38, 70 41	F2A
A 159	8										72	E4A
A 159R			J8-52 TB1-C25					.10 .18	NO NO		38 40	
A 159Y			J8-51 TB1-C26					.10 .18	NO NO		38 41	
A 160	4		J8-53 J22-65					.10 .13	NO NO		38, 70 39	F4B
A 161	4		J8-54 TB1-C4					.10 .18	NO NO		38, 70	F4A
A 162	4		J8-60 TB1-A22					.10 .18	NO NO		38, 70 41	E4A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 163	4		J8-61 TB1-B22					.10 .18	NO NO		38, 70	E4A
A 164	8										72	E4A
A 164R			J8-62 TB1-B26					.10 .18	NO NO		38 41	
A 164Y			J8-63 TB1-B25					.10 .18	NO NO		38	
A 165	10										72	F4B
A 165G			J8-66 TB1-A76					.10 .18	NO NO		38 41	
A 165N			J8-95 TB1-A75					.10 .18	NO NO		38 41	
A 165R			J8-68 TB1-A77					.10 .18	NO NO		38 41	
A 165Y			J8-81 TB1-A78					.10 .18	NO NO		38 41	
A 166	4		J8-67 TB1-A53					.10 .18	NO NO		38, 70 41	F4B
A 167	4		J8-70 TB1-B22					.10 .18	NO NO		38, 70	E4A
A 168	8										72	E4A

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 168R			J8-71 TB1-D26					.10 .18	NO NO		38 41	
A 168Y			J8-82 TB1-D25					.10 .18	NO NO		38 40	
A 169	4		J8-72 TB1-A24					.10 .18	NO NO		38, 70 41	E4A
A 170	4		J8-73 TB1-B24					.10 .18	NO NO		38, 70 42	E4A
A 171	4		J8-78 TB1-B52					.10 .18	NO NO		38, 70 41	F4B
A 172	4		J8-79 TB1-A52					.10 .18	NO NO		38, 70 41	F4B
A 173	4		J8-83 TB1-B23					.10 .18	NO NO		38, 70 42	E4A
A 174	4		J8-84 TB1-B23					.10 .18	NO NO		38, 70	E4A
A 175	4		J8-92 TB1-D4					.10 .18	NO NO		38, 70 40	F4A
A 176	4		J8-93 TB1-A51					.10 .18	NO NO		38, 70 41	F4B
A 177	4		J8-106 TB1-B51					.10 .18	NO NO		38, 70 41	F4B
A 178	8										72	F3B

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 178R			P2-A TB1-A5					.20 .18	NO NO		62	
A 178Y			P2-B TB1-B5					.20 .18	NO NO		62 40	
A 179	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F2B
A 179B	7		TB1-A12 SHLD A179					.18 .20	NO NO			
A 179R			P2-A* TB1-A13					.20 .18	NO NO		62	
A 179Y			P2-B* TB1-A14					.20 .18	NO NO		62	
A 180	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F2B
A 180B	7		TB1-F17 SHLD A180					.18 .20	NO NO			
A 180R			P2-C TB1-F15					.20 .18	NO NO		62	
A 180Y			P2-D TB1-F14					.20 .18	NO NO		62 40	
A 181	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F2B
A 181B	7		TB1-G17 SHLD A181					.18 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT. FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 181R			P2-E TB1-G14					.20 .18	NO NO		62 40	
A 181Y			P2-F TB1-G15					.20 .18	NO NO		62	
A 182	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F2B
A 182B	7		TB1-A17 SHLD A182					.18 .20	NO NO			
A 182R			P2-F* TB1-A15					.20 .18	NO NO		62	
A 182Y			P2-G* TB1-A16					.20 .18	NO NO		62	
A 183	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F3B
A 183B	7		TB1-H12 SHLD A183					.18 .20	NO NO			
A 183R			P2-G TB1-H10					.20 .18	NO NO		62	
A 183Y			P2-H TB1-H9					.20 .18	NO NO		62 40	
A 184	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F3B
A 184B	7		TB1-K12 SHLD A184					.18 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 184R			P2-J TB1-K9					.20 .18	NO NO		62 40	
A 184Y			P2-K TB1-K10					.20 .18	NO NO		62	
A 185	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F2B
A 185B	7		TB1-B12 SHLD A185					.18 .20	NO NO			
A 185R			P2-L TB1-B13					.20 .18	NO NO		62	
A 185Y			P2-M TB1-B14					.20 .18	NO NO		62	
A 186	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F2B
A 186B	7		TB1-B17 SHLD A186					.18 .20	NO NO			
A 186R			P2-P TB1-B16					.20 .18	NO NO		62	
A 186Y			P2-N TB1-B15					.20 .18	NO NO		62	
A 187	11										72	F3B
A 187R			P2-R TB1-K7					.20 .18	NO NO		62 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 187Y			P2-S TB1-H7					.20 .18	NO NO		62 40	
A 188	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F3B
A 188B	7		TB1-H12 SHLD A188					.18 .20	NO NO			
A 188R			P2-T TB1-K8					.20 .18	NO NO		62 41	
A 188Y			P2-U TB1-H8					.20 .18	NO NO		62 41	
A 189	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F2B
A 189B	7		TB1-H17 SHLD A189					.18 .20	NO NO			
A 189R			P2-W TB1-H15					.20 .18	NO NO		62	
A 189Y			P2-X TB1-H14					.20 .18	NO NO		62 40	
A 190	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F2B
A 190B	7		TB1-K17 SHLD A190					.18 .20	NO NO			
A 190R			P2-Y TB1-K14					.20 .18	NO NO		62 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 190Y			P2-Z TB1-K15					.20 .18	NO NO		62	
A 191	1				1.50 2.50	1.25 1.75				7 6B	72 55, 43	E4B
A 191B	7		TB1-G27 SHLD A191					.18 .20	NO NO		41	
A 191Y			P3-A TB1-G28					.20 .18	NO NO		62 41	
A 192	8										72	F2B
A 192R			P3-Z TB1-D18					.20 .18	NO NO		62 42	
A 192Y			P3-A* TB1-D19					.20 .18	NO NO		62 42	
A 193	1				1.50 2.50	1.25 1.75				7 6B	72 55, 43	E4B
A 193B	7		TB1-G27 SHLD A193					.18 .20	NO NO			
A 193Y			P3-B TB1-F28					.20 .18	NO NO		62 41	
A 194	8										72	F2B
A 194R			P3-C* TB1-D18					.20 .18	NO NO		62	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 194Y			P3-B* TB1-D19					.20 .18	NO NO		62	
A 195	10										72	E4B
A 195G			P3-U TB1-C28					.20 .18	NO NO		62 41	
A 195N			P3-W TB1-B28					.20 .18	NO NO		62 42	
A 195R			P3-C TB1-A28					.20 .18	NO NO		62 41	
A 195Y			P3-V TB1-D28					.20 .18	NO NO		62 41	
A 196	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F2B
A 196B	7		TB1-C17 SHLD A196					.18 .20	NO NO			
A 196R			P3-D TB1-C14					.20 .18	NO NO		62 41	
A 196Y			P3-E TB1-C15					.20 .18	NO NO		62	
A 197	8										72	F2B
A 197R			P3-D* TB1-F18					.20 .18	NO NO		62 42	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 197Y			P3-E* TB1-F19					.20 .18	NO NO		62 42	
A 198	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F2B
A 198B	7		TB1-D17 SHLD A198					.18 .20	NO NO			
A 198R			P3-F TB1-D15					.20 .18	NO NO		62	
A 198Y			P3-G TB1-D14					.20 .18	NO NO		62 41	
A 199	8										72	F2B
A 199R			P3-G* TB1-F18					.20 .18	NO NO		62	
A 199Y			P3-F* TB1-F19					.20 .18	NO NO		62	
A 200	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	E4B
A 200B	7		TB1-K28 SHLD A200					.18 .20	NO NO		41	
A 200R			P3-J TB1-K28					.20 .18	NO NO		62	
A 200Y			P3-H TB1-K29					.20 .18	NO NO		62 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 201	4		P3-H* TB1-G7					.20 .18	NO NO		62, 70	F3B
A 202	4		P3-J* TB1-A56					.20 .18	NO NO		62, 70 42	F1
A 203	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	E4B
A 203B	7		TB1-H28 SHLD A203					.18 .20	NO NO		41	
A 203R			P3-K TB1-H28					.20 .18	NO NO		62	
A 203Y			P3-L TB1-H29					.20 .18	NO NO		62 40	
A 204	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F2B
A 204B	7		TB1-G12 SHLD A204					.18 .20	NO NO		40	
A 204R			P3-N TB1-H13					.20 .18	NO NO		62 40	
A 204Y			P3-M TB1-K13					.20 .18	NO NO		62 40	
A 205	2				1.50 2.50	1.25 1.75				7 6B	72 54, 44	F2B
A 205B	7		TB1-F12 SHLD A205					.18 .20	NO NO		40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 205R			P3-R TB1-F13					.20 .18	NO NO		62 40	
A 205Y			P3-P TB1-G13					.20 .18	NO NO		62 40	
A 206	8										72	F2B
A 206R			P3-Y TB1-C18					.20 .18	NO NO		62 42	
A 206Y			P3-X TB1-C19					.20 .18	NO NO		62 42	
A 207	8										72 72	
A 207R			P4-D2 P5-30					.13 .13	NO NO		39 39	
A 207Y			P4-D1 P5-27					.13 .13	NO NO		39 39	
A 208	8										72	F3B
A 208R			P4-E1 TB1-D6					.13 .18	NO NO		39 41	
A 208Y			P4-E2 TB1-F6					.13 .18	NO NO		39 42	
A 209	8										72 72	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 209R			P4-F1 P5-59					.13 .13	NO NO		39 39	
A 209Y			P4-F2 P5-58					.13 .13	NO NO		39 39	
A 210	4		P5-1 TB1-G11					.13 .18	NO NO		39, 70	F2B
A 211	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	E3B
A 211B	7		TB1-C47 SHLD A211					.18 .20	NO NO			
A 211R			P5-3 TB1-C45					.13 .18	NO NO		39	
A 211Y			P5-2 TB1-C46					.13 .18	NO NO		39	
A 212	9										72	E1B
A 212G			P5-16 TB1-G50					.13 .18	NO NO		39 42	
A 212R			P5-5 TB1-G51					.13 .18	NO NO		39 40	
A 212Y			P5-33 TB1-G52					.13 .18	NO NO		39 40	
A 213	2				2.00 2.50	1.75 1.75				7 6B	72 54	E3B

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 213B	7		TB1-D47 SHLD A213					.18 .20	NO NO			
A 213R			P5-6 TB1-D45					.13 .18	NO NO		39	
A 213Y			P5-7 TB1-D46					.13 .18	NO NO		39	
A 214	9										72	E1B
A 214G			P5-19 TB1-G50					.13 .18	NO NO		39	
A 214R			P5-8 TB1-G49					.13 .18	NO NO		39 40	
A 214Y			P5-36 TB1-G48					.13 .18	NO NO		39 40	
A 215	4		P5-9 TB1-B67					.13 .18	NO NO		39, 70 42	F1
A 216	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	F1
A 216B	7		TB1-A67 SHLD A216					.18 .20	NO NO		41	
A 216R			P5-11 TB1-A66					.13 .18	NO NO		39 41	
A 216Y			P5-10 TB1-A65					.13 .18	NO NO		39 41	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 217	9										72	F3B
A 217G			P5-14 TB1-F6					.13 .18	NO NO		39	
A 217R			P5-12 TB1-D6					.13 .18	NO NO		39	
A 217Y			P5-13 TB1-F6					.13 .18	NO NO		39	
A 218	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	F1
A 218B	7		TB1-B67 SHLD A218					.18 .20	NO NO			
A 218R			P5-17 TB1-B66					.13 .18	NO NO		39 41	
A 218Y			P5-18 TB1-B65					.13 .18	NO NO		39 41	
A 219	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	E3B
A 219B	7		TB1-H36 SHLD A219					.18 .20	NO NO		40	
A 219R			P5-23 TB1-H37					.13 .18	NO NO		39 40	
A 219Y			P5-24 TB1-H38					.13 .18	NO NO		39 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 220	8										72	F3B
A 220R			P5-32 TB1-D7					.13 .18	NO NO		39 42	
A 220Y			P5-55 TB1-F7					.13 .18	NO NO		39 42	
A 221	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	E3B
A 221B	7		TB1-D36 SHLD A221					.18 .20	NO NO		40	
A 221R			P5-34 TB1-D37					.13 .18	NO NO		39 40	
A 221Y			P5-35 TB1-D38					.13 .18	NO NO		39 40	
A 222	4		P5-37 TB1-C67					.13 .18	NO NO		39, 70 42	F1
A 223	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	E3B
A 223B	7		TB1-D42 SHLD A223					.18 .20	NO NO			
A 223R			P5-38 TB1-D43					.13 .18	NO NO		39	
A 223Y			P5-39 TB1-D44					.13 .18	NO NO		39	

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WIRING HARNESS A 1015085 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 224	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	E1B
A 224B	7		TB1-C42 SHLD A224					.18 .20	NO NO			
A 224R			P5-41 TB1-C44					.13 .18	NO NO		39	
A 224Y			P5-40 TB1-C43					.13 .18	NO NO		39	
A 225	8										72	F3B
A 225R			P5-43 TB1-A3					.13 .18	NO NO		39	
A 225Y			P5-44 TB1-B3					.13 .18	NO NO		39	
A 226	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	E1B
A 226B	7		TB1-G47 SHLD A226					.18 .20	NO NO		41	
A 226R			P5-52 TB1-G46					.13 .18	NO NO		39 41	
A 226Y			P5-51 TB1-G45					.13 .18	NO NO		39 41	
A 227	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	E1B

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 227B	7		TB1-F47 SHLD A227					.18 .20	NO NO		41	
A 227R			P5-53 TB1-F46					.13 .18	NO NO		39 41	
A 227Y			P5-54 TB1-F45					.13 .18	NO NO		39 41	
A 228	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	F1
A 228B	7		TB1-D67 SHLD A228					.18 .20	NO NO		41	
A 228R			P5-64 TB1-D66					.13 .18	NO NO		39 41	
A 228Y			P5-65 TB1-D65					.13 .18	NO NO		39 41	
A 229	4		P5-68 TB1-B71					.13 .18	NO NO		39, 70 42	F1
A 230	4		P5-69 TB1-D78					.13 .18	NO NO		39, 70 41	F1
A 231	8										72	F3B
A 231R			P5-71 TB1-D7					.13 .18	NO NO		39	
A 231Y			P5-70 TB1-F7					.13 .18	NO NO		39	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 232	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	F1
A 232B	7		TB1-C67 SHLD A232					.18 .20	NO NO			
A 232R			P5-72 TB1-C66					.13 .18	NO NO		39 41	
A 232Y			P5-73 TB1-C65					.13 .18	NO NO		39 41	
A 233	8										72	F3B
A 233R			P5-76 TB1-D8					.13 .18	NO NO		39	
A 233Y			P5-77 TB1-F8					.13 .18	NO NO		39	
A 234	2				2.00 2.50	1.75 1.75				7 6B	72 54	E1B
A 234B	7		TB1-B47 SHLD A234					.18 .20	NO NO			
A 234R			P5-79 TB1-B45					.13 .18	NO NO		39	
A 234Y			P5-78 TB1-B46					.13 .18	NO NO		39	
A 235	2				2.00 2.50	1.75 1.75				7 6B	72 54	F1

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 235B	7		TB1-K67 SHLD A235					.18 .20	NO NO		42	
A 235R			P5-80 TB1-K66					.13 .18	NO NO		39 40	
A 235Y			P5-81 TB1-K65					.13 .18	NO NO		39 40	
A 236	2				2.00 2.50	1.75 1.75				7 6B	72 54	E1B
A 236B	7		TB1-A47 SHLD A236					.18 .20	NO NO			
A 236R			P5-83 TB1-A46					.13 .18	NO NO		39	
A 236Y			P5-82 TB1-A45					.13 .18	NO NO		39	
A 237	8										72	F3B
A 237R			P5-84 TB1-D7					.13 .18	NO NO		39	
A 237Y			P5-85 TB1-F7					.13 .18	NO NO		39	
A 238	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	E3B
A 238B	7		TB1-A42 SHLD A238					.18 .20	NO NO			

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 238R			P5-87 TB1-A43					.13 .18	NO NO		39	
A 238Y			P5-86 TB1-A44					.13 .18	NO NO		39	
A 239	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	F1
A 239B	7		TB1-H67 SHLD A239					.18 .20	NO NO		41	
A 239R			P5-88 TB1-H66					.13 .18	NO NO		39 40	
A 239Y			P5-89 TB1-H65					.13 .18	NO NO		39 40	
A 240	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	E3B
A 240B	7		TB1-B42 SHLD A240					.18 .20	NO NO			
A 240R			P5-91 TB1-B43					.13 .18	NO NO		39	
A 240Y			P5-90 TB1-B44					.13 .18	NO NO		39	
A 241	9										72	D2B
A 241G			P6-A TB1-C74					.20 .18	NO NO		62 41	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 241R			P6-C TB1-C72					.20 .18	NO NO		62 41	
A 241Y			P6-B TB1-C73					.20 .18	NO NO		62 41	
A 242	8										72	D3B
A 242R			P6-Z TB1-K63					.20 .18	NO NO		62 40	
A 242Y			P6-A* TB1-K64					.20 .18	NO NO		62 40	
A 243	8										72	D2B
A 243R			P6-B* TB1-K74					.20 .18	NO NO		62 40	
A 243Y			P6-C* TB1-K73					.20 .18	NO NO		62 40	
A 244	4		P6-D TB1-G71					.20 .18	NO NO		62, 70 41	D2B
A 245	8										72	D3B
A 245R			P6-D* TB1-D68					.20 .18	NO NO		62 41	
A 245Y			P6-E* TB1-D69					.20 .18	NO NO		62 41	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 246	4		P6-E TB1-H26					.20 .18	NO NO		62, 70 41	D1
A 247	4		P6-F TB1-C54					.20 .18	NO NO		62, 70 41	D4B
A 248	8										72	D2B
A 248R			P6-F* TB1-C77					.20 .18	NO NO		62 40	
A 248Y			P6-G* TB1-C76					.20 .18	NO NO		62 41	
A 249	4		P6-G TB1-G70					.20 .18	NO NO		62, 70 42	D3B
A 250	8										72	D1
A 250R			P6-H TB1-C18					.20 .18	NO NO		62	
A 250Y			P6-J TB1-C19					.20 .18	NO NO		62	
A 251	4		P6-K TB1-H61					.20 .18	NO NO		62, 70 40	D3B
A 252	8										72	D3B
A 252R			P6-M TB1-H63					.20 .18	NO NO		62 40	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 252Y			P6-L TB1-H64					.20 .18	NO NO		62 40	
A 253	8										72	D3B
A 253R			P6-N TB1-H62					.20 .18	NO NO		62 41	
A 253Y			P6-P TB1-G61					.20 .18	NO NO		62 40	
A 254	2				1.25 2.50	1.00 1.75				7 6B	72 55	D3B
A 254B	7		TB1-C59 SHLD A254					.18 .20	NO NO		41	
A 254R			P6-X TB1-C60					.20 .10	NO NO		62 40	
A 254Y			P6-R TB1-C61					.20 .10	NO NO		62 40	
A 255	2				1.50 2.50	1.25 1.75				7 6B	72 55	D3B
A 255B	7		TB1-C59 SHLD A255					.18 .20	NO NO			
A 255R			P6-V TB1-D60					.20 .18	NO NO		62 40	
A 255Y			P6-W TB1-D61					.20 .18	NO NO		62 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 256	4		P6-Y TB1-D62					.20 .18	NO NO		62, 70 41	D3B
A 257	6				1.75 2.50	1.50 1.75				7 6B	73 55, 44	D1
A 257B	7		TB1-C24 SHLD A257					.18 .20	NO NO		40	
A 257L			P7-A TB1-C23					.40 .18	NO NO		62 40	
A 257R			P7-C TB1-C21					.40 .18	NO NO		62 40	
A 257W			P7-B TB1-C22					.40 .18	NO NO		62 40	
A 258	8										72	D1
A 258R			P7-Z TB1-D11					.20 .18	NO NO		62 40	
A 258Y			P7-A* TB1-D10					.20 .18	NO NO		62 40	
A 259	8										72	D1
A 259R			P7-B* TB1-C11					.20 .18	NO NO		62 40	
A 259Y			P7-C* TB1-C10					.20 .18	NO NO		62 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 260	6				1.75 2.50	1.50 1.75				7 6B	73 55, 44	D1
A 260B	7		TB1-F24 SHLD A260					.18 .20	NO NO		40	
A 260L			P7-D TB1-F23					.40 .18	NO NO		62 40	
A 260R			P7-F TB1-F21					.40 .18	NO NO		62 40	
A 260W			P7-E TB1-F22					.40 .18	NO NO		62 40	
A 261	10										72	D1
A 261G			P7-F* TB1-A10					.20 .18	NO NO		62 40	
A 261N			P7-G* TB1-A11					.20 .18	NO NO		62 40	
A 261R			P7-H* TB1-B11					.20 .18	NO NO		62 40	
A 261Y			P7-J* TB1-B10					.20 .18	NO NO		62 40	
A 262	6				1.75 2.50	1.50 1.75				7 6B	73 55	D1
A 262B	7		TB1-D24 SHLD A262					.18 .20	NO NO		41	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 262L			P7-G TB1-D23					.40 .18	NO NO		62 40	
A 262R			P7-J TB1-D21					.40 .18	NO NO		62 40	
A 262W			P7-H TB1-D22					.40 .18	NO NO		62 40	
A 263	6				1.75 2.50	1.50 1.75				7 6B	73 55	D1
A 263B	7		TB1-G24 SHLD A263					.18 .20	NO NO		40	
A 263L			P7-K TB1-G23					.40 .18	NO NO		62 40	
A 263R			P7-M TB1-G21					.40 .18	NO NO		62 40	
A 263W			P7-L TB1-G22					.40 .18	NO NO		62 40	
A 264	6				1.75 2.50	1.50 1.75				7 6B	73 55	D1
A 264B	7		TB1-H24 SHLD A264					.18 .20	NO NO		40	
A 264L			P7-N TB1-H23					.40 .18	NO NO		62 40	
A 264R			P7-R TB1-H21					.40 .18	NO NO		62 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 264W			P7-P TB1-H22					.40 .18	NO NO		62 40	
A 265	6				1.75 2.50	1.50 1.75				7 6B	73 55	D1
A 265B	7		TB1-K24 SHLD A265					.18 .20	NO NO		40	
A 265L			P7-U TB1-K23					.40 .18	NO NO		62 40	
A 265R			P7-W TB1-K21					.40 .18	NO NO		62 40	
A 265W			P7-V TB1-K22					.40 .18	NO NO		62 40	
A 266	8										72	D1
A 266R			P7-X TB1-F11					.20 .18	NO NO		62 40	
A 266Y			P7-Y TB1-F10					.20 .18	NO NO		62 40	
A 267	9										72	D4B
A 267G			P8-1 TB1-K50					.13 .18	NO NO		39	
A 267R			P8-2 TB1-K51					.13 .18	NO NO		39 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 267Y			P8-3 TB1-K52					.13 .18	NO NO		39 40	
A 268	9										72	D4B
A 268G			P8-7 TB1-H50					.13 .18	NO NO		39	
A 268R			P8-5 TB1-H51					.13 .18	NO NO		39 40	
A 268Y			P8-6 TB1-H52					.13 .18	NO NO		39 40	
A 269	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	D1
A 269B	7		TB1-F42 SHLD A269					.18 .20	NO NO		40	
A 269R			P8-9 TB1-F44					.13 .18	NO NO		39 40	
A 269Y			P8-10 TB1-F43					.13 .18	NO NO		39 40	
A 270	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	D1
A 270B	7		TB1-G42 SHLD A270					.18 .20	NO NO		40	
A 270R			P8-12 TB1-G43					.13 .18	NO NO		39 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 270Y			P8-13 TB1-G44					.13 .18	NO NO		39 40	
A 271	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	D1
A 271B	7		TB1-F39 SHLD A271					.18 .20	NO NO		40	
A 271R			P8-19 TB1-F41					.13 .18	NO NO		39 40	
A 271Y			P8-18 TB1-F40					.13 .18	NO NO		39 40	
A 272	8										72	D2B
A 272R			P8-21 TB1-A74					.13 .18	NO NO		39 42	
A 272Y			P8-22 TB1-B74					.13 .18	NO NO		39 42	
A 273	8										72	D2B
A 273R			P8-24 TB1-A74					.13 .18	NO NO		39	
A 273Y			P8-25 TB1-B74					.13 .18	NO NO		39	
A 274	8										72	D2B

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 274R			P8-27 TB1-A73					.13 .18	NO NO		39 41	
A 274Y			P8-28 TB1-B73					.13 .18	NO NO		39 41	
A 275	8										72	D2B
A 275R			P8-30 TB1-A73					.13 .18	NO NO		39	
A 275Y			P8-31 TB1-B73					.13 .18	NO NO		39	
A 276	2				2.00 2.50	1.75 1.75				6B 6B	72, 44 54, 44	D1
A 276A	7		SHLD A276 P8-35					.20 .13	NO NO		39	
A 276B	7		TB1-F36 SHLD A276					.18 .20	NO NO		40	
A 276R			P8-33 TB1-F37					.13 .18	NO NO		39 40	
A 276Y			P8-34 TB1-F38					.13 .18	NO NO		39 40	
A 278	2				2.00 2.50	1.75 1.75				6B 6B	72, 44 54, 44	D1
A 278A	7		SHLD A278 P8-37					.20 .13	NO NO		39	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 278B	7		TB1-K36 SHLD A278					.18 .20	NO NO		40	
A 278R			P8-38 TB1-K37					.13 .18	NO NO		39 40	
A 278Y			P8-39 TB1-K38					.13 .18	NO NO		39 40	
A 279	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	D1
A 279B	7		TB1-G47 SHLD A279					.18 .20	NO NO			
A 279R			P8-41 TB1-G46					.13 .18	NO NO		39	
A 279Y			P8-42 TB1-G45					.13 .18	NO NO		39	
A 280	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	D1
A 280B	7		TB1-F47 SHLD A280					.18 .20	NO NO			
A 280R			P8-44 TB1-F46					.13 .18	NO NO		39	
A 280Y			P8-45 TB1-F45					.13 .18	NO NO		39	
A 281	2				2.00 2.50	1.75 1.75				7 6B	72 54, 44	D4B

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 281B	7		TB1-K39 SHLD A281					.18 .20	NO NO		40	
A 281R			P8-50 TB1-K41					.13 .18	NO NO		39 40	
A 281Y			P8-51 TB1-K40					.13 .18	NO NO		39 40	
A 282	8										72	D1
A 282R			P8-53 TB1-A4					.13 .18	NO NO		39	
A 282Y			P8-54 TB1-B4					.13 .18	NO NO		39 42	
A 283	8										72	D1
A 283R			P8-56 TB1-A4					.13 .18	NO NO		39	
A 283Y			P8-57 TB1-B4					.13 .18	NO NO		39	
A 284	4		P8-59 TB1-G70					.13 .18	NO NO		39, 70	D3B
A 285	4		J9-1 TB1-F77					.10 .18	NO NO		70 40	D2A
A 286	3				1.25 2.50	1.00 1.75				7 6B	72 54, 44	D3A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 286B	7		TB1-A59 SHLD A286					.18 .20	NO NO		41	
A 286G			J9-70 TB1-B59					.10 .10	NO NO		38 41	
A 286R			J9-2 TB1-A61					.10 .10	NO NO		38 41	
A 286Y			J9-72 TB1-B60					.10 .10	NO NO		38 41	
A 287	9										72	C1A
A 287G			J9-16 J22-90					.10 .13	NO NO		38 39	
A 287R			J9-17 J22-60					.10 .13	NO NO		38 39	
A 287Y			J9-3 J22-89					.10 .13	NO NO		38 39	
A 288	9										72	C1A
A 288G			J9-18 J22-36					.10 .13	NO NO		38 39	
A 288R			J9-5 J22-35					.10 .13	NO NO		38 39	
A 288Y			J9-4 J22-18					.10 .13	NO NO		38 39	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 289	9										72	C1A
A 289G			J9-7 J22-88					.10 .13	NO NO		38 39	
A 289R			J9-6 J22-87					.10 .13	NO NO		38 39	
A 289Y			J9-20 J22-58					.10 .13	NO NO		38 39	
A 290	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	D3A
A 290B	7		TB1-K67 SHLD A290					.18 .20	NO NO			
A 290R			J9-8 TB1-K68					.10 .18	NO NO		38 40	
A 290Y			J9-22 TB1-K69					.10 .18	NO NO		38 40	
A 291	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	D3A
A 291B	7		TB1-H67 SHLD A291					.18 .20	NO NO			
A 291R			J9-10 TB1-H68					.10 .18	NO NO		38 40	
A 291Y			J9-24 TB1-H69					.10 .18	NO NO		38 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 292	5		J9-99 TB1-B23					.10 .18	NO NO		38, 70	C1B
A 295	4		J9-14 J22-64					.10 .13	NO NO		38, 70 39	C1A
A 296	4		J9-15 TB1-D70					.10 .18	NO NO		38, 70 41	D3A
A 297	4		J9-26 TB1-C62					.10 .18	NO NO		38, 70 41	D3A
A 298	1				1.25 2.50	1.00 1.75				6A 7	72, 43 50	
A 298A	7		SHLD A298 E24					.18 .20	NO NO		 43	
A 298Y			J9-30 P10-32					.10 .10	NO NO		38 38	
A 299	4		J9-31 P10-16					.10 .10	NO NO		38, 70 38, 70	
A 300	8										72	D4A
A 300R			J9-32 TB1-A54					.10 .18	NO NO		38	
A 300Y			J9-44 TB1-A55					.10 .18	NO NO		38	
A 301	1				1.25 2.50	1.00 1.75					72, 43 72	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 301A	7		SHLD A301 E24					.20 .20	NO NO	6A 7	 43	
A 301Y			J9-33 P10-33					.10 .10	NO NO		38 38	
A 302	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	D3A
A 302B	7		TB1-F67 SHLD A302					.18 .20	NO NO		41	
A 302R			J9-34 TB1-F68					.10 .18	NO NO		38 40	
A 302Y			J9-35 TB1-F69					.10 .18	NO NO		38 40	
A 303	9										72	C1A
A 303G			J9-50 J22-2					.10 .13	NO NO		38 39	
A 303R			J9-41 J22-7					.10 .13	NO NO		38 39	
A 303Y			J9-40 J22-8					.10 .13	NO NO		38 39	
A 304	1				1.00 2.50	.75 1.75				7 6A	72, 43 55, 43	C1A
A 304B	7		E23 SHLD A304					.20 .20	NO NO		44	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 304Y			J9-42 J24-31					.10 .13	NO NO		38 39	
A 305	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	D3A
A 305B	7		TB1-G67 SHLD A305					.18 .20	NO NO		41	
A 305R			J9-43 TB1-G68					.10 .18	NO NO		38 40	
A 305Y			J9-60 TB1-G69					.10 .18	NO NO		38 40	
A 306	9										72	D2A
A 306G			J9-45 TB1-A71					.10 .18	NO NO		38 40	
A 306R			J9-80 TB1-A72					.10 .18	NO NO		38 41	
A 306Y			J9-69 TB1-B72					.10 .18	NO NO		38 41	
A 307	11										72	D2A
A 307R			J9-55 TB1-B76					.10 .18	NO NO		38	
A 307Y			J9-46 TB1-B77					.10 .18	NO NO		38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 308	2				1.25 2.50	1.00 1.75				6A 6B	72, 44 54, 44	D3A
A 308A	7		SHLD A308 E24					.20 .20	NO NO			
A 308B	7		TB1-A70 SHLD A308					.18 .20	NO NO		42	
A 308R			J9-48 TB1-A69					.10 .18	NO NO		38 42	
A 308Y			J9-47 TB1-A68					.10 .18	NO NO		38 42	
A 309	1				1.25 2.50	1.00 1.75				6A 6B	72, 43 55, 43	C1A
A 309A	7		SHLD A309 E24					.20 .20	NO NO			
A 309B	7		E23 SHLD A309					.20 .20	NO NO			
A 309Y			J9-49 J24-54					.10 .13	NO NO		38 39	
A 310	4		J9-51 TB1-K72					.10 .18	NO NO		38, 70	D2A
A 311	12										72 72	
A 311G			J9-61 P10-105					.10 .10	NO NO		38 38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 311R			J9-53 P10-106					.10 .10	NO NO		38 38	
A 311Y			J9-52 P10-92					.10 .10	NO NO		38 38	
A 312	11										72	C18
A 312R			J9-54 TB1-A3					.10 .18	NO NO		38	
A 312Y			J9-84 TB1-C3					.10 .18	NO NO		38	
A 313	3									7 6B	72 54, 44	D4A
A 313B	7		TB1-A58 SHLD A313					.18 .20	NO NO		41	
A 313G			J9-82 TB1-A57					.10 .10	NO NO		38 40	
A 313R			J9-59 TB1-B58					.10 .10	NO NO		38 40	
A 313Y			J9-58 TB1-B57					.10 .10	NO NO		38 40	
A 314	9										72 72	
A 314G			J9-95 P10-48					.10 .10	NO NO		38 38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 314R			J9-65 P10-39					.10 .10	NO NO		38 38	
A 314Y			J9-77 P10-38					.10 .10	NO NO		38 38	
A 315	9										72 55	D2A
A 315G			J9-66 TB1-A76					.10 .18	NO NO		38	
A 315R			J9-68 TB1-A77					.10 .18	NO NO		38	
A 315Y			J9-81 TB1-A78					.10 .18	NO NO		38	
A 316	4		J9-67 TB1-A53					.10 .18	NO NO		38, 70	D4A
A 317	4		J9-71 TB1-H71					.10 .18	NO NO		38, 70 42	D2A
A 318	4		J9-73 TB1-D72					.10 .18	NO NO		38, 70 42	D2A
A 319	9										72	D3A
A 319G			J9-105 TB1-F61					.10 .18	NO NO		38 40	
A 319R			J9-74 TB1-F60					.10 .18	NO NO		38 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 319Y			J9-92 TB1-F62					.10 .18	NO NO		38 40	
A 320	4		J9-75 TB1-F59					.10 .18	NO NO		38, 70 40	D4A
A 321	9										72	D3A
A 321G			J9-94 TB1-F63					.10 .18	NO NO		38 40	
A 321R			J9-90 TB1-D62					.10 .18	NO NO		38	
A 321Y			J9-76 TB1-D63					.10 .18	NO NO		38 40	
A 322	4		J9-78 TB1-B52					.10 .18	NO NO		38, 70	D4A
A 323	4		J9-79 TB1-A52					.10 .18	NO NO		38, 70	D4A
A 324	10										72	D3A
A 324G			J9-85 TB1-K62					.10 .18	NO NO		38 40	
A 324N			J9-89 TB1-K61					.10 .18	NO NO		38 40	
A 324R			J9-86 TB1-K60					.10 .18	NO NO		38 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 324Y			J9-102 TB1-K59					.10 .18	NO NO		38 40	
A 325	10										72	D4A
A 325G			J9-87 TB1-H60					.10 .18	NO NO		38 40	
A 325N			J9-88 TB1-G60					.10 .18	NO NO		38 40	
A 325R			J9-100 TB1-G59					.10 .18	NO NO		38 40	
A 325Y			J9-101 TB1-H59					.10 .18	NO NO		38 40	
A 326	4		J9-91 TB1-H70					.10 .18	NO NO		38, 70 42	D3A
A 327	4		J9-93 TB1-A51					.10 .18	NO NO		38, 70	D4A
A 328	4		J9-96 TB1-B71					.10 .18	NO NO		38, 70	D2A
A 329	10										72	D3A
A 329G			J9-103 TB1-G64					.10 .18	NO NO		38 40	
A 329N			J9-98 TB1-G62					.10 .18	NO NO		38 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 329R			J9-104 TB1-G63					.10 .18	NO NO		38 40	
A 329Y			J9-97 TB1-H62					.10 .18	NO NO		38	
A 330	4		J9-106 TB1-B51					.10 .18	NO NO		38, 70	D4A
A 331	4		J9-108 TB1-C71					.10 .18	NO NO		38, 70 40	D2A
A 332	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	C1B
A 332B	7		TB1-A17 SHLD A332					.18 .20	NO NO			
A 332R			P9-23 TB1-A15					.10 .18	NO NO		38	
A 332Y			P9-1 TB1-A16					.10 .18	NO NO		38	
A 333	2				1.00 2.50	.75 1.75				7 6B	72 44	C1B
A 333B	7		TB1-A12 SHLD A333					.18 .20	NO NO			
A 333R			P9-3 TB1-A14					.10 .18	NO NO		38	
A 333Y			P9-2 TB1-A13					.10 .18	NO NO		38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 334	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	C1B
A 334B	7		TB1-D17 SHLD A334					.18 .20	NO NO			
A 334R			P9-26 TB1-D14					.10 .18	NO NO		38	
A 334Y			P9-4 TB1-D15					.10 .18	NO NO		38	
A 335	4		P9-5 TB1-D77					.10 .18	NO NO		38, 70 40	D2A
A 336	4		P9-6 TB1-H71					.10 .18	NO NO		38, 70	D2A
A 337	9										72	D3A
A 337G			P9-28 TB1-C63					.10 .18	NO NO		38 40	
A 337R			P9-7 TB1-A63					.10 .18	NO NO		38 40	
A 337Y			P9-29 TB1-B63					.10 .18	NO NO		38 40	
A 338	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	C1B
A 338B	7		TB1-F32 SHLD A338					.18 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 338R			P9-9 TB1-G31					.10 .18	NO NO		38	
A 338Y			P9-31 TB1-G30					.10 .18	NO NO		38	
A 339	4		P9-10 TB1-H70					.10 .18	NO NO		38, 70	D3A
A 340	8										72	C1B
A 340R			P9-11 TB1-A7					.10 .18	NO NO		38	
A 340Y			P9-12 TB1-B7					.10 .18	NO NO		38	
A 341	8										72	D2A
A 341R			P9-13 TB1-C75					.10 .18	NO NO		38 40	
A 341Y			P9-14 TB1-C76					.10 .18	NO NO		38	
A 342	4		P9-19 TB1-G57					.10 .18	NO NO		38, 70 40	D4A
A 343	4		P9-20 TB1-H58					.10 .18	NO NO		38, 70 40	D4A
A 344	4		P9-21 TB1-H55					.10 .18	NO NO		38, 70 40	D4A

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WIRING HARNESS A 1015085 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 345	4		P9-22 TB1-H57					.10 .18	NO NO		38, 70 40	D4A
A 346	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	C1B
A 346B	7		TB1-B17 SHLD A346					.18 .20	NO NO			
A 346R			P9-42 TB1-B15					.10 .18	NO NO		38	
A 346Y			P9-24 TB1-B16					.10 .18	NO NO		38	
A 347	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	C1B
A 347B	7		TB1-B12 SHLD A347					.18 .20	NO NO			
A 347R			P9-25 TB1-B13					.10 .18	NO NO		38	
A 347Y			P9-44 TB1-B14					.10 .18	NO NO		38	
A 348	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	C1B
A 348B	7		TB1-C17 SHLD A348					.18 .20	NO NO			
A 348R			P9-45 TB1-C14					.10 .18	NO NO		38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 348Y			P9-27 TB1-C15					.10 .18	NO NO		38	
A 349	9										72	D2A
A 349G			P9-32 TB1-C74					.10 .18	NO NO		38	
A 349R			P9-33 TB1-C72					.10 .18	NO NO		38	
A 349Y			P9-50 TB1-C73					.10 .18	NO NO		38	
A 350	4		P9-37 TB1-K57					.10 .18	NO NO		38, 70 40	D4A
A 351	4		P9-38 TB1-H54					.10 .18	NO NO		38, 70 40	D4A
A 352	4		P9-39 TB1-G58					.10 .18	NO NO		38, 70 40	D4A
A 353	4		P9-40 TB1-F58					.10 .18	NO NO		38, 70 40	D4A
A 354	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	C1B
A 354B	7		TB1-K32 SHLD A354					.18 .20	NO NO			
A 354R			P9-59 TB1-K33					.10 .18	NO NO		38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 354Y			P9-41 TB1-K34					.10 .18	NO NO		38	
A 355	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	C1B
A 355B	7		TB1-H32 SHLD A355					.20 .20	NO NO			
A 355R			P9-60 TB1-H33					.10 .18	NO NO		38	
A 355Y			P9-43 TB1-H34					.10 .18	NO NO		38	
A 356	4		P9-46 TB1-G73					.10 .18	NO NO		38, 70 40	D2A
A 357	5		P9-47 TB1-H72					.10 .18	NO NO		38, 70 40	D2A
A 358	5		P9-48 TB1-B62					.10 .18	NO NO		38, 70 41	D3A
A 359	5		P9-49 TB1-G71					.10 .18	NO NO		38, 70	D2A
A 360	4		P9-54 TB1-G55					.10 .18	NO NO		38, 70 41	D4A
A 361	4		P9-55 TB1-G54					.10 .18	NO NO		38, 70 41	D4A
A 362	4		P9-56 TB1-F57					.10 .18	NO NO		38, 70 41	D4A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 363	4		P9-57 TB1-K55					.10 .18	NO NO		38, 70 40	D4A
A 364	4		P9-58 TB1-K54					.10 .18	NO NO		38, 70 40	D4A
A 365	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	C1B
A 365B	7		TB1-G32 SHLD A365					.18 .20	NO NO			
A 365R			P9-77 TB1-G33					.10 .18	NO NO		38	
A 365Y			P9-61 TB1-G34					.10 .18	NO NO		38	
A 366	4		P9-62 TB1-G74					.10 .18	NO NO		38, 70 40	D2A
A 367	4		P9-63 TB1-H73					.10 .18	NO NO		38, 70 40	D2A
A 368	4		P9-64 TB1-H74					.10 .18	NO NO		38, 70 40	D2A
A 369	8										72	D3A
A 369R			P9-65 TB1-F70					.10 .18	NO NO		38 40	
A 369Y			P9-81 TB1-F71					.10 .18	NO NO		38 40	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 370	4		P9-66 TB1-C54					.10 .18	NO NO		38, 70	D4A
A 371	4		P9-67 TB1-D26					.10 .18	NO NO		38, 70	C1B
A 372	5		P9-68 TB1-B62					.10 .18	NO NO		38, 70	D3A
A 373	4		P9-69 TB1-A26					.10 .18	NO NO		38, 70	C1B
A 374	8										72	C1B
A 374R			P9-70 TB1-K8					.10 .18	NO NO		38	
A 374Y			P9-88 TB1-H8					.10 .18	NO NO		38	
A 375	4		P9-71 TB1-G56					.10 .18	NO NO		38, 70 41	D4A
A 376	4		P9-72 TB1-K58					.10 .18	NO NO		38, 70 40	D4A
A 377	4		P9-73 TB1-H56					.10 .18	NO NO		38, 70 40	D4A
A 378	4		P9-74 TB1-K56					.10 .18	NO NO		38, 70 40	D4A
A 379	1				1.00 2.50	.75 1.75				7 6B	72 55, 43	C1B

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 379B	7		TB1-F27 SHLD A379					.18 .20	NO NO		41	
A 379Y			P9-75 TB1-F28					.10 .18	NO NO		38	
A 380	1				1.00 2.50	.75 1.75				7 68	72 55, 43	C1B
A 380B	7		TB1-F27 SHLD A380					.18 .20	NO NO			
A 380Y			P9-76 TB1-G28					.10 .18	NO NO		38	
A 381	8										72	D3A
A 381R			P9-79 TB1-D68					.10 .18	NO NO		38	
A 381Y			P9-78 TB1-D69					.10 .18	NO NO		38	
A 382	4		P9-80 TB1-D52					.10 .18	NO NO		38, 70 40	D4A
A 383	11										72	D2A
A 383R			P9-82 TB1-G72					.10 .18	NO NO		38 40	
A 383Y			P9-83 TB1-F72					.10 .18	NO NO		38 42	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 384	4		P9-84 TB1-C26					.10 .18	NO NO		38, 70	C1B
A 385	4		P9-85 TB1-A56					.10 .18	NO NO		38, 70	D4A
A 386	4		P9-86 TB1-B26					.10 .18	NO NO		38, 70	C1B
A 387	8										72	C1B
A 387R			P9-105 TB1-H1					.10 .18	NO NO		38	
A 387Y			P9-87 TB1-H2					.10 .18	NO NO		38	
A 388	10										72	D4A
A 388G			P9-89 TB1-C58					.10 .18	NO NO		38 40	
A 388N			P9-90 TB1-C57					.10 .18	NO NO		38 40	
A 388R			P9-130 TB1-D57					.10 .18	NO NO		38 40	
A 388Y			P9-108 TB1-D58					.10 .18	NO NO		38 40	
A 389	8										72	C1B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 389R			P9-92 TB1-F18					.10 .18	NO NO		38	
A 389Y			P9-91 TB1-F19					.10 .18	NO NO		38	
A 390	10										72	C1B
A 390G			P9-94 TB1-C28					.10 .18	NO NO		38	
A 390N			P9-93 TB1-D28					.10 .18	NO NO		38	
A 390R			P9-112 TB1-B28					.10 .18	NO NO		38	
A 390Y			P9-111 TB1-A28					.10 .18	NO NO		38	
A 391	10										72	C1B
A 391G			P9-95 TB1-B40					.10 .18	NO NO		38 40	
A 391N			P9-114 TB1-B41					.10 .18	NO NO		38 40	
A 391R			P9-96 TB1-A40					.10 .18	NO NO		38 40	
A 391Y			P9-113 TB1-A41					.10 .18	NO NO		38	

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 392	4		P9-97 TB1-F52					.10 .18	NO NO		38, 70 40	D4A
A 393	4		P9-98 TB1-D51					.10 .18	NO NO		38, 70 40	D4A
A 394	8										72	D2A
A 394R			P9-103 TB1-A74					.10 .18	NO NO		38	
A 394Y			P9-102 TB1-B74					.10 .18	NO NO		38	
A 395	8										72	C1B
A 395R			P9-126 TB1-K1					.10 .18	NO NO		38	
A 395Y			P9-104 TB1-K2					.10 .18	NO NO		38	
A 396	4		P9-106 TB1-F64					.10 .18	NO NO		38, 70 40	D3A
A 397	4		P9-107 TB1-A64					.10 .18	NO NO		38, 70 40	D3A
A 398	8										72	C1B
A 398R			P9-131 TB1-C18					.10 .18	NO NO		38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 398Y			P9-109 TB1-C19					.10 .18	NO NO		38	
A 399	8										72	C1B
A 399R			P9-132 TB1-D18					.10 .18	NO NO		38	
A 399Y			P9-110 TB1-D19					.10 .18	NO NO		38	
A 400	4		P9-115 J23-58					.10 .13	NO NO		38, 70 39	C1A
A 401	4		P9-116 TB1-F51					.10 .18	NO NO		38, 70 40	D4A
A 402	8										72	D2A
A 402R			P9-125 TB1-A72					.10 .18	NO NO		38	
A 402Y			P9-124 TB1-B72					.10 .18	NO NO		38	
A 403	4		P9-127 TB1-D64					.10 .18	NO NO		38, 70 40	D3A
A 404	4		P9-128 TB1-C64					.10 .18	NO NO		38, 70 40	D3A
A 405	4		P9-129 TB1-B64					.10 .18	NO NO		38, 70 40	D3A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 406	4		P10-1 TB1-H70					.10 .18	NO NO		38, 70	D3A
A 407	4		P10-8 J22-62					.10 .13	NO NO		38, 70 39	C1A
A 408	4		P10-9 TB1-D70					.10 .18	NO NO		38, 70	D3A
A 409	4		P10-10 TB1-D72					.10 .18	NO NO		38, 70	D2A
A 410	4		P10-12 TB1-A56					.10 .18	NO NO		38, 70	D4A
A 411	4		P10-13 TB1-C62					.10 .18	NO NO		38, 70	D3A
A 412	4		P10-14 TB1-H71					.10 .18	NO NO		38, 70	D2A
A 413	1				1.00 2.50	.75 1.75				7 6B	72 55, 43	D3A
A 413B	7		TB1-A58 SHLD A413					.18 .20	NO NO			
A 413Y			P10-15 TB1-B61					.10 .18	NO NO		38 40	
A 414	1				1.00 2.50	.75 1.75				7 6A	72 55, 43	C2B
A 414B	7		E23 SHLD A414					.20 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 414Y			P10-19 J24-32					.10 .13	NO NO		38 39	
A 415	4		P10-24 TB1-A23					.10 .18	NO NO		38, 70	C1B
A 416	1				1.00 2.50	.75 1.75				7 6B	72 55, 43	D3A
A 416B	7		TB1-A70 SHLD A416					.18 .20	NO NO			
A 416Y			P10-43 TB1-A69					.10 .18	NO NO		38	
A 417	1				1.00 2.50	.75 1.75				7 6A	72 55, 43	C2B
A 417B	7		E23 SHLD A417					.20 .20	NO NO			
A 417Y			P10-44 J24-55					.10 .13	NO NO		38 39	
A 418	8										72	D2A
A 418R			P10-49 TB1-A75					.10 .18	NO NO		38	
A 418Y			P10-95 TB1-B75					.10 .18	NO NO		38	
A 419	11										72	D2A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 419R			P10-69 TB1-B78					.10 .18	NO NO		38 41	
A 419Y			P10-68 TB1-C78					.10 .18	NO NO		38 41	
A 420	13										72	C1B
A 420G			P10-107 TB1-C1					.10 .18	NO NO		38	
A 420N			P10-108 TB1-C2					.10 .18	NO NO		38	
A 420R			P10-93 TB1-B2					.10 .18	NO NO		38	
A 420Y			P10-94 TB1-B4					.10 .18	NO NO		38	
A 421	4		P10-104 TB1-K71					.10 .18	NO NO		38, 70 42	D2A
A 422	8										72	A
A 422R			J10-42 J21-5					.10 .13	NO NO		38 39	
A 422Y			E28 J21-4					.20 .13	NO NO		44 39	
A 423	8										72	A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 423R			J10-32 J21-34					.10 .13	NO NO		38 39	
A 423Y			E28 J21-17					.20 .13	NO NO		39	
A 424	8										72	A
A 424R			J10-17 J21-35					.10 .13	NO NO		38 39	
A 424Y			E28 J21-18					.20 .13	NO NO		39	
A 425	8										72	A
A 425R			J10-18 J21-7					.10 .13	NO NO		38 39	
A 425Y			E28 J21-2					.20 .13	NO NO		39	
A 426	8										72	A
A 426R			J10-40 J21-10					.10 .13	NO NO		38 39	
A 426Y			E28 J21-24					.20 .13	NO NO		39	
A 427	8										72	A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 427R			J10-41 J21-44					.10 .13	NO NO		38 39	
A 427Y			E29 J21-69					.20 .13	NO NO		44 39	
A 428	8										72	A
A 428R			J10-19 J21-86					.10 .13	NO NO		38 39	
A 428Y			E29 J21-57					.20 .13	NO NO		39	
A 429	8										72	A
A 429R			J10-33 J21-6					.10 .13	NO NO		38 39	
A 429Y			E29 J21-1					.20 .13	NO NO		39	
A 430	8										72	A
A 430R			J10-44 J21-3					.10 .13	NO NO		38 39	
A 430Y			E29 J21-11					.20 .13	NO NO		39	
A 431	8										72	A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 431R			J10-43 J21-25					.10 .13	NO NO		38 39	
A 431Y			E29 J21-45					.20 .13	NO NO		39	
A 432	8										72	A
A 432R			J10-53 J21-71					.10 .13	NO NO		38 39	
A 432Y			E30 J21-70					.20 .13	NO NO		44 39	
A 433	8										72	A
A 433R			J10-51 J21-85					.10 .13	NO NO		38 39	
A 433Y			E30 J21-56					.20 .13	NO NO		39	
A 434	8										72	A
A 434R			J10-64 J21-33					.10 .13	NO NO		38 39	
A 434Y			E30 J21-16					.20 .13	NO NO		39	
A 435	8										72	A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 435R			J10-73 J21-90					.10 .13	NO NO		38 39	
A 435Y			E30 J21-61					.20 .13	NO NO		39	
A 436	8										72	A
A 436R			J10-74 J21-38					.10 .13	NO NO		38 39	
A 436Y			E31 J21-39					.20 .13	NO NO		44 39	
A 437	8										72	A
A 437R			J10-60 J21-40					.10 .13	NO NO		38 39	
A 437Y			E31 J21-41					.20 .13	NO NO		39	
A 438	8										72	A
A 438R			J10-28 J21-67					.10 .13	NO NO		38 39	
A 438Y			E31 J21-66					.20 .13	NO NO		39	
A 439	8										72	A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 439R			J10-29 J21-89					.10 .13	NO NO		38 39	
A 439Y			E31 J21-60					.20 .13	NO NO		 39	
A 440	8										72	A
A 440R			J10-30 J21-37					.10 .13	NO NO		38 39	
A 440Y			E32 J21-20					.20 .13	NO NO		44 39	
A 441	8										72	A
A 441R			J10-61 J21-42					.10 .13	NO NO		38 39	
A 441Y			E32 J21-68					.20 .13	NO NO		38 39	
A 442	8										72	A
A 442R			J10-62 J21-88					.10 .13	NO NO		38 39	
A 442Y			E32 J21-59					.20 .13	NO NO		38 39	
A 443	8										72	A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 443R			J10-63 J21-36					.10 .13	NO NO		38 39	
A 443Y			E32 J21-19					.20 .13	NO NO		38 39	
A 444	8										72	A
A 444R			J10-14 J21-8					.10 .13	NO NO		38 39	
A 444Y			E33 J21-9					.20 .13	NO NO		44 39	
A 445	8										72	A
A 445R			J10-16 J21-87					.10 .13	NO NO		38 39	
A 445Y			E33 J21-58					.20 .13	NO NO		 39	
A 446	8										72	A
A 446R			J10-31 J21-21					.10 .13	NO NO		38 39	
A 446Y			E33 J21-22					.20 .13	NO NO		 39	
A 447	8										72	A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 447R			J10-15 J21-23					.10 .13	NO NO		38 39	
A 447Y			E33 J21-43					.20 .13	NO NO		 39	
A 448	4		J10-72 J21-46					.10 .13	NO NO		38, 70 39	A
A 449	4		J10-71 J21-26					.10 .13	NO NO		38, 70 39	A
A 450	4		J10-70 J21-12					.10 .13	NO NO		38, 70 39	A
A 451	4		J10-75 J21-72					.10 .13	NO NO		38, 70 39	A
A 452	4		J10-82 E34					.10 .20	NO NO		38, 70 44	A
A 453	4		E28 E34					.20 .20	NO NO		70 70	A
A 454	4		E29 E34					.20 .20	NO NO		70 70	A
A 455	4		E30 E34					.20 .20	NO NO		70 70	A
A 456	4		E31 E34					.20 .20	NO NO		70 70	A
A 457	4		E32 E34					.20 .20	NO NO		70 70	A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 458	4		E33 E34					.20 .20	NO NO		70 70	A
A 459	8										72	B
A 459R			J10-38 J21-32					.10 .13	NO NO		38 39	
A 459Y			E27 J21-15					.20 .13	NO NO		44 39	
A 460	8										72	B
A 460R			J10-49 J21-83					.10 .13	NO NO		38 39	
A 460Y			E27 J21-54					.20 .13	NO NO		 39	
A 461	8										72	B
A 461R			J10-36 J21-82					.10 .13	NO NO		38 39	
A 461Y			E27 J21-53					.20 .13	NO NO		 39	
A 462	8										72	B
A 462R			J10-39 J21-31					.10 .13	NO NO		38 39	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 462Y			E27 J21-30					.20 .13	NO NO		 39	
A 463	8										72	B
A 463R			J10-37 J21-52					.10 .13	NO NO		38 39	
A 463Y			E27 J21-51					.20 .13	NO NO		 39	
A 464	8										72	B
A 464R			J10-35 J21-48					.10 .13	NO NO		38 39	
A 464Y			E26 J21-74					.20 .13	NO NO		44 39	
A 465	8										72	B
A 465R			J10-47 J21-27					.10 .13	NO NO		38 39	
A 465Y			E26 J21-47					.20 .13	NO NO		 39	
A 466	8										72	B
A 466R			J10-34 J21-29					.10 .13	NO NO		38 39	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 466Y			E26 J21-28					.20 .13	NO NO		 39	
A 467	8										72	B
A 467R			J10-48 J21-14					.10 .13	NO NO		38 39	
A 467Y			E26 J21-13					.20 .13	NO NO		 39	
A 468	4		J10-45 J21-84					.10 .13	NO NO		38, 70 39	B
A 469	4		J10-46 J21-55					.10 .13	NO NO		38, 70 39	B
A 470	4		J10-69 E26					.10 .20	NO NO		38, 70	B
A 471	4		E26 E27					.20 .20	NO NO		70 70	B
A 472	3				1.00 2.50	.75 1.75				7 6B	72 54, 44	D4A
A 472B	7		TB1-A59 SHLD A472					.18 .20	NO NO			
A 472G			J10-67 TB1-B59					.10 .18	NO NO		38	
A 472R			J10-66 TB1-A61					.10 .18	NO NO		38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 472Y			J10-65 TB1-B60					.10 .18	NO NO		38	
A 473	9										72	C1B
A 473G			J10-3 TB1-A21					.10 .18	NO NO		38	
A 473R			J10-4 TB1-A24					.10 .18	NO NO		38	
A 473Y			J10-5 TB1-B24					.10 .18	NO NO		38	
A 474	3				1.00 2.50	.75 1.75				7 6B	72 54, 44	C1B
A 474B	7		TB1-A49 SHLD A474					.18 .20	NO NO			
A 474G			J10-12 TB1-B48					.10 .18	NO NO		38	
A 474R			J10-26 TB1-A48					.10 .18	NO NO		38	
A 474Y			J10-13 TB1-A48					.10 .18	NO NO		38	
A 475	3				1.00 2.50	.75 1.75				7 6B	72 54, 44	D4A
A 475B	7		TB1-B49 SHLD A475					.18 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 475G			J10-22 TB1-A50					.10 .18	NO NO		38	
A 475R			J10-24 TB1-B50					.10 .18	NO NO		38	
A 475Y			J10-21 TB1-C50					.10 .18	NO NO		38	
A 476	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	C1B
A 476B	7		TB1-B49 SHLD A476					.18 .20	NO NO			
A 476R			J10-25 TB1-C49					.10 .18	NO NO		38	
A 476Y			J10-23 TB1-C48					.10 .18	NO NO		38	
A 477	4		J10-2 TB1-D72					.10 .18	NO NO		38, 70	D2A
A 478	4		J10-6 TB1-A22					.10 .18	NO NO		38, 70	C1B
A 479	4		J10-7 TB1-A20					.10 .18	NO NO		38, 70	C1B
A 480	4		J10-57 J21-64					.10 .13	NO NO		38, 70 39	C1A
A 481	4		J10-9 TB1-B56					.10 .18	NO NO		38, 70 40	D4A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 482	4		J10-59 J21-65					.10 .13	NO NO		38, 70 39	C1A
A 483	4		J10-8 TB1-K71					.10 .18	NO NO		38, 70	D2A
A 484	4		J10-58 J21-62					.10 .13	NO NO		38, 70 39	C1A
A 485	4		J10-56 J21-91					.10 .13	NO NO		38, 70 39	C1A
A 486	4		J10-55 J21-63					.10 .13	NO NO		38, 70 39	C1A
A 487	4		J10-27 E36					.10 .20	NO NO		38, 70 45, 49	
A 488	4		J10-1 E38					.10 .20	NO NO		38, 70 47, 48	
A 489	4		J10-10 TB1-K71					.10 .18	NO NO		38, 70	D2A
A 490	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	D3A
A 490B	7		TB1-C67 SHLD A490									
A 490R			P13-1 TB1-C66					.10 .18	NO NO		38	
A 490Y			P13-9 TB1-C65					.20 .18	NO NO		43	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 491	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	D3A
A 491B	7		TB1-D67 SHLD A491					.18 .20	NO NO			
A 491R			P13-2 TB1-D66					.10 .18	NO NO		38	
A 491Y			P13-10 TB1-D65					.20 .18	NO NO			
A 493	8										72	D4A
A 493R			P13-5 TB1-G55					.10 .18	NO NO		38	
A 493Y			P13-13 TB1-F56					.10 .18	NO NO		38 41	
A 494	8										72	D4A
A 494R			P13-6 TB1-G54					.10 .18	NO NO		38	
A 494Y			P13-14 TB1-F56					.10 .18	NO NO		38	
A 495	8										72	D4A
A 495R			P13-15 TB1-G56					.10 .18	NO NO		38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 495Y			P13-7 TB1-F57					.10 .18	NO NO		38	
A 496	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	D3A
A 496B	7		TB1-F67 SHLD A496					.18 .20	NO NO			
A 496R			P13-31 TB1-F66					.10 .18	NO NO		38 40	
A 496Y			P13-23 TB1-F65					.10 .18	NO NO		38 40	
A 497	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	D3A
A 497B	7		TB1-G67 SHLD A497					.18 .20	NO NO			
A 497R			P13-32 TB1-G66					.10 .18	NO NO		38 40	
A 497Y			P13-24 TB1-G65					.10 .18	NO NO		38 40	
A 498	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	D3A
A 498B	7		TB1-A67 SHLD A498					.18 .20	NO NO			
A 498R			P13-28 TB1-A66					.10 .18	NO NO		38	

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 498Y			P13-27 TB1-A65					.10 .18	NO NO		38	
A 499	2				1.00 2.50	.75 1.75				7 6B	72 54, 44	D3A
A 499B	7		TB1-B67 SHLD A499					.18 .20	NO NO			
A 499R			P13-35 TB1-B66					.10 .18	NO NO		38	
A 499Y			P13-36 TB1-B65					.10 .18	NO NO		38	
A 500	4		P13-37 TB1-K70					.10 .18	NO NO		38, 70 41	D3A
A 502	5		P11-A TB1-K78					.25 .18	NO NO		61, 70 42	C2A
A 503	5		P11-A J23-38					.25 .13	NO NO		70 39	C2A
A 504	5		P11-A J23-61					.25 .13	NO NO		70 39	C2A
A 505	5		P11-B TB1-K76					.25 .18	NO NO		61, 70 42	C2A
A 506	5		P11-B TB1-K76					.25 .18	NO NO		70	C2A
A 507	5		P11-B TB1-K76					.25 .18	NO NO		70	C2A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 508	5		P11-C TB1-H76					.25 .18	NO NO		61, 70 42	D2A
A 509	5		P11-C TB1-H76					.25 .18	NO NO		70	D2A
A 510	5		P11-C TB1-H76					.25 .18	NO NO		70	D2A
A 511	5		P11-D TB1-F75					.25 .18	NO NO		61, 70 41	C2A
A 512	5		P11-D TB1-B68					.25 .18	NO NO		70 41	D3A
A 513	5		P11-E TB1-C69					.25 .18	NO NO		61, 70 40	D3A
A 514	5		P11-E TB1-D74					.25 .18	NO NO		70 40	D2A
A 515	5		P11-F TB1-F73					.25 .18	NO NO		61, 70	D2A
A 516	5		P11-F TB1-B70					.25 .18	NO NO		70 41	D3A
A 517	5		P11-G TB1-F78					.25 .18	NO NO		61, 70 40	C2A
A 518	5		P11-G TB1-K53					.25 .18	NO NO		70 40	D4A
A 519	5		P11-G TB1-K50					.25 .18	NO NO		70	D4A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 520	5		P11-H TB1-G78					.25 .18	NO NO		61, 70 42	D2A
A 521	5		P11-H TB1-G78					.25 .18	NO NO		70	D2A
A 522	5		P11-H TB1-H78					.25 .18	NO NO		70 40	D2A
A 523	5		P11-J J23-90					.25 .13	NO NO		61, 70 39	C2A
A 524	5		P11-J J23-91					.25 .13	NO NO		70 39	C2A
A 525	5		P11-J P12-J					.25 .25	NO NO		70	
A 526	11										72	C2A
A 526R			P11-N TB1-B78					.25 .18	NO NO		61	
A 526Y			P11-K TB1-C78					.25 .18	NO NO		61	
A 527	5		P11-L TB1-G70					.25 .18	NO NO		61, 70	D3A
A 528	5		P11-M TB1-G76					.25 .18	NO NO		61, 70 42	C2A
A 529	5		P11-M TB1-G76					.25 .18	NO NO		70	C2A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 530	5		P12-A TB1-K77					.25 .18	NO NO		61, 70 42	D2A
A 531	5		P12-A J23-39					.25 .13	NO NO		70 39	C2A
A 532	5		P12-A J23-40					.25 .13	NO NO		70 39	C2A
A 533	5		P12-B TB1-K75					.25 .18	NO NO		61, 70 42	D2A
A 534	5		P12-B TB1-K75					.25 .18	NO NO		70	D2A
A 535	5		P12-B TB1-K75					.25 .18	NO NO		70	D2A
A 536	5		P12-C TB1-H75					.25 .18	NO NO		61, 70 42	D2A
A 537	5		P12-C TB1-H75					.25 .18	NO NO		70	D2A
A 538	5		P12-C TB1-H75					.25 .18	NO NO		70	D2A
A 539	5		P12-D TB1-C70					.25 .18	NO NO		61, 70 41	D3A
A 540	5		P12-D TB1-D73					.25 .18	NO NO		70 41	C2A
A 541	5		P12-E TB1-F74					.25 .18	NO NO		61, 70 40	C2A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 542	5		P12-E TB1-B69					.25 .18	NO NO		70 40	D3A
A 543	5		P12-F TB1-C68					.25 .18	NO NO		61, 70 41	D3A
A 544	5		P12-F TB1-D75					.25 .18	NO NO		70 41	C2A
A 545	5		P12-G TB1-D78					.25 .18	NO NO		61, 70	C2A
A 546	5		P12-G TB1-G53					.25 .18	NO NO		70 40	D4A
A 547	5		P12-G TB1-G50					.25 .18	NO NO		70	D4A
A 548	5		P12-H TB1-G77					.25 .18	NO NO		61, 70 42	D2A
A 549	5		P12-H TB1-G77					.25 .18	NO NO		70	D2A
A 550	5		P12-H TB1-H77					.25 .18	NO NO		70 40	D2A
A 551	5		P12-J J23-41					.25 .13	NO NO		61, 70 39	C2A
A 552	5		P12-J J23-66					.25 .13	NO NO		70 39	C2A
A 553	5		P12-L TB1-K70					.25 .18	NO NO		61, 70	D3A

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 554	5		P12-M TB1-G75					.25 .18	NO NO		61, 70 42	D2A
A 555	5		P12-M TB1-G75					.25 .18	NO NO		70	D2A
A 556	4		J21-50 E35					.13 .20	NO NO		39 46, 50	C1A
A 557	4		J21-73 E37					.13 .20	NO NO		39 48, 52	C1A
A 558	5		J23-62 TB1-K78					.13 .18	NO NO		39 42	
A 559	5		J23-63 TB1-K78					.13 .18	NO NO		39	
A 560	5		J23-64 TB1-K77					.13 .18	NO NO		39 42	
A 561	5		J23-65 TB1-K77					.13 .18	NO NO		39	
A 562	4		J23-48 TB1-D71					.13 .18	NO NO		39	
A 563	4		J24-51 E23					.13 .20	NO NO		39	
A 564	2				2.00 2.50	1.75 2.25				7 6B	54, 44 54	
A 564B	7		TB1-A70 SHLD A564					.18 .20	NO NO			

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LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 564R			J24-15 TB1-A69					.13 .18	NO NO		39	
A 564Y			J24-84 TB1-A68					.13 .18	NO NO		39	
A 566	1				2.00 2.50	1.75 1.75				7 6B	55, 43 55	
A 566A	7		SHLD A566 E23					.20 .20	NO NO			
A 566Y			J24-83 TB1-A68					.13 .18	NO NO		39	
A 567	4		TB1-D24 TB1-D59					.18 .18	NO NO		 40	
A 570	5		TB1-H26 TB1-K26					.18 .18	NO NO		 40	
A 571	4		TB1-G30 TB1-F32					.18 .18	NO NO			
A 573	5		TB1-B68 TB1-C68					.18 .18	NO NO			
A 577	5		TB1-C70 TB1-F73					.18 .18	NO NO			
A 578	5		TB1-B70 TB1-D73					.18 .18	NO NO			
A 583	5		TB1-D75 TB1-F75					.18 .18	NO NO		 40	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR E | SHEET 126 OF 127

MIL 2084 4-63

WIRING HARNESS A 1015085 E

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS ROUTING
A 586	5		TB1-D76 TB1-K67					.18 .18	NO NO		40	
A 589	4		J9-107 TB1-A25					.10 .18	NO NO		38, 70	C1B
A 590	4		J9-62 TB1-C25					.10 .18	NO NO		38, 70	C1B
A 591	4		J9-38 TB1-B25					.10 .18	NO NO		38, 70	C1B
A 592	4		J9-39 TB1-D25					.10 .18	NO NO		38, 70	C1B
A 593	4		J9-83 TB1-F76					.10 .18	NO NO		38, 70 40	D1A
A 594	8										72	D4A
A 594R			P13-38 TB1-B71					.10 .18	NO NO		38	
A 594Y			P13-30 TB1-D76					.10 .18	NO NO		38 40	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015085
SCALE-NONE | REV LTR E | SHEET 127 OF 127

MIL 2084 4-63

NOTE	QTY	PART NUMBER	NOMENCLATURE
	1	1015085-1	WIRE PER 1010789-011 YEL JKT 24 AWG YEL 13 FT 0.0 IN. TOTAL LG
	1	1015085-2	WIRE PER 1010789-012 YEL JKT 24 AWG YEL, RED 370 FT 0.0 IN. TOTAL LG
	1	1015085-3	WIRE PER 1010789-013 YEL JKT 24 AWG YEL, RED, GRN 31 FT 0.0 IN. TOTAL LG
	1	1015085-4	WIRE PER 1010789-001 24 AWG YEL 865 FT 0.0 IN. TOTAL LG.
	1	1015085-5	WIRE PER 1010789-006 22 AWG YEL 165 FT 0.0 IN. TOTAL LG
	1	1015085-6	WIRE PER 1010707-1 RED JKT 29 AWG BLU, RED, WHT 26 FT 6.0 IN. TOTAL LG
	1	1015085-7	WIRE PER 1010789-002 24 AWG BLK 118 FT 0.0 IN. TOTAL LG
	1	1015085-8	WIRE PER 1010789-003 24 AWG YEL, RED 393 FT 0.0 IN. TOTAL LG
	1	1015085-9	WIRE PER 1010789-004 24 AWG YEL, RED, GRN 91 FT 0.0 IN. TOTAL LG
	1	1015085-10	WIRE PER 1010789-005 24 AWG YEL, RED, GRN, BRN 25 FT 11.0 IN. TOTAL LG
	1	1015085-11	WIRE PER 1010789-008 22 AWG YEL, RED 13 FT 9.0 IN. TOTAL LG.
	1	1015085-12	WIRE PER 1010789-009 22 AWG YEL, RED, GRN 4 FT 6.0 IN. TOTAL LG.
	1	1015085-13	WIRE PER 1010789-010 22 AWG YEL, RED, GRN, BRN 16 FT 1.0 IN. TOTAL LG
	1	1015085-14	WIRE, BRAID PER QQ-B-575 (COPPER, TIN-COATED, TUBULAR) SIZE 3/8 ID, 36 GA, 2 FT 5.0 IN. TOTAL LG

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085
SCALE-NONE	REV LTR	SHEET 2 of 4

MIL 2084 4-63

NOTE	QTY	PART NUMBER	NOMENCLATURE
	1	1015085-15	WIRE, BRAID PER QQ-B-575 (COPPER, TIN-COATED, TUBULAR) SIZE 1/2 ID, 36 GA, 2 FT 5.0 IN. TOTAL LG
3	1	1010671-1	CONNECTOR PLUG ELECTRICAL
3	1	1010671-2	CONNECTOR PLUG ELECTRICAL
3	1	1010674-1	CONNECTOR PLUG ELECTRICAL
3	1	1010674-2	CONNECTOR PLUG ELECTRICAL
3	1	1010674-3	CONNECTOR PLUG ELECTRICAL
3	1	1010674-4	CONNECTOR PLUG ELECTRICAL
	1	1010771-201	CONNECTOR PLUG ELECTRICAL
	1	1010771-207	CONNECTOR PLUG ELECTRICAL
	1	1010809-1	CONNECTOR RECP ELECTRICAL
3	1	1010860-1	CONNECTOR RECP ELECTRICAL
3	1	1010822-3	CONNECTOR RECP ELECTRICAL
3	1	1010856-1	CONNECTOR RECP ELECTRICAL
3	1	1010822-5	CONNECTOR RECP ELECTRICAL
3	1	1010824-1	CONNECTOR RECP ELECTRICAL
3	5	1010824-2	CONNECTOR RECP ELECTRICAL
3	1	1010824-3	CONNECTOR RECP ELECTRICAL
3	1	1010824-4	CONNECTOR RECP ELECTRICAL
3	1	1010824-5	CONNECTOR RECP ELECTRICAL
	1	1010844-1	CONNECTOR RECP ELECTRICAL
	1	1010844-2	CONNECTOR RECP ELECTRICAL
	1	1010844-3	CONNECTOR RECP ELECTRICAL
	1	1010844-4	CONNECTOR RECP ELECTRICAL
3	1358	1010738-6	CONTACT, SOCKET

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085
SCALE-NONE	REV LTR	SHEET 3 of 4

MIL 2084 4-63

SYM	DESCRIPTION	DATE	APPROVAL

REVISIONS 15658

APPLICATION	
NEXT ASSY	USED ON

D.O. 58760

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. THIS IS AN INCOMPLETE DRAWING.
3. VENDOR ITEM-SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

REV															
SHEET															
REV STATUS OF SHEETS	REV	+	+	+	+										
	SHEET	1	2	3	4										

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN 18 DEC 64

CHECKED DATE 18 DEC 64

APPROVAL 22 DEC 64

APPROVAL 21 DEC 64

NASA APPROVAL 1/19/65 1-19-65

MIT APPROVAL 1-19-65

CONTRACT NAS9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
AGE INTERCONNECT

SIZE

CODE IDENT NO.

1015085

REV

SCALE NONE

SHEET 1 OF 4

NOTE	QTY	PART NUMBER	NOMENCLATURE
3	528	1010770-2	CONTACT, SOCKET
3	270	1010743-1	WRAPOST RECEPTACLE
3	137	1010743-2	WRAPOST RECEPTACLE
3	80	1010743-3	WRAPOST RECEPTACLE
3	16	1010402-1	SLEEVE, SOLDER
3	130	1010402-2	SLEEVE, SOLDER
3	1	1000242-24	FERRULE, OUTER ELEC COND
3	1	1000242-27	FERRULE, OUTER ELEC COND
3	1	1000242-31	FERRULE, OUTER ELEC COND
3	1	1000242-33	FERRULE, OUTER ELEC COND
3	1	1000243-26	FERRULE, INNER ELEC COND
3	1	1000243-30	FERRULE, INNER ELEC COND
3	1	1000243-33	FERRULE, INNER ELEC COND
3	1	1000243-36	FERRULE, INNER ELEC COND
3	30	1010490-108	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	286	1010490-110	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	238	1010490-112	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	2	1010490-216	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	2	1010490-222	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	1	1010490-975	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	1	1010490-979	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (WHITE)
3	24	1010476-112	INSULATION-SLEEVING, ELECTRICAL HEAT SHRINKABLE (BROWN)

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015085
SCALE-NONE	REV LTR	SHEET 4 of 4

MIL 2084 4-63

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER: AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 13821

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 15657	LJB	RL	1/19/65	

PART NO.	DESCRIPTION	REQD
1007599-011	END CONNECTOR ASSY PSA	1
1007583	CONNECTOR PLATE ASSY	1
1010822-1	CONNECTOR, RECEPTACLE	1
1010822-3	CONNECTOR, RECEPTACLE	2
1015085	WIRING HARNESS A	1
1008583	SPACER	6

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN
CHECKED
APPROVED 10/24/64
APPROVED 10/20/64
APPROVED MIT 10/21/64
APPROVED MSC W J Rhine 10-21-64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSY

CODE IDENT NO.
SIZE C
DRAWING NO. 1015086
SCALE
SHEET 1 OF 1

1015086 A

APOLLO G&N Specification
PS1015086 A
Original Issue Date: 2/3/65
Release Authority: TDRR 16218
Class A Release

PROCUREMENT SPECIFICATION

FOR

AGE HARNESS & PSA END CONNECTOR ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
2/24/66	A	26643	2, 3, 4	WK	—

This specification consists of page 1 to 6 inclusive.

APPROVALS	NASA/MSC	2/3/65 MIT/IL 2/2/65	ACSP

PROCUREMENT SPECIFICATION

FOR

AGE HARNESS & PSA END CONNECTOR ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Age Harness & PSA End Connector Assembly, Drawing 1015086, hereafter called the assembly.

1.2 CLASSIFICATION. The requirements for the equipment covered by this specification shall be classified as follows: Unless identified by their respective type, all requirements of this specification are applicable for all types.

a. Type I. The requirements for Part Number 1015086-000 shall be designated as Type I.

b. Type II. The requirements for Part Number 1015086-011 shall be designated as Type II.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

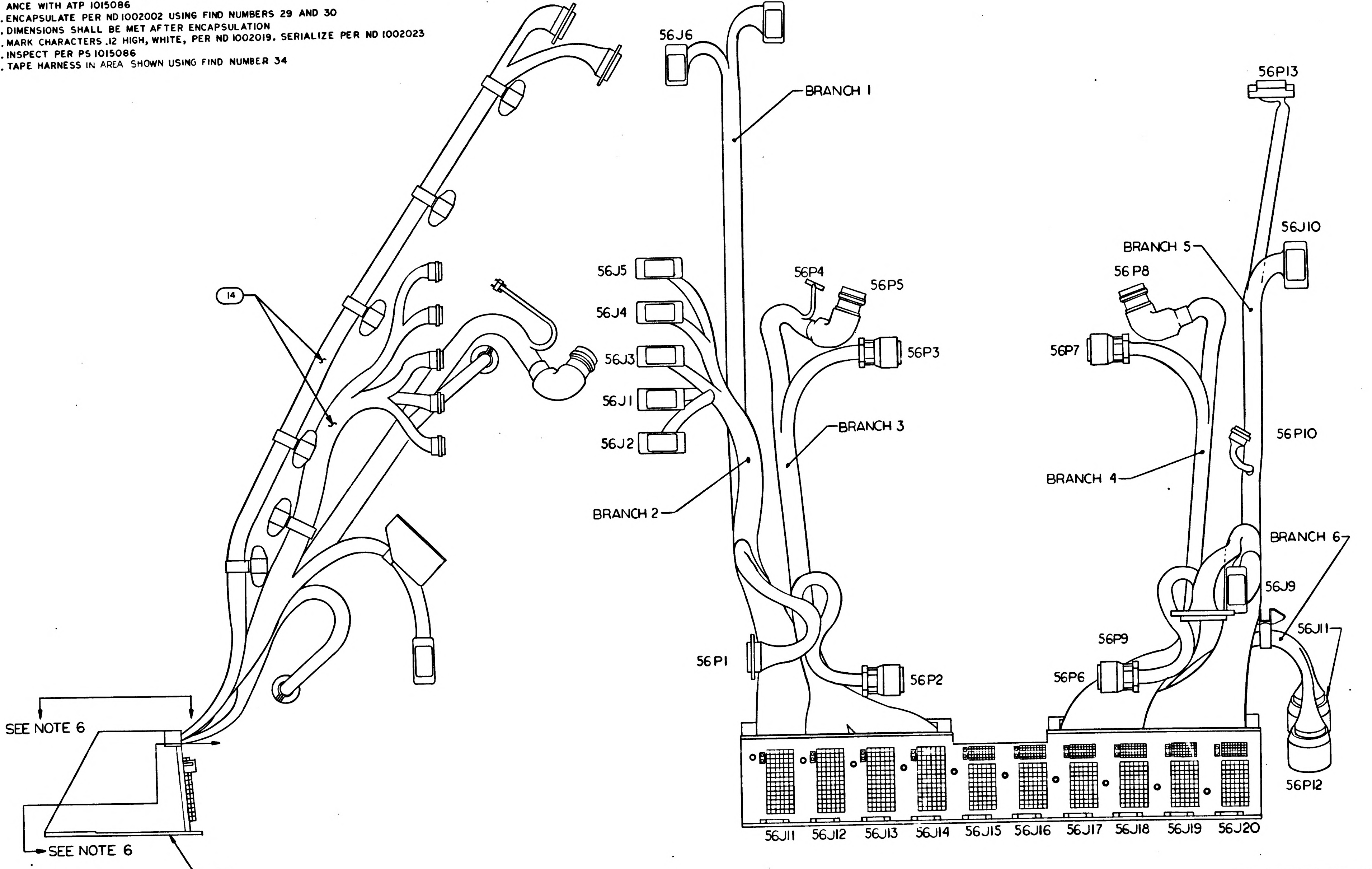
APOLLO G&N

ND1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
ND1002214	General Specification for Preservation, Packaging, Packing and Container Marking of APOLLO Guidance and Navigation Major Assemblies, Assemblies, Subassemblies, Parts and Associated Ground Support Equipment
FTM1015086	Final Test Method for Age Harness & PSA End Connector Assembly

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
C		REPLACES WORD DWG REV B PER TDRR				WR

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BRANCHES 1, 2 AND 3 OF FIND NO. 14 ARE SHOWN ON SHEET 2
3. BRANCHES 4, 5 AND 6 OF FIND NO. 14 ARE SHOWN ON SHEET 3
4. GRID MODULE ON SHEETS 2 AND 3 IS 1 INCH TRUE POSITION
5. UNLESS OTHERWISE SPECIFIED, FEATURE CENTERLINES ON SHEETS 2, 3 AND 4 ARE LOCATED WITHIN ±.25. ENDS OF HOOK UP WIRES OR ACCESSORIES ARE LOCATED WITHIN .12
6. MARRIAGE CONFIGURATION OF FIND NUMBERS 1 AND 14 IS SHOWN ON SHEET 4
7. ENCAPSULATION ENVELOPE IS SHOWN ON SHEET 5
8. TERMINATION NUMBERS AND TOLERANCE CHART ARE LISTED IN CONDUCTOR CHART OF FIND NO. 14
9. INTERCONNECTION DIAGRAM OF AGE C/M, LOWER EQUIPMENT BAY, IS 1015090
10. WELD PER ND 1002225
11. CRIMP PER ND 1002206
12. LACE HARNESS PER ND 1002032
13. ALL WIRING SHALL BE BELOW THE SURFACE OF THE ENCAPSULATING MATERIAL
① 14. DIMENSION OR CHARACTERISTIC IS CONTROLLED BY ICDMH01-01203-116
② 15. ICDMH01-01203-116 ENVELOPE DIMENSIONS ARE 7.000 AND 22.690 RESPECTIVELY; ACTUAL VALUES MAY BE LESS. ENCAPSULATION SHALL BE FLUSH TO .015 LESS THAN THE ENVELOPE DEFINED BY THE ACTUAL LENGTH AND WIDTH OF THE END CONNECTOR ASSEMBLY
16. CHICAGO STITCH AT APPROXIMATELY 1 INCH INTERVALS USING FIND NUMBERS 24 AND 25. WIRES FROM THE DIFFERENT HARNESS BRANCHES MERGING INTO THE SAME WIRE HARNESS CLAMP CHANNEL GROUP SHALL BE BLENDED TOGETHER WHEN CHICAGO STITCHING IS PERFORMED
17. APPLY EPOXY PER ND 1002187 USING FIND NUMBERS 26 AND 27 TO SEAL BACKS OF CONNECTORS 56J21, 56J22, 56J23 AND 56J24, AND TO SEAL JUNCTION OF CONNECTOR FLANGES AND BOTTOM PLATE
18. ENCAPSULATE BACK OF CONNECTOR PER ND 1002236 USING FIND NO. 28
19. MARK FIND NO. 13 WITH REFERENCE DESIGNATION AS SHOWN, .12 HIGH, BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE
20. SECURE FIND NO. 13 TO FIND NO. 14 USING FIND NUMBERS 24 AND 25
21. SELECT NOTED FIND NUMBERS IN ACCORDANCE WITH ATP REQUIREMENTS AT ENCAPSULATION PHASE OF END CONNECTOR BUILD UP
22. ASSEMBLE, TEST AND ENCAPSULATE, USING FIND NO. 28 PER ND 1002236, IN ACCORDANCE WITH ATP 1015086
23. ENCAPSULATE PER ND 1002002 USING FIND NUMBERS 29 AND 30
24. DIMENSIONS SHALL BE MET AFTER ENCAPSULATION
25. MARK CHARACTERS .12 HIGH, WHITE, PER ND 1002019. SERIALIZE PER ND 1002023
26. INSPECT PER PS 1015086
27. TAPE HARNESS IN AREA SHOWN USING FIND NUMBER 34



Ⓒ REPLACES WORD DWG REV B

031	021	011	000	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
			☒		REF	1015087	INTERCONNECTION LIST
			AR		34		TAPE
			1		33	MS35650-104	NUT, PLAIN HEX
			4		32	MS35649-44	NUT, PLAIN HEX
			4		31	1010618-15	SCREW, BUTTON HEAD
			AR		30	1010798-2	ACTIVATOR
			AR		29	1010798-1	RESIN
			AR		28	1012503	COMPOUND, POTTING, POLYURETHANE
			AR		27	1010679	ADHESIVE ACTIVATOR
			AR		26	1010661	EPOXY RESIN
			AR		25	1012507-004	LACING TAPE
			AR		24	1012507-002	LACING TAPE
			1		23	MS35338-081	WASHER, LOCK
			6		22	1006783-47	SCREW, BUTTON HEAD
			1		21	1010705-8	CLAMP
			1		20	1010705-6	CLAMP
			1		19	1010400-8	CLAMP, LOOP, HINGED
			1		18	1010400-7	CLAMP, LOOP, HINGED
			3		17	1010400-3	CLAMP, LOOP, HINGED
			1		16	1010400-2	CLAMP, LOOP, HINGED
			5		15	1010400-1	CLAMP, LOOP, HINGED
			1		14	1015085	WIRING HARNESS "A"
			21		13	1010811-002	BAND, IDENTIFICATION
			1		12	1021253-8	SPACER
			1		11	1021253-7	SPACER
			2		10	1021253-6	SPACER
			2		9	1021253-5	SPACER
			1		8	1021253-4	SPACER
			1		7	1021253-3	SPACER
			2		6	1021253-2	SPACER
			2		5	1021253-1	SPACER
			1		4	1014609	BRACKET, CLAMP
			1		3	1008165	CABLE CLAMP, RIGHT
			1		2	1008164	CABLE CLAMP, LEFT
			1		1	1007599-011	END CONNECTOR ASSY, PSA
QUANTITY REQUIRED					LIST OF MATERIALS		

1015086 C

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

AC SPARK PLUG DIVISION
ACSP PN

DRAWN	L. HOOD	1-23-65
CHECKED		
APPROVED		
APPROVED		
APPROVED MIT	W. Kaylor	
APPROVED MSC		
		DATE

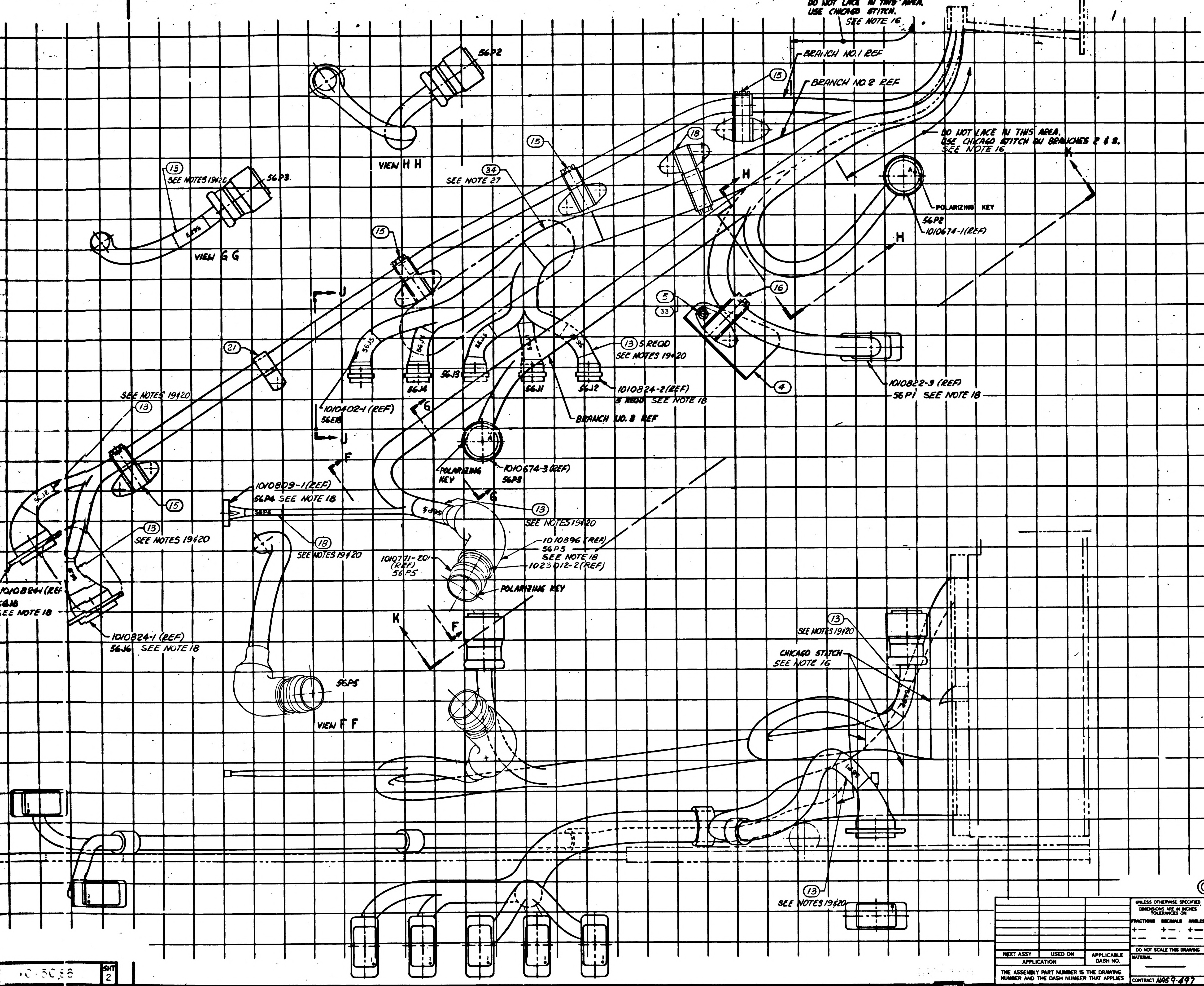
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO.	SIZE	DRAWING NO.
	E	1015086
SCALE 1/2		SHEET 1 OF 5

REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPR.
C		REPLACES WORD DWG REV B PER TDRR 16217		


DO NOT LACE IN THIS AREA.
USE CHICAGO STITCH.
SEE NOTE 16
BRANCH NO. 1 REF
BRANCH NO. 2 REF
15
56P2
VIEW H H
13
SEE NOTES 19&20
56P3.
VIEW G G
34
SEE NOTE 27
15
18
DO NOT LACE IN THIS AREA.
USE CHICAGO STITCH ON BRANCHES 2 & 8.
SEE NOTE 16
K
H
POLARIZING KEY
56P2
1010674-1(REF)
H
15
J
16
5
33
56J5
56J4
56J3
56J1
56J2
13 5 REQD
SEE NOTES 19&20
1010824-2(REF)
5 REQD SEE NOTE 18
21
4
1010822-3 (REF)
56P1 SEE NOTE 18
1010402-1 (REF)
56E18
J
G
BRANCH NO. 8 REF
SEE NOTES 19&20
13
15
POLARIZING KEY
1010674-3(REF)
56P8
F
G
1010809-1(REF)
56P4 SEE NOTE 18
56P4
13
SEE NOTES 19&20
18
SEE NOTES 19&20
13
SEE NOTES 19&20
1010896 (REF)
56P5
SEE NOTE 18
1010771-201
(REF)
56P5
1023012-2(REF)
POLARIZING KEY
56J8
1010824-1 (REF)
56J8
SEE NOTE 18
1010824-1 (REF)
56J6 SEE NOTE 18
K
F
56P5
VIEW F F
13
SEE NOTES 19&20
CHICAGO STITCH
SEE NOTE 16
13
SEE NOTES 19&20

Ⓒ REPLACES WORD DWG REV B

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

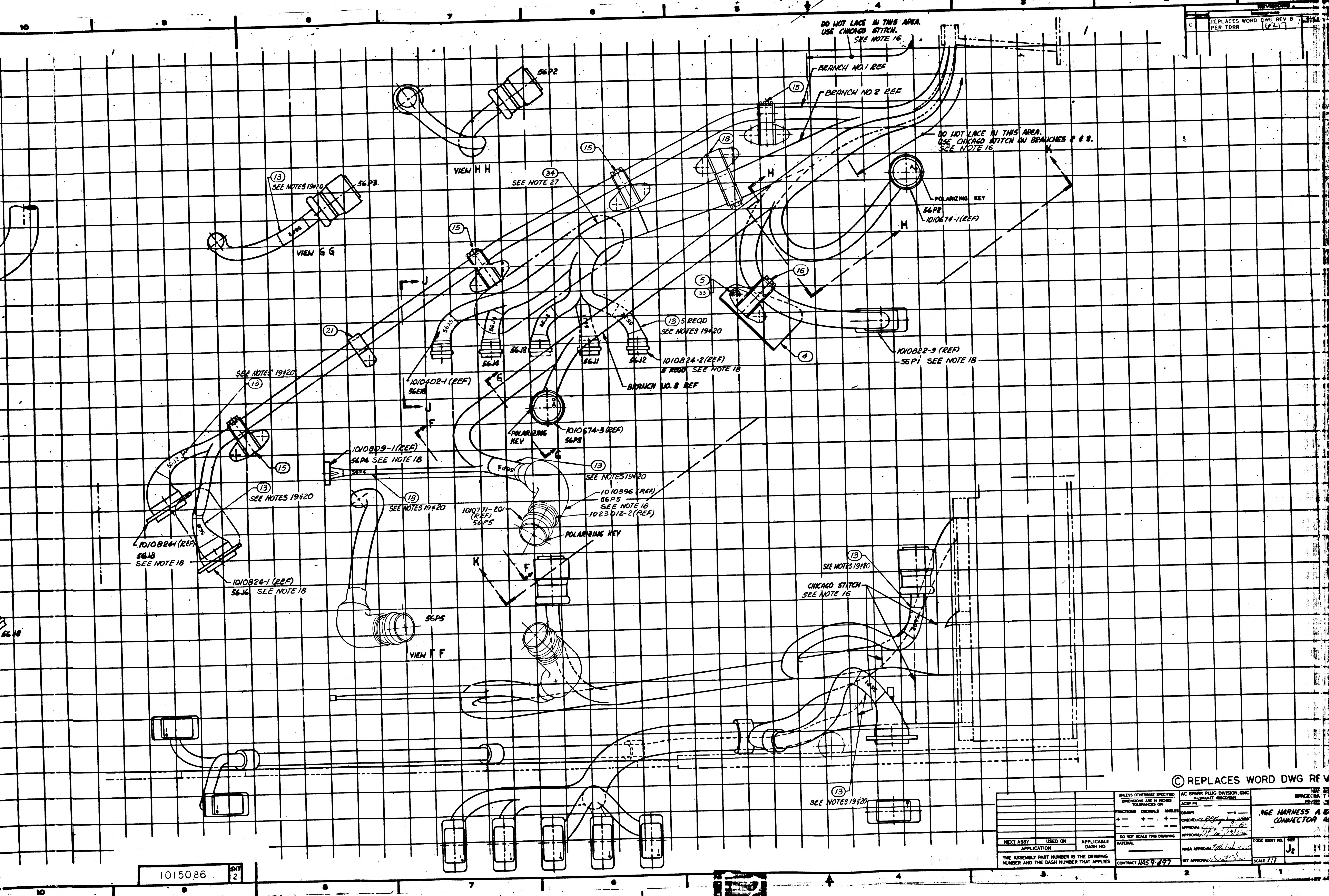
AGE HARNESS AND PSA END
CONNECTOR ASSEMBLY

CODE IDENT NO. SIZE J2 1015086
SCALE 1:1 SHEET 3 OF 5

1015086 C

-0-5086 SHT 2

E3


DO NOT LACE IN THIS AREA.
USE CHICAGO STITCH.
SEE NOTE 16
BRANCH NO. 1 REF
BRANCH NO. 2 REF
DO NOT LACE IN THIS AREA.
USE CHICAGO STITCH ON BRANCHES 2 & 3.
SEE NOTE 16
56P2
VIEW H H
13
SEE NOTES 19 & 20
56P3
VIEW G G
15
18
34
SEE NOTE 27
H
K
POLARIZING KEY
56P2
1010674-1 (REF)
H
15
J
16
5
33
21
56J5
56J4
56J3
56J1
56J2
13 5 REQD
SEE NOTES 19 & 20
1010824-2 (REF)
3 REQD SEE NOTE 18
4
1010822-3 (REF)
56P1 SEE NOTE 18
1010402-1 (REF)
56E18
J
G
BRANCH NO. 3 REF
SEE NOTES 19 & 20
13
POLARIZING KEY
1010674-3 (REF)
56P3
F
G
1010809-1 (REF)
56P4 SEE NOTE 18
56P4
15
13
SEE NOTES 19 & 20
56J2
13
SEE NOTES 19 & 20
18
SEE NOTES 19 & 20
1010896 (REF)
56P5
SEE NOTE 18
1010771-201 (REF)
56P5
1023012-2 (REF)
POLARIZING KEY
1010824-1 (REF)
56J8
SEE NOTE 18
1010824-1 (REF)
56J6 SEE NOTE 18
K
F
56P5
VIEW F F
56J8
13
SEE NOTES 19 & 20
CHICAGO STITCH
SEE NOTE 16
13
SEE NOTES 19 & 20
10
9
8
7
6
5
4
3
2
1

SYM	ZONE	REVISIONS	
C		REPLACES WORD DWG REV B PER TDRR 16217	

Ⓒ REPLACES WORD DWG REV

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

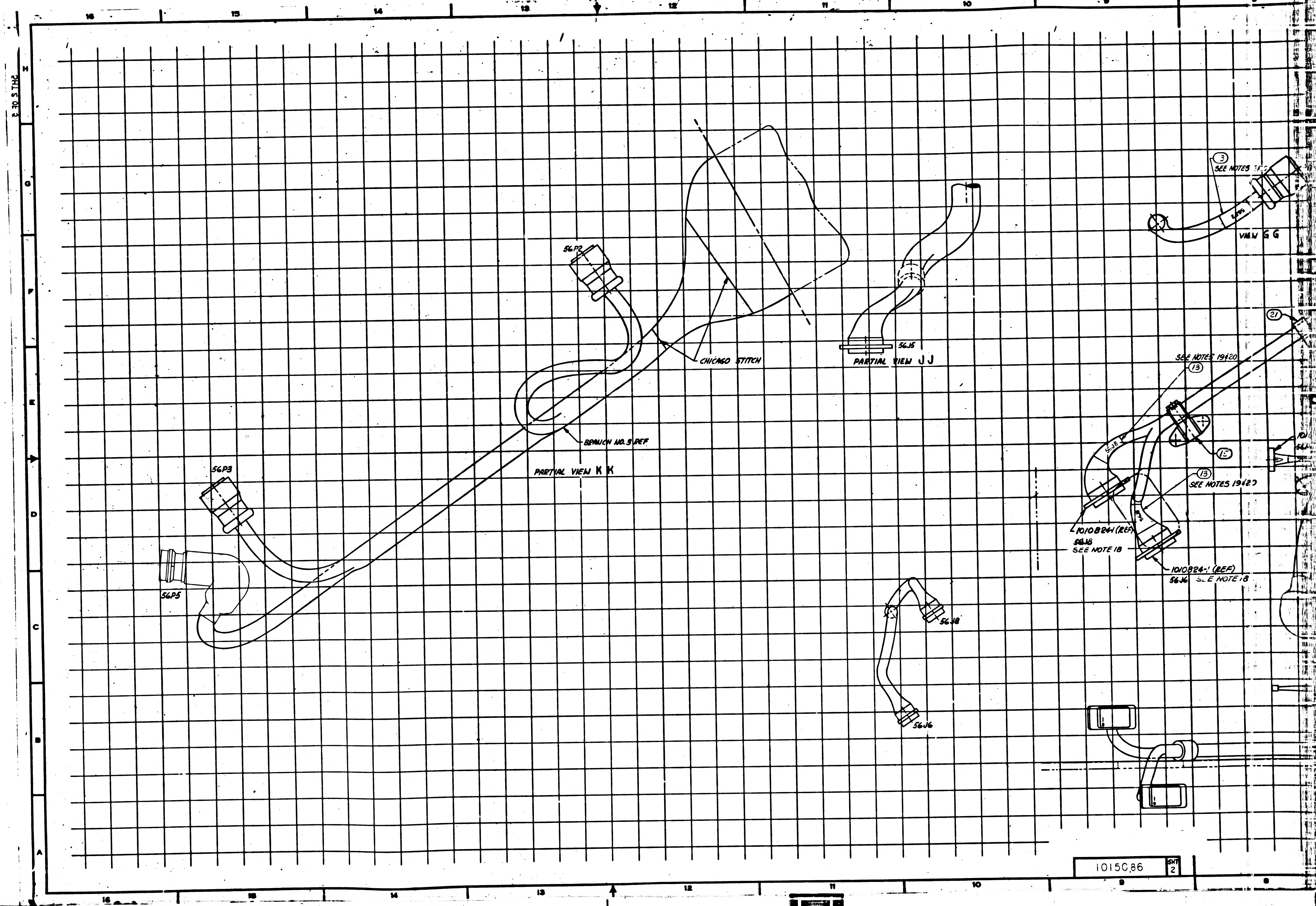
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

NA ED
SPACECRA T C
HOU

AGE HARNESS A D
CONNECTOR AS

CODE IDENT NO.
SIZE J2
SCALE 1:1

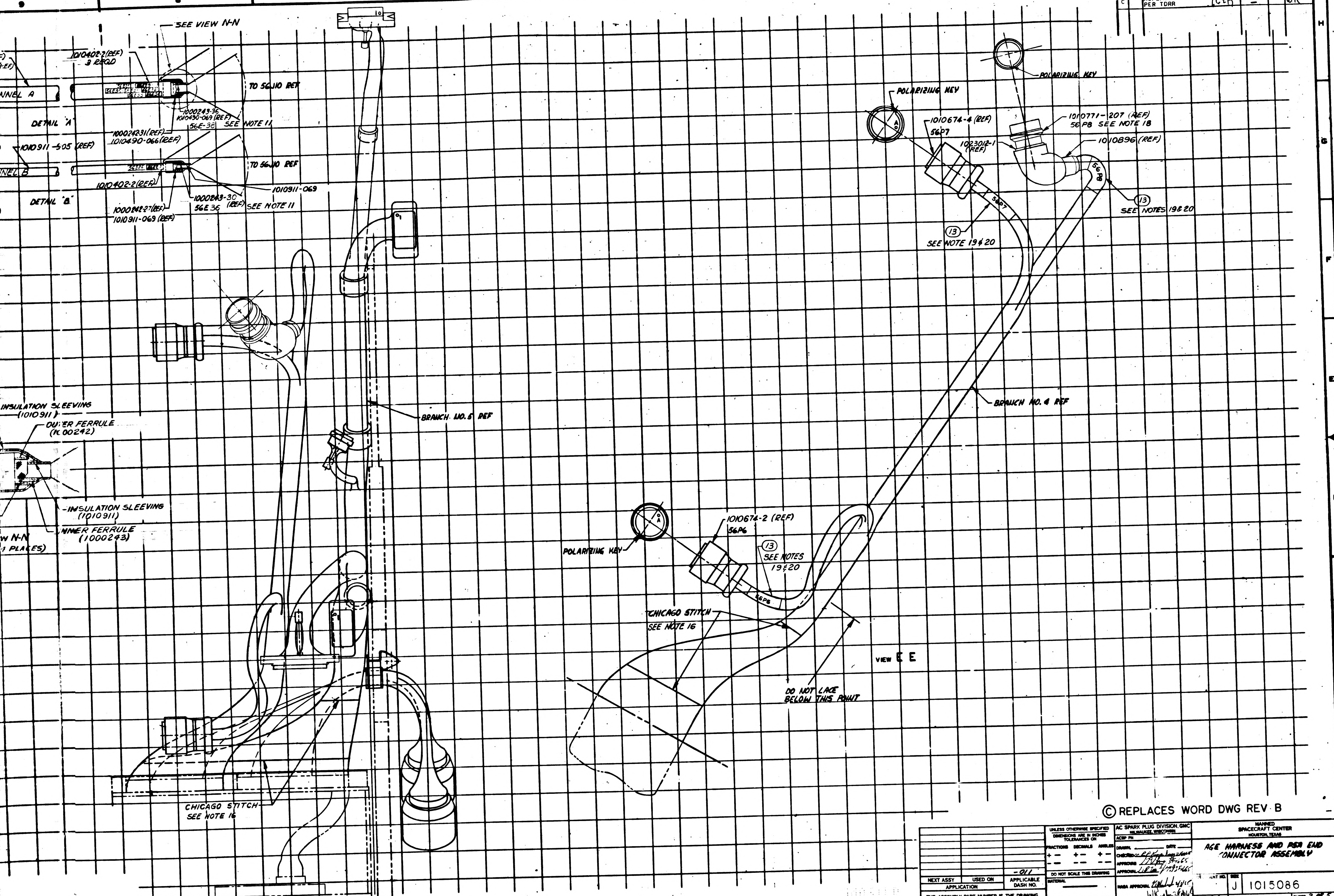
1015086 SHT 2



56P2
CHICAGO STITCH
56J5
PARTIAL VIEW J J
BRANCH NO. 3 REF
PARTIAL VIEW K K
56P3
56P5
3
SEE NOTES
VIEW G G
21
SEE NOTES 19&20
13
56J8
15
13
SEE NOTES 19&20
1010824-1 (REF)
56J8
SEE NOTE 18
1010824-1 (REF)
56J6 SEE NOTE 18
56J8
56J6

1015C86 SHT 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REPLACES WORD DWG REV B PER TDRR LC2H	—		W.K


9
8
7
6
5
4
3
2
1
H
G
F
E
D
C
A
SEE VIEW N-N
1010402-2 (REF)
3 REQD
EF)
(REF)
NNEL A
TO 56J10 REF
1000243-36
1010490-069 (REF)
56E-38
SEE NOTE 11
DETAIL "A"
1000242-31 (REF)
1010490-066 (REF)
1010911-505 (REF)
NNEL B
TO 56J10 REF
1010402-2 (REF)
1010911-069
DETAIL "B"
1000243-30
56E 36
(REF)
SEE NOTE 11
1000242-27 (REF)
1010911-069 (REF)
INSULATION SLEEVING
(1010911)
OUTER FERRULE
(1000242)
INSULATION SLEEVING
(1010911)
INNER FERRULE
(1000243)
W N-N
4 PLACES)
BRANCH NO. 5 REF
CHICAGO STITCH
SEE NOTE 16
POLARIZING KEY
POLARIZING KEY
1010674-4 (REF)
56P7
1023012-1
(REF)
1010771-207 (REF)
56 P8 SEE NOTE 18
1010896 (REF)
56 P8
56P7
13
SEE NOTES 19 & 20
13
SEE NOTE 19 & 20
BRANCH NO. 4 REF
1010674-2 (REF)
56P6
POLARIZING KEY
13
SEE NOTES
19 & 20
56P6
CHICAGO STITCH
SEE NOTE 16
VIEW E E
DO NOT LACE
BELOW THIS POINT
1015086
SHT 3

© REPLACES WORD DWG REV B

NEXT ASSY	USED ON	APPLICABLE DASH NO.
		-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN ______ DATE ______
CHECKED R.R. Kopp 3 Aug 2 1965
APPROVAL 3 F 16 65
APPROVAL 3 Feb 65
NASA APPROVAL 4/1/65
MIT APPROVAL 3 Feb 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

DOCUMENT NO.
SIZE J
1015086
SCALE 1:1
SHEET 3 OF 3

1015086 C

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPR.
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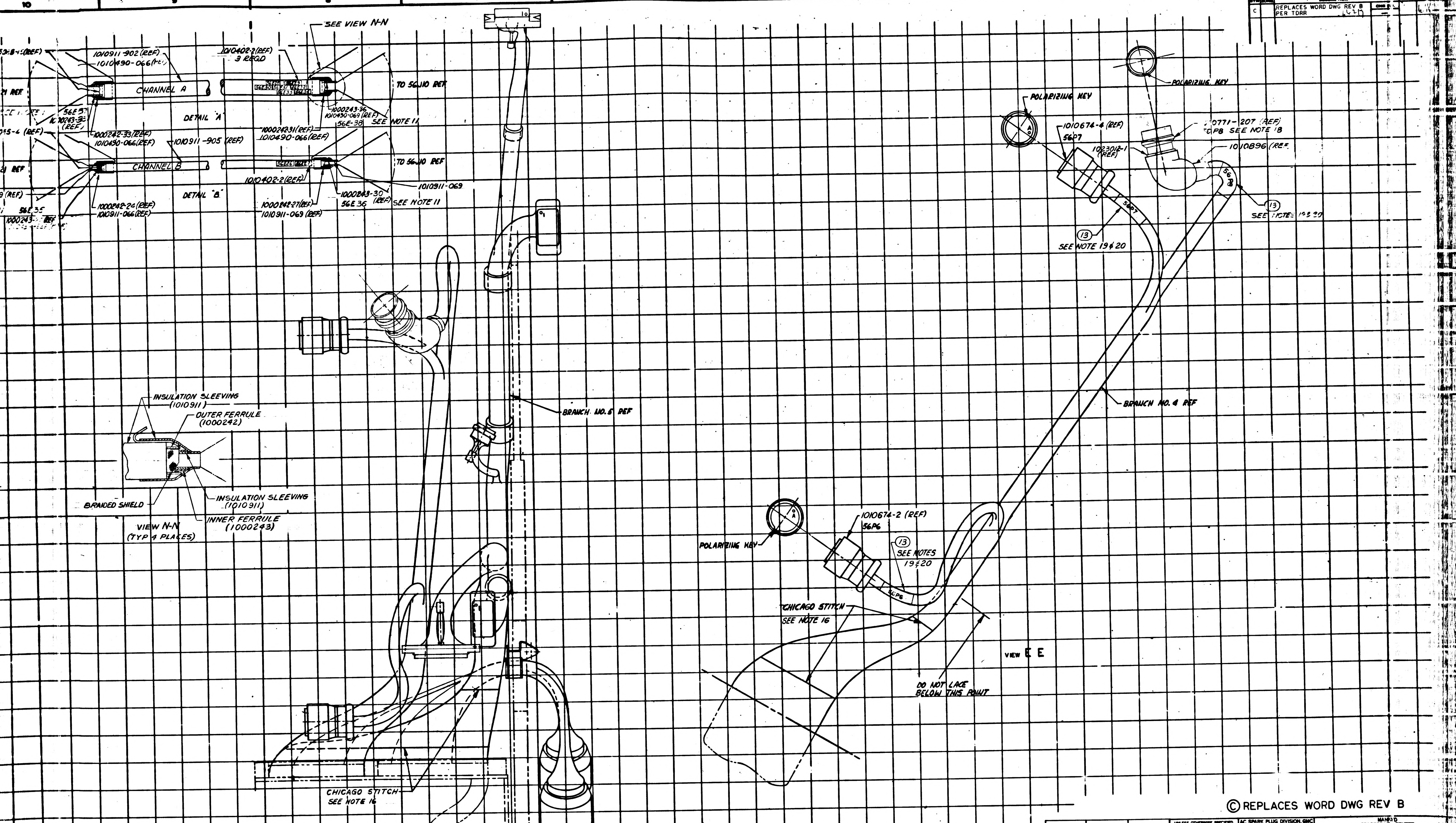


10
9
8
7
6
5
4
3
2
1
SEE VIEW N-N
1010911-902 (REF)
1010490-066 (REF)
1010402-2 (REF)
3 REQD
CHANNEL A
TO 56J10 REF
DETAIL "A"
56E37
1000243-33
(REF)
1000243-36
1010490-069 (REF)
56E-38
SEE NOTE 11
1000242-33 (REF)
1010490-066 (REF)
1010911-905 (REF)
1000242-31 (REF)
1010490-066 (REF)
CHANNEL B
TO 56J10 REF
1010402-2 (REF)
1010911-069
DETAIL "B"
1000243-30
(REF)
56E36
SEE NOTE 11
1000242-24 (REF)
1010911-066 (REF)
1000242-27 (REF)
1010911-069 (REF)
56E35
1000243-
REF
POLARIZING KEY
POLARIZING KEY
1010674-4 (REF)
56P7
1023012-1
(REF)
0771-207 (REF)
56P8 SEE NOTE 18
1010896 (REF)
56P8
56P7
13
SEE NOTES 19 & 20
13
SEE NOTE 19 & 20
INSULATION SLEEVING
(1010911)
OUTER FERRULE
(1000242)
BRAIDED SHIELD
INSULATION SLEEVING
(1010911)
INNER FERRULE
(1000243)
VIEW N-N
(TYP 4 PLACES)
BRANCH NO. 6 REF
BRANCH NO. 4 REF
1010674-2 (REF)
56P6
13
SEE NOTES
19 & 20
POLARIZING KEY
56P6
CHICAGO STITCH
SEE NOTE 16
VIEW E E
DO NOT LACE
BELOW THIS POINT
CHICAGO STITCH
SEE NOTE 16

Ⓒ REPLACES WORD DWG REV B

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

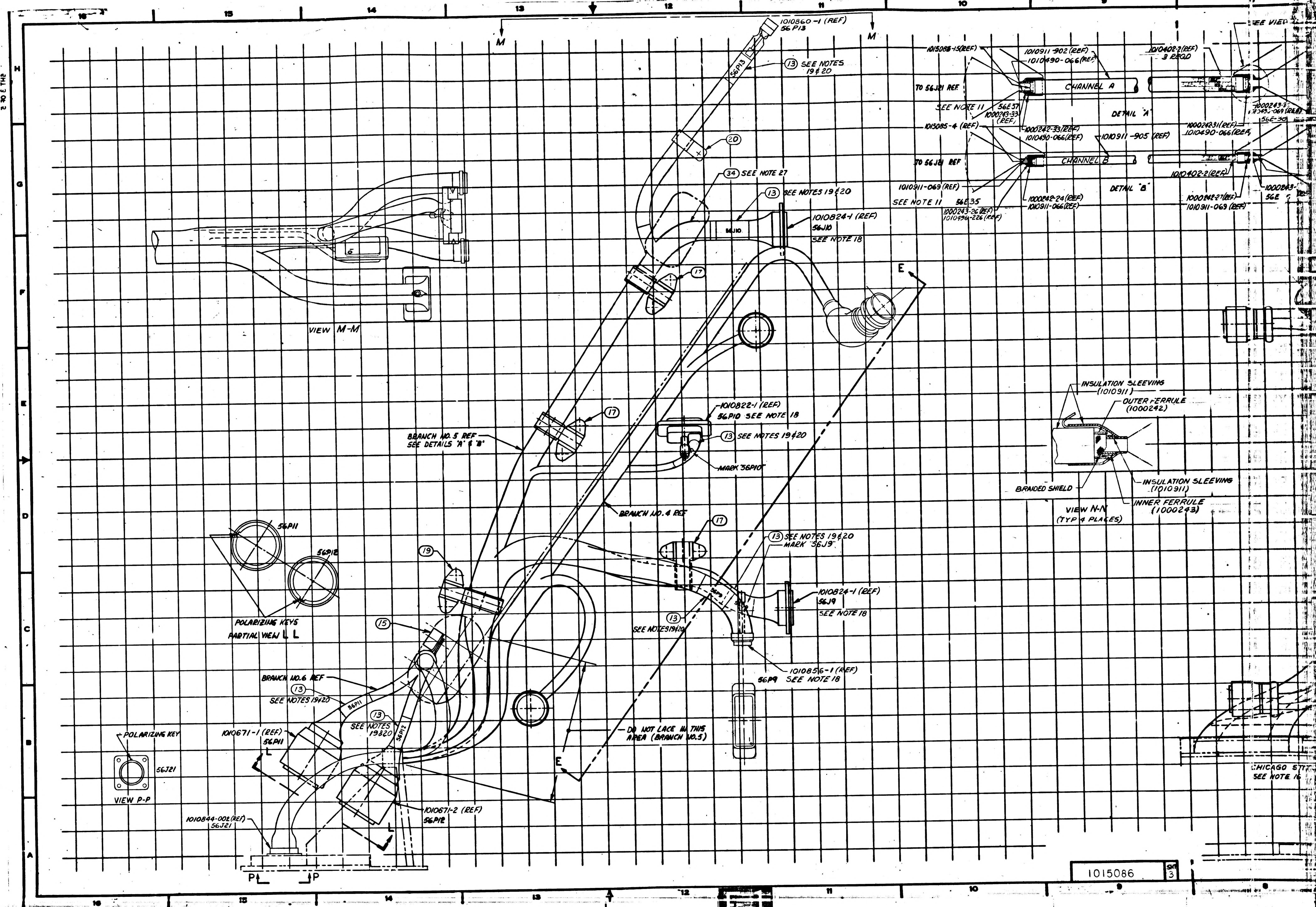
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN ____ DATE ____
CHECKED cc RP Kuga June 2 1965
APPROVAL June 3rd, 65
APPROVAL 7/19/65
NASA APPROVAL 4/8/65
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

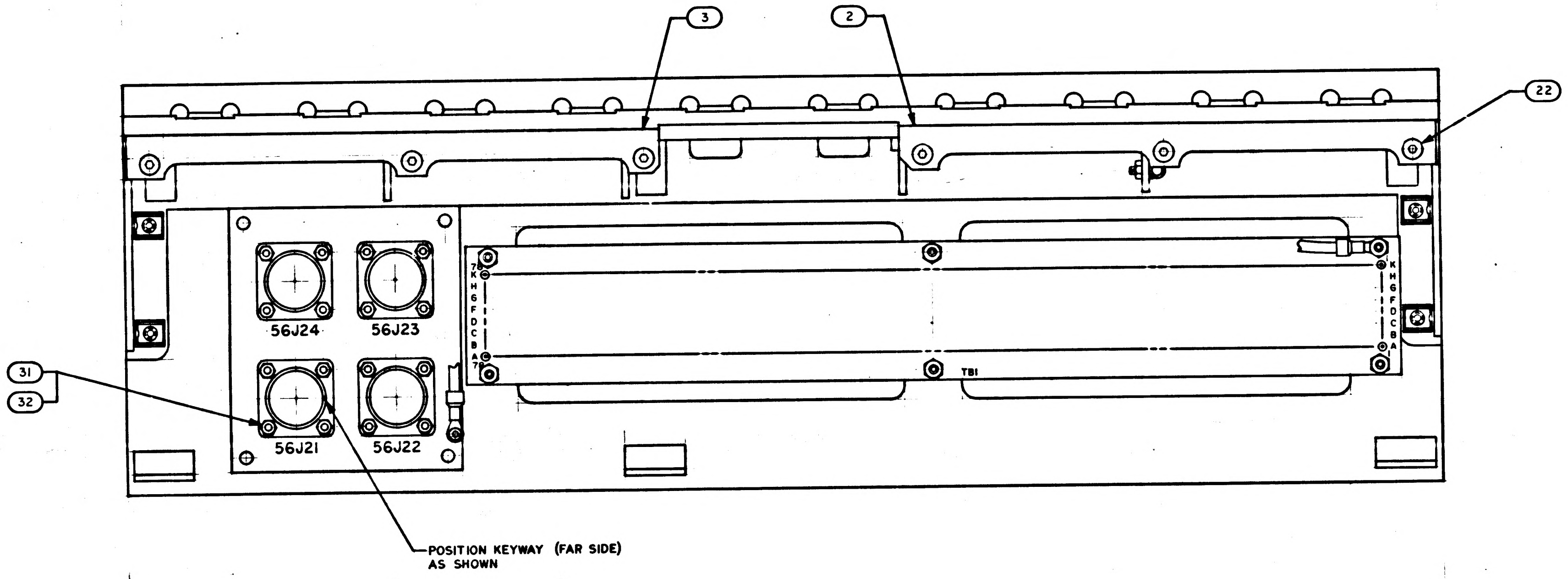
AGE HARNESS , WD PSA END
CONNECTOR ASSEMBLY

ENT NO. | SIZE J | 1015086
SCALE 1/1 | SHEET 3

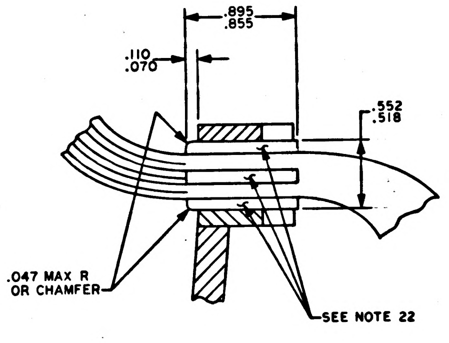

2 TO E TH2
16
15
14
13
12
11
10
9
H
G
F
E
D
C
B
A
M
M
1010860-1 (REF)
56P13
56P13
(13) SEE NOTES 19 & 20
(20)
(34) SEE NOTE 27
(13) SEE NOTES 19 & 20
56J10
1010824-1 (REF)
56J10
SEE NOTE 18
(17)
E
VIEW M-M
1015086-15(REF)
1010911-902 (REF)
1010490-066(REF)
1010402-2(REF)
3 REQD
SEE VIEW
TO 56J21 REF
CHANNEL A
SEE NOTE 11
56E37
1000243-33
(REF)
DETAIL "A"
1000243-3
1010490-069 (REF)
56E-36
1015085-4 (REF)
1000242-33(REF)
1010490-066(REF)
1010911-905 (REF)
1000242-31(REF)
1010490-066(REF)
TO 56J21 REF
CHANNEL B
1010402-2(REF)
1010911-069 (REF)
DETAIL "B"
SEE NOTE 11
56E35
1000242-24(REF)
1010911-066(REF)
1000243-26(REF)
1010496-226(REF)
1000242-27(REF)
1010911-069 (REF)
1000243-
56E
INSULATION SLEEVING
(1010911)
OUTER FERRULE
(1000242)
BRAIDED SHIELD
INSULATION SLEEVING
(1010911)
INNER FERRULE
(1000243)
VIEW N-N
(TYP 4 PLACES)
(17)
BRANCH NO.5 REF
SEE DETAILS "A" & "B"
1010822-1 (REF)
56P10 SEE NOTE 18
(13) SEE NOTES 19 & 20
MARK "56P10"
BRANCH NO.4 REF
56P11
56P12
POLARIZING KEYS
PARTIAL VIEW L L
(19)
(17)
(13) SEE NOTES 19 & 20
MARK "56J9"
56P9
1010824-1 (REF)
56J9
SEE NOTE 18
(13)
SEE NOTES 19 & 20
1010856-1 (REF)
56P9 SEE NOTE 18
(15)
BRANCH NO.6 REF
(13)
SEE NOTES 19 & 20
56P11
(13)
SEE NOTES 19 & 20
56P12
1010671-1 (REF)
56P11
L
L
1010671-2 (REF)
56P12
POLARIZING KEY
56J21
VIEW P-P
1010844-002(REF)
56J21
P
P
DO NOT LACE IN THIS AREA (BRANCH NO.5)
E
CHICAGO ST
SEE NOTE 1

1015086 C

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 6217		WK

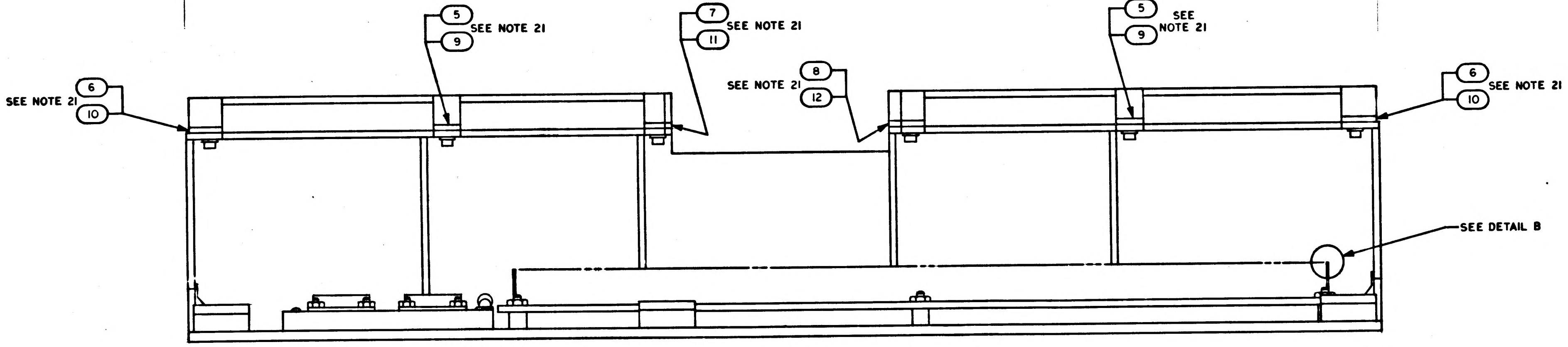


3
2
22
31
32
56J24
56J23
56J21
56J22
K H G F D C B A
TB1
POSITION KEYWAY (FAR SIDE) AS SHOWN

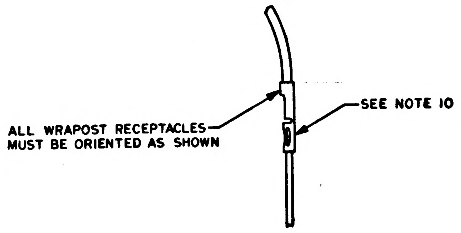


.895
.855
.110
.070
.552
.518
.047 MAX R OR CHAMFER
SEE NOTE 22

DETAIL C
SCALE: 2/1



5
9
SEE NOTE 21
7
11
SEE NOTE 21
5
9
SEE NOTE 21
6
10
SEE NOTE 21
8
12
SEE NOTE 21
6
10
SEE NOTE 21
SEE DETAIL B



SEE NOTE 10
ALL WRAPOST RECEPTACLES MUST BE ORIENTED AS SHOWN

DETAIL B
SCALE: 2/1

Ⓒ REPLACES WORD DWG REV B

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN Ken Healy DATE
CHECKED
APPROVAL 2/3/65
APPROVAL 3 Feb 65
NASA APPROVAL 2/4/65
MIT APPROVAL

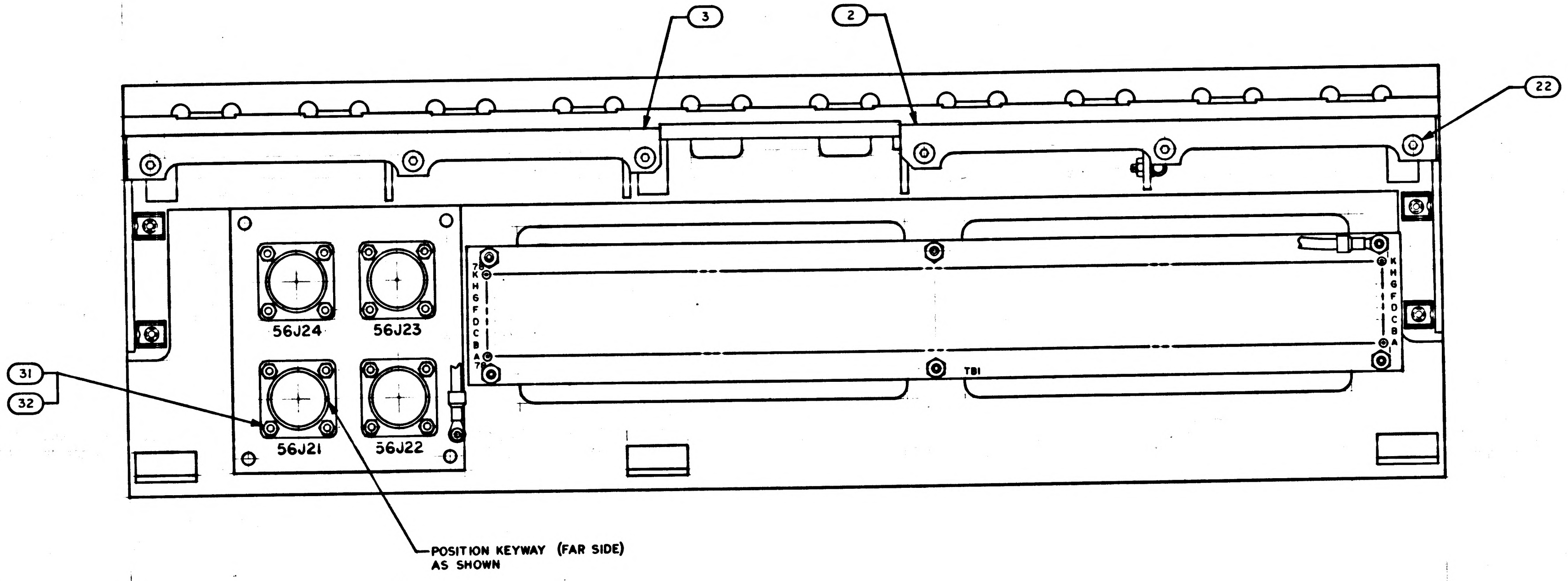
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

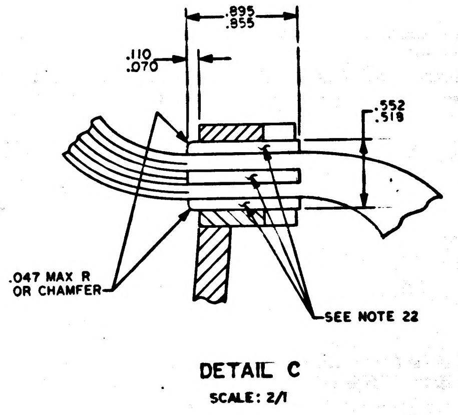
AGE HARNESS AND PSA END CONNECTOR ASSY

CODE IDENT NO.	SIZE	NASA DRAWING NO
	J	1015086
SCALE 1/1	WT	SHEET 4 OF 5

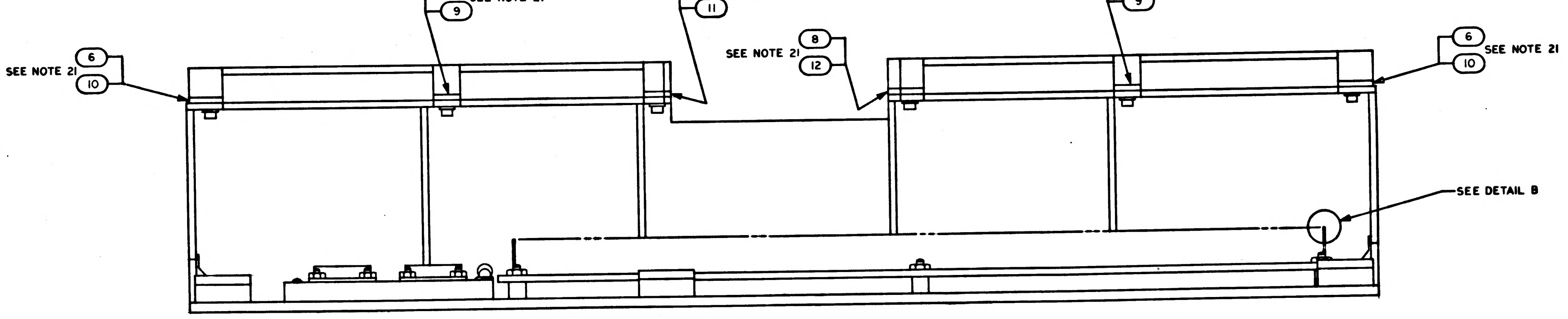
1015086

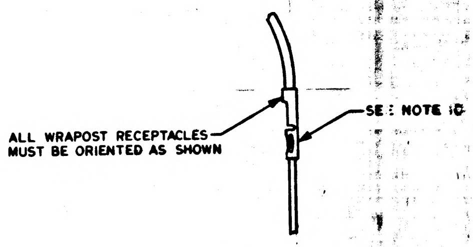
SYM	DESCRIPTION
C	REPLACES WORD PER TORR


3
2
22
31
32
56J24
56J23
56J21
56J22
TB1
K H G F D C B A
POSITION KEYWAY (FAR SIDE) AS SHOWN


.895
.855
.110
.070
.552
.518
.047 MAX R OR CHAMFER
SEE NOTE 22

DETAIL C
SCALE: 2/1


5
9
SEE NOTE 21
7
11
SEE NOTE 21
5
9
SEE NOTE 21
6
10
SEE NOTE 21
8
12
SEE NOTE 21
6
10
SEE NOTE 21
SEE DETAIL B


ALL WRAPOST RECEPTACLES MUST BE ORIENTED AS SHOWN
SEE NOTE 10

DETAIL B
SCALE: 2/1

Ⓒ REPLACES WORD

QTY REQD	PART OR IDENTIFYING NO.	
		LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

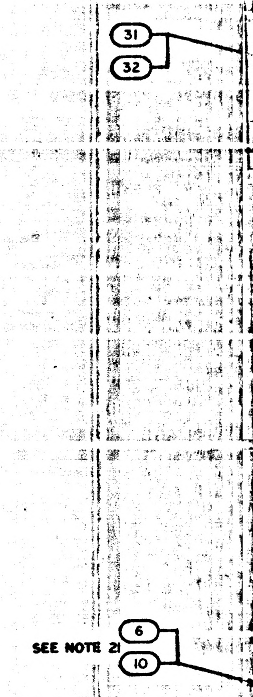
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN Geo. Healy DATE 30 ~ 65
CHECKED
APPROVAL 3-65
APPROVAL 3 Feb 65
NASA APPROVAL 2/4/65
MIT APPROVAL 3 Feb 65

MANNED

AGE HARN
END CONN

IDENT NO.
SIZE J
SCALE 1/1
WT

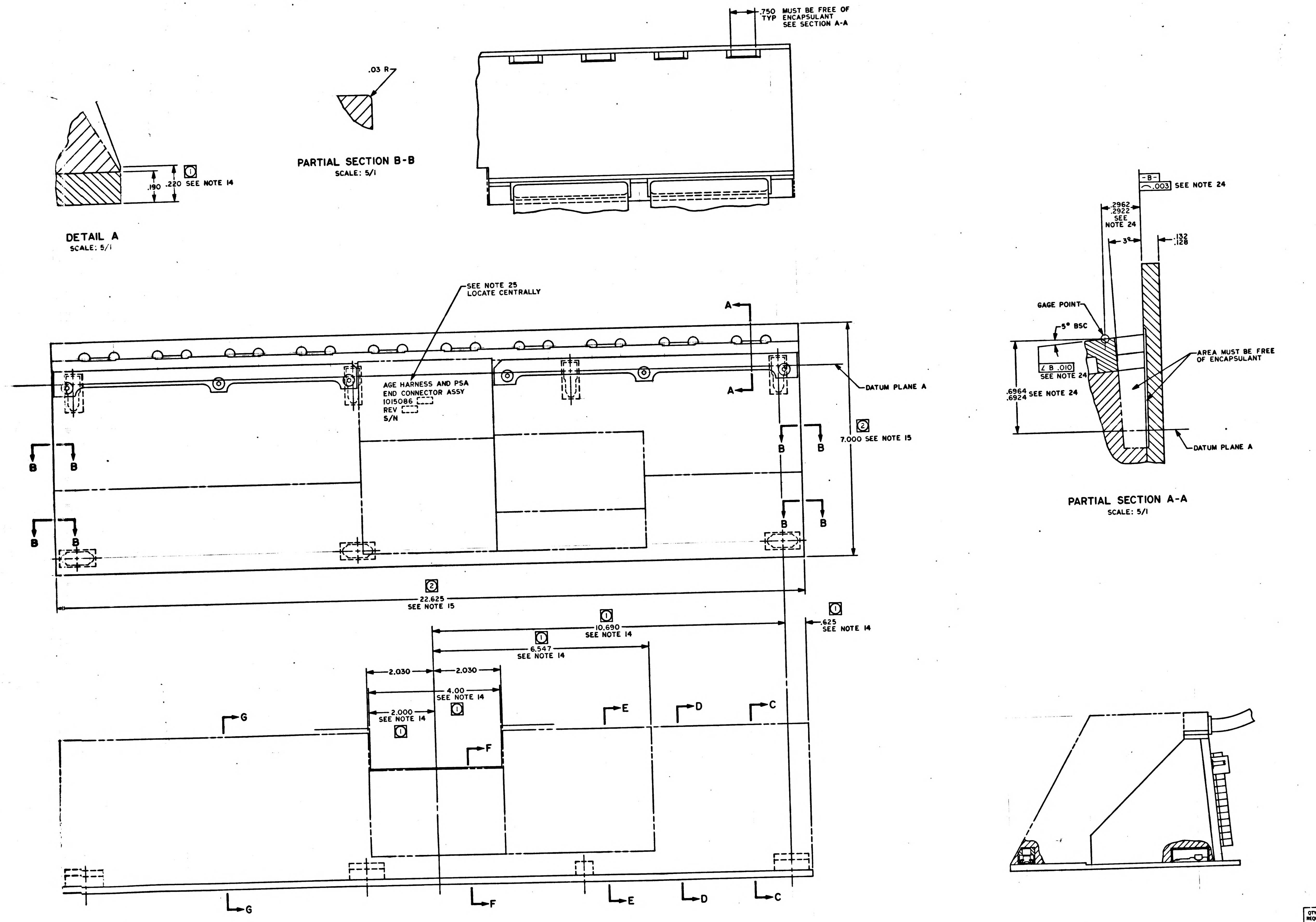
MASTER


31
32
SEE NOTE 21
6
10

1015086

1015086 C

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 16217		WR


DETAIL A
SCALE: 5/1
.190
.220
① SEE NOTE 14
.03 R
PARTIAL SECTION B-B
SCALE: 5/1
.750 TYP MUST BE FREE OF ENCAPSULANT SEE SECTION A-A
SEE NOTE 25 LOCATE CENTRALLY
AGE HARNESS AND PSA END CONNECTOR ASSY
1015086
REV
S/N
A
A
DATUM PLANE A
② 7.000 SEE NOTE 15
B
B
② 22.625 SEE NOTE 15
① .625 SEE NOTE 14
① 10.690 SEE NOTE 14
① 6.547 SEE NOTE 14
2.030
2.030
4.00 SEE NOTE 14 ①
2.000 SEE NOTE 14 ①
G
F
E
D
C
-B-
.003 SEE NOTE 24
.2962
.2922
SEE NOTE 24
3°
.132
.128
GAGE POINT
5° BSC
∠ B .010
SEE NOTE 24
.6964
.6924 SEE NOTE 24
AREA MUST BE FREE OF ENCAPSULANT
DATUM PLANE A
PARTIAL SECTION A-A
SCALE: 5/1

© REPLACES WORD DWG REV B

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

	-
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN [illegible] DATE 12 Nov 65
CHECKED [illegible] Jan 26 1966
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible] 2/66
MIT APPROVAL [illegible] 3 Feb 66

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO.
SIZE J
NASA DRAWING NO 1015086
SCALE 1/1
WT
SHEET 5 OF 5

1015086 C

1015086

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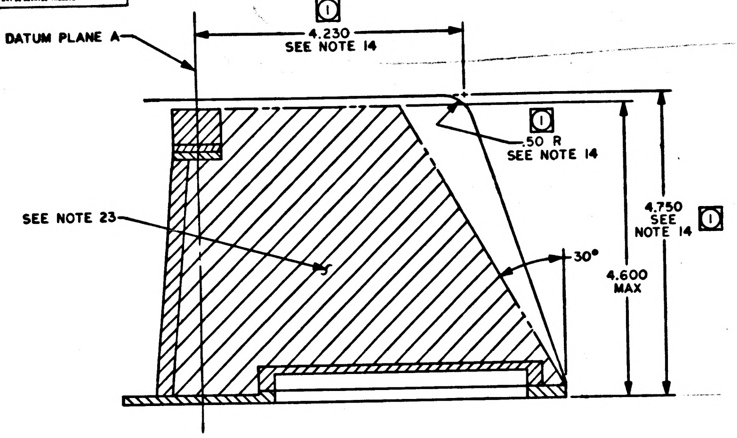
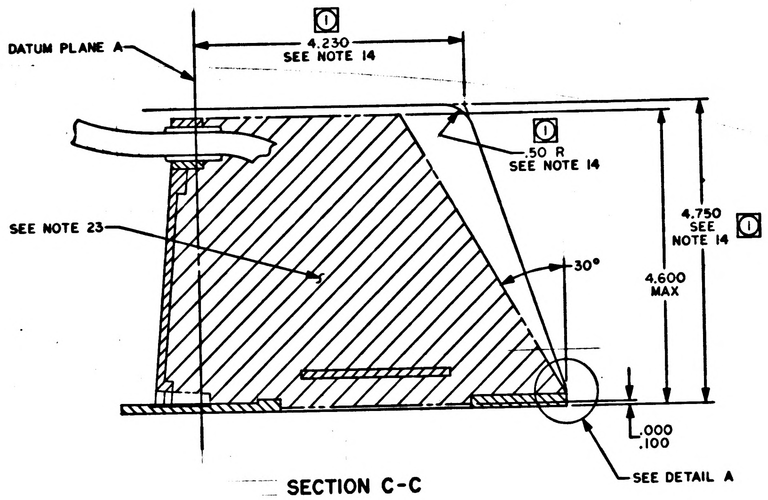
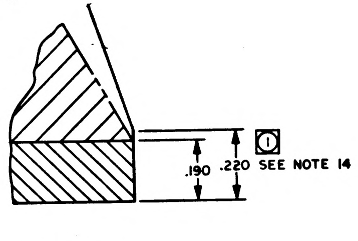

DATUM PLANE A
① 4.230 SEE NOTE 14
① .50 R SEE NOTE 14
SEE NOTE 23
30°
4.750 SEE NOTE 14 ①
4.600 MAX

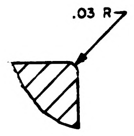
SECTION G-G


DATUM PLANE A
① 4.230 SEE NOTE 14
① .50 R SEE NOTE 14
SEE NOTE 23
30°
4.750 SEE NOTE 14 ①
4.600 MAX
.000 .100
SEE DETAIL A

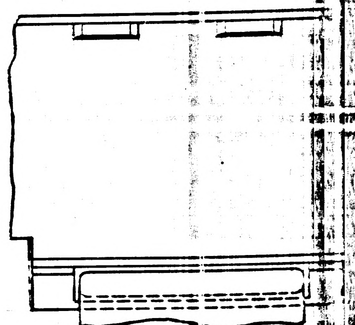
SECTION C-C

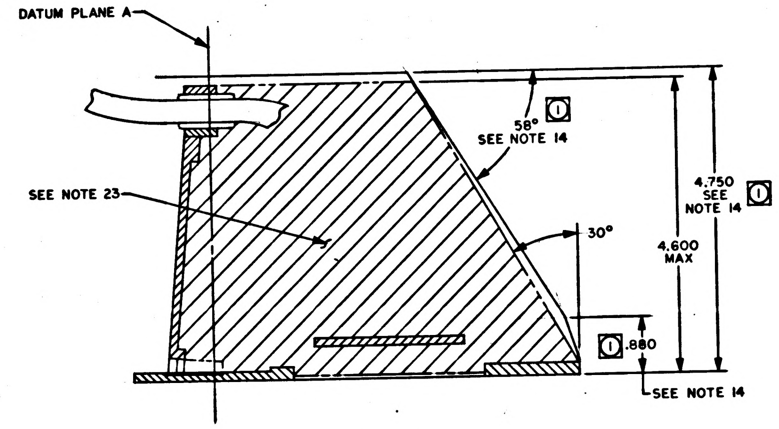

.190
.220 SEE NOTE 14 ①

DETAIL A
SCALE: 5/1

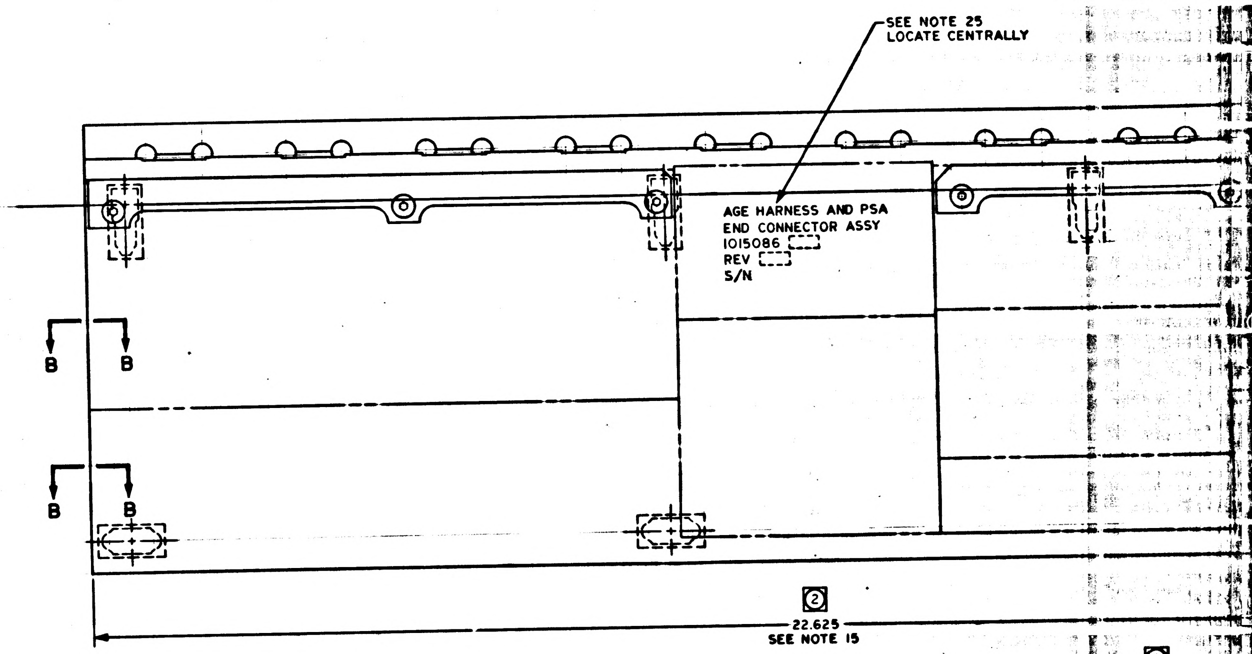


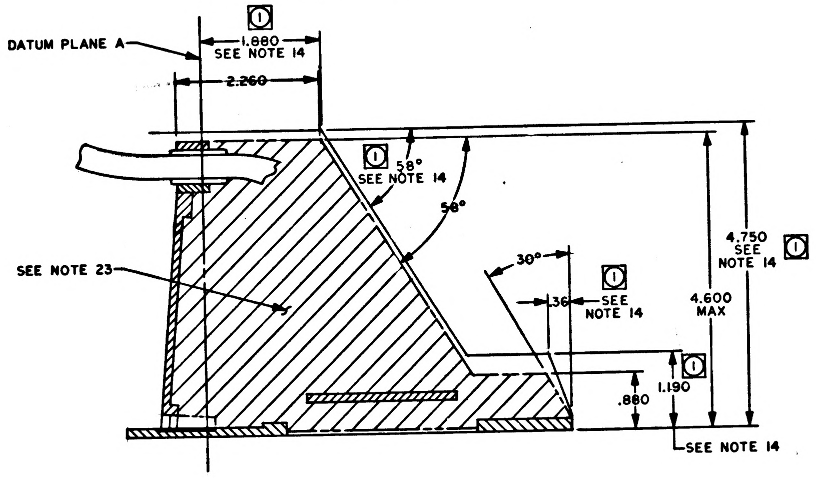
PARTIAL SECTION B-B
SCALE: 5/1



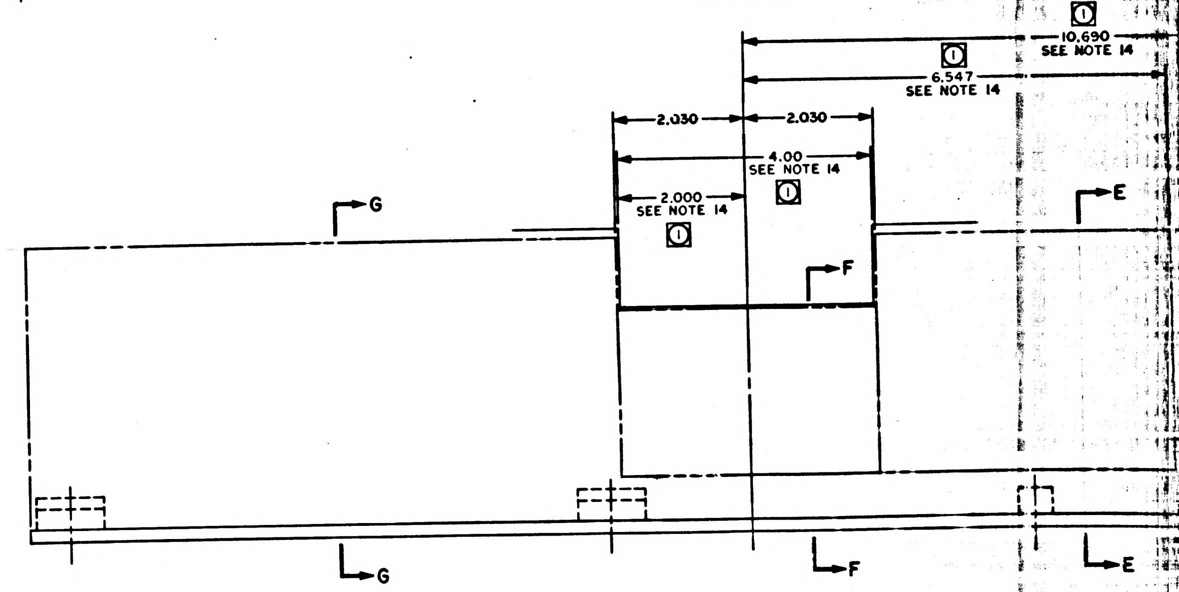

DATUM PLANE A
58° ① SEE NOTE 14
SEE NOTE 23
30°
4.750 SEE NOTE 14 ①
4.600 MAX
① .880
SEE NOTE 14

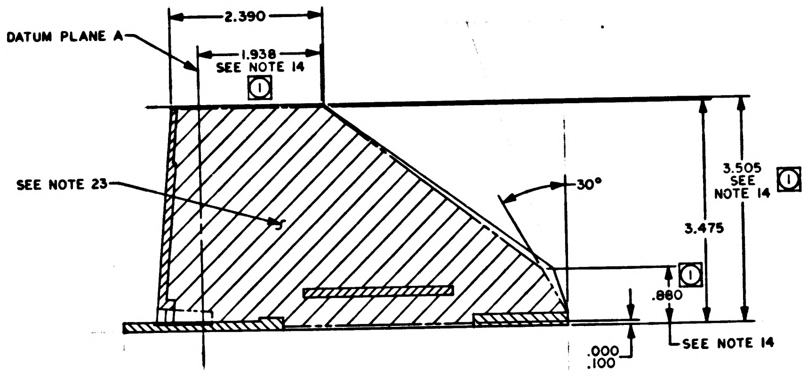
SECTION D-D


SEE NOTE 25 LOCATE CENTRALLY
AGE HARNESS AND PSA END CONNECTOR ASSY 1015086
REV
S/N
B
B
B
B
② 22.625 SEE NOTE 15


DATUM PLANE A
① 1.880 SEE NOTE 14
2.260
① 58° SEE NOTE 14
58°
SEE NOTE 23
30°
.36 SEE NOTE 14 ①
4.750 SEE NOTE 14 ①
4.600 MAX
① 1.190
.880
SEE NOTE 14

SECTION E-E


① 10.690 SEE NOTE 14
① 6.547 SEE NOTE 14
2.030
2.030
4.00 SEE NOTE 14 ①
2.000 SEE NOTE 14 ①
G
G
F
F
E
E


DATUM PLANE A
2.390
1.938 SEE NOTE 14 ①
SEE NOTE 23
30°
3.505 SEE NOTE 14 ①
3.475
① .880
SEE NOTE 14
.000 .100

SECTION F-F

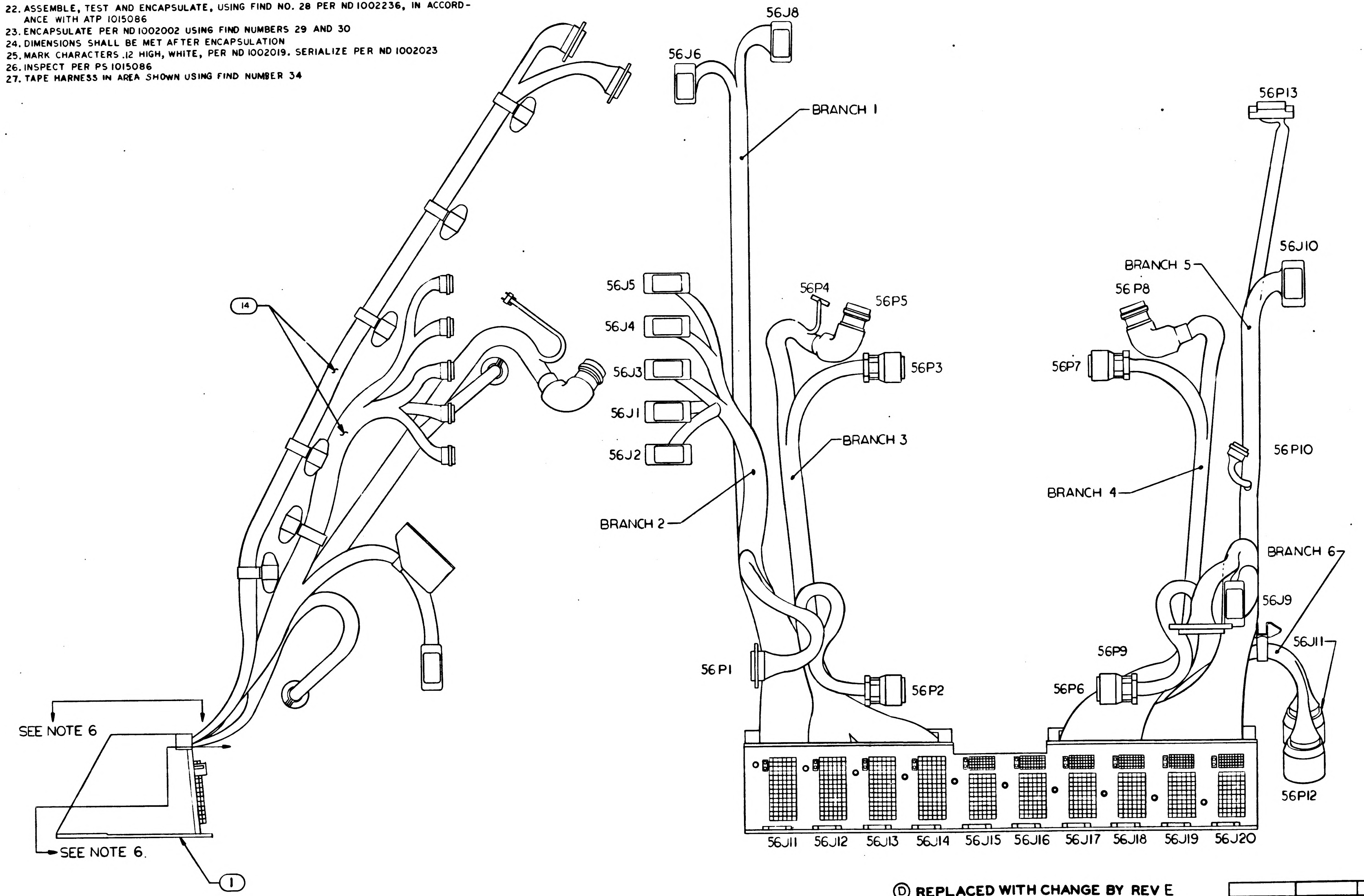
NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED	
C		REPLACES WORD DWG REV B PER TDRR 16217				W R	
D		REPLACED WITH CHANGE BY REV E PER TDRR 20529	W.R				

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BRANCHES 1, 2 AND 3 OF FIND NO. 14 ARE SHOWN ON SHEET 2
3. BRANCHES 4, 5 AND 6 OF FIND NO. 14 ARE SHOWN ON SHEET 3
4. GRID MODULE ON SHEETS 2 AND 3 IS 1 INCH TRUE POSITION
5. UNLESS OTHERWISE SPECIFIED, FEATURE CENTERLINES ON SHEETS 2, 3 AND 4 ARE LOCATED WITHIN ±.25. ENDS OF HOOK UP WIRES OR ACCESSORIES ARE LOCATED WITHIN .12
6. MARRIAGE CONFIGURATION OF FIND NUMBERS 1 AND 14 IS SHOWN ON SHEET 4
7. ENCAPSULATION ENVELOPE IS SHOWN ON SHEET 5
8. TERMINATION NUMBERS AND TOLERANCE CHART ARE LISTED IN CONDUCTOR CHART OF FIND NO. 14
9. INTERCONNECTION DIAGRAM OF AGE C/M, LOWER EQUIPMENT BAY, IS 1015090
10. WELD PER ND 1002225
11. CRIMP PER ND 1002206
12. LACE HARNESS PER ND 1002032
13. ALL WIRING SHALL BE BELOW THE SURFACE OF THE ENCAPSULATING MATERIAL
14. ① DIMENSION OR CHARACTERISTIC IS CONTROLLED BY ICDMH01-01203-116
15. ② ICDMH01-01203-116 ENVELOPE DIMENSIONS ARE 7.000 AND 22.690 RESPECTIVELY; ACTUAL VALUES MAY BE LESS. ENCAPSULATION SHALL BE FLUSH TO .015 LESS THAN THE ENVELOPE DEFINED BY THE ACTUAL LENGTH AND WIDTH OF THE END CONNECTOR ASSEMBLY
16. CHICAGO STITCH AT APPROXIMATELY 1 INCH INTERVALS USING FIND NUMBERS 24 AND 25. WIRES FROM THE DIFFERENT HARNESS BRANCHES MERGING INTO THE SAME WIRE HARNESS CLAMP CHANNEL GROUP SHALL BE BLENDED TOGETHER WHEN CHICAGO STITCHING IS PERFORMED
17. APPLY EPOXY PER ND 1002187 USING FIND NUMBERS 26 AND 27 TO SEAL BACKS OF CONNECTORS 56J21, 56J22, 56J23 AND 56J24, AND TO SEAL JUNCTION OF CONNECTOR FLANGES AND BOTTOM PLATE.
18. ENCAPSULATE BACK OF CONNECTOR PER ND 1002236 USING FIND NO. 28
19. MARK FIND NO. 13 WITH REFERENCE DESIGNATION AS SHOWN, .12 HIGH, BLACK, HOT IMPRESSION STAMPING PER ND 1002019 CENTRALIZE
20. SECURE FIND NO. 13 TO FIND NO. 14 USING FIND NUMBERS 24 AND 25
21. SELECT NOTED FIND NUMBERS IN ACCORDANCE WITH ATP REQUIREMENTS AT ENCAPSULATION PHASE OF END CONNECTOR BUILD UP
22. ASSEMBLE, TEST AND ENCAPSULATE, USING FIND NO. 28 PER ND 1002236, IN ACCORDANCE WITH ATP 1015086
23. ENCAPSULATE PER ND 1002002 USING FIND NUMBERS 29 AND 30
24. DIMENSIONS SHALL BE MET AFTER ENCAPSULATION
25. MARK CHARACTERS .12 HIGH, WHITE, PER ND 1002019. SERIALIZE PER ND 1002023
26. INSPECT PER PS 1015086
27. TAPE HARNESS IN AREA SHOWN USING FIND NUMBER 34



Ⓓ REPLACED WITH CHANGE BY REV E

Ⓒ REPLACES WORD DWG REV B

031	021	011	000	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
			☒		REF	1015087	INTERCONNECTION LIST
			AR		34		TAPE
			1		33	MS35650-104	NUT, PLAIN HEX
			4		32	MS35649-44	NUT, PLAIN HEX
			4		31	1010618-15	SCREW, BUTTON HEAD
			AR		30	1010798-2	ACTIVATOR
			AR		29	1010798-1	RESIN
			AR		28	1012503	COMPOUND, POTTING, POLYURETHANE
			AR		27	1010679	ADHESIVE ACTIVATOR
			AR		26	1010661	EPOXY RESIN
			AR		25	1012507-004	LACING TAPE
			AR		24	1012507-002	LACING TAPE
			1		23	MS35338-081	WASHER, LOCK
			6		22	1006783-47	SCREW, BUTTON HEAD
			1		21	1010705-8	CLAMP
			1		20	1010705-6	CLAMP
			1		19	1010400-8	CLAMP, LOOP, HINGED
			1		18	1010400-7	CLAMP, LOOP, HINGED
			3		17	1010400-3	CLAMP, LOOP, HINGED
			1		16	1010400-2	CLAMP, LOOP, HINGED
			5		15	1010400-1	CLAMP, LOOP, HINGED
			1		14	1015085	WIRING HARNESS "A"
			21		13	1010811-002	BAND, IDENTIFICATION
			1		12	1021253-8	SPACER
			1		11	1021253-7	SPACER
			2		10	1021253-6	SPACER
			2		9	1021253-5	SPACER
			1		8	1021253-4	SPACER
			1		7	1021253-3	SPACER
			2		6	1021253-2	SPACER
			2		5	1021253-1	SPACER
			1		4	1014609	BRACKET, CLAMP
			1		3	1008165	CABLE CLAMP, RIGHT
			1		2	1008164	CABLE CLAMP, LEFT
			1		1	1007599-011	END CONNECTOR ASSY, PSA
QUANTITY REQUIRED					LIST OF MATERIALS		

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

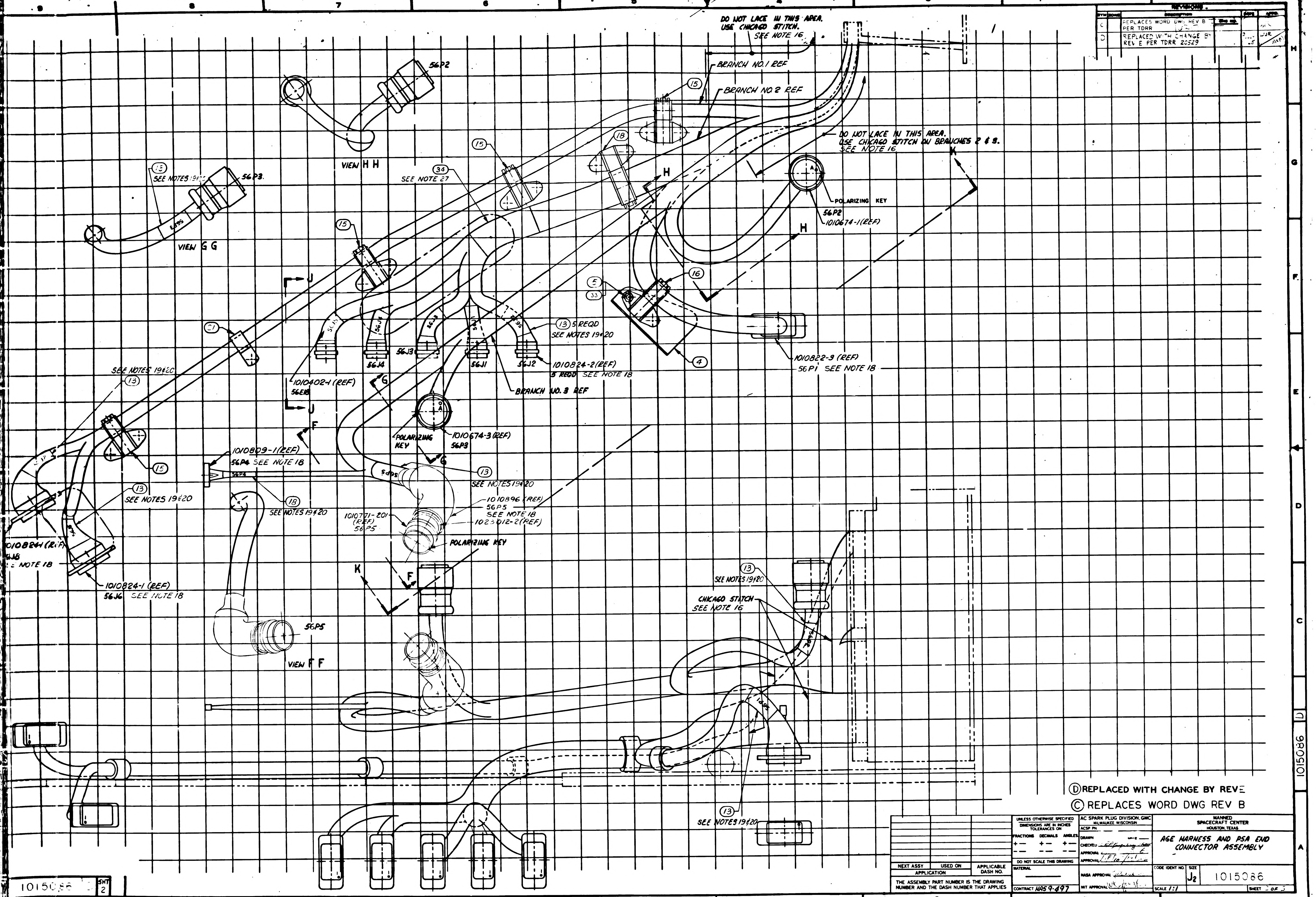
AC SPARK PLUG DIVISION
ACSP PN
DRAWN L. HOOD 1-23-65
CHECKED
APPROVED
APPROVED
APPROVED MIT W Kayfer
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE E
DRAWING NO. 1015086
SCALE 1/2
SHEET 1 OF 5

1015086 D


DO NOT LACE IN THIS AREA.
USE CHICAGO STITCH.
SEE NOTE 16
BRANCH NO. 1 REF
BRANCH NO. 2 REF
15
56P2
VIEW H H
15
SEE NOTES 19 & 20
56P3
VIEW G G
15
34
SEE NOTE 27
18
H
DO NOT LACE IN THIS AREA.
USE CHICAGO STITCH ON BRANCHES 2 & 3.
SEE NOTE 16
K
POLARIZING KEY
56P2
1010674-1 (REF)
H
15
J
16
5
33
13 5 REQD
SEE NOTES 19 & 20
56J4
56J3
56J1
56J2
1010824-2 (REF)
5 REQD SEE NOTE 18
C1
4
1010822-9 (REF)
56P1 SEE NOTE 18
1010402-1 (REF)
56E18
G
BRANCH NO. 3 REF
SEE NOTES 19 & 20
13
J
F
POLARIZING KEY
1010674-3 (REF)
56P3
G
1010809-1 (REF)
56P4 SEE NOTE 18
56P4
13
SEE NOTES 19 & 20
15
13
SEE NOTES 19 & 20
18
SEE NOTES 19 & 20
1010896 (REF)
56P5
SEE NOTE 18
1010771-201 (REF) 56P5
1023012-2 (REF)
POLARIZING KEY
1010824-1 (REF)
56J8
SEE NOTE 18
1010824-1 (REF)
56J6 SEE NOTE 18
K
F
56P5
VIEW F F
13
SEE NOTES 19 & 20
CHICAGO STITCH
SEE NOTE 16
13
SEE NOTES 19 & 20

SYM	ZONE	DESCRIPTION	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR		
D		REPLACED WITH CHANGE BY REV E PER TDRR 20529		WJR

Ⓓ REPLACED WITH CHANGE BY REV E

Ⓒ REPLACES WORD DWG REV B

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

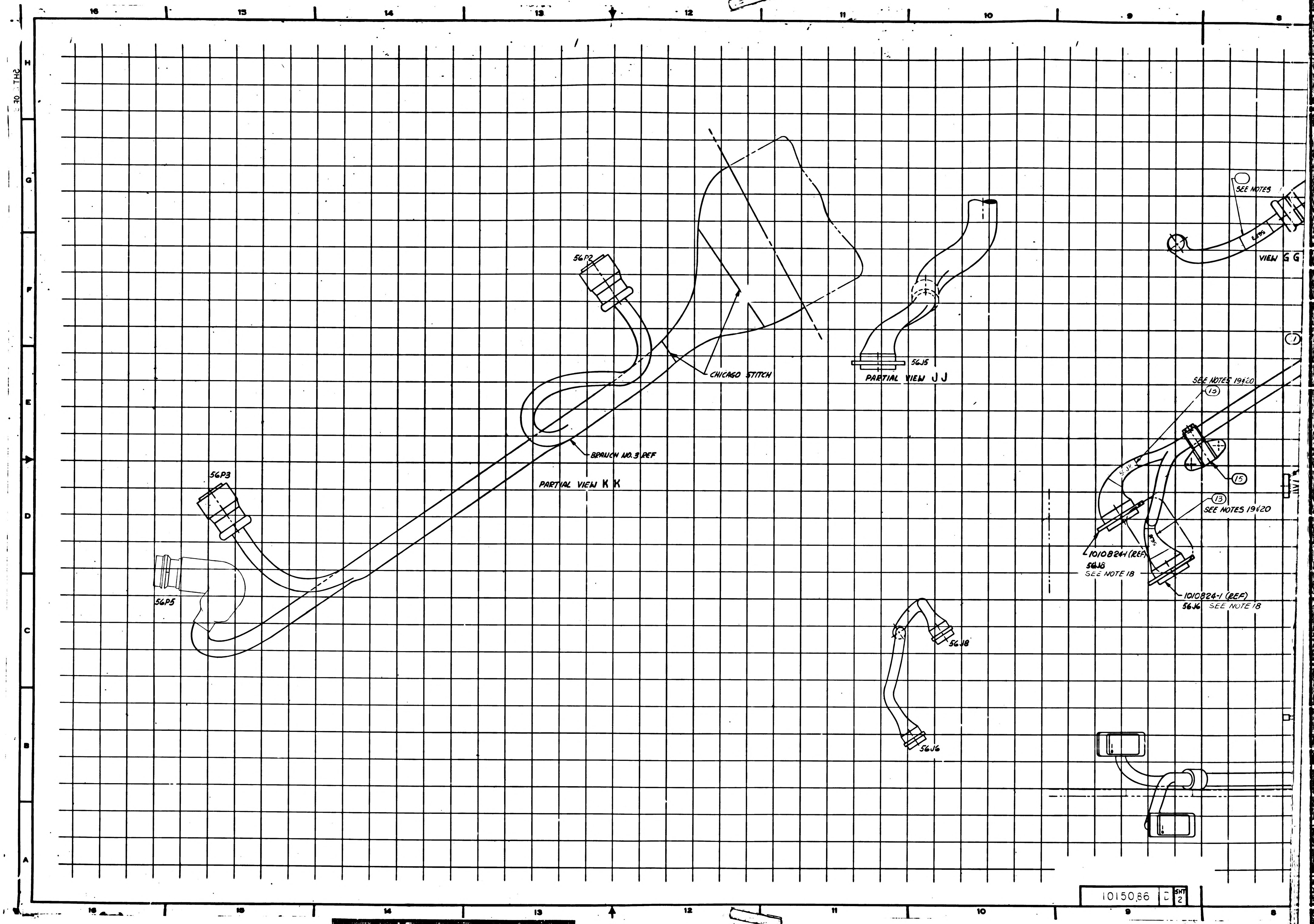
AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO. SIZE J2 1015086
SCALE 1:1 SHEET 2 OF 5

1015086 SHT 2

1015086 D

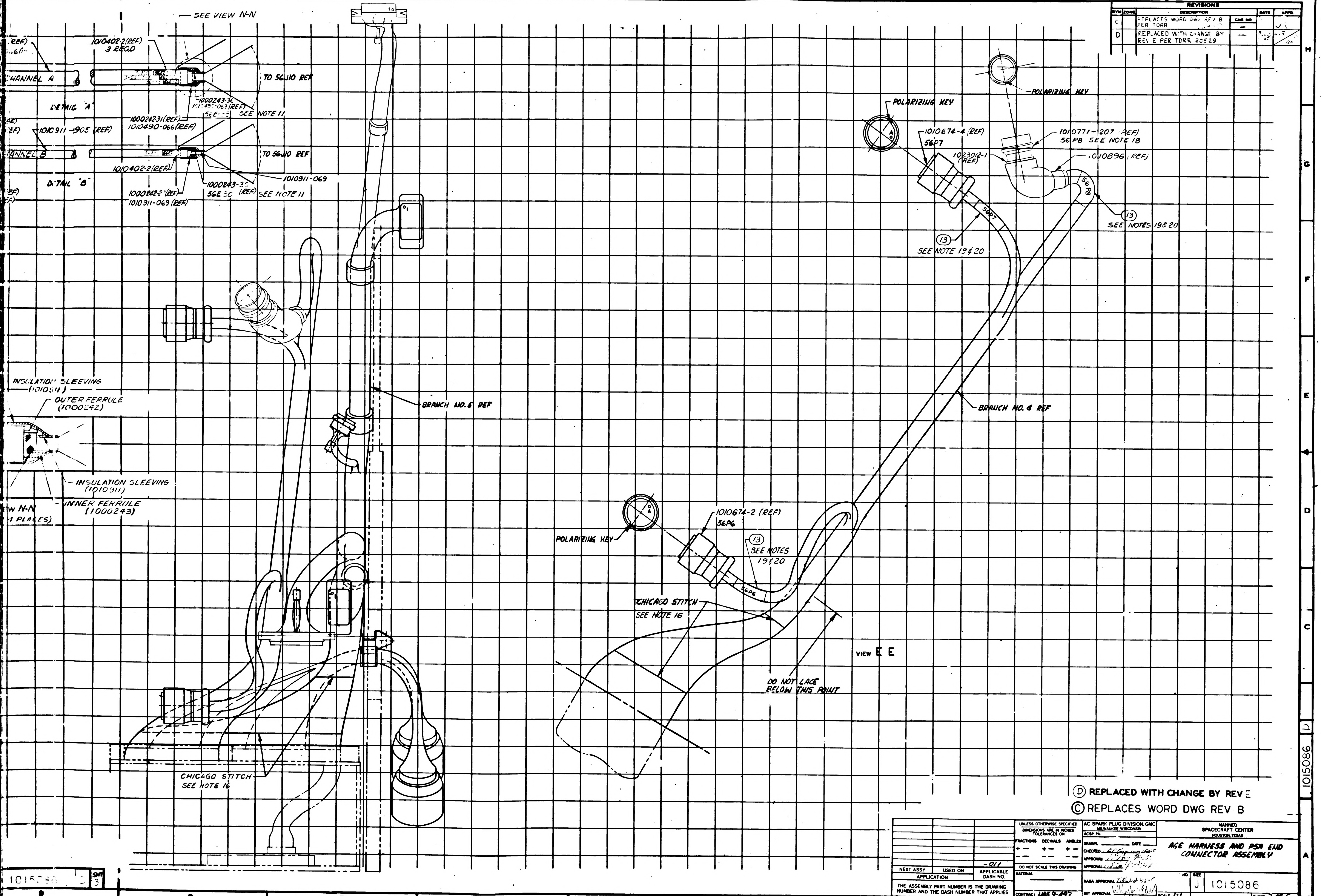
2/1015086


16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
SHT OF
56P2
CHICAGO STITCH
BRANCH NO. 3 REF
PARTIAL VIEW K K
56P3
56P5
56J5
PARTIAL VIEW J J
SEE NOTES
VIEW G G
1
SEE NOTES 19&20
15
15
13
SEE NOTES 19&20
1010824-1 (REF)
56J8
SEE NOTE 18
1010824-1 (REF)
56J6 SEE NOTE 18
56J8
56J6

1015086 D SHT 2

1/1015086

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
C		REPLACES WORD DWG REV B PER TDRR	—		
D		REPLACED WITH CHANGE BY REV E PER TDRR 20529	—		



SEE VIEW N-N
(REF)
CHANNEL A
1010402-2 (REF)
3 REQD
TO 56J10 REF
1000243-36
1010490-069 (REF)
56E-36
SEE NOTE 11
DETAIL "A"
1000242-31 (REF)
1010490-066 (REF)
1010911-905 (REF)
CHANNEL B
TO 56J10 REF
1010402-2 (REF)
1010911-069
DETAIL "B"
1000243-30
56E 30
(REF)
SEE NOTE 11
1000242-27 (REF)
1010911-069 (REF)
INSULATION SLEEVING
(1010511)
OUTER FERRULE
(1000242)
INSULATION SLEEVING
(1010311)
INNER FERRULE
(1000243)
VIEW N-N
(4 PLACES)
BRANCH NO. 5 REF
CHICAGO STITCH
SEE NOTE 16
POLARIZING KEY
1010674-4 (REF)
56P7
1023012-1
(REF)
POLARIZING KEY
1010771-207 (REF)
56P8 SEE NOTE 18
1010896 (REF)
56P8
56P7
13
SEE NOTES 19 & 20
13
SEE NOTE 19 & 20
BRANCH NO. 4 REF
POLARIZING KEY
1010674-2 (REF)
56P6
13
SEE NOTES
19 & 20
56P6
CHICAGO STITCH
SEE NOTE 16
VIEW E E
DO NOT LACE
BELOW THIS POINT
1015086 D
1015086 D
SHT 3

Ⓓ REPLACED WITH CHANGE BY REV E

Ⓒ REPLACES WORD DWG REV B

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

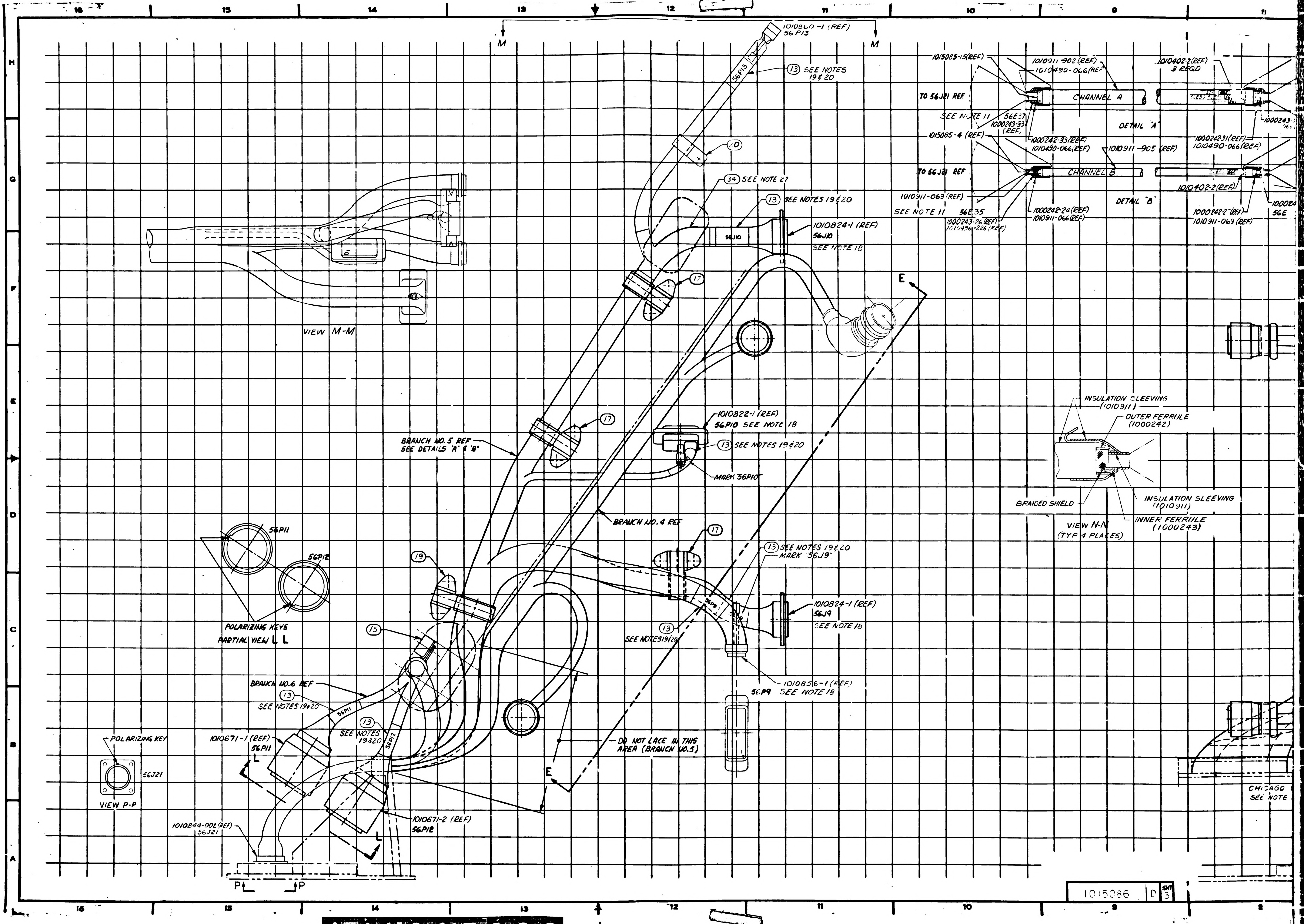
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT: NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ASE HARNESS AND PSA END
CONNECTOR ASSEMBLY

NO. SIZE J 1015086
SCALE 1:1
SHEET 3 OF

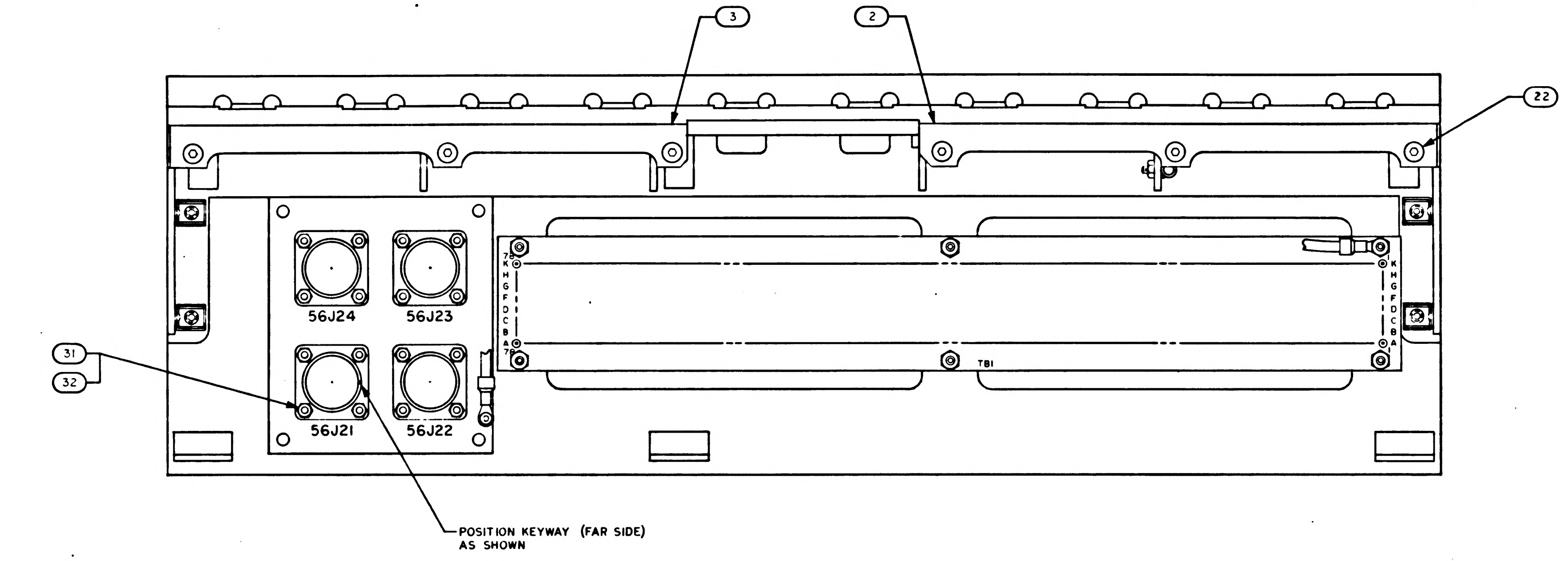

16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
M
M
1010860 -1 (REF)
56 P13
56P13
(13) SEE NOTES 19 & 20
(20)
(34) SEE NOTE 27
(13) SEE NOTES 19 & 20
56J10
1010824-1 (REF)
56J10
SEE NOTE 18
(17)
E
VIEW M-M
(17)
BRANCH NO. 5 REF
SEE DETAILS "A" & "B"
1010822-1 (REF)
56P10 SEE NOTE 18
(13) SEE NOTES 19 & 20
MARK "56P10"
BRANCH NO. 4 REF
(17)
(13) SEE NOTES 19 & 20
MARK "56J9"
1010824-1 (REF)
56J9
SEE NOTE 18
(13)
SEE NOTES 19 & 20
56P9
1010856-1 (REF)
56P9 SEE NOTE 18
56P11
56P12
POLARIZING KEYS
PARTIAL VIEW L L
(19)
(15)
BRANCH NO. 6 REF
(13)
SEE NOTES 19 & 20
56P11
(13)
SEE NOTES 19 & 20
56P12
1010671-1 (REF)
56P11
L
L
1010671-2 (REF)
56P12
DO NOT LACE IN THIS AREA (BRANCH NO. 5)
E
POLARIZING KEY
56J21
VIEW P-P
1010844-002 (REF)
56J21
P
P
1015085-15 (REF)
1010911-902 (REF)
1010490-066 (REF)
1010402-2 (REF)
3 REQD
TO 56J21 REF
CHANNEL A
SEE NOTE 11
56E37
1000243-33 (REF)
1000243-3
DETAIL "A"
1015085-4 (REF)
1000242-33 (REF)
1010490-066 (REF)
1010911-905 (REF)
1000242-31 (REF)
1010490-066 (REF)
TO 56J21 REF
CHANNEL B
1010402-2 (REF)
1010911-069 (REF)
SEE NOTE 11
56E35
1000243-26 (REF)
1010496-226 (REF)
1000242-24 (REF)
1010911-066 (REF)
DETAIL "B"
1000242-2 (REF)
1010911-069 (REF)
100024
56E
INSULATION SLEEVING
(1010911)
OUTER FERRULE
(1000242)
BRAIDED SHIELD
INSULATION SLEEVING
(1010911)
INNER FERRULE
(1000243)
VIEW N-N
(TYP 4 PLACES)
CHICAGO
SEE NOTE

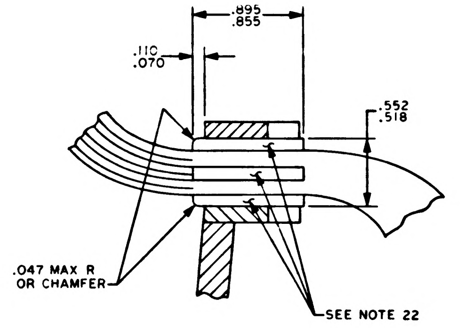
1015086 D SHT 3

1/1015086

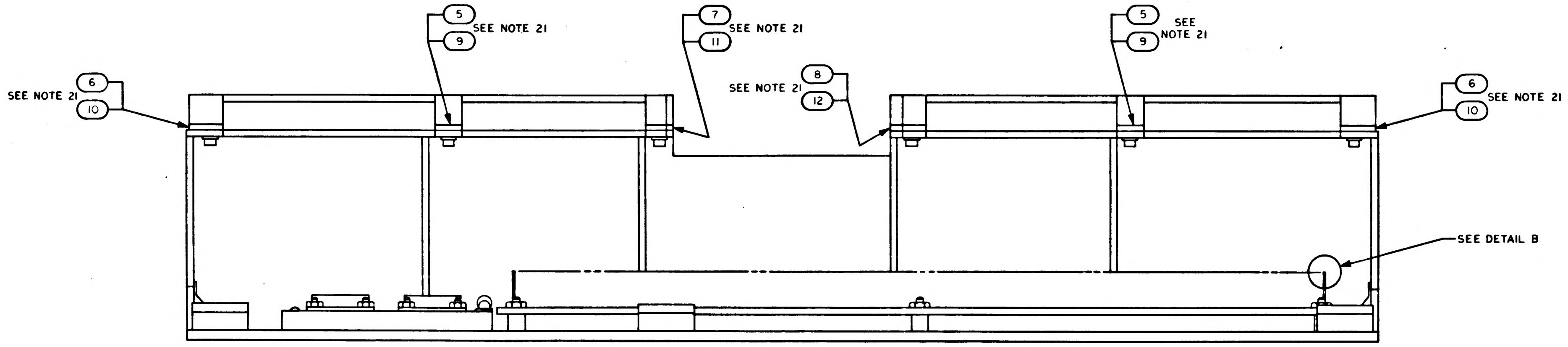
1015086 D

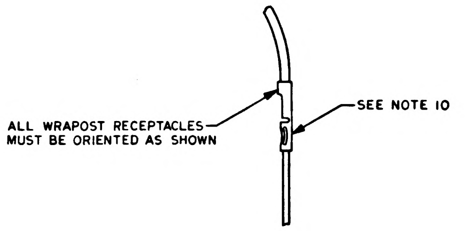
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 6217		WK
D	REPLACED WITH CHANGE BY REV E PER TDRR 20529	3 JULY 65	WJR / MEM


3
2
22
56J24
56J23
56J21
56J22
TB1
31
32
POSITION KEYWAY (FAR SIDE) AS SHOWN


.895
.855
.110
.070
.552
.518
.047 MAX R OR CHAMFER
SEE NOTE 22

DETAIL C
SCALE: 2/1


5
9
SEE NOTE 21
7
11
SEE NOTE 21
5
9
SEE NOTE 21
6
10
SEE NOTE 21
8
12
SEE NOTE 21
6
10
SEE NOTE 21
SEE DETAIL B


ALL WRAPOST RECEPTACLES MUST BE ORIENTED AS SHOWN
SEE NOTE 10

DETAIL B
SCALE: 2/1

Ⓓ REPLACED WITH CHANGE BY REV E
Ⓒ REPLACES WORD DWG REV B

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIN NC

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

NEXT ASSY | USED ON
APPLICATION

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN Ken Healy DATE 30 Jan 65
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO
SIZE J
NASA DRAWING NO 1015086
SCALE 1/1
WT
SHEET 4 OF 5

1015086 D

1015086 C

2/1015086

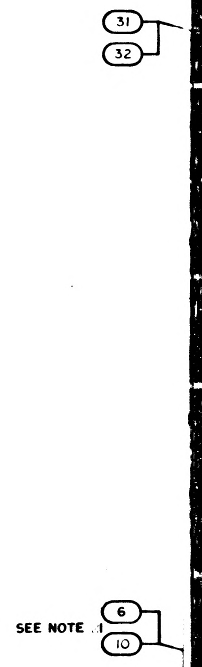
8 7 6 5

D

C

B

A


31
32
SEE NOTE
6
10

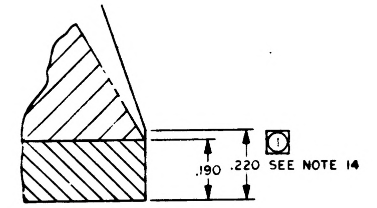
8 7 6 5

1015086 D

1 41015086

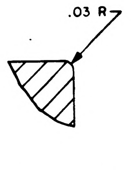
1015086 D

SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES WORD DWG REV B PER TDRR 6217		WR
D	REPLACED WITH CHANGE BY REV E PER TDRR 20529.	3 JULY 65	WJR MCM

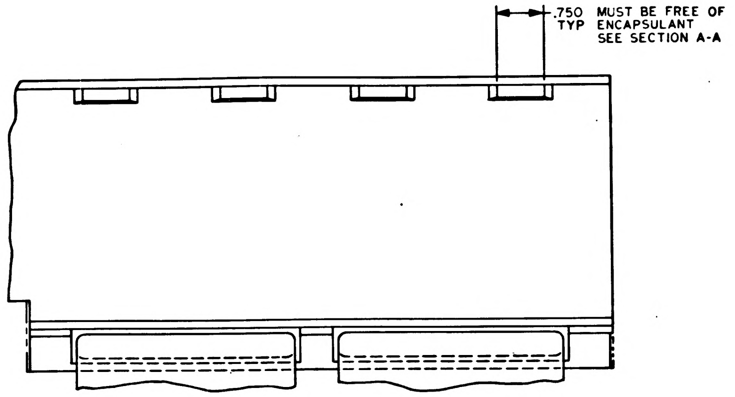


.190
.220
① SEE NOTE 14

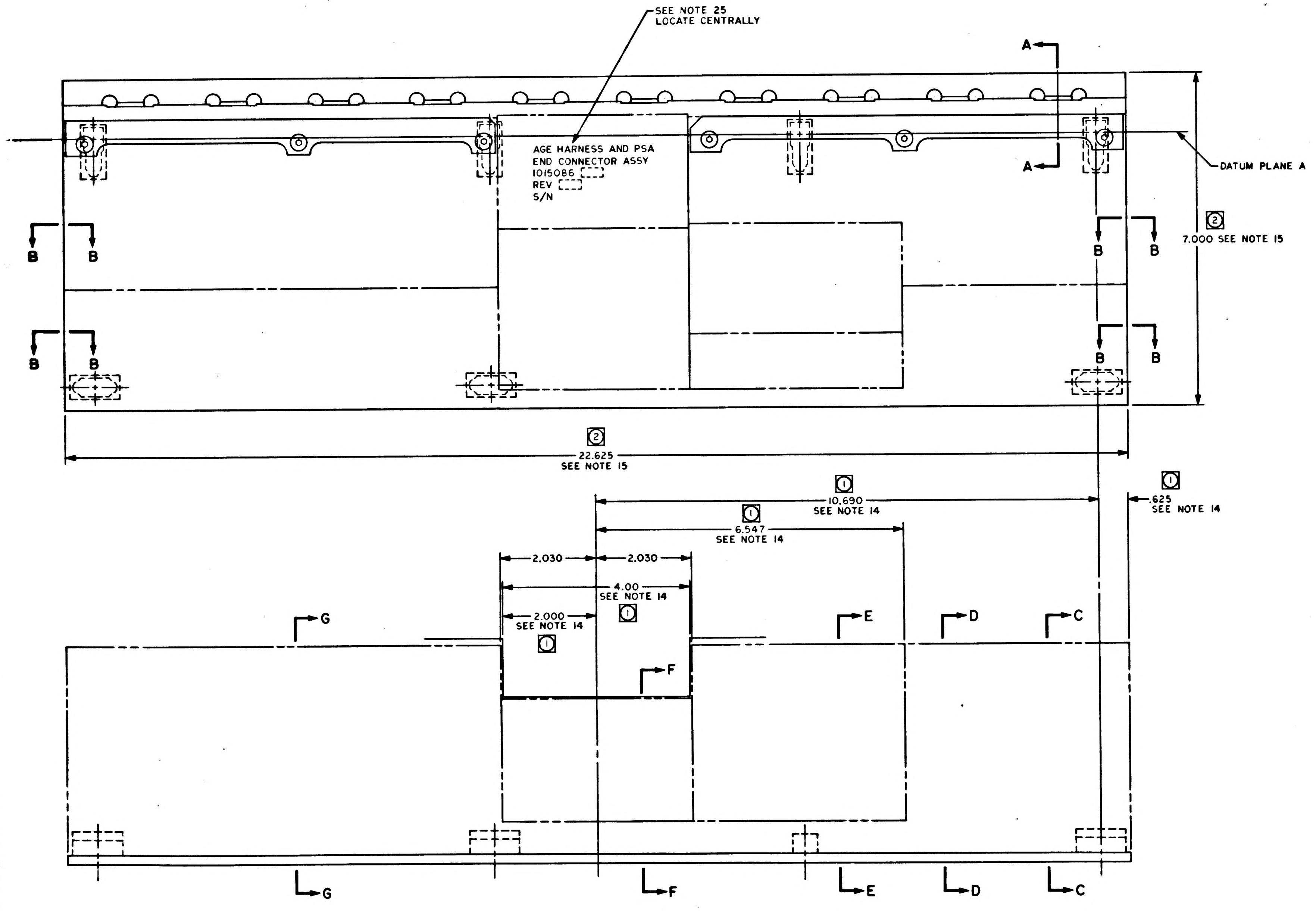
DETAIL A
SCALE: 5/1



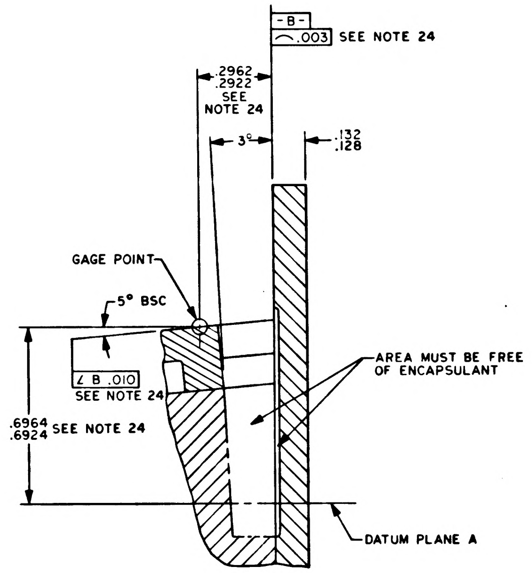
PARTIAL SECTION B-B
SCALE: 5/1



.750 TYP
MUST BE FREE OF ENCAPSULANT SEE SECTION A-A

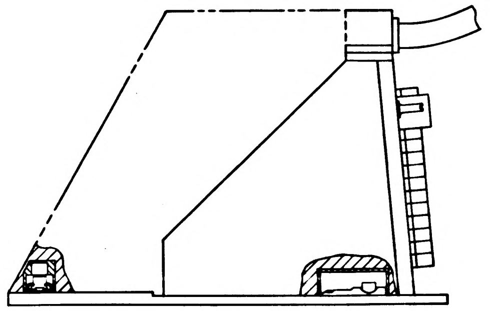


SEE NOTE 25 LOCATE CENTRALLY
A
A
AGE HARNESS AND PSA END CONNECTOR ASSY
1015086
REV
S/N
DATUM PLANE A
② 7.000 SEE NOTE 15
B
B
B
B
B
B
B
B
② 22.625 SEE NOTE 15
① 10.690 SEE NOTE 14
① 6.547 SEE NOTE 14
① .625 SEE NOTE 14
2.030
2.030
4.00 SEE NOTE 14 ①
2.000 SEE NOTE 14 ①
G
F
E
D
C
G
F
E
D
C



-B-
⌒ .003 SEE NOTE 24
.2962
.2922
SEE NOTE 24
3°
.132
.128
GAGE POINT
5° BSC
∠ B .010 SEE NOTE 24
.6964
.6924 SEE NOTE 24
AREA MUST BE FREE OF ENCAPSULANT
DATUM PLANE A

PARTIAL SECTION A-A
SCALE: 5/1



Ⓓ REPLACED WITH CHANGE BY REV E

Ⓒ REPLACES WORD DWG REV B

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN Ken Healy DATE 12 Jan 63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSY

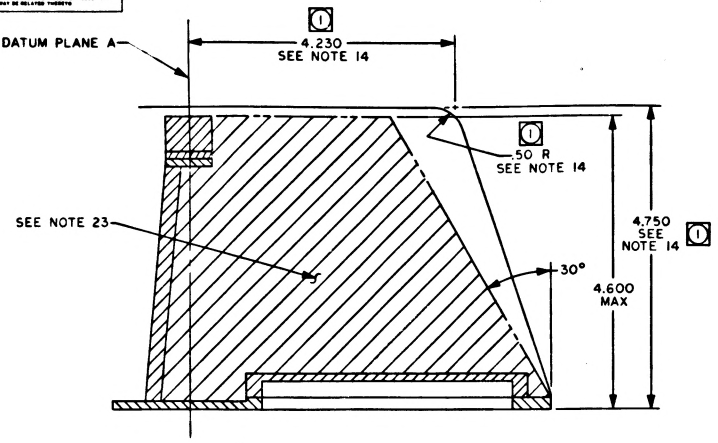
CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1015086
SCALE 1/1
WT
SHEET 5 OF 5

1015086 D

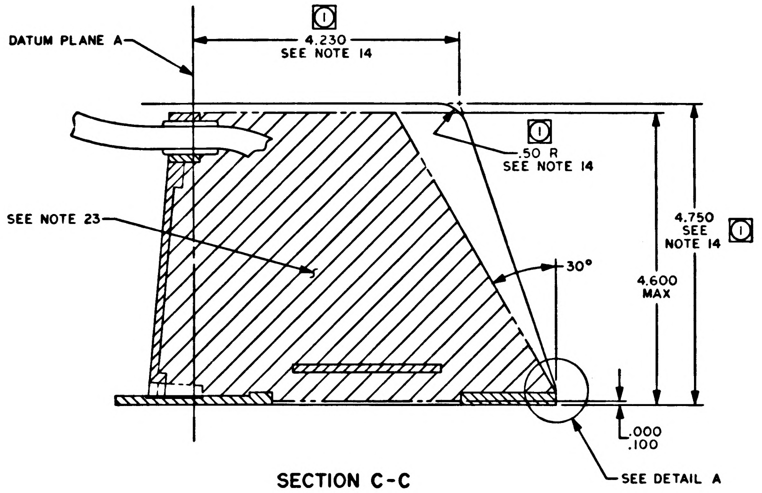
1015086 D

27/1015086

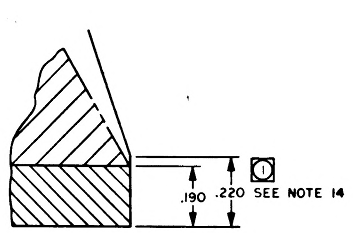
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


DATUM PLANE A
① 4.230 SEE NOTE 14
① .50 R SEE NOTE 14
SEE NOTE 23
4.750 SEE NOTE 14 ①
4.600 MAX
30°

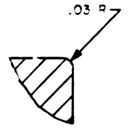
SECTION G-G


DATUM PLANE A
① 4.230 SEE NOTE 14
① .50 R SEE NOTE 14
SEE NOTE 23
4.750 SEE NOTE 14 ①
4.600 MAX
30°
.000 .100
SEE DETAIL A

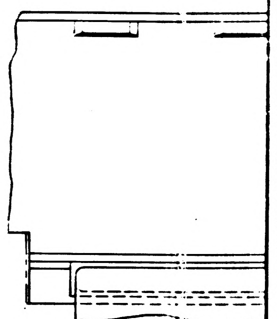
SECTION C-C

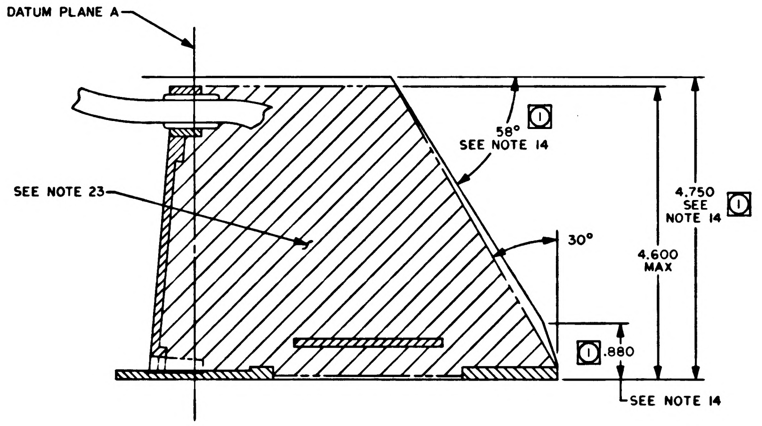

.190
.220 SEE NOTE 14 ①

DETAIL A
SCALE: 5/1

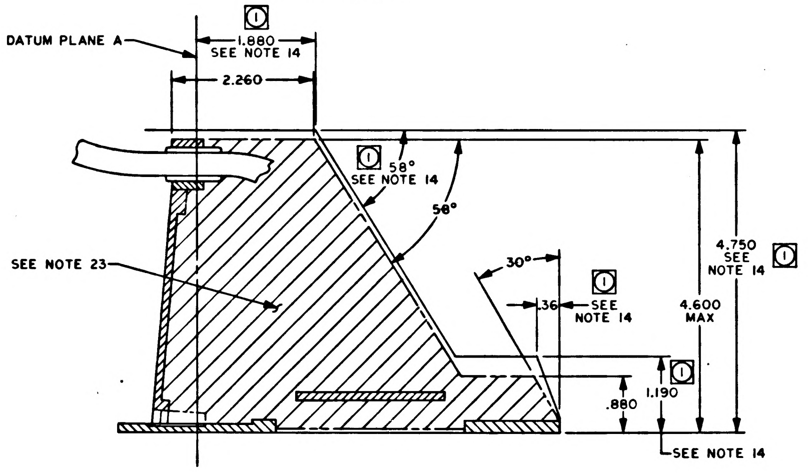


PARTIAL SECTION B-B
SCALE: 5/1

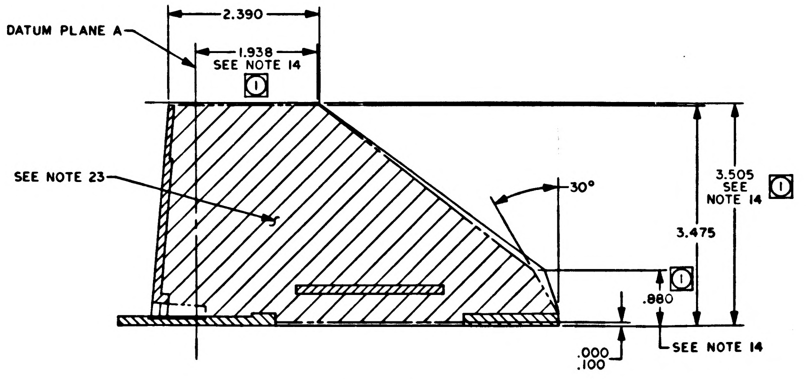



DATUM PLANE A
58° ① SEE NOTE 14
SEE NOTE 23
4.750 SEE NOTE 14 ①
4.600 MAX
30°
① .880
SEE NOTE 14

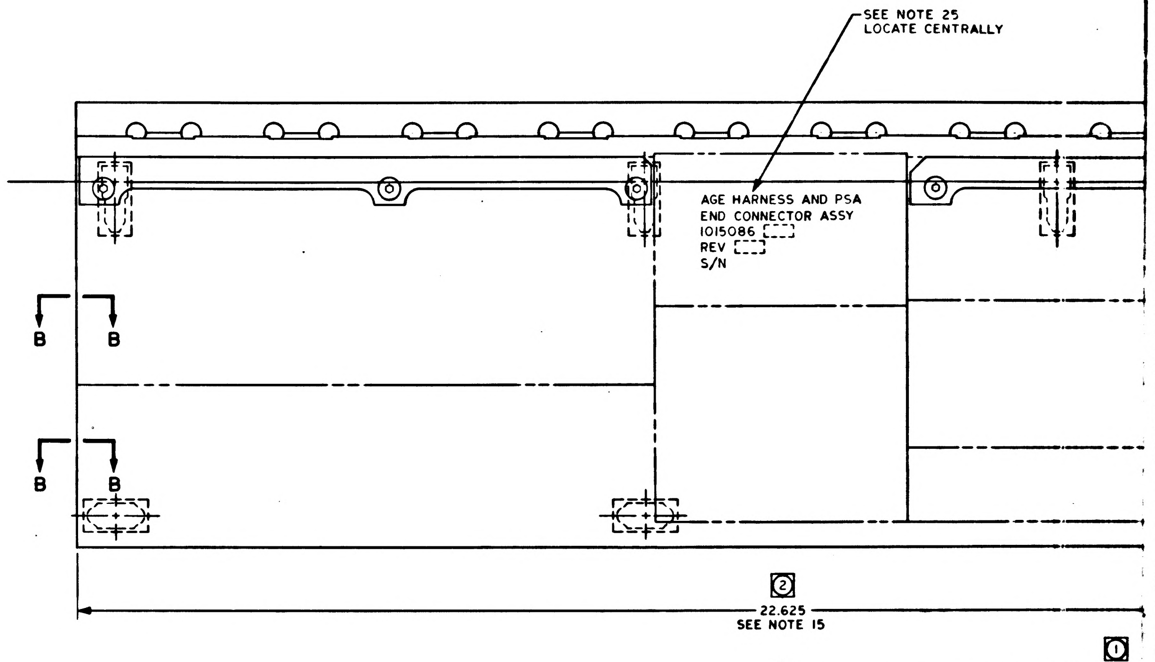
SECTION D-D

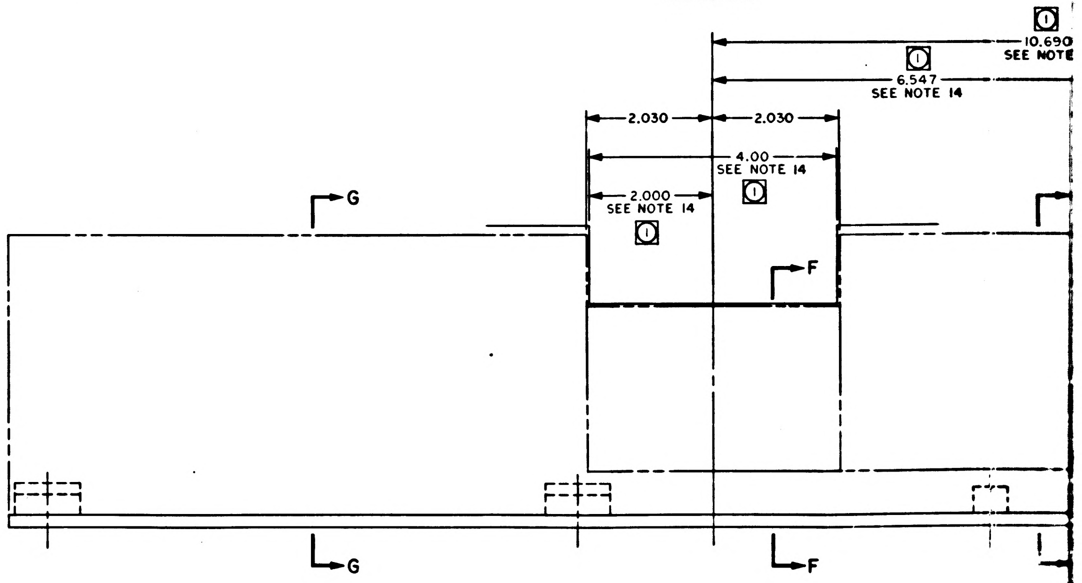

DATUM PLANE A
① 1.880 SEE NOTE 14
2.260
① 58° SEE NOTE 14
58°
SEE NOTE 23
30°
.36
① SEE NOTE 14
4.750 SEE NOTE 14 ①
4.600 MAX
① 1.190
.880
SEE NOTE 14

SECTION E-E


2.390
DATUM PLANE A
1.938 SEE NOTE 14 ①
SEE NOTE 23
30°
3.505 SEE NOTE 14 ①
3.475
① .880
.000 .100
SEE NOTE 14

SECTION F-F


SEE NOTE 25
LOCATE CENTRALLY
AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086
REV
S/N
B
B
B
B
② 22.625 SEE NOTE 15


① 10.690 SEE NOTE
① 6.547 SEE NOTE 14
2.030
2.030
4.00 SEE NOTE 14 ①
2.000 SEE NOTE 14 ①
G
G
F
F

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER TDRR 20527	—	11 MAY 65	DKO

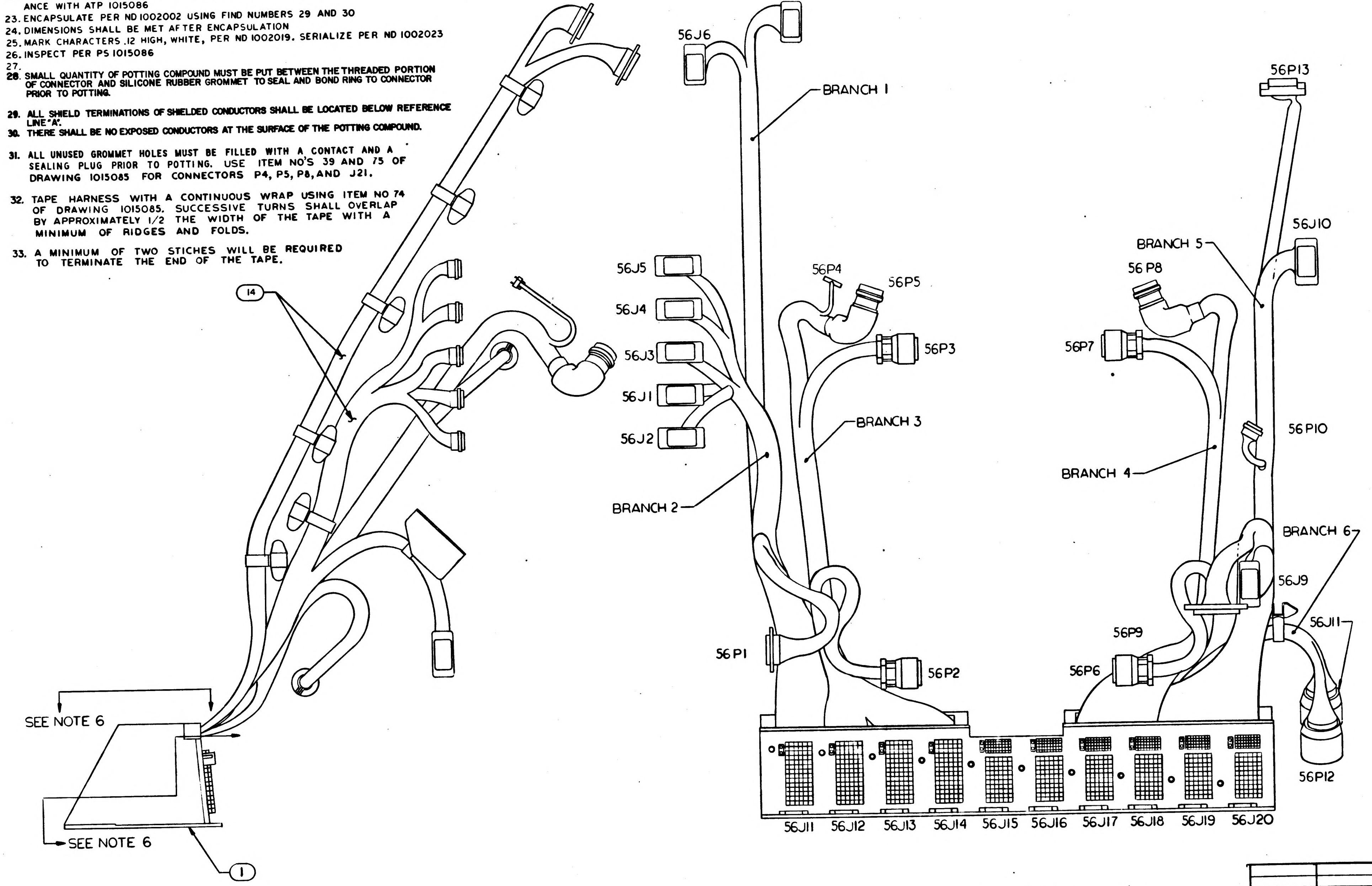
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BRANCHES 1, 2 AND 3 OF FIND NO. 14 ARE SHOWN ON SHEET 2
3. BRANCHES 4, 5 AND 6 OF FIND NO. 14 ARE SHOWN ON SHEET 3
4. GRID MODULE ON SHEETS 2 AND 3 IS 1 INCH TRUE POSITION
5. UNLESS OTHERWISE SPECIFIED, FEATURE CENTERLINES ON SHEETS 2, 3 AND 4 ARE LOCATED WITHIN ±.25. ENDS OF HOOK UP WIRES OR ACCESSORIES ARE LOCATED WITHIN .12
6. MARRIAGE CONFIGURATION OF FIND NUMBERS 1 AND 14 IS SHOWN ON SHEET 4
7. ENCAPSULATION ENVELOPE IS SHOWN ON SHEET 5
8. TERMINATION NUMBERS AND TOLERANCE CHART ARE LISTED IN CONDUCTOR CHART OF FIND NO. 14
9. INTERCONNECTION DIAGRAM OF AGE C/M, LOWER EQUIPMENT BAY, IS 1015090
10. WELD PER ND 1002225
11. CRIMP PER ND 1002206
12. LACE HARNESS PER ND 1002032
13. ALL WIRING SHALL BE BELOW THE SURFACE OF THE ENCAPSULATING MATERIAL
① 14. DIMENSION OR CHARACTERISTIC IS CONTROLLED BY ICDMH01-01203-116
② 15. ICDMH01-01203-116 ENVELOPE DIMENSIONS ARE 7.000 AND 22.690 RESPECTIVELY; ACTUAL VALUES MAY BE LESS. ENCAPSULATION SHALL BE FLUSH TO .015 LESS THAN THE ENVELOPE DEFINED BY THE ACTUAL LENGTH AND WIDTH OF THE END CONNECTOR ASSEMBLY
16. CHICAGO STITCH AT APPROXIMATELY 1 INCH INTERVALS USING FIND NUMBERS 24 AND 25. WIRES FROM THE DIFFERENT HARNESS BRANCHES MERGING INTO THE SAME WIRE HARNESS CLAMP CHANNEL GROUP SHALL BE BLENDED TOGETHER WHEN CHICAGO STITCHING IS PERFORMED
17. APPLY EPOXY PER ND 1002187 TYPE II USING FIND NUMBERS 26 AND 27. TO SEAL JUNCTION OF CONNECTOR FLANGES AND BOTTOM PLATE.
18. ENCAPSULATE BACK OF CONNECTOR PER ND 1002236 USING FIND NO. 28
19. MARK FIND NO. 13 WITH REFERENCE DESIGNATION AS SHOWN, .12 HIGH, BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE
20. SECURE FIND NO. 13 TO FIND NO. 14 USING FIND NUMBERS 24 AND 25
21. SELECT NOTED FIND NUMBERS IN ACCORDANCE WITH ATP REQUIREMENTS AT ENCAPSULATION PHASE OF END CONNECTOR BUILD UP
22. ASSEMBLE, TEST AND ENCAPSULATE, USING FIND NO. 28 PER ND 1002236, IN ACCORDANCE WITH ATP 1015086
23. ENCAPSULATE PER ND 1002002 USING FIND NUMBERS 29 AND 30
24. DIMENSIONS SHALL BE MET AFTER ENCAPSULATION
25. MARK CHARACTERS .12 HIGH, WHITE, PER ND 1002019. SERIALIZE PER ND 1002023
26. INSPECT PER PS 1015086
27.
28. **SMALL QUANTITY OF POTTING COMPOUND MUST BE PUT BETWEEN THE THREADED PORTION OF CONNECTOR AND SILICONE RUBBER GROMMET TO SEAL AND BOND RING TO CONNECTOR PRIOR TO POTTING.**

29. **ALL SHIELD TERMINATIONS OF SHIELDED CONDUCTORS SHALL BE LOCATED BELOW REFERENCE LINE "A".**
30. **THERE SHALL BE NO EXPOSED CONDUCTORS AT THE SURFACE OF THE POTTING COMPOUND.**

31. ALL UNUSED GROMMET HOLES MUST BE FILLED WITH A CONTACT AND A SEALING PLUG PRIOR TO POTTING. USE ITEM NO'S 39 AND 75 OF DRAWING 1015085 FOR CONNECTORS P4, P5, P8, AND J21.

32. TAPE HARNESS WITH A CONTINUOUS WRAP USING ITEM NO 74 OF DRAWING 1015085. SUCCESSIVE TURNS SHALL OVERLAP BY APPROXIMATELY 1/2 THE WIDTH OF THE TAPE WITH A MINIMUM OF RIDGES AND FOLDS.

33. A MINIMUM OF TWO STICHES WILL BE REQUIRED TO TERMINATE THE END OF THE TAPE.



Ⓔ REPLACES REV D WITH CHANGE

031	021	011	000	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
			☒		REF	1015087	INTERCONNECTION LIST
			1		33	MS35650-104	NUT, PLAIN HEX
			4		32	MS35649-44	NUT, PLAIN HEX
			4		31	1010618-15	SCREW, BUTTON HEAD
			AR		30	1010798-2	ACTIVATOR
			AR		29	1010798-1	RESIN
			AR		28	1012503	COMPOUND, POTTING, ~~POL~~YURETHANE
			AR		27	1010679	ADHESIVE ACTIVATOR
			AR		26	1010661	EPOXY RESIN
			AR		25	1012507-004	LACING TAPE
			AR		24	1012507-002	LACING TAPE
			1		23	MS35338-081	WASHER, LOCK
			6		22	1006783-47	SCREW, BUTTON HEAD
			1		21	1010705-8	CLAMP
			1		20	1010705-6	CLAMP
			1		19	1010400-8	CLAMP, LOOP, HINGED
			1		18	1010400-7	CLAMP, LOOP, HINGED
			3		17	1010400-3	CLAMP, LOOP, HINGED
			1		16	1010400-2	CLAMP, LOOP, HINGED
			5		15	1010400-1	CLAMP, LOOP, HINGED
			1		14	1015085	WIRING HARNESS "A"
			21		13	1010811-002	BAND, IDENTIFICATION
			1		12	1021253-8	SPACER
			1		11	1021253-7	SPACER
			2		10	1021253-6	SPACER
			2		9	1021253-5	SPACER
			1		8	1021253-4	SPACER
			1		7	1021253-3	SPACER
			2		6	1021253-2	SPACER
			2		5	1021253-1	SPACER
			1		4	1014609	BRACKET, CLAMP
			1		3	1008165	CABLE CLAMP, RIGHT
			1		2	1008164	CABLE CLAMP, LEFT
			1		1	1007599-011	END CONNECTOR ASSY, PSA
QUANTITY REQUIRED						LIST OF MATERIALS	

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

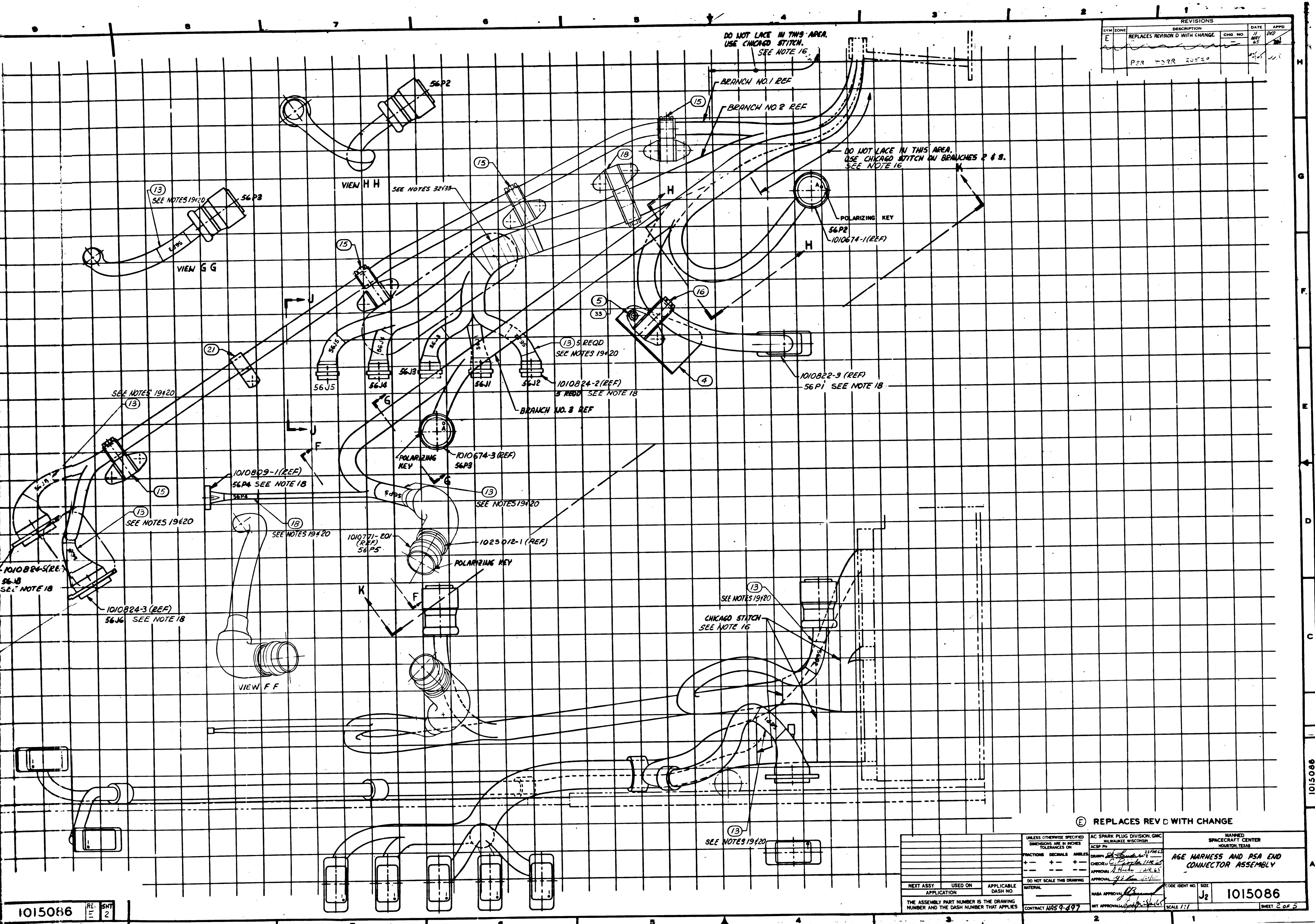
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Fiside DATE 23 FEB 65
CHECKED 1 APR 65
APPROVAL A Hicks APR 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE E
1015086
SCALE 1:2
SHEET 1 OF 5

			REVISIONS			
SYM	ZONE	DESCRIPTION		CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE		—	11 MAY 65	DKD
		PER TDRR 20520				



DO NOT LACE IN THIS AREA. USE CHICAGO STITCH. SEE NOTE 16
BRANCH NO. 1 REF
BRANCH NO. 2 REF
DO NOT LACE IN THIS AREA. USE CHICAGO STITCH ON BRANCHES 2 & 3. SEE NOTE 16
K
H
POLARIZING KEY
56P2
1010674-1 (REF)
56P2
VIEW H H
SEE NOTES 32 & 33
13
SEE NOTES 19 & 20
56P3
VIEW G G
15
18
21
J
5
33
16
4
13 5 REQD
SEE NOTES 19 & 20
56J5
56J4
56J3
56J1
56J2
1010824-2 (REF)
5 REQD SEE NOTE 18
1010822-9 (REF)
56P1 SEE NOTE 18
BRANCH NO. 3 REF
G
SEE NOTES 19 & 20
1010809-1 (REF)
56P4 SEE NOTE 18
56P4
F
POLARIZING KEY
1010674-3 (REF)
56P3
SEE NOTES 19 & 20
1010824-5 (REF)
56J8
SEE NOTE 18
1010824-3 (REF)
56J6 SEE NOTE 18
1010771-201 (REF) 56P5
1023012-1 (REF)
POLARIZING KEY
VIEW F F
CHICAGO STITCH SEE NOTE 16
SEE NOTES 19 & 20

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 23 FEB 65
CHECKED C. Pizzola 1 APR 65
APPROVAL S. Hicks 1 APR 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

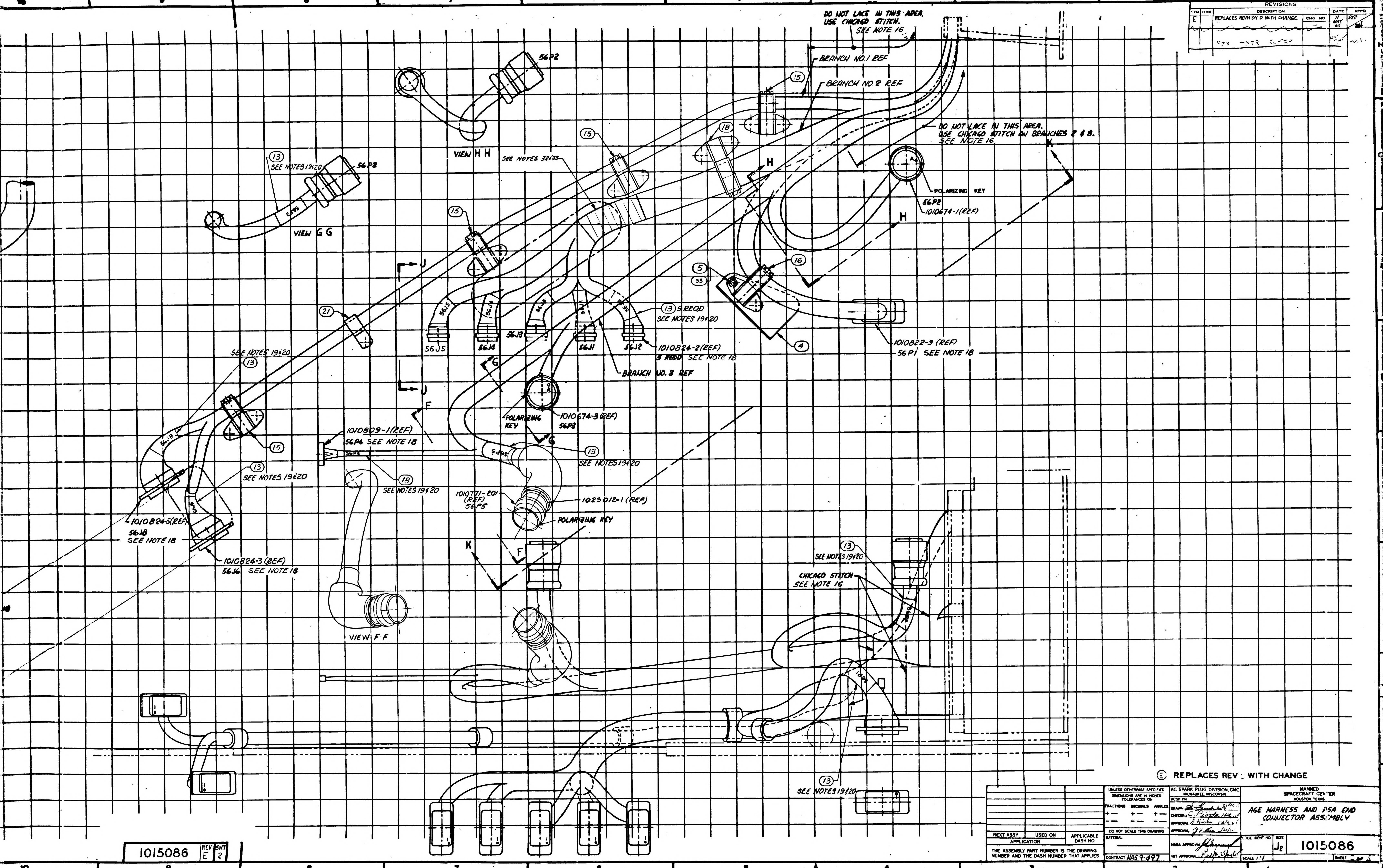
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE J2
1015086
SCALE 1:1
SHEET 2 OF 5

1015086 REV E SHT 2

F-3


DO NOT LACE IN THIS AREA. USE CHICAGO STITCH. SEE NOTE 16
BRANCH NO. 1 REF
BRANCH NO. 2 REF
15
18
56P2
VIEW H H
SEE NOTES 32 & 33
13
SEE NOTES 19 & 20
56P3
VIEW G G
DO NOT LACE IN THIS AREA. USE CHICAGO STITCH ON BRANCHES 2 & 3. SEE NOTE 16
K
H
POLARIZING KEY
56P2
1010674-1 (REF)
H
J
5
33
16
21
56J5
56J4
56J3
56J1
56J2
13 5 REQD
SEE NOTES 19 & 20
1010824-2 (REF)
5 REQD SEE NOTE 18
4
1010822-3 (REF)
56P1 SEE NOTE 18
BRANCH NO. 3 REF
G
SEE NOTES 19 & 20
13
J
F
POLARIZING KEY
1010674-3 (REF)
56P3
1010809-1 (REF)
56P4 SEE NOTE 18
56P4
56J8
15
13
SEE NOTES 19 & 20
G
13
SEE NOTES 19 & 20
18
SEE NOTES 19 & 20
1010771-201 (REF)
56P5
1023012-1 (REF)
POLARIZING KEY
1010824-5 (REF)
56J8
SEE NOTE 18
1010824-3 (REF)
56J6 SEE NOTE 18
K
F
13
SEE NOTES 19 & 20
CHICAGO STITCH
SEE NOTE 16
VIEW F F
13
SEE NOTES 19 & 20

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		REPLACES REVISION D WITH CHANGE	—	11 MAY 65	DKD

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

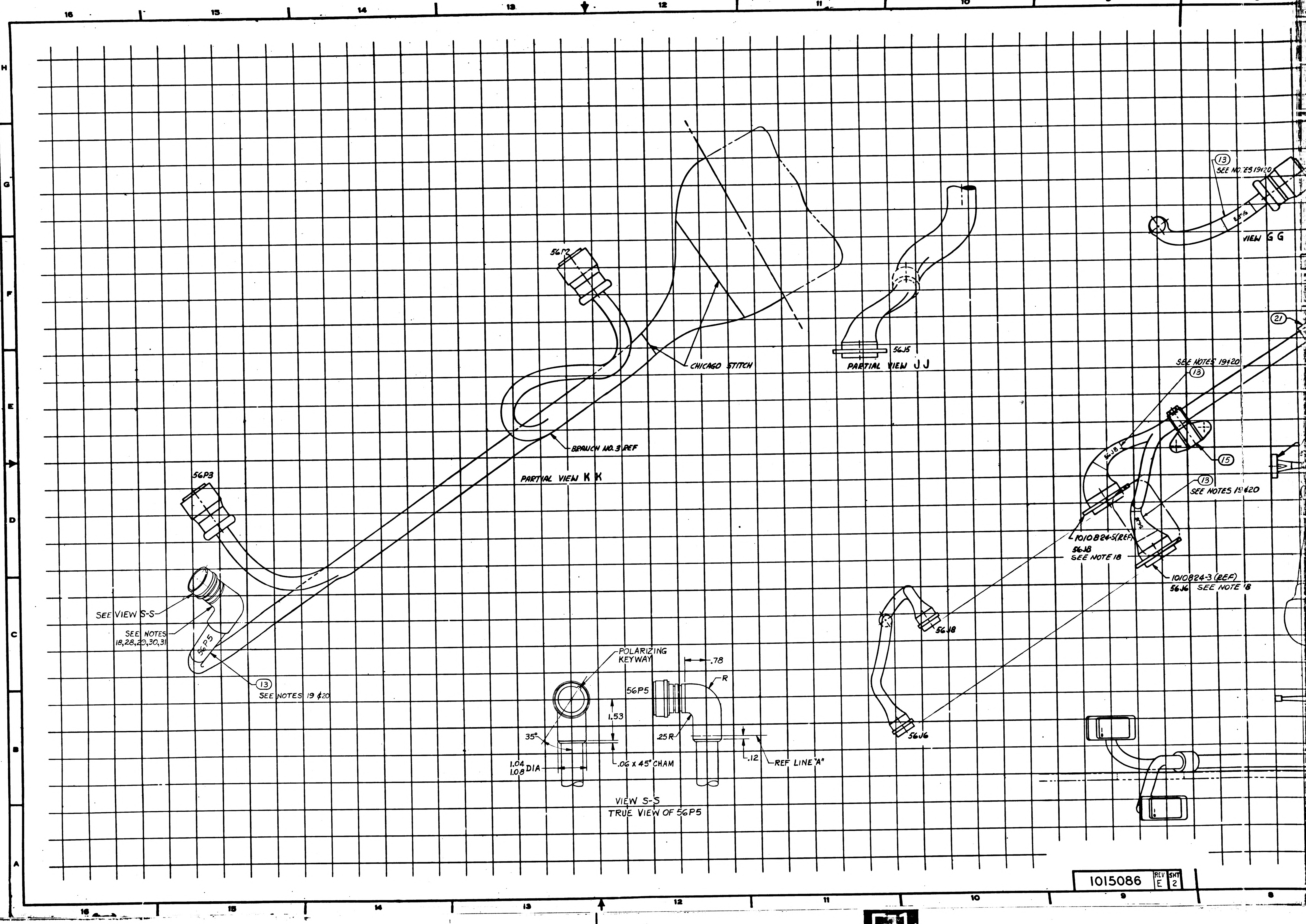
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 23 FEB
CHECKED C. Pizzola 1 APR
APPROVAL D. Hicks 1 APR 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

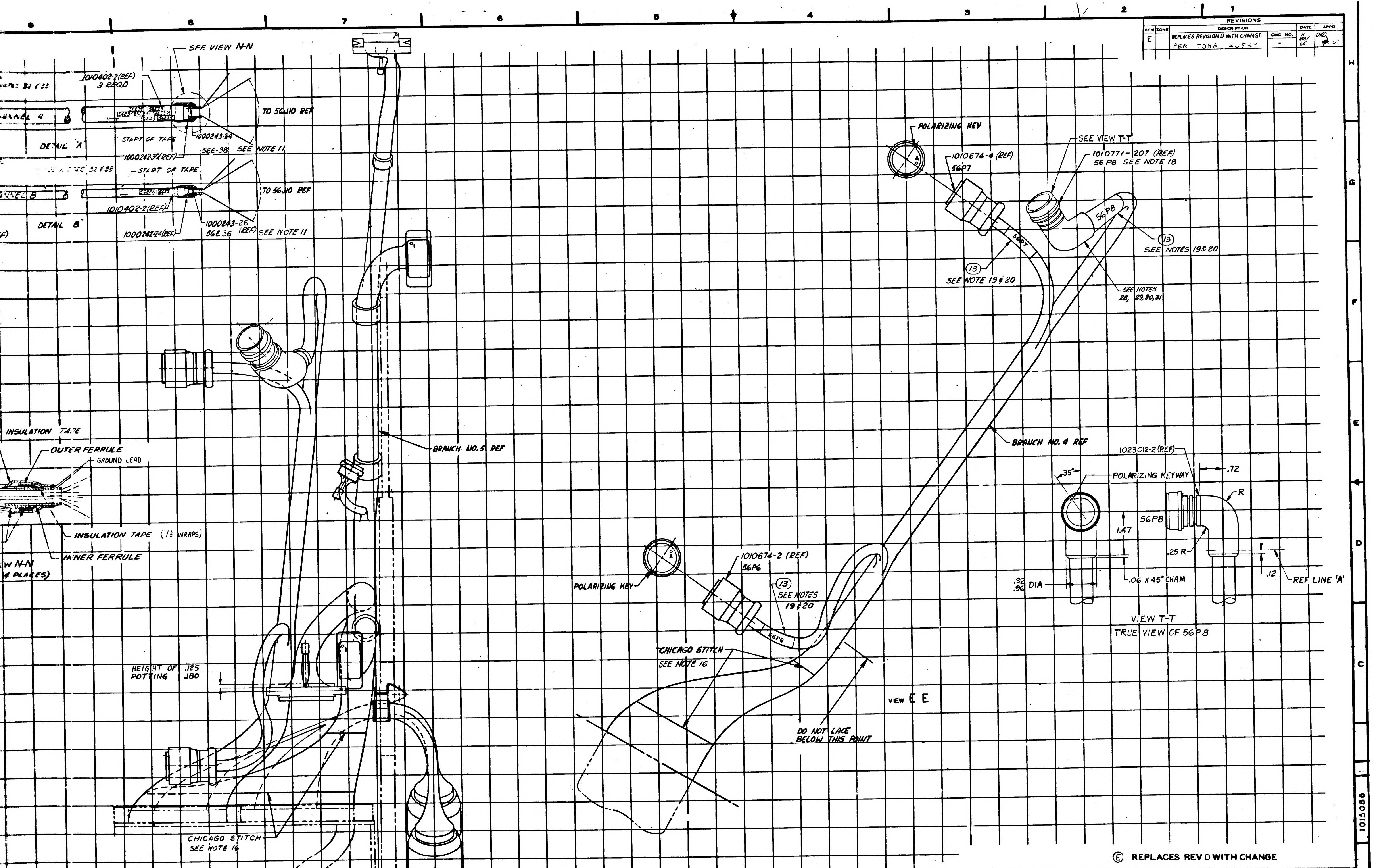
CODE IDENT NO.
SIZE J2
1015086
SCALE 1:1
SHEET 2

1015086 REV E SHT 2


16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
56P2
CHICAGO STITCH
BRANCH NO. 3 REF
PARTIAL VIEW K K
56J5
PARTIAL VIEW J J
13
SEE NOTES 19&20
VIEW G G
21
SEE NOTES 19&20
13
56J8
15
13
SEE NOTES 19&20
1010824-5(REF)
56J8
SEE NOTE 18
1010824-3 (REF)
56J6 SEE NOTE 18
56P3
SEE VIEW S-S
SEE NOTES
18,28,29,30,31
56P5
13
SEE NOTES 19 &20
POLARIZING
KEYWAY
.78
R
56P5
1.53
35°
.25R
1.04
1.08 DIA
.06 X 45° CHAM
.12
REF LINE "A"
VIEW S-S
TRUE VIEW OF 56P5
56J8
56J6

1015086	REV E	SHT 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER TDRR 20527	-	11 MAY 65	DKD



SEE VIEW N-N
1010402-2(REF)
3 REQD
NOTES 32 & 33
CHANNEL A
TO 56J10 REF
DETAIL "A"
START OF TAPE
1000243-34
1000242-30(REF)
56E-38
SEE NOTE 11
NOTES 32 & 33
START OF TAPE
CHANNEL B
TO 56J10 REF
1010402-2(REF)
DETAIL "B"
1000243-26 (REF)
1000242-24(REF)
56E 36
SEE NOTE 11
INSULATION TAPE
OUTER FERRULE
GROUND LEAD
INSULATION TAPE (1½ WRAPS)
INNER FERRULE
VIEW N-N
(4 PLACES)
BRANCH NO. 5 REF
HEIGHT OF POTTING .125 .180
CHICAGO STITCH
SEE NOTE 16
POLARIZING KEY
1010674-4 (REF)
56P7
SEE VIEW T-T
1010771-207 (REF)
56 P8 SEE NOTE 18
56P8
56P7
13
SEE NOTES 19 & 20
13
SEE NOTE 19 & 20
SEE NOTES 28, 29, 30, 31
BRANCH NO. 4 REF
1023012-2 (REF)
35°
POLARIZING KEYWAY
.72
R
56P8
1.47
.25 R
.12
REF LINE 'A'
.92 .96 DIA
.06 x 45° CHAM
VIEW T-T
TRUE VIEW OF 56P8
1010674-2 (REF)
56P6
13
SEE NOTES 19 & 20
POLARIZING KEY
56P6
CHICAGO STITCH
SEE NOTE 16
VIEW E E
DO NOT LACE BELOW THIS POINT

Ⓔ REPLACES REV D WITH CHANGE

		-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±2° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN
NEXT ASSY	USED ON	APPLICABLE DASH NO.	MATERIAL —	DRAWN 23 FEB 65 CHECKED 1 APR 65 APPROVAL G Huck 1 APR 65 APPROVAL
APPLICATION			CONTRACT NAS 9-497	NASA APPROVAL MIT APPROVAL
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES				

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO. | SIZE J | 1015086
SCALE 1:1 | SHEET 3 OF 5

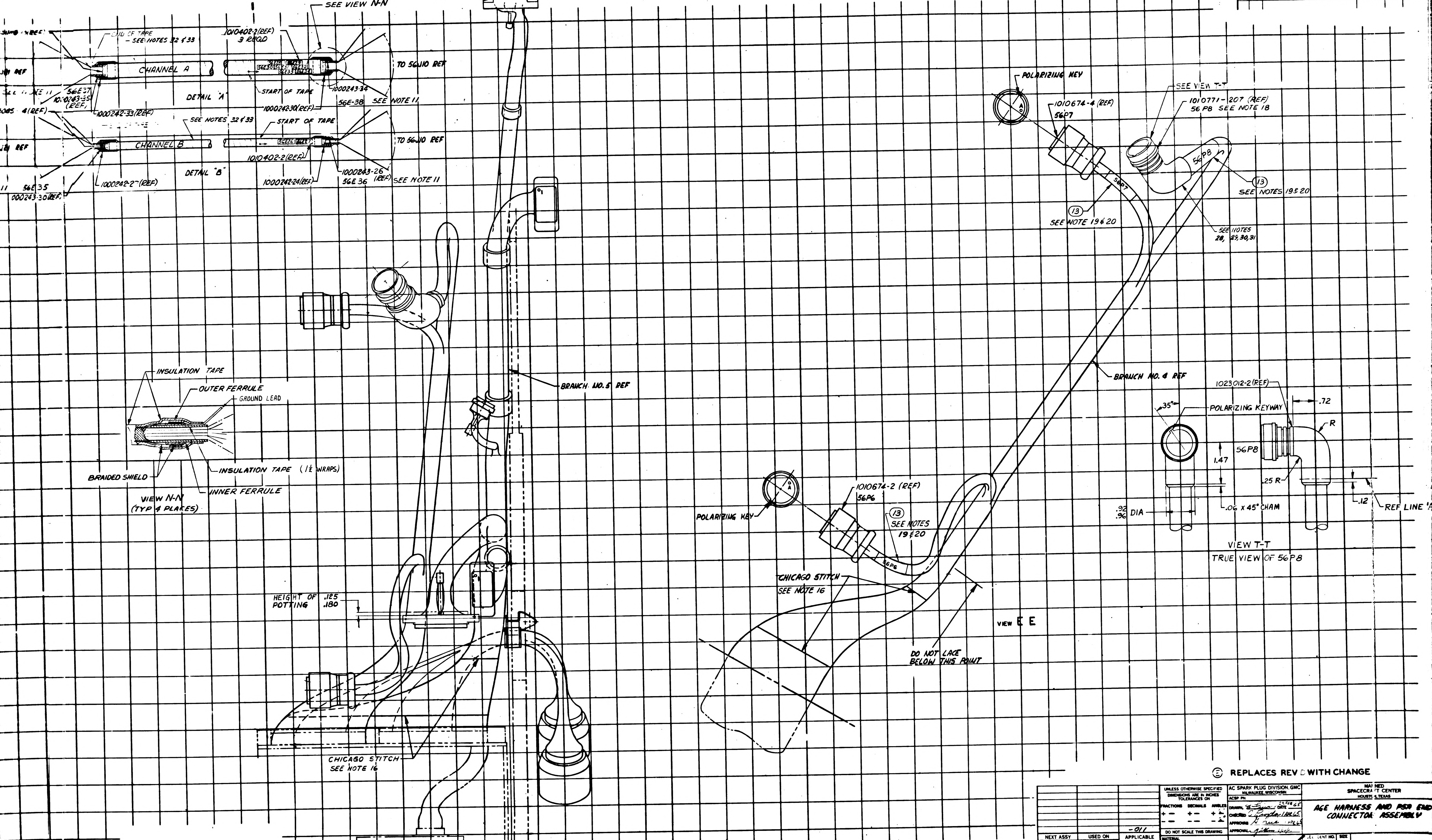
1015086 E SHT 3

1015086

3H

E3

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPR
E		REPLACES REVISION D WITH CHANGE PER [illegible]	–	11 MAY 65	[illegible]


SEE VIEW N-N
END OF TAPE - SEE NOTES 32 & 33
1010402-2 (REF) 3 REQD
CHANNEL A
TO 56J10 REF
1000243-34
START OF TAPE
DETAIL "A"
56E37
1000243-35 (REF)
1000242-33 (REF)
1000242-30 (REF)
56E-38
SEE NOTE 11
4 (REF)
SEE NOTES 32 & 33
START OF TAPE
CHANNEL B
TO 56J10 REF
1010402-2 (REF)
DETAIL "B"
1000243-26 (REF)
56E36
SEE NOTE 11
1000242-2 (REF)
1000242-24 (REF)
56E35
1000243-30 (REF)
56E26
56E30
56E31
56E32
56E33
POLARIZING KEY
1010674-4 (REF)
56P7
SEE VIEW T-T
1010771-207 (REF)
56P8 SEE NOTE 18
56P7
56P8
13
SEE NOTES 19 & 20
13
SEE NOTE 19 & 20
SEE NOTES 28, 25, 30, 31
INSULATION TAPE
OUTER FERRULE
GROUND LEAD
INSULATION TAPE (1½ WRAPS)
BRAIDED SHIELD
INNER FERRULE
VIEW N-N
(TYP 4 PLACES)
BRANCH NO. 5 REF
BRANCH NO. 4 REF
1023012-2 (REF)
35°
POLARIZING KEYWAY
.72
R
56P8
1.47
.25 R
.12
REF LINE "A"
.92
.96 DIA
.06 x 45° CHAM
VIEW T-T
TRUE VIEW OF 56P8
POLARIZING KEY
1010674-2 (REF)
56P6
13
SEE NOTES 19 & 20
56P6
CHICAGO STITCH
SEE NOTE 16
HEIGHT OF POTTING .125 .180
VIEW E E
DO NOT LACE BELOW THIS POINT
CHICAGO STITCH
SEE NOTE 16

Ⓔ REPLACES REV D WITH CHANGE

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

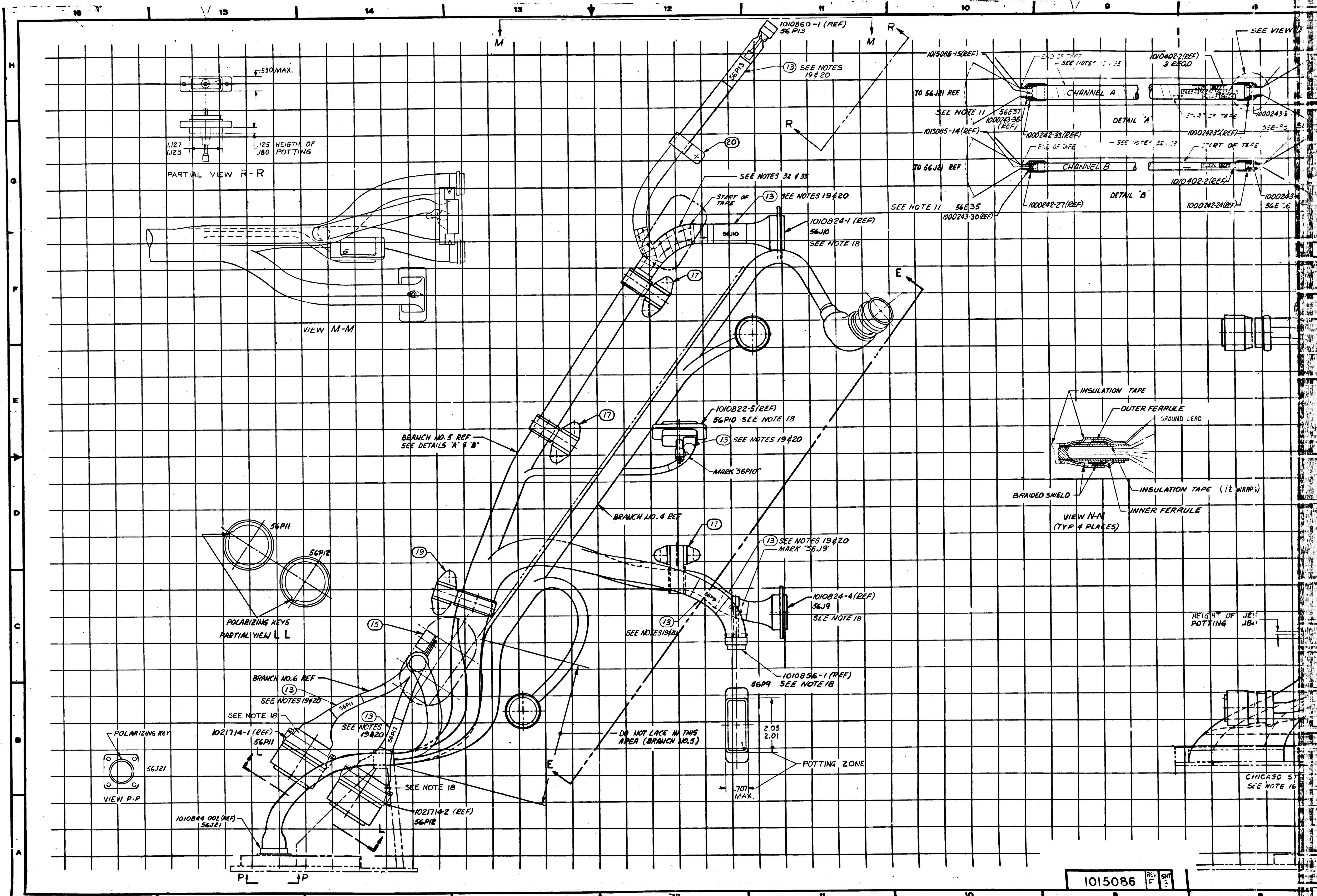
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 23 FEB 65
CHECKED C. Propla 1 APR 65
APPROVAL [illegible] 1 APR 65
APPROVAL [illegible]
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE J
1015086
SCALE 1:1

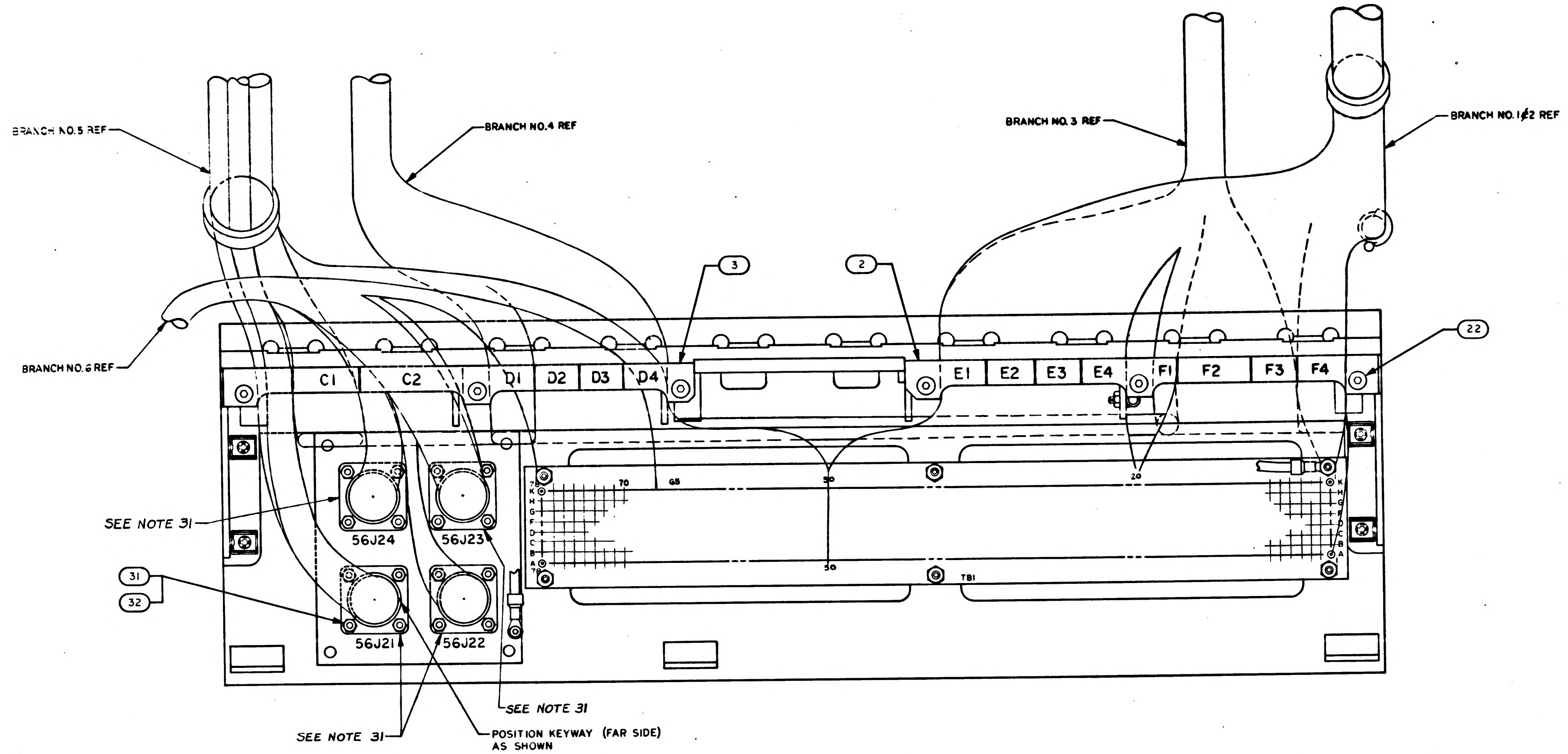
1015086 REV E SHT 3



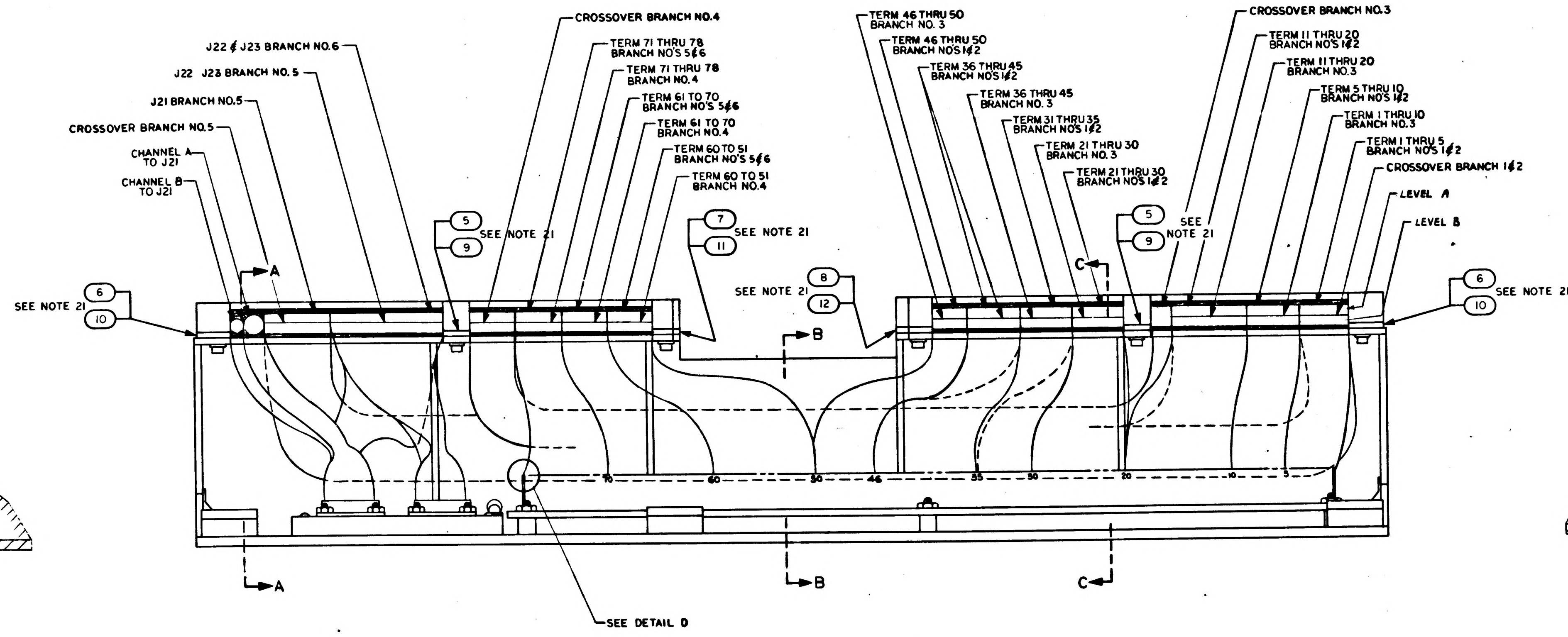
PARTIAL VIEW R-R
.530 MAX.
1.127
1.123
.125 HEIGTH OF
.180 POTTING
VIEW M-M
M
R
1010860-1 (REF)
56P13
(13) SEE NOTES 19 & 20
(20)
SEE NOTES 32 & 33
START OF TAPE
(13) SEE NOTES 19 & 20
1010824-1 (REF)
56J10
SEE NOTE 18
(17)
E
1015085-15(REF)
END OF TAPE
SEE NOTES 32 & 33
1010402-2 (REF)
3 REQD
TO 56J21 REF
CHANNEL A
SEE NOTE 11
56E37
1000243-36 (REF)
1000242-33(REF)
DETAIL "A"
START OF TAPE
1000243-3
1015085-14(REF)
END OF TAPE
SEE NOTES 32 & 33
START OF TAPE
TO 56J21 REF
CHANNEL B
1010402-2(REF)
SEE NOTE 11
56E35
1000243-30(REF)
1000242-27(REF)
DETAIL "B"
1000242-24(REF)
SEE VIEW
INSULATION TAPE
OUTER FERRULE
GROUND LEAD
BRAIDED SHIELD
INSULATION TAPE (1 1/2 WRAPS)
INNER FERRULE
VIEW N-N
(TYP 4 PLACES)
1010822-5(REF)
56P10 SEE NOTE 18
(13) SEE NOTES 19 & 20
MARK "56P10"
(17)
BRANCH NO. 5 REF
SEE DETAILS "A" & "B"
BRANCH NO. 4 REF
(17)
(13) SEE NOTES 19 & 20
MARK "56J9"
1010824-4(REF)
56J9
SEE NOTE 18
(13)
SEE NOTES 19 & 20
1010856-1 (REF)
56P9 SEE NOTE 18
56P11
56P12
POLARIZING KEYS
PARTIAL VIEW L L
(19)
(15)
BRANCH NO. 6 REF
(13)
SEE NOTES 19 & 20
SEE NOTE 18
1021714-1 (REF)
56P11
(13)
SEE NOTES 19 & 20
SEE NOTE 18
1021714-2 (REF)
56P12
L
DO NOT LACE IN THIS AREA (BRANCH NO. 5)
2.05
2.01
POTTING ZONE
.707 MAX.
HEIGHT OF POTTING
.125
.180
POLARIZING KEY
56J21
VIEW P-P
1010844-002 (REF)
56J21
P
CHICAGO ST
SEE NOTE 16
H G F E D C B A
16 15 14 13 12 11 10 9 8

1015086 REV F SHT 3

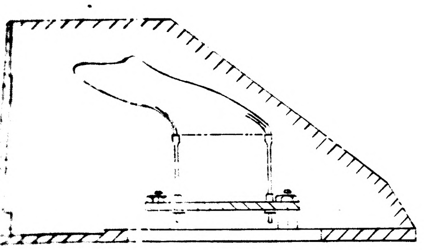
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
E	REPLACES REVISION D WITH CHANGE. TDRR 20529	11 MAY 65	

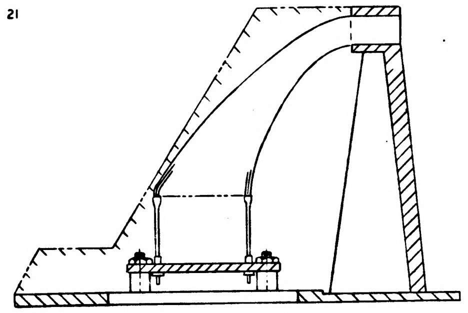


BRANCH NO.5 REF
BRANCH NO.4 REF
BRANCH NO.3 REF
BRANCH NO.1 & 2 REF
BRANCH NO.6 REF
3
2
22
C1
C2
D1
D2
D3
D4
E1
E2
E3
E4
F1
F2
F3
F4
SEE NOTE 31
31
32
56J24
56J23
56J21
56J22
TB1
70
65
50
20
SEE NOTE 31
SEE NOTE 31
POSITION KEYWAY (FAR SIDE) AS SHOWN



CROSSOVER BRANCH NO.4
J22 & J23 BRANCH NO.6
TERM 71 THRU 78 BRANCH NO'S 5 & 6
J22 J23 BRANCH NO.5
TERM 71 THRU 78 BRANCH NO.4
J21 BRANCH NO.5
TERM 61 TO 70 BRANCH NO'S 5 & 6
CROSSOVER BRANCH NO.5
TERM 61 TO 70 BRANCH NO.4
CHANNEL A TO J21
TERM 60 TO 51 BRANCH NO'S 5 & 6
CHANNEL B TO J21
TERM 60 TO 51 BRANCH NO.4
TERM 46 THRU 50 BRANCH NO. 3
TERM 46 THRU 50 BRANCH NO'S 1 & 2
TERM 36 THRU 45 BRANCH NO'S 1 & 2
TERM 36 THRU 45 BRANCH NO. 3
TERM 31 THRU 35 BRANCH NO'S 1 & 2
TERM 21 THRU 30 BRANCH NO. 3
TERM 21 THRU 30 BRANCH NO'S 1 & 2
CROSSOVER BRANCH NO.3
TERM 11 THRU 20 BRANCH NO'S 1 & 2
TERM 11 THRU 20 BRANCH NO.3
TERM 5 THRU 10 BRANCH NO'S 1 & 2
TERM 1 THRU 10 BRANCH NO.3
TERM 1 THRU 5 BRANCH NO'S 1 & 2
CROSSOVER BRANCH 1 & 2
LEVEL A
LEVEL B
5
9
SEE NOTE 21
7
11
SEE NOTE 21
SEE NOTE 21
8
12
SEE NOTE 21
6
10
5
9
SEE NOTE 21
6
10
SEE NOTE 21
A
A
B
B
C
C
70
60
50
46
35
30
20
10
5
SEE DETAIL D


SECTION B-B


SECTION C-C

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED C. Frazer 1 APR 65
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

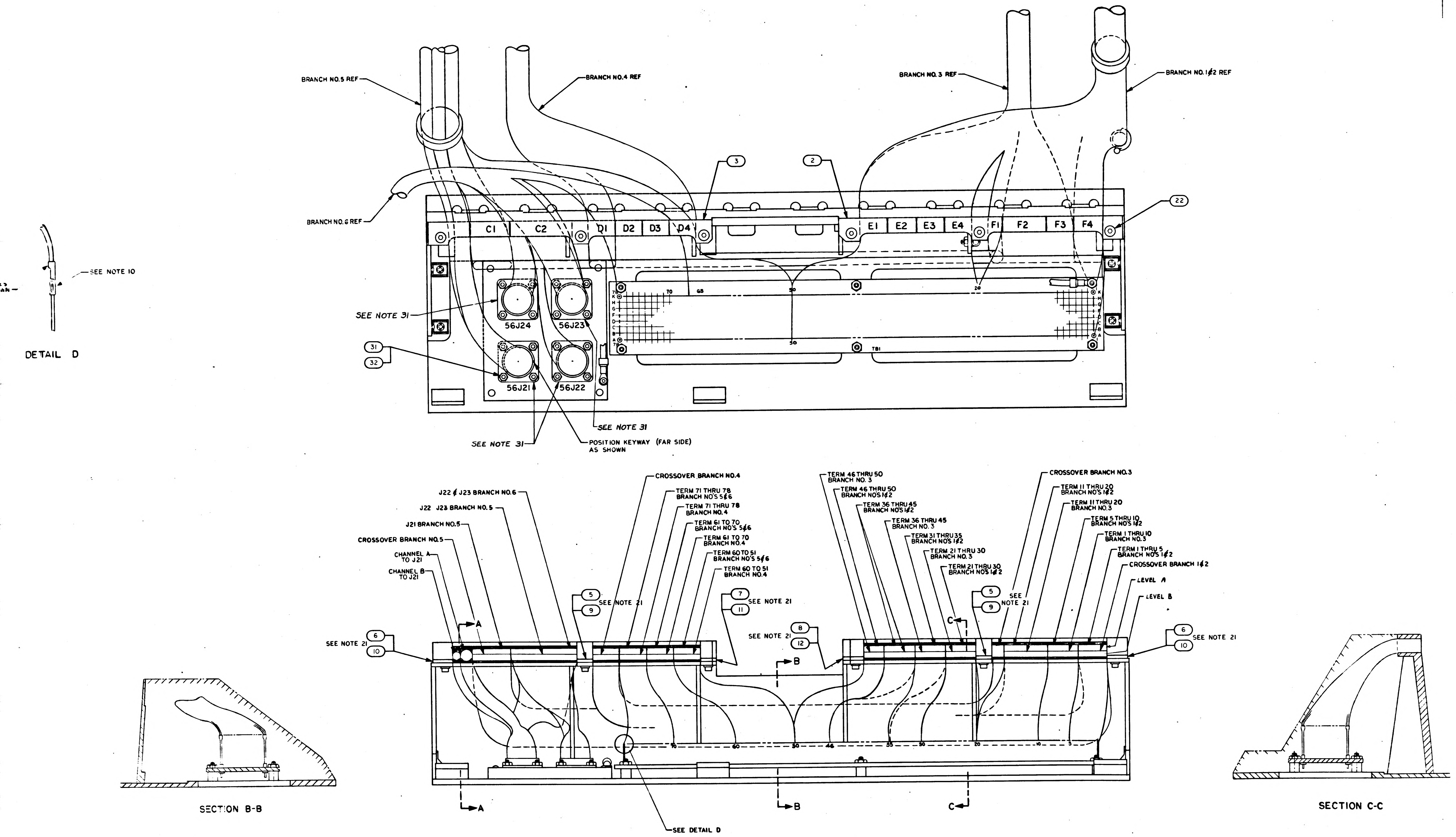
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO.
SIZE J
1015086
SCALE 1/1
SHEET 4 OF 5

1015086 E 4

F3


BRANCH NO.5 REF
BRANCH NO.4 REF
BRANCH NO.3 REF
BRANCH NO.1 & 2 REF
BRANCH NO.6 REF
3
2
22
C1
C2
D1
D2
D3
D4
E1
E2
E3
E4
F1
F2
F3
F4
SEE NOTE 31
31
32
56J24
56J23
56J21
56J22
SEE NOTE 31
SEE NOTE 31
POSITION KEYWAY (FAR SIDE) AS SHOWN
70
65
50
20
50
TB1
SEE NOTE 10
DETAIL D
J22 & J23 BRANCH NO.6
J22 J23 BRANCH NO.5
J21 BRANCH NO.5
CROSSOVER BRANCH NO.5
CHANNEL A TO J21
CHANNEL B TO J21
CROSSOVER BRANCH NO.4
TERM 71 THRU 78 BRANCH NO'S 5 & 6
TERM 71 THRU 78 BRANCH NO.4
TERM 61 TO 70 BRANCH NO'S 5 & 6
TERM 61 TO 70 BRANCH NO.4
TERM 60 TO 51 BRANCH NO'S 5 & 6
TERM 60 TO 51 BRANCH NO.4
TERM 46 THRU 50 BRANCH NO. 3
TERM 46 THRU 50 BRANCH NO'S 1 & 2
TERM 36 THRU 45 BRANCH NO'S 1 & 2
TERM 36 THRU 45 BRANCH NO. 3
TERM 31 THRU 35 BRANCH NO'S 1 & 2
TERM 21 THRU 30 BRANCH NO. 3
TERM 21 THRU 30 BRANCH NO'S 1 & 2
CROSSOVER BRANCH NO.3
TERM 11 THRU 20 BRANCH NO'S 1 & 2
TERM 11 THRU 20 BRANCH NO.3
TERM 5 THRU 10 BRANCH NO'S 1 & 2
TERM 1 THRU 10 BRANCH NO.3
TERM 1 THRU 5 BRANCH NO'S 1 & 2
CROSSOVER BRANCH 1 & 2
LEVEL A
LEVEL B
5
9
SEE NOTE 21
7
11
SEE NOTE 21
8
12
SEE NOTE 21
5
9
SEE NOTE 21
6
10
SEE NOTE 21
6
10
SEE NOTE 21
A
B
C
A
B
C
70
60
50
46
35
30
20
10
5
SEE DETAIL D
SECTION B-B
SECTION C-C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
E	REPLACES REVISION D WITH CHANGE. [illegible]	[illegible] 65	

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

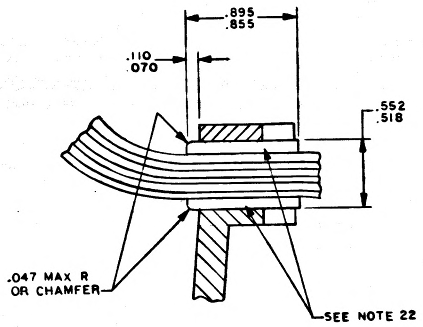
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO. SIZE J 1015086
SCALE 1/1 SHEET 4 OF 5

1015086	REV E	SHT 4

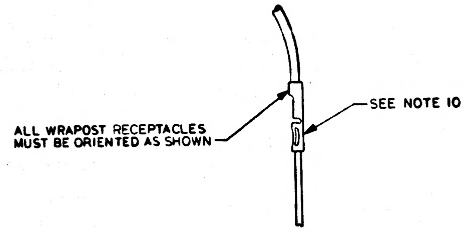
E-2



.895
.855
.110
.070
.552
.518
.047 MAX R
OR CHAMFER
SEE NOTE 22

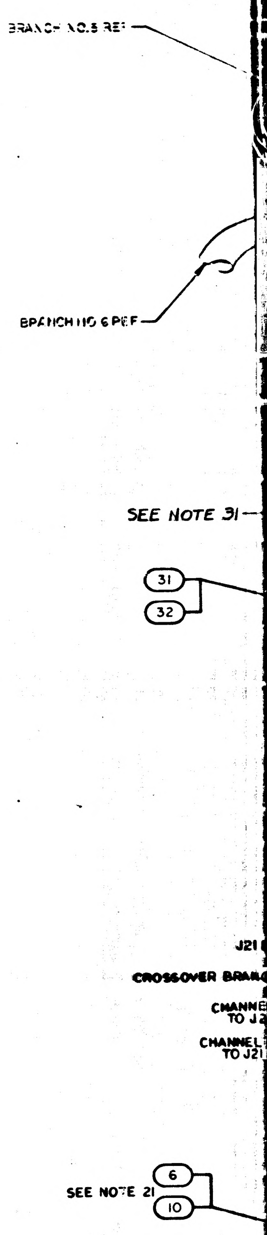
DETAIL E

SCALE: 2/1

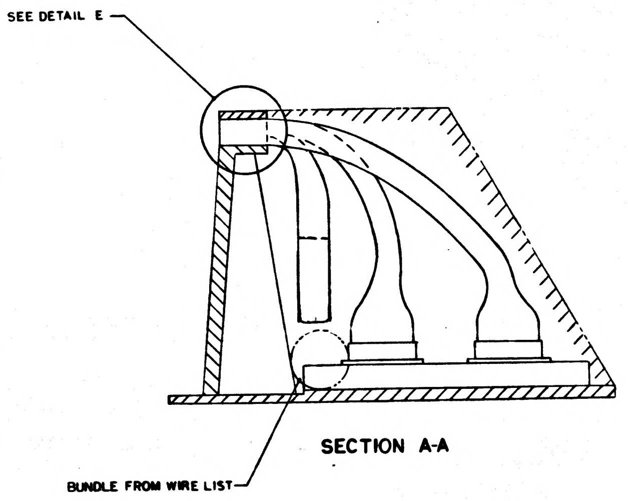


ALL WRAPOST RECEPTACLES
MUST BE ORIENTED AS SHOWN
SEE NOTE 10

DETAIL D

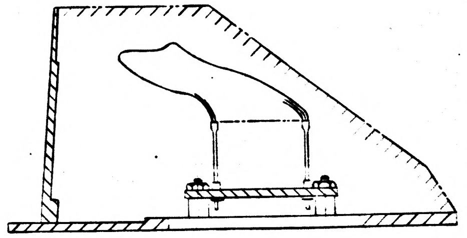


BRANCH NO.5 REF
BRANCH NO 6 REF
SEE NOTE 31
31
32
J21
CROSSOVER BRA
CHANNE
TO J2
CHANNEL
TO J21
SEE NOTE 21
6
10



SEE DETAIL E
BUNDLE FROM WIRE LIST

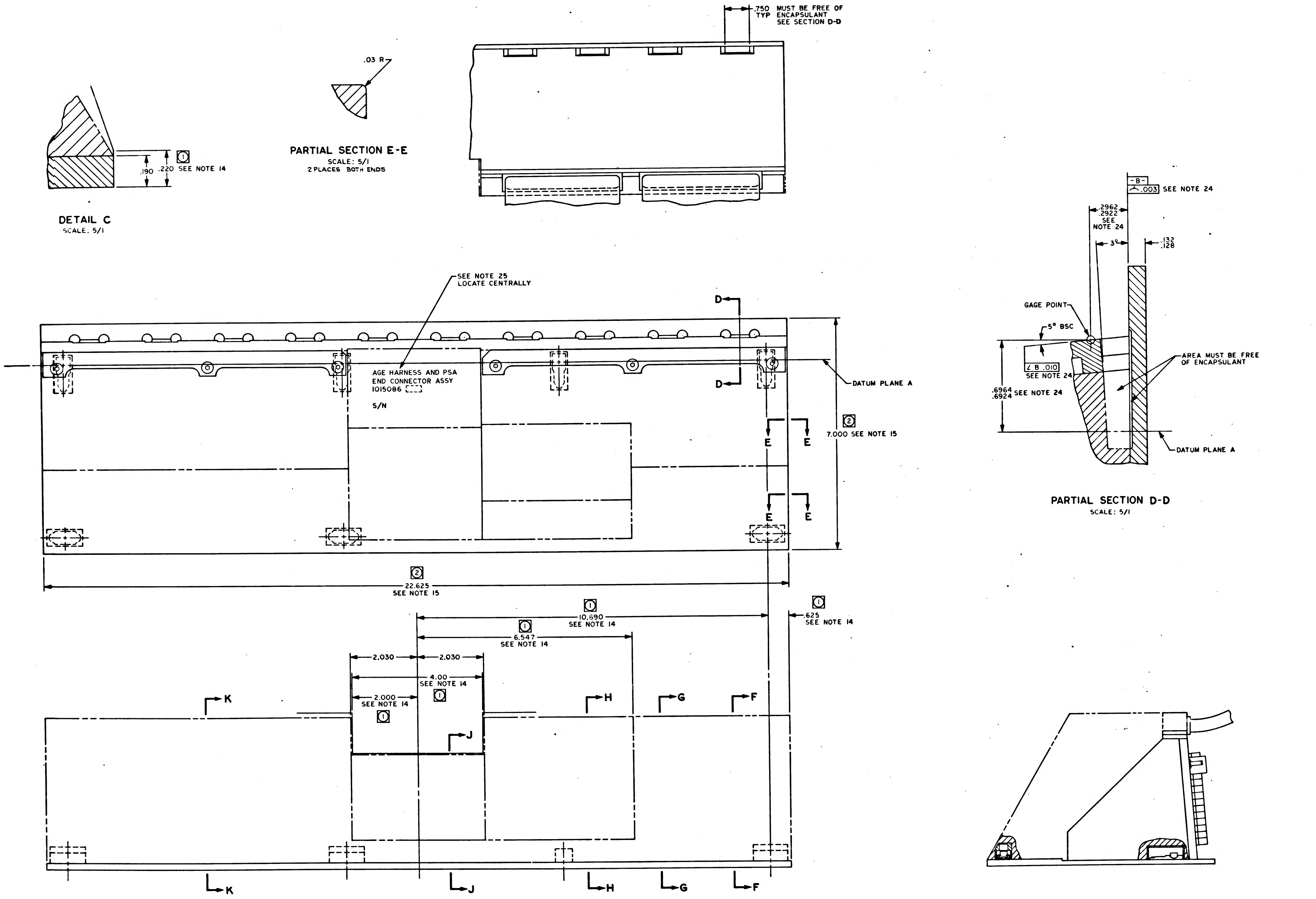
SECTION A-A



SECTION B-B

1015086 REV E SHT 4

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER TCN 2L5524	—	11 MAY 65	DKO



DETAIL C
SCALE: 5/1
.190
.220 SEE NOTE 14
1
PARTIAL SECTION E-E
SCALE: 5/1
2 PLACES BOTH ENDS
.03 R
.750 MUST BE FREE OF
TYP ENCAPSULANT
SEE SECTION D-D
SEE NOTE 25
LOCATE CENTRALLY
AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086
S/N
D
D
DATUM PLANE A
E
E
2
7.000 SEE NOTE 15
2
22.625
SEE NOTE 15
1
10.690
SEE NOTE 14
1
6.547
SEE NOTE 14
1
.625
SEE NOTE 14
2.030
2.030
4.00
SEE NOTE 14
2.000
SEE NOTE 14
K
J
H
G
F
-B-
.003 SEE NOTE 24
.2962
.2922
SEE
NOTE 24
3°
.132
.128
GAGE POINT
5° BSC
∠ B .010
SEE NOTE 24
.6964
.6924 SEE NOTE 24
AREA MUST BE FREE
OF ENCAPSULANT
DATUM PLANE A
PARTIAL SECTION D-D
SCALE: 5/1

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

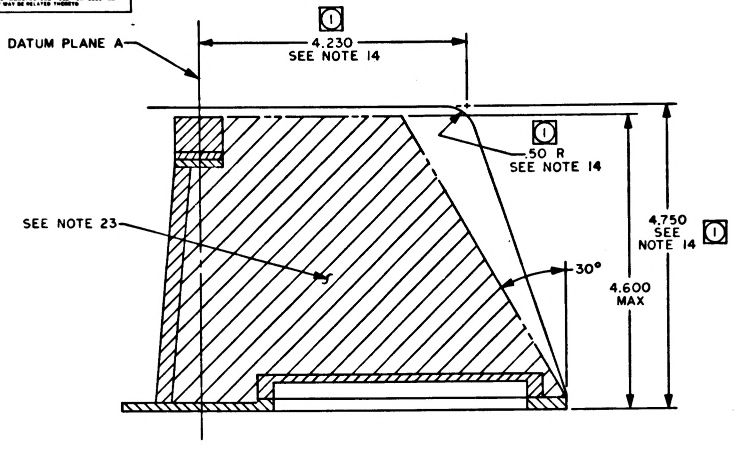
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 3 FEB 65
CHECKED 1 APR 65
APPROVAL 1 APR 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

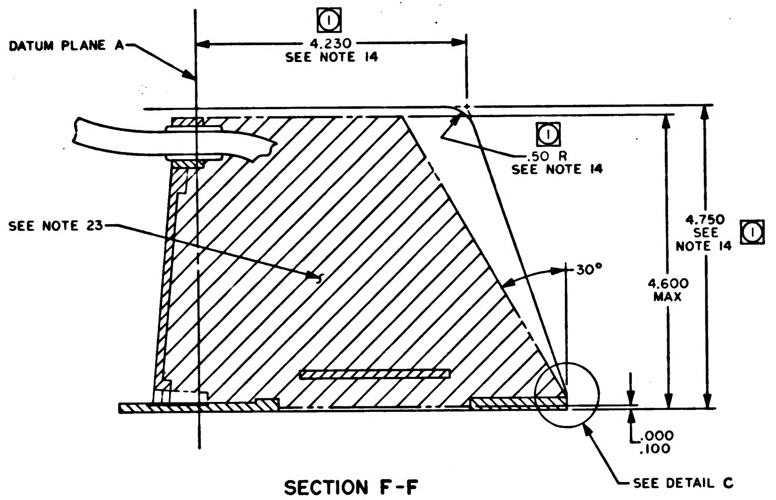
AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO.
SIZE J
1015086
SCALE 1:1
SHEET 5 OF 5

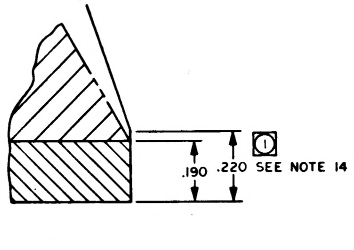
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


DATUM PLANE A
① 4.230 SEE NOTE 14
.50 R ① SEE NOTE 14
SEE NOTE 23
30°
4.750 SEE NOTE 14 ①
4.600 MAX

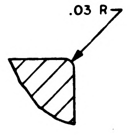
SECTION K-K


DATUM PLANE A
① 4.230 SEE NOTE 14
.50 R ① SEE NOTE 14
SEE NOTE 23
30°
4.750 SEE NOTE 14 ①
4.600 MAX
.000 .100
SEE DETAIL C

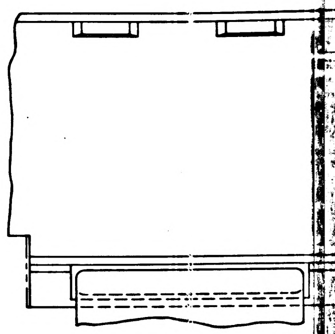
SECTION F-F

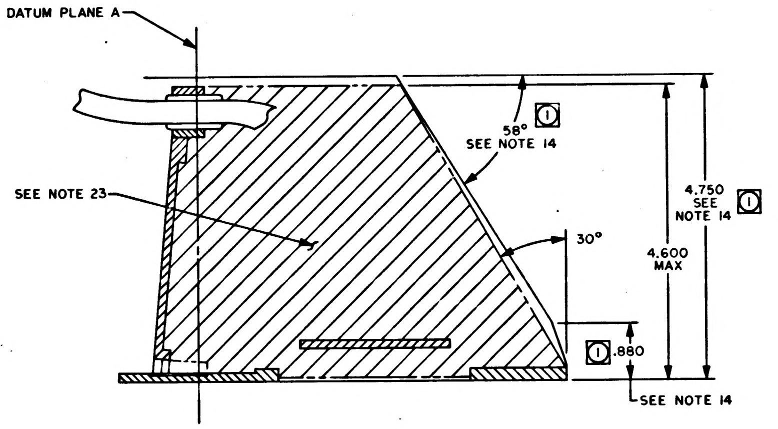

.190
.220 ① SEE NOTE 14

DETAIL C
SCALE: 5/1

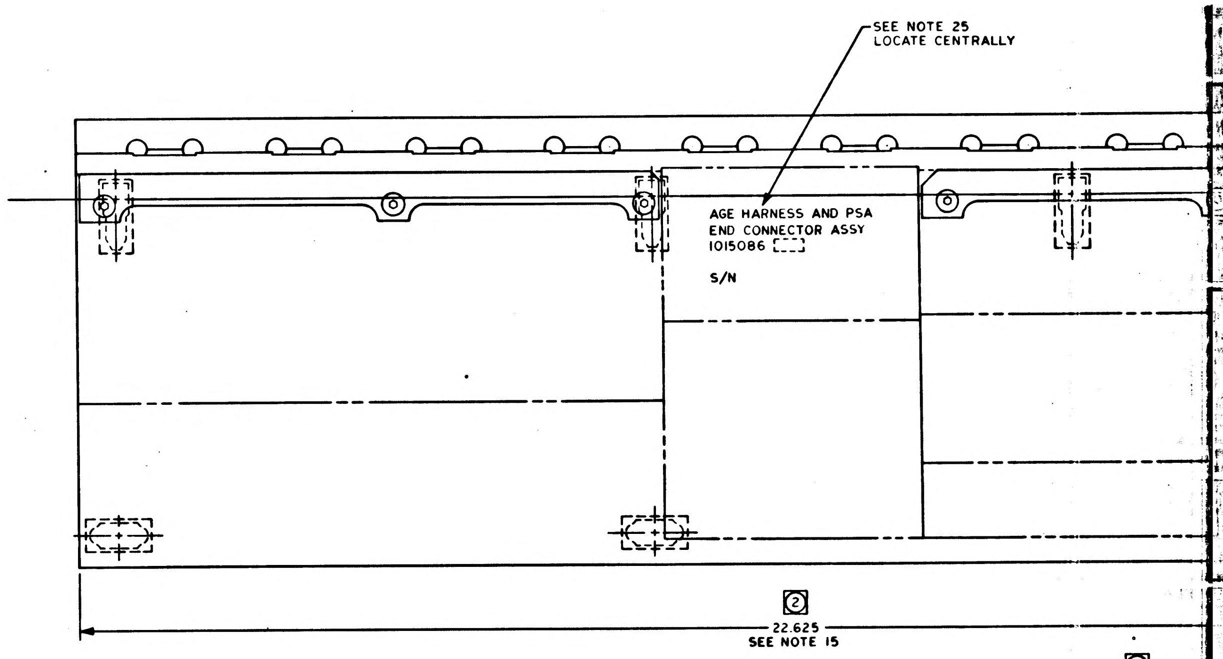


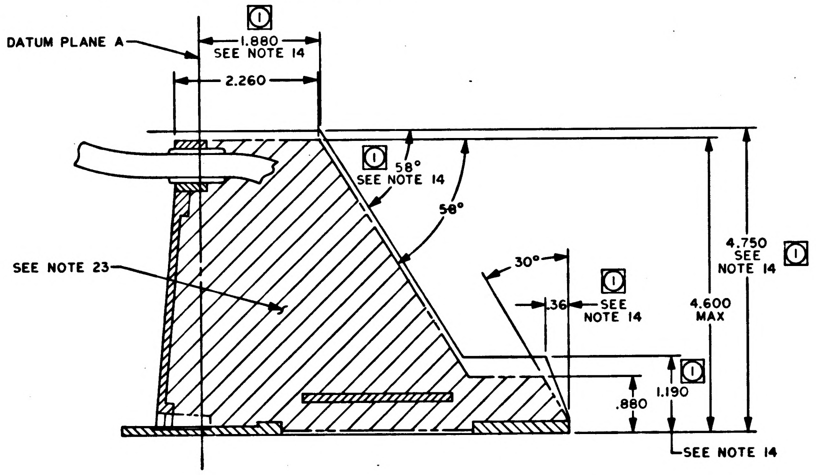
PARTIAL SECTION E-E
SCALE: 5/1
2 PLACES BOTH ENDS



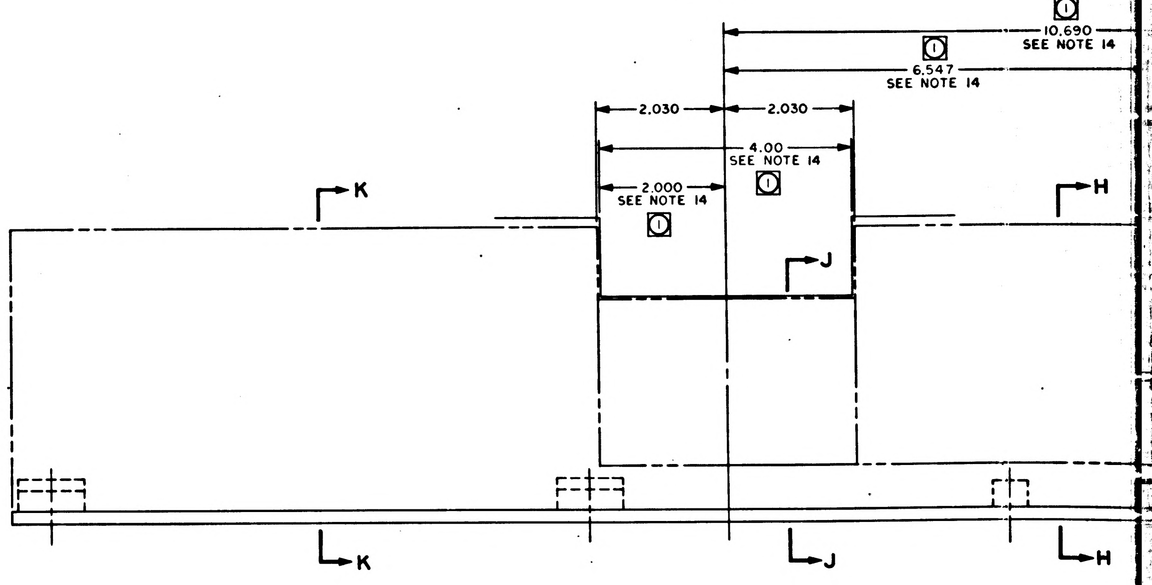

DATUM PLANE A
58° ① SEE NOTE 14
SEE NOTE 23
30°
4.750 SEE NOTE 14 ①
4.600 MAX
① .880
SEE NOTE 14

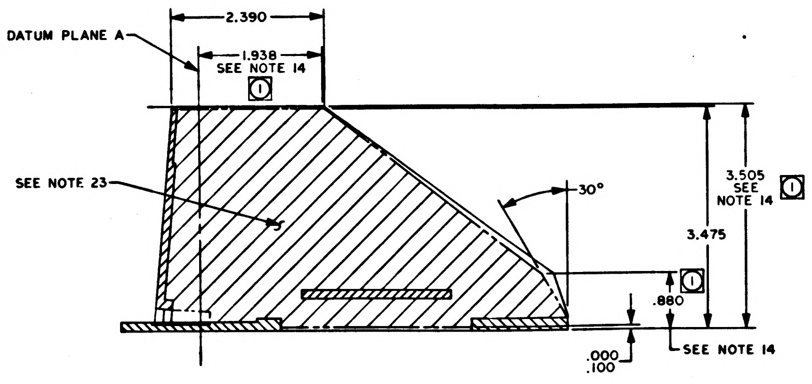
SECTION G-G


SEE NOTE 25 LOCATE CENTRALLY
AGE HARNESS AND PSA END CONNECTOR ASSY 1015086
S/N
② 22.625 SEE NOTE 15


DATUM PLANE A
① 1.880 SEE NOTE 14
2.260
① 58° SEE NOTE 14
58°
SEE NOTE 23
30°
.36 ① SEE NOTE 14
4.750 SEE NOTE 14 ①
4.600 MAX
① 1.190
.880
SEE NOTE 14

SECTION H-H


① 10.690 SEE NOTE 14
① 6.547 SEE NOTE 14
2.030
2.030
4.00 SEE NOTE 14 ①
2.000 SEE NOTE 14 ①
K
J
H
K
J
H


DATUM PLANE A
2.390
1.938 SEE NOTE 14 ①
SEE NOTE 23
30°
3.505 SEE NOTE 14 ①
3.475
① .880
.000 .100
SEE NOTE 14

SECTION J-J

(2")

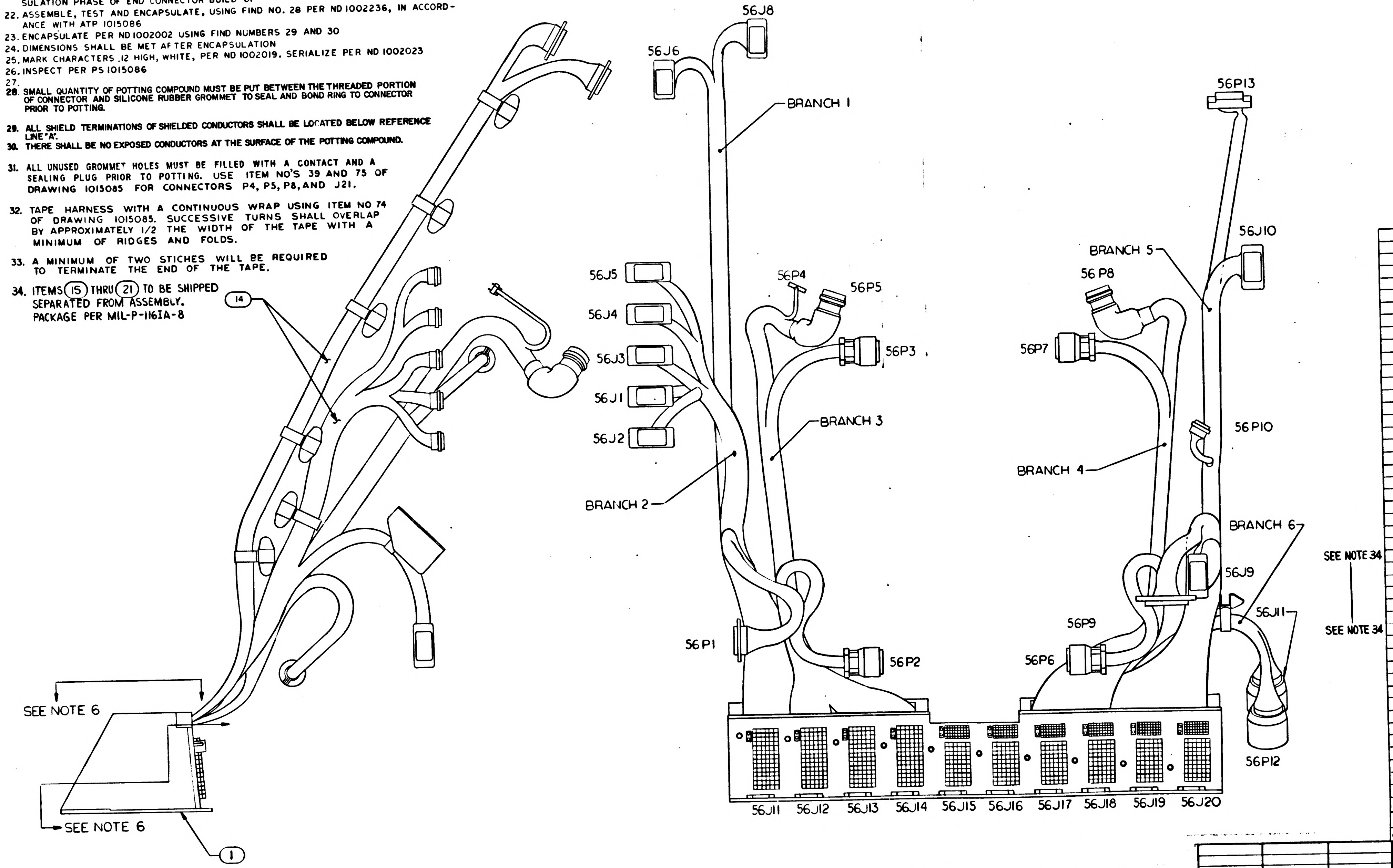
1015086 REV E SHT 5

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
		REVISIONS			
E		REPLACES REVISION D WITH CHANGE PER TDRR [illegible]	—	11 MAY 65	DKD
F		REVISED PER TDRR 22497		21SEP 65	RL

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BRANCHES 1, 2 AND 3 OF FIND NO. 14 ARE SHOWN ON SHEET 2
3. BRANCHES 4, 5 AND 6 OF FIND NO. 14 ARE SHOWN ON SHEET 3
4. GRID MODULE ON SHEETS 2 AND 3 IS 1 INCH TRUE POSITION
5. UNLESS OTHERWISE SPECIFIED, FEATURE CENTERLINES ON SHEETS 2, 3 AND 4 ARE LOCATED WITHIN ±.25. ENDS OF HOOK UP WIRES OR ACCESSORIES ARE LOCATED WITHIN .12
6. MARRIAGE CONFIGURATION OF FIND NUMBERS 1 AND 14 IS SHOWN ON SHEET 4
7. ENCAPSULATION ENVELOPE IS SHOWN ON SHEET 5
8. TERMINATION NUMBERS AND TOLERANCE CHART ARE LISTED IN CONDUCTOR CHART OF FIND NO. 14
9. INTERCONNECTION DIAGRAM OF AGE C/M, LOWER EQUIPMENT BAY, IS 1015090
10. WELD PER ND1002225
11. CRIMP PER ND1002206
12. LACE HARNESS PER ND1002032
13. ALL WIRING SHALL BE BELOW THE SURFACE OF THE ENCAPSULATING MATERIAL
14. ① DIMENSION OR CHARACTERISTIC IS CONTROLLED BY ICDMH01-01203-116
15. ② ICDMH01-01203-116 ENVELOPE DIMENSIONS ARE 7.000 AND 22.690 RESPECTIVELY; ACTUAL VALUES MAY BE LESS. ENCAPSULATION SHALL BE FLUSH TO .015 LESS THAN THE ENVELOPE DEFINED BY THE ACTUAL LENGTH AND WIDTH OF THE END CONNECTOR ASSEMBLY
16. LACE HARNESS IN GROUPS, USING A CONTINUOUS CLOVE HITCH AT INTERVALS NOT TO EXCEED TWO INCHES MAXIMUM. WIRES FROM DIFFERENT HARNESS BRANCHES MERGING INTO THE SAME WIRE HARNESS CLAMP CHANNEL GROUP SHALL BE BLENDED TOGETHER WHEN STITCHING IS PERFORMED.
17. APPLY EPOXY PER ND1002187 TYPE II USING FIND NUMBERS 26 AND 27. TO SEAL JUNCTION OF CONNECTOR FLANGES AND BOTTOM PLATE.
18. ENCAPSULATE BACK OF CONNECTOR PER ND1002236 USING FIND NO. 28
19. MARK FIND NO. 13 WITH REFERENCE DESIGNATION AS SHOWN, .12 HIGH, BLACK, HOT IMPRESSION STAMPING PER ND1002019. CENTRALIZE
20. SECURE FIND NO. 13 TO FIND NO. 14 USING FIND NUMBERS 24 AND 25
21. SELECT NOTED FIND NUMBERS IN ACCORDANCE WITH ATP REQUIREMENTS AT ENCAPSULATION PHASE OF END CONNECTOR BUILD UP
22. ASSEMBLE, TEST AND ENCAPSULATE, USING FIND NO. 28 PER ND1002236, IN ACCORDANCE WITH ATP 1015086
23. ENCAPSULATE PER ND1002002 USING FIND NUMBERS 29 AND 30
24. DIMENSIONS SHALL BE MET AFTER ENCAPSULATION
25. MARK CHARACTERS .12 HIGH, WHITE, PER ND1002019. SERIALIZE PER ND1002023
26. INSPECT PER PS1015086
27.
28. SMALL QUANTITY OF POTTING COMPOUND MUST BE PUT BETWEEN THE THREADED PORTION OF CONNECTOR AND SILICONE RUBBER GROMMET TO SEAL AND BOND RING TO CONNECTOR PRIOR TO POTTING.
29. ALL SHIELD TERMINATIONS OF SHIELDED CONDUCTORS SHALL BE LOCATED BELOW REFERENCE LINE "A".
30. THERE SHALL BE NO EXPOSED CONDUCTORS AT THE SURFACE OF THE POTTING COMPOUND.
31. ALL UNUSED GROMMET HOLES MUST BE FILLED WITH A CONTACT AND A SEALING PLUG PRIOR TO POTTING. USE ITEM NO'S 39 AND 75 OF DRAWING 1015085 FOR CONNECTORS P4, P5, P8, AND J21.
32. TAPE HARNESS WITH A CONTINUOUS WRAP USING ITEM NO 74 OF DRAWING 1015085. SUCCESSIVE TURNS SHALL OVERLAP BY APPROXIMATELY 1/2 THE WIDTH OF THE TAPE WITH A MINIMUM OF RIDGES AND FOLDS.
33. A MINIMUM OF TWO STICHES WILL BE REQUIRED TO TERMINATE THE END OF THE TAPE.
34. ITEMS ⑮ THRU ㉑ TO BE SHIPPED SEPARATED FROM ASSEMBLY. PACKAGE PER MIL-P-116IA-8



Ⓔ REPLACES REVD WITH CHANGE

031	021	011	000	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
			✕		REF	1015087	INTERCONNECTION LIST
			1		33	MS35650-104	NUT, PLAIN HEX
			4		32	MS35649-44	NUT, PLAIN HEX
			4		31	1010618-15	SCREW, BUTTON HEAD
			AR		30	1010798-2	ACTIVATOR
			AR		29	1010798-1	RESIN
			AR		28	1012503	COMPOUND, POTTING, ~~PO~~LYURETHANE
			AR		27	1010679	ADHESIVE ACTIVATOR
			AR		26	1010661	EPOXY RESIN
			AR		25	1012507-004	LACING TAPE
			AR		24	1012507-002	LACING TAPE
			1		23	MS35338-081	WASHER, LOCK
			6		22	1006783-47	SCREW, BUTTON HEAD
			1		21	1010705-8	CLAMP
			1		20	1010705-6	CLAMP
			1		19	1010400-8	CLAMP, LOOP, HINGED
			1		18	1010400-7	CLAMP, LOOP, HINGED
			3		17	1010400-3	CLAMP, LOOP, HINGED
			1		16	1010400-2	CLAMP, LOOP, HINGED
			5		15	1010400-1	CLAMP, LOOP, HINGED
			1		14	1015085	WIRING HARNESS "A"
			21		13	1010811-002	BAND, IDENTIFICATION
			1		12	1021253-8	SPACER
			1		11	1021253-7	SPACER
			2		10	1021253-6	SPACER
			2		9	1021253-5	SPACER
			1		8	1021253-4	SPACER
			1		7	1021253-3	SPACER
			2		6	1021253-2	SPACER
			2		5	1021253-1	SPACER
			1		4	1014609	BRACKET, CLAMP
			1		3	1008165	CABLE CLAMP, RIGHT
			1		2	1008164	CABLE CLAMP, LEFT
			1		1	1007599-011	END CONNECTOR ASSY, PSA
QUANTITY REQUIRED						LIST OF MATERIALS	

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

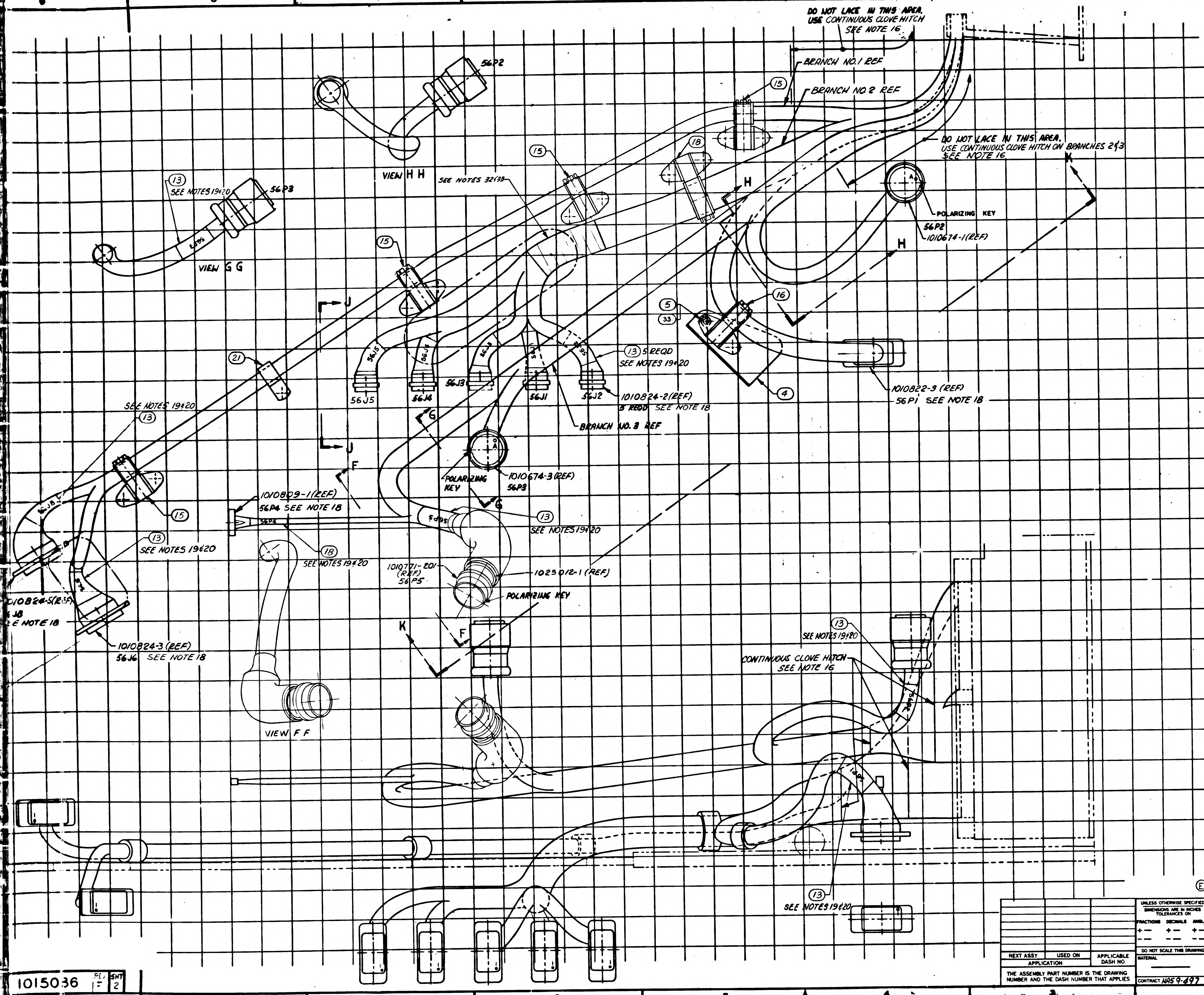
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 23 FEB 65
CHECKED 1 APR 65
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE E
1015086
SCALE 1:2
SHEET

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE	—	11 MAY 65	DKD
		PER TDRR 20529			
F		REVISED PER TDRR 22497		2 SEP 65	


DO NOT LACE IN THIS AREA. USE CONTINUOUS CLOVE HITCH SEE NOTE 16
BRANCH NO. 1 REF
BRANCH NO. 2 REF
56P2
VIEW H H
15
18
SEE NOTES 32 & 33
DO NOT LACE IN THIS AREA. USE CONTINUOUS CLOVE HITCH ON BRANCHES 2 & 3 SEE NOTE 16
K
H
13
SEE NOTES 19 & 20
56P3
VIEW G G
POLARIZING KEY
56P2
1010674-1 (REF)
H
15
J
5
33
16
56J5
56J4
56J3
56J1
56J2
13 5 REQD
SEE NOTES 19 & 20
21
4
1010824-2 (REF)
5 REQD SEE NOTE 18
1010822-9 (REF)
56P1 SEE NOTE 18
SEE NOTES 19 & 20
13
G
BRANCH NO. 3 REF
J
F
1010674-3 (REF)
POLARIZING KEY
56P3
G
1010809-1 (REF)
56P4 SEE NOTE 18
56P4
56P5
13
SEE NOTES 19 & 20
15
13
SEE NOTES 19 & 20
18
SEE NOTES 19 & 20
1010771-201 (REF) 56P5
1023012-1 (REF)
POLARIZING KEY
1010824-5 (REF)
J8
E NOTE 18
K
F
1010824-3 (REF)
56J6 SEE NOTE 18
13
SEE NOTES 19 & 20
CONTINUOUS CLOVE HITCH
SEE NOTE 16
VIEW F F
13
SEE NOTES 19 & 20

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 23 FEB 65
CHECKED C. Pjozda 1 APR 65
APPROVAL D. Hicks 1 APR 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

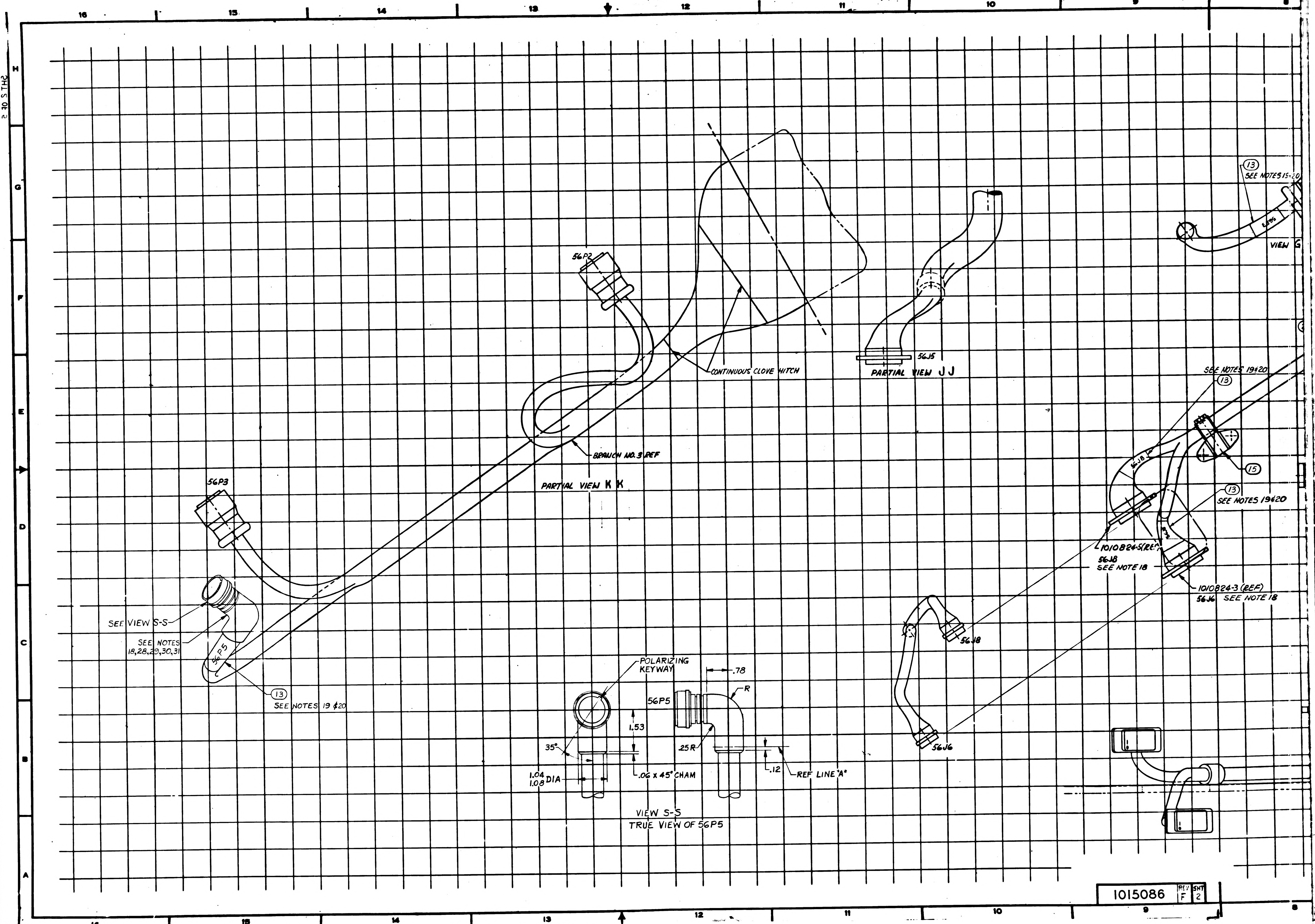
AGE HARNESS AND PSA END
CONNECTOR ASSEMBLY

CODE IDENT NO. SIZE J2 1015086
SCALE 1:1 SHEET 2 OF 5

1015036 REV F SHT 2

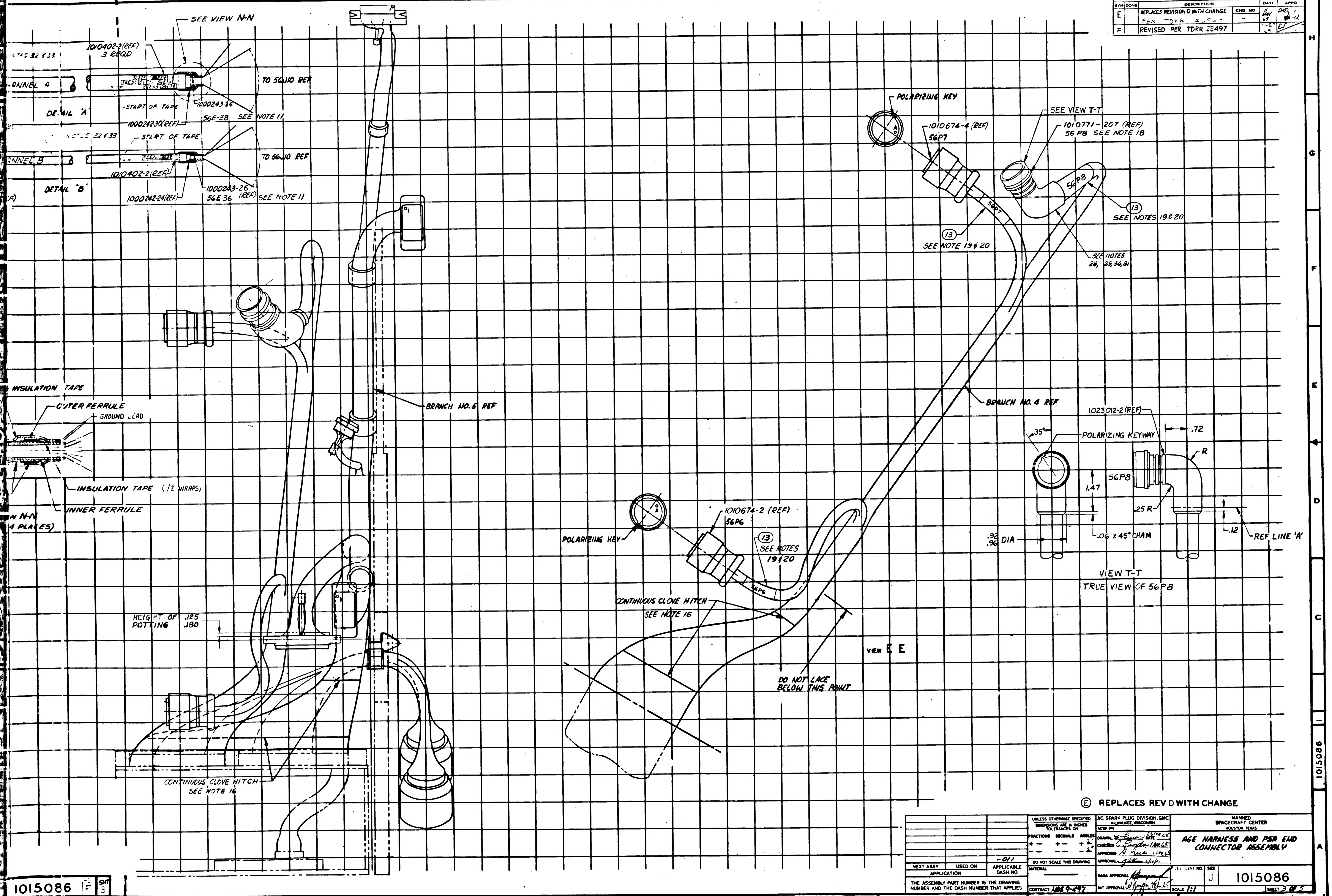
1015086

2/1015086


16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
SHT 2 OF 3
56P2
CONTINUOUS CLOVE HITCH
BRANCH NO. 3 REF
PARTIAL VIEW K K
56J5
PARTIAL VIEW J J
56P3
SEE VIEW S-S
SEE NOTES 18,28,29,30,31
56P5
13
SEE NOTES 19 & 20
POLARIZING KEYWAY
.78
R
56P5
1.53
35°
.25R
1.04
1.08 DIA
.06 x 45° CHAM
.12
REF LINE "A"
VIEW S-S
TRUE VIEW OF 56P5
13
SEE NOTES 19-20
VIEW G
SEE NOTES 19&20
13
56J8
15
13
SEE NOTES 19&20
1010824-5(REF)
56J8
SEE NOTE 18
1010824-3 (REF)
56J6 SEE NOTE 18
56J8
56J6
1015086
REV F
SHT 2

1/1015086

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER TDRR [illegible]	-	11 MAY 65	DKD
F		REVISED PER TDRR 22497		[illegible]	



SEE VIEW N-N
1010402-2(REF)
3 REQD
TO 56J10 REF
1000243-34
DETAIL "A"
START OF TAPE
1000242-30(REF)
56E-38
SEE NOTE 11
START OF TAPE
TO 56J10 REF
1010402-2(REF)
DETAIL "B"
1000242-24(REF)
1000243-26
56E36
(REF)
SEE NOTE 11
INSULATION TAPE
OUTER FERRULE
GROUND LEAD
INSULATION TAPE (1½ WRAPS)
INNER FERRULE
(4 PLACES)
BRANCH NO. 5 REF
HEIGHT OF POTTING
.125
.180
CONTINUOUS CLOVE HITCH
SEE NOTE 16
POLARIZING KEY
1010674-4 (REF)
56P7
SEE VIEW T-T
1010771-207 (REF)
56P8 SEE NOTE 18
56P8
56P7
13
SEE NOTES 19 & 20
13
SEE NOTE 19 & 20
SEE NOTES 26, 28, 30, 31
BRANCH NO. 4 REF
1023012-2 (REF)
.72
35°
POLARIZING KEYWAY
R
56P8
1.47
.25 R
.92
.96
DIA
.06 x 45° CHAM
.12
REF LINE 'A'
VIEW T-T
TRUE VIEW OF 56P8
POLARIZING KEY
1010674-2 (REF)
56P6
13
SEE NOTES
19 & 20
56P6
CONTINUOUS CLOVE HITCH
SEE NOTE 16
VIEW E E
DO NOT LACE BELOW THIS POINT

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
		-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + 2° − 2°
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 23 FEB 65
CHECKED C Proyda 1 APR 65
APPROVAL G Hue 1 APR 65
APPROVAL [illegible]
NASA APPROVAL
MIT APPROVAL

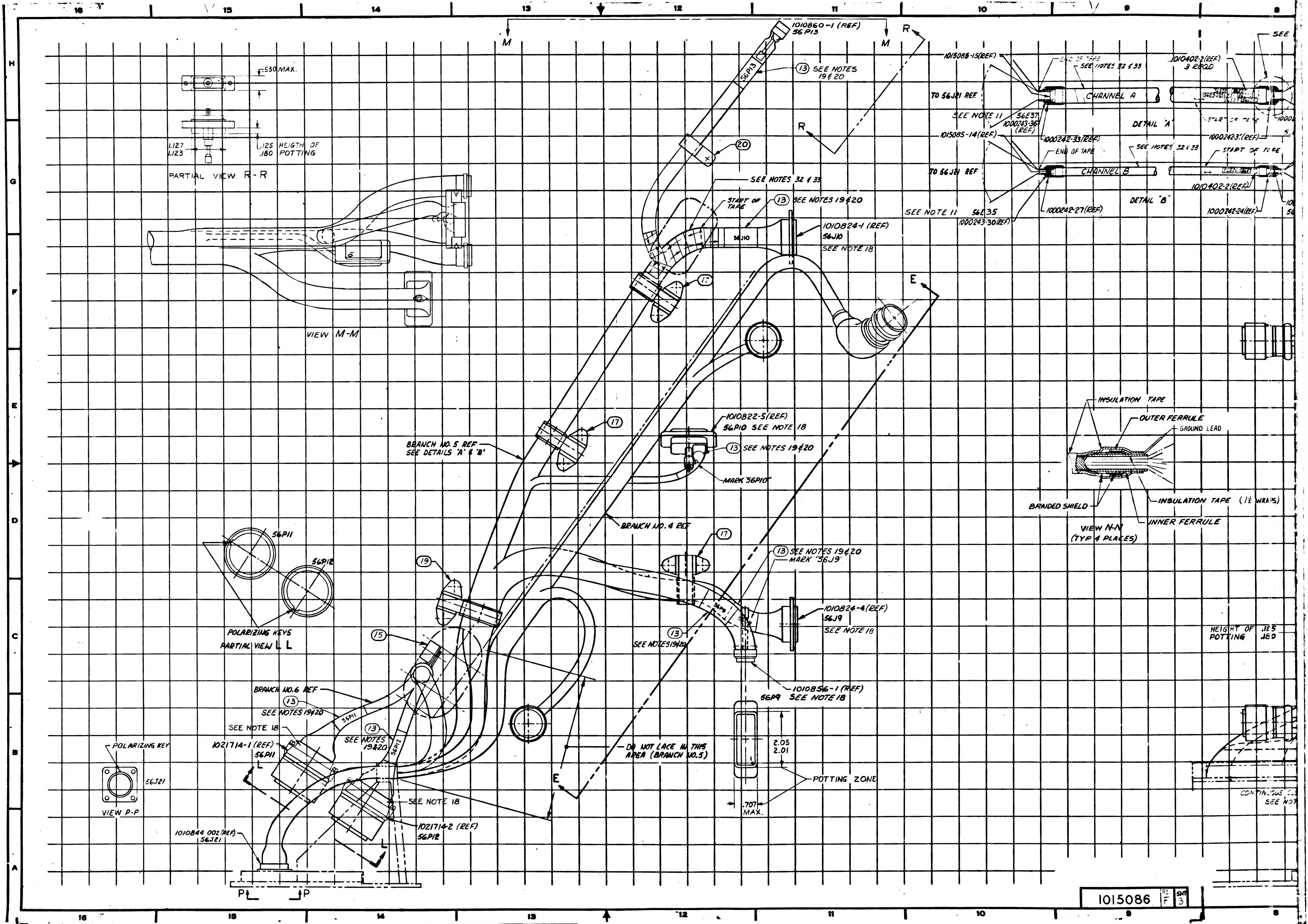
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO. SIZE J 1015086
SCALE 1:1 SHEET 3 OF 5

1015086 F SHT 3

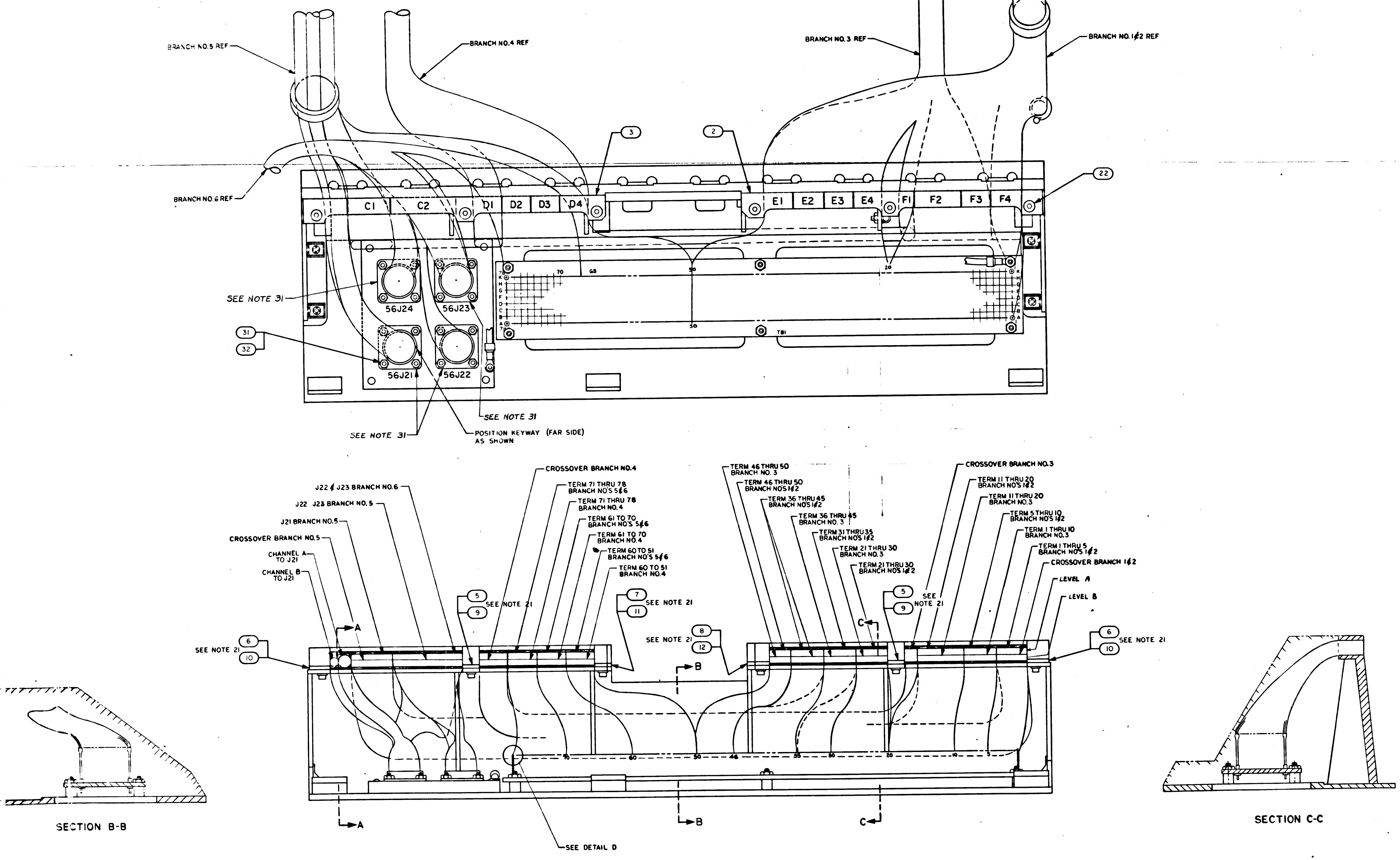
2/1015086


1010860-1 (REF)
56P13
13 SEE NOTES 19 & 20
20
M
M
R
R
.530 MAX.
1.127
1.123
.125 HEIGTH OF
.180 POTTING
PARTIAL VIEW R-R
VIEW M-M
SEE NOTES 32 & 33
START OF TAPE
13 SEE NOTES 19 & 20
56J10
1010824-1 (REF)
56J10
SEE NOTE 18
17
E
E
17
1010822-5 (REF)
56P10 SEE NOTE 18
13 SEE NOTES 19 & 20
MARK "56P10"
BRANCH NO. 5 REF
SEE DETAILS "A" & "B"
BRANCH NO. 4 REF
17
13 SEE NOTES 19 & 20
MARK "56J9"
56P11
56P12
POLARIZING KEYS
PARTIAL VIEW L L
19
15
56P9
13
SEE NOTES 19 & 20
1010824-4 (REF)
56J9
SEE NOTE 18
1010856-1 (REF)
56P9 SEE NOTE 18
BRANCH NO. 6 REF
13
SEE NOTES 19 & 20
56P11
13
SEE NOTES 19 & 20
56P12
SEE NOTE 18
1021714-1 (REF)
56P11
L
L
SEE NOTE 18
1021714-2 (REF)
56P12
DO NOT LACE IN THIS AREA (BRANCH NO. 5)
2.05
2.01
POTTING ZONE
.707 MAX.
POLARIZING KEY
56J21
VIEW P-P
1010844 002 (REF)
56J21
P
P
1015085-15 (REF)
END OF TAPE
SEE NOTES 32 & 33
CHANNEL A
1010402-2 (REF)
3 REQD
SEE
TO 56J21 REF.
SEE NOTE 11
56E37
1000243-36 (REF)
1000242-33 (REF)
DETAIL "A"
START OF TAPE
1000242-33 (REF)
1015085-14 (REF)
END OF TAPE
SEE NOTES 32 & 33
START OF TAPE
TO 56J21 REF
CHANNEL B
1010402-2 (REF)
DETAIL "B"
SEE NOTE 11
56E35
1000243-30 (REF)
1000242-27 (REF)
1000242-24 (REF)
INSULATION TAPE
OUTER FERRULE
GROUND LEAD
BRAIDED SHIELD
INSULATION TAPE (1 1/2 WRAPS)
INNER FERRULE
VIEW N-N
(TYP 4 PLACES)
HEIGHT OF POTTING
.125
.180
CONTINUOUS
SEE NOTE
H
G
F
E
D
C
B
A
16
15
14
13
12
11
10
9
8
1015086
F
SHT 3

1015086
SHT 3 OF 5

1/1015086

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
E	REPLACES REVISION D WITH CHANGE. TDRR 20529	11 MAY 65	
F	REVISION STATUS CHANGED	21 SEP 65	RLP E



BRANCH NO.5 REF
BRANCH NO.4 REF
BRANCH NO.3 REF
BRANCH NO.1&2 REF
BRANCH NO.6 REF
3
2
22
C1
C2
D1
D2
D3
D4
E1
E2
E3
E4
F1
F2
F3
F4
70
65
50
20
TB1
SEE NOTE 31
56J24
56J23
31
32
56J21
56J22
SEE NOTE 31
SEE NOTE 31
POSITION KEYWAY (FAR SIDE) AS SHOWN
CROSSOVER BRANCH NO.4
J22 & J23 BRANCH NO.6
TERM 71 THRU 78 BRANCH NO'S 5&6
J22 J23 BRANCH NO.5
TERM 71 THRU 78 BRANCH NO.4
J21 BRANCH NO.5
TERM 61 TO 70 BRANCH NO'S 5&6
CROSSOVER BRANCH NO.5
TERM 61 TO 70 BRANCH NO.4
CHANNEL A TO J21
TERM 60 TO 51 BRANCH NO'S 5&6
CHANNEL B TO J21
TERM 60 TO 51 BRANCH NO.4
TERM 46 THRU 50 BRANCH NO. 3
TERM 46 THRU 50 BRANCH NO'S 1&2
TERM 36 THRU 45 BRANCH NO'S 1&2
TERM 36 THRU 45 BRANCH NO. 3
TERM 31 THRU 35 BRANCH NO'S 1&2
TERM 21 THRU 30 BRANCH NO. 3
TERM 21 THRU 30 BRANCH NO'S 1&2
CROSSOVER BRANCH NO.3
TERM 11 THRU 20 BRANCH NO'S 1&2
TERM 11 THRU 20 BRANCH NO.3
TERM 5 THRU 10 BRANCH NO'S 1&2
TERM 1 THRU 10 BRANCH NO.3
TERM 1 THRU 5 BRANCH NO'S 1&2
CROSSOVER BRANCH 1&2
LEVEL A
LEVEL B
5
9
SEE NOTE 21
7
11
SEE NOTE 21
8
12
SEE NOTE 21
5
9
SEE NOTE 21
6
10
SEE NOTE 21
6
10
SEE NOTE 21
A
B
C
70
60
50
46
35
30
20
10
5
A
B
C
SEE DETAIL D
SECTION B-B
SECTION C-C

Ⓔ. REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

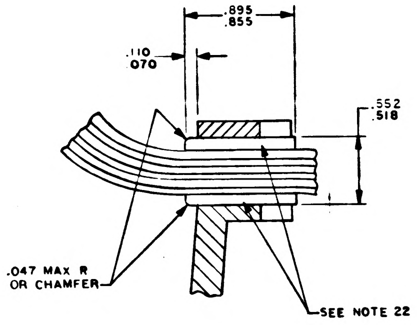
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED 1 APR 65
APPROVAL APR 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

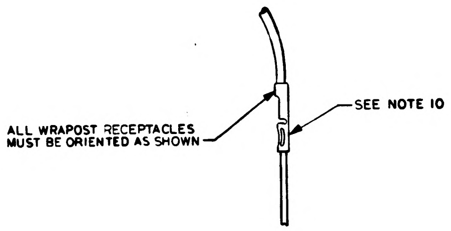
AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO.
SIZE J
1015086
SCALE 1:1

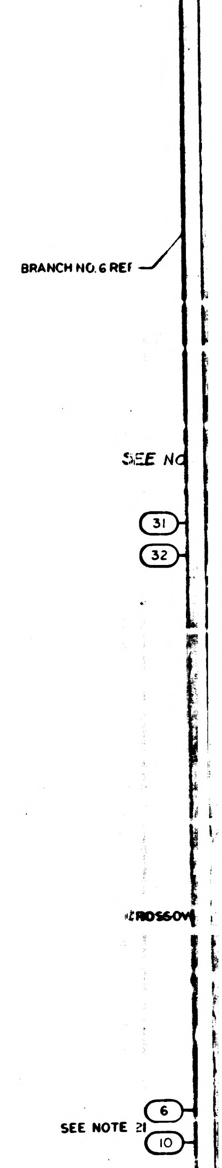

.895
.855
.110
.070
.552
.518
.047 MAX R
OR CHAMFER
SEE NOTE 22

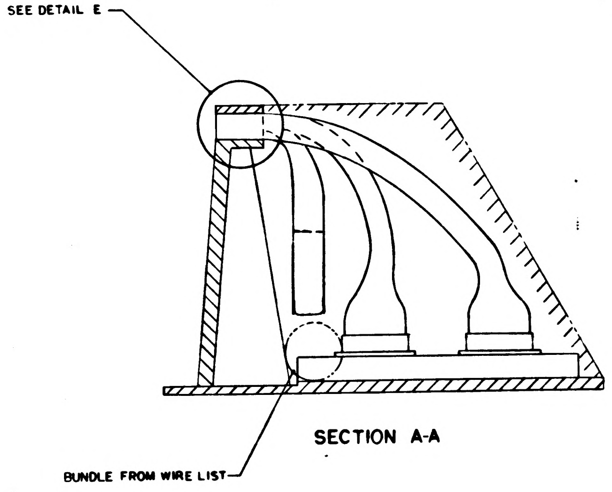
DETAIL E

SCALE: 2/1

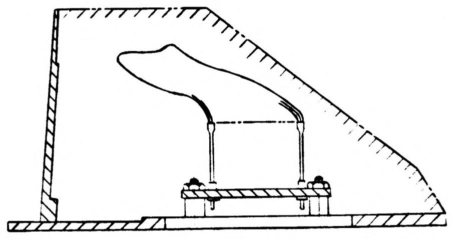

ALL WRAPOST RECEPTACLES
MUST BE ORIENTED AS SHOWN
SEE NOTE 10

DETAIL D


BRANCH NO.8 REF
BRANCH NO.6 REF
SEE NO
31
32
CROSSOV
SEE NOTE 21
6
10


SEE DETAIL E
BUNDLE FROM WIRE LIST

SECTION A-A

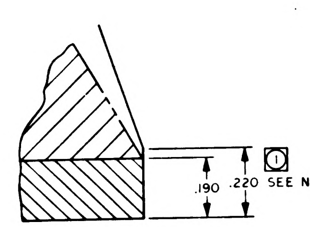


SECTION B-B

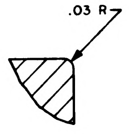
D C B A

1015086	REV F	SHT 4

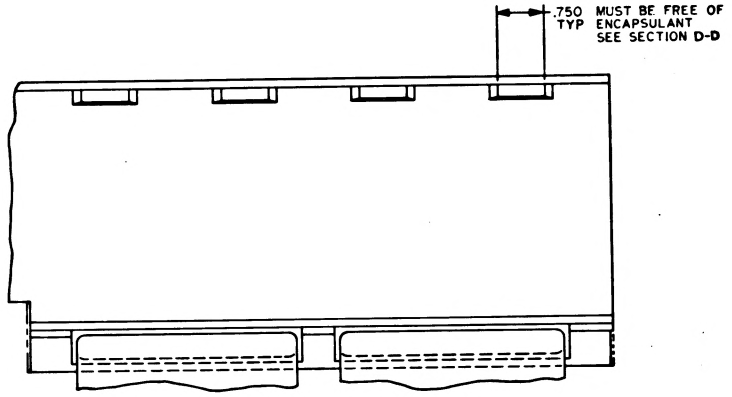
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER T[illegible] 2052[illegible]	—	11 MAY 65	DWD
F		REVISION STATUS CHANGED		21 SEP 65	RJF

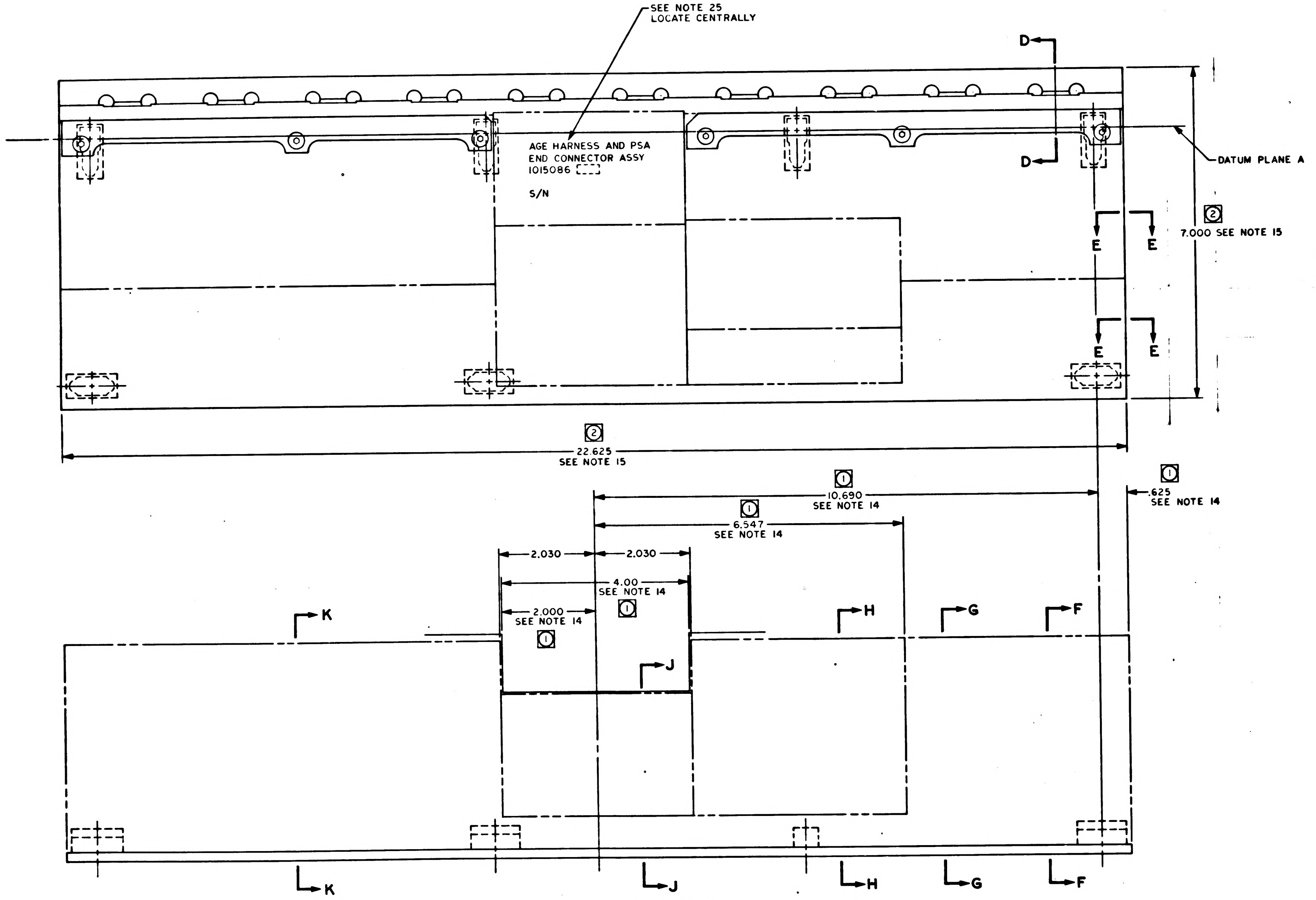

.190
.220 SEE NOTE 14
①

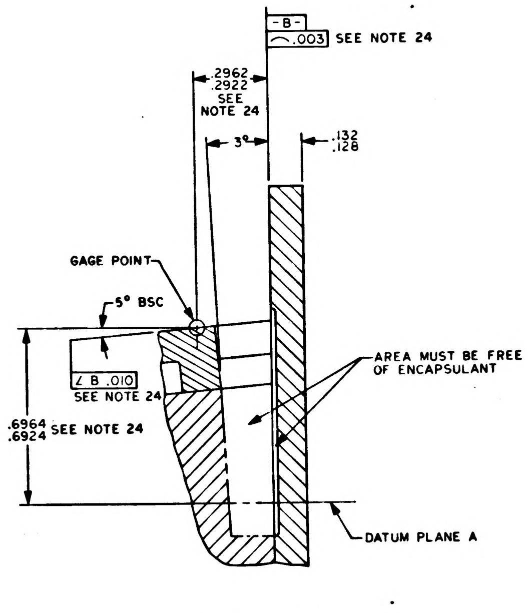
DETAIL C
SCALE: 5/1



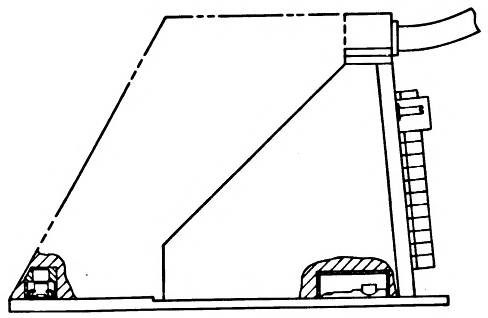
PARTIAL SECTION E-E
SCALE: 5/1
2 PLACES BOTH ENDS


.750 MUST BE FREE OF
TYP ENCAPSULANT
SEE SECTION D-D


SEE NOTE 25
LOCATE CENTRALLY
AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086
S/N
D
D
DATUM PLANE A
E
E
E
E
②
7.000 SEE NOTE 15
②
22.625
SEE NOTE 15
①
10.690
SEE NOTE 14
①
6.547
SEE NOTE 14
①
.625
SEE NOTE 14
2.030
2.030
4.00
SEE NOTE 14
①
2.000
SEE NOTE 14
①
K
J
H
G
F
K
J
H
G
F


-B-
⌒ .003 SEE NOTE 24
.2962
.2922
SEE
NOTE 24
3°
.132
.128
GAGE POINT
5° BSC
∠ B .010
SEE NOTE 24
.6964
.6924 SEE NOTE 24
AREA MUST BE FREE
OF ENCAPSULANT
DATUM PLANE A

PARTIAL SECTION D-D
SCALE: 5/1



Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-437

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 3 FEB 65
CHECKED C. [illegible] 1 APR 65
APPROVAL [illegible] 1 APR 65
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO.
SIZE J
1015086
SCALE 1:1
SHEET 5 OF 5

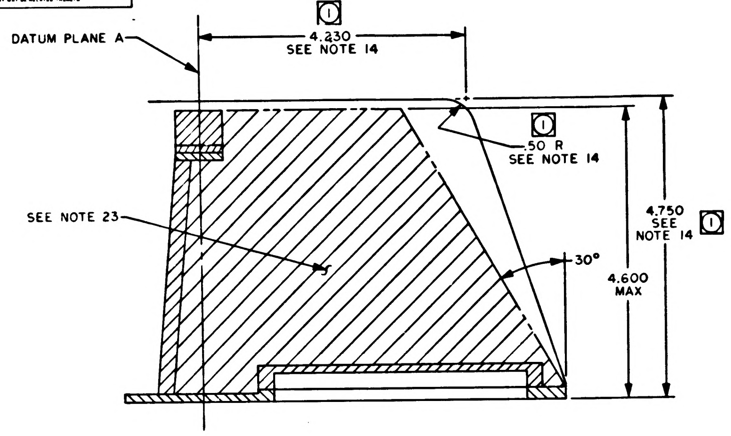
1015086 F

1015086 REV F SHT 5

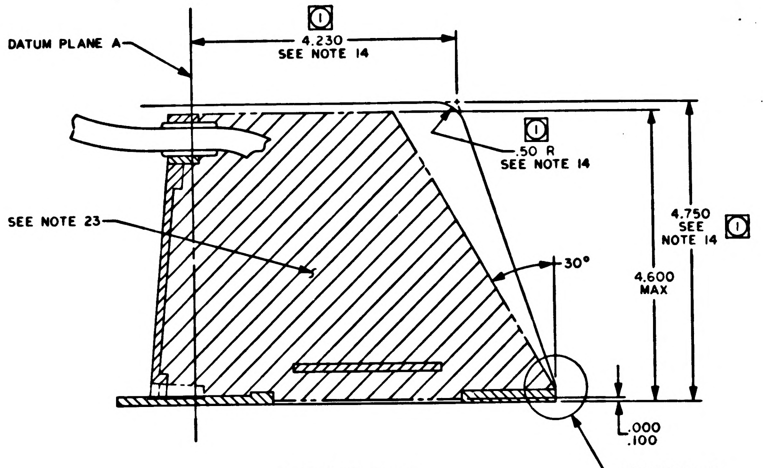
2/1015086

1010098

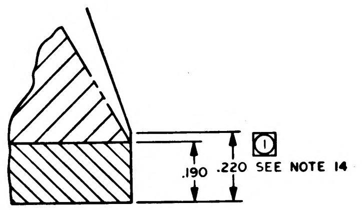
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


DATUM PLANE A
①
4.230
SEE NOTE 14
①
.50 R
SEE NOTE 14
SEE NOTE 23
4.750
SEE
NOTE 14 ①
30°
4.600
MAX

SECTION K-K

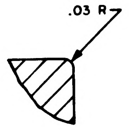

DATUM PLANE A
①
4.230
SEE NOTE 14
①
.50 R
SEE NOTE 14
SEE NOTE 23
4.750
SEE
NOTE 14 ①
30°
4.600
MAX
.000
.100
SEE DETAIL C

SECTION F-F


.190
.220 SEE NOTE 14 ①

DETAIL C

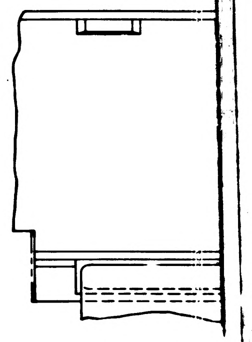
SCALE: 5/1

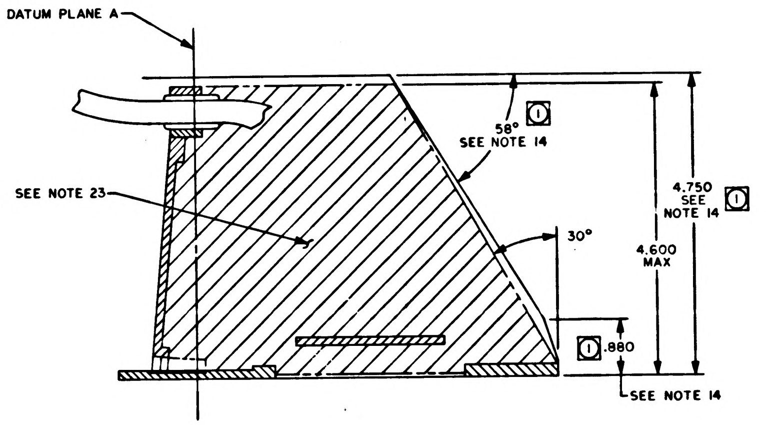


PARTIAL SECTION E-E

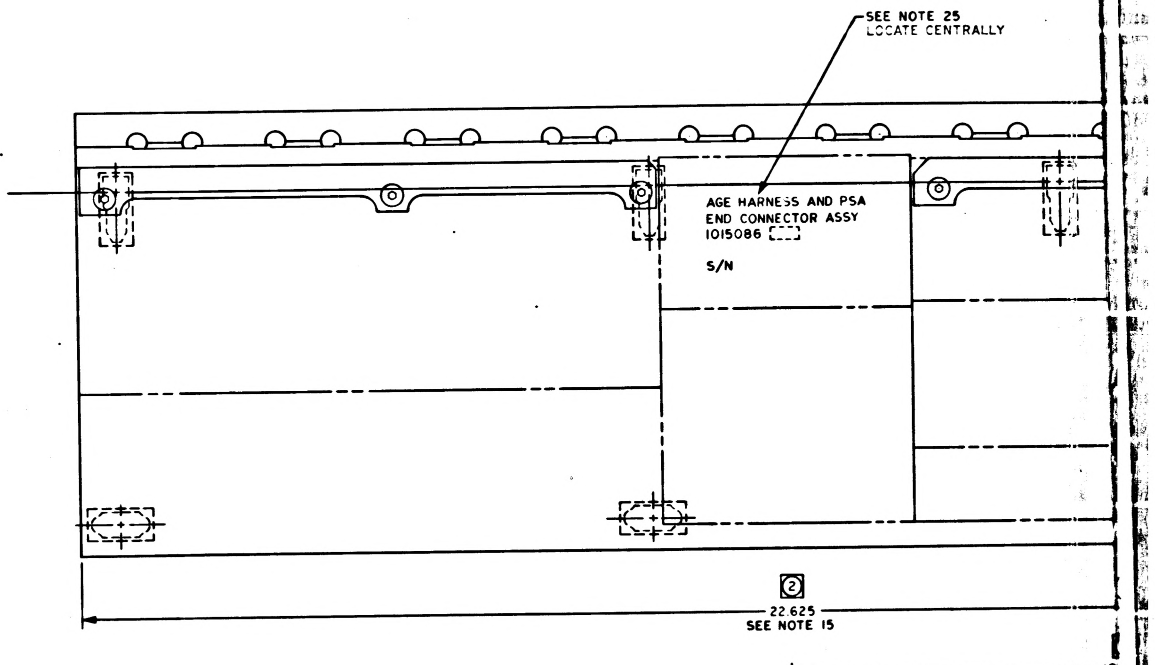
SCALE: 5/1

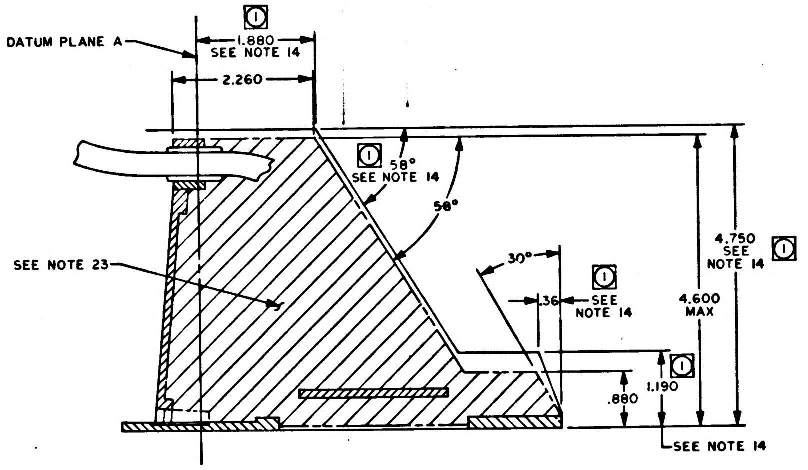
2 PLACES BOTH ENDS



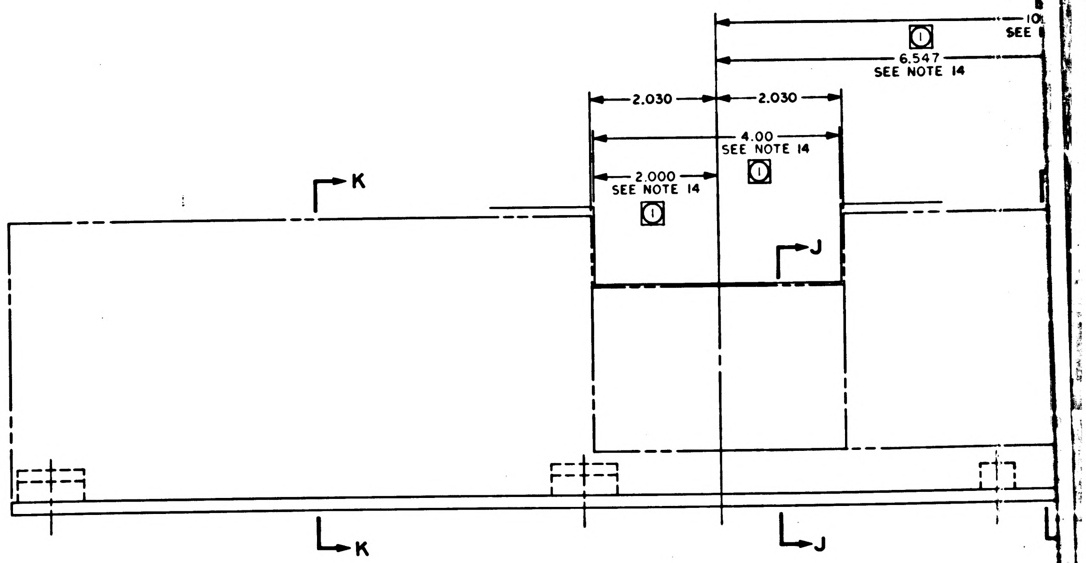

DATUM PLANE A
58°
SEE NOTE 14 ①
SEE NOTE 23
4.750
SEE
NOTE 14 ①
30°
4.600
MAX
① .880
SEE NOTE 14

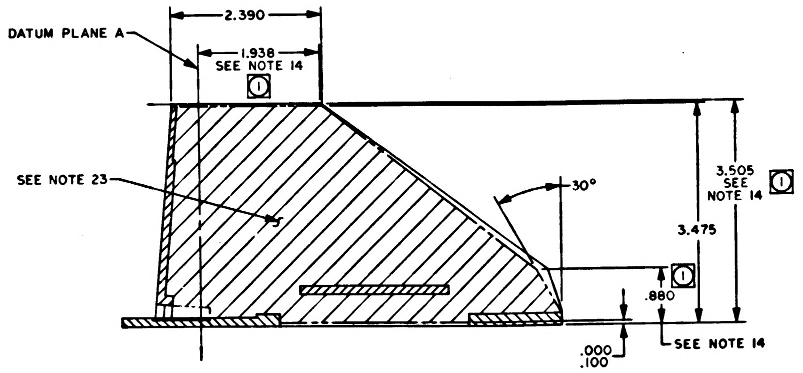
SECTION G-G


SEE NOTE 25
LOCATE CENTRALLY
AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086
S/N
②
22.625
SEE NOTE 15


DATUM PLANE A
①
1.880
SEE NOTE 14
2.260
① 58°
SEE NOTE 14
58°
SEE NOTE 23
30°
.36
①
SEE
NOTE 14
4.750
SEE
NOTE 14 ①
4.600
MAX
①
1.190
.880
SEE NOTE 14

SECTION H-H


10
SEE
①
6.547
SEE NOTE 14
2.030
2.030
4.00
SEE NOTE 14
①
2.000
SEE NOTE 14
①
K
J
K
J


DATUM PLANE A
2.390
1.938
SEE NOTE 14
①
SEE NOTE 23
30°
3.505
SEE
NOTE 14 ①
3.475
①
.880
.000
.100
SEE NOTE 14

SECTION J-J

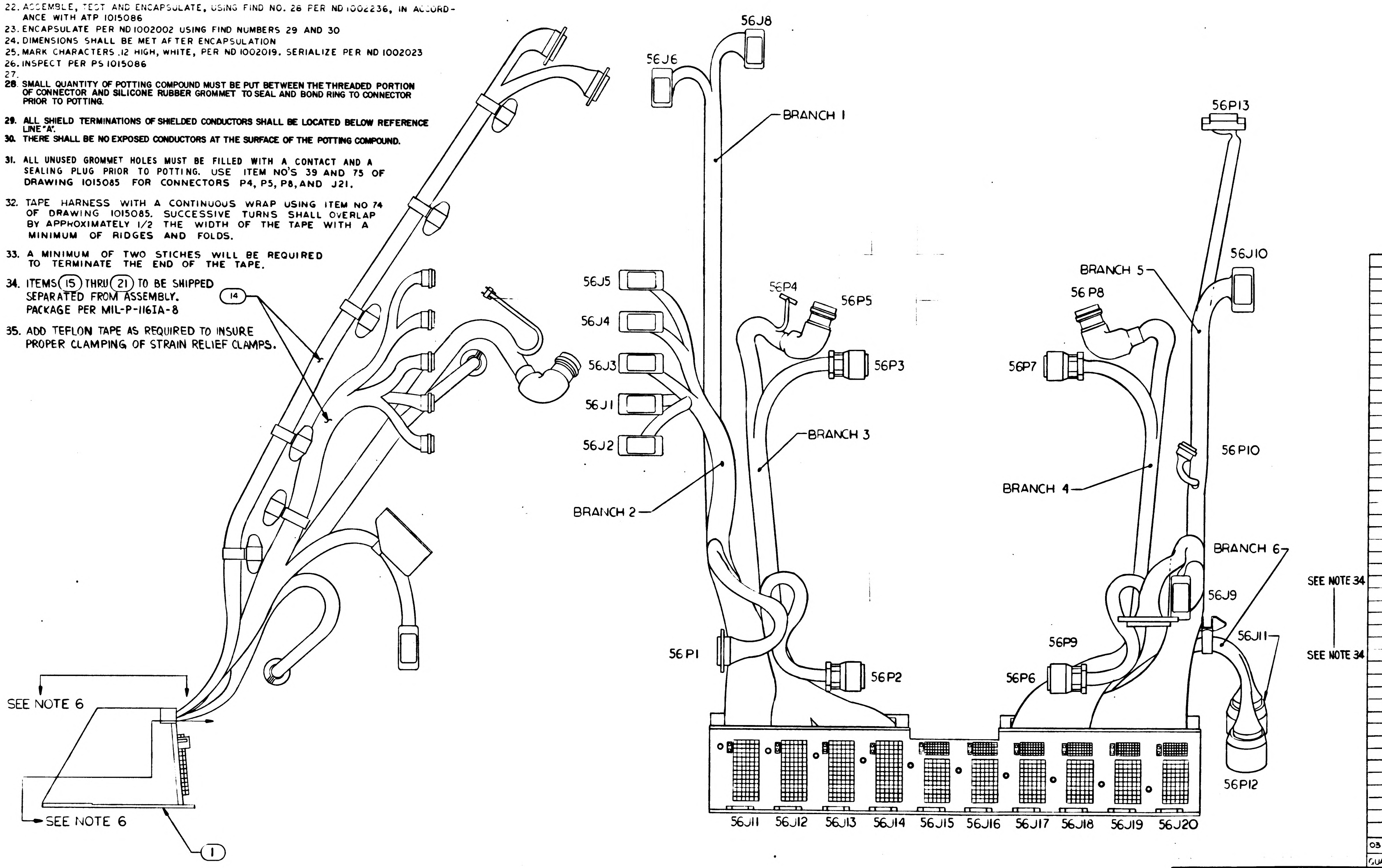
1015086	REV F	SHT 5

1/1015086

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO	DATE	APPD
E		REPLACES REVISION D WITH CHANGE	—	11 MAY 65	DKO
F		REVISED PER TDRR 22497		SEP 5	RLF
G		REVISED PER TDRR 24769		DEC	RLF

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BRANCHES 1, 2 AND 3 OF FIND NO. 14 ARE SHOWN ON SHEET 2
3. BRANCHES 4, 5 AND 6 OF FIND NO. 14 ARE SHOWN ON SHEET 3
4. GRID MODULE ON SHEETS 2 AND 3 IS 1 INCH TRUE POSITION
5. UNLESS OTHERWISE SPECIFIED, FEATURE CENTERLINES ON SHEETS 2, 3 AND 4 ARE LOCATED WITHIN ±.25. ENDS OF HOOK UP WIRES OR ACCESSORIES ARE LOCATED WITHIN .12
6. MARRIAGE CONFIGURATION OF FIND NUMBERS 1 AND 14 IS SHOWN ON SHEET 4
7. ENCAPSULATION ENVELOPE IS SHOWN ON SHEET 5
8. TERMINATION NUMBERS AND TOLERANCE CHART ARE LISTED IN CONDUCTOR CHART OF FIND NO. 14
9. INTERCONNECTION DIAGRAM OF AGE C/M, LOWER EQUIPMENT BAY, IS 1015090
10. WELD PER ND 1002225
11. CRIMP PER ND 1002206
12. LACE HARNESS PER ND 1002032
13. ALL WIRING SHALL BE BELOW THE SURFACE OF THE ENCAPSULATING MATERIAL
14. ① DIMENSION OR CHARACTERISTIC IS CONTROLLED BY ICDMH01-01203-116
15. ② ICDMH01-01203-116 ENVELOPE DIMENSIONS ARE 7.000 AND 22.690 RESPECTIVELY; ACTUAL VALUES MAY BE LESS. ENCAPSULATION SHALL BE FLUSH TO .015 LESS THAN THE ENVELOPE DEFINED BY THE ACTUAL LENGTH AND WIDTH OF THE END CONNECTOR ASSEMBLY
16. LACE HARNESS IN GROUPS, USING A CONTINUOUS CLOVE HITCH AT INTERVALS NOT TO EXCEED TWO INCHES MAXIMUM. WIRES FROM DIFFERENT HARNESS BRANCHES MERGING INTO THE SAME WIRE HARNESS CLAMP CHANNEL GROUP SHALL BE BLENDED TOGETHER WHEN STITCHING IS PERFORMED.
17. APPLY EPOXY PER ND 1002187 TYPE II USING FIND NUMBERS 26 AND 27. TO SEAL JUNCTION OF CONNECTOR FLANGES AND BOTTOM PLATE.
18. ENCAPSULATE BACK OF CONNECTOR PER ND 1002236 USING FIND NO. 28
19. MARK FIND NO. 13 WITH REFERENCE DESIGNATION AS SHOWN, .12 HIGH, BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE
20. SECURE FIND NO. 13 TO FIND NO. 14 USING FIND NUMBERS 24 AND 25
21. SELECT NOTED FIND NUMBERS IN ACCORDANCE WITH ATP REQUIREMENTS AT ENCAPSULATION PHASE OF END CONNECTOR BUILD UP
22. ASSEMBLE, TEST AND ENCAPSULATE, USING FIND NO. 28 PER ND 1002236, IN ACCORDANCE WITH ATP 1015086
23. ENCAPSULATE PER ND 1002002 USING FIND NUMBERS 29 AND 30
24. DIMENSIONS SHALL BE MET AFTER ENCAPSULATION
25. MARK CHARACTERS .12 HIGH, WHITE, PER ND 1002019. SERIALIZE PER ND 1002023
26. INSPECT PER PS 1015086
27.
28. SMALL QUANTITY OF POTTING COMPOUND MUST BE PUT BETWEEN THE THREADED PORTION OF CONNECTOR AND SILICONE RUBBER GROMMET TO SEAL AND BOND RING TO CONNECTOR PRIOR TO POTTING.
29. ALL SHIELD TERMINATIONS OF SHIELDED CONDUCTORS SHALL BE LOCATED BELOW REFERENCE LINE "A".
30. THERE SHALL BE NO EXPOSED CONDUCTORS AT THE SURFACE OF THE POTTING COMPOUND.
31. ALL UNUSED GROMMET HOLES MUST BE FILLED WITH A CONTACT AND A SEALING PLUG PRIOR TO POTTING. USE ITEM NO'S 39 AND 75 OF DRAWING 1015085 FOR CONNECTORS P4, P5, P8, AND J21.
32. TAPE HARNESS WITH A CONTINUOUS WRAP USING ITEM NO 74 OF DRAWING 1015085. SUCCESSIVE TURNS SHALL OVERLAP BY APPROXIMATELY 1/2 THE WIDTH OF THE TAPE WITH A MINIMUM OF RIDGES AND FOLDS.
33. A MINIMUM OF TWO STICHES WILL BE REQUIRED TO TERMINATE THE END OF THE TAPE.
34. ITEMS ⑮ THRU ㉑ TO BE SHIPPED SEPARATED FROM ASSEMBLY. PACKAGE PER MIL-P-116IA-8
35. ADD TEFLON TAPE AS REQUIRED TO INSURE PROPER CLAMPING OF STRAIN RELIEF CLAMPS.



Ⓔ REPLACES REV D WITH CHANGE

031	021	011	000	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION
			☒		REF	1015087	INTERCONNECTION LIST
			1		33	MS35650-104	NUT, PLAIN HEX
			4		32	MS35649-44	NUT, PLAIN HEX
			4		31	1010618-15	SCREW, BUTTON HEAD
			AR		30	1010798-2	ACTIVATOR
			AR		29	1010798-1	RESIN
			AR		28	1012503	COMPOUND, POTTING, ~~POLY~~URETHANE
			AR		27	1010679	ADHESIVE ACTIVATOR
			AR		26	1010661	EPOXY RESIN
			AR		25	1012507-004	LACING TAPE
			AR		24	1012507-002	LACING TAPE
			1		23	MS35338-081	WASHER, LOCK
			6		22	1006783-47	SCREW, BUTTON HEAD
			1		21	1010705-8	CLAMP
			1		20	1010705-6	CLAMP
			1		19	1010400-8	CLAMP, LOOP, HINGED
			1		18	1010400-7	CLAMP, LOOP, HINGED
			3		17	1010400-3	CLAMP, LOOP, HINGED
			1		16	1010400-2	CLAMP, LOOP, HINGED
			5		15	1010400-1	CLAMP, LOOP, HINGED
			1		14	1015085	WIRING HARNESS "A"
			21		13	1010811-002	BAND, IDENTIFICATION
			1		12	1021253-8	SPACER
			1		11	1021253-7	SPACER
			2		10	1021253-6	SPACER
			2		9	1021253-5	SPACER
			1		8	1021253-4	SPACER
			1		7	1021253-3	SPACER
			2		6	1021253-2	SPACER
			2		5	1021253-1	SPACER
			1		4	1014609	BRACKET, CLAMP
			1		3	1008165	CABLE CLAMP, RIGHT
			1		2	1008164	CABLE CLAMP, LEFT
			1		1	1007599-011	END CONNECTOR ASSY, PSA
QUANTITY REQUIRED					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

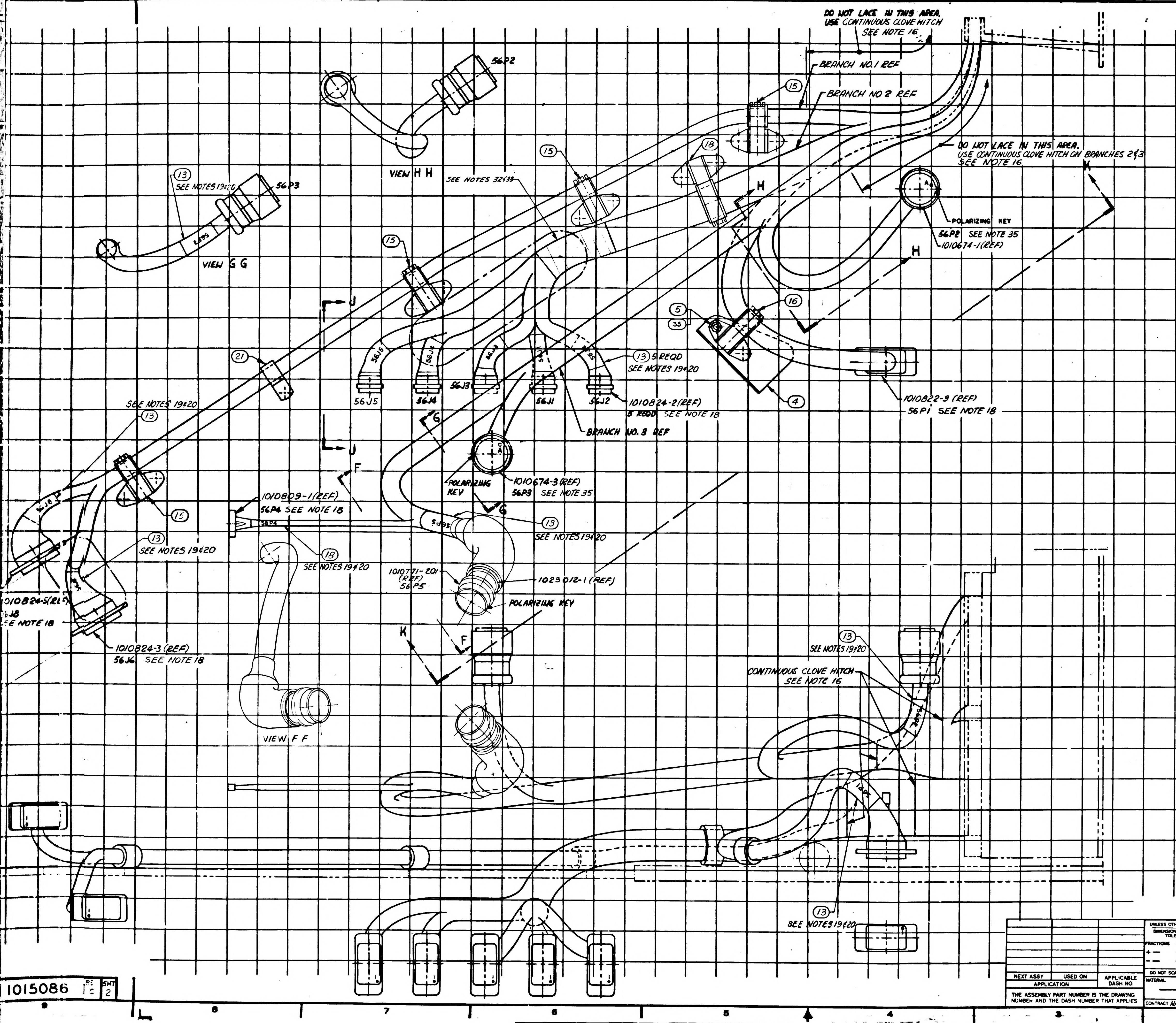
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE E
1015086
SCALE 1/2
SHEET

1015086

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE	—	11 MAY 65	DKD
		PER TDRR 20529			
F		REVISED PER TDRR 22497		21 SEP 65	
G		REVISED PER TDRR 24769		29 DEC 65	



DO NOT LACE IN THIS AREA. USE CONTINUOUS CLOVE HITCH SEE NOTE 16
BRANCH NO. 1 REF
BRANCH NO. 2 REF
56P2
VIEW H H
SEE NOTES 32 & 33
(15)
(18)
DO NOT LACE IN THIS AREA. USE CONTINUOUS CLOVE HITCH ON BRANCHES 2 & 3 SEE NOTE 16
K
H
POLARIZING KEY
56P2 SEE NOTE 35
1010674-1 (REF)
(13) SEE NOTES 19 & 20
56P3
VIEW G G
J
(5)
(33)
(16)
(21)
56J5
56J4
56J3
56J1
56J2
(13) 5 REQD SEE NOTES 19 & 20
1010824-2 (REF) 5 REQD SEE NOTE 18
BRANCH NO. 3 REF
(4)
1010822-9 (REF)
56P1 SEE NOTE 18
SEE NOTES 19 & 20
(13)
G
F
POLARIZING KEY
1010674-3 (REF)
56P3 SEE NOTE 35
1010809-1 (REF)
56P4 SEE NOTE 18
56P4
(13) SEE NOTES 19 & 20
(18) SEE NOTES 19 & 20
1010824-5 (REF)
56J8
SEE NOTE 18
1010824-3 (REF)
56J6 SEE NOTE 18
1010771-201 (REF) 56P5
1023012-1 (REF)
POLARIZING KEY
VIEW F F
(13) SEE NOTES 19 & 20
CONTINUOUS CLOVE HITCH SEE NOTE 16
(13) SEE NOTES 19 & 20

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN D. Lunde DATE 23 FEB 65
CHECKED C. Pizzola 1 APR 65
APPROVAL S. Hicks APR 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

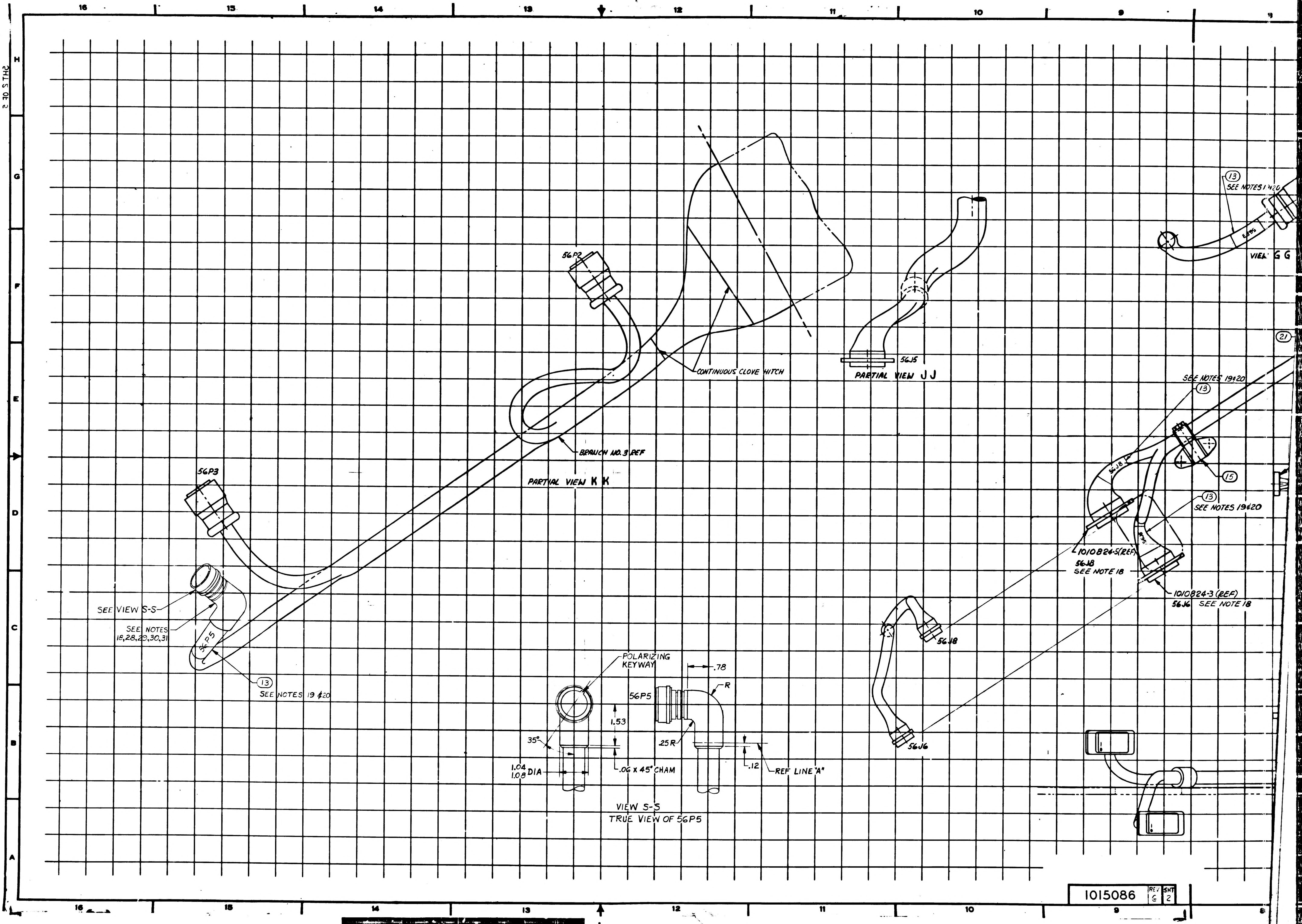
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END
CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE J2
1015086
SCALE 1:1
SHEET 2 OF 5

1015086 | SHT 2

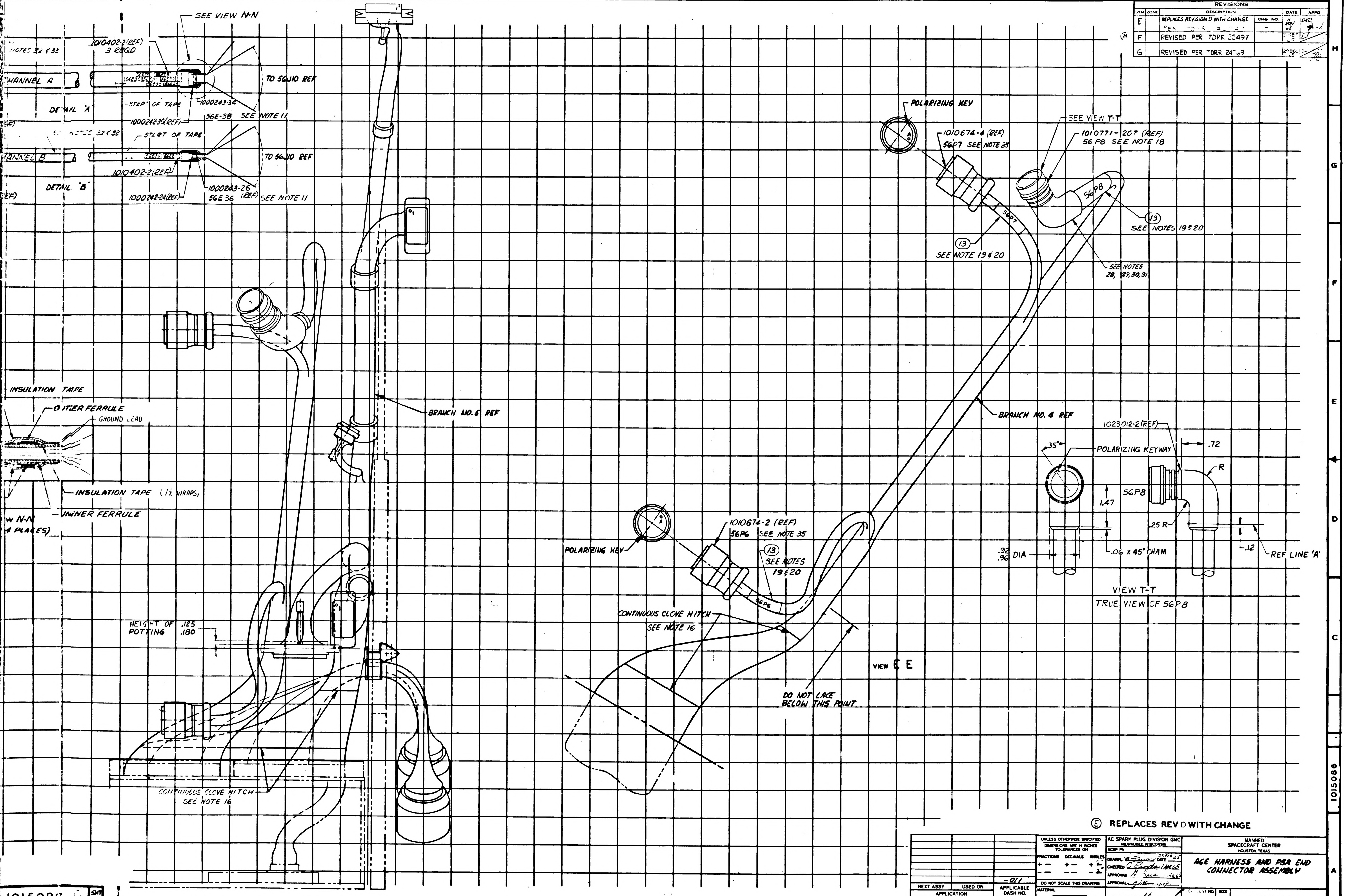
27/1015086


16
15
14
13
12
11
10
9
H
G
F
E
D
C
B
A
SHT 2 OF 2
8802101
56P2
CONTINUOUS CLOVE HITCH
BRANCH NO. 3 REF
PARTIAL VIEW K K
56P3
SEE VIEW S-S
SEE NOTES
18,28,29,30,31
56P5
13
SEE NOTES 19 & 20
56J5
PARTIAL VIEW J J
13
SEE NOTES 19 & 20
E-96
VIEW G G
21
SEE NOTES 19 & 20
13
56J8
15
13
SEE NOTES 19 & 20
1010824-5(REF)
56J8
SEE NOTE 18
1010824-3 (REF)
56J6 SEE NOTE 18
56J8
56J6
POLARIZING
KEYWAY
56P5
.78
R
1.53
35°
.25R
1.04
1.08 DIA
.06 X 45° CHAM
.12
REF LINE "A"
VIEW S-S
TRUE VIEW OF 56P5

1015086	REV G	SHT 2

1/1015086

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER TDRR 2[illegible]	-	11 MAY 65	DKD
F		REVISED PER TDRR 22497		[illegible] SEP 65	[illegible]
G		REVISED PER TDRR 24769		20 DEC 65	[illegible]



SEE VIEW N-N
1010402-2 (REF) 3 REQD
NOTES 32 & 33
CHANNEL A
TO 56J10 REF
START OF TAPE
1000243-34
DETAIL "A"
1000242-34 (REF)
56E-38
SEE NOTE 11
NOTES 32 & 33
START OF TAPE
CHANNEL B
TO 56J10 REF
1010402-2 (REF)
DETAIL "B"
1000243-26 (REF)
1000242-24 (REF)
56E 36
SEE NOTE 11
INSULATION TAPE
OUTER FERRULE
GROUND LEAD
INSULATION TAPE (1½ WRAPS)
INNER FERRULE
VIEW N-N (4 PLACES)
BRANCH NO. 5 REF
HEIGHT OF POTTING
.125
.180
CONTINUOUS CLOVE HITCH
SEE NOTE 16
POLARIZING KEY
1010674-4 (REF)
56P7 SEE NOTE 35
SEE VIEW T-T
1010771-207 (REF)
56P8 SEE NOTE 18
56P7
56P8
13
SEE NOTES 19 & 20
13
SEE NOTE 19 & 20
SEE NOTES 28, 29, 30, 31
BRANCH NO. 4 REF
1023012-2 (REF)
35°
POLARIZING KEYWAY
.72
R
56P8
1.47
.25 R
.92
.96
DIA
.06 x 45° CHAM
.12
REF LINE 'A'
VIEW T-T
TRUE VIEW OF 56P8
POLARIZING KEY
1010674-2 (REF)
56P6 SEE NOTE 35
13
SEE NOTES 19 & 20
56P6
CONTINUOUS CLOVE HITCH
SEE NOTE 16
VIEW E E
DO NOT LACE BELOW THIS POINT

Ⓔ REPLACES REV D WITH CHANGE

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	+ —	+ ½°
— —	— —	— ½°

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

DRAWN [illegible] DATE 23 FEB 65
CHECKED C. [illegible] 1 APR 65
APPROVAL [illegible] APR 65
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

DOCUMENT NO. SIZE J 1015086

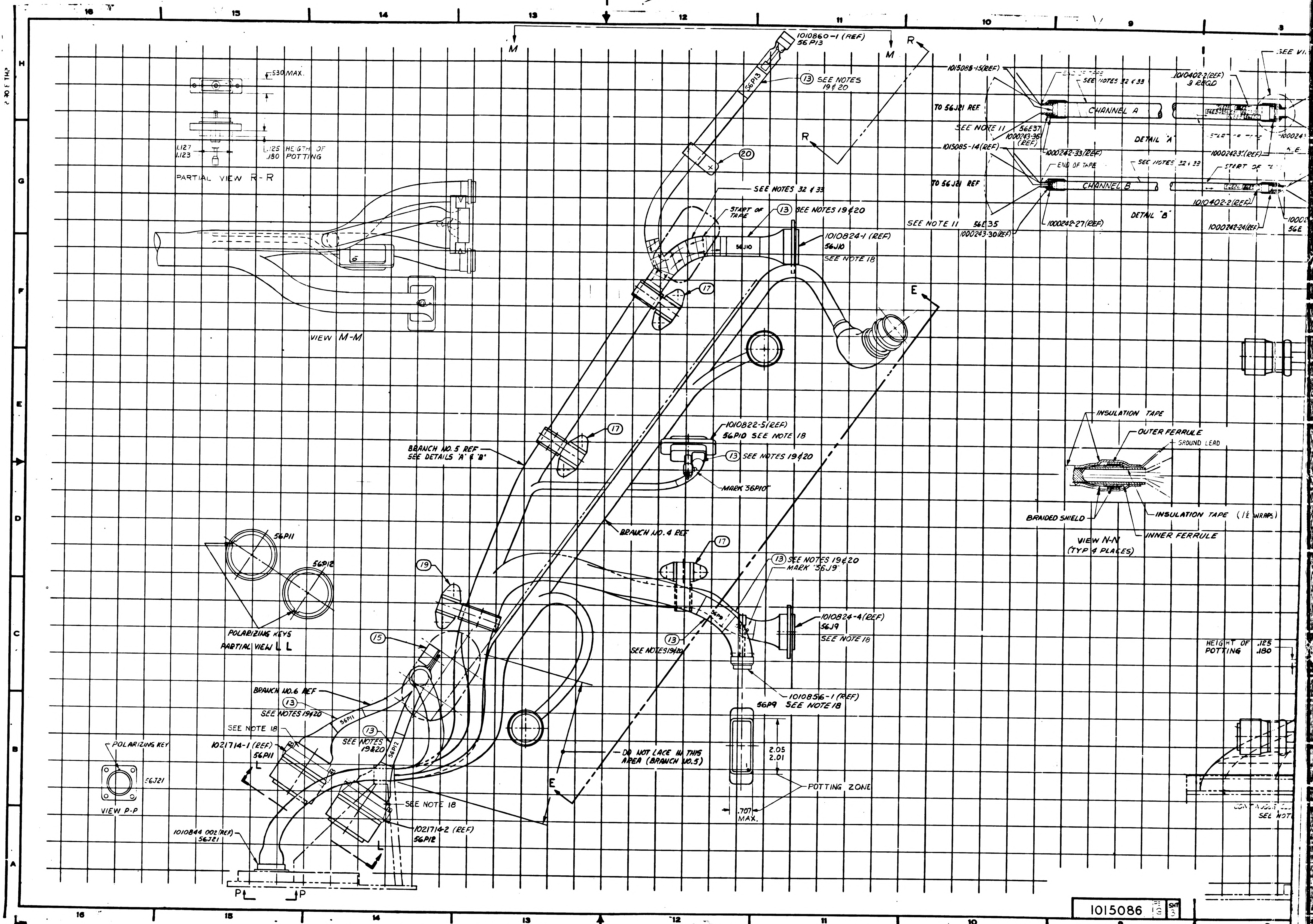
SCALE 1:1 SHEET 3 OF 5

1015086 SHT 3

2/1015086

1015086

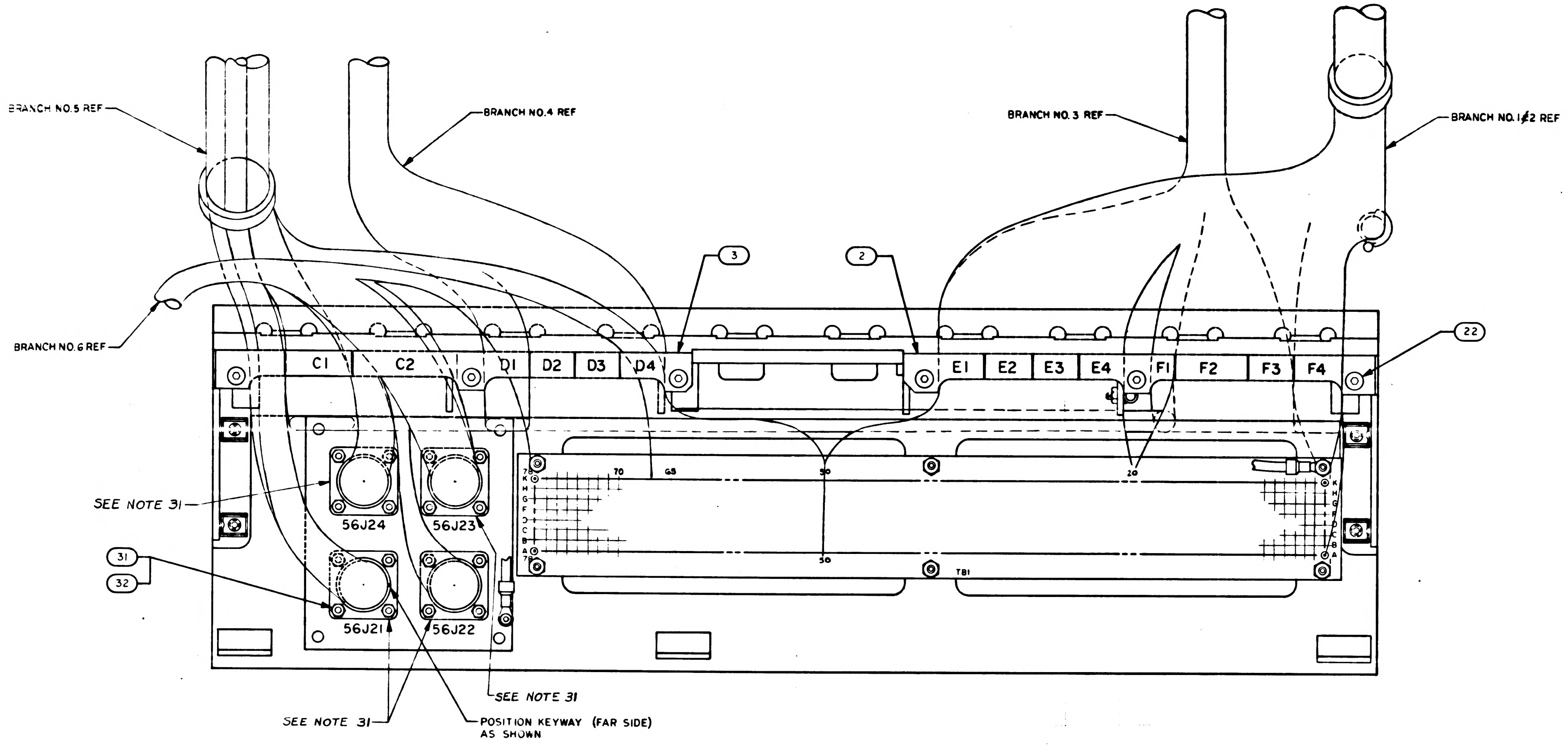
SHT 3 OF


16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
M
M
R
R
E
E
1010860-1 (REF)
56P13
56P13
⑬ SEE NOTES 19 & 20
⑳
.530 MAX.
1.127
1.123
.125 HEIGTH OF
.180 POTTING
PARTIAL VIEW R-R
VIEW M-M
SEE NOTES 32 & 33
START OF TAPE
⑬ SEE NOTES 19 & 20
56J10
1010824-1 (REF)
56J10
SEE NOTE 18
⑰
⑰
⑰
1015085-15(REF)
END OF TAPE
SEE NOTES 32 & 33
TO 56J21 REF
CHANNEL A
SEE NOTE 11
56E37
1000243-36
(REF)
1000242-33(REF)
1010402-2(REF)
3 REQD
SEE VI
DETAIL "A"
START OF TAPE
1000243
1000242-31(REF)
56E
1015085-14(REF)
END OF TAPE
SEE NOTES 32 & 33
TO 56J21 REF
CHANNEL B
START OF
SEE NOTE 11
56E35
1000243-30(REF)
1000242-27(REF)
DETAIL "B"
1010402-2(REF)
1000242-24(REF)
1000
56E
BRANCH NO. 5 REF
SEE DETAILS "A" & "B"
1010822-5(REF)
56P10 SEE NOTE 18
⑬ SEE NOTES 19 & 20
MARK "56P10"
BRANCH NO. 4 REF
INSULATION TAPE
OUTER FERRULE
GROUND LEAD
BRAIDED SHIELD
INSULATION TAPE (1½ WRAPS)
INNER FERRULE
VIEW N-N
(TYP 4 PLACES)
56P11
56P12
POLARIZING KEYS
PARTIAL VIEW L L
⑲
⑮
⑬ SEE NOTES 19 & 20
MARK "56J9"
56P9
1010824-4(REF)
56J9
SEE NOTE 18
⑬
SEE NOTES 19 & 20
1010856-1 (REF)
56P9 SEE NOTE 18
HEIGHT OF .125
POTTING .180
BRANCH NO. 6 REF
⑬
SEE NOTES 19 & 20
56P11
SEE NOTE 18
⑬
SEE NOTES 19 & 20
56P12
1021714-1 (REF)
56P11
L
L
DO NOT LACE IN THIS
AREA (BRANCH NO. 5)
2.05
2.01
POTTING ZONE
.707
MAX.
POLARIZING KEY
56J21
VIEW P-P
SEE NOTE 18
1010844 002 (REF)
56J21
1021714-2 (REF)
56P12
P
P
CONTINUOUS
SEE NOTE

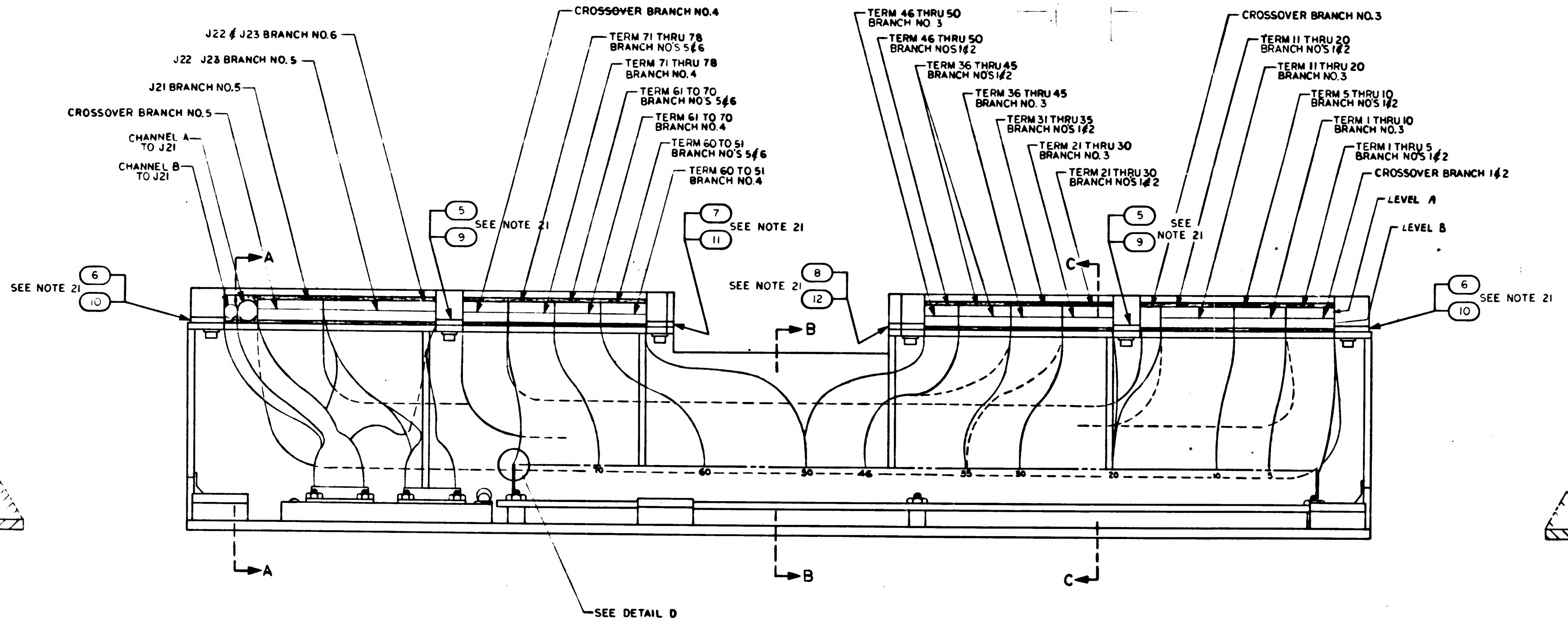
1015086 | G | SHT 3

1/1015086

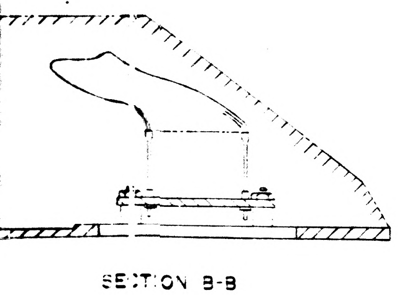
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
E	REPLACES REVISION D WITH CHANGE. TDRR 20529	1 MAY 65	
F	REVISION STATUS CHANGED	21 SEP 65	
G	REVISION STATUS CHANGED	29 DEC 65	



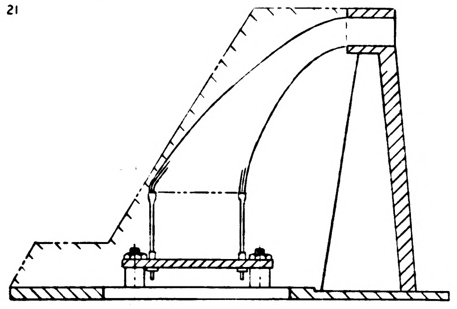
BRANCH NO.5 REF
BRANCH NO.4 REF
BRANCH NO.3 REF
BRANCH NO.1&2 REF
BRANCH NO.6 REF
3
2
22
C1
C2
D1
D2
D3
D4
E1
E2
E3
E4
F1
F2
F3
F4
70
65
50
20
11
TB1
SEE NOTE 31
56J24
56J23
56J21
56J22
31
32
SEE NOTE 31
SEE NOTE 31
POSITION KEYWAY (FAR SIDE) AS SHOWN



CROSSOVER BRANCH NO.4
J22 & J23 BRANCH NO.6
J22 J23 BRANCH NO.5
J21 BRANCH NO.5
CROSSOVER BRANCH NO.5
CHANNEL A TO J21
CHANNEL B TO J21
TERM 71 THRU 78 BRANCH NO'S 5&6
TERM 71 THRU 78 BRANCH NO.4
TERM 61 TO 70 BRANCH NO'S 5&6
TERM 61 TO 70 BRANCH NO.4
TERM 60 TO 51 BRANCH NO'S 5&6
TERM 60 TO 51 BRANCH NO.4
TERM 46 THRU 50 BRANCH NO. 3
TERM 46 THRU 50 BRANCH NOS 1&2
TERM 36 THRU 45 BRANCH NO'S 1&2
TERM 36 THRU 45 BRANCH NO. 3
TERM 31 THRU 35 BRANCH NO'S 1&2
TERM 21 THRU 30 BRANCH NO. 3
TERM 21 THRU 30 BRANCH NO'S 1&2
CROSSOVER BRANCH NO.3
TERM 11 THRU 20 BRANCH NO'S 1&2
TERM 11 THRU 20 BRANCH NO.3
TERM 5 THRU 10 BRANCH NO'S 1&2
TERM 1 THRU 10 BRANCH NO.3
TERM 1 THRU 5 BRANCH NO'S 1&2
CROSSOVER BRANCH 1&2
LEVEL A
LEVEL B
6
10
SEE NOTE 21
5
9
SEE NOTE 21
7
11
SEE NOTE 21
8
12
SEE NOTE 21
5
9
SEE NOTE 21
6
10
SEE NOTE 21
A
B
C
70
60
50
46
35
30
20
10
5
A
B
C
SEE DETAIL D



SECTION B-B



SECTION C-C

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN
DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

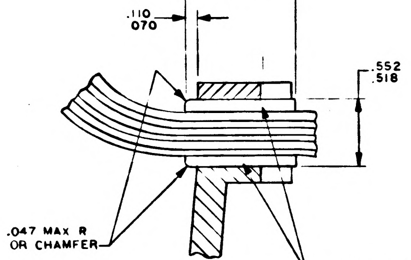
AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO
SIZE J
1015086
SCALE 1:1
SHEET 4 OF 5

1015086 G

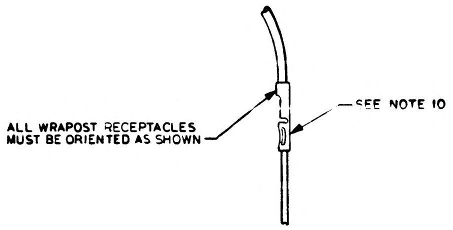
1015086 G

27 1015086

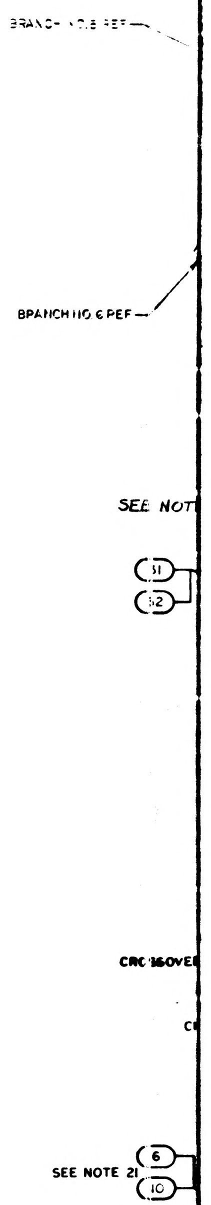

.895
.855
.110
070
.552
.518
.047 MAX R
OR CHAMFER
SEE NOTE 22

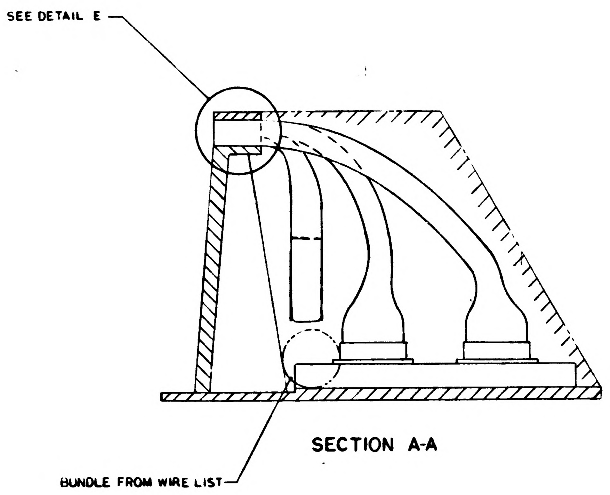
DETAIL E

SCALE: 2/1

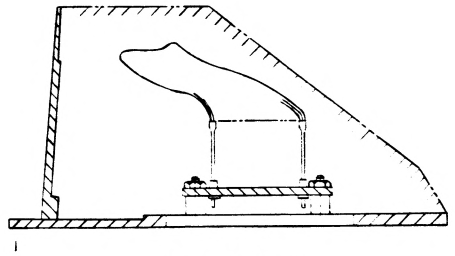

ALL WRAPOST RECEPTACLES
MUST BE ORIENTED AS SHOWN
SEE NOTE 10

DETAIL D


BRANCH NO.8 REF
BRANCH NO.6 REF
SEE NOT
31
32
CROSSOVE
6
10
SEE NOTE 21


SEE DETAIL E
BUNDLE FROM WIRE LIST

SECTION A-A

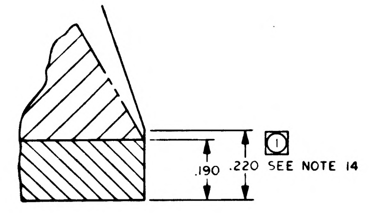


SECTION B-B

1015086 REV G SHT 4

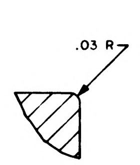
1/1015086

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		REPLACES REVISION D WITH CHANGE	—	11 MAY 65	DKO
F		REVISION STATUS CHANGED		21 SEP 65	
G		REVISION STATUS CHANGED		2? DEC 65	

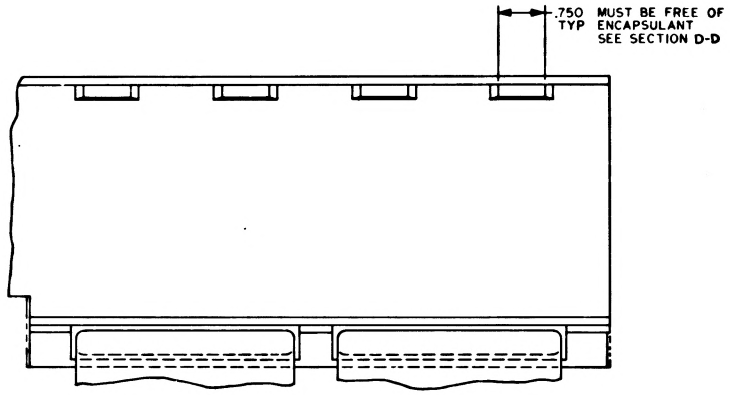


.190
.220
①
SEE NOTE 14

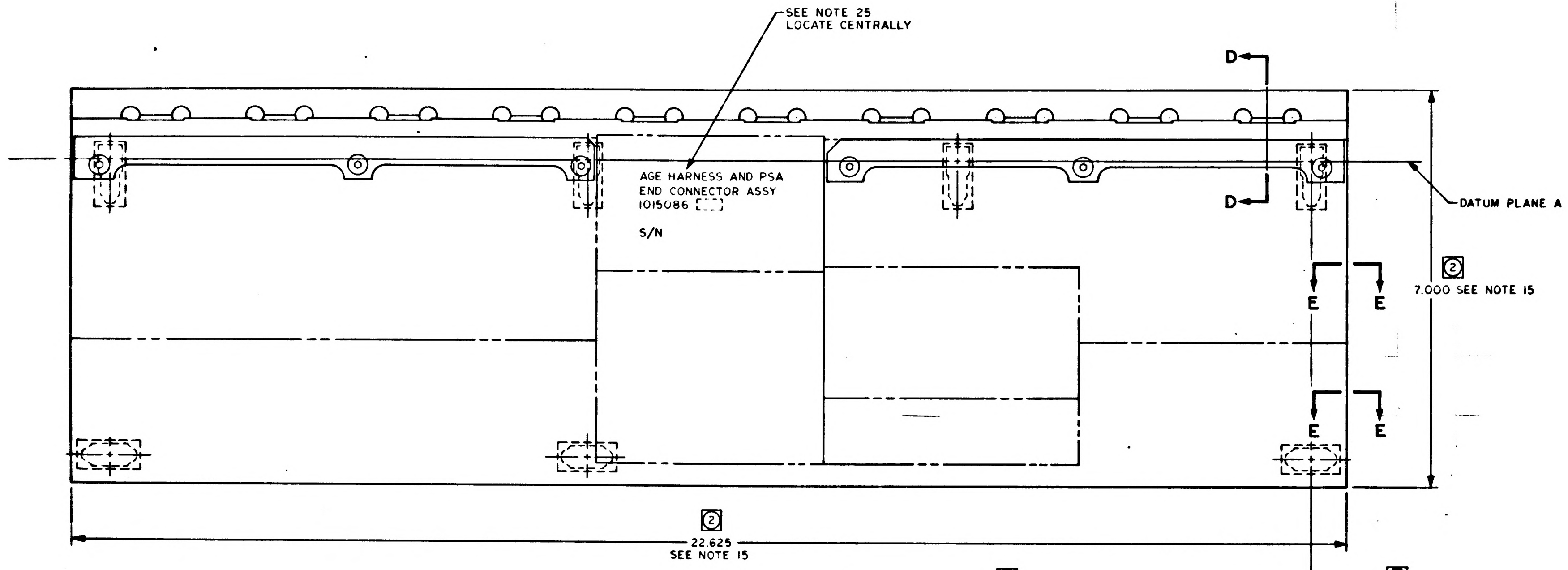
DETAIL C
SCALE: 5/1



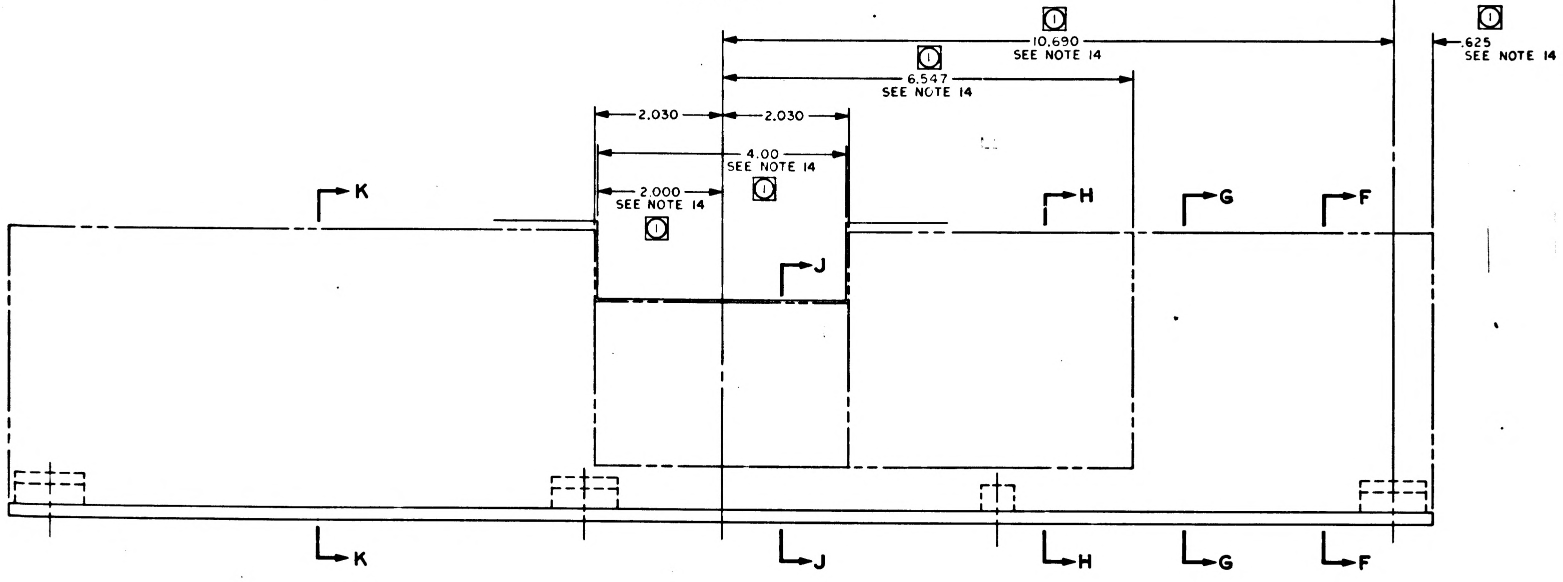
PARTIAL SECTION E-E
SCALE: 5/1
2 PLACES BOTH ENDS



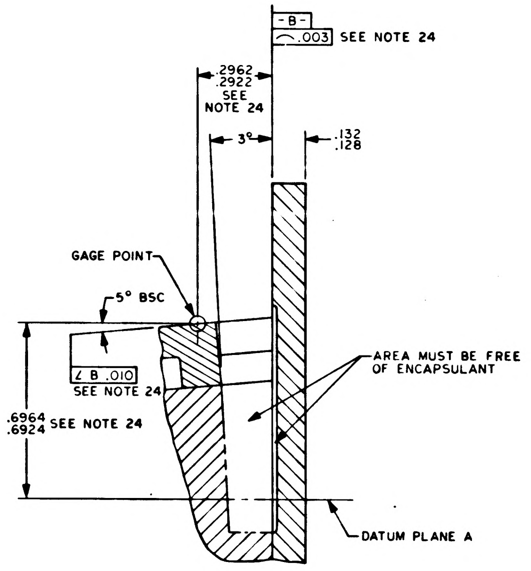
.750 MUST BE FREE OF
TYP ENCAPSULANT
SEE SECTION D-D



SEE NOTE 25
LOCATE CENTRALLY
D
D
AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086
S/N
DATUM PLANE A
E
E
E
E
②
7.000 SEE NOTE 15
②
22.625
SEE NOTE 15

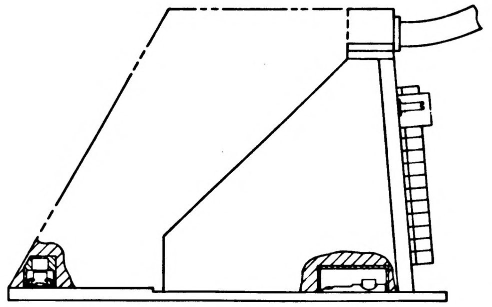


①
10.690
SEE NOTE 14
①
.625
SEE NOTE 14
①
6.547
SEE NOTE 14
2.030
2.030
4.00
SEE NOTE 14
①
2.000
SEE NOTE 14
①
K
J
H
G
F
K
J
H
G
F



-B-
.003 SEE NOTE 24
.2962
.2922
SEE
NOTE 24
3°
.132
.128
GAGE POINT
5° BSC
∠ B .010
SEE NOTE 24
.6964
.6924 SEE NOTE 24
AREA MUST BE FREE
OF ENCAPSULANT
DATUM PLANE A

PARTIAL SECTION D-D
SCALE: 5/1



Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 3 FEB 65
CHECKED 1 APR 65
APPROVAL 1 APR 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO.
SIZE J
1015086
SCALE 1:1
SHEET 5 OF 5

1015086 REV G SHEET 5

27/1015086

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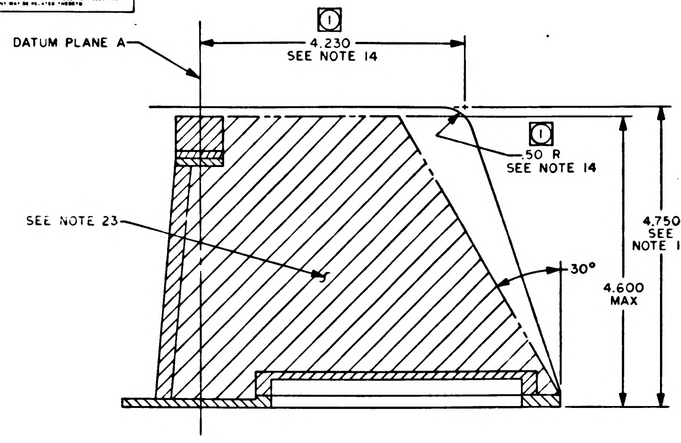
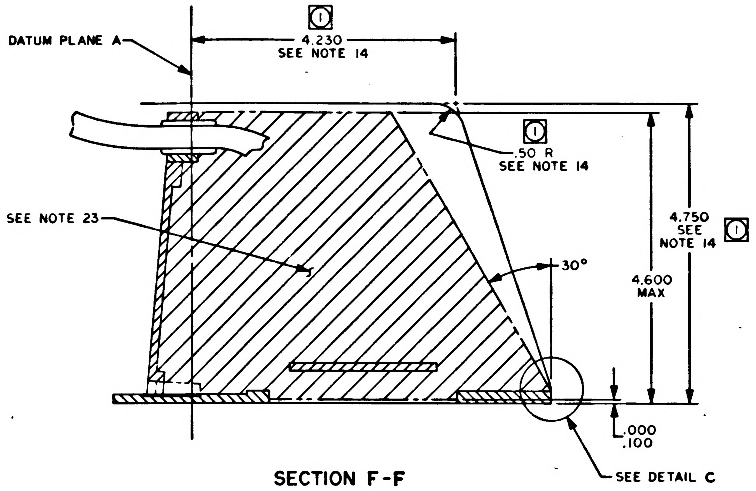
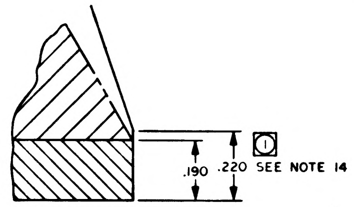

DATUM PLANE A
① 4.230 SEE NOTE 14
① .50 R SEE NOTE 14
SEE NOTE 23
30°
4.750 SEE NOTE 14 ①
4.600 MAX

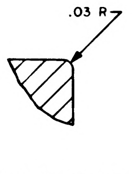
SECTION K-K


DATUM PLANE A
① 4.230 SEE NOTE 14
① .50 R SEE NOTE 14
SEE NOTE 23
30°
4.750 SEE NOTE 14 ①
4.600 MAX
.000 .100
SEE DETAIL C

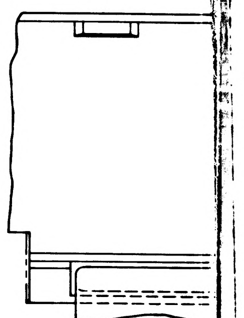
SECTION F-F

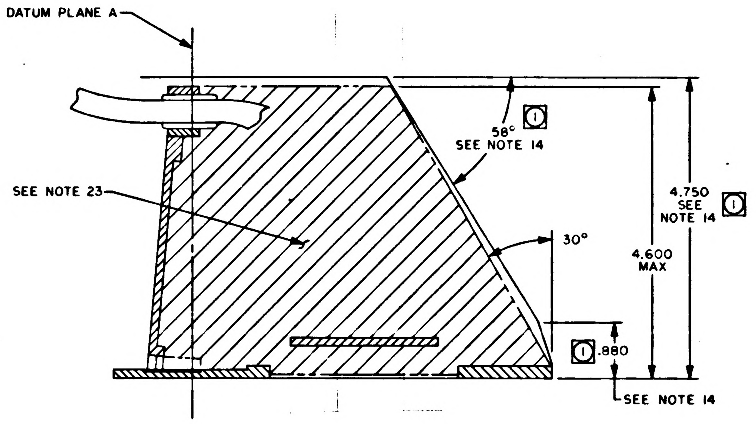

.190
.220 ① SEE NOTE 14

DETAIL C
SCALE: 5/1

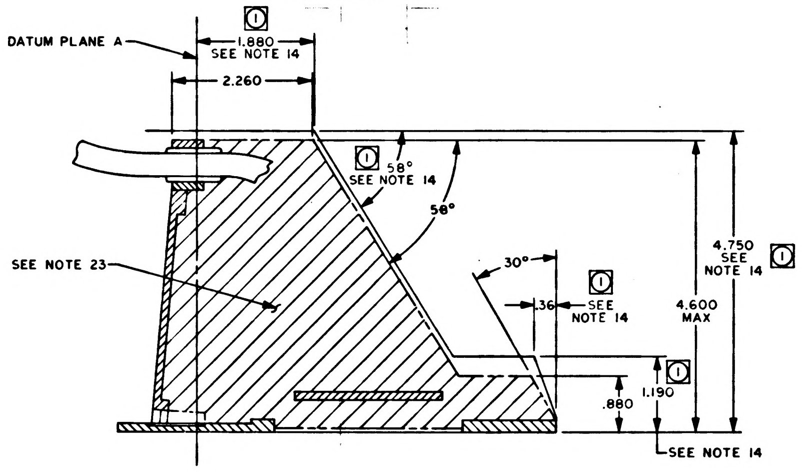


PARTIAL SECTION E-E
SCALE: 5/1
2 PLACES BOTH ENDS

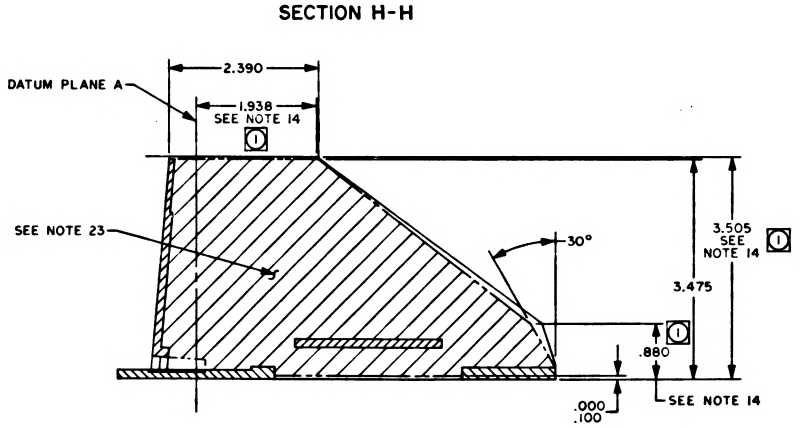



DATUM PLANE A
① 58° SEE NOTE 14
SEE NOTE 23
30°
4.750 SEE NOTE 14 ①
4.600 MAX
① .880
SEE NOTE 14

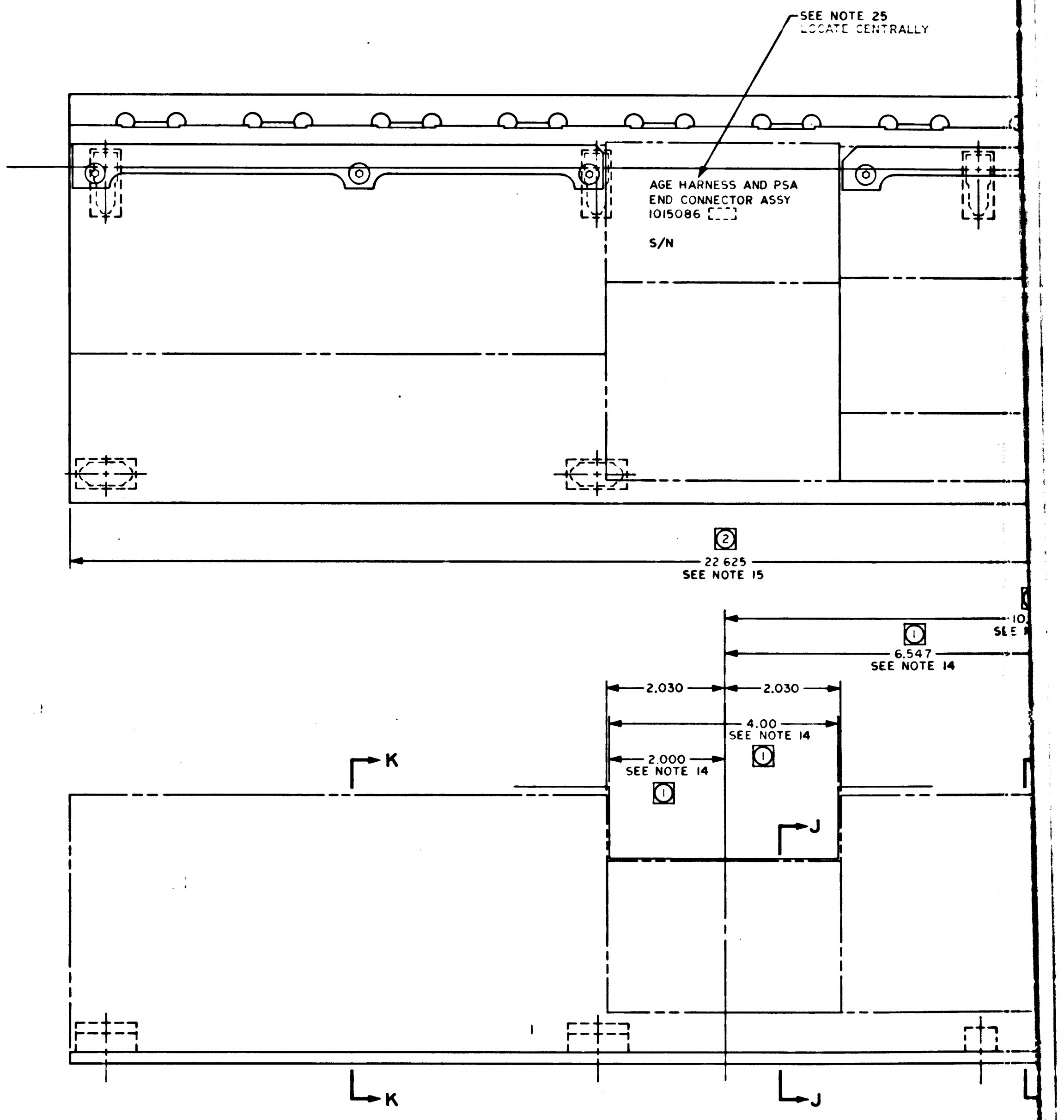
SECTION G-G


DATUM PLANE A
① 1.880 SEE NOTE 14
2.260
① 58° SEE NOTE 14
58°
SEE NOTE 23
30°
.36
① SEE NOTE 14
4.750 SEE NOTE 14 ①
4.600 MAX
① 1.190
.880
SEE NOTE 14

SECTION H-H


DATUM PLANE A
2.390
1.938 SEE NOTE 14 ①
SEE NOTE 23
30°
3.505 SEE NOTE 14 ①
3.475
① .880
.000 .100
SEE NOTE 14

SECTION J-J


SEE NOTE 25
LOCATE CENTRALLY
AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086
S/N
② 22.625 SEE NOTE 15
10
SEE
① 6.547 SEE NOTE 14
2.030
2.030
4.00 SEE NOTE 14 ①
2.000 SEE NOTE 14 ①
K
J
K
J

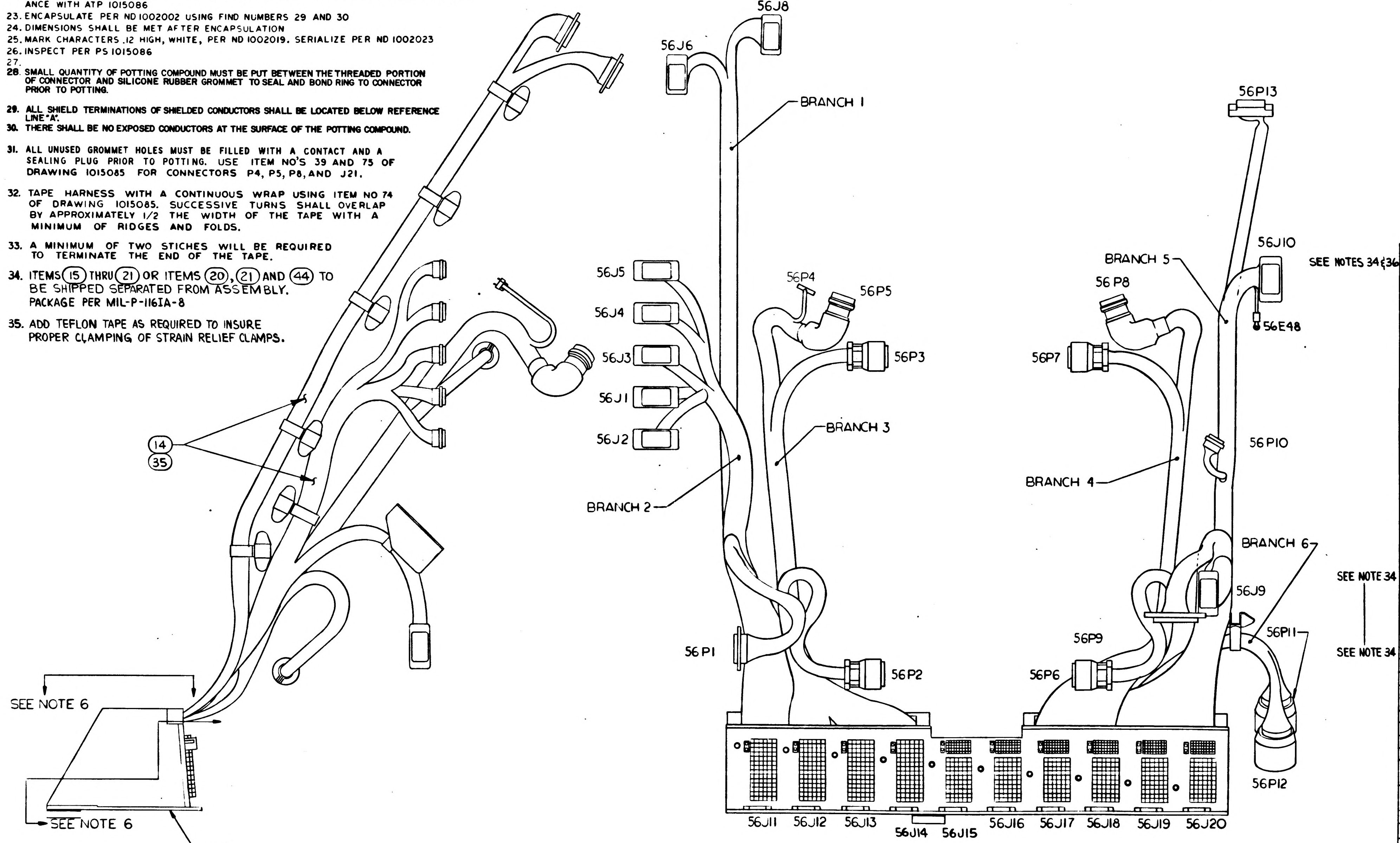
1015086	REV G	SHT 5

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER TDRR [illegible]	—	11 MAY 65	DKU
F		REVISED PER TDRR 22497		SEP 65	
G		REVISED PER TDRR 24769		20 DEC 65	
H		REVISED PER TDRR 26642		7 MAR 66	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BRANCHES 1, 2 AND 3 OF FIND NO. 14 ARE SHOWN ON SHEET 2
3. BRANCHES 4, 5 AND 6 OF FIND NO. 14 ARE SHOWN ON SHEET 3
4. GRID MODULE ON SHEETS 2 AND 3 IS 1 INCH TRUE POSITION
5. UNLESS OTHERWISE SPECIFIED, FEATURE CENTERLINES ON SHEETS 2, 3 AND 4 ARE LOCATED WITHIN ±.25. ENDS OF HOOK UP WIRES OR ACCESSORIES ARE LOCATED WITHIN .12
6. MARRIAGE CONFIGURATION OF FIND NUMBERS 1 AND 14 IS SHOWN ON SHEET 4
7. ENCAPSULATION ENVELOPE IS SHOWN ON SHEET 5
8. TERMINATION NUMBERS AND TOLERANCE CHART ARE LISTED IN CONDUCTOR CHART OF FIND NO. 14
9. INTERCONNECTION DIAGRAM OF AGE C/M, LOWER EQUIPMENT BAY, IS 1015090
10. WELD PER ND 1002225
11. CRIMP PER ND 1002206
12. LACE HARNESS PER ND 1002032
13. ALL WIRING SHALL BE BELOW THE SURFACE OF THE ENCAPSULATING MATERIAL
14. ① DIMENSION OR CHARACTERISTIC IS CONTROLLED BY ICDMH01-01203-116
15. ② ICDMH01-01203-116 ENVELOPE DIMENSIONS ARE 7.000 AND 22.690 RESPECTIVELY; ACTUAL VALUES MAY BE LESS. ENCAPSULATION SHALL BE FLUSH TO .015 LESS THAN THE ENVELOPE DEFINED BY THE ACTUAL LENGTH AND WIDTH OF THE END CONNECTOR ASSEMBLY
16. LACE HARNESS IN GROUPS, USING A CONTINUOUS CLOVE HITCH AT INTERVALS NOT TO EXCEED TWO INCHES MAXIMUM. WIRES FROM DIFFERENT HARNESS BRANCHES MERGING INTO THE SAME WIRE HARNESS CLAMP CHANNEL GROUP SHALL BE BLENDED TOGETHER WHEN STITCHING IS PERFORMED.
17. APPLY EPOXY PER ND 1002187 TYPE II USING FIND NUMBERS 26 AND 27. TO SEAL JUNCTION OF CONNECTOR FLANGES AND BOTTOM PLATE.
18. ENCAPSULATE BACK OF CONNECTOR PER ND 1002236 USING FIND NO. 28
19. MARK FIND NO. 13 WITH REFERENCE DESIGNATION AS SHOWN, .12 HIGH, BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE
20. SECURE FIND NO. 13 TO FIND NO. 14 USING FIND NUMBERS 24 AND 25
21. SELECT NOTED FIND NUMBERS IN ACCORDANCE WITH ATP REQUIREMENTS AT ENCAPSULATION PHASE OF END CONNECTOR BUILD UP
22. ASSEMBLE, TEST AND ENCAPSULATE, USING FIND NO. 28 PER ND 1002236, IN ACCORDANCE WITH ATP 1015086
23. ENCAPSULATE PER ND 1002002 USING FIND NUMBERS 29 AND 30
24. DIMENSIONS SHALL BE MET AFTER ENCAPSULATION
25. MARK CHARACTERS .12 HIGH, WHITE, PER ND 1002019. SERIALIZE PER ND 1002023
26. INSPECT PER PS 1015086
27.
28. SMALL QUANTITY OF POTTING COMPOUND MUST BE PUT BETWEEN THE THREADED PORTION OF CONNECTOR AND SILICONE RUBBER GROMMET TO SEAL AND BOND RING TO CONNECTOR PRIOR TO POTTING.
29. ALL SHIELD TERMINATIONS OF SHIELDED CONDUCTORS SHALL BE LOCATED BELOW REFERENCE LINE "A".
30. THERE SHALL BE NO EXPOSED CONDUCTORS AT THE SURFACE OF THE POTTING COMPOUND.
31. ALL UNUSED GROMMET HOLES MUST BE FILLED WITH A CONTACT AND A SEALING PLUG PRIOR TO POTTING. USE ITEM NO'S 39 AND 75 OF DRAWING 1015085 FOR CONNECTORS P4, P5, P8, AND J21.
32. TAPE HARNESS WITH A CONTINUOUS WRAP USING ITEM NO 74 OF DRAWING 1015085. SUCCESSIVE TURNS SHALL OVERLAP BY APPROXIMATELY 1/2 THE WIDTH OF THE TAPE WITH A MINIMUM OF RIDGES AND FOLDS.
33. A MINIMUM OF TWO STICHES WILL BE REQUIRED TO TERMINATE THE END OF THE TAPE.
34. ITEMS ⑮ THRU ㉑ OR ITEMS ⑳, ㉑ AND (44) TO BE SHIPPED SEPARATED FROM ASSEMBLY. PACKAGE PER MIL-P-116IA-8
35. ADD TEFLON TAPE AS REQUIRED TO INSURE PROPER CLAMPING OF STRAIN RELIEF CLAMPS.
36. SELECT SIZES TO CONFORM TO BUNDLE DIAMETER AT LOCATION SHOWN.
37. POT BACK OF CONNECTORS 56J1 THRU 56J5 PER ND 1002236 USING ITEM ㉘. INSIDE CENTER HARDWARE MUST BE FREE OF POTTING WITHIN DIMENSION SHOWN.
38. BOND ITEM ㊳ TO BACK SIDE OF CONNECTOR FLANGE FOR CONNECTORS 56J1 THRU 56J5, USING ITEMS ㊴ AND ㊵ PER ND 1002151.
39. UNDERCUT .12 X .12 AS SHOWN.
40. AFTER ENCAPSULATION REMOVE ANODIZE ALONG NOTED SURFACES.
41. AFTER ENCAPSULATION APPLY ECCOBOND 45 AND CATALYST NO. 15 PER ND 1002004, TYPE II, USING ITEMS ㊷ AND ㊸ TO ENTIRE LENGTH OF NOTED SURFACES.
42. AFTER ENCAPSULATION APPLY PRIMER AND PR1538 PER ND 1002236, USING ITEMS ㊶ AND ㉘ TO THE REWORKED TRAY SLOTS.
43. CLAMP LOCATIONS SHOWN ARE FOR REFERENCE ONLY.



Ⓔ REPLACES REV D WITH CHANGE

031	021	011	000	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION
		10	—		44	1010400-1 THRU -18	CLAMP, LOOP, HINGED
		AR	—		43	1010686	CATALYST
		AR	—		42	1010657	EPOXY RESIN
		AR	—		41	1012504	PRIMER, METAL PARTS
		AR	—		40	1010718	PRIMER, SILICONE ADHESIVE
		AR	—		39	MIL-A-25457	ADHESIVE, SILICONE RUBBER
		5	—		38	1021307	GASKET, CONNECTOR
		2	—		37	1010618-26	SCREW, BUTTON HD.
		1	—		36	1008329	SPACER BLOCK
		X	—		REF	1023058	INTERCONNECTION LIST
		—	X		REF	1015087	INTERCONNECTION LIST
		1	—		35	1023059	WIRING HARNESS "A"
		1	—		34	1007599-021	END CONNECTOR ASSY, PSA
		—	1		33	MS35650-104	NUT, PLAIN HEX
		4	4		32	MS35649-44	NUT, PLAIN HEX
		4	4		31	1010618-15	SCREW, BUTTON HEAD
		AR	AR		30	1010798-2	ACTIVATOR
		AR	AR		29	1010798-1	RESIN
		AR	AR		28	1012503	COMPOUND, POTTING, POLYURETHANE
		AR	AR		27	1010679	ADHESIVE ACTIVATOR
		AR	AR		26	1010661	EPOXY RESIN
		AR	AR		25	1012507-004	LACING TAPE
		AR	AR		24	1012507-002	LACING TAPE
		—	1		23	MS35338-081	WASHER, LOCK
		6	6		22	1006783-47	SCREW, BUTTON HEAD
		2	1		21	1010705-8	CLAMP
		1	1		20	1010705-6	CLAMP
		—	1		19	1010400-8	CLAMP, LOOP, HINGED
		—	1		18	1010400-7	CLAMP, LOOP, HINGED
		—	3		17	1010400-3	CLAMP, LOOP, HINGED
		—	1		16	1010400-2	CLAMP, LOOP, HINGED
		—	5		15	1010400-1	CLAMP, LOOP, HINGED
		—	1		14	1015085	WIRING HARNESS "A"
		21	21		13	1010811-002	BAND, IDENTIFICATION
		1	1		12	1021253-8	SPACER
		1	1		11	1021253-7	SPACER
		2	2		10	1021253-6	SPACER
		2	2		9	1021253-5	SPACER
		1	1		8	1021253-4	SPACER
		1	1		7	1021253-3	SPACER
		2	2		6	1021253-2	SPACER
		2	2		5	1021253-1	SPACER
		—	1		4	1014609	BRACKET, CLAMP
		1	1		3	1008165	CABLE CLAMP, RIGHT
		1	1		2	1008164	CABLE CLAMP, LEFT
		—	1		1	1007599-011	END CONNECTOR ASSY, PSA
QUANTITY REQUIRED							

LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT [illegible]

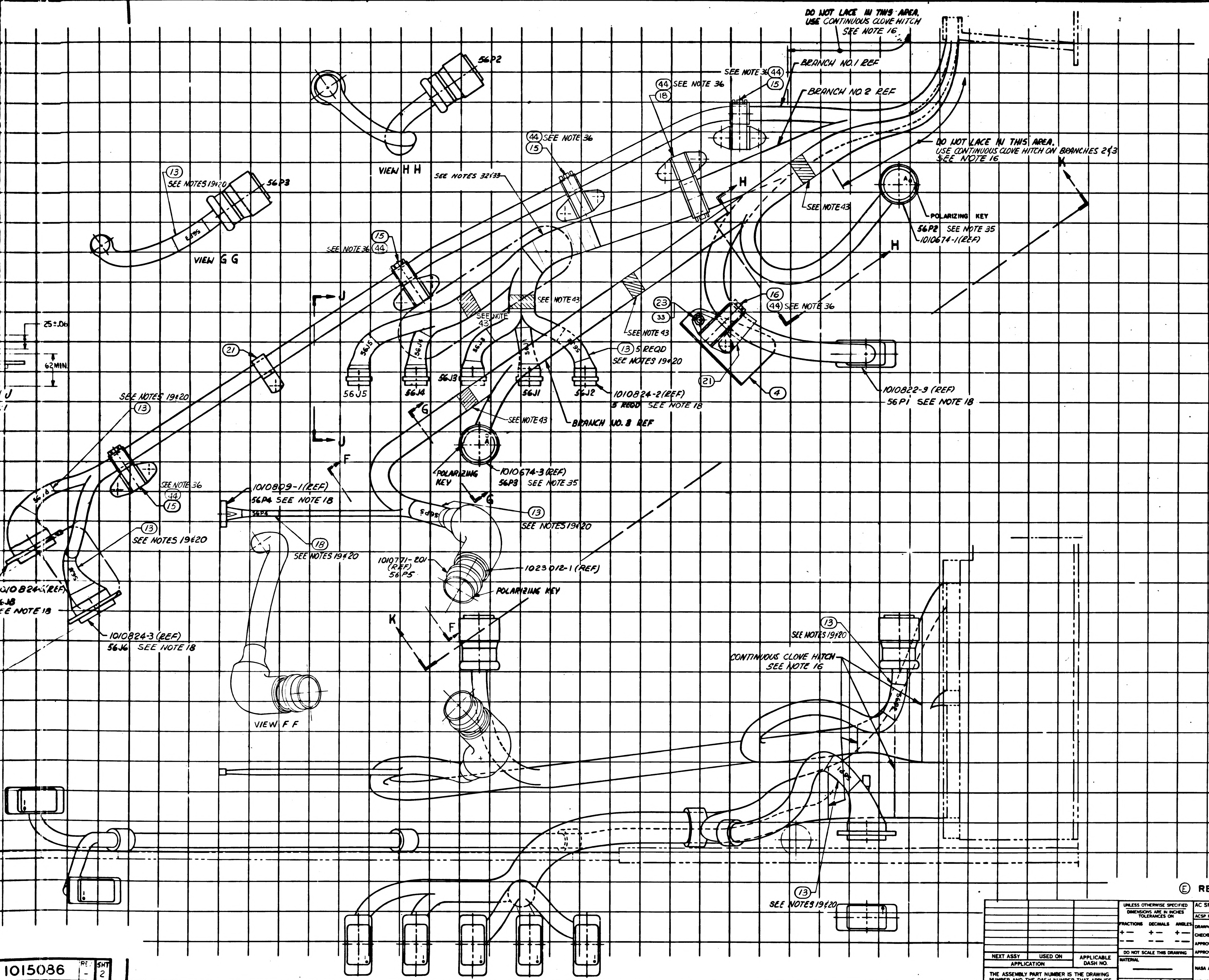
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE E
1015086
SCALE 1:2
SHEET 1 OF 6

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER TDRR 20529	—	11 MAY 65	DKD
F		REVISED PER TDRR 2240̄		21 SEP 65	
G		REVISED PER TDRR 2-̄69		29 DEC 65	
H		REVISED PER TDRR 26642		7 MAR 66	



DO NOT LACE IN THIS AREA. USE CONTINUOUS CLOVE HITCH SEE NOTE 16.
BRANCH NO. 1 REF
BRANCH NO. 2 REF
SEE NOTE 36 (44)
(44) SEE NOTE 36
(15)
(18)
56P2
VIEW H H
(13) SEE NOTES 19 & 20
56P3
VIEW G G
(44) SEE NOTE 36
(15)
SEE NOTES 32 & 33
DO NOT LACE IN THIS AREA. USE CONTINUOUS CLOVE HITCH ON BRANCHES 2 & 3 SEE NOTE 16
K
H
SEE NOTE 43
POLARIZING KEY
56P2 SEE NOTE 35
1010674-1 (REF)
H
(15)
SEE NOTE 36 (44)
J
SEE NOTE 43
SEE NOTE 43
SEE NOTE 43
(16)
(44) SEE NOTE 36
(23)
(33)
(21)
56J5
56J4
56J3
56J1
56J2
(13) 5 REQD SEE NOTES 19 & 20
1010824-2 (REF) 5 REQD SEE NOTE 18
(21)
(4)
1010822-3 (REF)
56P1 SEE NOTE 18
25 ± .06
.62 MIN.
J
SEE NOTES 19 & 20
(13)
G
SEE NOTE 43
BRANCH NO. 3 REF
J
POLARIZING KEY
1010674-3 (REF)
56P3 SEE NOTE 35
F
G
SEE NOTE 36
(44)
(15)
1010809-1 (REF)
56P4 SEE NOTE 18
56P4
(13)
SEE NOTES 19 & 20
(13)
SEE NOTES 19 & 20
(18)
SEE NOTES 19 & 20
1010771-201 (REF) 56P5
1023012-1 (REF)
POLARIZING KEY
1010824-1 (REF)
56J8
SEE NOTE 18
1010824-3 (REF)
56J6 SEE NOTE 18
K
F
VIEW F F
(13)
SEE NOTES 19 & 20
CONTINUOUS CLOVE HITCH SEE NOTE 16
(13)
SEE NOTES 19 & 20

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN D. Lauda DATE 23 FEB 65
CHECKED C. Pizzola 1 APR 65
APPROVAL S. Hicks 1 APR 65
APPROVAL Y. Kim 1/21/65
NASA APPROVAL
MIT APPROVAL 28 Jan 65

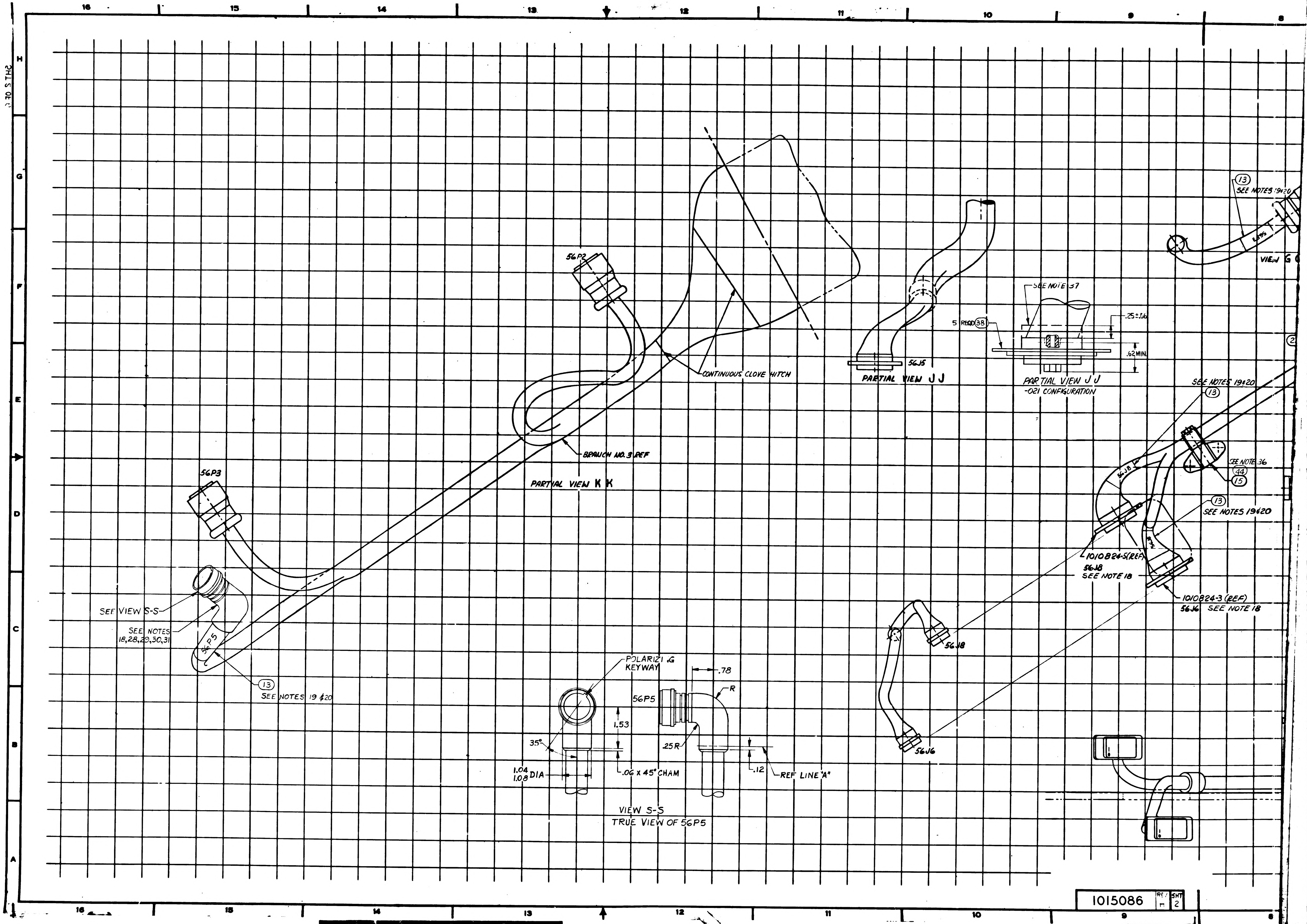
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE J2
1015086
SCALE 1:1
SHEET 2 OF 6

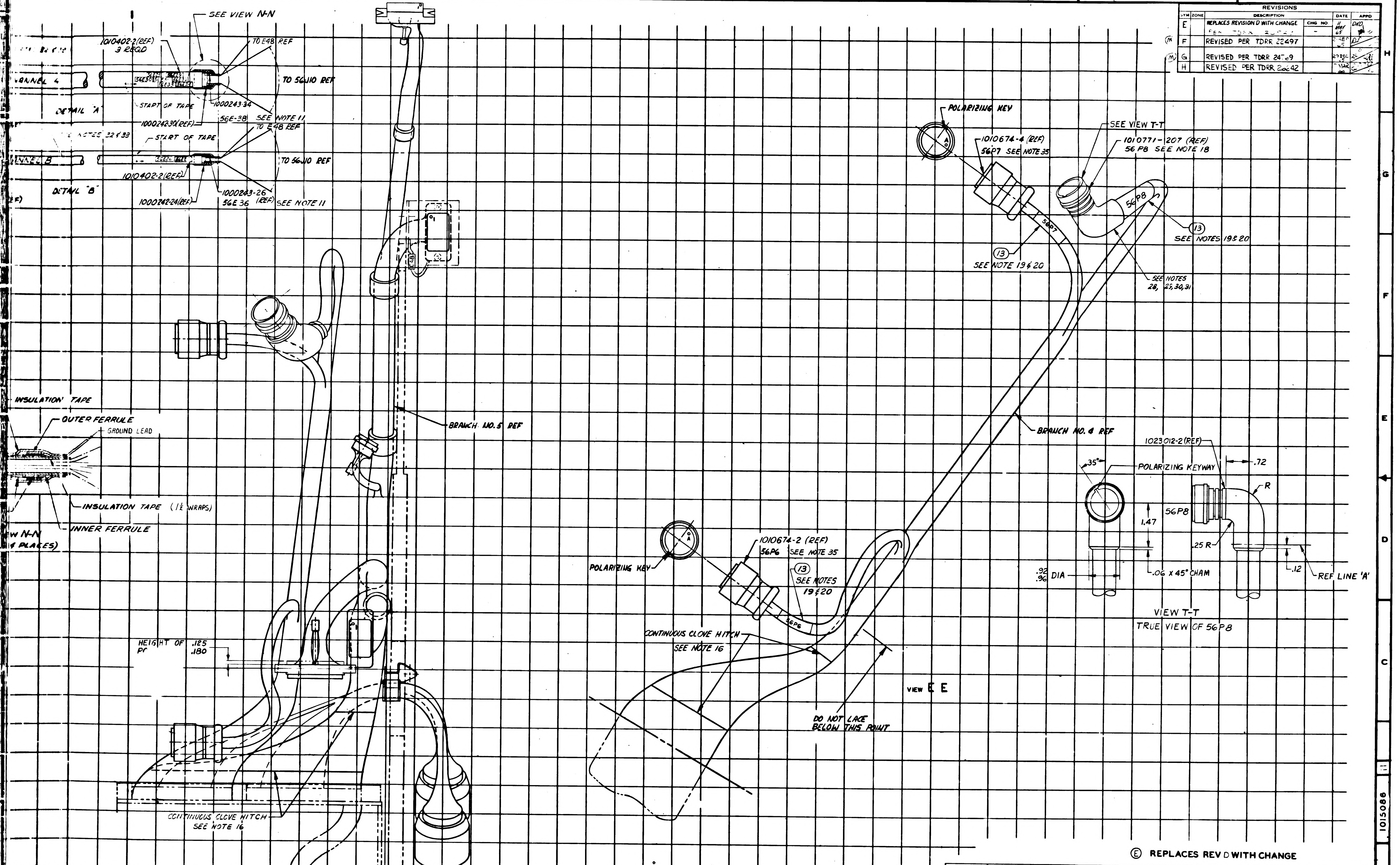
1015086 RE - SHT 2

2710150 86


56P2
CONTINUOUS CLOVE HITCH
BRANCH NO. 3 REF
PARTIAL VIEW K K
56P3
SEE VIEW S-S
SEE NOTES 18,28,29,30,31
56P5
13
SEE NOTES 19 & 20
56J5
PARTIAL VIEW J J
SEE NOTE 37
5 REQD 38
.25±.06
.62 MIN.
PARTIAL VIEW J J
-021 CONFIGURATION
13
SEE NOTES 19&20
VIEW G G
SEE NOTES 19&20
13
56J8
SEE NOTE 36
44
15
13
SEE NOTES 19&20
1010824-5(REF)
56J8
SEE NOTE 18
1010824-3 (REF)
56J6 SEE NOTE 18
56J8
56J6
POLARIZING KEYWAY
.78
56P5
R
1.53
35°
.25R
1.04
1.08 DIA
.06 X 45° CHAM
.12
REF LINE "A"
VIEW S-S
TRUE VIEW OF 56P5
16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
1015086
REV
SHT 2
8808101
SHT 2 OF

1710015086

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER TDRR 2[illegible]	-	11 MAY 65	DKD
F		REVISED PER TDRR 22497		2 SEP 65	[illegible]
G		REVISED PER TDRR 24[illegible]9		23 DEC 65	[illegible]
H		REVISED PER TDRR 26642		MAR [illegible]	[illegible]


SEE VIEW N-N
1010402-2(REF)
3 REQD
TO E48 REF
TO 56J10 REF
ANNEL 4
56E30
56E33
56E35
DETAIL "A"
START OF TAPE
1000243-34
1000242-30(REF)
56E-38
SEE NOTE 11
E NOTES 32 & 33
START OF TAPE
TO E48 REF
TO 56J10 REF
NNEL B
56E26
1010402-2(REF)
DETAIL "B"
1000243-26
56E 36
(REF)
SEE NOTE 11
1000242-24(REF)
F)
INSULATION TAPE
OUTER FERRULE
GROUND LEAD
INSULATION TAPE (1½ WRAPS)
INNER FERRULE
W N-N
4 PLACES)
BRANCH NO. 5 REF
E48
HEIGHT OF .125
PT .180
CONTINUOUS CLOVE HITCH
SEE NOTE 16
POLARIZING KEY
1010674-4 (REF)
56P7 SEE NOTE 35
SEE VIEW T-T
1010771-207 (REF)
56P8 SEE NOTE 18
56P8
56P7
13
SEE NOTES 19 & 20
13
SEE NOTE 19 & 20
SEE NOTES
28, 29, 30, 31
BRANCH NO. 4 REF
1023012-2 (REF)
.72
35°
POLARIZING KEYWAY
R
56P8
1.47
.25 R
.12
.92
.96 DIA
.06 x 45° CHAM
REF LINE 'A'
VIEW T-T
TRUE VIEW OF 56P8
1010674-2 (REF)
56P6 SEE NOTE 35
POLARIZING KEY
13
SEE NOTES
19 & 20
56P6
CONTINUOUS CLOVE HITCH
SEE NOTE 16
VIEW E E
DO NOT LACE
BELOW THIS POINT

Ⓔ REPLACES REV D WITH CHANGE

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ −	+ −	+ ½°
− −	− −	− ½°

DO NOT SCALE THIS DRAWING

MATERIAL ——

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN [illegible] DATE 23 FEB 65
CHECKED C. [illegible] 1 APR 65
APPROVAL [illegible] 1 APR 65
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

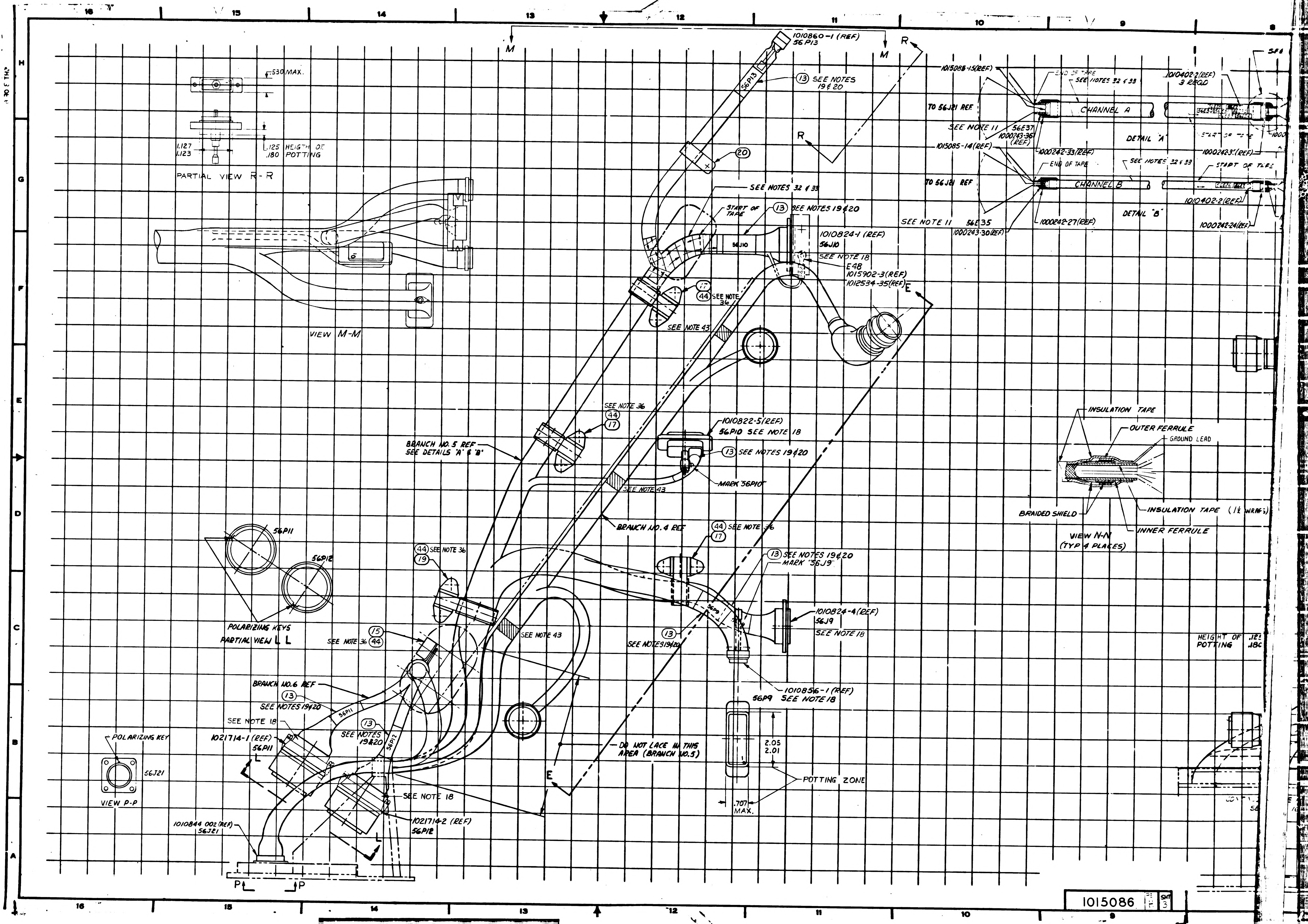
AGE HARNESS AND PSA END
CONNECTOR ASSEMBLY

DOCUMENT NO. | SIZE J | 1015086
SCALE 1:1 | SHEET 3 OF 6

1015086 | SHT 3

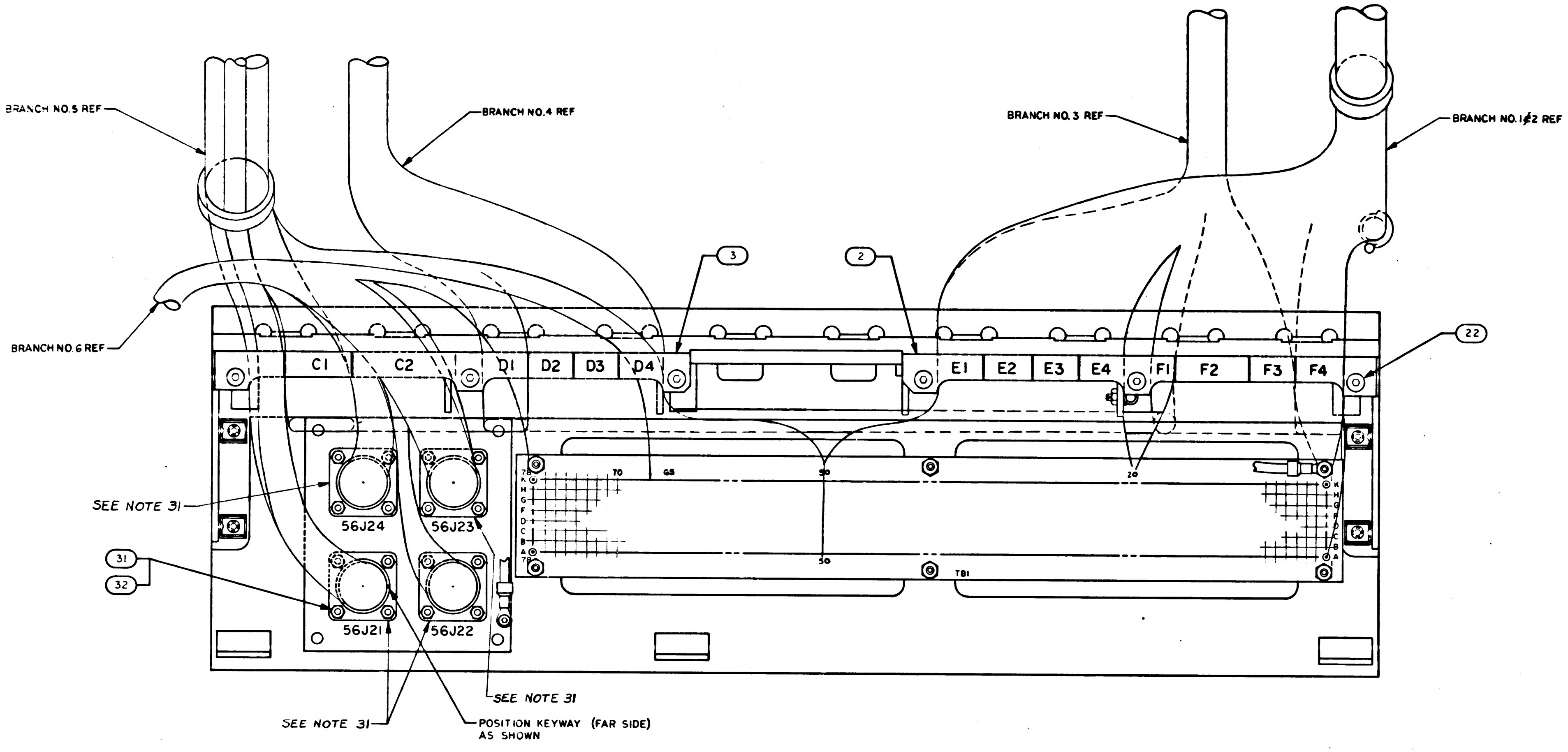
SH

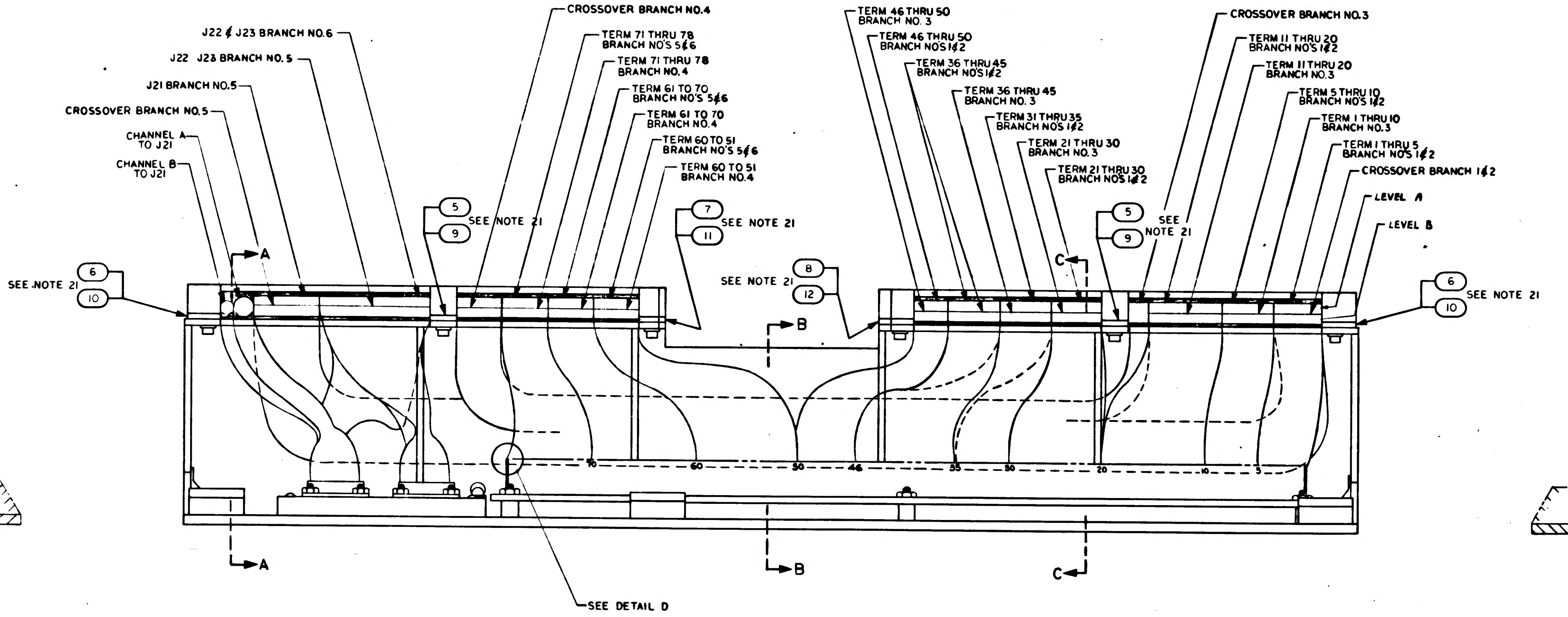
27/1015086

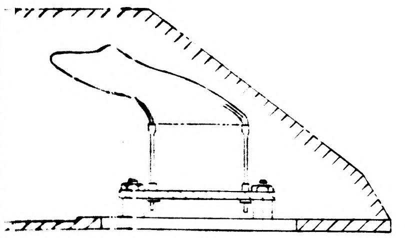

PARTIAL VIEW R-R
.530 MAX.
1.127
1.123
.125 HEIGTH OF
.180 POTTING
VIEW M-M
1010860-1 (REF)
56P13
56P13
M
M
R
R
(13) SEE NOTES 19 & 20
(20)
SEE NOTES 32 & 33
START OF TAPE
(13) SEE NOTES 19 & 20
56J10
1010824-1 (REF)
56J10
SEE NOTE 18
E48
1015902-3(REF)
1012534-35(REF)
E
(17)
(44) SEE NOTE 36
SEE NOTE 43
1015085-15(REF)
END OF TAPE
SEE NOTES 32 & 33
1010402-2(REF)
3 REQD
TO 56J21 REF.
CHANNEL A
SEE NOTE 11
56E37
1000243-36 (REF)
1000242-33(REF)
DETAIL "A"
START OF TAPE
1000242-31(REF)
1015085-14(REF)
END OF TAPE
SEE NOTES 32 & 33
START OF TAPE
TO 56J21 REF
CHANNEL B
1010402-2(REF)
SEE NOTE 11
56E35
1000243-30(REF)
1000242-27(REF)
DETAIL "B"
1000242-24(REF)
SEE NOTE 36
(44)
(17)
BRANCH NO. 5 REF
SEE DETAILS "A" & "B"
1010822-5(REF)
56P10 SEE NOTE 18
(13) SEE NOTES 19 & 20
MARK "56P10"
SEE NOTE 43
BRANCH NO. 4 REF
INSULATION TAPE
OUTER FERRULE
GROUND LEAD
BRAIDED SHIELD
INSULATION TAPE (1½ WRAPS)
INNER FERRULE
VIEW N-N
(TYP 4 PLACES)
56P11
56P12
POLARIZING KEYS
PARTIAL VIEW L L
(44) SEE NOTE 36
(19)
(44) SEE NOTE 36
(17)
(13) SEE NOTES 19 & 20
MARK "56J9"
56P9
1010824-4(REF)
56J9
SEE NOTE 18
(15)
SEE NOTE 36 (44)
SEE NOTE 43
(13)
SEE NOTES 19&20
1010856-1 (REF)
56P9 SEE NOTE 18
HEIGHT OF POTTING .125 .180
BRANCH NO.6 REF
(13)
SEE NOTES 19&20
56P11
SEE NOTE 18
1021714-1 (REF)
56P11
(13)
SEE NOTES 19&20
56P12
DO NOT LACE IN THIS AREA (BRANCH NO.5)
2.05
2.01
POTTING ZONE
.707 MAX.
E
POLARIZING KEY
56J21
VIEW P-P
L
L
SEE NOTE 18
1021714-2 (REF)
56P12
1010844 002 (REF)
56J21
P
P
16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
1015086
SHT 3

1/1015086

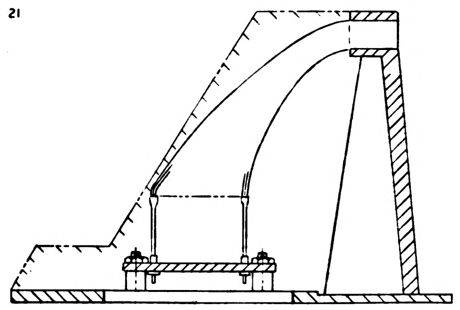
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
E	REPLACES REVISION D WITH CHANGE. TDRR 20529	11 MAY 65	
(M) F	REVISION STATUS CHANGED	21 SEP 65	
(M) G	REVISION STATUS CHANGED	29 DEC 65	
H	REV.SED PER TDRR 26642	7 MAR	


BRANCH NO.5 REF
BRANCH NO.4 REF
BRANCH NO.3 REF
BRANCH NO.1 & 2 REF
BRANCH NO.6 REF
3
2
22
C1
C2
D1
D2
D3
D4
E1
E2
E3
E4
F1
F2
F3
F4
SEE NOTE 31
56J24
56J23
56J21
56J22
31
32
70
65
50
20
TB1
SEE NOTE 31
SEE NOTE 31
POSITION KEYWAY (FAR SIDE) AS SHOWN


CROSSOVER BRANCH NO.4
J22 & J23 BRANCH NO.6
J22 J23 BRANCH NO.5
J21 BRANCH NO.5
CROSSOVER BRANCH NO.5
CHANNEL A TO J21
CHANNEL B TO J21
TERM 71 THRU 78 BRANCH NO'S 5&6
TERM 71 THRU 78 BRANCH NO.4
TERM 61 TO 70 BRANCH NO'S 5&6
TERM 61 TO 70 BRANCH NO.4
TERM 60 TO 51 BRANCH NO'S 5&6
TERM 60 TO 51 BRANCH NO.4
5
9
SEE NOTE 21
7
11
SEE NOTE 21
6
10
SEE NOTE 21
8
12
SEE NOTE 21
TERM 46 THRU 50 BRANCH NO. 3
TERM 46 THRU 50 BRANCH NO'S 1&2
TERM 36 THRU 45 BRANCH NO'S 1&2
TERM 36 THRU 45 BRANCH NO. 3
TERM 31 THRU 35 BRANCH NO'S 1&2
TERM 21 THRU 30 BRANCH NO. 3
TERM 21 THRU 30 BRANCH NO'S 1&2
CROSSOVER BRANCH NO.3
TERM 11 THRU 20 BRANCH NO'S 1&2
TERM 11 THRU 20 BRANCH NO.3
TERM 5 THRU 10 BRANCH NO'S 1&2
TERM 1 THRU 10 BRANCH NO.3
TERM 1 THRU 5 BRANCH NO'S 1&2
CROSSOVER BRANCH 1&2
LEVEL A
LEVEL B
5
9
SEE NOTE 21
6
10
SEE NOTE 21
A
A
B
B
C
C
70
60
50
46
35
30
20
10
5
SEE DETAIL D



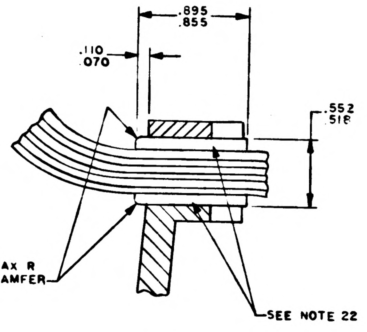
SECTION B-B



SECTION C-C

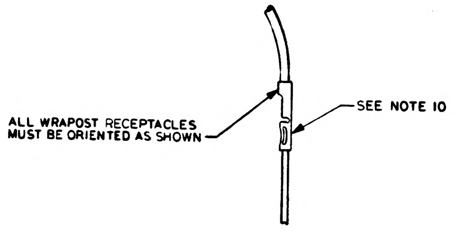
(E) REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN DATE CHECKED 1 APR 65 APPROVAL APR 65 APPROVAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS AGE HARNESS AND PSA END CONNECTOR ASSY
APPLICATION			DO NOT SCALE THIS DRAWING MATERIAL	NASA APPROVAL	CODE IDENT NO. | SIZE J | 1015086
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES			CONTRACT NAS9-497	MIT APPROVAL	SCALE 1:1 | SHEET 4 OF 6

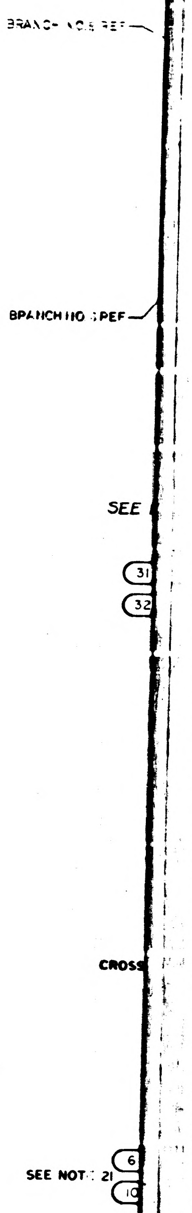

.895
.855
.110
.070
.552
.518
.047 MAX R
OR CHAMFER
SEE NOTE 22

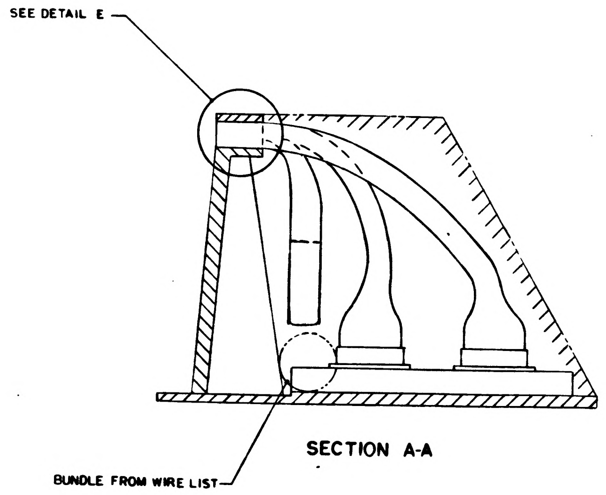
DETAIL E

SCALE: 2/1

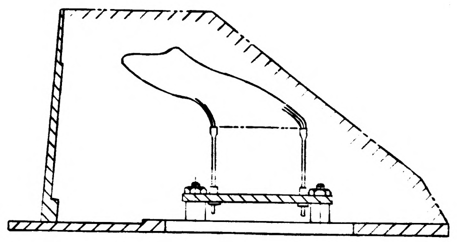

ALL WRAPOST RECEPTACLES
MUST BE ORIENTED AS SHOWN
SEE NOTE 10

DETAIL D


BRANCH NO.8 REF
BRANCH NO.9 REF
SEE
31
32
CROSS
SEE NOTE 21
6
10


SEE DETAIL E
BUNDLE FROM WIRE LIST

SECTION A-A

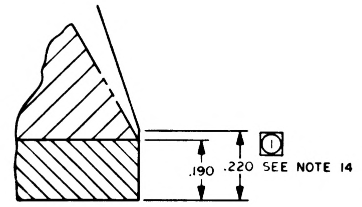


SECTION B-B

1015086 REV - SHT 4

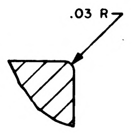
1/1015086

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER	—	11 MAY 65	DYD
F		REVISION STATUS CHANGED		21 SEP 65	RJ
G		REVISION STATUS CHANGED		27 DEC 65	
H		REVISED PER TDRR 26642		7 MAR 66	

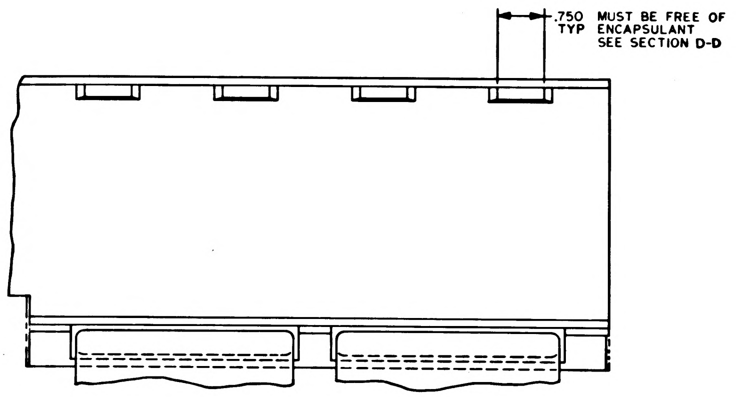


.190
.220
①
SEE NOTE 14

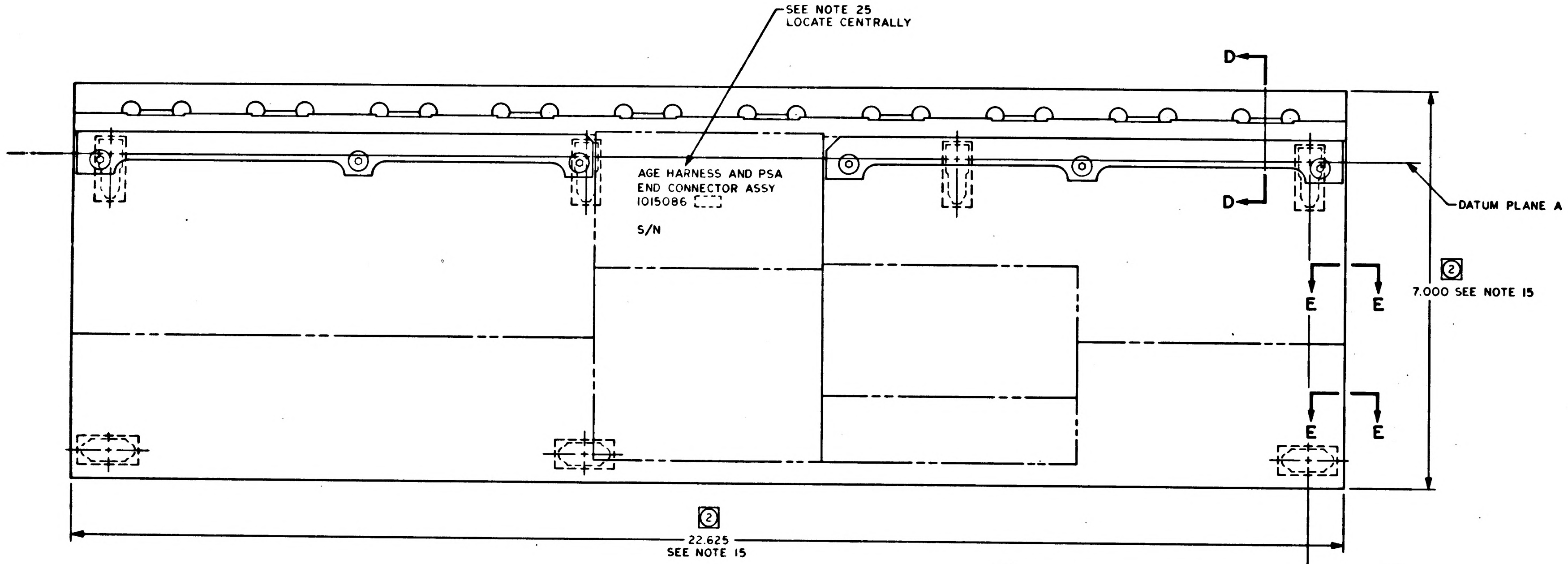
DETAIL C
SCALE: 5/1



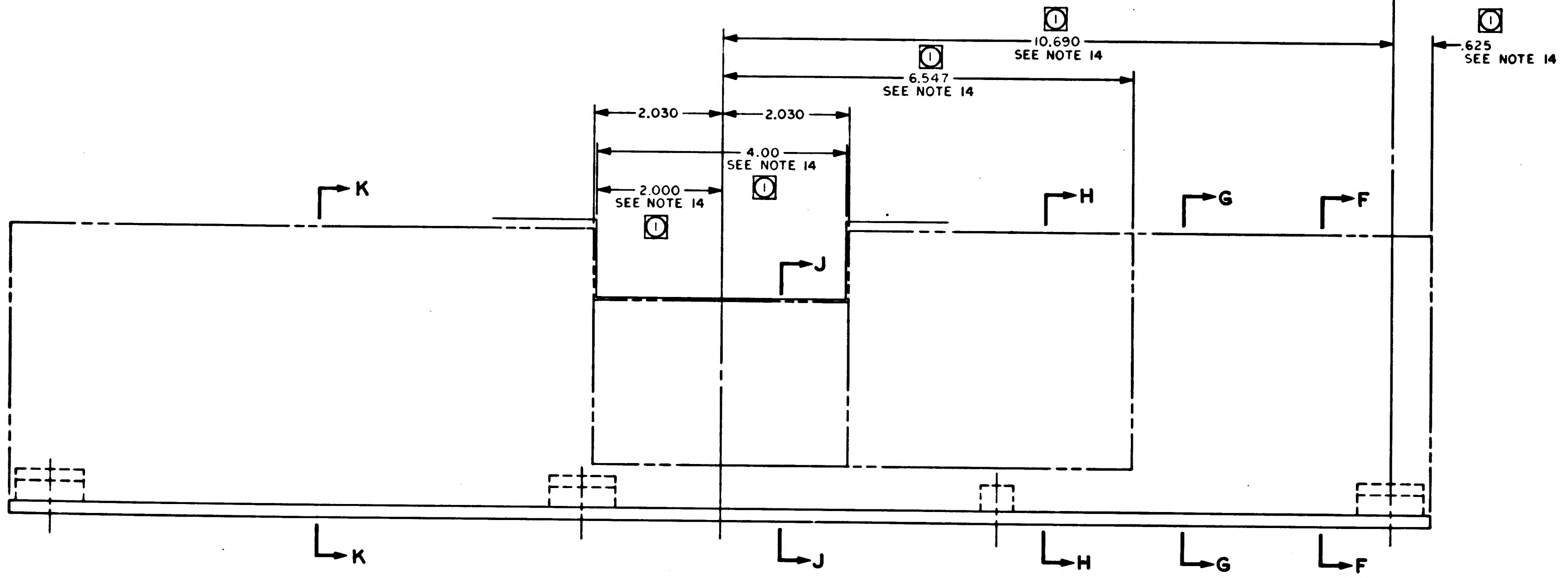
PARTIAL SECTION E-E
SCALE: 5/1
2 PLACES BOTH ENDS



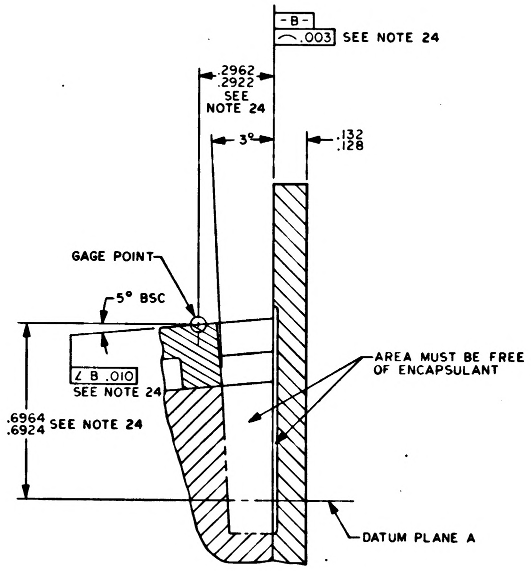
.750 TYP
MUST BE FREE OF ENCAPSULANT
SEE SECTION D-D



SEE NOTE 25
LOCATE CENTRALLY
AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086
S/N
D
D
DATUM PLANE A
E
E
E
E
②
7.000 SEE NOTE 15
②
22.625
SEE NOTE 15

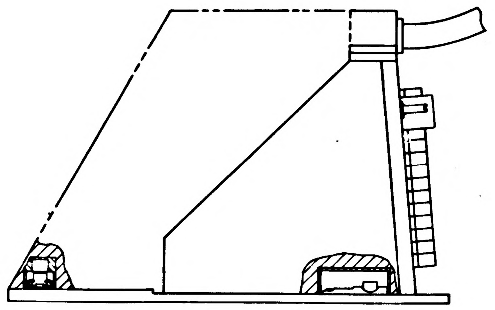


①
10.690
SEE NOTE 14
①
6.547
SEE NOTE 14
①
.625
SEE NOTE 14
2.030
2.030
4.00
SEE NOTE 14
①
2.000
SEE NOTE 14
①
K
J
H
G
F
K
J
H
G
F



-B-
⌒ .003
SEE NOTE 24
.2962
.2922
SEE NOTE 24
3°
.132
.128
GAGE POINT
5° BSC
∠ B .010
SEE NOTE 24
.6964
.6924
SEE NOTE 24
AREA MUST BE FREE OF ENCAPSULANT
DATUM PLANE A

PARTIAL SECTION D-D
SCALE: 5/1



Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE FEB 65
CHECKED 1 APR 65
APPROVAL APR 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

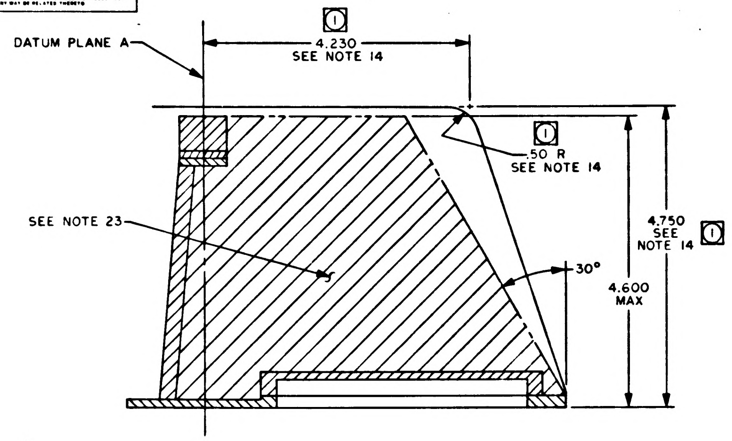
AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO
SIZE J
1015086
SCALE 1:1
SHEET 5 OF 6

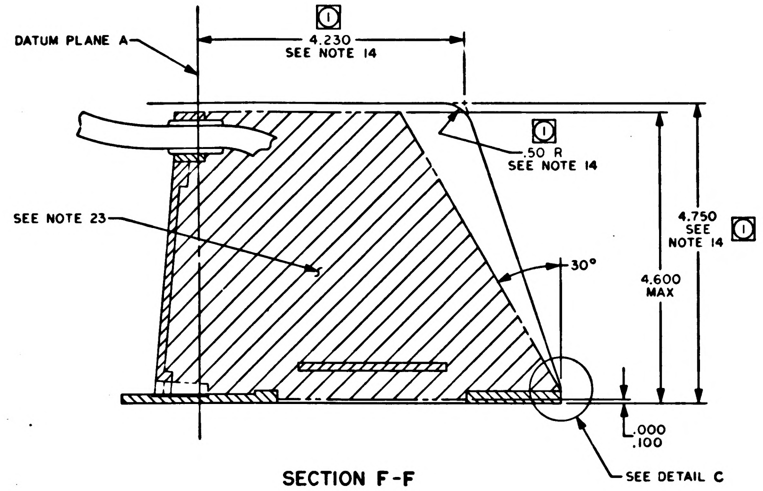
1015086 REV - SHT 5

2/1015086

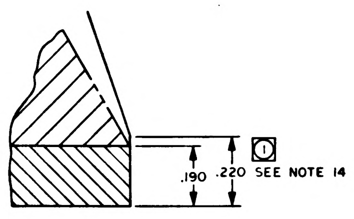
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


DATUM PLANE A
①
4.230
SEE NOTE 14
①
.50 R
SEE NOTE 14
SEE NOTE 23
4.750
SEE
NOTE 14
①
4.600
MAX
30°

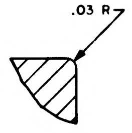
SECTION K-K


DATUM PLANE A
①
4.230
SEE NOTE 14
①
.50 R
SEE NOTE 14
SEE NOTE 23
4.750
SEE
NOTE 14
①
4.600
MAX
30°
.000
.100
SEE DETAIL C

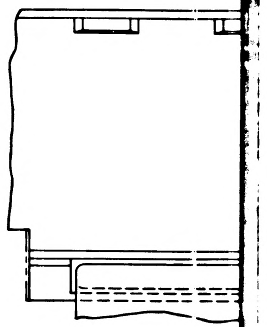
SECTION F-F

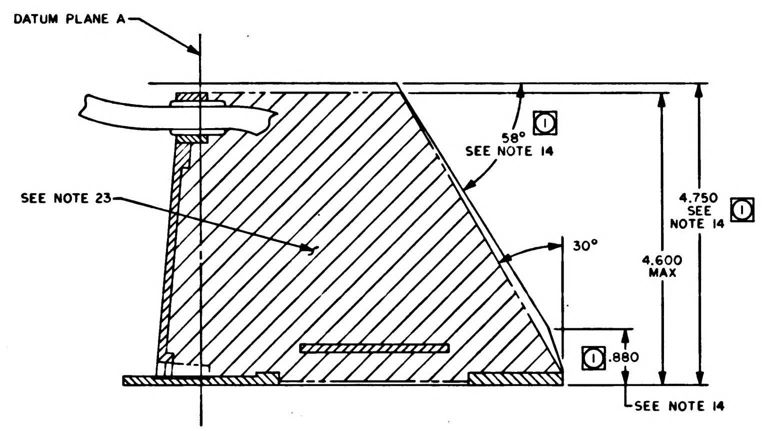

.190
.220
①
SEE NOTE 14

DETAIL C
SCALE: 5/1

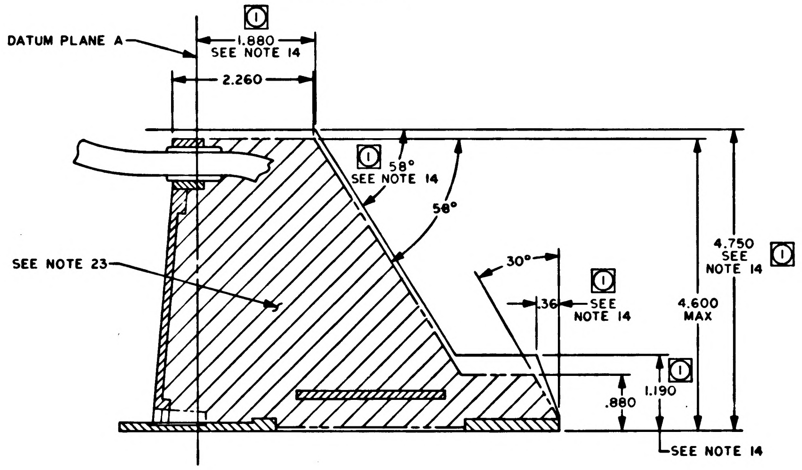


PARTIAL SECTION E-E
SCALE: 5/1
2 PLACES BOTH ENDS

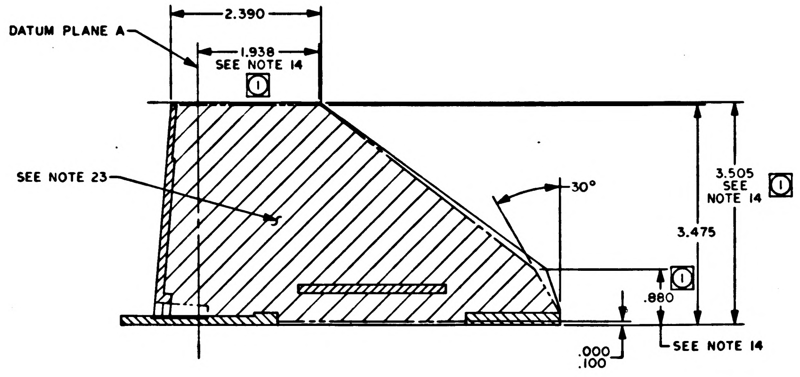



DATUM PLANE A
①
58°
SEE NOTE 14
SEE NOTE 23
4.750
SEE
NOTE 14
①
4.600
MAX
30°
①
.880
SEE NOTE 14

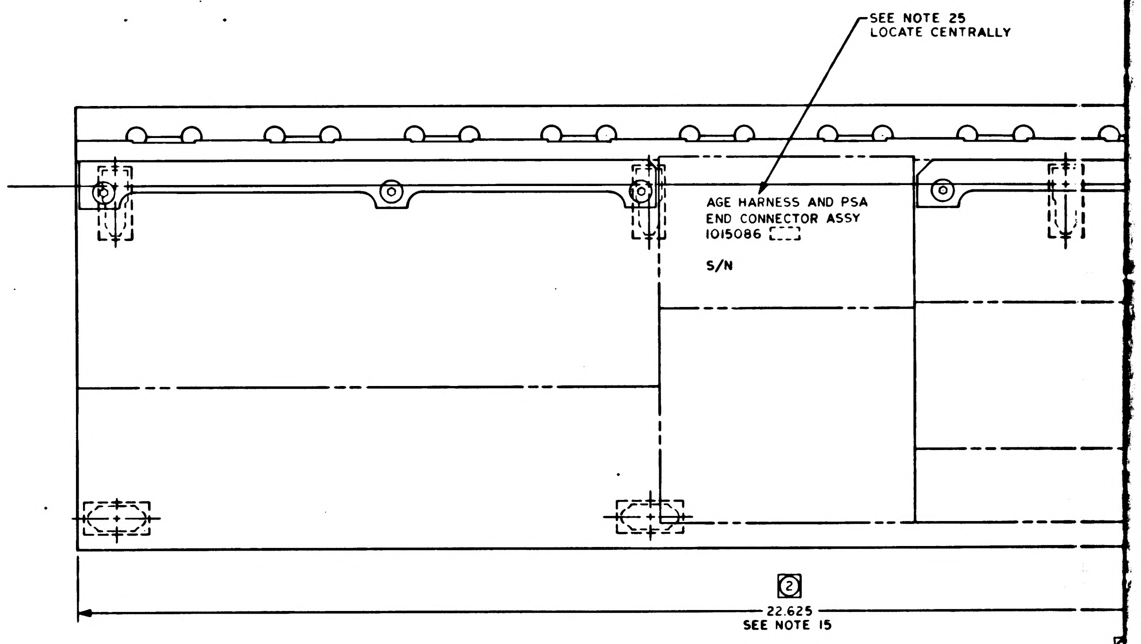
SECTION G-G

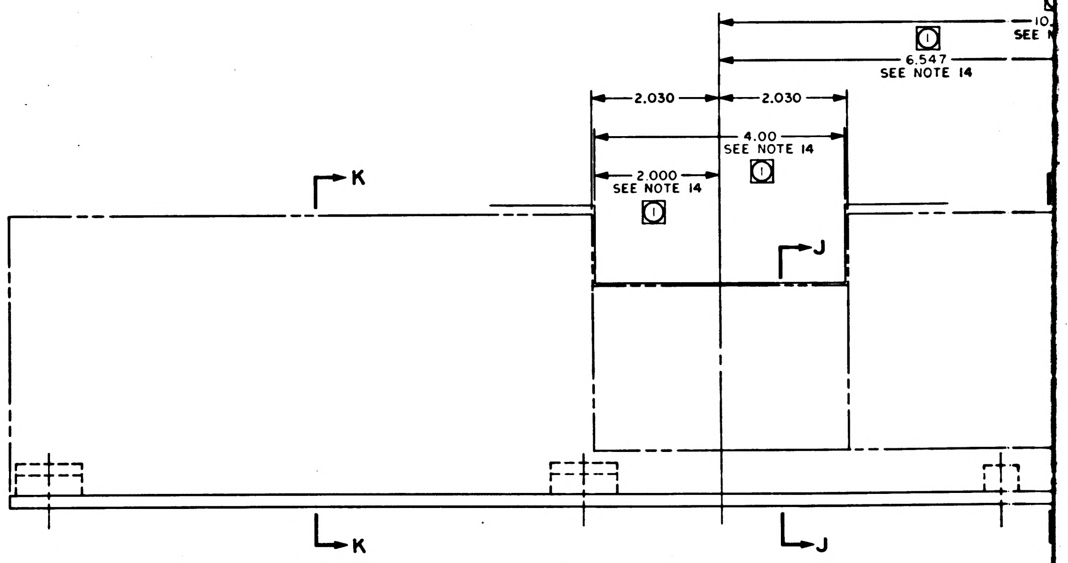

①
DATUM PLANE A
1.880
SEE NOTE 14
2.260
①
58°
SEE NOTE 14
58°
SEE NOTE 23
30°
①
.36
SEE
NOTE 14
4.750
SEE
NOTE 14
①
4.600
MAX
①
1.190
.880
SEE NOTE 14

SECTION H-H

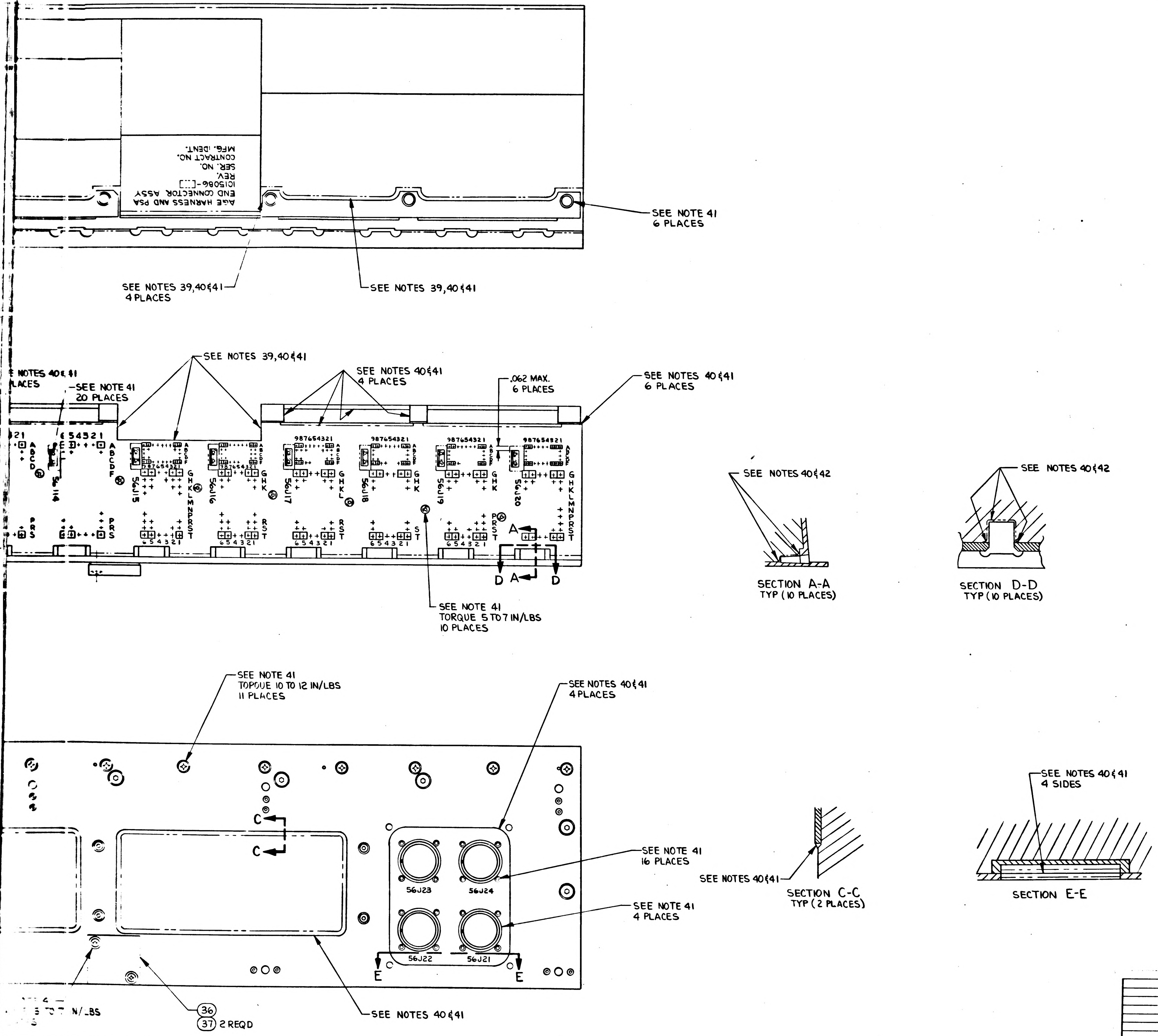

DATUM PLANE A
2.390
1.938
SEE NOTE 14
①
SEE NOTE 23
30°
3.505
SEE
NOTE 14
①
3.475
①
.880
.000
.100
SEE NOTE 14

SECTION J-J


SEE NOTE 25
LOCATE CENTRALLY
AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086
S/N
②
22.625
SEE NOTE 15


10.
SEE
①
6.547
SEE NOTE 14
2.030
2.030
4.00
SEE NOTE 14
①
2.000
SEE NOTE 14
①
K
J
K
J

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
H		THIS SHEET ADDED PER TDRR 26642		8 MAR 66	AU



AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086-[ ]
REV.
SER. NO.
CONTRACT NO.
MFG. IDENT.
SEE NOTE 41
6 PLACES
SEE NOTES 39,40 & 41
4 PLACES
SEE NOTES 39,40 & 41
SEE NOTES 39,40 & 41
SEE NOTES 40 & 41
4 PLACES
.062 MAX.
6 PLACES
SEE NOTES 40 & 41
6 PLACES
SEE NOTES 40 & 41
PLACES
SEE NOTE 41
20 PLACES
56J14
56J15
56J16
56J17
56J18
56J19
56J20
A
A
D
D
SEE NOTE 41
TORQUE 5 TO 7 IN/LBS
10 PLACES
SEE NOTES 40 & 42
SECTION A-A
TYP (10 PLACES)
SEE NOTES 40 & 42
SECTION D-D
TYP (10 PLACES)
SEE NOTE 41
TORQUE 10 TO 12 IN/LBS
11 PLACES
SEE NOTES 40 & 41
4 PLACES
C
C
56J23
56J24
56J22
56J21
E
E
SEE NOTE 41
16 PLACES
SEE NOTE 41
4 PLACES
SEE NOTES 40 & 41
SECTION C-C
TYP (2 PLACES)
SEE NOTES 40 & 41
4 SIDES
SECTION E-E
5 TO 7 IN/LBS
36
37 2 REQD
SEE NOTES 40 & 41

FOR -011 CONFIGURATION

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ±
3 PLACE DECIMALS ±
ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL NAS 9-497

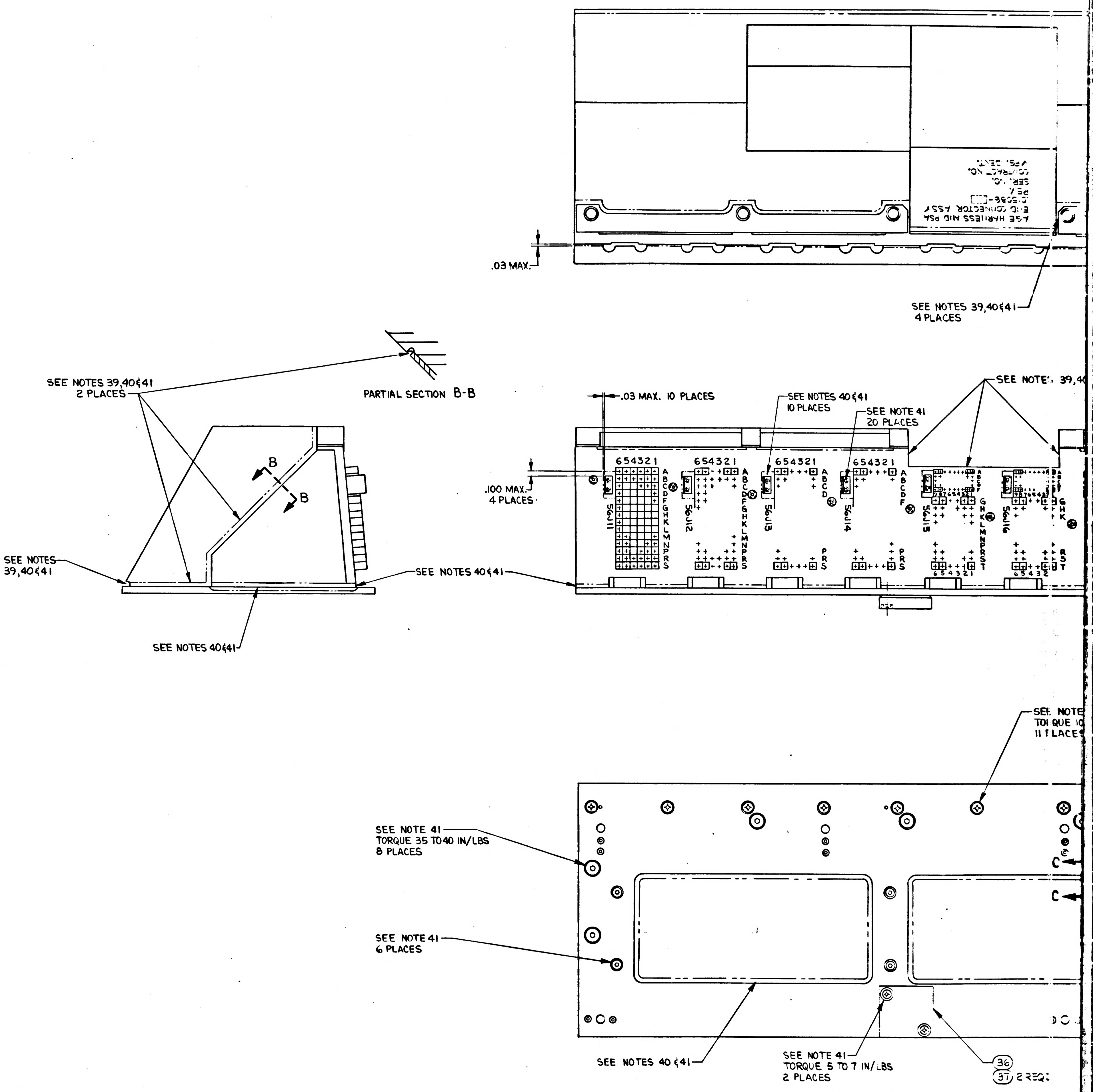
AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN R. Parks DATE 8 MAR 66
CHECKED Mack 10 MAR 66
APPROVAL
CONTRACT
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSY

SIZE J2
CODE IDENT NO. 99974
1015086
SCALE
SHEET 6 OF 6

1015086 H SH 6



.03 MAX.
SEE NOTES 39,40&41
4 PLACES
SEE NOTES 39,40&41
2 PLACES
PARTIAL SECTION B-B
B
B
.03 MAX. 10 PLACES
SEE NOTES 40&41
10 PLACES
SEE NOTE 41
20 PLACES
SEE NOTES 39,4
.100 MAX.
4 PLACES
654321
654321
654321
654321
654321
654321
ABCDEFGHKLMNPRS
56J11
56J12
56J13
56J14
56J15
56J16
SEE NOTES
39,40&41
SEE NOTES 40&41
SEE NOTES 40&41
SEE NOTE
TORQUE 1
11 PLACES
SEE NOTE 41
TORQUE 35 TO 40 IN/LBS
8 PLACES
SEE NOTE 41
6 PLACES
C
C
SEE NOTES 40&41
SEE NOTE 41
TORQUE 5 TO 7 IN/LBS
2 PLACES
36
37 2 REQ

	REV	SH
1015086	H	6

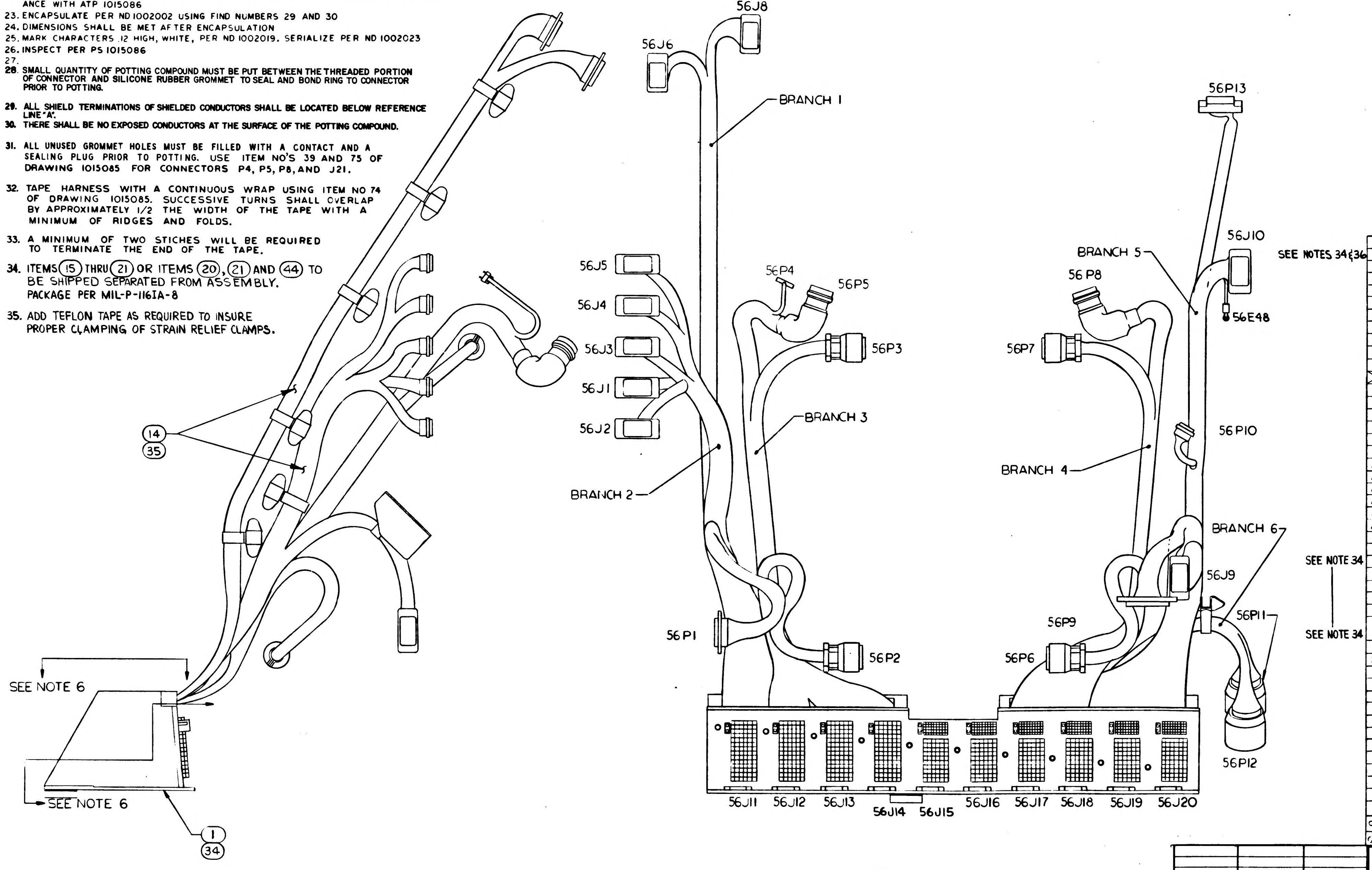
1/1015086

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO	DATE	APPD
E		REPLACES REVISION D WITH CHANGE	—	11 MAY 65	DKC
F		REVISED PER TDRR 22497		[illegible] SEP 5	RCF
G		REVISED PER TDRR 2476[illegible]		[illegible] DEC	RCF
H		REVISED PER TDRR 26642		[illegible] MAR	RCF AU
J		REVISED PER TDRR 28[illegible]52		[illegible]	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BRANCHES 1, 2 AND 3 OF FIND NO. 14 ARE SHOWN ON SHEET 2
3. BRANCHES 4, 5 AND 6 OF FIND NO. 14 ARE SHOWN ON SHEET 3
4. GRID MODULE ON SHEETS 2 AND 3 IS 1 INCH TRUE POSITION
5. UNLESS OTHERWISE SPECIFIED, FEATURE CENTERLINES ON SHEETS 2, 3 AND 4 ARE LOCATED WITHIN ±.25. ENDS OF HOOK UP WIRES OR ACCESSORIES ARE LOCATED WITHIN .12
6. MARRIAGE CONFIGURATION OF FIND NUMBERS 1 AND 14 IS SHOWN ON SHEET 4
7. ENCAPSULATION ENVELOPE IS SHOWN ON SHEET 5
8. TERMINATION NUMBERS AND TOLERANCE CHART ARE LISTED IN CONDUCTOR CHART OF FIND NO. 14
9. INTERCONNECTION DIAGRAM OF AGE C/M, LOWER EQUIPMENT BAY, IS 1015090
10. WELD PER ND 1002225
11. CRIMP PER ND 1002206
12. LACE HARNESS PER ND 1002032
13. ALL WIRING SHALL BE BELOW THE SURFACE OF THE ENCAPSULATING MATERIAL
14. ① DIMENSION OR CHARACTERISTIC IS CONTROLLED BY ICDMH01-01203-116
15. ② ICDMH01-01203-116 ENVELOPE DIMENSIONS ARE 7.000 AND 22.690 RESPECTIVELY; ACTUAL VALUES MAY BE LESS. ENCAPSULATION SHALL BE FLUSH TO .015 LESS THAN THE ENVELOPE DEFINED BY THE ACTUAL LENGTH AND WIDTH OF THE END CONNECTOR ASSEMBLY
16. LACE HARNESS IN GROUPS, USING A CONTINUOUS CLOVE HITCH AT INTERVALS NOT TO EXCEED TWO INCHES MAXIMUM. WIRES FROM DIFFERENT HARNESS BRANCHES MERGING INTO THE SAME WIRE HARNESS CLAMP CHANNEL GROUP SHALL BE BLENDED TOGETHER WHEN STITCHING IS PERFORMED.
17. APPLY EPOXY PER ND 1002187 TYPE II USING FIND NUMBERS 26 AND 27. TO SEAL JUNCTION OF CONNECTOR FLANGES AND BOTTOM PLATE.
18. ENCAPSULATE BACK OF CONNECTOR PER ND 1002236 USING FIND NO. 28
19. MARK FIND NO. 13 WITH REFERENCE DESIGNATION AS SHOWN, .12 HIGH, BLACK, HOT IMPRESSION STAMPING PER ND 1002019. CENTRALIZE
20. SECURE FIND NO. 13 TO FIND NO. 14 USING FIND NUMBERS 24 AND 25
21. SELECT NOTED FIND NUMBERS IN ACCORDANCE WITH ATP REQUIREMENTS AT ENCAPSULATION PHASE OF END CONNECTOR BUILD UP
22. ASSEMBLE, TEST AND ENCAPSULATE, USING FIND NO. 28 PER ND 1002236, IN ACCORDANCE WITH ATP 1015086
23. ENCAPSULATE PER ND 1002002 USING FIND NUMBERS 29 AND 30
24. DIMENSIONS SHALL BE MET AFTER ENCAPSULATION
25. MARK CHARACTERS .12 HIGH, WHITE, PER ND 1002019. SERIALIZE PER ND 1002023
26. INSPECT PER PS 1015086
27.
28. SMALL QUANTITY OF POTTING COMPOUND MUST BE PUT BETWEEN THE THREADED PORTION OF CONNECTOR AND SILICONE RUBBER GROMMET TO SEAL AND BOND RING TO CONNECTOR PRIOR TO POTTING.
29. ALL SHIELD TERMINATIONS OF SHIELDED CONDUCTORS SHALL BE LOCATED BELOW REFERENCE LINE "A".
30. THERE SHALL BE NO EXPOSED CONDUCTORS AT THE SURFACE OF THE POTTING COMPOUND.
31. ALL UNUSED GROMMET HOLES MUST BE FILLED WITH A CONTACT AND A SEALING PLUG PRIOR TO POTTING. USE ITEM NO'S 39 AND 75 OF DRAWING 1015085 FOR CONNECTORS P4, P5, P8, AND J21.
32. TAPE HARNESS WITH A CONTINUOUS WRAP USING ITEM NO 74 OF DRAWING 1015085. SUCCESSIVE TURNS SHALL OVERLAP BY APPROXIMATELY 1/2 THE WIDTH OF THE TAPE WITH A MINIMUM OF RIDGES AND FOLDS.
33. A MINIMUM OF TWO STICHES WILL BE REQUIRED TO TERMINATE THE END OF THE TAPE.
34. ITEMS ⑮ THRU ㉑ OR ITEMS ⑳, ㉑ AND ㊹ TO BE SHIPPED SEPARATED FROM ASSEMBLY. PACKAGE PER MIL-P-116IA-8
35. ADD TEFLON TAPE AS REQUIRED TO INSURE PROPER CLAMPING OF STRAIN RELIEF CLAMPS.
36. SELECT SIZES TO CONFORM TO BUNDLE DIAMETER AT LOCATION SHOWN.
37. POT BACK OF CONNECTORS 56J1 THRU 56J5 PER ND 1002236 USING ITEM ㉘. INSIDE CENTER HARDWARE MUST BE FREE OF POTTING WITHIN DIMENSION SHOWN.
38. BOND ITEM ㊳ TO BACK SIDE OF CONNECTOR FLANGE FOR CONNECTORS 56J1 THRU 56J5, USING ITEMS ㊴ AND ㊵ PER ND 1002151.
39. UNDERCUT .12 X .12 AS SHOWN.
40. AFTER ENCAPSULATION REMOVE ANODIZE ALONG NOTED SURFACES.
41. AFTER ENCAPSULATION APPLY ECCOBOND 45 AND CATALYST NO. 15 PER ND 1002004, TYPE II, USING ITEMS ㊷ AND ㊸ TO ENTIRE LENGTH OF NOTED SURFACES.
42. AFTER ENCAPSULATION APPLY PRIMER AND PR1538 PER ND 1002236, USING ITEMS ㊶ AND ㉘ TO THE REWORKED TRAY SLOTS.
43. CLAMP LOCATIONS SHOWN ARE FOR REFERENCE ONLY.



Ⓔ REPLACES REVD WITH CHANGE

SEE NOTES 34 & 36 (item 44)

SEE NOTE 34 (items 21 thru 15)

031	021	011	000	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
—	—	10	—		44	1010400-1THRU-12	CLAMP, LOOP, HINGED
—	AR	AR	—		43	1010686	CATALYST
—	AR	AR	—		42	1010657	EPOXY RESIN
—	AR	AR	—		41	1012504	PRIMER, METAL PARTS
—	AR	AR	—		40	1010718	PRIMER, SILICONE ADHESIVE
—	AR	AR	—		39	MIL-A-25457	ADHESIVE, SILICONE RUBBER
—	5	5	—		38	1021307	GASKET, CONNECTOR
—	2	2	—		37	1010618-26	SCREW, BUTTON HD.
—	1	1	—		36	1008329	SPACER BLOCK
—	X	X	—		REF	1023058	INTERCONNECTION LIST
X	—	—	X		REF	1015087	INTERCONNECTION LIST
1	1	1	—		35	1023059	WIRING HARNESS "A"
—	1	1	—		34	1007599-021	END CONNECTOR ASSY, PSA
1	1	—	1		33	MS35650-104	NUT, PLAIN HEX
4	4	4	4		32	MS35649-44	NUT, PLAIN HEX
4	4	4	4		31	1010618-15	SCREW, BUTTON HEAD
AR	AR	AR	AR		30	1010798-2	ACTIVATOR
AR	AR	AR	AR		29	1010798-1	RESIN
AR	AR	AR	AR		28	1012503	COMPOUND, POTTING, ~~POLYURETHANE~~
AR	AR	AR	AR		27	1010679	ADHESIVE ACTIVATOR
AR	AR	AR	AR		26	1010661	EPOXY RESIN
AR	AR	AR	AR		25	1012507-004	LACING TAPE
AR	AR	AR	AR		24	1012507-002	LACING TAPE
1	1	—	1		23	MS35338-081	WASHER, LOCK
6	6	6	6		22	1006783-47	SCREW, BUTTON HEAD
1	2	2	1		21	1010705-8	CLAMP
1	1	1	1		20	1010705-6	CLAMP
1	1	—	1		19	1010400-8	CLAMP, LOOP, HINGED
1	1	—	1		18	1010400-7	CLAMP, LOOP, HINGED
3	3	—	3		17	1010400-3	CLAMP, LOOP, HINGED
1	1	—	1		16	1010400-2	CLAMP, LOOP, HINGED
5	5	—	5		15	1010400-1	CLAMP, LOOP, HINGED
—	—	—	1		14	1015085	WIRING HARNESS "A"
21	21	21	21		13	1010811-002	BAND, IDENTIFICATION
1	1	1	1		12	1021253-8	SPACER
1	1	1	1		11	1021253-7	SPACER
2	2	2	2		10	1021253-6	SPACER
2	2	2	2		9	1021253-5	SPACER
1	1	1	1		8	1021253-4	SPACER
1	1	1	1		7	1021253-3	SPACER
2	2	2	2		6	1021253-2	SPACER
2	2	2	2		5	1021253-1	SPACER
1	1	—	1		4	1014609	BRACKET, CLAMP
1	1	1	1		3	1008165	CABLE CLAMP, RIGHT
1	1	1	1		2	1008164	CABLE CLAMP, LEFT
1	—	—	1		1	1007599-011	END CONNECTOR ASSY, PSA
QUANTITY REQUI					LIST OF MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-49[illegible]

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN [illegible] DATE [illegible] FEB
CHECKED [illegible]
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

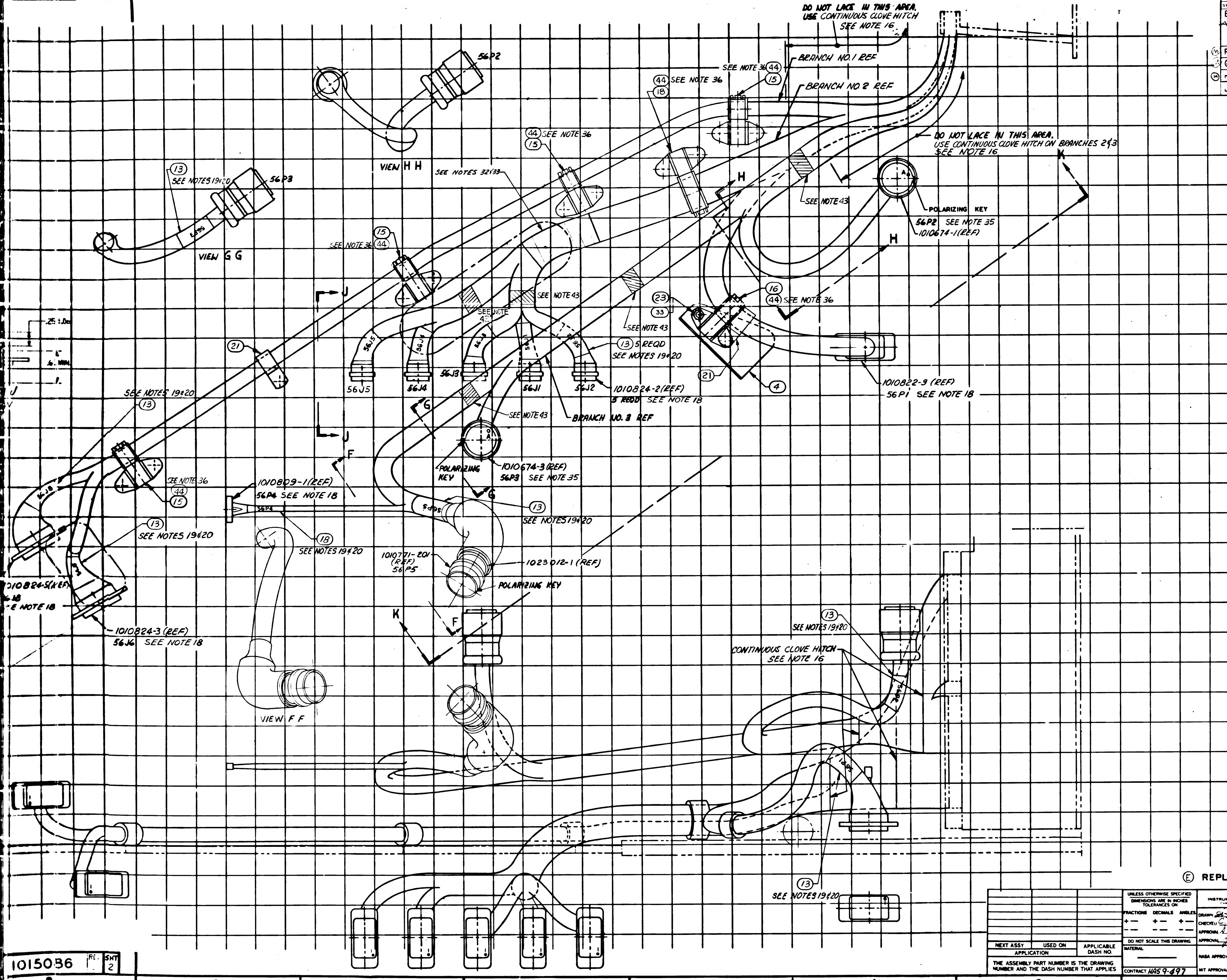
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1015086
SCALE 1:2
SHEET 1 OF 6

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		REPLACES REVISION D WITH CHANGE	—	11 MAY 65	DKD
		PER TDRR 20529			
F		REVISED PER TDRR 2240[illegible]		2 SEP 65	
G		REVISED PER TDRR 24[illegible]		29 DEC 65	
H		REVISED PER TDRR 2[illegible]		7 MAR 66	
J		REVISION STATUS CHANGED		5 [illegible] 66	


DO NOT LACE IN THIS AREA. USE CONTINUOUS CLOVE HITCH SEE NOTE 16
BRANCH NO. 1 REF
BRANCH NO. 2 REF
BRANCH NO. 3 REF
DO NOT LACE IN THIS AREA. USE CONTINUOUS CLOVE HITCH ON BRANCHES 2 & 3 SEE NOTE 16
56P2
VIEW H H
13 SEE NOTES 19 & 20
56P3
VIEW G G
44 SEE NOTE 36
15
18
SEE NOTES 32 & 33
SEE NOTE 43
POLARIZING KEY
56P2 SEE NOTE 35
1010674-1 (REF)
16
23
33
21
4
13 5 REQD SEE NOTES 19 & 20
1010824-2 (REF) 5 REQD SEE NOTE 18
1010822-3 (REF) 56P1 SEE NOTE 18
56J5
56J4
56J3
56J1
56J2
H
J
K
G
F
1010674-3 (REF) 56P3 SEE NOTE 35
1010809-1 (REF) 56P4 SEE NOTE 18
SEE NOTES 19 & 20
1010771-201 (REF) 56P5
1023012-1 (REF)
1010824-5 (REF) 56J8 SEE NOTE 18
1010824-3 (REF) 56J6 SEE NOTE 18
.25 ±.06
6
MIN
1
VIEW F F
SEE NOTES 19 & 20
CONTINUOUS CLOVE HITCH SEE NOTE 16

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN D. Lunde DATE 23 FEB 65
CHECKED C. Piozola 1 APR 65
APPROVAL S. Hicks 1 APR 65
APPROVAL [illegible]
NASA APPROVAL
MIT APPROVAL

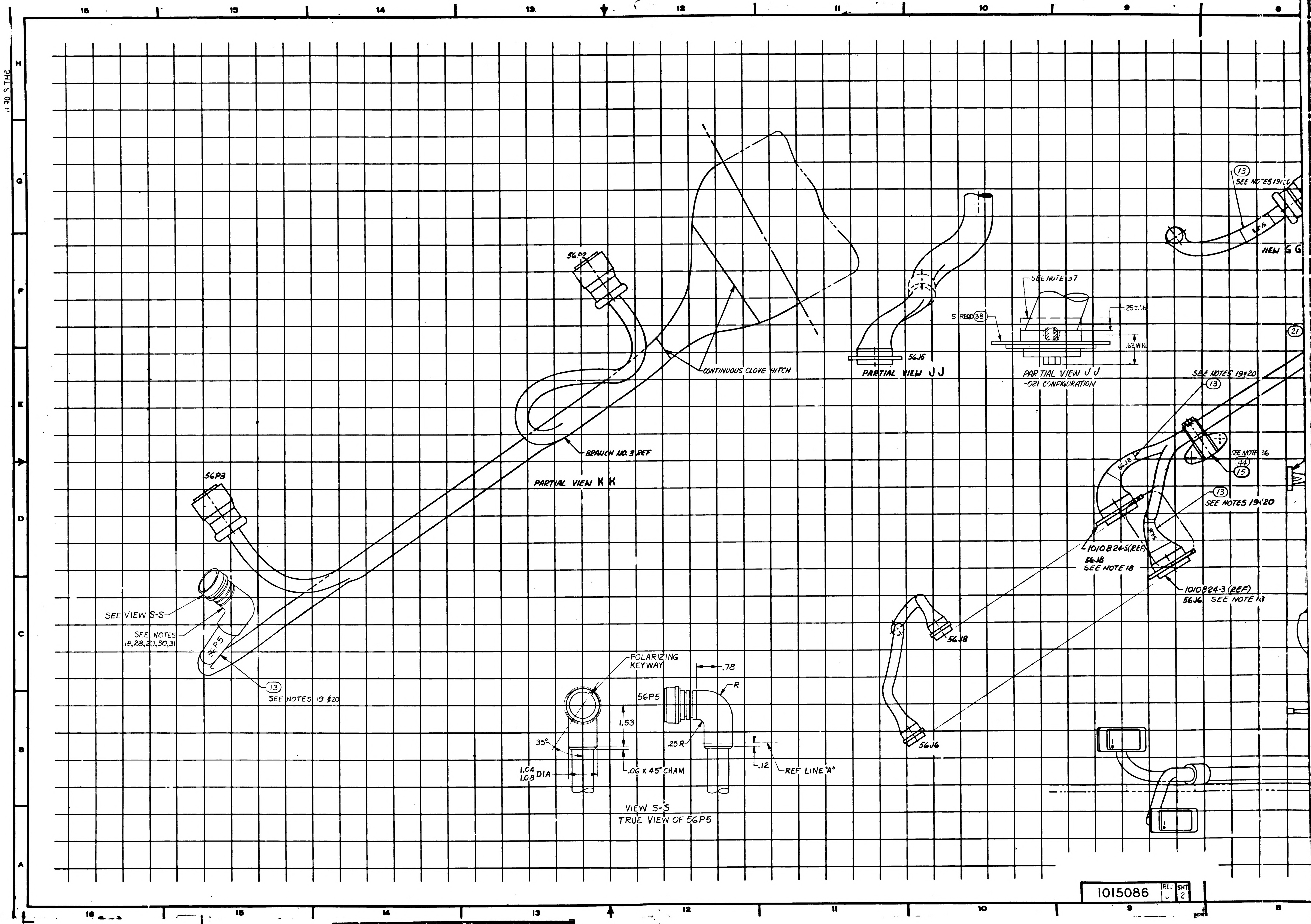
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END
CONNECTOR ASSEMBLY

CODE IDENT NO. 80230
SIZE J2
1015086
SCALE 1:1
SHEET 2 OF 6

1015086 RE SHT 2

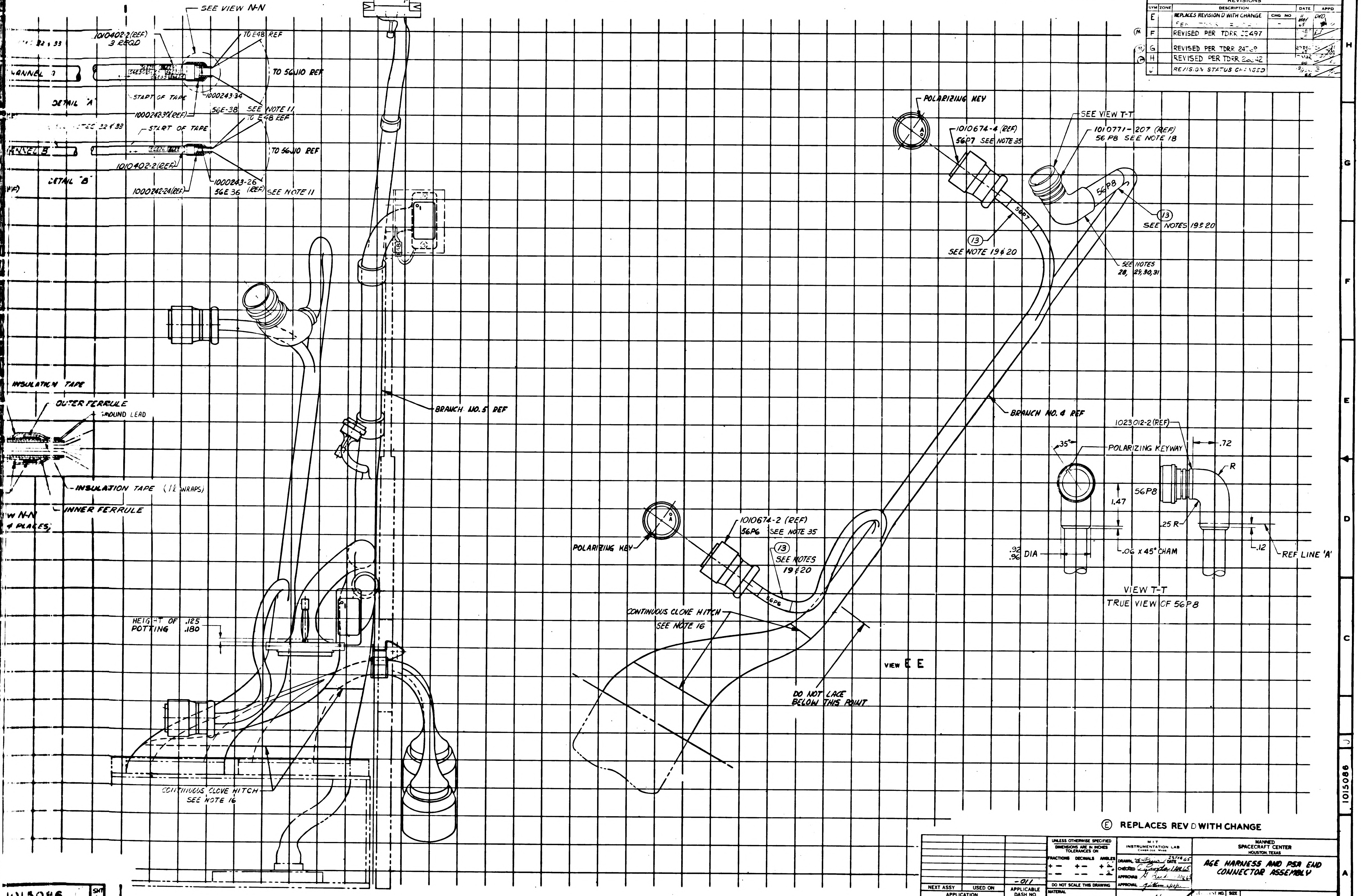
2/1015086


16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
56P2
CONTINUOUS CLOVE HITCH
BRANCH NO. 3 REF
PARTIAL VIEW K K
56P3
SEE VIEW S-S
SEE NOTES
18,28,29,30,31
56P5
13
SEE NOTES 19 & 20
56J5
PARTIAL VIEW J J
SEE NOTE 37
5 REQD 38
.25±.06
.62 MIN.
PARTIAL VIEW J J
-021 CONFIGURATION
13
SEE NOTES 19&20
VIEW G G
21
SEE NOTES 19&20
13
SEE NOTE 36
44
15
13
SEE NOTES 19&20
56J8
1010824-5(REF)
56J8
SEE NOTE 18
1010824-3 (REF)
56J6 SEE NOTE 18
56J8
56J6
POLARIZING
KEYWAY
.78
R
56P5
1.53
35°
.25R
1.04
1.08 DIA
.06 x 45° CHAM
.12
REF LINE "A"
VIEW S-S
TRUE VIEW OF 56P5

1015086 REV. SHT 2

1/1015086

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER TDRR [illegible]	-	11 MAY 65	DKD
F		REVISED PER TDRR 22497		[illegible]	
G		REVISED PER TDRR 24769		29 DEC 65	
H		REVISED PER TDRR 26042		[illegible] MAR 66	
J		REVISION STATUS CHANGED		[illegible] 66	



SEE VIEW N-N
1010402-2 (REF) 3 REQD
TO E48 REF
TO 56J10 REF
NOTES 32 & 33
CHANNEL A
DETAIL "A"
START OF TAPE
1000243-34
1000242-30 (REF)
56E-38
SEE NOTE 11
TO E48 REF
NOTES 32 & 33
START OF TAPE
CHANNEL B
TO 56J10 REF
1010402-2 (REF)
DETAIL "B"
1000242-24 (REF)
1000243-26 (REF)
56E 36
SEE NOTE 11
INSULATION TAPE
OUTER FERRULE
GROUND LEAD
INSULATION TAPE (1½ WRAPS)
INNER FERRULE
VIEW N-N (4 PLACES)
BRANCH NO. 5 REF
HEIGHT OF POTTING
.125
.180
CONTINUOUS CLOVE HITCH
SEE NOTE 16
POLARIZING KEY
1010674-4 (REF)
56P7 SEE NOTE 35
SEE VIEW T-T
1010771-207 (REF)
56P8 SEE NOTE 18
56P8
56P7
13
SEE NOTES 19 & 20
13
SEE NOTE 19 & 20
SEE NOTES 28, 29, 30, 31
BRANCH NO. 4 REF
1023012-2 (REF)
35°
POLARIZING KEYWAY
.72
R
56P8
1.47
.25 R
.92
.96
DIA
.06 x 45° CHAM
.12
REF LINE 'A'
VIEW T-T
TRUE VIEW OF 56P8
POLARIZING KEY
1010674-2 (REF)
56P6 SEE NOTE 35
13
SEE NOTES 19 & 20
56P6
CONTINUOUS CLOVE HITCH
SEE NOTE 16
VIEW E E
DO NOT LACE BELOW THIS POINT

Ⓔ REPLACES REV D WITH CHANGE

		-011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE 23 FEB 65
CHECKED 1 APR 65
APPROVAL APR 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

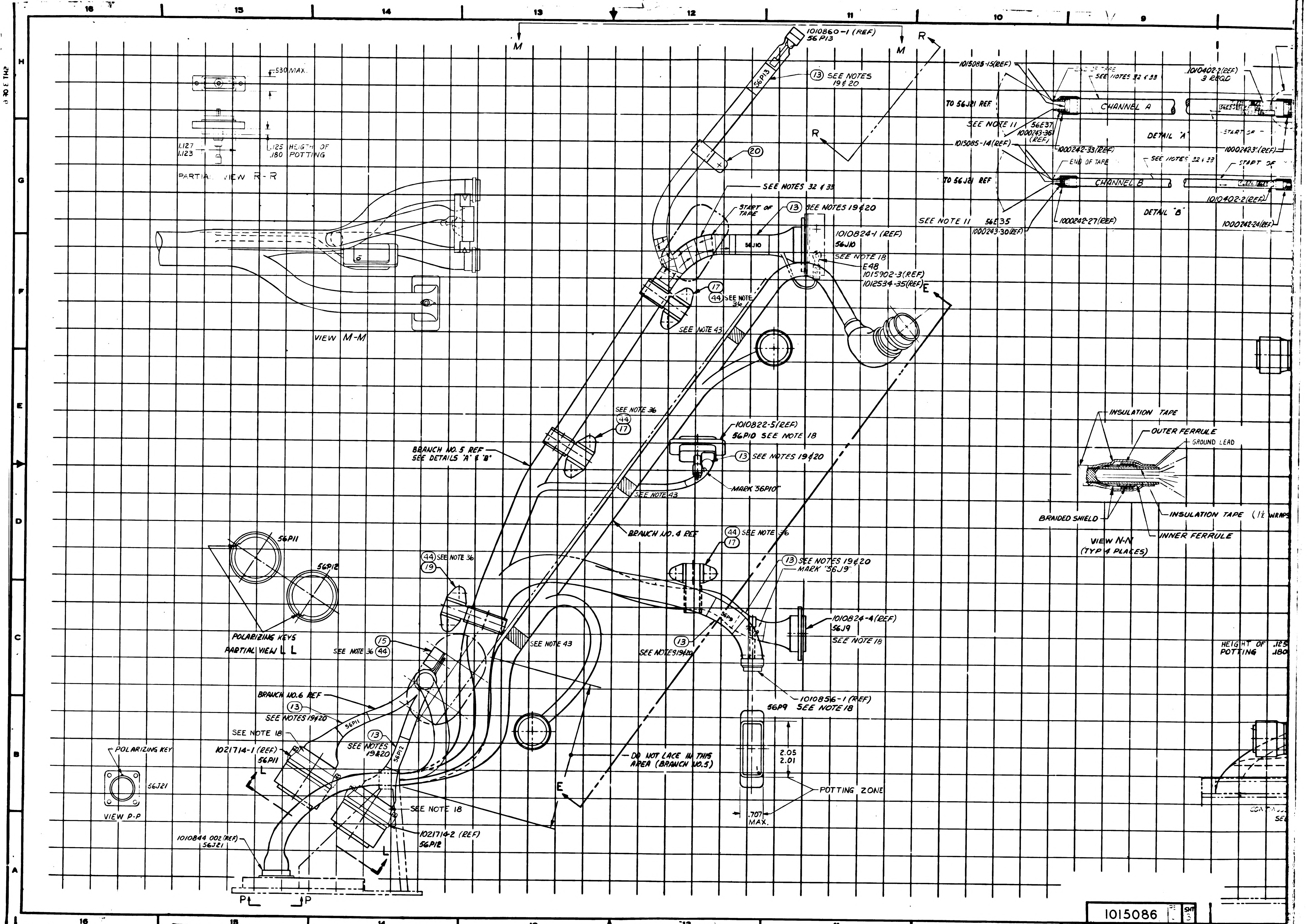
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO. 80230
SIZE J
1015086
SCALE 1:1
SHEET 3 OF 6

1015086 SHT 3

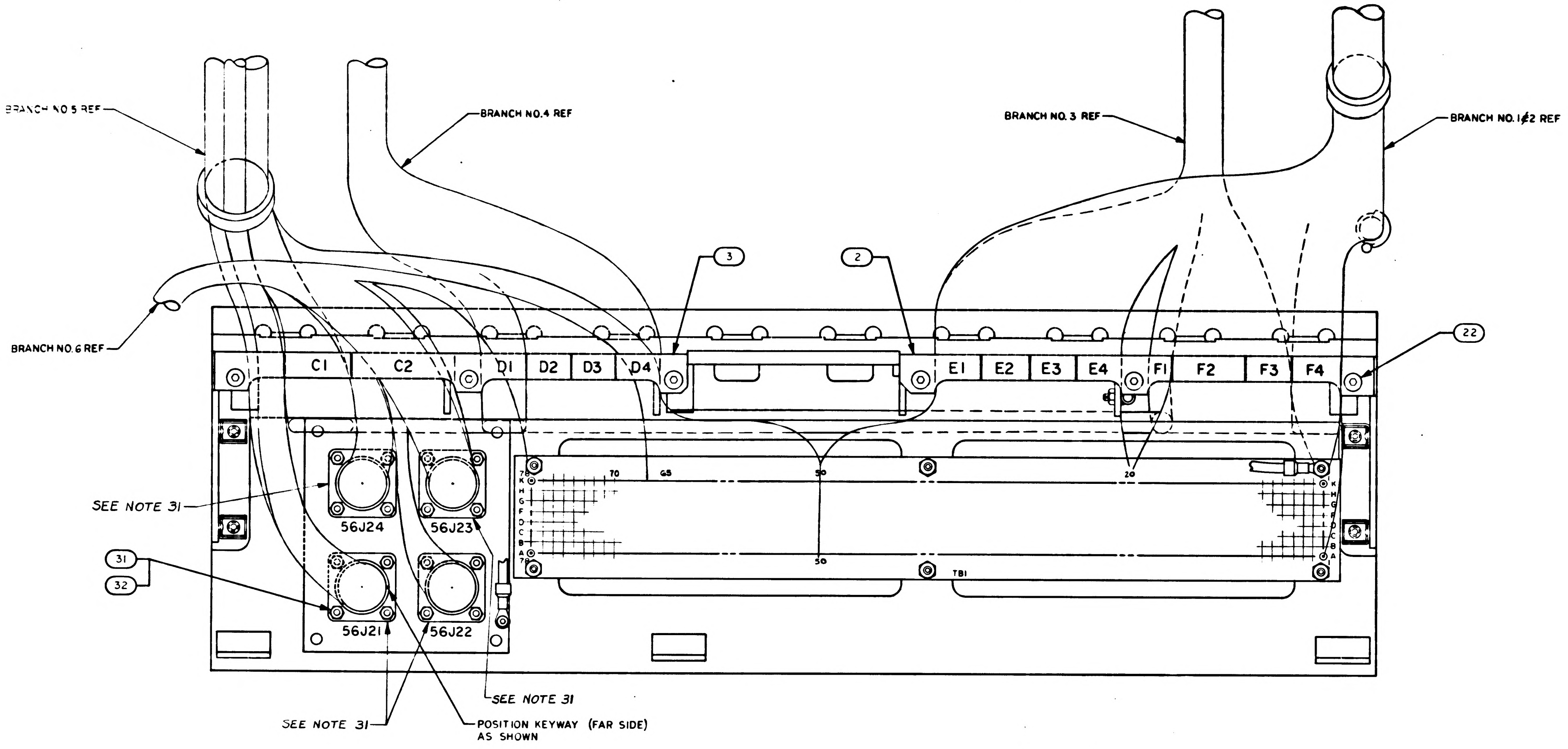
27 1015086


1015086
16
15
14
13
12
11
10
9
H
G
F
E
D
C
B
A
M
M
R
R
E
E
.530 MAX.
1.127
1.123
.125 HEIGTH OF
.180 POTTING
PARTIAL VIEW R-R
VIEW M-M
1010860-1 (REF)
56P13
56P13
13 SEE NOTES 19 & 20
20
SEE NOTES 32 & 33
START OF TAPE
13 SEE NOTES 19 & 20
56J10
1010824-1 (REF)
56J10
SEE NOTE 18
E48
1015902-3(REF)
1012534-35(REF)
17
44 SEE NOTE 36
SEE NOTE 43
1015085-15(REF)
END OF TAPE
SEE NOTES 32 & 33
1010402-2(REF)
3 REQD
TO 56J21 REF
CHANNEL A
SEE NOTE 11
56E37
1000243-36 (REF)
1000242-33(REF)
DETAIL "A"
START OF
1000242-3'(REF)
1015085-14(REF)
END OF TAPE
SEE NOTES 32 & 33
START OF
TO 56J21 REF
CHANNEL B
1010402-2(REF)
DETAIL "B"
SEE NOTE 11
56E35
1000243-30(REF)
1000242-27(REF)
1000242-24(REF)
INSULATION TAPE
OUTER FERRULE
GROUND LEAD
INSULATION TAPE (1½ WRAPS
BRAIDED SHIELD
INNER FERRULE
VIEW N-N
(TYP 4 PLACES)
SEE NOTE 36
44
17
BRANCH NO. 5 REF
SEE DETAILS "A" & "B"
1010822-5(REF)
56P10 SEE NOTE 18
13 SEE NOTES 19 & 20
MARK "56P10"
SEE NOTE 43
BRANCH NO. 4 REF
44 SEE NOTE 36
17
13 SEE NOTES 19 & 20
MARK "56J9"
56P9
1010824-4(REF)
56J9
SEE NOTE 18
13
SEE NOTES 19 & 20
1010856-1 (REF)
56P9 SEE NOTE 18
2.05
2.01
POTTING ZONE
.707
MAX.
DO NOT LACE IN THIS AREA (BRANCH NO.5)
HEIGHT OF POTTING
.125
.180
56P11
56P12
POLARIZING KEYS
PARTIAL VIEW L L
44 SEE NOTE 36
19
SEE NOTE 43
15
SEE NOTE 36 44
BRANCH NO.6 REF
13
SEE NOTES 19 & 20
56P11
SEE NOTE 18
1021714-1 (REF)
56P11
13
SEE NOTES 19 & 20
56P12
SEE NOTE 18
1021714-2 (REF)
56P12
1010844 002 (REF)
56J21
L
L
P
P
POLARIZING KEY
56J21
VIEW P-P

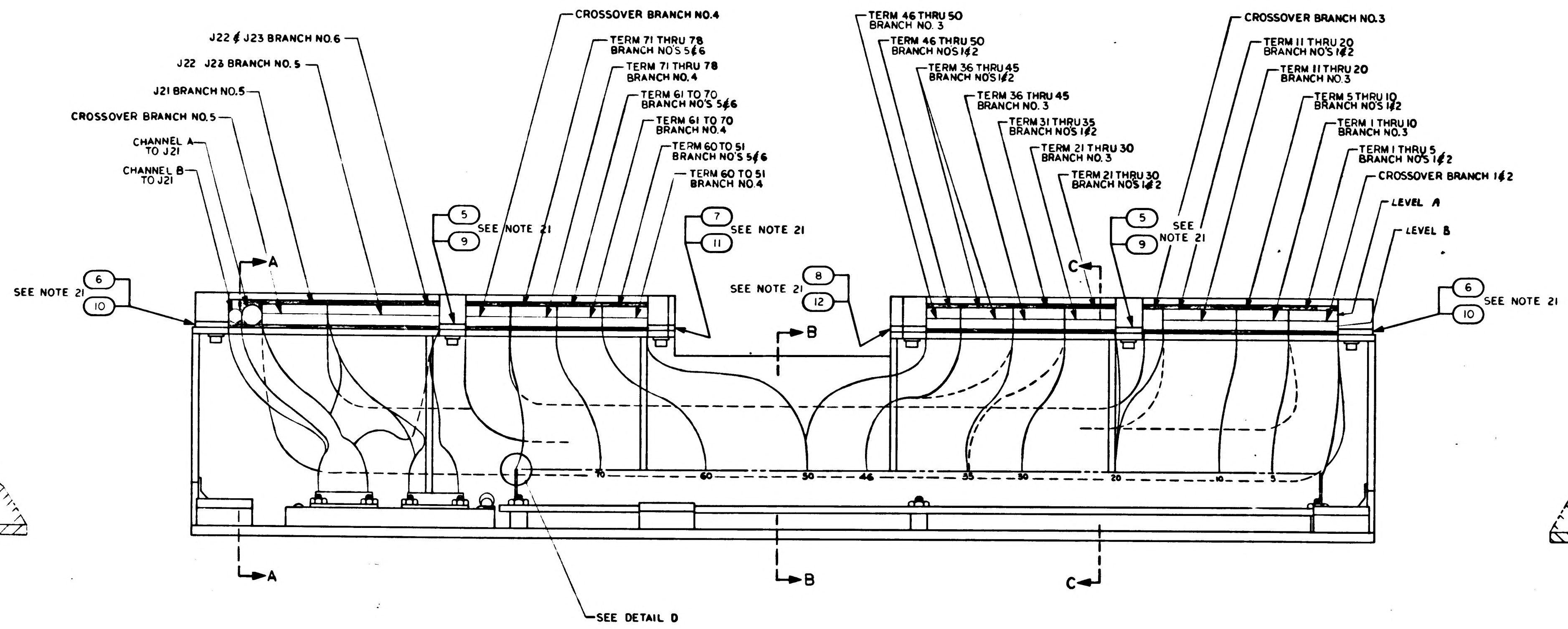
1015086 SHT 3

1710015086

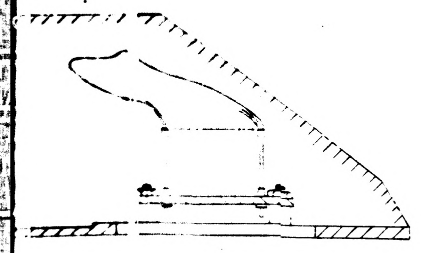
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
E	REPLACES REVISION D WITH CHANGE. TDRR 20529	7 MAY 65	
F	REVISION STATUS CHANGED	21 SEP 65	
G	REVISION STATUS CHANGED	29 DEC 65	
H	REVISED PER TDRR 26642	7 MAR 66	
J	REVISION STATUS CHANGED	9-MAY-66	3

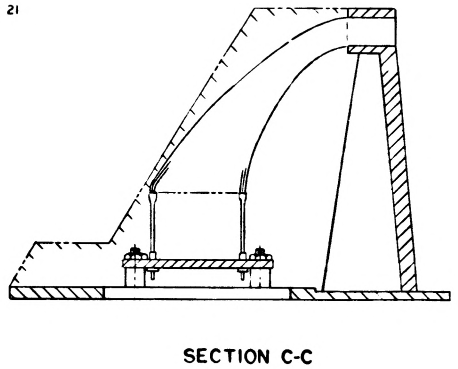


BRANCH NO.5 REF
BRANCH NO.4 REF
BRANCH NO.3 REF
BRANCH NO.1&2 REF
BRANCH NO.6 REF
3
2
22
C1
C2
D1
D2
D3
D4
E1
E2
E3
E4
F1
F2
F3
F4
SEE NOTE 31
56J24
56J23
56J21
56J22
31
32
70
65
50
20
TB1
SEE NOTE 31
SEE NOTE 31
POSITION KEYWAY (FAR SIDE) AS SHOWN



J22 & J23 BRANCH NO.6
J22 J23 BRANCH NO.5
J21 BRANCH NO.5
CROSSOVER BRANCH NO.5
CHANNEL A TO J21
CHANNEL B TO J21
CROSSOVER BRANCH NO.4
TERM 71 THRU 78 BRANCH NO'S 5&6
TERM 71 THRU 78 BRANCH NO.4
TERM 61 TO 70 BRANCH NO'S 5&6
TERM 61 TO 70 BRANCH NO.4
TERM 60 TO 51 BRANCH NO'S 5&6
TERM 60 TO 51 BRANCH NO.4
TERM 46 THRU 50 BRANCH NO. 3
TERM 46 THRU 50 BRANCH NO'S 1&2
TERM 36 THRU 45 BRANCH NO'S 1&2
TERM 36 THRU 45 BRANCH NO. 3
TERM 31 THRU 35 BRANCH NO'S 1&2
TERM 21 THRU 30 BRANCH NO. 3
TERM 21 THRU 30 BRANCH NO'S 1&2
CROSSOVER BRANCH NO.3
TERM 11 THRU 20 BRANCH NO'S 1&2
TERM 11 THRU 20 BRANCH NO.3
TERM 5 THRU 10 BRANCH NO'S 1&2
TERM 1 THRU 10 BRANCH NO.3
TERM 1 THRU 5 BRANCH NO'S 1&2
CROSSOVER BRANCH 1&2
LEVEL A
LEVEL B
5
9
SEE NOTE 21
7
11
SEE NOTE 21
SEE NOTE 21
8
12
5
9
SEE NOTE 21
6
10
SEE NOTE 21
SEE NOTE 21
6
10
A
B
C
70
60
50
46
35
30
20
10
A
B
C
SEE DETAIL D


SECTION B-B


SECTION C-C

Ⓔ. REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

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DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

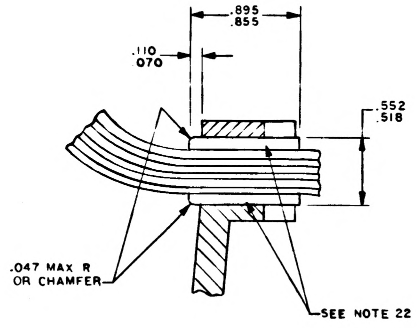
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO. 80230
SIZE J
1015086
SCALE 1:1
SHEET 4 OF 6

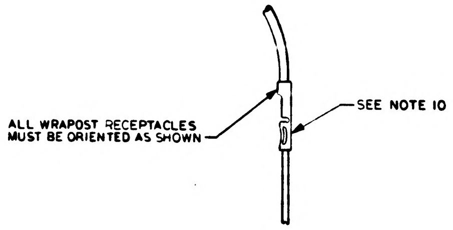
1015086 J

2 7 1 0 1 5 0 8 6


.895
.855
.110
.070
.552
.518
.047 MAX R
OR CHAMFER
SEE NOTE 22

DETAIL E

SCALE: 2/1


ALL WRAPOST RECEPTACLES
MUST BE ORIENTED AS SHOWN
SEE NOTE 10

DETAIL D

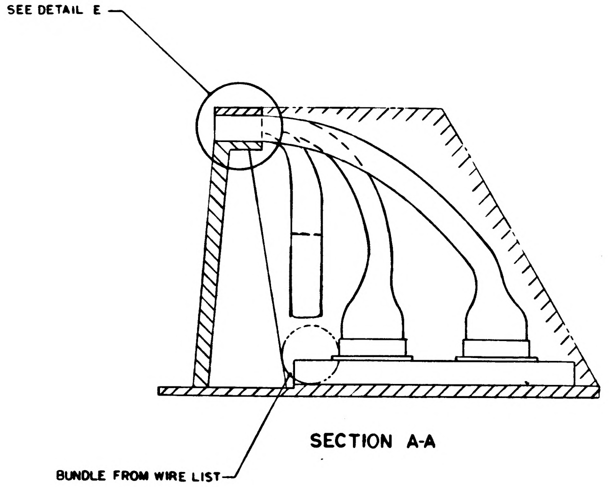
BRANCH NO 8 REF

BRANCH NO 6 REF

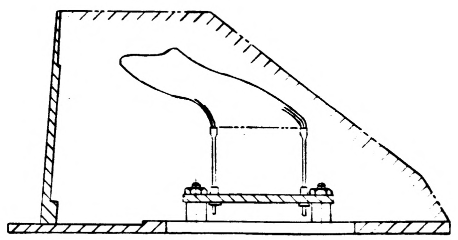
SEE

CROSS

SEE NOTE 21

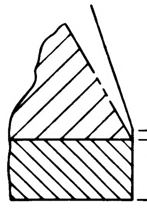

SEE DETAIL E
BUNDLE FROM WIRE LIST

SECTION A-A

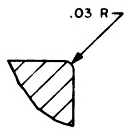


SECTION B-B

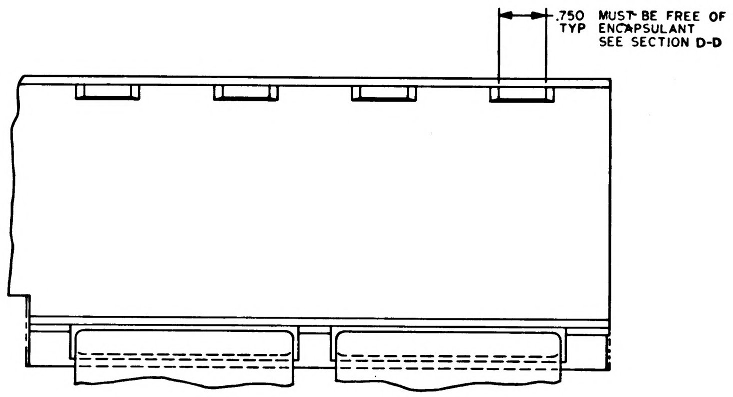
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER	—	11 MAY 65	DKD
F		REVISION STATUS CHANGED		2 SEP 65	RJ
G		REVISION STATUS CHANGED		27 DEC 65	RJ
H		REVISED PER TDRR 26642		MAR 66	AU
J		REVISION STATUS CHANGED		66	

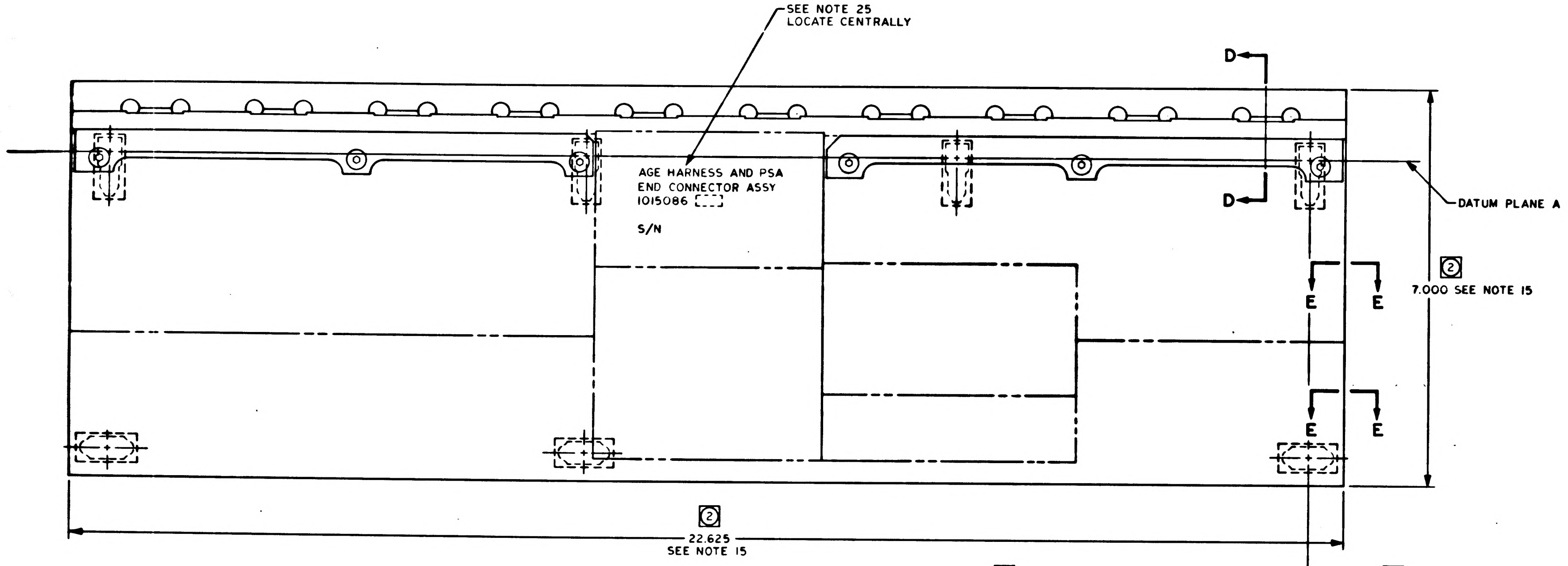

.190
.220 SEE NOTE 14
①

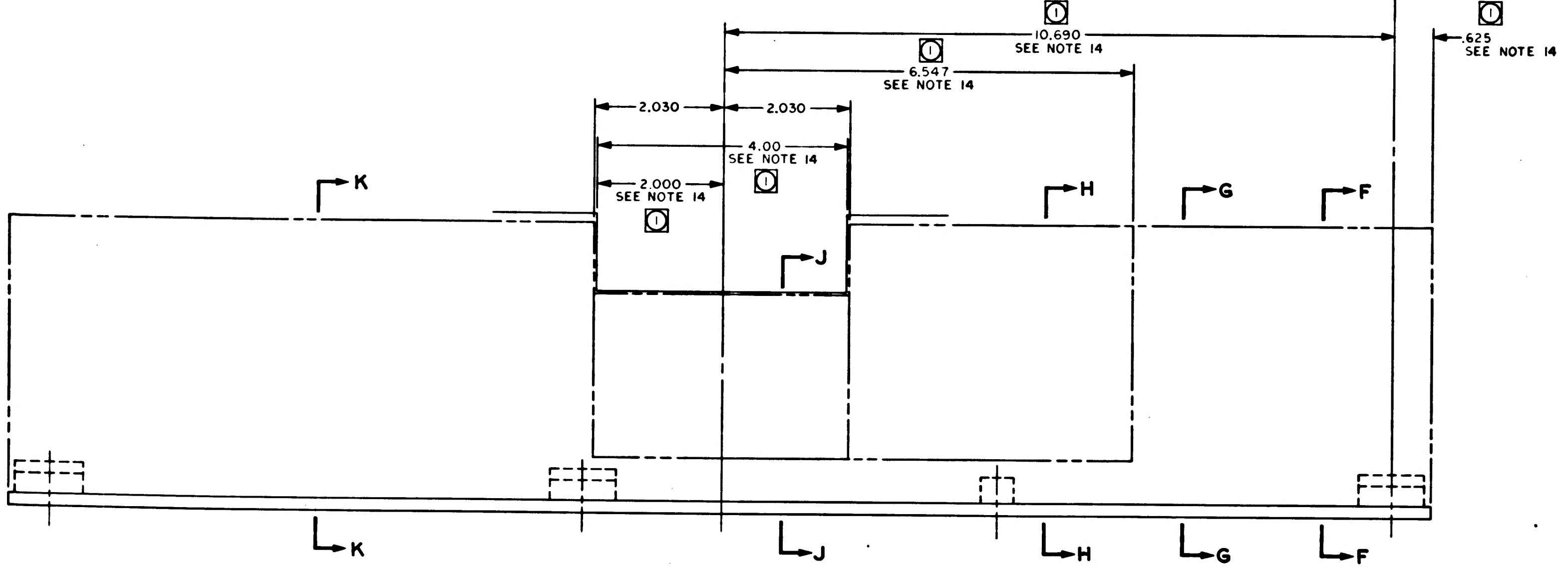
DETAIL C
SCALE: 5/1

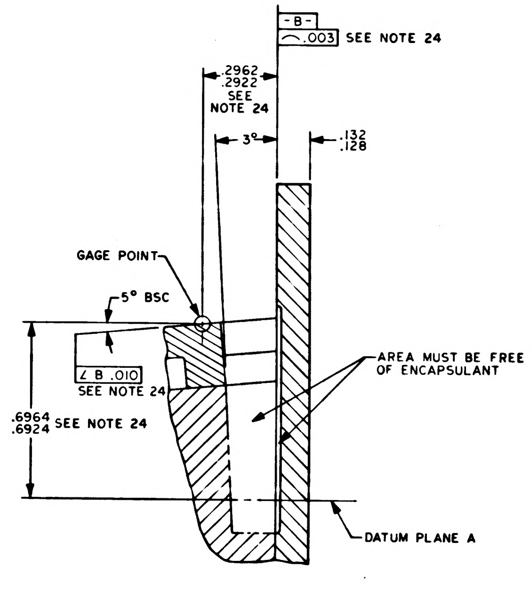


PARTIAL SECTION E-E
SCALE: 5/1
2 PLACES BOTH ENDS

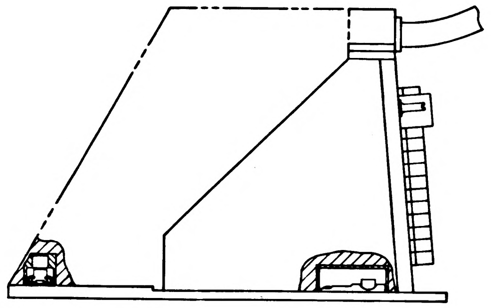

.750 TYP
MUST BE FREE OF ENCAPSULANT SEE SECTION D-D


SEE NOTE 25
LOCATE CENTRALLY
AGE HARNESS AND PSA END CONNECTOR ASSY 1015086
S/N
D
D
DATUM PLANE A
E
E
E
E
②
7.000 SEE NOTE 15
②
22.625
SEE NOTE 15


①
10.690
SEE NOTE 14
①
.625
SEE NOTE 14
①
6.547
SEE NOTE 14
2.030
2.030
4.00
SEE NOTE 14
①
2.000
SEE NOTE 14
①
K
H
G
F
J
K
J
H
G
F


-B-
.003 SEE NOTE 24
.2962
.2922
SEE NOTE 24
3°
.132
.128
GAGE POINT
5° BSC
∠ B .010
SEE NOTE 24
.6964
.6924 SEE NOTE 24
AREA MUST BE FREE OF ENCAPSULANT
DATUM PLANE A

PARTIAL SECTION D-D
SCALE: 5/1



Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

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FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE FEB 65
CHECKED 1 APR 65
APPROVAL APR 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO. 80230
SIZE J
1015086
SCALE 1:1
SHEET 5

1015086 REV J SHT 5

27 1015086

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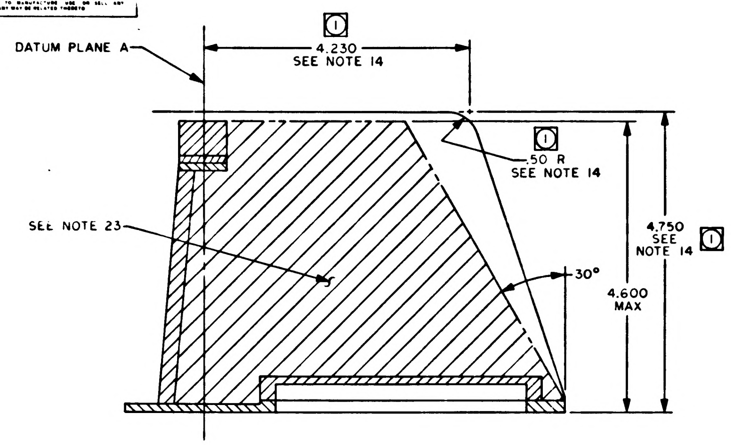
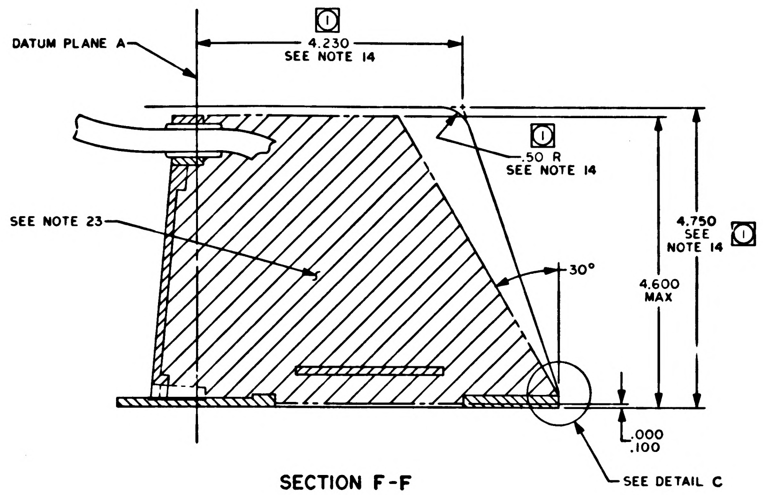
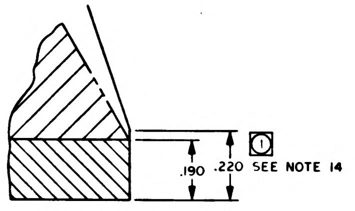

DATUM PLANE A
1
4.230
SEE NOTE 14
1
.50 R
SEE NOTE 14
SEE NOTE 23
4.750
SEE
NOTE 14
1
30°
4.600
MAX

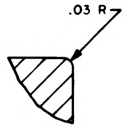
SECTION K-K


DATUM PLANE A
1
4.230
SEE NOTE 14
1
.50 R
SEE NOTE 14
SEE NOTE 23
4.750
SEE
NOTE 14
1
30°
4.600
MAX
.000
.100
SEE DETAIL C

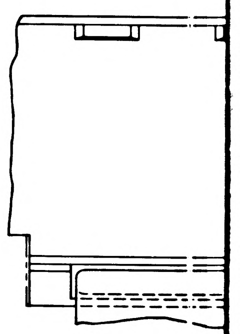
SECTION F-F

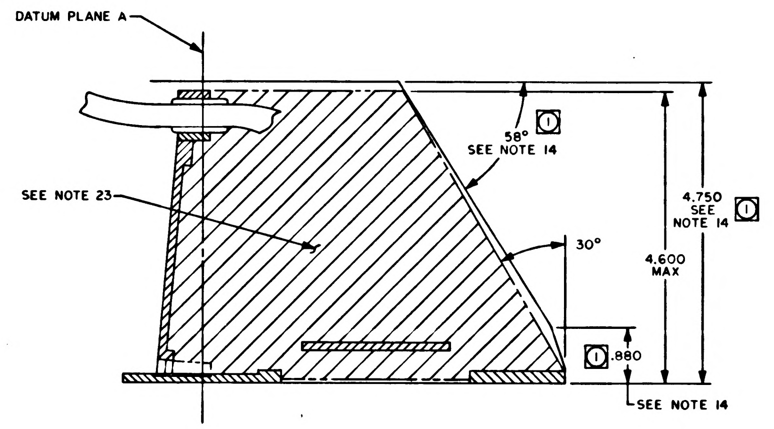

1
.190
.220 SEE NOTE 14

DETAIL C
SCALE: 5/1

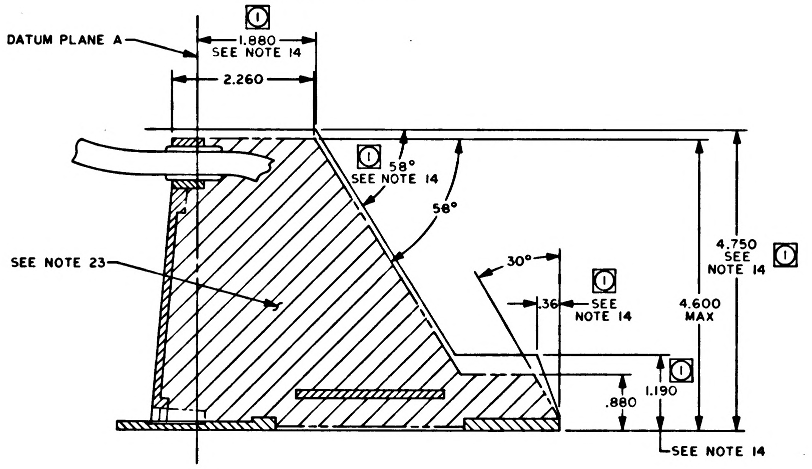


PARTIAL SECTION E-E
SCALE: 5/1
2 PLACES BOTH ENDS

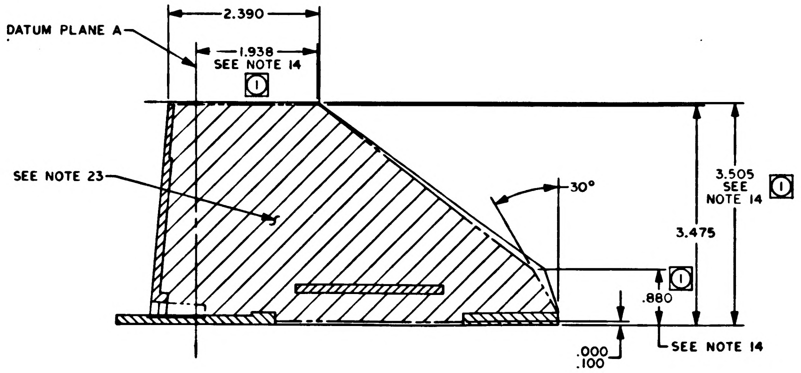



DATUM PLANE A
1
58°
SEE NOTE 14
SEE NOTE 23
4.750
SEE
NOTE 14
1
30°
4.600
MAX
1
.880
SEE NOTE 14

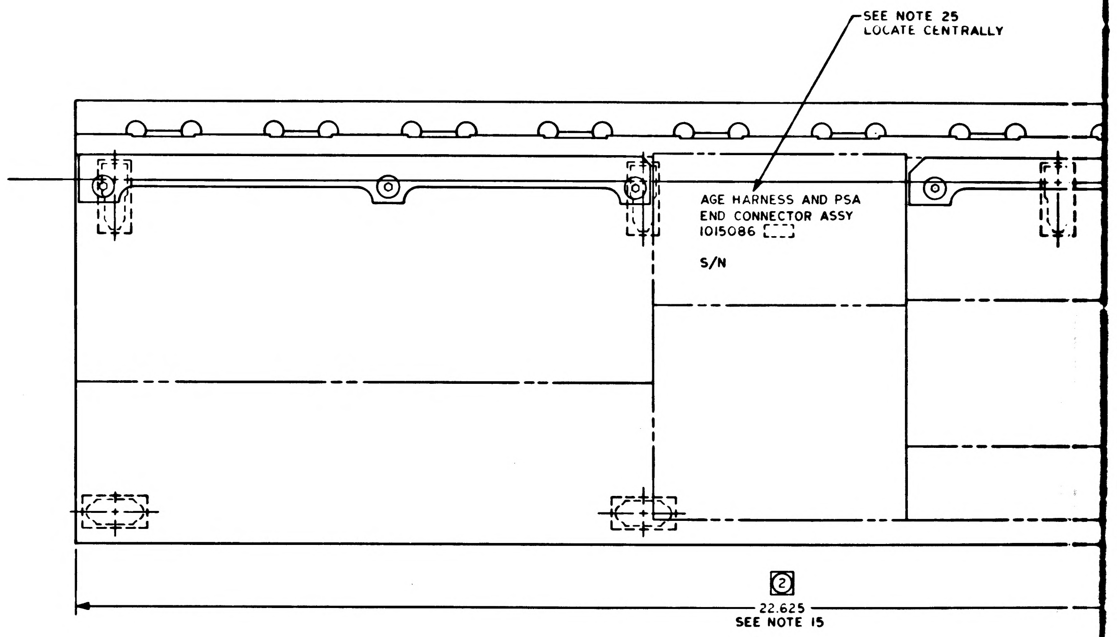
SECTION G-G

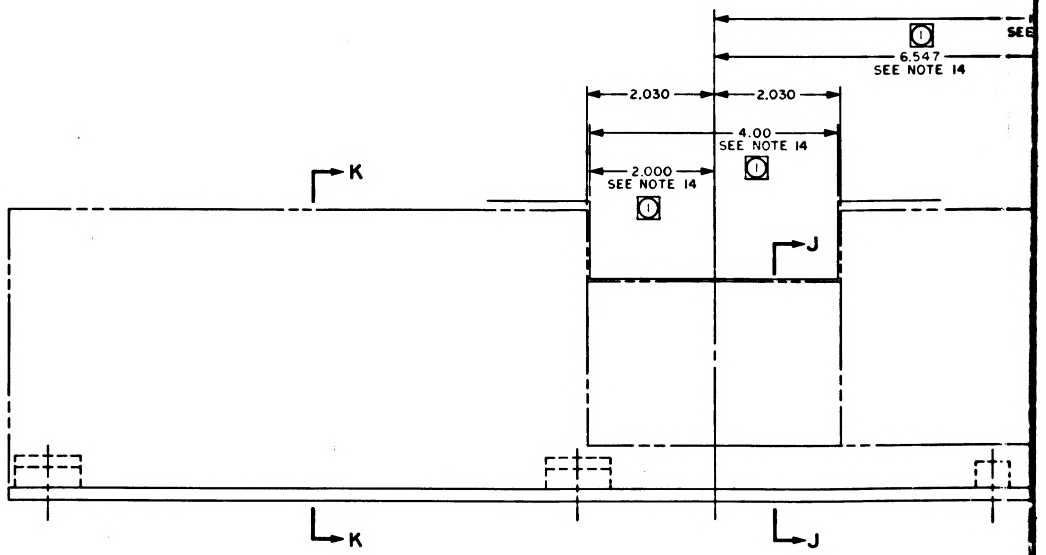

1
DATUM PLANE A
1.880
SEE NOTE 14
2.260
1
58°
SEE NOTE 14
58°
SEE NOTE 23
30°
1
.36
SEE
NOTE 14
4.750
SEE
NOTE 14
1
4.600
MAX
1
1.190
.880
SEE NOTE 14

SECTION H-H


2.390
DATUM PLANE A
1.938
SEE NOTE 14
1
SEE NOTE 23
30°
3.505
SEE
NOTE 14
1
3.475
1
.880
.000
.100
SEE NOTE 14

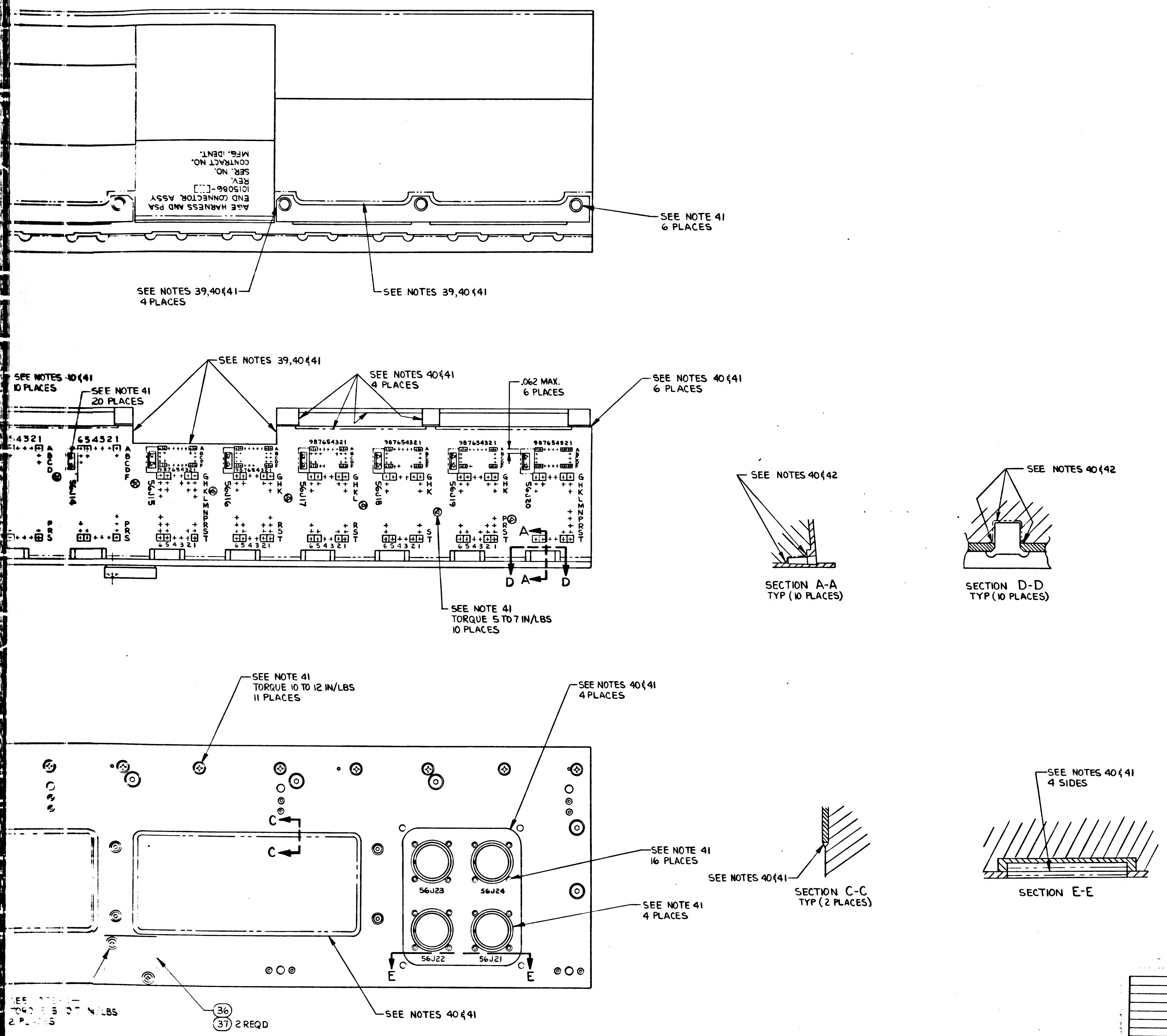
SECTION J-J


SEE NOTE 25
LOCATE CENTRALLY
AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086
S/N
2
22.625
SEE NOTE 15


SEE
1
6.547
SEE NOTE 14
2.030
2.030
4.00
SEE NOTE 14
1
2.000
SEE NOTE 14
1
K
J
K
J

1015086 REV J SHT 5

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
H		THIS SHEET ADDED PER TDRR 26642		8 MAR 66	AU
J		REVISION STATUS CHANGED		3 NOV 66	3


AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086-[ ]
REV.
SER. NO.
CONTRACT NO.
MFG. IDENT.
SEE NOTE 41
6 PLACES
SEE NOTES 39,40 & 41
4 PLACES
SEE NOTES 39,40 & 41
SEE NOTES 40 & 41
10 PLACES
SEE NOTE 41
20 PLACES
SEE NOTES 39,40 & 41
SEE NOTES 40 & 41
4 PLACES
.062 MAX.
6 PLACES
SEE NOTES 40 & 41
6 PLACES
56J14
56J15
56J16
56J17
56J18
56J19
56J20
A
D
SEE NOTE 41
TORQUE 5 TO 7 IN/LBS
10 PLACES
SEE NOTES 40 & 42
SECTION A-A
TYP (10 PLACES)
SEE NOTES 40 & 42
SECTION D-D
TYP (10 PLACES)
SEE NOTE 41
TORQUE 10 TO 12 IN/LBS
11 PLACES
SEE NOTES 40 & 41
4 PLACES
C
SEE NOTE 41
16 PLACES
SEE NOTE 41
4 PLACES
56J23
56J24
56J22
56J21
E
2 PLACES
36
37 2 REQD
SEE NOTES 40 & 41
SEE NOTES 40 & 41
SECTION C-C
TYP (2 PLACES)
SEE NOTES 40 & 41
4 SIDES
SECTION E-E

FOR -011 CONFIGURATION

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL NAS 9-497

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN R. Parker DATE 5 MAR 66
CHECKED
APPROVAL
CONTRACT
NASA APPROVAL
MIT APPROVAL

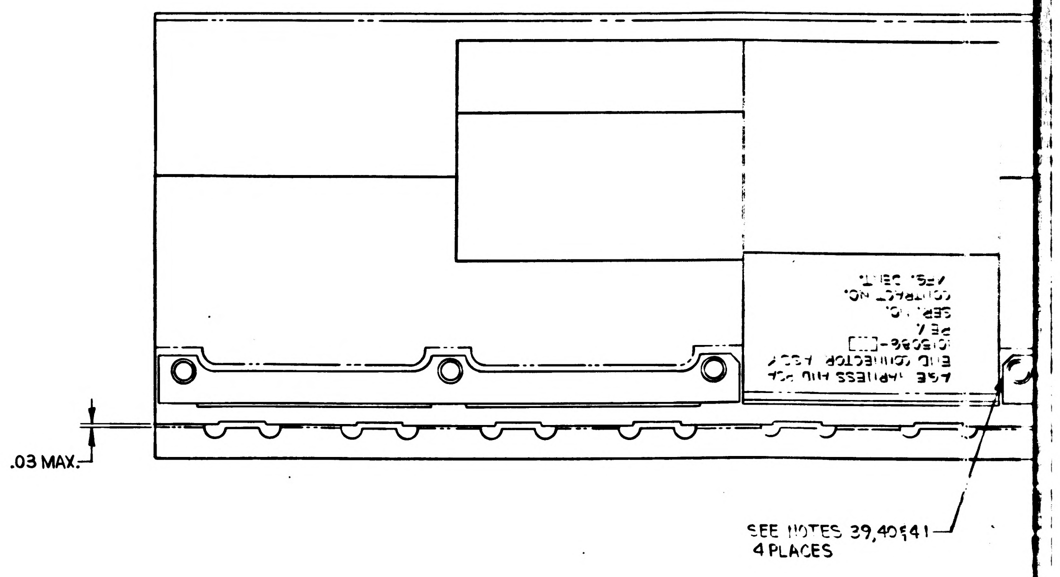
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

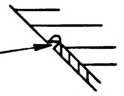
AGE HARNESS AND PSA
END CONNECTOR ASSY

SIZE J2 CODE IDENT NO. 80230 1015086
SCALE SHEET 6 OF 6

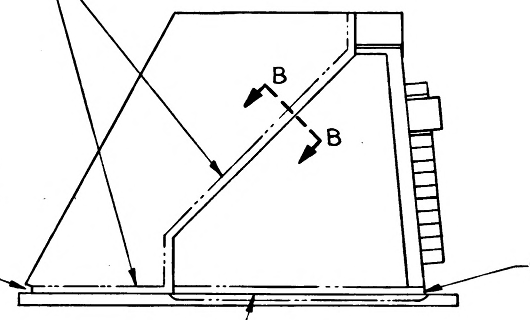
1015086 J 6

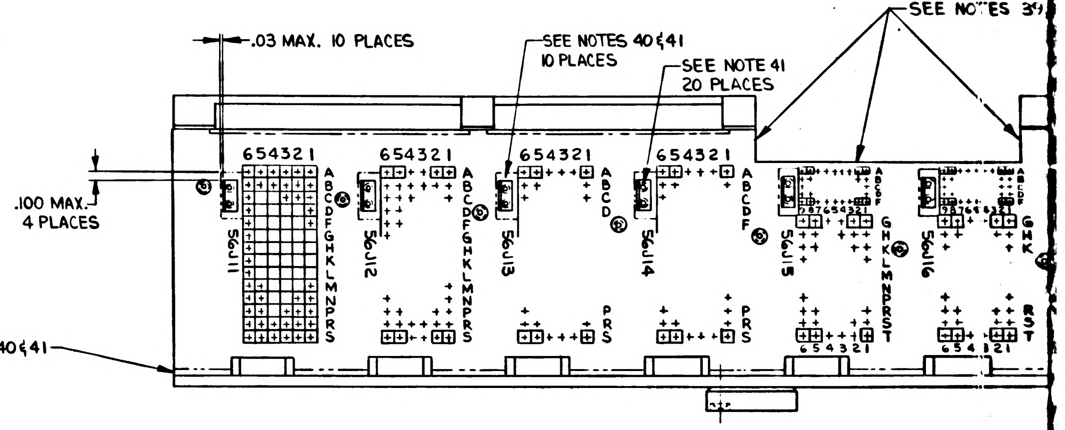
27 1015086

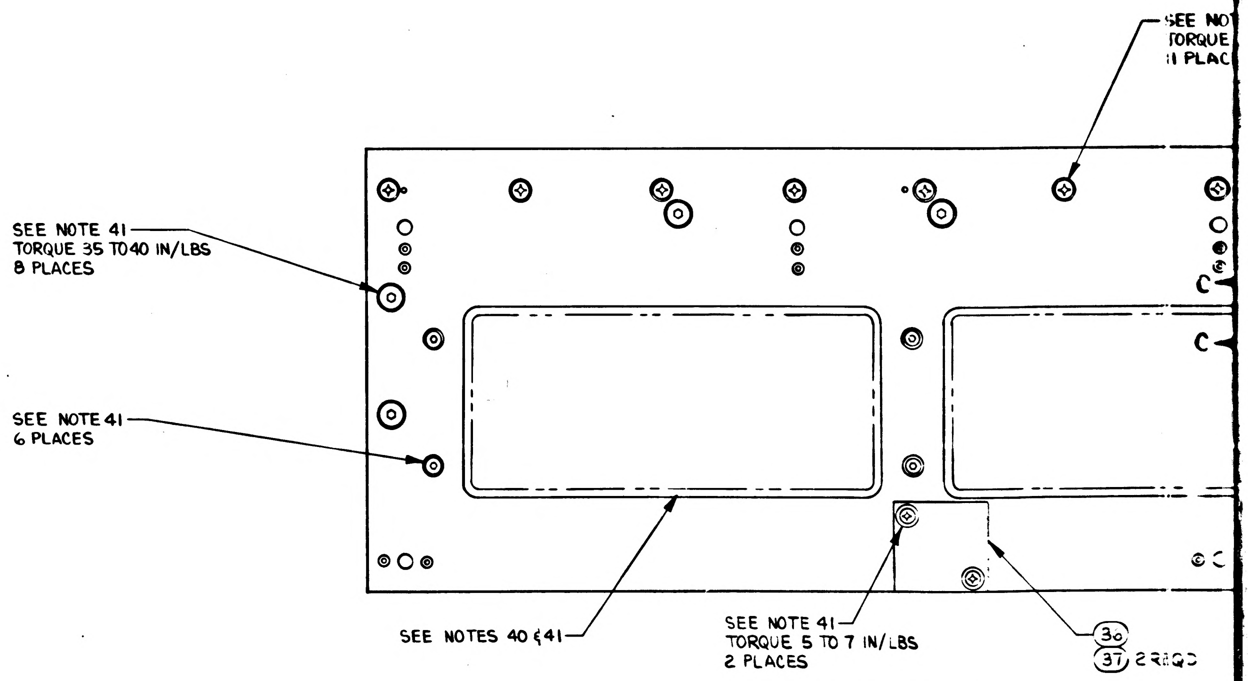

.03 MAX.
SEE NOTES 39,40&41
4 PLACES


PARTIAL SECTION B-B

SEE NOTES 39,40&41
2 PLACES


B
B
SEE NOTES
39,40&41
SEE NOTES 40&41
SEE NOTES 40&41


.03 MAX. 10 PLACES
SEE NOTES 40&41
10 PLACES
SEE NOTE 41
20 PLACES
SEE NOTES 39
.100 MAX.
4 PLACES
654321
654321
654321
654321
S6J11
S6J12
S6J13
S6J14
S6J15
S6J16
ABCDEFGHKLMNPRS
ABCD
ABCDF
GHKLMNPRST
PRS
654321


SEE NOTE
TORQUE
11 PLAC
SEE NOTE 41
TORQUE 35 TO 40 IN/LBS
8 PLACES
SEE NOTE 41
6 PLACES
C
C
SEE NOTES 40&41
SEE NOTE 41
TORQUE 5 TO 7 IN/LBS
2 PLACES
30
37 2 REQD

1015086	REV J	SH 6

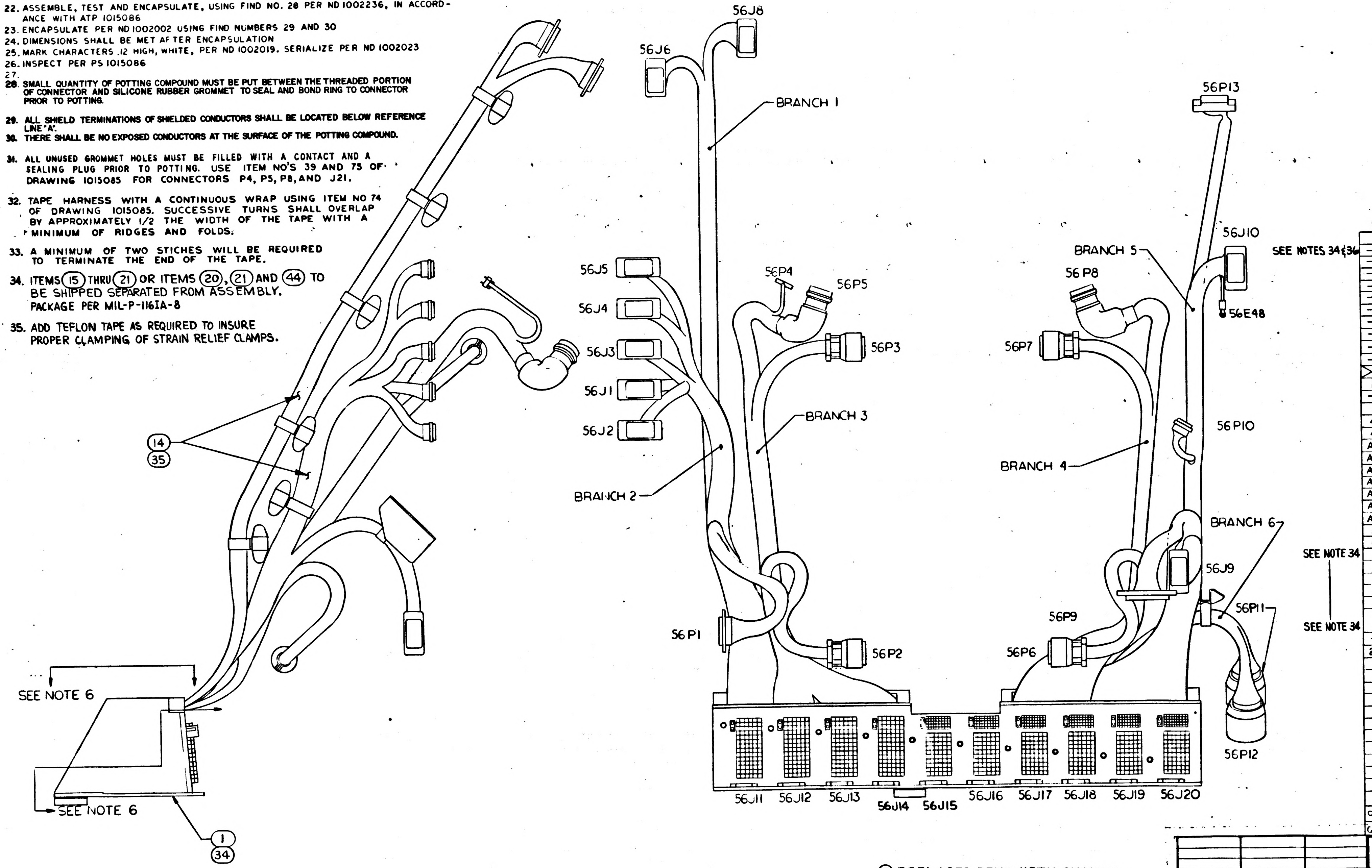
1/1015086

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE	—	11 MAY 65	DKU
F		REVISED PER TDRR 22497		21 SEP 65	
G		REVISED PER TDRR 24769		29 DEC 65	
H		REVISED PER TDRR 26642		7 MAR 66	AU
J		REVISED PER TDRR 28752		19 MAY 66	
K		REVISED PER TDRR 31362		5 OCT 66	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BRANCHES 1, 2 AND 3 OF FIND NO. 14 ARE SHOWN ON SHEET 2
3. BRANCHES 4, 5 AND 6 OF FIND NO. 14 ARE SHOWN ON SHEET 3
4. GRID MODULE ON SHEETS 2 AND 3 IS 1 INCH TRUE POSITION
5. UNLESS OTHERWISE SPECIFIED, FEATURE CENTERLINES ON SHEETS 2, 3 AND 4 ARE LOCATED WITHIN ±.25. ENDS OF HOOK UP WIRES OR ACCESSORIES ARE LOCATED WITHIN .12
6. MARRIAGE CONFIGURATION OF FIND NUMBERS 1 AND 14 IS SHOWN ON SHEET 4
7. ENCAPSULATION ENVELOPE IS SHOWN ON SHEET 5
8. TERMINATION NUMBERS AND TOLERANCE CHART ARE LISTED IN CONDUCTOR CHART OF FIND NO. 14
9. INTERCONNECTION DIAGRAM OF AGE C/M, LOWER EQUIPMENT BAY, IS 1015090
10. WELD PER ND 1002225
11. CRIMP PER ND 1002206
12. LACE HARNESS PER ND 1002032
13. ALL WIRING SHALL BE BELOW THE SURFACE OF THE ENCAPSULATING MATERIAL
14. ① DIMENSION OR CHARACTERISTIC IS CONTROLLED BY ICDMH01-01203-116
15. ② ICDMH01-01203-116 ENVELOPE DIMENSIONS ARE 7.000 AND 22.690 RESPECTIVELY; ACTUAL VALUES MAY BE LESS. ENCAPSULATION SHALL BE FLUSH TO .015 LESS THAN THE ENVELOPE DEFINED BY THE ACTUAL LENGTH AND WIDTH OF THE END CONNECTOR ASSEMBLY
16. LACE HARNESS IN GROUPS, USING A CONTINUOUS CLOVE HITCH AT INTERVALS NOT TO EXCEED TWO INCHES MAXIMUM. WIRES FROM DIFFERENT HARNESS BRANCHES MERGING INTO THE SAME WIRE HARNESS CLAMP CHANNEL GROUP SHALL BE BLENDED TOGETHER WHEN STITCHING IS PERFORMED.
17. APPLY EPOXY PER ND 1002187 TYPE II USING FIND NUMBERS 26 AND 27. TO SEAL JUNCTION OF CONNECTOR FLANGES AND BOTTOM PLATE.
18. ENCAPSULATE BACK OF CONNECTOR PER ND 1002236 USING FIND NO. 28
19. MARK FIND NO. 13 WITH REFERENCE DESIGNATION AS SHOWN, .12 HIGH, BLACK, HOT IMPRESSION STAMPING PER ND 1002019 CENTRALIZE
20. SECURE FIND NO. 13 TO FIND NO. 14 USING FIND NUMBERS 24 AND 25
21. SELECT NOTED FIND NUMBERS IN ACCORDANCE WITH ATP REQUIREMENTS AT ENCAPSULATION PHASE OF END CONNECTOR BUILD UP
22. ASSEMBLE, TEST AND ENCAPSULATE, USING FIND NO. 28 PER ND 1002236, IN ACCORDANCE WITH ATP 1015086
23. ENCAPSULATE PER ND 1002002 USING FIND NUMBERS 29 AND 30
24. DIMENSIONS SHALL BE MET AFTER ENCAPSULATION
25. MARK CHARACTERS .12 HIGH, WHITE, PER ND 1002019. SERIALIZE PER ND 1002023
26. INSPECT PER PS 1015086
27.
28. SMALL QUANTITY OF POTTING COMPOUND MUST BE PUT BETWEEN THE THREADED PORTION OF CONNECTOR AND SILICONE RUBBER GROMMET TO SEAL AND BOND RING TO CONNECTOR PRIOR TO POTTING.
29. ALL SHIELD TERMINATIONS OF SHIELDED CONDUCTORS SHALL BE LOCATED BELOW REFERENCE LINE "A".
30. THERE SHALL BE NO EXPOSED CONDUCTORS AT THE SURFACE OF THE POTTING COMPOUND.
31. ALL UNUSED GROMMET HOLES MUST BE FILLED WITH A CONTACT AND A SEALING PLUG PRIOR TO POTTING. USE ITEM NO'S 39 AND 75 OF DRAWING 1015085 FOR CONNECTORS P4, P5, P8, AND J21.
32. TAPE HARNESS WITH A CONTINUOUS WRAP USING ITEM NO 74 OF DRAWING 1015085. SUCCESSIVE TURNS SHALL OVERLAP BY APPROXIMATELY 1/2 THE WIDTH OF THE TAPE WITH A MINIMUM OF RIDGES AND FOLDS.
33. A MINIMUM OF TWO STICHES WILL BE REQUIRED TO TERMINATE THE END OF THE TAPE.
34. ITEMS (15) THRU (21) OR ITEMS (20), (21) AND (44) TO BE SHIPPED SEPARATED FROM ASSEMBLY. PACKAGE PER MIL-P-116IA-8
35. ADD TEFLON TAPE AS REQUIRED TO INSURE PROPER CLAMPING OF STRAIN RELIEF CLAMPS.
36. SELECT SIZES TO CONFORM TO BUNDLE DIAMETER AT LOCATION SHOWN.
37. POT BACK OF CONNECTORS 56J1 THRU 56J5 PER ND 1002236 USING ITEM (28). INSIDE CENTER HARDWARE MUST BE FREE OF POTTING WITHIN DIMENSION SHOWN.
38. BOND ITEM (38) TO BACK SIDE OF CONNECTOR FLANGE FOR CONNECTORS 56J1 THRU 56J5, USING ITEMS (39) AND (40) PER ND 1002151.
39. UNDERCUT .12 X .12 AS SHOWN.
40. AFTER ENCAPSULATION REMOVE ANODIZE ALONG NOTED SURFACES.
41. AFTER ENCAPSULATION APPLY ECCOBOND 45 AND CATALYST NO. 15 PER ND 1002004, TYPE II, USING ITEMS (42) AND (43) TO ENTIRE LENGTH OF NOTED SURFACES.
42. AFTER ENCAPSULATION APPLY PRIMER AND PR1538 PER ND 1002236, USING ITEMS (41) AND (28) TO THE REWORKED TRAY SLOTS.
43. CLAMP LOCATIONS SHOWN ARE FOR REFERENCE ONLY.
44. MOISTUREPROOFING OF THIS ASSEMBLY SHALL BE PERFORMED PER ND 1002292.



ⓔ REPLACES REV D WITH CHANGE

SEE NOTES 34 & 36 (item 44); SEE NOTE 34 (items 21 through 15)

031	021	011	000	EFFECTIVITY	FIND NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
—	—	10	—		44	1010400-1 THRU -12	CLAMP, LOOP, HINGED
—	AR	AR	—		43	1010686	CATALYST
—	AR	AR	—		42	1010657	EPOXY RESIN
—	AR	AR	—		41	1012504	PRIMER, METAL PARTS
—	AR	AR	—		40	1010718	PRIMER, SILICONE ADHESIVE
—	AR	AR	—		39	MIL-A-25457	ADHESIVE, SILICONE RUBBER
—	5	5	—		38	1021307	GASKET, CONNECTOR
—	2	2	—		37	1010618-26	SCREW, BUTTON HD.
—	1	1	—		36	1008329	SPACER BLOCK
—	╳	╳	—		REF	1023058	INTERCONNECTION LIST
╳	—	—	╳		REF	1015087	INTERCONNECTION LIST
1	1	1	—		35	1023059	WIRING HARNESS "A"
—	1	1	—		34	1007599-021	END CONNECTOR ASSY, PSA
1	1	—	1		33	MS35650-104	NUT, PLAIN HEX
4	4	4	4		32	MS35649-44	NUT, PLAIN HEX
4	4	4	4		31	1010618-15	SCREW, BUTTON HEAD
AR	AR	AR	AR		30	1010798-2	ACTIVATOR
AR	AR	AR	AR		29	1010798-1	RESIN
AR	AR	AR	AR		28	1012503	COMPOUND, POTTING, POLYURETHANE
AR	AR	AR	AR		27	1010679	ADHESIVE ACTIVATOR
AR	AR	AR	AR		26	1010661	EPOXY RESIN
AR	AR	AR	AR		25	1012507-004	LACING TAPE
AR	AR	AR	AR		24	1012507-002	LACING TAPE
1	1	—	1		23	MS35338-081	WASHER, LOCK
6	6	6	6		22	1006783-47	SCREW, BUTTON HEAD
1	2	2	1		21	1010705-8	CLAMP
1	1	1	1		20	1010705-6	CLAMP
1	1	—	1		19	1010400-8	CLAMP, LOOP, HINGED
1	1	—	1		18	1010400-7	CLAMP, LOOP, HINGED
3	3	—	3		17	1010400-3	CLAMP, LOOP, HINGED
1	1	—	1		16	1010400-2	CLAMP, LOOP, HINGED
5	5	—	5		15	1010400-1	CLAMP, LOOP, HINGED
—	—	—	1		14	1015085	WIRING HARNESS "A"
21	21	21	21		13	1010811-002	BAND, IDENTIFICATION
1	1	1	1		12	1021253-8	SPACER
1	1	1	1		11	1021253-7	SPACER
2	2	2	2		10	1021253-6	SPACER
2	2	2	2		9	1021253-5	SPACER
1	1	1	1		8	1021253-4	SPACER
1	1	1	1		7	1021253-3	SPACER
2	2	2	2		6	1021253-2	SPACER
2	2	2	2		5	1021253-1	SPACER
1	1	—	1		4	1014609	BRACKET, CLAMP
1	1	1	1		3	1008165	CABLE CLAMP, RIGHT
1	1	1	1		2	1008164	CABLE CLAMP, LEFT
1	—	—	1		1	1007599-011	END CONNECTOR ASSY, PSA

QUANTITY REQUIRED — LIST OF MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

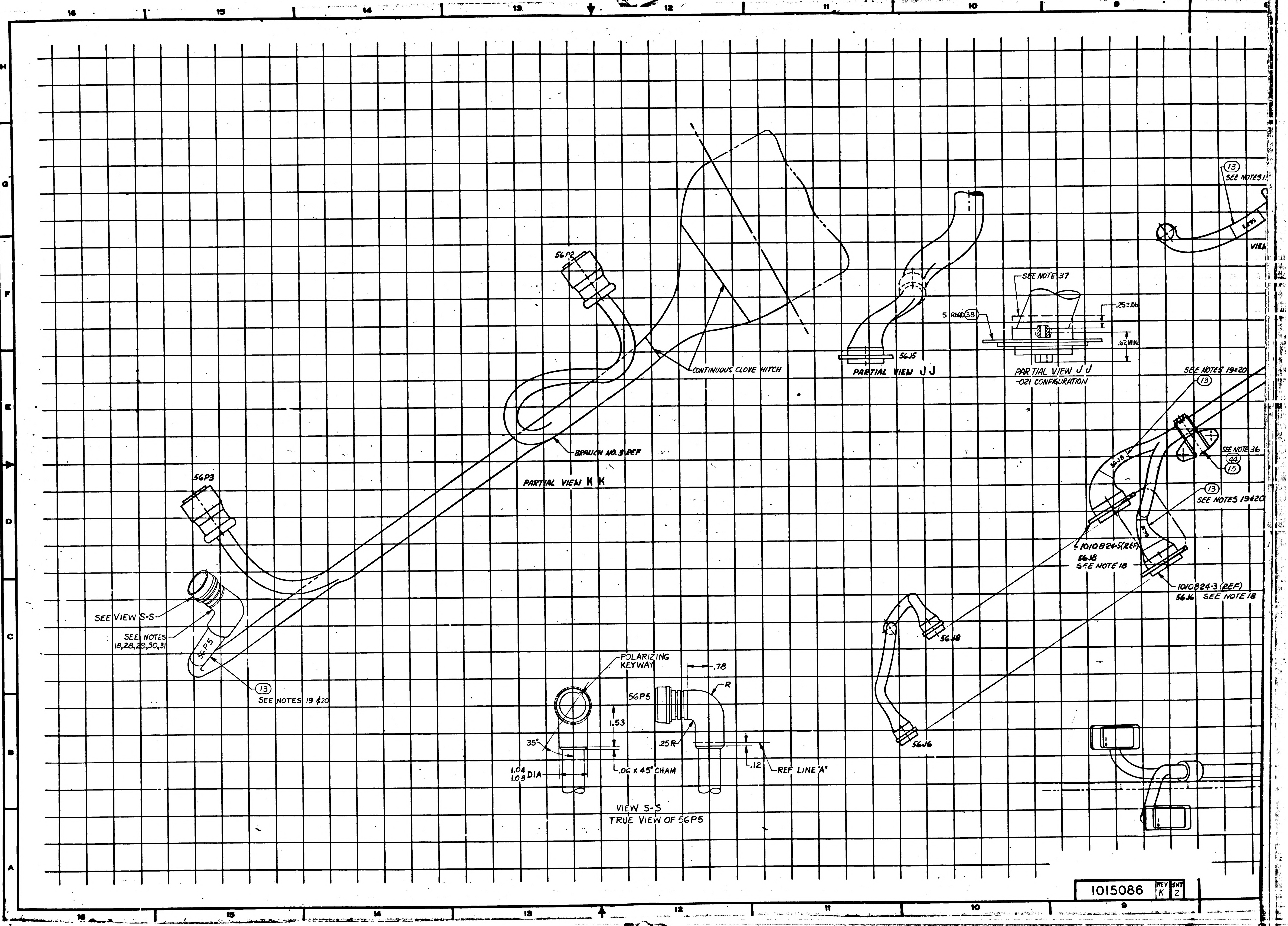
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO. 80230
SIZE E
1015086
SCALE 1:2
SHEET 1 OF 6


16
15
14
13
12
11
10
9
H
G
F
E
D
C
B
A
56P2
CONTINUOUS CLOVE HITCH
BRANCH NO. 3 REF
PARTIAL VIEW K K
56P3
SEE VIEW S-S
SEE NOTES
18,28,29,30,31
56P5
13
SEE NOTES 19 & 20
56J5
PARTIAL VIEW J J
SEE NOTE 37
5 REQD 38
.25±.06
.62 MIN.
PARTIAL VIEW J J
-021 CONFIGURATION
13
SEE NOTES 1
VIEW
SEE NOTES 19&20
13
SEE NOTE 36
44
15
13
SEE NOTES 19&20
56J8
1010824-5(REF)
56J8
SEE NOTE 18
1010824-3 (REF)
56J6 SEE NOTE 18
56J8
56J6
POLARIZING
KEYWAY
.78
R
56P5
1.53
35°
.25R
1.04
1.08 DIA
.06 X 45° CHAM
.12
REF LINE "A"
VIEW S-S
TRUE VIEW OF 56P5

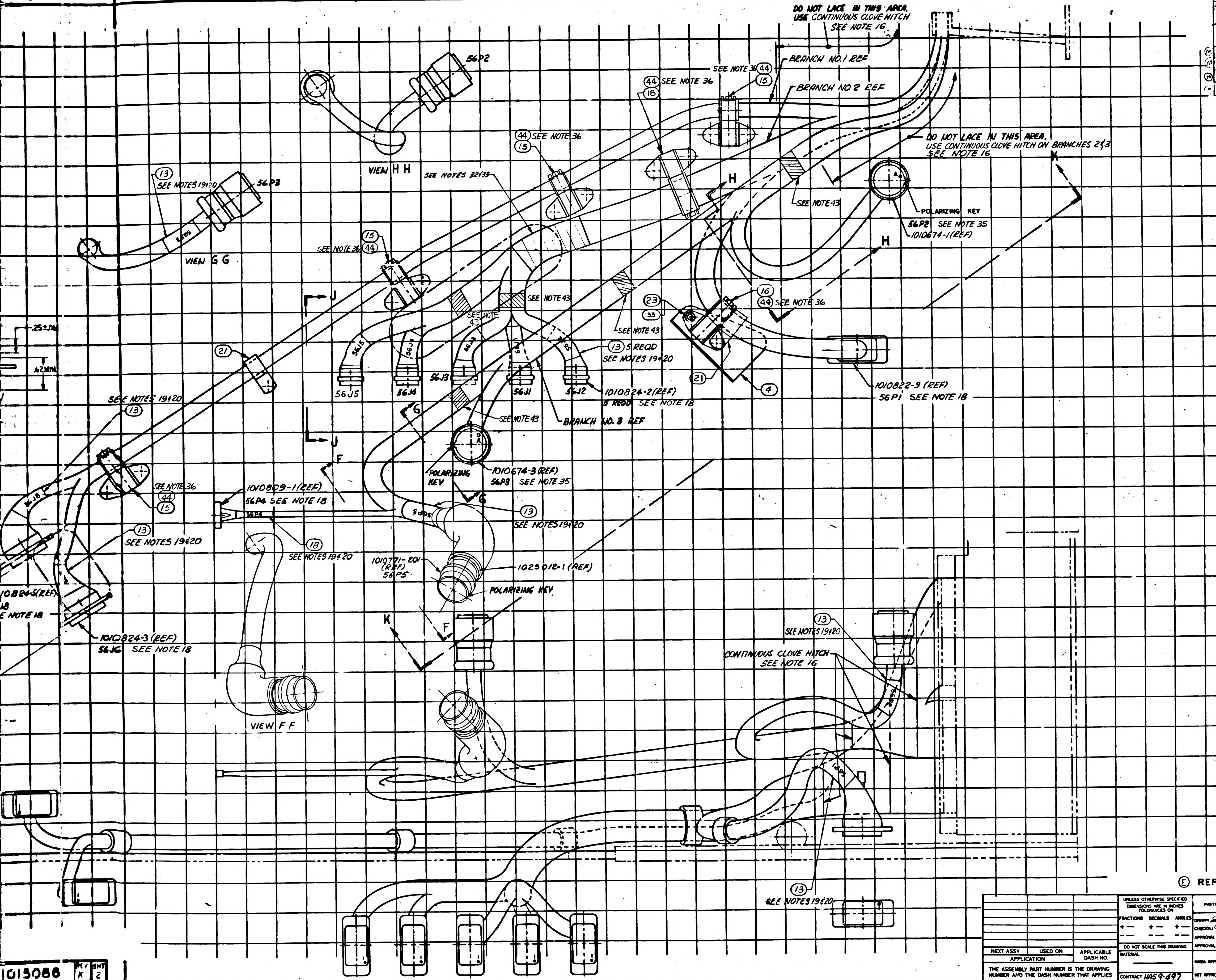
1015086 SHT 2 OF 6

1015086	REV K	SHT 2

1 7 1 0 1 5 0 8 6

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		REPLACES REVISION D WITH CHANGE	—	11 MAY 65	DKD
		PER TDRR 20529			WH
F		REVISED PER TDRR 22497		21 SEP 65	RLP EF
G		REVISED PER TDRR 24769		29 DEC 65	RLP
H		REVISED PER TDRR 26642		7 MAR 66	RLP AU
J		REVISION STATUS CHANGED		19 MAY 66	B. PZ

SEE SHEET 1 FOR REVISION RECORD


DO NOT LACE IN THIS AREA.
USE CONTINUOUS CLOVE HITCH
SEE NOTE 16
56P2
SEE NOTE 36 (44) (15)
BRANCH NO. 1 REF
(44) SEE NOTE 36 (18)
(15)
BRANCH NO. 2 REF
DO NOT LACE IN THIS AREA.
USE CONTINUOUS CLOVE HITCH ON BRANCHES 2 & 3
SEE NOTE 16
K
(44) SEE NOTE 36
(15)
VIEW H H
SEE NOTES 32 & 33
H
SEE NOTE 43
POLARIZING KEY
56P2 SEE NOTE 35
1010674-1(REF)
(13)
SEE NOTES 19 & 20
56P3
VIEW G G
(15)
SEE NOTE 36 (44)
H
J
SEE NOTE 43
SEE NOTE 43
(23)
(33)
(16)
(44) SEE NOTE 36
SEE NOTE 43
.25±.06
.62 MIN.
(21)
56J5
56J4
56J3
56J1
56J2
(13) 5 REQD
SEE NOTES 19 & 20
1010824-2(REF)
5 REQD SEE NOTE 18
(21)
(4)
1010822-3 (REF)
56P1 SEE NOTE 18
SEE NOTES 19 & 20
(13)
G
SEE NOTE 43
BRANCH NO. 3 REF
J
F
1010674-3(REF)
56P3 SEE NOTE 35
POLARIZING KEY
SEE NOTE 36
(44)
(15)
1010809-1(REF)
56P4 SEE NOTE 18
G
(13)
SEE NOTES 19 & 20
(13)
SEE NOTES 19 & 20
56P4
(18)
SEE NOTES 19 & 20
1010771-201 (REF) 56P5
1023012-1 (REF)
POLARIZING KEY
1010824-5(REF)
SEE NOTE 18
1010824-3 (REF)
56J6 SEE NOTE 18
K
F
(13)
SEE NOTES 19 & 20
CONTINUOUS CLOVE HITCH
SEE NOTE 16
VIEW F F
(13)
SEE NOTES 19 & 20
9
8
7
6
5
4
3
2
1
H
G
F
E
D
C
A
K

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN D. Frude DATE 23 FEB 65
CHECKED C. Piozda 1 APR 65
APPROVAL A. Hicks 1 APR 65
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

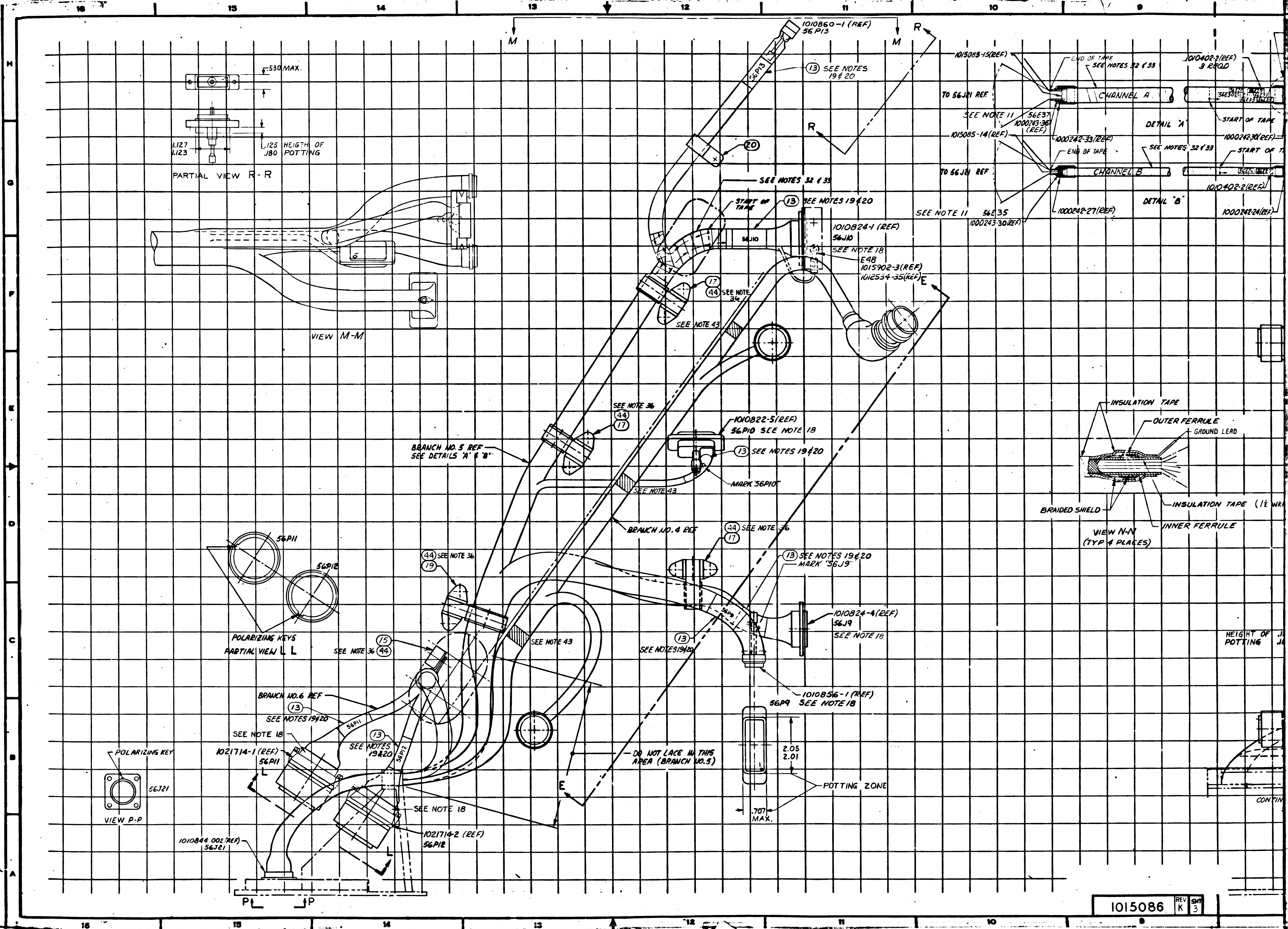
CODE IDENT NO. 80230
SIZE J2
1015086
SCALE 1:1
SHEET 2 OF 6

1015086	REV K	SHT 2

1015086

3H

2/1015086

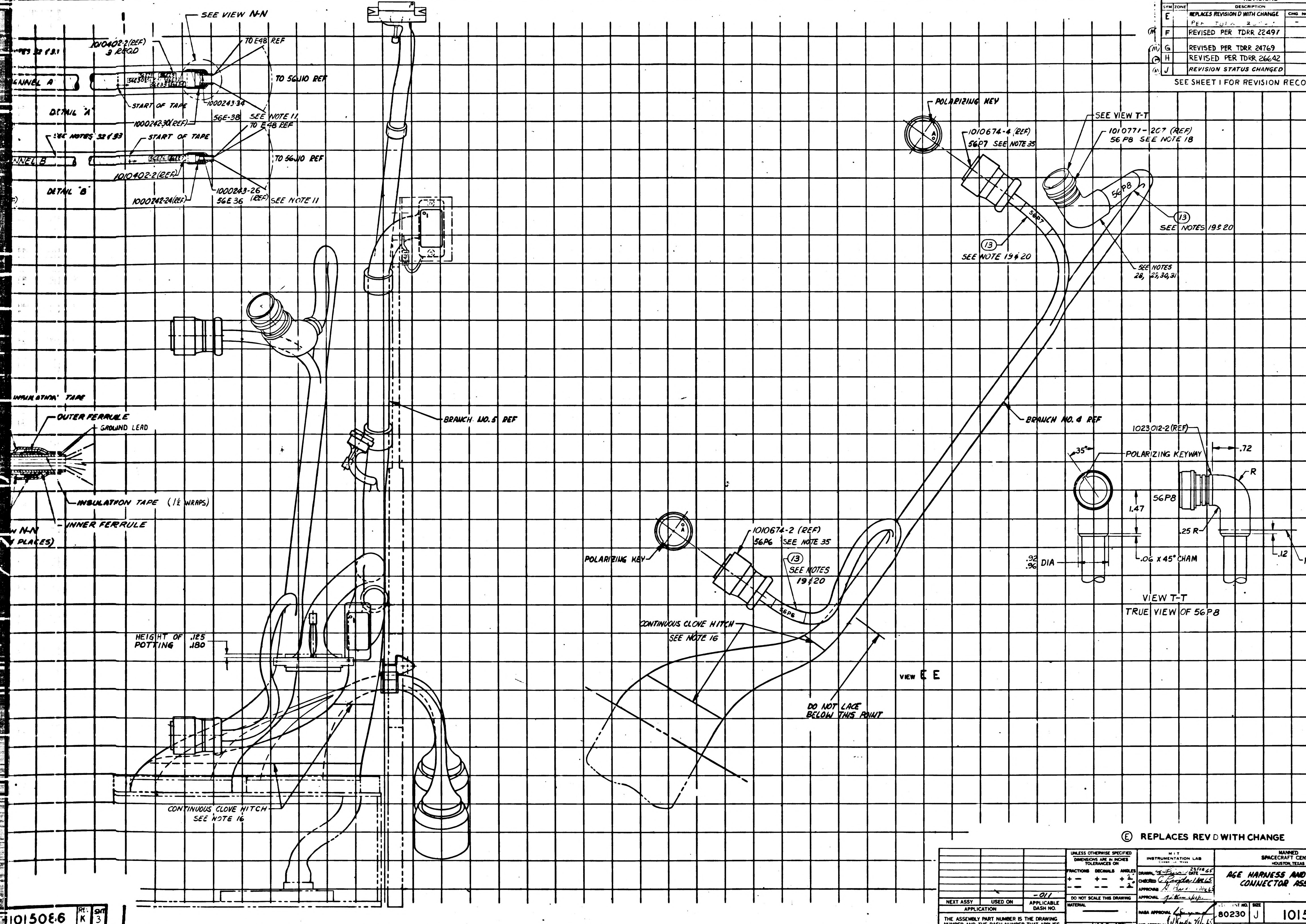

16
15
14
13
12
11
10
9
H
G
F
E
D
C
B
A
M
M
R
R
E
E
.530 MAX.
1.127
1.123
.125 HEIGTH OF
.180 POTTING
PARTIAL VIEW R-R
VIEW M-M
1010860-1 (REF)
56P13
(13) SEE NOTES 19 & 20
(20)
SEE NOTES 32 & 33
START OF TAPE
(13) SEE NOTES 19 & 20
56J10
1010824-1 (REF)
56J10
SEE NOTE 18
E48
1015902-3(REF)
1012554-35(REF)
(17)
(44) SEE NOTE 34
SEE NOTE 43
1015085-15(REF)
END OF TAPE
SEE NOTES 32 & 33
CHANNEL A
1010402-2(REF)
3 REQD
TO 56J21 REF.
SEE NOTE 11
56E37
1000243-36(REF)
1000242-33(REF)
DETAIL "A"
START OF TAPE
1000242-30(REF)
1015085-14(REF)
END OF TAPE
SEE NOTES 32 & 33
START OF TAPE
TO 56J21 REF
CHANNEL B
1010402-2(REF)
SEE NOTE 11
56E35
1000243-30(REF)
1000242-27(REF)
DETAIL "B"
1000242-24(REF)
SEE NOTE 36
(44)
(17)
1010822-5(REF)
56P10 SEE NOTE 18
(13) SEE NOTES 19 & 20
MARK "56P10"
BRANCH NO. 5 REF
SEE DETAILS "A" & "B"
SEE NOTE 43
BRANCH NO. 4 REF
INSULATION TAPE
OUTER FERRULE
GROUND LEAD
BRAIDED SHIELD
INSULATION TAPE (1½ WR
INNER FERRULE
VIEW N-N
(TYP 4 PLACES)
56P11
56P12
POLARIZING KEYS
PARTIAL VIEW L L
(44) SEE NOTE 36
(19)
(15)
SEE NOTE 36 (44)
SEE NOTE 43
(44) SEE NOTE 36
(17)
(13) SEE NOTES 19 & 20
MARK "56J9"
56P9
1010824-4(REF)
56J9
SEE NOTE 18
(13)
SEE NOTES 19 & 20
1010856-1 (REF)
56P9 SEE NOTE 18
HEIGHT OF
POTTING
BRANCH NO. 6 REF
(13)
SEE NOTES 19 & 20
SEE NOTE 18
(13)
SEE NOTES 19 & 20
56P11
56P12
1021714-1 (REF)
56P11
L
L
SEE NOTE 18
1021714-2 (REF)
56P12
DO NOT LACE IN THIS
AREA (BRANCH NO. 5)
2.05
2.01
POTTING ZONE
.707
MAX.
POLARIZING KEY
56J21
VIEW P-P
1010844 002 (REF)
56J21
P
P
CONTIN

1015086 REV K SHT 3

1/1015086

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER TDRR 2[illegible]	–	11 MAY 65	DKD
F		REVISED PER TDRR 22497		21 SEP 65	RLP
G		REVISED PER TDRR 24769		29 DEC 65	RLP
H		REVISED PER TDRR 26642		7 MAR 66	RLP
J		REVISION STATUS CHANGED		19 MAY 66	B.

SEE SHEET 1 FOR REVISION RECORD


SEE VIEW N-N
1010402-2 (REF) 3 REQD
TO E48 REF
TO 56J10 REF
CHANNEL A
DETAIL "A"
START OF TAPE
1000243-34
1000242-30 (REF)
56E-38
SEE NOTE 11
SEE NOTES 32 & 33
START OF TAPE
TO E48 REF
TO 56J10 REF
CHANNEL B
1010402-2 (REF)
DETAIL "B"
1000242-24 (REF)
1000243-26 (REF)
56E 36
SEE NOTE 11
INSULATION TAPE
OUTER FERRULE
GROUND LEAD
INSULATION TAPE (1½ WRAPS)
INNER FERRULE
VIEW N-N
BRANCH NO. 5 REF
HEIGHT OF POTTING .125 .180
CONTINUOUS CLOVE HITCH
SEE NOTE 16
POLARIZING KEY
1010674-4 (REF)
56P7 SEE NOTE 35
SEE VIEW T-T
1010771-207 (REF)
56P8 SEE NOTE 18
56P8
56P7
13
SEE NOTES 19 & 20
13
SEE NOTE 19 & 20
SEE NOTES 28, 29, 30, 31
BRANCH NO. 4 REF
1023012-2 (REF)
35°
POLARIZING KEYWAY
.72
R
56P8
1.47
.25 R
.12
REF LINE 'A'
.92 .96 DIA
.06 x 45° CHAM
VIEW T-T
TRUE VIEW OF 56P8
POLARIZING KEY
1010674-2 (REF)
56P6 SEE NOTE 35
13
SEE NOTES 19 & 20
56P6
CONTINUOUS CLOVE HITCH
SEE NOTE 16
VIEW E E
DO NOT LACE BELOW THIS POINT

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
		-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN [illegible] DATE 23 FEB 65
CHECKED C. Pagola 1 Mar 65
APPROVAL [illegible] 1 Mar 65
APPROVAL [illegible]
NASA APPROVAL
MIT APPROVAL

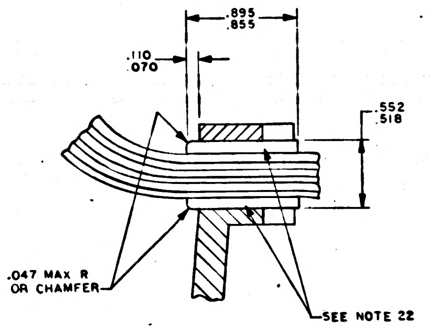
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO. 80230 SIZE J 1015086
SCALE 1:1 SHEET 3 OF 6

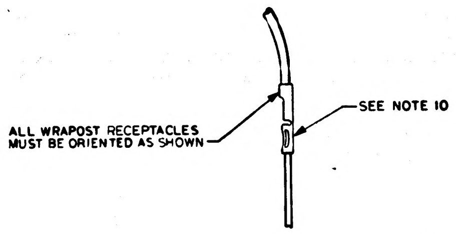
1015086 REV K SHT 3

27-1015086

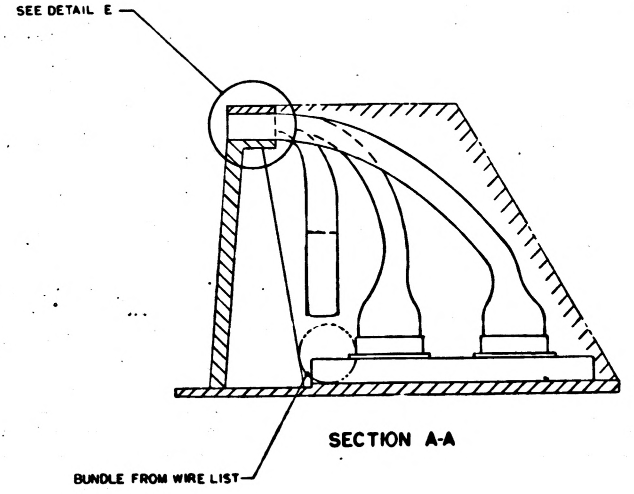

.895
.855
.110
.070
.552
.518
.047 MAX R
OR CHAMFER
SEE NOTE 22

DETAIL E

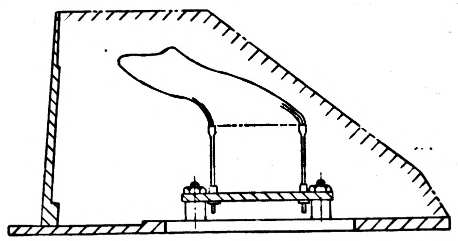
SCALE; 2/1


ALL WRAPOST RECEPTACLES
MUST BE ORIENTED AS SHOWN
SEE NOTE 10

DETAIL D


SEE DETAIL E
BUNDLE FROM WIRE LIST

SECTION A-A



SECTION B-B

BRANCH NO.5 REF

BRANCH NO.6 REF

SEE NO

31

32

CROSSOVE

CH

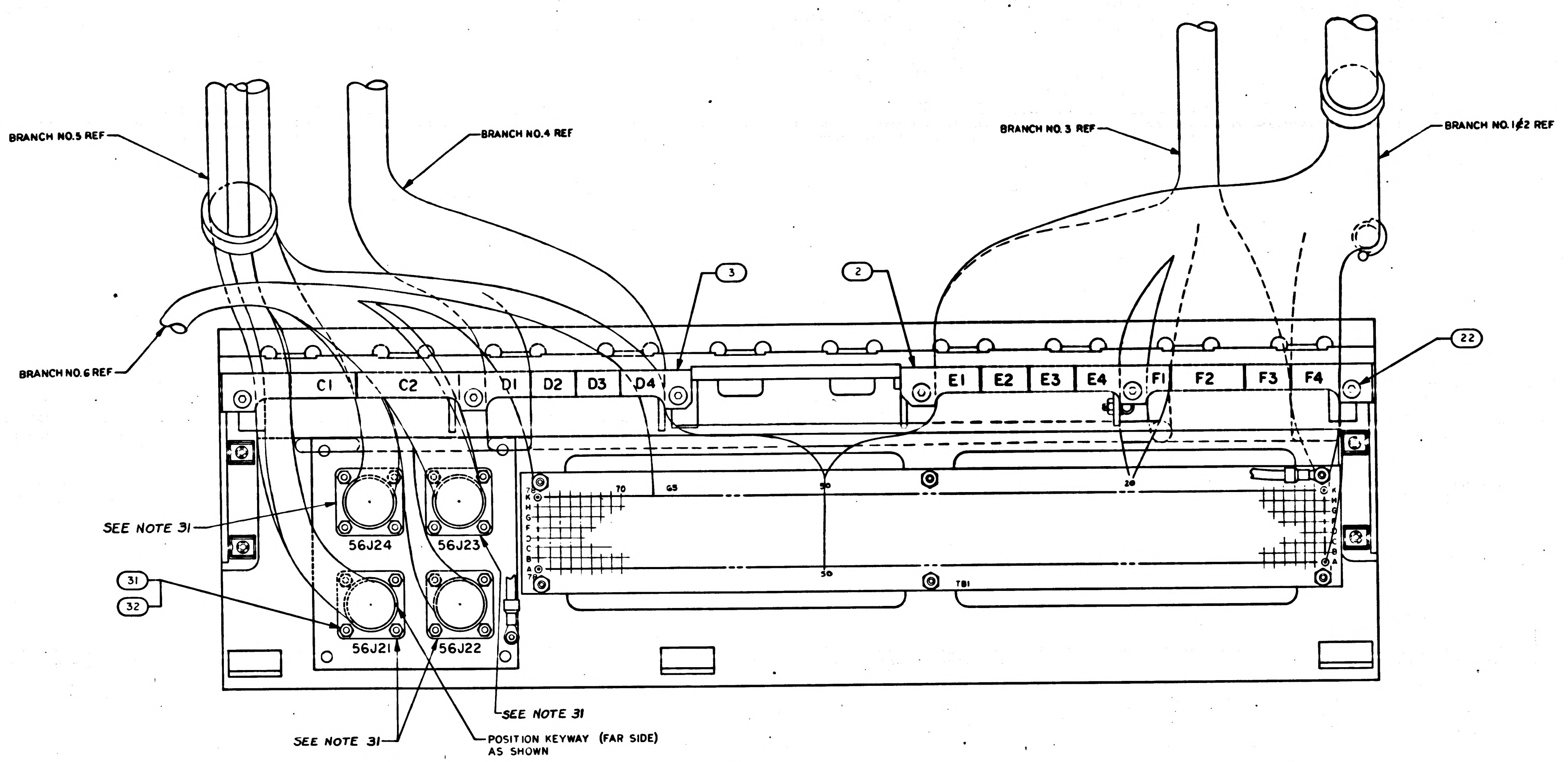
SEE NOTE 2

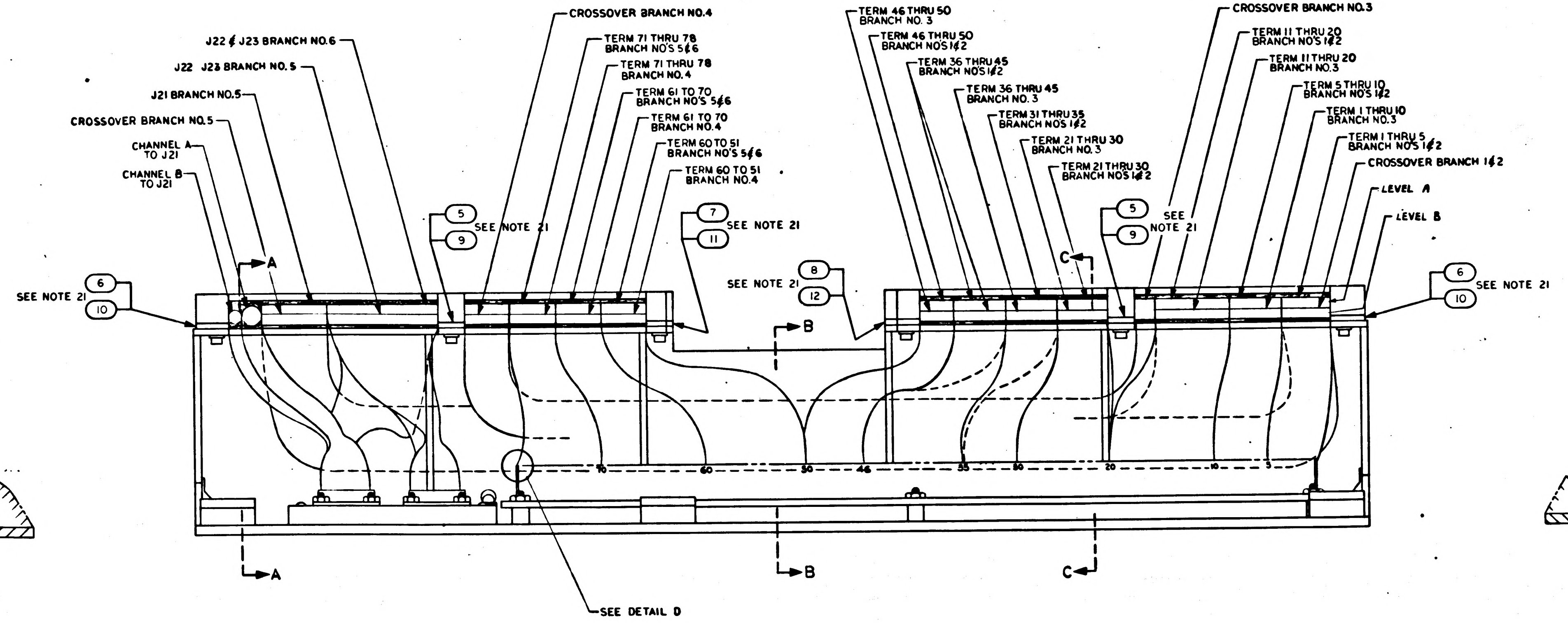
6

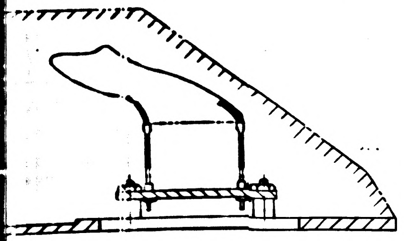
10

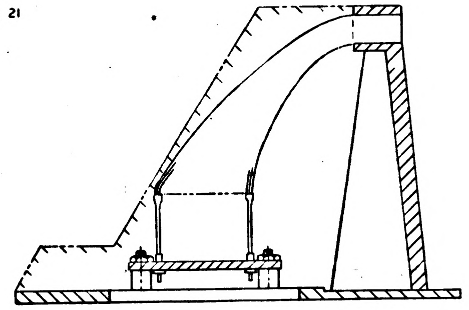
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
E	REPLACES REVISION D WITH CHANGE. TDRR 20529	11 MAY 65	OKD
(M) F	REVISION STATUS CHANGED	21 SEP 65	RLP EF
(M) G	REVISION STATUS CHANGED	29 DEC 65	RLP
(M) H	REVISED PER TDRR 26642	7 MAR 66	RLP AU
(M) J	REVISION STATUS CHANGED	19-MAY-66	B.

SEE SHEET I FOR REVISION RECORD


BRANCH NO.5 REF
BRANCH NO.4 REF
BRANCH NO.3 REF
BRANCH NO.1 & 2 REF
BRANCH NO.6 REF
3
2
22
C1
C2
D1
D2
D3
D4
E1
E2
E3
E4
F1
F2
F3
F4
SEE NOTE 31
56J24
56J23
31
32
56J21
56J22
SEE NOTE 31
SEE NOTE 31
POSITION KEYWAY (FAR SIDE) AS SHOWN
TB1


J22 & J23 BRANCH NO.6
J22 J23 BRANCH NO. 5
J21 BRANCH NO.5
CROSSOVER BRANCH NO.5
CHANNEL A TO J21
CHANNEL B TO J21
CROSSOVER BRANCH NO.4
TERM 71 THRU 78 BRANCH NO'S 5&6
TERM 71 THRU 78 BRANCH NO.4
TERM 61 TO 70 BRANCH NO'S 5&6
TERM 61 TO 70 BRANCH NO.4
TERM 60 TO 51 BRANCH NO'S 5&6
TERM 60 TO 51 BRANCH NO.4
5
9
SEE NOTE 21
7
11
SEE NOTE 21
6
10
SEE NOTE 21
8
12
SEE NOTE 21
TERM 46 THRU 50 BRANCH NO. 3
TERM 46 THRU 50 BRANCH NO'S 1&2
TERM 36 THRU 45 BRANCH NO'S 1&2
TERM 36 THRU 45 BRANCH NO. 3
TERM 31 THRU 35 BRANCH NO'S 1&2
TERM 21 THRU 30 BRANCH NO. 3
TERM 21 THRU 30 BRANCH NO'S 1&2
CROSSOVER BRANCH NO.3
TERM 11 THRU 20 BRANCH NO'S 1&2
TERM 11 THRU 20 BRANCH NO.3
TERM 5 THRU 10 BRANCH NO'S 1&2
TERM 1 THRU 10 BRANCH NO.3
TERM 1 THRU 5 BRANCH NO'S 1&2
CROSSOVER BRANCH 1&2
LEVEL A
LEVEL B
5
9
SEE NOTE 21
6
10
SEE NOTE 21
A
B
C
SEE DETAIL D


SECTION B-B


SECTION C-C

Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

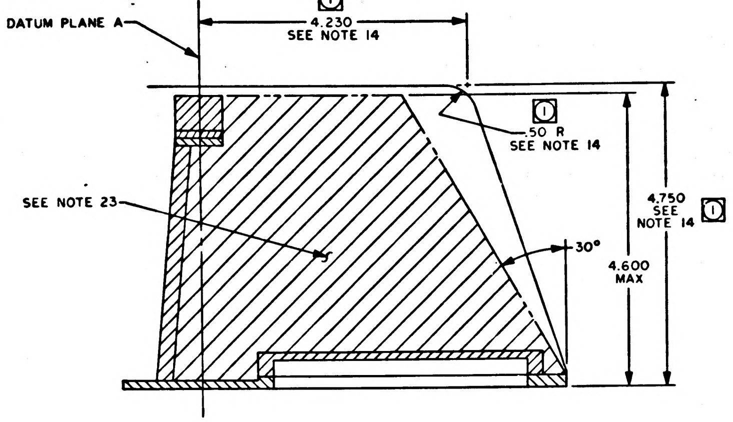
AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO. 80230
SIZE J
1015086
SCALE 1:1
SHEET 4 OF 6

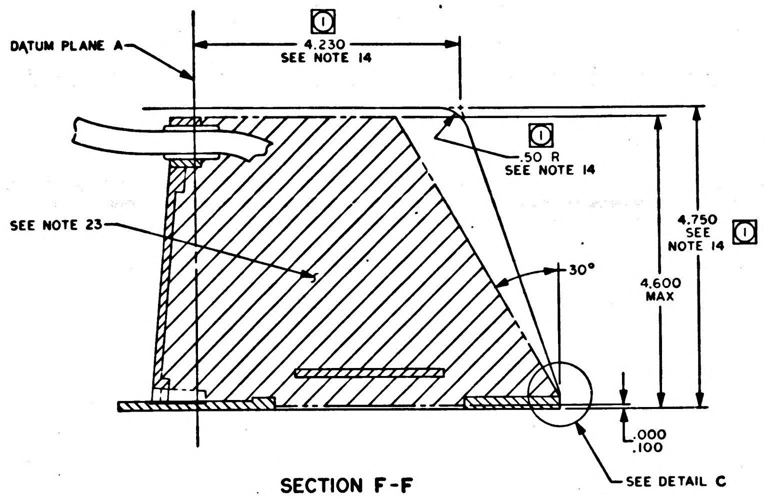
1015086 REV K SHT 4

2741015086

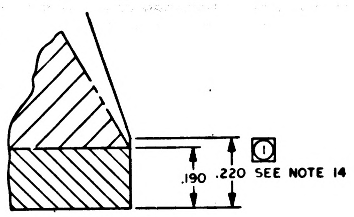
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


DATUM PLANE A
① 4.230 SEE NOTE 14
① .50 R SEE NOTE 14
SEE NOTE 23
4.750 SEE NOTE 14 ①
4.600 MAX
30°

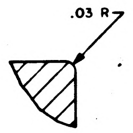
SECTION K-K


DATUM PLANE A
① 4.230 SEE NOTE 14
① .50 R SEE NOTE 14
SEE NOTE 23
4.750 SEE NOTE 14 ①
4.600 MAX
30°
.000 .100
SEE DETAIL C

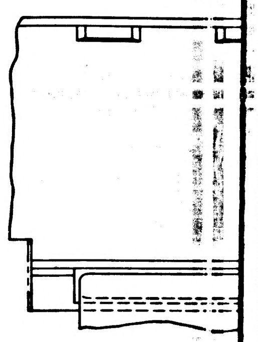
SECTION F-F

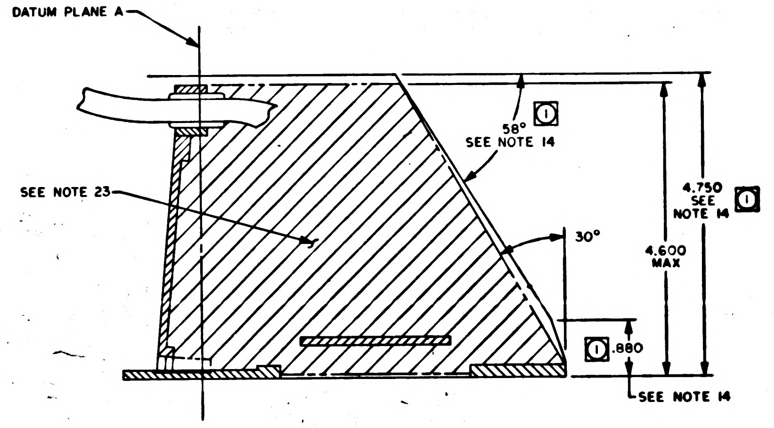

.190
.220 ① SEE NOTE 14

DETAIL C
SCALE: 5/1

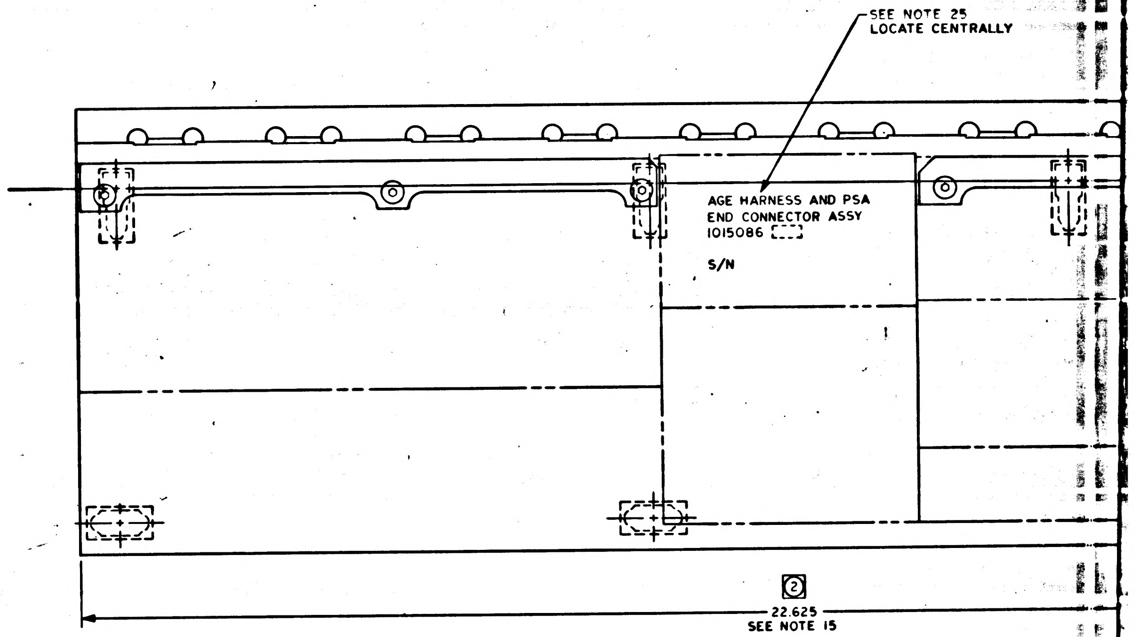


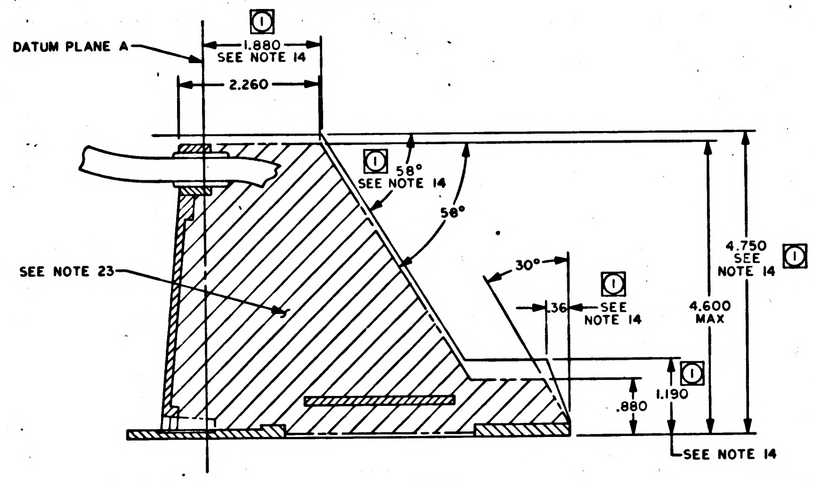
PARTIAL SECTION E-E
SCALE: 5/1
2 PLACES BOTH ENDS



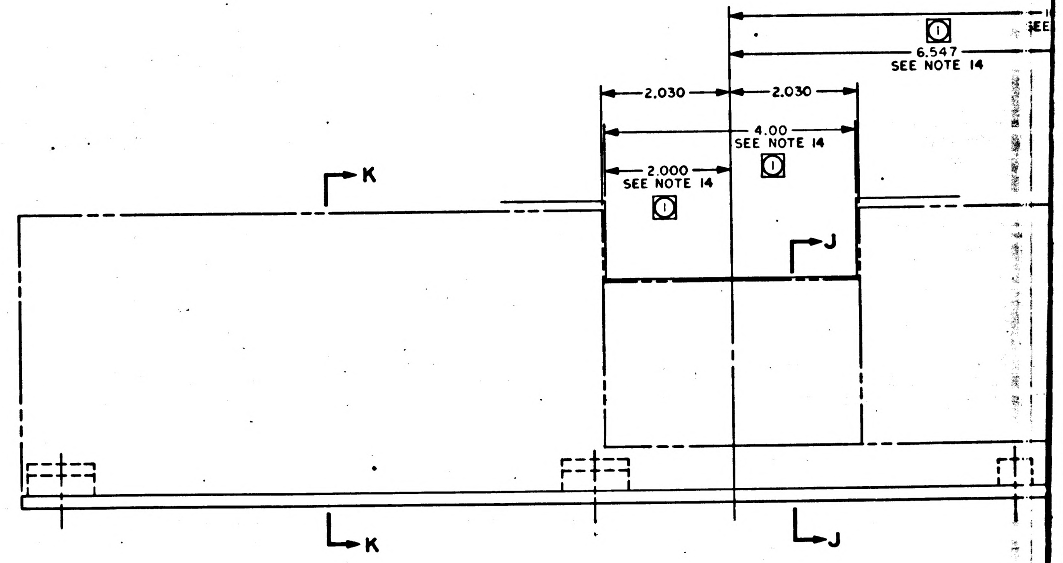

DATUM PLANE A
58° ① SEE NOTE 14
SEE NOTE 23
4.750 SEE NOTE 14 ①
4.600 MAX
30°
① .880
SEE NOTE 14

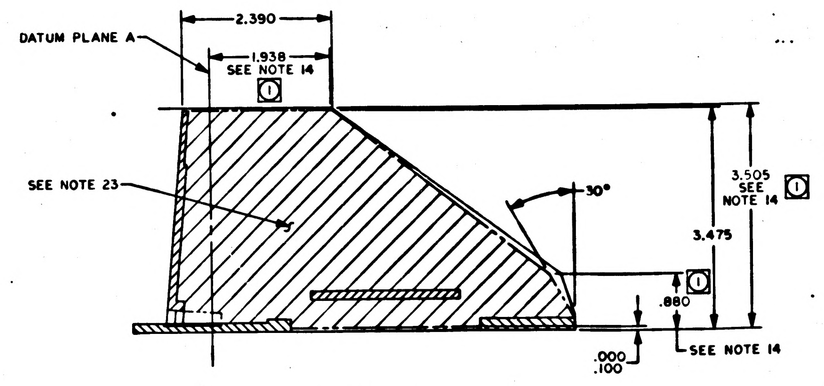
SECTION G-G


SEE NOTE 25 LOCATE CENTRALLY
AGE HARNESS AND PSA END CONNECTOR ASSY 1015086
S/N
② 22.625 SEE NOTE 15


① 1.880 SEE NOTE 14
DATUM PLANE A
2.260
① 58° SEE NOTE 14
58°
SEE NOTE 23
30°
.36 ① SEE NOTE 14
4.750 SEE NOTE 14 ①
4.600 MAX
1.190 ①
.880
SEE NOTE 14

SECTION H-H


① 6.547 SEE NOTE 14
2.030
2.030
4.00 SEE NOTE 14 ①
2.000 SEE NOTE 14 ①
K
J
K
J

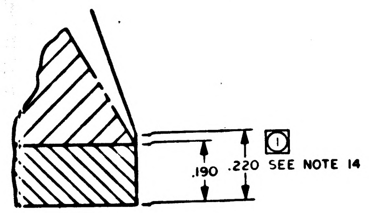

2.390
DATUM PLANE A
1.938 SEE NOTE 14 ①
SEE NOTE 23
30°
3.505 SEE NOTE 14 ①
3.475
① .880
.000 .100
SEE NOTE 14

SECTION J-J

1015086	REV K	SHT 5

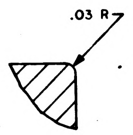
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
E		REPLACES REVISION D WITH CHANGE PER 20529	—	11 MAY 65	DKD
F		REVISION STATUS CHANGED		21 SEP 65	RLP EF
G		REVISION STATUS CHANGED		29 DEC 65	RLP
H		REVISED PER TDRR 26642		7 MAR 66	RLP AU
J		REVISION STATUS CHANGED		19 MAY 66	B.

SEE SHEET I FOR REVISION RECORD

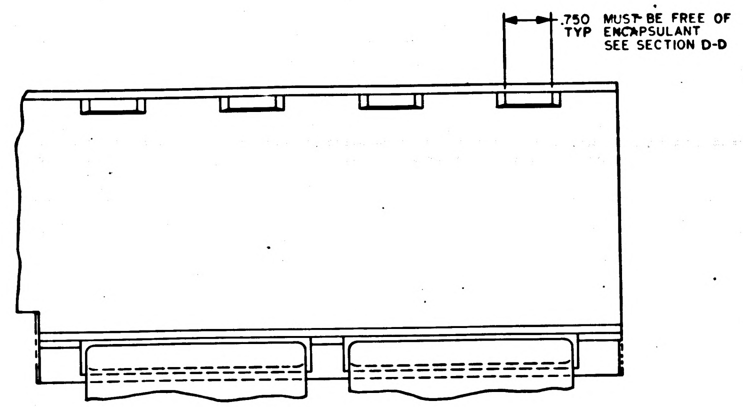


1
.190
.220 SEE NOTE 14

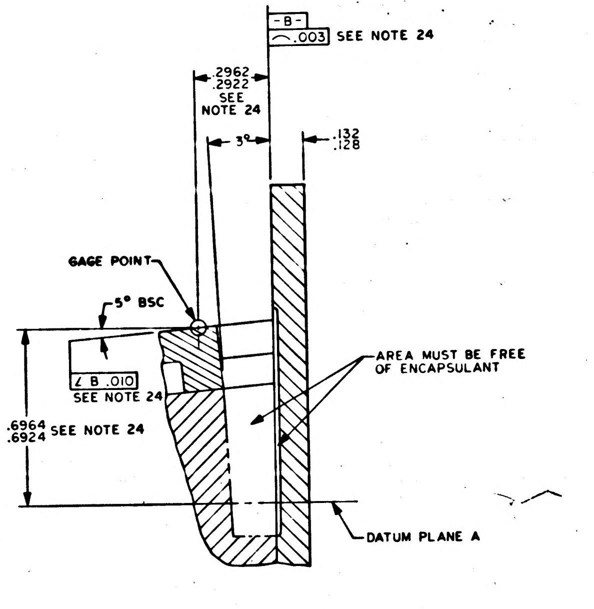
DETAIL C
SCALE: 5/1



PARTIAL SECTION E-E
SCALE: 5/1
2 PLACES BOTH ENDS

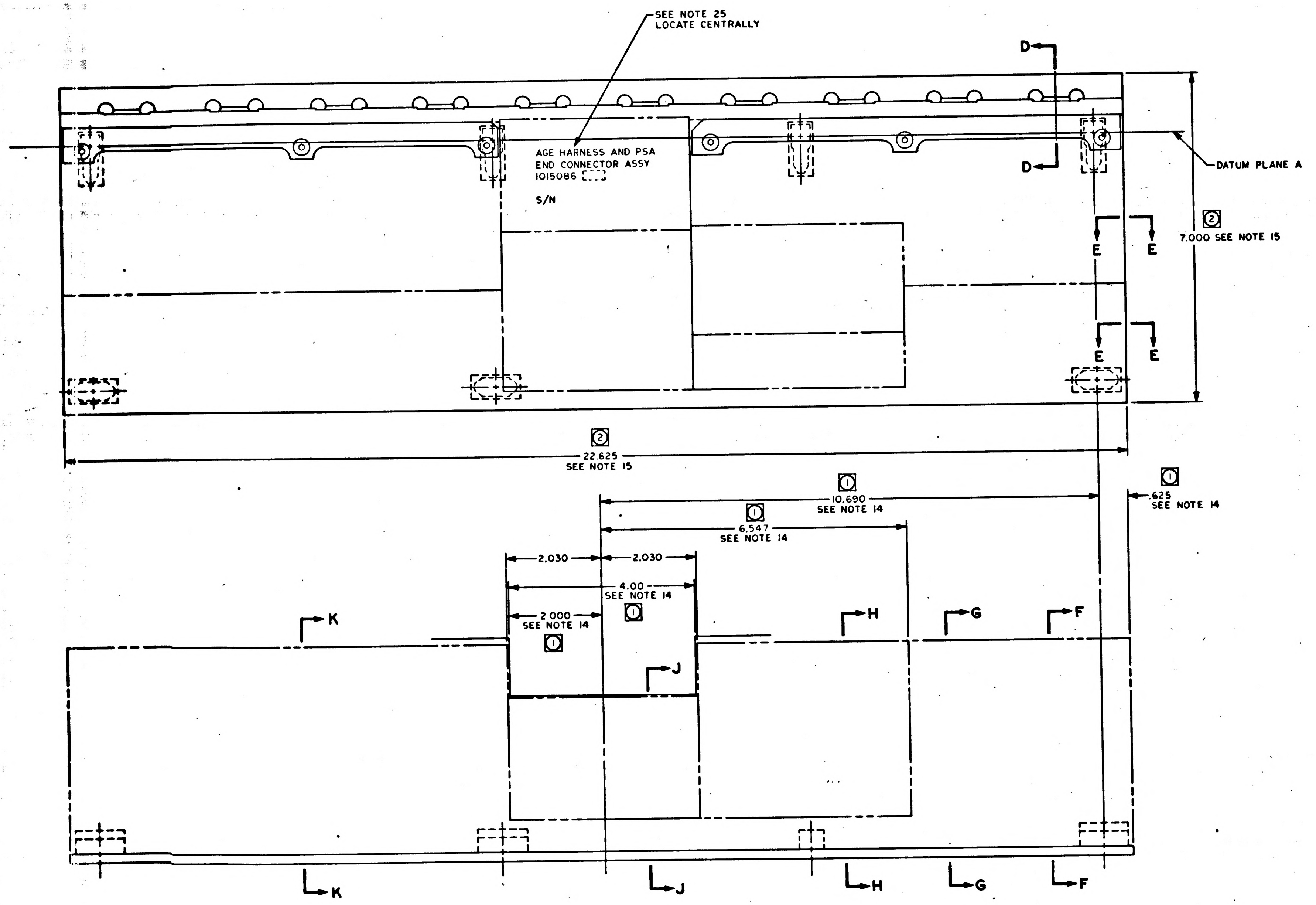


.750 MUST BE FREE OF
TYP ENCAPSULANT
SEE SECTION D-D

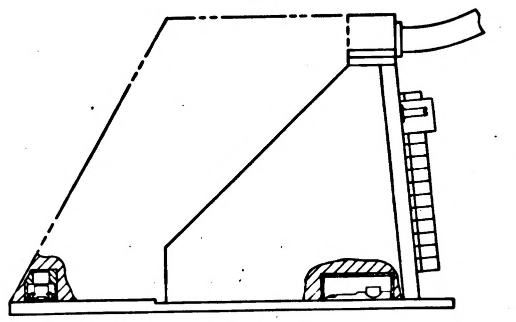


-B-
.003 SEE NOTE 24
.2962
.2922
SEE
NOTE 24
3°
.132
.128
GAGE POINT
5° BSC
B .010
SEE NOTE 24
.6964
.6924 SEE NOTE 24
AREA MUST BE FREE
OF ENCAPSULANT
DATUM PLANE A

PARTIAL SECTION D-D
SCALE: 5/1



SEE NOTE 25
LOCATE CENTRALLY
AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086
S/N
D
D
DATUM PLANE A
E
E
E
E
2
7.000 SEE NOTE 15
2
22.625
SEE NOTE 15
1
10.690
SEE NOTE 14
1
.625
SEE NOTE 14
1
6.547
SEE NOTE 14
2.030
2.030
4.00
SEE NOTE 14
1
2.000
SEE NOTE 14
1
K
J
H
G
F
K
J
H
G
F



Ⓔ REPLACES REV D WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ + +
− − −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

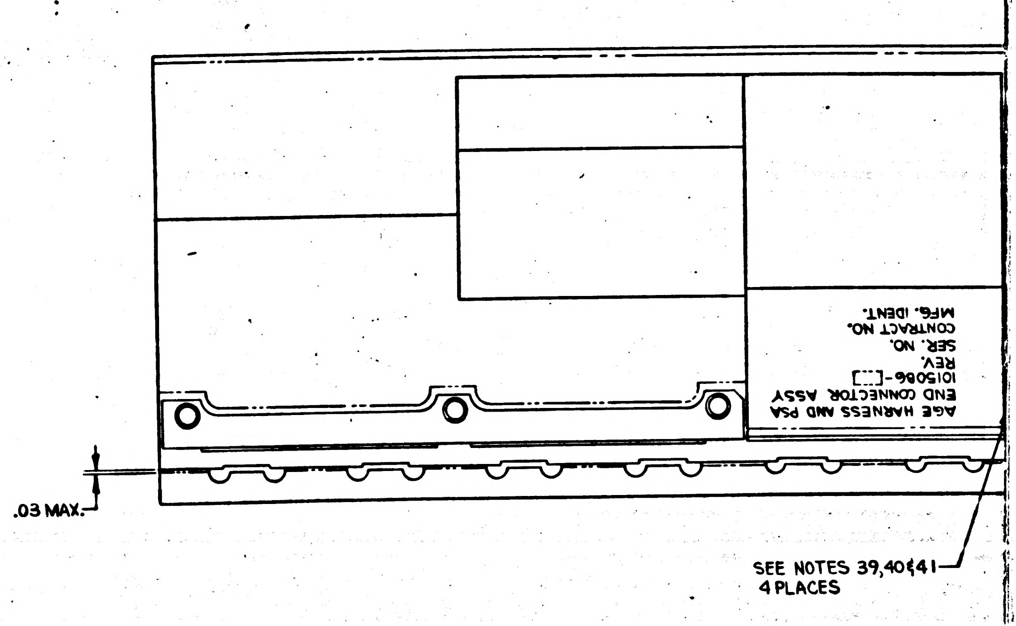
M I T
INSTRUMENTATION LAB
Cambridge Mass
DRAWN DATE
CHECKED Mar 65
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

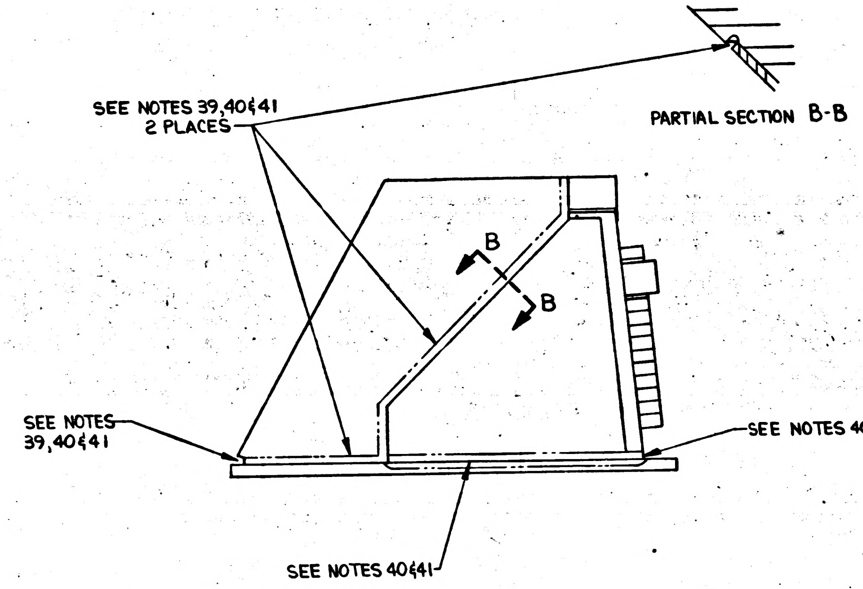
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

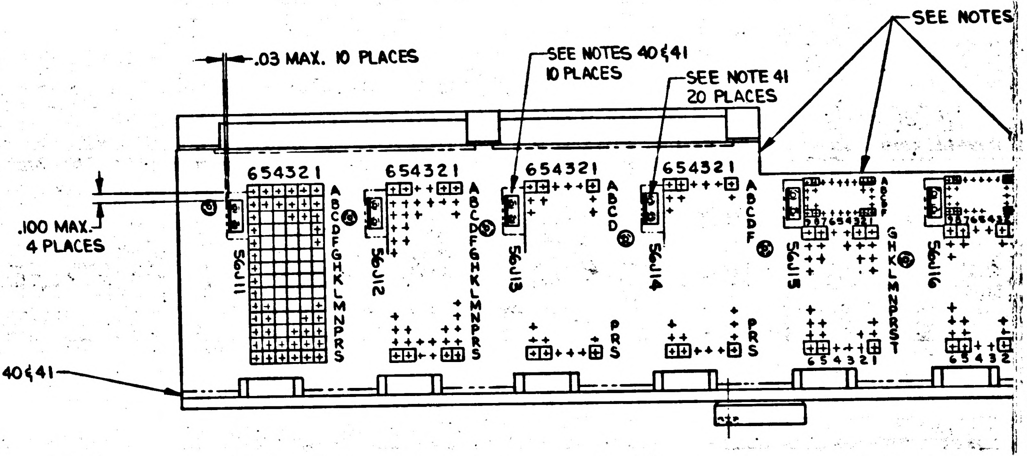
AGE HARNESS AND PSA
END CONNECTOR ASSY

CODE IDENT NO. 80230
SIZE J
1015086
SCALE 1:1
SHEET 5 OF 6

1015086	REV K	SHT 5


AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086-[ ]
REV.
SER. NO.
CONTRACT NO.
MFG. IDENT.
.03 MAX.
SEE NOTES 39,40&41
4 PLACES


SEE NOTES 39,40&41
2 PLACES
PARTIAL SECTION B-B
B
B
SEE NOTES
39,40&41
SEE NOTES 40&41
SEE NOTES 40&41


.03 MAX. 10 PLACES
SEE NOTES 40&41
10 PLACES
SEE NOTE 41
20 PLACES
SEE NOTES
.100 MAX.
4 PLACES
654321
654321
654321
654321
ABCDFGHKLMNPRS
ABCDFGHKLMNPRS
ABCD
PRS
ABCDF
PRS
GHKLMNPRST
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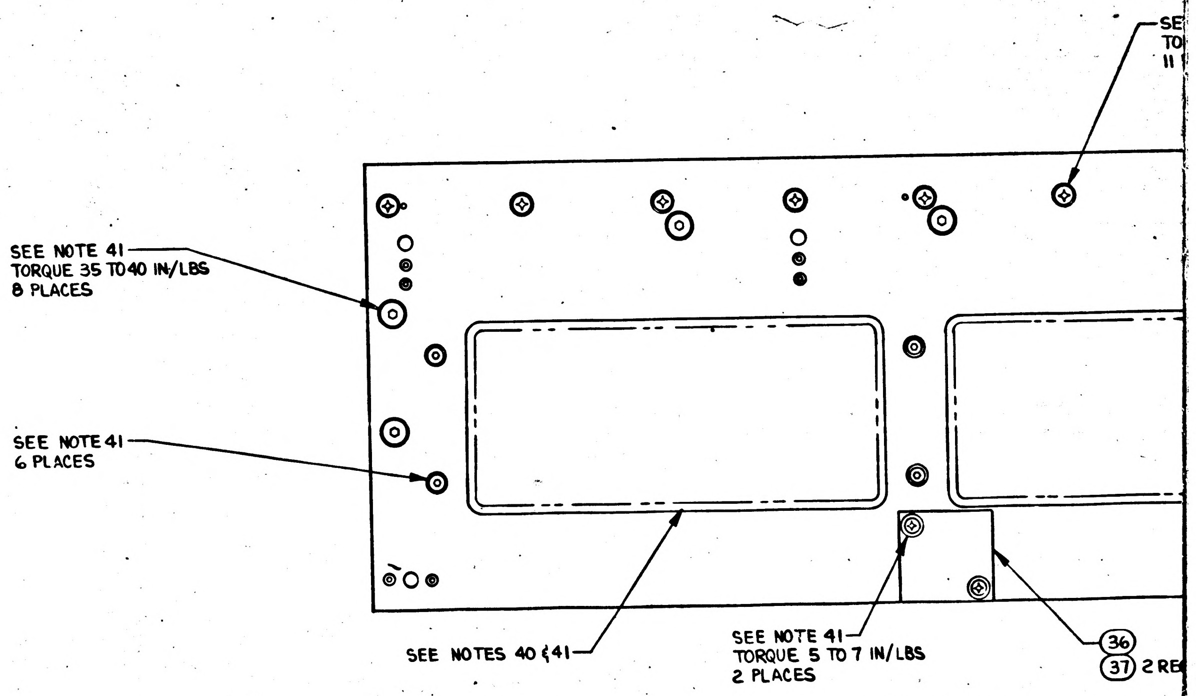
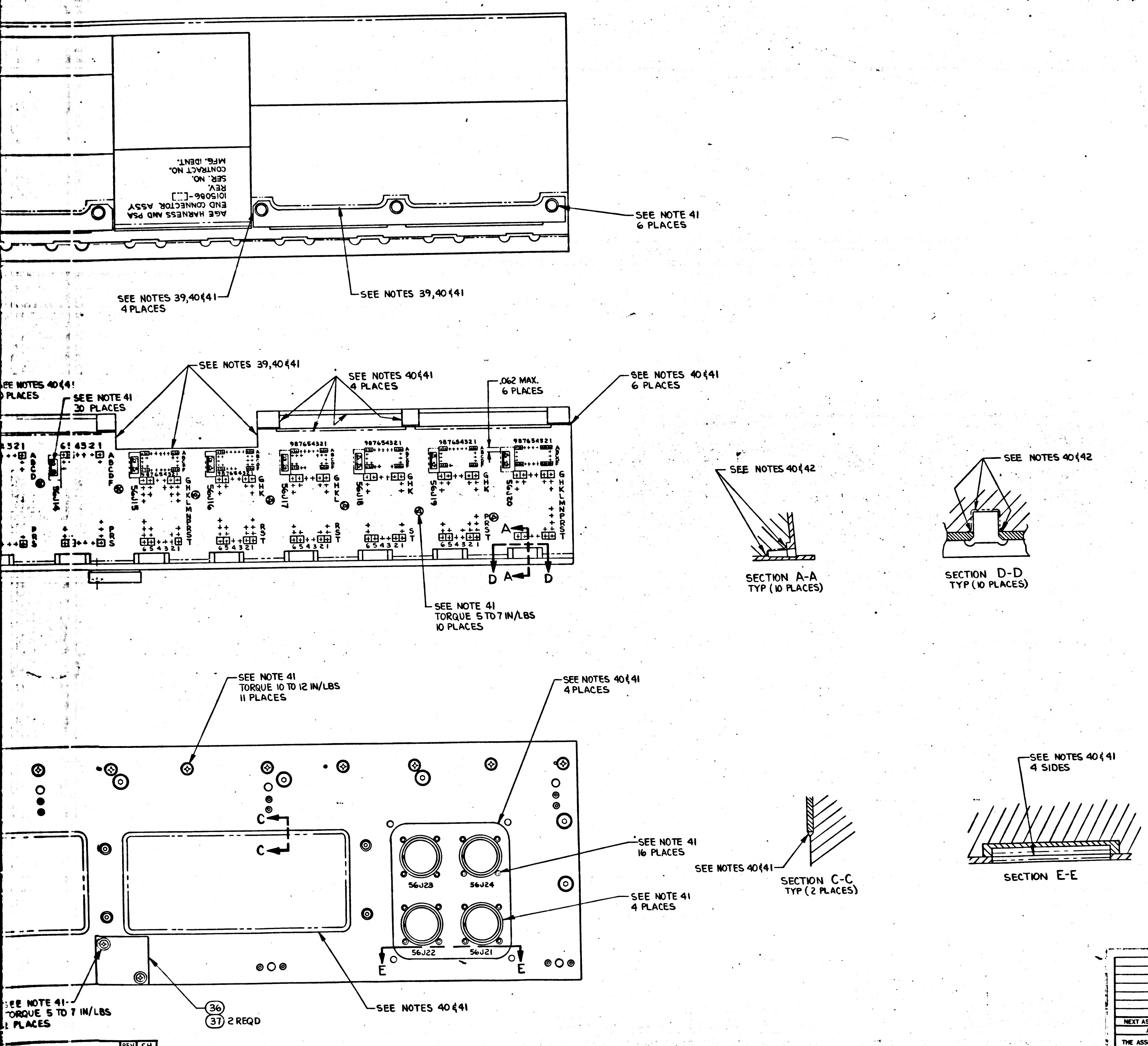
56J13
56J14
56J15
56J16


SEE NOTE 41
TORQUE 35 TO 40 IN/LBS
8 PLACES
SEE NOTE 41
6 PLACES
SEE NOTES 40&41
SEE NOTE 41
TORQUE 5 TO 7 IN/LBS
2 PLACES
36
37 2 RE

1015086	REV	SH
	K	6

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
H		THIS SHEET ADDED PER TDRR 26642.		8 MAR 66	BP / AU
J		REVISION STATUS CHANGED		19 MAY -66	B. / BJ
		SEE SHEET 1 FOR REVISION RECORD			



AGE HARNESS AND PSA
END CONNECTOR ASSY
1015086-[ ]
REV.
SER. NO.
CONTRACT NO.
MFG. IDENT.
SEE NOTE 41
6 PLACES
SEE NOTES 39,40 & 41
4 PLACES
SEE NOTES 39,40 & 41
SEE NOTES 39,40 & 41
SEE NOTES 40 & 41
4 PLACES
.062 MAX.
6 PLACES
SEE NOTES 40 & 41
6 PLACES
SEE NOTES 40 & 41
PLACES
SEE NOTE 41
30 PLACES
56J14
56J15
56J16
56J17
56J18
56J19
56J20
A
D
SEE NOTE 41
TORQUE 5 TO 7 IN/LBS
10 PLACES
SEE NOTES 40 & 42
SECTION A-A
TYP (10 PLACES)
SEE NOTES 40 & 42
SECTION D-D
TYP (10 PLACES)
SEE NOTE 41
TORQUE 10 TO 12 IN/LBS
11 PLACES
SEE NOTES 40 & 41
4 PLACES
C
SEE NOTE 41
16 PLACES
SEE NOTE 41
4 PLACES
56J23
56J24
56J22
56J21
E
SEE NOTES 40 & 41
SEE NOTE 41
TORQUE 5 TO 7 IN/LBS
PLACES
36
37 2 REQD
SEE NOTES 40 & 41
SECTION C-C
TYP (2 PLACES)
SEE NOTES 40 & 41
4 SIDES
SECTION E-E

FOR -011 CONFIGURATION

1015086 REV K SH 6

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN R. Porter 8 MAR 66
CHECKED Mosch 10 MAR 66
APPROVAL G. Hicks 10 MAR 66
CONTRACT
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND PSA
END CONNECTOR ASSY

SIZE J2 CODE IDENT NO. 80230 1015086
SCALE SHEET 6 OF 6

1015086

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REVISIONS 13821

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

PART NO.	DESCRIPTION	REQD
1007599-011	END CONNECTOR ASSY PSA	1
1007583	CONNECTOR PLATE ASSY	1
1010844-001	CONNECTOR, RECEPTACLE	1
1010844-002	" "	1
1010844-003	" "	1
1010844-004	" "	1
1010809-1	" "	1
1015088-1	WIRE PER 1010707-2	1
1015088-3	WIRE PER 1010807-4	1
1015088-4	WIRE PER 1010807-5	1
1015088-5	WIRE PER 1010807-3	1
1015085-1	WIRE PER 1010789-011	1
" -2	" " " -012	1
" -3	" " " -013	1
" -4	" " " -001	1
" -5	" " " -006	1
" -6	" " 1010707-1	1
" -7	WIREBRAID PER QQ-B-575 -3/8"	1
" -8	WIREBRAID PER QQ-B-575 -1/2"	1
" -9	WIRE PER 1010789-002	1
" -10	" " " -003	1
" -11	" " " -004	1
" -12	" " " -005	1
" -13	" " " -008	1
" -14	" " " -009	1
" -15	" " " -010	1
1010824-1	CONNECTOR, RECEPTACLE	4
1010824-2	" "	5
1010822-1	" "	1
1010822-3	" "	2

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN
CHECKED
APPROVED J. V. Fox 10/24/64
APPROVED D. Hoag 10/20/64
APPROVED MIT 10/21/64
APPROVED MSC W J Rhine 10-21-64
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AGE HARNESS AND
PSA END CONNECTOR ASSY

CODE IDENT NO.
SIZE C
DRAWING NO. 1015086
SCALE
SHEET 1 OF 1

MASTER

INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

APOLLO G&N Specification
PS1015086
Original Issue Date: 2/3/65
Release Authority: TDRR 16218
Class A Release

PROCUREMENT SPECIFICATION

FOR

AGE HARNESS & PSA END CONNECTOR ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page 1 to 6 inclusive.

APPROVALS	NASA/MSC	W Kupfer 2/3/65 2/2/65 MIT/IL	ACSP

PROCUREMENT SPECIFICATION

FOR

AGE HARNESS & PSA END CONNECTOR ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Age Harness & PSA End Connector Assembly, Drawing 1015086, hereafter called the assembly.

1.2 CLASSIFICATION. The requirements for Part Number 1015086-000 shall be designated as Type I.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies.
ND1002214	General Specification for Preservation, Packaging, Packing and Container Marking of APOLLO Guidance and Navigation Major Assemblies, Assemblies, Subassemblies, Parts and Associated Ground Support Equipment
FTM1015086	Final Test Method for Age Harness & PSA End Connector Assembly

DRAWINGS

APOLLO G&N

1015086	Age Harness & PSA End Connector Assembly
1015087	Interconnection List of Age Interconnect Harness & PSA End Connector Assembly (For Reference Only)

3. REQUIREMENTS

3.1 GENERAL SPECIFICATION. All of the requirements of Specification ND 1002210 shall apply as requirements of this specification.

3.2 DESCRIPTION. The assembly shall be used to interconnect APOLLO Guidance and Navigation Equipment.

3.3 FUNCTIONAL REQUIREMENTS

3.3.1 Insulation Resistance. With 500±50 vdc applied, the insulation resistance between pin J11-L4 (structure ground) and all other pins of the assembly with the exception of those specified in Table I, and between each pin and all other pins not electrically connected including all spare pins shall be greater than or equal to 100 megohms.

TABLE I

PINS NOT TO BE MEASURED

PIN NUMBER	PIN NUMBER
J1-41	J16-N4
J2-41	J17-L6
J3-41	J18-P4
J4-41	J19-R4
J5-41	J20-M4
J6-91	P1-84
J8-29	P5-1
J9-91	P6-G
J12-K3	P8-59
J13-C6	P9-10
J14-H5	P10-1
J15-K3	P11-L
	P12-L
	P13-37

3.3.2 Continuity and DC Resistance. Continuity and dc resistance shall be in accordance with FTM1015086.(Drawing 1015087).

3.4 PERFORMANCE AND PRODUCT CHARACTERISTICS

3.4.1 Service Life

3.4.1.1 Operating Life. The assembly shall meet performance specifications for at least 2000 hours of operation, excluding the supplier's test time of the completed unit.

3.4.1.2 Shelf Life. The assembly shall have a life of at least 3 years, without operation when packaged in accordance with Specification ND-1002214 at ambient room temperature after final acceptance at the supplier's facility.

TDRR 15073 DEC 22 1964

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		A	REPLACED WITH CHANGE BY REV "B" PER TDRR 16222	9 FEB 65	JWP

Ⓐ **REPLACED WITH CHANGE BY REV "B"**

SEE SHEET 2 FOR REVISION RECORD

REV	
SHEET	
REV STATUS OF SHEETS	REV
	SHEET

AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
ACSP PN	
DRAWN Wunderlich DATE 21-DEC 64 CHECKED A.E. Atkinson 12-22-64 APPROVAL J. L. Vern 12/22/64 APPROVAL	INTERCONNECTION LIST OF AGE INTERCONNECT HARNESS AND PSA END CONNECTOR
NASA APPROVAL 12-22-64 MIT APPROVAL 22 Dec 64	CODE IDENT NO. — | SIZE A | 1015087 | REV A
CONTRACT	SCALE | SHEET 1 OF 133

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REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	A	37	A	73	A	109	A										
2	A	38	A	74	A	110	A										
3	A	39	A	75	A	111	A										
4	A	40	A	76	A	112	A										
5	A	41	A	77	A	113	A										
6	A	42	A	78	A	114	A										
7	A	43	A	79	A	115	A										
8	A	44	A	80	A	116	A										
9	A	45	A	81	A	117	A										
10	A	46	A	82	A	118	A										
11	A	47	A	83	A	119	A										
12	A	48	A	84	A	120	A										
13	A	49	A	85	A	121	A										
14	A	50	A	86	A	122	A										
15	A	51	A	87	A	123	A										
16	A	52	A	88	A	124	A										
17	A	53	A	89	A	125	A										
18	A	54	A	90	A	126	A										
19	A	55	A	91	A	127	A										
20	A	56	A	92	A	128	A										
21	A	57	A	93	A	129	A										
22	A	58	A	94	A	130	A										
23	A	59	A	95	A	131	A										
24	A	60	A	96	A	132	A										
25	A	61	A	97	A	133	A										
26	A	62	A	98	A												
27	A	63	A	99	A												
28	A	64	A	100	A												
29	A	65	A	101	A												
30	A	66	A	102	A												
31	A	67	A	103	A												
32	A	68	A	104	A												
33	A	69	A	105	A												
34	A	70	A	106	A												
35	A	71	A	107	A												
36	A	72	A	108	A												

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INTERCONNECT LIST

GENERAL NOTES

1 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* CC342	E 1	J13-C6	STRUCTURE GROUND	
* CC341	E 2	TB1-K 4	STRUCTURE GROUND	
* CC343	E 3	TB1-K70	STRUCTURE GROUND	
BB 94B	E 4	SHLD BB 94	0 VDC IMU	
* CC 1A	E 4	SHLD CC 1	0 VDC IMU	
* CC 2A	E 4	SHLD CC 2	0 VDC IMU	
* CC 6A	E 4	SHLD CC 6	0 VDC IMU	
* CC 7A	E 4	SHLD CC 7	0 VDC IMU	
* CC 79	E 4	J11-P2	0 VDC IMU	
CC 11W	E 5	J23- 6	0 VDC IMU	139R
CC 12W	E 5	J23- 1	0 VDC IMU	140R
* CC102	E 5	J13-R6	0 VDC IMU	
CC 13W	E 6	J23- 10	0 VDC IMU	142S
CC 14W	E 6	J23- 24	0 VDC IMU	143S
CC 15W	E 6	J23- 56	0 VDC IMU	144S
CC 16W	E 6	J23- 33	0 VDC IMU	145S
CC 17W	E 6	J23- 16	0 VDC IMU	146S
CC 18W	E 6	J23- 5	0 VDC IMU	147S
CC 19W	E 6	J23- 44	0 VDC IMU	148S
CC338	E 6	E 7	0 VDC IMU	
* CC110	E 6	J14-R6	0 VDC IMU	
* CC 13A	E 7	SHLD CC 13	0 VDC IMU	
* CC 14A	E 7	SHLD CC 14	0 VDC IMU	
* CC 15A	E 7	SHLD CC 15	0 VDC IMU	
* CC 16A	E 7	SHLD CC 16	0 VDC IMU	
* CC 17A	E 7	SHLD CC 17	0 VDC IMU	
* CC 18A	E 7	SHLD CC 18	0 VDC IMU	
* CC 19A	E 7	SHLD CC 19	0 VDC IMU	
* CC338	E 7	E 6	0 VDC IMU	
CC 26R	E 8	J24- 22	IG DAC MDA SIG LO	120R
CC 27W	E 8	J24- 42	IG DAC MDA SIG LO	121R
* CC120	E 8	J15-A5	IG DAC MDA SIG LO	
CC 32R	E 9	J23- 23	IG DAC MDA SIG LO	128R
CC 33W	E 9	J23- 69	IG DAC MDA SIG LO	129R
* CC 32A	E 9	SHLD CC 32	IG DAC MDA SIG LO	
* CC 33A	E 9	SHLD CC 33	IG DAC MDA SIG LO	
* CC123	E 9	J15-A5	IG DAC MDA SIG LO	
CC 28R	E 10	J24- 18	MG DAC MDA SIG LO	122R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC 29W	E 10	J24- 7	MG DAC MDA SIG LO	123R
* CC121	E 10	J15-A7	MG DAC MDA SIG LO	
CC 34R	E 11	J23- 34	MG DAC MDA SIG LO	130R
CC 35W	E 11	J23- 17	MG DAC MDA SIG LO	131R
* CC 34A	E 11	SHLD CC 34	MG DAC MDA SIG LO	
* CC 35A	E 11	SHLD CC 35	MG DAC MDA SIG LO	
* CC124	E 11	J15-A7	MG DAC MDA SIG LO	
CC 30R	E 12	J24- 20	OG DAC MDA SIG LO	118R
CC 31W	E 12	J24- 21	OG DAC MDA SIG LO	119R
* CC122	E 12	J15-A9	OG DAC MDA SIG LO	
CC 36R	E 13	J23- 8	OG DAC MDA SIG LO	126R
CC 37W	E 13	J23- 9	OG DAC MDA SIG LO	127R
* CC 36A	E 13	SHLD CC 36	OG DAC MDA SIG LO	
* CC 37A	E 13	SHLD CC 37	OG DAC MDA SIG LO	
* CC125	E 13	J15-A9	OG DAC MDA SIG LO	
CC 20W	E 14	J24- 9	COMPUTER RET	132S
CC 21W	E 14	J24- 23	COMPUTER RET	133S
* CC114	E 14	J15-L5	COMPUTER RET	
CC 22W	E 15	J24- 43	COMPUTER RET	134S
CC 23W	E 15	J24- 69	COMPUTER RET	135S
* CC115	E 15	J15-L5	COMPUTER RET	
CC 24W	E 16	J24- 34	COMPUTER RET	137S
CC 25W	E 16	J24- 57	COMPUTER RET	136S
* CC116	E 16	J15-L5	COMPUTER RET	
CC 20B	E 17	SHLD CC 20	AGC SIGNAL 179 SHIELD RETURN	
CC 21B	E 17	SHLD CC 21	AGC SIGNAL 179 SHIELD RETURN	
CC 22B	E 17	SHLD CC 22	AGC SIGNAL 179 SHIELD RETURN	
CC 23B	E 17	SHLD CC 23	AGC SIGNAL 179 SHIELD RETURN	
CC 24B	E 17	SHLD CC 24	AGC SIGNAL 179 SHIELD RETURN	
CC 25B	E 17	SHLD CC 25	AGC SIGNAL 179 SHIELD RETURN	
CC339	E 17	E 18	AGC SIGNAL 179 SHIELD RETURN	
CC 8B	E 18	SHLD CC 8	AGC SIGNAL 179 SHIELD RETURN	
CC 9B	E 18	SHLD CC 9	AGC SIGNAL 179 SHIELD RETURN	
CC 10B	E 18	SHLD CC 10	AGC SIGNAL 179 SHIELD RETURN	
* CC336	E 18	J24- 87	AGC SIGNAL 179 SHIELD RETURN	179
* CC339	E 18	E 17	AGC SIGNAL 179 SHIELD RETURN	
CC 26B	E 19	SHLD CC 26	AGC SIGNAL 179 SHIELD RETURN	
CC 27B	E 19	SHLD CC 27	AGC SIGNAL 179 SHIELD RETURN	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC 28B	E 19	SHLD CC 28	AGC SIGNAL 179 SHIELD RETURN	
CC 29B	E 19	SHLD CC 29	AGC SIGNAL 179 SHIELD RETURN	
CC 30B	E 19	SHLD CC 30	AGC SIGNAL 179 SHIELD RETURN	
CC 31B	E 19	SHLD CC 31	AGC SIGNAL 179 SHIELD RETURN	
CC340	E 19	E 20	AGC SIGNAL 179 SHIELD RETURN	
CC 42B	E 20	SHLD CC 42	AGC SIGNAL 179 SHIELD RETURN	
CC 46B	E 20	SHLD CC 46	AGC SIGNAL 179 SHIELD RETURN	
CC 49B	E 20	SHLD CC 49	AGC SIGNAL 179 SHIELD RETURN	
CC 50B	E 20	SHLD CC 50	AGC SIGNAL 179 SHIELD RETURN	
* CC337	E 20	J24- 64	AGC SIGNAL 179 SHIELD RETURN	179
* CC340	E 20	E 19	AGC SIGNAL 179 SHIELD RETURN	
CC 38B	E 21	SHLD CC 38	AGC SIGNAL 178 SHIELD RETURN	
CC 41B	E 21	SHLD CC 41	AGC SIGNAL 178 SHIELD RETURN	
CC344	E 21	E 22	AGC SIGNAL 178 SHIELD RETURN	
CC345	E 21	E 23	AGC SIGNAL 178 SHIELD RETURN	
* CC332A	E 21	SHLD CC332	AGC SIGNAL 178 SHIELD RETURN	
A 114B	E 22	SHLD A 114	AGC SIGNAL 178 SHIELD RETURN	
A 131B	E 22	SHLD A 131	AGC SIGNAL 178 SHIELD RETURN	
A 132B	E 22	SHLD A 132	AGC SIGNAL 178 SHIELD RETURN	
A 133B	E 22	SHLD A 133	AGC SIGNAL 178 SHIELD RETURN	
A 136B	E 22	SHLD A 136	AGC SIGNAL 178 SHIELD RETURN	
* CC344	E 22	E 21	AGC SIGNAL 178 SHIELD RETURN	
A 304B	E 23	SHLD A 304	AGC SIGNAL 178 SHIELD RETURN	
A 414B	E 23	SHLD A 414	AGC SIGNAL 178 SHIELD RETURN	
A 417B	E 23	SHLD A 417	AGC SIGNAL 178 SHIELD RETURN	
A 566B	E 23	SHLD A 566	AGC SIGNAL 178 SHIELD RETURN	
* A 308A	E 23	SHLD A 308	AGC SIGNAL 178 SHIELD RETURN	
* A 309A	E 23	SHLD A 309	AGC SIGNAL 178 SHIELD RETURN	
* A 563	E 23	J24- 51	AGC SIGNAL 178 SHIELD RETURN	178
* CC345	E 23	E 21	AGC SIGNAL 178 SHIELD RETURN	
A 309B	E 24	SHLD A 309	AGC SIGNAL 178 SHIELD RETURN	
* A 298A	E 24	SHLD A 298	AGC SIGNAL 178 SHIELD RETURN	
* A 301A	E 24	SHLD A 301	AGC SIGNAL 178 SHIELD RETURN	
A 490Y	E 25	TB1-C65	TRACKER AUTOMATIC GAIN CONTROL LO	
A 491Y	E 25	TB1-D65	TRACKER PREAMP OUTPUT LO	
* A 492	E 25	P13- 10	TRACKER SIGNAL COMMON	
A 464Y	E 26	J21- 74	COMMONED RETURNS GROUND	202R
A 465Y	E 26	J21- 47	COMMONED RETURNS GROUND	210R

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 466Y	E 26	J21- 28	COMMONED RETURNS GROUND	201R
	A 467Y	E 26	J21- 13	COMMONED RETURNS GROUND	208R
	A 471	E 26	E 27	COMMONED RETURNS GROUND	
*	A 470	E 26	J10- 69	COMMONED RETURNS GROUND	252
	A 459Y	E 27	J21- 15	COMMONED RETURNS GROUND	205R
	A 460Y	E 27	J21- 54	COMMONED RETURNS GROUND	209R
	A 461Y	E 27	J21- 53	COMMONED RETURNS GROUND	203R
	A 462Y	E 27	J21- 30	COMMONED RETURNS GROUND	207R
	A 463Y	E 27	J21- 51	COMMONED RETURNS GROUND	204R
*	A 471	E 27	E 26	COMMONED RETURNS GROUND	
	A 422Y	E 28	J21- 4	COMMONED RETURNS GROUND	244R
	A 423Y	E 28	J21- 17	COMMONED RETURNS GROUND	232R
	A 424Y	E 28	J21- 18	COMMONED RETURNS GROUND	227R
	A 425Y	E 28	J21- 2	COMMONED RETURNS GROUND	228R
	A 426Y	E 28	J21- 24	COMMONED RETURNS GROUND	229R
	A 453	E 28	E 34	COMMONED RETURNS GROUND	
	A 427Y	E 29	J21- 69	COMMONED RETURNS GROUND	230R
	A 428Y	E 29	J21- 57	COMMONED RETURNS GROUND	231R
	A 429Y	E 29	J21- 1	COMMONED RETURNS GROUND	233R
	A 430Y	E 29	J21- 11	COMMONED RETURNS GROUND	234R
	A 431Y	E 29	J21- 45	COMMONED RETURNS GROUND	235R
	A 454	E 29	E 34	COMMONED RETURNS GROUND	
	A 432Y	E 30	J21- 70	COMMONED RETURNS GROUND	236R
	A 433Y	E 30	J21- 56	COMMONED RETURNS GROUND	237R
	A 434Y	E 30	J21- 16	COMMONED RETURNS GROUND	238R
	A 435Y	E 30	J21- 61	COMMONED RETURNS GROUND	214R
	A 455	E 30	E 34	COMMONED RETURNS GROUND	
	A 436Y	E 31	J21- 39	COMMONED RETURNS GROUND	215R
	A 437Y	E 31	J21- 41	COMMONED RETURNS GROUND	216R
	A 438Y	E 31	J21- 66	COMMONED RETURNS GROUND	217R
	A 439Y	E 31	J21- 60	COMMONED RETURNS GROUND	218R
	A 456	E 31	E 34	COMMONED RETURNS GROUND	
	A 440Y	E 32	J21- 20	COMMONED RETURNS GROUND	219R
	A 441Y	E 32	J21- 68	COMMONED RETURNS GROUND	221R
	A 442Y	E 32	J21- 59	COMMONED RETURNS GROUND	222R
	A 443Y	E 32	J21- 19	COMMONED RETURNS GROUND	223R
	A 457	E 32	E 34	COMMONED RETURNS GROUND	
	A 444Y	E 33	J21- 9	COMMONED RETURNS GROUND	224R

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 445Y	E 33	J21- 58	COMMONED RETURNS GROUND	226R
	A 446Y	E 33	J21- 22	COMMONED RETURNS GROUND	220R
	A 447Y	E 33	J21- 43	COMMONED RETURNS GROUND	225R
	A 458	E 33	E 34	COMMONED RETURNS GROUND	
*	A 452	E 34	J10- 82	COMMONED RETURNS GROUND	330
*	A 453	E 34	E 28	COMMONED RETURNS GROUND	
*	A 454	E 34	E 29	COMMONED RETURNS GROUND	
*	A 455	E 34	E 30	COMMONED RETURNS GROUND	
*	A 456	E 34	E 31	COMMONED RETURNS GROUND	
*	A 457	E 34	E 32	COMMONED RETURNS GROUND	
*	A 458	E 34	E 33	COMMONED RETURNS GROUND	
*	A 556	E 35	J21- 50	GROUP 3 SHIELD	250
*	A 487	E 36	J10- 27	GROUP 3 SHIELD	250
*	A 557	E 37	J21- 73	GROUP 2 SHIELD	245
*	A 488	E 38	J10- 1	GROUP 2 SHIELD	245

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 1R	J01- 1	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
A 2Y	J01- 2	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 2R	J01- 3	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 3Y	J01- 6	TB1-A14	COS AIG 1X RET P1
A 4Y	J01- 7	TB1-A16	SIN AIG 1X P2
A 5G	J01- 11	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
A 5Y	J01- 12	TB1-B 6	ZEROING RSVR 800 CPS
A 1Y	J01- 14	TB1-R 8	800 CPS 28 V 1 PCT LO IMU
A 6	J01- 15	TB1-B53	+28 VDC CDU NOT LOCK
A 7	J01- 16	TB1-G 6	+28 VDC IMU
A 3R	J01- 20	TB1-A13	COS AIG 1X P3
A 4R	J01- 21	TB1-A15	SIN AIG 1X RET P4
A 5R	J01- 25	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
A 8R	J01- 28	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
A 8Y	J01- 29	TB1-B 1	400 CPS 6 V LO
A 9	J01- 30	TB1-C53	+28 VDC IMU FOR IG MDA
A 10G	J01- 31	TB1-K18	IG CDU MDA OUTPUT
A 10Y	J01- 32	TB1-K19	IG CDU MDA OUTPUT
A 11	J01- 34	TB1-K35	IG CDU 1X RSVR LOAD S1
A 12R	J01- 35	TB1-K33	IG CDU 1X ERROR SIG S2
A 13	J01- 41	TB1-G 9	STRUCTURE GROUND
A 10R	J01- 43	TB1-K20	0 VDC IMU
A 12Y	J01- 45	TB1-K34	IG CDU ERROR SIG RET
A 14R	J01- 50	TB1-G 1	25.6 KC HI IMU
A 15Y	J01- 57	TB1-B31	IG CDU ERROR SIG RET S1
A 14Y	J01- 60	TB1-G 2	25.6 KC LO IMU
A 15R	J01- 67	TB1-A31	IG CDU 1/2X ERROR SIG S3
A 16Y	J01- 86	TB1-H16	COS AIG 16X TO CDU
A 17Y	J01- 87	TB1-K16	SIN AIG 16X TO CDU
A 18Y	J01- 90	TB1-K30	IG CDU ERROR SIG RET
A 19Y	J01- 92	TB1-F30	IG CDU MDA INPUT RET
A 20Y	J01- 94	TB1-F34	IG CDU ENCODER COMMON
A 16R	J01-100	TB1-H15	COS AIG 16X S3
A 17R	J01-101	TB1-K15	SIN AIG 16X S4
A 18R	J01-104	TB1-K31	IG CDU 16X ERROR SIG
A 19G	J01-105	TB1-F31	IG CDU MDA SLEW SIG
A 19R	J01-106	TB1-F29	IG CDU MDA TACH SIG
A 20G	J01-107	TB1-F35	IG CDU ENCODER PHASE 1

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 20R	J01-108	TB1-F33	IG CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 21R	J02- 1	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
A 22Y	J02- 2	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 22R	J02- 3	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 23Y	J02- 6	TB1-B14	COS AMG 1X S1
A 24Y	J02- 7	TB1-B16	SIN AMG 1X
A 25G	J02- 11	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
A 25Y	J02- 12	TB1-B 6	ZEROING RSVR 800 CPS
A 21Y	J02- 14	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
A 26	J02- 15	TB1-B53	+28 VDC CDU NOT LOCK
A 27	J02- 16	TB1-G 6	+28 VDC IMU
A 23R	J02- 20	TB1-B13	COS AMG 1X S3
A 24R	J02- 21	TB1-B15	SIN AMG 1X RET
A 25R	J02- 25	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
A 28R	J02- 28	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
A 28Y	J02- 29	TB1-B 1	400 CPS 6 V LO
A 29	J02- 30	TB1-C52	+28 VDC IMU FOR MG MDA
A 30G	J02- 31	TB1-H19	MG CDU MDA OUTPUT
A 30Y	J02- 32	TB1-H18	MG CDU MDA OUTPUT
A 31	J02- 34	TB1-H35	MG CDU 1X RSVR LOAD
A 32R	J02- 35	TB1-H33	MG CDU 1X ERROR SIG
A 33	J02- 41	TB1-G 9	STRUCTURE GROUND
A 30R	J02- 43	TB1-H20	0 VDC IMU
A 32Y	J02- 45	TB1-H34	MG CDU ERROR SIG RET
A 34R	J02- 50	TB1-G 1	25.6 KC HI IMU
A 35Y	J02- 57	TB1-B30	MG CDU ERROR SIG RET
A 34Y	J02- 60	TB1-G 2	25.6 KC LO IMU
A 35R	J02- 67	TB1-A30	MG CDU 1/2X ERROR SIG
A 36Y	J02- 86	TB1-H11	COS AMG 16X TO CDU
A 37Y	J02- 87	TB1-K11	SIN AMG 16X TO CDU
A 38Y	J02- 90	TB1-H30	MG CDU ERROR SIG RET
A 39Y	J02- 92	TB1-D30	MG CDU MDA INPUT RET
A 40Y	J02- 94	TB1-D34	MG CDU ENCODER COMMON
A 36R	J02-100	TB1-H10	COS AMG 16X S3
A 37R	J02-101	TB1-K10	SIN AMG 16X S4
A 38R	J02-104	TB1-H31	MG CDU 16X ERROR SIG
A 39G	J02-105	TB1-D31	MG CDU MDA SLEW SIG
A 39R	J02-106	TB1-D29	MG CDU MDA TACH SIG
A 40G	J02-107	TB1-D35	MG CDU ENCODER PHASE 1

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 40R	J02-108	TB1-D33	MG CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 41R	J03- 1	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
A 42Y	J03- 2	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 42R	J03- 3	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 43Y	J03- 6	TB1-C15	COS AOG 1X S1
A 44Y	J03- 7	TB1-D15	SIN AOG 1X S4
A 45G	J03- 11	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
A 45Y	J03- 12	TB1-B 6	ZEROING RSVR 800 CPS
A 41Y	J03- 14	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
A 46	J03- 15	TB1-B53	+28 VDC CDU NOT LOCK
A 47	J03- 16	TB1-G 6	+28 VDC IMU
A 43R	J03- 20	TB1-C16	COS AOG 1X TO CDU
A 44R	J03- 21	TB1-D16	SIN AOG 1X TO CDU
A 45R	J03- 25	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
A 48R	J03- 28	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
A 48Y	J03- 29	TB1-B 1	400 CPS 6 V LO
A 49	J03- 30	TB1-C51	+28 VDC IMU FOR OG MDA
A 50G	J03- 31	TB1-G19	OG CDU MDA OUTPUT
A 50Y	J03- 32	TB1-G18	OG CDU MDA OUTPUT
A 51	J03- 34	TB1-G35	OG CDU 1X RSVR LOAD
A 52R	J03- 35	TB1-G33	OG CDU 1X ERROR SIG
A 53	J03- 41	TB1-G10	STRUCTURE GROUND
A 50R	J03- 43	TB1-G20	0 VDC IMU
A 52Y	J03- 45	TB1-G34	OG CDU ERROR SIG RET
A 54R	J03- 50	TB1-H 1	25.6 KC HI IMU
A 55Y	J03- 57	TB1-B29	OG CDU ERROR SIG RET
A 54Y	J03- 60	TB1-H 2	25.6 KC LO IMU
A 55R	J03- 67	TB1-A29	OG CDU 1/2X ERROR SIG
A 56Y	J03- 86	TB1-F16	COS AOG 16X TO CDU
A 57Y	J03- 87	TB1-G16	SIN AOG 16X TO CDU
A 58	J03- 89	TB1-G29	OG CDU 16X RSVR LOAD
A 59Y	J03- 90	TB1-G30	OG CDU ERROR SIG RET
A 60Y	J03- 92	TB1-C30	OG CDU MDA INPUT RET
A 61Y	J03- 94	TB1-C34	OG CDU ENCODER COMMON
A 56R	J03-100	TB1-F15	COS AOG 16X S3
A 57R	J03-101	TB1-G15	SIN AOG 16X S4
A 59R	J03-104	TB1-G31	OG CDU 16X ERROR SIG
A 60G	J03-105	TB1-C31	OG CDU MDA SLEW SIG
A 60R	J03-106	TB1-C29	OG CDU MDA TACH SIG

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 61G	J03-107	TB1-C35	OG CDU ENCODER PHASE 1
A 61R	J03-108	TB1-C33	OG CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 62R	J04- 1	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS
A 63Y	J04- 2	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 63R	J04- 3	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 64Y	J04- 6	TB1-H46	SHAFT CDU 1X RSVR P1
A 65R	J04- 7	TB1-K46	SHAFT CDU 1X RSVR P2
A 66Y	J04- 11	TB1-H40	SHAFT CDU 1/2X RSVR P1
A 62Y	J04- 14	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS
A 64R	J04- 20	TB1-H45	SHAFT CDU 1X RSVR P3
A 65Y	J04- 21	TB1-K45	SHAFT CDU 1X RSVR P4
A 66R	J04- 25	TB1-H41	SHAFT CDU 1/2X RSVR P3
A 67R	J04- 28	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
A 67Y	J04- 29	TB1-B 2	400 CPS 6 V LO
A 68Y	J04- 31	TB1-H48	SHAFT CDU MOTOR PHASE 1
A 68R	J04- 32	TB1-H49	SHAFT CDU MOTOR PHASE 2
A 69Y	J04- 34	TB1-F50	SHAFT CDU 1X RSVR S1
A 69G	J04- 35	TB1-F48	SHAFT CDU 1X RSVR S2
A 70	J04- 41	TB1-G10	STRUCTURE GROUND
A 68G	J04- 43	TB1-H50	0 VDC OPTICS
A 69R	J04- 45	TB1-F49	SHAFT CDU 1X RSVR S3
A 71R	J04- 50	TB1-K 1	25.6 KC HI OPTICS
A 72R	J04- 56	TB1-C45	SHAFT CDU 1/2X RSVR S2
A 73R	J04- 57	TB1-D45	SHAFT CDU 1/2X RSVR S1
A 71Y	J04- 60	TB1-K 2	25.6 KC LO OPTICS
A 72Y	J04- 66	TB1-C46	SHAFT CDU 1/2X RSVR S4
A 73Y	J04- 67	TB1-D46	SHAFT CDU 1/2X RSVR S3
A 74Y	J04- 86	TB1-A45	SHAFT CDU 16X RSVR P1
A 75R	J04- 87	TB1-B45	SHAFT CDU 16X RSVR P2
A 76R	J04- 90	TB1-G41	SHAFT CDU 16X RSVR S3
A 77Y	J04- 92	TB1-G38	SHAFT CDU TACH LO
A 78Y	J04- 94	TB1-A34	SHAFT CDU ENCODER COMMON
A 74R	J04-100	TB1-A46	SHAFT CDU 16X RSVR P3
A 75Y	J04-101	TB1-B46	SHAFT CDU 16X RSVR P4
A 76Y	J04-104	TB1-G40	SHAFT CDU 16X RSVR S2
A 77R	J04-106	TB1-G37	SHAFT CDU TACH HI
A 78G	J04-107	TB1-A35	SHAFT CDU ENCODER PHASE 1
A 78R	J04-108	TB1-A33	SHAFT CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 79R	J05- 1	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS
A 80Y	J05- 2	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 80R	J05- 3	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 81Y	J05- 4	TB1-D41	TRUNNION CDU 1/4X RSVR P3
A 82Y	J05- 8	TB1-D44	TRUNNION CDU 1/4X RSVR S1
A 83R	J05- 9	TB1-C44	TRUNNION CDU 1/4X RSVR S2
A 83Y	J05- 10	TB1-C43	TRUNNION CDU 1/4X RSVR S4
A 84G	J05- 11	TB1-B19	TRUNNION CDU 1/2X RSVR P1 AND P3
A 84Y	J05- 12	TB1-B18	TRUNNION CDU 1/2X RSVR P2
A 79Y	J05- 14	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS
A 81R	J05- 17	TB1-D40	TRUNNION CDU 1/4X RSVR P2
A 82R	J05- 22	TB1-D43	TRUNNION CDU 1/4X RSVR S3
A 84R	J05- 25	TB1-B19	TRUNNION CDU 1/2X RSVR P3
A 85R	J05- 28	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
A 85Y	J05- 29	TB1-B 2	400 CPS 6 V LO
A 86Y	J05- 31	TB1-K48	TRUNNION CDU MOTOR PHASE 1
A 86R	J05- 32	TB1-K49	TRUNNION CDU MOTOR PHASE 2
A 87	J05- 41	TB1-G11	STRUCTURE GROUND
A 86G	J05- 43	TB1-K50	0 VDC OPTICS
A 88R	J05- 50	TB1-K 1	25.6 KC HI OPTICS
A 89R	J05- 56	TB1-H44	TRUNNION CDU 1/2X RSVR S2
A 90R	J05- 57	TB1-K44	TRUNNION CDU 1/2X RSVR S1
A 88Y	J05- 60	TB1-K 2	25.6 KC LO OPTICS
A 89Y	J05- 66	TB1-H43	TRUNNION CDU 1/2X RSVR S4
A 90Y	J05- 67	TB1-K43	TRUNNION CDU 1/2X RSVR S3
A 91Y	J05- 86	TB1-A44	TRUNNION CDU 16X RSVR P1
A 92Y	J05- 87	TB1-B44	TRUNNION CDU 16X RSVR P2
A 93R	J05- 90	TB1-C41	TRUNNION CDU 16X RSVR S3
A 94Y	J05- 92	TB1-C38	TRUNNION CDU TACHOMETER LO
A 95Y	J05- 94	TB1-B34	TRUNNION CDU ENCODER COMMON
A 91R	J05-100	TB1-A43	TRUNNION CDU 16X RSVR P3
A 92R	J05-101	TB1-B43	TRUNNION CDU 16X RSVR P4
A 93Y	J05-104	TB1-C40	TRUNNION CDU 16X RSVR S2
A 94R	J05-106	TB1-C37	TRUNNION CDU TACHOMETER HI
A 95G	J05-107	TB1-B35	TRUNNION CDU ENCODER PHASE 1
A 95R	J05-108	TB1-B33	TRUNNION CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 96R	J06- 1	P01- 1	PITCH ATTITUDE ERROR METER +
A 96Y	J06- 2	P01- 2	PITCH ATTITUDE ERROR METER -
A 97	J06- 6	P01- 6	ENTRY RELAY CONTROL RESET
A 98	J06- 9	P01- 9	MODE SWITCH INTERLOCK
A 99Y	J06- 12	TB1-A48	MODE RELAY COMMON TO AGC
A 100R	J06- 14	P01- 14	YAW ATTITUDE ERROR METER +
A 100Y	J06- 15	P01- 15	YAW ATTITUDE ERROR METER -
A 101	J06- 18	P01- 18	MODE RELAY COMMON TO D AND C ELECT
A 102	J06- 22	P01- 22	ATTITUDE CONTROL MODE LIGHT
A 103	J06- 23	P01- 23	FINE ALIGN RELAY CONTROL
A 104Y	J06- 24	TB1-G 3	ATTITUDE CONTROL RELAY CONTROL
A 105	J06- 25	P01- 25	ENTRY RELAY CONTROL
A 106Y	J06- 28	P01- 28	ROLL ATTITUDE ERROR METER -
A 106R	J06- 29	P01- 29	ROLL ATTITUDE ERROR METER +
A 107	J06- 34	P01- 34	ZERO ENCODER RELAY CONTROL
A 108	J06- 35	P01- 35	COARSE ALIGN RELAY CONTROL
A 109	J06- 36	P01- 36	CDU MANUAL RELAY CONTROL
A 110	J06- 37	P01- 37	MANUAL ALIGN
A 111	J06- 46	P01- 46	ATTITUDE CONTROL MODE INTERLOCK
A 112	J06- 56	P01- 56	MANUAL ALIGN
A 113Y	J06- 68	TB1-C56	AGC COMMON (ISS)
A 114Y	J06- 69	J24- 12	TRANSFER SWITCH INDICATION TO AGC 164
A 115	J06- 78	TB1-D 3	0 VDC IMU
A 116	J06- 79	P01- 79	ENTRY MODE LIGHT
A 99R	J06- 81	TB1-B48	ATTIT CONT MODE COMMAND FROM AGC
A 117	J06- 91	TB1-G 8	STRUCTURE GROUND
A 118	J06- 92	P01- 92	COARSE ALIGN MODE LIGHT
A 119	J06- 93	P01- 93	MODE RELAY COMMON
A 120	J06- 94	P01- 94	FINE ALIGN MODE LIGHT
A 121	J06-104	P01-104	ZERO ENCODER MODE LIGHT
A 122	J06-105	P01-105	CDU MANUAL MODE LIGHT
A 123Y	J06-107	TB1-B 3	400 CPS 6 V LO
A 123R	J06-108	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 146	J08- 17	TB1-B21	SPARE FAIL LIGHT 3 LO
A 147	J08- 18	TB1-A23	GIMBAL LOCK LIGHT HI
A 148	J08- 19	TB1-B21	GIMBAL LOCK LIGHT LO
A 149	J08- 28	TB1-B21	SPARE FAIL LIGHT 2 LO
A 150	J08- 29	TB1-G 8	STRUCTURE GROUND
A 151	J08- 30	TB1-B22	ZERO ENCODER LIGHT LO
A 152	J08- 31	TB1-A25	IMU DELAY LIGHT LO
A 153	J08- 32	TB1-C 4	MASTER CAUTION LIGHT HI
A 154Y	J08- 36	TB1-B75	400 CPS 6 V LO
A 155	J08- 41	TB1-A21	ZERO ENCODER LIGHT HI
A 156	J08- 42	TB1-A26	IMU DELAY LIGHT HI
A 157	J08- 43	J22- 40	MASTER CAUTION LIGHT RET
A 154G	J08- 46	TB1-B77	PROJECTION LAMP LO INTENSITY
A 158	J08- 50	TB1-A20	SPARE FAIL LIGHT 1 HI
A 159Y	J08- 51	TB1-C26	G+N ERROR LIGHT HI
A 159R	J08- 52	TB1-C25	G+N ERROR LIGHT LO
A 160	J08- 53	J22- 65	MASTER WARNING LIGHT RET
A 161	J08- 54	TB1-C 4	MASTER WARNING LIGHT HI
A 154R	J08- 55	TB1-B76	PROJECTION LAMP HI INTENSITY
A 162	J08- 60	TB1-A22	IMU FAIL LIGHT HI
A 163	J08- 61	TB1-B22	IMU FAIL LIGHT LO
A 164R	J08- 62	TB1-B26	IMU TEMP CONT FAIL LIGHT HI
A 164Y	J08- 63	TB1-B25	IMU TEMP CONT FAIL LIGHT LO
A 165G	J08- 66	TB1-A76	MDV SLEW CONTROL 1.5 V 400 CPS
A 166	J08- 67	TB1-A53	+28 VDC MDV SWITCHED
A 165R	J08- 68	TB1-A77	400 CPS 26 V MDV RSVR EXC
A 167	J08- 70	TB1-B22	SPARE FAIL LIGHT 1 LO
A 168R	J08- 71	TB1-D26	AGC POWER SUPPLY FAIL SIG HI
A 169	J08- 72	TB1-A24	CDU FAIL LIGHT HI
A 170	J08- 73	TB1-B24	ACCEL FAIL LIGHT HI
A 171	J08- 78	TB1-B52	STEP-UP-C
A 172	J08- 79	TB1-A52	STEP-DOWN-C
A 165Y	J08- 81	TB1-A78	400 CPS 26 V SLEW
A 168Y	J08- 82	TB1-D25	AGC POWER SUPPLY FAIL LIGHT LO
A 173	J08- 83	TB1-B23	CDU FAIL LIGHT LO
A 174	J08- 84	TB1-B23	ACCEL FAIL LIGHT LO
A 175	J08- 92	TB1-D 4	0 VDC IMU
A 176	J08- 93	TB1-A51	STEP-DOWN-R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 165N	J08- 95	TB1-A75	400 CPS 26 V LO
A 177	J08-106	TB1-B51	STEP-UP-R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 285	J09- 1	TB1-F77	0 VDC OPTICS
A 286R	J09- 2	TB1-A61	TRACKER MODE RELAY COMMAND
A 287Y	J09- 3	J22- 89	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT
A 288Y	J09- 4	J22- 18	PITCH ATTIT IMPULSE CONTR OUTPUT UP
A 288R	J09- 5	J22- 35	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN
A 289R	J09- 6	J22- 87	YAW ATTIT IMPULSE CONTR OUTPUT LEFT
A 289G	J09- 7	J22- 88	YAW ATTIT IMPULSE CONTR INPUT
A 290R	J09- 8	TB1-K68	TRUNNION HAND CONTROLLER OUTPUT HI
A 291R	J09- 10	TB1-H68	SHAFT HAND CONTROLLER OUTPUT HI
A 292	J09- 11	TB1-B23	CONDITION LAMP DIMMER EMITTER
A 293	J09- 12	TB1-B54	CONDITION LAMP DIMMER BASE
A 294	J09- 13	TB1-B55	CONDITION LAMP DIMMER COLLECTOR
A 295	J09- 14	J22- 64	SPACECRAFT LAMP TEST
A 296	J09- 15	TB1-D70	0 VDC SPACECRAFT
A 287G	J09- 16	J22- 90	ROLL ATTIT IMPULSE CONTR INPUT
A 287R	J09- 17	J22- 60	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT
A 288G	J09- 18	J22- 36	PITCH ATTIT IMPULSE CONTR INPUT
A 289Y	J09- 20	J22- 58	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT
A 290Y	J09- 22	TB1-K69	TRUNNION HAND CONTROLLER OUTPUT LO
A 291Y	J09- 24	TB1-H69	SHAFT HAND CONTROLLER OUTPUT LO
A 297	J09- 26	TB1-C62	0 VDC IMU
A 298Y	J09- 30	P10- 32	ACCEPT MARK
A 299	J09- 31	P10- 16	MANUAL MARK COMMAND
A 300R	J09- 32	TB1-A54	PANEL BRIGHTNESS CONTROL
A 301Y	J09- 33	P10- 33	MARK REJECT
A 302R	J09- 34	TB1-F68	SCT TRUNNION TRACKER MODE INPUT HI
A 302Y	J09- 35	TB1-F69	SCT TRUNNION TRACKER MODE INPUT LO
A 303Y	J09- 40	J22- 8	0 VDC FROM NAA
A 303R	J09- 41	J22- 7	+28 VDC FROM NAA
A 304Y	J09- 42	J24- 31	TRACKER ON INDICATION TO AGC 107
A 305R	J09- 43	TB1-G68	PHOTOMETER MARK REJECT HI
A 300Y	J09- 44	TB1-A55	PANEL BRIGHTNESS CONTROL
A 306G	J09- 45	TB1-A71	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR
A 307Y	J09- 46	TB1-B77	PROJECTION LAMP LO INTENSITY
A 308Y	J09- 47	TB1-A68	AGC COMMON (OSS)
A 308R	J09- 48	TB1-A69	OPTICS ZERO ENCODER INDICATION
A 309Y	J09- 49	J24- 54	OPTICS MODE SW COMPUTER INDICATION 106
A 303G	J09- 50	J22- 2	ATTITUDE DISABLE SIG TO NAA

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 310	J09- 51	TB1-K72	+28 VDC MDV
A 311Y	J09- 52	P10- 92	400 CPS 6 V LO
A 311R	J09- 53	P10-106	400 CPS 6 V HI
A 312R	J09- 54	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
A 307R	J09- 55	TB1-B76	PROJECTION LAMP HI INTENSITY
A 313Y	J09- 58	TB1-B57	0 DEG OFFSET RELAY COMMAND
A 313R	J09- 59	TB1-B58	25 DEG OFFSET RELAY COMMAND
A 305Y	J09- 60	TB1-G69	PHOTOMETER MARK REJECT LO
A 311G	J09- 61	P10-105	400 CPS 6 V HI
A 314R	J09- 65	P10- 39	400 CPS 1.5 V PI PHASE
A 315G	J09- 66	TB1-A76	MDV SLEW CONTROL 1.5 V 400 CPS
A 316	J09- 67	TB1-A53	+28 VDC MDV SWITCHED
A 315R	J09- 68	TB1-A77	400 CPS 26 V MDV RSVR EXC
A 306Y	J09- 69	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS
A 286G	J09- 70	TB1-B59	COMPUTER RELAY COMMAND
A 317	J09- 71	TB1-H71	+28 VDC OPTICS
A 286Y	J09- 72	TB1-B60	ZERO OPTICS MODE COMMAND
A 318	J09- 73	TB1-D72	CONDITION LAMP TEST
A 319R	J09- 74	TB1-F60	IMU TEMP ALARM AMP PIN 15
A 320	J09- 75	TB1-F59	IMU TEMP ALARM AMP PIN 14
A 321Y	J09- 76	TB1-D63	IMU TEMP CONT K2 PIN 6
A 314Y	J09- 77	P10- 38	400 CPS 1.5 V ZERO PHASE
A 322	J09- 78	TB1-B52	STEP-UP-C
A 323	J09- 79	TB1-A52	STEP-DOWN-C
A 306R	J09- 80	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS
A 315Y	J09- 81	TB1-A78	400 CPS 26 V SLEW
A 313G	J09- 82	TB1-A57	RESOLVED MODE RELAY COMMAND
A 312Y	J09- 84	TB1-C 3	MODE LAMP TEST PWR
A 324G	J09- 85	TB1-K62	IRIG TEMP BRIDGE AMP PIN 6
A 324R	J09- 86	TB1-K60	IRIG TEMP GAIN SWITCH NC
A 325G	J09- 87	TB1-H60	IMU TEMP CONT AMP PIN 5
A 325N	J09- 88	TB1-G60	IMU TEMP CONT K2 PIN 5
A 324N	J09- 89	TB1-K61	IRIG ZERO DEVIATION CHECK
A 321R	J09- 90	TB1-D62	EMERG HTR CONT MODULE LO
A 326	J09- 91	TB1-H70	STRUCTURE GROUND
A 319Y	J09- 92	TB1-F62	IMU TEMP ALARM AMP PIN 5
A 327	J09- 93	TB1-A51	STEP-DOWN-R
A 321G	J09- 94	TB1-F63	TEMPERATURE CONTROLLER 0 VDC IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 314G	J09- 95	P10- 48	400 CPS 26 V HI
A 328	J09- 96	TB1-B71	+28 VDC OPTICS TRACKER POWER
A 329Y	J09- 97	TB1-H62	ACCEL INDICATING SENSOR HI
A 329N	J09- 98	TB1-G62	ACCEL BRIDGE AMP PIN 6
A 325R	J09-100	TB1-G59	IMU HTR CURRENT AMP PIN 5
A 325Y	J09-101	TB1-H59	IMU TEMP CONT K1 PIN 3
A 324Y	J09-102	TB1-K59	IMU TEMP CONT -5 DEG GAIN CHECK
A 329G	J09-103	TB1-G64	IMU IMU TEMP CONT +5 DEG GAIN CHECK
A 329R	J09-104	TB1-G63	ACCEL ZERO DEVIATION CHECK
A 319G	J09-105	TB1-F61	IMU TEMP ALARM BIAS RESISTOR
A 330	J09-106	TB1-B51	STEP-UP-R
A 331	J09-108	TB1-C71	+28 VDC OPTICS DAC POWER

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 488	J10- 1	E 38	GROUP 2 SHIELD	245
A 477	J10- 2	TB1-D72	CONDITION LAMP TEST	328
A 473G	J10- 3	TB1-A21	ZERO ENCODER LIGHT HI	301
A 473R	J10- 4	TB1-A24	CDU FAIL LIGHT HI	302
A 473Y	J10- 5	TB1-B24	ACCEL FAIL LIGHT HI	303
A 478	J10- 6	TB1-A22	IMU FAIL LIGHT HI	304
A 479	J10- 7	TB1-A20	SPARE FAIL LIGHT 1 HI	305
A 483	J10- 8	TB1-K71	+28 VDC MDV	306
A 481	J10- 9	TB1-B56	AGC FAIL SIG	326
A 489	J10- 10	TB1-K71	+28 VDC MDV	327
A 474G	J10- 12	TB1-B48	ATTIT CONT MODE COMMAND FROM AGC	314
A 474Y	J10- 13	TB1-A48	MODE RELAY COMMON TO AGC	315
A 444R	J10- 14	J21- 8	OUT 0 11	224S
A 447R	J10- 15	J21- 23	OUT 0 12	225S
A 445R	J10- 16	J21- 87	OUT 0 13	226S
A 424R	J10- 17	J21- 35	OUT 0 14	227S
A 425R	J10- 18	J21- 7	OUT 0 15	228S
A 428R	J10- 19	J21- 86	TELEMETRY FAIL ALARM	231S
A 475Y	J10- 21	TB1-C50	ZERO ENCODER MODE COMMAND FROM AGC	307
A 475G	J10- 22	TB1-A50	COARSE ALIGN MODE COMMAND FROM AGC	308
A 476Y	J10- 23	TB1-C48	CDU MANUAL MODE COMMAND FROM AGC	309
A 475R	J10- 24	TB1-B50	FINE ALIGN MODE COMMAND FROM AGC	310
A 476R	J10- 25	TB1-C49	ENTRY MODE COMMAND FROM AGC	311
A 474R	J10- 26	TB1-A48	MODE RELAY COMMON TO AGC	312
A 487	J10- 27	E 36	GROUP 3 SHIELD	250
A 438R	J10- 28	J21- 67	OUT 0 4	217S
A 439R	J10- 29	J21- 89	OUT 0 5	218S
A 440R	J10- 30	J21- 37	OUT 0 6	219S
A 446R	J10- 31	J21- 21	OUT 0 7	220S
A 423R	J10- 32	J21- 34	PROGRAM CHECK FAIL ALARM	232S
A 429R	J10- 33	J21- 6	SCALER FAIL ALARM	233S
A 466R	J10- 34	J21- 29	KEY CODE 1	201S
A 464R	J10- 35	J21- 48	KEY CODE 2	202S
A 461R	J10- 36	J21- 82	KEY CODE 3	203S
A 463R	J10- 37	J21- 52	KEY CODE 4	204S
A 459R	J10- 38	J21- 32	KEY CODE 5	205S
A 462R	J10- 39	J21- 31	TEST ALARM	207S
A 426R	J10- 40	J21- 10	PROGRAM ALARM	229S

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 427R	J10- 41	J21- 44	COMPUTER ACTIVITY	230S
A 422R	J10- 42	J21- 5	TIMING (1.5 CPS)	244S
A 431R	J10- 43	J21- 25	COUNTER FAIL ALARM	235S
A 430R	J10- 44	J21- 3	PARITY FAIL ALARM	234S
A 468	J10- 45	J21- 84	SPARE	248
A 469	J10- 46	J21- 55	SPARE	249
A 465R	J10- 47	J21- 27	OR OF C1 THRU C33	210S
A 467R	J10- 48	J21- 14	ERROR RESET	208S
A 460R	J10- 49	J21- 83	KEY RESET NAV	209S
A 433R	J10- 51	J21- 85	RUPT LOCK ALARM	237S
A 432R	J10- 53	J21- 71	KEY RELEASE	236S
A 486	J10- 55	J21- 63	SPARE	240
A 485	J10- 56	J21- 91	DISKY GROUND	239
A 480	J10- 57	J21- 64	+13 V B	241
A 484	J10- 58	J21- 62	DISKY GROUND	251
A 482	J10- 59	J21- 65	+28 VDC AGC	243
A 437R	J10- 60	J21- 40	OUT 0 3	216S
A 441R	J10- 61	J21- 42	OUT 0 8	221S
A 442R	J10- 62	J21- 88	OUT 0 9	222S
A 443R	J10- 63	J21- 36	OUT 0 10	223S
A 434R	J10- 64	J21- 33	TC TRAP ALARM	238S
A 472Y	J10- 65	TB1-B60	ZERO OPTICS MODE COMMAND	316
A 472R	J10- 66	TB1-A61	TRACKER MODE RELAY COMMAND	317
A 472G	J10- 67	TB1-B59	COMPUTER RELAY COMMAND	331
A 470	J10- 69	E 26	COMMONED RETURNS GROUND	252
A 450	J10- 70	J21- 12	SPARE	211
A 449	J10- 71	J21- 26	POWER SUPPLY SYNC	212
A 448	J10- 72	J21- 46	SPARE	213
A 435R	J10- 73	J21- 90	OUT 0 1	214S
A 436R	J10- 74	J21- 38	OUT 0 2	215S
A 451	J10- 75	J21- 72	SPARE	247
A 452	J10- 82	E 34	COMMONED RETURNS GROUND	330

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC 60W	J11-A1	TB1-K33	IG CDU 1X ERROR SIG
CC 62W	J11-A2	TB1-H33	MG CDU 1X ERROR SIG
CC 64W	J11-A3	TB1-G33	OG CDU 1X ERROR SIG
BB 9R	J11-A5	J12-A2	IMU MG ERROR SIG
CC 68R	J11-A5	TB1-B28	IMU MG ERROR SIG
BB 9L	J11-A6	J12-B1	IMU OG ERROR SIG
CC 68L	J11-A6	TB1-A28	IMU OG ERROR SIG
CC 60R	J11-B1	TB1-K34	IG CDU ERROR SIG RET
CC 61W	J11-B1	TB1-K28	IG CDU ERROR SIG RET
CC 62R	J11-B2	TB1-H34	MG CDU ERROR SIG RET
CC 63W	J11-B2	TB1-H28	MG CDU ERROR SIG RET
BB 10R	J11-B3	J17-B1	OG CDU ERROR SIG RET
CC 64R	J11-B3	TB1-G34	OG CDU ERROR SIG RET
BB 9K	J11-B5	J12-B2	IMU GIMBAL AND GYRO ERROR SIG LO
BB 28	J11-B5	J11-S6	0 VDC IMU
CC 68K	J11-B5	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO
BB 9W	J11-B6	J12-A1	IMU IG AND Y GYRO ERROR SIG
CC 68W	J11-B6	TB1-C28	IMU IG AND Y GYRO ERROR SIG
CC 61R	J11-C1	TB1-K29	IG CDU ATTITUDE STEERING ERROR
CC 63R	J11-C2	TB1-H29	MG CDU ATTITUDE STEERING ERROR
BB 10W	J11-C3	J17-A1	OG CDU ATTITUDE STEERING ERROR
CC 69W	J11-D5	TB1-F19	IG TORQUE MOTOR RET
CC 69R	J11-D6	TB1-F18	IG TORQUE MOTOR HI
CC 65R	J11-F1	TB1-B11	IG ADA
CC 73R	J11-F3	TB1-K 8	3200 CPS 2 V FEEDBACK HI
CC 70R	J11-F6	TB1-D18	MG TORQUE MOTOR HI
CC 65K	J11-G1	TB1-A10	OG ADA
BB 17	J11-G2	J11-P6	0 VDC IMU
CC 65W	J11-G2	TB1-B10	0 VDC IMU
CC 73W	J11-G3	TB1-H 8	3200 CPS 2 V FEEDBACK LO
CC 70W	J11-G6	TB1-D19	MG TORQUE MOTOR RET
CC 65L	J11-H1	TB1-A11	MG ADA
CC 71W	J11-H5	TB1-C19	OG TORQUE MOTOR RET
CC 71R	J11-H6	TB1-C18	OG TORQUE MOTOR HI
BB 8R	J11-L1	J12-H2	3200 CPS 2 V HI
CC 67L	J11-L1	TB1-K 7	3200 CPS 2 V HI
BB 8W	J11-L2	J12-K2	3200 CPS 2 V LO
CC 67W	J11-L2	TB1-H 7	3200 CPS 2 V LO

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CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC 72	J11-L3	TB1-K 3	COARSE ALIGN RELAY CONTROL	
BB 7	J11-L4	J12-K3	STRUCTURE GROUND	
CC 80	J11-L4	TB1-H 4	STRUCTURE GROUND	
CC 1R	J11-L6	J23- 31	COMPUTER 3200 PPS OUT OF PHASE SYNC	152S
CC 67K	J11-M1	TB1-K 7	3200 CPS 2 V HI	
CC 67R	J11-M2	TB1-H 7	3200 CPS 2 V LO	
BB 18	J11-M5	J11-P3	0 VDC IMU	
CC 1W	J11-M5	J23- 52	COMPUTER 3200 PPS SYNC RET	152R
CC 2W	J11-M5	J23- 53	COMPUTER 3200 PPS SYNC RET	151R
CC 2R	J11-M6	J23- 54	COMPUTER 3200 PPS IN PHASE SYNC	151S
BB 11R	J11-N1	J17-P2	3200 CPS 20 V CT	
BB 11W	J11-N2	J17-R2	3200 CPS 20 V LO	
BB 16	J11-N3	J12-P4	COMPUTER 12.8 KPPS SYNC	
BB 5W	J11-N4	J12-P3	800 CPS 28 V 1 PCT LO IMU	
BB 5R	J11-N5	J12-N3	800 CPS 28 V 1 PCT HI IMU	
BB 13	J11-N6	J13-P6	-28 VDC	
CC 66	J11-N6	TB1-C54	-28 VDC	
BB 11L	J11-P1	J17-N2	3200 CPS 20 V HI	
BB 19	J11-P2	J11-P3	0 VDC IMU	
CC 79	J11-P2	E 4	0 VDC IMU	
BB 20	J11-P3	J11-R3	0 VDC IMU	
* BB 18	J11-P3	J11-M5	0 VDC IMU	
* BB 19	J11-P3	J11-P2	0 VDC IMU	
BB 21	J11-P4	J11-P5	0 VDC IMU	
BB 27	J11-P4	J11-R4	0 VDC IMU	
* BB 21	J11-P5	J11-P4	0 VDC IMU	
BB 22	J11-P6	J11-R6	0 VDC IMU	
* BB 17	J11-P6	J11-G2	0 VDC IMU	
BB 23	J11-R1	J11-R2	0 VDC IMU	
CC 78	J11-R1	TB1-C69	0 VDC IMU	
CC 74	J11-R2	TB1-C70	0 VDC IMU	
* BB 23	J11-R2	J11-R1	0 VDC IMU	
CC 75	J11-R3	TB1-B68	0 VDC IMU	
* BB 20	J11-R3	J11-P3	0 VDC IMU	
BB 24	J11-R4	J11-R5	0 VDC IMU	
* BB 27	J11-R4	J11-P4	0 VDC IMU	
BB 26	J11-R5	J11-R6	0 VDC IMU	
CC 76	J11-R5	TB1-H26	0 VDC IMU	

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	BB 24	J11-R5	J11-R4	0 VDC IMU
	BB 25	J11-R6	J11-S6	0 VDC IMU
*	BB 22	J11-R6	J11-P6	0 VDC IMU
*	BB 26	J11-R6	J11-R5	0 VDC IMU
	BB 2	J11-S1	J20-N1	+28 VDC IMU
	BB 15	J11-S1	J11-S2	+28 VDC IMU
	BB 3	J11-S2	J20-N2	+28 VDC IMU
*	BB 15	J11-S2	J11-S1	+28 VDC IMU
	BB 12	J11-S3	J17-R1	+28 VDC STBY TO 3200 CPS POWER SUPPLY
	BB 1	J11-S4	J15-S6	+28 VDC IMU
	BB 6	J11-S4	J12-S5	+28 VDC IMU
	BB 14	J11-S4	J11-S5	+28 VDC IMU
	BB 4	J11-S5	J20-L2	+28 VDC IMU
*	BB 14	J11-S5	J11-S4	+28 VDC IMU
	CC 77	J11-S6	TB1-K26	0 VDC IMU
*	BB 25	J11-S6	J11-R6	0 VDC IMU
*	BB 28	J11-S6	J11-B5	0 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	BB 9W	J12-A1	J11-B6	IMU IG AND Y GYRO ERROR SIG	
*	BB 9R	J12-A2	J11-A5	IMU MG ERROR SIG	
	BB 44	J12-A5	J13-D2	X PIP ERROR MONITOR	
	BB 45	J12-A6	J13-F2	Y PIP ERROR MONITOR	
*	BB 9L	J12-B1	J11-A6	IMU OG ERROR SIG	
*	BB 9K	J12-B2	J11-B5	IMU GIMBAL AND GYRO ERROR SIG LO	
	BB 59	J12-B5	J13-R6	0 VDC IMU	
	CC 89	J12-B5	TB1-B41	0 VDC IMU	
	BB 29	J12-B6	J14-H6	Z PIP ERROR MONITOR	
	CC 87	J12-C1	TB1-F51	TRAY 2 THERMISTER HI	
	BB 55	J12-C2	J13-C2	THERMISTER LO	
*	BB 94R	J12-D1	J16-L4	COMPUTER 800 PPS OUT OF PHASE SYNC	
*	BB 94L	J12-D2	J16-M4	COMPUTER 800 PPS IN PHASE SYNC	
	CC 10R	J12-D4	J24- 45	ACCEL FAIL	138S
	CC 9R	J12-D5	J24- 70	CDU FAIL	124S
	CC 8R	J12-D6	J24- 25	IMU FAIL	141S
	BB 41	J12-F1	J12-F2	COMPUTER 800 PPS SYNC RET	
*	BB 49	J12-F1	J12-R4	0 VDC IMU	
*	BB 94W	J12-F1	J16-L3	COMPUTER 800 PPS SYNC RET	
	CC 6W	J12-F2	J23- 51	COMPUTER 25.6 KPPS SYNC RET	153R
	CC 7W	J12-F2	J23- 50	COMPUTER 25.6 KPPS SYNC RET	154R
*	BB 41	J12-F2	J12-F1	COMPUTER 800 PPS SYNC RET	
	BB 52	J12-F3	J17-M3	0 VDC SPACECRAFT	
	CC 10W	J12-F4	J24- 72	ACCEL FAIL RET	138R
	CC 9W	J12-F5	J24- 71	CDU FAIL RET	124R
	CC 8W	J12-F6	J24- 46	IMU FAIL RET	141R
	CC 6R	J12-G1	J23- 30	COMPUTER 25.6 KPPS IN PHASE SYNC	153S
	CC 7R	J12-G2	J23- 29	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154S
	CC 4	J12-G3	J22- 63	G+N ERROR LIGHT (MAIN PANEL)	
	BB 34	J12-G4	J20-M6	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
	BB 56	J12-G5	J16-R2	0 VDC IMU	
	BB 37W	J12-G6	J16-N3	OG CDU FAILURE INDICATION	
	CC 3W	J12-H1	J23- 73	COMPUTER 102.4 KPPS SYNC RET	156R
*	BB 8R	J12-H2	J11-L1	3200 CPS 2 V HI	
	BB 33R	J12-H4	J20-K6	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	BB 39	J12-H4	J12-N2	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	CC 88R	J12-H4	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	BB 37L	J12-H5	J16-M2	IG CDU FAILURE INDICATION	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	BB 37R	J12-H6	J16-M3	MG CDU FAILURE INDICATION	
	CC 3R	J12-K1	J23- 46	COMPUTER 102.4 KPPS SYNC	156S
*	BB 8W	J12-K2	J11-L2	3200 CPS 2 V LO	
	BB 42	J12-K3	J13-C6	STRUCTURE GROUND	
*	BB 7	J12-K3	J11-L4	STRUCTURE GROUND	
*	CC 3A	J12-K3	SHLD CC 3	STRUCTURE GROUND	
	BB 33W	J12-K4	J20-K5	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
	CC 88W	J12-K4	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
	BB 43W	J12-K6	J14-R2	+12, +32, +120 VDC RET GYRO	
	BB 46	J12-L1	J20-N5	+28 VDC MDV	
	CC 86	J12-L2	TB1-C26	G+N ERROR LIGHT HI	
	BB 43R	J12-L6	J14-S2	+120 VDC GYRO	
	CC 5	J12-M1	J23- 26	AGC POWER SUPPLY FAIL SIG HI	157S
	CC 85	J12-M1	TB1-D26	AGC POWER SUPPLY FAIL SIG HI	
	CC 84	J12-M3	TB1-B56	AGC FAIL SIG	
	BB 43K	J12-M5	J14-S5	+32 VDC GYRO	
	BB 43L	J12-M6	J14-S3	+12 VDC GYRO	
	BB 38	J12-N1	J12-P1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	BB 39	J12-N2	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	BB 30R	J12-N3	J15-P6	800 CPS 28 V 1 PCT HI IMU	
*	BB 5R	J12-N3	J11-N5	800 CPS 28 V 1 PCT HI IMU	
	BB 40	J12-N4	J12-N5	25.6 KC HI IMU	
	CC 83R	J12-N4	TB1-G 1	25.6 KC HI IMU	
	BB 31R	J12-N5	J15-N6	25.6 KC HI IMU	
*	BB 40	J12-N5	J12-N4	25.6 KC HI IMU	
	BB 51W	J12-N6	J17-N3	25.6 KC LO OPTICS	
	BB 53	J12-N6	J12-R6	0 VDC OPTICS	
	CC 82W	J12-N6	TB1-K 2	25.6 KC LO OPTICS	
	CC 81L	J12-P1	TB1-C74	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	BB 38	J12-P1	J12-N1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
	CC 81R	J12-P2	TB1-C72	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
	BB 30W	J12-P3	J15-P5	800 CPS 28 V 1 PCT LO IMU	
*	BB 5W	J12-P3	J11-N4	800 CPS 28 V 1 PCT LO IMU	
	BB 50W	J12-P4	J17-R3	COMPUTER 12.8 KPPS SYNC	
*	BB 16	J12-P4	J11-N3	COMPUTER 12.8 KPPS SYNC	
	BB 31W	J12-P5	J15-N5	25.6 KC LO IMU	
	BB 54	J12-P5	J12-R2	0 VDC IMU	
	CC 83W	J12-P5	TB1-G 2	25.6 KC LO IMU	

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB 51R	J12-P6	J17-P3	25.6 KC HI OPTICS
	CC 82R	J12-P6	TB1-K 1	25.6 KC HI OPTICS
	CC 81W	J12-R1	TB1-C73	800 CPS 28 V 5 PCT IMU WHEELS LO
	BB 57	J12-R2	J12-R3	0 VDC IMU
	CC 90	J12-R2	TB1-C70	0 VDC IMU
*	BB 54	J12-R2	J12-P5	0 VDC IMU
	BB 58	J12-R3	J12-R4	0 VDC IMU
	CC 91	J12-R3	TB1-C69	0 VDC IMU
*	BB 57	J12-R3	J12-R2	0 VDC IMU
	BB 49	J12-R4	J12-F1	0 VDC IMU
	CC 92	J12-R4	TB1-C68	0 VDC IMU
*	BB 58	J12-R4	J12-R3	0 VDC IMU
	CC 93	J12-R5	TB1-K25	0 VDC IMU
	CC 94	J12-R6	TB1-H53	0 VDC OPTICS
*	BB 53	J12-R6	J12-N6	0 VDC OPTICS
	BB 35	J12-S1	J20-M1	+28 VDC IMU
	BB 47	J12-S1	J12-S3	+28 VDC IMU
	BB 36	J12-S2	J20-M2	+28 VDC IMU
	BB 48	J12-S2	J12-S4	+28 VDC IMU
*	BB 47	J12-S3	J12-S1	+28 VDC IMU
*	BB 48	J12-S4	J12-S2	+28 VDC IMU
*	BB 6	J12-S5	J11-S4	+28 VDC IMU
	BB 32	J12-S6	J20-P5	+28 VDC OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC 95R	J13-A1	TB1-F11	X PIP ERROR HI	
CC 98R	J13-A3	TB1-D11	Y PIP ERROR HI	
BB 62	J13-A6	J14-A6	X GYRO DC DIFF AMP OUTPUT	
CC 95W	J13-B1	TB1-F10	X PIP ERROR LO	
CC 98W	J13-B3	TB1-D10	Y PIP ERROR LO	
CC104	J13-C1	TB1-D51	TRAY 3 THERMISTER HI	
BB 73	J13-C2	J14-B2	THERMISTER LO	
* BB 55	J13-C2	J12-C2	THERMISTER LO	
BB 64	J13-C6	J14-H5	STRUCTURE GROUND	
CC342	J13-C6	E 1	STRUCTURE GROUND	
* BB 42	J13-C6	J12-K3	STRUCTURE GROUND	
BB 69	J13-D1	J15-L4	P X	
CC 97	J13-D2	TB1-B40	X PIP ERROR MONITOR	
* BB 44	J13-D2	J12-A5	X PIP ERROR MONITOR	
BB 71	J13-D3	J15-L3	P Y	
CC101L	J13-D6	TB1-F23	X GYRO TORQUE +	
BB 70	J13-F1	J15-M4	N X	
CC100	J13-F2	TB1-A40	Y PIP ERROR MONITOR	
* BB 45	J13-F2	J12-A6	Y PIP ERROR MONITOR	
BB 72	J13-F3	J15-M3	N Y	
CC101W	J13-F6	TB1-F22	X GYRO TORQUE RET	
CC101R	J13-G6	TB1-F21	X GYRO TORQUE -	
CC 96L	J13-H1	TB1-K23	X PIP TORQUE +	
BB 63L	J13-H6	J14-G1	X GYRO CAL DUMMY	
CC 96W	J13-K1	TB1-K22	X PIP TORQUE RET	
BB 63R	J13-K6	J14-H1	X GYRO TERNARY CUR SW TORQUE +	
CC 96R	J13-L1	TB1-K21	X PIP TORQUE -	
CC 99L	J13-L3	TB1-H23	Y PIP TORQUE +	
BB 63W	J13-L6	J14-K1	X GYRO TERNARY CUR SW TORQUE -	
CC 99W	J13-M3	TB1-H22	Y PIP TORQUE RET	
CC 99R	J13-N3	TB1-H21	Y PIP TORQUE -	
BB 60	J13-N5	J14-H3	PIPA INTERROGATE PULSE	
CC 11R	J13-N5	J23- 7	PIPA INTERROGATE PULSE	139S
BB 61	J13-N6	J14-K3	PIPA SWITCHING PULSE	
CC 12R	J13-N6	J23- 2	PIPA SWITCHING PULSE	140S
BB 68	J13-P6	J14-P6	-28 VDC	
* BB 13	J13-P6	J11-N6	-28 VDC	
BB 67W	J13-R1	J14-R2	+12, +32, +120 VDC RET GYRO	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
BB 66W	J13-R2	J14-R1	+32, +120 VDC RET PIP
BB 74	J13-R6	J14-R6	0 VDC IMU
CC102	J13-R6	E 5	0 VDC IMU
* BB 59	J13-R6	J12-B5	0 VDC IMU
BB 67R	J13-S1	J14-S2	+120 VDC GYRO
BB 66R	J13-S2	J14-S1	+120 VDC PIP
BB 67L	J13-S3	J14-S5	+32 VDC GYRO
BB 66L	J13-S4	J14-S4	+32 VDC PIP
BB 65	J13-S6	J14-S6	+28 VDC IMU
CC103	J13-S6	TB1-G 6	+28 VDC IMU

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REV LTR

SHEET 32

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC105R	J14-A1	TB1-C11	Z PIP ERROR HI	
CC105W	J14-A2	TB1-C10	Z PIP ERROR LO	
* BB 62	J14-A6	J13-A6	X GYRO DC DIFF AMP OUTPUT	
CC111	J14-B1	TB1-D52	TRAY 4 THERMISTER HI	
CC112	J14-B2	TB1-F52	THERMISTER LO	
* BB 73	J14-B2	J13-C2	THERMISTER LO	
CC 13R	J14-D1	J23- 3	+ DX GYRO RATE	142R
CC 14R	J14-D2	J23- 11	- DX GYRO RATE	143R
CC 15R	J14-D3	J23- 55	+ DY GYRO RATE	144R
CC 16R	J14-D4	J23- 32	- DY GYRO RATE	145R
CC 17R	J14-D5	J23- 15	+ DZ GYRO RATE	146R
CC 18R	J14-D6	J23- 14	- DZ GYRO RATE	147R
BB 75	J14-F6	J15-L2	P Z	
* BB 63L	J14-G1	J13-H6	X GYRO CAL DUMMY	
BB 76	J14-G6	J15-M2	N Z	
* BB 63R	J14-H1	J13-K6	X GYRO TERNARY CUR SW TORQUE +	
* BB 60	J14-H3	J13-N5	PIPA INTERROGATE PULSE	
BB 77	J14-H5	J15-K3	STRUCTURE GROUND	
* BB 64	J14-H5	J13-C6	STRUCTURE GROUND	
CC107	J14-H6	TB1-A41	Z PIP ERROR MONITOR	
* BB 29	J14-H6	J12-B6	Z PIP ERROR MONITOR	
* BB 63W	J14-K1	J13-L6	X GYRO TERNARY CUR SW TORQUE -	
* BB 61	J14-K3	J13-N6	PIPA SWITCHING PULSE	
CC 19R	J14-K4	J23- 25	GYRO RESET PULSE	148R
CC109L	J14-L6	TB1-C23	Z GYRO TORQUE +	
CC108L	J14-M1	TB1-D23	Y GYRO TORQUE +	
CC108R	J14-M2	TB1-D21	Y GYRO TORQUE -	
CC108W	J14-M3	TB1-D22	Y GYRO TORQUE RET	
CC109R	J14-M6	TB1-C21	Z GYRO TORQUE -	
CC109W	J14-N6	TB1-C22	Z GYRO TORQUE RET	
CC106L	J14-P1	TB1-G23	Z PIP TORQUE +	
CC106R	J14-P2	TB1-G21	Z PIP TORQUE -	
CC106W	J14-P3	TB1-G22	Z PIP TORQUE RET	
* BB 68	J14-P6	J13-P6	-28 VDC	
BB 79W	J14-R1	J17-L4	+32, +120 VDC RET PIP	
* BB 66W	J14-R1	J13-R2	+32, +120 VDC RET PIP	
* BB 43W	J14-R2	J12-K6	+12, +32, +120 VDC RET GYRO	
* BB 67W	J14-R2	J13-R1	+12, +32, +120 VDC RET GYRO	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC110	J14-R6	E 6	0 VDC IMU
CC113	J14-R6	TB1-H25	0 VDC IMU
* BB 74	J14-R6	J13-R6	0 VDC IMU
BB 79R	J14-S1	J17-L5	+120 VDC PIP
* BB 66R	J14-S1	J13-S2	+120 VDC PIP
* BB 43R	J14-S2	J12-L6	+120 VDC GYRO
* BB 67R	J14-S2	J13-S1	+120 VDC GYRO
* BB 43L	J14-S3	J12-M6	+12 VDC GYRO
BB 79L	J14-S4	J17-T5	+32 VDC PIP
* BB 66L	J14-S4	J13-S4	+32 VDC PIP
* BB 43K	J14-S5	J12-M5	+32 VDC GYRO
* BB 67L	J14-S5	J13-S3	+32 VDC GYRO
BB 78	J14-S6	J15-S2	+28 VDC IMU
* BB 65	J14-S6	J13-S6	+28 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC130W	J15-A1	TB1-F28	Z GYRO ERROR SIG	
	CC 38W	J15-A3	J24- 30	MANUAL CDU MODE INDICATION TO AGC	160
	BB 82R	J15-A4	J16-B2	IG DAC MDA SIG HI	
	BB 82W	J15-A5	J16-B1	IG DAC MDA SIG LO	
	CC120	J15-A5	E 8	IG DAC MDA SIG LO	
	CC123	J15-A5	E 9	IG DAC MDA SIG LO	
	BB 83R	J15-A6	J16-B4	MG DAC MDA SIG HI	
	BB 83W	J15-A7	J16-B3	MG DAC MDA SIG LO	
	CC121	J15-A7	E 10	MG DAC MDA SIG LO	
	CC124	J15-A7	E 11	MG DAC MDA SIG LO	
	BB 84R	J15-A8	J16-B6	OG DAC MDA SIG HI	
	BB 84W	J15-A9	J16-B5	OG DAC MDA SIG LO	
	CC122	J15-A9	E 12	OG DAC MDA SIG LO	
	CC125	J15-A9	E 13	OG DAC MDA SIG LO	
	CC130L	J15-B1	TB1-G28	X GYRO ERROR SIG	
	CC130R	J15-B2	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO	
	BB 80	J15-B3	J16-B7	AGC COMMON (ISS)	
	CC 26W	J15-B4	J24- 41	IG ENCODER + DELTA THETA	120S
	CC 32W	J15-B5	J23- 42	IG CDU + DELTA THETA COMMAND	128S
	CC 28W	J15-B6	J24- 19	MG ENCODER + DELTA THETA	122S
	CC 34W	J15-B7	J23- 35	MG CDU + DELTA THETA COMMAND	130S
	CC 30W	J15-B8	J24- 39	OG ENCODER + DELTA THETA	118S
	CC 36W	J15-B9	J23- 21	OG CDU + DELTA THETA COMMAND	126S
	CC117W	J15-C1	TB1-F34	IG CDU ENCODER COMMON	
	CC117L	J15-C2	TB1-F35	IG CDU ENCODER PHASE 1	
	CC119R	J15-C3	TB1-C33	OG CDU ENCODER PHASE 2	
	CC 27R	J15-C4	J24- 67	IG ENCODER - DELTA THETA	121S
	CC 33R	J15-C5	J23- 43	IG CDU - DELTA THETA COMMAND	129S
	CC 29R	J15-C6	J24- 8	MG ENCODER - DELTA THETA	123S
	CC 35R	J15-C7	J23- 18	MG CDU - DELTA THETA COMMAND	131S
	CC 31R	J15-C8	J24- 40	OG ENCODER - DELTA THETA	119S
	CC 37R	J15-C9	J23- 22	OG CDU - DELTA THETA COMMAND	127S
	CC117R	J15-D1	TB1-F33	IG CDU ENCODER PHASE 2	
	CC118R	J15-D2	TB1-D33	MG CDU ENCODER PHASE 2	
	CC119W	J15-D3	TB1-C34	OG CDU ENCODER COMMON	
	CC119L	J15-D4	TB1-C35	OG CDU ENCODER PHASE 1	
	CC126R	J15-D7	TB1-K15	SIN AIG 16X S4	
	CC126W	J15-D8	TB1-K14	SIN AIG 16X S2	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC127L	J15-D9	TB1-K11	SIN AMG 16X TO CDU	
	CC118L	J15-F1	TB1-D35	MG CDU ENCODER PHASE 1	
	CC118W	J15-F2	TB1-D34	MG CDU ENCODER COMMON	
	CC126L	J15-F7	TB1-K16	SIN AIG 16X TO CDU	
	CC127W	J15-F8	TB1-K 9	SIN AMG 16X S2	
	CC127R	J15-F9	TB1-K10	SIN AMG 16X S4	
	BB 85W	J15-H4	J16-L1	FINE ALIGN RELAY CONTROL	
	CC128R	J15-H4	TB1-H 5	FINE ALIGN RELAY CONTROL	
	BB 88	J15-K3	J16-N4	STRUCTURE GROUND	
	CC132	J15-K3	TB1-B49	STRUCTURE GROUND	
*	BB 77	J15-K3	J14-H5	STRUCTURE GROUND	
	CC 24R	J15-K4	J24- 33	- DELTA V Z	137R
	CC 25R	J15-K5	J24- 56	+ DELTA V Z	136R
	CC 23R	J15-K6	J24- 44	- DELTA V Y	135R
*	BB 75	J15-L2	J14-F6	P Z	
*	BB 71	J15-L3	J13-D3	P Y	
*	BB 69	J15-L4	J13-D1	P X	
	CC114	J15-L5	E 14	COMPUTER RET	
	CC115	J15-L5	E 15	COMPUTER RET	
	CC116	J15-L5	E 16	COMPUTER RET	
	CC 22R	J15-L6	J24- 24	+ DELTA V Y	134R
*	BB 76	J15-M2	J14-G6	N Z	
*	BB 72	J15-M3	J13-F3	N Y	
*	BB 70	J15-M4	J13-F1	N X	
	CC 20R	J15-M5	J24- 2	+ DELTA V X	132R
	CC 21R	J15-M6	J24- 10	- DELTA V X	133R
*	BB 31W	J15-N5	J12-P5	25.6 KC LO IMU	
*	BB 31R	J15-N6	J12-N5	25.6 KC HI IMU	
	BB 86W	J15-P5	J16-S3	800 CPS 28 V 1 PCT LO IMU	
*	BB 30W	J15-P5	J12-P3	800 CPS 28 V 1 PCT LO IMU	
	BB 86R	J15-P6	J16-S4	800 CPS 28 V 1 PCT HI IMU	
*	BB 30R	J15-P6	J12-N3	800 CPS 28 V 1 PCT HI IMU	
	CC131	J15-R2	TB1-K26	0 VDC IMU	
	CC129	J15-R6	TB1-B53	+28 VDC CDU NOT LOCK	
	BB 85R	J15-S1	J16-L2	ZERO ENCODER RELAY CONTROL	
	CC128L	J15-S1	TB1-K 5	ZERO ENCODER RELAY CONTROL	
	BB 81	J15-S2	J20-L1	+28 VDC IMU	
*	BB 78	J15-S2	J14-S6	+28 VDC IMU	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC128W	J15-S3	TB1-G 5	LOCK CDU RELAY CONTROL
	BB 87	J15-S6	J16-S2	+28 VDC IMU
*	BB 1	J15-S6	J11-S4	+28 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC136R	J16-A1	TB1-F29	IG CDU MDA TACH SIG
	CC136W	J16-A2	TB1-F31	IG CDU MDA SLEW SIG
	CC141R	J16-A3	TB1-D29	MG CDU MDA TACH SIG
	CC141W	J16-A4	TB1-D31	MG CDU MDA SLEW SIG
	CC153R	J16-A5	TB1-C29	OG CDU MDA TACH SIG
	CC153W	J16-A6	TB1-C31	OG CDU MDA SLEW SIG
	CC 41W	J16-A7	J24- 5	ZERO ENCODER MODE INDICATION TO AGC 158
	BB 98R	J16-A8	J22- 12	SIN AOG 1X S2
	CC144W	J16-A8	TB1-D14	SIN AOG 1X S2
	BB 98W	J16-A9	J22- 26	SIN AOG 1X S4
	CC144R	J16-A9	TB1-D15	SIN AOG 1X S4
	CC136L	J16-B1	TB1-F30	IG CDU MDA INPUT RET
*	BB 82W	J16-B1	J15-A5	IG DAC MDA SIG LO
*	CC136A	J16-B1	SHLD CC136	IG CDU MDA INPUT RET
*	BB 82R	J16-B2	J15-A4	IG DAC MDA SIG HI
	CC141L	J16-B3	TB1-D30	MG CDU MDA INPUT RET
*	BB 83W	J16-B3	J15-A7	MG DAC MDA SIG LO
*	CC141A	J16-B3	SHLD CC141	MG CDU MDA INPUT RET
*	BB 83R	J16-B4	J15-A6	MG DAC MDA SIG HI
	CC153L	J16-B5	TB1-C30	OG CDU MDA INPUT RET
*	BB 84W	J16-B5	J15-A9	OG DAC MDA SIG LO
*	CC153A	J16-B5	SHLD CC153	OG CDU MDA INPUT RET
*	BB 84R	J16-B6	J15-A8	OG DAC MDA SIG HI
	CC173W	J16-B7	TB1-C56	AGC COMMON (ISS)
*	BB 80	J16-B7	J15-B3	AGC COMMON (ISS)
	BB 99W	J16-B8	J22- 4	COS AOG 1X S3
	CC143W	J16-B8	TB1-C14	COS AOG 1X S3
	CC144L	J16-B9	TB1-D16	SIN AOG 1X TO CDU
	CC135W	J16-C1	TB1-K31	IG CDU 16X ERROR SIG
	CC134W	J16-C2	TB1-K33	IG CDU 1X ERROR SIG
	CC140W	J16-C3	TB1-H31	MG CDU 16X ERROR SIG
	CC139W	J16-C4	TB1-H33	MG CDU 1X ERROR SIG
	CC147R	J16-C5	TB1-G31	OG CDU 16X ERROR SIG
	CC146W	J16-C6	TB1-G33	OG CDU 1X ERROR SIG
	CC158	J16-C7	TB1-G29	OG CDU 16X RSVR LOAD
	BB 99R	J16-C8	J22- 13	COS AOG 1X S1
	CC143R	J16-C8	TB1-C15	COS AOG 1X S1
	CC143L	J16-C9	TB1-C16	COS AOG 1X TO CDU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC133W	J16-D1	TB1-A31	IG CDU 1/2X ERROR SIG	
	CC134R	J16-D2	TB1-K34	IG CDU ERROR SIG RET	
	CC135R	J16-D2	TB1-K30	IG CDU ERROR SIG RET	
	CC138W	J16-D3	TB1-A30	MG CDU 1/2X ERROR SIG	
	CC139R	J16-D4	TB1-H34	MG CDU ERROR SIG RET	
	CC140R	J16-D4	TB1-H30	MG CDU ERROR SIG RET	
	CC145W	J16-D5	TB1-A29	OG CDU 1/2X ERROR SIG	
	CC146R	J16-D6	TB1-G34	OG CDU ERROR SIG RET	
	CC147W	J16-D6	TB1-G30	OG CDU ERROR SIG RET	
	CC148R	J16-D7	TB1-F14	COS AOG 16X S1	
	CC152W	J16-D8	TB1-G14	SIN AOG 16X S2	
	CC152R	J16-D9	TB1-G15	SIN AOG 16X S4	
	CC133R	J16-F1	TB1-B31	IG CDU ERROR SIG RET	
	CC155	J16-F2	TB1-K35	IG CDU 1X RSVR LOAD	
	CC138R	J16-F3	TB1-B30	MG CDU ERROR SIG RET	
	CC156	J16-F4	TB1-H35	MG CDU 1X RSVR LOAD	
	CC145R	J16-F5	TB1-B29	OG CDU ERROR SIG RET	
	CC157	J16-F6	TB1-G35	OG CDU 1X RSVR LOAD	
	CC148W	J16-F7	TB1-F15	COS AOG 16X S3	
	CC148L	J16-F8	TB1-F16	COS AOG 16X TO CDU	
	CC152L	J16-F9	TB1-G16	SIN AOG 16X TO CDU	
	CC163W	J16-G1	TB1-H15	COS AIG 16X S3	
	CC163L	J16-G2	TB1-H16	COS AIG 16X TO CDU	
	CC164W	J16-G3	TB1-H10	COS AMG 16X S3	
	CC164L	J16-G4	TB1-H11	COS AMG 16X TO CDU	
	CC163R	J16-H1	TB1-H14	COS AIG 16X S1	
	CC165	J16-H2	TB1-B54	CONDITION LAMP DIMMER BASE	
	CC164R	J16-H3	TB1-H 9	COS AMG 16X S1	
	CC166	J16-H4	TB1-B25	IMU TEMP CONT FAIL LIGHT LO	
	CC167	J16-K1	TB1-B23	CONDITION LAMP DIMMER EMITTER	
	CC168	J16-K2	TB1-B55	CONDITION LAMP DIMMER COLLECTOR	
	CC171	J16-K3	TB1-A25	IMU DELAY LIGHT LO	
	CC169	J16-K4	TB1-D25	AGC POWER SUPPLY FAIL LIGHT LO	
	CC170	J16-K5	TB1-C25	G+N ERROR LIGHT LO	
*	BB 85W	J16-L1	J15-H4	FINE ALIGN RELAY CONTROL	
*	BB 85R	J16-L2	J15-S1	ZERO ENCODER RELAY CONTROL	
	BB 94W	J16-L3	J12-F1	COMPUTER 800 PPS SYNC RET	
	CC 39W	J16-L3	J23- 27	COMPUTER 800 PPS SYNC RET	150R

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC 40W	J16-L3	J23- 13	COMPUTER 800 PPS SYNC RET	149R
	BB 94R	J16-L4	J12-D1	COMPUTER 800 PPS OUT OF PHASE SYNC	
	CC 39R	J16-L4	J23- 12	COMPUTER 800 PPS OUT OF PHASE SYNC	150S
	CC159W	J16-M1	TB1-H 3	ENTRY RELAY CONTROL	
	CC175K	J16-M2	TB1-C58	IG CDU FAILURE INDICATION	
*	BB 37L	J16-M2	J12-H5	IG CDU FAILURE INDICATION	
	CC175L	J16-M3	TB1-C57	MG CDU FAILURE INDICATION	
*	BB 37R	J16-M3	J12-H6	MG CDU FAILURE INDICATION	
	BB 94L	J16-M4	J12-D2	COMPUTER 800 PPS IN PHASE SYNC	
	CC 40R	J16-M4	J23- 4	COMPUTER 800 PPS IN PHASE SYNC	149S
	CC154W	J16-N1	TB1-G19	OG CDU MDA OUTPUT	
	CC154R	J16-N2	TB1-G18	OG CDU MDA OUTPUT	
	CC175R	J16-N3	TB1-D57	OG CDU FAILURE INDICATION	
*	BB 37W	J16-N3	J12-G6	OG CDU FAILURE INDICATION	
	BB 95	J16-N4	J17-L6	STRUCTURE GROUND	
	CC180	J16-N4	TB1-A60	STRUCTURE GROUND	
*	BB 88	J16-N4	J15-K3	STRUCTURE GROUND	
	BB 89W	J16-N5	J18-S1	800 CPS 28 V 1 PCT LO OPTICS	
	CC161R	J16-N5	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS	
	CC172R	J16-N5	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS	
	BB 92W	J16-N6	J20-H5	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
	CC162W	J16-N6	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
	CC174W	J16-N6	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
	CC137R	J16-P1	TB1-K19	IG CDU MDA OUTPUT	
	CC176	J16-P2	TB1-D59	0 VDC IMU	
*	CC 39A	J16-P2	SHLD CC 39	0 VDC IMU	
*	CC 40A	J16-P2	SHLD CC 40	0 VDC IMU	
	CC142R	J16-P3	TB1-H18	MG CDU MDA OUTPUT	
	CC160W	J16-P4	TB1-B 5	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU	
	BB 89R	J16-P5	J18-T1	800 CPS 28 V 1 PCT HI OPTICS	
	CC161W	J16-P5	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS	
	CC172W	J16-P5	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS	
	BB 92R	J16-P6	J20-H6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
	CC162R	J16-P6	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
	CC174R	J16-P6	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
	CC137W	J16-R1	TB1-K18	IG CDU MDA OUTPUT	
	CC175W	J16-R2	TB1-D58	0 VDC IMU	
	CC177	J16-R2	TB1-F75	0 VDC IMU	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	BB 56	J16-R2	J12-G5	0 VDC IMU
	CC142W	J16-R3	TB1-H19	MG CDU MDA OUTPUT
	CC160K	J16-R4	TB1-B 6	ZEROING RSVR 800 CPS
	CC178	J16-R5	TB1-K53	0 VDC OPTICS
	CC179	J16-R6	TB1-G53	0 VDC OPTICS
	CC149	J16-S1	TB1-C53	+28 VDC IMU FOR IG MDA
	BB 93	J16-S2	J20-L2	+28 VDC IMU
*	BB 87	J16-S2	J15-S6	+28 VDC IMU
	BB 97W	J16-S3	J20-F8	800 CPS 28 V 1 PCT LO IMU
	CC160R	J16-S3	TB1-B 7	800 CPS 28 V 1 PCT LO IMU
*	BB 86W	J16-S3	J15-P5	800 CPS 28 V 1 PCT LO IMU
	BB 97R	J16-S4	J20-F9	800 CPS 28 V 1 PCT HI IMU
	CC160L	J16-S4	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
*	BB 86R	J16-S4	J15-P6	800 CPS 28 V 1 PCT HI IMU
	BB 90	J16-S5	J20-P5	+28 VDC OPTICS
	BB 96	J16-S5	J16-S6	+28 VDC OPTICS
	BB 91	J16-S6	J20-P6	+28 VDC OPTICS
*	BB 96	J16-S6	J16-S5	+28 VDC OPTICS
	CC150	J16-T1	TB1-C52	+28 VDC IMU FOR MG MDA
	CC151	J16-T2	TB1-C51	+28 VDC IMU FOR OG MDA

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	BB 10W	J17-A1	J11-C3	OG CDU ATTITUDE STEERING ERROR
	CC204W	J17-A2	TB1-G31	OG CDU 16X ERROR SIG
	CC 47R	J17-A3	J22- 83	ROLL ERROR BODY OFFSET AXIS HI
	CC 43R	J17-A4	J22- 74	ROLL ERROR BODY AXIS HI
	CC202L	J17-A6	TB1-B35	TRUNNION CDU ENCODER PHASE 1
	CC202W	J17-A7	TB1-B34	TRUNNION CDU ENCODER COMMON
	CC202R	J17-A8	TB1-B33	TRUNNION CDU ENCODER PHASE 2
	BB112	J17-A9	J17-B9	TRUNNION ENCODER SCALE SELECT
*	BB 10R	J17-B1	J11-B3	OG CDU ERROR SIG RET
	CC204R	J17-B2	TB1-G30	OG CDU ERROR SIG RET
	CC 47W	J17-B3	J22- 82	ROLL ERROR BODY OFFSET AXIS LO
	CC 43W	J17-B4	J22- 75	ROLL ERROR BODY AXIS LO
	CC191W	J17-B5	TB1-H64	IRIG TEMP CONT SENSOR RET
	CC191R	J17-B6	TB1-H63	IRIG TEMP CONT SENSOR HI
	CC184W	J17-B7	TB1-K59	IMU TEMP CONT -5 DEG GAIN CHECK
	CC184L	J17-B8	TB1-K61	IRIG ZERO DEVIATION CHECK
*	BB112	J17-B9	J17-A9	TRUNNION ENCODER SCALE SELECT
	CC 48W	J17-C1	J22- 79	PITCH ERROR BODY AND BODY OFFSET AXIS LO
	CC201W	J17-C1	TB1-G13	PITCH ERROR BODY AND BODY OFFSET AXIS LO
	CC201R	J17-C2	TB1-F13	PITCH-YAW RSVR S4
	CC 45R	J17-C3	J22- 53	YAW ERROR BODY OFFSET AXIS HI
	CC 44R	J17-C4	J22- 49	YAW ERROR BODY AXIS HI
	CC198W	J17-C5	TB1-K64	IRIG TEMP IND SENSOR RET
	CC198R	J17-C6	TB1-K63	IRIG TEMP IND SENSOR HI
	CC184K	J17-C7	TB1-K62	IRIG TEMP BRIDGE AMP PIN 6
	CC184R	J17-C8	TB1-K60	IRIG TEMP GAIN SWITCH NC
	CC203L	J17-C9	TB1-A35	SHAFT CDU ENCODER PHASE 1
	CC 48R	J17-D1	J22- 78	PITCH ERROR BODY AND BODY OFFSET AXIS HI
	CC182R	J17-D2	TB1-H13	PITCH YAW RSVR S3
	CC 45W	J17-D3	J22- 81	YAW ERROR BODY OFFSET AXIS LO
	CC182W	J17-D3	TB1-K13	YAW ERROR BODY OFFSET AXIS LO
	CC 44W	J17-D4	J22- 76	YAW ERROR BODY AXIS LO
	CC185W	J17-D5	TB1-G61	ACCEL TEMP IND SENSOR RET
	CC185L	J17-D6	TB1-G64	IMU IMU TEMP CONT +5 DEG GAIN CHECK
	CC185R	J17-D7	TB1-G63	ACCEL ZERO DEVIATION CHECK
	CC203W	J17-D9	TB1-A34	SHAFT CDU ENCODER COMMON
	CC205	J17-F2	TB1-C64	TEMPERATURE CONTROL SIG LO
	CC196	J17-F3	TB1-B64	HTR CURRENT (TELEMETRY)

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC195	J17-F4	TB1-D64	IRIG TEMP (TELEMETRY)
CC194	J17-F5	TB1-F64	ACCEL TEMP (TELEMETRY)
CC193	J17-F6	TB1-A64	BLOWER CURRENT SENSOR (TELEMETRY)
CC185K	J17-F7	TB1-G62	ACCEL BRIDGE AMP PIN 6
CC203R	J17-F9	TB1-A33	SHAFT CDU ENCODER PHASE 2
CC188	J17-G1	TB1-F59	IMU TEMP ALARM AMP PIN 14
CC187R	J17-G2	TB1-F60	IMU TEMP ALARM AMP PIN 15
BB107L	J17-G4	J18-G4	SHAFT ENCODER + DELTA THETA OUTPUT
CC 50R	J17-G4	J24- 59	SHAFT ENCODER + DELTA THETA OUTPUT 108S
BB101L	J17-G6	J18-G6	TRUNNION ENCODER + DELTA THETA OUTPUT
CC 42R	J17-G6	J24- 61	TRUNNION ENCODER + DELTA THETA OUT 110S
CC187L	J17-H1	TB1-F61	IMU TEMP ALARM BIAS RESISTOR
CC187W	J17-H2	TB1-F62	IMU TEMP ALARM AMP PIN 5
BB107W	J17-H4	J18-H4	SHAFT ENCODER DELTA THETA OUT COMMON
CC 46W	J17-H4	J24- 35	SHAFT ENCODER DELTA THETA OUT COMMON109R
CC 50W	J17-H4	J24- 58	SHAFT ENCODER DELTA THETA OUT COMMON108R
BB101W	J17-H6	J18-H6	TRUNNION ENCODER DELTA THETA OUT COM
CC 42W	J17-H6	J24- 60	TRUNNION ENCODER DELTA THETA OUT COM110R
CC 49W	J17-H6	J24- 37	TRUNNION ENCODER DELTA THETA OUT COM111R
BB107R	J17-K4	J18-K4	SHAFT ENCODER - DELTA THETA OUTPUT
CC 46R	J17-K4	J24- 36	SHAFT ENCODER - DELTA THETA OUTPUT 109S
BB101R	J17-K6	J18-K6	TRUNNION ENCODER - DELTA THETA OUTPUT
CC 49R	J17-K6	J24- 38	TRUNNION ENCODER - DELTA THETA OUT 111S
CC189W	J17-L1	TB1-D63	IMU TEMP CONT K2 PIN 6
BB109	J17-L3	J22- 38	IMU TEMP LIGHT (MAIN PANEL)
CC206W	J17-L4	TB1-B63	+32, +120 VDC RET PIP
* BB 79W	J17-L4	J14-R1	+32, +120 VDC RET PIP
CC206R	J17-L5	TB1-A63	+120 VDC PIP
* BB 79R	J17-L5	J14-S1	+120 VDC PIP
BB100	J17-L6	J18-P4	STRUCTURE GROUND
CC207	J17-L6	TB1-G70	STRUCTURE GROUND
* BB 95	J17-L6	J16-N4	STRUCTURE GROUND
CC189R	J17-M1	TB1-F63	TEMPERATURE CONTROLLER 0 VDC IMU
CC199	J17-M2	TB1-H61	IMU TEMP SENSOR COM
BB108	J17-M3	J22- 39	0 VDC SPACECRAFT
CC200	J17-M3	TB1-D70	0 VDC SPACECRAFT
* BB 52	J17-M3	J12-F3	0 VDC SPACECRAFT
CC190W	J17-M4	TB1-C60	IMU EMERGENCY HTR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC186W	J17-M5	TB1-H59	IMU TEMP CONT K1 PIN 3
CC186R	J17-M6	TB1-H60	IMU TEMP CONT AMP PIN 5
CC192W	J17-N1	TB1-D61	IMU CONTROL HTR LO
* BB 11L	J17-N2	J11-P1	3200 CPS 20 V HI
* BB 51W	J17-N3	J12-N6	25.6 KC LO OPTICS
CC190R	J17-N4	TB1-C61	EMERGENCY HTR LO-OPER AND STBY
CC186L	J17-N5	TB1-G60	IMU TEMP CONT K2 PIN 5
CC186K	J17-N6	TB1-G59	IMU HTR CURRENT AMP PIN 5
CC192R	J17-P1	TB1-D60	IMU CONTROL HTR HI
* BB 11R	J17-P2	J11-N1	3200 CPS 20 V CT
* BB 51R	J17-P3	J12-P6	25.6 KC HI OPTICS
CC183R	J17-P4	TB1-C77	800 CPS 28 V 5 PCT HI TO BLOWERS
CC197	J17-P5	TB1-B26	IMU TEMP CONT FAIL LIGHT HI
CC181	J17-P6	TB1-D71	CONDITION LAMP TEST
* BB 12	J17-R1	J11-S3	+28 VDC STBY TO 3200 CPS POWER SUPPLY
* BB 11W	J17-R2	J11-N2	3200 CPS 20 V LO
CC 51R	J17-R3	J23- 28	COMPUTER 12.8 KPPS SYNC 155S
* BB 50W	J17-R3	J12-P4	COMPUTER 12.8 KPPS SYNC
CC183W	J17-R4	TB1-C75	800 CPS 28 V 5 PCT L-90 DEG HI IMU
BB106	J17-R5	J20-M5	+28 VDC MDV
CC208	J17-R6	TB1-F76	0 VDC OPTICS
BB113	J17-S1	J17-S2	0 VDC IMU
CC209	J17-S1	TB1-D75	0 VDC IMU
CC210	J17-S2	TB1-D74	0 VDC IMU
* BB113	J17-S2	J17-S1	0 VDC IMU
CC 51W	J17-S3	J23- 49	0 VDC IMU 155R
CC211	J17-S3	TB1-B69	0 VDC IMU
BB 50B	J17-S4	SHLD BB 50	0 VDC IMU
CC212	J17-S4	TB1-B70	0 VDC IMU
* CC 51A	J17-S4	SHLD CC 51	0 VDC IMU
CC213	J17-S6	TB1-D76	0 VDC OPTICS
BB104	J17-T1	J20-R3	+28 VDC STBY
BB110	J17-T1	J17-T2	+28 VDC STBY
BB105	J17-T2	J20-R4	+28 VDC STBY
* BB110	J17-T2	J17-T1	+28 VDC STBY
BB103	J17-T3	J20-M2	+28 VDC IMU
BB102	J17-T4	J20-M1	+28 VDC IMU
CC206L	J17-T5	TB1-C63	+32 VDC PIP

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* BB 79L	J17-T5	J14-S4	+32 VDC PIP
BB111	J17-T6	J20-N6	+28 VDC OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC218W	J18-A1	TB1-D46	SXT SHAFT 1/2X RSVR S1
CC219W	J18-A2	TB1-B46	SXT SHAFT 16X RSVR S4
CC219R	J18-A3	TB1-B45	SXT SHAFT 16X RSVR S2
CC237R	J18-A5	TB1-K37	SCT SHAFT TACH HI
CC239R	J18-A7	TB1-H37	SXT SHAFT TACH HI
CC233R	J18-A9	TB1-D37	SXT TRUNNION TACH HI
CC218R	J18-B1	TB1-D45	SXT SHAFT 1/2X RSVR S3
CC237W	J18-B5	TB1-K38	SCT SHAFT TACH LO
CC239W	J18-B7	TB1-H38	SXT SHAFT TACH LO
CC233W	J18-B9	TB1-D38	SXT TRUNNION TACH LO
CC234R	J18-C1	TB1-B43	SXT TRUNNION 64X RSVR S2
CC234W	J18-C2	TB1-B44	SXT TRUNNION 64X RSVR S4
CC235R	J18-C5	TB1-K41	SCT SHAFT 1X RSVR S2
CC226	J18-C7	TB1-G55	TRACKER X DRIVE BUFFERED HI
CC227	J18-C8	TB1-G54	TRACKER Y DRIVE BUFFERED HI
CC228	J18-C9	TB1-G56	TRACKER PREAMP OUTPUT BUFFERED HI
CC230W	J18-D1	TB1-C43	TRUNNION CDU 1/4X RSVR S4
CC221W	J18-D3	TB1-G44	SCT TRUNNION 1X RSVR P1
CC221R	J18-D4	TB1-G43	SCT TRUNNION 1X RSVR P3
CC235W	J18-D5	TB1-K40	SCT SHAFT 1X RSVR S4
BB120	J18-D7	J18-D8	0 VDC OPTICS
BB122	J18-D7	J18-L1	0 VDC OPTICS
BB121	J18-D8	J18-D9	0 VDC OPTICS
* BB120	J18-D8	J18-D7	0 VDC OPTICS
* BB121	J18-D9	J18-D8	0 VDC OPTICS
CC230R	J18-F1	TB1-C44	TRUNNION CDU 1/4X RSVR S2
CC229W	J18-F2	TB1-D44	TRUNNION CDU 1/4X RSVR S1
CC229R	J18-F3	TB1-D43	TRUNNION CDU 1/4X RSVR S3
CC231R	J18-F4	TB1-F44	SCT TRUNNION 1X RSVR P2
CC231W	J18-F5	TB1-F43	SCT TRUNNION 1X RSVR P4
BB118R	J18-G1	J19-G6	SXT SHAFT MDA INPUT HI
BB118W	J18-G2	J19-G5	SXT SHAFT MDA INPUT LO
CC 55R	J18-G3	J23- 37	SHAFT + DELTA THETA COMMAND 114S
* BB107L	J18-G4	J17-G4	SHAFT ENCODER + DELTA THETA OUTPUT
CC 54R	J18-G5	J23- 60	TRUNNION - DELTA THETA COMMAND 117S
* BB101L	J18-G6	J17-G6	TRUNNION ENCODER + DELTA THETA OUTPUT
BB119W	J18-H1	J19-H6	SXT TRUNNION MDA INPUT LO
CC 53W	J18-H3	J23- 19	SHAFT DELTA THETA COMMAND COMMON 115R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC 55W	J18-H3	J23- 36	SHAFT DELTA THETA COMMAND COMMON 114R
* BB107W	J18-H4	J17-H4	SHAFT ENCODER DELTA THETA OUT COMMON
CC 52W	J18-H5	J23- 88	TRUNNION DELTA THETA COMMAND COMMON 116R
CC 54W	J18-H5	J23- 59	TRUNNION DELTA THETA COMMAND COMMON 117R
* BB101W	J18-H6	J17-H6	TRUNNION ENCODER DELTA THETA OUT COM
BB119R	J18-K1	J19-K6	SXT TRUNNION MDA INPUT HI
CC 53R	J18-K3	J23- 20	SHAFT - DELTA THETA COMMAND 115S
* BB107R	J18-K4	J17-K4	SHAFT ENCODER - DELTA THETA OUTPUT
CC 52R	J18-K5	J23- 89	TRUNNION + DELTA THETA COMMAND 116S
* BB101R	J18-K6	J17-K6	TRUNNION ENCODER - DELTA THETA OUTPUT
BB123	J18-L1	J18-L2	0 VDC OPTICS
BB131	J18-L1	J19-L6	0 VDC OPTICS
* BB122	J18-L1	J18-D7	0 VDC OPTICS
BB124	J18-L2	J18-L3	0 VDC OPTICS
* BB123	J18-L2	J18-L1	0 VDC OPTICS
BB125	J18-L3	J18-L4	0 VDC OPTICS
* BB124	J18-L3	J18-L2	0 VDC OPTICS
BB126	J18-L4	J18-L5	0 VDC OPTICS
* BB125	J18-L4	J18-L3	0 VDC OPTICS
BB127	J18-L5	J18-L6	0 VDC OPTICS
* BB126	J18-L5	J18-L4	0 VDC OPTICS
* BB127	J18-L6	J18-L5	0 VDC OPTICS
CC222	J18-M1	TB1-H56	SXT TRUNNION MDA INPUT BUFFERED
CC220	J18-M2	TB1-H55	SXT TRUNNION TACH FEEDBACK BUFFERED
CC214	J18-M3	TB1-K56	SXT SHAFT MDA INPUT BUFFERED
CC215	J18-M4	TB1-K55	SXT SHAFT TACH FEEDBACK BUFFERED
CC217	J18-M5	TB1-H54	SCT SHAFT 1X ERROR SIG BUFFERED
CC216	J18-M6	TB1-K54	SCT SHAFT TACH FEEDBACK BUFFERED
CC225R	J18-P1	TB1-B60	ZERO OPTICS MODE COMMAND
CC223W	J18-P2	TB1-B57	0 DEG OFFSET RELAY COMMAND
CC225W	J18-P3	TB1-B59	COMPUTER RELAY COMMAND
BB115	J18-P4	J19-R4	STRUCTURE GROUND
* BB100	J18-P4	J17-L6	STRUCTURE GROUND
BB116	J18-R1	J19-R6	TRACKER MODE RELAY COMMAND
CC223R	J18-R2	TB1-B58	25 DEG OFFSET RELAY COMMAND
BB128	J18-R4	J18-R5	0 VDC OPTICS
BB130	J18-R4	J18-S3	0 VDC OPTICS
CC241	J18-R4	TB1-F77	0 VDC OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
BB129	J18-R5	J18-R6	0 VDC OPTICS
* BB128	J18-R5	J18-R4	0 VDC OPTICS
CC240	J18-R6	TB1-D77	0 VDC OPTICS
* BB129	J18-R6	J18-R5	0 VDC OPTICS
BB117W	J18-S1	J19-S6	800 CPS 28 V 1 PCT LO OPTICS
* BB 89W	J18-S1	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
* BB130	J18-S3	J18-R4	0 VDC OPTICS
CC236R	J18-S4	TB1-H51	SCT SHAFT MOTOR PHASE 2
CC238R	J18-S5	TB1-G49	SXT SHAFT MOTOR PHASE 2
CC232R	J18-S6	TB1-G51	SXT TRUNNION MOTOR PHASE 2
BB117R	J18-T1	J19-T6	800 CPS 28 V 1 PCT HI OPTICS
* BB 89R	J18-T1	J16-P5	800 CPS 28 V 1 PCT HI OPTICS
BB114	J18-T2	J20-N6	+28 VDC OPTICS
CC224	J18-T3	TB1-C71	+28 VDC OPTICS DAC POWER
CC236W	J18-T4	TB1-H52	SCT SHAFT MOTOR PHASE 1
CC238W	J18-T5	TB1-G48	SXT SHAFT MOTOR PHASE 1
CC232W	J18-T6	TB1-G52	SXT TRUNNION MOTOR PHASE 1

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC261R	J19-A1	TB1-F37	SCT TRUNNION TACH HI
CC258R	J19-A6	TB1-C37	TRUNNION CDU TACHOMETER HI
CC269R	J19-A9	TB1-G37	SHAFT CDU TACH HI
CC261W	J19-B1	TB1-F38	SCT TRUNNION TACH LO
CC256R	J19-B4	TB1-C41	TRUNNION CDU 16X RSVR S3
CC256W	J19-B5	TB1-C40	TRUNNION CDU 16X RSVR S2
CC258W	J19-B6	TB1-C38	TRUNNION CDU TACHOMETER LO
CC267R	J19-B7	TB1-G41	SHAFT CDU 16X RSVR S3
CC267W	J19-B8	TB1-G40	SHAFT CDU 16X RSVR S2
CC269W	J19-B9	TB1-G38	SHAFT CDU TACH LO
CC259W	J19-C1	TB1-F40	SCT TRUNNION 1X RSVR S2
CC259R	J19-C2	TB1-F41	SCT TRUNNION 1X RSVR S4
CC255R	J19-C5	TB1-D40	TRUNNION CDU 1/4X RSVR P2
CC255W	J19-C6	TB1-D41	TRUNNION CDU 1/4X RSVR P3
CC263W	J19-C8	TB1-H40	SHAFT CDU 1/2X RSVR P1
CC263R	J19-C9	TB1-H41	SHAFT CDU 1/2X RSVR P3
CC262W	J19-D2	TB1-F69	SCT TRUNNION TRACKER MODE INPUT LO
CC262R	J19-D3	TB1-F68	SCT TRUNNION TRACKER MODE INPUT HI
CC250W	J19-D7	TB1-H69	SHAFT HAND CONTROLLER OUTPUT LO
CC250R	J19-D8	TB1-H68	SHAFT HAND CONTROLLER OUTPUT HI
CC249W	J19-F8	TB1-K69	TRUNNION HAND CONTROLLER OUTPUT LO
CC249R	J19-F9	TB1-K68	TRUNNION HAND CONTROLLER OUTPUT HI
CC253R	J19-G1	TB1-K44	TRUNNION CDU 1/2X RSVR S1
CC266W	J19-G3	TB1-K45	SHAFT CDU 1X RSVR P4
BB133R	J19-G4	J20-D8	SHAFT CDU 1X RSVR P2
CC266R	J19-G4	TB1-K46	SHAFT CDU 1X RSVR P2
* BB118W	J19-G5	J18-G2	SXT SHAFT MDA INPUT LO
* BB118R	J19-G6	J18-G1	SXT SHAFT MDA INPUT HI
CC253W	J19-H1	TB1-K43	TRUNNION CDU 1/2X RSVR S3
BB133W	J19-H4	J20-C8	X TRACKER OUTPUT HI
BB132W	J19-H5	J20-C9	Y TRACKER OUTPUT HI
* BB119W	J19-H6	J18-H1	SXT TRUNNION MDA INPUT LO
CC254R	J19-K1	TB1-H44	TRUNNION CDU 1/2X RSVR S2
CC254W	J19-K2	TB1-H43	TRUNNION CDU 1/2X RSVR S4
CC265W	J19-K4	TB1-H46	SHAFT CDU 1X RSVR P1
BB132R	J19-K5	J20-D9	SHAFT CDU 1X RSVR P3
CC265R	J19-K5	TB1-H45	SHAFT CDU 1X RSVR P3
* BB119R	J19-K6	J18-K1	SXT TRUNNION MDA INPUT HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
BB135	J19-L1	J20-B8	0 VDC OPTICS
BB136	J19-L1	J19-L2	0 VDC OPTICS
BB137	J19-L2	J19-L3	0 VDC OPTICS
* BB136	J19-L2	J19-L1	0 VDC OPTICS
BB138	J19-L3	J19-L4	0 VDC OPTICS
* BB137	J19-L3	J19-L2	0 VDC OPTICS
BB139	J19-L4	J19-L5	0 VDC OPTICS
* BB138	J19-L4	J19-L3	0 VDC OPTICS
BB140	J19-L5	J19-L6	0 VDC OPTICS
* BB139	J19-L5	J19-L4	0 VDC OPTICS
CC270	J19-L6	TB1-F56	0 VDC OPTICS
* BB131	J19-L6	J18-L1	0 VDC OPTICS
* BB140	J19-L6	J19-L5	0 VDC OPTICS
CC243	J19-M1	TB1-G57	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
CC244	J19-M2	TB1-H57	TRUNNION CDU TACH FEEDBACK BUFFERED
CC242	J19-M3	TB1-H58	SHAFT CDU 16X ERROR SIG BUFFERED
CC248	J19-M4	TB1-G58	SHAFT CDU TACH FEEDBACK SIG BUFFERED
CC245	J19-M5	TB1-K57	SCT TRUNNION 1X ERROR SIG BUFFERED
CC246	J19-M6	TB1-F58	SCT TRUNNION TACH FEEDBACK BUFFERED
CC252R	J19-P1	TB1-B19	TRUNNION CDU 1/2X RSVR P3
CC252W	J19-P2	TB1-B18	TRUNNION CDU 1/2X RSVR P2
CC264L	J19-P3	TB1-F48	SHAFT CDU 1X RSVR S2
CC264R	J19-P4	TB1-F49	SHAFT CDU 1X RSVR S3
CC264W	J19-P5	TB1-F50	SHAFT CDU 1X RSVR S1
CC251R	J19-P6	TB1-A57	RESOLVED MODE RELAY COMMAND
BB141	J19-R1	J19-R2	0 VDC OPTICS
CC271	J19-R1	TB1-F78	0 VDC OPTICS
BB142	J19-R2	J19-R3	0 VDC OPTICS
* BB141	J19-R2	J19-R1	0 VDC OPTICS
BB143	J19-R3	J19-S4	0 VDC OPTICS
CC272	J19-R3	TB1-D78	0 VDC OPTICS
* BB142	J19-R3	J19-R2	0 VDC OPTICS
BB134	J19-R4	J20-M4	STRUCTURE GROUND
* BB115	J19-R4	J18-P4	STRUCTURE GROUND
CC251W	J19-R6	TB1-A61	TRACKER MODE RELAY COMMAND
* BB116	J19-R6	J18-R1	TRACKER MODE RELAY COMMAND
CC257W	J19-S1	TB1-K48	TRUNNION CDU MOTOR PHASE 1
CC268W	J19-S2	TB1-H48	SHAFT CDU MOTOR PHASE 1

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC260W	J19-S3	TB1-K52	SCT TRUNNION MOTOR PHASE 1
	BB144	J19-S4	J19-S5	0 VDC OPTICS
*	BB143	J19-S4	J19-R3	0 VDC OPTICS
*	BB144	J19-S5	J19-S4	0 VDC OPTICS
*	BB117W	J19-S6	J18-S1	800 CPS 28 V 1 PCT LO OPTICS
	CC257R	J19-T1	TB1-K49	TRUNNION CDU MOTOR PHASE 2
	CC268R	J19-T2	TB1-H49	SHAFT CDU MOTOR PHASE 2
	CC260R	J19-T3	TB1-K51	SCT TRUNNION MOTOR PHASE 2
	CC247	J19-T5	TB1-H71	+28 VDC OPTICS
*	BB117R	J19-T6	J18-T1	800 CPS 28 V 1 PCT HI OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC286R	J20-A4	TB1-D68	IMU PRESSURE MONITOR HI	
	CC310R	J20-A6	TB1-K74	PRESSURE SENSOR +28 VDC HI	
	CC277R	J20-A7	TB1-H66	STAR PRESENCE INPUT HI	
	CC277W	J20-A8	TB1-H65	STAR PRESENCE INPUT LO	
	CC278R	J20-A9	TB1-K66	PHOTOMETER SIGNAL HI	
	CC286W	J20-B4	TB1-D69	IMU PRESSURE MONITOR LO	
	CC310W	J20-B6	TB1-K73	PRESSURE SENSOR +28 VDC LO	
	CC282	J20-B7	TB1-K58	PHOTOMETER PREAMP OUTPUT BUFFERED HI	
*	BB135	J20-B8	J19-L1	0 VDC OPTICS	
	CC278W	J20-B9	TB1-K65	PHOTOMETER SIGNAL LO	
	CC 56W	J20-C3	J24- 16	STAR PRESENCE LO	183R
	CC 56R	J20-C4	J24- 17	STAR PRESENCE HI	183S
	CC274R	J20-C6	TB1-G66	TRACKER X ERROR HI	
	CC274W	J20-C7	TB1-G65	TRACKER X ERROR LO	
*	BB133W	J20-C8	J19-H4	X TRACKER OUTPUT HI	
*	BB132W	J20-C9	J19-H5	Y TRACKER OUTPUT HI	
	CC309R	J20-D1	TB1-F71	+2.5 VDC CONDITIONING HI	
	CC 57W	J20-D3	J23- 75	102.4 KPPS INPUT LO	056R
	CC292	J20-D4	TB1-G74	+13 VDC AGC	
	CC275R	J20-D6	TB1-F66	TRACKER Y ERROR HI	
	CC275W	J20-D7	TB1-F65	TRACKER Y ERROR LO	
*	BB133R	J20-D8	J19-G4	SHAFT CDU 1X RSVR P2	
*	BB132R	J20-D9	J19-K5	SHAFT CDU 1X RSVR P3	
	CC309W	J20-F1	TB1-F70	+2.5 VDC CONDITIONING LO	
	CC276W	J20-F2	TB1-B61	AUTOMATIC MARK COMMAND	
	CC 57R	J20-F3	J23- 74	102.4 KPPS INPUT HI	056S
	CC293	J20-F4	TB1-G73	+3 VDC AGC	
	CC289	J20-F5	TB1-H74	+28 VDC AGC	
	CC290	J20-F5	TB1-H74	+28 VDC AGC	166
	CC281R	J20-F6	TB1-G68	PHOTOMETER MARK REJECT HI	
	CC281W	J20-F7	TB1-G69	PHOTOMETER MARK REJECT LO	
	CC 59W	J20-F8	J22- 73	800 CPS 28 V 1 PCT LO IMU	
*	BB 97W	J20-F8	J16-S3	800 CPS 28 V 1 PCT LO IMU	
	CC 59R	J20-F9	J22- 72	800 CPS 28 V 1 PCT HI IMU	
*	BB 97R	J20-F9	J16-S4	800 CPS 28 V 1 PCT HI IMU	
	CC294W	J20-G1	TB1-F72	0 VDC CONDITIONING	
	CC294R	J20-G2	TB1-G72	+20 VDC CONDITIONING	
	CC291	J20-G3	TB1-H73	0 VDC AGC	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB145	J20-G4	J20-G5	800 CPS 28 V 1 PCT LO OPTICS
	CC273R	J20-G5	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
*	BB145	J20-G5	J20-G4	800 CPS 28 V 1 PCT LO OPTICS
	CC273W	J20-G6	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS
	BB161	J20-H1	J20-K1	0 VDC IMU
	CC320	J20-H1	TB1-F75	0 VDC IMU
	CC287	J20-H2	TB1-K78	+28 VDC AGC BUSS A
	CC288	J20-H3	TB1-K77	+28 VDC AGC BUSS B
	CC273L	J20-H4	TB1-A71	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR
*	BB 92W	J20-H5	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	BB 92R	J20-H6	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
	BB162	J20-K1	J20-K2	0 VDC IMU
	CC321	J20-K1	TB1-F73	0 VDC IMU
*	BB161	J20-K1	J20-H1	0 VDC IMU
	CC322	J20-K2	TB1-C68	0 VDC IMU
*	BB162	J20-K2	J20-K1	0 VDC IMU
	BB147	J20-K5	J20-L5	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	BB 33W	J20-K5	J12-K4	800 CPS 28 V 5 PCT L-90 DEG LO IMU
	BB146	J20-K6	J20-L6	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	BB 33R	J20-K6	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	CC306	J20-L1	TB1-G 7	+28 VDC IMU
	CC307	J20-L1	TB1-G71	+28 VDC IMU
*	BB 81	J20-L1	J15-S2	+28 VDC IMU
	CC308	J20-L2	TB1-G71	+28 VDC IMU
*	BB 4	J20-L2	J11-S5	+28 VDC IMU
*	BB 93	J20-L2	J16-S2	+28 VDC IMU
	CC285W	J20-L5	TB1-C76	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	BB147	J20-L5	J20-K5	800 CPS 28 V 5 PCT L-90 DEG LO IMU
	CC285R	J20-L6	TB1-C75	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	BB146	J20-L6	J20-K6	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	BB152	J20-M1	J20-N1	+28 VDC IMU
*	BB 35	J20-M1	J12-S1	+28 VDC IMU
*	BB102	J20-M1	J17-T4	+28 VDC IMU
	BB154	J20-M2	J20-N2	+28 VDC IMU
*	BB 36	J20-M2	J12-S2	+28 VDC IMU
*	BB103	J20-M2	J17-T3	+28 VDC IMU
	CC311W	J20-M3	TB1-C78	400 CPS 115 V LO
*	BB134	J20-M4	J19-R4	STRUCTURE GROUND

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC 57A	J20-M4	SHLD CC 57	STRUCTURE GROUND	
	CC284	J20-M5	TB1-K72	+28 VDC MDV	
*	BB106	J20-M5	J17-R5	+28 VDC MDV	
*	BB 34	J20-M6	J12-G4	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
	BB153	J20-N1	J20-N2	+28 VDC IMU	
*	BB 2	J20-N1	J11-S1	+28 VDC IMU	
*	BB152	J20-N1	J20-M1	+28 VDC IMU	
*	BB 3	J20-N2	J11-S2	+28 VDC IMU	
*	BB153	J20-N2	J20-N1	+28 VDC IMU	
*	BB154	J20-N2	J20-M2	+28 VDC IMU	
	CC311R	J20-N3	TB1-B78	400 CPS 115 V HI	
	CC280	J20-N4	TB1-B71	+28 VDC OPTICS TRACKER POWER	
	CC 58	J20-N5	J23- 47	+28 VDC MDV	157R
	CC283	J20-N5	TB1-K71	+28 VDC MDV	
*	BB 46	J20-N5	J12-L1	+28 VDC MDV	
	CC279	J20-N6	TB1-H71	+28 VDC OPTICS	
*	BB111	J20-N6	J17-T6	+28 VDC OPTICS	
*	BB114	J20-N6	J18-T2	+28 VDC OPTICS	
	BB148	J20-P1	J20-T1	+28 VDC IMU BUSS A	
	CC313	J20-P1	TB1-H76	+28 VDC IMU BUSS A	
	BB150	J20-P2	J20-T2	+28 VDC IMU BUSS B	
	CC315	J20-P2	TB1-H75	+28 VDC IMU BUSS B	
	CC323	J20-P3	TB1-D78	0 VDC OPTICS	
	CC324	J20-P4	TB1-F78	0 VDC OPTICS	
*	BB 32	J20-P5	J12-S6	+28 VDC OPTICS	
*	BB 90	J20-P5	J16-S5	+28 VDC OPTICS	
*	BB 91	J20-P6	J16-S6	+28 VDC OPTICS	
	BB149	J20-R1	J20-S1	+28 VDC IMU BUSS A	
	CC312	J20-R1	TB1-K76	+28 VDC IMU BUSS A	
	BB151	J20-R2	J20-S2	+28 VDC IMU BUSS B	
	CC314	J20-R2	TB1-K75	+28 VDC IMU BUSS B	
	CC301	J20-R3	TB1-H72	+28 VDC STBY	
*	BB104	J20-R3	J17-T1	+28 VDC STBY	
*	BB105	J20-R4	J17-T2	+28 VDC STBY	
	BB157	J20-R5	J20-T5	+28 VDC OPTICS BUSS A	
	BB158	J20-R5	J20-S5	+28 VDC OPTICS BUSS A	
	CC318	J20-R5	TB1-G78	+28 VDC OPTICS BUSS A	
	BB159	J20-R6	J20-T6	+28 VDC OPTICS BUSS B	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB160	J20-R6	J20-S6	+28 VDC OPTICS BUSS B
	CC319	J20-R6	TB1-G77	+28 VDC OPTICS BUSS B
	CC296	J20-S1	TB1-H76	+28 VDC IMU BUSS A
*	BB149	J20-S1	J20-R1	+28 VDC IMU BUSS A
	CC298	J20-S2	TB1-H75	+28 VDC IMU BUSS B
*	BB151	J20-S2	J20-R2	+28 VDC IMU BUSS B
	BB155	J20-S3	J20-T3	+28 VDC STBY BUSS A
	CC316	J20-S3	TB1-G76	+28 VDC STBY BUSS A
	BB156	J20-S4	J20-T4	+28 VDC STBY BUSS B
	CC317	J20-S4	TB1-G75	+28 VDC STBY BUSS B
	CC303	J20-S5	TB1-H78	+28 VDC OPTICS BUSS A
*	BB158	J20-S5	J20-R5	+28 VDC OPTICS BUSS A
	CC305	J20-S6	TB1-G77	+28 VDC OPTICS BUSS B
*	BB160	J20-S6	J20-R6	+28 VDC OPTICS BUSS B
	CC295	J20-T1	TB1-K76	+28 VDC IMU BUSS A
*	BB148	J20-T1	J20-P1	+28 VDC IMU BUSS A
	CC297	J20-T2	TB1-K75	+28 VDC IMU BUSS B
*	BB150	J20-T2	J20-P2	+28 VDC IMU BUSS B
	CC299	J20-T3	TB1-G76	+28 VDC STBY BUSS A
*	BB155	J20-T3	J20-S3	+28 VDC STBY BUSS A
	CC300	J20-T4	TB1-G75	+28 VDC STBY BUSS B
*	BB156	J20-T4	J20-S4	+28 VDC STBY BUSS B
	CC302	J20-T5	TB1-G78	+28 VDC OPTICS BUSS A
*	BB157	J20-T5	J20-R5	+28 VDC OPTICS BUSS A
	CC304	J20-T6	TB1-H77	+28 VDC OPTICS BUSS B
*	BB159	J20-T6	J20-R6	+28 VDC OPTICS BUSS B

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 429Y	J21- 1	E 29	COMMONED RETURNS GROUND	233R
*	A 425Y	J21- 2	E 28	COMMONED RETURNS GROUND	228R
*	A 430R	J21- 3	J10- 44	PARITY FAIL ALARM	234S
*	A 422Y	J21- 4	E 28	COMMONED RETURNS GROUND	244R
*	A 422R	J21- 5	J10- 42	TIMING (1.5 CPS)	244S
*	A 429R	J21- 6	J10- 33	SCALER FAIL ALARM	233S
*	A 425R	J21- 7	J10- 18	OUT 0 15	228S
*	A 444R	J21- 8	J10- 14	OUT 0 11	224S
*	A 444Y	J21- 9	E 33	COMMONED RETURNS GROUND	224R
*	A 426R	J21- 10	J10- 40	PROGRAM ALARM	229S
*	A 430Y	J21- 11	E 29	COMMONED RETURNS GROUND	234R
*	A 450	J21- 12	J10- 70	SPARE	211
*	A 467Y	J21- 13	E 26	COMMONED RETURNS GROUND	208R
*	A 467R	J21- 14	J10- 48	ERROR RESET	208S
*	A 459Y	J21- 15	E 27	COMMONED RETURNS GROUND	205R
*	A 434Y	J21- 16	E 30	COMMONED RETURNS GROUND	238R
*	A 423Y	J21- 17	E 28	COMMONED RETURNS GROUND	232R
*	A 424Y	J21- 18	E 28	COMMONED RETURNS GROUND	227R
*	A 443Y	J21- 19	E 32	COMMONED RETURNS GROUND	223R
*	A 440Y	J21- 20	E 32	COMMONED RETURNS GROUND	219R
*	A 446R	J21- 21	J10- 31	OUT 0 7	220S
*	A 446Y	J21- 22	E 33	COMMONED RETURNS GROUND	220R
*	A 447R	J21- 23	J10- 15	OUT 0 12	225S
*	A 426Y	J21- 24	E 28	COMMONED RETURNS GROUND	229R
*	A 431R	J21- 25	J10- 43	COUNTER FAIL ALARM	235S
*	A 449	J21- 26	J10- 71	POWER SUPPLY SYNC	212
*	A 465R	J21- 27	J10- 47	OR OF C1 THRU C33	210S
*	A 466Y	J21- 28	E 26	COMMONED RETURNS GROUND	201R
*	A 466R	J21- 29	J10- 34	KEY CODE 1	201S
*	A 462Y	J21- 30	E 27	COMMONED RETURNS GROUND	207R
*	A 462R	J21- 31	J10- 39	TEST ALARM	207S
*	A 459R	J21- 32	J10- 38	KEY CODE 5	205S
*	A 434R	J21- 33	J10- 64	TC TRAP ALARM	238S
*	A 423R	J21- 34	J10- 32	PROGRAM CHECK FAIL ALARM	232S
*	A 424R	J21- 35	J10- 17	OUT 0 14	227S
*	A 443R	J21- 36	J10- 63	OUT 0 10	223S
*	A 440R	J21- 37	J10- 30	OUT 0 6	219S
*	A 436R	J21- 38	J10- 74	OUT 0 2	215S

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 436Y	J21- 39	E 31	COMMONED RETURNS GROUND	215R
*	A 437R	J21- 40	J10- 60	OUT 0 3	216S
*	A 437Y	J21- 41	E 31	COMMONED RETURNS GROUND	216R
*	A 441R	J21- 42	J10- 61	OUT 0 8	221S
*	A 447Y	J21- 43	E 33	COMMONED RETURNS GROUND	225R
*	A 427R	J21- 44	J10- 41	COMPUTER ACTIVITY	230S
*	A 431Y	J21- 45	E 29	COMMONED RETURNS GROUND	235R
*	A 448	J21- 46	J10- 72	SPARE	213
*	A 465Y	J21- 47	E 26	COMMONED RETURNS GROUND	210R
*	A 464R	J21- 48	J10- 35	KEY CODE 2	202S
	A 556	J21- 50	E 35	GROUP 3 SHIELD	250
*	A 463Y	J21- 51	E 27	COMMONED RETURNS GROUND	204R
*	A 463R	J21- 52	J10- 37	KEY CODE 4	204S
*	A 461Y	J21- 53	E 27	COMMONED RETURNS GROUND	203R
*	A 460Y	J21- 54	E 27	COMMONED RETURNS GROUND	209R
*	A 469	J21- 55	J10- 46	SPARE	249
*	A 433Y	J21- 56	E 30	COMMONED RETURNS GROUND	237R
*	A 428Y	J21- 57	E 29	COMMONED RETURNS GROUND	231R
*	A 445Y	J21- 58	E 33	COMMONED RETURNS GROUND	226R
*	A 442Y	J21- 59	E 32	COMMONED RETURNS GROUND	222R
*	A 439Y	J21- 60	E 31	COMMONED RETURNS GROUND	218R
*	A 435Y	J21- 61	E 30	COMMONED RETURNS GROUND	214R
*	A 484	J21- 62	J10- 58	DISKY GROUND	251
*	A 486	J21- 63	J10- 55	SPARE	240
*	A 480	J21- 64	J10- 57	+13 V B	241
*	A 482	J21- 65	J10- 59	+28 VDC AGC	243
*	A 438Y	J21- 66	E 31	COMMONED RETURNS GROUND	217R
*	A 438R	J21- 67	J10- 28	OUT 0 4	217S
*	A 441Y	J21- 68	E 32	COMMONED RETURNS GROUND	221R
*	A 427Y	J21- 69	E 29	COMMONED RETURNS GROUND	230R
*	A 432Y	J21- 70	E 30	COMMONED RETURNS GROUND	236R
*	A 432R	J21- 71	J10- 53	KEY RELEASE	236S
*	A 451	J21- 72	J10- 75	SPARE	247
	A 557	J21- 73	E 37	GROUP 2 SHIELD	245
*	A 464Y	J21- 74	E 26	COMMONED RETURNS GROUND	202R
*	A 461R	J21- 82	J10- 36	KEY CODE 3	203S
*	A 460R	J21- 83	J10- 49	KEY RESET NAV	209S
*	A 468	J21- 84	J10- 45	SPARE	248

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 433R	J21- 85	J10- 51	RUPT LOCK ALARM	237S
*	A 428R	J21- 86	J10- 19	TELEMETRY FAIL ALARM	231S
*	A 445R	J21- 87	J10- 16	OUT 0 13	226S
*	A 442R	J21- 88	J10- 62	OUT 0 9	222S
*	A 439R	J21- 89	J10- 29	OUT 0 5	218S
*	A 435R	J21- 90	J10- 73	OUT 0 1	214S
*	A 485	J21- 91	J10- 56	DISKY GROUND	239

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 303G	J22- 2	J09- 50	ATTITUDE DISABLE SIG TO NAA
*	BB 99W	J22- 4	J16-B8	COS AOG 1X S3
*	A 303R	J22- 7	J09- 41	+28 VDC FROM NAA
*	A 303Y	J22- 8	J09- 40	0 VDC FROM NAA
*	BB 98R	J22- 12	J16-A8	SIN AOG 1X S2
*	BB 99R	J22- 13	J16-C8	COS AOG 1X S1
	CC327R	J22- 14	TB1-B16	SIN AMG 1X
	CC327W	J22- 15	TB1-B15	SIN AMG 1X RET
	CC328W	J22- 16	TB1-B13	COS AMG 1X S3
*	A 288Y	J22- 18	J09- 4	PITCH ATTIT IMPULSE CONTR OUTPUT UP
*	BB 98W	J22- 26	J16-A9	SIN AOG 1X S4
	CC328R	J22- 32	TB1-B14	COS AMG 1X S1
	CC329W	J22- 33	TB1-A15	SIN AIG 1X RET
*	A 288R	J22- 35	J09- 5	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN
*	A 288G	J22- 36	J09- 18	PITCH ATTIT IMPULSE CONTR INPUT
*	BB109	J22- 38	J17-L3	IMU TEMP LIGHT (MAIN PANEL)
*	BB108	J22- 39	J17-M3	0 VDC SPACECRAFT
*	A 157	J22- 40	J08- 43	MASTER CAUTION LIGHT RET
	CC326	J22- 41	TB1-C 4	+28 VDC SPACECRAFT
	CC325W	J22- 42	TB1-G 3	ATTITUDE CONTROL RELAY CONTROL
	CC 43B	J22- 48	SHLD CC 43	NAA SHIELD GROUND
*	CC 44R	J22- 49	J17-C4	YAW ERROR BODY AXIS HI
	CC 48B	J22- 51	SHLD CC 48	NAA SHIELD GROUND
*	CC 45R	J22- 53	J17-C3	YAW ERROR BODY OFFSET AXIS HI
	CC 47B	J22- 54	SHLD CC 47	NAA SHIELD GROUND
	CC329R	J22- 56	TB1-A16	SIN AIG 1X
*	A 289Y	J22- 58	J09- 20	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT
*	A 287R	J22- 60	J09- 17	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT
*	A 407	J22- 62	P10- 8	MAIN PANEL GIMBAL LOCK LIGHT
*	CC 4	J22- 63	J12-G3	G+N ERROR LIGHT (MAIN PANEL)
*	A 295	J22- 64	J09- 14	SPACECRAFT LAMP TEST
*	A 160	J22- 65	J08- 53	MASTER WARNING LIGHT RET
	CC325R	J22- 67	TB1-G 5	LOCK CDU RELAY CONTROL
	CC325L	J22- 68	TB1-H 5	FINE ALIGN RELAY CONTROL
*	CC 59R	J22- 72	J20-F9	800 CPS 28 V 1 PCT HI IMU
*	CC 59W	J22- 73	J20-F8	800 CPS 28 V 1 PCT LO IMU
*	CC 43R	J22- 74	J17-A4	ROLL ERROR BODY AXIS HI
*	CC 43W	J22- 75	J17-B4	ROLL ERROR BODY AXIS LO

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC 44W	J22- 76	J17-D4	YAW ERROR BODY AXIS LO
	CC 44B	J22- 77	SHLD CC 44	NAA SHIELD GROUND
*	CC 48R	J22- 78	J17-D1	PITCH ERROR BODY AND BODY OFFSET AXIS HI
*	CC 48W	J22- 79	J17-C1	PITCH ERROR BODY AND BODY OFFSET AXIS LO
	CC 45B	J22- 80	SHLD CC 45	NAA SHIELD GROUND
*	CC 45W	J22- 81	J17-D3	YAW ERROR BODY OFFSET AXIS LO
*	CC 47W	J22- 82	J17-B3	ROLL ERROR BODY OFFSET AXIS LO
*	CC 47R	J22- 83	J17-A3	ROLL ERROR BODY OFFSET AXIS HI
	CC330R	J22- 84	TB1-A13	COS AIG 1X
	CC330W	J22- 85	TB1-A14	COS AIG 1X RET
*	A 289R	J22- 87	J09- 6	YAW ATTIT IMPULSE CONTR OUTPUT LEFT
*	A 289G	J22- 88	J09- 7	YAW ATTIT IMPULSE CONTR INPUT
*	A 287Y	J22- 89	J09- 3	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT
*	A 287G	J22- 90	J09- 16	ROLL ATTIT IMPULSE CONTR INPUT

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC 12W	J23- 1	E 5	0 VDC IMU	140R
*	CC 12R	J23- 2	J13-N6	PIPA SWITCHING PULSE	140S
*	CC 13R	J23- 3	J14-D1	+ DX GYRO RATE	142R
*	CC 40R	J23- 4	J16-M4	COMPUTER 800 PPS IN PHASE SYNC	149S
*	CC 18W	J23- 5	E 6	0 VDC IMU	147S
*	CC 11W	J23- 6	E 5	0 VDC IMU	139R
*	CC 11R	J23- 7	J13-N5	PIPA INTERROGATE PULSE	139S
*	CC 36R	J23- 8	E 13	OG DAC MDA SIG LO	126R
*	CC 37W	J23- 9	E 13	OG DAC MDA SIG LO	127R
*	CC 13W	J23- 10	E 6	0 VDC IMU	142S
*	CC 14R	J23- 11	J14-D2	- DX GYRO RATE	143R
*	CC 39R	J23- 12	J16-L4	COMPUTER 800 PPS OUT OF PHASE SYNC	150S
*	CC 40W	J23- 13	J16-L3	COMPUTER 800 PPS SYNC RET	149R
*	CC 18R	J23- 14	J14-D6	- DZ GYRO RATE	147R
*	CC 17R	J23- 15	J14-D5	+ DZ GYRO RATE	146R
*	CC 17W	J23- 16	E 6	0 VDC IMU	146S
*	CC 35W	J23- 17	E 11	MG DAC MDA SIG LO	131R
*	CC 35R	J23- 18	J15-C7	MG CDU - DELTA THETA COMMAND	131S
*	CC 53W	J23- 19	J18-H3	SHAFT DELTA THETA COMMAND COMMON	115R
*	CC 53R	J23- 20	J18-K3	SHAFT - DELTA THETA COMMAND	115S
*	CC 36W	J23- 21	J15-B9	OG CDU + DELTA THETA COMMAND	126S
*	CC 37R	J23- 22	J15-C9	OG CDU - DELTA THETA COMMAND	127S
*	CC 32R	J23- 23	E 9	IG DAC MDA SIG LO	128R
*	CC 14W	J23- 24	E 6	0 VDC IMU	143S
*	CC 19R	J23- 25	J14-K4	GYRO RESET PULSE	148R
*	CC 5	J23- 26	J12-M1	AGC POWER SUPPLY FAIL SIG HI	157S
*	CC 39W	J23- 27	J16-L3	COMPUTER 800 PPS SYNC RET	150R
*	CC 51R	J23- 28	J17-R3	COMPUTER 12.8 KPPS SYNC	155S
*	CC 7R	J23- 29	J12-G2	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154S
*	CC 6R	J23- 30	J12-G1	COMPUTER 25.6 KPPS IN PHASE SYNC	153S
*	CC 1R	J23- 31	J11-L6	COMPUTER 3200 PPS OUT OF PHASE SYNC	152S
*	CC 16R	J23- 32	J14-D4	- DY GYRO RATE	145R
*	CC 16W	J23- 33	E 6	0 VDC IMU	145S
*	CC 34R	J23- 34	E 11	MG DAC MDA SIG LO	130R
*	CC 34W	J23- 35	J15-B7	MG CDU + DELTA THETA COMMAND	130S
*	CC 55W	J23- 36	J18-H3	SHAFT DELTA THETA COMMAND COMMON	114R
*	CC 55R	J23- 37	J18-G3	SHAFT + DELTA THETA COMMAND	114S
*	A 503	J23- 38	P11-A	+28 VDC AGC BUSS A	167

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 531	J23- 39	P12-A	+28 VDC AGC BUSS B	168
*	A 532	J23- 40	P12-A	+28 VDC AGC BUSS B	168
*	A 551	J23- 41	P12-J	0 VDC AGC	170
*	CC 32W	J23- 42	J15-B5	IG CDU + DELTA THETA COMMAND	128S
*	CC 33R	J23- 43	J15-C5	IG CDU - DELTA THETA COMMAND	129S
*	CC 19W	J23- 44	E 6	0 VDC IMU	148S
*	CC 3R	J23- 46	J12-K1	COMPUTER 102.4 KPPS SYNC	156S
*	CC 58	J23- 47	J20-N5	+28 VDC MDV	157R
	A 562	J23- 48	TB1-D71	CONDITION LAMP TEST	157T
*	CC 51W	J23- 49	J17-S3	0 VDC IMU	155R
*	CC 7W	J23- 50	J12-F2	COMPUTER 25.6 KPPS SYNC RET	154R
*	CC 6W	J23- 51	J12-F2	COMPUTER 25.6 KPPS SYNC RET	153R
*	CC 1W	J23- 52	J11-M5	COMPUTER 3200 PPS SYNC RET	152R
*	CC 2W	J23- 53	J11-M5	COMPUTER 3200 PPS SYNC RET	151R
*	CC 2R	J23- 54	J11-M6	COMPUTER 3200 PPS IN PHASE SYNC	151S
*	CC 15R	J23- 55	J14-D3	+ DY GYRO RATE	144R
*	CC 15W	J23- 56	E 6	0 VDC IMU	144S
	CC331	J23- 57	TB1-F52	THERMISTER LO	199R
*	A 400	J23- 58	P09-115	AGC THERMISTER HI	199S
*	CC 54W	J23- 59	J18-H5	TRUNNION DELTA THETA COMMAND COMMON	117R
*	CC 54R	J23- 60	J18-G5	TRUNNION - DELTA THETA COMMAND	117S
*	A 504	J23- 61	P11-A	+28 VDC AGC BUSS A	167
	A 558	J23- 62	TB1-K78	+28 VDC AGC BUSS A	167
	A 559	J23- 63	TB1-K78	+28 VDC AGC BUSS A	167
	A 560	J23- 64	TB1-K77	+28 VDC AGC BUSS B	168
	A 561	J23- 65	TB1-K77	+28 VDC AGC BUSS B	168
*	A 552	J23- 66	P12-J	0 VDC AGC	170
*	CC 33W	J23- 69	E 9	IG DAC MDA SIG LO	129R
*	CC 3W	J23- 73	J12-H1	COMPUTER 102.4 KPPS SYNC RET	156R
*	CC 57R	J23- 74	J20-F3	102.4 KPPS INPUT HI	056S
*	CC 57W	J23- 75	J20-D3	102.4 KPPS INPUT LO	056R
*	CC 52W	J23- 88	J18-H5	TRUNNION DELTA THETA COMMAND COMMON	116R
*	CC 52R	J23- 89	J18-K5	TRUNNION + DELTA THETA COMMAND	116S
*	A 523	J23- 90	P11-J	0 VDC AGC	169
*	A 524	J23- 91	P11-J	0 VDC AGC	169

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC333	J24- 1	TB1-G74	+13 VDC AGC	176
*	CC 20R	J24- 2	J15-M5	+ DELTA V X	132R
	CC334	J24- 3	TB1-H73	0 VDC AGC	177
*	A 132Y	J24- 4	P01- 49	FINE ALIGN MODE INDICATION TO AGC	161
*	CC 41W	J24- 5	J16-A7	ZERO ENCODER MODE INDICATION TO AGC	158
	CC335	J24- 6	TB1-G73	+3 VDC AGC	175
*	CC 29W	J24- 7	E 10	MG DAC MDA SIG LO	123R
*	CC 29R	J24- 8	J15-C6	MG ENCODER - DELTA THETA	123S
*	CC 20W	J24- 9	E 14	COMPUTER RET	132S
*	CC 21R	J24- 10	J15-M6	- DELTA V X	133R
*	A 114Y	J24- 12	J06- 69	TRANSFER SWITCH INDICATION TO AGC	164
*	A 136Y	J24- 13	P01- 76	ATTIT CONT MODE INDICATION TO AGC	162
*	A 133Y	J24- 14	P01- 59	COARSE ALIGN MODE INDICATION TO AGC	159
	A 564R	J24- 15	TB1-A69	OPTICS ZERO ENCODER INDICATION	104
*	CC 56W	J24- 16	J20-C3	STAR PRESENCE LO	183R
*	CC 56R	J24- 17	J20-C4	STAR PRESENCE HI	183S
*	CC 28R	J24- 18	E 10	MG DAC MDA SIG LO	122R
*	CC 28W	J24- 19	J15-B6	MG ENCODER + DELTA THETA	122S
*	CC 30R	J24- 20	E 12	OG DAC MDA SIG LO	118R
*	CC 31W	J24- 21	E 12	OG DAC MDA SIG LO	119R
*	CC 26R	J24- 22	E 8	IG DAC MDA SIG LO	120R
*	CC 21W	J24- 23	E 14	COMPUTER RET	133S
*	CC 22R	J24- 24	J15-L6	+ DELTA V Y	134R
*	CC 8R	J24- 25	J12-D6	IMU FAIL	141S
	CC332W	J24- 26	TB1-C56	AGC COMMON (ISS)	165
*	A 131Y	J24- 29	P01- 39	ENTRY MODE INDICATION TO AGC	163
*	CC 38W	J24- 30	J15-A3	MANUAL CDU MODE INDICATION TO AGC	160
*	A 304Y	J24- 31	J09- 42	TRACKER ON INDICATION TO AGC	107
*	A 414Y	J24- 32	P10- 19	NOT MARK	103
*	CC 24R	J24- 33	J15-K4	- DELTA V Z	137R
*	CC 24W	J24- 34	E 16	COMPUTER RET	137S
*	CC 46W	J24- 35	J17-H4	SHAFT ENCODER DELTA THETA OUT COMMON	109R
*	CC 46R	J24- 36	J17-K4	SHAFT ENCODER - DELTA THETA OUTPUT	109S
*	CC 49W	J24- 37	J17-H6	TRUNNION ENCODER DELTA THETA OUT COM	111R
*	CC 49R	J24- 38	J17-K6	TRUNNION ENCODER - DELTA THETA OUT	111S
*	CC 30W	J24- 39	J15-B8	OG ENCODER + DELTA THETA	118S
*	CC 31R	J24- 40	J15-C8	OG ENCODER - DELTA THETA	119S
*	CC 26W	J24- 41	J15-B4	IG ENCODER + DELTA THETA	120S

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC 27W	J24- 42	E 8	IG DAC MDA SIG LO	121R
*	CC 22W	J24- 43	E 15	COMPUTER RET	134S
*	CC 23R	J24- 44	J15-K6	- DELTA V Y	135R
*	CC 10R	J24- 45	J12-D4	ACCEL FAIL	138S
*	CC 8W	J24- 46	J12-F6	IMU FAIL RET	141R
	A 563	J24- 51	E 23	AGC SIGNAL 178 SHIELD RETURN	178
*	A 309Y	J24- 54	J09- 49	OPTICS MODE SW COMPUTER INDICATION	106
*	A 417Y	J24- 55	P10- 44	MARK	102
*	CC 25R	J24- 56	J15-K5	+ DELTA V Z	136R
*	CC 25W	J24- 57	E 16	COMPUTER RET	136S
*	CC 50W	J24- 58	J17-H4	SHAFT ENCODER DELTA THETA OUT COMMON	108R
*	CC 50R	J24- 59	J17-G4	SHAFT ENCODER + DELTA THETA OUTPUT	108S
*	CC 42W	J24- 60	J17-H6	TRUNNION ENCODER DELTA THETA OUT COM	110R
*	CC 42R	J24- 61	J17-G6	TRUNNION ENCODER + DELTA THETA OUT	110S
	CC337	J24- 64	E 20	AGC SIGNAL 179 SHIELD RETURN	179
*	CC 27R	J24- 67	J15-C4	IG ENCODER - DELTA THETA	121S
*	CC 23W	J24- 69	E 15	COMPUTER RET	135S
*	CC 9R	J24- 70	J12-D5	CDU FAIL	124S
*	CC 9W	J24- 71	J12-F5	CDU FAIL RET	124R
*	CC 10W	J24- 72	J12-F4	ACCEL FAIL RET	138R
	A 566Y	J24- 83	TB1-A68	SXT POWER ON INDICATION	105
	A 564Y	J24- 84	TB1-A68	AGC COMMON (OSS)	101
	CC336	J24- 87	E 18	AGC SIGNAL 179 SHIELD RETURN	179

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 96R	P01- 1	J06- 1	PITCH ATTITUDE ERROR METER +	
*	A 96Y	P01- 2	J06- 2	PITCH ATTITUDE ERROR METER -	
	A 124G	P01- 4	TB1-K 3	COARSE ALIGN RELAY CONTROL	
	A 124R	P01- 5	TB1-H 5	FINE ALIGN RELAY CONTROL	
*	A 97	P01- 6	J06- 6	ENTRY RELAY CONTROL RESET	
	A 125	P01- 7	TB1-G 7	+28 VDC IMU	
*	A 98	P01- 9	J06- 9	MODE SWITCH INTERLOCK	
	A 126Y	P01- 10	TB1-B 7	800 CPS 28 V 1 PCT LO IMU	
	A 126R	P01- 11	TB1-A 7	800 CPS 28 V 1 PCT HI IMU	
	A 124Y	P01- 12	TB1-K 5	ZERO ENCODER RELAY CONTROL	
	A 127R	P01- 13	TB1-B50	FINE ALIGN MODE COMMAND FROM AGC	
*	A 100R	P01- 14	J06- 14	YAW ATTITUDE ERROR METER +	
*	A 100Y	P01- 15	J06- 15	YAW ATTITUDE ERROR METER -	
*	A 101	P01- 18	J06- 18	MODE RELAY COMMON TO D AND C ELECT	
*	A 102	P01- 22	J06- 22	ATTITUDE CONTROL MODE LIGHT	
*	A 103	P01- 23	J06- 23	FINE ALIGN RELAY CONTROL	
	A 128Y	P01- 24	TB1-G 3	ATTITUDE CONTROL RELAY CONTROL	
*	A 105	P01- 25	J06- 25	ENTRY RELAY CONTROL	
	A 129	P01- 26	TB1-A26	IMU DELAY LIGHT HI	
	A 130Y	P01- 27	TB1-C48	CDU MANUAL MODE COMMAND FROM AGC	
*	A 106Y	P01- 28	J06- 28	ROLL ATTITUDE ERROR METER -	
*	A 106R	P01- 29	J06- 29	ROLL ATTITUDE ERROR METER +	
*	A 107	P01- 34	J06- 34	ZERO ENCODER RELAY CONTROL	
*	A 108	P01- 35	J06- 35	COARSE ALIGN RELAY CONTROL	
*	A 109	P01- 36	J06- 36	CDU MANUAL RELAY CONTROL	
*	A 110	P01- 37	J06- 37	MANUAL ALIGN	
	A 127Y	P01- 38	TB1-C50	ZERO ENCODER MODE COMMAND FROM AGC	
	A 131Y	P01- 39	J24- 29	ENTRY MODE INDICATION TO AGC	163
*	A 111	P01- 46	J06- 46	ATTITUDE CONTROL MODE INTERLOCK	
	A 127G	P01- 48	TB1-A50	COARSE ALIGN MODE COMMAND FROM AGC	
	A 132Y	P01- 49	J24- 4	FINE ALIGN MODE INDICATION TO AGC	161
*	A 112	P01- 56	J06- 56	MANUAL ALIGN	
	A 128G	P01- 57	TB1-H 3	ENTRY RELAY CONTROL	
	A 130R	P01- 58	TB1-C49	ENTRY MODE COMMAND FROM AGC	
	A 133Y	P01- 59	J24- 14	COARSE ALIGN MODE INDICATION TO AGC	159
	A 134Y	P01- 68	TB1-C56	AGC COMMON (ISS)	
	A 128R	P01- 69	TB1-G 5	LOCK CDU RELAY CONTROL	
	A 135R	P01- 70	TB1-K33	IG CDU 1X ERROR SIG	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 135Y	P01- 71	TB1-K34	IG CDU ERROR SIG RET	
	A 136Y	P01- 76	J24- 13	ATTIT CONT MODE INDICATION TO AGC	162
	A 137	P01- 78	TB1-D 3	0 VDC IMU	
*	A 116	P01- 79	J06- 79	ENTRY MODE LIGHT	
	A 138R	P01- 80	TB1-A54	PANEL BRIGHTNESS CONTROL	
	A 139R	P01- 82	TB1-H33	MG CDU 1X ERROR SIG	
	A 139Y	P01- 83	TB1-H34	MG CDU ERROR SIG RET	
	A 140	P01- 84	TB1-G 8	STRUCTURE GROUND	
	A 141	P01- 88	TB1-D71	CONDITION LAMP TEST	
	A 142	P01- 89	TB1-K72	+28 VDC MDV	
	A 143N	P01- 90	TB1-C 2	400 CPS 6 V HI	
	A 144	P01- 91	TB1-C 3	MODE LAMP TEST PWR	
*	A 118	P01- 92	J06- 92	COARSE ALIGN MODE LIGHT	
*	A 119	P01- 93	J06- 93	MODE RELAY COMMON	
*	A 120	P01- 94	J06- 94	FINE ALIGN MODE LIGHT	
	A 138Y	P01- 95	TB1-A55	PANEL BRIGHTNESS CONTROL	
	A 145R	P01- 96	TB1-G33	OG CDU 1X ERROR SIG	
	A 145Y	P01- 97	TB1-G34	OG CDU ERROR SIG RET	
	A 143R	P01-103	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER	
*	A 121	P01-104	J06-104	ZERO ENCODER MODE LIGHT	
*	A 122	P01-105	J06-105	CDU MANUAL MODE LIGHT	
	A 143G	P01-106	TB1-C 1	400 CPS 6 V HI	
	A 143Y	P01-108	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 178R	P02-A	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
A 179R	P02-A*	TB1-A13	COS AIG 1X S3
A 178Y	P02-B	TB1-B 5	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
A 179Y	P02-B*	TB1-A14	COS AIG 1X RET S1
A 180R	P02-C	TB1-F15	COS AOG 16X S3
A 180Y	P02-D	TB1-F14	COS AOG 16X S1
A 181R	P02-E	TB1-G14	SIN AOG 16X S2
A 181Y	P02-F	TB1-G15	SIN AOG 16X S4
A 182R	P02-F*	TB1-A15	SIN AIG 1X RET S2
A 183R	P02-G	TB1-H10	COS AMG 16X S3
A 182Y	P02-G*	TB1-A16	SIN AIG 1X S4
A 183Y	P02-H	TB1-H 9	COS AMG 16X S1
A 184R	P02-J	TB1-K 9	SIN AMG 16X S2
A 184Y	P02-K	TB1-K10	SIN AMG 16X S4
A 185R	P02-L	TB1-B13	COS AMG 1X S3
A 185Y	P02-M	TB1-B14	COS AMG 1X S1
A 186Y	P02-N	TB1-B15	SIN AMG 1X RET S2
A 186R	P02-P	TB1-B16	SIN AMG 1X S4
A 187R	P02-R	TB1-K 7	3200 CPS 2 V HI
A 187Y	P02-S	TB1-H 7	3200 CPS 2 V LO
A 188R	P02-T	TB1-K 8	3200 CPS 2 V FEEDBACK HI
A 188Y	P02-U	TB1-H 8	3200 CPS 2 V FEEDBACK LO
A 189R	P02-W	TB1-H15	COS AIG 16X S3
A 189Y	P02-X	TB1-H14	COS AIG 16X S1
A 190R	P02-Y	TB1-K14	SIN AIG 16X S2
A 190Y	P02-Z	TB1-K15	SIN AIG 16X S4

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 191Y	P03-A	TB1-G28	X GYRO ERROR SIG
A 192Y	P03-A*	TB1-D19	MG TORQUE MOTOR RET
A 193Y	P03-B	TB1-F28	Z GYRO ERROR SIG
A 194Y	P03-B*	TB1-D19	MG TORQUE MOTOR RET
A 195R	P03-C	TB1-A28	IMU OG ERROR SIG
A 194R	P03-C*	TB1-D18	MG TORQUE MOTOR HI
A 196R	P03-D	TB1-C14	COS AOG 1X S3
A 197R	P03-D*	TB1-F18	IG TORQUE MOTOR HI
A 196Y	P03-E	TB1-C15	COS AOG 1X S1
A 197Y	P03-E*	TB1-F19	IG TORQUE MOTOR RET
A 198R	P03-F	TB1-D15	SIN AOG 1X S4
A 199Y	P03-F*	TB1-F19	IG TORQUE MOTOR RET
A 198Y	P03-G	TB1-D14	SIN AOG 1X S2
A 199R	P03-G*	TB1-F18	IG TORQUE MOTOR HI
A 200Y	P03-H	TB1-K29	IG CDU ATTITUDE STEERING ERROR
A 201	P03-H*	TB1-G 7	+28 VDC IMU
A 200R	P03-J	TB1-K28	IG CDU ERROR SIG RET
A 202	P03-J*	TB1-A56	GIMBAL LOCK SIGNAL
A 203R	P03-K	TB1-H28	MG CDU ERROR SIG RET
A 203Y	P03-L	TB1-H29	MG CDU ATTITUDE STEERING ERROR
A 204Y	P03-M	TB1-K13	YAW ERROR BODY OFFSET AXIS LO
A 204R	P03-N	TB1-H13	PITCH YAW RSVR S3
A 205Y	P03-P	TB1-G13	PITCH ERROR BODY AND BODY OFFSET AXIS LO
A 205R	P03-R	TB1-F13	PITCH-YAW RSVR S4
A 195G	P03-U	TB1-C28	IMU IG AND Y GYRO ERROR SIG
A 195Y	P03-V	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO
A 195N	P03-W	TB1-B28	IMU MG ERROR SIG
A 206Y	P03-X	TB1-C19	OG TORQUE MOTOR RET
A 206R	P03-Y	TB1-C18	OG TORQUE MOTOR HI
A 192R	P03-Z	TB1-D18	MG TORQUE MOTOR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 207Y	P04-D1	P05- 27	SXT SHAFT 16X RSVR P2
A 207R	P04-D2	P05- 30	SXT SHAFT 16X RSVR P4
A 208R	P04-E1	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
A 208Y	P04-E2	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
A 209R	P04-F1	P05- 59	SXT TRUNNION 64X RSVR P4
A 209Y	P04-F2	P05- 58	SXT TRUNNION 64X RSVR P2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 210	P05- 1	TB1-G11	STRUCTURE GROUND
A 211Y	P05- 2	TB1-C46	SXT SHAFT 1/2X RSVR S4
A 211R	P05- 3	TB1-C45	SXT SHAFT 1/2X RSVR S2
A 212R	P05- 5	TB1-G51	SXT TRUNNION MOTOR PHASE 2
A 213Y	P05- 6	TB1-D46	SXT SHAFT 1/2X RSVR S1
A 213R	P05- 7	TB1-D45	SXT SHAFT 1/2X RSVR S3
A 214R	P05- 8	TB1-G49	SXT SHAFT MOTOR PHASE 2
A 215	P05- 9	TB1-B67	0 VDC OPTICS
A 216Y	P05- 10	TB1-A65	TRACKER Y REFERENCE
A 216R	P05- 11	TB1-A66	TRACKER Y REFERENCE
A 217R	P05- 12	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
A 217Y	P05- 13	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
A 217G	P05- 14	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
A 212G	P05- 16	TB1-G50	0 VDC OPTICS
A 218R	P05- 17	TB1-B66	TRACKER X REFERENCE
A 218Y	P05- 18	TB1-B65	TRACKER X REFERENCE
A 214G	P05- 19	TB1-G50	0 VDC OPTICS
A 219R	P05- 23	TB1-H37	SXT SHAFT TACH HI
A 219Y	P05- 24	TB1-H38	SXT SHAFT TACH LO
* A 207Y	P05- 27	P04-D1	SXT SHAFT 16X RSVR P2
* A 207R	P05- 30	P04-D2	SXT SHAFT 16X RSVR P4
A 220R	P05- 32	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
A 212Y	P05- 33	TB1-G52	SXT TRUNNION MOTOR PHASE 1
A 221R	P05- 34	TB1-D37	SXT TRUNNION TACH HI
A 221Y	P05- 35	TB1-D38	SXT TRUNNION TACH LO
A 214Y	P05- 36	TB1-G48	SXT SHAFT MOTOR PHASE 1
A 222	P05- 37	TB1-C67	0 VDC OPTICS
A 223R	P05- 38	TB1-D43	SXT TRUNNION 1X RSVR S3
A 223Y	P05- 39	TB1-D44	SXT TRUNNION 1X RSVR S1
A 224Y	P05- 40	TB1-C43	SXT TRUNNION 1X RSVR S2
A 224R	P05- 41	TB1-C44	SXT TRUNNION 1X RSVR S4
A 225R	P05- 43	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
A 225Y	P05- 44	TB1-B 3	400 CPS 6 V LO
A 226Y	P05- 51	TB1-G45	SXT SHAFT 1X RSVR S4
A 226R	P05- 52	TB1-G46	SXT SHAFT 1X RSVR S2
A 227R	P05- 53	TB1-F46	SXT SHAFT 1X RSVR S1
A 227Y	P05- 54	TB1-F45	SXT SHAFT 1X RSVR S3
A 220Y	P05- 55	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 209Y	P05- 58	P04-F2	SXT TRUNNION 64X RSVR P2
* A 209R	P05- 59	P04-F1	SXT TRUNNION 64X RSVR P4
A 228R	P05- 64	TB1-D66	TRACKER PREAMP OUTPUT HI
A 228Y	P05- 65	TB1-D65	TRACKER PREAMP OUTPUT LO
A 229	P05- 68	TB1-B71	+28 VDC OPTICS TRACKER POWER
A 230	P05- 69	TB1-D78	0 VDC OPTICS
A 231Y	P05- 70	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS
A 231R	P05- 71	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
A 232R	P05- 72	TB1-C66	TRACKER AUTOMATIC GAIN CONTROL HI
A 232Y	P05- 73	TB1-C65	TRACKER AUTOMATIC GAIN CONTROL LO
A 233R	P05- 76	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 233Y	P05- 77	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 234Y	P05- 78	TB1-B46	SXT SHAFT 16X RSVR S4
A 234R	P05- 79	TB1-B45	SXT SHAFT 16X RSVR S2
A 235R	P05- 80	TB1-K66	PHOTOMETER SIGNAL HI
A 235Y	P05- 81	TB1-K65	PHOTOMETER SIGNAL LO
A 236Y	P05- 82	TB1-A45	SXT SHAFT 16X RSVR S1
A 236R	P05- 83	TB1-A46	SXT SHAFT 16X RSVR S3
A 237R	P05- 84	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
A 237Y	P05- 85	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS
A 238Y	P05- 86	TB1-A44	SXT TRUNNION 64X RSVR S1
A 238R	P05- 87	TB1-A43	SXT TRUNNION 64X RSVR S3
A 239R	P05- 88	TB1-H66	STAR PRESENCE INPUT HI
A 239Y	P05- 89	TB1-H65	STAR PRESENCE INPUT LO
A 240Y	P05- 90	TB1-B44	SXT TRUNNION 64X RSVR S4
A 240R	P05- 91	TB1-B43	SXT TRUNNION 64X RSVR S2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 241G	P06-A	TB1-C74	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
A 242Y	P06-A*	TB1-K64	IRIG TEMP IND SENSOR RET
A 241Y	P06-B	TB1-C73	800 CPS 28 V 5 PCT IMU WHEELS LO
A 243R	P06-B*	TB1-K74	PRESSURE SENSOR +28 VDC HI
A 241R	P06-C	TB1-C72	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
A 243Y	P06-C*	TB1-K73	PRESSURE SENSOR +28 VDC LO
A 244	P06-D	TB1-G71	+28 VDC IMU
A 245R	P06-D*	TB1-D68	IMU PRESSURE MONITOR HI
A 246	P06-E	TB1-H26	0 VDC IMU
A 245Y	P06-E*	TB1-D69	IMU PRESSURE MONITOR LO
A 247	P06-F	TB1-C54	-28 VDC
A 248R	P06-F*	TB1-C77	800 CPS 28 V 5 PCT HI TO BLOWERS
A 249	P06-G	TB1-G70	STRUCTURE GROUND
A 248Y	P06-G*	TB1-C76	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 250R	P06-H	TB1-C18	OG TORQUE MOTOR HI
A 250Y	P06-J	TB1-C19	OG TORQUE MOTOR RET
A 251	P06-K	TB1-H61	IMU TEMP SENSOR COM
A 252Y	P06-L	TB1-H64	IRIG TEMP CONT SENSOR RET
A 252R	P06-M	TB1-H63	IRIG TEMP CONT SENSOR HI
A 253R	P06-N	TB1-H62	ACCEL INDICATING SENSOR HI
A 253Y	P06-P	TB1-G61	ACCEL TEMP IND SENSOR RET
A 254Y	P06-R	TB1-C61	EMERGENCY HTR LO-OPER AND STBY
A 255R	P06-V	TB1-D60	IMU CONTROL HTR HI
A 255Y	P06-W	TB1-D61	IMU CONTROL HTR LO
A 254R	P06-X	TB1-C60	IMU EMERGENCY HTR HI
A 256	P06-Y	TB1-D62	EMERG HTR CONT MODULE LO
A 242R	P06-Z	TB1-K63	IRIG TEMP IND SENSOR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 257L	P07-A	TB1-C23	Z GYRO TORQUE +
A 258Y	P07-A*	TB1-D10	Y PIP ERROR LO
A 257W	P07-B	TB1-C22	Z GYRO TORQUE RET
A 259R	P07-B*	TB1-C11	Z PIP ERROR HI
A 257R	P07-C	TB1-C21	Z GYRO TORQUE -
A 259Y	P07-C*	TB1-C10	Z PIP ERROR LO
A 260L	P07-D	TB1-F23	X GYRO TORQUE +
A 260W	P07-E	TB1-F22	X GYRO TORQUE RET
A 260R	P07-F	TB1-F21	X GYRO TORQUE -
A 261G	P07-F*	TB1-A10	OG ADA
A 262L	P07-G	TB1-D23	Y GYRO TORQUE +
A 261N	P07-G*	TB1-A11	MG ADA
A 262W	P07-H	TB1-D22	Y GYRO TORQUE RET
A 261R	P07-H*	TB1-B11	IG ADA
A 262R	P07-J	TB1-D21	Y GYRO TORQUE -
A 261Y	P07-J*	TB1-B10	0 VDC IMU
A 263L	P07-K	TB1-G23	Z PIP TORQUE +
A 263W	P07-L	TB1-G22	Z PIP TORQUE RET
A 263R	P07-M	TB1-G21	Z PIP TORQUE -
A 264L	P07-N	TB1-H23	Y PIP TORQUE +
A 264W	P07-P	TB1-H22	Y PIP TORQUE RET
A 264R	P07-R	TB1-H21	Y PIP TORQUE -
A 265L	P07-U	TB1-K23	X PIP TORQUE +
A 265W	P07-V	TB1-K22	X PIP TORQUE RET
A 265R	P07-W	TB1-K21	X PIP TORQUE -
A 266R	P07-X	TB1-F11	X PIP ERROR HI
A 266Y	P07-Y	TB1-F10	X PIP ERROR LO
A 258R	P07-Z	TB1-D11	Y PIP ERROR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 267G	P08- 1	TB1-K50	0 VDC OPTICS
A 267R	P08- 2	TB1-K51	SCT TRUNNION MOTOR PHASE 2
A 267Y	P08- 3	TB1-K52	SCT TRUNNION MOTOR PHASE 1
A 268R	P08- 5	TB1-H51	SCT SHAFT MOTOR PHASE 2
A 268Y	P08- 6	TB1-H52	SCT SHAFT MOTOR PHASE 1
A 268G	P08- 7	TB1-H50	0 VDC OPTICS
A 269R	P08- 9	TB1-F44	SCT TRUNNION 1X RSVR P2
A 269Y	P08- 10	TB1-F43	SCT TRUNNION 1X RSVR P4
A 270R	P08- 12	TB1-G43	SCT TRUNNION 1X RSVR P3
A 270Y	P08- 13	TB1-G44	SCT TRUNNION 1X RSVR P1
A 271Y	P08- 18	TB1-F40	SCT TRUNNION 1X RSVR S2
A 271R	P08- 19	TB1-F41	SCT TRUNNION 1X RSVR S4
A 272R	P08- 21	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 272Y	P08- 22	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 273R	P08- 24	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 273Y	P08- 25	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 274R	P08- 27	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS
A 274Y	P08- 28	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
A 275R	P08- 30	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS
A 275Y	P08- 31	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
A 276R	P08- 33	TB1-F37	SCT TRUNNION TACH HI
A 276Y	P08- 34	TB1-F38	SCT TRUNNION TACH LO
A 277	P08- 37	TB1-D67	0 VDC OPTICS
A 278R	P08- 38	TB1-K37	SCT SHAFT TACH HI
A 278Y	P08- 39	TB1-K38	SCT SHAFT TACH LO
A 279R	P08- 41	TB1-G46	SCT SHAFT 1X RSVR P2
A 279Y	P08- 42	TB1-G45	SCT SHAFT 1X RSVR P4
A 280R	P08- 44	TB1-F46	SCT SHAFT 1X RSVR P3
A 280Y	P08- 45	TB1-F45	SCT SHAFT 1X RSVR P1
A 281R	P08- 50	TB1-K41	SCT SHAFT 1X RSVR S2
A 281Y	P08- 51	TB1-K40	SCT SHAFT 1X RSVR S4
A 282R	P08- 53	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER
A 282Y	P08- 54	TB1-B 4	400 CPS 6 V LO
A 283R	P08- 56	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER
A 283Y	P08- 57	TB1-B 4	400 CPS 6 V LO
A 284	P08- 59	TB1-G70	STRUCTURE GROUND

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 332Y	P09- 1	TB1-A16	SIN AIG 1X
A 333Y	P09- 2	TB1-A13	COS AIG 1X
A 333R	P09- 3	TB1-A14	COS AIG 1X RET
A 334Y	P09- 4	TB1-D15	SIN AOG 1X S4
A 335	P09- 5	TB1-D77	0 VDC OPTICS
A 336	P09- 6	TB1-H71	+28 VDC OPTICS
A 337R	P09- 7	TB1-A63	+120 VDC PIP
A 338R	P09- 9	TB1-G31	OG CDU 16X ERROR SIG
A 339	P09- 10	TB1-H70	STRUCTURE GROUND
A 340R	P09- 11	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
A 340Y	P09- 12	TB1-B 7	800 CPS 28 V 1 PCT LO IMU
A 341R	P09- 13	TB1-C75	800 CPS 28 V 5 PCT L-90 DEG HI IMU.
A 341Y	P09- 14	TB1-C76	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 342	P09- 19	TB1-G57	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
A 343	P09- 20	TB1-H58	SHAFT CDU 16X ERROR SIG BUFFERED
A 344	P09- 21	TB1-H55	SXT TRUNNION TACH FEEDBACK BUFFERED
A 345	P09- 22	TB1-H57	TRUNNION CDU TACH FEEDBACK BUFFERED
A 332R	P09- 23	TB1-A15	SIN AIG 1X RET
A 346Y	P09- 24	TB1-B16	SIN AMG 1X
A 347R	P09- 25	TB1-B13	COS AMG 1X S3
A 334R	P09- 26	TB1-D14	SIN AOG 1X S2
A 348Y	P09- 27	TB1-C15	COS AOG 1X S1
A 337G	P09- 28	TB1-C63	+32 VDC PIP
A 337Y	P09- 29	TB1-B63	+32, +120 VDC RET PIP
A 338Y	P09- 31	TB1-G30	OG CDU ERROR SIG RET
A 349G	P09- 32	TB1-C74	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
A 349R	P09- 33	TB1-C72	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
A 350	P09- 37	TB1-K57	SCT TRUNNION 1X ERROR SIG BUFFERED
A 351	P09- 38	TB1-H54	SCT SHAFT 1X ERROR SIG BUFFERED
A 352	P09- 39	TB1-G58	SHAFT CDU TACH FEEDBACK SIG BUFFERED
A 353	P09- 40	TB1-F58	SCT TRUNNION TACH FEEDBACK BUFFERED
A 354Y	P09- 41	TB1-K34	IG CDU ERROR SIG RET
A 346R	P09- 42	TB1-B15	SIN AMG 1X RET
A 355Y	P09- 43	TB1-H34	MG CDU ERROR SIG RET
A 347Y	P09- 44	TB1-B14	COS AMG 1X S1
A 348R	P09- 45	TB1-C14	COS AOG 1X S3
A 356	P09- 46	TB1-G73	+3 VDC AGC
A 357	P09- 47	TB1-H72	+28 VDC STBY

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 358	P09- 48	TB1-B62	0 VDC IMU
A 359	P09- 49	TB1-G71	+28 VDC IMU
A 349Y	P09- 50	TB1-C73	800 CPS 28 V 5 PCT IMU WHEELS LO
A 360	P09- 54	TB1-G55	TRACKER X DRIVE BUFFERED HI
A 361	P09- 55	TB1-G54	TRACKER Y DRIVE BUFFERED HI
A 362	P09- 56	TB1-F57	0 VDC OPTICS
A 363	P09- 57	TB1-K55	SXT SHAFT TACH FEEDBACK BUFFERED
A 364	P09- 58	TB1-K54	SCT SHAFT TACH FEEDBACK BUFFERED
A 354R	P09- 59	TB1-K33	IG CDU 1X ERROR SIG
A 355R	P09- 60	TB1-H33	MG CDU 1X ERROR SIG
A 365Y	P09- 61	TB1-G34	OG CDU ERROR SIG RET
A 366	P09- 62	TB1-G74	+13 VDC AGC
A 367	P09- 63	TB1-H73	0 VDC AGC
A 368	P09- 64	TB1-H74	+28 VDC AGC
A 369R	P09- 65	TB1-F70	+2.5 VDC CONDITIONING LO
A 370	P09- 66	TB1-C54	-28 VDC
A 371	P09- 67	TB1-D26	AGC POWER SUPPLY FAIL SIG HI
A 372	P09- 68	TB1-B62	0 VDC IMU
A 373	P09- 69	TB1-A26	IMU DELAY LIGHT HI
A 374R	P09- 70	TB1-K 8	3200 CPS 2 V FEEDBACK HI
A 375	P09- 71	TB1-G56	TRACKER PREAMP OUTPUT BUFFERED HI
A 376	P09- 72	TB1-K58	PHOTOMETER PREAMP OUTPUT BUFFERED HI
A 377	P09- 73	TB1-H56	SXT TRUNNION MDA INPUT BUFFERED
A 378	P09- 74	TB1-K56	SXT SHAFT MDA INPUT BUFFERED
A 379Y	P09- 75	TB1-F28	Z GYRO ERROR SIG
A 380Y	P09- 76	TB1-G28	X GYRO ERROR SIG
A 365R	P09- 77	TB1-G33	OG CDU 1X ERROR SIG
A 381Y	P09- 78	TB1-D69	IMU PRESSURE MONITOR LO
A 381R	P09- 79	TB1-D68	IMU PRESSURE MONITOR HI
A 382	P09- 80	TB1-D52	TRAY 4 THERMISTER HI
A 369Y	P09- 81	TB1-F71	+2.5 VDC CONDITIONING HI
A 383R	P09- 82	TB1-G72	+20 VDC CONDITIONING
A 383Y	P09- 83	TB1-F72	0 VDC CONDITIONING
A 384	P09- 84	TB1-C26	G+N ERROR LIGHT HI
A 385	P09- 85	TB1-A56	GIMBAL LOCK SIGNAL
A 386	P09- 86	TB1-B26	IMU TEMP CONT FAIL LIGHT HI
A 387Y	P09- 87	TB1-H 2	25.6 KC LO IMU
A 374Y	P09- 88	TB1-H 8	3200 CPS 2 V FEEDBACK LO

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 388G	P09- 89	TB1-C58	IG CDU FAILURE INDICATION	
A 388N	P09- 90	TB1-C57	MG CDU FAILURE INDICATION	
A 389Y	P09- 91	TB1-F19	IG TORQUE MOTOR RET	
A 389R	P09- 92	TB1-F18	IG TORQUE MOTOR HI	
A 390N	P09- 93	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO	
A 390G	P09- 94	TB1-C28	IMU IG AND Y GYRO ERROR SIG	
A 391G	P09- 95	TB1-B40	X PIP ERROR MONITOR	
A 391R	P09- 96	TB1-A40	Y PIP ERROR MONITOR	
A 392	P09- 97	TB1-F52	THERMISTER LO	
A 393	P09- 98	TB1-D51	TRAY 3 THERMISTER HI	
A 394Y	P09-102	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
A 394R	P09-103	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
A 395Y	P09-104	TB1-K 2	25.6 KC LO OPTICS	
A 387R	P09-105	TB1-H 1	25.6 KC HI IMU	
A 396	P09-106	TB1-F64	ACCEL TEMP (TELEMETRY)	
A 397	P09-107	TB1-A64	BLOWER CURRENT SENSOR (TELEMETRY)	
A 388Y	P09-108	TB1-D58	0 VDC IMU	
A 398Y	P09-109	TB1-C19	OG TORQUE MOTOR RET	
A 399Y	P09-110	TB1-D19	MG TORQUE MOTOR RET	
A 390Y	P09-111	TB1-A28	IMU OG ERROR SIG	
A 390R	P09-112	TB1-B28	IMU MG ERROR SIG	
A 391Y	P09-113	TB1-A41	Z PIP ERROR MONITOR	
A 391N	P09-114	TB1-B41	0 VDC IMU	
A 400	P09-115	J23- 58	AGC THERMISTER HI	1995
A 401	P09-116	TB1-F51	TRAY 2 THERMISTER HI	
A 402Y	P09-124	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS	
A 402R	P09-125	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS	
A 395R	P09-126	TB1-K 1	25.6 KC HI OPTICS	
A 403	P09-127	TB1-D64	IRIG TEMP (TELEMETRY)	
A 404	P09-128	TB1-C64	TEMPERATURE CONTROL SIG LO	
A 405	P09-129	TB1-B64	HTR CURRENT (TELEMETRY)	
A 388R	P09-130	TB1-D57	OG CDU FAILURE INDICATION	
A 398R	P09-131	TB1-C18	OG TORQUE MOTOR HI	
A 399R	P09-132	TB1-D18	MG TORQUE MOTOR HI	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 406	P10- 1	TB1-H70	STRUCTURE GROUND	
	A 407	P10- 8	J22- 62	MAIN PANEL GIMBAL LOCK LIGHT	
	A 408	P10- 9	TB1-D70	0 VDC SPACECRAFT	
	A 409	P10- 10	TB1-D72	CONDITION LAMP TEST	
	A 410	P10- 12	TB1-A56	GIMBAL LOCK SIGNAL	
	A 411	P10- 13	TB1-C62	0 VDC IMU	
	A 412	P10- 14	TB1-H71	+28 VDC OPTICS	
	A 413Y	P10- 15	TB1-B61	AUTOMATIC MARK COMMAND	
*	A 299	P10- 16	J09- 31	MANUAL MARK COMMAND	
	A 414Y	P10- 19	J24- 32	NOT MARK	103
	A 415	P10- 24	TB1-A23	GIMBAL LOCK LIGHT HI	
*	A 298Y	P10- 32	J09- 30	ACCEPT MARK	
*	A 301Y	P10- 33	J09- 33	MARK REJECT	
*	A 314Y	P10- 38	J09- 77	400 CPS 1.5 V ZERO PHASE	
*	A 314R	P10- 39	J09- 65	400 CPS 1.5 V PI PHASE	
	A 416Y	P10- 43	TB1-A69	OPTICS ZERO ENCODER INDICATION	
	A 417Y	P10- 44	J24- 55	MARK	102
*	A 314G	P10- 48	J09- 95	400 CPS 26 V HI	
	A 418R	P10- 49	TB1-A75	400 CPS 26 V LO	
	A 419Y	P10- 68	TB1-C78	400 CPS 115 V LO	
	A 419R	P10- 69	TB1-B78	400 CPS 115 V HI	
*	A 311Y	P10- 92	J09- 52	400 CPS 6 V LO	
	A 420R	P10- 93	TB1-B 2	400 CPS 6 V LO	
	A 420Y	P10- 94	TB1-B 4	400 CPS 6 V LO	
	A 418Y	P10- 95	TB1-B75	400 CPS 6 V LO	
	A 421	P10-104	TB1-K71	+28 VDC MDV	
*	A 311G	P10-105	J09- 61	400 CPS 6 V HI	
*	A 311R	P10-106	J09- 53	400 CPS 6 V HI	
	A 420G	P10-107	TB1-C 1	400 CPS 6 V HI	
	A 420N	P10-108	TB1-C 2	400 CPS 6 V HI	

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SIZE A
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SCALE - NONE
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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 502	P11-A	TB1-K78	+28 VDC AGC BUSS A	
A 503	P11-A	J23- 38	+28 VDC AGC BUSS A	167
A 504	P11-A	J23- 61	+28 VDC AGC BUSS A	167
A 505	P11-B	TB1-K76	+28 VDC IMU BUSS A	
A 506	P11-B	TB1-K76	+28 VDC IMU BUSS A	
A 507	P11-B	TB1-K76	+28 VDC IMU BUSS A	
A 508	P11-C	TB1-H76	+28 VDC IMU BUSS A	
A 509	P11-C	TB1-H76	+28 VDC IMU BUSS A	
A 510	P11-C	TB1-H76	+28 VDC IMU BUSS A	
A 511	P11-D	TB1-F75	0 VDC IMU	
A 512	P11-D	TB1-B68	0 VDC IMU	
A 513	P11-E	TB1-C69	0 VDC IMU	
A 514	P11-E	TB1-D74	0 VDC IMU	
A 515	P11-F	TB1-F73	0 VDC IMU	
A 516	P11-F	TB1-B70	0 VDC IMU	
A 517	P11-G	TB1-F78	0 VDC OPTICS	
A 518	P11-G	TB1-K53	0 VDC OPTICS	
A 519	P11-G	TB1-K50	0 VDC OPTICS	
A 520	P11-H	TB1-G78	+28 VDC OPTICS BUSS A	
A 521	P11-H	TB1-G78	+28 VDC OPTICS BUSS A	
A 522	P11-H	TB1-H78	+28 VDC OPTICS BUSS A	
A 523	P11-J	J23- 90	0 VDC AGC	169
A 524	P11-J	J23- 91	0 VDC AGC	169
A 525	P11-J	P12-J	0 VDC AGC	
A 526Y	P11-K	TB1-C78	400 CPS 115 V LO	
A 527	P11-L	TB1-G70	STRUCTURE GROUND	
A 528	P11-M	TB1-G76	+28 VDC STBY BUSS A	
A 529	P11-M	TB1-G76	+28 VDC STBY BUSS A	
A 526R	P11-N	TB1-B78	400 CPS 115 V HI	

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SCALE - NONE | REV LTR | SHEET .79

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 530	P12-A	TB1-K77	+28 VDC AGC BUSS B	
A 531	P12-A	J23- 39	+28 VDC AGC BUSS B	168
A 532	P12-A	J23- 40	+28 VDC AGC BUSS B	168
A 533	P12-B	TB1-K75	+28 VDC IMU BUSS B	
A 534	P12-B	TB1-K75	+28 VDC IMU BUSS B	
A 535	P12-B	TB1-K75	+28 VDC IMU BUSS B	
A 536	P12-C	TB1-H75	+28 VDC IMU BUSS B	
A 537	P12-C	TB1-H75	+28 VDC IMU BUSS B	
A 538	P12-C	TB1-H75	+28 VDC IMU BUSS B	
A 539	P12-D	TB1-C70	0 VDC IMU	
A 540	P12-D	TB1-D73	0 VDC IMU	
A 541	P12-E	TB1-F74	0 VDC IMU	
A 542	P12-E	TB1-B69	0 VDC IMU	
A 543	P12-F	TB1-C68	0 VDC IMU	
A 544	P12-F	TB1-D75	0 VDC IMU	
A 545	P12-G	TB1-D78	0 VDC OPTICS	
A 546	P12-G	TB1-G53	0 VDC OPTICS	
A 547	P12-G	TB1-G50	0 VDC OPTICS	
A 548	P12-H	TB1-G77	+28 VDC OPTICS BUSS B	
A 549	P12-H	TB1-G77	+28 VDC OPTICS BUSS B	
A 550	P12-H	TB1-H77	+28 VDC OPTICS BUSS B	
A 551	P12-J	J23- 41	0 VDC AGC	170
A 552	P12-J	J23- 66	0 VDC AGC	170
* A 525	P12-J	P11-J	0 VDC AGC	
A 553	P12-L	TB1-K70	STRUCTURE GROUND	
A 554	P12-M	TB1-G75	+28 VDC STBY BUSS B	
A 555	P12-M	TB1-G75	+28 VDC STBY BUSS B	

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SCALE - NONE | REV LTR | SHEET 80

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 490R	P13- 1	TB1-C66	TRACKER AUTOMATIC GAIN CONTROL HI
A 491R	P13- 2	TB1-D66	TRACKER PREAMP OUTPUT HI
A 493R	P13- 5	TB1-G55	TRACKER X DRIVE BUFFERED HI
A 494R	P13- 6	TB1-G54	TRACKER Y DRIVE BUFFERED HI
A 495Y	P13- 7	TB1-F57	TRACKER PREAMP OUTPUT BUFFERED LO
A 492	P13- 10	E 25	TRACKER SIGNAL COMMON
A 493Y	P13- 13	TB1-F56	TRACKER X DRIVE BUFFERED LO
A 494Y	P13- 14	TB1-F56	TRACKER Y DRIVE BUFFERED LO
A 495R	P13- 15	TB1-G56	TRACKER PREAMP OUTPUT BUFFERED HI
A 496Y	P13- 23	TB1-F65	TRACKER Y ERROR LO
A 497Y	P13- 24	TB1-G65	TRACKER X ERROR LO
A 498Y	P13- 27	TB1-A65	TRACKER Y REFERENCE
A 498R	P13- 28	TB1-A66	TRACKER Y REFERENCE
A 496R	P13- 31	TB1-F66	TRACKER Y ERROR HI
A 497R	P13- 32	TB1-G66	TRACKER X ERROR HI
A 499R	P13- 35	TB1-B66	TRACKER X REFERENCE
A 499Y	P13- 36	TB1-B65	TRACKER X REFERENCE
A 500	P13- 37	TB1-K70	STRUCTURE GROUND
A 501	P13- 38	TB1-B71	+28 VDC OPTICS TRACKER POWER

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SCALE - NONE | REV LTR | SHEET 81

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 3B	SHLD A 3	TB1-A12	0 VDC IMU
* A 4B	SHLD A 4	TB1-A17	0 VDC IMU
* A 12B	SHLD A 12	TB1-K32	IG CDU ERROR SIG RET
* A 16B	SHLD A 16	TB1-H17	0 VDC IMU
* A 17B	SHLD A 17	TB1-K17	0 VDC IMU
* A 18B	SHLD A 18	TB1-K30	IG CDU ERROR SIG RET
* A 19B	SHLD A 19	TB1-F30	IG CDU MDA INPUT RET
* A 20B	SHLD A 20	TB1-F34	IG CDU ENCODER COMMON
* A 23B	SHLD A 23	TB1-B12	0 VDC IMU
* A 24B	SHLD A 24	TB1-B17	0 VDC IMU
* A 32B	SHLD A 32	TB1-H32	MG CDU ERROR SIG RET
* A 36B	SHLD A 36	TB1-H12	0 VDC IMU
* A 37B	SHLD A 37	TB1-K12	0 VDC IMU
* A 38B	SHLD A 38	TB1-H30	MG CDU ERROR SIG RET
* A 39B	SHLD A 39	TB1-D30	MG CDU MDA INPUT RET
* A 40B	SHLD A 40	TB1-D34	MG CDU ENCODER COMMON
* A 43B	SHLD A 43	TB1-C17	0 VDC IMU
* A 44B	SHLD A 44	TB1-D17	0 VDC IMU
* A 52B	SHLD A 52	TB1-G32	OG CDU ERROR SIG RET
* A 56B	SHLD A 56	TB1-F17	0 VDC IMU
* A 57B	SHLD A 57	TB1-G17	0 VDC IMU
* A 59B	SHLD A 59	TB1-F32	OG CDU ERROR SIG RET
* A 60B	SHLD A 60	TB1-C30	OG CDU MDA INPUT RET
* A 61B	SHLD A 61	TB1-C34	OG CDU ENCODER COMMON
* A 64B	SHLD A 64	TB1-H47	0 VDC OPTICS
* A 65B	SHLD A 65	TB1-K47	0 VDC OPTICS
* A 66B	SHLD A 66	TB1-H39	0 VDC OPTICS
* A 72B	SHLD A 72	TB1-C47	0 VDC OPTICS
* A 73B	SHLD A 73	TB1-D47	0 VDC OPTICS
* A 74B	SHLD A 74	TB1-A47	0 VDC OPTICS
* A 75B	SHLD A 75	TB1-B47	0 VDC OPTICS
* A 76B	SHLD A 76	TB1-G39	0 VDC OPTICS
* A 77B	SHLD A 77	TB1-G36	0 VDC OPTICS
* A 78B	SHLD A 78	TB1-A34	SHAFT CDU ENCODER COMMON
* A 81B	SHLD A 81	TB1-D39	0 VDC OPTICS
* A 82B	SHLD A 82	TB1-D42	0 VDC OPTICS
* A 83B	SHLD A 83	TB1-C42	0 VDC OPTICS
* A 89B	SHLD A 89	TB1-H42	0 VDC OPTICS

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SCALE - NONE | REV LTR | SHEET 82

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 90B	SHLD A 90	TB1-K42	0 VDC OPTICS
* A 91B	SHLD A 91	TB1-A42	0 VDC OPTICS
* A 92B	SHLD A 92	TB1-B42	0 VDC OPTICS
* A 93B	SHLD A 93	TB1-C42	0 VDC OPTICS
* A 94B	SHLD A 94	TB1-C36	0 VDC OPTICS
* A 95B	SHLD A 95	TB1-B34	TRUNNION CDU ENCODER COMMON
* A 99B	SHLD A 99	TB1-A49	STRUCTURE GROUND
* A 104B	SHLD A 104	TB1-H 4	STRUCTURE GROUND
* A 113B	SHLD A 113	TB1-D56	AGC SIGNAL 178 SHIELD RETURN
* A 114B	SHLD A 114	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 124B	SHLD A 124	TB1-K 4	STRUCTURE GROUND
* A 127B	SHLD A 127	TB1-A49	STRUCTURE GROUND
* A 128B	SHLD A 128	TB1-G 4	STRUCTURE GROUND
* A 130B	SHLD A 130	TB1-B49	STRUCTURE GROUND
* A 131B	SHLD A 131	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 132B	SHLD A 132	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 133B	SHLD A 133	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 134B	SHLD A 134	TB1-D56	AGC SIGNAL 178 SHIELD RETURN
* A 135B	SHLD A 135	TB1-K32	IG CDU ERROR SIG RET
* A 136B	SHLD A 136	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 139B	SHLD A 139	TB1-H32	MG CDU ERROR SIG RET
* A 145B	SHLD A 145	TB1-G32	OG CDU ERROR SIG RET
* A 179B	SHLD A 179	TB1-A12	0 VDC IMU
* A 180B	SHLD A 180	TB1-F17	0 VDC IMU
* A 181B	SHLD A 181	TB1-G17	0 VDC IMU
* A 182B	SHLD A 182	TB1-A17	0 VDC IMU
* A 183B	SHLD A 183	TB1-H12	0 VDC IMU
* A 184B	SHLD A 184	TB1-K12	0 VDC IMU
* A 185B	SHLD A 185	TB1-B12	0 VDC IMU
* A 186B	SHLD A 186	TB1-B17	0 VDC IMU
* A 188B	SHLD A 188	TB1-H12	0 VDC IMU
* A 189B	SHLD A 189	TB1-H17	0 VDC IMU
* A 190B	SHLD A 190	TB1-K17	0 VDC IMU
* A 191B	SHLD A 191	TB1-G27	0 VDC IMU
* A 193B	SHLD A 193	TB1-G27	0 VDC IMU
* A 196B	SHLD A 196	TB1-C17	0 VDC IMU
* A 198B	SHLD A 198	TB1-D17	0 VDC IMU
* A 200B	SHLD A 200	TB1-K28	IG CDU ERROR SIG RET

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SCALE - NONE	REV LTR	SHEET 83

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 203B	SHLD A 203	TB1-H28	MG CDU ERROR SIG RET
* A 204B	SHLD A 204	TB1-G12	0 VDC IMU
* A 205B	SHLD A 205	TB1-F12	0 VDC IMU
* A 211B	SHLD A 211	TB1-C47	0 VDC OPTICS
* A 213B	SHLD A 213	TB1-D47	0 VDC OPTICS
* A 216B	SHLD A 216	TB1-A67	0 VDC OPTICS
* A 218B	SHLD A 218	TB1-B67	0 VDC OPTICS
* A 219B	SHLD A 219	TB1-H36	0 VDC OPTICS
* A 221B	SHLD A 221	TB1-D36	0 VDC OPTICS
* A 223B	SHLD A 223	TB1-D42	0 VDC OPTICS
* A 224B	SHLD A 224	TB1-C42	0 VDC OPTICS
* A 226B	SHLD A 226	TB1-G47	0 VDC OPTICS
* A 227B	SHLD A 227	TB1-F47	0 VDC OPTICS
* A 228B	SHLD A 228	TB1-D67	0 VDC OPTICS
* A 232B	SHLD A 232	TB1-C67	0 VDC OPTICS
* A 234B	SHLD A 234	TB1-B47	0 VDC OPTICS
* A 235B	SHLD A 235	TB1-K67	0 VDC OPTICS
* A 236B	SHLD A 236	TB1-A47	0 VDC OPTICS
* A 238B	SHLD A 238	TB1-A42	0 VDC OPTICS
* A 239B	SHLD A 239	TB1-H67	0 VDC OPTICS
* A 240B	SHLD A 240	TB1-B42	0 VDC OPTICS
* A 254B	SHLD A 254	TB1-C59	0 VDC IMU
* A 255B	SHLD A 255	TB1-C59	0 VDC IMU
* A 257B	SHLD A 257	TB1-C24	0 VDC IMU
* A 260B	SHLD A 260	TB1-F24	0 VDC IMU
* A 262B	SHLD A 262	TB1-D24	0 VDC IMU
* A 263B	SHLD A 263	TB1-G24	0 VDC IMU
* A 264B	SHLD A 264	TB1-H24	0 VDC IMU
* A 265B	SHLD A 265	TB1-K24	0 VDC IMU
* A 269B	SHLD A 269	TB1-F42	0 VDC OPTICS
* A 270B	SHLD A 270	TB1-G42	0 VDC OPTICS
* A 271B	SHLD A 271	TB1-F39	0 VDC OPTICS
* A 276B	SHLD A 276	TB1-F36	0 VDC OPTICS
* A 278B	SHLD A 278	TB1-K36	0 VDC OPTICS
* A 279B	SHLD A 279	TB1-G47	0 VDC OPTICS
* A 280B	SHLD A 280	TB1-F47	0 VDC OPTICS
* A 281B	SHLD A 281	TB1-K39	0 VDC OPTICS
* A 286B	SHLD A 286	TB1-A59	STRUCTURE GROUND

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SCALE - NONE	REV LTR	SHEET 84

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 290B	SHLD A 290	TB1-K67	0 VDC OPTICS
* A 291B	SHLD A 291	TB1-H67	0 VDC OPTICS
A 298A	SHLD A 298	E 24	AGC SIGNAL 178 SHIELD RETURN
A 301A	SHLD A 301	E 24	AGC SIGNAL 178 SHIELD RETURN
* A 302B	SHLD A 302	TB1-F67	0 VDC OPTICS
* A 304B	SHLD A 304	E 23	AGC SIGNAL 178 SHIELD RETURN
* A 305B	SHLD A 305	TB1-G67	0 VDC OPTICS
A 308A	SHLD A 308	E 23	AGC SIGNAL 178 SHIELD RETURN
* A 308B	SHLD A 308	TB1-A70	AGC SIGNAL 178 SHIELD RETURN
A 309A	SHLD A 309	E 23	AGC SIGNAL 178 SHIELD RETURN
* A 309B	SHLD A 309	E 24	AGC SIGNAL 178 SHIELD RETURN
* A 313B	SHLD A 313	TB1-A58	STRUCTURE GROUND
* A 332B	SHLD A 332	TB1-A17	0 VDC IMU
* A 333B	SHLD A 333	TB1-A12	0 VDC IMU
* A 334B	SHLD A 334	TB1-D17	0 VDC IMU
* A 338B	SHLD A 338	TB1-F32	OG CDU ERROR SIG RET
* A 346B	SHLD A 346	TB1-B17	0 VDC IMU
* A 347B	SHLD A 347	TB1-B12	0 VDC IMU
* A 348B	SHLD A 348	TB1-C17	0 VDC IMU
* A 354B	SHLD A 354	TB1-K32	IG CDU ERROR SIG RET
* A 355B	SHLD A 355	TB1-H32	MG CDU ERROR SIG RET
* A 365B	SHLD A 365	TB1-G32	OG CDU ERROR SIG RET
* A 379B	SHLD A 379	TB1-F27	0 VDC IMU
* A 380B	SHLD A 380	TB1-F27	0 VDC IMU
* A 413B	SHLD A 413	TB1-A58	STRUCTURE GROUND
* A 414B	SHLD A 414	E 23	AGC SIGNAL 178 SHIELD RETURN
* A 416B	SHLD A 416	TB1-A70	AGC SIGNAL 178 SHIELD RETURN
* A 417B	SHLD A 417	E 23	AGC SIGNAL 178 SHIELD RETURN
* A 472B	SHLD A 472	TB1-A59	STRUCTURE GROUND
* A 474B	SHLD A 474	TB1-A49	STRUCTURE GROUND
* A 475B	SHLD A 475	TB1-B49	STRUCTURE GROUND
* A 476B	SHLD A 476	TB1-B49	STRUCTURE GROUND
* A 490B	SHLD A 490	TB1-C67	0 VDC OPTICS
* A 491B	SHLD A 491	TB1-D67	0 VDC OPTICS
* A 496B	SHLD A 496	TB1-F67	0 VDC OPTICS
* A 497B	SHLD A 497	TB1-G67	0 VDC OPTICS
* A 498B	SHLD A 498	TB1-A67	0 VDC OPTICS
* A 499B	SHLD A 499	TB1-B67	0 VDC OPTICS

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SCALE - NONE	REV LTR	SHEET 85

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 564B	SHLD A 564	TB1-A70	AGC SIGNAL 178 SHIELD RETURN
* A 566B	SHLD A 566	E 23	AGC SIGNAL 178 SHIELD RETURN
* BB 50B	SHLD BB 50	J17-S4	0 VDC IMU
* BB 94B	SHLD BB 94	E 4	0 VDC IMU
CC 1A	SHLD CC 1	E 4	0 VDC IMU
CC 2A	SHLD CC 2	E 4	0 VDC IMU
CC 3A	SHLD CC 3	J12-K3	STRUCTURE GROUND
CC 6A	SHLD CC 6	E 4	0 VDC IMU
CC 7A	SHLD CC 7	E 4	0 VDC IMU
* CC 8B	SHLD CC 8	E 18	AGC SIGNAL 179 SHIELD RETURN
* CC 9B	SHLD CC 9	E 18	AGC SIGNAL 179 SHIELD RETURN
* CC 10B	SHLD CC 10	E 18	AGC SIGNAL 179 SHIELD RETURN
CC 13A	SHLD CC 13	E 7	0 VDC IMU
CC 14A	SHLD CC 14	E 7	0 VDC IMU
CC 15A	SHLD CC 15	E 7	0 VDC IMU
CC 16A	SHLD CC 16	E 7	0 VDC IMU
CC 17A	SHLD CC 17	E 7	0 VDC IMU
CC 18A	SHLD CC 18	E 7	0 VDC IMU
CC 19A	SHLD CC 19	E 7	0 VDC IMU
* CC 20B	SHLD CC 20	E 17	AGC SIGNAL 179 SHIELD RETURN
* CC 21B	SHLD CC 21	E 17	AGC SIGNAL 179 SHIELD RETURN
* CC 22B	SHLD CC 22	E 17	AGC SIGNAL 179 SHIELD RETURN
* CC 23B	SHLD CC 23	E 17	AGC SIGNAL 179 SHIELD RETURN
* CC 24B	SHLD CC 24	E 17	AGC SIGNAL 179 SHIELD RETURN
* CC 25B	SHLD CC 25	E 17	AGC SIGNAL 179 SHIELD RETURN
* CC 26B	SHLD CC 26	E 19	AGC SIGNAL 179 SHIELD RETURN
* CC 27B	SHLD CC 27	E 19	AGC SIGNAL 179 SHIELD RETURN
* CC 28B	SHLD CC 28	E 19	AGC SIGNAL 179 SHIELD RETURN
* CC 29B	SHLD CC 29	E 19	AGC SIGNAL 179 SHIELD RETURN
* CC 30B	SHLD CC 30	E 19	AGC SIGNAL 179 SHIELD RETURN
* CC 31B	SHLD CC 31	E 19	AGC SIGNAL 179 SHIELD RETURN
CC 32A	SHLD CC 32	E 9	IG DAC MDA SIG LO
CC 33A	SHLD CC 33	E 9	IG DAC MDA SIG LO
CC 34A	SHLD CC 34	E 11	MG DAC MDA SIG LO
CC 35A	SHLD CC 35	E 11	MG DAC MDA SIG LO
CC 36A	SHLD CC 36	E 13	OG DAC MDA SIG LO
CC 37A	SHLD CC 37	E 13	OG DAC MDA SIG LO
* CC 38B	SHLD CC 38	E 21	AGC SIGNAL 178 SHIELD RETURN

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SCALE - NONE	REV LTR	SHEET 86

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC 39A	SHLD CC 39	J16-P2	0 VDC IMU
CC 40A	SHLD CC 40	J16-P2	0 VDC IMU
* CC 41B	SHLD CC 41	E 21	AGC SIGNAL 178 SHIELD RETURN
* CC 42B	SHLD CC 42	E 20	AGC SIGNAL 179 SHIELD RETURN
* CC 43B	SHLD CC 43	J22- 48	NAA SHIELD GROUND
* CC 44B	SHLD CC 44	J22- 77	NAA SHIELD GROUND
* CC 45B	SHLD CC 45	J22- 80	NAA SHIELD GROUND
* CC 46B	SHLD CC 46	E 20	AGC SIGNAL 179 SHIELD RETURN
* CC 47B	SHLD CC 47	J22- 54	NAA SHIELD GROUND
* CC 48B	SHLD CC 48	J22- 51	NAA SHIELD GROUND
* CC 49B	SHLD CC 49	E 20	AGC SIGNAL 179 SHIELD RETURN
* CC 50B	SHLD CC 50	E 20	AGC SIGNAL 179 SHIELD RETURN
CC 51A	SHLD CC 51	J17-S4	0 VDC IMU
CC 57A	SHLD CC 57	J20-M4	STRUCTURE GROUND
* CC 96B	SHLD CC 96	TB1-K24	0 VDC IMU
* CC 99B	SHLD CC 99	TB1-H24	0 VDC IMU
* CC101B	SHLD CC101	TB1-F24	0 VDC IMU
* CC106B	SHLD CC106	TB1-G24	0 VDC IMU
* CC108B	SHLD CC108	TB1-D24	0 VDC IMU
* CC109B	SHLD CC109	TB1-C24	0 VDC IMU
* CC126B	SHLD CC126	TB1-K17	0 VDC IMU
* CC127B	SHLD CC127	TB1-K12	0 VDC IMU
* CC128B	SHLD CC128	TB1-H 4	STRUCTURE GROUND
CC136A	SHLD CC136	J16-B1	IG CDU MDA INPUT RET
CC141A	SHLD CC141	J16-B3	MG CDU MDA INPUT RET
* CC143B	SHLD CC143	TB1-C17	0 VDC IMU
* CC144B	SHLD CC144	TB1-D17	0 VDC IMU
* CC148B	SHLD CC148	TB1-F17	0 VDC IMU
* CC152B	SHLD CC152	TB1-G17	0 VDC IMU
CC153A	SHLD CC153	J16-B5	OG CDU MDA INPUT RET
* CC159B	SHLD CC159	TB1-K 4	STRUCTURE GROUND
* CC163B	SHLD CC163	TB1-H17	0 VDC IMU
* CC164B	SHLD CC164	TB1-H12	0 VDC IMU
* CC173B	SHLD CC173	TB1-D56	AGC SIGNAL 178 SHIELD RETURN
* CC182B	SHLD CC182	TB1-G12	0 VDC IMU
* CC190B	SHLD CC190	TB1-C59	0 VDC IMU
* CC192B	SHLD CC192	TB1-C59	0 VDC IMU
* CC201B	SHLD CC201	TB1-F12	0 VDC IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* CC204B	SHLD CC204	TB1-G32	OG CDU ERROR SIG RET
* CC218B	SHLD CC218	TB1-D47	0 VDC OPTICS
* CC219B	SHLD CC219	TB1-B47	0 VDC OPTICS
* CC221B	SHLD CC221	TB1-G42	0 VDC OPTICS
* CC223B	SHLD CC223	TB1-A58	STRUCTURE GROUND
* CC225B	SHLD CC225	TB1-A59	STRUCTURE GROUND
* CC229B	SHLD CC229	TB1-D42	0 VDC OPTICS
* CC230B	SHLD CC230	TB1-C42	0 VDC OPTICS
* CC231B	SHLD CC231	TB1-F42	0 VDC OPTICS
* CC233B	SHLD CC233	TB1-D36	0 VDC OPTICS
* CC234B	SHLD CC234	TB1-B42	0 VDC OPTICS
* CC235B	SHLD CC235	TB1-K39	0 VDC OPTICS
* CC237B	SHLD CC237	TB1-K36	0 VDC OPTICS
* CC239B	SHLD CC239	TB1-H36	0 VDC OPTICS
* CC251B	SHLD CC251	TB1-A59	STRUCTURE GROUND
* CC253B	SHLD CC253	TB1-K42	0 VDC OPTICS
* CC254B	SHLD CC254	TB1-H42	0 VDC OPTICS
* CC255B	SHLD CC255	TB1-D39	0 VDC OPTICS
* CC256B	SHLD CC256	TB1-C42	0 VDC OPTICS
* CC258B	SHLD CC258	TB1-C36	0 VDC OPTICS
* CC259B	SHLD CC259	TB1-F39	0 VDC OPTICS
* CC261B	SHLD CC261	TB1-F36	0 VDC OPTICS
* CC263B	SHLD CC263	TB1-H39	0 VDC OPTICS
* CC265B	SHLD CC265	TB1-H47	0 VDC OPTICS
* CC266B	SHLD CC266	TB1-K47	0 VDC OPTICS
* CC267B	SHLD CC267	TB1-G39	0 VDC OPTICS
* CC269B	SHLD CC269	TB1-G36	0 VDC OPTICS
* CC276B	SHLD CC276	TB1-A58	STRUCTURE GROUND
* CC278B	SHLD CC278	TB1-K67	0 VDC OPTICS
* CC281B	SHLD CC281	TB1-G67	0 VDC OPTICS
* CC325B	SHLD CC325	TB1-G 4	STRUCTURE GROUND
* CC327B	SHLD CC327	TB1-B17	0 VDC IMU
* CC328B	SHLD CC328	TB1-B12	0 VDC IMU
* CC329B	SHLD CC329	TB1-A17	0 VDC IMU
* CC330B	SHLD CC330	TB1-A12	0 VDC IMU
CC332A	SHLD CC332	E 21	AGC SIGNAL 178 SHIELD RETURN
* CC332B	SHLD CC332	TB1-D56	AGC SIGNAL 178 SHIELD RETURN

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
AA 70	TB1-A 1	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
* A 8R	TB1-A 1	J01- 28	400 CPS VARIABLE ILLUMINATION POWER
* A 28R	TB1-A 1	J02- 28	400 CPS VARIABLE ILLUMINATION POWER
* A 48R	TB1-A 1	J03- 28	400 CPS VARIABLE ILLUMINATION POWER
AA 74	TB1-A 2	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
* A 67R	TB1-A 2	J04- 28	400 CPS VARIABLE ILLUMINATION POWER
* A 85R	TB1-A 2	J05- 28	400 CPS VARIABLE ILLUMINATION POWER
* A 143R	TB1-A 2	P01-103	400 CPS VARIABLE ILLUMINATION POWER
* AA 70	TB1-A 2	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
AA 77	TB1-A 3	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER
* A 123R	TB1-A 3	J06-108	400 CPS VARIABLE ILLUMINATION POWER
* A 225R	TB1-A 3	P05- 43	400 CPS VARIABLE ILLUMINATION POWER
* A 312R	TB1-A 3	J09- 54	400 CPS VARIABLE ILLUMINATION POWER
* AA 74	TB1-A 3	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
* A 143Y	TB1-A 4	P01-108	400 CPS VARIABLE ILLUMINATION POWER
* A 282R	TB1-A 4	P08- 53	400 CPS VARIABLE ILLUMINATION POWER
* A 283R	TB1-A 4	P08- 56	400 CPS VARIABLE ILLUMINATION POWER
* AA 77	TB1-A 4	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
AA 81	TB1-A 5	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
* A 25G	TB1-A 5	J02- 11	800 CPS 28 V 1 PCT HI IMU
* A 25R	TB1-A 5	J02- 25	800 CPS 28 V 1 PCT HI IMU
* A 178R	TB1-A 5	P02-A	800 CPS 28 V 1 PCT HI IMU
* CC160L	TB1-A 5	J16-S4	800 CPS 28 V 1 PCT HI IMU
AA 84	TB1-A 6	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
* A 5G	TB1-A 6	J01- 11	800 CPS 28 V 1 PCT HI IMU
* A 5R	TB1-A 6	J01- 25	800 CPS 28 V 1 PCT HI IMU
* A 45R	TB1-A 6	J03- 25	800 CPS 28 V 1 PCT HI IMU
* AA 81	TB1-A 6	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
AA 88	TB1-A 7	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
* A 45G	TB1-A 7	J03- 11	800 CPS 28 V 1 PCT HI IMU
* A 126R	TB1-A 7	P01- 11	800 CPS 28 V 1 PCT HI IMU
* A 340R	TB1-A 7	P09- 11	800 CPS 28 V 1 PCT HI IMU
* AA 84	TB1-A 7	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
* A 1R	TB1-A 8	J01- 1	800 CPS 28 V 1 PCT HI IMU
* A 21R	TB1-A 8	J02- 1	800 CPS 28 V 1 PCT HI IMU
* A 41R	TB1-A 8	J03- 1	800 CPS 28 V 1 PCT HI IMU
* AA 88	TB1-A 8	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
* A 261G	TB1-A10	P07-F*	OG ADA

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* CC 65K	TB1-A10	J11-G1	OG ADA	
* A 261N	TB1-A11	P07-G*	MG ADA	
* CC 65L	TB1-A11	J11-H1	MG ADA	
A 3B	TB1-A12	SHLD A 3	0 VDC IMU	
A 179B	TB1-A12	SHLD A 179	0 VDC IMU	
A 333B	TB1-A12	SHLD A 333	0 VDC IMU	
AA 3	TB1-A12	TB1-B12	0 VDC IMU	
AA 93	TB1-A12	TB1-B17	0 VDC IMU	
CC330B	TB1-A12	SHLD CC330	0 VDC IMU	
* A 3R	TB1-A13	J01- 20	COS AIG 1X P3	
* A 179R	TB1-A13	P02-A*	COS AIG 1X S3	
* A 333Y	TB1-A13	P09- 2	COS AIG 1X	
* CC330R	TB1-A13	J22- 84	COS AIG 1X	
* A 3Y	TB1-A14	J01- 6	COS AIG 1X RET P1	
* A 179Y	TB1-A14	P02-B*	COS AIG 1X RET S1	
* A 333R	TB1-A14	P09- 3	COS AIG 1X RET	
* CC330W	TB1-A14	J22- 85	COS AIG 1X RET	
* A 4R	TB1-A15	J01- 21	SIN AIG 1X RET P4	
* A 182R	TB1-A15	P02-F*	SIN AIG 1X RET S2	
* A 332R	TB1-A15	P09- 23	SIN AIG 1X RET	
* CC329W	TB1-A15	J22- 33	SIN AIG 1X RET	
* A 4Y	TB1-A16	J01- 7	SIN AIG 1X P2	
* A 182Y	TB1-A16	P02-G*	SIN AIG 1X S4	
* A 332Y	TB1-A16	P09- 1	SIN AIG 1X	
* CC329R	TB1-A16	J22- 56	SIN AIG 1X	
A 4B	TB1-A17	SHLD A 4	0 VDC IMU	
A 182B	TB1-A17	SHLD A 182	0 VDC IMU	
A 332B	TB1-A17	SHLD A 332	0 VDC IMU	
AA 10	TB1-A17	TB1-B17	0 VDC IMU	
AA 95	TB1-A17	TB1-C24	0 VDC IMU	
CC329B	TB1-A17	SHLD CC329	0 VDC IMU	
* A 158	TB1-A20	J08- 50	SPARE FAIL LIGHT 1 HI	
* A 479	TB1-A20	J10- 7	SPARE FAIL LIGHT 1 HI	305
* A 155	TB1-A21	J08- 41	ZERO ENCODER LIGHT HI	
* A 473G	TB1-A21	J10- 3	ZERO ENCODER LIGHT HI	301
* A 162	TB1-A22	J08- 60	IMU FAIL LIGHT HI	
* A 478	TB1-A22	J10- 6	IMU FAIL LIGHT HI	304
* A 147	TB1-A23	J08- 18	GIMBAL LOCK LIGHT HI	

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CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* A 415	TB1-A23	P10- 24	GIMBAL LOCK LIGHT HI	
* A 169	TB1-A24	J08- 72	CDU FAIL LIGHT HI	
* A 473R	TB1-A24	J10- 4	CDU FAIL LIGHT HI	302
* A 152	TB1-A25	J08- 31	IMU DELAY LIGHT LO	
* CC171	TB1-A25	J16-K3	IMU DELAY LIGHT LO	
* A 129	TB1-A26	P01- 26	IMU DELAY LIGHT HI	
* A 156	TB1-A26	J08- 42	IMU DELAY LIGHT HI	
* A 373	TB1-A26	P09- 69	IMU DELAY LIGHT HI	
* A 195R	TB1-A28	P03-C	IMU OG ERROR SIG	
* A 390Y	TB1-A28	P09-111	IMU OG ERROR SIG	
* CC 68L	TB1-A28	J11-A6	IMU OG ERROR SIG	
* A 55R	TB1-A29	J03- 67	OG CDU 1/2X ERROR SIG	
* CC145W	TB1-A29	J16-D5	OG CDU 1/2X ERROR SIG	
* A 35R	TB1-A30	J02- 67	MG CDU 1/2X ERROR SIG	
* CC138W	TB1-A30	J16-D3	MG CDU 1/2X ERROR SIG	
* A 15R	TB1-A31	J01- 67	IG CDU 1/2X ERROR SIG S3	
* CC133W	TB1-A31	J16-D1	IG CDU 1/2X ERROR SIG	
* A 78R	TB1-A33	J04-108	SHAFT CDU ENCODER PHASE 2	
* CC203R	TB1-A33	J17-F9	SHAFT CDU ENCODER PHASE 2	
A 78B	TB1-A34	SHLD A 78	SHAFT CDU ENCODER COMMON	
* A 78Y	TB1-A34	J04- 94	SHAFT CDU ENCODER COMMON	
* CC203W	TB1-A34	J17-D9	SHAFT CDU ENCODER COMMON	
* A 78G	TB1-A35	J04-107	SHAFT CDU ENCODER PHASE 1	
* CC203L	TB1-A35	J17-C9	SHAFT CDU ENCODER PHASE 1	
AA 25	TB1-A36	TB1-B36	0 VDC OPTICS	
AA 32	TB1-A39	TB1-B39	0 VDC OPTICS	
AA103	TB1-A39	TB1-B36	0 VDC OPTICS	
* A 391R	TB1-A40	P09- 96	Y PIP ERROR MONITOR	
* CC100	TB1-A40	J13-F2	Y PIP ERROR MONITOR	
* A 391Y	TB1-A41	P09-113	Z PIP ERROR MONITOR	
* CC107	TB1-A41	J14-H6	Z PIP ERROR MONITOR	
A 91B	TB1-A42	SHLD A 91	0 VDC OPTICS	
A 238B	TB1-A42	SHLD A 238	0 VDC OPTICS	
AA 39	TB1-A42	TB1-B42	0 VDC OPTICS	
AA105	TB1-A42	TB1-B39	0 VDC OPTICS	
* A 91R	TB1-A43	J05-100	TRUNNION CDU 16X RSVR P3	
* A 238R	TB1-A43	P05- 87	SXT TRUNNION 64X RSVR S3	
* A 91Y	TB1-A44	J05- 86	TRUNNION CDU 16X RSVR P1	

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CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* A 238Y	TB1-A44	P05- 86	SXT TRUNNION 64X RSVR S1	
* A 74Y	TB1-A45	J04- 86	SHAFT CDU 16X RSVR P1	
* A 236Y	TB1-A45	P05- 82	SXT SHAFT 16X RSVR S1	
* A 74R	TB1-A46	J04-100	SHAFT CDU 16X RSVR P3	
* A 236R	TB1-A46	P05- 83	SXT SHAFT 16X RSVR S3	
A 74B	TB1-A47	SHLD A 74	0 VDC OPTICS	
A 236B	TB1-A47	SHLD A 236	0 VDC OPTICS	
AA 46	TB1-A47	TB1-B47	0 VDC OPTICS	
AA107	TB1-A47	TB1-B42	0 VDC OPTICS	
* A 99Y	TB1-A48	J06- 12	MODE RELAY COMMON TO AGC	
* A 474R	TB1-A48	J10- 26	MODE RELAY COMMON TO AGC	312
* A 474Y	TB1-A48	J10- 13	MODE RELAY COMMON TO AGC	315
A 99B	TB1-A49	SHLD A 99	STRUCTURE GROUND	
A 127B	TB1-A49	SHLD A 127	STRUCTURE GROUND	
A 474B	TB1-A49	SHLD A 474	STRUCTURE GROUND	
AA 53	TB1-A49	TB1-B49	STRUCTURE GROUND	
* A 127G	TB1-A50	P01- 48	COARSE ALIGN MODE COMMAND FROM AGC	
* A 475G	TB1-A50	J10- 22	COARSE ALIGN MODE COMMAND FROM AGC	308
* A 176	TB1-A51	J08- 93	STEP-DOWN-R	
* A 327	TB1-A51	J09- 93	STEP-DOWN-R	
* A 172	TB1-A52	J08- 79	STEP-DOWN-C	
* A 323	TB1-A52	J09- 79	STEP-DOWN-C	
* A 166	TB1-A53	J08- 67	+28 VDC MDV SWITCHED	
* A 316	TB1-A53	J09- 67	+28 VDC MDV SWITCHED	
* A 138R	TB1-A54	P01- 80	PANEL BRIGHTNESS CONTROL	
* A 300R	TB1-A54	J09- 32	PANEL BRIGHTNESS CONTROL	
* A 138Y	TB1-A55	P01- 95	PANEL BRIGHTNESS CONTROL	
* A 300Y	TB1-A55	J09- 44	PANEL BRIGHTNESS CONTROL	
* A 202	TB1-A56	P03-J*	GIMBAL LOCK SIGNAL	
* A 385	TB1-A56	P09- 85	GIMBAL LOCK SIGNAL	
* A 410	TB1-A56	P10- 12	GIMBAL LOCK SIGNAL	
* A 313G	TB1-A57	J09- 82	RESOLVED MODE RELAY COMMAND	
* CC251R	TB1-A57	J19-P6	RESOLVED MODE RELAY COMMAND	
A 313B	TB1-A58	SHLD A 313	STRUCTURE GROUND	
A 413B	TB1-A58	SHLD A 413	STRUCTURE GROUND	
AA 58	TB1-A58	TB1-A59	STRUCTURE GROUND	
CC223B	TB1-A58	SHLD CC223	STRUCTURE GROUND	
CC276B	TB1-A58	SHLD CC276	STRUCTURE GROUND	

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CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 286B	TB1-A59	SHLD A 286	STRUCTURE GROUND	
A 472B	TB1-A59	SHLD A 472	STRUCTURE GROUND	
AA 59	TB1-A59	TB1-A60	STRUCTURE GROUND	
CC225B	TB1-A59	SHLD CC225	STRUCTURE GROUND	
CC251B	TB1-A59	SHLD CC251	STRUCTURE GROUND	
* AA 58	TB1-A59	TB1-A58	STRUCTURE GROUND	
* AA 59	TB1-A60	TB1-A59	STRUCTURE GROUND	
* CC180	TB1-A60	J16-N4	STRUCTURE GROUND	
* A 286R	TB1-A61	J09- 2	TRACKER MODE RELAY COMMAND	
* A 472R	TB1-A61	J10- 66	TRACKER MODE RELAY COMMAND	317
* CC251W	TB1-A61	J19-R6	TRACKER MODE RELAY COMMAND	
* A 337R	TB1-A63	P09- 7	+120 VDC PIP	
* CC206R	TB1-A63	J17-L5	+120 VDC PIP	
* A 397	TB1-A64	P09-107	BLOWER CURRENT SENSOR (TELEMETRY)	
* CC193	TB1-A64	J17-F6	BLOWER CURRENT SENSOR (TELEMETRY)	
* A 216Y	TB1-A65	P05- 10	TRACKER Y REFERENCE	
* A 498Y	TB1-A65	P13- 27	TRACKER Y REFERENCE	
* A 216R	TB1-A66	P05- 11	TRACKER Y REFERENCE	
* A 498R	TB1-A66	P13- 28	TRACKER Y REFERENCE	
A 216B	TB1-A67	SHLD A 216	0 VDC OPTICS	
A 498B	TB1-A67	SHLD A 498	0 VDC OPTICS	
AA 61	TB1-A67	TB1-B67	0 VDC OPTICS	
AA114	TB1-A67	TB1-B47	0 VDC OPTICS	
* A 308Y	TB1-A68	J09- 47	AGC COMMON (OSS)	
* A 564Y	TB1-A68	J24- 84	AGC COMMON (OSS)	101
* A 566Y	TB1-A68	J24- 83	SXT POWER ON INDICATION	105
* A 308R	TB1-A69	J09- 48	OPTICS ZERO ENCODER INDICATION	
* A 416Y	TB1-A69	P10- 43	OPTICS ZERO ENCODER INDICATION	
* A 564R	TB1-A69	J24- 15	OPTICS ZERO ENCODER INDICATION	104
A 308B	TB1-A70	SHLD A 308	AGC SIGNAL 178 SHIELD RETURN	
A 416B	TB1-A70	SHLD A 416	AGC SIGNAL 178 SHIELD RETURN	
A 564B	TB1-A70	SHLD A 564	AGC SIGNAL 178 SHIELD RETURN	
* A 306G	TB1-A71	J09- 45	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR	
* CC273L	TB1-A71	J20-H4	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR	
AA121	TB1-A72	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS	
* A 306R	TB1-A72	J09- 80	800 CPS 28 V 1 PCT HI OPTICS	
* A 402R	TB1-A72	P09-125	800 CPS 28 V 1 PCT HI OPTICS	
* CC172W	TB1-A72	J16-P5	800 CPS 28 V 1 PCT HI OPTICS	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 274R	TB1-A73	P08- 27	800 CPS 28 V 1 PCT HI OPTICS
* A 275R	TB1-A73	P08- 30	800 CPS 28 V 1 PCT HI OPTICS
* AA121	TB1-A73	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS
* CC273W	TB1-A73	J20-G6	800 CPS 28 V 1 PCT HI OPTICS
* A 272R	TB1-A74	P08- 21	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 273R	TB1-A74	P08- 24	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 394R	TB1-A74	P09-103	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* CC174R	TB1-A74	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 165N	TB1-A75	J08- 95	400 CPS 26 V LO
* A 418R	TB1-A75	P10- 49	400 CPS 26 V LO
* A 165G	TB1-A76	J08- 66	MDV SLEW CONTROL 1.5 V 400 CPS
* A 315G	TB1-A76	J09- 66	MDV SLEW CONTROL 1.5 V 400 CPS
* A 165R	TB1-A77	J08- 68	400 CPS 26 V MDV RSVR EXC
* A 315R	TB1-A77	J09- 68	400 CPS 26 V MDV RSVR EXC
* A 165Y	TB1-A78	J08- 81	400 CPS 26 V SLEW
* A 315Y	TB1-A78	J09- 81	400 CPS 26 V SLEW
AA 71	TB1-B 1	TB1-B 2	400 CPS 6 V LO
* A 8Y	TB1-B 1	J01- 29	400 CPS 6 V LO
* A 28Y	TB1-B 1	J02- 29	400 CPS 6 V LO
* A 48Y	TB1-B 1	J03- 29	400 CPS 6 V LO
AA 75	TB1-B 2	TB1-B 3	400 CPS 6 V LO
* A 67Y	TB1-B 2	J04- 29	400 CPS 6 V LO
* A 85Y	TB1-B 2	J05- 29	400 CPS 6 V LO
* A 420R	TB1-B 2	P10- 93	400 CPS 6 V LO
* AA 71	TB1-B 2	TB1-B 1	400 CPS 6 V LO
AA 78	TB1-B 3	TB1-B 4	400 CPS 6 V LO
* A 123Y	TB1-B 3	J06-107	400 CPS 6 V LO
* A 225Y	TB1-B 3	P05- 44	400 CPS 6 V LO
* AA 75	TB1-B 3	TB1-B 2	400 CPS 6 V LO
* A 282Y	TB1-B 4	P08- 54	400 CPS 6 V LO
* A 283Y	TB1-B 4	P08- 57	400 CPS 6 V LO
* A 420Y	TB1-B 4	P10- 94	400 CPS 6 V LO
* AA 78	TB1-B 4	TB1-B 3	400 CPS 6 V LO
* A 178Y	TB1-B 5	P02-B	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
* CC160W	TB1-B 5	J16-P4	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
* A 5Y	TB1-B 6	J01- 12	ZEROING RSVR 800 CPS
* A 25Y	TB1-B 6	J02- 12	ZEROING RSVR 800 CPS
* A 45Y	TB1-B 6	J03- 12	ZEROING RSVR 800 CPS

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC160K	TB1-B 6	J16-R4	ZEROING RSVR 800 CPS
	AA 89	TB1-B 7	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
*	A 126Y	TB1-B 7	P01- 10	800 CPS 28 V 1 PCT LO IMU
*	A 340Y	TB1-B 7	P09- 12	800 CPS 28 V 1 PCT LO IMU
*	CC160R	TB1-B 7	J16-S3	800 CPS 28 V 1 PCT LO IMU
*	A 1Y	TB1-B 8	J01- 14	800 CPS 28 V 1 PCT LO IMU
*	A 21Y	TB1-B 8	J02- 14	800 CPS 28 V 1 PCT LO IMU
*	A 41Y	TB1-B 8	J03- 14	800 CPS 28 V 1 PCT LO IMU
*	AA 89	TB1-B 8	TB1-B 7	800 CPS 28 V 1 PCT LO IMU
*	A 261Y	TB1-B10	P07-J*	0 VDC IMU
*	CC 65W	TB1-B10	J11-G2	0 VDC IMU
*	A 261R	TB1-B11	P07-H*	IG ADA
*	CC 65R	TB1-B11	J11-F1	IG ADA
	A 23B	TB1-B12	SHLD A 23	0 VDC IMU
	A 185B	TB1-B12	SHLD A 185	0 VDC IMU
	A 347B	TB1-B12	SHLD A 347	0 VDC IMU
	AA 4	TB1-B12	TB1-C12	0 VDC IMU
	CC328B	TB1-B12	SHLD CC328	0 VDC IMU
*	AA 3	TB1-B12	TB1-A12	0 VDC IMU
*	A 23R	TB1-B13	J02- 20	COS AMG 1X S3
*	A 185R	TB1-B13	P02-L	COS AMG 1X S3
*	A 347R	TB1-B13	P09- 25	COS AMG 1X S3
*	CC328W	TB1-B13	J22- 16	COS AMG 1X S3
*	A 23Y	TB1-B14	J02- 6	COS AMG 1X S1
*	A 185Y	TB1-B14	P02-M	COS AMG 1X S1
*	A 347Y	TB1-B14	P09- 44	COS AMG 1X S1
*	CC328R	TB1-B14	J22- 32	COS AMG 1X S1
*	A 24R	TB1-B15	J02- 21	SIN AMG 1X RET
*	A 186Y	TB1-B15	P02-N	SIN AMG 1X RET S2
*	A 346R	TB1-B15	P09- 42	SIN AMG 1X RET
*	CC327W	TB1-B15	J22- 15	SIN AMG 1X RET
*	A 24Y	TB1-B16	J02- 7	SIN AMG 1X
*	A 186R	TB1-B16	P02-P	SIN AMG 1X S4
*	A 346Y	TB1-B16	P09- 24	SIN AMG 1X
*	CC327R	TB1-B16	J22- 14	SIN AMG 1X
	A 24B	TB1-B17	SHLD A 24	0 VDC IMU
	A 186B	TB1-B17	SHLD A 186	0 VDC IMU
	A 346B	TB1-B17	SHLD A 346	0 VDC IMU

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

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SCALE - NONE

REV LTR

SHEET 95

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA 11	TB1-B17	TB1-C17	0 VDC IMU	
	CC327B	TB1-B17	SHLD CC327	0 VDC IMU	
*	AA 10	TB1-B17	TB1-A17	0 VDC IMU	
*	AA 93	TB1-B17	TB1-A12	0 VDC IMU	
*	A 84Y	TB1-B18	J05- 12	TRUNNION CDU 1/2X RSVR P2	
*	CC252W	TB1-B18	J19-P2	TRUNNION CDU 1/2X RSVR P2	
*	A 84G	TB1-B19	J05- 11	TRUNNION CDU 1/2X RSVR P1 AND P3	
*	A 84R	TB1-B19	J05- 25	TRUNNION CDU 1/2X RSVR P3	
*	CC252R	TB1-B19	J19-P1	TRUNNION CDU 1/2X RSVR P3	
	AA 97	TB1-B21	TB1-B22	CONDITION LAMPS COMMON	
*	A 146	TB1-B21	J08- 17	SPARE FAIL LIGHT 3 LO	
*	A 148	TB1-B21	J08- 19	GIMBAL LOCK LIGHT LO	
*	A 149	TB1-B21	J08- 28	SPARE FAIL LIGHT 2 LO	
	AA 98	TB1-B22	TB1-B23	CONDITION LAMPS COMMON	
*	A 151	TB1-B22	J08- 30	ZERO ENCODER LIGHT LO	
*	A 163	TB1-B22	J08- 61	IMU FAIL LIGHT LO	
*	A 167	TB1-B22	J08- 70	SPARE FAIL LIGHT 1 LO	
*	AA 97	TB1-B22	TB1-B21	CONDITION LAMPS COMMON	
*	A 173	TB1-B23	J08- 83	CDU FAIL LIGHT LO	
*	A 174	TB1-B23	J08- 84	ACCEL FAIL LIGHT LO	
*	A 292	TB1-B23	J09- 11	CONDITION LAMP DIMMER EMITTER	
*	AA 98	TB1-B23	TB1-B22	CONDITION LAMPS COMMON	
*	CC167	TB1-B23	J16-K1	CONDITION LAMP DIMMER EMITTER	
*	A 170	TB1-B24	J08- 73	ACCEL FAIL LIGHT HI	
*	A 473Y	TB1-B24	J10- 5	ACCEL FAIL LIGHT HI	303
*	A 164Y	TB1-B25	J08- 63	IMU TEMP CONT FAIL LIGHT LO	
*	CC166	TB1-B25	J16-H4	IMU TEMP CONT FAIL LIGHT LO	
*	A 164R	TB1-B26	J08- 62	IMU TEMP CONT FAIL LIGHT HI	
*	A 386	TB1-B26	P09- 86	IMU TEMP CONT FAIL LIGHT HI	
*	CC197	TB1-B26	J17-P5	IMU TEMP CONT FAIL LIGHT HI	
*	A 195N	TB1-B28	P03-W	IMU MG ERROR SIG	
*	A 390R	TB1-B28	P09-112	IMU MG ERROR SIG	
*	CC 68R	TB1-B28	J11-A5	IMU MG ERROR SIG	
*	A 55Y	TB1-B29	J03- 57	OG CDU ERROR SIG RET	
*	CC145R	TB1-B29	J16-F5	OG CDU ERROR SIG RET	
*	A 35Y	TB1-B30	J02- 57	MG CDU ERROR SIG RET	
*	CC138R	TB1-B30	J16-F3	MG CDU ERROR SIG RET	
*	A 15Y	TB1-B31	J01- 57	IG CDU ERROR SIG RET S1	

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SCALE - NONE

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SHEET 96

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC133R	TB1-B31	J16-F1	IG CDU ERROR SIG RET
*	A 95R	TB1-B33	J05-108	TRUNNION CDU ENCODER PHASE 2
*	CC202R	TB1-B33	J17-A8	TRUNNION CDU ENCODER PHASE 2
	A 95B	TB1-B34	SHLD A 95	TRUNNION CDU ENCODER COMMON
*	A 95Y	TB1-B34	J05- 94	TRUNNION CDU ENCODER COMMON
*	CC202W	TB1-B34	J17-A7	TRUNNION CDU ENCODER COMMON
*	A 95G	TB1-B35	J05-107	TRUNNION CDU ENCODER PHASE 1
*	CC202L	TB1-B35	J17-A6	TRUNNION CDU ENCODER PHASE 1
	AA 26	TB1-B36	TB1-C36	0 VDC OPTICS
*	AA 25	TB1-B36	TB1-A36	0 VDC OPTICS
*	AA103	TB1-B36	TB1-A39	0 VDC OPTICS
	AA 33	TB1-B39	TB1-C39	0 VDC OPTICS
*	AA 32	TB1-B39	TB1-A39	0 VDC OPTICS
*	AA105	TB1-B39	TB1-A42	0 VDC OPTICS
*	A 391G	TB1-B40	P09- 95	X PIP ERROR MONITOR
*	CC 97	TB1-B40	J13-D2	X PIP ERROR MONITOR
*	A 391N	TB1-B41	P09-114	0 VDC IMU
*	CC 89	TB1-B41	J12-B5	0 VDC IMU
	A 92B	TB1-B42	SHLD A 92	0 VDC OPTICS
	A 240B	TB1-B42	SHLD A 240	0 VDC OPTICS
	AA 40	TB1-B42	TB1-C42	0 VDC OPTICS
	CC234B	TB1-B42	SHLD CC234	0 VDC OPTICS
*	AA 39	TB1-B42	TB1-A42	0 VDC OPTICS
*	AA107	TB1-B42	TB1-A47	0 VDC OPTICS
*	A 92R	TB1-B43	J05-101	TRUNNION CDU 16X RSVR P4
*	A 240R	TB1-B43	P05- 91	SXT TRUNNION 64X RSVR S2
*	CC234R	TB1-B43	J18-C1	SXT TRUNNION 64X RSVR S2
*	A 92Y	TB1-B44	J05- 87	TRUNNION CDU 16X RSVR P2
*	A 240Y	TB1-B44	P05- 90	SXT TRUNNION 64X RSVR S4
*	CC234W	TB1-B44	J18-C2	SXT TRUNNION 64X RSVR S4
*	A 75R	TB1-B45	J04- 87	SHAFT CDU 16X RSVR P2
*	A 234R	TB1-B45	P05- 79	SXT SHAFT 16X RSVR S2
*	CC219R	TB1-B45	J18-A3	SXT SHAFT 16X RSVR S2
*	A 75Y	TB1-B46	J04-101	SHAFT CDU 16X RSVR P4
*	A 234Y	TB1-B46	P05- 78	SXT SHAFT 16X RSVR S4
*	CC219W	TB1-B46	J18-A2	SXT SHAFT 16X RSVR S4
	A 75B	TB1-B47	SHLD A 75	0 VDC OPTICS
	A 234B	TB1-B47	SHLD A 234	0 VDC OPTICS

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SIZE A

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SCALE - NONE

REV LTR

SHEET 97

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA 47	TB1-B47	TB1-C47	0 VDC OPTICS	
	CC219B	TB1-B47	SHLD CC219	0 VDC OPTICS	
*	AA 46	TB1-B47	TB1-A47	0 VDC OPTICS	
*	AA114	TB1-B47	TB1-A67	0 VDC OPTICS	
*	A 99R	TB1-B48	J06- 81	ATTIT CONT MODE COMMAND FROM AGC	
*	A 474G	TB1-B48	J10- 12	ATTIT CONT MODE COMMAND FROM AGC	314
	A 130B	TB1-B49	SHLD A 130	STRUCTURE GROUND	
	A 475B	TB1-B49	SHLD A 475	STRUCTURE GROUND	
	A 476B	TB1-B49	SHLD A 476	STRUCTURE GROUND	
*	AA 53	TB1-B49	TB1-A49	STRUCTURE GROUND	
*	CC132	TB1-B49	J15-K3	STRUCTURE GROUND	
*	A 127R	TB1-B50	P01- 13	FINE ALIGN MODE COMMAND FROM AGC	
*	A 475R	TB1-B50	J10- 24	FINE ALIGN MODE COMMAND FROM AGC	310
*	A 177	TB1-B51	J08-106	STEP-UP-R	
*	A 330	TB1-B51	J09-106	STEP-UP-R	
*	A 171	TB1-B52	J08- 78	STEP-UP-C	
*	A 322	TB1-B52	J09- 78	STEP-UP-C	
*	A 6	TB1-B53	J01- 15	+28 VDC CDU NOT LOCK	
*	A 26	TB1-B53	J02- 15	+28 VDC CDU NOT LOCK	
*	A 46	TB1-B53	J03- 15	+28 VDC CDU NOT LOCK	
*	CC129	TB1-B53	J15-R6	+28 VDC CDU NOT LOCK	
*	A 293	TB1-B54	J09- 12	CONDITION LAMP DIMMER BASE	
*	CC165	TB1-B54	J16-H2	CONDITION LAMP DIMMER BASE	
*	A 294	TB1-B55	J09- 13	CONDITION LAMP DIMMER COLLECTOR	
*	CC168	TB1-B55	J16-K2	CONDITION LAMP DIMMER COLLECTOR	
*	A 481	TB1-B56	J10- 9	AGC FAIL SIG	326
*	CC 84	TB1-B56	J12-M3	AGC FAIL SIG	
*	A 313Y	TB1-B57	J09- 58	0 DEG OFFSET RELAY COMMAND	
*	CC223W	TB1-B57	J18-P2	0 DEG OFFSET RELAY COMMAND	
*	A 313R	TB1-B58	J09- 59	25 DEG OFFSET RELAY COMMAND	
*	CC223R	TB1-B58	J18-R2	25 DEG OFFSET RELAY COMMAND	
*	A 286G	TB1-B59	J09- 70	COMPUTER RELAY COMMAND	
*	A 472G	TB1-B59	J10- 67	COMPUTER RELAY COMMAND	331
*	CC225W	TB1-B59	J18-P3	COMPUTER RELAY COMMAND	
*	A 286Y	TB1-B60	J09- 72	ZERO OPTICS MODE COMMAND	
*	A 472Y	TB1-B60	J10- 65	ZERO OPTICS MODE COMMAND	316
*	CC225R	TB1-B60	J18-P1	ZERO OPTICS MODE COMMAND	
*	A 413Y	TB1-B61	P10- 15	AUTOMATIC MARK COMMAND	

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SIZE A

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SCALE - NONE

REV LTR

SHEET 98

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC276W	TB1-B61	J20-F2	AUTOMATIC MARK COMMAND
	AA112	TB1-B62	TB1-C62	0 VDC IMU
	AA113	TB1-B62	TB1-D 4	0 VDC IMU
*	A 358	TB1-B62	P09- 48	0 VDC IMU
*	A 372	TB1-B62	P09- 68	0 VDC IMU
*	A 337Y	TB1-B63	P09- 29	+32, +120 VDC RET PIP
*	CC206W	TB1-B63	J17-L4	+32, +120 VDC RET PIP
*	A 405	TB1-B64	P09-129	HTR CURRENT (TELEMETRY)
*	CC196	TB1-B64	J17-F3	HTR CURRENT (TELEMETRY)
*	A 218Y	TB1-B65	P05- 18	TRACKER X REFERENCE
*	A 499Y	TB1-B65	P13- 36	TRACKER X REFERENCE
*	A 218R	TB1-B66	P05- 17	TRACKER X REFERENCE
*	A 499R	TB1-B66	P13- 35	TRACKER X REFERENCE
	A 218B	TB1-B67	SHLD A 218	0 VDC OPTICS
	A 499B	TB1-B67	SHLD A 499	0 VDC OPTICS
	AA 62	TB1-B67	TB1-C67	0 VDC OPTICS
	AA115	TB1-B67	TB1-D76	0 VDC OPTICS
*	A 215	TB1-B67	P05- 9	0 VDC OPTICS
*	AA 61	TB1-B67	TB1-A67	0 VDC OPTICS
	A 573	TB1-B68	TB1-C68	0 VDC IMU
	A 574	TB1-B68	TB1-B69	0 VDC IMU
	AA117	TB1-B68	TB1-C62	0 VDC IMU
*	A 512	TB1-B68	P11-D	0 VDC IMU
*	CC 75	TB1-B68	J11-R3	0 VDC IMU
	A 576	TB1-B69	TB1-B70	0 VDC IMU
*	A 542	TB1-B69	P12-E	0 VDC IMU
*	A 574	TB1-B69	TB1-B68	0 VDC IMU
*	CC211	TB1-B69	J17-S3	0 VDC IMU
	A 578	TB1-B70	TB1-D73	0 VDC IMU
	AA118	TB1-B70	TB1-K20	0 VDC IMU
*	A 516	TB1-B70	P11-F	0 VDC IMU
*	A 576	TB1-B70	TB1-B69	0 VDC IMU
*	CC212	TB1-B70	J17-S4	0 VDC IMU
*	A 229	TB1-B71	P05- 68	+28 VDC OPTICS TRACKER POWER
*	A 328	TB1-B71	J09- 96	+28 VDC OPTICS TRACKER POWER
*	A 501	TB1-B71	P13- 38	+28 VDC OPTICS TRACKER POWER
*	CC280	TB1-B71	J20-N4	+28 VDC OPTICS TRACKER POWER
	AA122	TB1-B72	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR	SHEET 99

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 306Y	TB1-B72	J09- 69	800 CPS 28 V 1 PCT LO OPTICS
*	A 402Y	TB1-B72	P09-124	800 CPS 28 V 1 PCT LO OPTICS
*	CC172R	TB1-B72	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
*	A 274Y	TB1-B73	P08- 28	800 CPS 28 V 1 PCT LO OPTICS
*	A 275Y	TB1-B73	P08- 31	800 CPS 28 V 1 PCT LO OPTICS
*	AA122	TB1-B73	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS
*	CC273R	TB1-B73	J20-G5	800 CPS 28 V 1 PCT LO OPTICS
*	A 272Y	TB1-B74	P08- 22	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 273Y	TB1-B74	P08- 25	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 394Y	TB1-B74	P09-102	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	CC174W	TB1-B74	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 154Y	TB1-B75	J08- 36	400 CPS 6 V LO
*	A 418Y	TB1-B75	P10- 95	400 CPS 6 V LO
*	A 154R	TB1-B76	J08- 55	PROJECTION LAMP HI INTENSITY
*	A 307R	TB1-B76	J09- 55	PROJECTION LAMP HI INTENSITY
*	A 154G	TB1-B77	J08- 46	PROJECTION LAMP LO INTENSITY
*	A 307Y	TB1-B77	J09- 46	PROJECTION LAMP LO INTENSITY
*	A 419R	TB1-B78	P10- 69	400 CPS 115 V HI
*	A 526R	TB1-B78	P11-N	400 CPS 115 V HI
*	CC311R	TB1-B78	J20-N3	400 CPS 115 V HI
	AA 72	TB1-C 1	TB1-C 2	400 CPS 6 V HI
*	A 143G	TB1-C 1	P01-106	400 CPS 6 V HI
*	A 420G	TB1-C 1	P10-107	400 CPS 6 V HI
*	A 143N	TB1-C 2	P01- 90	400 CPS 6 V HI
*	A 420N	TB1-C 2	P10-108	400 CPS 6 V HI
*	AA 72	TB1-C 2	TB1-C 1	400 CPS 6 V HI
*	A 144	TB1-C 3	P01- 91	MODE LAMP TEST PWR
*	A 312Y	TB1-C 3	J09- 84	MODE LAMP TEST PWR
*	A 153	TB1-C 4	J08- 32	MASTER CAUTION LIGHT HI
*	A 161	TB1-C 4	J08- 54	MASTER WARNING LIGHT HI
*	CC326	TB1-C 4	J22- 41	+28 VDC SPACECRAFT
*	A 259Y	TB1-C10	P07-C*	Z PIP ERROR LO
*	CC105W	TB1-C10	J14-A2	Z PIP ERROR LO
*	A 259R	TB1-C11	P07-B*	Z PIP ERROR HI
*	CC105R	TB1-C11	J14-A1	Z PIP ERROR HI
	AA 5	TB1-C12	TB1-D12	0 VDC IMU
*	AA 4	TB1-C12	TB1-B12	0 VDC IMU
*	A 196R	TB1-C14	P03-D	COS AOG 1X S3

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SCALE - NONE	REV LTR	SHEET 100

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 348R	TB1-C14	P09- 45	COS AOG 1X S3
*	CC143W	TB1-C14	J16-B8	COS AOG 1X S3
*	A 43Y	TB1-C15	J03- 6	COS AOG 1X S1
*	A 196Y	TB1-C15	P03-E	COS AOG 1X S1
*	A 348Y	TB1-C15	P09- 27	COS AOG 1X S1
*	CC143R	TB1-C15	J16-C8	COS AOG 1X S1
*	A 43R	TB1-C16	J03- 20	COS AOG 1X TO CDU
*	CC143L	TB1-C16	J16-C9	COS AOG 1X TO CDU
	A 43B	TB1-C17	SHLD A 43	0 VDC IMU
	A 196B	TB1-C17	SHLD A 196	0 VDC IMU
	A 348B	TB1-C17	SHLD A 348	0 VDC IMU
	AA 12	TB1-C17	TB1-D17	0 VDC IMU
	CC143B	TB1-C17	SHLD CC143	0 VDC IMU
*	AA 11	TB1-C17	TB1-B17	0 VDC IMU
*	A 206R	TB1-C18	P03-Y	OG TORQUE MOTOR HI
*	A 250R	TB1-C18	P06-H	OG TORQUE MOTOR HI
*	A 398R	TB1-C18	P09-131	OG TORQUE MOTOR HI
*	CC 71R	TB1-C18	J11-H6	OG TORQUE MOTOR HI
*	A 206Y	TB1-C19	P03-X	OG TORQUE MOTOR RET
*	A 250Y	TB1-C19	P06-J	OG TORQUE MOTOR RET
*	A 398Y	TB1-C19	P09-109	OG TORQUE MOTOR RET
*	CC 71W	TB1-C19	J11-H5	OG TORQUE MOTOR RET
*	A 257R	TB1-C21	P07-C	Z GYRO TORQUE -
*	CC109R	TB1-C21	J14-M6	Z GYRO TORQUE -
*	A 257W	TB1-C22	P07-B	Z GYRO TORQUE RET
*	CC109W	TB1-C22	J14-N6	Z GYRO TORQUE RET
*	A 257L	TB1-C23	P07-A	Z GYRO TORQUE +
*	CC109L	TB1-C23	J14-L6	Z GYRO TORQUE +
	A 257B	TB1-C24	SHLD A 257	0 VDC IMU
	AA 19	TB1-C24	TB1-D24	0 VDC IMU
	CC109B	TB1-C24	SHLD CC109	0 VDC IMU
*	AA 95	TB1-C24	TB1-A17	0 VDC IMU
*	A 159R	TB1-C25	J08- 52	G+N ERROR LIGHT LO
*	CC170	TB1-C25	J16-K5	G+N ERROR LIGHT LO
*	A 159Y	TB1-C26	J08- 51	G+N ERROR LIGHT HI
*	A 384	TB1-C26	P09- 84	G+N ERROR LIGHT HI
*	CC 86	TB1-C26	J12-L2	G+N ERROR LIGHT HI
*	A 195G	TB1-C28	P03-U	IMU IG AND Y GYRO ERROR SIG

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SCALE - NONE	REV LTR	SHEET 101

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 390G	TB1-C28	P09- 94	IMU IG AND Y GYRO ERROR SIG
*	CC 68W	TB1-C28	J11-B6	IMU IG AND Y GYRO ERROR SIG
*	A 60R	TB1-C29	J03-106	OG CDU MDA TACH SIG
*	CC153R	TB1-C29	J16-A5	OG CDU MDA TACH SIG
	A 60B	TB1-C30	SHLD A 60	OG CDU MDA INPUT RET
*	A 60Y	TB1-C30	J03- 92	OG CDU MDA INPUT RET
*	CC153L	TB1-C30	J16-B5	OG CDU MDA INPUT RET
*	A 60G	TB1-C31	J03-105	OG CDU MDA SLEW SIG
*	CC153W	TB1-C31	J16-A6	OG CDU MDA SLEW SIG
*	A 61R	TB1-C33	J03-108	OG CDU ENCODER PHASE 2
*	CC119R	TB1-C33	J15-C3	OG CDU ENCODER PHASE 2
	A 61B	TB1-C34	SHLD A 61	OG CDU ENCODER COMMON
*	A 61Y	TB1-C34	J03- 94	OG CDU ENCODER COMMON
*	CC119W	TB1-C34	J15-D3	OG CDU ENCODER COMMON
*	A 61G	TB1-C35	J03-107	OG CDU ENCODER PHASE 1
*	CC119L	TB1-C35	J15-D4	OG CDU ENCODER PHASE 1
	A 94B	TB1-C36	SHLD A 94	0 VDC OPTICS
	AA 27	TB1-C36	TB1-D36	0 VDC OPTICS
	CC258B	TB1-C36	SHLD CC258	0 VDC OPTICS
*	AA 26	TB1-C36	TB1-B36	0 VDC OPTICS
*	A 94R	TB1-C37	J05-106	TRUNNION CDU TACHOMETER HI
*	CC258R	TB1-C37	J19-A6	TRUNNION CDU TACHOMETER HI
*	A 94Y	TB1-C38	J05- 92	TRUNNION CDU TACHOMETER LO
*	CC258W	TB1-C38	J19-B6	TRUNNION CDU TACHOMETER LO
	AA 34	TB1-C39	TB1-D39	0 VDC OPTICS
*	AA 33	TB1-C39	TB1-B39	0 VDC OPTICS
*	A 93Y	TB1-C40	J05-104	TRUNNION CDU 16X RSVR S2
*	CC256W	TB1-C40	J19-B5	TRUNNION CDU 16X RSVR S2
*	A 93R	TB1-C41	J05- 90	TRUNNION CDU 16X RSVR S3
*	CC256R	TB1-C41	J19-B4	TRUNNION CDU 16X RSVR S3
	A 83B	TB1-C42	SHLD A 83	0 VDC OPTICS
	A 93B	TB1-C42	SHLD A 93	0 VDC OPTICS
	A 224B	TB1-C42	SHLD A 224	0 VDC OPTICS
	AA 41	TB1-C42	TB1-D42	0 VDC OPTICS
	CC230B	TB1-C42	SHLD CC230	0 VDC OPTICS
	CC256B	TB1-C42	SHLD CC256	0 VDC OPTICS
*	AA 40	TB1-C42	TB1-B42	0 VDC OPTICS
*	A 83Y	TB1-C43	J05- 10	TRUNNION CDU 1/4X RSVR S4

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 224Y	TB1-C43	P05- 40	SXT TRUNNION 1X RSVR S2	
*	CC230W	TB1-C43	J18-D1	TRUNNION CDU 1/4X RSVR S4	
*	A 83R	TB1-C44	J05- 9	TRUNNION CDU 1/4X RSVR S2	
*	A 224R	TB1-C44	P05- 41	SXT TRUNNION 1X RSVR S4	
*	CC230R	TB1-C44	J18-F1	TRUNNION CDU 1/4X RSVR S2	
*	A 72R	TB1-C45	J04- 56	SHAFT CDU 1/2X RSVR S2	
*	A 211R	TB1-C45	P05- 3	SXT SHAFT 1/2X RSVR S2	
*	A 72Y	TB1-C46	J04- 66	SHAFT CDU 1/2X RSVR S4	
*	A 211Y	TB1-C46	P05- 2	SXT SHAFT 1/2X RSVR S4	
	A 72B	TB1-C47	SHLD A 72	0 VDC OPTICS	
	A 211B	TB1-C47	SHLD A 211	0 VDC OPTICS	
	AA 48	TB1-C47	TB1-D47	0 VDC OPTICS	
*	AA 47	TB1-C47	TB1-B47	0 VDC OPTICS	
*	A 130Y	TB1-C48	P01- 27	CDU MANUAL MODE COMMAND FROM AGC	
*	A 476Y	TB1-C48	J10- 23	CDU MANUAL MODE COMMAND FROM AGC	309
*	A 130R	TB1-C49	P01- 58	ENTRY MODE COMMAND FROM AGC	
*	A 476R	TB1-C49	J10- 25	ENTRY MODE COMMAND FROM AGC	311
*	A 127Y	TB1-C50	P01- 38	ZERO ENCODER MODE COMMAND FROM AGC	
*	A 475Y	TB1-C50	J10- 21	ZERO ENCODER MODE COMMAND FROM AGC	307
*	A 49	TB1-C51	J03- 30	+28 VDC IMU FOR OG MDA	
*	CC151	TB1-C51	J16-T2	+28 VDC IMU FOR OG MDA	
*	A 29	TB1-C52	J02- 30	+28 VDC IMU FOR MG MDA	
*	CC150	TB1-C52	J16-T1	+28 VDC IMU FOR MG MDA	
*	A 9	TB1-C53	J01- 30	+28 VDC IMU FOR IG MDA	
*	CC149	TB1-C53	J16-S1	+28 VDC IMU FOR IG MDA	
*	A 247	TB1-C54	P06-F	-28 VDC	
*	A 370	TB1-C54	P09- 66	-28 VDC	
*	CC 66	TB1-C54	J11-N6	-28 VDC	
*	A 113Y	TB1-C56	J06- 68	AGC COMMON (ISS)	
*	A 134Y	TB1-C56	P01- 68	AGC COMMON (ISS)	
*	CC173W	TB1-C56	J16-B7	AGC COMMON (ISS)	
*	CC332W	TB1-C56	J24- 26	AGC COMMON (ISS)	165
*	A 388N	TB1-C57	P09- 90	MG CDU FAILURE INDICATION	
*	CC175L	TB1-C57	J16-M3	MG CDU FAILURE INDICATION	
*	A 388G	TB1-C58	P09- 89	IG CDU FAILURE INDICATION	
*	CC175K	TB1-C58	J16-M2	IG CDU FAILURE INDICATION	
	A 254B	TB1-C59	SHLD A 254	0 VDC IMU	
	A 255B	TB1-C59	SHLD A 255	0 VDC IMU	

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA 60	TB1-C59	TB1-D59	0 VDC IMU
	CC190B	TB1-C59	SHLD CC190	0 VDC IMU
	CC192B	TB1-C59	SHLD CC192	0 VDC IMU
*	A 254R	TB1-C60	P06-X	IMU EMERGENCY HTR HI
*	CC190W	TB1-C60	J17-M4	IMU EMERGENCY HTR HI
*	A 254Y	TB1-C61	P06-R	EMERGENCY HTR LO-OPER AND STBY
*	CC190R	TB1-C61	J17-N4	EMERGENCY HTR LO-OPER AND STBY
*	A 297	TB1-C62	J09- 26	0 VDC IMU
*	A 411	TB1-C62	P10- 13	0 VDC IMU
*	AA112	TB1-C62	TB1-B62	0 VDC IMU
*	AA117	TB1-C62	TB1-B68	0 VDC IMU
*	A 337G	TB1-C63	P09- 28	+32 VDC PIP
*	CC206L	TB1-C63	J17-T5	+32 VDC PIP
*	A 404	TB1-C64	P09-128	TEMPERATURE CONTROL SIG LO
*	CC205	TB1-C64	J17-F2	TEMPERATURE CONTROL SIG LO
*	A 232Y	TB1-C65	P05- 73	TRACKER AUTOMATIC GAIN CONTROL LO
*	A 490Y	TB1-C65	E 25	TRACKER AUTOMATIC GAIN CONTROL LO
*	A 232R	TB1-C66	P05- 72	TRACKER AUTOMATIC GAIN CONTROL HI
*	A 490R	TB1-C66	P13- 1	TRACKER AUTOMATIC GAIN CONTROL HI
	A 232B	TB1-C67	SHLD A 232	0 VDC OPTICS
	A 490B	TB1-C67	SHLD A 490	0 VDC OPTICS
	AA 63	TB1-C67	TB1-D67	0 VDC OPTICS
*	A 222	TB1-C67	P05- 37	0 VDC OPTICS
*	AA 62	TB1-C67	TB1-B67	0 VDC OPTICS
	A 572	TB1-C68	TB1-C69	0 VDC IMU
*	A 543	TB1-C68	P12-F	0 VDC IMU
*	A 573	TB1-C68	TB1-B68	0 VDC IMU
*	CC 92	TB1-C68	J12-R4	0 VDC IMU
*	CC322	TB1-C68	J20-K2	0 VDC IMU
	A 575	TB1-C69	TB1-C70	0 VDC IMU
*	A 513	TB1-C69	P11-E	0 VDC IMU
*	A 572	TB1-C69	TB1-C68	0 VDC IMU
*	CC 78	TB1-C69	J11-R1	0 VDC IMU
*	CC 91	TB1-C69	J12-R3	0 VDC IMU
	A 577	TB1-C70	TB1-F73	0 VDC IMU
*	A 539	TB1-C70	P12-D	0 VDC IMU
*	A 575	TB1-C70	TB1-C69	0 VDC IMU
*	CC 74	TB1-C70	J11-R2	0 VDC IMU

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC 90	TB1-C70	J12-R2	0 VDC IMU
*	A 331	TB1-C71	J09-108	+28 VDC OPTICS DAC POWER
*	CC224	TB1-C71	J18-T3	+28 VDC OPTICS DAC POWER
*	A 241R	TB1-C72	P06-C	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
*	A 349R	TB1-C72	P09- 33	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
*	CC 81R	TB1-C72	J12-P2	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
*	A 241Y	TB1-C73	P06-B	800 CPS 28 V 5 PCT IMU WHEELS LO
*	A 349Y	TB1-C73	P09- 50	800 CPS 28 V 5 PCT IMU WHEELS LO
*	CC 81W	TB1-C73	J12-R1	800 CPS 28 V 5 PCT IMU WHEELS LO
*	A 241G	TB1-C74	P06-A	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
*	A 349G	TB1-C74	P09- 32	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
*	CC 81L	TB1-C74	J12-P1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
*	A 341R	TB1-C75	P09- 13	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	CC183W	TB1-C75	J17-R4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	CC285R	TB1-C75	J20-L6	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 248Y	TB1-C76	P06-G*	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 341Y	TB1-C76	P09- 14	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	CC285W	TB1-C76	J20-L5	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 248R	TB1-C77	P06-F*	800 CPS 28 V 5 PCT HI TO BLOWERS
*	CC183R	TB1-C77	J17-P4	800 CPS 28 V 5 PCT HI TO BLOWERS
*	A 419Y	TB1-C78	P10- 68	400 CPS 115 V LO
*	A 526Y	TB1-C78	P11-K	400 CPS 115 V LO
*	CC311W	TB1-C78	J20-M3	400 CPS 115 V LO
*	A 2R	TB1-D 1	J01- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 22R	TB1-D 1	J02- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 42R	TB1-D 1	J03- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	CC 88R	TB1-D 1	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 2Y	TB1-D 2	J01- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 22Y	TB1-D 2	J02- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 42Y	TB1-D 2	J03- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	CC 88W	TB1-D 2	J12-K4	800 CPS 28 V 5 PCT L-90 DEG LO IMU
	AA 79	TB1-D 3	TB1-D 4	0 VDC IMU
*	A 115	TB1-D 3	J06- 78	0 VDC IMU
*	A 137	TB1-D 3	P01- 78	0 VDC IMU
*	A 175	TB1-D 4	J08- 92	0 VDC IMU
*	AA 79	TB1-D 4	TB1-D 3	0 VDC IMU
*	AA113	TB1-D 4	TB1-B62	0 VDC IMU
	AA 82	TB1-D 5	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 62R	TB1-D 5	J04- 1	800 CPS 28 V 1 PCT HI OPTICS
*	A 79R	TB1-D 5	J05- 1	800 CPS 28 V 1 PCT HI OPTICS
*	CC161W	TB1-D 5	J16-P5	800 CPS 28 V 1 PCT HI OPTICS
	AA 85	TB1-D 6	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
*	A 208R	TB1-D 6	P04-E1	800 CPS 28 V 1 PCT HI OPTICS
*	A 217R	TB1-D 6	P05- 12	800 CPS 28 V 1 PCT HI OPTICS
*	AA 82	TB1-D 6	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS
*	A 220R	TB1-D 7	P05- 32	800 CPS 28 V 1 PCT HI OPTICS
*	A 231R	TB1-D 7	P05- 71	800 CPS 28 V 1 PCT HI OPTICS
*	A 237R	TB1-D 7	P05- 84	800 CPS 28 V 1 PCT HI OPTICS
*	AA 85	TB1-D 7	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
*	A 63R	TB1-D 8	J04- 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 80R	TB1-D 8	J05- 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 233R	TB1-D 8	P05- 76	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	CC162R	TB1-D 8	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 258Y	TB1-D10	P07-A*	Y PIP ERROR LO
*	CC 98W	TB1-D10	J13-B3	Y PIP ERROR LO
*	A 258R	TB1-D11	P07-Z	Y PIP ERROR HI
*	CC 98R	TB1-D11	J13-A3	Y PIP ERROR HI
	AA 6	TB1-D12	TB1-F12	0 VDC IMU
*	AA 5	TB1-D12	TB1-C12	0 VDC IMU
*	A 198Y	TB1-D14	P03-G	SIN AOG 1X S2
*	A 334R	TB1-D14	P09- 26	SIN AOG 1X S2
*	CC144W	TB1-D14	J16-A8	SIN AOG 1X S2
*	A 44Y	TB1-D15	J03- 7	SIN AOG 1X S4
*	A 198R	TB1-D15	P03-F	SIN AOG 1X S4
*	A 334Y	TB1-D15	P09- 4	SIN AOG 1X S4
*	CC144R	TB1-D15	J16-A9	SIN AOG 1X S4
*	A 44R	TB1-D16	J03- 21	SIN AOG 1X TO CDU
*	CC144L	TB1-D16	J16-B9	SIN AOG 1X TO CDU
	A 44B	TB1-D17	SHLD A 44	0 VDC IMU
	A 198B	TB1-D17	SHLD A 198	0 VDC IMU
	A 334B	TB1-D17	SHLD A 334	0 VDC IMU
	AA 13	TB1-D17	TB1-F17	0 VDC IMU
	CC144B	TB1-D17	SHLD CC144	0 VDC IMU
*	AA 12	TB1-D17	TB1-C17	0 VDC IMU
*	A 192R	TB1-D18	P03-Z	MG TORQUE MOTOR HI
*	A 194R	TB1-D18	P03-C*	MG TORQUE MOTOR HI

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 399R	TB1-D18	P09-132	MG TORQUE MOTOR HI
*	CC 70R	TB1-D18	J11-F6	MG TORQUE MOTOR HI
*	A 192Y	TB1-D19	P03-A*	MG TORQUE MOTOR RET
*	A 194Y	TB1-D19	P03-B*	MG TORQUE MOTOR RET
*	A 399Y	TB1-D19	P09-110	MG TORQUE MOTOR RET
*	CC 70W	TB1-D19	J11-G6	MG TORQUE MOTOR RET
*	A 262R	TB1-D21	P07-J	Y GYRO TORQUE -
*	CC108R	TB1-D21	J14-M2	Y GYRO TORQUE -
*	A 262W	TB1-D22	P07-H	Y GYRO TORQUE RET
*	CC108W	TB1-D22	J14-M3	Y GYRO TORQUE RET
*	A 262L	TB1-D23	P07-G	Y GYRO TORQUE +
*	CC108L	TB1-D23	J14-M1	Y GYRO TORQUE +
	A 262B	TB1-D24	SHLD A 262	0 VDC IMU
	A 567	TB1-D24	TB1-D59	0 VDC IMU
	AA 20	TB1-D24	TB1-F24	0 VDC IMU
	CC108B	TB1-D24	SHLD CC108	0 VDC IMU
*	AA 19	TB1-D24	TB1-C24	0 VDC IMU
*	A 168Y	TB1-D25	J08- 82	AGC POWER SUPPLY FAIL LIGHT LO
*	CC169	TB1-D25	J16-K4	AGC POWER SUPPLY FAIL LIGHT LO
*	A 168R	TB1-D26	J08- 71	AGC POWER SUPPLY FAIL SIG HI
*	A 371	TB1-D26	P09- 67	AGC POWER SUPPLY FAIL SIG HI
*	CC 85	TB1-D26	J12-M1	AGC POWER SUPPLY FAIL SIG HI
*	A 195Y	TB1-D28	P03-V	IMU GIMBAL AND GYRO ERROR SIG LO
*	A 390N	TB1-D28	P09- 93	IMU GIMBAL AND GYRO ERROR SIG LO
*	CC 68K	TB1-D28	J11-B5	IMU GIMBAL AND GYRO ERROR SIG LO
*	CC130R	TB1-D28	J15-B2	IMU GIMBAL AND GYRO ERROR SIG LO
*	A 39R	TB1-D29	J02-106	MG CDU MDA TACH SIG
*	CC141R	TB1-D29	J16-A3	MG CDU MDA TACH SIG
	A 39B	TB1-D30	SHLD A 39	MG CDU MDA INPUT RET
*	A 39Y	TB1-D30	J02- 92	MG CDU MDA INPUT RET
*	CC141L	TB1-D30	J16-B3	MG CDU MDA INPUT RET
*	A 39G	TB1-D31	J02-105	MG CDU MDA SLEW SIG
*	CC141W	TB1-D31	J16-A4	MG CDU MDA SLEW SIG
*	A 40R	TB1-D33	J02-108	MG CDU ENCODER PHASE 2
*	CC118R	TB1-D33	J15-D2	MG CDU ENCODER PHASE 2
	A 40B	TB1-D34	SHLD A 40	MG CDU ENCODER COMMON
*	A 40Y	TB1-D34	J02- 94	MG CDU ENCODER COMMON
*	CC118W	TB1-D34	J15-F2	MG CDU ENCODER COMMON

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 40G	TB1-D35	J02-107	MG CDU ENCODER PHASE 1
*	CC118L	TB1-D35	J15-F1	MG CDU ENCODER PHASE 1
	A 221B	TB1-D36	SHLD A 221	0 VDC OPTICS
	AA 28	TB1-D36	TB1-F36	0 VDC OPTICS
	CC233B	TB1-D36	SHLD CC233	0 VDC OPTICS
*	AA 27	TB1-D36	TB1-C36	0 VDC OPTICS
*	A 221R	TB1-D37	P05- 34	SXT TRUNNION TACH HI
*	CC233R	TB1-D37	J18-A9	SXT TRUNNION TACH HI
*	A 221Y	TB1-D38	P05- 35	SXT TRUNNION TACH LO
*	CC233W	TB1-D38	J18-B9	SXT TRUNNION TACH LO
	A 81B	TB1-D39	SHLD A 81	0 VDC OPTICS
	AA 35	TB1-D39	TB1-F39	0 VDC OPTICS
	CC255B	TB1-D39	SHLD CC255	0 VDC OPTICS
*	AA 34	TB1-D39	TB1-C39	0 VDC OPTICS
*	A 81R	TB1-D40	J05- 17	TRUNNION CDU 1/4X RSVR P2
*	CC255R	TB1-D40	J19-C5	TRUNNION CDU 1/4X RSVR P2
*	A 81Y	TB1-D41	J05- 4	TRUNNION CDU 1/4X RSVR P3
*	CC255W	TB1-D41	J19-C6	TRUNNION CDU 1/4X RSVR P3
	A 82B	TB1-D42	SHLD A 82	0 VDC OPTICS
	A 223B	TB1-D42	SHLD A 223	0 VDC OPTICS
	AA 42	TB1-D42	TB1-F42	0 VDC OPTICS
	CC229B	TB1-D42	SHLD CC229	0 VDC OPTICS
*	AA 41	TB1-D42	TB1-C42	0 VDC OPTICS
*	A 82R	TB1-D43	J05- 22	TRUNNION CDU 1/4X RSVR S3
*	A 223R	TB1-D43	P05- 38	SXT TRUNNION 1X RSVR S3
*	CC229R	TB1-D43	J18-F3	TRUNNION CDU 1/4X RSVR S3
*	A 82Y	TB1-D44	J05- 8	TRUNNION CDU 1/4X RSVR S1
*	A 223Y	TB1-D44	P05- 39	SXT TRUNNION 1X RSVR S1
*	CC229W	TB1-D44	J18-F2	TRUNNION CDU 1/4X RSVR S1
*	A 73R	TB1-D45	J04- 57	SHAFT CDU 1/2X RSVR S1
*	A 213R	TB1-D45	P05- 7	SXT SHAFT 1/2X RSVR S3
*	CC218R	TB1-D45	J18-B1	SXT SHAFT 1/2X RSVR S3
*	A 73Y	TB1-D46	J04- 67	SHAFT CDU 1/2X RSVR S3
*	A 213Y	TB1-D46	P05- 6	SXT SHAFT 1/2X RSVR S1
*	CC218W	TB1-D46	J18-A1	SXT SHAFT 1/2X RSVR S1
	A 73B	TB1-D47	SHLD A 73	0 VDC OPTICS
	A 213B	TB1-D47	SHLD A 213	0 VDC OPTICS
	AA 49	TB1-D47	TB1-F47	0 VDC OPTICS

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC218B	TB1-D47	SHLD CC218	0 VDC OPTICS
*	AA 48	TB1-D47	TB1-C47	0 VDC OPTICS
*	A 393	TB1-D51	P09- 98	TRAY 3 THERMISTER HI
*	CC104	TB1-D51	J13-C1	TRAY 3 THERMISTER HI
*	A 382	TB1-D52	P09- 80	TRAY 4 THERMISTER HI
*	CC111	TB1-D52	J14-B1	TRAY 4 THERMISTER HI
	A 113B	TB1-D56	SHLD A 113	AGC SIGNAL 178 SHIELD RETURN
	A 134B	TB1-D56	SHLD A 134	AGC SIGNAL 178 SHIELD RETURN
	CC173B	TB1-D56	SHLD CC173	AGC SIGNAL 178 SHIELD RETURN
	CC332B	TB1-D56	SHLD CC332	AGC SIGNAL 178 SHIELD RETURN
*	A 388R	TB1-D57	P09-130	OG CDU FAILURE INDICATION
*	CC175R	TB1-D57	J16-N3	OG CDU FAILURE INDICATION
*	A 388Y	TB1-D58	P09-108	0 VDC IMU
*	CC175W	TB1-D58	J16-R2	0 VDC IMU
	AA111	TB1-D59	TB1-F74	0 VDC IMU
*	A 567	TB1-D59	TB1-D24	0 VDC IMU
*	AA 60	TB1-D59	TB1-C59	0 VDC IMU
*	CC176	TB1-D59	J16-P2	0 VDC IMU
*	A 255R	TB1-D60	P06-V	IMU CONTROL HTR HI
*	CC192R	TB1-D60	J17-P1	IMU CONTROL HTR HI
*	A 255Y	TB1-D61	P06-W	IMU CONTROL HTR LO
*	CC192W	TB1-D61	J17-N1	IMU CONTROL HTR LO
*	A 256	TB1-D62	P06-Y	EMERG HTR CONT MODULE LO
*	A 321R	TB1-D62	J09- 90	EMERG HTR CONT MODULE LO
*	A 321Y	TB1-D63	J09- 76	IMU TEMP CONT K2 PIN 6
*	CC189W	TB1-D63	J17-L1	IMU TEMP CONT K2 PIN 6
*	A 403	TB1-D64	P09-127	IRIG TEMP (TELEMETRY)
*	CC195	TB1-D64	J17-F4	IRIG TEMP (TELEMETRY)
*	A 228Y	TB1-D65	P05- 65	TRACKER PREAMP OUTPUT LO
*	A 491Y	TB1-D65	E 25	TRACKER PREAMP OUTPUT LO
*	A 228R	TB1-D66	P05- 64	TRACKER PREAMP OUTPUT HI
*	A 491R	TB1-D66	P13- 2	TRACKER PREAMP OUTPUT HI
	A 228B	TB1-D67	SHLD A 228	0 VDC OPTICS
	A 491B	TB1-D67	SHLD A 491	0 VDC OPTICS
	AA 64	TB1-D67	TB1-F67	0 VDC OPTICS
*	A 277	TB1-D67	P08- 37	0 VDC OPTICS
*	AA 63	TB1-D67	TB1-C67	0 VDC OPTICS
*	A 245R	TB1-D68	P06-D*	IMU PRESSURE MONITOR HI

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	CONDUCTOR	FROM	TO	IGNAL DESCRIPTION	
*	A 381R	TB1-D68	P09- 79	IMU PRESSURE MONITOR HI	
*	CC286R	TB1-D68	J20-A4	IMU PRESSURE MONITOR HI	
*	A 245Y	TB1-D69	P06-E*	IMU PRESSURE MONITOR LO	
*	A 381Y	TB1-D69	P09- 78	IMU PRESSURE MONITOR LO	
*	CC286W	TB1-D69	J20-B4	IMU PRESSURE MONITOR LO	
*	A 296	TB1-D70	J09- 15	0 VDC SPACECRAFT	
*	A 408	TB1-D70	P10- 9	0 VDC SPACECRAFT	
*	CC200	TB1-D70	J17-M3	0 VDC SPACECRAFT	
	AA119	TB1-D71	TB1-D72	CONDITION LAMP TEST	
*	A 141	TB1-D71	P01- 88	CONDITION LAMP TEST	
*	A 562	TB1-D71	J23- 48	CONDITION LAMP TEST	157T
*	CC181	TB1-D71	J17-P6	CONDITION LAMP TEST	
*	A 318	TB1-D72	J09- 73	CONDITION LAMP TEST	
*	A 409	TB1-D72	P10- 10	CONDITION LAMP TEST	
*	A 477	TB1-D72	J10- 2	CONDITION LAMP TEST	328
*	AA119	TB1-D72	TB1-D71	CONDITION LAMP TEST	
	A 580	TB1-D73	TB1-D74	0 VDC IMU	
	AA123	TB1-D73	TB1-F73	0 VDC IMU	
	AA124	TB1-D73	TB1-G20	0 VDC IMU	
*	A 540	TB1-D73	P12-D	0 VDC IMU	
*	A 578	TB1-D73	TB1-B70	0 VDC IMU	
	A 582	TB1-D74	TB1-D75	0 VDC IMU	
	AA125	TB1-D74	TB1-H25	0 VDC IMU	
*	A 514	TB1-D74	P11-E	0 VDC IMU	
*	A 580	TB1-D74	TB1-D73	0 VDC IMU	
*	CC210	TB1-D74	J17-S2	0 VDC IMU	
	A 583	TB1-D75	TB1-F75	0 VDC IMU	
	AA127	TB1-D75	TB1-K25	0 VDC IMU	
*	A 544	TB1-D75	P12-F	0 VDC IMU	
*	A 582	TB1-D75	TB1-D74	0 VDC IMU	
*	CC209	TB1-D75	J17-S1	0 VDC IMU	
	A 585	TB1-D76	TB1-D77	0 VDC OPTICS	
	A 586	TB1-D76	TB1-K67	0 VDC OPTICS	
*	AA115	TB1-D76	TB1-B67	0 VDC OPTICS	
*	CC213	TB1-D76	J17-S6	0 VDC OPTICS	
	A 588	TB1-D77	TB1-D78	0 VDC OPTICS	
	AA128	TB1-D77	TB1-F77	0 VDC OPTICS	
*	A 335	TB1-D77	P09- 5	0 VDC OPTICS	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 585	TB1-D77	TB1-D76	0 VDC OPTICS
* CC240	TB1-D77	J18-R6	0 VDC OPTICS
* A 230	TB1-D78	P05- 69	0 VDC OPTICS
* A 545	TB1-D78	P12-G	0 VDC OPTICS
* A 588	TB1-D78	TB1-D77	0 VDC OPTICS
* CC272	TB1-D78	J19-R3	0 VDC OPTICS
* CC323	TB1-D78	J20-P3	0 VDC OPTICS
AA 83	TB1-F 5	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
* A 62Y	TB1-F 5	J04- 14	800 CPS 28 V 1 PCT LO OPTICS
* A 79Y	TB1-F 5	J05- 14	800 CPS 28 V 1 PCT LO OPTICS
* CC161R	TB1-F 5	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
AA 86	TB1-F 6	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS
* A 208Y	TB1-F 6	P04-E2	800 CPS 28 V 1 PCT LO OPTICS
* A 217G	TB1-F 6	P05- 14	800 CPS 28 V 1 PCT LO OPTICS
* A 217Y	TB1-F 6	P05- 13	800 CPS 28 V 1 PCT LO OPTICS
* AA 83	TB1-F 6	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS
* A 220Y	TB1-F 7	P05- 55	800 CPS 28 V 1 PCT LO OPTICS
* A 231Y	TB1-F 7	P05- 70	800 CPS 28 V 1 PCT LO OPTICS
* A 237Y	TB1-F 7	P05- 85	800 CPS 28 V 1 PCT LO OPTICS
* AA 86	TB1-F 7	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
* A 63Y	TB1-F 8	J04- 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 80Y	TB1-F 8	J05- 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 233Y	TB1-F 8	P05- 77	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* CC162W	TB1-F 8	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 266Y	TB1-F10	P07-Y	X PIP ERROR LO
* CC 95W	TB1-F10	J13-B1	X PIP ERROR LO
* A 266R	TB1-F11	P07-X	X PIP ERROR HI
* CC 95R	TB1-F11	J13-A1	X PIP ERROR HI
A 205B	TB1-F12	SHLD A 205	0 VDC IMU
AA 7	TB1-F12	TB1-G12	0 VDC IMU
CC201B	TB1-F12	SHLD CC201	0 VDC IMU
* AA 6	TB1-F12	TB1-D12	0 VDC IMU
* A 205R	TB1-F13	P03-R	PITCH-YAW RSVR S4
* CC201R	TB1-F13	J17-C2	PITCH-YAW RSVR S4
* A 180Y	TB1-F14	P02-D	COS AOG 16X S1
* CC148R	TB1-F14	J16-D7	COS AOG 16X S1
* A 56R	TB1-F15	J03-100	COS AOG 16X S3
* A 180R	TB1-F15	P02-C	COS AOG 16X S3

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* CC148W	TB1-F15	J16-F7	COS AOG 16X S3
* A 56Y	TB1-F16	J03- 86	COS AOG 16X TO CDU
* CC148L	TB1-F16	J16-F8	COS AOG 16X TO CDU
A 56B	TB1-F17	SHLD A 56	0 VDC IMU
A 180B	TB1-F17	SHLD A 180	0 VDC IMU
AA 14	TB1-F17	TB1-G17	0 VDC IMU
CC148B	TB1-F17	SHLD CC148	0 VDC IMU
* AA 13	TB1-F17	TB1-D17	0 VDC IMU
* A 197R	TB1-F18	P03-D*	IG TORQUE MOTOR HI
* A 199R	TB1-F18	P03-G*	IG TORQUE MOTOR HI
* A 389R	TB1-F18	P09- 92	IG TORQUE MOTOR HI
* CC 69R	TB1-F18	J11-D6	IG TORQUE MOTOR HI
* A 197Y	TB1-F19	P03-E*	IG TORQUE MOTOR RET
* A 199Y	TB1-F19	P03-F*	IG TORQUE MOTOR RET
* A 389Y	TB1-F19	P09- 91	IG TORQUE MOTOR RET
* CC 69W	TB1-F19	J11-D5	IG TORQUE MOTOR RET
* A 260R	TB1-F21	P07-F	X GYRO TORQUE -
* CC101R	TB1-F21	J13-G6	X GYRO TORQUE -
* A 260W	TB1-F22	P07-E	X GYRO TORQUE RET
* CC101W	TB1-F22	J13-F6	X GYRO TORQUE RET
* A 260L	TB1-F23	P07-D	X GYRO TORQUE +
* CC101L	TB1-F23	J13-D6	X GYRO TORQUE +
A 260B	TB1-F24	SHLD A 260	0 VDC IMU
AA 21	TB1-F24	TB1-G24	0 VDC IMU
CC101B	TB1-F24	SHLD CC101	0 VDC IMU
* AA 20	TB1-F24	TB1-D24	0 VDC IMU
A 379B	TB1-F27	SHLD A 379	0 VDC IMU
A 380B	TB1-F27	SHLD A 380	0 VDC IMU
AA 24	TB1-F27	TB1-G27	0 VDC IMU
* A 193Y	TB1-F28	P03-B	Z GYRO ERROR SIG
* A 379Y	TB1-F28	P09- 75	Z GYRO ERROR SIG
* CC130W	TB1-F28	J15-A1	Z GYRO ERROR SIG
* A 19R	TB1-F29	J01-106	IG CDU MDA TACH SIG
* CC136R	TB1-F29	J16-A1	IG CDU MDA TACH SIG
A 19B	TB1-F30	SHLD A 19	IG CDU MDA INPUT RET
* A 19Y	TB1-F30	J01- 92	IG CDU MDA INPUT RET
* CC136L	TB1-F30	J16-B1	IG CDU MDA INPUT RET
* A 19G	TB1-F31	J01-105	IG CDU MDA SLEW SIG

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* CC136W	TB1-F31	J16-A2	IG CDU MDA SLEW SIG
A 59B	TB1-F32	SHLD A. 59	OG CDU ERROR SIG RET
A 338B	TB1-F32	SHLD A 338	OG CDU ERROR SIG RET
* A 571	TB1-F32	TB1-G30	OG CDU ERROR SIG RET
* AA102	TB1-F32	TB1-G32	OG CDU ERROR SIG RET
* A 20R	TB1-F33	J01-108	IG CDU ENCODER PHASE 2
* CC117R	TB1-F33	J15-D1	IG CDU ENCODER PHASE 2
A 20B	TB1-F34	SHLD A 20	IG CDU ENCODER COMMON
* A 20Y	TB1-F34	J01- 94	IG CDU ENCODER COMMON
* CC117W	TB1-F34	J15-C1	IG CDU ENCODER COMMON
* A 20G	TB1-F35	J01-107	IG CDU ENCODER PHASE 1
* CC117L	TB1-F35	J15-C2	IG CDU ENCODER PHASE 1
A 276B	TB1-F36	SHLD A 276	0 VDC OPTICS
AA 29	TB1-F36	TB1-G36	0 VDC OPTICS
CC261B	TB1-F36	SHLD CC261	0 VDC OPTICS
* AA 28	TB1-F36	TB1-D36	0 VDC OPTICS
* A 276R	TB1-F37	P08- 33	SCT TRUNNION TACH HI
* CC261R	TB1-F37	J19-A1	SCT TRUNNION TACH HI
* A 276Y	TB1-F38	P08- 34	SCT TRUNNION TACH LO
* CC261W	TB1-F38	J19-B1	SCT TRUNNION TACH LO
A 271B	TB1-F39	SHLD A 271	0 VDC OPTICS
AA 36	TB1-F39	TB1-G39	0 VDC OPTICS
CC259B	TB1-F39	SHLD CC259	0 VDC OPTICS
* AA 35	TB1-F39	TB1-D39	0 VDC OPTICS
* A 271Y	TB1-F40	P08- 18	SCT TRUNNION 1X RSVR S2
* CC259W	TB1-F40	J19-C1	SCT TRUNNION 1X RSVR S2
* A 271R	TB1-F41	P08- 19	SCT TRUNNION 1X RSVR S4
* CC259R	TB1-F41	J19-C2	SCT TRUNNION 1X RSVR S4
A 269B	TB1-F42	SHLD A 269	0 VDC OPTICS
AA 43	TB1-F42	TB1-G42	0 VDC OPTICS
CC231B	TB1-F42	SHLD CC231	0 VDC OPTICS
* AA 42	TB1-F42	TB1-D42	0 VDC OPTICS
* A 269Y	TB1-F43	P08- 10	SCT TRUNNION 1X RSVR P4
* CC231W	TB1-F43	J18-F5	SCT TRUNNION 1X RSVR P4
* A 269R	TB1-F44	P08- 9	SCT TRUNNION 1X RSVR P2
* CC231R	TB1-F44	J18-F4	SCT TRUNNION 1X RSVR P2
* A 227Y	TB1-F45	P05- 54	SXT SHAFT 1X RSVR S3
* A 280Y	TB1-F45	P08- 45	SCT SHAFT 1X RSVR P1

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 227R	TB1-F46	P05- 53	SXT SHAFT 1X RSVR S1
* A 280R	TB1-F46	P08- 44	SCT SHAFT 1X RSVR P3
A 227B	TB1-F47	SHLD A 227	0 VDC OPTICS
A 280B	TB1-F47	SHLD A 280	0 VDC OPTICS
AA 50	TB1-F47	TB1-G47	0 VDC OPTICS
* AA 49	TB1-F47	TB1-D47	0 VDC OPTICS
* A 69G	TB1-F48	J04- 35	SHAFT CDU 1X RSVR S2
* CC264L	TB1-F48	J19-P3	SHAFT CDU 1X RSVR S2
* A 69R	TB1-F49	J04- 45	SHAFT CDU 1X RSVR S3
* CC264R	TB1-F49	J19-P4	SHAFT CDU 1X RSVR S3
* A 69Y	TB1-F50	J04- 34	SHAFT CDU 1X RSVR S1
* CC264W	TB1-F50	J19-P5	SHAFT CDU 1X RSVR S1
* A 401	TB1-F51	P09-116	TRAY 2 THERMISTER HI
* CC 87	TB1-F51	J12-C1	TRAY 2 THERMISTER HI
* A 392	TB1-F52	P09- 97	THERMISTER LO
* CC112	TB1-F52	J14-B2	THERMISTER LO
* CC331	TB1-F52	J23- 57	THERMISTER LO
AA109	TB1-F56	TB1-F57	0 VDC OPTICS
AA110	TB1-F56	TB1-F76	0 VDC OPTICS
* A 493Y	TB1-F56	P13- 13	TRACKER X DRIVE BUFFERED LO
* A 494Y	TB1-F56	P13- 14	TRACKER Y DRIVE BUFFERED LO
* CC270	TB1-F56	J19-L6	0 VDC OPTICS
* A 362	TB1-F57	P09- 56	0 VDC OPTICS
* A 495Y	TB1-F57	P13- 7	TRACKER PREAMP OUTPUT BUFFERED LO
* AA109	TB1-F57	TB1-F56	0 VDC OPTICS
* A 353	TB1-F58	P09- 40	SCT TRUNNION TACH FEEDBACK BUFFERED
* CC246	TB1-F58	J19-M6	SCT TRUNNION TACH FEEDBACK BUFFERED
* A 320	TB1-F59	J09- 75	IMU TEMP ALARM AMP PIN 14
* CC188	TB1-F59	J17-G1	IMU TEMP ALARM AMP PIN 14
* A 319R	TB1-F60	J09- 74	IMU TEMP ALARM AMP PIN 15
* CC187R	TB1-F60	J17-G2	IMU TEMP ALARM AMP PIN 15
* A 319G	TB1-F61	J09-105	IMU TEMP ALARM BIAS RESISTOR
* CC187L	TB1-F61	J17-H1	IMU TEMP ALARM BIAS RESISTOR
* A 319Y	TB1-F62	J09- 92	IMU TEMP ALARM AMP PIN 5
* CC187W	TB1-F62	J17-H2	IMU TEMP ALARM AMP PIN 5
* A 321G	TB1-F63	J09- 94	TEMPERATURE CONTROLLER 0 VDC IMU
* CC189R	TB1-F63	J17-M1	TEMPERATURE CONTROLLER 0 VDC IMU
* A 396	TB1-F64	P09-106	ACCEL TEMP (TELEMETRY)

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC194	TB1-F64	J17-F5	ACCEL TEMP (TELEMETRY)
*	A 496Y	TB1-F65	P13- 23	TRACKER Y ERROR LO
*	CC275W	TB1-F65	J20-D7	TRACKER Y ERROR LO
*	A 496R	TB1-F66	P13- 31	TRACKER Y ERROR HI
*	CC275R	TB1-F66	J20-D6	TRACKER Y ERROR HI
	A 302B	TB1-F67	SHLD A 302	0 VDC OPTICS
	A 496B	TB1-F67	SHLD A 496	0 VDC OPTICS
	AA 65	TB1-F67	TB1-G67	0 VDC OPTICS
*	AA 64	TB1-F67	TB1-D67	0 VDC OPTICS
*	A 302R	TB1-F68	J09- 34	SCT TRUNNION TRACKER MODE INPUT HI
*	CC262R	TB1-F68	J19-D3	SCT TRUNNION TRACKER MODE INPUT HI
*	A 302Y	TB1-F69	J09- 35	SCT TRUNNION TRACKER MODE INPUT LO
*	CC262W	TB1-F69	J19-D2	SCT TRUNNION TRACKER MODE INPUT LO
*	A 369R	TB1-F70	P09- 65	+2.5 VDC CONDITIONING LO
*	CC309W	TB1-F70	J20-F1	+2.5 VDC CONDITIONING LO
*	A 369Y	TB1-F71	P09- 81	+2.5 VDC CONDITIONING HI
*	CC309R	TB1-F71	J20-D1	+2.5 VDC CONDITIONING HI
*	A 383Y	TB1-F72	P09- 83	0 VDC CONDITIONING
*	CC294W	TB1-F72	J20-G1	0 VDC CONDITIONING
	A 579	TB1-F73	TB1-F74	0 VDC IMU
*	A 515	TB1-F73	P11-F	0 VDC IMU
*	A 577	TB1-F73	TB1-C70	0 VDC IMU
*	AA123	TB1-F73	TB1-D73	0 VDC IMU
*	CC321	TB1-F73	J20-K1	0 VDC IMU
	A 581	TB1-F74	TB1-F75	0 VDC IMU
	AA126	TB1-F74	TB1-H24	0 VDC IMU
*	A 541	TB1-F74	P12-E	0 VDC IMU
*	A 579	TB1-F74	TB1-F73	0 VDC IMU
*	AA111	TB1-F74	TB1-D59	0 VDC IMU
*	A 511	TB1-F75	P11-D	0 VDC IMU
*	A 581	TB1-F75	TB1-F74	0 VDC IMU
*	A 583	TB1-F75	TB1-D75	0 VDC IMU
*	CC177	TB1-F75	J16-R2	0 VDC IMU
*	CC320	TB1-F75	J20-H1	0 VDC IMU
	A 584	TB1-F76	TB1-F77	0 VDC OPTICS
*	AA110	TB1-F76	TB1-F56	0 VDC OPTICS
*	CC208	TB1-F76	J17-R6	0 VDC OPTICS
	A 587	TB1-F77	TB1-F78	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 285	TB1-F77	J09- 1	0 VDC OPTICS
*	A 584	TB1-F77	TB1-F76	0 VDC OPTICS
*	AA128	TB1-F77	TB1-D77	0 VDC OPTICS
*	CC241	TB1-F77	J18-R4	0 VDC OPTICS
*	A 517	TB1-F78	P11-G	0 VDC OPTICS
*	A 587	TB1-F78	TB1-F77	0 VDC OPTICS
*	CC271	TB1-F78	J19-R1	0 VDC OPTICS
*	CC324	TB1-F78	J20-P4	0 VDC OPTICS
	AA 73	TB1-G 1	TB1-H 1	25.6 KC HI IMU
*	A 14R	TB1-G 1	J01- 50	25.6 KC HI IMU
*	A 34R	TB1-G 1	J02- 50	25.6 KC HI IMU
*	CC 83R	TB1-G 1	J12-N4	25.6 KC HI IMU
	AA 76	TB1-G 2	TB1-H 2	0 VDC IMU
*	A 14Y	TB1-G 2	J01- 60	25.6 KC LO IMU
*	A 34Y	TB1-G 2	J02- 60	25.6 KC LO IMU
*	CC 83W	TB1-G 2	J12-P5	25.6 KC LO IMU
*	A 104Y	TB1-G 3	J06- 24	ATTITUDE CONTROL RELAY CONTROL
*	A 128Y	TB1-G 3	P01- 24	ATTITUDE CONTROL RELAY CONTROL
*	CC325W	TB1-G 3	J22- 42	ATTITUDE CONTROL RELAY CONTROL
	A 128B	TB1-G 4	SHLD A 128	STRUCTURE GROUND
	AA 1	TB1-G 4	TB1-H 4	STRUCTURE GROUND
	AA 80	TB1-G 4	TB1-G 8	STRUCTURE GROUND
	CC325B	TB1-G 4	SHLD CC325	STRUCTURE GROUND
*	A 128R	TB1-G 5	P01- 69	LOCK CDU RELAY CONTROL
*	CC128W	TB1-G 5	J15-S3	LOCK CDU RELAY CONTROL
*	CC325R	TB1-G 5	J22- 67	LOCK CDU RELAY CONTROL
	AA 87	TB1-G 6	TB1-G 7	+28 VDC IMU
*	A 7	TB1-G 6	J01- 16	+28 VDC IMU
*	A 27	TB1-G 6	J02- 16	+28 VDC IMU
*	A 47	TB1-G 6	J03- 16	+28 VDC IMU
*	CC103	TB1-G 6	J13-S6	+28 VDC IMU
*	A 125	TB1-G 7	P01- 7	+28 VDC IMU
*	A 201	TB1-G 7	P03-H*	+28 VDC IMU
*	AA 87	TB1-G 7	TB1-G 6	+28 VDC IMU
*	CC306	TB1-G 7	J20-L1	+28 VDC IMU
	AA 90	TB1-G 8	TB1-G 9	STRUCTURE GROUND
*	A 117	TB1-G 8	J06- 91	STRUCTURE GROUND
*	A 140	TB1-G 8	P01- 84	STRUCTURE GROUND

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 150	TB1-G 8	J08- 29	STRUCTURE GROUND
*	AA 80	TB1-G 8	TB1-G 4	STRUCTURE GROUND
	AA 91	TB1-G 9	TB1-G10	STRUCTURE GROUND
*	A 13	TB1-G 9	J01- 41	STRUCTURE GROUND
*	A 33	TB1-G 9	J02- 41	STRUCTURE GROUND
*	AA 90	TB1-G 9	TB1-G 8	STRUCTURE GROUND
	AA 92	TB1-G10	TB1-G11	STRUCTURE GROUND
*	A 53	TB1-G10	J03- 41	STRUCTURE GROUND
*	A 70	TB1-G10	J04- 41	STRUCTURE GROUND
*	AA 91	TB1-G10	TB1-G 9	STRUCTURE GROUND
*	A 87	TB1-G11	J05- 41	STRUCTURE GROUND
*	A 210	TB1-G11	P05- 1	STRUCTURE GROUND
*	AA 92	TB1-G11	TB1-G10	STRUCTURE GROUND
	A 204B	TB1-G12	SHLD A 204	0 VDC IMU
	AA 8	TB1-G12	TB1-H12	0 VDC IMU
	CC182B	TB1-G12	SHLD CC182	0 VDC IMU
*	AA 7	TB1-G12	TB1-F12	0 VDC IMU
*	A 205Y	TB1-G13	P03-P	PITCH ERROR BODY AND BODY OFFSET AXIS LO
*	CC201W	TB1-G13	J17-C1	PITCH ERROR BODY AND BODY OFFSET AXIS LO
*	A 181R	TB1-G14	P02-E	SIN AOG 16X S2
*	CC152W	TB1-G14	J16-D8	SIN AOG 16X S2
*	A 57R	TB1-G15	J03-101	SIN AOG 16X S4
*	A 181Y	TB1-G15	P02-F	SIN AOG 16X S4
*	CC152R	TB1-G15	J16-D9	SIN AOG 16X S4
*	A 57Y	TB1-G16	J03- 87	SIN AOG 16X TO CDU
*	CC152L	TB1-G16	J16-F9	SIN AOG 16X TO CDU
	A 57B	TB1-G17	SHLD A 57	0 VDC IMU
	A 181B	TB1-G17	SHLD A 181	0 VDC IMU
	AA 15	TB1-G17	TB1-H17	0 VDC IMU
	CC152B	TB1-G17	SHLD CC152	0 VDC IMU
*	AA 14	TB1-G17	TB1-F17	0 VDC IMU
*	A 50Y	TB1-G18	J03- 32	OG CDU MDA OUTPUT
*	CC154R	TB1-G18	J16-N2	OG CDU MDA OUTPUT
*	A 50G	TB1-G19	J03- 31	OG CDU MDA OUTPUT
*	CC154W	TB1-G19	J16-N1	OG CDU MDA OUTPUT
	AA 17	TB1-G20	TB1-H20	0 VDC IMU
*	A 50R	TB1-G20	J03- 43	0 VDC IMU
*	AA124	TB1-G20	TB1-D73	0 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 263R	TB1-G21	P07-M	Z PIP TORQUE -
*	CC106R	TB1-G21	J14-P2	Z PIP TORQUE -
*	A 263W	TB1-G22	P07-L	Z PIP TORQUE RET
*	CC106W	TB1-G22	J14-P3	Z PIP TORQUE RET
*	A 263L	TB1-G23	P07-K	Z PIP TORQUE +
*	CC106L	TB1-G23	J14-P1	Z PIP TORQUE +
	A 263B	TB1-G24	SHLD A 263	0 VDC IMU
	AA 22	TB1-G24	TB1-H24	0 VDC IMU
	AA 99	TB1-G24	TB1-G27	0 VDC IMU
	CC106B	TB1-G24	SHLD CC106	0 VDC IMU
*	AA 21	TB1-G24	TB1-F24	0 VDC IMU
	A 191B	TB1-G27	SHLD A 191	0 VDC IMU
	A 193B	TB1-G27	SHLD A 193	0 VDC IMU
*	AA 24	TB1-G27	TB1-F27	0 VDC IMU
*	AA 99	TB1-G27	TB1-G24	0 VDC IMU
*	A 191Y	TB1-G28	P03-A	X GYRO ERROR SIG
*	A 380Y	TB1-G28	P09- 76	X GYRO ERROR SIG
*	CC130L	TB1-G28	J15-B1	X GYRO ERROR SIG
*	A 58	TB1-G29	J03- 89	OG CDU 16X RSVR LOAD
*	CC158	TB1-G29	J16-C7	OG CDU 16X RSVR LOAD
	A 571	TB1-G30	TB1-F32	OG CDU ERROR SIG RET
*	A 59Y	TB1-G30	J03- 90	OG CDU ERROR SIG RET
*	A 338Y	TB1-G30	P09- 31	OG CDU ERROR SIG RET
*	CC147W	TB1-G30	J16-D6	OG CDU ERROR SIG RET
*	CC204R	TB1-G30	J17-B2	OG CDU ERROR SIG RET
*	A 59R	TB1-G31	J03-104	OG CDU 16X ERROR SIG
*	A 338R	TB1-G31	P09- 9	OG CDU 16X ERROR SIG
*	CC147R	TB1-G31	J16-C5	OG CDU 16X ERROR SIG
*	CC204W	TB1-G31	J17-A2	OG CDU 16X ERROR SIG
	A 52B	TB1-G32	SHLD A 52	OG CDU ERROR SIG RET
	A 145B	TB1-G32	SHLD A 145	OG CDU ERROR SIG RET
	A 365B	TB1-G32	SHLD A 365	OG CDU ERROR SIG RET
	AA102	TB1-G32	TB1-F32	OG CDU ERROR SIG RET
	CC204B	TB1-G32	SHLD CC204	OG CDU ERROR SIG RET
*	A 52R	TB1-G33	J03- 35	OG CDU 1X ERROR SIG
*	A 145R	TB1-G33	P01- 96	OG CDU 1X ERROR SIG
*	A 365R	TB1-G33	P09- 77	OG CDU 1X ERROR SIG
*	CC 64W	TB1-G33	J11-A3	OG CDU 1X ERROR SIG

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC146W	TB1-G33	J16-C6	OG CDU 1X ERROR SIG
*	A 52Y	TB1-G34	J03- 45	OG CDU ERROR SIG RET
*	A 145Y	TB1-G34	P01- 97	OG CDU ERROR SIG RET
*	A 365Y	TB1-G34	P09- 61	OG CDU ERROR SIG RET
*	CC 64R	TB1-G34	J11-B3	OG CDU ERROR SIG RET
*	CC146R	TB1-G34	J16-D6	OG CDU ERROR SIG RET
*	A 51	TB1-G35	J03- 34	OG CDU 1X RSVR LOAD
*	CC157	TB1-G35	J16-F6	OG CDU 1X RSVR LOAD
	A 77B	TB1-G36	SHLD A 77	0 VDC OPTICS
	AA 30	TB1-G36	TB1-H36	0 VDC OPTICS
	CC269B	TB1-G36	SHLD CC269	0 VDC OPTICS
*	AA 29	TB1-G36	TB1-F36	0 VDC OPTICS
*	A 77R	TB1-G37	J04-106	SHAFT CDU TACH HI
*	CC269R	TB1-G37	J19-A9	SHAFT CDU TACH HI
*	A 77Y	TB1-G38	J04- 92	SHAFT CDU TACH LO
*	CC269W	TB1-G38	J19-B9	SHAFT CDU TACH LO
	A 76B	TB1-G39	SHLD A 76	0 VDC OPTICS
	AA 37	TB1-G39	TB1-H39	0 VDC OPTICS
	CC267B	TB1-G39	SHLD CC267	0 VDC OPTICS
*	AA 36	TB1-G39	TB1-F39	0 VDC OPTICS
*	A 76Y	TB1-G40	J04-104	SHAFT CDU 16X RSVR S2
*	CC267W	TB1-G40	J19-B8	SHAFT CDU 16X RSVR S2
*	A 76R	TB1-G41	J04- 90	SHAFT CDU 16X RSVR S3
*	CC267R	TB1-G41	J19-B7	SHAFT CDU 16X RSVR S3
	A 270B	TB1-G42	SHLD A 270	0 VDC OPTICS
	AA 44	TB1-G42	TB1-H42	0 VDC OPTICS
	CC221B	TB1-G42	SHLD CC221	0 VDC OPTICS
*	AA 43	TB1-G42	TB1-F42	0 VDC OPTICS
*	A 270R	TB1-G43	P08- 12	SCT TRUNNION 1X RSVR P3
*	CC221R	TB1-G43	J18-D4	SCT TRUNNION 1X RSVR P3
*	A 270Y	TB1-G44	P08- 13	SCT TRUNNION 1X RSVR P1
*	CC221W	TB1-G44	J18-D3	SCT TRUNNION 1X RSVR P1
*	A 226Y	TB1-G45	P05- 51	SXT SHAFT 1X RSVR S4
*	A 279Y	TB1-G45	P08- 42	SCT SHAFT 1X RSVR P4
*	A 226R	TB1-G46	P05- 52	SXT SHAFT 1X RSVR S2
*	A 279R	TB1-G46	P08- 41	SCT SHAFT 1X RSVR P2
	A 226B	TB1-G47	SHLD A 226	0 VDC OPTICS
	A 279B	TB1-G47	SHLD A 279	0 VDC OPTICS

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA 51	TB1-G47	TB1-H47	0 VDC OPTICS
*	AA 50	TB1-G47	TB1-F47	0 VDC OPTICS
*	A 214Y	TB1-G48	P05- 36	SXT SHAFT MOTOR PHASE 1
*	CC238W	TB1-G48	J18-T5	SXT SHAFT MOTOR PHASE 1
*	A 214R	TB1-G49	P05- 8	SXT SHAFT MOTOR PHASE 2
*	CC238R	TB1-G49	J18-S5	SXT SHAFT MOTOR PHASE 2
	AA 54	TB1-G50	TB1-H50	0 VDC OPTICS
*	A 212G	TB1-G50	P05- 16	0 VDC OPTICS
*	A 214G	TB1-G50	P05- 19	0 VDC OPTICS
*	A 547	TB1-G50	P12-G	0 VDC OPTICS
*	A 212R	TB1-G51	P05- 5	SXT TRUNNION MOTOR PHASE 2
*	CC232R	TB1-G51	J18-S6	SXT TRUNNION MOTOR PHASE 2
*	A 212Y	TB1-G52	P05- 33	SXT TRUNNION MOTOR PHASE 1
*	CC232W	TB1-G52	J18-T6	SXT TRUNNION MOTOR PHASE 1
	AA 56	TB1-G53	TB1-H53	0 VDC OPTICS
*	A 546	TB1-G53	P12-G	0 VDC OPTICS
*	CC179	TB1-G53	J16-R6	0 VDC OPTICS
*	A 361	TB1-G54	P09- 55	TRACKER Y DRIVE BUFFERED HI
*	A 494R	TB1-G54	P13- 6	TRACKER Y DRIVE BUFFERED HI
*	CC227	TB1-G54	J18-C8	TRACKER Y DRIVE BUFFERED HI
*	A 360	TB1-G55	P09- 54	TRACKER X DRIVE BUFFERED HI
*	A 493R	TB1-G55	P13- 5	TRACKER X DRIVE BUFFERED HI
*	CC226	TB1-G55	J18-C7	TRACKER X DRIVE BUFFERED HI
*	A 375	TB1-G56	P09- 71	TRACKER PREAMP OUTPUT BUFFERED HI
*	A 495R	TB1-G56	P13- 15	TRACKER PREAMP OUTPUT BUFFERED HI
*	CC228	TB1-G56	J18-C9	TRACKER PREAMP OUTPUT BUFFERED HI
*	A 342	TB1-G57	P09- 19	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
*	CC243	TB1-G57	J19-M1	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
*	A 352	TB1-G58	P09- 39	SHAFT CDU TACH FEEDBACK SIG BUFFERED
*	CC248	TB1-G58	J19-M4	SHAFT CDU TACH FEEDBACK SIG BUFFERED
*	A 325R	TB1-G59	J09-100	IMU HTR CURRENT AMP PIN 5
*	CC186K	TB1-G59	J17-N6	IMU HTR CURRENT AMP PIN 5
*	A 325N	TB1-G60	J09- 88	IMU TEMP CONT K2 PIN 5
*	CC186L	TB1-G60	J17-N5	IMU TEMP CONT K2 PIN 5
*	A 253Y	TB1-G61	P06-P	ACCEL TEMP IND SENSOR RET
*	CC185W	TB1-G61	J17-D5	ACCEL TEMP IND SENSOR RET
*	A 329N	TB1-G62	J09- 98	ACCEL BRIDGE AMP PIN 6
*	CC185K	TB1-G62	J17-F7	ACCEL BRIDGE AMP PIN 6

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 329R	TB1-G63	J09-104	ACCEL ZERO DEVIATION CHECK	
*	CC185R	TB1-G63	J17-D7	ACCEL ZERO DEVIATION CHECK	
*	A 329G	TB1-G64	J09-103	IMU IMU TEMP CONT +5 DEG GAIN CHECK	
*	CC185L	TB1-G64	J17-D6	IMU IMU TEMP CONT +5 DEG GAIN CHECK	
*	A 497Y	TB1-G65	P13- 24	TRACKER X ERROR LO	
*	CC274W	TB1-G65	J20-C7	TRACKER X ERROR LO	
*	A 497R	TB1-G66	P13- 32	TRACKER X ERROR HI	
*	CC274R	TB1-G66	J20-C6	TRACKER X ERROR HI	
	A 305B	TB1-G67	SHLD A 305	0 VDC OPTICS	
	A 497B	TB1-G67	SHLD A 497	0 VDC OPTICS	
	AA 66	TB1-G67	TB1-H67	0 VDC OPTICS	
	CC281B	TB1-G67	SHLD CC281	0 VDC OPTICS	
*	AA 65	TB1-G67	TB1-F67	0 VDC OPTICS	
*	A 305R	TB1-G68	J09- 43	PHOTOMETER MARK REJECT HI	
*	CC281R	TB1-G68	J20-F6	PHOTOMETER MARK REJECT HI	
*	A 305Y	TB1-G69	J09- 60	PHOTOMETER MARK REJECT LO	
*	CC281W	TB1-G69	J20-F7	PHOTOMETER MARK REJECT LO	
	AA 68	TB1-G70	TB1-H70	STRUCTURE GROUND	
*	A 249	TB1-G70	P06-G	STRUCTURE GROUND	
*	A 284	TB1-G70	P08- 59	STRUCTURE GROUND	
*	A 527	TB1-G70	P11-L	STRUCTURE GROUND	
*	CC207	TB1-G70	J17-L6	STRUCTURE GROUND	
*	A 244	TB1-G71	P06-D	+28 VDC IMU	
*	A 359	TB1-G71	P09- 49	+28 VDC IMU	
*	CC307	TB1-G71	J20-L1	+28 VDC IMU	
*	CC308	TB1-G71	J20-L2	+28 VDC IMU	
*	A 383R	TB1-G72	P09- 82	+20 VDC CONDITIONING	
*	CC294R	TB1-G72	J20-G2	+20 VDC CONDITIONING	
*	A 356	TB1-G73	P09- 46	+3 VDC AGC	
*	CC293	TB1-G73	J20-F4	+3 VDC AGC	
*	CC335	TB1-G73	J24- 6	+3 VDC AGC	175
*	A 366	TB1-G74	P09- 62	+13 VDC AGC	
*	CC292	TB1-G74	J20-D4	+13 VDC AGC	
*	CC333	TB1-G74	J24- 1	+13 VDC AGC	176
*	A 554	TB1-G75	P12-M	+28 VDC STBY BUSS B	
*	A 555	TB1-G75	P12-M	+28 VDC STBY BUSS B	
*	CC300	TB1-G75	J20-T4	+28 VDC STBY BUSS B	
*	CC317	TB1-G75	J20-S4	+28 VDC STBY BUSS B	

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 528	TB1-G76	P11-M	+28 VDC STBY BUSS A
*	A 529	TB1-G76	P11-M	+28 VDC STBY BUSS A
*	CC299	TB1-G76	J20-T3	+28 VDC STBY BUSS A
*	CC316	TB1-G76	J20-S3	+28 VDC STBY BUSS A
*	A 548	TB1-G77	P12-H	+28 VDC OPTICS BUSS B
*	A 549	TB1-G77	P12-H	+28 VDC OPTICS BUSS B
*	CC305	TB1-G77	J20-S6	+28 VDC OPTICS BUSS B
*	CC319	TB1-G77	J20-R6	+28 VDC OPTICS BUSS B
*	A 520	TB1-G78	P11-H	+28 VDC OPTICS BUSS A
*	A 521	TB1-G78	P11-H	+28 VDC OPTICS BUSS A
*	CC302	TB1-G78	J20-T5	+28 VDC OPTICS BUSS A
*	CC318	TB1-G78	J20-R5	+28 VDC OPTICS BUSS A
*	A 54R	TB1-H 1	J03- 50	25.6 KC HI IMU
*	A 387R	TB1-H 1	P09-105	25.6 KC HI IMU
*	AA 73	TB1-H 1	TB1-G 1	25.6 KC HI IMU
*	A 54Y	TB1-H 2	J03- 60	25.6 KC LO IMU
*	A 387Y	TB1-H 2	P09- 87	25.6 KC LO IMU
*	AA 76	TB1-H 2	TB1-G 2	0 VDC IMU
*	A 128G	TB1-H 3	P01- 57	ENTRY RELAY CONTROL
*	CC159W	TB1-H 3	J16-M1	ENTRY RELAY CONTROL
	A 104B	TB1-H 4	SHLD A 104	STRUCTURE GROUND
	AA 2	TB1-H 4	TB1-K 4	STRUCTURE GROUND
	CC128B	TB1-H 4	SHLD CC128	STRUCTURE GROUND
*	AA 1	TB1-H 4	TB1-G 4	STRUCTURE GROUND
*	CC 80	TB1-H 4	J11-L4	STRUCTURE GROUND
*	A 124R	TB1-H 5	P01- 5	FINE ALIGN RELAY CONTROL
*	CC128R	TB1-H 5	J15-H4	FINE ALIGN RELAY CONTROL
*	CC325L	TB1-H 5	J22- 68	FINE ALIGN RELAY CONTROL
*	A 187Y	TB1-H 7	P02-S	3200 CPS 2 V LO
*	CC 67R	TB1-H 7	J11-M2	3200 CPS 2 V LO
*	CC 67W	TB1-H 7	J11-L2	3200 CPS 2 V LO
*	A 188Y	TB1-H 8	P02-U	3200 CPS 2 V FEEDBACK LO
*	A 374Y	TB1-H 8	P09- 88	3200 CPS 2 V FEEDBACK LO
*	CC 73W	TB1-H 8	J11-G3	3200 CPS 2 V FEEDBACK LO
*	A 183Y	TB1-H 9	P02-H	COS AMG 16X S1
*	CC164R	TB1-H 9	J16-H3	COS AMG 16X S1
*	A 36R	TB1-H10	J02-100	COS AMG 16X S3
*	A 183R	TB1-H10	P02-G	COS AMG 16X S3

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC164W	TB1-H10	J16-G3	COS AMG 16X S3
*	A 36Y	TB1-H11	J02- 86	COS AMG 16X TO CDU
*	CC164L	TB1-H11	J16-G4	COS AMG 16X TO CDU
	A 36B	TB1-H12	SHLD A 36	0 VDC IMU
	A 183B	TB1-H12	SHLD A 183	0 VDC IMU
	A 188B	TB1-H12	SHLD A 188	0 VDC IMU
	AA 9	TB1-H12	TB1-K12	0 VDC IMU
	AA 94	TB1-H12	TB1-K17	0 VDC IMU
	CC164B	TB1-H12	SHLD CC164	0 VDC IMU
*	AA 8	TB1-H12	TB1-G12	0 VDC IMU
*	A 204R	TB1-H13	P03-N	PITCH YAW RSVR S3
*	CC182R	TB1-H13	J17-D2	PITCH YAW RSVR S3
*	A 189Y	TB1-H14	P02-X	COS AIG 16X S1
*	CC163R	TB1-H14	J16-H1	COS AIG 16X S1
*	A 16R	TB1-H15	J01-100	COS AIG 16X S3
*	A 189R	TB1-H15	P02-W	COS AIG 16X S3
*	CC163W	TB1-H15	J16-G1	COS AIG 16X S3
*	A 16Y	TB1-H16	J01- 86	COS AIG 16X TO CDU
*	CC163L	TB1-H16	J16-G2	COS AIG 16X TO CDU
	A 16B	TB1-H17	SHLD A 16	0 VDC IMU
	A 189B	TB1-H17	SHLD A 189	0 VDC IMU
	AA 16	TB1-H17	TB1-K17	0 VDC IMU
	AA 96	TB1-H17	TB1-K24	0 VDC IMU
	CC163B	TB1-H17	SHLD CC163	0 VDC IMU
*	AA 15	TB1-H17	TB1-G17	0 VDC IMU
*	A 30Y	TB1-H18	J02- 32	MG CDU MDA OUTPUT
*	CC142R	TB1-H18	J16-P3	MG CDU MDA OUTPUT
*	A 30G	TB1-H19	J02- 31	MG CDU MDA OUTPUT
*	CC142W	TB1-H19	J16-R3	MG CDU MDA OUTPUT
	AA 18	TB1-H20	TB1-K20	0 VDC IMU
*	A 30R	TB1-H20	J02- 43	0 VDC IMU
*	AA 17	TB1-H20	TB1-G20	0 VDC IMU
*	A 264R	TB1-H21	P07-R	Y PIP TORQUE -
*	CC 99R	TB1-H21	J13-N3	Y PIP TORQUE -
*	A 264W	TB1-H22	P07-P	Y PIP TORQUE RET
*	CC 99W	TB1-H22	J13-M3	Y PIP TORQUE RET
*	A 264L	TB1-H23	P07-N	Y PIP TORQUE +
*	CC 99L	TB1-H23	J13-L3	Y PIP TORQUE +

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	A 264B	TB1-H24	SHLD A 264	0 VDC IMU
	AA 23	TB1-H24	TB1-K24	0 VDC IMU
	CC 99B	TB1-H24	SHLD CC 99	0 VDC IMU
*	AA 22	TB1-H24	TB1-G24	0 VDC IMU
*	AA126	TB1-H24	TB1-F74	0 VDC IMU
	A 569	TB1-H25	TB1-H26	0 VDC IMU
*	AA125	TB1-H25	TB1-D74	0 VDC IMU
*	CC113	TB1-H25	J14-R6	0 VDC IMU
	A 570	TB1-H26	TB1-K26	0 VDC IMU
*	A 246	TB1-H26	P06-E	0 VDC IMU
*	A 569	TB1-H26	TB1-H25	0 VDC IMU
*	CC 76	TB1-H26	J11-R5	0 VDC IMU
	A 203B	TB1-H28	SHLD A 203	MG CDU ERROR SIG RET
*	A 203R	TB1-H28	P03-K	MG CDU ERROR SIG RET
*	CC 63W	TB1-H28	J11-B2	MG CDU ERROR SIG RET
*	A 203Y	TB1-H29	P03-L	MG CDU ATTITUDE STEERING ERROR
*	CC 63R	TB1-H29	J11-C2	MG CDU ATTITUDE STEERING ERROR
	A 38B	TB1-H30	SHLD A 38	MG CDU ERROR SIG RET
	AA100	TB1-H30	TB1-H32	MG CDU ERROR SIG RET
*	A 38Y	TB1-H30	J02- 90	MG CDU ERROR SIG RET
*	CC140R	TB1-H30	J16-D4	MG CDU ERROR SIG RET
*	A 38R	TB1-H31	J02-104	MG CDU 16X ERROR SIG
*	CC140W	TB1-H31	J16-C3	MG CDU 16X ERROR SIG
	A 32B	TB1-H32	SHLD A 32	MG CDU ERROR SIG RET
	A 139B	TB1-H32	SHLD A 139	MG CDU ERROR SIG RET
	A 355B	TB1-H32	SHLD A 355	MG CDU ERROR SIG RET
*	AA100	TB1-H32	TB1-H30	MG CDU ERROR SIG RET
*	A 32R	TB1-H33	J02- 35	MG CDU 1X ERROR SIG
*	A 139R	TB1-H33	P01- 82	MG CDU 1X ERROR SIG
*	A 355R	TB1-H33	P09- 60	MG CDU 1X ERROR SIG
*	CC 62W	TB1-H33	J11-A2	MG CDU 1X ERROR SIG
*	CC139W	TB1-H33	J16-C4	MG CDU 1X ERROR SIG
*	A 32Y	TB1-H34	J02- 45	MG CDU ERROR SIG RET
*	A 139Y	TB1-H34	P01- 83	MG CDU ERROR SIG RET
*	A 355Y	TB1-H34	P09- 43	MG CDU ERROR SIG RET
*	CC 62R	TB1-H34	J11-B2	MG CDU ERROR SIG RET
*	CC139R	TB1-H34	J16-D4	MG CDU ERROR SIG RET
*	A 31	TB1-H35	J02- 34	MG CDU 1X RSVR LOAD

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC156	TB1-H35	J16-F4	MG CDU 1X RSVR LOAD
	A 219B	TB1-H36	SHLD A 219	0 VDC OPTICS
	AA 31	TB1-H36	TB1-K36	0 VDC OPTICS
	CC239B	TB1-H36	SHLD CC239	0 VDC OPTICS
*	AA 30	TB1-H36	TB1-G36	0 VDC OPTICS
*	A 219R	TB1-H37	P05- 23	SXT SHAFT TACH HI
*	CC239R	TB1-H37	J18-A7	SXT SHAFT TACH HI
*	A 219Y	TB1-H38	P05- 24	SXT SHAFT TACH LO
*	CC239W	TB1-H38	J18-B7	SXT SHAFT TACH LO
	A 66B	TB1-H39	SHLD A 66	0 VDC OPTICS
	AA 38	TB1-H39	TB1-K39	0 VDC OPTICS
	AA104	TB1-H39	TB1-K36	0 VDC OPTICS
	CC263B	TB1-H39	SHLD CC263	0 VDC OPTICS
*	AA 37	TB1-H39	TB1-G39	0 VDC OPTICS
*	A 66Y	TB1-H40	J04- 11	SHAFT CDU 1/2X RSVR P1
*	CC263W	TB1-H40	J19-C8	SHAFT CDU 1/2X RSVR P1
*	A 66R	TB1-H41	J04- 25	SHAFT CDU 1/2X RSVR P3
*	CC263R	TB1-H41	J19-C9	SHAFT CDU 1/2X RSVR P3
	A 89B	TB1-H42	SHLD A 89	0 VDC OPTICS
	AA 45	TB1-H42	TB1-K42	0 VDC OPTICS
	AA106	TB1-H42	TB1-K39	0 VDC OPTICS
	CC254B	TB1-H42	SHLD CC254	0 VDC OPTICS
*	AA 44	TB1-H42	TB1-G42	0 VDC OPTICS
*	A 89Y	TB1-H43	J05- 66	TRUNNION CDU 1/2X RSVR S4
*	CC254W	TB1-H43	J19-K2	TRUNNION CDU 1/2X RSVR S4
*	A 89R	TB1-H44	J05- 56	TRUNNION CDU 1/2X RSVR S2
*	CC254R	TB1-H44	J19-K1	TRUNNION CDU 1/2X RSVR S2
*	A 64R	TB1-H45	J04- 20	SHAFT CDU 1X RSVR P3
*	CC265R	TB1-H45	J19-K5	SHAFT CDU 1X RSVR P3
*	A 64Y	TB1-H46	J04- 6	SHAFT CDU 1X RSVR P1
*	CC265W	TB1-H46	J19-K4	SHAFT CDU 1X RSVR P1
	A 64B	TB1-H47	SHLD A 64	0 VDC OPTICS
	AA 52	TB1-H47	TB1-K47	0 VDC OPTICS
	AA108	TB1-H47	TB1-K42	0 VDC OPTICS
	CC265B	TB1-H47	SHLD CC265	0 VDC OPTICS
*	AA 51	TB1-H47	TB1-G47	0 VDC OPTICS
*	A 68Y	TB1-H48	J04- 31	SHAFT CDU MOTOR PHASE 1
*	CC268W	TB1-H48	J19-S2	SHAFT CDU MOTOR PHASE 1

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 68R	TB1-H49	J04- 32	SHAFT CDU MOTOR PHASE 2
*	CC268R	TB1-H49	J19-T2	SHAFT CDU MOTOR PHASE 2
	AA 55	TB1-H50	TB1-K50	0 VDC OPTICS
*	A 68G	TB1-H50	J04- 43	0 VDC OPTICS
*	A 268G	TB1-H50	P08- 7	0 VDC OPTICS
*	AA 54	TB1-H50	TB1-G50	0 VDC OPTICS
*	A 268R	TB1-H51	P08- 5	SCT SHAFT MOTOR PHASE 2
*	CC236R	TB1-H51	J18-S4	SCT SHAFT MOTOR PHASE 2
*	A 268Y	TB1-H52	P08- 6	SCT SHAFT MOTOR PHASE 1
*	CC236W	TB1-H52	J18-T4	SCT SHAFT MOTOR PHASE 1
	AA 57	TB1-H53	TB1-K53	0 VDC OPTICS
*	AA 56	TB1-H53	TB1-G53	0 VDC OPTICS
*	CC 94	TB1-H53	J12-R6	0 VDC OPTICS
*	A 351	TB1-H54	P09- 38	SCT SHAFT 1X ERROR SIG BUFFERED
*	CC217	TB1-H54	J18-M5	SCT SHAFT 1X ERROR SIG BUFFERED
*	A 344	TB1-H55	P09- 21	SXT TRUNNION TACH FEEDBACK BUFFERED
*	CC220	TB1-H55	J18-M2	SXT TRUNNION TACH FEEDBACK BUFFERED
*	A 377	TB1-H56	P09- 73	SXT TRUNNION MDA INPUT BUFFERED
*	CC222	TB1-H56	J18-M1	SXT TRUNNION MDA INPUT BUFFERED
*	A 345	TB1-H57	P09- 22	TRUNNION CDU TACH FEEDBACK BUFFERED
*	CC244	TB1-H57	J19-M2	TRUNNION CDU TACH FEEDBACK BUFFERED
*	A 343	TB1-H58	P09- 20	SHAFT CDU 16X ERROR SIG BUFFERED
*	CC242	TB1-H58	J19-M3	SHAFT CDU 16X ERROR SIG BUFFERED
*	A 325Y	TB1-H59	J09-101	IMU TEMP CONT K1 PIN 3
*	CC186W	TB1-H59	J17-M5	IMU TEMP CONT K1 PIN 3
*	A 325G	TB1-H60	J09- 87	IMU TEMP CONT AMP PIN 5
*	CC186R	TB1-H60	J17-M6	IMU TEMP CONT AMP PIN 5
*	A 251	TB1-H61	P06-K	IMU TEMP SENSOR COM
*	CC199	TB1-H61	J17-M2	IMU TEMP SENSOR COM
*	A 253R	TB1-H62	P06-N	ACCEL INDICATING SENSOR HI
*	A 329Y	TB1-H62	J09- 97	ACCEL INDICATING SENSOR HI
*	A 252R	TB1-H63	P06-M	IRIG TEMP CONT SENSOR HI
*	CC191R	TB1-H63	J17-B6	IRIG TEMP CONT SENSOR HI
*	A 252Y	TB1-H64	P06-L	IRIG TEMP CONT SENSOR RET
*	CC191W	TB1-H64	J17-B5	IRIG TEMP CONT SENSOR RET
*	A 239Y	TB1-H65	P05- 89	STAR PRESENCE INPUT LO
*	CC277W	TB1-H65	J20-A8	STAR PRESENCE INPUT LO
*	A 239R	TB1-H66	P05- 88	STAR PRESENCE INPUT HI

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* CC277R	TB1-H66	J20-A7	STAR PRESENCE INPUT HI	
A 239B	TB1-H67	SHLD A 239	0 VDC OPTICS	
A 291B	TB1-H67	SHLD A 291	0 VDC OPTICS	
AA 67	TB1-H67	TB1-K67	0 VDC OPTICS	
AA116	TB1-H67	TB1-K47	0 VDC OPTICS	
* AA 66	TB1-H67	TB1-G67	0 VDC OPTICS	
* A 291R	TB1-H68	J09- 10	SHAFT HAND CONTROLLER OUTPUT HI	
* CC250R	TB1-H68	J19-D8	SHAFT HAND CONTROLLER OUTPUT HI	
* A 291Y	TB1-H69	J09- 24	SHAFT HAND CONTROLLER OUTPUT LO	
* CC250W	TB1-H69	J19-D7	SHAFT HAND CONTROLLER OUTPUT LO	
AA 69	TB1-H70	TB1-K70	STRUCTURE GROUND	
* A 326	TB1-H70	J09- 91	STRUCTURE GROUND	
* A 339	TB1-H70	P09- 10	STRUCTURE GROUND	
* A 406	TB1-H70	P10- 1	STRUCTURE GROUND	
* AA 68	TB1-H70	TB1-G70	STRUCTURE GROUND	
* A 317	TB1-H71	J09- 71	+28 VDC OPTICS	
* A 336	TB1-H71	P09- 6	+28 VDC OPTICS	
* A 412	TB1-H71	P10- 14	+28 VDC OPTICS	
* CC247	TB1-H71	J19-T5	+28 VDC OPTICS	
* CC279	TB1-H71	J20-N6	+28 VDC OPTICS	
* A 357	TB1-H72	P09- 47	+28 VDC STBY	
* CC301	TB1-H72	J20-R3	+28 VDC STBY	
* A 367	TB1-H73	P09- 63	0 VDC AGC	
* CC291	TB1-H73	J20-G3	0 VDC AGC	
* CC334	TB1-H73	J24- 3	0 VDC AGC	177
* A 368	TB1-H74	P09- 64	+28 VDC AGC	
* CC289	TB1-H74	J20-F5	+28 VDC AGC	
* CC290	TB1-H74	J20-F5	+28 VDC AGC	166
* A 536	TB1-H75	P12-C	+28 VDC IMU BUSS B	
* A 537	TB1-H75	P12-C	+28 VDC IMU BUSS B	
* A 538	TB1-H75	P12-C	+28 VDC IMU BUSS B	
* CC298	TB1-H75	J20-S2	+28 VDC IMU BUSS B	
* CC315	TB1-H75	J20-P2	+28 VDC IMU BUSS B	
* A 508	TB1-H76	P11-C	+28 VDC IMU BUSS A	
* A 509	TB1-H76	P11-C	+28 VDC IMU BUSS A	
* A 510	TB1-H76	P11-C	+28 VDC IMU BUSS A	
* CC296	TB1-H76	J20-S1	+28 VDC IMU BUSS A	
* CC313	TB1-H76	J20-P1	+28 VDC IMU BUSS A	

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CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 550	TB1-H77	P12-H	+28 VDC OPTICS BUSS B
* CC304	TB1-H77	J20-T6	+28 VDC OPTICS BUSS B
* A 522	TB1-H78	P11-H	+28 VDC OPTICS BUSS A
* CC303	TB1-H78	J20-S5	+28 VDC OPTICS BUSS A
* A 71R	TB1-K 1	J04- 50	25.6 KC HI OPTICS
* A 88R	TB1-K 1	J05- 50	25.6 KC HI OPTICS
* A 395R	TB1-K 1	P09-126	25.6 KC HI OPTICS
* CC 82R	TB1-K 1	J12-P6	25.6 KC HI OPTICS
* A 71Y	TB1-K 2	J04- 60	25.6 KC LO OPTICS
* A 88Y	TB1-K 2	J05- 60	25.6 KC LO OPTICS
* A 395Y	TB1-K 2	P09-104	25.6 KC LO OPTICS
* CC 82W	TB1-K 2	J12-N6	25.6 KC LO OPTICS
* A 124G	TB1-K 3	P01- 4	COARSE ALIGN RELAY CONTROL
* CC 72	TB1-K 3	J11-L3	COARSE ALIGN RELAY CONTROL
A 124B	TB1-K 4	SHLD A 124	STRUCTURE GROUND
CC159B	TB1-K 4	SHLD CC159	STRUCTURE GROUND
CC341	TB1-K 4	E 2	STRUCTURE GROUND
* AA 2	TB1-K 4	TB1-H 4	STRUCTURE GROUND
* A 124Y	TB1-K 5	P01- 12	ZERO ENCODER RELAY CONTROL
* CC128L	TB1-K 5	J15-S1	ZERO ENCODER RELAY CONTROL
* A 187R	TB1-K 7	P02-R	3200 CPS 2 V HI
* CC 67K	TB1-K 7	J11-M1	3200 CPS 2 V HI
* CC 67L	TB1-K 7	J11-L1	3200 CPS 2 V HI
* A 188R	TB1-K 8	P02-T	3200 CPS 2 V FEEDBACK HI
* A 374R	TB1-K 8	P09- 70	3200 CPS 2 V FEEDBACK HI
* CC 73R	TB1-K 8	J11-F3	3200 CPS 2 V FEEDBACK HI
* A 184R	TB1-K 9	P02-J	SIN AMG 16X S2
* CC127W	TB1-K 9	J15-F8	SIN AMG 16X S2
* A 37R	TB1-K10	J02-101	SIN AMG 16X S4
* A 184Y	TB1-K10	P02-K	SIN AMG 16X S4
* CC127R	TB1-K10	J15-F9	SIN AMG 16X S4
* A 37Y	TB1-K11	J02- 87	SIN AMG 16X TO CDU
* CC127L	TB1-K11	J15-D9	SIN AMG 16X TO CDU
A 37B	TB1-K12	SHLD A 37	0 VDC IMU
A 184B	TB1-K12	SHLD A 184	0 VDC IMU
CC127B	TB1-K12	SHLD CC127	0 VDC IMU
* AA 9	TB1-K12	TB1-H12	0 VDC IMU
* A 204Y	TB1-K13	P03-M	YAW ERROR BODY OFFSET AXIS LO

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CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* CC182W	TB1-K13	J17-D3	YAW ERROR BODY OFFSET AXIS LO
* A 190R	TB1-K14	P02-Y	SIN AIG 16X S2
* CC126W	TB1-K14	J15-D8	SIN AIG 16X S2
* A 17R	TB1-K15	J01-101	SIN AIG 16X S4
* A 190Y	TB1-K15	P02-Z	SIN AIG 16X S4
* CC126R	TB1-K15	J15-D7	SIN AIG 16X S4
* A 17Y	TB1-K16	J01- 87	SIN AIG 16X TO CDU
* CC126L	TB1-K16	J15-F7	SIN AIG 16X TO CDU
A 17B	TB1-K17	SHLD A 17	0 VDC IMU
A 190B	TB1-K17	SHLD A 190	0 VDC IMU
CC126B	TB1-K17	SHLD CC126	0 VDC IMU
* AA 16	TB1-K17	TB1-H17	0 VDC IMU
* AA 94	TB1-K17	TB1-H12	0 VDC IMU
* A 10G	TB1-K18	J01- 31	IG CDU MDA OUTPUT
* CC137W	TB1-K18	J16-R1	IG CDU MDA OUTPUT
* A 10Y	TB1-K19	J01- 32	IG CDU MDA OUTPUT
* CC137R	TB1-K19	J16-P1	IG CDU MDA OUTPUT
* A 10R	TB1-K20	J01- 43	0 VDC IMU
* AA 18	TB1-K20	TB1-H20	0 VDC IMU
* AA118	TB1-K20	TB1-B70	0 VDC IMU
* A 265R	TB1-K21	P07-W	X PIP TORQUE -
* CC 96R	TB1-K21	J13-L1	X PIP TORQUE -
* A 265W	TB1-K22	P07-V	X PIP TORQUE RET
* CC 96W	TB1-K22	J13-K1	X PIP TORQUE RET
* A 265L	TB1-K23	P07-U	X PIP TORQUE +
* CC 96L	TB1-K23	J13-H1	X PIP TORQUE +
A 265B	TB1-K24	SHLD A 265	0 VDC IMU
CC 96B	TB1-K24	SHLD CC 96	0 VDC IMU
* AA 23	TB1-K24	TB1-H24	0 VDC IMU
* AA 96	TB1-K24	TB1-H17	0 VDC IMU
A 568	TB1-K25	TB1-K26	0 VDC IMU
* AA127	TB1-K25	TB1-D75	0 VDC IMU
* CC 93	TB1-K25	J12-R5	0 VDC IMU
* A 568	TB1-K26	TB1-K25	0 VDC IMU
* A 570	TB1-K26	TB1-H26	0 VDC IMU
* CC 77	TB1-K26	J11-S6	0 VDC IMU
* CC131	TB1-K26	J15-R2	0 VDC IMU
A 200B	TB1-K28	SHLD A 200	IG CDU ERROR SIG RET

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 200R	TB1-K28	P03-J	IG CDU ERROR SIG RET
* CC 61W	TB1-K28	J11-B1	IG CDU ERROR SIG RET
* A 200Y	TB1-K29	P03-H	IG CDU ATTITUDE STEERING ERROR
* CC 61R	TB1-K29	J11-C1	IG CDU ATTITUDE STEERING ERROR
A 18B	TB1-K30	SHLD A 18	IG CDU ERROR SIG RET
AA101	TB1-K30	TB1-K32	IG CDU ERROR SIG RET
* A 18Y	TB1-K30	J01- 90	IG CDU ERROR SIG RET
* CC135R	TB1-K30	J16-D2	IG CDU ERROR SIG RET
* A 18R	TB1-K31	J01-104	IG CDU 16X ERROR SIG
* CC135W	TB1-K31	J16-C1	IG CDU 16X ERROR SIG
A 12B	TB1-K32	SHLD A 12	IG CDU ERROR SIG RET
A 135B	TB1-K32	SHLD A 135	IG CDU ERROR SIG RET
A 354B	TB1-K32	SHLD A 354	IG CDU ERROR SIG RET
* AA101	TB1-K32	TB1-K30	IG CDU ERROR SIG RET
* A 12R	TB1-K33	J01- 35	IG CDU 1X ERROR SIG S2
* A 135R	TB1-K33	P01- 70	IG CDU 1X ERROR SIG
* A 354R	TB1-K33	P09- 59	IG CDU 1X ERROR SIG
* CC 60W	TB1-K33	J11-A1	IG CDU 1X ERROR SIG
* CC134W	TB1-K33	J16-C2	IG CDU 1X ERROR SIG
* A 12Y	TB1-K34	J01- 45	IG CDU ERROR SIG RET
* A 135Y	TB1-K34	P01- 71	IG CDU ERROR SIG RET
* A 354Y	TB1-K34	P09- 41	IG CDU ERROR SIG RET
* CC 60R	TB1-K34	J11-B1	IG CDU ERROR SIG RET
* CC134R	TB1-K34	J16-D2	IG CDU ERROR SIG RET
* A 11	TB1-K35	J01- 34	IG CDU 1X RSVR LOAD S1
* CC155	TB1-K35	J16-F2	IG CDU 1X RSVR LOAD
A 278B	TB1-K36	SHLD A 278	0 VDC OPTICS
CC237B	TB1-K36	SHLD CC237	0 VDC OPTICS
* AA 31	TB1-K36	TB1-H36	0 VDC OPTICS
* AA104	TB1-K36	TB1-H39	0 VDC OPTICS
* A 278R	TB1-K37	P08- 38	SCT SHAFT TACH HI
* CC237R	TB1-K37	J18-A5	SCT SHAFT TACH HI
* A 278Y	TB1-K38	P08- 39	SCT SHAFT TACH LO
* CC237W	TB1-K38	J18-B5	SCT SHAFT TACH LO
A 281B	TB1-K39	SHLD A 281	0 VDC OPTICS
CC235B	TB1-K39	SHLD CC235	0 VDC OPTICS
* AA 38	TB1-K39	TB1-H39	0 VDC OPTICS
* AA106	TB1-K39	TB1-H42	0 VDC OPTICS

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*	A 281Y	TB1-K40	P08- 51	SCT SHAFT 1X RSVR S4
*	CC235W	TB1-K40	J18-D5	SCT SHAFT 1X RSVR S4
*	A 281R	TB1-K41	P08- 50	SCT SHAFT 1X RSVR S2
*	CC235R	TB1-K41	J18-C5	SCT SHAFT 1X RSVR S2
	A 90B	TB1-K42	SHLD A 90	0 VDC OPTICS
	CC253B	TB1-K42	SHLD CC253	0 VDC OPTICS
*	AA 45	TB1-K42	TB1-H42	0 VDC OPTICS
*	AA108	TB1-K42	TB1-H47	0 VDC OPTICS
*	A 90Y	TB1-K43	J05- 67	TRUNNION CDU 1/2X RSVR S3
*	CC253W	TB1-K43	J19-H1	TRUNNION CDU 1/2X RSVR S3
*	A 90R	TB1-K44	J05- 57	TRUNNION CDU 1/2X RSVR S1
*	CC253R	TB1-K44	J19-G1	TRUNNION CDU 1/2X RSVR S1
*	A 65Y	TB1-K45	J04- 21	SHAFT CDU 1X RSVR P4
*	CC266W	TB1-K45	J19-G3	SHAFT CDU 1X RSVR P4
*	A 65R	TB1-K46	J04- 7	SHAFT CDU 1X RSVR P2
*	CC266R	TB1-K46	J19-G4	SHAFT CDU 1X RSVR P2
	A 65B	TB1-K47	SHLD A 65	0 VDC OPTICS
	CC266B	TB1-K47	SHLD CC266	0 VDC OPTICS
*	AA 52	TB1-K47	TB1-H47	0 VDC OPTICS
*	AA116	TB1-K47	TB1-H67	0 VDC OPTICS
*	A 86Y	TB1-K48	J05- 31	TRUNNION CDU MOTOR PHASE 1
*	CC257W	TB1-K48	J19-S1	TRUNNION CDU MOTOR PHASE 1
*	A 86R	TB1-K49	J05- 32	TRUNNION CDU MOTOR PHASE 2
*	CC257R	TB1-K49	J19-T1	TRUNNION CDU MOTOR PHASE 2
*	A 86G	TB1-K50	J05- 43	0 VDC OPTICS
*	A 267G	TB1-K50	P08- 1	0 VDC OPTICS
*	A 519	TB1-K50	P11-G	0 VDC OPTICS
*	AA 55	TB1-K50	TB1-H50	0 VDC OPTICS
*	A 267R	TB1-K51	P08- 2	SCT TRUNNION MOTOR PHASE 2
*	CC260R	TB1-K51	J19-T3	SCT TRUNNION MOTOR PHASE 2
*	A 267Y	TB1-K52	P08- 3	SCT TRUNNION MOTOR PHASE 1
*	CC260W	TB1-K52	J19-S3	SCT TRUNNION MOTOR PHASE 1
*	A 518	TB1-K53	P11-G	0 VDC OPTICS
*	AA 57	TB1-K53	TB1-H53	0 VDC OPTICS
*	CC178	TB1-K53	J16-R5	0 VDC OPTICS
*	A 364	TB1-K54	P09- 58	SCT SHAFT TACH FEEDBACK BUFFERED
*	CC216	TB1-K54	J18-M6	SCT SHAFT TACH FEEDBACK BUFFERED
*	A 363	TB1-K55	P09- 57	SXT SHAFT TACH FEEDBACK BUFFERED

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*	CC215	TB1-K55	J18-M4	SXT SHAFT TACH FEEDBACK BUFFERED
*	A 378	TB1-K56	P09- 74	SXT SHAFT MDA INPUT BUFFERED
*	CC214	TB1-K56	J18-M3	SXT SHAFT MDA INPUT BUFFERED
*	A 350	TB1-K57	P09- 37	SCT TRUNNION 1X ERROR SIG BUFFERED
*	CC245	TB1-K57	J19-M5	SCT TRUNNION 1X ERROR SIG BUFFERED
*	A 376	TB1-K58	P09- 72	PHOTOMETER PREAMP OUTPUT BUFFERED HI
*	CC282	TB1-K58	J20-B7	PHOTOMETER PREAMP OUTPUT BUFFERED HI
*	A 324Y	TB1-K59	J09-102	IMU TEMP CONT -5 DEG GAIN CHECK
*	CC184W	TB1-K59	J17-B7	IMU TEMP CONT -5 DEG GAIN CHECK
*	A 324R	TB1-K60	J09- 86	IRIG TEMP GAIN SWITCH NC
*	CC184R	TB1-K60	J17-C8	IRIG TEMP GAIN SWITCH NC
*	A 324N	TB1-K61	J09- 89	IRIG ZERO DEVIATION CHECK
*	CC184L	TB1-K61	J17-B8	IRIG ZERO DEVIATION CHECK
*	A 324G	TB1-K62	J09- 85	IRIG TEMP BRIDGE AMP PIN 6
*	CC184K	TB1-K62	J17-C7	IRIG TEMP BRIDGE AMP PIN 6
*	A 242R	TB1-K63	P06-Z	IRIG TEMP IND SENSOR HI
*	CC198R	TB1-K63	J17-C6	IRIG TEMP IND SENSOR HI
*	A 242Y	TB1-K64	P06-A*	IRIG TEMP IND SENSOR RET
*	CC198W	TB1-K64	J17-C5	IRIG TEMP IND SENSOR RET
*	A 235Y	TB1-K65	P05- 81	PHOTOMETER SIGNAL LO
*	CC278W	TB1-K65	J20-B9	PHOTOMETER SIGNAL LO
*	A 235R	TB1-K66	P05- 80	PHOTOMETER SIGNAL HI
*	CC278R	TB1-K66	J20-A9	PHOTOMETER SIGNAL HI
	A 235B	TB1-K67	SHLD A 235	0 VDC OPTICS
	A 290B	TB1-K67	SHLD A 290	0 VDC OPTICS
	CC278B	TB1-K67	SHLD CC278	0 VDC OPTICS
*	A 586	TB1-K67	TB1-D76	0 VDC OPTICS
*	AA 67	TB1-K67	TB1-H67	0 VDC OPTICS
*	A 290R	TB1-K68	J09- 8	TRUNNION HAND CONTROLLER OUTPUT HI
*	CC249R	TB1-K68	J19-F9	TRUNNION HAND CONTROLLER OUTPUT HI
*	A 290Y	TB1-K69	J09- 22	TRUNNION HAND CONTROLLER OUTPUT LO
*	CC249W	TB1-K69	J19-F8	TRUNNION HAND CONTROLLER OUTPUT LO
	CC343	TB1-K70	E 3	STRUCTURE GROUND
*	A 500	TB1-K70	P13- 37	STRUCTURE GROUND
*	A 553	TB1-K70	P12-L	STRUCTURE GROUND
*	AA 69	TB1-K70	TB1-H70	STRUCTURE GROUND
	AA120	TB1-K71	TB1-K72	+28 VDC MDV
*	A 421	TB1-K71	P10-104	+28 VDC MDV

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 483	TB1-K71	J10- 8	+28 VDC MDV	306
*	A 489	TB1-K71	J10- 10	+28 VDC MDV	327
*	CC283	TB1-K71	J20-N5	+28 VDC MDV	
*	A 142	TB1-K72	P01- 89	+28 VDC MDV	
*	A 310	TB1-K72	J09- 51	+28 VDC MDV	
*	AA120	TB1-K72	TB1-K71	+28 VDC MDV	
*	CC284	TB1-K72	J20-M5	+28 VDC MDV	
*	A 243Y	TB1-K73	P06-C*	PRESSURE SENSOR +28 VDC LO	
*	CC310W	TB1-K73	J20-B6	PRESSURE SENSOR +28 VDC LO	
*	A 243R	TB1-K74	P06-B*	PRESSURE SENSOR +28 VDC HI	
*	CC310R	TB1-K74	J20-A6	PRESSURE SENSOR +28 VDC HI	
*	A 533	TB1-K75	P12-B	+28 VDC IMU BUSS B	
*	A 534	TB1-K75	P12-B	+28 VDC IMU BUSS B	
*	A 535	TB1-K75	P12-B	+28 VDC IMU BUSS B	
*	CC297	TB1-K75	J20-T2	+28 VDC IMU BUSS B	
*	CC314	TB1-K75	J20-R2	+28 VDC IMU BUSS B	
*	A 505	TB1-K76	P11-B	+28 VDC IMU BUSS A	
*	A 506	TB1-K76	P11-B	+28 VDC IMU BUSS A	
*	A 507	TB1-K76	P11-B	+28 VDC IMU BUSS A	
*	CC295	TB1-K76	J20-T1	+28 VDC IMU BUSS A	
*	CC312	TB1-K76	J20-R1	+28 VDC IMU BUSS A	
*	A 530	TB1-K77	P12-A	+28 VDC AGC BUSS B	
*	A 560	TB1-K77	J23- 64	+28 VDC AGC BUSS B	168
*	A 561	TB1-K77	J23- 65	+28 VDC AGC BUSS B	168
*	CC288	TB1-K77	J20-H3	+28 VDC AGC BUSS B	
*	A 502	TB1-K78	P11-A	+28 VDC AGC BUSS A	
*	A 558	TB1-K78	J23- 62	+28 VDC AGC BUSS A	167
*	A 559	TB1-K78	J23- 63	+28 VDC AGC BUSS A	167
*	CC287	TB1-K78	J20-H2	+28 VDC AGC BUSS A	

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015087

SCALE - NONE
REV LTR
SHEET 133

APPLICATION		REVISIONS 16222			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		B	REPLACES REV A WITH CHANGES PER TDRR 16222	2/3/65	WR

Ⓑ REPLACES REV A

SEE SHEET 2 FOR REVISION RECORD

REV	
SHEET	
REV STATUS OF SHEETS	REV SHEET

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN
DRAWN DATE 1-FEB-65
CHECKED N. Abraham 1-FEB-65
APPROVAL
APPROVAL
NASA APPROVAL 2/5/65
MIT APPROVAL 2/3/65
CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTERCONNECTION LIST OF AGE INTERCONNECT HARNESS AND PSA END CONNECTOR

SIZE A
CODE IDENT NO.
1015087
REV B
SCALE
SHEET 1 OF 134

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	B	37	B	73	B	109	B										
2	B	38	B	74	B	110	B										
3	B	39	B	75	B	111	B										
4	B	40	B	76	B	112	B										
5	B	41	B	77	B	113	B										
6	B	42	B	78	B	114	B										
7	B	43	B	79	B	115	B										
8	B	44	B	80	B	116	B										
9	B	45	B	81	B	117	B										
10	B	46	B	82	B	118	B										
11	B	47	B	83	B	119	B										
12	B	48	B	84	B	120	B										
13	B	49	B	85	B	121	B										
14	B	50	B	86	B	122	B										
15	B	51	B	87	B	123	B										
16	B	52	B	88	B	124	B										
17	B	53	B	89	B	125	B										
18	B	54	B	90	B	126	B										
19	B	55	B	91	B	127	B										
20	B	56	B	92	B	128	B										
21	B	57	B	93	B	129	B										
22	B	58	B	94	B	130	B										
23	B	59	B	95	B	131	B										
24	B	60	B	96	B	132	B										
25	B	61	B	97	B	133	B										
26	B	62	B	98	B	134	B										
27	B	63	B	99	B														
28	B	64	B	100	B														
29	B	65	B	101	B														
30	B	66	B	102	B														
31	B	67	B	103	B														
32	B	68	B	104	B														
33	B	69	B	105	B														
34	B	70	B	106	B														
35	B	71	B	107	B														
36	B	72	B	108	B														

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION B

NASA DRAWING NO.
1015087
SHEET 2 OF 134

INTERCONNECT LIST

GENERAL NOTES

1 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

2 THE INTERCONNECT LIST IS A COMPILATION OF THE ASSEMBLY DRAWINGS THAT ARE USED TO BUILD THE AGE INTERCONNECTING HARNESS AND PSA END CONNECTOR ASSEMBLY. THESE DRAWINGS ARE IDENTIFIED BY THE CONDUCTOR PREFIX LETTER AS FOLLOWS-

A - WIRING HARNESS A, PART NUMBER 1015085

AA - WIRE LIST AA, PART NUMBER 1021792

BB - WIRE LIST BB, PART NUMBER 1021791

CC - WIRE LIST CC, PART NUMBER 1015088

TB - BUSS BARS THAT ARE INSTALLED ON CONNECTOR PLATE ASSEMBLY (TERMINAL BOARD), PART NUMBER 1007583

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015087
SCALE-NONE | REV LTR B | SHEET 3

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC342	E 1	J13-C6	STRUCTURE GROUND	
*	CC341	E 2	TB1-K 4	STRUCTURE GROUND	
*	CC343	E 3	TB1-K70	STRUCTURE GROUND	
	BB 94B	E 4	SHLD BB 94	0 VDC IMU	
*	CC 1A	E 4	SHLD CC 1	0 VDC IMU	
*	CC 2A	E 4	SHLD CC 2	0 VDC IMU	
*	CC 6A	E 4	SHLD CC 6	0 VDC IMU	
*	CC 7A	E 4	SHLD CC 7	0 VDC IMU	
*	CC 79	E 4	J11-P2	0 VDC IMU	
	CC 11W	E 5	J23- 6	0 VDC IMU	139R
	CC 12W	E 5	J23- 1	0 VDC IMU	140R
*	CC102	E 5	J13-R6	0 VDC IMU	
	CC 13W	E 6	J23- 10	0 VDC IMU	142S
	CC 14W	E 6	J23- 24	0 VDC IMU	143S
	CC 15W	E 6	J23- 56	0 VDC IMU	144S
	CC 16W	E 6	J23- 33	0 VDC IMU	145S
	CC 17W	E 6	J23- 16	0 VDC IMU	146S
	CC 18W	E 6	J23- 5	0 VDC IMU	147S
	CC 19W	E 6	J23- 44	0 VDC IMU	148S
	CC338	E 6	E 7	0 VDC IMU	
*	CC110	E 6	J14-R6	0 VDC IMU	
*	CC 13A	E 7	SHLD CC 13	0 VDC IMU	
*	CC 14A	E 7	SHLD CC 14	0 VDC IMU	
*	CC 15A	E 7	SHLD CC 15	0 VDC IMU	
*	CC 16A	E 7	SHLD CC 16	0 VDC IMU	
*	CC 17A	E 7	SHLD CC 17	0 VDC IMU	
*	CC 18A	E 7	SHLD CC 18	0 VDC IMU	
*	CC 19A	E 7	SHLD CC 19	0 VDC IMU	
*	CC338	E 7	E 6	0 VDC IMU	
	CC 26R	E 8	J24- 22	IG DAC MDA SIG LO	120R
	CC 27W	E 8	J24- 42	IG DAC MDA SIG LO	121R
*	CC120	E 8	J15-A5	IG DAC MDA SIG LO	
	CC 32R	E 9	J23- 23	IG DAC MDA SIG LO	128R
	CC 33W	E 9	J23- 69	IG DAC MDA SIG LO	129R
*	CC 32A	E 9	SHLD CC 32	IG DAC MDA SIG LO	
*	CC 33A	E 9	SHLD CC 33	IG DAC MDA SIG LO	
*	CC123	E 9	J15-A5	IG DAC MDA SIG LO	
	CC 28R	E 10	J24- 18	MG DAC MDA SIG LO	122R

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015087
SCALE-NONE | REV LTR B | SHEET 4

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC 29W	E 10	J24- 7	MG DAC MDA SIG LO	123R
*	CC121	E 10	J15-A7	MG DAC MDA SIG LO	
	CC 34R	E 11	J23- 34	MG DAC MDA SIG LO	130R
	CC 35W	E 11	J23- 17	MG DAC MDA SIG LO	131R
*	CC 34A	E 11	SHLD CC 34	MG DAC MDA SIG LO	
*	CC 35A	E 11	SHLD CC 35	MG DAC MDA SIG LO	
*	CC124	E 11	J15-A7	MG DAC MDA SIG LO	
	CC 30R	E 12	J24- 20	OG DAC MDA SIG LO	118R
	CC 31W	E 12	J24- 21	OG DAC MDA SIG LO	119R
*	CC122	E 12	J15-A9	OG DAC MDA SIG LO	
	CC 36R	E 13	J23- 8	OG DAC MDA SIG LO	126R
	CC 37W	E 13	J23- 9	OG DAC MDA SIG LO	127R
*	CC 36A	E 13	SHLD CC 36	OG DAC MDA SIG LO	
*	CC 37A	E 13	SHLD CC 37	OG DAC MDA SIG LO	
*	CC125	E 13	J15-A9	OG DAC MDA SIG LO	
	CC 20W	E 14	J24- 9	COMPUTER RET	132S
	CC 21W	E 14	J24- 23	COMPUTER RET	133S
*	CC114	E 14	J15-L5	COMPUTER RET	
	CC 22W	E 15	J24- 43	COMPUTER RET	134S
	CC 23W	E 15	J24- 69	COMPUTER RET	135S
*	CC115	E 15	J15-L5	COMPUTER RET	
	CC 24W	E 16	J24- 34	COMPUTER RET	137S
	CC 25W	E 16	J24- 57	COMPUTER RET	136S
*	CC116	E 16	J15-L5	COMPUTER RET	
	CC 20B	E 17	SHLD CC 20	AGC SIGNAL 179 SHIELD RETURN	
	CC 21B	E 17	SHLD CC 21	AGC SIGNAL 179 SHIELD RETURN	
	CC 22B	E 17	SHLD CC 22	AGC SIGNAL 179 SHIELD RETURN	
	CC 23B	E 17	SHLD CC 23	AGC SIGNAL 179 SHIELD RETURN	
	CC 24B	E 17	SHLD CC 24	AGC SIGNAL 179 SHIELD RETURN	
	CC 25B	E 17	SHLD CC 25	AGC SIGNAL 179 SHIELD RETURN	
	CC339	E 17	E 18	AGC SIGNAL 179 SHIELD RETURN	
	CC 8B	E 18	SHLD CC 8	AGC SIGNAL 179 SHIELD RETURN	
	CC 9B	E 18	SHLD CC 9	AGC SIGNAL 179 SHIELD RETURN	
	CC 10B	E 18	SHLD CC 10	AGC SIGNAL 179 SHIELD RETURN	
*	CC336	E 18	J24- 87	AGC SIGNAL 179 SHIELD RETURN	179
*	CC339	E 18	E 17	AGC SIGNAL 179 SHIELD RETURN	
	CC 26B	E 19	SHLD CC 26	AGC SIGNAL 179 SHIELD RETURN	
	CC 27B	E 19	SHLD CC 27	AGC SIGNAL 179 SHIELD RETURN	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE-NONE	REV LTR B	SHEET 5

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC 28B	E 19	SHLD CC 28	AGC SIGNAL 179 SHIELD RETURN	
	CC 29B	E 19	SHLD CC 29	AGC SIGNAL 179 SHIELD RETURN	
	CC 30B	E 19	SHLD CC 30	AGC SIGNAL 179 SHIELD RETURN	
	CC 31B	E 19	SHLD CC 31	AGC SIGNAL 179 SHIELD RETURN	
	CC340	E 19	E 20	AGC SIGNAL 179 SHIELD RETURN	
	CC 42B	E 20	SHLD CC 42	AGC SIGNAL 179 SHIELD RETURN	
	CC 46B	E 20	SHLD CC 46	AGC SIGNAL 179 SHIELD RETURN	
	CC 49B	E 20	SHLD CC 49	AGC SIGNAL 179 SHIELD RETURN	
	CC 50B	E 20	SHLD CC 50	AGC SIGNAL 179 SHIELD RETURN	
*	CC337	E 20	J24- 64	AGC SIGNAL 179 SHIELD RETURN	179
*	CC340	E 20	E 19	AGC SIGNAL 179 SHIELD RETURN	
	CC 38B	E 21	SHLD CC 38	AGC SIGNAL 178 SHIELD RETURN	
	CC 41B	E 21	SHLD CC 41	AGC SIGNAL 178 SHIELD RETURN	
	CC344	E 21	E 22	AGC SIGNAL 178 SHIELD RETURN	
	CC345	E 21	E 23	AGC SIGNAL 178 SHIELD RETURN	
*	CC332A	E 21	SHLD CC332	AGC SIGNAL 178 SHIELD RETURN	
	A 114B	E 22	SHLD A 114	AGC SIGNAL 178 SHIELD RETURN	
	A 131B	E 22	SHLD A 131	AGC SIGNAL 178 SHIELD RETURN	
	A 132B	E 22	SHLD A 132	AGC SIGNAL 178 SHIELD RETURN	
	A 133B	E 22	SHLD A 133	AGC SIGNAL 178 SHIELD RETURN	
	A 136B	E 22	SHLD A 136	AGC SIGNAL 178 SHIELD RETURN	
*	CC344	E 22	E 21	AGC SIGNAL 178 SHIELD RETURN	
	A 304B	E 23	SHLD A 304	AGC SIGNAL 178 SHIELD RETURN	
	A 414B	E 23	SHLD A 414	AGC SIGNAL 178 SHIELD RETURN	
	A 417B	E 23	SHLD A 417	AGC SIGNAL 178 SHIELD RETURN	
	A 566B	E 23	SHLD A 566	AGC SIGNAL 178 SHIELD RETURN	
*	CC345	E 23	E 21	AGC SIGNAL 178 SHIELD RETURN	
*	A 308A	E 23	SHLD A 308	AGC SIGNAL 178 SHIELD RETURN	
*	A 309A	E 23	SHLD A 309	AGC SIGNAL 178 SHIELD RETURN	
*	A 563	E 23	J24- 51	AGC SIGNAL 178 SHIELD RETURN	178
	A 309B	E 24	SHLD A 309	AGC SIGNAL 178 SHIELD RETURN	
*	A 298A	E 24	SHLD A 298	AGC SIGNAL 178 SHIELD RETURN	
*	A 301A	E 24	SHLD A 301	AGC SIGNAL 178 SHIELD RETURN	
	A 490Y	E 25	TB1-C65	TRACKER AUTOMATIC GAIN CONTROL LO	
	A 491Y	E 25	TB1-D65	TRACKER PREAMP OUTPUT LO	
*	A 492	E 25	P13- 10	TRACKER SIGNAL COMMON	
	A 464Y	E 26	J21- 74	COMMONED RETURNS GROUND	202R
	A 465Y	E 26	J21- 47	COMMONED RETURNS GROUND	210R

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE-NONE	REV LTR B	SHEET 6

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 466Y	E 26	J21- 28	COMMONED RETURNS GROUND	201R
	A 467Y	E 26	J21- 13	COMMONED RETURNS GROUND	208R
	A 471	E 26	E 27	COMMONED RETURNS GROUND	
*	A 470	E 26	J10- 69	COMMONED RETURNS GROUND	252
	A 459Y	E 27	J21- 15	COMMONED RETURNS GROUND	205R
	A 460Y	E 27	J21- 54	COMMONED RETURNS GROUND	209R
	A 461Y	E 27	J21- 53	COMMONED RETURNS GROUND	203R
	A 462Y	E 27	J21- 30	COMMONED RETURNS GROUND	207R
	A 463Y	E 27	J21- 51	COMMONED RETURNS GROUND	204R
*	A 471	E 27	E 26	COMMONED RETURNS GROUND	
	A 422Y	E 28	J21- 4	COMMONED RETURNS GROUND	244R
	A 423Y	E 28	J21- 17	COMMONED RETURNS GROUND	232R
	A 424Y	E 28	J21- 18	COMMONED RETURNS GROUND	227R
	A 425Y	E 28	J21- 2	COMMONED RETURNS GROUND	228R
	A 426Y	E 28	J21- 24	COMMONED RETURNS GROUND	229R
	A 453	E 28	E 34	COMMONED RETURNS GROUND	
	A 427Y	E 29	J21- 69	COMMONED RETURNS GROUND	230R
	A 428Y	E 29	J21- 57	COMMONED RETURNS GROUND	231R
	A 429Y	E 29	J21- 1	COMMONED RETURNS GROUND	233R
	A 430Y	E 29	J21- 11	COMMONED RETURNS GROUND	234R
	A 431Y	E 29	J21- 45	COMMONED RETURNS GROUND	235R
	A 454	E 29	E 34	COMMONED RETURNS GROUND	
	A 432Y	E 30	J21- 70	COMMONED RETURNS GROUND	236R
	A 433Y	E 30	J21- 56	COMMONED RETURNS GROUND	237R
	A 434Y	E 30	J21- 16	COMMONED RETURNS GROUND	238R
	A 435Y	E 30	J21- 61	COMMONED RETURNS GROUND	214R
	A 455	E 30	E 34	COMMONED RETURNS GROUND	
	A 436Y	E 31	J21- 39	COMMONED RETURNS GROUND	215R
	A 437Y	E 31	J21- 41	COMMONED RETURNS GROUND	216R
	A 438Y	E 31	J21- 66	COMMONED RETURNS GROUND	217R
	A 439Y	E 31	J21- 60	COMMONED RETURNS GROUND	218R
	A 456	E 31	E 34	COMMONED RETURNS GROUND	
	A 440Y	E 32	J21- 20	COMMONED RETURNS GROUND	219R
	A 441Y	E 32	J21- 68	COMMONED RETURNS GROUND	221R
	A 442Y	E 32	J21- 59	COMMONED RETURNS GROUND	222R
	A 443Y	E 32	J21- 19	COMMONED RETURNS GROUND	223R
	A 457	E 32	E 34	COMMONED RETURNS GROUND	
	A 444Y	E 33	J21- 9	COMMONED RETURNS GROUND	224R

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE-NONE	REV LTR B	SHEET 7

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 445Y	E 33	J21- 58	COMMONED RETURNS GROUND	226R
	A 446Y	E 33	J21- 22	COMMONED RETURNS GROUND	220R
	A 447Y	E 33	J21- 43	COMMONED RETURNS GROUND	225R
	A 458	E 33	E 34	COMMONED RETURNS GROUND	
*	A 452	E 34	J10- 82	COMMONED RETURNS GROUND	330
*	A 453	E 34	E 28	COMMONED RETURNS GROUND	
*	A 454	E 34	E 29	COMMONED RETURNS GROUND	
*	A 456	E 34	E 31	COMMONED RETURNS GROUND	
*	A 455	E 34	E 30	COMMONED RETURNS GROUND	
*	A 457	E 34	E 32	COMMONED RETURNS GROUND	
*	A 458	E 34	E 33	COMMONED RETURNS GROUND	
*	A 556	E 35	J21- 50	GROUP 3 SHIELD	250
*	A 487	E 36	J10- 27	GROUP 3 SHIELD	250
*	A 557	E 37	J21- 73	GROUP 2 SHIELD	245
*	A 488	E 38	J10- 1	GROUP 2 SHIELD	245

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE-NONE	REV LTR B	SHEET 8

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 1R	J01- 1	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
A 2Y	J01- 2	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 2R	J01- 3	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 3Y	J01- 6	TB1-A14	COS AIG 1X RET P1
A 4Y	J01- 7	TB1-A16	SIN AIG 1X P2
A 5G	J01- 11	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
A 5Y	J01- 12	TB1-B 6	ZEROING RSVR 800 CPS
A 1Y	J01- 14	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
A 6	J01- 15	TB1-B53	+28 VDC CDU NOT LOCK
A 7	J01- 16	TB1-G 6	+28 VDC IMU
A 3R	J01- 20	TB1-A13	COS AIG 1X P3
A 4R	J01- 21	TB1-A15	SIN AIG 1X RET P4
A 5R	J01- 25	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
A 8R	J01- 28	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
A 8Y	J01- 29	TB1-B 1	400 CPS 6 V LO
A 9	J01- 30	TB1-C53	+28 VDC IMU FOR IG MDA
A 10G	J01- 31	TB1-K18	IG CDU MDA OUTPUT
A 10Y	J01- 32	TB1-K19	IG CDU MDA OUTPUT
A 11	J01- 34	TB1-K35	IG CDU 1X RSVR LOAD S1
A 12R	J01- 35	TB1-K33	IG CDU 1X ERROR SIG S2
A 13	J01- 41	TB1-G 9	STRUCTURE GROUND
A 10R	J01- 43	TB1-K20	0 VDC IMU
A 12Y	J01- 45	TB1-K34	IG CDU ERROR SIG RET
A 14R	J01- 50	TB1-G 1	25.6 KC HI IMU
A 15Y	J01- 57	TB1-B31	IG CDU ERROR SIG RET S1
A 14Y	J01- 60	TB1-G 2	25.6 KC LO IMU
A 15R	J01- 67	TB1-A31	IG CDU 1/2X ERROR SIG S3
A 16Y	J01- 86	TB1-H16	COS AIG 16X TO CDU
A 17Y	J01- 87	TB1-K16	SIN AIG 16X TO CDU
A 18Y	J01- 90	TB1-K30	IG CDU ERROR SIG RET
A 19Y	J01- 92	TB1-F30	IG CDU MDA INPUT RET
A 20Y	J01- 94	TB1-F34	IG CDU ENCODER COMMON
A 16R	J01-100	TB1-H15	COS AIG 16X S3
A 17R	J01-101	TB1-K15	SIN AIG 16X S4
A 18R	J01-104	TB1-K31	IG CDU 16X ERROR SIG
A 19G	J01-105	TB1-F31	IG CDU MDA SLEW SIG
A 19R	J01-106	TB1-F29	IG CDU MDA TACH SIG
A 20G	J01-107	TB1-F35	IG CDU ENCODER PHASE 1

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR B	SHEET 9

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 20R	J01-108	TB1-F33	IG CDU ENCODER PHASE 2

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR B	SHEET 10

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 21R	J02- 1	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
A 22Y	J02- 2	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 22R	J02- 3	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 23Y	J02- 6	TB1-B14	COS AMG 1X S1
A 24Y	J02- 7	TB1-B16	SIN AMG 1X
A 25G	J02- 11	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
A 25Y	J02- 12	TB1-B 6	ZEROING RSVR 800 CPS
A 21Y	J02- 14	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
A 26	J02- 15	TB1-B53	+28 VDC CDU NOT LOCK
A 27	J02- 16	TB1-G 6	+28 VDC IMU
A 23R	J02- 20	TB1-B13	COS AMG 1X S3
A 24R	J02- 21	TB1-B15	SIN AMG 1X RET
A 25R	J02- 25	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
A 28R	J02- 28	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
A 28Y	J02- 29	TB1-B 1	400 CPS 6 V LO
A 29	J02- 30	TB1-C52	+28 VDC IMU FOR MG MDA
A 30G	J02- 31	TB1-H19	MG CDU MDA OUTPUT
A 30Y	J02- 32	TB1-H18	MG CDU MDA OUTPUT
A 31	J02- 34	TB1-H35	MG CDU 1X RSVR LOAD
A 32R	J02- 35	TB1-H33	MG CDU 1X ERROR SIG
A 33	J02- 41	TB1-G 9	STRUCTURE GROUND
A 30R	J02- 43	TB1-H20	0 VDC IMU
A 32Y	J02- 45	TB1-H34	MG CDU ERROR SIG RET
A 34R	J02- 50	TB1-G 1	25.6 KC HI IMU
A 35Y	J02- 57	TB1-B30	MG CDU ERROR SIG RET
A 34Y	J02- 60	TB1-G 2	25.6 KC LO IMU
A 35R	J02- 67	TB1-A30	MG CDU 1/2X ERROR SIG
A 36Y	J02- 86	TB1-H11	COS AMG 16X TO CDU
A 37Y	J02- 87	TB1-K11	SIN AMG 16X TO CDU
A 38Y	J02- 90	TB1-H30	MG CDU ERROR SIG RET
A 39Y	J02- 92	TB1-D30	MG CDU MDA INPUT RET
A 40Y	J02- 94	TB1-D34	MG CDU ENCODER COMMON
A 36R	J02-100	TB1-H10	COS AMG 16X S3
A 37R	J02-101	TB1-K10	SIN AMG 16X S4
A 38R	J02-104	TB1-H31	MG CDU 16X ERROR SIG
A 39G	J02-105	TB1-D31	MG CDU MDA SLEW SIG
A 39R	J02-106	TB1-D29	MG CDU MDA TACH SIG
A 40G	J02-107	TB1-D35	MG CDU ENCODER PHASE 1

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 40R	J02-108	TB1-D33	MG CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 41R	J03- 1	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
A 42Y	J03- 2	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 42R	J03- 3	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 43Y	J03- 6	TB1-C15	COS AOG 1X S1
A 44Y	J03- 7	TB1-D15	SIN AOG 1X S4
A 45G	J03- 11	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
A 45Y	J03- 12	TB1-B 6	ZEROING RSVR 800 CPS
A 41Y	J03- 14	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
A 46	J03- 15	TB1-B53	+28 VDC CDU NOT LOCK
A 47	J03- 16	TB1-G 6	+28 VDC IMU
A 43R	J03- 20	TB1-C16	COS AOG 1X TO CDU
A 44R	J03- 21	TB1-D16	SIN AOG 1X TO CDU
A 45R	J03- 25	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
A 48R	J03- 28	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
A 48Y	J03- 29	TB1-B 1	400 CPS 6 V LO
A 49	J03- 30	TB1-C51	+28 VDC IMU FOR OG MDA
A 50G	J03- 31	TB1-G19	OG CDU MDA OUTPUT
A 50Y	J03- 32	TB1-G18	OG CDU MDA OUTPUT
A 51	J03- 34	TB1-G35	OG CDU 1X RSVR LOAD
A 52R	J03- 35	TB1-G33	OG CDU 1X ERROR SIG
A 53	J03- 41	TB1-G10	STRUCTURE GROUND
A 50R	J03- 43	TB1-G20	0 VDC IMU
A 52Y	J03- 45	TB1-G34	OG CDU ERROR SIG RET
A 54R	J03- 50	TB1-H 1	25.6 KC HI IMU
A 55Y	J03- 57	TB1-B29	OG CDU ERROR SIG RET
A 54Y	J03- 60	TB1-H 2	25.6 KC LO IMU
A 55R	J03- 67	TB1-A29	OG CDU 1/2X ERROR SIG
A 56Y	J03- 86	TB1-F16	COS AOG 16X TO CDU
A 57Y	J03- 87	TB1-G16	SIN AOG 16X TO CDU
A 58	J03- 89	TB1-G29	OG CDU 16X RSVR LOAD
A 59Y	J03- 90	TB1-G30	OG CDU ERROR SIG RET
A 60Y	J03- 92	TB1-C30	OG CDU MDA INPUT RET
A 61Y	J03- 94	TB1-C34	OG CDU ENCODER COMMON
A 56R	J03-100	TB1-F15	COS AOG 16X S3
A 57R	J03-101	TB1-G15	SIN AOG 16X S4
A 59R	J03-104	TB1-G31	OG CDU 16X ERROR SIG
A 60G	J03-105	TB1-C31	OG CDU MDA SLEW SIG
A 60R	J03-106	TB1-C29	OG CDU MDA TACH SIG

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 61G	J03-107	TB1-C35	OG CDU ENCODER PHASE 1
A 61R	J03-108	TB1-C33	OG CDU ENCODER PHASE 2

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SCALE - NONE | REV LTR B | SHEET 14

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 62R	J04- 1	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS
A 63Y	J04- 2	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 63R	J04- 5	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 64Y	J04- 6	TB1-H46	SHAFT CDU 1X RSVR P1
A 65R	J04- 7	TB1-K46	SHAFT CDU 1X RSVR P2
A 66Y	J04- 11	TB1-H40	SHAFT CDU 1/2X RSVR P1
A 62Y	J04- 14	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS
A 64R	J04- 20	TB1-H45	SHAFT CDU 1X RSVR P3
A 65Y	J04- 21	TB1-K45	SHAFT CDU 1X RSVR P4
A 66R	J04- 25	TB1-H41	SHAFT CDU 1/2X RSVR P3
A 67R	J04- 28	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
A 67Y	J04- 29	TB1-B 2	400 CPS 6 V LO
A 68Y	J04- 31	TB1-H48	SHAFT CDU MOTOR PHASE 1
A 68R	J04- 32	TB1-H49	SHAFT CDU MOTOR PHASE 2
A 69Y	J04- 34	TB1-F50	SHAFT CDU 1X RSVR S1
A 69G	J04- 35	TB1-F48	SHAFT CDU 1X RSVR S2
A 70	J04- 41	TB1-G10	STRUCTURE GROUND
A 68G	J04- 43	TB1-H50	0 VDC OPTICS
A 69R	J04- 45	TB1-F49	SHAFT CDU 1X RSVR S3
A 71R	J04- 50	TB1-K 1	25.6 KC HI OPTICS
A 72R	J04- 56	TB1-C45	SHAFT CDU 1/2X RSVR S2
A 73Y	J04- 57	TB1-D46	SHAFT CDU 1/2X RSVR S3
A 71Y	J04- 60	TB1-K 2	25.6 KC LO OPTICS
A 72Y	J04- 66	TB1-C46	SHAFT CDU 1/2X RSVR S4
A 73R	J04- 67	TB1-D45	SHAFT CDU 1/2X RSVR S1
A 74Y	J04- 86	TB1-A45	SHAFT CDU 16X RSVR P1
A 75R	J04- 87	TB1-B45	SHAFT CDU 16X RSVR P2
A 76R	J04- 90	TB1-G41	SHAFT CDU 16X RSVR S3
A 77Y	J04- 92	TB1-G38	SHAFT CDU TACH LO
A 78Y	J04- 94	TB1-A34	SHAFT CDU ENCODER COMMON
A 74R	J04-100	TB1-A46	SHAFT CDU 16X RSVR P3
A 75Y	J04-101	TB1-B46	SHAFT CDU 16X RSVR P4
A 76Y	J04-104	TB1-G40	SHAFT CDU 16X RSVR S2
A 77R	J04-106	TB1-G37	SHAFT CDU TACH HI
A 78G	J04-107	TB1-A35	SHAFT CDU ENCODER PHASE 1
A 78R	J04-108	TB1-A33	SHAFT CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 79R	J05- 1	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS
A 80Y	J05- 2	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 81Y	J05- 4	TB1-D41	TRUNNION CDU 1/4X RSVR P3
A 80R	J05- 5	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 82Y	J05- 8	TB1-D44	TRUNNION CDU 1/4X RSVR S1
A 83R	J05- 9	TB1-C44	TRUNNION CDU 1/4X RSVR S2
A 83Y	J05- 10	TB1-C43	TRUNNION CDU 1/4X RSVR S4
A 84G	J05- 11	TB1-B19	TRUNNION CDU 1/2X RSVR P1 AND P3
A 84Y	J05- 12	TB1-B18	TRUNNION CDU 1/2X RSVR P2
A 79Y	J05- 14	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS
A 81R	J05- 17	TB1-D40	TRUNNION CDU 1/4X RSVR P2
A 82R	J05- 22	TB1-D43	TRUNNION CDU 1/4X RSVR S3
A 84R	J05- 25	TB1-B19	TRUNNION CDU 1/2X RSVR P3
A 85R	J05- 28	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
A 85Y	J05- 29	TB1-B 2	400 CPS 6 V LO
A 86Y	J05- 31	TB1-K48	TRUNNION CDU MOTOR PHASE 1
A 86R	J05- 32	TB1-K49	TRUNNION CDU MOTOR PHASE 2
A 87	J05- 41	TB1-G11	STRUCTURE GROUND
A 86G	J05- 43	TB1-K50	0 VDC OPTICS
A 88R	J05- 50	TB1-K 1	25.6 KC HI OPTICS
A 89R	J05- 56	TB1-H44	TRUNNION CDU 1/2X RSVR S2
A 88Y	J05- 60	TB1-K 2	25.6 KC LO OPTICS
A 89Y	J05- 66	TB1-H43	TRUNNION CDU 1/2X RSVR S4
A 90Y	J05- 67	TB1-K43	TRUNNION CDU 1/2X RSVR S3
A 90R	J05- 68	TB1-K44	TRUNNION CDU 1/2X RSVR S1
A 91Y	J05- 86	TB1-A44	TRUNNION CDU 16X RSVR P1
A 92Y	J05- 87	TB1-B44	TRUNNION CDU 16X RSVR P2
A 93R	J05- 90	TB1-C41	TRUNNION CDU 16X RSVR S3
A 94Y	J05- 92	TB1-C38	TRUNNION CDU TACHOMETER LO
A 95Y	J05- 94	TB1-B34	TRUNNION CDU ENCODER COMMON
A 91R	J05-100	TB1-A43	TRUNNION CDU 16X RSVR P3
A 92R	J05-101	TB1-B43	TRUNNION CDU 16X RSVR P4
A 93Y	J05-104	TB1-C40	TRUNNION CDU 16X RSVR S2
A 94R	J05-106	TB1-C37	TRUNNION CDU TACHOMETER HI
A 95G	J05-107	TB1-B35	TRUNNION CDU ENCODER PHASE 1
A 95R	J05-108	TB1-B33	TRUNNION CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 96R	J06- 1	P01- 1	PITCH ATTITUDE ERROR METER +	
A 96Y	J06- 2	P01- 2	PITCH ATTITUDE ERROR METER -	
A 97	J06- 6	P01- 6	ENTRY RELAY CONTROL RESET	
A 98	J06- 9	P01- 9	MODE SWITCH INTERLOCK	
A 99Y	J06- 12	TB1-A48	MODE RELAY COMMON TO AGC	
A 100R	J06- 14	P01- 14	YAW ATTITUDE ERROR METER +	
A 100Y	J06- 15	P01- 15	YAW ATTITUDE ERROR METER -	
A 101	J06- 18	P01- 18	MODE RELAY COMMON TO D AND C ELECT	
A 102	J06- 22	P01- 22	ATTITUDE CONTROL MODE LIGHT	
A 103	J06- 23	P01- 23	FINE ALIGN RELAY CONTROL	
A 104Y	J06- 24	TB1-G 3	ATTITUDE CONTROL RELAY CONTROL	
A 105	J06- 25	P01- 25	ENTRY RELAY CONTROL	
A 106Y	J06- 28	P01- 28	ROLL ATTITUDE ERROR METER -	
A 106R	J06- 29	P01- 29	ROLL ATTITUDE ERROR METER +	
A 107	J06- 34	P01- 34	ZERO ENCODER RELAY CONTROL	
A 108	J06- 35	P01- 35	COARSE ALIGN RELAY CONTROL	
A 109	J06- 36	P01- 36	CDU MANUAL RELAY CONTROL	
A 110	J06- 37	P01- 37	MANUAL ALIGN	
A 111	J06- 46	P01- 46	ATTITUDE CONTROL MODE INTERLOCK	
A 112	J06- 56	P01- 56	MANUAL ALIGN	
A 113Y	J06- 68	TB1-C56	AGC COMMON (ISS)	
A 114Y	J06- 69	J24- 12	TRANSFER SWITCH INDICATION TO AGC	164
A 115	J06- 78	TB1-D 3	0 VDC IMU	
A 116	J06- 79	P01- 79	ENTRY MODE LIGHT	
A 99R	J06- 81	TB1-B48	ATTIT CONT MODE COMMAND FROM AGC	
A 117	J06- 91	TB1-G 8	STRUCTURE GROUND	
A 118	J06- 92	P01- 92	COARSE ALIGN MODE LIGHT	
A 119	J06- 93	P01- 93	MODE RELAY COMMON	
A 120	J06- 94	P01- 94	FINE ALIGN MODE LIGHT	
A 121	J06-104	P01-104	ZERO ENCODER MODE LIGHT	
A 122	J06-105	P01-105	CDU MANUAL MODE LIGHT	
A 123Y	J06-107	TB1-B 3	400 CPS 6 V LO	
A 123R	J06-108	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 146	J08- 17	TB1-B21	SPARE FAIL LIGHT 3 LO
A 147	J08- 18	TB1-A23	GIMBAL LOCK LIGHT HI
A 148	J08- 19	TB1-B21	GIMBAL LOCK LIGHT LO
A 149	J08- 28	TB1-B21	SPARE FAIL LIGHT 2 LO
A 150	J08- 29	TB1-G 8	STRUCTURE GROUND
A 151	J08- 30	TB1-B22	ZERO ENCODER LIGHT LO
A 152	J08- 31	TB1-A25	IMU DELAY LIGHT LO
A 153	J08- 32	TB1-C 4	MASTER CAUTION LIGHT HI
A 154Y	J08- 36	TB1-B75	400 CPS 6 V LO
A 155	J08- 41	TB1-A21	ZERO ENCODER LIGHT HI
A 156	J08- 42	TB1-A26	IMU DELAY LIGHT HI
A 157	J08- 43	J22- 40	MASTER CAUTION LIGHT RET
A 154G	J08- 46	TB1-B77	PROJECTION LAMP LO INTENSITY
A 158	J08- 50	TB1-A20	SPARE FAIL LIGHT 1 HI
A 159Y	J08- 51	TB1-C26	G+N ERROR LIGHT HI
A 159R	J08- 52	TB1-C25	G+N ERROR LIGHT LO
A 160	J08- 53	J22- 65	MASTER WARNING LIGHT RET
A 161	J08- 54	TB1-C 4	MASTER WARNING LIGHT HI
A 154R	J08- 55	TB1-B76	PROJECTION LAMP HI INTENSITY
A 162	J08- 60	TB1-A22	IMU FAIL LIGHT HI
A 163	J08- 61	TB1-B22	IMU FAIL LIGHT LO
A 164R	J08- 62	TB1-B26	IMU TEMP CONT FAIL LIGHT HI
A 164Y	J08- 63	TB1-B25	IMU TEMP CONT FAIL LIGHT LO
A 165G	J08- 66	TB1-A76	MDV SLEW CONTROL 1.5 V 400 CPS
A 166	J08- 67	TB1-A53	+28 VDC MDV SWITCHED
A 165R	J08- 68	TB1-A77	400 CPS 26 V MDV RSVR EXC
A 167	J08- 70	TB1-B22	SPARE FAIL LIGHT 1 LO
A 168R	J08- 71	TB1-D26	AGC POWER SUPPLY FAIL SIG HI
A 169	J08- 72	TB1-A24	CDU FAIL LIGHT HI
A 170	J08- 73	TB1-B24	ACCEL FAIL LIGHT HI
A 171	J08- 78	TB1-B52	STEP-UP-C
A 172	J08- 79	TB1-A52	STEP-DOWN-C
A 165Y	J08- 81	TB1-A78	400 CPS 26 V SLEW
A 168Y	J08- 82	TB1-D25	AGC POWER SUPPLY FAIL LIGHT LO
A 173	J08- 83	TB1-B23	CDU FAIL LIGHT LO
A 174	J08- 84	TB1-B23	ACCEL FAIL LIGHT LO
A 175	J08- 92	TB1-D 4	0 VDC IMU
A 176	J08- 93	TB1-A51	STEP-DOWN-R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 165N	J08- 95	TB1-A75	400 CPS 26 V LO
A 177	J08-106	TB1-B51	STEP-UP-R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 285	J09- 1	TB1-F77	0 VDC OPTICS	
A 286R	J09- 2	TB1-A61	TRACKER MODE RELAY COMMAND	
A 287Y	J09- 3	J22- 89	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT	
A 288Y	J09- 4	J22- 18	PITCH ATTIT IMPULSE CONTR OUTPUT UP	
A 288R	J09- 5	J22- 35	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN	
A 289R	J09- 6	J22- 87	YAW ATTIT IMPULSE CONTR OUTPUT LEFT	
A 289G	J09- 7	J22- 88	YAW ATTIT IMPULSE CONTR INPUT	
A 290R	J09- 8	TB1-K68	TRUNNION HAND CONTROLLER OUTPUT HI	
A 291R	J09- 10	TB1-H68	SHAFT HAND CONTROLLER OUTPUT HI	
A 295	J09- 14	J22- 64	SPACECRAFT LAMP TEST	
A 296	J09- 15	TB1-D70	0 VDC SPACECRAFT	
A 287G	J09- 16	J22- 90	ROLL ATTIT IMPULSE CONTR INPUT	
A 287R	J09- 17	J22- 60	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT	
A 288G	J09- 18	J22- 36	PITCH ATTIT IMPULSE CONTR INPUT	
A 289Y	J09- 20	J22- 58	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT	
A 290Y	J09- 22	TB1-K69	TRUNNION HAND CONTROLLER OUTPUT LO	
A 291Y	J09- 24	TB1-H69	SHAFT HAND CONTROLLER OUTPUT LO	
A 297	J09- 26	TB1-C62	0 VDC IMU	
A 298Y	J09- 30	P10- 32	ACCEPT MARK	
A 299	J09- 31	P10- 16	MANUAL MARK COMMAND	
A 300R	J09- 32	TB1-A54	PANEL BRIGHTNESS CONTROL	
A 301Y	J09- 33	P10- 33	MARK REJECT	
A 302R	J09- 34	TB1-F68	SCT TRUNNION TRACKER MODE INPUT HI	
A 302Y	J09- 35	TB1-F69	SCT TRUNNION TRACKER MODE INPUT LO	
A 591	J09- 38	TB1-B25	IMU TEMP CONT FAIL LIGHT LO	
A 592	J09- 39	TB1-D25	AGC POWER SUPPLY FAIL LIGHT LO	
A 303Y	J09- 40	J22- 8	0 VDC FROM NAA	
A 303R	J09- 41	J22- 7	+28 VDC FROM NAA	
A 304Y	J09- 42	J24- 31	TRACKER ON INDICATION TO AGC	107
A 305R	J09- 43	TB1-G68	PHOTOMETER MARK REJECT HI	
A 300Y	J09- 44	TB1-A55	PANEL BRIGHTNESS CONTROL	
A 306G	J09- 45	TB1-A71	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR	
A 307Y	J09- 46	TB1-B77	PROJECTION LAMP LO INTENSITY	
A 308Y	J09- 47	TB1-A68	AGC COMMON (OSS)	
A 308R	J09- 48	TB1-A69	OPTICS ZERO ENCODER INDICATION	
A 309Y	J09- 49	J24- 54	OPTICS MODE SW COMPUTER INDICATION	106
A 303G	J09- 50	J22- 2	ATTITUDE DISABLE SIG TO NAA	
A 310	J09- 51	TB1-K72	+28 VDC MDV	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 311Y	J09- 52	P10- 92	400 CPS 6 V LO
A 311R	J09- 53	P10-106	400 CPS 6 V HI
A 312R	J09- 54	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
A 307R	J09- 55	TB1-B76	PROJECTION LAMP HI INTENSITY
A 313Y	J09- 58	TB1-B57	0 DEG OFFSET RELAY COMMAND
A 313R	J09- 59	TB1-B58	25 DEG OFFSET RELAY COMMAND
A 305Y	J09- 60	TB1-G69	PHOTOMETER MARK REJECT LO
A 311G	J09- 61	P10-105	400 CPS 6 V HI
A 590	J09- 62	TB1-C25	G+N ERROR LIGHT LO
A 314R	J09- 65	P10- 39	400 CPS 1.5 V PI PHASE
A 315G	J09- 66	TB1-A76	MDV SLEW CONTROL 1.5 V 400 CPS
A 316	J09- 67	TB1-A53	+28 VDC MDV SWITCHED
A 315R	J09- 68	TB1-A77	400 CPS 26 V MDV RSVR EXC
A 306Y	J09- 69	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS
A 286G	J09- 70	TB1-B59	COMPUTER RELAY COMMAND
A 317	J09- 71	TB1-H71	+28 VDC OPTICS
A 286Y	J09- 72	TB1-B60	ZERO OPTICS MODE COMMAND
A 318	J09- 73	TB1-D72	CONDITION LAMP TEST
A 319R	J09- 74	TB1-F60	IMU TEMP ALARM AMP PIN 15
A 320	J09- 75	TB1-F59	IMU TEMP ALARM AMP PIN 14
A 321Y	J09- 76	TB1-D63	IMU TEMP CONT K2 PIN 6
A 314Y	J09- 77	P10- 38	400 CPS 1.5 V ZERO PHASE
A 322	J09- 78	TB1-B52	STEP-UP-C
A 323	J09- 79	TB1-A52	STEP-DOWN-C
A 306R	J09- 80	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS
A 315Y	J09- 81	TB1-A78	400 CPS 26 V SLEW
A 313G	J09- 82	TB1-A57	RESOLVED MODE RELAY COMMAND
A 312Y	J09- 84	TB1-C 3	MODE LAMP TEST PWR
A 324G	J09- 85	TB1-K62	IRIG TEMP BRIDGE AMP PIN 6
A 324R	J09- 86	TB1-K60	IRIG TEMP GAIN SWITCH NC
A 325G	J09- 87	TB1-H60	IMU TEMP CONT AMP PIN 5
A 325N	J09- 88	TB1-G60	IMU TEMP CONT K2 PIN 5
A 324N	J09- 89	TB1-K61	IRIG ZERO DEVIATION CHECK
A 321R	J09- 90	TB1-D62	EMERG HTR CONT MODULE LO
A 326	J09- 91	TB1-H70	STRUCTURE GROUND
A 319Y	J09- 92	TB1-F62	IMU TEMP ALARM AMP PIN 5
A 327	J09- 93	TB1-A51	STEP-DOWN-R
A 321G	J09- 94	TB1-F63	TEMPERATURE CONTROLLER 0 VDC IMU

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SCALE - NONE	REV LTR B	SHEET 21

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 314G	J09- 95	P10- 48	400 CPS 26 V HI
A 328	J09- 96	TB1-B71	+28 VDC OPTICS TRACKER POWER
A 329Y	J09- 97	TB1-H62	ACCEL INDICATING SENSOR HI
A 329N	J09- 98	TB1-G62	ACCEL BRIDGE AMP PIN 6
A 292	J09- 99	TB1-B23	CONDITION LAMPS COMMON
A 325R	J09-100	TB1-G59	IMU HTR CURRENT AMP PIN 5
A 325Y	J09-101	TB1-H59	IMU TEMP CONT K1 PIN 3
A 324Y	J09-102	TB1-K59	IMU TEMP CONT -5 DEG GAIN CHECK
A 329G	J09-103	TB1-G64	IMU IMU TEMP CONT +5 DEG GAIN CHECK
A 329R	J09-104	TB1-G63	ACCEL ZERO DEVIATION CHECK
A 319G	J09-105	TB1-F61	IMU TEMP ALARM BIAS RESISTOR
A 330	J09-106	TB1-B51	STEP-UP-R
A 589	J09-107	TB1-A25	IMU DELAY LIGHT LO
A 331	J09-108	TB1-C71	+28 VDC OPTICS DAC POWER

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 488	J10- 1	E 38	GROUP 2 SHIELD	245
A 477	J10- 2	TB1-D72	CONDITION LAMP TEST	328
A 473G	J10- 3	TB1-A21	ZERO ENCODER LIGHT HI	301
A 473R	J10- 4	TB1-A24	CDU FAIL LIGHT HI	302
A 473Y	J10- 5	TB1-B24	ACCEL FAIL LIGHT HI	303
A 478	J10- 6	TB1-A22	IMU FAIL LIGHT HI	304
A 479	J10- 7	TB1-A20	SPARE FAIL LIGHT 1 HI	305
A 483	J10- 8	TB1-K71	+28 VDC MDV	306
A 481	J10- 9	TB1-B56	AGC FAIL SIG	326
A 489	J10- 10	TB1-K71	+28 VDC MDV	327
A 474G	J10- 12	TB1-B48	ATTIT CONT MODE COMMAND FROM AGC	314
A 474Y	J10- 13	TB1-A48	MODE RELAY COMMON TO AGC	315
A 444R	J10- 14	J21- 8	OUT 0 11	224S
A 447R	J10- 15	J21- 23	OUT 0 12	225S
A 445R	J10- 16	J21- 87	OUT 0 13	226S
A 424R	J10- 17	J21- 35	OUT 0 14	227S
A 425R	J10- 18	J21- 7	OUT 0 15	228S
A 428R	J10- 19	J21- 86	TELEMETRY FAIL ALARM	231S
A 475Y	J10- 21	TB1-C50	ZERO ENCODER MODE COMMAND FROM AGC	307
A 475G	J10- 22	TB1-A50	COARSE ALIGN MODE COMMAND FROM AGC	308
A 476Y	J10- 23	TB1-C48	CDU MANUAL MODE COMMAND FROM AGC	309
A 475R	J10- 24	TB1-B50	FINE ALIGN MODE COMMAND FROM AGC	310
A 476R	J10- 25	TB1-C49	ENTRY MODE COMMAND FROM AGC	311
A 474R	J10- 26	TB1-A48	MODE RELAY COMMON TO AGC	312
A 487	J10- 27	E 36	GROUP 3 SHIELD	250
A 438R	J10- 28	J21- 67	OUT 0 4	217S
A 439R	J10- 29	J21- 89	OUT 0 5	218S
A 440R	J10- 30	J21- 37	OUT 0 6	219S
A 446R	J10- 31	J21- 21	OUT 0 7	220S
A 423R	J10- 32	J21- 34	PROGRAM CHECK FAIL ALARM	232S
A 429R	J10- 33	J21- 6	SCALER FAIL ALARM	233S
A 466R	J10- 34	J21- 29	KEY CODE 1	201S
A 464R	J10- 35	J21- 48	KEY CODE 2	202S
A 461R	J10- 36	J21- 82	KEY CODE 3	203S
A 463R	J10- 37	J21- 52	KEY CODE 4	204S
A 459R	J10- 38	J21- 32	KEY CODE 5	205S
A 462R	J10- 39	J21- 31	TEST ALARM	207S
A 426R	J10- 40	J21- 10	PROGRAM ALARM	229S

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MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 427R	J10- 41	J21- 44	COMPUTER ACTIVITY	230S
A 422R	J10- 42	J21- 5	TIMING (1.5 CPS)	244S
A 431R	J10- 43	J21- 25	COUNTER FAIL ALARM	235S
A 430R	J10- 44	J21- 3	PARITY FAIL ALARM	234S
A 468	J10- 45	J21- 84	SPARE	248
A 469	J10- 46	J21- 55	SPARE	249
A 465R	J10- 47	J21- 27	OR OF C1 THRU C33	210S
A 467R	J10- 48	J21- 14	ERROR RESET	208S
A 460R	J10- 49	J21- 83	KEY RESET NAV	209S
A 433R	J10- 51	J21- 85	RUPT LOCK ALARM	237S
A 432R	J10- 53	J21- 71	KEY RELEASE	236S
A 486	J10- 55	J21- 63	SPARE	240
A 485	J10- 56	J21- 91	DISKY GROUND	239
A 480	J10- 57	J21- 64	+13 V B	241
A 484	J10- 58	J21- 62	DISKY GROUND	251
A 482	J10- 59	J21- 65	+28 VDC AGC	243
A 437R	J10- 60	J21- 40	OUT 0 3	216S
A 441R	J10- 61	J21- 42	OUT 0 8	221S
A 442R	J10- 62	J21- 88	OUT 0 9	222S
A 443R	J10- 63	J21- 36	OUT 0 10	223S
A 434R	J10- 64	J21- 33	TC TRAP ALARM	238S
A 472Y	J10- 65	TB1-B60	ZERO OPTICS MODE COMMAND	316
A 472R	J10- 66	TB1-A61	TRACKER MODE RELAY COMMAND	317
A 472G	J10- 67	TB1-B59	COMPUTER RELAY COMMAND	331
A 470	J10- 69	E 26	COMMONED RETURNS GROUND	252
A 450	J10- 70	J21- 12	SPARE	211
A 449	J10- 71	J21- 26	POWER SUPPLY SYNC	212
A 448	J10- 72	J21- 46	SPARE	213
A 435R	J10- 73	J21- 90	OUT 0 1	214S
A 436R	J10- 74	J21- 38	OUT 0 2	215S
A 451	J10- 75	J21- 72	SPARE	247
A 452	J10- 82	E 34	COMMONED RETURNS GROUND	330

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC 60W	J11-A1	TB1-K33	IG CDU 1X ERROR SIG
CC 62W	J11-A2	TB1-H33	MG CDU 1X ERROR SIG
CC 64W	J11-A3	TB1-G33	OG CDU 1X ERROR SIG
BB 9R	J11-A5	J12-A2	IMU MG ERROR SIG
CC 68R	J11-A5	TB1-B28	IMU MG ERROR SIG
BB 9L	J11-A6	J12-B1	IMU OG ERROR SIG
CC 68L	J11-A6	TB1-A28	IMU OG ERROR SIG
CC 60R	J11-B1	TB1-K34	IG CDU ERROR SIG RET
CC 61W	J11-B1	TB1-K28	IG CDU ERROR SIG RET
CC 62R	J11-B2	TB1-H34	MG CDU ERROR SIG RET
CC 63W	J11-B2	TB1-H28	MG CDU ERROR SIG RET
BB 10R	J11-B3	J17-B1	OG CDU ERROR SIG RET
CC 64R	J11-B3	TB1-G34	OG CDU ERROR SIG RET
BB 9K	J11-B5	J12-B2	IMU GIMBAL AND GYRO ERROR SIG LO
BB 28	J11-B5	J11-S6	0 VDC IMU
CC 68K	J11-B5	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO
BB 9W	J11-B6	J12-A1	IMU IG AND Y GYRO ERROR SIG
CC 68W	J11-B6	TB1-C28	IMU IG AND Y GYRO ERROR SIG
CC 61R	J11-C1	TB1-K29	IG CDU ATTITUDE STEERING ERROR
CC 63R	J11-C2	TB1-H29	MG CDU ATTITUDE STEERING ERROR
BB 10W	J11-C3	J17-A1	OG CDU ATTITUDE STEERING ERROR
CC 69W	J11-D5	TB1-F19	IG TORQUE MOTOR RET
CC 69R	J11-D6	TB1-F18	IG TORQUE MOTOR HI
CC 65R	J11-F1	TB1-B11	IG ADA
CC 73R	J11-F3	TB1-K 8	3200 CPS 2 V FEEDBACK HI
CC 70R	J11-F6	TB1-D18	MG TORQUE MOTOR HI
CC 65K	J11-G1	TB1-A10	OG ADA
BB 17	J11-G2	J11-P6	0 VDC IMU
CC 65W	J11-G2	TB1-B10	0 VDC IMU
CC 73W	J11-G3	TB1-H 8	3200 CPS 2 V FEEDBACK LO
CC 70W	J11-G6	TB1-D19	MG TORQUE MOTOR RET
CC 65L	J11-H1	TB1-A11	MG ADA
CC 71W	J11-H5	TB1-C19	OG TORQUE MOTOR RET
CC 71R	J11-H6	TB1-C18	OG TORQUE MOTOR HI
BB 8R	J11-L1	J12-H2	3200 CPS 2 V HI
CC 67L	J11-L1	TB1-K 7	3200 CPS 2 V HI
BB 8W	J11-L2	J12-K2	3200 CPS 2 V LO
CC 67W	J11-L2	TB1-H 7	3200 CPS 2 V LO

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC 72	J11-L3	TB1-K 3	COARSE ALIGN RELAY CONTROL	
BB 7	J11-L4	J12-K3	STRUCTURE GROUND	
CC 80	J11-L4	TB1-H 4	STRUCTURE GROUND	
CC 1R	J11-L6	J23- 31	COMPUTER 3200 PPS OUT OF PHASE SYNC	152S
CC 67K	J11-M1	TB1-K 7	3200 CPS 2 V HI	
CC 67R	J11-M2	TB1-H 7	3200 CPS 2 V LO	
BB 18	J11-M5	J11-P3	0 VDC IMU	
CC 1W	J11-M5	J23- 52	COMPUTER 3200 PPS SYNC RET	152R
CC 2W	J11-M5	J23- 53	COMPUTER 3200 PPS SYNC RET	151R
CC 2R	J11-M6	J23- 54	COMPUTER 3200 PPS IN PHASE SYNC	151S
BB 11R	J11-N1	J17-P2	3200 CPS 20 V CT	
BB 11W	J11-N2	J17-R2	3200 CPS 20 V LO	
BB 16	J11-N3	J12-P4	COMPUTER 12.8 KPPS SYNC	
BB 5W	J11-N4	J12-P3	800 CPS 28 V 1 PCT LO IMU	
BB 5R	J11-N5	J12-N3	800 CPS 28 V 1 PCT HI IMU	
BB 13	J11-N6	J13-P6	-28 VDC	
CC 66	J11-N6	TB1-C54	-28 VDC	
BB 11L	J11-P1	J17-N2	3200 CPS 20 V HI	
BB 19	J11-P2	J11-P3	0 VDC IMU	
CC 79	J11-P2	E 4	0 VDC IMU	
BB 20	J11-P3	J11-R3	0 VDC IMU	
* BB 18	J11-P3	J11-M5	0 VDC IMU	
* BB 19	J11-P3	J11-P2	0 VDC IMU	
BB 21	J11-P4	J11-P5	0 VDC IMU	
BB 27	J11-P4	J11-R4	0 VDC IMU	
* BB 21	J11-P5	J11-P4	0 VDC IMU	
BB 22	J11-P6	J11-R6	0 VDC IMU	
* BB 17	J11-P6	J11-G2	0 VDC IMU	
BB 23	J11-R1	J11-R2	0 VDC IMU	
CC 78	J11-R1	TB1-C69	0 VDC IMU	
CC 74	J11-R2	TB1-C70	0 VDC IMU	
* BB 23	J11-R2	J11-R1	0 VDC IMU	
CC 75	J11-R3	TB1-B68	0 VDC IMU	
* BB 20	J11-R3	J11-P3	0 VDC IMU	
BB 24	J11-R4	J11-R5	0 VDC IMU	
* BB 27	J11-R4	J11-P4	0 VDC IMU	
BB 26	J11-R5	J11-R6	0 VDC IMU	
CC 76	J11-R5	TB1-H26	0 VDC IMU	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* BB 24	J11-R5	J11-R4	0 VDC IMU
BB 25	J11-R6	J11-S6	0 VDC IMU
* BB 22	J11-R6	J11-P6	0 VDC IMU
* BB 26	J11-R6	J11-R5	0 VDC IMU
BB 2	J11-S1	J20-N1	+28 VDC IMU
BB 15	J11-S1	J11-S2	+28 VDC IMU
BB 3	J11-S2	J20-N2	+28 VDC IMU
* BB 15	J11-S2	J11-S1	+28 VDC IMU
BB 12	J11-S3	J17-R1	+28 VDC STBY TO 3200 CPS POWER SUPPLY
BB 1	J11-S4	J15-S6	+28 VDC IMU
BB 6	J11-S4	J12-S5	+28 VDC IMU
BB 14	J11-S4	J11-S5	+28 VDC IMU
BB 4	J11-S5	J20-L2	+28 VDC IMU
* BB 14	J11-S5	J11-S4	+28 VDC IMU
CC 77	J11-S6	TB1-K26	0 VDC IMU
* BB 25	J11-S6	J11-R6	0 VDC IMU
* BB 28	J11-S6	J11-B5	0 VDC IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* BB 9W	J12-A1	J11-B6	IMU IG AND Y GYRO ERROR SIG	
* BB 9R	J12-A2	J11-A5	IMU MG ERROR SIG	
BB 44	J12-A5	J13-D2	X PIP ERROR MONITOR	
BB 45	J12-A6	J13-F2	Y PIP ERROR MONITOR	
* BB 9L	J12-B1	J11-A6	IMU OG ERROR SIG	
* BB 9K	J12-B2	J11-B5	IMU GIMBAL AND GYRO ERROR SIG LO	
BB 59	J12-B5	J13-R6	0 VDC IMU	
CC 89	J12-B5	TB1-B41	0 VDC IMU	
BB 29	J12-B6	J14-H6	Z PIP ERROR MONITOR	
CC 87	J12-C1	TB1-F51	TRAY 2 THERMISTER HI	
BB 55	J12-C2	J13-C2	THERMISTER LO	
* BB 94R	J12-D1	J16-L4	COMPUTER 800 PPS OUT OF PHASE SYNC	
* BB 94L	J12-D2	J16-M4	COMPUTER 800 PPS IN PHASE SYNC	
CC 10R	J12-D4	J24- 45	ACCEL FAIL	138S
CC 9R	J12-D5	J24- 70	CDU FAIL	124S
CC 8R	J12-D6	J24- 25	IMU FAIL	141S
BB 41	J12-F1	J12-F2	COMPUTER 800 PPS SYNC RET	
* BB 49	J12-F1	J12-R4	0 VDC IMU	
* BB 94W	J12-F1	J16-L3	COMPUTER 800 PPS SYNC RET	
CC 6W	J12-F2	J23- 51	COMPUTER 25.6 KPPS SYNC RET	153R
CC 7W	J12-F2	J23- 50	COMPUTER 25.6 KPPS SYNC RET	154R
* BB 41	J12-F2	J12-F1	COMPUTER 800 PPS SYNC RET	
BB 52	J12-F3	J17-M3	0 VDC SPACECRAFT	
CC 10W	J12-F4	J24- 72	ACCEL FAIL RET	138R
CC 9W	J12-F5	J24- 71	CDU FAIL RET	124R
CC 8W	J12-F6	J24- 46	IMU FAIL RET	141R
CC 6R	J12-G1	J23- 30	COMPUTER 25.6 KPPS IN PHASE SYNC	153S
CC 7R	J12-G2	J23- 29	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154S
CC 4	J12-G3	J22- 63	G+N ERROR LIGHT (MAIN PANEL)	
BB 34	J12-G4	J20-M6	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
BB 56	J12-G5	J16-R2	0 VDC IMU	
BB 37W	J12-G6	J16-N3	OG CDU FAILURE INDICATION	
CC 3W	J12-H1	J23- 73	COMPUTER 102.4 KPPS SYNC RET	156R
* BB 8R	J12-H2	J11-L1	3200 CPS 2 V HI	
BB 33R	J12-H4	J20-K6	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
BB 39	J12-H4	J12-N2	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
CC 88R	J12-H4	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
BB 37L	J12-H5	J16-M2	IG CDU FAILURE INDICATION	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	BB 37R	J12-H6	J16-M3	MG CDU FAILURE INDICATION	
	CC 3R	J12-K1	J23- 46	COMPUTER 102.4 KPPS SYNC	156S
*	BB 8W	J12-K2	J11-L2	3200 CPS 2 V LO	
	BB 42	J12-K3	J13-C6	STRUCTURE GROUND	
*	BB 7	J12-K3	J11-L4	STRUCTURE GROUND	
*	CC 3A	J12-K3	SHLD CC 3	STRUCTURE GROUND	
	BB 33W	J12-K4	J20-K5	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
	CC 88W	J12-K4	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
	BB 43W	J12-K6	J14-R2	+12, +32, +120 VDC RET GYRO	
	BB 46	J12-L1	J20-N5	+28 VDC MDV	
	CC 86	J12-L2	TB1-C26	G+N ERROR LIGHT HI	
	BB 43R	J12-L6	J14-S2	+120 VDC GYRO	
	CC 5	J12-M1	J23- 26	AGC POWER SUPPLY FAIL SIG HI	157S
	CC 85	J12-M1	TB1-D26	AGC POWER SUPPLY FAIL SIG HI	
	CC 84	J12-M3	TB1-B56	AGC FAIL SIG	
	BB 43K	J12-M5	J14-S5	+32 VDC GYRO	
	BB 43L	J12-M6	J14-S3	+12 VDC GYRO	
	BB 38	J12-N1	J12-P1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	BB 39	J12-N2	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	BB 30R	J12-N3	J15-P6	800 CPS 28 V 1 PCT HI IMU	
*	BB 5R	J12-N3	J11-N5	800 CPS 28 V 1 PCT HI IMU	
	BB 40	J12-N4	J12-N5	25.6 KC HI IMU	
	CC 83R	J12-N4	TB1-G 1	25.6 KC HI IMU	
	BB 31R	J12-N5	J15-N6	25.6 KC HI IMU	
*	BB 40	J12-N5	J12-N4	25.6 KC HI IMU	
	BB 51W	J12-N6	J17-N3	25.6 KC LO OPTICS	
	BB 53	J12-N6	J12-R6	0 VDC OPTICS	
	CC 82W	J12-N6	TB1-K 2	25.6 KC LO OPTICS	
	CC 81L	J12-P1	TB1-C74	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	BB 38	J12-P1	J12-N1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
	CC 81R	J12-P2	TB1-C72	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
	BB 30W	J12-P3	J15-P5	800 CPS 28 V 1 PCT LO IMU	
*	BB 5W	J12-P3	J11-N4	800 CPS 28 V 1 PCT LO IMU	
	BB 50W	J12-P4	J17-R3	COMPUTER 12.8 KPPS SYNC	
*	BB 16	J12-P4	J11-N3	COMPUTER 12.8 KPPS SYNC	
	BB 31W	J12-P5	J15-N5	25.6 KC LO IMU	
	BB 54	J12-P5	J12-R2	0 VDC IMU	
	CC 83W	J12-P5	TB1-G 2	25.6 KC LO IMU	

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SCALE-NONE	REV LTR B	SHEET 29

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB 51R	J12-P6	J17-P3	25.6 KC HI OPTICS
	CC 82R	J12-P6	TB1-K 1	25.6 KC HI OPTICS
	CC 81W	J12-R1	TB1-C73	800 CPS 28 V 5 PCT IMU WHEELS LO
	BB 57	J12-R2	J12-R3	0 VDC IMU
	CC 90	J12-R2	TB1-C70	0 VDC IMU
*	BB 54	J12-R2	J12-P5	0 VDC IMU
	BB 58	J12-R3	J12-R4	0 VDC IMU
	CC 91	J12-R3	TB1-C69	0 VDC IMU
*	BB 57	J12-R3	J12-R2	0 VDC IMU
	BB 49	J12-R4	J12-F1	0 VDC IMU
	CC 92	J12-R4	TB1-C68	0 VDC IMU
*	BB 58	J12-R4	J12-R3	0 VDC IMU
	CC 93	J12-R5	TB1-K25	0 VDC IMU
	CC 94	J12-R6	TB1-H53	0 VDC OPTICS
*	BB 53	J12-R6	J12-N6	0 VDC OPTICS
	BB 35	J12-S1	J20-M1	+28 VDC IMU
	BB 47	J12-S1	J12-S3	+28 VDC IMU
	BB 36	J12-S2	J20-M2	+28 VDC IMU
	BB 48	J12-S2	J12-S4	+28 VDC IMU
*	BB 47	J12-S3	J12-S1	+28 VDC IMU
*	BB 48	J12-S4	J12-S2	+28 VDC IMU
*	BB 6	J12-S5	J11-S4	+28 VDC IMU
	BB 32	J12-S6	J20-P5	+28 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC 95R	J13-A1	TB1-F11	X PIP ERROR HI	
	CC 98R	J13-A3	TB1-D11	Y PIP ERROR HI	
	BB 62	J13-A6	J14-A6	X GYRO DC DIFF AMP OUTPUT	
	CC 95W	J13-B1	TB1-F10	X PIP ERROR LO	
	CC 98W	J13-B3	TB1-D10	Y PIP ERROR LO	
	CC104	J13-C1	TB1-D51	TRAY 3 THERMISTER HI	
	BB 73	J13-C2	J14-B2	THERMISTER LO	
*	BB 55	J13-C2	J12-C2	THERMISTER LO	
	BB 64	J13-C6	J14-H5	STRUCTURE GROUND	
	CC342	J13-C6	E 1	STRUCTURE GROUND	
*	BB 42	J13-C6	J12-K3	STRUCTURE GROUND	
	BB 69	J13-D1	J15-L4	P X	
	CC 97	J13-D2	TB1-B40	X PIP ERROR MONITOR	
*	BB 44	J13-D2	J12-A5	X PIP ERROR MONITOR	
	BB 71	J13-D3	J15-L3	P Y	
	CC101L	J13-D6	TB1-F23	X GYRO TORQUE +	
	BB 70	J13-F1	J15-M4	N X	
	CC100	J13-F2	TB1-A40	Y PIP ERROR MONITOR	
*	BB 45	J13-F2	J12-A6	Y PIP ERROR MONITOR	
	BB 72	J13-F3	J15-M3	N Y	
	CC101W	J13-F6	TB1-F22	X GYRO TORQUE RET	
	CC101R	J13-G6	TB1-F21	X GYRO TORQUE -	
	CC 96L	J13-H1	TB1-K23	X PIP TORQUE +	
	BB 63L	J13-H6	J14-G1	X GYRO CAL DUMMY	
	CC 96W	J13-K1	TB1-K22	X PIP TORQUE RET	
	BB 63R	J13-K6	J14-H1	X GYRO TERNARY CUR SW TORQUE +	
	CC 96R	J13-L1	TB1-K21	X PIP TORQUE -	
	CC 99L	J13-L3	TB1-H23	Y PIP TORQUE +	
	BB 63W	J13-L6	J14-K1	X GYRO TERNARY CUR SW TORQUE -	
	CC 99W	J13-M3	TB1-H22	Y PIP TORQUE RET	
	CC 99R	J13-N3	TB1-H21	Y PIP TORQUE -	
	BB 60	J13-N5	J14-H3	PIPA INTERROGATE PULSE	
	CC 11R	J13-N5	J23- 7	PIPA INTERROGATE PULSE	139S
	BB 61	J13-N6	J14-K3	PIPA SWITCHING PULSE	
	CC 12R	J13-N6	J23- 2	PIPA SWITCHING PULSE	140S
	BB 68	J13-P6	J14-P6	-28 VDC	
*	BB 13	J13-P6	J11-N6	-28 VDC	
	BB 67W	J13-R1	J14-R2	+12, +32, +120 VDC RET GYRO	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE-NONE	REV LTR B	SHEET 31

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB 66W	J13-R2	J14-R1	+32, +120 VDC RET PIP
	BB 74	J13-R6	J14-R6	0 VDC IMU
	CC102	J13-R6	E 5	0 VDC IMU
*	BB 59	J13-R6	J12-B5	0 VDC IMU
	BB 67R	J13-S1	J14-S2	+120 VDC GYRO
	BB 66R	J13-S2	J14-S1	+120 VDC PIP
	BB 67L	J13-S3	J14-S5	+32 VDC GYRO
	BB 66L	J13-S4	J14-S4	+32 VDC PIP
	BB 65	J13-S6	J14-S6	+28 VDC IMU
	CC103	J13-S6	TB1-G 6	+28 VDC IMU

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE-NONE	REV LTR B	SHEET 32

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC105R	J14-A1	TB1-C11	Z PIP ERROR HI	
	CC105W	J14-A2	TB1-C10	Z PIP ERROR LO	
*	BB 62	J14-A6	J13-A6	X GYRO DC DIFF AMP OUTPUT	
	CC111	J14-B1	TB1-D52	TRAY 4 THERMISTER HI	
	CC112	J14-B2	TB1-F52	THERMISTER LO	
*	BB 73	J14-B2	J13-C2	THERMISTER LO	
	CC 13R	J14-D1	J23- 3	+ DX GYRO RATE	142R
	CC 14R	J14-D2	J23- 11	- DX GYRO RATE	143R
	CC 15R	J14-D3	J23- 55	+ DY GYRO RATE	144R
	CC 16R	J14-D4	J23- 32	- DY GYRO RATE	145R
	CC 17R	J14-D5	J23- 15	+ DZ GYRO RATE	146R
	CC 18R	J14-D6	J23- 14	- DZ GYRO RATE	147R
	BB 75	J14-F6	J15-L2	P Z	
*	BB 63L	J14-G1	J13-H6	X GYRO CAL DUMMY	
	BB 76	J14-G6	J15-M2	N Z	
*	BB 63R	J14-H1	J13-K6	X GYRO TERNARY CUR SW TORQUE +	
*	BB 60	J14-H3	J13-N5	PIPA INTERROGATE PULSE	
	BB 77	J14-H5	J15-K3	STRUCTURE GROUND	
*	BB 64	J14-H5	J13-C6	STRUCTURE GROUND	
	CC107	J14-H6	TB1-A41	Z PIP ERROR MONITOR	
*	BB 29	J14-H6	J12-B6	Z PIP ERROR MONITOR	
*	BB 63W	J14-K1	J13-L6	X GYRO TERNARY CUR SW TORQUE -	
*	BB 61	J14-K3	J13-N6	PIPA SWITCHING PULSE	
	CC 19R	J14-K4	J23- 25	GYRO RESET PULSE	148R
	CC109L	J14-L6	TB1-C23	Z GYRO TORQUE +	
	CC108L	J14-M1	TB1-D23	Y GYRO TORQUE +	
	CC108R	J14-M2	TB1-D21	Y GYRO TORQUE -	
	CC108W	J14-M3	TB1-D22	Y GYRO TORQUE RET	
	CC109R	J14-M6	TB1-C21	Z GYRO TORQUE -	
	CC109W	J14-N6	TB1-C22	Z GYRO TORQUE RET	
	CC106L	J14-P1	TB1-G23	Z PIP TORQUE +	
	CC106R	J14-P2	TB1-G21	Z PIP TORQUE -	
	CC106W	J14-P3	TB1-G22	Z PIP TORQUE RET	
*	BB 68	J14-P6	J13-P6	-28 VDC	
	BB 79W	J14-R1	J17-L4	+32, +120 VDC RET PIP	
*	BB 66W	J14-R1	J13-R2	+32, +120 VDC RET PIP	
*	BB 43W	J14-R2	J12-K6	+12, +32, +120 VDC RET GYRO	
*	BB 67W	J14-R2	J13-R1	+12, +32, +120 VDC RET GYRO	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR B	SHEET 33

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC110	J14-R6	E 6	0 VDC IMU
	CC113	J14-R6	TB1-H25	0 VDC IMU
*	BB 74	J14-R6	J13-R6	0 VDC IMU
	BB 79R	J14-S1	J17-L5	+120 VDC PIP
*	BB 66R	J14-S1	J13-S2	+120 VDC PIP
*	BB 43R	J14-S2	J12-L6	+120 VDC GYRO
*	BB 67R	J14-S2	J13-S1	+120 VDC GYRO
*	BB 43L	J14-S3	J12-M6	+12 VDC GYRO
	BB 79L	J14-S4	J17-T5	+32 VDC PIP
*	BB 66L	J14-S4	J13-S4	+32 VDC PIP
*	BB 43K	J14-S5	J12-M5	+32 VDC GYRO
*	BB 67L	J14-S5	J13-S3	+32 VDC GYRO
	BB 78	J14-S6	J15-S2	+28 VDC IMU
*	BB 65	J14-S6	J13-S6	+28 VDC IMU

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR B	SHEET 34

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC130W	J15-A1	TB1-F28	Z GYRO ERROR SIG	
CC 38W	J15-A3	J24- 30	MANUAL CDU MODE INDICATION TO AGC	160
BB 82R	J15-A4	J16-B2	IG DAC MDA SIG HI	
BB 82W	J15-A5	J16-B1	IG DAC MDA SIG LO	
CC120	J15-A5	E 8	IG DAC MDA SIG LO	
CC123	J15-A5	E 9	IG DAC MDA SIG LO	
BB 83R	J15-A6	J16-B4	MG DAC MDA SIG HI	
BB 83W	J15-A7	J16-B3	MG DAC MDA SIG LO	
CC121	J15-A7	E 10	MG DAC MDA SIG LO	
CC124	J15-A7	E 11	MG DAC MDA SIG LO	
BB 84R	J15-A8	J16-B6	OG DAC MDA SIG HI	
BB 84W	J15-A9	J16-B5	OG DAC MDA SIG LO	
CC122	J15-A9	E 12	OG DAC MDA SIG LO	
CC125	J15-A9	E 13	OG DAC MDA SIG LO	
CC130L	J15-B1	TB1-G28	X GYRO ERROR SIG	
CC130R	J15-B2	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO	
BB 80	J15-B3	J16-B7	AGC COMMON (ISS)	
CC 26W	J15-B4	J24- 41	IG ENCODER + DELTA THETA	120S
CC 32W	J15-B5	J23- 42	IG CDU + DELTA THETA COMMAND	128S
CC 28W	J15-B6	J24- 19	MG ENCODER + DELTA THETA	122S
CC 34W	J15-B7	J23- 35	MG CDU + DELTA THETA COMMAND	130S
CC 30W	J15-B8	J24- 39	OG ENCODER + DELTA THETA	118S
CC 36W	J15-B9	J23- 21	OG CDU + DELTA THETA COMMAND	126S
CC117W	J15-C1	TB1-F34	IG CDU ENCODER COMMON	
CC117L	J15-C2	TB1-F35	IG CDU ENCODER PHASE 1	
CC119R	J15-C3	TB1-C33	OG CDU ENCODER PHASE 2	
CC 27R	J15-C4	J24- 67	IG ENCODER - DELTA THETA	121S
CC 33R	J15-C5	J23- 43	IG CDU - DELTA THETA COMMAND	129S
CC 29R	J15-C6	J24- 8	MG ENCODER - DELTA THETA	123S
CC 35R	J15-C7	J23- 18	MG CDU - DELTA THETA COMMAND	131S
CC 31R	J15-C8	J24- 40	OG ENCODER - DELTA THETA	119S
CC 37R	J15-C9	J23- 22	OG CDU - DELTA THETA COMMAND	127S
CC117R	J15-D1	TB1-F33	IG CDU ENCODER PHASE 2	
CC118R	J15-D2	TB1-D33	MG CDU ENCODER PHASE 2	
CC119W	J15-D3	TB1-C34	OG CDU ENCODER COMMON	
CC119L	J15-D4	TB1-C35	OG CDU ENCODER PHASE 1	
CC126R	J15-D7	TB1-K15	SIN AIG 16X S4	
CC126W	J15-D8	TB1-K14	SIN AIG 16X S2	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR B	SHEET 35

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC127L	J15-D9	TB1-K11	SIN AMG 16X TO CDU	
	CC118L	J15-F1	TB1-D35	MG CDU ENCODER PHASE 1	
	CC118W	J15-F2	TB1-D34	MG CDU ENCODER COMMON	
	CC126L	J15-F7	TB1-K16	SIN AIG 16X TO CDU	
	CC127W	J15-F8	TB1-K 9	SIN AMG 16X S2	
	CC127R	J15-F9	TB1-K10	SIN AMG 16X S4	
	BB 85W	J15-H4	J16-L1	FINE ALIGN RELAY CONTROL	
	CC128R	J15-H4	TB1-H 5	FINE ALIGN RELAY CONTROL	
	BB 88	J15-K3	J16-N4	STRUCTURE GROUND	
	CC132	J15-K3	TB1-B49	STRUCTURE GROUND	
*	BB 77	J15-K3	J14-H5	STRUCTURE GROUND	
	CC 24R	J15-K4	J24- 33	- DELTA V Z	137R
	CC 25R	J15-K5	J24- 56	+ DELTA V Z	136R
	CC 23R	J15-K6	J24- 44	- DELTA V Y	135R
*	BB 75	J15-L2	J14-F6	P Z	
*	BB 71	J15-L3	J13-D3	P Y	
*	BB 69	J15-L4	J13-D1	P X	
	CC114	J15-L5	E 14	COMPUTER RET	
	CC115	J15-L5	E 15	COMPUTER RET	
	CC116	J15-L5	E 16	COMPUTER RET	
	CC 22R	J15-L6	J24- 24	+ DELTA V Y	134R
*	BB 76	J15-M2	J14-G6	N Z	
*	BB 72	J15-M3	J13-F3	N Y	
*	BB 70	J15-M4	J13-F1	N X	
	CC 20R	J15-M5	J24- 2	+ DELTA V X	132R
	CC 21R	J15-M6	J24- 10	- DELTA V X	133R
*	BB 31W	J15-N5	J12-P5	25.6 KC LO IMU	
*	BB 31R	J15-N6	J12-N5	25.6 KC HI IMU	
	BB 86W	J15-P5	J16-S3	800 CPS 28 V 1 PCT LO IMU	
*	BB 30W	J15-P5	J12-P3	800 CPS 28 V 1 PCT LO IMU	
	BB 86R	J15-P6	J16-S4	800 CPS 28 V 1 PCT HI IMU	
*	BB 30R	J15-P6	J12-N3	800 CPS 28 V 1 PCT HI IMU	
	CC131	J15-R2	TB1-K26	0 VDC IMU	
	CC129	J15-R6	TB1-B53	+28 VDC CDU NOT LOCK	
	BB 85R	J15-S1	J16-L2	ZERO ENCODER RELAY CONTROL	
	CC128L	J15-S1	TB1-K 5	ZERO ENCODER RELAY CONTROL	
	BB 81	J15-S2	J20-L1	+28 VDC IMU	
*	BB 78	J15-S2	J14-S6	+28 VDC IMU	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR B	SHEET 36

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC128W	J15-S3	TB1-G 5	LOCK CDU RELAY CONTROL
BB 87	J15-S6	J16-S2	+28 VDC IMU
* BB 1	J15-S6	J11-S4	+28 VDC IMU

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015087
SCALE - NONE
REV LTR B
SHEET 37

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC136R	J16-A1	TB1-F29	IG CDU MDA TACH SIG
CC136W	J16-A2	TB1-F31	IG CDU MDA SLEW SIG
CC141R	J16-A3	TB1-D29	MG CDU MDA TACH SIG
CC141W	J16-A4	TB1-D31	MG CDU MDA SLEW SIG
CC153R	J16-A5	TB1-C29	OG CDU MDA TACH SIG
CC153W	J16-A6	TB1-C31	OG CDU MDA SLEW SIG
CC 41W	J16-A7	J24- 5	ZERO ENCODER MODE INDICATION TO AGC 158
CC144W	J16-A8	TB1-D14	SIN AOG 1X S2
CC348R	J16-A8	J22- 12	SIN AOG 1X S2
CC144R	J16-A9	TB1-D15	SIN AOG 1X S4
CC348W	J16-A9	J22- 26	SIN AOG 1X S4
CC136L	J16-B1	TB1-F30	IG CDU MDA INPUT RET
* BB 82W	J16-B1	J15-A5	IG DAC MDA SIG LO
* CC136A	J16-B1	SHLD CC136	IG CDU MDA INPUT RET
* BB 82R	J16-B2	J15-A4	IG DAC MDA SIG HI
CC141L	J16-B3	TB1-D30	MG CDU MDA INPUT RET
* BB 83W	J16-B3	J15-A7	MG DAC MDA SIG LO
* CC141A	J16-B3	SHLD CC141	MG CDU MDA INPUT RET
* BB 83R	J16-B4	J15-A6	MG DAC MDA SIG HI
CC153L	J16-B5	TB1-C30	OG CDU MDA INPUT RET
* BB 84W	J16-B5	J15-A9	OG DAC MDA SIG LO
* CC153A	J16-B5	SHLD CC153	OG CDU MDA INPUT RET
* BB 84R	J16-B6	J15-A8	OG DAC MDA SIG HI
CC173W	J16-B7	TB1-C56	AGC COMMON (ISS)
* BB 80	J16-B7	J15-B3	AGC COMMON (ISS)
CC143W	J16-B8	TB1-C14	COS AOG 1X S3
CC349W	J16-B8	J22- 4	COS AOG 1X S3
CC144L	J16-B9	TB1-D16	SIN AOG 1X TO CDU
CC135W	J16-C1	TB1-K31	IG CDU 16X ERROR SIG
CC134W	J16-C2	TB1-K33	IG CDU 1X ERROR SIG
CC140W	J16-C3	TB1-H31	MG CDU 16X ERROR SIG
CC139W	J16-C4	TB1-H33	MG CDU 1X ERROR SIG
CC147R	J16-C5	TB1-G31	OG CDU 16X ERROR SIG
CC146W	J16-C6	TB1-G33	OG CDU 1X ERROR SIG
CC158	J16-C7	TB1-G29	OG CDU 16X RSVR LOAD
CC143R	J16-C8	TB1-C15	COS AOG 1X S1
CC349R	J16-C8	J22- 13	COS AOG 1X S1
CC143L	J16-C9	TB1-C16	COS AOG 1X TO CDU

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015087
SCALE - NONE
REV LTR B
SHEET 38

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC133W	J16-D1	TB1-A31	IG CDU 1/2X ERROR SIG	
CC134R	J16-D2	TB1-K34	IG CDU ERROR SIG RET	
CC135R	J16-D2	TB1-K30	IG CDU ERROR SIG RET	
CC138W	J16-D3	TB1-A30	MG CDU 1/2X ERROR SIG	
CC139R	J16-D4	TB1-H34	MG CDU ERROR SIG RET	
CC140R	J16-D4	TB1-H30	MG CDU ERROR SIG RET	
CC145W	J16-D5	TB1-A29	OG CDU 1/2X ERROR SIG	
CC146R	J16-D6	TB1-G34	OG CDU ERROR SIG RET	
CC147W	J16-D6	TB1-G30	OG CDU ERROR SIG RET	
CC148R	J16-D7	TB1-F14	COS AOG 16X S1	
CC152W	J16-D8	TB1-G14	SIN AOG 16X S2	
CC152R	J16-D9	TB1-G15	SIN AOG 16X S4	
CC133R	J16-F1	TB1-B31	IG CDU ERROR SIG RET	
CC155	J16-F2	TB1-K35	IG CDU 1X RSVR LOAD	
CC138R	J16-F3	TB1-B30	MG CDU ERROR SIG RET	
CC156	J16-F4	TB1-H35	MG CDU 1X RSVR LOAD	
CC145R	J16-F5	TB1-B29	OG CDU ERROR SIG RET	
CC157	J16-F6	TB1-G35	OG CDU 1X RSVR LOAD	
CC148W	J16-F7	TB1-F15	COS AOG 16X S3	
CC148L	J16-F8	TB1-F16	COS AOG 16X TO CDU	
CC152L	J16-F9	TB1-G16	SIN AOG 16X TO CDU	
CC163W	J16-G1	TB1-H15	COS AIG 16X S3	
CC163L	J16-G2	TB1-H16	COS AIG 16X TO CDU	
CC164W	J16-G3	TB1-H10	COS AMG 16X S3	
CC164L	J16-G4	TB1-H11	COS AMG 16X TO CDU	
CC163R	J16-H1	TB1-H14	COS AIG 16X S1	
CC164R	J16-H3	TB1-H 9	COS AMG 16X S1	
* BB 85W	J16-L1	J15-H4	FINE ALIGN RELAY CONTROL	
* BB 85R	J16-L2	J15-S1	ZERO ENCODER RELAY CONTROL	
BB 94W	J16-L3	J12-F1	COMPUTER 800 PPS SYNC RET	
CC 39W	J16-L3	J23- 27	COMPUTER 800 PPS SYNC RET	150R
CC 40W	J16-L3	J23- 13	COMPUTER 800 PPS SYNC RET	149R
BB 94R	J16-L4	J12-D1	COMPUTER 800 PPS OUT OF PHASE SYNC	
CC 39R	J16-L4	J23- 12	COMPUTER 800 PPS OUT OF PHASE SYNC	150S
CC159W	J16-M1	TB1-H 3	ENTRY RELAY CONTROL	
CC175K	J16-M2	TB1-C58	IG CDU FAILURE INDICATION	
* BB 37L	J16-M2	J12-H5	IG CDU FAILURE INDICATION	
CC175L	J16-M3	TB1-C57	MG CDU FAILURE INDICATION	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015087
SCALE - NONE
REV LTR B
SHEET 39

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* BB 37R	J16-M3	J12-H6	MG CDU FAILURE INDICATION	
BB 94L	J16-M4	J12-D2	COMPUTER 800 PPS IN PHASE SYNC	
CC 40R	J16-M4	J23- 4	COMPUTER 800 PPS IN PHASE SYNC	149S
CC154W	J16-N1	TB1-G19	OG CDU MDA OUTPUT	
CC154R	J16-N2	TB1-G18	OG CDU MDA OUTPUT	
CC175R	J16-N3	TB1-D57	OG CDU FAILURE INDICATION	
* BB 37W	J16-N3	J12-G6	OG CDU FAILURE INDICATION	
BB 95	J16-N4	J'7-L6	STRUCTURE GROUND	
CC180	J16-N4	TB1-A60	STRUCTURE GROUND	
* BB 88	J16-N4	J15-K3	STRUCTURE GROUND	
BB 89W	J16-N5	J18-S1	800 CPS 28 V 1 PCT LO OPTICS	
CC161R	J16-N5	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS	
CC172R	J16-N5	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS	
BB 92W	J16-N6	J20-H5	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
CC162W	J16-N6	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
CC174W	J16-N6	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
CC137R	J16-P1	TB1-K19	IG CDU MDA OUTPUT	
CC176	J16-P2	TB1-D59	0 VDC IMU	
* CC 39A	J16-P2	SHLD CC 39	0 VDC IMU	
* CC 40A	J16-P2	SHLD CC 40	0 VDC IMU	
CC142R	J16-P3	TB1-H18	MG CDU MDA OUTPUT	
CC160W	J16-P4	TB1-B 5	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU	
BB 89R	J16-P5	J18-T1	800 CPS 28 V 1 PCT HI OPTICS	
CC161W	J16-P5	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS	
CC172W	J16-P5	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS	
BB 92R	J16-P6	J20-H6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
CC162R	J16-P6	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
CC174R	J16-P6	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
CC137W	J16-R1	TB1-K18	IG CDU MDA OUTPUT	
CC175W	J16-R2	TB1-D58	0 VDC IMU	
CC177	J16-R2	TB1-F75	0 VDC IMU	
* BB 56	J16-R2	J12-G5	0 VDC IMU	
CC142W	J16-R3	TB1-H19	MG CDU MDA OUTPUT	
CC160K	J16-R4	TB1-B 6	ZEROING RSVR 800 CPS	
CC178	J16-R5	TB1-K53	0 VDC OPTICS	
CC179	J16-R6	TB1-G53	0 VDC OPTICS	
CC149	J16-S1	TB1-C53	+28 VDC IMU FOR IG MDA	
BB 93	J16-S2	J20-L2	+28 VDC IMU	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015087
SCALE - NONE
REV LTR B
SHEET 40

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	BB 87	J16-S2	J15-S6	+28 VDC IMU
	BB 97W	J16-S3	J20-F8	800 CPS 28 V 1 PCT LO IMU
	CC160R	J16-S3	TB1-B 7	800 CPS 28 V 1 PCT LO IMU
*	BB 86W	J16-S3	J15-P5	800 CPS 28 V 1 PCT LO IMU
	BB 97R	J16-S4	J20-F9	800 CPS 28 V 1 PCT HI IMU
	CC160L	J16-S4	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
*	BB 86R	J16-S4	J15-P6	800 CPS 28 V 1 PCT HI IMU
	BB 90	J16-S5	J20-P5	+28 VDC OPTICS
	BB 96	J16-S5	J16-S6	+28 VDC OPTICS
	BB 91	J16-S6	J20-P6	+28 VDC OPTICS
*	BB 96	J16-S6	J16-S5	+28 VDC OPTICS
	CC150	J16-T1	TB1-C52	+28 VDC IMU FOR MG MDA
	CC151	J16-T2	TB1-C51	+28 VDC IMU FOR OG MDA

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015087
SCALE - NONE
REV LTR B
SHEET 41

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	BB 10W	J17-A1	J11-C3	OG CDU ATTITUDE STEERING ERROR
	CC204W	J17-A2	TB1-G31	OG CDU 16X ERROR SIG
	CC 47R	J17-A3	J22- 83	ROLL ERROR BODY OFFSET AXIS HI
	CC 43R	J17-A4	J22- 74	ROLL ERROR BODY AXIS HI
	CC202L	J17-A6	TB1-B35	TRUNNION CDU ENCODER PHASE 1
	CC202W	J17-A7	TB1-B34	TRUNNION CDU ENCODER COMMON
	CC202R	J17-A8	TB1-B33	TRUNNION CDU ENCODER PHASE 2
	BB112	J17-A9	J17-B9	TRUNNION ENCODER SCALE SELECT
*	BB 10R	J17-B1	J11-B3	OG CDU ERROR SIG RET
	CC204R	J17-B2	TB1-G30	OG CDU ERROR SIG RET
	CC 47W	J17-B3	J22- 82	ROLL ERROR BODY OFFSET AXIS LO
	CC 43W	J17-B4	J22- 75	ROLL ERROR BODY AXIS LO
	CC191W	J17-B5	TB1-H64	IRIG TEMP CONT SENSOR RET
	CC191R	J17-B6	TB1-H63	IRIG TEMP CONT SENSOR HI
	CC184W	J17-B7	TB1-K59	IMU TEMP CONT -5 DEG GAIN CHECK
	CC184L	J17-B8	TB1-K61	IRIG ZERO DEVIATION CHECK
*	BB112	J17-B9	J17-A9	TRUNNION ENCODER SCALE SELECT
	CC 48W	J17-C1	J22- 79	PITCH ERROR BODY AND BODY OFFSET AXIS LO
	CC201W	J17-C1	TB1-G13	PITCH ERROR BODY AND BODY OFFSET AXIS LO
	CC201R	J17-C2	TB1-F13	PITCH-YAW RSVR S4
	CC 45R	J17-C3	J22- 53	YAW ERROR BODY OFFSET AXIS HI
	CC 44R	J17-C4	J22- 49	YAW ERROR BODY AXIS HI
	CC198W	J17-C5	TB1-K64	IRIG TEMP IND SENSOR RET
	CC198R	J17-C6	TB1-K63	IRIG TEMP IND SENSOR HI
	CC184K	J17-C7	TB1-K62	IRIG TEMP BRIDGE AMP PIN 6
	CC184R	J17-C8	TB1-K60	IRIG TEMP GAIN SWITCH NC
	CC203L	J17-C9	TB1-A35	SHAFT CDU ENCODER PHASE 1
	CC 48R	J17-D1	J22- 78	PITCH ERROR BODY AND BODY OFFSET AXIS HI
	CC182R	J17-D2	TB1-H13	PITCH YAW RSVR S3
	CC 45W	J17-D3	J22- 81	YAW ERROR BODY OFFSET AXIS LO
	CC182W	J17-D3	TB1-K13	YAW ERROR BODY OFFSET AXIS LO
	CC 44W	J17-D4	J22- 76	YAW ERROR BODY AXIS LO
	CC185W	J17-D5	TB1-G61	ACCEL TEMP IND SENSOR RET
	CC185L	J17-D6	TB1-G64	IMU IMU TEMP CONT +5 DEG GAIN CHECK
	CC185R	J17-D7	TB1-G63	ACCEL ZERO DEVIATION CHECK
	CC203W	J17-D9	TB1-A34	SHAFT CDU ENCODER COMMON
	CC205	J17-F2	TB1-C64	TEMPERATURE CONTROL SIG LO
	CC196	J17-F3	TB1-B64	HTR CURRENT (TELEMETRY)

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC195	J17-F4	TB1-D64	IRIG TEMP (TELEMETRY)
	CC194	J17-F5	TB1-F64	ACCEL TEMP (TELEMETRY)
	CC193	J17-F6	TB1-A64	BLOWER CURRENT SENSOR (TELEMETRY)
	CC185K	J17-F7	TB1-G62	ACCEL BRIDGE AMP PIN 6
	CC203R	J17-F9	TB1-A33	SHAFT CDU ENCODER PHASE 2
	CC188	J17-G1	TB1-F59	IMU TEMP ALARM AMP PIN 14
	CC187R	J17-G2	TB1-F60	IMU TEMP ALARM AMP PIN 15
	BB107L	J17-G4	J18-G4	SHAFT ENCODER + DELTA THETA OUTPUT
	CC 50R	J17-G4	J24- 59	SHAFT ENCODER + DELTA THETA OUTPUT 108S
	BB101L	J17-G6	J18-G6	TRUNNION ENCODER + DELTA THETA OUTPUT
	CC 42R	J17-G6	J24- 61	TRUNNION ENCODER + DELTA THETA OUT 110S
	CC187L	J17-H1	TB1-F61	IMU TEMP ALARM BIAS RESISTOR
	CC187W	J17-H2	TB1-F62	IMU TEMP ALARM AMP PIN 5
	BB107W	J17-H4	J18-H4	SHAFT ENCODER DELTA THETA OUT COMMON
	CC 46W	J17-H4	J24- 35	SHAFT ENCODER DELTA THETA OUT COMMON109R
	CC 50W	J17-H4	J24- 58	SHAFT ENCODER DELTA THETA OUT COMMON108R
	BB101W	J17-H6	J18-H6	TRUNNION ENCODER DELTA THETA OUT COM
	CC 42W	J17-H6	J24- 60	TRUNNION ENCODER DELTA THETA OUT COM110R
	CC 49W	J17-H6	J24- 37	TRUNNION ENCODER DELTA THETA OUT COM111R
	BB107R	J17-K4	J18-K4	SHAFT ENCODER - DELTA THETA OUTPUT
	CC 46R	J17-K4	J24- 36	SHAFT ENCODER - DELTA THETA OUTPUT 109S
	BB101R	J17-K6	J18-K6	TRUNNION ENCODER - DELTA THETA OUTPUT
	CC 49R	J17-K6	J24- 38	TRUNNION ENCODER - DELTA THETA OUT 111S
	CC189W	J17-L1	TB1-D63	IMU TEMP CONT K2 PIN 6
	CC347	J17-L3	J22- 38	IMU TEMP LIGHT (MAIN PANEL)
	CC206W	J17-L4	TB1-B63	+32, +120 VDC RET PIP
*	BB 79W	J17-L4	J14-R1	+32, +120 VDC RET PIP
	CC206R	J17-L5	TB1-A63	+120 VDC PIP
*	BB 79R	J17-L5	J14-S1	+120 VDC PIP
	BB100	J17-L6	J18-P4	STRUCTURE GROUND
	CC207	J17-L6	TB1-G70	STRUCTURE GROUND
*	BB 95	J17-L6	J16-N4	STRUCTURE GROUND
	CC189R	J17-M1	TB1-F63	TEMPERATURE CONTROLLER 0 VDC IMU
	CC199	J17-M2	TB1-H61	IMU TEMP SENSOR COM
	CC200	J17-M3	TB1-D70	0 VDC SPACECRAFT
	CC346	J17-M3	J22- 39	0 VDC SPACECRAFT
*	BB 52	J17-M3	J12-F3	0 VDC SPACECRAFT
	CC190W	J17-M4	TB1-C60	IMU EMERGENCY HTR HI

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC186W	J17-M5	TB1-H59	IMU TEMP CONT K1 PIN 3
	CC186R	J17-M6	TB1-H60	IMU TEMP CONT AMP PIN 5
	CC192W	J17-N1	TB1-D61	IMU CONTROL HTR LO
*	BB 11L	J17-N2	J11-P1	3200 CPS 20 V HI
*	BB 51W	J17-N3	J12-N6	25.6 KC LO OPTICS
	CC190R	J17-N4	TB1-C61	EMERGENCY HTR LO-OPER AND STBY
	CC186L	J17-N5	TB1-G60	IMU TEMP CONT K2 PIN 5
	CC186K	J17-N6	TB1-G59	IMU HTR CURRENT AMP PIN 5
	CC192R	J17-P1	TB1-D60	IMU CONTROL HTR HI
*	BB 11R	J17-P2	J11-N1	3200 CPS 20 V CT
*	BB 51R	J17-P3	J12-P6	25.6 KC HI OPTICS
	CC183R	J17-P4	TB1-C77	800 CPS 28 V 5 PCT HI TO BLOWERS
	CC197	J17-P5	TB1-B26	IMU TEMP CONT FAIL LIGHT HI
	CC181	J17-P6	TB1-D71	CONDITION LAMP TEST
*	BB 12	J17-R1	J11-S3	+28 VDC STBY TO 3200 CPS POWER SUPPLY
*	BB 11W	J17-R2	J11-N2	3200 CPS 20 V LO
	CC 51R	J17-R3	J23- 28	COMPUTER 12.8 KPPS SYNC 155S
*	BB 50W	J17-R3	J12-P4	COMPUTER 12.8 KPPS SYNC
	CC183W	J17-R4	TB1-C75	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	BB106	J17-R5	J20-M5	+28 VDC MDV
	CC208	J17-R6	TB1-F76	0 VDC OPTICS
	BB113	J17-S1	J17-S2	0 VDC IMU
	CC209	J17-S1	TB1-D75	0 VDC IMU
	CC210	J17-S2	TB1-D74	0 VDC IMU
*	BB113	J17-S2	J17-S1	0 VDC IMU
	CC 51W	J17-S3	J23- 49	0 VDC IMU 155R
	CC211	J17-S3	TB1-B69	0 VDC IMU
	BB 50B	J17-S4	SHLD BB 50	0 VDC IMU
	CC212	J17-S4	TB1-B70	0 VDC IMU
*	CC 51A	J17-S4	SHLD CC 51	0 VDC IMU
	CC213	J17-S6	TB1-D76	0 VDC OPTICS
	BB104	J17-T1	J20-R3	+28 VDC STBY
	BB110	J17-T1	J17-T2	+28 VDC STBY
	BB105	J17-T2	J20-R4	+28 VDC STBY
*	BB110	J17-T2	J17-T1	+28 VDC STBY
	BB103	J17-T3	J20-M2	+28 VDC IMU
	BB102	J17-T4	J20-M1	+28 VDC IMU
	CC206L	J17-T5	TB1-C63	+32 VDC PIP

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	BB 79L	J17-T5	J14-S4	+32 VDC PIP
	BB111	J17-T6	J20-N6	+28 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC218W	J18-A1	TB1-D46	SXT SHAFT 1/2X RSVR S1
	CC219W	J18-A2	TB1-B46	SXT SHAFT 16X RSVR S4
	CC219R	J18-A3	TB1-B45	SXT SHAFT 16X RSVR S2
	CC237R	J18-A5	TB1-K37	SCT SHAFT TACH HI
	CC239R	J18-A7	TB1-H37	SXT SHAFT TACH HI
	CC233R	J18-A9	TB1-D37	SXT TRUNNION TACH HI
	CC218R	J18-B1	TB1-D45	SXT SHAFT 1/2X RSVR S3
	CC237W	J18-B5	TB1-K38	SCT SHAFT TACH LO
	CC239W	J18-B7	TB1-H38	SXT SHAFT TACH LO
	CC233W	J18-B9	TB1-D38	SXT TRUNNION TACH LO
	CC234R	J18-C1	TB1-B43	SXT TRUNNION 64X RSVR S2
	CC234W	J18-C2	TB1-B44	SXT TRUNNION 64X RSVR S4
	CC235R	J18-C5	TB1-K41	SCT SHAFT 1X RSVR S2
	CC226	J18-C7	TB1-G55	TRACKER X DRIVE BUFFERED HI
	CC227	J18-C8	TB1-G54	TRACKER Y DRIVE BUFFERED HI
	CC228	J18-C9	TB1-G56	TRACKER PREAMP OUTPUT BUFFERED HI
	CC230W	J18-D1	TB1-C43	TRUNNION CDU 1/4X RSVR S4
	CC221W	J18-D3	TB1-G44	SCT TRUNNION 1X RSVR P1
	CC221R	J18-D4	TB1-G43	SCT TRUNNION 1X RSVR P3
	CC235W	J18-D5	TB1-K40	SCT SHAFT 1X RSVR S4
	BB120	J18-D7	J18-D8	0 VDC OPTICS
	BB122	J18-D7	J18-L1	0 VDC OPTICS
	BB121	J18-D8	J18-D9	0 VDC OPTICS
*	BB120	J18-D8	J18-D7	0 VDC OPTICS
*	BB121	J18-D9	J18-D8	0 VDC OPTICS
	CC230R	J18-F1	TB1-C44	TRUNNION CDU 1/4X RSVR S2
	CC229W	J18-F2	TB1-D44	TRUNNION CDU 1/4X RSVR S1
	CC229R	J18-F3	TB1-D43	TRUNNION CDU 1/4X RSVR S3
	CC231R	J18-F4	TB1-F44	SCT TRUNNION 1X RSVR P2
	CC231W	J18-F5	TB1-F43	SCT TRUNNION 1X RSVR P4
	BB118R	J18-G1	J19-G6	SXT SHAFT MDA INPUT HI
	BB118W	J18-G2	J19-G5	SXT SHAFT MDA INPUT LO
	CC 55R	J18-G3	J23- 37	SHAFT + DELTA THETA COMMAND 114S
*	BB107L	J18-G4	J17-G4	SHAFT ENCODER + DELTA THETA OUTPUT
	CC 54R	J18-G5	J23- 60	TRUNNION - DELTA THETA COMMAND 117S
*	BB101L	J18-G6	J17-G6	TRUNNION ENCODER + DELTA THETA OUTPUT
	BB119W	J18-H1	J19-H6	SXT TRUNNION MDA INPUT LO
	CC 53W	J18-H3	J23- 19	SHAFT DELTA THETA COMMAND COMMON 115R

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC 55W	J18-H3	J23- 36	SHAFT DELTA THETA COMMAND COMMON 114R
*	BB107W	J18-H4	J17-H4	SHAFT ENCODER DELTA THETA OUT COMMON
	CC 52W	J18-H5	J23- 88	TRUNNION DELTA THETA COMMAND COMMON 116R
	CC 54W	J18-H5	J23- 59	TRUNNION DELTA THETA COMMAND COMMON 117R
*	BB101W	J18-H6	J17-H6	TRUNNION ENCODER DELTA THETA OUT COM
	BB119R	J18-K1	J19-K6	SXT TRUNNION MDA INPUT HI
	CC 53R	J18-K3	J23- 20	SHAFT - DELTA THETA COMMAND 115S
*	BB107R	J18-K4	J17-K4	SHAFT ENCODER - DELTA THETA OUTPUT
	CC 52R	J18-K5	J23- 89	TRUNNION + DELTA THETA COMMAND 116S
*	BB101R	J18-K6	J17-K6	TRUNNION ENCODER - DELTA THETA OUTPUT
	BB123	J18-L1	J18-L2	0 VDC OPTICS
	BB131	J18-L1	J19-L6	0 VDC OPTICS
*	BB122	J18-L1	J18-D7	0 VDC OPTICS
	BB124	J18-L2	J18-L3	0 VDC OPTICS
*	BB123	J18-L2	J18-L1	0 VDC OPTICS
	BB125	J18-L3	J18-L4	0 VDC OPTICS
*	BB124	J18-L3	J18-L2	0 VDC OPTICS
	BB126	J18-L4	J18-L5	0 VDC OPTICS
*	BB125	J18-L4	J18-L3	0 VDC OPTICS
	BB127	J18-L5	J18-L6	0 VDC OPTICS
*	BB126	J18-L5	J18-L4	0 VDC OPTICS
*	BB127	J18-L6	J18-L5	0 VDC OPTICS
	CC222	J18-M1	TB1-H56	SXT TRUNNION MDA INPUT BUFFERED
	CC220	J18-M2	TB1-H55	SXT TRUNNION TACH FEEDBACK BUFFERED
	CC214	J18-M3	TB1-K56	SXT SHAFT MDA INPUT BUFFERED
	CC215	J18-M4	TB1-K55	SXT SHAFT TACH FEEDBACK BUFFERED
	CC217	J18-M5	TB1-H54	SCT SHAFT 1X ERROR SIG BUFFERED
	CC216	J18-M6	TB1-K54	SCT SHAFT TACH FEEDBACK BUFFERED
	CC225R	J18-P1	TB1-B60	ZERO OPTICS MODE COMMAND
	CC223W	J18-P2	TB1-B57	0 DEG OFFSET RELAY COMMAND
	CC225W	J18-P3	TB1-B59	COMPUTER RELAY COMMAND
	BB115	J18-P4	J19-R4	STRUCTURE GROUND
*	BB100	J18-P4	J17-L6	STRUCTURE GROUND
	BB116	J18-R1	J19-R6	TRACKER MODE RELAY COMMAND
	CC223R	J18-R2	TB1-B58	25 DEG OFFSET RELAY COMMAND
	BB128	J18-R4	J18-R5	0 VDC OPTICS
	BB130	J18-R4	J18-S3	0 VDC OPTICS
	CC241	J18-R4	TB1-F77	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB129	J18-R5	J18-R6	0 VDC OPTICS
*	BB128	J18-R5	J18-R4	0 VDC OPTICS
	CC240	J18-R6	TB1-D77	0 VDC OPTICS
*	BB129	J18-R6	J18-R5	0 VDC OPTICS
	BB117W	J18-S1	J19-S6	800 CPS 28 V 1 PCT LO OPTICS
*	BB 89W	J18-S1	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
*	BB130	J18-S3	J18-R4	0 VDC OPTICS
	CC236R	J18-S4	TB1-H51	SCT SHAFT MOTOR PHASE 2
	CC238R	J18-S5	TB1-G49	SXT SHAFT MOTOR PHASE 2
	CC232R	J18-S6	TB1-G51	SXT TRUNNION MOTOR PHASE 2
	BB117R	J18-T1	J19-T6	800 CPS 28 V 1 PCT HI OPTICS
*	BB 89R	J18-T1	J16-P5	800 CPS 28 V 1 PCT HI OPTICS
	BB114	J18-T2	J20-N6	+28 VDC OPTICS
	CC224	J18-T3	TB1-C71	+28 VDC OPTICS DAC POWER
	CC236W	J18-T4	TB1-H52	SCT SHAFT MOTOR PHASE 1
	CC238W	J18-T5	TB1-G48	SXT SHAFT MOTOR PHASE 1
	CC232W	J18-T6	TB1-G52	SXT TRUNNION MOTOR PHASE 1

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC261R	J19-A1	TB1-F37	SCT TRUNNION TACH HI
CC258R	J19-A6	TB1-C37	TRUNNION CDU TACHOMETER HI
CC269R	J19-A9	TB1-G37	SHAFT CDU TACH HI
CC261W	J19-B1	TB1-F38	SCT TRUNNION TACH LO
CC256R	J19-B4	TB1-C41	TRUNNION CDU 16X RSVR S3
CC256W	J19-B5	TB1-C40	TRUNNION CDU 16X RSVR S2
CC258W	J19-B6	TB1-C38	TRUNNION CDU TACHOMETER LO
CC267R	J19-B7	TB1-G41	SHAFT CDU 16X RSVR S3
CC267W	J19-B8	TB1-G40	SHAFT CDU 16X RSVR S2
CC269W	J19-B9	TB1-G38	SHAFT CDU TACH LO
CC259W	J19-C1	TB1-F40	SCT TRUNNION 1X RSVR S2
CC259R	J19-C2	TB1-F41	SCT TRUNNION 1X RSVR S4
CC255R	J19-C5	TB1-D40	TRUNNION CDU 1/4X RSVR P2
CC255W	J19-C6	TB1-D41	TRUNNION CDU 1/4X RSVR P3
CC263W	J19-C8	TB1-H40	SHAFT CDU 1/2X RSVR P1
CC263R	J19-C9	TB1-H41	SHAFT CDU 1/2X RSVR P3
CC262W	J19-D2	TB1-F69	SCT TRUNNION TRACKER MODE INPUT LO
CC262R	J19-D3	TB1-F68	SCT TRUNNION TRACKER MODE INPUT HI
CC250W	J19-D7	TB1-H69	SHAFT HAND CONTROLLER OUTPUT LO
CC250R	J19-D8	TB1-H68	SHAFT HAND CONTROLLER OUTPUT HI
CC249W	J19-F8	TB1-K69	TRUNNION HAND CONTROLLER OUTPUT LO
CC249R	J19-F9	TB1-K68	TRUNNION HAND CONTROLLER OUTPUT HI
CC253R	J19-G1	TB1-K44	TRUNNION CDU 1/2X RSVR S1
CC266W	J19-G3	TB1-K45	SHAFT CDU 1X RSVR P4
BB133R	J19-G4	J20-D9	SHAFT CDU 1X RSVR P2
CC266R	J19-G4	TB1-K46	SHAFT CDU 1X RSVR P2
* BB118W	J19-G5	J18-G2	SXT SHAFT MDA INPUT LO
* BB118R	J19-G6	J18-G1	SXT SHAFT MDA INPUT HI
CC253W	J19-H1	TB1-K43	TRUNNION CDU 1/2X RSVR S3
BB133W	J19-H4	J20-C9	X TRACKER OUTPUT HI
BB132W	J19-H5	J20-C8	Y TRACKER OUTPUT HI
* BB119W	J19-H6	J18-H1	SXT TRUNNION MDA INPUT LO
CC254R	J19-K1	TB1-H44	TRUNNION CDU 1/2X RSVR S2
CC254W	J19-K2	TB1-H43	TRUNNION CDU 1/2X RSVR S4
CC265W	J19-K4	TB1-H46	SHAFT CDU 1X RSVR P1
BB132R	J19-K5	J20-D8	SHAFT CDU 1X RSVR P3
CC265R	J19-K5	TB1-H45	SHAFT CDU 1X RSVR P3
* BB119R	J19-K6	J18-K1	SXT TRUNNION MDA INPUT HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
BB135	J19-L1	J20-B8	0 VDC OPTICS
BB136	J19-L1	J19-L2	0 VDC OPTICS
BB137	J19-L2	J19-L3	0 VDC OPTICS
* BB136	J19-L2	J19-L1	0 VDC OPTICS
BB138	J19-L3	J19-L4	0 VDC OPTICS
* BB137	J19-L3	J19-L2	0 VDC OPTICS
BB139	J19-L4	J19-L5	0 VDC OPTICS
* BB138	J19-L4	J19-L3	0 VDC OPTICS
BB140	J19-L5	J19-L6	0 VDC OPTICS
* BB139	J19-L5	J19-L4	0 VDC OPTICS
CC270	J19-L6	TB1-F56	0 VDC OPTICS
* BB131	J19-L6	J18-L1	0 VDC OPTICS
* BB140	J19-L6	J19-L5	0 VDC OPTICS
CC243	J19-M1	TB1-G57	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
CC244	J19-M2	TB1-H57	TRUNNION CDU TACH FEEDBACK BUFFERED
CC242	J19-M3	TB1-H58	SHAFT CDU 16X ERROR SIG BUFFERED
CC248	J19-M4	TB1-G58	SHAFT CDU TACH FEEDBACK SIG BUFFERED
CC245	J19-M5	TB1-K57	SCT TRUNNION 1X ERROR SIG BUFFERED
CC246	J19-M6	TB1-F58	SCT TRUNNION TACH FEEDBACK BUFFERED
CC252R	J19-P1	TB1-B19	TRUNNION CDU 1/2X RSVR P3
CC252W	J19-P2	TB1-B18	TRUNNION CDU 1/2X RSVR P2
CC264L	J19-P3	TB1-F48	SHAFT CDU 1X RSVR S2
CC264R	J19-P4	TB1-F49	SHAFT CDU 1X RSVR S3
CC264W	J19-P5	TB1-F50	SHAFT CDU 1X RSVR S1
CC251R	J19-P6	TB1-A57	RESOLVED MODE RELAY COMMAND
BB141	J19-R1	J19-R2	0 VDC OPTICS
CC271	J19-R1	TB1-F78	0 VDC OPTICS
BB142	J19-R2	J19-R3	0 VDC OPTICS
* BB141	J19-R2	J19-R1	0 VDC OPTICS
BB143	J19-R3	J19-S4	0 VDC OPTICS
CC272	J19-R3	TB1-D78	0 VDC OPTICS
* BB142	J19-R3	J19-R2	0 VDC OPTICS
BB134	J19-R4	J20-M4	STRUCTURE GROUND
* BB115	J19-R4	J18-P4	STRUCTURE GROUND
CC251W	J19-R6	TB1-A61	TRACKER MODE RELAY COMMAND
* BB116	J19-R6	J18-R1	TRACKER MODE RELAY COMMAND
CC257W	J19-S1	TB1-K48	TRUNNION CDU MOTOR PHASE 1
CC268W	J19-S2	TB1-H48	SHAFT CDU MOTOR PHASE 1

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR B	SHEET 50	

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC260W	J19-S3	TB1-K52	SCT TRUNNION MOTOR PHASE 1
BB144	J19-S4	J19-S5	0 VDC OPTICS
* BB143	J19-S4	J19-R3	0 VDC OPTICS
* BB144	J19-S5	J19-S4	0 VDC OPTICS
* BB117W	J19-S6	J18-S1	800 CPS 28 V 1 PCT LO OPTICS
CC257R	J19-T1	TB1-K49	TRUNNION CDU MOTOR PHASE 2
CC268R	J19-T2	TB1-H49	SHAFT CDU MOTOR PHASE 2
CC260R	J19-T3	TB1-K51	SCT TRUNNION MOTOR PHASE 2
CC247	J19-T5	TB1-H71	+28 VDC OPTICS
* BB117R	J19-T6	J18-T1	800 CPS 28 V 1 PCT HI OPTICS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR B	SHEET 51	

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC286R	J20-A4	TB1-D68	IMU PRESSURE MONITOR HI	
CC310R	J20-A6	TB1-K74	PRESSURE SENSOR +28 VDC HI	
CC277R	J20-A7	TB1-H66	STAR PRESENCE INPUT HI	
CC277W	J20-A8	TB1-H65	STAR PRESENCE INPUT LO	
CC278R	J20-A9	TB1-K66	PHOTOMETER SIGNAL HI	
CC286W	J20-B4	TB1-D69	IMU PRESSURE MONITOR LO	
CC310W	J20-B6	TB1-K73	PRESSURE SENSOR +28 VDC LO	
CC282	J20-B7	TB1-K58	PHOTOMETER PREAMP OUTPUT BUFFERED HI	
* BB135	J20-B8	J19-L1	0 VDC OPTICS	
CC278W	J20-B9	TB1-K65	PHOTOMETER SIGNAL LO	
CC 56W	J20-C3	J24- 16	STAR PRESENCE LO	183R
CC 56R	J20-C4	J24- 17	STAR PRESENCE HI	183S
CC274R	J20-C6	TB1-G66	TRACKER X ERROR HI	
CC274W	J20-C7	TB1-G65	TRACKER X ERROR LO	
* BB132W	J20-C8	J19-H5	Y TRACKER OUTPUT HI	
* BB133W	J20-C9	J19-H4	X TRACKER OUTPUT HI	
CC309R	J20-D1	TB1-F71	+2.5 VDC CONDITIONING HI	
CC 57W	J20-D3	J23- 75	102.4 KPPS INPUT LO	056R
CC292	J20-D4	TB1-G74	+13 VDC AGC	
CC275R	J20-D6	TB1-F66	TRACKER Y ERROR HI	
CC275W	J20-D7	TB1-F65	TRACKER Y ERROR LO	
* BB132R	J20-D8	J19-K5	SHAFT CDU 1X RSVR P3	
* BB133R	J20-D9	J19-G4	SHAFT CDU 1X RSVR P2	
CC309W	J20-F1	TB1-F70	+2.5 VDC CONDITIONING LO	
CC276W	J20-F2	TB1-B61	AUTOMATIC MARK COMMAND	
CC 57R	J20-F3	J23- 74	102.4 KPPS INPUT HI	056S
CC293	J20-F4	TB1-G73	+3 VDC AGC	
CC289	J20-F5	TB1-H74	+28 VDC AGC	
CC281R	J20-F6	TB1-G68	PHOTOMETER MARK REJECT HI	
CC281W	J20-F7	TB1-G69	PHOTOMETER MARK REJECT LO	
CC 59W	J20-F8	J22- 73	800 CPS 28 V 1 PCT LO IMU	
* BB 97W	J20-F8	J16-S3	800 CPS 28 V 1 PCT LO IMU	
CC 59R	J20-F9	J22- 72	800 CPS 28 V 1 PCT HI IMU	
* BB 97R	J20-F9	J16-S4	800 CPS 28 V 1 PCT HI IMU	
CC294W	J20-G1	TB1-F72	0 VDC CONDITIONING	
CC294R	J20-G2	TB1-G72	+20 VDC CONDITIONING	
CC291	J20-G3	TB1-H73	0 VDC AGC	
BB145	J20-G4	J20-G5	800 CPS 28 V 1 PCT LO OPTICS	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR B	SHEET 52	

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC273R	J20-G5	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
*	BB145	J20-G5	J20-G4	800 CPS 28 V 1 PCT LO OPTICS
	CC273W	J20-G6	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS
	BB161	J20-H1	J20-K1	0 VDC IMU
	CC320	J20-H1	TB1-F75	0 VDC IMU
	CC287	J20-H2	TB1-K78	+28 VDC AGC BUSS A
	CC288	J20-H3	TB1-K77	+28 VDC AGC BUSS B
	CC273L	J20-H4	TB1-A71	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR
*	BB 92W	J20-H5	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	BB 92R	J20-H6	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
	BB162	J20-K1	J20-K2	0 VDC IMU
	CC321	J20-K1	TB1-F73	0 VDC IMU
*	BB161	J20-K1	J20-H1	0 VDC IMU
	CC322	J20-K2	TB1-C68	0 VDC IMU
*	BB162	J20-K2	J20-K1	0 VDC IMU
	BB147	J20-K5	J20-L5	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	BB 33W	J20-K5	J12-K4	800 CPS 28 V 5 PCT L-90 DEG LO IMU
	BB146	J20-K6	J20-L6	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	BB 33R	J20-K6	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	CC306	J20-L1	TB1-G 7	+28 VDC IMU
	CC307	J20-L1	TB1-G71	+28 VDC IMU
*	BB 81	J20-L1	J15-S2	+28 VDC IMU
	CC308	J20-L2	TB1-G71	+28 VDC IMU
*	BB 4	J20-L2	J11-S5	+28 VDC IMU
*	BB 93	J20-L2	J16-S2	+28 VDC IMU
	CC285W	J20-L5	TB1-C76	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	BB147	J20-L5	J20-K5	800 CPS 28 V 5 PCT L-90 DEG LO IMU
	CC285R	J20-L6	TB1-C75	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	BB146	J20-L6	J20-K6	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	BB152	J20-M1	J20-N1	+28 VDC IMU
*	BB 35	J20-M1	J12-S1	+28 VDC IMU
*	BB102	J20-M1	J17-T4	+28 VDC IMU
	BB154	J20-M2	J20-N2	+28 VDC IMU
*	BB 36	J20-M2	J12-S2	+28 VDC IMU
*	BB103	J20-M2	J17-T3	+28 VDC IMU
	CC311W	J20-M3	TB1-C78	400 CPS 115 V LO
*	BB134	J20-M4	J19-R4	STRUCTURE GROUND
*	CC 57A	J20-M4	SHLD CC 57	STRUCTURE GROUND

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE-NONE	REV LTR B	SHEET 53	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC284	J20-M5	TB1-K72	+28 VDC MDV	
*	BB106	J20-M5	J17-R5	+28 VDC MDV	
*	BB 34	J20-M6	J12-G4	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
	BB153	J20-N1	J20-N2	+28 VDC IMU	
*	BB 2	J20-N1	J11-S1	+28 VDC IMU	
*	BB152	J20-N1	J20-M1	+28 VDC IMU	
*	BB 3	J20-N2	J11-S2	+28 VDC IMU	
*	BB153	J20-N2	J20-N1	+28 VDC IMU	
*	BB154	J20-N2	J20-M2	+28 VDC IMU	
	CC311R	J20-N3	TB1-B78	400 CPS 115 V HI	
	CC280	J20-N4	TB1-B71	+28 VDC OPTICS TRACKER POWER	
	CC 58	J20-N5	J23- 47	+28 VDC MDV	157R
	CC283	J20-N5	TB1-K71	+28 VDC MDV	
*	BB 46	J20-N5	J12-L1	+28 VDC MDV	
	CC279	J20-N6	TB1-H71	+28 VDC OPTICS	
*	BB111	J20-N6	J17-T6	+28 VDC OPTICS	
*	BB114	J20-N6	J18-T2	+28 VDC OPTICS	
	BB148	J20-P1	J20-T1	+28 VDC IMU BUSS A	
	CC313	J20-P1	TB1-H76	+28 VDC IMU BUSS A	
	BB150	J20-P2	J20-T2	+28 VDC IMU BUSS B	
	CC315	J20-P2	TB1-H75	+28 VDC IMU BUSS B	
	CC323	J20-P3	TB1-D78	0 VDC OPTICS	
	CC324	J20-P4	TB1-F78	0 VDC OPTICS	
*	BB 32	J20-P5	J12-S6	+28 VDC OPTICS	
*	BB 90	J20-P5	J16-S5	+28 VDC OPTICS	
*	BB 91	J20-P6	J16-S6	+28 VDC OPTICS	
	BB149	J20-R1	J20-S1	+28 VDC IMU BUSS A	
	CC312	J20-R1	TB1-K76	+28 VDC IMU BUSS A	
	BB151	J20-R2	J20-S2	+28 VDC IMU BUSS B	
	CC314	J20-R2	TB1-K75	+28 VDC IMU BUSS B	
	CC301	J20-R3	TB1-H72	+28 VDC STBY	
*	BB104	J20-R3	J17-T1	+28 VDC STBY	
*	BB105	J20-R4	J17-T2	+28 VDC STBY	
	BB157	J20-R5	J20-T5	+28 VDC OPTICS BUSS A	
	BB158	J20-R5	J20-S5	+28 VDC OPTICS BUSS A	
	CC318	J20-R5	TB1-G78	+28 VDC OPTICS BUSS A	
	BB159	J20-R6	J20-T6	+28 VDC OPTICS BUSS B	
	BB160	J20-R6	J20-S6	+28 VDC OPTICS BUSS B	

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SCALE-NONE	REV LTR B	SHEET 54	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC319	J20-R6	TB1-G77	+28 VDC OPTICS BUSS B
	CC296	J20-S1	TB1-H76	+28 VDC IMU BUSS A
*	BB149	J20-S1	J20-R1	+28 VDC IMU BUSS A
	CC298	J20-S2	TB1-H75	+28 VDC IMU BUSS B
*	BB151	J20-S2	J20-R2	+28 VDC IMU BUSS B
	BB155	J20-S3	J20-T3	+28 VDC STBY BUSS A
	CC316	J20-S3	TB1-G76	+28 VDC STBY BUSS A
	BB156	J20-S4	J20-T4	+28 VDC STBY BUSS B
	CC317	J20-S4	TB1-G75	+28 VDC STBY BUSS B
	CC303	J20-S5	TB1-H78	+28 VDC OPTICS BUSS A
*	BB158	J20-S5	J20-R5	+28 VDC OPTICS BUSS A
	CC305	J20-S6	TB1-G77	+28 VDC OPTICS BUSS B
*	BB160	J20-S6	J20-R6	+28 VDC OPTICS BUSS B
	CC295	J20-T1	TB1-K76	+28 VDC IMU BUSS A
*	BB148	J20-T1	J20-P1	+28 VDC IMU BUSS A
	CC297	J20-T2	TB1-K75	+28 VDC IMU BUSS B
*	BB150	J20-T2	J20-P2	+28 VDC IMU BUSS B
	CC299	J20-T3	TB1-G76	+28 VDC STBY BUSS A
*	BB155	J20-T3	J20-S3	+28 VDC STBY BUSS A
	CC300	J20-T4	TB1-G75	+28 VDC STBY BUSS B
*	BB156	J20-T4	J20-S4	+28 VDC STBY BUSS B
	CC302	J20-T5	TB1-G78	+28 VDC OPTICS BUSS A
*	BB157	J20-T5	J20-R5	+28 VDC OPTICS BUSS A
	CC304	J20-T6	TB1-H77	+28 VDC OPTICS BUSS B
*	BB159	J20-T6	J20-R6	+28 VDC OPTICS BUSS B

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE-NONE	REV LTR B	SHEET 55	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 429Y	J21- 1	E 29	COMMONED RETURNS GROUND	233R
*	A 425Y	J21- 2	E 28	COMMONED RETURNS GROUND	228R
*	A 430R	J21- 3	J10- 44	PARITY FAIL ALARM	234S
*	A 422Y	J21- 4	E 28	COMMONED RETURNS GROUND	244R
*	A 422R	J21- 5	J10- 42	TIMING (1.5 CPS)	244S
*	A 429R	J21- 6	J10- 33	SCALER FAIL ALARM	233S
*	A 425R	J21- 7	J10- 18	OUT 0 15	228S
*	A 444R	J21- 8	J10- 14	OUT 0 11	224S
*	A 444Y	J21- 9	E 33	COMMONED RETURNS GROUND	224R
*	A 426R	J21- 10	J10- 40	PROGRAM ALARM	229S
*	A 430Y	J21- 11	E 29	COMMONED RETURNS GROUND	234R
*	A 450	J21- 12	J10- 70	SPARE	211
*	A 467Y	J21- 13	E 26	COMMONED RETURNS GROUND	208R
*	A 467R	J21- 14	J10- 48	ERROR RESET	208S
*	A 459Y	J21- 15	E 27	COMMONED RETURNS GROUND	205R
*	A 434Y	J21- 16	E 30	COMMONED RETURNS GROUND	238R
*	A 423Y	J21- 17	E 28	COMMONED RETURNS GROUND	232R
*	A 424Y	J21- 18	E 28	COMMONED RETURNS GROUND	227R
*	A 443Y	J21- 19	E 32	COMMONED RETURNS GROUND	223R
*	A 440Y	J21- 20	E 32	COMMONED RETURNS GROUND	219R
*	A 446R	J21- 21	J10- 31	OUT 0 7	220S
*	A 446Y	J21- 22	E 33	COMMONED RETURNS GROUND	220R
*	A 447R	J21- 23	J10- 15	OUT 0 12	225S
*	A 426Y	J21- 24	E 28	COMMONED RETURNS GROUND	229R
*	A 431R	J21- 25	J10- 43	COUNTER FAIL ALARM	235S
*	A 449	J21- 26	J10- 71	POWER SUPPLY SYNC	212
*	A 465R	J21- 27	J10- 47	OR OF C1 THRU C33	210S
*	A 466Y	J21- 28	E 26	COMMONED RETURNS GROUND	201R
*	A 466R	J21- 29	J10- 34	KEY CODE 1	201S
*	A 462Y	J21- 30	E 27	COMMONED RETURNS GROUND	207R
*	A 462R	J21- 31	J10- 39	TEST ALARM	207S
*	A 459R	J21- 32	J10- 38	KEY CODE 5	205S
*	A 434R	J21- 33	J10- 64	TC TRAP ALARM	238S
*	A 423R	J21- 34	J10- 32	PROGRAM CHECK FAIL ALARM	232S
*	A 424R	J21- 35	J10- 17	OUT 0 14	227S
*	A 443R	J21- 36	J10- 63	OUT 0 10	223S
*	A 440R	J21- 37	J10- 30	OUT 0 6	219S
*	A 436R	J21- 38	J10- 74	OUT 0 2	215S

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE-NONE	REV LTR B	SHEET 56	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 436Y	J21- 39	E 31	COMMONED RETURNS GROUND	215R
*	A 437R	J21- 40	J10- 60	OUT 0 3	216S
*	A 437Y	J21- 41	E 31	COMMONED RETURNS GROUND	216R
*	A 441R	J21- 42	J10- 61	OUT 0 8	221S
*	A 447Y	J21- 43	E 33	COMMONED RETURNS GROUND	225R
*	A 427R	J21- 44	J10- 41	COMPUTER ACTIVITY	230S
*	A 431Y	J21- 45	E 29	COMMONED RETURNS GROUND	235R
*	A 448	J21- 46	J10- 72	SPARE	213
*	A 465Y	J21- 47	E 26	COMMONED RETURNS GROUND	210R
*	A 464R	J21- 48	J10- 35	KEY CODE 2	202S
	A 556	J21- 50	E 35	GROUP 3 SHIELD	250
*	A 463Y	J21- 51	E 27	COMMONED RETURNS GROUND	204R
*	A 463R	J21- 52	J10- 37	KEY CODE 4	204S
*	A 461Y	J21- 53	E 27	COMMONED RETURNS GROUND	203R
*	A 460Y	J21- 54	E 27	COMMONED RETURNS GROUND	209R
*	A 469	J21- 55	J10- 46	SPARE	249
*	A 433Y	J21- 56	E 30	COMMONED RETURNS GROUND	237R
*	A 428Y	J21- 57	E 29	COMMONED RETURNS GROUND	231R
*	A 445Y	J21- 58	E 33	COMMONED RETURNS GROUND	226R
*	A 442Y	J21- 59	E 32	COMMONED RETURNS GROUND	222R
*	A 439Y	J21- 60	E 31	COMMONED RETURNS GROUND	218R
*	A 435Y	J21- 61	E 30	COMMONED RETURNS GROUND	214R
*	A 484	J21- 62	J10- 58	DISKY GROUND	251
*	A 486	J21- 63	J10- 55	SPARE	240
*	A 480	J21- 64	J10- 57	+13 V B	241
*	A 482	J21- 65	J10- 59	+28 VDC AGC	243
*	A 438Y	J21- 66	E 31	COMMONED RETURNS GROUND	217R
*	A 438R	J21- 67	J10- 28	OUT 0 4	217S
*	A 441Y	J21- 68	E 32	COMMONED RETURNS GROUND	221R
*	A 427Y	J21- 69	E 29	COMMONED RETURNS GROUND	230R
*	A 432Y	J21- 70	E 30	COMMONED RETURNS GROUND	236R
*	A 432R	J21- 71	J10- 53	KEY RELEASE	236S
*	A 451	J21- 72	J10- 75	SPARE	247
	A 557	J21- 73	E 37	GROUP 2 SHIELD	245
*	A 464Y	J21- 74	E 26	COMMONED RETURNS GROUND	202R
*	A 461R	J21- 82	J10- 36	KEY CODE 3	203S
*	A 460R	J21- 83	J10- 49	KEY RESET NAV	209S
*	A 468	J21- 84	J10- 45	SPARE	248

MANNED
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SIZE A

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SCALE - NONE

REV LTR B

SHEET 57

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 433R	J21- 85	J10- 51	RUPT LOCK ALARM	237S
*	A 428R	J21- 86	J10- 19	TELEMETRY FAIL ALARM	231S
*	A 445R	J21- 87	J10- 16	OUT 0 13	226S
*	A 442R	J21- 88	J10- 62	OUT 0 9	222S
*	A 439R	J21- 89	J10- 29	OUT 0 5	218S
*	A 435R	J21- 90	J10- 73	OUT 0 1	214S
*	A 485	J21- 91	J10- 56	DISKY GROUND	239

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SCALE - NONE

REV LTR B

SHEET 58

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 303G	J22- 2	J09- 50	ATTITUDE DISABLE SIG TO NAA
*	CC349W	J22- 4	J16-B8	COS AOG 1X S3
*	A 303R	J22- 7	J09- 41	+28 VDC FROM NAA
*	A 303Y	J22- 8	J09- 40	0 VDC FROM NAA
*	CC348R	J22- 12	J16-A8	SIN AOG 1X S2
*	CC349R	J22- 13	J16-C8	COS AOG 1X S1
	CC327R	J22- 14	TB1-B16	SIN AMG 1X
	CC327W	J22- 15	TB1-B15	SIN AMG 1X RET
	CC328W	J22- 16	TB1-B13	COS AMG 1X S3
*	A 288Y	J22- 18	J09- 4	PITCH ATTIT IMPULSE CONTR OUTPUT UP
*	CC348W	J22- 26	J16-A9	SIN AOG 1X S4
	CC328R	J22- 32	TB1-B14	COS AMG 1X S1
	CC329W	J22- 33	TB1-A15	SIN AIG 1X RET
*	A 288R	J22- 35	J09- 5	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN
*	A 288G	J22- 36	J09- 18	PITCH ATTIT IMPULSE CONTR INPUT
*	CC347	J22- 38	J17-L3	IMU TEMP LIGHT (MAIN PANEL)
*	CC346	J22- 39	J17-M3	0 VDC SPACECRAFT
*	A 157	J22- 40	J08- 43	MASTER CAUTION LIGHT RET
	CC326	J22- 41	TB1-C 4	+28 VDC SPACECRAFT
	CC325W	J22- 42	TB1-G 3	ATTITUDE CONTROL RELAY CONTROL
	CC 43B	J22- 48	SHLD CC 43	NAA SHIELD GROUND
*	CC 44R	J22- 49	J17-C4	YAW ERROR BODY AXIS HI
	CC 48B	J22- 51	SHLD CC 48	NAA SHIELD GROUND
*	CC 45R	J22- 53	J17-C3	YAW ERROR BODY OFFSET AXIS HI
	CC 47B	J22- 54	SHLD CC 47	NAA SHIELD GROUND
	CC329R	J22- 56	TB1-A16	SIN AIG 1X
*	A 289Y	J22- 58	J09- 20	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT
*	A 287R	J22- 60	J09- 17	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT
*	A 407	J22- 62	P10- 8	MAIN PANEL GIMBAL LOCK LIGHT
*	CC 4	J22- 63	J12-G3	G+N ERROR LIGHT (MAIN PANEL)
*	A 295	J22- 64	J09- 14	SPACECRAFT LAMP TEST
*	A 160	J22- 65	J08- 53	MASTER WARNING LIGHT RET
	CC325R	J22- 67	TB1-G 5	LOCK CDU RELAY CONTROL
	CC325L	J22- 68	TB1-H 5	FINE ALIGN RELAY CONTROL
*	CC 59R	J22- 72	J20-F9	800 CPS 28 V 1 PCT HI IMU
*	CC 59W	J22- 73	J20-F8	800 CPS 28 V 1 PCT LO IMU
*	CC 43R	J22- 74	J17-A4	ROLL ERROR BODY AXIS HI
*	CC 43W	J22- 75	J17-B4	ROLL ERROR BODY AXIS LO

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC 44W	J22- 76	J17-D4	YAW ERROR BODY AXIS LO
	CC 44B	J22- 77	SHLD CC 44	NAA SHIELD GROUND
*	CC 48R	J22- 78	J17-D1	PITCH ERROR BODY AND BODY OFFSET AXIS HI
*	CC 48W	J22- 79	J17-C1	PITCH ERROR BODY AND BODY OFFSET AXIS LO
	CC 45B	J22- 80	SHLD CC 45	NAA SHIELD GROUND
*	CC 45W	J22- 81	J17-D3	YAW ERROR BODY OFFSET AXIS LO
*	CC 47W	J22- 82	J17-B3	ROLL ERROR BODY OFFSET AXIS LO
*	CC 47R	J22- 83	J17-A3	ROLL ERROR BODY OFFSET AXIS HI
	CC330R	J22- 84	TB1-A13	COS AIG 1X
	CC330W	J22- 85	TB1-A14	COS AIG 1X RET
*	A 289R	J22- 87	J09- 6	YAW ATTIT IMPULSE CONTR OUTPUT LEFT
*	A 289G	J22- 88	J09- 7	YAW ATTIT IMPULSE CONTR INPUT
*	A 287Y	J22- 89	J09- 3	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT
*	A 287G	J22- 90	J09- 16	ROLL ATTIT IMPULSE CONTR INPUT

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC 12W	J23- 1	E 5	0 VDC IMU	140R
*	CC 12R	J23- 2	J13-N6	PIPA SWITCHING PULSE	140S
*	CC 13R	J23- 3	J14-D1	+ DX GYRO RATE	142R
*	CC 40R	J23- 4	J16-M4	COMPUTER 800 PPS IN PHASE SYNC	149S
*	CC 18W	J23- 5	E 6	0 VDC IMU	147S
*	CC 11W	J23- 6	E 5	0 VDC IMU	139R
*	CC 11R	J23- 7	J13-N5	PIPA INTERROGATE PULSE	139S
*	CC 36R	J23- 8	E 13	OG DAC MDA SIG LO	126R
*	CC 37W	J23- 9	E 13	OG DAC MDA SIG LO	127R
*	CC 13W	J23- 10	E 6	0 VDC IMU	142S
*	CC 14R	J23- 11	J14-D2	- DX GYRO RATE	143R
*	CC 39R	J23- 12	J16-L4	COMPUTER 800 PPS OUT OF PHASE SYNC	150S
*	CC 40W	J23- 13	J16-L3	COMPUTER 800 PPS SYNC RET	149R
*	CC 18R	J23- 14	J14-D6	- DZ GYRO RATE	147R
*	CC 17R	J23- 15	J14-D5	+ DZ GYRO RATE	146R
*	CC 17W	J23- 16	E 6	0 VDC IMU	146S
*	CC 35W	J23- 17	E 11	MG DAC MDA SIG LO	131R
*	CC 35R	J23- 18	J15-C7	MG CDU - DELTA THETA COMMAND	131S
*	CC 53W	J23- 19	J18-H3	SHAFT DELTA THETA COMMAND COMMON	115R
*	CC 53R	J23- 20	J18-K3	SHAFT - DELTA THETA COMMAND	115S
*	CC 36W	J23- 21	J15-B9	OG CDU + DELTA THETA COMMAND	126S
*	CC 37R	J23- 22	J15-C9	OG CDU - DELTA THETA COMMAND	127S
*	CC 32R	J23- 23	E 9	IG DAC MDA SIG LO	128R
*	CC 14W	J23- 24	E 6	0 VDC IMU	143S
*	CC 19R	J23- 25	J14-K4	GYRO RESET PULSE	148R
*	CC 5	J23- 26	J12-M1	AGC POWER SUPPLY FAIL SIG HI	157S
*	CC 39W	J23- 27	J16-L3	COMPUTER 800 PPS SYNC RET	150R
*	CC 51R	J23- 28	J17-R3	COMPUTER 12.8 KPPS SYNC	155S
*	CC 7R	J23- 29	J12-G2	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154S
*	CC 6R	J23- 30	J12-G1	COMPUTER 25.6 KPPS IN PHASE SYNC	153S
*	CC 1R	J23- 31	J11-L6	COMPUTER 3200 PPS OUT OF PHASE SYNC	152S
*	CC 16R	J23- 32	J14-D4	- DY GYRO RATE	145R
*	CC 16W	J23- 33	E 6	0 VDC IMU	145S
*	CC 34R	J23- 34	E 11	MG DAC MDA SIG LO	130R
*	CC 34W	J23- 35	J15-B7	MG CDU + DELTA THETA COMMAND	130S
*	CC 55W	J23- 36	J18-H3	SHAFT DELTA THETA COMMAND COMMON	114R
*	CC 55R	J23- 37	J18-G3	SHAFT + DELTA THETA COMMAND	114S
*	A 503	J23- 38	P11-A	+28 VDC AGC BUSS A	167

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 531	J23- 39	P12-A	+28 VDC AGC BUSS B	168
*	A 532	J23- 40	P12-A	+28 VDC AGC BUSS B	168
*	A 551	J23- 41	P12-J	0 VDC AGC	170
*	CC 32W	J23- 42	J15-B5	IG CDU + DELTA THETA COMMAND	128S
*	CC 33R	J23- 43	J15-C5	IG CDU - DELTA THETA COMMAND	129S
*	CC 19W	J23- 44	E 6	0 VDC IMU	148S
*	CC 3R	J23- 46	J12-K1	COMPUTER 102.4 KPPS SYNC	156S
*	CC 58	J23- 47	J20-N5	+28 VDC MDV	157R
	A 562	J23- 48	TB1-D71	CONDITION LAMP TEST	157T
*	CC 51W	J23- 49	J17-S3	0 VDC IMU	155R
*	CC 7W	J23- 50	J12-F2	COMPUTER 25.6 KPPS SYNC RET	154R
*	CC 6W	J23- 51	J12-F2	COMPUTER 25.6 KPPS SYNC RET	153R
*	CC 1W	J23- 52	J11-M5	COMPUTER 3200 PPS SYNC RET	152R
*	CC 2W	J23- 53	J11-M5	COMPUTER 3200 PPS SYNC RET	151R
*	CC 2R	J23- 54	J11-M6	COMPUTER 3200 PPS IN PHASE SYNC	151S
*	CC 15R	J23- 55	J14-D3	+ DY GYRO RATE	144R
*	CC 15W	J23- 56	E 6	0 VDC IMU	144S
	CC331	J23- 57	TB1-F52	THERMISTER LO	199R
*	A 400	J23- 58	P09-115	AGC THERMISTER HI	199S
*	CC 54W	J23- 59	J18-H5	TRUNNION DELTA THETA COMMAND COMMON	117R
*	CC 54R	J23- 60	J18-G5	TRUNNION - DELTA THETA COMMAND	117S
*	A 504	J23- 61	P11-A	+28 VDC AGC BUSS A	167
	A 558	J23- 62	TB1-K78	+28 VDC AGC BUSS A	167
	A 559	J23- 63	TB1-K78	+28 VDC AGC BUSS A	167
	A 560	J23- 64	TB1-K77	+28 VDC AGC BUSS B	168
	A 561	J23- 65	TB1-K77	+28 VDC AGC BUSS B	168
*	A 552	J23- 66	P12-J	0 VDC AGC	170
*	CC 33W	J23- 69	E 9	IG DAC MDA SIG LO	129R
*	CC 3W	J23- 73	J12-H1	COMPUTER 102.4 KPPS SYNC RET	156R
*	CC 57R	J23- 74	J20-F3	102.4 KPPS INPUT HI	056S
*	CC 57W	J23- 75	J20-D3	102.4 KPPS INPUT LO	056R
*	CC 52W	J23- 88	J18-H5	TRUNNION DELTA THETA COMMAND COMMON	116R
*	CC 52R	J23- 89	J18-K5	TRUNNION + DELTA THETA COMMAND	116S
*	A 523	J23- 90	P11-J	0 VDC AGC	169
*	A 524	J23- 91	P11-J	0 VDC AGC	169

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC333	J24- 1	TB1-G74	+13 VDC AGC	176
*	CC 20R	J24- 2	J15-M5	+ DELTA V X	132R
	CC334	J24- 3	TB1-H73	0 VDC AGC	177
*	A 132Y	J24- 4	P01- 49	FINE ALIGN MODE INDICATION TO AGC	161
*	CC 41W	J24- 5	J16-A7	ZERO ENCODER MODE INDICATION TO AGC	158
	CC335	J24- 6	TB1-G73	+3 VDC AGC	175
*	CC 29W	J24- 7	E 10	MG DAC MDA SIG LO	123R
*	CC 29R	J24- 8	J15-C6	MG ENCODER - DELTA THETA	123S
*	CC 20W	J24- 9	E 14	COMPUTER RET	132S
*	CC 21R	J24- 10	J15-M6	- DELTA V X	133R
	CC290	J24- 11	TB1-H74	+28 VDC AGC	166
*	A 114Y	J24- 12	J06- 69	TRANSFER SWITCH INDICATION TO AGC	164
*	A 136Y	J24- 13	P01- 76	ATTIT CONT MODE INDICATION TO AGC	162
*	A 133Y	J24- 14	P01- 59	COARSE ALIGN MODE INDICATION TO AGC	159
	A 564R	J24- 15	TB1-A69	OPTICS ZERO ENCODER INDICATION	104
*	CC 56W	J24- 16	J20-C3	STAR PRESENCE LO	183R
*	CC 56R	J24- 17	J20-C4	STAR PRESENCE HI	183S
*	CC 28R	J24- 18	E 10	MG DAC MDA SIG LO	122R
*	CC 28W	J24- 19	J15-B6	MG ENCODER + DELTA THETA	122S
*	CC 30R	J24- 20	E 12	OG DAC MDA SIG LO	118R
*	CC 31W	J24- 21	E 12	OG DAC MDA SIG LO	119R
*	CC 26R	J24- 22	E 8	IG DAC MDA SIG LO	120R
*	CC 21W	J24- 23	E 14	COMPUTER RET	133S
*	CC 22R	J24- 24	J15-L6	+ DELTA V Y	134R
*	CC 8R	J24- 25	J12-D6	IMU FAIL	141S
	CC332W	J24- 26	TB1-C56	AGC COMMON (ISS)	165
*	A 131Y	J24- 29	P01- 39	ENTRY MODE INDICATION TO AGC	163
*	CC 38W	J24- 30	J15-A3	MANUAL CDU MODE INDICATION TO AGC	160
*	A 304Y	J24- 31	J09- 42	TRACKER ON INDICATION TO AGC	107
*	A 414Y	J24- 32	P10- 19	NOT MARK	103
*	CC 24R	J24- 33	J15-K4	- DELTA V Z	137R
*	CC 24W	J24- 34	E 16	COMPUTER RET	137S
*	CC 46W	J24- 35	J17-H4	SHAFT ENCODER DELTA THETA OUT COMMON	109R
*	CC 46R	J24- 36	J17-K4	SHAFT ENCODER - DELTA THETA OUTPUT	109S
*	CC 49W	J24- 37	J17-H6	TRUNNION ENCODER DELTA THETA OUT COM	111R
*	CC 49R	J24- 38	J17-K6	TRUNNION ENCODER - DELTA THETA OUT	111S
*	CC 30W	J24- 39	J15-B8	OG ENCODER + DELTA THETA	118S
*	CC 31R	J24- 40	J15-C8	OG ENCODER - DELTA THETA	119S

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC 26W	J24- 41	J15-B4	IG ENCODER + DELTA THETA	120S
*	CC 27W	J24- 42	E 8	IG DAC MDA SIG LO	121R
*	CC 22W	J24- 43	E 15	COMPUTER RET	134S
*	CC 23R	J24- 44	J15-K6	- DELTA V Y	135R
*	CC 10R	J24- 45	J12-D4	ACCEL FAIL	138S
*	CC 8W	J24- 46	J12-F6	IMU FAIL RET	141R
	A 563	J24- 51	E 23	AGC SIGNAL 178 SHIELD RETURN	178
*	A 309Y	J24- 54	J09- 49	OPTICS MODE SW COMPUTER INDICATION	106
*	A 417Y	J24- 55	P10- 44	MARK	102
*	CC 25R	J24- 56	J15-K5	+ DELTA V Z	136R
*	CC 25W	J24- 57	E 16	COMPUTER RET	136S
*	CC 50W	J24- 58	J17-H4	SHAFT ENCODER DELTA THETA OUT COMMON	108R
*	CC 50R	J24- 59	J17-G4	SHAFT ENCODER + DELTA THETA OUTPUT	108S
*	CC 42W	J24- 60	J17-H6	TRUNNION ENCODER DELTA THETA OUT COM	110R
*	CC 42R	J24- 61	J17-G6	TRUNNION ENCODER + DELTA THETA OUT	110S
	CC337	J24- 64	E 20	AGC SIGNAL 179 SHIELD RETURN	179
*	CC 27R	J24- 67	J15-C4	IG ENCODER - DELTA THETA	121S
*	CC 23W	J24- 69	E 15	COMPUTER RET	135S
*	CC 9R	J24- 70	J12-D5	CDU FAIL	124S
*	CC 9W	J24- 71	J12-F5	CDU FAIL RET	124R
*	CC 10W	J24- 72	J12-F4	ACCEL FAIL RET	138R
	A 566Y	J24- 83	TB1-A68	SXT POWER ON INDICATION	105
	A 564Y	J24- 84	TB1-A68	AGC COMMON (OSS)	101
	CC336	J24- 87	E 18	AGC SIGNAL 179 SHIELD RETURN	179

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 96R	P01- 1	J06- 1	PITCH ATTITUDE ERROR METER +	
*	A 96Y	P01- 2	J06- 2	PITCH ATTITUDE ERROR METER -	
	A 124G	P01- 4	TB1-K 3	COARSE ALIGN RELAY CONTROL	
	A 124R	P01- 5	TB1-H 5	FINE ALIGN RELAY CONTROL	
*	A 97	P01- 6	J06- 6	ENTRY RELAY CONTROL RESET	
	A 125	P01- 7	TB1-G 7	+28 VDC IMU	
*	A 98	P01- 9	J06- 9	MODE SWITCH INTERLOCK	
	A 126Y	P01- 10	TB1-B 7	800 CPS 28 V 1 PCT LO IMU	
	A 126R	P01- 11	TB1-A 7	800 CPS 28 V 1 PCT HI IMU	
	A 124Y	P01- 12	TB1-K 5	ZERO ENCODER RELAY CONTROL	
	A 127R	P01- 13	TB1-B50	FINE ALIGN MODE COMMAND FROM AGC	
*	A 100R	P01- 14	J06- 14	YAW ATTITUDE ERROR METER +	
*	A 100Y	P01- 15	J06- 15	YAW ATTITUDE ERROR METER -	
*	A 101	P01- 18	J06- 18	MODE RELAY COMMON TO D AND C ELECT	
*	A 102	P01- 22	J06- 22	ATTITUDE CONTROL MODE LIGHT	
*	A 103	P01- 23	J06- 23	FINE ALIGN RELAY CONTROL	
	A 128Y	P01- 24	TB1-G 3	ATTITUDE CONTROL RELAY CONTROL	
*	A 105	P01- 25	J06- 25	ENTRY RELAY CONTROL	
	A 129	P01- 26	TB1-A26	IMU DELAY LIGHT HI	
	A 130Y	P01- 27	TB1-C48	CDU MANUAL MODE COMMAND FROM AGC	
*	A 106Y	P01- 28	J06- 28	ROLL ATTITUDE ERROR METER -	
*	A 106R	P01- 29	J06- 29	ROLL ATTITUDE ERROR METER +	
*	A 107	P01- 34	J06- 34	ZERO ENCODER RELAY CONTROL	
*	A 108	P01- 35	J06- 35	COARSE ALIGN RELAY CONTROL	
*	A 109	P01- 36	J06- 36	CDU MANUAL RELAY CONTROL	
*	A 110	P01- 37	J06- 37	MANUAL ALIGN	
	A 127Y	P01- 38	TB1-C50	ZERO ENCODER MODE COMMAND FROM AGC	
	A 131Y	P01- 39	J24- 29	ENTRY MODE INDICATION TO AGC	163
*	A 111	P01- 46	J06- 46	ATTITUDE CONTROL MODE INTERLOCK	
	A 127G	P01- 48	TB1-A50	COARSE ALIGN MODE COMMAND FROM AGC	
	A 132Y	P01- 49	J24- 4	FINE ALIGN MODE INDICATION TO AGC	161
*	A 112	P01- 56	J06- 56	MANUAL ALIGN	
	A 128G	P01- 57	TB1-H 3	ENTRY RELAY CONTROL	
	A 130R	P01- 58	TB1-C49	ENTRY MODE COMMAND FROM AGC	
	A 133Y	P01- 59	J24- 14	COARSE ALIGN MODE INDICATION TO AGC	159
	A 134Y	P01- 68	TB1-C56	AGC COMMON (ISS)	
	A 128R	P01- 69	TB1-G 5	LOCK CDU RELAY CONTROL	
	A 135R	P01- 70	TB1-K33	IG CDU 1X ERROR SIG	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 135Y	P01- 71	TB1-K34	IG CDU ERROR SIG RET	
	A 136Y	P01- 76	J24- 13	ATTIT CONT MODE INDICATION TO AGC	162
	A 137	P01- 78	TB1-D 3	0 VDC IMU	
*	A 116	P01- 79	J06- 79	ENTRY MODE LIGHT	
	A 138R	P01- 80	TB1-A54	PANEL BRIGHTNESS CONTROL	
	A 139R	P01- 82	TB1-H33	MG CDU 1X ERROR SIG	
	A 139Y	P01- 83	TB1-H34	MG CDU ERROR SIG RET	
	A 140	P01- 84	TB1-G 8	STRUCTURE GROUND	
	A 141	P01- 88	TB1-D71	CONDITION LAMP TEST	
	A 142	P01- 89	TB1-K72	+28 VDC MDV	
	A 143N	P01- 90	TB1-C 2	400 CPS 6 V HI	
	A 144	P01- 91	TB1-C 3	MODE LAMP TEST PWR	
*	A 118	P01- 92	J06- 92	COARSE ALIGN MODE LIGHT	
*	A 119	P01- 93	J06- 93	MODE RELAY COMMON	
*	A 120	P01- 94	J06- 94	FINE ALIGN MODE LIGHT	
	A 138Y	P01- 95	TB1-A55	PANEL BRIGHTNESS CONTROL	
	A 145R	P01- 96	TB1-G33	OG CDU 1X ERROR SIG	
	A 145Y	P01- 97	TB1-G34	OG CDU ERROR SIG RET	
	A 143R	P01-103	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER	
*	A 121	P01-104	J06-104	ZERO ENCODER MODE LIGHT	
*	A 122	P01-105	J06-105	CDU MANUAL MODE LIGHT	
	A 143G	P01-106	TB1-C 1	400 CPS 6 V HI	
	A 143Y	P01-108	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 178R	P02-A	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
A 179R	P02-A*	TB1-A13	COS AIG 1X S3
A 178Y	P02-B	TB1-B 5	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
A 179Y	P02-B*	TB1-A14	COS AIG 1X RET S1
A 180R	P02-C	TB1-F15	COS AOG 16X S3
A 180Y	P02-D	TB1-F14	COS AOG 16X S1
A 181R	P02-E	TB1-G14	SIN AOG 16X S2
A 181Y	P02-F	TB1-G15	SIN AOG 16X S4
A 182R	P02-F*	TB1-A15	SIN AIG 1X RET S2
A 183R	P02-G	TB1-H10	COS AMG 16X S3
A 182Y	P02-G*	TB1-A16	SIN AIG 1X S4
A 183Y	P02-H	TB1-H 9	COS AMG 16X S1
A 184R	P02-J	TB1-K 9	SIN AMG 16X S2
A 184Y	P02-K	TB1-K10	SIN AMG 16X S4
A 185R	P02-L	TB1-B13	COS AMG 1X S3
A 185Y	P02-M	TB1-B14	COS AMG 1X S1
A 186Y	P02-N	TB1-B15	SIN AMG 1X RET S2
A 186R	P02-P	TB1-B16	SIN AMG 1X S4
A 187R	P02-R	TB1-K 7	3200 CPS 2 V HI
A 187Y	P02-S	TB1-H 7	3200 CPS 2 V LO
A 188R	P02-T	TB1-K 8	3200 CPS 2 V FEEDBACK HI
A 188Y	P02-U	TB1-H 8	3200 CPS 2 V FEEDBACK LO
A 189R	P02-W	TB1-H15	COS AIG 16X S3
A 189Y	P02-X	TB1-H14	COS AIG 16X S1
A 190R	P02-Y	TB1-K14	SIN AIG 16X S2
A 190Y	P02-Z	TB1-K15	SIN AIG 16X S4

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 191Y	P03-A	TB1-G28	X GYRO ERROR SIG
A 192Y	P03-A*	TB1-D19	MG TORQUE MOTOR RET
A 193Y	P03-B	TB1-F28	Z GYRO ERROR SIG
A 194Y	P03-B*	TB1-D19	MG TORQUE MOTOR RET
A 195R	P03-C	TB1-A28	IMU OG ERROR SIG
A 194R	P03-C*	TB1-D18	MG TORQUE MOTOR HI
A 196R	P03-D	TB1-C14	COS AOG 1X S3
A 197R	P03-D*	TB1-F18	IG TORQUE MOTOR HI
A 196Y	P03-E	TB1-C15	COS AOG 1X S1
A 197Y	P03-E*	TB1-F19	IG TORQUE MOTOR RET
A 198R	P03-F	TB1-D15	SIN AOG 1X S4
A 199Y	P03-F*	TB1-F19	IG TORQUE MOTOR RET
A 198Y	P03-G	TB1-D14	SIN AOG 1X S2
A 199R	P03-G*	TB1-F18	IG TORQUE MOTOR HI
A 200Y	P03-H	TB1-K29	IG CDU ATTITUDE STEERING ERROR
A 201	P03-H*	TB1-G 7	+28 VDC IMU
A 200R	P03-J	TB1-K28	IG CDU ERROR SIG RET
A 202	P03-J*	TB1-A56	GIMBAL LOCK SIGNAL
A 203R	P03-K	TB1-H28	MG CDU ERROR SIG RET
A 203Y	P03-L	TB1-H29	MG CDU ATTITUDE STEERING ERROR
A 204Y	P03-M	TB1-K13	YAW ERROR BODY OFFSET AXIS LO
A 204R	P03-N	TB1-H13	PITCH YAW RSVR S3
A 205Y	P03-P	TB1-G13	PITCH ERROR BODY AND BODY OFFSET AXIS LO
A 205R	P03-R	TB1-F13	PITCH-YAW RSVR S4
A 195G	P03-U	TB1-C28	IMU IG AND Y GYRO ERROR SIG
A 195Y	P03-V	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO
A 195N	P03-W	TB1-B28	IMU MG ERROR SIG
A 206Y	P03-X	TB1-C19	OG TORQUE MOTOR RET
A 206R	P03-Y	TB1-C18	OG TORQUE MOTOR HI
A 192R	P03-Z	TB1-D18	MG TORQUE MOTOR HI

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	A 207Y	P04-D1	P05- 27	SXT SHAFT 16X RSVR P2
	A 207R	P04-D2	P05- 30	SXT SHAFT 16X RSVR P4
	A 208R	P04-E1	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
	A 208Y	P04-E2	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
	A 209R	P04-F1	P05- 59	SXT TRUNNION 64X RSVR P4
	A 209Y	P04-F2	P05- 58	SXT TRUNNION 64X RSVR P2

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	A 210	P05- 1	TB1-G11	STRUCTURE GROUND
	A 211Y	P05- 2	TB1-C46	SXT SHAFT 1/2X RSVR S4
	A 211R	P05- 3	TB1-C45	SXT SHAFT 1/2X RSVR S2
	A 212R	P05- 5	TB1-G51	SXT TRUNNION MOTOR PHASE 2
	A 213Y	P05- 6	TB1-D46	SXT SHAFT 1/2X RSVR S1
	A 213R	P05- 7	TB1-D45	SXT SHAFT 1/2X RSVR S3
	A 214R	P05- 8	TB1-G49	SXT SHAFT MOTOR PHASE 2
	A 215	P05- 9	TB1-B67	0 VDC OPTICS
	A 216Y	P05- 10	TB1-A65	TRACKER Y REFERENCE
	A 216R	P05- 11	TB1-A66	TRACKER Y REFERENCE
	A 217R	P05- 12	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
	A 217Y	P05- 13	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
	A 217G	P05- 14	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
	A 212G	P05- 16	TB1-G50	0 VDC OPTICS
	A 218R	P05- 17	TB1-B66	TRACKER X REFERENCE
	A 218Y	P05- 18	TB1-B65	TRACKER X REFERENCE
	A 214G	P05- 19	TB1-G50	0 VDC OPTICS
	A 219R	P05- 23	TB1-H37	SXT SHAFT TACH HI
	A 219Y	P05- 24	TB1-H38	SXT SHAFT TACH LO
*	A 207Y	P05- 27	P04-D1	SXT SHAFT 16X RSVR P2
*	A 207R	P05- 30	P04-D2	SXT SHAFT 16X RSVR P4
	A 220R	P05- 32	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
	A 212Y	P05- 33	TB1-G52	SXT TRUNNION MOTOR PHASE 1
	A 221R	P05- 34	TB1-D37	SXT TRUNNION TACH HI
	A 221Y	P05- 35	TB1-D38	SXT TRUNNION TACH LO
	A 214Y	P05- 36	TB1-G48	SXT SHAFT MOTOR PHASE 1
	A 222	P05- 37	TB1-C67	0 VDC OPTICS
	A 223R	P05- 38	TB1-D43	SXT TRUNNION 1X RSVR S3
	A 223Y	P05- 39	TB1-D44	SXT TRUNNION 1X RSVR S1
	A 224Y	P05- 40	TB1-C43	SXT TRUNNION 1X RSVR S2
	A 224R	P05- 41	TB1-C44	SXT TRUNNION 1X RSVR S4
	A 225R	P05- 43	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
	A 225Y	P05- 44	TB1-B 3	400 CPS 6 V LO
	A 226Y	P05- 51	TB1-G45	SXT SHAFT 1X RSVR S4
	A 226R	P05- 52	TB1-G46	SXT SHAFT 1X RSVR S2
	A 227R	P05- 53	TB1-F46	SXT SHAFT 1X RSVR S1
	A 227Y	P05- 54	TB1-F45	SXT SHAFT 1X RSVR S3
	A 220Y	P05- 55	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 209Y	P05- 58	P04-F2	SXT TRUNNION 64X RSVR P2
*	A 209R	P05- 59	P04-F1	SXT TRUNNION 64X RSVR P4
	A 228R	P05- 64	TB1-D66	TRACKER PREAMP OUTPUT HI
	A 228Y	P05- 65	TB1-D65	TRACKER PREAMP OUTPUT LO
	A 229	P05- 68	TB1-B71	+28 VDC OPTICS TRACKER POWER
	A 230	P05- 69	TB1-D78	0 VDC OPTICS
	A 231Y	P05- 70	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS
	A 231R	P05- 71	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
	A 232R	P05- 72	TB1-C66	TRACKER AUTOMATIC GAIN CONTROL HI
	A 232Y	P05- 73	TB1-C65	TRACKER AUTOMATIC GAIN CONTROL LO
	A 233R	P05- 76	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
	A 233Y	P05- 77	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
	A 234Y	P05- 78	TB1-B46	SXT SHAFT 16X RSVR S4
	A 234R	P05- 79	TB1-B45	SXT SHAFT 16X RSVR S2
	A 235R	P05- 80	TB1-K66	PHOTOMETER SIGNAL HI
	A 235Y	P05- 81	TB1-K65	PHOTOMETER SIGNAL LO
	A 236Y	P05- 82	TB1-A45	SXT SHAFT 16X RSVR S1
	A 236R	P05- 83	TB1-A46	SXT SHAFT 16X RSVR S3
	A 237R	P05- 84	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
	A 237Y	P05- 85	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS
	A 238Y	P05- 86	TB1-A44	SXT TRUNNION 64X RSVR S1
	A 238R	P05- 87	TB1-A43	SXT TRUNNION 64X RSVR S3
	A 239R	P05- 88	TB1-H66	STAR PRESENCE INPUT HI
	A 239Y	P05- 89	TB1-H65	STAR PRESENCE INPUT LO
	A 240Y	P05- 90	TB1-B44	SXT TRUNNION 64X RSVR S4
	A 240R	P05- 91	TB1-B43	SXT TRUNNION 64X RSVR S2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 241G	P06-A	TB1-C74	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
A 242Y	P06-A*	TB1-K64	IRIG TEMP IND SENSOR RET
A 241Y	P06-B	TB1-C73	800 CPS 28 V 5 PCT IMU WHEELS LO
A 243R	P06-B*	TB1-K74	PRESSURE SENSOR +28 VDC HI
A 241R	P06-C	TB1-C72	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
A 243Y	P06-C*	TB1-K73	PRESSURE SENSOR +28 VDC LO
A 244	P06-D	TB1-G71	+28 VDC IMU
A 245R	P06-D*	TB1-D68	IMU PRESSURE MONITOR HI
A 246	P06-E	TB1-H26	0 VDC IMU
A 245Y	P06-E*	TB1-D69	IMU PRESSURE MONITOR LO
A 247	P06-F	TB1-C54	-28 VDC
A 248R	P06-F*	TB1-C77	800 CPS 28 V 5 PCT HI TO BLOWERS
A 249	P06-G	TB1-G70	STRUCTURE GROUND
A 248Y	P06-G*	TB1-C76	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 250R	P06-H	TB1-C18	OG TORQUE MOTOR HI
A 250Y	P06-J	TB1-C19	OG TORQUE MOTOR RET
A 251	P06-K	TB1-H61	IMU TEMP SENSOR COM
A 252Y	P06-L	TB1-H64	IRIG TEMP CONT SENSOR RET
A 252R	P06-M	TB1-H63	IRIG TEMP CONT SENSOR HI
A 253R	P06-N	TB1-H62	ACCEL INDICATING SENSOR HI
A 253Y	P06-P	TB1-G61	ACCEL TEMP IND SENSOR RET
A 254Y	P06-R	TB1-C61	EMERGENCY HTR LO-OPER AND STBY
A 255R	P06-V	TB1-D60	IMU CONTROL HTR HI
A 255Y	P06-W	TB1-D61	IMU CONTROL HTR LO
A 254R	P06-X	TB1-C60	IMU EMERGENCY HTR HI
A 256	P06-Y	TB1-D62	EMERG HTR CONT MODULE LO
A 242R	P06-Z	TB1-K63	IRIG TEMP IND SENSOR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 257L	P07-A	TB1-C23	Z GYRO TORQUE +
A 258Y	P07-A*	TB1-D10	Y PIP ERROR LO
A 257W	P07-B	TB1-C22	Z GYRO TORQUE RET
A 259R	P07-B*	TB1-C11	Z PIP ERROR HI
A 257R	P07-C	TB1-C21	Z GYRO TORQUE -
A 259Y	P07-C*	TB1-C10	Z PIP ERROR LO
A 260L	P07-D	TB1-F23	X GYRO TORQUE +
A 260W	P07-E	TB1-F22	X GYRO TORQUE RET
A 260R	P07-F	TB1-F21	X GYRO TORQUE -
A 261G	P07-F*	TB1-A10	OG ADA
A 262L	P07-G	TB1-D23	Y GYRO TORQUE +
A 261N	P07-G*	TB1-A11	MG ADA
A 262W	P07-H	TB1-D22	Y GYRO TORQUE RET
A 261R	P07-H*	TB1-B11	IG ADA
A 262R	P07-J	TB1-D21	Y GYRO TORQUE -
A 261Y	P07-J*	TB1-B10	0 VDC IMU
A 263L	P07-K	TB1-G23	Z PIP TORQUE +
A 263W	P07-L	TB1-G22	Z PIP TORQUE RET
A 263R	P07-M	TB1-G21	Z PIP TORQUE -
A 264L	P07-N	TB1-H23	Y PIP TORQUE +
A 264W	P07-P	TB1-H22	Y PIP TORQUE RET
A 264R	P07-R	TB1-H21	Y PIP TORQUE -
A 265L	P07-U	TB1-K23	X PIP TORQUE +
A 265W	P07-V	TB1-K22	X PIP TORQUE RET
A 265R	P07-W	TB1-K21	X PIP TORQUE -
A 266R	P07-X	TB1-F11	X PIP ERROR HI
A 266Y	P07-Y	TB1-F10	X PIP ERROR LO
A 258R	P07-Z	TB1-D11	Y PIP ERROR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 267G	P08- 1	TB1-K50	0 VDC OPTICS
A 267R	P08- 2	TB1-K51	SCT TRUNNION MOTOR PHASE 2
A 267Y	P08- 3	TB1-K52	SCT TRUNNION MOTOR PHASE 1
A 268R	P08- 5	TB1-H51	SCT SHAFT MOTOR PHASE 2
A 268Y	P08- 6	TB1-H52	SCT SHAFT MOTOR PHASE 1
A 268G	P08- 7	TB1-H50	0 VDC OPTICS
A 269R	P08- 9	TB1-F44	SCT TRUNNION 1X RSVR P2
A 269Y	P08- 10	TB1-F43	SCT TRUNNION 1X RSVR P4
A 270R	P08- 12	TB1-G43	SCT TRUNNION 1X RSVR P3
A 270Y	P08- 13	TB1-G44	SCT TRUNNION 1X RSVR P1
A 271Y	P08- 18	TB1-F40	SCT TRUNNION 1X RSVR S2
A 271R	P08- 19	TB1-F41	SCT TRUNNION 1X RSVR S4
A 272R	P08- 21	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 272Y	P08- 22	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 273R	P08- 24	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 273Y	P08- 25	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 274R	P08- 27	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS
A 274Y	P08- 28	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
A 275R	P08- 30	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS
A 275Y	P08- 31	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
A 276R	P08- 33	TB1-F37	SCT TRUNNION TACH HI
A 276Y	P08- 34	TB1-F38	SCT TRUNNION TACH LO
* A 276A	P08- 35	SHLD A 276	0 VDC OPTICS
* A 278A	P08- 37	SHLD A 278	0 VDC OPTICS
A 278R	P08- 38	TB1-K37	SCT SHAFT TACH HI
A 278Y	P08- 39	TB1-K38	SCT SHAFT TACH LO
A 279R	P08- 41	TB1-G46	SCT SHAFT 1X RSVR P2
A 279Y	P08- 42	TB1-G45	SCT SHAFT 1X RSVR P4
A 280R	P08- 44	TB1-F46	SCT SHAFT 1X RSVR P3
A 280Y	P08- 45	TB1-F45	SCT SHAFT 1X RSVR P1
A 281R	P08- 50	TB1-K41	SCT SHAFT 1X RSVR S2
A 281Y	P08- 51	TB1-K40	SCT SHAFT 1X RSVR S4
A 282R	P08- 53	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER
A 282Y	P08- 54	TB1-B 4	400 CPS 6 V LO
A 283R	P08- 56	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER
A 283Y	P08- 57	TB1-B 4	400 CPS 6 V LO
A 284	P08- 59	TB1-G70	STRUCTURE GROUND

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 332Y	P09- 1	TB1-A16	SIN AIG 1X
A 333Y	P09- 2	TB1-A13	COS AIG 1X
A 333R	P09- 3	TB1-A14	COS AIG 1X RET
A 334Y	P09- 4	TB1-D15	SIN AOG 1X S4
A 335	P09- 5	TB1-D77	0 VDC OPTICS
A 336	P09- 6	TB1-H71	+28 VDC OPTICS
A 337R	P09- 7	TB1-A63	+120 VDC PIP
A 338R	P09- 9	TB1-G31	OG CDU 16X ERROR SIG
A 339	P09- 10	TB1-H70	STRUCTURE GROUND
A 340R	P09- 11	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
A 340Y	P09- 12	TB1-B 7	800 CPS 28 V 1 PCT LO IMU
A 341R	P09- 13	TB1-C75	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 341Y	P09- 14	TB1-C76	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 342	P09- 19	TB1-G57	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
A 343	P09- 20	TB1-H58	SHAFT CDU 16X ERROR SIG BUFFERED
A 344	P09- 21	TB1-H55	SXT TRUNNION TACH FEEDBACK BUFFERED
A 345	P09- 22	TB1-H57	TRUNNION CDU TACH FEEDBACK BUFFERED
A 332R	P09- 23	TB1-A15	SIN AIG 1X RET
A 346Y	P09- 24	TB1-B16	SIN AMG 1X
A 347R	P09- 25	TB1-B13	COS AMG 1X S3
A 334R	P09- 26	TB1-D14	SIN AOG 1X S2
A 348Y	P09- 27	TB1-C15	COS AOG 1X S1
A 337G	P09- 28	TB1-C63	+32 VDC PIP
A 337Y	P09- 29	TB1-B63	+32, +120 VDC RET PIP
A 338Y	P09- 31	TB1-G30	OG CDU ERROR SIG RET
A 349G	P09- 32	TB1-C74	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
A 349R	P09- 33	TB1-C72	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
A 350	P09- 37	TB1-K57	SCT TRUNNION 1X ERROR SIG BUFFERED
A 351	P09- 38	TB1-H54	SCT SHAFT 1X ERROR SIG BUFFERED
A 352	P09- 39	TB1-G58	SHAFT CDU TACH FEEDBACK SIG BUFFERED
A 353	P09- 40	TB1-F58	SCT TRUNNION TACH FEEDBACK BUFFERED
A 354Y	P09- 41	TB1-K34	IG CDU ERROR SIG RET
A 346R	P09- 42	TB1-B15	SIN AMG 1X RET
A 355Y	P09- 43	TB1-H34	MG CDU ERROR SIG RET
A 347Y	P09- 44	TB1-B14	COS AMG 1X S1
A 348R	P09- 45	TB1-C14	COS AOG 1X S3
A 356	P09- 46	TB1-G73	+3 VDC AGC
A 357	P09- 47	TB1-H72	+28 VDC STBY

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 358	P09- 48	TB1-B62	0 VDC IMU
A 359	P09- 49	TB1-G71	+28 VDC IMU
A 349Y	P09- 50	TB1-C73	800 CPS 28 V 5 PCT IMU WHEELS LO
A 360	P09- 54	TB1-G55	TRACKER X DRIVE BUFFERED HI
A 361	P09- 55	TB1-G54	TRACKER Y DRIVE BUFFERED HI
A 362	P09- 56	TB1-F57	0 VDC OPTICS
A 363	P09- 57	TB1-K55	SXT SHAFT TACH FEEDBACK BUFFERED
A 364	P09- 58	TB1-K54	SCT SHAFT TACH FEEDBACK BUFFERED
A 354R	P09- 59	TB1-K33	IG CDU 1X ERROR SIG
A 355R	P09- 60	TB1-H33	MG CDU 1X ERROR SIG
A 365Y	P09- 61	TB1-G34	OG CDU ERROR SIG RET
A 366	P09- 62	TB1-G74	+13 VDC AGC
A 367	P09- 63	TB1-H73	0 VDC AGC
A 368	P09- 64	TB1-H74	+28 VDC AGC
A 369R	P09- 65	TB1-F70	+2.5 VDC CONDITIONING LO
A 370	P09- 66	TB1-C54	-28 VDC
A 371	P09- 67	TB1-D26	AGC POWER SUPPLY FAIL SIG HI
A 372	P09- 68	TB1-B62	0 VDC IMU
A 373	P09- 69	TB1-A26	IMU DELAY LIGHT HI
A 374R	P09- 70	TB1-K 8	3200 CPS 2 V FEEDBACK HI
A 375	P09- 71	TB1-G56	TRACKER PREAMP OUTPUT BUFFERED HI
A 376	P09- 72	TB1-K58	PHOTOMETER PREAMP OUTPUT BUFFERED HI
A 377	P09- 73	TB1-H56	SXT TRUNNION MDA INPUT BUFFERED
A 378	P09- 74	TB1-K56	SXT SHAFT MDA INPUT BUFFERED
A 379Y	P09- 75	TB1-F28	Z GYRO ERROR SIG
A 380Y	P09- 76	TB1-G28	X GYRO ERROR SIG
A 365R	P09- 77	TB1-G33	OG CDU 1X ERROR SIG
A 381Y	P09- 78	TB1-D69	IMU PRESSURE MONITOR LO
A 381R	P09- 79	TB1-D68	IMU PRESSURE MONITOR HI
A 382	P09- 80	TB1-D52	TRAY 4 THERMISTER HI
A 369Y	P09- 81	TB1-F71	+2.5 VDC CONDITIONING HI
A 383R	P09- 82	TB1-G72	+20 VDC CONDITIONING
A 383Y	P09- 83	TB1-F72	0 VDC CONDITIONING
A 384	P09- 84	TB1-C26	G+N ERROR LIGHT HI
A 385	P09- 85	TB1-A56	GIMBAL LOCK SIGNAL
A 386	P09- 86	TB1-B26	IMU TEMP CONT FAIL LIGHT HI
A 387Y	P09- 87	TB1-H 2	25.6 KC LO IMU
A 374Y	P09- 88	TB1-H 8	3200 CPS 2 V FEEDBACK LO

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 388G	P09- 89	TB1-C58	IG CDU FAILURE INDICATION	
A 388N	P09- 90	TB1-C57	MG CDU FAILURE INDICATION	
A 389Y	P09- 91	TB1-F19	IG TORQUE MOTOR RET	
A 389R	P09- 92	TB1-F18	IG TORQUE MOTOR HI	
A 390N	P09- 93	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO	
A 390G	P09- 94	TB1-C28	IMU IG AND Y GYRO ERROR SIG	
A 391G	P09- 95	TB1-B40	X PIP ERROR MONITOR	
A 391R	P09- 96	TB1-A40	Y PIP ERROR MONITOR	
A 392	P09- 97	TB1-F52	THERMISTER LO	
A 393	P09- 98	TB1-D51	TRAY 3 THERMISTER HI	
A 394Y	P09-102	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
A 394R	P09-103	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
A 395Y	P09-104	TB1-K 2	25.6 KC LO OPTICS	
A 387R	P09-105	TB1-H 1	25.6 KC HI IMU	
A 396	P09-106	TB1-F64	ACCEL TEMP (TELEMETRY)	
A 397	P09-107	TB1-A64	BLOWER CURRENT SENSOR (TELEMETRY)	
A 388Y	P09-108	TB1-D58	0 VDC IMU	
A 398Y	P09-109	TB1-C19	OG TORQUE MOTOR RET	
A 399Y	P09-110	TB1-D19	MG TORQUE MOTOR RET	
A 390Y	P09-111	TB1-A28	IMU OG ERROR SIG	
A 390R	P09-112	TB1-B28	IMU MG ERROR SIG	
A 391Y	P09-113	TB1-A41	Z PIP ERROR MONITOR	
A 391N	P09-114	TB1-B41	0 VDC IMU	
A 400	P09-115	J23- 58	AGC THERMISTER HI	199S
A 401	P09-116	TB1-F51	TRAY 2 THERMISTER HI	
A 402Y	P09-124	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS	
A 402R	P09-125	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS	
A 395R	P09-126	TB1-K 1	25.6 KC HI OPTICS	
A 403	P09-127	TB1-D64	IRIG TEMP (TELEMETRY)	
A 404	P09-128	TB1-C64	TEMPERATURE CONTROL SIG LO	
A 405	P09-129	TB1-B64	HTR CURRENT (TELEMETRY)	
A 388R	P09-130	TB1-D57	OG CDU FAILURE INDICATION	
A 398R	P09-131	TB1-C18	OG TORQUE MOTOR HI	
A 399R	P09-132	TB1-D18	MG TORQUE MOTOR HI	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 406	P10- 1	TB1-H70	STRUCTURE GROUND	
	A 407	P10- 8	J22- 62	MAIN PANEL GIMBAL LOCK LIGHT	
	A 408	P10- 9	TB1-D70	0 VDC SPACECRAFT	
	A 409	P10- 10	TB1-D72	CONDITION LAMP TEST	
	A 410	P10- 12	TB1-A56	GIMBAL LOCK SIGNAL	
	A 411	P10- 13	TB1-C62	0 VDC IMU	
	A 412	P10- 14	TB1-H71	+28 VDC OPTICS	
	A 413Y	P10- 15	TB1-B61	AUTOMATIC MARK COMMAND	
*	A 299	P10- 16	J09- 31	MANUAL MARK COMMAND	
	A 414Y	P10- 19	J24- 32	NOT MARK	103
	A 415	P10- 24	TB1-A23	GIMBAL LOCK LIGHT HI	
*	A 298Y	P10- 32	J09- 30	ACCEPT MARK	
*	A 301Y	P10- 33	J09- 33	MARK REJECT	
*	A 314Y	P10- 38	J09- 77	400 CPS 1.5 V ZERO PHASE	
*	A 314R	P10- 39	J09- 65	400 CPS 1.5 V PI PHASE	
	A 416Y	P10- 43	TB1-A69	OPTICS ZERO ENCODER INDICATION	
	A 417Y	P10- 44	J24- 55	MARK	102
*	A 314G	P10- 48	J09- 95	400 CPS 26 V HI	
	A 418R	P10- 49	TB1-A75	400 CPS 26 V LO	
	A 419Y	P10- 68	TB1-C78	400 CPS 115 V LO	
	A 419R	P10- 69	TB1-B78	400 CPS 115 V HI	
*	A 311Y	P10- 92	J09- 52	400 CPS 6 V LO	
	A 420R	P10- 93	TB1-B 2	400 CPS 6 V LO	
	A 420Y	P10- 94	TB1-B 4	400 CPS 6 V LO	
	A 418Y	P10- 95	TB1-B75	400 CPS 6 V LO	
	A 421	P10-104	TB1-K71	+28 VDC MDV	
*	A 311G	P10-105	J09- 61	400 CPS 6 V HI	
*	A 311R	P10-106	J09- 53	400 CPS 6 V HI	
	A 420G	P10-107	TB1-C 1	400 CPS 6 V HI	
	A 420N	P10-108	TB1-C 2	400 CPS 6 V HI	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 502	P11-A	TB1-K78	+28 VDC AGC BUSS A	
A 503	P11-A	J23- 38	+28 VDC AGC BUSS A	167
A 504	P11-A	J23- 61	+28 VDC AGC BUSS A	167
A 505	P11-B	TB1-K76	+28 VDC IMU BUSS A	
A 506	P11-B	TB1-K76	+28 VDC IMU BUSS A	
A 507	P11-B	TB1-K76	+28 VDC IMU BUSS A	
A 508	P11-C	TB1-H76	+28 VDC IMU BUSS A	
A 509	P11-C	TB1-H76	+28 VDC IMU BUSS A	
A 510	P11-C	TB1-H76	+28 VDC IMU BUSS A	
A 511	P11-D	TB1-F75	0 VDC IMU	
A 512	P11-D	TB1-B68	0 VDC IMU	
A 513	P11-E	TB1-C69	0 VDC IMU	
A 514	P11-E	TB1-D74	0 VDC IMU	
A 515	P11-F	TB1-F73	0 VDC IMU	
A 516	P11-F	TB1-B70	0 VDC IMU	
A 517	P11-G	TB1-F78	0 VDC OPTICS	
A 518	P11-G	TB1-K53	0 VDC OPTICS	
A 519	P11-G	TB1-K50	0 VDC OPTICS	
A 520	P11-H	TB1-G78	+28 VDC OPTICS BUSS A	
A 521	P11-H	TB1-G78	+28 VDC OPTICS BUSS A	
A 522	P11-H	TB1-H78	+28 VDC OPTICS BUSS A	
A 523	P11-J	J23- 90	0 VDC AGC	169
A 524	P11-J	J23- 91	0 VDC AGC	169
A 525	P11-J	P12-J	0 VDC AGC	
A 526Y	P11-K	TB1-C78	400 CPS 115 V LO	
A 527	P11-L	TB1-G70	STRUCTURE GROUND	
A 528	P11-M	TB1-G76	+28 VDC STBY BUSS A	
A 529	P11-M	TB1-G76	+28 VDC STBY BUSS A	
A 526R	P11-N	TB1-B78	400 CPS 115 V HI	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 530	P12-A	TB1-K77	+28 VDC AGC BUSS B	
	A 531	P12-A	J23- 39	+28 VDC AGC BUSS B	168
	A 532	P12-A	J23- 40	+28 VDC AGC BUSS B	168
	A 533	P12-B	TB1-K75	+28 VDC IMU BUSS B	
	A 534	P12-B	TB1-K75	+28 VDC IMU BUSS B	
	A 535	P12-B	TB1-K75	+28 VDC IMU BUSS B	
	A 536	P12-C	TB1-H75	+28 VDC IMU BUSS B	
	A 537	P12-C	TB1-H75	+28 VDC IMU BUSS B	
	A 538	P12-C	TB1-H75	+28 VDC IMU BUSS B	
	A 539	P12-D	TB1-C70	0 VDC IMU	
	A 540	P12-D	TB1-D73	0 VDC IMU	
	A 541	P12-E	TB1-F74	0 VDC IMU	
	A 542	P12-E	TB1-B69	0 VDC IMU	
	A 543	P12-F	TB1-C68	0 VDC IMU	
	A 544	P12-F	TB1-D75	0 VDC IMU	
	A 545	P12-G	TB1-D78	0 VDC OPTICS	
	A 546	P12-G	TB1-G53	0 VDC OPTICS	
	A 547	P12-G	TB1-G50	0 VDC OPTICS	
	A 548	P12-H	TB1-G77	+28 VDC OPTICS BUSS B	
	A 549	P12-H	TB1-G77	+28 VDC OPTICS BUSS B	
	A 550	P12-H	TB1-H77	+28 VDC OPTICS BUSS B	
	A 551	P12-J	J23- 41	0 VDC AGC	170
	A 552	P12-J	J23- 66	0 VDC AGC	170
*	A 525	P12-J	P11-J	0 VDC AGC	
	A 553	P12-L	TB1-K70	STRUCTURE GROUND	
	A 554	P12-M	TB1-G75	+28 VDC STBY BUSS B	
	A 555	P12-M	TB1-G75	+28 VDC STBY BUSS B	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 490R	P13- 1	TB1-C66	TRACKER AUTOMATIC GAIN CONTROL HI
A 491R	P13- 2	TB1-D66	TRACKER PREAMP OUTPUT HI
A 493R	P13- 5	TB1-G55	TRACKER X DRIVE BUFFERED HI
A 494R	P13- 6	TB1-G54	TRACKER Y DRIVE BUFFERED HI
A 495Y	P13- 7	TB1-F57	TRACKER PREAMP OUTPUT BUFFERED LO
A 492	P13- 10	E 25	TRACKER SIGNAL COMMON
A 493Y	P13- 13	TB1-F56	TRACKER X DRIVE BUFFERED LO
A 494Y	P13- 14	TB1-F56	TRACKER Y DRIVE BUFFERED LO
A 495R	P13- 15	TB1-G56	TRACKER PREAMP OUTPUT BUFFERED HI
A 496Y	P13- 23	TB1-F65	TRACKER Y ERROR LO
A 497Y	P13- 24	TB1-G65	TRACKER X ERROR LO
A 498Y	P13- 27	TB1-A65	TRACKER Y REFERENCE
A 498R	P13- 28	TB1-A66	TRACKER Y REFERENCE
A 496R	P13- 31	TB1-F66	TRACKER Y ERROR HI
A 497R	P13- 32	TB1-G66	TRACKER X ERROR HI
A 499R	P13- 35	TB1-B66	TRACKER X REFERENCE
A 499Y	P13- 36	TB1-B65	TRACKER X REFERENCE
A 500	P13- 37	TB1-K70	STRUCTURE GROUND
A 501	P13- 38	TB1-B71	+28 VDC OPTICS TRACKER POWER

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 3B	SHLD A 3	TB1-A12	0 VDC IMU
* A 4B	SHLD A 4	TB1-A17	0 VDC IMU
* A 12B	SHLD A 12	TB1-K32	IG CDU ERROR SIG RET
* A 16B	SHLD A 16	TB1-H17	0 VDC IMU
* A 17B	SHLD A 17	TB1-K17	0 VDC IMU
* A 18B	SHLD A 18	TB1-K30	IG CDU ERROR SIG RET
* A 19B	SHLD A 19	TB1-F30	IG CDU MDA INPUT RET
* A 20B	SHLD A 20	TB1-F34	IG CDU ENCODER COMMON
* A 23B	SHLD A 23	TB1-B12	0 VDC IMU
* A 24B	SHLD A 24	TB1-B17	0 VDC IMU
* A 32B	SHLD A 32	TB1-H32	MG CDU ERROR SIG RET
* A 36B	SHLD A 36	TB1-H12	0 VDC IMU
* A 37B	SHLD A 37	TB1-K12	0 VDC IMU
* A 38B	SHLD A 38	TB1-H30	MG CDU ERROR SIG RET
* A 39B	SHLD A 39	TB1-D30	MG CDU MDA INPUT RET
* A 40B	SHLD A 40	TB1-D34	MG CDU ENCODER COMMON
* A 43B	SHLD A 43	TB1-C17	0 VDC IMU
* A 44B	SHLD A 44	TB1-D17	0 VDC IMU
* A 52B	SHLD A 52	TB1-G32	OG CDU ERROR SIG RET
* A 56B	SHLD A 56	TB1-F17	0 VDC IMU
* A 57B	SHLD A 57	TB1-G17	0 VDC IMU
* A 59B	SHLD A 59	TB1-F32	OG CDU ERROR SIG RET
* A 60B	SHLD A 60	TB1-C30	OG CDU MDA INPUT RET
* A 61B	SHLD A 61	TB1-C34	OG CDU ENCODER COMMON
* A 64B	SHLD A 64	TB1-H47	0 VDC OPTICS
* A 65B	SHLD A 65	TB1-K47	0 VDC OPTICS
* A 66B	SHLD A 66	TB1-H39	0 VDC OPTICS
* A 72B	SHLD A 72	TB1-C47	0 VDC OPTICS
* A 73B	SHLD A 73	TB1-D47	0 VDC OPTICS
* A 74B	SHLD A 74	TB1-A47	0 VDC OPTICS
* A 75B	SHLD A 75	TB1-B47	0 VDC OPTICS
* A 76B	SHLD A 76	TB1-G39	0 VDC OPTICS
* A 77B	SHLD A 77	TB1-G36	0 VDC OPTICS
* A 78B	SHLD A 78	TB1-A34	SHAFT CDU ENCODER COMMON
* A 81B	SHLD A 81	TB1-D39	0 VDC OPTICS
* A 82B	SHLD A 82	TB1-D42	0 VDC OPTICS
* A 83B	SHLD A 83	TB1-C42	0 VDC OPTICS
* A 89B	SHLD A 89	TB1-H42	0 VDC OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 90B	SHLD A 90	TB1-K42	0 VDC OPTICS
* A 91B	SHLD A 91	TB1-A42	0 VDC OPTICS
* A 92B	SHLD A 92	TB1-B42	0 VDC OPTICS
* A 93B	SHLD A 93	TB1-C42	0 VDC OPTICS
* A 94B	SHLD A 94	TB1-C36	0 VDC OPTICS
* A 95B	SHLD A 95	TB1-B34	TRUNNION CDU ENCODER COMMON
* A 99B	SHLD A 99	TB1-A49	STRUCTURE GROUND
* A 104B	SHLD A 104	TB1-H 4	STRUCTURE GROUND
* A 113B	SHLD A 113	TB1-D56	AGC SIGNAL 178 SHIELD RETURN
* A 114B	SHLD A 114	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 124B	SHLD A 124	TB1-K 4	STRUCTURE GROUND
* A 127B	SHLD A 127	TB1-A49	STRUCTURE GROUND
* A 128B	SHLD A 128	TB1-G 4	STRUCTURE GROUND
* A 130B	SHLD A 130	TB1-B49	STRUCTURE GROUND
* A 131B	SHLD A 131	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 132B	SHLD A 132	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 133B	SHLD A 133	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 134B	SHLD A 134	TB1-D56	AGC SIGNAL 178 SHIELD RETURN
* A 135B	SHLD A 135	TB1-K32	IG CDU ERROR SIG RET
* A 136B	SHLD A 136	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 139B	SHLD A 139	TB1-H32	MG CDU ERROR SIG RET
* A 145B	SHLD A 145	TB1-G32	OG CDU ERROR SIG RET
* A 179B	SHLD A 179	TB1-A12	0 VDC IMU
* A 180B	SHLD A 180	TB1-F17	0 VDC IMU
* A 181B	SHLD A 181	TB1-G17	0 VDC IMU
* A 182B	SHLD A 182	TB1-A17	0 VDC IMU
* A 183B	SHLD A 183	TB1-H12	0 VDC IMU
* A 184B	SHLD A 184	TB1-K12	0 VDC IMU
* A 185B	SHLD A 185	TB1-B12	0 VDC IMU
* A 186B	SHLD A 186	TB1-B17	0 VDC IMU
* A 188B	SHLD A 188	TB1-H12	0 VDC IMU
* A 189B	SHLD A 189	TB1-H17	0 VDC IMU
* A 190B	SHLD A 190	TB1-K17	0 VDC IMU
* A 191B	SHLD A 191	TB1-G27	0 VDC IMU
* A 193B	SHLD A 193	TB1-G27	0 VDC IMU
* A 196B	SHLD A 196	TB1-C17	0 VDC IMU
* A 198B	SHLD A 198	TB1-D17	0 VDC IMU
* A 200B	SHLD A 200	TB1-K28	IG CDU ERROR SIG RET

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 203B	SHLD A 203	TB1-H28	MG CDU ERROR SIG RET
* A 204B	SHLD A 204	TB1-G12	0 VDC IMU
* A 205B	SHLD A 205	TB1-F12	0 VDC IMU
* A 211B	SHLD A 211	TB1-C47	0 VDC OPTICS
* A 213B	SHLD A 213	TB1-D47	0 VDC OPTICS
* A 216B	SHLD A 216	TB1-A67	0 VDC OPTICS
* A 218B	SHLD A 218	TB1-B67	0 VDC OPTICS
* A 219B	SHLD A 219	TB1-H36	0 VDC OPTICS
* A 221B	SHLD A 221	TB1-D36	0 VDC OPTICS
* A 223B	SHLD A 223	TB1-D42	0 VDC OPTICS
* A 224B	SHLD A 224	TB1-C42	0 VDC OPTICS
* A 226B	SHLD A 226	TB1-G47	0 VDC OPTICS
* A 227B	SHLD A 227	TB1-F47	0 VDC OPTICS
* A 228B	SHLD A 228	TB1-D67	0 VDC OPTICS
* A 232B	SHLD A 232	TB1-C67	0 VDC OPTICS
* A 234B	SHLD A 234	TB1-B47	0 VDC OPTICS
* A 235B	SHLD A 235	TB1-K67	0 VDC OPTICS
* A 236B	SHLD A 236	TB1-A47	0 VDC OPTICS
* A 238B	SHLD A 238	TB1-A42	0 VDC OPTICS
* A 239B	SHLD A 239	TB1-H67	0 VDC OPTICS
* A 240B	SHLD A 240	TB1-B42	0 VDC OPTICS
* A 254B	SHLD A 254	TB1-C59	0 VDC IMU
* A 255B	SHLD A 255	TB1-C59	0 VDC IMU
* A 257B	SHLD A 257	TB1-C24	0 VDC IMU
* A 260B	SHLD A 260	TB1-F24	0 VDC IMU
* A 262B	SHLD A 262	TB1-D24	0 VDC IMU
* A 263B	SHLD A 263	TB1-G24	0 VDC IMU
* A 264B	SHLD A 264	TB1-H24	0 VDC IMU
* A 265B	SHLD A 265	TB1-K24	0 VDC IMU
* A 269B	SHLD A 269	TB1-F42	0 VDC OPTICS
* A 270B	SHLD A 270	TB1-G42	0 VDC OPTICS
* A 271B	SHLD A 271	TB1-F39	0 VDC OPTICS
A 276A	SHLD A 276	P08- 35	0 VDC OPTICS
* A 276B	SHLD A 276	TB1-F36	0 VDC OPTICS
A 278A	SHLD A 278	P08- 37	0 VDC OPTICS
* A 278B	SHLD A 278	TB1-K36	0 VDC OPTICS
* A 279B	SHLD A 279	TB1-G47	0 VDC OPTICS
* A 280B	SHLD A 280	TB1-F47	0 VDC OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 281B	SHLD A 281	TB1-K39	0 VDC OPTICS
* A 286B	SHLD A 286	TB1-A59	STRUCTURE GROUND
* A 290B	SHLD A 290	TB1-K67	0 VDC OPTICS
* A 291B	SHLD A 291	TB1-H67	0 VDC OPTICS
A 298A	SHLD A 298	E 24	AGC SIGNAL 178 SHIELD RETURN
A 301A	SHLD A 301	E 24	AGC SIGNAL 178 SHIELD RETURN
* A 302B	SHLD A 302	TB1-F67	0 VDC OPTICS
* A 304B	SHLD A 304	E 23	AGC SIGNAL 178 SHIELD RETURN
* A 305B	SHLD A 305	TB1-G67	0 VDC OPTICS
A 308A	SHLD A 308	E 23	AGC SIGNAL 178 SHIELD RETURN
* A 308B	SHLD A 308	TB1-A70	AGC SIGNAL 178 SHIELD RETURN
A 309A	SHLD A 309	E 23	AGC SIGNAL 178 SHIELD RETURN
* A 309B	SHLD A 309	E 24	AGC SIGNAL 178 SHIELD RETURN
* A 313B	SHLD A 313	TB1-A58	STRUCTURE GROUND
* A 332B	SHLD A 332	TB1-A17	0 VDC IMU
* A 333B	SHLD A 333	TB1-A12	0 VDC IMU
* A 334B	SHLD A 334	TB1-D17	0 VDC IMU
* A 338B	SHLD A 338	TB1-F32	OG CDU ERROR SIG RET
* A 346B	SHLD A 346	TB1-B17	0 VDC IMU
* A 347B	SHLD A 347	TB1-B12	0 VDC IMU
* A 348B	SHLD A 348	TB1-C17	0 VDC IMU
* A 354B	SHLD A 354	TB1-K32	IG CDU ERROR SIG RET
* A 355B	SHLD A 355	TB1-H32	MG CDU ERROR SIG RET
* A 365B	SHLD A 365	TB1-G32	OG CDU ERROR SIG RET
* A 379B	SHLD A 379	TB1-F27	0 VDC IMU
* A 380B	SHLD A 380	TB1-F27	0 VDC IMU
* A 413B	SHLD A 413	TB1-A58	STRUCTURE GROUND
* A 414B	SHLD A 414	E 23	AGC SIGNAL 178 SHIELD RETURN
* A 416B	SHLD A 416	TB1-A70	AGC SIGNAL 178 SHIELD RETURN
* A 417B	SHLD A 417	E 23	AGC SIGNAL 178 SHIELD RETURN
* A 472B	SHLD A 472	TB1-A59	STRUCTURE GROUND
* A 474B	SHLD A 474	TB1-A49	STRUCTURE GROUND
* A 475B	SHLD A 475	TB1-B49	STRUCTURE GROUND
* A 476B	SHLD A 476	TB1-B49	STRUCTURE GROUND
* A 490B	SHLD A 490	TB1-C67	0 VDC OPTICS
* A 491B	SHLD A 491	TB1-D67	0 VDC OPTICS
* A 496B	SHLD A 496	TB1-F67	0 VDC OPTICS
* A 497B	SHLD A 497	TB1-G67	0 VDC OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 498B	SHLD A 498	TB1-A67	0 VDC OPTICS
* A 499B	SHLD A 499	TB1-B67	0 VDC OPTICS
* A 564B	SHLD A 564	TB1-A70	AGC SIGNAL 178 SHIELD RETURN
* A 566B	SHLD A 566	E 23	AGC SIGNAL 178 SHIELD RETURN
* BB 50B	SHLD BB 50	J17-S4	0 VDC IMU
* BB 94B	SHLD BB 94	E 4	0 VDC IMU
CC 1A	SHLD CC 1	E 4	0 VDC IMU
CC 2A	SHLD CC 2	E 4	0 VDC IMU
CC 3A	SHLD CC 3	J12-K3	STRUCTURE GROUND
CC 6A	SHLD CC 6	E 4	0 VDC IMU
CC 7A	SHLD CC 7	E 4	0 VDC IMU
* CC 8B	SHLD CC 8	E 18	AGC SIGNAL 179 SHIELD RETURN
* CC 9B	SHLD CC 9	E 18	AGC SIGNAL 179 SHIELD RETURN
* CC 10B	SHLD CC 10	E 18	AGC SIGNAL 179 SHIELD RETURN
CC 13A	SHLD CC 13	E 7	0 VDC IMU
CC 14A	SHLD CC 14	E 7	0 VDC IMU
CC 15A	SHLD CC 15	E 7	0 VDC IMU
CC 16A	SHLD CC 16	E 7	0 VDC IMU
CC 17A	SHLD CC 17	E 7	0 VDC IMU
CC 18A	SHLD CC 18	E 7	0 VDC IMU
CC 19A	SHLD CC 19	E 7	0 VDC IMU
* CC 20B	SHLD CC 20	E 17	AGC SIGNAL 179 SHIELD RETURN
* CC 21B	SHLD CC 21	E 17	AGC SIGNAL 179 SHIELD RETURN
* CC 22B	SHLD CC 22	E 17	AGC SIGNAL 179 SHIELD RETURN
* CC 23B	SHLD CC 23	E 17	AGC SIGNAL 179 SHIELD RETURN
* CC 24B	SHLD CC 24	E 17	AGC SIGNAL 179 SHIELD RETURN
* CC 25B	SHLD CC 25	E 17	AGC SIGNAL 179 SHIELD RETURN
* CC 26B	SHLD CC 26	E 19	AGC SIGNAL 179 SHIELD RETURN
* CC 27B	SHLD CC 27	E 19	AGC SIGNAL 179 SHIELD RETURN
* CC 28B	SHLD CC 28	E 19	AGC SIGNAL 179 SHIELD RETURN
* CC 29B	SHLD CC 29	E 19	AGC SIGNAL 179 SHIELD RETURN
* CC 30B	SHLD CC 30	E 19	AGC SIGNAL 179 SHIELD RETURN
* CC 31B	SHLD CC 31	E 19	AGC SIGNAL 179 SHIELD RETURN
CC 32A	SHLD CC 32	E 9	IG DAC MDA SIG LO
CC 33A	SHLD CC 33	E 9	IG DAC MDA SIG LO
CC 34A	SHLD CC 34	E 11	MG DAC MDA SIG LO
CC 35A	SHLD CC 35	E 11	MG DAC MDA SIG LO
CC 36A	SHLD CC 36	E 13	OG DAC MDA SIG LO

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC 37A	SHLD CC 37	E 13	OG DAC MDA SIG LO
* CC 38B	SHLD CC 38	E 21	AGC SIGNAL 178 SHIELD RETURN
CC 39A	SHLD CC 39	J16-P2	0 VDC IMU
CC 40A	SHLD CC 40	J16-P2	0 VDC IMU
* CC 41B	SHLD CC 41	E 21	AGC SIGNAL 178 SHIELD RETURN
* CC 42B	SHLD CC 42	E 20	AGC SIGNAL 179 SHIELD RETURN
* CC 43B	SHLD CC 43	J22- 48	NAA SHIELD GROUND
* CC 44B	SHLD CC 44	J22- 77	NAA SHIELD GROUND
* CC 45B	SHLD CC 45	J22- 80	NAA SHIELD GROUND
* CC 46B	SHLD CC 46	E 20	AGC SIGNAL 179 SHIELD RETURN
* CC 47B	SHLD CC 47	J22- 54	NAA SHIELD GROUND
* CC 48B	SHLD CC 48	J22- 51	NAA SHIELD GROUND
* CC 49B	SHLD CC 49	E 20	AGC SIGNAL 179 SHIELD RETURN
* CC 50B	SHLD CC 50	E 20	AGC SIGNAL 179 SHIELD RETURN
CC 51A	SHLD CC 51	J17-S4	0 VDC IMU
CC 57A	SHLD CC 57	J20-M4	STRUCTURE GROUND
* CC 96B	SHLD CC 96	TB1-K24	0 VDC IMU
* CC 99B	SHLD CC 99	TB1-H24	0 VDC IMU
* CC101B	SHLD CC101	TB1-F24	0 VDC IMU
* CC106B	SHLD CC106	TB1-G24	0 VDC IMU
* CC108B	SHLD CC108	TB1-D24	0 VDC IMU
* CC109B	SHLD CC109	TB1-C24	0 VDC IMU
* CC126B	SHLD CC126	TB1-K17	0 VDC IMU
* CC127B	SHLD CC127	TB1-K12	0 VDC IMU
* CC128B	SHLD CC128	TB1-H 4	STRUCTURE GROUND
CC136A	SHLD CC136	J16-B1	IG CDU MDA INPUT RET
CC141A	SHLD CC141	J16-B3	MG CDU MDA INPUT RET
* CC143B	SHLD CC143	TB1-C17	0 VDC IMU
* CC144B	SHLD CC144	TB1-D17	0 VDC IMU
* CC148B	SHLD CC148	TB1-F17	0 VDC IMU
* CC152B	SHLD CC152	TB1-G17	0 VDC IMU
CC153A	SHLD CC153	J16-B5	OG CDU MDA INPUT RET
* CC159B	SHLD CC159	TB1-K 4	STRUCTURE GROUND
* CC163B	SHLD CC163	TB1-H17	0 VDC IMU
* CC164B	SHLD CC164	TB1-H12	0 VDC IMU
* CC173B	SHLD CC173	TB1-D56	AGC SIGNAL 178 SHIELD RETURN
* CC182B	SHLD CC182	TB1-G12	0 VDC IMU
* CC190B	SHLD CC190	TB1-C59	0 VDC IMU

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
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SCALE-NONE
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SHEET 87

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* CC192B	SHLD CC192	TB1-C59	0 VDC IMU
* CC201B	SHLD CC201	TB1-F12	0 VDC IMU
* CC204B	SHLD CC204	TB1-G32	OG CDU ERROR SIG RET
* CC218B	SHLD CC218	TB1-D47	0 VDC OPTICS
* CC219B	SHLD CC219	TB1-B47	0 VDC OPTICS
* CC221B	SHLD CC221	TB1-G42	0 VDC OPTICS
* CC223B	SHLD CC223	TB1-A58	STRUCTURE GROUND
* CC225B	SHLD CC225	TB1-A59	STRUCTURE GROUND
* CC229B	SHLD CC229	TB1-D42	0 VDC OPTICS
* CC230B	SHLD CC230	TB1-C42	0 VDC OPTICS
* CC231B	SHLD CC231	TB1-F42	0 VDC OPTICS
* CC233B	SHLD CC233	TB1-D36	0 VDC OPTICS
* CC234B	SHLD CC234	TB1-B42	0 VDC OPTICS
* CC235B	SHLD CC235	TB1-K39	0 VDC OPTICS
* CC237B	SHLD CC237	TB1-K36	0 VDC OPTICS
* CC239B	SHLD CC239	TB1-H36	0 VDC OPTICS
* CC251B	SHLD CC251	TB1-A59	STRUCTURE GROUND
* CC253B	SHLD CC253	TB1-K42	0 VDC OPTICS
* CC254B	SHLD CC254	TB1-H42	0 VDC OPTICS
* CC255B	SHLD CC255	TB1-D39	0 VDC OPTICS
* CC256B	SHLD CC256	TB1-C42	0 VDC OPTICS
* CC258B	SHLD CC258	TB1-C36	0 VDC OPTICS
* CC259B	SHLD CC259	TB1-F39	0 VDC OPTICS
* CC261B	SHLD CC261	TB1-F36	0 VDC OPTICS
* CC263B	SHLD CC263	TB1-H39	0 VDC OPTICS
* CC265B	SHLD CC265	TB1-H47	0 VDC OPTICS
* CC266B	SHLD CC266	TB1-K47	0 VDC OPTICS
* CC267B	SHLD CC267	TB1-G39	0 VDC OPTICS
* CC269B	SHLD CC269	TB1-G36	0 VDC OPTICS
* CC276B	SHLD CC276	TB1-A58	STRUCTURE GROUND
* CC278B	SHLD CC278	TB1-K67	0 VDC OPTICS
* CC281B	SHLD CC281	TB1-G67	0 VDC OPTICS
* CC325B	SHLD CC325	TB1-G 4	STRUCTURE GROUND
* CC327B	SHLD CC327	TB1-B17	0 VDC IMU
* CC328B	SHLD CC328	TB1-B12	0 VDC IMU
* CC329B	SHLD CC329	TB1-A17	0 VDC IMU
* CC330B	SHLD CC330	TB1-A12	0 VDC IMU
CC332A	SHLD CC332	E 21	AGC SIGNAL 178 SHIELD RETURN

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC332B	SHLD CC332	TB1-D56	AGC SIGNAL 178 SHIELD RETURN

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REV LTR B
SHEET 89

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	TB 1	TB1-A 1	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
*	A 8R	TB1-A 1	J01- 28	400 CPS VARIABLE ILLUMINATION POWER
*	A 28R	TB1-A 1	J02- 28	400 CPS VARIABLE ILLUMINATION POWER
*	A 48R	TB1-A 1	J03- 28	400 CPS VARIABLE ILLUMINATION POWER
	TB 1	TB1-A 2	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
*	TB 1	TB1-A 2	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
*	A 67R	TB1-A 2	J04- 28	400 CPS VARIABLE ILLUMINATION POWER
*	A 85R	TB1-A 2	J05- 28	400 CPS VARIABLE ILLUMINATION POWER
*	A 143R	TB1-A 2	P01-103	400 CPS VARIABLE ILLUMINATION POWER
	TB 1	TB1-A 3	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER
*	TB 1	TB1-A 3	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
*	A 123R	TB1-A 3	J06-108	400 CPS VARIABLE ILLUMINATION POWER
*	A 225R	TB1-A 3	P05- 43	400 CPS VARIABLE ILLUMINATION POWER
*	A 312R	TB1-A 3	J09- 54	400 CPS VARIABLE ILLUMINATION POWER
*	TB 1	TB1-A 4	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
*	A 143Y	TB1-A 4	P01-108	400 CPS VARIABLE ILLUMINATION POWER
*	A 282R	TB1-A 4	P08- 53	400 CPS VARIABLE ILLUMINATION POWER
*	A 283R	TB1-A 4	P08- 56	400 CPS VARIABLE ILLUMINATION POWER
	TB 8	TB1-A 5	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
*	CC160L	TB1-A 5	J16-S4	800 CPS 28 V 1 PCT HI IMU
*	A 25G	TB1-A 5	J02- 11	800 CPS 28 V 1 PCT HI IMU
*	A 25R	TB1-A 5	J02- 25	800 CPS 28 V 1 PCT HI IMU
*	A 178R	TB1-A 5	P02-A	800 CPS 28 V 1 PCT HI IMU
	TB 8	TB1-A 6	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
*	TB 8	TB1-A 6	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
*	A 5G	TB1-A 6	J01- 11	800 CPS 28 V 1 PCT HI IMU
*	A 5R	TB1-A 6	J01- 25	800 CPS 28 V 1 PCT HI IMU
*	A 45R	TB1-A 6	J03- 25	800 CPS 28 V 1 PCT HI IMU
	TB 8	TB1-A 7	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
*	TB 8	TB1-A 7	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
*	A 45G	TB1-A 7	J03- 11	800 CPS 28 V 1 PCT HI IMU
*	A 126R	TB1-A 7	P01- 11	800 CPS 28 V 1 PCT HI IMU
*	A 340R	TB1-A 7	P09- 11	800 CPS 28 V 1 PCT HI IMU
*	TB 8	TB1-A 8	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
*	A 1R	TB1-A 8	J01- 1	800 CPS 28 V 1 PCT HI IMU
*	A 21R	TB1-A 8	J02- 1	800 CPS 28 V 1 PCT HI IMU
*	A 41R	TB1-A 8	J03- 1	800 CPS 28 V 1 PCT HI IMU
*	CC 65K	TB1-A10	J11-G1	OG ADA

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 261G	TB1-A10	P07-F*	OG ADA	
*	CC 65L	TB1-A11	J11-H1	MG ADA	
*	A 261N	TB1-A11	P07-G*	MG ADA	
	AA 1	TB1-A12	TB1-B17	0 VDC IMU	
	TB 14	TB1-A12	TB1-B12	0 VDC IMU	
	CC330B	TB1-A12	SHLD CC330	0 VDC IMU	
	A 3B	TB1-A12	SHLD A 3	0 VDC IMU	
	A 179B	TB1-A12	SHLD A 179	0 VDC IMU	
	A 333B	TB1-A12	SHLD A 333	0 VDC IMU	
*	CC330R	TB1-A13	J22- 84	COS AIG 1X	
*	A 3R	TB1-A13	J01- 20	COS AIG 1X P3	
*	A 179R	TB1-A13	P02-A*	COS AIG 1X S3	
*	A 333Y	TB1-A13	P09- 2	COS AIG 1X	
*	CC330W	TB1-A14	J22- 85	COS AIG 1X RET	
*	A 3Y	TB1-A14	J01- 6	COS AIG 1X RET P1	
*	A 179Y	TB1-A14	P02-B*	COS AIG 1X RET S1	
*	A 333R	TB1-A14	P09- 3	COS AIG 1X RET	
*	CC329W	TB1-A15	J22- 33	SIN AIG 1X RET	
*	A 4R	TB1-A15	J01- 21	SIN AIG 1X RET P4	
*	A 182R	TB1-A15	P02-F*	SIN AIG 1X RET S2	
*	A 332R	TB1-A15	P09- 23	SIN AIG 1X RET	
*	CC329R	TB1-A16	J22- 56	SIN AIG 1X	
*	A 4Y	TB1-A16	J01- 7	SIN AIG 1X P2	
*	A 182Y	TB1-A16	P02-G*	SIN AIG 1X S4	
*	A 332Y	TB1-A16	P09- 1	SIN AIG 1X	
	AA 2	TB1-A17	TB1-C24	0 VDC IMU	
	TB 15	TB1-A17	TB1-B17	0 VDC IMU	
	CC329B	TB1-A17	SHLD CC329	0 VDC IMU	
	A 4B	TB1-A17	SHLD A 4	0 VDC IMU	
	A 182B	TB1-A17	SHLD A 182	0 VDC IMU	
	A 332B	TB1-A17	SHLD A 332	0 VDC IMU	
*	A 158	TB1-A20	J08- 50	SPARE FAIL LIGHT 1 HI	
*	A 479	TB1-A20	J10- 7	SPARE FAIL LIGHT 1 HI	305
*	A 155	TB1-A21	J08- 41	ZERO ENCODER LIGHT HI	
*	A 473G	TB1-A21	J10- 3	ZERO ENCODER LIGHT HI	301
*	A 162	TB1-A22	J08- 60	IMU FAIL LIGHT HI	
*	A 478	TB1-A22	J10- 6	IMU FAIL LIGHT HI	304
*	A 147	TB1-A23	J08- 18	GIMBAL LOCK LIGHT HI	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 415	TB1-A23	P10- 24	GIMBAL LOCK LIGHT HI	
*	A 169	TB1-A24	J08- 72	CDU FAIL LIGHT HI	
*	A 473R	TB1-A24	J10- 4	CDU FAIL LIGHT HI	302
*	A 152	TB1-A25	J08- 31	IMU DELAY LIGHT LO	
*	A 589	TB1-A25	J09-107	IMU DELAY LIGHT LO	
*	A 129	TB1-A26	P01- 26	IMU DELAY LIGHT HI	
*	A 156	TB1-A26	J08- 42	IMU DELAY LIGHT HI	
*	A 373	TB1-A26	P09- 69	IMU DELAY LIGHT HI	
*	CC 68L	TB1-A28	J11-A6	IMU OG ERROR SIG	
*	A 195R	TB1-A28	P03-C	IMU OG ERROR SIG	
*	A 390Y	TB1-A28	P09-111	IMU OG ERROR SIG	
*	CC145W	TB1-A29	J16-D5	OG CDU 1/2X ERROR SIG	
*	A 55R	TB1-A29	J03- 67	OG CDU 1/2X ERROR SIG	
*	CC138W	TB1-A30	J16-D3	MG CDU 1/2X ERROR SIG	
*	A 35R	TB1-A30	J02- 67	MG CDU 1/2X ERROR SIG	
*	CC133W	TB1-A31	J16-D1	IG CDU 1/2X ERROR SIG	
*	A 15R	TB1-A31	J01- 67	IG CDU 1/2X ERROR SIG S3	
*	CC203R	TB1-A33	J17-F9	SHAFT CDU ENCODER PHASE 2	
*	A 78R	TB1-A33	J04-108	SHAFT CDU ENCODER PHASE 2	
	A 78B	TB1-A34	SHLD A 78	SHAFT CDU ENCODER COMMON	
*	CC203W	TB1-A34	J17-D9	SHAFT CDU ENCODER COMMON	
*	A 78Y	TB1-A34	J04- 94	SHAFT CDU ENCODER COMMON	
*	CC203L	TB1-A35	J17-C9	SHAFT CDU ENCODER PHASE 1	
*	A 78G	TB1-A35	J04-107	SHAFT CDU ENCODER PHASE 1	
	TB 23	TB1-A36	TB1-B36	0 VDC OPTICS	
	AA 3	TB1-A39	TB1-B36	0 VDC OPTICS	
	TB 24	TB1-A39	TB1-B39	0 VDC OPTICS	
*	CC100	TB1-A40	J13-F2	Y PIP ERROR MONITOR	
*	A 391R	TB1-A40	P09- 96	Y PIP ERROR MONITOR	
*	CC107	TB1-A41	J14-H6	Z PIP ERROR MONITOR	
*	A 391Y	TB1-A41	P09-113	Z PIP ERROR MONITOR	
	AA 4	TB1-A42	TB1-B39	0 VDC OPTICS	
	TB 25	TB1-A42	TB1-B42	0 VDC OPTICS	
	A 91B	TB1-A42	SHLD A 91	0 VDC OPTICS	
	A 238B	TB1-A42	SHLD A 238	0 VDC OPTICS	
*	A 91R	TB1-A43	J05-100	TRUNNION CDU 16X RSVR P3	
*	A 238R	TB1-A43	P05- 87	SXT TRUNNION 64X RSVR S3	
*	A 91Y	TB1-A44	J05- 86	TRUNNION CDU 16X RSVR P1	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 238Y	TB1-A44	P05- 86	SXT TRUNNION 64X RSVR S1	
*	A 74Y	TB1-A45	J04- 86	SHAFT CDU 16X RSVR P1	
*	A 236Y	TB1-A45	P05- 82	SXT SHAFT 16X RSVR S1	
*	A 74R	TB1-A46	J04-100	SHAFT CDU 16X RSVR P3	
*	A 236R	TB1-A46	P05- 83	SXT SHAFT 16X RSVR S3	
	AA 5	TB1-A47	TB1-B42	0 VDC OPTICS	
	TB 26	TB1-A47	TB1-B47	0 VDC OPTICS	
	A 74B	TB1-A47	SHLD A 74	0 VDC OPTICS	
	A 236B	TB1-A47	SHLD A 236	0 VDC OPTICS	
*	A 99Y	TB1-A48	J06- 12	MODE RELAY COMMON TO AGC	
*	A 474R	TB1-A48	J10- 26	MODE RELAY COMMON TO AGC	312
*	A 474Y	TB1-A48	J10- 13	MODE RELAY COMMON TO AGC	315
	TB 27	TB1-A49	TB1-B49	STRUCTURE GROUND	
	A 99B	TB1-A49	SHLD A 99	STRUCTURE GROUND	
	A 127B	TB1-A49	SHLD A 127	STRUCTURE GROUND	
	A 474B	TB1-A49	SHLD A 474	STRUCTURE GROUND	
*	A 127G	TB1-A50	P01- 48	COARSE ALIGN MODE COMMAND FROM AGC	
*	A 475G	TB1-A50	J10- 22	COARSE ALIGN MODE COMMAND FROM AGC	308
*	A 176	TB1-A51	J08- 93	STEP-DOWN-R	
*	A 327	TB1-A51	J09- 93	STEP-DOWN-R	
*	A 172	TB1-A52	J08- 79	STEP-DOWN-C	
*	A 323	TB1-A52	J09- 79	STEP-DOWN-C	
*	A 166	TB1-A53	J08- 67	+28 VDC MDV SWITCHED	
*	A 316	TB1-A53	J09- 67	+28 VDC MDV SWITCHED	
*	A 138R	TB1-A54	P01- 80	PANEL BRIGHTNESS CONTROL	
*	A 300R	TB1-A54	J09- 32	PANEL BRIGHTNESS CONTROL	
*	A 138Y	TB1-A55	P01- 95	PANEL BRIGHTNESS CONTROL	
*	A 300Y	TB1-A55	J09- 44	PANEL BRIGHTNESS CONTROL	
*	A 202	TB1-A56	P03-J*	GIMBAL LOCK SIGNAL	
*	A 385	TB1-A56	P09- 85	GIMBAL LOCK SIGNAL	
*	A 410	TB1-A56	P10- 12	GIMBAL LOCK SIGNAL	
*	CC251R	TB1-A57	J19-P6	RESOLVED MODE RELAY COMMAND	
*	A 313G	TB1-A57	J09- 82	RESOLVED MODE RELAY COMMAND	
	TB 31	TB1-A58	TB1-A59	STRUCTURE GROUND	
	CC223B	TB1-A58	SHLD CC223	STRUCTURE GROUND	
	CC276B	TB1-A58	SHLD CC276	STRUCTURE GROUND	
	A 313B	TB1-A58	SHLD A 313	STRUCTURE GROUND	
	A 413B	TB1-A58	SHLD A 413	STRUCTURE GROUND	

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SCALE - NONE	REV LTR B	SHEET 93

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	TB 31	TB1-A59	TB1-A60	STRUCTURE GROUND	
	CC225B	TB1-A59	SHLD CC225	STRUCTURE GROUND	
	CC251B	TB1-A59	SHLD CC251	STRUCTURE GROUND	
	A 286B	TB1-A59	SHLD A 286	STRUCTURE GROUND	
	A 472B	TB1-A59	SHLD A 472	STRUCTURE GROUND	
*	TB 31	TB1-A59	TB1-A58	STRUCTURE GROUND	
*	TB 31	TB1-A60	TB1-A59	STRUCTURE GROUND	
*	CC180	TB1-A60	J16-N4	STRUCTURE GROUND	
*	CC251W	TB1-A61	J19-R6	TRACKER MODE RELAY COMMAND	
*	A 286R	TB1-A61	J09- 2	TRACKER MODE RELAY COMMAND	
*	A 472R	TB1-A61	J10- 66	TRACKER MODE RELAY COMMAND	317
*	CC206R	TB1-A63	J17-L5	+120 VDC PIP	
*	A 337R	TB1-A63	P09- 7	+120 VDC PIP	
*	CC193	TB1-A64	J17-F6	BLOWER CURRENT SENSOR (TELEMETRY)	
*	A 397	TB1-A64	P09-107	BLOWER CURRENT SENSOR (TELEMETRY)	
*	A 216Y	TB1-A65	P05- 10	TRACKER Y REFERENCE	
*	A 498Y	TB1-A65	P13- 27	TRACKER Y REFERENCE	
*	A 216R	TB1-A66	P05- 11	TRACKER Y REFERENCE	
*	A 498R	TB1-A66	P13- 28	TRACKER Y REFERENCE	
	AA 6	TB1-A67	TB1-B47	0 VDC OPTICS	
	TB 34	TB1-A67	TB1-B67	0 VDC OPTICS	
	A 216B	TB1-A67	SHLD A 216	0 VDC OPTICS	
	A 498B	TB1-A67	SHLD A 498	0 VDC OPTICS	
*	A 308Y	TB1-A68	J09- 47	AGC COMMON (OSS)	
*	A 564Y	TB1-A68	J24- 84	AGC COMMON (OSS)	101
*	A 566Y	TB1-A68	J24- 83	SXT POWER ON INDICATION	105
*	A 308R	TB1-A69	J09- 48	OPTICS ZERO ENCODER INDICATION	
*	A 416Y	TB1-A69	P10- 43	OPTICS ZERO ENCODER INDICATION	
*	A 564R	TB1-A69	J24- 15	OPTICS ZERO ENCODER INDICATION	104
	A 308B	TB1-A70	SHLD A 308	AGC SIGNAL 178 SHIELD RETURN	
	A 416B	TB1-A70	SHLD A 416	AGC SIGNAL 178 SHIELD RETURN	
	A 564B	TB1-A70	SHLD A 564	AGC SIGNAL 178 SHIELD RETURN	
*	CC273L	TB1-A71	J20-H4	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR	
*	A 306G	TB1-A71	J09- 45	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR	
	TB 40	TB1-A72	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS	
*	CC172W	TB1-A72	J16-P5	800 CPS 28 V 1 PCT HI OPTICS	
*	A 306R	TB1-A72	J09- 80	800 CPS 28 V 1 PCT HI OPTICS	
*	A 402R	TB1-A72	P09-125	800 CPS 28 V 1 PCT HI OPTICS	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	TB 40	TB1-A73	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS
*	CC273W	TB1-A73	J20-G6	800 CPS 28 V 1 PCT HI OPTICS
*	A 274R	TB1-A73	P08- 27	800 CPS 28 V 1 PCT HI OPTICS
*	A 275R	TB1-A73	P08- 30	800 CPS 28 V 1 PCT HI OPTICS
*	CC174R	TB1-A74	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 272R	TB1-A74	P08- 21	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 273R	TB1-A74	P08- 24	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 394R	TB1-A74	P09-103	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 165N	TB1-A75	J08- 95	400 CPS 26 V LO
*	A 418R	TB1-A75	P10- 49	400 CPS 26 V LO
*	A 165G	TB1-A76	J08- 66	MDV SLEW CONTROL 1.5 V 400 CPS
*	A 315G	TB1-A76	J09- 66	MDV SLEW CONTROL 1.5 V 400 CPS
*	A 165R	TB1-A77	J08- 68	400 CPS 26 V MDV RSVR EXC
*	A 315R	TB1-A77	J09- 68	400 CPS 26 V MDV RSVR EXC
*	A 165Y	TB1-A78	J08- 81	400 CPS 26 V SLEW
*	A 315Y	TB1-A78	J09- 81	400 CPS 26 V SLEW
	TB 2	TB1-B 1	TB1-B 2	400 CPS 6 V LO
*	A 8Y	TB1-B 1	J01- 29	400 CPS 6 V LO
*	A 28Y	TB1-B 1	J02- 29	400 CPS 6 V LO
*	A 48Y	TB1-B 1	J03- 29	400 CPS 6 V LO
	TB 2	TB1-B 2	TB1-B 3	400 CPS 6 V LO
*	TB 2	TB1-B 2	TB1-B 1	400 CPS 6 V LO
*	A 67Y	TB1-B 2	J04- 29	400 CPS 6 V LO
*	A 85Y	TB1-B 2	J05- 29	400 CPS 6 V LO
*	A 420R	TB1-B 2	P10- 93	400 CPS 6 V LO
	TB 2	TB1-B 3	TB1-B 4	400 CPS 6 V LO
*	TB 2	TB1-B 3	TB1-B 2	400 CPS 6 V LO
*	A 123Y	TB1-B 3	J06-107	400 CPS 6 V LO
*	A 225Y	TB1-B 3	P05- 44	400 CPS 6 V LO
	AA 7	TB1-B 4	TB1-D 3	0 VDC IMU
*	TB 2	TB1-B 4	TB1-B 3	400 CPS 6 V LO
*	A 282Y	TB1-B 4	P08- 54	400 CPS 6 V LO
*	A 283Y	TB1-B 4	P08- 57	400 CPS 6 V LO
*	A 420Y	TB1-B 4	P10- 94	400 CPS 6 V LO
*	CC160W	TB1-B 5	J16-P4	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
*	A 178Y	TB1-B 5	P02-B	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
*	CC160K	TB1-B 6	J16-R4	ZEROING RSVR 800 CPS
*	A 5Y	TB1-B 6	J01- 12	ZEROING RSVR 800 CPS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 25Y	TB1-B 6	J02- 12	ZEROING RSVR 800 CPS
*	A 45Y	TB1-B 6	J03- 12	ZEROING RSVR 800 CPS
	TB 12	TB1-B 7	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
*	CC160R	TB1-B 7	J16-S3	800 CPS 28 V 1 PCT LO IMU
*	A 126Y	TB1-B 7	P01- 10	800 CPS 28 V 1 PCT LO IMU
*	A 340Y	TB1-B 7	P09- 12	800 CPS 28 V 1 PCT LO IMU
*	TB 12	TB1-B 8	TB1-B 7	800 CPS 28 V 1 PCT LO IMU
*	A 1Y	TB1-B 8	J01- 14	800 CPS 28 V 1 PCT LO IMU
*	A 21Y	TB1-B 8	J02- 14	800 CPS 28 V 1 PCT LO IMU
*	A 41Y	TB1-B 8	J03- 14	800 CPS 28 V 1 PCT LO IMU
*	CC 65W	TB1-B10	J11-G2	0 VDC IMU
*	A 261Y	TB1-B10	P07-J*	0 VDC IMU
*	CC 65R	TB1-B11	J11-F1	IG ADA
*	A 261R	TB1-B11	P07-H*	IG ADA
	TB 14	TB1-B12	TB1-C12	0 VDC IMU
	CC328B	TB1-B12	SHLD CC328	0 VDC IMU
	A 23B	TB1-B12	SHLD A 23	0 VDC IMU
	A 185B	TB1-B12	SHLD A 185	0 VDC IMU
	A 347B	TB1-B12	SHLD A 347	0 VDC IMU
*	TB 14	TB1-B12	TB1-A12	0 VDC IMU
*	CC328W	TB1-B13	J22- 16	COS AMG 1X S3
*	A 23R	TB1-B13	J02- 20	COS AMG 1X S3
*	A 185R	TB1-B13	P02-L	COS AMG 1X S3
*	A 347R	TB1-B13	P09- 25	COS AMG 1X S3
*	CC328R	TB1-B14	J22- 32	COS AMG 1X S1
*	A 23Y	TB1-B14	J02- 6	COS AMG 1X S1
*	A 185Y	TB1-B14	P02-M	COS AMG 1X S1
*	A 347Y	TB1-B14	P09- 44	COS AMG 1X S1
*	CC327W	TB1-B15	J22- 15	SIN AMG 1X RET
*	A 24R	TB1-B15	J02- 21	SIN AMG 1X RET
*	A 186Y	TB1-B15	P02-N	SIN AMG 1X RET S2
*	A 346R	TB1-B15	P09- 42	SIN AMG 1X RET
*	CC327R	TB1-B16	J22- 14	SIN AMG 1X
*	A 24Y	TB1-B16	J02- 7	SIN AMG 1X
*	A 186R	TB1-B16	P02-P	SIN AMG 1X S4
*	A 346Y	TB1-B16	P09- 24	SIN AMG 1X
	TB 15	TB1-B17	TB1-C17	0 VDC IMU
	CC327B	TB1-B17	SHLD CC327	0 VDC IMU

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR B	SHEET 96

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 24B	TB1-B17	SHLD A 24	0 VDC IMU	
	A 186B	TB1-B17	SHLD A 186	0 VDC IMU	
	A 346B	TB1-B17	SHLD A 346	0 VDC IMU	
*	AA 1	TB1-B17	TB1-A12	0 VDC IMU	
*	TB 15	TB1-B17	TB1-A17	0 VDC IMU	
*	CC252W	TB1-B18	J19-P2	TRUNNION CDU 1/2X RSVR P2	
*	A 84Y	TB1-B18	J05- 12	TRUNNION CDU 1/2X RSVR P2	
*	CC252R	TB1-B19	J19-P1	TRUNNION CDU 1/2X RSVR P3	
*	A 84G	TB1-B19	J05- 11	TRUNNION CDU 1/2X RSVR P1 AND P3	
*	A 84R	TB1-B19	J05- 25	TRUNNION CDU 1/2X RSVR P3	
	TB 17	TB1-B21	TB1-B22	CONDITION LAMPS COMMON	
*	A 146	TB1-B21	J08- 17	SPARE FAIL LIGHT 3 LO	
*	A 148	TB1-B21	J08- 19	GIMBAL LOCK LIGHT LO	
*	A 149	TB1-B21	J08- 28	SPARE FAIL LIGHT 2 LO	
	TB 17	TB1-B22	TB1-B23	CONDITION LAMPS COMMON	
*	TB 17	TB1-B22	TB1-B21	CONDITION LAMPS COMMON	
*	A 151	TB1-B22	J08- 30	ZERO ENCODER LIGHT LO	
*	A 163	TB1-B22	J08- 61	IMU FAIL LIGHT LO	
*	A 167	TB1-B22	J08- 70	SPARE FAIL LIGHT 1 LO	
*	TB 17	TB1-B23	TB1-B22	CONDITION LAMPS COMMON	
*	A 173	TB1-B23	J08- 83	CDU FAIL LIGHT LO	
*	A 174	TB1-B23	J08- 84	ACCEL FAIL LIGHT LO	
*	A 292	TB1-B23	J09- 99	CONDITION LAMPS COMMON	
*	A 170	TB1-B24	J08- 73	ACCEL FAIL LIGHT HI	
*	A 473Y	TB1-B24	J10- 5	ACCEL FAIL LIGHT HI	303
*	A 164Y	TB1-B25	J08- 63	IMU TEMP CONT FAIL LIGHT LO	
*	A 591	TB1-B25	J09- 38	IMU TEMP CONT FAIL LIGHT LO	
*	CC197	TB1-B26	J17-P5	IMU TEMP CONT FAIL LIGHT HI	
*	A 164R	TB1-B26	J08- 62	IMU TEMP CONT FAIL LIGHT HI	
*	A 386	TB1-B26	P09- 86	IMU TEMP CONT FAIL LIGHT HI	
*	CC 68R	TB1-B28	J11-A5	IMU MG ERROR SIG	
*	A 195N	TB1-B28	P03-W	IMU MG ERROR SIG	
*	A 390R	TB1-B28	P09-112	IMU MG ERROR SIG	
*	CC145R	TB1-B29	J16-F5	OG CDU ERROR SIG RET	
*	A 55Y	TB1-B29	J03- 57	OG CDU ERROR SIG RET	
*	CC138R	TB1-B30	J16-F3	MG CDU ERROR SIG RET	
*	A 35Y	TB1-B30	J02- 57	MG CDU ERROR SIG RET	
*	CC133R	TB1-B31	J16-F1	IG CDU ERROR SIG RET	

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
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SCALE-NONE
REV LTR B
SHEET 97

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 15Y	TB1-B31	J01- 57	IG CDU ERROR SIG RET S1
*	CC202R	TB1-B33	J17-A8	TRUNNION CDU ENCODER PHASE 2
*	A 95R	TB1-B33	J05-108	TRUNNION CDU ENCODER PHASE 2
	A 95B	TB1-B34	SHLD A 95	TRUNNION CDU ENCODER COMMON
*	CC202W	TB1-B34	J17-A7	TRUNNION CDU ENCODER COMMON
*	A 95Y	TB1-B34	J05- 94	TRUNNION CDU ENCODER COMMON
*	CC202L	TB1-B35	J17-A6	TRUNNION CDU ENCODER PHASE 1
*	A 95G	TB1-B35	J05-107	TRUNNION CDU ENCODER PHASE 1
	TB 23	TB1-B36	TB1-C36	0 VDC OPTICS
*	AA 3	TB1-B36	TB1-A39	0 VDC OPTICS
*	TB 23	TB1-B36	TB1-A36	0 VDC OPTICS
	TB 24	TB1-B39	TB1-C39	0 VDC OPTICS
*	AA 4	TB1-B39	TB1-A42	0 VDC OPTICS
*	TB 24	TB1-B39	TB1-A39	0 VDC OPTICS
*	CC 97	TB1-B40	J13-D2	X PIP ERROR MONITOR
*	A 391G	TB1-B40	P09- 95	X PIP ERROR MONITOR
*	CC 89	TB1-B41	J12-B5	0 VDC IMU
*	A 391N	TB1-B41	P09-114	0 VDC IMU
	TB 25	TB1-B42	TB1-C42	0 VDC OPTICS
	CC234B	TB1-B42	SHLD CC234	0 VDC OPTICS
	A 92B	TB1-B42	SHLD A 92	0 VDC OPTICS
	A 240B	TB1-B42	SHLD A 240	0 VDC OPTICS
*	AA 5	TB1-B42	TB1-A47	0 VDC OPTICS
*	TB 25	TB1-B42	TB1-A42	0 VDC OPTICS
*	CC234R	TB1-B43	J18-C1	SXT TRUNNION 64X RSVR S2
*	A 92R	TB1-B43	J05-101	TRUNNION CDU 16X RSVR P4
*	A 240R	TB1-B43	P05- 91	SXT TRUNNION 64X RSVR S2
*	CC234W	TB1-B44	J18-C2	SXT TRUNNION 64X RSVR S4
*	A 92Y	TB1-B44	J05- 87	TRUNNION CDU 16X RSVR P2
*	A 240Y	TB1-B44	P05- 90	SXT TRUNNION 64X RSVR S4
*	CC219R	TB1-B45	J18-A3	SXT SHAFT 16X RSVR S2
*	A 75R	TB1-B45	J04- 87	SHAFT CDU 16X RSVR P2
*	A 234R	TB1-B45	P05- 79	SXT SHAFT 16X RSVR S2
*	CC219W	TB1-B46	J18-A2	SXT SHAFT 16X RSVR S4
*	A 75Y	TB1-B46	J04-101	SHAFT CDU 16X RSVR P4
*	A 234Y	TB1-B46	P05- 78	SXT SHAFT 16X RSVR S4
	TB 26	TB1-B47	TB1-C47	0 VDC OPTICS
	CC219B	TB1-B47	SHLD CC219	0 VDC OPTICS

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
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SCALE-NONE
REV LTR B
SHEET 98

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 75B	TB1-B47	SHLD A 75	0 VDC OPTICS	
	A 234B	TB1-B47	SHLD A 234	0 VDC OPTICS	
*	AA 6	TB1-B47	TB1-A67	0 VDC OPTICS	
*	TB 26	TB1-B47	TB1-A47	0 VDC OPTICS	
*	A 99R	TB1-B48	J06- 81	ATTIT CONT MODE COMMAND FROM AGC	
*	A 474G	TB1-B48	J10- 12	ATTIT CONT MODE COMMAND FROM AGC	314
	A 130B	TB1-B49	SHLD A 130	STRUCTURE GROUND	
	A 475B	TB1-B49	SHLD A 475	STRUCTURE GROUND	
	A 476B	TB1-B49	SHLD A 476	STRUCTURE GROUND	
*	TB 27	TB1-B49	TB1-A49	STRUCTURE GROUND	
*	CC132	TB1-B49	J15-K3	STRUCTURE GROUND	
*	A 127R	TB1-B50	P01- 13	FINE ALIGN MODE COMMAND FROM AGC	
*	A 475R	TB1-B50	J10- 24	FINE ALIGN MODE COMMAND FROM AGC	310
*	A 177	TB1-B51	J08-106	STEP-UP-R	
*	A 330	TB1-B51	J09-106	STEP-UP-R	
*	A 171	TB1-B52	J08- 78	STEP-UP-C	
*	A 322	TB1-B52	J09- 78	STEP-UP-C	
*	CC129	TB1-B53	J15-R6	+28 VDC CDU NOT LOCK	
*	A 6	TB1-B53	J01- 15	+28 VDC CDU NOT LOCK	
*	A 26	TB1-B53	J02- 15	+28 VDC CDU NOT LOCK	
*	A 46	TB1-B53	J03- 15	+28 VDC CDU NOT LOCK	
*	CC 84	TB1-B56	J12-M3	AGC FAIL SIG	
*	A 481	TB1-B56	J10- 9	AGC FAIL SIG	326
*	CC223W	TB1-B57	J18-P2	0 DEG OFFSET RELAY COMMAND	
*	A 313Y	TB1-B57	J09- 58	0 DEG OFFSET RELAY COMMAND	
*	CC223R	TB1-B58	J18-R2	25 DEG OFFSET RELAY COMMAND	
*	A 313R	TB1-B58	J09- 59	25 DEG OFFSET RELAY COMMAND	
*	CC225W	TB1-B59	J18-P3	COMPUTER RELAY COMMAND	
*	A 286G	TB1-B59	J09- 70	COMPUTER RELAY COMMAND	
*	A 472G	TB1-B59	J10- 67	COMPUTER RELAY COMMAND	331
*	CC225R	TB1-B60	J18-P1	ZERO OPTICS MODE COMMAND	
*	A 286Y	TB1-B60	J09- 72	ZERO OPTICS MODE COMMAND	
*	A 472Y	TB1-B60	J10- 65	ZERO OPTICS MODE COMMAND	316
*	CC276W	TB1-B61	J20-F2	AUTOMATIC MARK COMMAND	
*	A 413Y	TB1-B61	P10- 15	AUTOMATIC MARK COMMAND	
	AA 8	TB1-B62	TB1-D 4	0 VDC IMU	
	TB 33	TB1-B62	TB1-C62	0 VDC IMU	
*	A 358	TB1-B62	P09- 48	0 VDC IMU	

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
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SCALE-NONE
REV LTR B
SHEET 99

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 372	TB1-B62	P09- 68	0 VDC IMU
*	CC206W	TB1-B63	J17-L4	+32, +120 VDC RET PIP
*	A 337Y	TB1-B63	P09- 29	+32, +120 VDC RET PIP
*	CC196	TB1-B64	J17-F3	HTR CURRENT (TELEMETRY)
*	A 405	TB1-B64	P09-129	HTR CURRENT (TELEMETRY)
*	A 218Y	TB1-B65	P05- 18	TRACKER X REFERENCE
*	A 499Y	TB1-B65	P13- 36	TRACKER X REFERENCE
*	A 218R	TB1-B66	P05- 17	TRACKER X REFERENCE
*	A 499R	TB1-B66	P13- 35	TRACKER X REFERENCE
	AA 9	TB1-B67	TB1-D76	0 VDC OPTICS
	TB 34	TB1-B67	TB1-C67	0 VDC OPTICS
	A 218B	TB1-B67	SHLD A 218	0 VDC OPTICS
	A 499B	TB1-B67	SHLD A 499	0 VDC OPTICS
*	TB 34	TB1-B67	TB1-A67	0 VDC OPTICS
*	A 215	TB1-B67	P05- 9	0 VDC OPTICS
	AA 10	TB1-B68	TB1-C62	0 VDC IMU
	TB 35	TB1-B68	TB1-B69	0 VDC IMU
	A 573	TB1-B68	TB1-C68	0 VDC IMU
*	CC 75	TB1-B68	J11-R3	0 VDC IMU
*	A 512	TB1-B68	P11-D	0 VDC IMU
	TB 35	TB1-B69	TB1-B70	0 VDC IMU
*	TB 35	TB1-B69	TB1-B68	0 VDC IMU
*	CC211	TB1-B69	J17-S3	0 VDC IMU
*	A 542	TB1-B69	P12-E	0 VDC IMU
	AA 11	TB1-B70	TB1-K20	0 VDC IMU
	A 578	TB1-B70	TB1-D73	0 VDC IMU
*	TB 35	TB1-B70	TB1-B69	0 VDC IMU
*	CC212	TB1-B70	J17-S4	0 VDC IMU
*	A 516	TB1-B70	P11-F	0 VDC IMU
*	CC280	TB1-B71	J20-N4	+28 VDC OPTICS TRACKER POWER
*	A 229	TB1-B71	P05- 68	+28 VDC OPTICS TRACKER POWER
*	A 328	TB1-B71	J09- 96	+28 VDC OPTICS TRACKER POWER
*	A 501	TB1-B71	P13- 38	+28 VDC OPTICS TRACKER POWER
	TB 41	TB1-B72	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
*	CC172R	TB1-B72	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
*	A 306Y	TB1-B72	J09- 69	800 CPS 28 V 1 PCT LO OPTICS
*	A 402Y	TB1-B72	P09-124	800 CPS 28 V 1 PCT LO OPTICS
*	TB 41	TB1-B73	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015087
SCALE-NONE
REV LTR B
SHEET 100

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC273R	TB1-B73	J20-G5	800 CPS 28 V 1 PCT LO OPTICS
*	A 274Y	TB1-B73	P08- 28	800 CPS 28 V 1 PCT LO OPTICS
*	A 275Y	TB1-B73	P08- 31	800 CPS 28 V 1 PCT LO OPTICS
*	CC174W	TB1-B74	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 272Y	TB1-B74	P08- 22	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 273Y	TB1-B74	P08- 25	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 394Y	TB1-B74	P09-102	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 154Y	TB1-B75	J08- 36	400 CPS 6 V LO
*	A 418Y	TB1-B75	P10- 95	400 CPS 6 V LO
*	A 154R	TB1-B76	J08- 55	PROJECTION LAMP HI INTENSITY
*	A 307R	TB1-B76	J09- 55	PROJECTION LAMP HI INTENSITY
*	A 154G	TB1-B77	J08- 46	PROJECTION LAMP LO INTENSITY
*	A 307Y	TB1-B77	J09- 46	PROJECTION LAMP LO INTENSITY
*	CC311R	TB1-B78	J20-N3	400 CPS 115 V HI
*	A 419R	TB1-B78	P10- 69	400 CPS 115 V HI
*	A 526R	TB1-B78	P11-N	400 CPS 115 V HI
	TB 3	TB1-C 1	TB1-C 2	400 CPS 6 V HI
*	A 143G	TB1-C 1	P01-106	400 CPS 6 V HI
*	A 420G	TB1-C 1	P10-107	400 CPS 6 V HI
*	TB 3	TB1-C 2	TB1-C 1	400 CPS 6 V HI
*	A 143N	TB1-C 2	P01- 90	400 CPS 6 V HI
*	A 420N	TB1-C 2	P10-108	400 CPS 6 V HI
*	A 144	TB1-C 3	P01- 91	MODE LAMP TEST PWR
*	A 312Y	TB1-C 3	J09- 84	MODE LAMP TEST PWR
*	CC326	TB1-C 4	J22- 41	+28 VDC SPACECRAFT
*	A 153	TB1-C 4	J08- 32	MASTER CAUTION LIGHT HI
*	A 161	TB1-C 4	J08- 54	MASTER WARNING LIGHT HI
*	CC105W	TB1-C10	J14-A2	Z PIP ERROR LO
*	A 259Y	TB1-C10	P07-C*	Z PIP ERROR LO
*	CC105R	TB1-C11	J14-A1	Z PIP ERROR HI
*	A 259R	TB1-C11	P07-B*	Z PIP ERROR HI
	TB 14	TB1-C12	TB1-D12	0 VDC IMU
*	TB 14	TB1-C12	TB1-B12	0 VDC IMU
*	CC143W	TB1-C14	J16-B8	COS AOG 1X S3
*	A 196R	TB1-C14	P03-D	COS AOG 1X S3
*	A 348R	TB1-C14	P09- 45	COS AOG 1X S3
*	CC143R	TB1-C15	J16-C8	COS AOG 1X S1
*	A 43Y	TB1-C15	J03- 6	COS AOG 1X S1

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015087
SCALE-NONE
REV LTR B
SHEET 101

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 196Y	TB1-C15	P03-E	COS AOG 1X S1
*	A 348Y	TB1-C15	P09- 27	COS AOG 1X S1
*	CC143L	TB1-C16	J16-C9	COS AOG 1X TO CDU
*	A 43R	TB1-C16	J03- 20	COS AOG 1X TO CDU
	TB 15	TB1-C17	TB1-D17	0 VDC IMU
	CC143B	TB1-C17	SHLD CC143	0 VDC IMU
	A 43B	TB1-C17	SHLD A 43	0 VDC IMU
	A 196B	TB1-C17	SHLD A 196	0 VDC IMU
	A 348B	TB1-C17	SHLD A 348	0 VDC IMU
*	TB 15	TB1-C17	TB1-B17	0 VDC IMU
*	CC 71R	TB1-C18	J11-H6	OG TORQUE MOTOR HI
*	A 206R	TB1-C18	P03-Y	OG TORQUE MOTOR HI
*	A 250R	TB1-C18	P06-H	OG TORQUE MOTOR HI
*	A 398R	TB1-C18	P09-131	OG TORQUE MOTOR HI
*	CC 71W	TB1-C19	J11-H5	OG TORQUE MOTOR RET
*	A 206Y	TB1-C19	P03-X	OG TORQUE MOTOR RET
*	A 250Y	TB1-C19	P06-J	OG TORQUE MOTOR RET
*	A 398Y	TB1-C19	P09-109	OG TORQUE MOTOR RET
*	CC109R	TB1-C21	J14-M6	Z GYRO TORQUE -
*	A 257R	TB1-C21	P07-C	Z GYRO TORQUE -
*	CC109W	TB1-C22	J14-N6	Z GYRO TORQUE RET
*	A 257W	TB1-C22	P07-B	Z GYRO TORQUE RET
*	CC109L	TB1-C23	J14-L6	Z GYRO TORQUE +
*	A 257L	TB1-C23	P07-A	Z GYRO TORQUE +
	TB 18	TB1-C24	TB1-D24	0 VDC IMU
	CC109B	TB1-C24	SHLD CC109	0 VDC IMU
	A 257B	TB1-C24	SHLD A 257	0 VDC IMU
*	AA 2	TB1-C24	TB1-A17	0 VDC IMU
*	A 159R	TB1-C25	J08- 52	G+N ERROR LIGHT LO
*	A 590	TB1-C25	J09- 62	G+N ERROR LIGHT LO
*	CC 86	TB1-C26	J12-L2	G+N ERROR LIGHT HI
*	A 159Y	TB1-C26	J08- 51	G+N ERROR LIGHT HI
*	A 384	TB1-C26	P09- 84	G+N ERROR LIGHT HI
*	CC 68W	TB1-C28	J11-B6	IMU IG AND Y GYRO ERROR SIG
*	A 195G	TB1-C28	P03-U	IMU IG AND Y GYRO ERROR SIG
*	A 390G	TB1-C28	P09- 94	IMU IG AND Y GYRO ERROR SIG
*	CC153R	TB1-C29	J16-A5	OG CDU MDA TACH SIG
*	A 60R	TB1-C29	J03-106	OG CDU MDA TACH SIG

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015087
SCALE-NONE
REV LTR B
SHEET 102

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	A 60B	TB1-C30	SHLD A 60	OG CDU MDA INPUT RET
*	CC153L	TB1-C30	J16-B5	OG CDU MDA INPUT RET
*	A 60Y	TB1-C30	J03- 92	OG CDU MDA INPUT RET
*	CC153W	TB1-C31	J16-A6	OG CDU MDA SLEW SIG
*	A 60G	TB1-C31	J03-105	OG CDU MDA SLEW SIG
*	CC119R	TB1-C33	J15-C3	OG CDU ENCODER PHASE 2
*	A 61R	TB1-C33	J03-108	OG CDU ENCODER PHASE 2
	A 61B	TB1-C34	SHLD A 61	OG CDU ENCODER COMMON
*	CC119W	TB1-C34	J15-D3	OG CDU ENCODER COMMON
*	A 61Y	TB1-C34	J03- 94	OG CDU ENCODER COMMON
*	CC119L	TB1-C35	J15-D4	OG CDU ENCODER PHASE 1
*	A 61G	TB1-C35	J03-107	OG CDU ENCODER PHASE 1
	TB 23	TB1-C36	TB1-D36	0 VDC OPTICS
	CC258B	TB1-C36	SHLD CC258	0 VDC OPTICS
	A 94B	TB1-C36	SHLD A 94	0 VDC OPTICS
*	TB 23	TB1-C36	TB1-B36	0 VDC OPTICS
*	CC258R	TB1-C37	J19-A6	TRUNNION CDU TACHOMETER HI
*	A 94R	TB1-C37	J05-106	TRUNNION CDU TACHOMETER HI
*	CC258W	TB1-C38	J19-B6	TRUNNION CDU TACHOMETER LO
*	A 94Y	TB1-C38	J05- 92	TRUNNION CDU TACHOMETER LO
	TB 24	TB1-C39	TB1-D39	0 VDC OPTICS
*	TB 24	TB1-C39	TB1-B39	0 VDC OPTICS
*	CC256W	TB1-C40	J19-B5	TRUNNION CDU 16X RSVR S2
*	A 93Y	TB1-C40	J05-104	TRUNNION CDU 16X RSVR S2
*	CC256R	TB1-C41	J19-B4	TRUNNION CDU 16X RSVR S3
*	A 93R	TB1-C41	J05- 90	TRUNNION CDU 16X RSVR S3
	TB 25	TB1-C42	TB1-D42	0 VDC OPTICS
	CC230B	TB1-C42	SHLD CC230	0 VDC OPTICS
	CC256B	TB1-C42	SHLD CC256	0 VDC OPTICS
	A 83B	TB1-C42	SHLD A 83	0 VDC OPTICS
	A 93B	TB1-C42	SHLD A 93	0 VDC OPTICS
	A 224B	TB1-C42	SHLD A 224	0 VDC OPTICS
*	TB 25	TB1-C42	TB1-B42	0 VDC OPTICS
*	CC230W	TB1-C43	J18-D1	TRUNNION CDU 1/4X RSVR S4
*	A 83Y	TB1-C43	J05- 10	TRUNNION CDU 1/4X RSVR S4
*	A 224Y	TB1-C43	P05- 40	SXT TRUNNION 1X RSVR S2
*	CC230R	TB1-C44	J18-F1	TRUNNION CDU 1/4X RSVR S2
*	A 83R	TB1-C44	J05- 9	TRUNNION CDU 1/4X RSVR S2

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 224R	TB1-C44	P05- 41	SXT TRUNNION 1X RSVR S4	
*	A 72R	TB1-C45	J04- 56	SHAFT CDU 1/2X RSVR S2	
*	A 211R	TB1-C45	P05- 3	SXT SHAFT 1/2X RSVR S2	
*	A 72Y	TB1-C46	J04- 66	SHAFT CDU 1/2X RSVR S4	
*	A 211Y	TB1-C46	P05- 2	SXT SHAFT 1/2X RSVR S4	
	TB 26	TB1-C47	TB1-D47	0 VDC OPTICS	
	A 72B	TB1-C47	SHLD A 72	0 VDC OPTICS	
	A 211B	TB1-C47	SHLD A 211	0 VDC OPTICS	
*	TB 26	TB1-C47	TB1-B47	0 VDC OPTICS	
*	A 130Y	TB1-C48	P01- 27	CDU MANUAL MODE COMMAND FROM AGC	
*	A 476Y	TB1-C48	J10- 23	CDU MANUAL MODE COMMAND FROM AGC	309
*	A 130R	TB1-C49	P01- 58	ENTRY MODE COMMAND FROM AGC	
*	A 476R	TB1-C49	J10- 25	ENTRY MODE COMMAND FROM AGC	311
*	A 127Y	TB1-C50	P01- 38	ZERO ENCODER MODE COMMAND FROM AGC	
*	A 475Y	TB1-C50	J10- 21	ZERO ENCODER MODE COMMAND FROM AGC	307
*	CC151	TB1-C51	J16-T2	+28 VDC IMU FOR OG MDA	
*	A 49	TB1-C51	J03- 30	+28 VDC IMU FOR OG MDA	
*	CC150	TB1-C52	J16-T1	+28 VDC IMU FOR MG MDA	
*	A 29	TB1-C52	J02- 30	+28 VDC IMU FOR MG MDA	
*	CC149	TB1-C53	J16-S1	+28 VDC IMU FOR IG MDA	
*	A 9	TB1-C53	J01- 30	+28 VDC IMU FOR IG MDA	
*	CC 66	TB1-C54	J11-N6	-28 VDC	
*	A 247	TB1-C54	P06-F	-28 VDC	
*	A 370	TB1-C54	P09- 66	-28 VDC	
*	CC173W	TB1-C56	J16-B7	AGC COMMON (ISS)	
*	CC332W	TB1-C56	J24- 26	AGC COMMON (ISS)	165
*	A 113Y	TB1-C56	J06- 68	AGC COMMON (ISS)	
*	A 134Y	TB1-C56	P01- 68	AGC COMMON (ISS)	
*	CC175L	TB1-C57	J16-M3	MG CDU FAILURE INDICATION	
*	A 388N	TB1-C57	P09- 90	MG CDU FAILURE INDICATION	
*	CC175K	TB1-C58	J16-M2	IG CDU FAILURE INDICATION	
*	A 388G	TB1-C58	P09- 89	IG CDU FAILURE INDICATION	
	TB 32	TB1-C59	TB1-D59	0 VDC IMU	
	CC190B	TB1-C59	SHLD CC190	0 VDC IMU	
	CC192B	TB1-C59	SHLD CC192	0 VDC IMU	
	A 254B	TB1-C59	SHLD A 254	0 VDC IMU	
	A 255B	TB1-C59	SHLD A 255	0 VDC IMU	
*	CC190W	TB1-C60	J17-M4	IMU EMERGENCY HTR HI	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 254R	TB1-C60	P06-X	IMU EMERGENCY HTR HI
*	CC190R	TB1-C61	J17-N4	EMERGENCY HTR LO-OPER AND STBY
*	A 254Y	TB1-C61	P06-R	EMERGENCY HTR LO-OPER AND STBY
*	AA 10	TB1-C62	TB1-B68	0 VDC IMU
*	TB 33	TB1-C62	TB1-B62	0 VDC IMU
*	A 297	TB1-C62	J09- 26	0 VDC IMU
*	A 411	TB1-C62	P10- 13	0 VDC IMU
*	CC206L	TB1-C63	J17-T5	+32 VDC PIP
*	A 337G	TB1-C63	P09- 28	+32 VDC PIP
*	CC205	TB1-C64	J17-F2	TEMPERATURE CONTROL SIG LO
*	A 404	TB1-C64	P09-128	TEMPERATURE CONTROL SIG LO
*	A 232Y	TB1-C65	P05- 73	TRACKER AUTOMATIC GAIN CONTROL LO
*	A 490Y	TB1-C65	E 25	TRACKER AUTOMATIC GAIN CONTROL LO
*	A 232R	TB1-C66	P05- 72	TRACKER AUTOMATIC GAIN CONTROL HI
*	A 490R	TB1-C66	P13- 1	TRACKER AUTOMATIC GAIN CONTROL HI
	TB 34	TB1-C67	TB1-D67	0 VDC OPTICS
	A 232B	TB1-C67	SHLD A 232	0 VDC OPTICS
	A 490B	TB1-C67	SHLD A 490	0 VDC OPTICS
*	TB 34	TB1-C67	TB1-B67	0 VDC OPTICS
*	A 222	TB1-C67	P05- 37	0 VDC OPTICS
	TB 36	TB1-C68	TB1-C69	0 VDC IMU
*	CC 92	TB1-C68	J12-R4	0 VDC IMU
*	CC322	TB1-C68	J20-K2	0 VDC IMU
*	A 543	TB1-C68	P12-F	0 VDC IMU
*	A 573	TB1-C68	TB1-B68	0 VDC IMU
	TB 36	TB1-C69	TB1-C70	0 VDC IMU
*	TB 36	TB1-C69	TB1-C68	0 VDC IMU
*	CC 78	TB1-C69	J11-R1	0 VDC IMU
*	CC 91	TB1-C69	J12-R3	0 VDC IMU
*	A 513	TB1-C69	P11-E	0 VDC IMU
	A 577	TB1-C70	TB1-F73	0 VDC IMU
*	TB 36	TB1-C70	TB1-C69	0 VDC IMU
*	CC 74	TB1-C70	J11-R2	0 VDC IMU
*	CC 90	TB1-C70	J12-R2	0 VDC IMU
*	A 539	TB1-C70	P12-D	0 VDC IMU
*	CC224	TB1-C71	J18-T3	+28 VDC OPTICS DAC POWER
*	A 331	TB1-C71	J09-108	+28 VDC OPTICS DAC POWER
*	CC 81R	TB1-C72	J12-P2	800 CPS 28 V 5 PCT IMU WHEELS PHASE B

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 241R	TB1-C72	P06-C	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
*	A 349R	TB1-C72	P09- 33	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
*	CC 81W	TB1-C73	J12-R1	800 CPS 28 V 5 PCT IMU WHEELS LO
*	A 241Y	TB1-C73	P06-B	800 CPS 28 V 5 PCT IMU WHEELS LO
*	A 349Y	TB1-C73	P09- 50	800 CPS 28 V 5 PCT IMU WHEELS LO
*	CC 81L	TB1-C74	J12-P1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
*	A 241G	TB1-C74	P06-A	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
*	A 349G	TB1-C74	P09- 32	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
*	CC183W	TB1-C75	J17-R4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	CC285R	TB1-C75	J20-L6	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 341R	TB1-C75	P09- 13	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	CC285W	TB1-C76	J20-L5	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 248Y	TB1-C76	P06-G*	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 341Y	TB1-C76	P09- 14	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	CC183R	TB1-C77	J17-P4	800 CPS 28 V 5 PCT HI TO BLOWERS
*	A 248R	TB1-C77	P06-F*	800 CPS 28 V 5 PCT HI TO BLOWERS
*	CC311W	TB1-C78	J20-M3	400 CPS 115 V LO
*	A 419Y	TB1-C78	P10- 68	400 CPS 115 V LO
*	A 526Y	TB1-C78	P11-K	400 CPS 115 V LO
*	CC 88R	TB1-D 1	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 2R	TB1-D 1	J01- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 22R	TB1-D 1	J02- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	A 42R	TB1-D 1	J03- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	CC 88W	TB1-D 2	J12-K4	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 2Y	TB1-D 2	J01- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 22Y	TB1-D 2	J02- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	A 42Y	TB1-D 2	J03- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
	TB 6	TB1-D 3	TB1-D 4	0 VDC IMU
*	AA 7	TB1-D 3	TB1-B 4	0 VDC IMU
*	A 115	TB1-D 3	J06- 78	0 VDC IMU
*	A 137	TB1-D 3	P01- 78	0 VDC IMU
*	AA 8	TB1-D 4	TB1-B62	0 VDC IMU
*	TB 6	TB1-D 4	TB1-D 3	0 VDC IMU
*	A 175	TB1-D 4	J08- 92	0 VDC IMU
	TB 9	TB1-D 5	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
*	CC161W	TB1-D 5	J16-P5	800 CPS 28 V 1 PCT HI OPTICS
*	A 62R	TB1-D 5	J04- 1	800 CPS 28 V 1 PCT HI OPTICS
*	A 79R	TB1-D 5	J05- 1	800 CPS 28 V 1 PCT HI OPTICS

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	TB 9	TB1-D 6	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
*	TB 9	TB1-D 6	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS
*	A 208R	TB1-D 6	P04-E1	800 CPS 28 V 1 PCT HI OPTICS
*	A 217R	TB1-D 6	P05- 12	800 CPS 28 V 1 PCT HI OPTICS
*	TB 9	TB1-D 7	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
*	A 220R	TB1-D 7	P05- 32	800 CPS 28 V 1 PCT HI OPTICS
*	A 231R	TB1-D 7	P05- 71	800 CPS 28 V 1 PCT HI OPTICS
*	A 237R	TB1-D 7	P05- 84	800 CPS 28 V 1 PCT HI OPTICS
*	CC162R	TB1-D 8	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 63R	TB1-D 8	J04- 5	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 80R	TB1-D 8	J05- 5	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 233R	TB1-D 8	P05- 76	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	CC 98W	TB1-D10	J13-B3	Y PIP ERROR LO
*	A 258Y	TB1-D10	P07-A*	Y PIP ERROR LO
*	CC 98R	TB1-D11	J13-A3	Y PIP ERROR HI
*	A 258R	TB1-D11	P07-Z	Y PIP ERROR HI
	TB 14	TB1-D12	TB1-F12	0 VDC IMU
*	TB 14	TB1-D12	TB1-C12	0 VDC IMU
*	CC144W	TB1-D14	J16-A8	SIN AOG 1X S2
*	A 198Y	TB1-D14	P03-G	SIN AOG 1X S2
*	A 334R	TB1-D14	P09- 26	SIN AOG 1X S2
*	CC144R	TB1-D15	J16-A9	SIN AOG 1X S4
*	A 44Y	TB1-D15	J03- 7	SIN AOG 1X S4
*	A 198R	TB1-D15	P03-F	SIN AOG 1X S4
*	A 334Y	TB1-D15	P09- 4	SIN AOG 1X S4
*	CC144L	TB1-D16	J16-B9	SIN AOG 1X TO CDU
*	A 44R	TB1-D16	J03- 21	SIN AOG 1X TO CDU
	TB 15	TB1-D17	TB1-F17	0 VDC IMU
	CC144B	TB1-D17	SHLD CC144	0 VDC IMU
	A 44B	TB1-D17	SHLD A 44	0 VDC IMU
	A 198B	TB1-D17	SHLD A 198	0 VDC IMU
	A 334B	TB1-D17	SHLD A 334	0 VDC IMU
*	TB 15	TB1-D17	TB1-C17	0 VDC IMU
*	CC 70R	TB1-D18	J11-F6	MG TORQUE MOTOR HI
*	A 192R	TB1-D18	P03-Z	MG TORQUE MOTOR HI
*	A 194R	TB1-D18	P03-C*	MG TORQUE MOTOR HI
*	A 399R	TB1-D18	P09-132	MG TORQUE MOTOR HI
*	CC 70W	TB1-D19	J11-G6	MG TORQUE MOTOR RET

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 192Y	TB1-D19	P03-A*	MG TORQUE MOTOR RET
*	A 194Y	TB1-D19	P03-B*	MG TORQUE MOTOR RET
*	A 399Y	TB1-D19	P09-110	MG TORQUE MOTOR RET
*	CC108R	TB1-D21	J14-M2	Y GYRO TORQUE -
*	A 262R	TB1-D21	P07-J	Y GYRO TORQUE -
*	CC108W	TB1-D22	J14-M3	Y GYRO TORQUE RET
*	A 262W	TB1-D22	P07-H	Y GYRO TORQUE RET
*	CC108L	TB1-D23	J14-M1	Y GYRO TORQUE +
*	A 262L	TB1-D23	P07-G	Y GYRO TORQUE +
	TB 18	TB1-D24	TB1-F24	0 VDC IMU
	CC108B	TB1-D24	SHLD CC108	0 VDC IMU
	A 262B	TB1-D24	SHLD A 262	0 VDC IMU
	A 567	TB1-D24	TB1-D59	0 VDC IMU
*	TB 18	TB1-D24	TB1-C24	0 VDC IMU
*	A 168Y	TB1-D25	J08- 82	AGC POWER SUPPLY FAIL LIGHT LO
*	A 592	TB1-D25	J09- 39	AGC POWER SUPPLY FAIL LIGHT LO
*	CC 85	TB1-D26	J12-M1	AGC POWER SUPPLY FAIL SIG HI
*	A 168R	TB1-D26	J08- 71	AGC POWER SUPPLY FAIL SIG HI
*	A 371	TB1-D26	P09- 67	AGC POWER SUPPLY FAIL SIG HI
*	CC 68K	TB1-D28	J11-B5	IMU GIMBAL AND GYRO ERROR SIG LO
*	CC130R	TB1-D28	J15-B2	IMU GIMBAL AND GYRO ERROR SIG LO
*	A 195Y	TB1-D28	P03-V	IMU GIMBAL AND GYRO ERROR SIG LO
*	A 390N	TB1-D28	P09- 93	IMU GIMBAL AND GYRO ERROR SIG LO
*	CC141R	TB1-D29	J16-A3	MG CDU MDA TACH SIG
*	A 39R	TB1-D29	J02-106	MG CDU MDA TACH SIG
	A 39B	TB1-D30	SHLD A 39	MG CDU MDA INPUT RET
*	CC141L	TB1-D30	J16-B3	MG CDU MDA INPUT RET
*	A 39Y	TB1-D30	J02- 92	MG CDU MDA INPUT RET
*	CC141W	TB1-D31	J16-A4	MG CDU MDA SLEW SIG
*	A 39G	TB1-D31	J02-105	MG CDU MDA SLEW SIG
*	CC118R	TB1-D33	J15-D2	MG CDU ENCODER PHASE 2
*	A 40R	TB1-D33	J02-108	MG CDU ENCODER PHASE 2
	A 40B	TB1-D34	SHLD A 40	MG CDU ENCODER COMMON
*	CC118W	TB1-D34	J15-F2	MG CDU ENCODER COMMON
*	A 40Y	TB1-D34	J02- 94	MG CDU ENCODER COMMON
*	CC118L	TB1-D35	J15-F1	MG CDU ENCODER PHASE 1
*	A 40G	TB1-D35	J02-107	MG CDU ENCODER PHASE 1
	TB 23	TB1-D36	TB1-F36	0 VDC OPTICS

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CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC233B	TB1-D36	SHLD CC233	0 VDC OPTICS
A 221B	TB1-D36	SHLD A 221	0 VDC OPTICS
* TB 23	TB1-D36	TB1-C36	0 VDC OPTICS
* CC233R	TB1-D37	J18-A9	SXT TRUNNION TACH HI
* A 221R	TB1-D37	P05- 34	SXT TRUNNION TACH HI
* CC233W	TB1-D38	J18-B9	SXT TRUNNION TACH LO
* A 221Y	TB1-D38	P05- 35	SXT TRUNNION TACH LO
TB 24	TB1-D39	TB1-F39	0 VDC OPTICS
CC255B	TB1-D39	SHLD CC255	0 VDC OPTICS
A 81B	TB1-D39	SHLD A 81	0 VDC OPTICS
* TB 24	TB1-D39	TB1-C39	0 VDC OPTICS
* CC255R	TB1-D40	J19-C5	TRUNNION CDU 1/4X RSVR P2
* A 81R	TB1-D40	J05- 17	TRUNNION CDU 1/4X RSVR P2
* CC255W	TB1-D41	J19-C6	TRUNNION CDU 1/4X RSVR P3
* A 81Y	TB1-D41	J05- 4	TRUNNION CDU 1/4X RSVR P3
TB 25	TB1-D42	TB1-F42	0 VDC OPTICS
CC229B	TB1-D42	SHLD CC229	0 VDC OPTICS
A 82B	TB1-D42	SHLD A 82	0 VDC OPTICS
A 223B	TB1-D42	SHLD A 223	0 VDC OPTICS
* TB 25	TB1-D42	TB1-C42	0 VDC OPTICS
* CC229R	TB1-D43	J18-F3	TRUNNION CDU 1/4X RSVR S3
* A 82R	TB1-D43	J05- 22	TRUNNION CDU 1/4X RSVR S3
* A 223R	TB1-D43	P05- 38	SXT TRUNNION 1X RSVR S3
* CC229W	TB1-D44	J18-F2	TRUNNION CDU 1/4X RSVR S1
* A 82Y	TB1-D44	J05- 8	TRUNNION CDU 1/4X RSVR S1
* A 223Y	TB1-D44	P05- 39	SXT TRUNNION 1X RSVR S1
* CC218R	TB1-D45	J18-B1	SXT SHAFT 1/2X RSVR S3
* A 73R	TB1-D45	J04- 67	SHAFT CDU 1/2X RSVR S1
* A 213R	TB1-D45	P05- 7	SXT SHAFT 1/2X RSVR S3
* CC218W	TB1-D46	J18-A1	SXT SHAFT 1/2X RSVR S1
* A 73Y	TB1-D46	J04- 57	SHAFT CDU 1/2X RSVR S3
* A 213Y	TB1-D46	P05- 6	SXT SHAFT 1/2X RSVR S1
TB 26	TB1-D47	TB1-F47	0 VDC OPTICS
CC218B	TB1-D47	SHLD CC218	0 VDC OPTICS
A 73B	TB1-D47	SHLD A 73	0 VDC OPTICS
A 213B	TB1-D47	SHLD A 213	0 VDC OPTICS
* TB 26	TB1-D47	TB1-C47	0 VDC OPTICS
* CC104	TB1-D51	J13-C1	TRAY 3 THERMISTER HI

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CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 393	TB1-D51	P09- 98	TRAY 3 THERMISTER HI
* CC111	TB1-D52	J14-B1	TRAY 4 THERMISTER HI
* A 382	TB1-D52	P09- 80	TRAY 4 THERMISTER HI
CC173B	TB1-D56	SHLD CC173	AGC SIGNAL 178 SHIELD RETURN
CC332B	TB1-D56	SHLD CC332	AGC SIGNAL 178 SHIELD RETURN
A 113B	TB1-D56	SHLD A 113	AGC SIGNAL 178 SHIELD RETURN
A 134B	TB1-D56	SHLD A 134	AGC SIGNAL 178 SHIELD RETURN
* CC175R	TB1-D57	J16-N3	OG CDU FAILURE INDICATION
* A 388R	TB1-D57	P09-130	OG CDU FAILURE INDICATION
* CC175W	TB1-D58	J16-R2	0 VDC IMU
* A 388Y	TB1-D58	P09-108	0 VDC IMU
AA 12	TB1-D59	TB1-F74	0 VDC IMU
* TB 32	TB1-D59	TB1-C59	0 VDC IMU
* CC176	TB1-D59	J16-P2	0 VDC IMU
* A 567	TB1-D59	TB1-D24	0 VDC IMU
* CC192R	TB1-D60	J17-P1	IMU CONTROL HTR HI
* A 255R	TB1-D60	P06-V	IMU CONTROL HTR HI
* CC192W	TB1-D61	J17-N1	IMU CONTROL HTR LO
* A 255Y	TB1-D61	P06-W	IMU CONTROL HTR LO
* A 256	TB1-D62	P06-Y	EMERG HTR CONT MODULE LO
* A 321R	TB1-D62	J09- 90	EMERG HTR CONT MODULE LO
* CC189W	TB1-D63	J17-L1	IMU TEMP CONT K2 PIN 6
* A 321Y	TB1-D63	J09- 76	IMU TEMP CONT K2 PIN 6
* CC195	TB1-D64	J17-F4	IRIG TEMP (TELEMETRY)
* A 403	TB1-D64	P09-127	IRIG TEMP (TELEMETRY)
* A 228Y	TB1-D65	P05- 65	TRACKER PREAMP OUTPUT LO
* A 491Y	TB1-D65	E 25	TRACKER PREAMP OUTPUT LO
* A 228R	TB1-D66	P05- 64	TRACKER PREAMP OUTPUT HI
* A 491R	TB1-D66	P13- 2	TRACKER PREAMP OUTPUT HI
TB 34	TB1-D67	TB1-F67	0 VDC OPTICS
A 228B	TB1-D67	SHLD A 228	0 VDC OPTICS
A 491B	TB1-D67	SHLD A 491	0 VDC OPTICS
* TB 34	TB1-D67	TB1-C67	0 VDC OPTICS
* CC286R	TB1-D68	J20-A4	IMU PRESSURE MONITOR HI
* A 245R	TB1-D68	P06-D*	IMU PRESSURE MONITOR HI
* A 381R	TB1-D68	P09- 79	IMU PRESSURE MONITOR HI
* CC286W	TB1-D69	J20-B4	IMU PRESSURE MONITOR LO
* A 245Y	TB1-D69	P06-E*	IMU PRESSURE MONITOR LO

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* A 381Y	TB1-D69	P09- 78	IMU PRESSURE MONITOR LO	
* CC200	TB1-D70	J17-M3	0 VDC SPACECRAFT	
* A 296	TB1-D70	J09- 15	0 VDC SPACECRAFT	
* A 408	TB1-D70	P10- 9	0 VDC SPACECRAFT	
TB 38	TB1-D71	TB1-D72	CONDITION LAMP TEST	
* CC181	TB1-D71	J17-P6	CONDITION LAMP TEST	
* A 141	TB1-D71	P01- 88	CONDITION LAMP TEST	
* A 562	TB1-D71	J23- 48	CONDITION LAMP TEST	157T
* TB 38	TB1-D72	TB1-D71	CONDITION LAMP TEST	
* A 318	TB1-D72	J09- 73	CONDITION LAMP TEST	
* A 409	TB1-D72	P10- 10	CONDITION LAMP TEST	
* A 477	TB1-D72	J10- 2	CONDITION LAMP TEST	328
AA 13	TB1-D73	TB1-F73	0 VDC IMU	
AA 14	TB1-D73	TB1-G20	0 VDC IMU	
TB 42	TB1-D73	TB1-D74	0 VDC IMU	
* A 540	TB1-D73	P12-D	0 VDC IMU	
* A 578	TB1-D73	TB1-B70	0 VDC IMU	
AA 15	TB1-D74	TB1-H25	0 VDC IMU	
TB 42	TB1-D74	TB1-D75	0 VDC IMU	
* TB 42	TB1-D74	TB1-D73	0 VDC IMU	
* CC210	TB1-D74	J17-S2	0 VDC IMU	
* A 514	TB1-D74	P11-E	0 VDC IMU	
AA 16	TB1-D75	TB1-K25	0 VDC IMU	
A 583	TB1-D75	TB1-F75	0 VDC IMU	
* TB 42	TB1-D75	TB1-D74	0 VDC IMU	
* CC209	TB1-D75	J17-S1	0 VDC IMU	
* A 544	TB1-D75	P12-F	0 VDC IMU	
TB 44	TB1-D76	TB1-D77	0 VDC OPTICS	
A 586	TB1-D76	TB1-K67	0 VDC OPTICS	
* AA 9	TB1-D76	TB1-B67	0 VDC OPTICS	
* CC213	TB1-D76	J17-S6	0 VDC OPTICS	
AA 17	TB1-D77	TB1-F77	0 VDC OPTICS	
TB 44	TB1-D77	TB1-D78	0 VDC OPTICS	
* TB 44	TB1-D77	TB1-D76	0 VDC OPTICS	
* CC240	TB1-D77	J18-R6	0 VDC OPTICS	
* A 335	TB1-D77	P09- 5	0 VDC OPTICS	
* TB 44	TB1-D78	TB1-D77	0 VDC OPTICS	
* CC272	TB1-D78	J19-R3	0 VDC OPTICS	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* CC323	TB1-D78	J20-P3	0 VDC OPTICS
* A 230	TB1-D78	P05- 69	0 VDC OPTICS
* A 545	TB1-D78	P12-G	0 VDC OPTICS
TB 10	TB1-F 5	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
* CC161R	TB1-F 5	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
* A 62Y	TB1-F 5	J04- 14	800 CPS 28 V 1 PCT LO OPTICS
* A 79Y	TB1-F 5	J05- 14	800 CPS 28 V 1 PCT LO OPTICS
TB 10	TB1-F 6	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS
* TB 10	TB1-F 6	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS
* A 208Y	TB1-F 6	P04-E2	800 CPS 28 V 1 PCT LO OPTICS
* A 217G	TB1-F 6	P05- 14	800 CPS 28 V 1 PCT LO OPTICS
* A 217Y	TB1-F 6	P05- 13	800 CPS 28 V 1 PCT LO OPTICS
* TB 10	TB1-F 7	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
* A 220Y	TB1-F 7	P05- 55	800 CPS 28 V 1 PCT LO OPTICS
* A 231Y	TB1-F 7	P05- 70	800 CPS 28 V 1 PCT LO OPTICS
* A 237Y	TB1-F 7	P05- 85	800 CPS 28 V 1 PCT LO OPTICS
* CC162W	TB1-F 8	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 63Y	TB1-F 8	J04- 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 80Y	TB1-F 8	J05- 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 233Y	TB1-F 8	P05- 77	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* CC 95W	TB1-F10	J13-B1	X PIP ERROR LO
* A 266Y	TB1-F10	P07-Y	X PIP ERROR LO
* CC 95R	TB1-F11	J13-A1	X PIP ERROR HI
* A 266R	TB1-F11	P07-X	X PIP ERROR HI
TB 14	TB1-F12	TB1-G12	0 VDC IMU
CC201B	TB1-F12	SHLD CC201	0 VDC IMU
A 205B	TB1-F12	SHLD A 205	0 VDC IMU
* TB 14	TB1-F12	TB1-D12	0 VDC IMU
* CC201R	TB1-F13	J17-C2	PITCH-YAW RSVR S4
* A 205R	TB1-F13	P03-R	PITCH-YAW RSVR S4
* CC148R	TB1-F14	J16-D7	COS AOG 16X S1
* A 180Y	TB1-F14	P02-D	COS AOG 16X S1
* CC148W	TB1-F15	J16-F7	COS AOG 16X S3
* A 56R	TB1-F15	J03-100	COS AOG 16X S3
* A 180R	TB1-F15	P02-C	COS AOG 16X S3
* CC148L	TB1-F16	J16-F8	COS AOG 16X TO CDU
* A 56Y	TB1-F16	J03- 86	COS AOG 16X TO CDU
TB 15	TB1-F17	TB1-G17	0 VDC IMU

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC148B	TB1-F17	SHLD CC148	0 VDC IMU
	A 56B	TB1-F17	SHLD A 56	0 VDC IMU
	A 180B	TB1-F17	SHLD A 180	0 VDC IMU
*	TB 15	TB1-F17	TB1-D17	0 VDC IMU
*	CC 69R	TB1-F18	J11-D6	IG TORQUE MOTOR HI
*	A 197R	TB1-F18	P03-D*	IG TORQUE MOTOR HI
*	A 199R	TB1-F18	P03-G*	IG TORQUE MOTOR HI
*	A 389R	TB1-F18	P09- 92	IG TORQUE MOTOR HI
*	CC 69W	TB1-F19	J11-D5	IG TORQUE MOTOR RET
*	A 197Y	TB1-F19	P03-E*	IG TORQUE MOTOR RET
*	A 199Y	TB1-F19	P03-F*	IG TORQUE MOTOR RET
*	A 389Y	TB1-F19	P09- 91	IG TORQUE MOTOR RET
*	CC101R	TB1-F21	J13-G6	X GYRO TORQUE -
*	A 260R	TB1-F21	P07-F	X GYRO TORQUE -
*	CC101W	TB1-F22	J13-F6	X GYRO TORQUE RET
*	A 260W	TB1-F22	P07-E	X GYRO TORQUE RET
*	CC101L	TB1-F23	J13-D6	X GYRO TORQUE +
*	A 260L	TB1-F23	P07-D	X GYRO TORQUE +
	TB 18	TB1-F24	TB1-G24	0 VDC IMU
	CC101B	TB1-F24	SHLD CC101	0 VDC IMU
	A 260B	TB1-F24	SHLD A 260	0 VDC IMU
*	TB 18	TB1-F24	TB1-D24	0 VDC IMU
	TB 21	TB1-F27	TB1-G27	0 VDC IMU
	A 379B	TB1-F27	SHLD A 379	0 VDC IMU
	A 380B	TB1-F27	SHLD A 380	0 VDC IMU
*	CC130W	TB1-F28	J15-A1	Z GYRO ERROR SIG
*	A 193Y	TB1-F28	P03-B	Z GYRO ERROR SIG
*	A 379Y	TB1-F28	P09- 75	Z GYRO ERROR SIG
*	CC136R	TB1-F29	J16-A1	IG CDU MDA TACH SIG
*	A 19R	TB1-F29	J01-106	IG CDU MDA TACH SIG
	A 19B	TB1-F30	SHLD A 19	IG CDU MDA INPUT RET
*	CC136L	TB1-F30	J16-B1	IG CDU MDA INPUT RET
*	A 19Y	TB1-F30	J01- 92	IG CDU MDA INPUT RET
*	CC136W	TB1-F31	J16-A2	IG CDU MDA SLEW SIG
*	A 19G	TB1-F31	J01-105	IG CDU MDA SLEW SIG
	TB 22	TB1-F32	TB1-G32	OG CDU ERROR SIG RET
	A 59B	TB1-F32	SHLD A 59	OG CDU ERROR SIG RET
	A 338B	TB1-F32	SHLD A 338	OG CDU ERROR SIG RET

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 571	TB1-F32	TB1-G30	OG CDU ERROR SIG RET
*	CC117R	TB1-F33	J15-D1	IG CDU ENCODER PHASE 2
*	A 20R	TB1-F33	J01-108	IG CDU ENCODER PHASE 2
	A 20B	TB1-F34	SHLD A 20	IG CDU ENCODER COMMON
*	CC117W	TB1-F34	J15-C1	IG CDU ENCODER COMMON
*	A 20Y	TB1-F34	J01- 94	IG CDU ENCODER COMMON
*	CC117L	TB1-F35	J15-C2	IG CDU ENCODER PHASE 1
*	A 20G	TB1-F35	J01-107	IG CDU ENCODER PHASE 1
	TB 23	TB1-F36	TB1-G36	0 VDC OPTICS
	CC261B	TB1-F36	SHLD CC261	0 VDC OPTICS
	A 276B	TB1-F36	SHLD A 276	0 VDC OPTICS
*	TB 23	TB1-F36	TB1-D36	0 VDC OPTICS
*	CC261R	TB1-F37	J19-A1	SCT TRUNNION TACH HI
*	A 276R	TB1-F37	P08- 33	SCT TRUNNION TACH HI
*	CC261W	TB1-F38	J19-B1	SCT TRUNNION TACH LO
*	A 276Y	TB1-F38	P08- 34	SCT TRUNNION TACH LO
	TB 24	TB1-F39	TB1-G39	0 VDC OPTICS
	CC259B	TB1-F39	SHLD CC259	0 VDC OPTICS
	A 271B	TB1-F39	SHLD A 271	0 VDC OPTICS
*	TB 24	TB1-F39	TB1-D39	0 VDC OPTICS
*	CC259W	TB1-F40	J19-C1	SCT TRUNNION 1X RSVR S2
*	A 271Y	TB1-F40	P08- 18	SCT TRUNNION 1X RSVR S2
*	CC259R	TB1-F41	J19-C2	SCT TRUNNION 1X RSVR S4
*	A 271R	TB1-F41	P08- 19	SCT TRUNNION 1X RSVR S4
	TB 25	TB1-F42	TB1-G42	0 VDC OPTICS
	CC231B	TB1-F42	SHLD CC231	0 VDC OPTICS
	A 269B	TB1-F42	SHLD A 269	0 VDC OPTICS
*	TB 25	TB1-F42	TB1-D42	0 VDC OPTICS
*	CC231W	TB1-F43	J18-F5	SCT TRUNNION 1X RSVR P4
*	A 269Y	TB1-F43	P08- 10	SCT TRUNNION 1X RSVR P4
*	CC231R	TB1-F44	J18-F4	SCT TRUNNION 1X RSVR P2
*	A 269R	TB1-F44	P08- 9	SCT TRUNNION 1X RSVR P2
*	A 227Y	TB1-F45	P05- 54	SXT SHAFT 1X RSVR S3
*	A 280Y	TB1-F45	P08- 45	SCT SHAFT 1X RSVR P1
*	A 227R	TB1-F46	P05- 53	SXT SHAFT 1X RSVR S1
*	A 280R	TB1-F46	P08- 44	SCT SHAFT 1X RSVR P3
	TB 26	TB1-F47	TB1-G47	0 VDC OPTICS
	A 227B	TB1-F47	SHLD A 227	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 280B	TB1-F47	SHLD A 280	0 VDC OPTICS	
*	TB 26	TB1-F47	TB1-D47	0 VDC OPTICS	
*	CC264L	TB1-F48	J19-P3	SHAFT CDU 1X RSVR S2	
*	A 69G	TB1-F48	J04- 35	SHAFT CDU 1X RSVR S2	
*	CC264R	TB1-F49	J19-P4	SHAFT CDU 1X RSVR S3	
*	A 69R	TB1-F49	J04- 45	SHAFT CDU 1X RSVR S3	
*	CC264W	TB1-F50	J19-P5	SHAFT CDU 1X RSVR S1	
*	A 69Y	TB1-F50	J04- 34	SHAFT CDU 1X RSVR S1	
*	CC 87	TB1-F51	J12-C1	TRAY 2 THERMISTER HI	
*	A 401	TB1-F51	P09-116	TRAY 2 THERMISTER HI	
*	CC112	TB1-F52	J14-B2	THERMISTER LO	
*	CC331	TB1-F52	J23- 57	THERMISTER LO	199R
*	A 392	TB1-F52	P09- 97	THERMISTER LO	
	AA 18	TB1-F56	TB1-F76	0 VDC OPTICS	
	TB 30	TB1-F56	TB1-F57	0 VDC OPTICS	
*	CC270	TB1-F56	J19-L6	0 VDC OPTICS	
*	A 493Y	TB1-F56	P13- 13	TRACKER X DRIVE BUFFERED LO	
*	A 494Y	TB1-F56	P13- 14	TRACKER Y DRIVE BUFFERED LO	
*	TB 30	TB1-F57	TB1-F56	0 VDC OPTICS	
*	A 362	TB1-F57	P09- 56	0 VDC OPTICS	
*	A 495Y	TB1-F57	P13- 7	TRACKER PREAMP OUTPUT BUFFERED LO	
*	CC246	TB1-F58	J19-M6	SCT TRUNNION TACH FEEDBACK BUFFERED	
*	A 353	TB1-F58	P09- 40	SCT TRUNNION TACH FEEDBACK BUFFERED	
*	CC188	TB1-F59	J17-G1	IMU TEMP ALARM AMP PIN 14	
*	A 320	TB1-F59	J09- 75	IMU TEMP ALARM AMP PIN 14	
*	CC187R	TB1-F60	J17-G2	IMU TEMP ALARM AMP PIN 15	
*	A 319R	TB1-F60	J09- 74	IMU TEMP ALARM AMP PIN 15	
*	CC187L	TB1-F61	J17-H1	IMU TEMP ALARM BIAS RESISTOR	
*	A 319G	TB1-F61	J09-105	IMU TEMP ALARM BIAS RESISTOR	
*	CC187W	TB1-F62	J17-H2	IMU TEMP ALARM AMP PIN 5	
*	A 319Y	TB1-F62	J09- 92	IMU TEMP ALARM AMP PIN 5	
*	CC189R	TB1-F63	J17-M1	TEMPERATURE CONTROLLER 0 VDC IMU	
*	A 321G	TB1-F63	J09- 94	TEMPERATURE CONTROLLER 0 VDC IMU	
*	CC194	TB1-F64	J17-F5	ACCEL TEMP (TELEMETRY)	
*	A 396	TB1-F64	P09-106	ACCEL TEMP (TELEMETRY)	
*	CC275W	TB1-F65	J20-D7	TRACKER Y ERROR LO	
*	A 496Y	TB1-F65	P13- 23	TRACKER Y ERROR LO	
*	CC275R	TB1-F66	J20-D6	TRACKER Y ERROR HI	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 496R	TB1-F66	P13- 31	TRACKER Y ERROR HI
	TB 34	TB1-F67	TB1-G67	0 VDC OPTICS
	A 302B	TB1-F67	SHLD A 302	0 VDC OPTICS
	A 496B	TB1-F67	SHLD A 496	0 VDC OPTICS
*	TB 34	TB1-F67	TB1-D67	0 VDC OPTICS
*	CC262R	TB1-F68	J19-D3	SCT TRUNNION TRACKER MODE INPUT HI
*	A 302R	TB1-F68	J09- 34	SCT TRUNNION TRACKER MODE INPUT HI
*	CC262W	TB1-F69	J19-D2	SCT TRUNNION TRACKER MODE INPUT LO
*	A 302Y	TB1-F69	J09- 35	SCT TRUNNION TRACKER MODE INPUT LO
*	CC309W	TB1-F70	J20-F1	+2.5 VDC CONDITIONING LO
*	A 369R	TB1-F70	P09- 65	+2.5 VDC CONDITIONING LO
*	CC309R	TB1-F71	J20-D1	+2.5 VDC CONDITIONING HI
*	A 369Y	TB1-F71	P09- 81	+2.5 VDC CONDITIONING HI
*	CC294W	TB1-F72	J20-G1	0 VDC CONDITIONING
*	A 383Y	TB1-F72	P09- 83	0 VDC CONDITIONING
	TB 43	TB1-F73	TB1-F74	0 VDC IMU
*	AA 13	TB1-F73	TB1-D73	0 VDC IMU
*	CC321	TB1-F73	J20-K1	0 VDC IMU
*	A 515	TB1-F73	P11-F	0 VDC IMU
*	A 577	TB1-F73	TB1-C70	0 VDC IMU
	AA 19	TB1-F74	TB1-H24	0 VDC IMU
	TB 43	TB1-F74	TB1-F75	0 VDC IMU
*	AA 12	TB1-F74	TB1-D59	0 VDC IMU
*	TB 43	TB1-F74	TB1-F73	0 VDC IMU
*	A 541	TB1-F74	P12-E	0 VDC IMU
*	TB 43	TB1-F75	TB1-F74	0 VDC IMU
*	CC177	TB1-F75	J16-R2	0 VDC IMU
*	CC320	TB1-F75	J20-H1	0 VDC IMU
*	A 511	TB1-F75	P11-D	0 VDC IMU
*	A 583	TB1-F75	TB1-D75	0 VDC IMU
	TB 45	TB1-F76	TB1-F77	0 VDC OPTICS
*	AA 18	TB1-F76	TB1-F56	0 VDC OPTICS
*	CC208	TB1-F76	J17-R6	0 VDC OPTICS
	TB 45	TB1-F77	TB1-F78	0 VDC OPTICS
*	AA 17	TB1-F77	TB1-D77	0 VDC OPTICS
*	TB 45	TB1-F77	TB1-F76	0 VDC OPTICS
*	CC241	TB1-F77	J18-R4	0 VDC OPTICS
*	A 285	TB1-F77	J09- 1	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	TB 45	TB1-F78	TB1-F77	0 VDC OPTICS
*	CC271	TB1-F78	J19-R1	0 VDC OPTICS
*	CC324	TB1-F78	J20-P4	0 VDC OPTICS
*	A 517	TB1-F78	P11-G	0 VDC OPTICS
	TB 4	TB1-G 1	TB1-H 1	25.6 KC HI IMU
*	CC 83R	TB1-G 1	J12-N4	25.6 KC HI IMU
*	A 14R	TB1-G 1	J01- 50	25.6 KC HI IMU
*	A 34R	TB1-G 1	J02- 50	25.6 KC HI IMU
	TB 5	TB1-G 2	TB1-H 2	0 VDC IMU
*	CC 83W	TB1-G 2	J12-P5	25.6 KC LO IMU
*	A 14Y	TB1-G 2	J01- 60	25.6 KC LO IMU
*	A 34Y	TB1-G 2	J02- 60	25.6 KC LO IMU
*	CC325W	TB1-G 3	J22- 42	ATTITUDE CONTROL RELAY CONTROL
*	A 104Y	TB1-G 3	J06- 24	ATTITUDE CONTROL RELAY CONTROL
*	A 128Y	TB1-G 3	P01- 24	ATTITUDE CONTROL RELAY CONTROL
	AA 20	TB1-G 4	TB1-G 8	STRUCTURE GROUND
	TB 7	TB1-G 4	TB1-H 4	STRUCTURE GROUND
	CC325B	TB1-G 4	SHLD CC325	STRUCTURE GROUND
	A 128B	TB1-G 4	SHLD A 128	STRUCTURE GROUND
*	CC128W	TB1-G 5	J15-S3	LOCK CDU RELAY CONTROL
*	CC325R	TB1-G 5	J22- 67	LOCK CDU RELAY CONTROL
*	A 128R	TB1-G 5	P01- 69	LOCK CDU RELAY CONTROL
	TB 11	TB1-G 6	TB1-G 7	+28 VDC IMU
*	CC103	TB1-G 6	J13-S6	+28 VDC IMU
*	A 7	TB1-G 6	J01- 16	+28 VDC IMU
*	A 27	TB1-G 6	J02- 16	+28 VDC IMU
*	A 47	TB1-G 6	J03- 16	+28 VDC IMU
*	TB 11	TB1-G 7	TB1-G 6	+28 VDC IMU
*	CC306	TB1-G 7	J20-L1	+28 VDC IMU
*	A 125	TB1-G 7	P01- 7	+28 VDC IMU
*	A 201	TB1-G 7	P03-H*	+28 VDC IMU
	TB 13	TB1-G 8	TB1-G 9	STRUCTURE GROUND
*	AA 20	TB1-G 8	TB1-G 4	STRUCTURE GROUND
*	A 117	TB1-G 8	J06- 91	STRUCTURE GROUND
*	A 140	TB1-G 8	P01- 84	STRUCTURE GROUND
*	A 150	TB1-G 8	J08- 29	STRUCTURE GROUND
	TB 13	TB1-G 9	TB1-G10	STRUCTURE GROUND
*	TB 13	TB1-G 9	TB1-G 8	STRUCTURE GROUND

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 13	TB1-G 9	J01- 41	STRUCTURE GROUND
*	A 33	TB1-G 9	J02- 41	STRUCTURE GROUND
	TB 13	TB1-G10	TB1-G11	STRUCTURE GROUND
*	TB 13	TB1-G10	TB1-G 9	STRUCTURE GROUND
*	A 53	TB1-G10	J03- 41	STRUCTURE GROUND
*	A 70	TB1-G10	J04- 41	STRUCTURE GROUND
*	TB 13	TB1-G11	TB1-G10	STRUCTURE GROUND
*	A 87	TB1-G11	J05- 41	STRUCTURE GROUND
*	A 210	TB1-G11	P05- 1	STRUCTURE GROUND
	TB 14	TB1-G12	TB1-H12	0 VDC IMU
	CC182B	TB1-G12	SHLD CC182	0 VDC IMU
	A 204B	TB1-G12	SHLD A 204	0 VDC IMU
*	TB 14	TB1-G12	TB1-F12	0 VDC IMU
*	CC201W	TB1-G13	J17-C1	PITCH ERROR BODY AND BODY OFFSET AXIS LO
*	A 205Y	TB1-G13	P03-P	PITCH ERROR BODY AND BODY OFFSET AXIS LO
*	CC152W	TB1-G14	J16-D8	SIN AOG 16X S2
*	A 181R	TB1-G14	P02-E	SIN AOG 16X S2
*	CC152R	TB1-G15	J16-D9	SIN AOG 16X S4
*	A 57R	TB1-G15	J03-101	SIN AOG 16X S4
*	A 181Y	TB1-G15	P02-F	SIN AOG 16X S4
*	CC152L	TB1-G16	J16-F9	SIN AOG 16X TO CDU
*	A 57Y	TB1-G16	J03- 87	SIN AOG 16X TO CDU
	TB 15	TB1-G17	TB1-H17	0 VDC IMU
	CC152B	TB1-G17	SHLD CC152	0 VDC IMU
	A 57B	TB1-G17	SHLD A 57	0 VDC IMU
	A 181B	TB1-G17	SHLD A 181	0 VDC IMU
*	TB 15	TB1-G17	TB1-F17	0 VDC IMU
*	CC154R	TB1-G18	J16-N2	OG CDU MDA OUTPUT
*	A 50Y	TB1-G18	J03- 32	OG CDU MDA OUTPUT
*	CC154W	TB1-G19	J16-N1	OG CDU MDA OUTPUT
*	A 50G	TB1-G19	J03- 31	OG CDU MDA OUTPUT
	TB 16	TB1-G20	TB1-H20	0 VDC IMU
*	AA 14	TB1-G20	TB1-D73	0 VDC IMU
*	A 50R	TB1-G20	J03- 43	0 VDC IMU
*	CC106R	TB1-G21	J14-P2	Z PIP TORQUE -
*	A 263R	TB1-G21	P07-M	Z PIP TORQUE -
*	CC106W	TB1-G22	J14-P3	Z PIP TORQUE RET
*	A 263W	TB1-G22	P07-L	Z PIP TORQUE RET

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC106L	TB1-G23	J14-P1	Z PIP TORQUE +
*	A 263L	TB1-G23	P07-K	Z PIP TORQUE +
	AA 21	TB1-G24	TB1-G27	0 VDC IMU
	TB 18	TB1-G24	TB1-H24	0 VDC IMU
	CC106B	TB1-G24	SHLD CC106	0 VDC IMU
	A 263B	TB1-G24	SHLD A 263	0 VDC IMU
*	TB 18	TB1-G24	TB1-F24	0 VDC IMU
	A 191B	TB1-G27	SHLD A 191	0 VDC IMU
	A 193B	TB1-G27	SHLD A 193	0 VDC IMU
*	AA 21	TB1-G27	TB1-G24	0 VDC IMU
*	TB 21	TB1-G27	TB1-F27	0 VDC IMU
*	CC130L	TB1-G28	J15-B1	X GYRO ERROR SIG
*	A 191Y	TB1-G28	P03-A	X GYRO ERROR SIG
*	A 380Y	TB1-G28	P09- 76	X GYRO ERROR SIG
*	CC158	TB1-G29	J16-C7	OG CDU 16X RSVR LOAD
*	A 58	TB1-G29	J03- 89	OG CDU 16X RSVR LOAD
	A 571	TB1-G30	TB1-F32	OG CDU ERROR SIG RET
*	CC147W	TB1-G30	J16-D6	OG CDU ERROR SIG RET
*	CC204R	TB1-G30	J17-B2	OG CDU ERROR SIG RET
*	A 59Y	TB1-G30	J03- 90	OG CDU ERROR SIG RET
*	A 338Y	TB1-G30	P09- 31	OG CDU ERROR SIG RET
*	CC147R	TB1-G31	J16-C5	OG CDU 16X ERROR SIG
*	CC204W	TB1-G31	J17-A2	OG CDU 16X ERROR SIG
*	A 59R	TB1-G31	J03-104	OG CDU 16X ERROR SIG
*	A 338R	TB1-G31	P09- 9	OG CDU 16X ERROR SIG
	CC204B	TB1-G32	SHLD CC204	OG CDU ERROR SIG RET
	A 52B	TB1-G32	SHLD A 52	OG CDU ERROR SIG RET
	A 145B	TB1-G32	SHLD A 145	OG CDU ERROR SIG RET
	A 365B	TB1-G32	SHLD A 365	OG CDU ERROR SIG RET
*	TB 22	TB1-G32	TB1-F32	OG CDU ERROR SIG RET
*	CC 64W	TB1-G33	J11-A3	OG CDU 1X ERROR SIG
*	CC146W	TB1-G33	J16-C6	OG CDU 1X ERROR SIG
*	A 52R	TB1-G33	J03- 35	OG CDU 1X ERROR SIG
*	A 145R	TB1-G33	P01- 96	OG CDU 1X ERROR SIG
*	A 365R	TB1-G33	P09- 77	OG CDU 1X ERROR SIG
*	CC 64R	TB1-G34	J11-B3	OG CDU ERROR SIG RET
*	CC146R	TB1-G34	J16-D6	OG CDU ERROR SIG RET
*	A 52Y	TB1-G34	J03- 45	OG CDU ERROR SIG RET

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 145Y	TB1-G34	P01- 97	OG CDU ERROR SIG RET
*	A 365Y	TB1-G34	P09- 61	OG CDU ERROR SIG RET
*	CC157	TB1-G35	J16-F6	OG CDU 1X RSVR LOAD
*	A 51	TB1-G35	J03- 34	OG CDU 1X RSVR LOAD
	TB 23	TB1-G36	TB1-H36	0 VDC OPTICS
	CC269B	TB1-G36	SHLD CC269	0 VDC OPTICS
	A 77B	TB1-G36	SHLD A 77	0 VDC OPTICS
*	TB 23	TB1-G36	TB1-F36	0 VDC OPTICS
*	CC269R	TB1-G37	J19-A9	SHAFT CDU TACH HI
*	A 77R	TB1-G37	J04-106	SHAFT CDU TACH HI
*	CC269W	TB1-G38	J19-B9	SHAFT CDU TACH LO
*	A 77Y	TB1-G38	J04- 92	SHAFT CDU TACH LO
	TB 24	TB1-G39	TB1-H39	0 VDC OPTICS
	CC267B	TB1-G39	SHLD CC267	0 VDC OPTICS
	A 76B	TB1-G39	SHLD A 76	0 VDC OPTICS
*	TB 24	TB1-G39	TB1-F39	0 VDC OPTICS
*	CC267W	TB1-G40	J19-B8	SHAFT CDU 16X RSVR S2
*	A 76Y	TB1-G40	J04-104	SHAFT CDU 16X RSVR S2
*	CC267R	TB1-G41	J19-B7	SHAFT CDU 16X RSVR S3
*	A 76R	TB1-G41	J04- 90	SHAFT CDU 16X RSVR S3
	TB 25	TB1-G42	TB1-H42	0 VDC OPTICS
	CC221B	TB1-G42	SHLD CC221	0 VDC OPTICS
	A 270B	TB1-G42	SHLD A 270	0 VDC OPTICS
*	TB 25	TB1-G42	TB1-F42	0 VDC OPTICS
*	CC221R	TB1-G43	J18-D4	SCT TRUNNION 1X RSVR P3
*	A 270R	TB1-G43	P08- 12	SCT TRUNNION 1X RSVR P3
*	CC221W	TB1-G44	J18-D3	SCT TRUNNION 1X RSVR P1
*	A 270Y	TB1-G44	P08- 13	SCT TRUNNION 1X RSVR P1
*	A 226Y	TB1-G45	P05- 51	SXT SHAFT 1X RSVR S4
*	A 279Y	TB1-G45	P08- 42	SCT SHAFT 1X RSVR P4
*	A 226R	TB1-G46	P05- 52	SXT SHAFT 1X RSVR S2
*	A 279R	TB1-G46	P08- 41	SCT SHAFT 1X RSVR P2
	TB 26	TB1-G47	TB1-H47	0 VDC OPTICS
	A 226B	TB1-G47	SHLD A 226	0 VDC OPTICS
	A 279B	TB1-G47	SHLD A 279	0 VDC OPTICS
*	TB 26	TB1-G47	TB1-F47	0 VDC OPTICS
*	CC238W	TB1-G48	J18-T5	SXT SHAFT MOTOR PHASE 1
*	A 214Y	TB1-G48	P05- 36	SXT SHAFT MOTOR PHASE 1

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC238R	TB1-G49	J18-S5	SXT SHAFT MOTOR PHASE 2
*	A 214R	TB1-G49	P05- 8	SXT SHAFT MOTOR PHASE 2
	TB 28	TB1-G50	TB1-H50	0 VDC OPTICS
*	A 212G	TB1-G50	P05- 16	0 VDC OPTICS
*	A 214G	TB1-G50	P05- 19	0 VDC OPTICS
*	A 547	TB1-G50	P12-G	0 VDC OPTICS
*	CC232R	TB1-G51	J18-S6	SXT TRUNNION MOTOR PHASE 2
*	A 212R	TB1-G51	P05- 5	SXT TRUNNION MOTOR PHASE 2
*	CC232W	TB1-G52	J18-T6	SXT TRUNNION MOTOR PHASE 1
*	A 212Y	TB1-G52	P05- 33	SXT TRUNNION MOTOR PHASE 1
	TB 29	TB1-G53	TB1-H53	0 VDC OPTICS
*	CC179	TB1-G53	J16-R6	0 VDC OPTICS
*	A 546	TB1-G53	P12-G	0 VDC OPTICS
*	CC227	TB1-G54	J18-C8	TRACKER Y DRIVE BUFFERED HI
*	A 361	TB1-G54	P09- 55	TRACKER Y DRIVE BUFFERED HI
*	A 494R	TB1-G54	P13- 6	TRACKER Y DRIVE BUFFERED HI
*	CC226	TB1-G55	J18-C7	TRACKER X DRIVE BUFFERED HI
*	A 360	TB1-G55	P09- 54	TRACKER X DRIVE BUFFERED HI
*	A 493R	TB1-G55	P13- 5	TRACKER X DRIVE BUFFERED HI
*	CC228	TB1-G56	J18-C9	TRACKER PREAMP OUTPUT BUFFERED HI
*	A 375	TB1-G56	P09- 71	TRACKER PREAMP OUTPUT BUFFERED HI
*	A 495R	TB1-G56	P13- 15	TRACKER PREAMP OUTPUT BUFFERED HI
*	CC243	TB1-G57	J19-M1	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
*	A 342	TB1-G57	P09- 19	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
*	CC248	TB1-G58	J19-M4	SHAFT CDU TACH FEEDBACK SIG BUFFERED
*	A 352	TB1-G58	P09- 39	SHAFT CDU TACH FEEDBACK SIG BUFFERED
*	CC186K	TB1-G59	J17-N6	IMU HTR CURRENT AMP PIN 5
*	A 325R	TB1-G59	J09-100	IMU HTR CURRENT AMP PIN 5
*	CC186L	TB1-G60	J17-N5	IMU TEMP CONT K2 PIN 5
*	A 325N	TB1-G60	J09- 88	IMU TEMP CONT K2 PIN 5
*	CC185W	TB1-G61	J17-D5	ACCEL TEMP IND SENSOR RET
*	A 253Y	TB1-G61	P06-P	ACCEL TEMP IND SENSOR RET
*	CC185K	TB1-G62	J17-F7	ACCEL BRIDGE AMP PIN 6
*	A 329N	TB1-G62	J09- 98	ACCEL BRIDGE AMP PIN 6
*	CC185R	TB1-G63	J17-D7	ACCEL ZERO DEVIATION CHECK
*	A 329R	TB1-G63	J09-104	ACCEL ZERO DEVIATION CHECK
*	CC185L	TB1-G64	J17-D6	IMU IMU TEMP CONT +5 DEG GAIN CHECK
*	A 329G	TB1-G64	J09-103	IMU IMU TEMP CONT +5 DEG GAIN CHECK

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC274W	TB1-G65	J20-C7	TRACKER X ERROR LO	
*	A 497Y	TB1-G65	P13- 24	TRACKER X ERROR LO	
*	CC274R	TB1-G66	J20-C6	TRACKER X ERROR HI	
*	A 497R	TB1-G66	P13- 32	TRACKER X ERROR HI	
	TB 34	TB1-G67	TB1-H67	0 VDC OPTICS	
	CC281B	TB1-G67	SHLD CC281	0 VDC OPTICS	
	A 305B	TB1-G67	SHLD A 305	0 VDC OPTICS	
	A 497B	TB1-G67	SHLD A 497	0 VDC OPTICS	
*	TB 34	TB1-G67	TB1-F67	0 VDC OPTICS	
*	CC281R	TB1-G68	J20-F6	PHOTOMETER MARK REJECT HI	
*	A 305R	TB1-G68	J09- 43	PHOTOMETER MARK REJECT HI	
*	CC281W	TB1-G69	J20-F7	PHOTOMETER MARK REJECT LO	
*	A 305Y	TB1-G69	J09- 60	PHOTOMETER MARK REJECT LO	
	TB 37	TB1-G70	TB1-H70	STRUCTURE GROUND	
*	CC207	TB1-G70	J17-L6	STRUCTURE GROUND	
*	A 249	TB1-G70	P06-G	STRUCTURE GROUND	
*	A 284	TB1-G70	P08- 59	STRUCTURE GROUND	
*	A 527	TB1-G70	P11-L	STRUCTURE GROUND	
*	CC307	TB1-G71	J20-L1	+28 VDC IMU	
*	CC308	TB1-G71	J20-L2	+28 VDC IMU	
*	A 244	TB1-G71	P06-D	+28 VDC IMU	
*	A 359	TB1-G71	P09- 49	+28 VDC IMU	
*	CC294R	TB1-G72	J20-G2	+20 VDC CONDITIONING	
*	A 383R	TB1-G72	P09- 82	+20 VDC CONDITIONING	
*	CC293	TB1-G73	J20-F4	+3 VDC AGC	
*	CC335	TB1-G73	J24- 6	+3 VDC AGC	175
*	A 356	TB1-G73	P09- 46	+3 VDC AGC	
*	CC292	TB1-G74	J20-D4	+13 VDC AGC	
*	CC333	TB1-G74	J24- 1	+13 VDC AGC	176
*	A 366	TB1-G74	P09- 62	+13 VDC AGC	
*	CC300	TB1-G75	J20-T4	+28 VDC STBY BUSS B	
*	CC317	TB1-G75	J20-S4	+28 VDC STBY BUSS B	
*	A 554	TB1-G75	P12-M	+28 VDC STBY BUSS B	
*	A 555	TB1-G75	P12-M	+28 VDC STBY BUSS B	
*	CC299	TB1-G76	J20-T3	+28 VDC STBY BUSS A	
*	CC316	TB1-G76	J20-S3	+28 VDC STBY BUSS A	
*	A 528	TB1-G76	P11-M	+28 VDC STBY BUSS A	
*	A 529	TB1-G76	P11-M	+28 VDC STBY BUSS A	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC305	TB1-G77	J20-S6	+28 VDC OPTICS BUSS B
*	CC319	TB1-G77	J20-R6	+28 VDC OPTICS BUSS B
*	A 548	TB1-G77	P12-H	+28 VDC OPTICS BUSS B
*	A 549	TB1-G77	P12-H	+28 VDC OPTICS BUSS B
*	CC302	TB1-G78	J20-T5	+28 VDC OPTICS BUSS A
*	CC318	TB1-G78	J20-R5	+28 VDC OPTICS BUSS A
*	A 520	TB1-G78	P11-H	+28 VDC OPTICS BUSS A
*	A 521	TB1-G78	P11-H	+28 VDC OPTICS BUSS A
*	TB 4	TB1-H 1	TB1-G 1	25.6 KC HI IMU
*	A 54R	TB1-H 1	J03- 50	25.6 KC HI IMU
*	A 387R	TB1-H 1	P09-105	25.6 KC HI IMU
*	TB 5	TB1-H 2	TB1-G 2	0 VDC IMU
*	A 54Y	TB1-H 2	J03- 60	25.6 KC LO IMU
*	A 387Y	TB1-H 2	P09- 87	25.6 KC LO IMU
*	CC159W	TB1-H 3	J16-M1	ENTRY RELAY CONTROL
*	A 128G	TB1-H 3	P01- 57	ENTRY RELAY CONTROL
	TB 7	TB1-H 4	TB1-K 4	STRUCTURE GROUND
	CC128B	TB1-H 4	SHLD CC128	STRUCTURE GROUND
	A 104B	TB1-H 4	SHLD A 104	STRUCTURE GROUND
*	TB 7	TB1-H 4	TB1-G 4	STRUCTURE GROUND
*	CC 80	TB1-H 4	J11-L4	STRUCTURE GROUND
*	CC128R	TB1-H 5	J15-H4	FINE ALIGN RELAY CONTROL
*	CC325L	TB1-H 5	J22- 68	FINE ALIGN RELAY CONTROL
*	A 124R	TB1-H 5	P01- 5	FINE ALIGN RELAY CONTROL
*	CC 67R	TB1-H 7	J11-M2	3200 CPS 2 V LO
*	CC 67W	TB1-H 7	J11-L2	3200 CPS 2 V LO
*	A 187Y	TB1-H 7	P02-S	3200 CPS 2 V LO
*	CC 73W	TB1-H 8	J11-G3	3200 CPS 2 V FEEDBACK LO
*	A 188Y	TB1-H 8	P02-U	3200 CPS 2 V FEEDBACK LO
*	A 374Y	TB1-H 8	P09- 88	3200 CPS 2 V FEEDBACK LO
*	CC164R	TB1-H 9	J16-H3	COS AMG 16X S1
*	A 183Y	TB1-H 9	P02-H	COS AMG 16X S1
*	CC164W	TB1-H10	J16-G3	COS AMG 16X S3
*	A 36R	TB1-H10	J02-100	COS AMG 16X S3
*	A 183R	TB1-H10	P02-G	COS AMG 16X S3
*	CC164L	TB1-H11	J16-G4	COS AMG 16X TO CDU
*	A 36Y	TB1-H11	J02- 86	COS AMG 16X TO CDU
	AA 22	TB1-H12	TB1-K17	0 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	TB 14	TB1-H12	TB1-K12	0 VDC IMU
	CC164B	TB1-H12	SHLD CC164	0 VDC IMU
	A 36B	TB1-H12	SHLD A 36	0 VDC IMU
	A 183B	TB1-H12	SHLD A 183	0 VDC IMU
	A 188B	TB1-H12	SHLD A 188	0 VDC IMU
*	TB 14	TB1-H12	TB1-G12	0 VDC IMU
*	CC182R	TB1-H13	J17-D2	PITCH YAW RSVR S3
*	A 204R	TB1-H13	P03-N	PITCH YAW RSVR S3
*	CC163R	TB1-H14	J16-H1	COS AIG 16X S1
*	A 189Y	TB1-H14	P02-X	COS AIG 16X S1
*	CC163W	TB1-H15	J16-G1	COS AIG 16X S3
*	A 16R	TB1-H15	J01-100	COS AIG 16X S3
*	A 189R	TB1-H15	P02-W	COS AIG 16X S3
*	CC163L	TB1-H16	J16-G2	COS AIG 16X TO CDU
*	A 16Y	TB1-H16	J01- 86	COS AIG 16X TO CDU
	AA 23	TB1-H17	TB1-K24	0 VDC IMU
	TB 15	TB1-H17	TB1-K17	0 VDC IMU
	CC163B	TB1-H17	SHLD CC163	0 VDC IMU
	A 16B	TB1-H17	SHLD A 16	0 VDC IMU
	A 189B	TB1-H17	SHLD A 189	0 VDC IMU
*	TB 15	TB1-H17	TB1-G17	0 VDC IMU
*	CC142R	TB1-H18	J16-P3	MG CDU MDA OUTPUT
*	A 30Y	TB1-H18	J02- 32	MG CDU MDA OUTPUT
*	CC142W	TB1-H19	J16-R3	MG CDU MDA OUTPUT
*	A 30G	TB1-H19	J02- 31	MG CDU MDA OUTPUT
	TB 16	TB1-H20	TB1-K20	0 VDC IMU
*	TB 16	TB1-H20	TB1-G20	0 VDC IMU
*	A 30R	TB1-H20	J02- 43	0 VDC IMU
*	CC 99R	TB1-H21	J13-N3	Y PIP TORQUE -
*	A 264R	TB1-H21	P07-R	Y PIP TORQUE -
*	CC 99W	TB1-H22	J13-M3	Y PIP TORQUE RET
*	A 264W	TB1-H22	P07-P	Y PIP TORQUE RET
*	CC 99L	TB1-H23	J13-L3	Y PIP TORQUE +
*	A 264L	TB1-H23	P07-N	Y PIP TORQUE +
	TB 18	TB1-H24	TB1-K24	0 VDC IMU
	CC 99B	TB1-H24	SHLD CC 99	0 VDC IMU
	A 264B	TB1-H24	SHLD A 264	0 VDC IMU
*	AA 19	TB1-H24	TB1-F74	0 VDC IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* TB 18	TB1-H24	TB1-G24	0 VDC IMU
TB 19	TB1-H25	TB1-H26	0 VDC IMU
* AA 15	TB1-H25	TB1-D74	0 VDC IMU
* CC113	TB1-H25	J14-R6	0 VDC IMU
A 570	TB1-H26	TB1-K26	0 VDC IMU
* TB 19	TB1-H26	TB1-H25	0 VDC IMU
* CC 76	TB1-H26	J11-R5	0 VDC IMU
* A 246	TB1-H26	P06-E	0 VDC IMU
A 203B	TB1-H28	SHLD A 203	MG CDU ERROR SIG RET
* CC 63W	TB1-H28	J11-B2	MG CDU ERROR SIG RET
* A 203R	TB1-H28	P03-K	MG CDU ERROR SIG RET
* CC 63R	TB1-H29	J11-C2	MG CDU ATTITUDE STEERING ERROR
* A 203Y	TB1-H29	P03-L	MG CDU ATTITUDE STEERING ERROR
AA 24	TB1-H30	TB1-H32	MG CDU ERROR SIG RET
A 38B	TB1-H30	SHLD A 38	MG CDU ERROR SIG RET
* CC140R	TB1-H30	J16-D4	MG CDU ERROR SIG RET
* A 38Y	TB1-H30	J02- 90	MG CDU ERROR SIG RET
* CC140W	TB1-H31	J16-C3	MG CDU 16X ERROR SIG
* A 38R	TB1-H31	J02-104	MG CDU 16X ERROR SIG
A 32B	TB1-H32	SHLD A 32	MG CDU ERROR SIG RET
A 139B	TB1-H32	SHLD A 139	MG CDU ERROR SIG RET
A 355B	TB1-H32	SHLD A 355	MG CDU ERROR SIG RET
* AA 24	TB1-H32	TB1-H30	MG CDU ERROR SIG RET
* CC 62W	TB1-H33	J11-A2	MG CDU 1X ERROR SIG
* CC139W	TB1-H33	J16-C4	MG CDU 1X ERROR SIG
* A 32R	TB1-H33	J02- 35	MG CDU 1X ERROR SIG
* A 139R	TB1-H33	P01- 82	MG CDU 1X ERROR SIG
* A 355R	TB1-H33	P09- 60	MG CDU 1X ERROR SIG
* CC 62R	TB1-H34	J11-B2	MG CDU ERROR SIG RET
* CC139R	TB1-H34	J16-D4	MG CDU ERROR SIG RET
* A 32Y	TB1-H34	J02- 45	MG CDU ERROR SIG RET
* A 139Y	TB1-H34	P01- 83	MG CDU ERROR SIG RET
* A 355Y	TB1-H34	P09- 43	MG CDU ERROR SIG RET
* CC156	TB1-H35	J16-F4	MG CDU 1X RSVR LOAD
* A 31	TB1-H35	J02- 34	MG CDU 1X RSVR LOAD
TB 23	TB1-H36	TB1-K36	0 VDC OPTICS
CC239R	TB1-H36	SHLD CC239	0 VDC OPTICS
A 219B	TB1-H36	SHLD A 219	0 VDC OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* TB 23	TB1-H36	TB1-G36	0 VDC OPTICS
* CC239R	TB1-H37	J18-A7	SXT SHAFT TACH HI
* A 219R	TB1-H37	P05- 23	SXT SHAFT TACH HI
* CC239W	TB1-H38	J18-B7	SXT SHAFT TACH LO
* A 219Y	TB1-H38	P05- 24	SXT SHAFT TACH LO
AA 25	TB1-H39	TB1-K36	0 VDC OPTICS
TB 24	TB1-H39	TB1-K39	0 VDC OPTICS
CC263B	TB1-H39	SHLD CC263	0 VDC OPTICS
A 66B	TB1-H39	SHLD A 66	0 VDC OPTICS
* TB 24	TB1-H39	TB1-G39	0 VDC OPTICS
* CC263W	TB1-H40	J19-C8	SHAFT CDU 1/2X RSVR P1
* A 66Y	TB1-H40	J04- 11	SHAFT CDU 1/2X RSVR P1
* CC263R	TB1-H41	J19-C9	SHAFT CDU 1/2X RSVR P3
* A 66R	TB1-H41	J04- 25	SHAFT CDU 1/2X RSVR P3
AA 26	TB1-H42	TB1-K39	0 VDC OPTICS
TB 25	TB1-H42	TB1-K42	0 VDC OPTICS
CC254B	TB1-H42	SHLD CC254	0 VDC OPTICS
A 89B	TB1-H42	SHLD A 89	0 VDC OPTICS
* TB 25	TB1-H42	TB1-G42	0 VDC OPTICS
* CC254W	TB1-H43	J19-K2	TRUNNION CDU 1/2X RSVR S4
* A 89Y	TB1-H43	J05- 66	TRUNNION CDU 1/2X RSVR S4
* CC254R	TB1-H44	J19-K1	TRUNNION CDU 1/2X RSVR S2
* A 89R	TB1-H44	J05- 56	TRUNNION CDU 1/2X RSVR S2
* CC265R	TB1-H45	J19-K5	SHAFT CDU 1X RSVR P3
* A 64R	TB1-H45	J04- 20	SHAFT CDU 1X RSVR P3
* CC265W	TB1-H46	J19-K4	SHAFT CDU 1X RSVR P1
* A 64Y	TB1-H46	J04- 6	SHAFT CDU 1X RSVR P1
AA 27	TB1-H47	TB1-K42	0 VDC OPTICS
TB 26	TB1-H47	TB1-K47	0 VDC OPTICS
CC265B	TB1-H47	SHLD CC265	0 VDC OPTICS
A 64B	TB1-H47	SHLD A 64	0 VDC OPTICS
* TB 26	TB1-H47	TB1-G47	0 VDC OPTICS
* CC268W	TB1-H48	J19-S2	SHAFT CDU MOTOR PHASE 1
* A 68Y	TB1-H48	J04- 31	SHAFT CDU MOTOR PHASE 1
* CC268R	TB1-H49	J19-T2	SHAFT CDU MOTOR PHASE 2
* A 68R	TB1-H49	J04- 32	SHAFT CDU MOTOR PHASE 2
TB 28	TB1-H50	TB1-K50	0 VDC OPTICS
* TB 28	TB1-H50	TB1-G50	0 VDC OPTICS

MANNED
SPACECRAFT
CENTER
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SIZE A

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SCALE - NONE | REV LTR B | SHEET 126

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 68G	TB1-H50	J04- 43	0 VDC OPTICS
* A 268G	TB1-H50	P08- 7	0 VDC OPTICS
* CC236R	TB1-H51	J18-S4	SCT SHAFT MOTOR PHASE 2
* A 268R	TB1-H51	P08- 5	SCT SHAFT MOTOR PHASE 2
* CC236W	TB1-H52	J18-T4	SCT SHAFT MOTOR PHASE 1
* A 268Y	TB1-H52	P08- 6	SCT SHAFT MOTOR PHASE 1
TB 29	TB1-H53	TB1-K53	0 VDC OPTICS
* TB 29	TB1-H53	TB1-G53	0 VDC OPTICS
* CC 94	TB1-H53	J12-R6	0 VDC OPTICS
* CC217	TB1-H54	J18-M5	SCT SHAFT 1X ERROR SIG BUFFERED
* A 351	TB1-H54	P09- 38	SCT SHAFT 1X ERROR SIG BUFFERED
* CC220	TB1-H55	J18-M2	SXT TRUNNION TACH FEEDBACK BUFFERED
* A 344	TB1-H55	P09- 21	SXT TRUNNION TACH FEEDBACK BUFFERED
* CC222	TB1-H56	J18-M1	SXT TRUNNION MDA INPUT BUFFERED
* A 377	TB1-H56	P09- 73	SXT TRUNNION MDA INPUT BUFFERED
* CC244	TB1-H57	J19-M2	TRUNNION CDU TACH FEEDBACK BUFFERED
* A 345	TB1-H57	P09- 22	TRUNNION CDU TACH FEEDBACK BUFFERED
* CC242	TB1-H58	J19-M3	SHAFT CDU 16X ERROR SIG BUFFERED
* A 343	TB1-H58	P09- 20	SHAFT CDU 16X ERROR SIG BUFFERED
* CC186W	TB1-H59	J17-M5	IMU TEMP CONT K1 PIN 3
* A 325Y	TB1-H59	J09-101	IMU TEMP CONT K1 PIN 3
* CC186R	TB1-H60	J17-M6	IMU TEMP CONT AMP PIN 5
* A 325G	TB1-H60	J09- 87	IMU TEMP CONT AMP PIN 5
* CC199	TB1-H61	J17-M2	IMU TEMP SENSOR COM
* A 251	TB1-H61	P06-K	IMU TEMP SENSOR COM
* A 253R	TB1-H62	P06-N	ACCEL INDICATING SENSOR HI
* A 329Y	TB1-H62	J09- 97	ACCEL INDICATING SENSOR HI
* CC191R	TB1-H63	J17-B6	IRIG TEMP CONT SENSOR HI
* A 252R	TB1-H63	P06-M	IRIG TEMP CONT SENSOR HI
* CC191W	TB1-H64	J17-B5	IRIG TEMP CONT SENSOR RET
* A 252Y	TB1-H64	P06-L	IRIG TEMP CONT SENSOR RET
* CC277W	TB1-H65	J20-A8	STAR PRESENCE INPUT LO
* A 239Y	TB1-H65	P05- 89	STAR PRESENCE INPUT LO
* CC277R	TB1-H66	J20-A7	STAR PRESENCE INPUT HI
* A 239R	TB1-H66	P05- 88	STAR PRESENCE INPUT HI
AA 28	TB1-H67	TB1-K47	0 VDC OPTICS
TB 34	TB1-H67	TB1-K67	0 VDC OPTICS
A 239B	TB1-H67	SHLD A 239	0 VDC OPTICS

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SIZE A

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SCALE - NONE | REV LTR B | SHEET 127

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 291B	TB1-H67	SHLD A 291	0 VDC OPTICS	
* TB 34	TB1-H67	TB1-G67	0 VDC OPTICS	
* CC250R	TB1-H68	J19-D8	SHAFT HAND CONTROLLER OUTPUT HI	
* A 291R	TB1-H68	J09- 10	SHAFT HAND CONTROLLER OUTPUT HI	
* CC250W	TB1-H69	J19-D7	SHAFT HAND CONTROLLER OUTPUT LO	
* A 291Y	TB1-H69	J09- 24	SHAFT HAND CONTROLLER OUTPUT LO	
TB 37	TB1-H70	TB1-K70	STRUCTURE GROUND	
* TB 37	TB1-H70	TB1-G70	STRUCTURE GROUND	
* A 326	TB1-H70	J09- 91	STRUCTURE GROUND	
* A 339	TB1-H70	P09- 10	STRUCTURE GROUND	
* A 406	TB1-H70	P10- 1	STRUCTURE GROUND	
* CC247	TB1-H71	J19-T5	+28 VDC OPTICS	
* CC279	TB1-H71	J20-N6	+28 VDC OPTICS	
* A 317	TB1-H71	J09- 71	+28 VDC OPTICS	
* A 336	TB1-H71	P09- 6	+28 VDC OPTICS	
* A 412	TB1-H71	P10- 14	+28 VDC OPTICS	
* CC301	TB1-H72	J20-R3	+28 VDC STBY	
* A 357	TB1-H72	P09- 47	+28 VDC STBY	
* CC291	TB1-H73	J20-G3	0 VDC AGC	
* CC334	TB1-H73	J24- 3	0 VDC AGC	177
* A 367	TB1-H73	P09- 63	0 VDC AGC	
* CC289	TB1-H74	J20-F5	+28 VDC AGC	
* CC290	TB1-H74	J24- 11	+28 VDC AGC	166
* A 368	TB1-H74	P09- 64	+28 VDC AGC	
* CC298	TB1-H75	J20-S2	+28 VDC IMU BUSS B	
* CC315	TB1-H75	J20-P2	+28 VDC IMU BUSS B	
* A 536	TB1-H75	P12-C	+28 VDC IMU BUSS B	
* A 537	TB1-H75	P12-C	+28 VDC IMU BUSS B	
* A 538	TB1-H75	P12-C	+28 VDC IMU BUSS B	
* CC296	TB1-H76	J20-S1	+28 VDC IMU BUSS A	
* CC313	TB1-H76	J20-P1	+28 VDC IMU BUSS A	
* A 508	TB1-H76	P11-C	+28 VDC IMU BUSS A	
* A 509	TB1-H76	P11-C	+28 VDC IMU BUSS A	
* A 510	TB1-H76	P11-C	+28 VDC IMU BUSS A	
* CC304	TB1-H77	J20-T6	+28 VDC OPTICS BUSS B	
* A 550	TB1-H77	P12-H	+28 VDC OPTICS BUSS B	
* CC303	TB1-H78	J20-S5	+28 VDC OPTICS BUSS A	
* A 522	TB1-H78	P11-H	+28 VDC OPTICS BUSS A	

MANNED
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CENTER
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SIZE A

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SCALE - NONE | REV LTR B | SHEET 128

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC 82R	TB1-K 1	J12-P6	25.6 KC HI OPTICS
*	A 71R	TB1-K 1	J04- 50	25.6 KC HI OPTICS
*	A 88R	TB1-K 1	J05- 50	25.6 KC HI OPTICS
*	A 395R	TB1-K 1	P09-126	25.6 KC HI OPTICS
*	CC 82W	TB1-K 2	J12-N6	25.6 KC LO OPTICS
*	A 71Y	TB1-K 2	J04- 60	25.6 KC LO OPTICS
*	A 88Y	TB1-K 2	J05- 60	25.6 KC LO OPTICS
*	A 395Y	TB1-K 2	P09-104	25.6 KC LO OPTICS
*	CC 72	TB1-K 3	J11-L3	COARSE ALIGN RELAY CONTROL
*	A 124G	TB1-K 3	P01- 4	COARSE ALIGN RELAY CONTROL
	CC159B	TB1-K 4	SHLD CC159	STRUCTURE GROUND
	CC341	TB1-K 4	E 2	STRUCTURE GROUND
	A 124B	TB1-K 4	SHLD A 124	STRUCTURE GROUND
*	TB 7	TB1-K 4	TB1-H 4	STRUCTURE GROUND
*	CC128L	TB1-K 5	J15-S1	ZERO ENCODER RELAY CONTROL
*	A 124Y	TB1-K 5	P01- 12	ZERO ENCODER RELAY CONTROL
*	CC 67K	TB1-K 7	J11-M1	3200 CPS 2 V HI
*	CC 67L	TB1-K 7	J11-L1	3200 CPS 2 V HI
*	A 187R	TB1-K 7	P02-R	3200 CPS 2 V HI
*	CC 73R	TB1-K 8	J11-F3	3200 CPS 2 V FEEDBACK HI
*	A 188R	TB1-K 8	P02-T	3200 CPS 2 V FEEDBACK HI
*	A 374R	TB1-K 8	P09- 70	3200 CPS 2 V FEEDBACK HI
*	CC127W	TB1-K 9	J15-F8	SIN AMG 16X S2
*	A 184R	TB1-K 9	P02-J	SIN AMG 16X S2
*	CC127R	TB1-K10	J15-F9	SIN AMG 16X S4
*	A 37R	TB1-K10	J02-101	SIN AMG 16X S4
*	A 184Y	TB1-K10	P02-K	SIN AMG 16X S4
*	CC127L	TB1-K11	J15-D9	SIN AMG 16X TO CDU
*	A 37Y	TB1-K11	J02- 87	SIN AMG 16X TO CDU
	CC127B	TB1-K12	SHLD CC127	0 VDC IMU
	A 37B	TB1-K12	SHLD A 37	0 VDC IMU
	A 184B	TB1-K12	SHLD A 184	0 VDC IMU
*	TB 14	TB1-K12	TB1-H12	0 VDC IMU
*	CC182W	TB1-K13	J17-D3	YAW ERROR BODY OFFSET AXIS LO
*	A 204Y	TB1-K13	P03-M	YAW ERROR BODY OFFSET AXIS LO
*	CC126W	TB1-K14	J15-D8	SIN AIG 16X S2
*	A 190R	TB1-K14	P02-Y	SIN AIG 16X S2
*	CC126R	TB1-K15	J15-D7	SIN AIG 16X S4

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SCALE - NONE	REV LTR B		SHEET 129

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 17R	TB1-K15	J01-101	SIN AIG 16X S4
*	A 190Y	TB1-K15	P02-Z	SIN AIG 16X S4
*	CC126L	TB1-K16	J15-F7	SIN AIG 16X TO CDU
*	A 17Y	TB1-K16	J01- 87	SIN AIG 16X TO CDU
	CC126B	TB1-K17	SHLD CC126	0 VDC IMU
	A 17B	TB1-K17	SHLD A 17	0 VDC IMU
	A 190B	TB1-K17	SHLD A 190	0 VDC IMU
*	AA 22	TB1-K17	TB1-H12	0 VDC IMU
*	TB 15	TB1-K17	TB1-H17	0 VDC IMU
*	CC137W	TB1-K18	J16-R1	IG CDU MDA OUTPUT
*	A 10G	TB1-K18	J01- 31	IG CDU MDA OUTPUT
*	CC137R	TB1-K19	J16-P1	IG CDU MDA OUTPUT
*	A 10Y	TB1-K19	J01- 32	IG CDU MDA OUTPUT
*	AA 11	TB1-K20	TB1-B70	0 VDC IMU
*	TB 16	TB1-K20	TB1-H20	0 VDC IMU
*	A 10R	TB1-K20	J01- 43	0 VDC IMU
*	CC 96R	TB1-K21	J13-L1	X PIP TORQUE -
*	A 265R	TB1-K21	P07-W	X PIP TORQUE -
*	CC 96W	TB1-K22	J13-K1	X PIP TORQUE RET
*	A 265W	TB1-K22	P07-V	X PIP TORQUE RET
*	CC 96L	TB1-K23	J13-H1	X PIP TORQUE +
*	A 265L	TB1-K23	P07-U	X PIP TORQUE +
	CC 96B	TB1-K24	SHLD CC 96	0 VDC IMU
	A 265B	TB1-K24	SHLD A 265	0 VDC IMU
*	AA 23	TB1-K24	TB1-H17	0 VDC IMU
*	TB 18	TB1-K24	TB1-H24	0 VDC IMU
	TB 20	TB1-K25	TB1-K26	0 VDC IMU
*	AA 16	TB1-K25	TB1-D75	0 VDC IMU
*	CC 93	TB1-K25	J12-R5	0 VDC IMU
*	TB 20	TB1-K26	TB1-K25	0 VDC IMU
*	CC 77	TB1-K26	J11-S6	0 VDC IMU
*	CC131	TB1-K26	J15-R2	0 VDC IMU
*	A 570	TB1-K26	TB1-H26	0 VDC IMU
	A 200B	TB1-K28	SHLD A 200	IG CDU ERROR SIG RET
*	CC 61W	TB1-K28	J11-B1	IG CDU ERROR SIG RET
*	A 200R	TB1-K28	P03-J	IG CDU ERROR SIG RET
*	CC 61R	TB1-K29	J11-C1	IG CDU ATTITUDE STEERING ERROR
*	A 200Y	TB1-K29	P03-H	IG CDU ATTITUDE STEERING ERROR

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR B		SHEET 130

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA 29	TB1-K30	TB1-K32	IG CDU ERROR SIG RET
	A 18B	TB1-K30	SHLD A 18	IG CDU ERROR SIG RET
*	CC135R	TB1-K30	J16-D2	IG CDU ERROR SIG RET
*	A 18Y	TB1-K30	J01- 90	IG CDU ERROR SIG RET
*	CC135W	TB1-K31	J16-C1	IG CDU 16X ERROR SIG
*	A 18R	TB1-K31	J01-104	IG CDU 16X ERROR SIG
	A 12B	TB1-K32	SHLD A 12	IG CDU ERROR SIG RET
	A 135B	TB1-K32	SHLD A 135	IG CDU ERROR SIG RET
	A 354B	TB1-K32	SHLD A 354	IG CDU ERROR SIG RET
*	AA 29	TB1-K32	TB1-K30	IG CDU ERROR SIG RET
*	CC 60W	TB1-K33	J11-A1	IG CDU 1X ERROR SIG
*	CC134W	TB1-K33	J16-C2	IG CDU 1X ERROR SIG
*	A 12R	TB1-K33	J01- 35	IG CDU 1X ERROR SIG S2
*	A 135R	TB1-K33	P01- 70	IG CDU 1X ERROR SIG
*	A 354R	TB1-K33	P09- 59	IG CDU 1X ERROR SIG
*	CC 60R	TB1-K34	J11-B1	IG CDU ERROR SIG RET
*	CC134R	TB1-K34	J16-D2	IG CDU ERROR SIG RET
*	A 12Y	TB1-K34	J01- 45	IG CDU ERROR SIG RET
*	A 135Y	TB1-K34	P01- 71	IG CDU ERROR SIG RET
*	A 354Y	TB1-K34	P09- 41	IG CDU ERROR SIG RET
*	CC155	TB1-K35	J16-F2	IG CDU 1X RSVR LOAD
*	A 11	TB1-K35	J01- 34	IG CDU 1X RSVR LOAD S1
	CC237B	TB1-K36	SHLD CC237	0 VDC OPTICS
	A 278B	TB1-K36	SHLD A 278	0 VDC OPTICS
*	AA 25	TB1-K36	TB1-H39	0 VDC OPTICS
*	TB 23	TB1-K36	TB1-H36	0 VDC OPTICS
*	CC237R	TB1-K37	J18-A5	SCT SHAFT TACH HI
*	A 278R	TB1-K37	P08- 38	SCT SHAFT TACH HI
*	CC237W	TB1-K38	J18-B5	SCT SHAFT TACH LO
*	A 278Y	TB1-K38	P08- 39	SCT SHAFT TACH LO
	CC235B	TB1-K39	SHLD CC235	0 VDC OPTICS
	A 281B	TB1-K39	SHLD A 281	0 VDC OPTICS
*	AA 26	TB1-K39	TB1-H42	0 VDC OPTICS
*	TB 24	TB1-K39	TB1-H39	0 VDC OPTICS
*	CC235W	TB1-K40	J18-D5	SCT SHAFT 1X RSVR S4
*	A 281Y	TB1-K40	P08- 51	SCT SHAFT 1X RSVR S4
*	CC235R	TB1-K41	J18-C5	SCT SHAFT 1X RSVR S2
*	A 281R	TB1-K41	P08- 50	SCT SHAFT 1X RSVR S2

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR B		SHEET 131

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC253B	TB1-K42	SHLD CC253	0 VDC OPTICS
	A 90B	TB1-K42	SHLD A 90	0 VDC OPTICS
*	AA 27	TB1-K42	TB1-H47	0 VDC OPTICS
*	TB 25	TB1-K42	TB1-H42	0 VDC OPTICS
*	CC253W	TB1-K43	J19-H1	TRUNNION CDU 1/2X RSVR S3
*	A 90Y	TB1-K43	J05- 67	TRUNNION CDU 1/2X RSVR S3
*	CC253R	TB1-K44	J19-G1	TRUNNION CDU 1/2X RSVR S1
*	A 90R	TB1-K44	J05- 68	TRUNNION CDU 1/2X RSVR S1
*	CC266W	TB1-K45	J19-G3	SHAFT CDU 1X RSVR P4
*	A 65Y	TB1-K45	J04- 21	SHAFT CDU 1X RSVR P4
*	CC266R	TB1-K46	J19-G4	SHAFT CDU 1X RSVR P2
*	A 65R	TB1-K46	J04- 7	SHAFT CDU 1X RSVR P2
	CC266B	TB1-K47	SHLD CC266	0 VDC OPTICS
	A 65B	TB1-K47	SHLD A 65	0 VDC OPTICS
*	AA 28	TB1-K47	TB1-H67	0 VDC OPTICS
*	TB 26	TB1-K47	TB1-H47	0 VDC OPTICS
*	CC257W	TB1-K48	J19-S1	TRUNNION CDU MOTOR PHASE 1
*	A 86Y	TB1-K48	J05- 31	TRUNNION CDU MOTOR PHASE 1
*	CC257R	TB1-K49	J19-T1	TRUNNION CDU MOTOR PHASE 2
*	A 86R	TB1-K49	J05- 32	TRUNNION CDU MOTOR PHASE 2
*	TB 28	TB1-K50	TB1-H50	0 VDC OPTICS
*	A 86G	TB1-K50	J05- 43	0 VDC OPTICS
*	A 267G	TB1-K50	P08- 1	0 VDC OPTICS
*	A 519	TB1-K50	P11-G	0 VDC OPTICS
*	CC260R	TB1-K51	J19-T3	SCT TRUNNION MOTOR PHASE 2
*	A 267R	TB1-K51	P08- 2	SCT TRUNNION MOTOR PHASE 2
*	CC260W	TB1-K52	J19-S3	SCT TRUNNION MOTOR PHASE 1
*	A 267Y	TB1-K52	P08- 3	SCT TRUNNION MOTOR PHASE 1
*	TB 29	TB1-K53	TB1-H53	0 VDC OPTICS
*	CC178	TB1-K53	J16-R5	0 VDC OPTICS
*	A 518	TB1-K53	P11-G	0 VDC OPTICS
*	CC216	TB1-K54	J18-M6	SCT SHAFT TACH FEEDBACK BUFFERED
*	A 364	TB1-K54	P09- 58	SCT SHAFT TACH FEEDBACK BUFFERED
*	CC215	TB1-K55	J18-M4	SXT SHAFT TACH FEEDBACK BUFFERED
*	A 363	TB1-K55	P09- 57	SXT SHAFT TACH FEEDBACK BUFFERED
*	CC214	TB1-K56	J18-M3	SXT SHAFT MDA INPUT BUFFERED
*	A 378	TB1-K56	P09- 74	SXT SHAFT MDA INPUT BUFFERED
*	CC245	TB1-K57	J19-M5	SCT TRUNNION 1X ERROR SIG BUFFERED

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SCALE - NONE	REV LTR B		SHEET 132

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 350	TB1-K57	P09- 37	SCT TRUNNION 1X ERROR SIG BUFFERED	
*	CC282	TB1-K58	J20-B7	PHOTOMETER PREAMP OUTPUT BUFFERED HI	
*	A 376	TB1-K58	P09- 72	PHOTOMETER PREAMP OUTPUT BUFFERED HI	
*	CC184W	TB1-K59	J17-B7	IMU TEMP CONT -5 DEG GAIN CHECK	
*	A 324Y	TB1-K59	J09-102	IMU TEMP CONT -5 DEG GAIN CHECK	
*	CC184R	TB1-K60	J17-C8	IRIG TEMP GAIN SWITCH NC	
*	A 324R	TB1-K60	J09- 86	IRIG TEMP GAIN SWITCH NC	
*	CC184L	TB1-K61	J17-B8	IRIG ZERO DEVIATION CHECK	
*	A 324N	TB1-K61	J09- 89	IRIG ZERO DEVIATION CHECK	
*	CC184K	TB1-K62	J17-C7	IRIG TEMP BRIDGE AMP PIN 6	
*	A 324G	TB1-K62	J09- 85	IRIG TEMP BRIDGE AMP PIN 6	
*	CC198R	TB1-K63	J17-C6	IRIG TEMP IND SENSOR HI	
*	A 242R	TB1-K63	P06-Z	IRIG TEMP IND SENSOR HI	
*	CC198W	TB1-K64	J17-C5	IRIG TEMP IND SENSOR RET	
*	A 242Y	TB1-K64	P06-A*	IRIG TEMP IND SENSOR RET	
*	CC278W	TB1-K65	J20-B9	PHOTOMETER SIGNAL LO	
*	A 235Y	TB1-K65	P05- 81	PHOTOMETER SIGNAL LO	
*	CC278R	TB1-K66	J20-A9	PHOTOMETER SIGNAL HI	
*	A 235R	TB1-K66	P05- 80	PHOTOMETER SIGNAL HI	
	CC278B	TB1-K67	SHLD CC278	0 VDC OPTICS	
	A 235B	TB1-K67	SHLD A 235	0 VDC OPTICS	
	A 290B	TB1-K67	SHLD A 290	0 VDC OPTICS	
*	TB 34	TB1-K67	TB1-H67	0 VDC OPTICS	
*	A 586	TB1-K67	TB1-D76	0 VDC OPTICS	
*	CC249R	TB1-K68	J19-F9	TRUNNION HAND CONTROLLER OUTPUT HI	
*	A 290R	TB1-K68	J09- 8	TRUNNION HAND CONTROLLER OUTPUT HI	
*	CC249W	TB1-K69	J19-F8	TRUNNION HAND CONTROLLER OUTPUT LO	
*	A 290Y	TB1-K69	J09- 22	TRUNNION HAND CONTROLLER OUTPUT LO	
	CC343	TB1-K70	E 3	STRUCTURE GROUND	
*	TB 37	TB1-K70	TB1-H70	STRUCTURE GROUND	
*	A 500	TB1-K70	P13- 37	STRUCTURE GROUND	
*	A 553	TB1-K70	P12-L	STRUCTURE GROUND	
	TB 39	TB1-K71	TB1-K72	+28 VDC MDV	
*	CC283	TB1-K71	J20-N5	+28 VDC MDV	
*	A 421	TB1-K71	P10-104	+28 VDC MDV	
*	A 483	TB1-K71	J10- 8	+28 VDC MDV	306
*	A 489	TB1-K71	J10- 10	+28 VDC MDV	327
*	TB 39	TB1-K72	TB1-K71	+28 VDC MDV	

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015087

SCALE-NONE

REV LTR B

SHEET 133

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC284	TB1-K72	J20-M5	+28 VDC MDV	
*	A 142	TB1-K72	P01- 89	+28 VDC MDV	
*	A 310	TB1-K72	J09- 51	+28 VDC MDV	
*	CC310W	TB1-K73	J20-B6	PRESSURE SENSOR +28 VDC LO	
*	A 243Y	TB1-K73	P06-C*	PRESSURE SENSOR +28 VDC LO	
*	CC310R	TB1-K74	J20-A6	PRESSURE SENSOR +28 VDC HI	
*	A 243R	TB1-K74	P06-B*	PRESSURE SENSOR +28 VDC HI	
*	CC297	TB1-K75	J20-T2	+28 VDC IMU BUSS B	
*	CC314	TB1-K75	J20-R2	+28 VDC IMU BUSS B	
*	A 533	TB1-K75	P12-B	+28 VDC IMU BUSS B	
*	A 534	TB1-K75	P12-B	+28 VDC IMU BUSS B	
*	A 535	TB1-K75	P12-B	+28 VDC IMU BUSS B	
*	CC295	TB1-K76	J20-T1	+28 VDC IMU BUSS A	
*	CC312	TB1-K76	J20-R1	+28 VDC IMU BUSS A	
*	A 505	TB1-K76	P11-B	+28 VDC IMU BUSS A	
*	A 506	TB1-K76	P11-B	+28 VDC IMU BUSS A	
*	A 507	TB1-K76	P11-B	+28 VDC IMU BUSS A	
*	CC288	TB1-K77	J20-H3	+28 VDC AGC BUSS B	
*	A 530	TB1-K77	P12-A	+28 VDC AGC BUSS B	
*	A 560	TB1-K77	J23- 64	+28 VDC AGC BUSS B	168
*	A 561	TB1-K77	J23- 65	+28 VDC AGC BUSS B	168
*	CC287	TB1-K78	J20-H2	+28 VDC AGC BUSS A	
*	A 502	TB1-K78	P11-A	+28 VDC AGC BUSS A	
*	A 558	TB1-K78	J23- 62	+28 VDC AGC BUSS A	167
*	A 559	TB1-K78	J23- 63	+28 VDC AGC BUSS A	167

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015087

SCALE-NONE

REV LTR B

SHEET 134

MIL 2064-4-64

APPLICATION		REVISIONS 16222			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		B	REPLACES REV A WITH CHANGES PER TDRR 16222	2/3/65	WK
		C	REPLACED WITH CHG BY REV D PER TDRR 19196	20-MAY-65	W.D.

ⓒ **REPLACED WITH CHANGE BY REV** *D*

Ⓑ *REPLACES REV A*

SEE SHEET 2 FOR REVISION RECORD

REV

SHEET

REV STATUS REV

OF SHEETS SHEET

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN DATE 1-FEB-65

CHECKED

APPROVAL N. Abraham 1-FEB-65

APPROVAL

NASA APPROVAL

MIT APPROVAL

CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTERCONNECTION LIST OF AGE INTERCONNECT HARNESS AND PSA END CONNECTOR

CODE IDENT NO

SIZE A

1015087

REV C

SCALE

SHEET OF 134

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	C	37	C	73	C	109	C								
2	C	38	C	74	C	110	C								
3	C	39	C	75	C	111	C								
4	C	40	C	76	C	112	C								
5	C	41	C	77	C	113	C								
6	C	42	C	78	C	114	C								
7	C	43	C	79	C	115	C								
8	C	44	C	80	C	116	C								
9	C	45	C	81	C	117	C								
10	C	46	C	82	C	118	C								
11	C	47	C	83	C	119	C								
12	C	48	C	84	C	120	C								
13	C	49	C	85	C	121	C								
14	C	50	C	86	C	122	C								
15	C	51	C	87	C	123	C								
16	C	52	C	88	C	124	C								
17	C	53	C	89	C	125	C								
18	C	54	C	90	C	126	C								
19	C	55	C	91	C	127	C								
20	C	56	C	92	C	128	C								
21	C	57	C	93	C	129	C								
22	C	58	C	94	C	130	C								
23	C	59	C	95	C	131	C								
24	C	60	C	96	C	132	C								
25	C	61	C	97	C	133	C								
26	C	62	C	98	C	134	C								
27	C	63	C	99	C										
28	C	64	C	100	C										
29	C	65	C	101	C										
30	C	66	C	102	C										
31	C	67	C	103	C										
32	C	68	C	104	C										
33	C	69	C	105	C										
34	C	70	C	106	C										
35	C	71	C	107	C										
36	C	72	C	108	C										

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HOUSTON, TEXAS

REVISION C

NASA DRAWING NO 1015087

SHEET 2 OF 134

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
			D₁ REPLACES REVISION C WITH CHANGE		
		D₂	D₂ CHANGED PER TDRR 19196	5/18/65	WK

REPLACES REVISION C WITH CHANGE

SEE SHEET 2 FOR REVISION RECORDS

REV	
SHEET	
REV STATUS OF SHEETS	REV
	SHEET

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Kunderlich DATE
CHECKED 5-18-65
APPROVAL 5/18/65
APPROVAL

NASA APPROVAL
MIT APPROVAL 18 May 65

CONTRACT

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HOUSTON, TEXAS

INTERCONNECTION LIST
OF AGE INTERCONNECTION HARNESS
AND PSA END CONNECTOR

CODE IDENT NO. | SIZE A | 1015087 | REV D

SCALE — | SHEET 1 OF 134

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	D	37	D	73	D	109	D						
2	D	38	D	74	D	110	D						
3	D	39	D	75	D	111	D						
4	D	40	D	76	D	112	D						
5	D	41	D	77	D	113	D						
6	D	42	D	78	D	114	D						
7	D	43	D	79	D	115	D						
8	D	44	D	80	D	116	D						
9	D	45	D	81	D	117	D						
10	D	46	D	82	D	118	D						
11	D	47	D	83	D	119	D						
12	D	48	D	84	D	120	D						
13	D	49	D	85	D	121	D						
14	D	50	D	86	D	122	D						
15	D	51	D	87	D	123	D						
16	D	52	D	88	D	124	D						
17	D	53	D	89	D	125	D						
18	D	54	D	90	D	126	D						
19	D	55	D	91	D	127	D						
20	D	56	D	92	D	128	D						
21	D	57	D	93	D	129	D						
22	D	58	D	94	D	130	D						
23	D	59	D	95	D	131	D						
24	D	60	D	96	D	132	D						
25	D	61	D	97	D	133	D						
26	D	62	D	98	D	134	D						
27	D	63	D	99	D								
28	D	64	D	100	D								
29	D	65	D	101	D								
30	D	66	D	102	D								
31	D	67	D	103	D								
32	D	68	D	104	D								
33	D	69	D	105	D								
34	D	70	D	106	D								
35	D	71	D	107	D								
36	D	72	D	108	D								

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION | NASA DRAWING NO. 1015087 | SHEET 2 OF 134

INTERCONNECT LIST

GENERAL NOTES

1 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

2 THE INTERCONNECT LIST IS A COMPILATION OF THE ASSEMBLY DRAWINGS THAT ARE USED TO BUILD THE AGE INTERCONNECTING HARNESS AND PSA END CONNECTOR ASSEMBLY. THESE DRAWINGS ARE IDENTIFIED BY THE CONDUCTOR PREFIX LETTER AS FOLLOWS-

A - WIRING HARNESS A, PART NUMBER 1015085

AA - WIRE LIST AA, PART NUMBER 1021792

BB - WIRE LIST BB, PART NUMBER 1021791

CC - WIRE LIST CC, PART NUMBER 1015088

TB - BUSS BARS THAT ARE INSTALLED ON CONNECTOR PLATE ASSEMBLY (TERMINAL BOARD), PART NUMBER 1007583

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015087
SCALE-NONE | REV LTR D | SHEET 3

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC342	E 1	J13-C6	STRUCTURE GROUND	
*	CC341	E 2	TB1-K 4	STRUCTURE GROUND	
*	CC343	E 3	TB1-K70	STRUCTURE GROUND	
	BB 94B	E 4	SHLD BB 94	0 VDC IMU	
*	CC 1A	E 4	SHLD CC 1	0 VDC IMU	
*	CC 2A	E 4	SHLD CC 2	0 VDC IMU	
*	CC 6A	E 4	SHLD CC 6	0 VDC IMU	
*	CC 7A	E 4	SHLD CC 7	0 VDC IMU	
*	CC 79	E 4	J11-P2	0 VDC IMU	
	CC 11W	E 5	J23- 6	0 VDC IMU	139R
	CC 12W	E 5	J23- 1	0 VDC IMU	140R
*	CC102	E 5	J13-R6	0 VDC IMU	
	CC 13W	E 6	J23- 10	0 VDC IMU	142S
	CC 14W	E 6	J23- 24	0 VDC IMU	143S
	CC 15W	E 6	J23- 56	0 VDC IMU	144S
	CC 16W	E 6	J23- 33	0 VDC IMU	145S
	CC 17W	E 6	J23- 16	0 VDC IMU	146S
	CC 18W	E 6	J23- 5	0 VDC IMU	147S
	CC 19W	E 6	J23- 44	0 VDC IMU	148S
	CC338	E 6	E 7	0 VDC IMU	
*	CC110	E 6	J14-R6	0 VDC IMU	
*	CC 13A	E 7	SHLD CC 13	0 VDC IMU	
*	CC 14A	E 7	SHLD CC 14	0 VDC IMU	
*	CC 15A	E 7	SHLD CC 15	0 VDC IMU	
*	CC 16A	E 7	SHLD CC 16	0 VDC IMU	
*	CC 17A	E 7	SHLD CC 17	0 VDC IMU	
*	CC 18A	E 7	SHLD CC 18	0 VDC IMU	
*	CC 19A	E 7	SHLD CC 19	0 VDC IMU	
*	CC338	E 7	E 6	0 VDC IMU	
	CC 26R	E 8	J24- 22	IG DAC MDA SIG LO	120R
	CC 27W	E 8	J24- 42	IG DAC MDA SIG LO	121R
*	CC120	E 8	J15-A5	IG DAC MDA SIG LO	
	CC 32R	E 9	J23- 23	IG DAC MDA SIG LO	128R
	CC 33W	E 9	J23- 69	IG DAC MDA SIG LO	129R
*	CC 32A	E 9	SHLD CC 32	IG DAC MDA SIG LO	
*	CC 33A	E 9	SHLD CC 33	IG DAC MDA SIG LO	
*	CC123	E 9	J15-A5	IG DAC MDA SIG LO	
	CC 28R	E 10	J24- 18	MG DAC MDA SIG LO	122R

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015087
SCALE-NONE | REV LTR D | SHEET 4

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC 29W	E 10	J24- 7	MG DAC MDA SIG LO	123R
*	CC121	E 10	J15-A7	MG DAC MDA SIG LO	
	CC 34R	E 11	J23- 34	MG DAC MDA SIG LO	130R
	CC 35W	E 11	J23- 17	MG DAC MDA SIG LO	131R
*	CC 34A	E 11	SHLD CC 34	MG DAC MDA SIG LO	
*	CC 35A	E 11	SHLD CC 35	MG DAC MDA SIG LO	
*	CC124	E 11	J15-A7	MG DAC MDA SIG LO	
	CC 30R	E 12	J24- 20	OG DAC MDA SIG LO	118R
	CC 31W	E 12	J24- 21	OG DAC MDA SIG LO	119R
*	CC122	E 12	J15-A9	OG DAC MDA SIG LO	
	CC 36R	E 13	J23- 8	OG DAC MDA SIG LO	126R
	CC 37W	E 13	J23- 9	OG DAC MDA SIG LO	127R
*	CC 36A	E 13	SHLD CC 36	OG DAC MDA SIG LO	
*	CC 37A	E 13	SHLD CC 37	OG DAC MDA SIG LO	
*	CC125	E 13	J15-A9	OG DAC MDA SIG LO	
	CC 20W	E 14	J24- 9	COMPUTER RET	132S
	CC 21W	E 14	J24- 23	COMPUTER RET	133S
*	CC114	E 14	J15-L5	COMPUTER RET	
	CC 22W	E 15	J24- 43	COMPUTER RET	134S
	CC 23W	E 15	J24- 69	COMPUTER RET	135S
*	CC115	E 15	J15-L5	COMPUTER RET	
	CC 24W	E 16	J24- 34	COMPUTER RET	137S
	CC 25W	E 16	J24- 57	COMPUTER RET	136S
*	CC116	E 16	J15-L5	COMPUTER RET	
	CC 20B	E 17	SHLD CC 20	AGC SIGNAL 179 SHIELD RETURN	
	CC 21B	E 17	SHLD CC 21	AGC SIGNAL 179 SHIELD RETURN	
	CC 22B	E 17	SHLD CC 22	AGC SIGNAL 179 SHIELD RETURN	
	CC 23B	E 17	SHLD CC 23	AGC SIGNAL 179 SHIELD RETURN	
	CC 24B	E 17	SHLD CC 24	AGC SIGNAL 179 SHIELD RETURN	
	CC 25B	E 17	SHLD CC 25	AGC SIGNAL 179 SHIELD RETURN	
	CC339	E 17	E 18	AGC SIGNAL 179 SHIELD RETURN	
	CC 8B	E 18	SHLD CC 8	AGC SIGNAL 179 SHIELD RETURN	
	CC 9B	E 18	SHLD CC 9	AGC SIGNAL 179 SHIELD RETURN	
	CC 10B	E 18	SHLD CC 10	AGC SIGNAL 179 SHIELD RETURN	
*	CC336	E 18	J24- 87	AGC SIGNAL 179 SHIELD RETURN	179
*	CC339	E 18	E 17	AGC SIGNAL 179 SHIELD RETURN	
	CC 26B	E 19	SHLD CC 26	AGC SIGNAL 179 SHIELD RETURN	
	CC 27B	E 19	SHLD CC 27	AGC SIGNAL 179 SHIELD RETURN	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR D	SHEET 5

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC 28B	E 19	SHLD CC 28	AGC SIGNAL 179 SHIELD RETURN	
	CC 29B	E 19	SHLD CC 29	AGC SIGNAL 179 SHIELD RETURN	
	CC 30B	E 19	SHLD CC 30	AGC SIGNAL 179 SHIELD RETURN	
	CC 31B	E 19	SHLD CC 31	AGC SIGNAL 179 SHIELD RETURN	
	CC340	E 19	E 20	AGC SIGNAL 179 SHIELD RETURN	
	CC 42B	E 20	SHLD CC 42	AGC SIGNAL 179 SHIELD RETURN	
	CC 46B	E 20	SHLD CC 46	AGC SIGNAL 179 SHIELD RETURN	
	CC 49B	E 20	SHLD CC 49	AGC SIGNAL 179 SHIELD RETURN	
	CC 50B	E 20	SHLD CC 50	AGC SIGNAL 179 SHIELD RETURN	
*	CC337	E 20	J24- 64	AGC SIGNAL 179 SHIELD RETURN	179
*	CC340	E 20	E 19	AGC SIGNAL 179 SHIELD RETURN	
	CC 38B	E 21	SHLD CC 38	AGC SIGNAL 178 SHIELD RETURN	
	CC 41B	E 21	SHLD CC 41	AGC SIGNAL 178 SHIELD RETURN	
	CC344	E 21	E 22	AGC SIGNAL 178 SHIELD RETURN	
	CC345	E 21	E 23	AGC SIGNAL 178 SHIELD RETURN	
*	CC332A	E 21	SHLD CC332	AGC SIGNAL 178 SHIELD RETURN	
	A 114B	E 22	SHLD A 114	AGC SIGNAL 178 SHIELD RETURN	
	A 131B	E 22	SHLD A 131	AGC SIGNAL 178 SHIELD RETURN	
	A 132B	E 22	SHLD A 132	AGC SIGNAL 178 SHIELD RETURN	
	A 133B	E 22	SHLD A 133	AGC SIGNAL 178 SHIELD RETURN	
	A 136B	E 22	SHLD A 136	AGC SIGNAL 178 SHIELD RETURN	
*	CC344	E 22	E 21	AGC SIGNAL 178 SHIELD RETURN	
	A 304B	E 23	SHLD A 304	AGC SIGNAL 178 SHIELD RETURN	
	A 309B	E 23	SHLD A 309	AGC SIGNAL 178 SHIELD RETURN	
	A 414B	E 23	SHLD A 414	AGC SIGNAL 178 SHIELD RETURN	
	A 417B	E 23	SHLD A 417	AGC SIGNAL 178 SHIELD RETURN	
*	A 563	E 23	J24- 51	AGC SIGNAL 178 SHIELD RETURN	178
*	A 566A	E 23	SHLD A 566	AGC SIGNAL 178 SHIELD RETURN	
*	CC345	E 23	E 21	AGC SIGNAL 178 SHIELD RETURN	
*	A 298A	E 24	SHLD A 298	AGC SIGNAL 178 SHIELD RETURN	
*	A 301A	E 24	SHLD A 301	AGC SIGNAL 178 SHIELD RETURN	
*	A 308A	E 24	SHLD A 308	AGC SIGNAL 178 SHIELD RETURN	
*	A 309A	E 24	SHLD A 309	AGC SIGNAL 178 SHIELD RETURN	
	A 464Y	E 26	J21- 74	COMMONED RETURNS GROUND	202R
	A 465Y	E 26	J21- 47	COMMONED RETURNS GROUND	210R
	A 466Y	E 26	J21- 28	COMMONED RETURNS GROUND	201R
	A 467Y	E 26	J21- 13	COMMONED RETURNS GROUND	208R
	A 471	E 26	E 27	COMMONED RETURNS GROUND	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR D	SHEET 6

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 470	E 26	J10- 69	COMMONED RETURNS GROUND	252
	A 459Y	E 27	J21- 15	COMMONED RETURNS GROUND	205R
	A 460Y	E 27	J21- 54	COMMONED RETURNS GROUND	209R
	A 461Y	E 27	J21- 53	COMMONED RETURNS GROUND	203R
	A 462Y	E 27	J21- 30	COMMONED RETURNS GROUND	207R
	A 463Y	E 27	J21- 51	COMMONED RETURNS GROUND	204R
*	A 471	E 27	E 26	COMMONED RETURNS GROUND	
	A 422Y	E 28	J21- 4	COMMONED RETURNS GROUND	244R
	A 423Y	E 28	J21- 17	COMMONED RETURNS GROUND	232R
	A 424Y	E 28	J21- 18	COMMONED RETURNS GROUND	227R
	A 425Y	E 28	J21- 2	COMMONED RETURNS GROUND	228R
	A 426Y	E 28	J21- 24	COMMONED RETURNS GROUND	229R
	A 453	E 28	E 34	COMMONED RETURNS GROUND	
	A 427Y	E 29	J21- 69	COMMONED RETURNS GROUND	230R
	A 428Y	E 29	J21- 57	COMMONED RETURNS GROUND	231R
	A 429Y	E 29	J21- 1	COMMONED RETURNS GROUND	233R
	A 430Y	E 29	J21- 11	COMMONED RETURNS GROUND	234R
	A 431Y	E 29	J21- 45	COMMONED RETURNS GROUND	235R
	A 454	E 29	E 34	COMMONED RETURNS GROUND	
	A 432Y	E 30	J21- 70	COMMONED RETURNS GROUND	236R
	A 433Y	E 30	J21- 56	COMMONED RETURNS GROUND	237R
	A 434Y	E 30	J21- 16	COMMONED RETURNS GROUND	238R
	A 435Y	E 30	J21- 61	COMMONED RETURNS GROUND	214R
	A 455	E 30	E 34	COMMONED RETURNS GROUND	
	A 436Y	E 31	J21- 39	COMMONED RETURNS GROUND	215R
	A 437Y	E 31	J21- 41	COMMONED RETURNS GROUND	216R
	A 438Y	E 31	J21- 66	COMMONED RETURNS GROUND	217R
	A 439Y	E 31	J21- 60	COMMONED RETURNS GROUND	218R
	A 456	E 31	E 34	COMMONED RETURNS GROUND	
	A 440Y	E 32	J21- 20	COMMONED RETURNS GROUND	219R
	A 441Y	E 32	J21- 68	COMMONED RETURNS GROUND	221R
	A 442Y	E 32	J21- 59	COMMONED RETURNS GROUND	222R
	A 443Y	E 32	J21- 19	COMMONED RETURNS GROUND	223R
	A 457	E 32	E 34	COMMONED RETURNS GROUND	
	A 444Y	E 33	J21- 9	COMMONED RETURNS GROUND	224R
	A 445Y	E 33	J21- 58	COMMONED RETURNS GROUND	226R
	A 446Y	E 33	J21- 22	COMMONED RETURNS GROUND	220R
	A 447Y	E 33	J21- 43	COMMONED RETURNS GROUND	225R

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR D	SHEET 7

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 458	E 33	E 34	COMMONED RETURNS GROUND	
*	A 452	E 34	J10- 82	COMMONED RETURNS GROUND	330
*	A 453	E 34	E 28	COMMONED RETURNS GROUND	
*	A 454	E 34	E 29	COMMONED RETURNS GROUND	
*	A 455	E 34	E 30	COMMONED RETURNS GROUND	
*	A 456	E 34	E 31	COMMONED RETURNS GROUND	
*	A 457	E 34	E 32	COMMONED RETURNS GROUND	
*	A 458	E 34	E 33	COMMONED RETURNS GROUND	
*	A 556	E 35	J21- 50	GROUP 3 SHIELD	250
*	A 487	E 36	J10- 27	GROUP 3 SHIELD	250
*	A 557	E 37	J21- 73	GROUP 2 SHIELD	245
*	A 488	E 38	J10- 1	GROUP 2 SHIELD	245

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR D	SHEET 8

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 1R	J01- 1	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
A 2Y	J01- 2	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 2R	J01- 3	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 3Y	J01- 6	TB1-A14	COS AIG 1X RET P1
A 4Y	J01- 7	TB1-A16	SIN AIG 1X P2
A 5G	J01- 11	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
A 5Y	J01- 12	TB1-B 6	ZEROING RSVR 800 CPS
A 1Y	J01- 14	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
A 6	J01- 15	TB1-B53	+28 VDC CDU NOT LOCK
A 7	J01- 16	TB1-G 6	+28 VDC IMU
A 3R	J01- 20	TB1-A13	COS AIG 1X P3
A 4R	J01- 21	TB1-A15	SIN AIG 1X RET P4
A 5R	J01- 25	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
A 8R	J01- 28	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
A 8Y	J01- 29	TB1-B 1	400 CPS 6 V LO
A 9	J01- 30	TB1-C53	+28 VDC IMU FOR IG MDA
A 10G	J01- 31	TB1-K18	IG CDU MDA OUTPUT
A 10Y	J01- 32	TB1-K19	IG CDU MDA OUTPUT
A 11	J01- 34	TB1-K35	IG CDU 1X RSVR LOAD S1
A 12R	J01- 35	TB1-K33	IG CDU 1X ERROR SIG S2
A 13	J01- 41	TB1-G 9	STRUCTURE GROUND
A 10R	J01- 43	TB1-K20	0 VDC IMU
A 12Y	J01- 45	TB1-K34	IG CDU ERROR SIG RET
A 14R	J01- 50	TB1-G 1	25.6 KC HI IMU
A 15Y	J01- 57	TB1-B31	IG CDU 1/2X ERROR SIG LO
A 14Y	J01- 60	TB1-G 2	25.6 KC LO IMU
A 15R	J01- 67	TB1-A31	IG CDU 1/2X ERROR SIG S3
A 16Y	J01- 86	TB1-H16	COS AIG 16X TO CDU
A 17Y	J01- 87	TB1-K16	SIN AIG 16X TO CDU
A 18Y	J01- 90	TB1-K30	IG CDU ERROR SIG RET
A 19Y	J01- 92	TB1-F30	IG CDU MDA INPUT RET
A 20Y	J01- 94	TB1-F34	IG CDU ENCODER COMMON
A 16R	J01-100	TB1-H15	COS AIG 16X S3
A 17R	J01-101	TB1-K15	SIN AIG 16X S4
A 18R	J01-104	TB1-K31	IG CDU 16X ERROR SIG
A 19G	J01-105	TB1-F31	IG CDU MDA SLEW SIG
A 19R	J01-106	TB1-F29	IG CDU MDA TACH SIG
A 20G	J01-107	TB1-F35	IG CDU ENCODER PHASE 1

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR D	SHEET 9

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 20R	J01-108	TB1-F33	IG CDU ENCODER PHASE 2

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SCALE - NONE	REV LTR D	SHEET 10

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 21R	J02- 1	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
A 22Y	J02- 2	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 22R	J02- 3	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 23Y	J02- 6	TB1-B14	COS AMG 1X S1
A 24Y	J02- 7	TB1-B16	SIN AMG 1X
A 25G	J02- 11	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
A 25Y	J02- 12	TB1-B 6	ZEROING RSVR 800 CPS
A 21Y	J02- 14	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
A 26	J02- 15	TB1-B53	+28 VDC CDU NOT LOCK
A 27	J02- 16	TB1-G 6	+28 VDC IMU
A 23R	J02- 20	TB1-B13	COS AMG 1X S3
A 24R	J02- 21	TB1-B15	SIN AMG 1X RET
A 25R	J02- 25	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
A 28R	J02- 28	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
A 28Y	J02- 29	TB1-B 1	400 CPS 6 V LO
A 29	J02- 30	TB1-C52	+28 VDC IMU FOR MG MDA
A 30G	J02- 31	TB1-H19	MG CDU MDA OUTPUT
A 30Y	J02- 32	TB1-H18	MG CDU MDA OUTPUT
A 31	J02- 34	TB1-H35	MG CDU 1X RSVR LOAD
A 32R	J02- 35	TB1-H33	MG CDU 1X ERROR SIG
A 33	J02- 41	TB1-G 9	STRUCTURE GROUND
A 30R	J02- 43	TB1-H20	0 VDC IMU
A 32Y	J02- 45	TB1-H34	MG CDU ERROR SIG RET
A 34R	J02- 50	TB1-G 1	25.6 KC HI IMU
A 35Y	J02- 57	TB1-B30	MG CDU 1/2X ERROR SIG LO
A 34Y	J02- 60	TB1-G 2	25.6 KC LO IMU
A 35R	J02- 67	TB1-A30	MG CDU 1/2X ERROR SIG
A 36Y	J02- 86	TB1-H11	COS AMG 16X TO CDU
A 37Y	J02- 87	TB1-K11	SIN AMG 16X TO CDU
A 38Y	J02- 90	TB1-H30	MG CDU ERROR SIG RET
A 39Y	J02- 92	TB1-D30	MG CDU MDA INPUT RET
A 40Y	J02- 94	TB1-D34	MG CDU ENCODER COMMON
A 36R	J02-100	TB1-H10	COS AMG 16X S3
A 37R	J02-101	TB1-K10	SIN AMG 16X S4
A 38R	J02-104	TB1-H31	MG CDU 16X ERROR SIG
A 39G	J02-105	TB1-D31	MG CDU MDA SLEW SIG
A 39R	J02-106	TB1-D29	MG CDU MDA TACH SIG
A 40G	J02-107	TB1-D35	MG CDU ENCODER PHASE 1

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 40R	J02-108	TB1-D33	MG CDU ENCODER PHASE 2

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SCALE - NONE	REV LTR D	SHEET 12

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 41R	J03- 1	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
A 42Y	J03- 2	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 42R	J03- 3	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 43Y	J03- 6	TB1-C15	COS AOG 1X S1
A 44Y	J03- 7	TB1-D15	SIN AOG 1X S4
A 45G	J03- 11	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
A 45Y	J03- 12	TB1-B 6	ZEROING RSVR 800 CPS
A 41Y	J03- 14	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
A 46	J03- 15	TB1-B53	+28 VDC CDU NOT LOCK
A 47	J03- 16	TB1-G 6	+28 VDC IMU
A 43R	J03- 20	TB1-C16	COS AOG 1X TO CDU
A 44R	J03- 21	TB1-D16	SIN AOG 1X TO CDU
A 45R	J03- 25	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
A 48R	J03- 28	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
A 48Y	J03- 29	TB1-B 1	400 CPS 6 V LO
A 49	J03- 30	TB1-C51	+28 VDC IMU FOR OG MDA
A 50G	J03- 31	TB1-G19	OG CDU MDA OUTPUT
A 50Y	J03- 32	TB1-G18	OG CDU MDA OUTPUT
A 51	J03- 34	TB1-G35	OG CDU 1X RSVR LOAD
A 52R	J03- 35	TB1-G33	OG CDU 1X ERROR SIG
A 53	J03- 41	TB1-G10	STRUCTURE GROUND
A 50R	J03- 43	TB1-G20	0 VDC IMU
A 52Y	J03- 45	TB1-G34	OG CDU ERROR SIG RET
A 54R	J03- 50	TB1-H 1	25.6 KC HI IMU
A 55Y	J03- 57	TB1-B29	OG CDU 1/2X ERROR SIG LO
A 54Y	J03- 60	TB1-H 2	25.6 KC LO IMU
A 55R	J03- 67	TB1-A29	OG CDU 1/2X ERROR SIG
A 56Y	J03- 86	TB1-F16	COS AOG 16X TO CDU
A 57Y	J03- 87	TB1-G16	SIN AOG 16X TO CDU
A 58	J03- 89	TB1-G29	OG CDU 16X RSVR LOAD
A 59Y	J03- 90	TB1-G30	OG CDU ERROR SIG RET
A 60Y	J03- 92	TB1-C30	OG CDU MDA INPUT RET
A 61Y	J03- 94	TB1-C34	OG CDU ENCODER COMMON
A 56R	J03-100	TB1-F15	COS AOG 16X S3
A 57R	J03-101	TB1-G15	SIN AOG 16X S4
A 59R	J03-104	TB1-G31	OG CDU 16X ERROR SIG
A 60G	J03-105	TB1-C31	OG CDU MDA SLEW SIG
A 60R	J03-106	TB1-C29	OG CDU MDA TACH SIG

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 61G	J03-107	TB1-C35	OG CDU ENCODER PHASE 1
A 61R	J03-108	TB1-C33	OG CDU ENCODER PHASE 2

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SCALE - NONE | REV LTR D | SHEET 14

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 62R	J04- 1	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS
A 63Y	J04- 2	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 63R	J04- 5	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 64Y	J04- 6	TB1-H46	SHAFT CDU 1X RSVR P1
A 65R	J04- 7	TB1-K46	SHAFT CDU 1X RSVR P2
A 66Y	J04- 11	TB1-H40	SHAFT CDU 1/2X RSVR P1
A 62Y	J04- 14	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS
A 64R	J04- 20	TB1-H45	SHAFT CDU 1X RSVR P3
A 65Y	J04- 21	TB1-K45	SHAFT CDU 1X RSVR P4
A 66R	J04- 25	TB1-H41	SHAFT CDU 1/2X RSVR P3
A 67R	J04- 28	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
A 67Y	J04- 29	TB1-B 2	400 CPS 6 V LO
A 68Y	J04- 31	TB1-H48	SHAFT CDU MOTOR PHASE 1
A 68R	J04- 32	TB1-H49	SHAFT CDU MOTOR PHASE 2
A 69Y	J04- 34	TB1-F50	SHAFT CDU 1X RSVR S1
A 69G	J04- 35	TB1-F48	SHAFT CDU 1X RSVR S2
A 70	J04- 41	TB1-G10	STRUCTURE GROUND
A 68G	J04- 43	TB1-H50	0 VDC OPTICS
A 68N	J04- 44	TB1-D49	CDU SHAFT MDA TUNING CAPACITOR
A 69R	J04- 45	TB1-F49	SHAFT CDU 1X RSVR S3
A 71R	J04- 50	TB1-K 1	25.6 KC HI OPTICS
A 72R	J04- 56	TB1-C45	SHAFT CDU 1/2X RSVR S2
A 73R	J04- 57	TB1-D45	SHAFT CDU 1/2X RSVR S1
A 71Y	J04- 60	TB1-K 2	25.6 KC LO OPTICS
A 72Y	J04- 66	TB1-C46	SHAFT CDU 1/2X RSVR S4
A 73Y	J04- 67	TB1-D46	SHAFT CDU 1/2X RSVR S3
A 74Y	J04- 86	TB1-A45	SHAFT CDU 16X RSVR P1
A 75R	J04- 87	TB1-B45	SHAFT CDU 16X RSVR P2
A 76R	J04- 90	TB1-G41	SHAFT CDU 16X RSVR S3
A 77Y	J04- 92	TB1-G38	SHAFT CDU TACH LO
A 78Y	J04- 94	TB1-A34	SHAFT CDU ENCODER COMMON
A 74R	J04-100	TB1-A46	SHAFT CDU 16X RSVR P3
A 75Y	J04-101	TB1-B46	SHAFT CDU 16X RSVR P4
A 76Y	J04-104	TB1-G40	SHAFT CDU 16X RSVR S2
A 77R	J04-106	TB1-G37	SHAFT CDU TACH HI
A 78G	J04-107	TB1-A35	SHAFT CDU ENCODER PHASE 1
A 78R	J04-108	TB1-A33	SHAFT CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 79R	J05- 1	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS
A 80Y	J05- 2	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 81Y	J05- 4	TB1-D41	TRUNNION CDU 1/4X RSVR P3
A 80R	J05- 5	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 82Y	J05- 8	TB1-D44	TRUNNION CDU 1/4X RSVR S1
A 83R	J05- 9	TB1-C44	TRUNNION CDU 1/4X RSVR S2
A 83Y	J05- 10	TB1-C43	TRUNNION CDU 1/4X RSVR S4
A 84G	J05- 11	TB1-B19	TRUNNION CDU 1/2X RSVR P1 AND P3
A 84Y	J05- 12	TB1-B18	TRUNNION CDU 1/2X RSVR P2
A 79Y	J05- 14	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS
A 81R	J05- 17	TB1-D40	TRUNNION CDU 1/4X RSVR P2
A 82R	J05- 22	TB1-D43	TRUNNION CDU 1/4X RSVR S3
A 84R	J05- 25	TB1-B19	TRUNNION CDU 1/2X RSVR P3
A 85R	J05- 28	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
A 85Y	J05- 29	TB1-B 2	400 CPS 6 V LO
A 86Y	J05- 31	TB1-K48	TRUNNION CDU MOTOR PHASE 1
A 86R	J05- 32	TB1-K49	TRUNNION CDU MOTOR PHASE 2
A 87	J05- 41	TB1-G11	STRUCTURE GROUND
A 86G	J05- 43	TB1-K50	0 VDC OPTICS
A 86N	J05- 44	TB1-D50	CDU TRUNNION MDA TUNING CAPACITOR
A 88R	J05- 50	TB1-K 1	25.6 KC HI OPTICS
A 89R	J05- 56	TB1-H44	TRUNNION CDU 1/2X RSVR S2
A 88Y	J05- 60	TB1-K 2	25.6 KC LO OPTICS
A 89Y	J05- 66	TB1-H43	TRUNNION CDU 1/2X RSVR S4
A 90Y	J05- 67	TB1-K43	TRUNNION CDU 1/2X RSVR S3
A 90R	J05- 68	TB1-K44	TRUNNION CDU 1/2X RSVR S1
A 91Y	J05- 86	TB1-A44	TRUNNION CDU 16X RSVR P1
A 92Y	J05- 87	TB1-B44	TRUNNION CDU 16X RSVR P2
A 93R	J05- 90	TB1-C41	TRUNNION CDU 16X RSVR S3
A 94Y	J05- 92	TB1-C38	TRUNNION CDU TACHOMETER LO
A 95Y	J05- 94	TB1-B34	TRUNNION CDU ENCODER COMMON
A 91R	J05-100	TB1-A43	TRUNNION CDU 16X RSVR P3
A 92R	J05-101	TB1-B43	TRUNNION CDU 16X RSVR P4
A 93Y	J05-104	TB1-C40	TRUNNION CDU 16X RSVR S2
A 94R	J05-106	TB1-C37	TRUNNION CDU TACHOMETER HI
A 95G	J05-107	TB1-B35	TRUNNION CDU ENCODER PHASE 1
A 95R	J05-108	TB1-B33	TRUNNION CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 96R	J06- 1	P01- 1	PITCH ATTITUDE ERROR METER +
A 96Y	J06- 2	P01- 2	PITCH ATTITUDE ERROR METER -
A 97	J06- 6	P01- 6	ENTRY RELAY CONTROL RESET
A 98	J06- 9	P01- 9	MODE SWITCH INTERLOCK
A 99Y	J06- 12	TB1-A48	MODE RELAY COMMON TO AGC
A 100R	J06- 14	P01- 14	YAW ATTITUDE ERROR METER +
A 100Y	J06- 15	P01- 15	YAW ATTITUDE ERROR METER -
A 101	J06- 18	P01- 18	MODE RELAY COMMON TO D AND C ELECT
A 102	J06- 22	P01- 22	ATTITUDE CONTROL MODE LIGHT
A 103	J06- 23	P01- 23	FINE ALIGN RELAY CONTROL
A 104Y	J06- 24	TB1-G 3	ATTITUDE CONTROL RELAY CONTROL
A 105	J06- 25	P01- 25	ENTRY RELAY CONTROL
A 106Y	J06- 28	P01- 28	ROLL ATTITUDE ERROR METER -
A 106R	J06- 29	P01- 29	ROLL ATTITUDE ERROR METER +
A 107	J06- 34	P01- 34	ZERO ENCODER RELAY CONTROL
A 108	J06- 35	P01- 35	COARSE ALIGN RELAY CONTROL
A 109	J06- 36	P01- 36	CDU MANUAL RELAY CONTROL
A 110	J06- 37	P01- 37	MANUAL ALIGN
A 111	J06- 46	P01- 46	ATTITUDE CONTROL MODE INTERLOCK
A 112	J06- 56	P01- 56	MANUAL ALIGN ENABLE
A 113Y	J06- 68	TB1-C56	AGC COMMON (ISS)
A 114Y	J06- 69	J24- 12	TRANSFER SWITCH INDICATION TO AGC 164
A 115	J06- 78	TB1-D 3	0 VDC IMU
A 116	J06- 79	P01- 79	ENTRY MODE LIGHT
A 99R	J06- 81	TB1-B48	ATTIT CONT MODE COMMAND FROM AGC
A 117	J06- 91	TB1-G 8	STRUCTURE GROUND
A 118	J06- 92	P01- 92	COARSE ALIGN MODE LIGHT
A 119	J06- 93	P01- 93	MODE RELAY COMMON
A 120	J06- 94	P01- 94	FINE ALIGN MODE LIGHT
A 121	J06-104	P01-104	ZERO ENCODER MODE LIGHT
A 122	J06-105	P01-105	CDU MANUAL MODE LIGHT
A 123Y	J06-107	TB1-B 3	400 CPS 6 V LO
A 123R	J06-108	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 146	J08- 17	TB1-B21	SPARE FAIL LIGHT 3 LO
A 147	J08- 18	TB1-A23	GIMBAL LOCK LIGHT HI
A 148	J08- 19	TB1-B21	GIMBAL LOCK LIGHT LO
A 149	J08- 28	TB1-B21	SPARE FAIL LIGHT 2 LO
A 150	J08- 29	TB1-G 8	STRUCTURE GROUND
A 151	J08- 30	TB1-B22	ZERO ENCODER LIGHT LO
A 152	J08- 31	TB1-A25	IMU DELAY LIGHT LO
A 153	J08- 32	TB1-C 4	MASTER CAUTION LIGHT HI
A 154Y	J08- 36	TB1-B75	400 CPS 6 V LO
A 155	J08- 41	TB1-A21	ZERO ENCODER LIGHT HI
A 156	J08- 42	TB1-A26	IMU DELAY LIGHT HI
A 157	J08- 43	J22- 40	MASTER CAUTION LIGHT RET
A 154G	J08- 46	TB1-B77	PROJECTION LAMP LO INTENSITY
A 158	J08- 50	TB1-A20	SPARE FAIL LIGHT 1 HI
A 159Y	J08- 51	TB1-C26	G+N ERROR LIGHT HI
A 159R	J08- 52	TB1-C25	G+N ERROR LIGHT LO
A 160	J08- 53	J22- 65	MASTER WARNING LIGHT RET
A 161	J08- 54	TB1-C 4	MASTER WARNING LIGHT HI
A 154R	J08- 55	TB1-B76	PROJECTION LAMP HI INTENSITY
A 162	J08- 60	TB1-A22	IMU FAIL LIGHT HI
A 163	J08- 61	TB1-B22	IMU FAIL LIGHT LO
A 164R	J08- 62	TB1-B26	IMU TEMP CONT FAIL LIGHT HI
A 164Y	J08- 63	TB1-B25	IMU TEMP CONT FAIL LIGHT LO
A 165G	J08- 66	TB1-A76	MDV SLEW CONTROL 1.5 V 400 CPS
A 166	J08- 67	TB1-A53	+28 VDC MDV SWITCHED
A 165R	J08- 68	TB1-A77	400 CPS 26 V MDV RSVR EXC
A 167	J08- 70	TB1-B22	SPARE FAIL LIGHT 1 LO
A 168R	J08- 71	TB1-D26	AGC POWER SUPPLY FAIL SIG HI
A 169	J08- 72	TB1-A24	CDU FAIL LIGHT HI
A 170	J08- 73	TB1-B24	ACCEL FAIL LIGHT HI
A 171	J08- 78	TB1-B52	STEP-UP-C
A 172	J08- 79	TB1-A52	STEP-DOWN-C
A 165Y	J08- 81	TB1-A78	400 CPS 26 V SLEW
A 168Y	J08- 82	TB1-D25	AGC POWER SUPPLY FAIL LIGHT LO
A 173	J08- 83	TB1-B23	CDU FAIL LIGHT LO
A 174	J08- 84	TB1-B23	ACCEL FAIL LIGHT LO
A 175	J08- 92	TB1-D 4	0 VDC IMU
A 176	J08- 93	TB1-A51	STEP-DOWN-R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 165N	J08- 95	TB1-A75	400 CPS 26 V LO
A 177	J08-106	TB1-B51	STEP-UP-R

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SCALE-NONE
REV LTR D
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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 285	J09- 1	TB1-F77	0 VDC OPTICS
A 286R	J09- 2	TB1-A61	TRACKER MODE RELAY COMMAND
A 287Y	J09- 3	J22- 89	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT
A 288Y	J09- 4	J22- 18	PITCH ATTIT IMPULSE CONTR OUTPUT UP
A 288R	J09- 5	J22- 35	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN
A 289R	J09- 6	J22- 87	YAW ATTIT IMPULSE CONTR OUTPUT LEFT
A 289G	J09- 7	J22- 88	YAW ATTIT IMPULSE CONTR INPUT
A 290R	J09- 8	TB1-K68	TRUNNION HAND CONTROLLER OUTPUT HI
A 291R	J09- 10	TB1-H68	SHAFT HAND CONTROLLER OUTPUT HI
A 295	J09- 14	J22- 64	SPACECRAFT LAMP TEST
A 296	J09- 15	TB1-D70	0 VDC SPACECRAFT
A 287G	J09- 16	J22- 90	ROLL ATTIT IMPULSE CONTR INPUT
A 287R	J09- 17	J22- 60	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT
A 288G	J09- 18	J22- 36	PITCH ATTIT IMPULSE CONTR INPUT
A 289Y	J09- 20	J22- 58	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT
A 290Y	J09- 22	TB1-K69	TRUNNION HAND CONTROLLER OUTPUT LO
A 291Y	J09- 24	TB1-H69	SHAFT HAND CONTROLLER OUTPUT LO
A 297	J09- 26	TB1-C62	0 VDC IMU
A 298Y	J09- 30	P10- 32	ACCEPT MARK
A 299	J09- 31	P10- 16	MANUAL MARK COMMAND
A 300R	J09- 32	TB1-A54	PANEL BRIGHTNESS CONTROL
A 301Y	J09- 33	P10- 33	MARK REJECT
A 302R	J09- 34	TB1-F68	SCT TRUNNION TRACKER MODE INPUT HI
A 302Y	J09- 35	TB1-F69	SCT TRUNNION TRACKER MODE INPUT LO
A 591	J09- 38	TB1-B25	IMU TEMP CONT FAIL LIGHT LO
A 592	J09- 39	TB1-D25	AGC POWER SUPPLY FAIL LIGHT LO
A 303Y	J09- 40	J22- 8	0 VDC FROM NAA
A 303R	J09- 41	J22- 7	+28 VDC FROM NAA
A 304Y	J09- 42	J24- 31	TRACKER ON INDICATION TO AGC 107
A 305R	J09- 43	TB1-G68	PHOTOMETER MARK REJECT HI
A 300Y	J09- 44	TB1-A55	PANEL BRIGHTNESS CONTROL
A 306G	J09- 45	TB1-A71	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR
A 307Y	J09- 46	TB1-B77	PROJECTION LAMP LO INTENSITY
A 308Y	J09- 47	TB1-A68	AGC COMMON (OSS)
A 308R	J09- 48	TB1-A69	OPTICS ZERO ENCODER INDICATION
A 309Y	J09- 49	J24- 54	OPTICS MODE SW COMPUTER INDICATION 106
A 303G	J09- 50	J22- 2	ATTITUDE DISABLE SIG TO NAA
A 310	J09- 51	TB1-K72	+28 VDC MDV

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 311Y	J09- 52	P10- 92	400 CPS 6 V LO
A 311R	J09- 53	P10-106	400 CPS 6 V HI
A 312R	J09- 54	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
A 307R	J09- 55	TB1-B76	PROJECTION LAMP HI INTENSITY
A 313Y	J09- 58	TB1-B57	0 DEG OFFSET RELAY COMMAND
A 313R	J09- 59	TB1-B58	25 DEG OFFSET RELAY COMMAND
A 305Y	J09- 60	TB1-G69	PHOTOMETER MARK REJECT LO
A 311G	J09- 61	P10-105	400 CPS 6 V HI
A 590	J09- 62	TB1-C25	G+N ERROR LIGHT LO
A 314R	J09- 65	P10- 39	400 CPS 1.5 V PI PHASE
A 315G	J09- 66	TB1-A76	MDV SLEW CONTROL 1.5 V 400 CPS
A 316	J09- 67	TB1-A53	+28 VDC MDV SWITCHED
A 315R	J09- 68	TB1-A77	400 CPS 26 V MDV RSVR EXC
A 306Y	J09- 69	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS
A 286G	J09- 70	TB1-B59	COMPUTER RELAY COMMAND
A 317	J09- 71	TB1-H71	+28 VDC OPTICS
A 286Y	J09- 72	TB1-B60	ZERO OPTICS MODE COMMAND
A 318	J09- 73	TB1-D72	CONDITION LAMP TEST
A 319R	J09- 74	TB1-F60	IMU TEMP ALARM AMP PIN 15
A 320	J09- 75	TB1-F59	IMU TEMP ALARM AMP PIN 14
A 321Y	J09- 76	TB1-D63	IMU TEMP CONT K2 PIN 6
A 314Y	J09- 77	P10- 38	400 CPS 1.5 V ZERO PHASE
A 322	J09- 78	TB1-B52	STEP-UP-C
A 323	J09- 79	TB1-A52	STEP-DOWN-C
A 306R	J09- 80	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS
A 315Y	J09- 81	TB1-A78	400 CPS 26 V SLEW
A 313G	J09- 82	TB1-A57	RESOLVED MODE RELAY COMMAND
A 593	J09- 83	TB1-F76	0 VDC OPTICS
A 312Y	J09- 84	TB1-C 3	MODE LAMP TEST PWR
A 324G	J09- 85	TB1-K62	IRIG TEMP BRIDGE AMP PIN 6
A 324R	J09- 86	TB1-K60	IRIG TEMP GAIN SWITCH NC
A 325G	J09- 87	TB1-H60	IMU TEMP CONT AMP PIN 5
A 325N	J09- 88	TB1-G60	IMU TEMP CONT K2 PIN 5
A 324N	J09- 89	TB1-K61	IRIG ZERO DEVIATION CHECK
A 321R	J09- 90	TB1-D62	EMERG HTR CONT MODULE LO
A 326	J09- 91	TB1-H70	STRUCTURE GROUND
A 319Y	J09- 92	TB1-F62	IMU TEMP ALARM AMP PIN 5
A 327	J09- 93	TB1-A51	STEP-DOWN-R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 321G	J09- 94	TB1-F63	TEMPERATURE CONTROLLER 0 VDC IMU
A 314G	J09- 95	P10- 48	400 CPS 26 V HI
A 328	J09- 96	TB1-B71	+28 VDC OPTICS TRACKER POWER
A 329Y	J09- 97	TB1-H62	ACCEL INDICATING SENSOR HI
A 329N	J09- 98	TB1-G62	ACCEL BRIDGE AMP PIN 6
A 292	J09- 99	TB1-B23	CONDITION LAMPS COMMON
A 325R	J09-100	TB1-G59	IMU HTR CURRENT AMP PIN 5
A 325Y	J09-101	TB1-H59	IMU TEMP CONT K1 PIN 3
A 324Y	J09-102	TB1-K59	IMU TEMP CONT -5 DEG GAIN CHECK
A 329G	J09-103	TB1-G64	IMU IMU TEMP CONT +5 DEG GAIN CHECK
A 329R	J09-104	TB1-G63	ACCEL ZERO DEVIATION CHECK
A 319G	J09-105	TB1-F61	IMU TEMP ALARM BIAS RESISTOR
A 330	J09-106	TB1-B51	STEP-UP-R
A 589	J09-107	TB1-A25	IMU DELAY LIGHT LO
A 331	J09-108	TB1-C71	+28 VDC OPTICS DAC POWER

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 488	J10- 1	E 38	GROUP 2 SHIELD	245
A 477	J10- 2	TB1-D72	CONDITION LAMP TEST	328
A 473G	J10- 3	TB1-A21	ZERO ENCODER LIGHT HI	301
A 473R	J10- 4	TB1-A24	CDU FAIL LIGHT HI	302
A 473Y	J10- 5	TB1-B24	ACCEL FAIL LIGHT HI	303
A 478	J10- 6	TB1-A22	IMU FAIL LIGHT HI	304
A 479	J10- 7	TB1-A20	SPARE FAIL LIGHT 1 HI	305
A 483	J10- 8	TB1-K71	+28 VDC MDV	306
A 481	J10- 9	TB1-B56	AGC FAIL SIG	326
A 489	J10- 10	TB1-K71	+28 VDC MDV	327
A 474G	J10- 12	TB1-B48	ATTIT CONT MODE COMMAND FROM AGC	314
A 474Y	J10- 13	TB1-A48	MODE RELAY COMMON TO AGC	315
A 444R	J10- 14	J21- 8	OUT 0 11	224S
A 447R	J10- 15	J21- 23	OUT 0 12	225S
A 445R	J10- 16	J21- 87	OUT 0 13	226S
A 424R	J10- 17	J21- 35	OUT 0 14	227S
A 425R	J10- 18	J21- 7	OUT 0 15	228S
A 428R	J10- 19	J21- 86	TELEMETRY FAIL ALARM	231S
A 475Y	J10- 21	TB1-C50	ZERO ENCODER MODE COMMAND FROM AGC	307
A 475G	J10- 22	TB1-A50	COARSE ALIGN MODE COMMAND FROM AGC	308
A 476Y	J10- 23	TB1-C48	CDU MANUAL MODE COMMAND FROM AGC	309
A 475R	J10- 24	TB1-B50	FINE ALIGN MODE COMMAND FROM AGC	310
A 476R	J10- 25	TB1-C49	ENTRY MODE COMMAND FROM AGC	311
A 474R	J10- 26	TB1-A48	MODE RELAY COMMON TO AGC	312
A 487	J10- 27	E 36	GROUP 3 SHIELD	250
A 438R	J10- 28	J21- 67	OUT 0 4	217S
A 439R	J10- 29	J21- 89	OUT 0 5	218S
A 440R	J10- 30	J21- 37	OUT 0 6	219S
A 446R	J10- 31	J21- 21	OUT 0 7	220S
A 423R	J10- 32	J21- 34	PROGRAM CHECK FAIL ALARM	232S
A 429R	J10- 33	J21- 6	SCALER FAIL ALARM	233S
A 466R	J10- 34	J21- 29	KEY CODE 1	201S
A 464R	J10- 35	J21- 48	KEY CODE 2	202S
A 461R	J10- 36	J21- 82	KEY CODE 3	203S
A 463R	J10- 37	J21- 52	KEY CODE 4	204S
A 459R	J10- 38	J21- 32	KEY CODE 5	205S
A 462R	J10- 39	J21- 31	TEST ALARM	207S
A 426R	J10- 40	J21- 10	PROGRAM ALARM	229S

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 427R	J10- 41	J21- 44	COMPUTER ACTIVITY	230S
A 422R	J10- 42	J21- 5	TIMING (1.5 CPS)	244S
A 431R	J10- 43	J21- 25	COUNTER FAIL ALARM	235S
A 430R	J10- 44	J21- 3	PARITY FAIL ALARM	234S
A 468	J10- 45	J21- 84	SPARE	248
A 469	J10- 46	J21- 55	SPARE	249
A 465R	J10- 47	J21- 27	OR OF C1 THRU C33	210S
A 467R	J10- 48	J21- 14	ERROR RESET	208S
A 460R	J10- 49	J21- 83	KEY RESET NAV	209S
A 433R	J10- 51	J21- 85	RUPT LOCK ALARM	237S
A 432R	J10- 53	J21- 71	KEY RELEASE	236S
A 486	J10- 55	J21- 63	SPARE	240
A 485	J10- 56	J21- 91	DISKY GROUND	239
A 480	J10- 57	J21- 64	+13 V B	241
A 484	J10- 58	J21- 62	DISKY GROUND	251
A 482	J10- 59	J21- 65	+28 VDC AGC	243
A 437R	J10- 60	J21- 40	OUT 0 3	216S
A 441R	J10- 61	J21- 42	OUT 0 8	221S
A 442R	J10- 62	J21- 88	OUT 0 9	222S
A 443R	J10- 63	J21- 36	OUT 0 10	223S
A 434R	J10- 64	J21- 33	TC TRAP ALARM	238S
A 472Y	J10- 65	TB1-B60	ZERO OPTICS MODE COMMAND	316
A 472R	J10- 66	TB1-A61	TRACKER MODE RELAY COMMAND	317
A 472G	J10- 67	TB1-B59	COMPUTER RELAY COMMAND	331
A 470	J10- 69	E 26	COMMONED RETURNS GROUND	252
A 450	J10- 70	J21- 12	SPARE	211
A 449	J10- 71	J21- 26	POWER SUPPLY SYNC	212
A 448	J10- 72	J21- 46	SPARE	213
A 435R	J10- 73	J21- 90	OUT 0 1	214S
A 436R	J10- 74	J21- 38	OUT 0 2	215S
A 451	J10- 75	J21- 72	SPARE	247
A 452	J10- 82	E 34	COMMONED RETURNS GROUND	330

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC 60W	J11-A1	TB1-K33	IG CDU 1X ERROR SIG
CC 62W	J11-A2	TB1-H33	MG CDU 1X ERROR SIG
CC 64W	J11-A3	TB1-G33	OG CDU 1X ERROR SIG
BB 9R	J11-A5	J12-A2	IMU MG ERROR SIG
CC 68R	J11-A5	TB1-B28	IMU MG ERROR SIG
BB 9L	J11-A6	J12-B1	IMU OG ERROR SIG
CC 68L	J11-A6	TB1-A28	IMU OG ERROR SIG
CC 60R	J11-B1	TB1-K34	IG CDU ERROR SIG RET
CC 61W	J11-B1	TB1-K28	IG CDU ERROR SIG RET
CC 62R	J11-B2	TB1-H34	MG CDU ERROR SIG RET
CC 63W	J11-B2	TB1-H28	MG CDU ERROR SIG RET
BB 10R	J11-B3	J17-B1	OG CDU ERROR SIG RET
CC 64R	J11-B3	TB1-G34	OG CDU ERROR SIG RET
BB 9K	J11-B5	J12-B2	IMU GIMBAL AND GYRO ERROR SIG LO
BB 28	J11-B5	J11-S6	0 VDC IMU
CC 68K	J11-B5	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO
BB 9W	J11-B6	J12-A1	IMU IG AND Y GYRO ERROR SIG
CC 68W	J11-B6	TB1-C28	IMU IG AND Y GYRO ERROR SIG
CC 61R	J11-C1	TB1-K29	IG CDU ATTITUDE STEERING ERROR
CC 63R	J11-C2	TB1-H29	MG CDU ATTITUDE STEERING ERROR
BB 10W	J11-C3	J17-A1	OG CDU ATTITUDE STEERING ERROR
CC 69W	J11-D5	TB1-F19	IG TORQUE MOTOR RET
CC 69R	J11-D6	TB1-F18	IG TORQUE MOTOR HI
CC 65R	J11-F1	TB1-B11	IG ADA
CC 73R	J11-F3	TB1-K 8	3200 CPS 2 V FEEDBACK HI
CC 70R	J11-F6	TB1-D18	MG TORQUE MOTOR HI
CC 65K	J11-G1	TB1-A10	OG ADA
BB 17	J11-G2	J11-P6	0 VDC IMU
CC 65W	J11-G2	TB1-B10	0 VDC IMU
CC 73W	J11-G3	TB1-H 8	3200 CPS 2 V FEEDBACK LO
CC 70W	J11-G6	TB1-D19	MG TORQUE MOTOR RET
CC 65L	J11-H1	TB1-A11	MG ADA
CC 71W	J11-H5	TB1-C19	OG TORQUE MOTOR RET
CC 71R	J11-H6	TB1-C18	OG TORQUE MOTOR HI
BB 8R	J11-L1	J12-H2	3200 CPS 2 V HI
CC 67L	J11-L1	TB1-K 7	3200 CPS 2 V HI
BB 8W	J11-L2	J12-K2	3200 CPS 2 V LO
CC 67W	J11-L2	TB1-H 7	3200 CPS 2 V LO

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC 72	J11-L3	TB1-K 3	COARSE ALIGN RELAY CONTROL	
BB 7	J11-L4	J12-K3	STRUCTURE GROUND	
CC 80	J11-L4	TB1-H 4	STRUCTURE GROUND	
CC 1R	J11-L6	J23- 31	COMPUTER 3200 PPS OUT OF PHASE SYNC	152S
CC 67K	J11-M1	TB1-K 7	3200 CPS 2 V HI	
CC 67R	J11-M2	TB1-H 7	3200 CPS 2 V LO	
BB 18	J11-M5	J11-P3	0 VDC IMU	
CC 1W	J11-M5	J23- 52	COMPUTER 3200 PPS SYNC RET	152R
CC 2W	J11-M5	J23- 53	COMPUTER 3200 PPS SYNC RET	151R
CC 2R	J11-M6	J23- 54	COMPUTER 3200 PPS IN PHASE SYNC	151S
BB 11R	J11-N1	J17-P2	3200 CPS 20 V CT	
BB 11W	J11-N2	J17-R2	3200 CPS 20 V LO	
BB 16	J11-N3	J12-P4	COMPUTER 12.8 KPPS SYNC	
BB 5W	J11-N4	J12-P3	800 CPS 28 V 1 PCT LO IMU	
BB 5R	J11-N5	J12-N3	800 CPS 28 V 1 PCT HI IMU	
BB 13	J11-N6	J13-P6	-28 VDC	
CC 66	J11-N6	TB1-C54	-28 VDC	
BB 11L	J11-P1	J17-N2	3200 CPS 20 V HI	
BB 19	J11-P2	J11-P3	0 VDC IMU	
CC 79	J11-P2	E 4	0 VDC IMU	
BB 20	J11-P3	J11-R3	0 VDC IMU	
* BB 18	J11-P3	J11-M5	0 VDC IMU	
* BB 19	J11-P3	J11-P2	0 VDC IMU	
BB 21	J11-P4	J11-P5	0 VDC IMU	
BB 27	J11-P4	J11-R4	0 VDC IMU	
* BB 21	J11-P5	J11-P4	0 VDC IMU	
BB 22	J11-P6	J11-R6	0 VDC IMU	
* BB 17	J11-P6	J11-G2	0 VDC IMU	
BB 23	J11-R1	J11-R2	0 VDC IMU	
CC 78	J11-R1	TB1-C69	0 VDC IMU	
CC 74	J11-R2	TB1-C70	0 VDC IMU	
* BB 23	J11-R2	J11-R1	0 VDC IMU	
CC 75	J11-R3	TB1-B68	0 VDC IMU	
* BB 20	J11-R3	J11-P3	0 VDC IMU	
BB 24	J11-R4	J11-R5	0 VDC IMU	
* BB 27	J11-R4	J11-P4	0 VDC IMU	
BB 26	J11-R5	J11-R6	0 VDC IMU	
CC 76	J11-R5	TB1-H26	0 VDC IMU	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* BB 24	J11-R5	J11-R4	0 VDC IMU
BB 25	J11-R6	J11-S6	0 VDC IMU
* BB 22	J11-R6	J11-P6	0 VDC IMU
* BB 26	J11-R6	J11-R5	0 VDC IMU
BB 2	J11-S1	J20-N1	+28 VDC IMU
BB 15	J11-S1	J11-S2	+28 VDC IMU
BB 3	J11-S2	J20-N2	+28 VDC IMU
* BB 15	J11-S2	J11-S1	+28 VDC IMU
BB 12	J11-S3	J17-R1	+28 VDC STBY TO 3200 CPS POWER SUPPLY
BB 1	J11-S4	J15-S6	+28 VDC IMU
BB 6	J11-S4	J12-S5	+28 VDC IMU
BB 14	J11-S4	J11-S5	+28 VDC IMU
BB 4	J11-S5	J20-L2	+28 VDC IMU
* BB 14	J11-S5	J11-S4	+28 VDC IMU
CC 77	J11-S6	TB1-K26	0 VDC IMU
* BB 25	J11-S6	J11-R6	0 VDC IMU
* BB 28	J11-S6	J11-B5	0 VDC IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* BB 9W	J12-A1	J11-B6	IMU IG AND Y GYRO ERROR SIG	
* BB 9R	J12-A2	J11-A5	IMU MG ERROR SIG	
BB 44	J12-A5	J13-D2	X PIP ERROR MONITOR	
BB 45	J12-A6	J13-F2	Y PIP ERROR MONITOR	
* BB 9L	J12-B1	J11-A6	IMU OG ERROR SIG	
* BB 9K	J12-B2	J11-B5	IMU GIMBAL AND GYRO ERROR SIG LO	
BB 59	J12-B5	J13-R6	0 VDC IMU	
CC 89	J12-B5	TB1-B41	0 VDC IMU	
BB 29	J12-B6	J14-H6	Z PIP ERROR MONITOR	
CC 87	J12-C1	TB1-F51	TRAY 2 THERMISTER HI	
BB 55	J12-C2	J13-C2	THERMISTER LO	
* BB 94R	J12-D1	J16-L4	COMPUTER 800 PPS OUT OF PHASE SYNC	
* BB 94L	J12-D2	J16-M4	COMPUTER 800 PPS IN PHASE SYNC	
CC 10R	J12-D4	J24- 45	ACCEL FAIL	138S
CC 9R	J12-D5	J24- 70	CDU FAIL	124S
CC 8R	J12-D6	J24- 25	IMU FAIL	141S
BB 41	J12-F1	J12-F2	COMPUTER 800 PPS SYNC RET	
* BB 49	J12-F1	J12-R4	0 VDC IMU	
* BB 94W	J12-F1	J16-L3	COMPUTER 800 PPS SYNC RET	
CC 6W	J12-F2	J23- 51	COMPUTER 25.6 KPPS SYNC RET	153R
CC 7W	J12-F2	J23- 50	COMPUTER 25.6 KPPS SYNC RET	154R
* BB 41	J12-F2	J12-F1	COMPUTER 800 PPS SYNC RET	
BB 52	J12-F3	J17-M3	0 VDC SPACECRAFT	
CC 10W	J12-F4	J24- 72	ACCEL FAIL RET	138R
CC 9W	J12-F5	J24- 71	CDU FAIL RET	124R
CC 8W	J12-F6	J24- 46	IMU FAIL RET	141R
CC 6R	J12-G1	J23- 30	COMPUTER 25.6 KPPS IN PHASE SYNC	153S
CC 7R	J12-G2	J23- 29	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154S
CC 4	J12-G3	J22- 63	G+N ERROR LIGHT (MAIN PANEL)	
BB 34	J12-G4	J20-M6	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
BB 56	J12-G5	J16-R2	0 VDC IMU	
BB 37W	J12-G6	J16-N3	OG CDU FAILURE INDICATION	
CC 3W	J12-H1	J23- 73	COMPUTER 102.4 KPPS SYNC RET	156R
* BB 8R	J12-H2	J11-L1	3200 CPS 2 V HI	
BB 33R	J12-H4	J20-K6	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
BB 39	J12-H4	J12-N2	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
CC 88R	J12-H4	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
BB 37L	J12-H5	J16-M2	IG CDU FAILURE INDICATION	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	BB 37R	J12-H6	J16-M3	MG CDU FAILURE INDICATION	
	CC 3R	J12-K1	J23- 46	COMPUTER 102.4 KPPS SYNC	156S
*	BB 8W	J12-K2	J11-L2	3200 CPS 2 V LO	
	BB 42	J12-K3	J13-C6	STRUCTURE GROUND	
*	BB 7	J12-K3	J11-L4	STRUCTURE GROUND	
*	CC 3A	J12-K3	SHLD CC 3	STRUCTURE GROUND	
	BB 33W	J12-K4	J20-K5	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
	CC 88W	J12-K4	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
	BB 43W	J12-K6	J14-R2	+12, +32, +120 VDC RET GYRO	
	BB 46	J12-L1	J20-N5	+28 VDC MDV	
	CC 86	J12-L2	TB1-C26	G+N ERROR LIGHT HI	
	BB 43R	J12-L6	J14-S2	+120 VDC GYRO	
	CC 5	J12-M1	J23- 26	AGC POWER SUPPLY FAIL SIG HI	157S
	CC 85	J12-M1	TB1-D26	AGC POWER SUPPLY FAIL SIG HI	
	CC 84	J12-M3	TB1-B56	AGC FAIL SIG	
	BB 43K	J12-M5	J14-S5	+32 VDC GYRO	
	BB 43L	J12-M6	J14-S3	+12 VDC GYRO	
	BB 38	J12-N1	J12-P1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	BB 39	J12-N2	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	BB 30R	J12-N3	J15-P6	800 CPS 28 V 1 PCT HI IMU	
*	BB 5R	J12-N3	J11-N5	800 CPS 28 V 1 PCT HI IMU	
	BB 40	J12-N4	J12-N5	25.6 KC HI IMU	
	CC 83R	J12-N4	TB1-G 1	25.6 KC HI IMU	
	BB 31R	J12-N5	J15-N6	25.6 KC HI IMU	
*	BB 40	J12-N5	J12-N4	25.6 KC HI IMU	
	BB 51W	J12-N6	J17-N3	25.6 KC LO OPTICS	
	BB 53	J12-N6	J12-R6	0 VDC OPTICS	
	CC 82W	J12-N6	TB1-K 2	25.6 KC LO OPTICS	
	CC 81L	J12-P1	TB1-C74	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	BB 38	J12-P1	J12-N1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
	CC 81R	J12-P2	TB1-C72	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
	BB 30W	J12-P3	J15-P5	800 CPS 28 V 1 PCT LO IMU	
*	BB 5W	J12-P3	J11-N4	800 CPS 28 V 1 PCT LO IMU	
	BB 50W	J12-P4	J17-R3	COMPUTER 12.8 KPPS SYNC	
*	BB 16	J12-P4	J11-N3	COMPUTER 12.8 KPPS SYNC	
	BB 31W	J12-P5	J15-N5	25.6 KC LO IMU	
	BB 54	J12-P5	J12-R2	0 VDC IMU	
	CC 83W	J12-P5	TB1-G 2	25.6 KC LO IMU	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB 51R	J12-P6	J17-P3	25.6 KC HI OPTICS
	CC 82R	J12-P6	TB1-K 1	25.6 KC HI OPTICS
	CC 81W	J12-R1	TB1-C73	800 CPS 28 V 5 PCT IMU WHEELS LO
	BB 57	J12-R2	J12-R3	0 VDC IMU
	CC 90	J12-R2	TB1-C70	0 VDC IMU
*	BB 54	J12-R2	J12-P5	0 VDC IMU
	BB 58	J12-R3	J12-R4	0 VDC IMU
	CC 91	J12-R3	TB1-C69	0 VDC IMU
*	BB 57	J12-R3	J12-R2	0 VDC IMU
	BB 49	J12-R4	J12-F1	0 VDC IMU
	CC 92	J12-R4	TB1-C68	0 VDC IMU
*	BB 58	J12-R4	J12-R3	0 VDC IMU
	CC 93	J12-R5	TB1-K25	0 VDC IMU
	CC 94	J12-R6	TB1-H53	0 VDC OPTICS
*	BB 53	J12-R6	J12-N6	0 VDC OPTICS
	BB 35	J12-S1	J20-M1	+28 VDC IMU
	BB 47	J12-S1	J12-S3	+28 VDC IMU
	BB 36	J12-S2	J20-M2	+28 VDC IMU
	BB 48	J12-S2	J12-S4	+28 VDC IMU
*	BB 47	J12-S3	J12-S1	+28 VDC IMU
*	BB 48	J12-S4	J12-S2	+28 VDC IMU
*	BB 6	J12-S5	J11-S4	+28 VDC IMU
	BB 32	J12-S6	J20-P5	+28 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC 95R	J13-A1	TB1-F11	X PIP ERROR HI	
	CC 98R	J13-A3	TB1-D11	Y PIP ERROR HI	
	BB 62	J13-A6	J14-A6	X GYRO DC DIFF AMP OUTPUT	
	CC 95W	J13-B1	TB1-F10	X PIP ERROR LO	
	CC 98W	J13-B3	TB1-D10	Y PIP ERROR LO	
	CC104	J13-C1	TB1-D51	TRAY 3 THERMISTER HI	
	BB 73	J13-C2	J14-B2	THERMISTER LO	
*	BB 55	J13-C2	J12-C2	THERMISTER LO	
	BB 64	J13-C6	J14-H5	STRUCTURE GROUND	
	CC342	J13-C6	E 1	STRUCTURE GROUND	
*	BB 42	J13-C6	J12-K3	STRUCTURE GROUND	
	BB 69	J13-D1	J15-L4	P X	
	CC 97	J13-D2	TB1-B40	X PIP ERROR MONITOR	
*	BB 44	J13-D2	J12-A5	X PIP ERROR MONITOR	
	BB 71	J13-D3	J15-L3	P Y	
	CC101L	J13-D6	TB1-F23	X GYRO TORQUE +	
	BB 70	J13-F1	J15-M4	N X	
	CC100	J13-F2	TB1-A40	Y PIP ERROR MONITOR	
*	BB 45	J13-F2	J12-A6	Y PIP ERROR MONITOR	
	BB 72	J13-F3	J15-M3	N Y	
	CC101W	J13-F6	TB1-F22	X GYRO TORQUE RET	
	CC101R	J13-G6	TB1-F21	X GYRO TORQUE -	
	CC 96L	J13-H1	TB1-K23	X PIP TORQUE +	
	BB 63L	J13-H6	J14-G1	X GYRO CAL DUMMY	
	CC 96W	J13-K1	TB1-K22	X PIP TORQUE RET	
	BB 63R	J13-K6	J14-H1	X GYRO TERNARY CUR SW TORQUE +	
	CC 96R	J13-L1	TB1-K21	X PIP TORQUE -	
	CC 99L	J13-L3	TB1-H23	Y PIP TORQUE +	
	BB 63W	J13-L6	J14-K1	X GYRO TERNARY CUR SW TORQUE -	
	CC 99W	J13-M3	TB1-H22	Y PIP TORQUE RET	
	CC 99R	J13-N3	TB1-H21	Y PIP TORQUE -	
	BB 60	J13-N5	J14-H3	PIPA INTERROGATE PULSE	
	CC 11R	J13-N5	J23- 7	PIPA INTERROGATE PULSE	139S
	BB 61	J13-N6	J14-K3	PIPA SWITCHING PULSE	
	CC 12R	J13-N6	J23- 2	PIPA SWITCHING PULSE	140S
	BB 68	J13-P6	J14-P6	-28 VDC	
*	BB 13	J13-P6	J11-N6	-28 VDC	
	BB 67W	J13-R1	J14-R2	+12, +32, +120 VDC RET GYRO	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB 66W	J13-R2	J14-R1	+32, +120 VDC RET PIP
	BB 74	J13-R6	J14-R6	0 VDC IMU
	CC102	J13-R6	E 5	0 VDC IMU
*	BB 59	J13-R6	J12-B5	0 VDC IMU
	BB 67R	J13-S1	J14-S2	+120 VDC GYRO
	BB 66R	J13-S2	J14-S1	+120 VDC PIP
	BB 67L	J13-S3	J14-S5	+32 VDC GYRO
	BB 66L	J13-S4	J14-S4	+32 VDC PIP
	BB 65	J13-S6	J14-S6	+28 VDC IMU
	CC103	J13-S6	TB1-G 6	+28 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC105R	J14-A1	TB1-C11	Z PIP ERROR HI	
	CC105W	J14-A2	TB1-C10	Z PIP ERROR LO	
*	BB 62	J14-A6	J13-A6	X GYRO DC DIFF AMP OUTPUT	
	CC111	J14-B1	TB1-D52	TRAY 4 THERMISTER HI	
	CC112	J14-B2	TB1-F52	THERMISTER LO	
*	BB 73	J14-B2	J13-C2	THERMISTER LO	
	CC 13R	J14-D1	J23- 3	+ DX GYRO RATE	142R
	CC 14R	J14-D2	J23- 11	- DX GYRO RATE	143R
	CC 15R	J14-D3	J23- 55	+ DY GYRO RATE	144R
	CC 16R	J14-D4	J23- 32	- DY GYRO RATE	145R
	CC 17R	J14-D5	J23- 15	+ DZ GYRO RATE	146R
	CC 18R	J14-D6	J23- 14	- DZ GYRO RATE	147R
	BB 75	J14-F6	J15-L2	P Z	
*	BB 63L	J14-G1	J13-H6	X GYRO CAL DUMMY	
	BB 76	J14-G6	J15-M2	N Z	
*	BB 63R	J14-H1	J13-K6	X GYRO TERNARY CUR SW TORQUE +	
*	BB 60	J14-H3	J13-N5	PIPA INTERROGATE PULSE	
	BB 77	J14-H5	J15-K3	STRUCTURE GROUND	
*	BB 64	J14-H5	J13-C6	STRUCTURE GROUND	
	CC107	J14-H6	TB1-A41	Z PIP ERROR MONITOR	
*	BB 29	J14-H6	J12-B6	Z PIP ERROR MONITOR	
*	BB 63W	J14-K1	J13-L6	X GYRO TERNARY CUR SW TORQUE -	
*	BB 61	J14-K3	J13-N6	PIPA SWITCHING PULSE	
	CC 19R	J14-K4	J23- 25	GYRO RESET PULSE	148R
	CC109L	J14-L6	TB1-C23	Z GYRO TORQUE +	
	CC108L	J14-M1	TB1-D23	Y GYRO TORQUE +	
	CC108R	J14-M2	TB1-D21	Y GYRO TORQUE -	
	CC108W	J14-M3	TB1-D22	Y GYRO TORQUE RET	
	CC109R	J14-M6	TB1-C21	Z GYRO TORQUE -	
	CC109W	J14-N6	TB1-C22	Z GYRO TORQUE RET	
	CC106L	J14-P1	TB1-G23	Z PIP TORQUE +	
	CC106R	J14-P2	TB1-G21	Z PIP TORQUE -	
	CC106W	J14-P3	TB1-G22	Z PIP TORQUE RET	
*	BB 68	J14-P6	J13-P6	-28 VDC	
	BB 79W	J14-R1	J17-L4	+32, +120 VDC RET PIP	
*	BB 66W	J14-R1	J13-R2	+32, +120 VDC RET PIP	
*	BB 43W	J14-R2	J12-K6	+12, +32, +120 VDC RET GYRO	
*	BB 67W	J14-R2	J13-R1	+12, +32, +120 VDC RET GYRO	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC110	J14-R6	E 6	0 VDC IMU
	CC113	J14-R6	TB1-H25	0 VDC IMU
*	BB 74	J14-R6	J13-R6	0 VDC IMU
	BB 79R	J14-S1	J17-L5	+120 VDC PIP
*	BB 66R	J14-S1	J13-S2	+120 VDC PIP
*	BB 43R	J14-S2	J12-L6	+120 VDC GYRO
*	BB 67R	J14-S2	J13-S1	+120 VDC GYRO
*	BB 43L	J14-S3	J12-M6	+12 VDC GYRO
	BB 79L	J14-S4	J17-T5	+32 VDC PIP
*	BB 66L	J14-S4	J13-S4	+32 VDC PIP
*	BB 43K	J14-S5	J12-M5	+32 VDC GYRO
*	BB 67L	J14-S5	J13-S3	+32 VDC GYRO
	BB 78	J14-S6	J15-S2	+28 VDC IMU
*	BB 65	J14-S6	J13-S6	+28 VDC IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC130W	J15-A1	TB1-F28	Z GYRO ERROR SIG	
CC 38W	J15-A3	J24- 30	MANUAL CDU MODE INDICATION TO AGC	160
BB 82R	J15-A4	J16-B2	IG DAC MDA SIG HI	
BB 82W	J15-A5	J16-B1	IG DAC MDA SIG LO	
CC120	J15-A5	E 8	IG DAC MDA SIG LO	
CC123	J15-A5	E 9	IG DAC MDA SIG LO	
BB 83R	J15-A6	J16-B4	MG DAC MDA SIG HI	
BB 83W	J15-A7	J16-B3	MG DAC MDA SIG LO	
CC121	J15-A7	E 10	MG DAC MDA SIG LO	
CC124	J15-A7	E 11	MG DAC MDA SIG LO	
BB 84R	J15-A8	J16-B6	OG DAC MDA SIG HI	
BB 84W	J15-A9	J16-B5	OG DAC MDA SIG LO	
CC122	J15-A9	E 12	OG DAC MDA SIG LO	
CC125	J15-A9	E 13	OG DAC MDA SIG LO	
CC130L	J15-B1	TB1-G28	X GYRO ERROR SIG	
CC130R	J15-B2	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO	
BB 80	J15-B3	J16-B7	AGC COMMON (ISS)	
CC 26W	J15-B4	J24- 41	IG ENCODER + DELTA THETA	120S
CC 32W	J15-B5	J23- 42	IG CDU + DELTA THETA COMMAND	128S
CC 28W	J15-B6	J24- 19	MG ENCODER + DELTA THETA	122S
CC 34W	J15-B7	J23- 35	MG CDU + DELTA THETA COMMAND	130S
CC 30W	J15-B8	J24- 39	OG ENCODER + DELTA THETA	118S
CC 36W	J15-B9	J23- 21	OG CDU + DELTA THETA COMMAND	126S
CC117W	J15-C1	TB1-F34	IG CDU ENCODER COMMON	
CC117L	J15-C2	TB1-F35	IG CDU ENCODER PHASE 1	
CC119R	J15-C3	TB1-C33	OG CDU ENCODER PHASE 2	
CC 27R	J15-C4	J24- 67	IG ENCODER - DELTA THETA	121S
CC 33R	J15-C5	J23- 43	IG CDU - DELTA THETA COMMAND	129S
CC 29R	J15-C6	J24- 8	MG ENCODER - DELTA THETA	123S
CC 35R	J15-C7	J23- 18	MG CDU - DELTA THETA COMMAND	131S
CC 31R	J15-C8	J24- 40	OG ENCODER - DELTA THETA	119S
CC 37R	J15-C9	J23- 22	OG CDU - DELTA THETA COMMAND	127S
CC117R	J15-D1	TB1-F33	IG CDU ENCODER PHASE 2	
CC118R	J15-D2	TB1-D33	MG CDU ENCODER PHASE 2	
CC119W	J15-D3	TB1-C34	OG CDU ENCODER COMMON	
CC119L	J15-D4	TB1-C35	OG CDU ENCODER PHASE 1	
CC126R	J15-D7	TB1-K15	SIN AIG 16X S4	
CC126W	J15-D8	TB1-K14	SIN AIG 16X S2	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC127L	J15-D9	TB1-K11	SIN AMG 16X TO CDU	
	CC118L	J15-F1	TB1-D35	MG CDU ENCODER PHASE 1	
	CC118W	J15-F2	TB1-D34	MG CDU ENCODER COMMON	
	CC126L	J15-F7	TB1-K16	SIN AIG 16X TO CDU	
	CC127W	J15-F8	TB1-K 9	SIN AMG 16X S2	
	CC127R	J15-F9	TB1-K10	SIN AMG 16X S4	
	BB 85W	J15-H4	J16-L1	FINE ALIGN RELAY CONTROL	
	CC128R	J15-H4	TB1-H 5	FINE ALIGN RELAY CONTROL	
	BB 88	J15-K3	J16-N4	STRUCTURE GROUND	
	CC132	J15-K3	TB1-B49	STRUCTURE GROUND	
*	BB 77	J15-K3	J14-H5	STRUCTURE GROUND	
	CC 24R	J15-K4	J24- 33	- DELTA V Z	137R
	CC 25R	J15-K5	J24- 56	+ DELTA V Z	136R
	CC 23R	J15-K6	J24- 44	- DELTA V Y	135R
*	BB 75	J15-L2	J14-F6	P Z	
*	BB 71	J15-L3	J13-D3	P Y	
*	BB 69	J15-L4	J13-D1	P X	
	CC114	J15-L5	E 14	COMPUTER RET	
	CC115	J15-L5	E 15	COMPUTER RET	
	CC116	J15-L5	E 16	COMPUTER RET	
	CC 22R	J15-L6	J24- 24	+ DELTA V Y	134R
*	BB 76	J15-M2	J14-G6	N Z	
*	BB 72	J15-M3	J13-F3	N Y	
*	BB 70	J15-M4	J13-F1	N X	
	CC 20R	J15-M5	J24- 2	+ DELTA V X	132R
	CC 21R	J15-M6	J24- 10	- DELTA V X	133R
*	BB 31W	J15-N5	J12-P5	25.6 KC LO IMU	
*	BB 31R	J15-N6	J12-N5	25.6 KC HI IMU	
	BB 86W	J15-P5	J16-S3	800 CPS 28 V 1 PCT LO IMU	
*	BB 30W	J15-P5	J12-P3	800 CPS 28 V 1 PCT LO IMU	
	BB 86R	J15-P6	J16-S4	800 CPS 28 V 1 PCT HI IMU	
*	BB 30R	J15-P6	J12-N3	800 CPS 28 V 1 PCT HI IMU	
	CC131	J15-R2	TB1-K26	0 VDC IMU	
	CC129	J15-R6	TB1-B53	+28 VDC CDU NOT LOCK	
	BB 85R	J15-S1	J16-L2	ZERO ENCODER RELAY CONTROL	
	CC128L	J15-S1	TB1-K 5	ZERO ENCODER RELAY CONTROL	
	BB 81	J15-S2	J20-L1	+28 VDC IMU	
*	BB 78	J15-S2	J14-S6	+28 VDC IMU	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC128W	J15-S3	TB1-G 5	LOCK CDU RELAY CONTROL
	BB 87	J15-S6	J16-S2	+28 VDC IMU
*	BB 1	J15-S6	J11-S4	+28 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC136R	J16-A1	TB1-F29	IG CDU MDA TACH SIG
	CC136W	J16-A2	TB1-F31	IG CDU MDA SLEW SIG
	CC141R	J16-A3	TB1-D29	MG CDU MDA TACH SIG
	CC141W	J16-A4	TB1-D31	MG CDU MDA SLEW SIG
	CC153R	J16-A5	TB1-C29	OG CDU MDA TACH SIG
	CC153W	J16-A6	TB1-C31	OG CDU MDA SLEW SIG
	CC 41W	J16-A7	J24- 5	ZERO ENCODER MODE INDICATION TO AGC 158
	CC144W	J16-A8	TB1-D14	SIN AOG 1X S2
	CC348R	J16-A8	J22- 12	SIN AOG 1X S2
	CC144R	J16-A9	TB1-D15	SIN AOG 1X S4
	CC348W	J16-A9	J22- 26	SIN AOG 1X S4
	CC136L	J16-B1	TB1-F30	IG CDU MDA INPUT RET
*	BB 82W	J16-B1	J15-A5	IG DAC MDA SIG LO
*	CC136A	J16-B1	SHLD CC136	IG CDU MDA INPUT RET
*	BB 82R	J16-B2	J15-A4	IG DAC MDA SIG HI
	CC141L	J16-B3	TB1-D30	MG CDU MDA INPUT RET
*	BB 83W	J16-B3	J15-A7	MG DAC MDA SIG LO
*	CC141A	J16-B3	SHLD CC141	MG CDU MDA INPUT RET
*	BB 83R	J16-B4	J15-A6	MG DAC MDA SIG HI
	CC153L	J16-B5	TB1-C30	OG CDU MDA INPUT RET
*	BB 84W	J16-B5	J15-A9	OG DAC MDA SIG LO
*	CC153A	J16-B5	SHLD CC153	OG CDU MDA INPUT RET
*	BB 84R	J16-B6	J15-A8	OG DAC MDA SIG HI
	CC173W	J16-B7	TB1-C56	AGC COMMON (ISS)
*	BB 80	J16-B7	J15-B3	AGC COMMON (ISS)
	CC143W	J16-B8	TB1-C14	COS AOG 1X S3
	CC349W	J16-B8	J22- 4	COS AOG 1X S3
	CC144L	J16-B9	TB1-D16	SIN AOG 1X TO CDU
	CC135W	J16-C1	TB1-K31	IG CDU 16X ERROR SIG
	CC134W	J16-C2	TB1-K33	IG CDU 1X ERROR SIG
	CC140W	J16-C3	TB1-H31	MG CDU 16X ERROR SIG
	CC139W	J16-C4	TB1-H33	MG CDU 1X ERROR SIG
	CC147R	J16-C5	TB1-G31	OG CDU 16X ERROR SIG
	CC146W	J16-C6	TB1-G33	OG CDU 1X ERROR SIG
	CC158	J16-C7	TB1-G29	OG CDU 16X RSVR LOAD
	CC143R	J16-C8	TB1-C15	COS AOG 1X S1
	CC349R	J16-C8	J22- 13	COS AOG 1X S1
	CC143L	J16-C9	TB1-C16	COS AOG 1X TO CDU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC133W	J16-D1	TB1-A31	IG CDU 1/2X ERROR SIG	
	CC134R	J16-D2	TB1-K34	IG CDU ERROR SIG RET	
	CC135R	J16-D2	TB1-K30	IG CDU ERROR SIG RET	
	CC138W	J16-D3	TB1-A30	MG CDU 1/2X ERROR SIG	
	CC139R	J16-D4	TB1-H34	MG CDU ERROR SIG RET	
	CC140R	J16-D4	TB1-H30	MG CDU ERROR SIG RET	
	CC145W	J16-D5	TB1-A29	OG CDU 1/2X ERROR SIG	
	CC146R	J16-D6	TB1-G34	OG CDU ERROR SIG RET	
	CC147W	J16-D6	TB1-G30	OG CDU ERROR SIG RET	
	CC148R	J16-D7	TB1-F14	COS AOG 16X S1	
	CC152W	J16-D8	TB1-G14	SIN AOG 16X S2	
	CC152R	J16-D9	TB1-G15	SIN AOG 16X S4	
	CC133R	J16-F1	TB1-B31	IG CDU 1/2X ERROR SIG LO	
	CC155	J16-F2	TB1-K35	IG CDU 1X RSVR LOAD	
	CC138R	J16-F3	TB1-B30	MG CDU 1/2X ERROR SIG LO	
	CC156	J16-F4	TB1-H35	MG CDU 1X RSVR LOAD	
	CC145R	J16-F5	TB1-B29	OG CDU 1/2X ERROR SIG LO	
	CC157	J16-F6	TB1-G35	OG CDU 1X RSVR LOAD	
	CC148W	J16-F7	TB1-F15	COS AOG 16X S3	
	CC148L	J16-F8	TB1-F16	COS AOG 16X TO CDU	
	CC152L	J16-F9	TB1-G16	SIN AOG 16X TO CDU	
	CC163W	J16-G1	TB1-H15	COS AIG 16X S3	
	CC163L	J16-G2	TB1-H16	COS AIG 16X TO CDU	
	CC164W	J16-G3	TB1-H10	COS AMG 16X S3	
	CC164L	J16-G4	TB1-H11	COS AMG 16X TO CDU	
	CC163R	J16-H1	TB1-H14	COS AIG 16X S1	
	CC164R	J16-H3	TB1-H 9	COS AMG 16X S1	
*	BB 85W	J16-L1	J15-H4	FINE ALIGN RELAY CONTROL	
*	BB 85R	J16-L2	J15-S1	ZERO ENCODER RELAY CONTROL	
	BB 94W	J16-L3	J12-F1	COMPUTER 800 PPS SYNC RET	
	CC 39W	J16-L3	J23- 27	COMPUTER 800 PPS SYNC RET	150R
	CC 40W	J16-L3	J23- 13	COMPUTER 800 PPS SYNC RET	149R
	BB 94R	J16-L4	J12-D1	COMPUTER 800 PPS OUT OF PHASE SYNC	
	CC 39R	J16-L4	J23- 12	COMPUTER 800 PPS OUT OF PHASE SYNC	150S
	CC159W	J16-M1	TB1-H 3	ENTRY RELAY CONTROL	
	CC175K	J16-M2	TB1-C58	IG CDU FAILURE INDICATION	
*	BB 37L	J16-M2	J12-H5	IG CDU FAILURE INDICATION	
	CC175L	J16-M3	TB1-C57	MG CDU FAILURE INDICATION	

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SCALE - NONE	REV LTR	D	SHEET 39

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	BB 37R	J16-M3	J12-H6	MG CDU FAILURE INDICATION	
	BB 94L	J16-M4	J12-D2	COMPUTER 800 PPS IN PHASE SYNC	
	CC 40R	J16-M4	J23- 4	COMPUTER 800 PPS IN PHASE SYNC	149S
	CC154W	J16-N1	TB1-G19	OG CDU MDA OUTPUT	
	CC154R	J16-N2	TB1-G18	OG CDU MDA OUTPUT	
	CC175R	J16-N3	TB1-D57	OG CDU FAILURE INDICATION	
*	BB 37W	J16-N3	J12-G6	OG CDU FAILURE INDICATION	
	BB 95	J16-N4	J17-L6	STRUCTURE GROUND	
	CC180	J16-N4	TB1-A60	STRUCTURE GROUND	
*	BB 88	J16-N4	J15-K3	STRUCTURE GROUND	
	BB 89W	J16-N5	J18-S1	800 CPS 28 V 1 PCT LO OPTICS	
	CC161R	J16-N5	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS	
	CC172R	J16-N5	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS	
	BB 92W	J16-N6	J20-H5	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
	CC162W	J16-N6	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
	CC174W	J16-N6	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
	CC137R	J16-P1	TB1-K19	IG CDU MDA OUTPUT	
	CC176	J16-P2	TB1-D59	0 VDC IMU	
*	CC 39A	J16-P2	SHLD CC 39	0 VDC IMU	
*	CC 40A	J16-P2	SHLD CC 40	0 VDC IMU	
	CC142R	J16-P3	TB1-H18	MG CDU MDA OUTPUT	
	CC160W	J16-P4	TB1-B 5	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU	
	BB 89R	J16-P5	J18-T1	800 CPS 28 V 1 PCT HI OPTICS	
	CC161W	J16-P5	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS	
	CC172W	J16-P5	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS	
	BB 92R	J16-P6	J20-H6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
	CC162R	J16-P6	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
	CC174R	J16-P6	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
	CC137W	J16-R1	TB1-K18	IG CDU MDA OUTPUT	
	CC175W	J16-R2	TB1-D58	0 VDC IMU	
	CC177	J16-R2	TB1-F75	0 VDC IMU	
*	BB 56	J16-R2	J12-G5	0 VDC IMU	
	CC142W	J16-R3	TB1-H19	MG CDU MDA OUTPUT	
	CC160K	J16-R4	TB1-B 6	ZEROING RSVR 800 CPS	
	CC178	J16-R5	TB1-K53	0 VDC OPTICS	
	CC179	J16-R6	TB1-G53	0 VDC OPTICS	
	CC149	J16-S1	TB1-C53	+28 VDC IMU FOR IG MDA	
	BB 93	J16-S2	J20-L2	+28 VDC IMU	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR	D	SHEET 40

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	BB 87	J16-S2	J15-S6	+28 VDC IMU
	BB 97W	J16-S3	J20-F8	800 CPS 28 V 1 PCT LO IMU
	CC160R	J16-S3	TB1-B 7	800 CPS 28 V 1 PCT LO IMU
*	BB 86W	J16-S3	J15-P5	800 CPS 28 V 1 PCT LO IMU
	BB 97R	J16-S4	J20-F9	800 CPS 28 V 1 PCT HI IMU
	CC160L	J16-S4	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
*	BB 86R	J16-S4	J15-P6	800 CPS 28 V 1 PCT HI IMU
	BB 90	J16-S5	J20-P5	+28 VDC OPTICS
	BB 96	J16-S5	J16-S6	+28 VDC OPTICS
	BB 91	J16-S6	J20-P6	+28 VDC OPTICS
*	BB 96	J16-S6	J16-S5	+28 VDC OPTICS
	CC150	J16-T1	TB1-C52	+28 VDC IMU FOR MG MDA
	CC151	J16-T2	TB1-C51	+28 VDC IMU FOR OG MDA

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SIZE A
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REV LTR D
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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	BB 10W	J17-A1	J11-C3	OG CDU ATTITUDE STEERING ERROR
	CC204W	J17-A2	TB1-G31	OG CDU 16X ERROR SIG
	CC 47R	J17-A3	J22- 83	ROLL ERROR BODY OFFSET AXIS HI
	CC 43R	J17-A4	J22- 74	ROLL ERROR BODY AXIS HI
	CC202L	J17-A6	TB1-B35	TRUNNION CDU ENCODER PHASE 1
	CC202W	J17-A7	TB1-B34	TRUNNION CDU ENCODER COMMON
	CC202R	J17-A8	TB1-B33	TRUNNION CDU ENCODER PHASE 2
	BB112	J17-A9	J17-B9	TRUNNION ENCODER SCALE SELECT
*	BB 10R	J17-B1	J11-B3	OG CDU ERROR SIG RET
	CC204R	J17-B2	TB1-G30	OG CDU ERROR SIG RET
	CC 47W	J17-B3	J22- 82	ROLL ERROR BODY OFFSET AXIS LO
	CC 43W	J17-B4	J22- 75	ROLL ERROR BODY AXIS LO
	CC191W	J17-B5	TB1-H64	IRIG TEMP CONT SENSOR RET
	CC191R	J17-B6	TB1-H63	IRIG TEMP CONT SENSOR HI
	CC184W	J17-B7	TB1-K59	IMU TEMP CONT -5 DEG GAIN CHECK
	CC184L	J17-B8	TB1-K61	IRIG ZERO DEVIATION CHECK
*	BB112	J17-B9	J17-A9	TRUNNION ENCODER SCALE SELECT
	CC 48W	J17-C1	J22- 79	PITCH ERROR BODY AND BODY OFFSET AXIS LO
	CC201W	J17-C1	TB1-G13	PITCH ERROR BODY AND BODY OFFSET AXIS LO
	CC201R	J17-C2	TB1-F13	PITCH-YAW RSVR S4
	CC 45R	J17-C3	J22- 53	YAW ERROR BODY OFFSET AXIS HI
	CC 44R	J17-C4	J22- 49	YAW ERROR BODY AXIS HI
	CC198W	J17-C5	TB1-K64	IRIG TEMP IND SENSOR RET
	CC198R	J17-C6	TB1-K63	IRIG TEMP IND SENSOR HI
	CC184K	J17-C7	TB1-K62	IRIG TEMP BRIDGE AMP PIN 6
	CC184R	J17-C8	TB1-K60	IRIG TEMP GAIN SWITCH NC
	CC203L	J17-C9	TB1-A35	SHAFT CDU ENCODER PHASE 1
	CC 48R	J17-D1	J22- 78	PITCH ERROR BODY AND BODY OFFSET AXIS HI
	CC182R	J17-D2	TB1-H13	PITCH YAW RSVR S3
	CC 45W	J17-D3	J22- 81	YAW ERROR BODY OFFSET AXIS LO
	CC182W	J17-D3	TB1-K13	YAW ERROR BODY OFFSET AXIS LO
	CC 44W	J17-D4	J22- 76	YAW ERROR BODY AXIS LO
	CC185W	J17-D5	TB1-G61	ACCEL TEMP IND SENSOR RET
	CC185L	J17-D6	TB1-G64	IMU IMU TEMP CONT +5 DEG GAIN CHECK
	CC185R	J17-D7	TB1-G63	ACCEL ZERO DEVIATION CHECK
	CC203W	J17-D9	TB1-A34	SHAFT CDU ENCODER COMMON
	CC205	J17-F2	TB1-C64	TEMPERATURE CONTROL SIG LO
	CC196	J17-F3	TB1-B64	HTR CURRENT (TELEMETRY)

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC195	J17-F4	TB1-D64	IRIG TEMP (TELEMETRY)
	CC194	J17-F5	TB1-F64	ACCEL TEMP (TELEMETRY)
	CC193	J17-F6	TB1-A64	BLOWER CURRENT SENSOR (TELEMETRY)
	CC185K	J17-F7	TB1-G62	ACCEL BRIDGE AMP PIN 6
	CC203R	J17-F9	TB1-A33	SHAFT CDU ENCODER PHASE 2
	CC188	J17-G1	TB1-F59	IMU TEMP ALARM AMP PIN 14
	CC187R	J17-G2	TB1-F60	IMU TEMP ALARM AMP PIN 15
	BB107L	J17-G4	J18-G4	SHAFT ENCODER + DELTA THETA OUTPUT
	CC 50R	J17-G4	J24- 59	SHAFT ENCODER + DELTA THETA OUTPUT 108S
	BB101L	J17-G6	J18-G6	TRUNNION ENCODER + DELTA THETA OUTPUT
	CC 42R	J17-G6	J24- 61	TRUNNION ENCODER + DELTA THETA OUT 110S
	CC187L	J17-H1	TB1-F61	IMU TEMP ALARM BIAS RESISTOR
	CC187W	J17-H2	TB1-F62	IMU TEMP ALARM AMP PIN 5
	BB107W	J17-H4	J18-H4	SHAFT ENCODER DELTA THETA OUT COMMON
	CC 46W	J17-H4	J24- 35	SHAFT ENCODER DELTA THETA OUT COMMON109R
	CC 50W	J17-H4	J24- 58	SHAFT ENCODER DELTA THETA OUT COMMON108R
	BB101W	J17-H6	J18-H6	TRUNNION ENCODER DELTA THETA OUT COM
	CC 4[illegible]	J17-H6	J24- 60	TRUNNION ENCODER DELTA THETA OUT COM110R
	CC 49W	J17-H6	J24- 37	TRUNNION ENCODER DELTA THETA OUT COM111R
	BB107R	J17-K4	J18-K4	SHAFT ENCODER - DELTA THETA OUTPUT
	CC 46R	J17-K4	J24- 36	SHAFT ENCODER - DELTA THETA OUTPUT 109S
	BB101R	J17-K6	J18-K6	TRUNNION ENCODER - DELTA THETA OUTPUT
	CC 49R	J17-K6	J24- 38	TRUNNION ENCODER - DELTA THETA OUT 111S
	CC189W	J17-L1	TB1-D63	IMU TEMP CONT K2 PIN 6
	CC347	J17-L3	J22- 38	IMU TEMP LIGHT (MAIN PANEL)
	CC206W	J17-L4	TB1-B63	+32, +120 VDC RET PIP
*	BB 79W	J17-L4	J14-R1	+32, +120 VDC RET PIP
	CC206R	J17-L5	TB1-A63	+120 VDC PIP
*	BB 79R	J17-L5	J14-S1	+120 VDC PIP
	BB100	J17-L6	J18-P4	STRUCTURE GROUND
	CC207	J17-L6	TB1-G70	STRUCTURE GROUND
*	BB 95	J17-L6	J16-N4	STRUCTURE GROUND
	CC189R	J17-M1	TB1-F63	TEMPERATURE CONTROLLER 0 VDC IMU
	CC199	J17-M2	TB1-H61	IMU TEMP SENSOR COM
	CC200	J17-M3	TB1-D70	0 VDC SPACECRAFT
	CC346	J17-M3	J22- 39	0 VDC SPACECRAFT
*	BB 52	J17-M3	J12-F3	0 VDC SPACECRAFT
	CC190W	J17-M4	TB1-C60	IMU EMERGENCY HTR HI

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC186W	J17-M5	TB1-H59	IMU TEMP CONT K1 PIN 3
	CC186R	J17-M6	TB1-H60	IMU TEMP CONT AMP PIN 5
	CC192W	J17-N1	TB1-D61	IMU CONTROL HTR LO
*	BB 11L	J17-N2	J11-P1	3200 CPS 20 V HI
*	BB 51W	J17-N3	J12-N6	25.6 KC LO OPTICS
	CC190R	J17-N4	TB1-C61	EMERGENCY HTR LO-OPER AND STBY
	CC186L	J17-N5	TB1-G60	IMU TEMP CONT K2 PIN 5
	CC186K	J17-N6	TB1-G59	IMU HTR CURRENT AMP PIN 5
	CC192R	J17-P1	TB1-D60	IMU CONTROL HTR HI
*	BB 11R	J17-P2	J11-N1	3200 CPS 20 V CT
*	BB 51R	J17-P3	J12-P6	25.6 KC HI OPTICS
	CC183R	J17-P4	TB1-C77	800 CPS 28 V 5 PCT HI TO BLOWERS
	CC197	J17-P5	TB1-B26	IMU TEMP CONT FAIL LIGHT HI
	CC181	J17-P6	TB1-D71	CONDITION LAMP TEST
*	BB 12	J17-R1	J11-S3	+28 VDC STBY TO 3200 CPS POWER SUPPLY
*	BB 11W	J17-R2	J11-N2	3200 CPS 20 V LO
	CC 51R	J17-R3	J23- 28	COMPUTER 12.8 KPPS SYNC 155S
*	BB 50W	J17-R3	J12-P4	COMPUTER 12.8 KPPS SYNC
	CC183W	J17-R4	TB1-C75	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	BB106	J17-R5	J20-M5	+28 VDC MDV
	CC208	J17-R6	TB1-F76	0 VDC OPTICS
	BB113	J17-S1	J17-S2	0 VDC IMU
	CC209	J17-S1	TB1-D75	0 VDC IMU
	CC210	J17-S2	TB1-D74	0 VDC IMU
*	BB113	J17-S2	J17-S1	0 VDC IMU
	CC 51W	J17-S3	J23- 49	0 VDC IMU 155R
	CC211	J17-S3	TB1-B69	0 VDC IMU
	BB 50B	J17-S4	SHLD BB 50	0 VDC IMU
	CC212	J17-S4	TB1-B70	0 VDC IMU
*	CC 51A	J17-S4	SHLD CC 51	0 VDC IMU
	CC213	J17-S6	TB1-D76	0 VDC OPTICS
	BB104	J17-T1	J20-R3	+28 VDC STBY
	BB110	J17-T1	J17-T2	+28 VDC STBY
	BB105	J17-T2	J20-R4	+28 VDC STBY
*	BB110	J17-T2	J17-T1	+28 VDC STBY
	BB103	J17-T3	J20-M2	+28 VDC IMU
	BB102	J17-T4	J20-M1	+28 VDC IMU
	CC206L	J17-T5	TB1-C63	+32 VDC PIP

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	BB 79L	J17-T5	J14-S4	+32 VDC PIP	
	BB111	J17-T6	J20-N6	+28 VDC OPTICS	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC218W	J18-A1	TB1-D46	SXT SHAFT 1/2X RSVR S3	
	CC219W	J18-A2	TB1-B46	SXT SHAFT 16X RSVR S4	
	CC219R	J18-A3	TB1-B45	SXT SHAFT 16X RSVR S2	
	CC237R	J18-A5	TB1-K37	SCT SHAFT TACH HI	
	CC239R	J18-A7	TB1-H37	SXT SHAFT TACH HI	
	CC233R	J18-A9	TB1-D37	SXT TRUNNION TACH HI	
	CC218R	J18-B1	TB1-D45	SXT SHAFT 1/2X RSVR S1	
	CC237W	J18-B5	TB1-K38	SCT SHAFT TACH LO	
	CC239W	J18-B7	TB1-H38	SXT SHAFT TACH LO	
	CC233W	J18-B9	TB1-D38	SXT TRUNNION TACH LO	
	CC234R	J18-C1	TB1-B43	SXT TRUNNION 64X RSVR S2	
	CC234W	J18-C2	TB1-B44	SXT TRUNNION 64X RSVR S4	
	CC235R	J18-C5	TB1-K41	SCT SHAFT 1X RSVR S2	
	CC226	J18-C7	TB1-G55	TRACKER X DRIVE BUFFERED HI	
	CC227	J18-C8	TB1-G54	TRACKER Y DRIVE BUFFERED HI	
	CC228	J18-C9	TB1-G56	TRACKER PREAMP OUTPUT BUFFERED HI	
	CC230W	J18-D1	TB1-C43	TRUNNION CDU 1/4X RSVR S4	
	CC221W	J18-D3	TB1-G44	SCT TRUNNION 1X RSVR P1	
	CC221R	J18-D4	TB1-G43	SCT TRUNNION 1X RSVR P3	
	CC235W	J18-D5	TB1-K40	SCT SHAFT 1X RSVR S4	
	BB120	J18-D7	J18-D8	0 VDC OPTICS	
	BB122	J18-D7	J18-L1	0 VDC OPTICS	
	BB121	J18-D8	J18-D9	0 VDC OPTICS	
*	BB120	J18-D8	J18-D7	0 VDC OPTICS	
*	BB121	J18-D9	J18-D8	0 VDC OPTICS	
	CC230R	J18-F1	TB1-C44	TRUNNION CDU 1/4X RSVR S2	
	CC229W	J18-F2	TB1-D44	TRUNNION CDU 1/4X RSVR S1	
	CC229R	J18-F3	TB1-D43	TRUNNION CDU 1/4X RSVR S3	
	CC231R	J18-F4	TB1-F44	SCT TRUNNION 1X RSVR P2	
	CC231W	J18-F5	TB1-F43	SCT TRUNNION 1X RSVR P4	
	BB118R	J18-G1	J19-G6	SXT SHAFT MDA INPUT HI	
	BB118W	J18-G2	J19-G5	SXT SHAFT MDA INPUT LO	
	CC 55R	J18-G3	J23- 37	SHAFT + DELTA THETA COMMAND	114S
*	BB107L	J18-G4	J17-G4	SHAFT ENCODER + DELTA THETA OUTPUT	
	CC 52R	J18-G5	J23- 89	TRUNNION + DELTA THETA COMMAND	116S
*	BB101L	J18-G6	J17-G6	TRUNNION ENCODER + DELTA THETA OUTPUT	
	BB119W	J18-H1	J19-H6	SXT TRUNNION MDA INPUT LO	
	CC 53W	J18-H3	J23- 19	SHAFT DELTA THETA COMMAND COMMON	115R

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SHEET 46

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC 55W	J18-H3	J23- 36	SHAFT DELTA THETA COMMAND COMMON	114R
*	BB107W	J18-H4	J17-H4	SHAFT ENCODER DELTA THETA OUT COMMON	
	CC 52W	J18-H5	J23- 88	TRUNNION DELTA THETA COMMAND COMMON	116R
	CC 54W	J18-H5	J23- 59	TRUNNION DELTA THETA COMMAND COMMON	117R
*	BB101W	J18-H6	J17-H6	TRUNNION ENCODER DELTA THETA OUT COM	
	BB119R	J18-K1	J19-K6	SXT TRUNNION MDA INPUT HI	
	CC 53R	J18-K3	J23- 20	SHAFT - DELTA THETA COMMAND	115S
*	BB107R	J18-K4	J17-K4	SHAFT ENCODER - DELTA THETA OUTPUT	
	CC 54R	J18-K5	J23- 60	TRUNNION - DELTA THETA COMMAND	117S
*	BB101R	J18-K6	J17-K6	TRUNNION ENCODER - DELTA THETA OUTPUT	
	BB123	J18-L1	J18-L2	0 VDC OPTICS	
	BB131	J18-L1	J19-L6	0 VDC OPTICS	
*	BB122	J18-L1	J18-D7	0 VDC OPTICS	
	BB124	J18-L2	J18-L3	0 VDC OPTICS	
*	BB123	J18-L2	J18-L1	0 VDC OPTICS	
	BB125	J18-L3	J18-L4	0 VDC OPTICS	
*	BB124	J18-L3	J18-L2	0 VDC OPTICS	
	BB126	J18-L4	J18-L5	0 VDC OPTICS	
*	BB125	J18-L4	J18-L3	0 VDC OPTICS	
	BB127	J18-L5	J18-L6	0 VDC OPTICS	
*	BB126	J18-L5	J18-L4	0 VDC OPTICS	
*	BB127	J18-L6	J18-L5	0 VDC OPTICS	
	CC222	J18-M1	TB1-H56	SXT TRUNNION MDA INPUT BUFFERED	
	CC220	J18-M2	TB1-H55	SXT TRUNNION TACH FEEDBACK BUFFERED	
	CC214	J18-M3	TB1-K56	SXT SHAFT MDA INPUT BUFFERED	
	CC215	J18-M4	TB1-K55	SXT SHAFT TACH FEEDBACK BUFFERED	
	CC217	J18-M5	TB1-H54	SCT SHAFT 1X ERROR SIG BUFFERED	
	CC216	J18-M6	TB1-K54	SCT SHAFT TACH FEEDBACK BUFFERED	
	CC225R	J18-P1	TB1-B60	ZERO OPTICS MODE COMMAND	
	CC223W	J18-P2	TB1-B57	0 DEG OFFSET RELAY COMMAND	
	CC225W	J18-P3	TB1-B59	COMPUTER RELAY COMMAND	
	BB115	J18-P4	J19-R4	STRUCTURE GROUND	
*	BB100	J18-P4	J17-L6	STRUCTURE GROUND	
	BB116	J18-R1	J19-R6	TRACKER MODE RELAY COMMAND	
	CC223R	J18-R2	TB1-B58	25 DEG OFFSET RELAY COMMAND	
	BB128	J18-R4	J18-R5	0 VDC OPTICS	
	BB130	J18-R4	J18-S3	0 VDC OPTICS	
	CC241	J18-R4	TB1-F77	0 VDC OPTICS	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB129	J18-R5	J18-R6	0 VDC OPTICS
*	BB128	J18-R5	J18-R4	0 VDC OPTICS
	CC240	J18-R6	TB1-D77	0 VDC OPTICS
*	BB129	J18-R6	J18-R5	0 VDC OPTICS
	BB117W	J18-S1	J19-S6	800 CPS 28 V 1 PCT LO OPTICS
*	BB 89W	J18-S1	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
*	BB130	J18-S3	J18-R4	0 VDC OPTICS
	CC236R	J18-S4	TB1-H51	SCT SHAFT MOTOR PHASE 2
	CC238R	J18-S5	TB1-G49	SXT SHAFT MOTOR PHASE 2
	CC232R	J18-S6	TB1-G51	SXT TRUNNION MOTOR PHASE 2
	BB117R	J18-T1	J19-T6	800 CPS 28 V 1 PCT HI OPTICS
*	BB 89R	J18-T1	J16-P5	800 CPS 28 V 1 PCT HI OPTICS
	BB114	J18-T2	J20-N6	+28 VDC OPTICS
	CC224	J18-T3	TB1-C71	+28 VDC OPTICS DAC POWER
	CC236W	J18-T4	TB1-H52	SCT SHAFT MOTOR PHASE 1
	CC238W	J18-T5	TB1-G48	SXT SHAFT MOTOR PHASE 1
	CC232W	J18-T6	TB1-G52	SXT TRUNNION MOTOR PHASE 1

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SIZE A
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SCALE - NONE
REV LTR D
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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC261R	J19-A1	TB1-F37	SCT TRUNNION TACH HI
	CC258R	J19-A6	TB1-C37	TRUNNION CDU TACHOMETER HI
	CC269R	J19-A9	TB1-G37	SHAFT CDU TACH HI
	CC261W	J19-B1	TB1-F38	SCT TRUNNION TACH LO
	CC256R	J19-B4	TB1-C41	TRUNNION CDU 16X RSVR S3
	CC256W	J19-B5	TB1-C40	TRUNNION CDU 16X RSVR S2
	CC258W	J19-B6	TB1-C38	TRUNNION CDU TACHOMETER LO
	CC267R	J19-B7	TB1-G41	SHAFT CDU 16X RSVR S3
	CC267W	J19-B8	TB1-G40	SHAFT CDU 16X RSVR S2
	CC269W	J19-B9	TB1-G38	SHAFT CDU TACH LO
	CC259W	J19-C1	TB1-F40	SCT TRUNNION 1X RSVR S2
	CC259R	J19-C2	TB1-F41	SCT TRUNNION 1X RSVR S4
	CC255R	J19-C5	TB1-D40	TRUNNION CDU 1/4X RSVR P2
	CC255W	J19-C6	TB1-D41	TRUNNION CDU 1/4X RSVR P3
	CC263W	J19-C8	TB1-H40	SHAFT CDU 1/2X RSVR P1
	CC263R	J19-C9	TB1-H41	SHAFT CDU 1/2X RSVR P3
	CC262W	J19-D2	TB1-F69	SCT TRUNNION TRACKER MODE INPUT LO
	CC262R	J19-D3	TB1-F68	SCT TRUNNION TRACKER MODE INPUT HI
	CC250W	J19-D7	TB1-H69	SHAFT HAND CONTROLLER OUTPUT LO
	CC250R	J19-D8	TB1-H68	SHAFT HAND CONTROLLER OUTPUT HI
	CC249W	J19-F8	TB1-K69	TRUNNION HAND CONTROLLER OUTPUT LO
	CC249R	J19-F9	TB1-K68	TRUNNION HAND CONTROLLER OUTPUT HI
	CC253R	J19-G1	TB1-K44	TRUNNION CDU 1/2X RSVR S1
	CC266W	J19-G3	TB1-K45	SHAFT CDU 1X RSVR P4
	BB133R	J19-G4	J20-D9	Y TRACKER OUTPUT LO
	CC266R	J19-G4	TB1-K46	SHAFT CDU 1X RSVR P2
*	BB118W	J19-G5	J18-G2	SXT SHAFT MDA INPUT LO
*	BB118R	J19-G6	J18-G1	SXT SHAFT MDA INPUT HI
	CC253W	J19-H1	TB1-K43	TRUNNION CDU 1/2X RSVR S3
	BB133W	J19-H4	J20-C9	Y TRACKER OUTPUT HI
	BB132W	J19-H5	J20-C8	X TRACKER OUTPUT HI
*	BB119W	J19-H6	J18-H1	SXT TRUNNION MDA INPUT LO
	CC254R	J19-K1	TB1-H44	TRUNNION CDU 1/2X RSVR S2
	CC254W	J19-K2	TB1-H43	TRUNNION CDU 1/2X RSVR S4
	CC265W	J19-K4	TB1-H46	SHAFT CDU 1X RSVR P1
	BB132R	J19-K5	J20-D8	X TRACKER OUTPUT LO
	CC265R	J19-K5	TB1-H45	SHAFT CDU 1X RSVR P3
*	BB119R	J19-K6	J18-K1	SXT TRUNNION MDA INPUT HI

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MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB135	J19-L1	J20-B7	0 VDC OPTICS
	BB136	J19-L1	J19-L2	0 VDC OPTICS
	BB137	J19-L2	J19-L3	0 VDC OPTICS
*	BB136	J19-L2	J19-L1	0 VDC OPTICS
	BB138	J19-L3	J19-L4	0 VDC OPTICS
*	BB137	J19-L3	J19-L2	0 VDC OPTICS
	BB139	J19-L4	J19-L5	0 VDC OPTICS
*	BB138	J19-L4	J19-L3	0 VDC OPTICS
	BB140	J19-L5	J19-L6	0 VDC OPTICS
*	BB139	J19-L5	J19-L4	0 VDC OPTICS
	CC270	J19-L6	TB1-F56	0 VDC OPTICS
*	BB131	J19-L6	J18-L1	0 VDC OPTICS
*	BB140	J19-L6	J19-L5	0 VDC OPTICS
	CC243	J19-M1	TB1-G57	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
	CC244	J19-M2	TB1-H57	TRUNNION CDU TACH FEEDBACK BUFFERED
	CC242	J19-M3	TB1-H58	SHAFT CDU 16X ERROR SIG BUFFERED
	CC248	J19-M4	TB1-G58	SHAFT CDU TACH FEEDBACK SIG BUFFERED
	CC245	J19-M5	TB1-K57	SCT TRUNNION 1X ERROR SIG BUFFERED
	CC246	J19-M6	TB1-F58	SCT TRUNNION TACH FEEDBACK BUFFERED
	CC257L	J19-N1	TB1-D50	CDU TRUNNION MDA TUNING CAPACITOR
	CC268L	J19-N2	TB1-D49	CDU SHAFT MDA TUNING CAPACITOR
	CC252R	J19-P1	TB1-B19	TRUNNION CDU 1/2X RSVR P3
	CC252W	J19-P2	TB1-B18	TRUNNION CDU 1/2X RSVR P2
	CC264L	J19-P3	TB1-F48	SHAFT CDU 1X RSVR S2
	CC264R	J19-P4	TB1-F49	SHAFT CDU 1X RSVR S3
	CC264W	J19-P5	TB1-F50	SHAFT CDU 1X RSVR S1
	CC251R	J19-P6	TB1-A57	RESOLVED MODE RELAY COMMAND
	BB141	J19-R1	J19-R2	0 VDC OPTICS
	CC271	J19-R1	TB1-F78	0 VDC OPTICS
	BB142	J19-R2	J19-R3	0 VDC OPTICS
*	BB141	J19-R2	J19-R1	0 VDC OPTICS
	BB143	J19-R3	J19-S4	0 VDC OPTICS
	CC272	J19-R3	TB1-D78	0 VDC OPTICS
*	BB142	J19-R3	J19-R2	0 VDC OPTICS
	BB134	J19-R4	J20-M4	STRUCTURE GROUND
*	BB115	J19-R4	J18-P4	STRUCTURE GROUND
	CC251W	J19-R6	TB1-A61	TRACKER MODE RELAY COMMAND
*	BB116	J19-R6	J18-R1	TRACKER MODE RELAY COMMAND

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SCALE - NONE	REV LTR D	SHEET 50

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC257W	J19-S1	TB1-K48	TRUNNION CDU MOTOR PHASE 1
	CC268W	J19-S2	TB1-H48	SHAFT CDU MOTOR PHASE 1
	CC260W	J19-S3	TB1-K52	SCT TRUNNION MOTOR PHASE 1
	BB144	J19-S4	J19-S5	0 VDC OPTICS
*	BB143	J19-S4	J19-R3	0 VDC OPTICS
*	BB144	J19-S5	J19-S4	0 VDC OPTICS
*	BB117W	J19-S6	J18-S1	800 CPS 28 V 1 PCT LO OPTICS
	CC257R	J19-T1	TB1-K49	TRUNNION CDU MOTOR PHASE 2
	CC268R	J19-T2	TB1-H49	SHAFT CDU MOTOR PHASE 2
	CC260R	J19-T3	TB1-K51	SCT TRUNNION MOTOR PHASE 2
	CC247	J19-T5	TB1-H71	+28 VDC OPTICS
*	BB117R	J19-T6	J18-T1	800 CPS 28 V 1 PCT HI OPTICS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR D	SHEET 51

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC286R	J20-A4	TB1-D68	IMU PRESSURE MONITOR HI	
	CC310R	J20-A6	TB1-K74	PRESSURE SENSOR +28 VDC HI	
	CC277R	J20-A7	TB1-H66	STAR PRESENCE INPUT HI	
	CC277W	J20-A8	TB1-H65	STAR PRESENCE INPUT LO	
	CC278R	J20-A9	TB1-K66	PHOTOMETER SIGNAL HI	
	CC286W	J20-B4	TB1-D69	IMU PRESSURE MONITOR LO	
	CC310W	J20-B6	TB1-K73	PRESSURE SENSOR +28 VDC LO	
*	BB135	J20-B7	J19-L1	0 VDC OPTICS	
	CC282	J20-B8	TB1-K58	PHOTOMETER PREAMP OUTPUT BUFFERED HI	
	CC278W	J20-B9	TB1-K65	PHOTOMETER SIGNAL LO	
	CC 56W	J20-C3	J24- 16	STAR PRESENCE LO	183R
	CC 56R	J20-C4	J24- 17	STAR PRESENCE HI	183S
	CC274R	J20-C6	TB1-G66	TRACKER X ERROR HI	
	CC274W	J20-C7	TB1-G65	TRACKER X ERROR LO	
*	BB132W	J20-C8	J19-H5	X TRACKER OUTPUT HI	
*	BB133W	J20-C9	J19-H4	Y TRACKER OUTPUT HI	
	CC309R	J20-D1	TB1-F71	+2.5 VDC CONDITIONING HI	
	CC 57W	J20-D3	J23- 75	102.4 KPPS INPUT LO	056R
	CC292	J20-D4	TB1-G74	+13 VDC AGC	
	CC275R	J20-D6	TB1-F66	TRACKER Y ERROR HI	
	CC275W	J20-D7	TB1-F65	TRACKER Y ERROR LO	
*	BB132R	J20-D8	J19-K5	X TRACKER OUTPUT LO	
*	BB133R	J20-D9	J19-G4	Y TRACKER OUTPUT LO	
	CC309W	J20-F1	TB1-F70	+2.5 VDC CONDITIONING LO	
	CC276W	J20-F2	TB1-B61	AUTOMATIC MARK COMMAND	
	CC 57R	J20-F3	J23- 74	102.4 KPPS INPUT HI	056S
	CC293	J20-F4	TB1-G73	+3 VDC AGC	
	CC289	J20-F5	TB1-H74	+28 VDC AGC	
	CC281R	J20-F6	TB1-G68	PHOTOMETER MARK REJECT HI	
	CC281W	J20-F7	TB1-G69	PHOTOMETER MARK REJECT LO	
	CC 59W	J20-F8	J22- 73	800 CPS 28 V 1 PCT LO IMU	
*	BB 97W	J20-F8	J16-S3	800 CPS 28 V 1 PCT LO IMU	
	CC 59R	J20-F9	J22- 72	800 CPS 28 V 1 PCT HI IMU	
*	BB 97R	J20-F9	J16-S4	800 CPS 28 V 1 PCT HI IMU	
	CC294W	J20-G1	TB1-F72	0 VDC CONDITIONING	
	CC294R	J20-G2	TB1-G72	+20 VDC CONDITIONING	
	CC291	J20-G3	TB1-H73	0 VDC AGC	
	BB145	J20-G4	J20-G5	800 CPS 28 V 1 PCT LO OPTICS	

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SCALE - NONE	REV LTR D	SHEET 52

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC273R	J20-G5	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
*	BB145	J20-G5	J20-G4	800 CPS 28 V 1 PCT LO OPTICS
	CC273W	J20-G6	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS
	BB161	J20-H1	J20-K1	0 VDC IMU
	CC320	J20-H1	TB1-F75	0 VDC IMU
	CC287	J20-H2	TB1-K78	+28 VDC AGC BUSS A
	CC288	J20-H3	TB1-K77	+28 VDC AGC BUSS B
	CC273L	J20-H4	TB1-A71	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR
*	BB 92W	J20-H5	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	BB 92R	J20-H6	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
	BB162	J20-K1	J20-K2	0 VDC IMU
	CC321	J20-K1	TB1-F73	0 VDC IMU
*	BB161	J20-K1	J20-H1	0 VDC IMU
	CC322	J20-K2	TB1-C68	0 VDC IMU
*	BB162	J20-K2	J20-K1	0 VDC IMU
	BB147	J20-K5	J20-L5	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	BB 33W	J20-K5	J12-K4	800 CPS 28 V 5 PCT L-90 DEG LO IMU
	BB146	J20-K6	J20-L6	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	BB 33R	J20-K6	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	CC306	J20-L1	TB1-G 7	+28 VDC IMU
	CC307	J20-L1	TB1-G71	+28 VDC IMU
*	BB 81	J20-L1	J15-S2	+28 VDC IMU
	CC308	J20-L2	TB1-G71	+28 VDC IMU
*	BB 4	J20-L2	J11-S5	+28 VDC IMU
*	BB 93	J20-L2	J16-S2	+28 VDC IMU
	CC285W	J20-L5	TB1-C76	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	BB147	J20-L5	J20-K5	800 CPS 28 V 5 PCT L-90 DEG LO IMU
	CC285R	J20-L6	TB1-C75	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	BB146	J20-L6	J20-K6	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	BB152	J20-M1	J20-N1	+28 VDC IMU
*	BB 35	J20-M1	J12-S1	+28 VDC IMU
*	BB102	J20-M1	J17-T4	+28 VDC IMU
	BB154	J20-M2	J20-N2	+28 VDC IMU
*	BB 36	J20-M2	J12-S2	+28 VDC IMU
*	BB103	J20-M2	J17-T3	+28 VDC IMU
	CC311W	J20-M3	TB1-C78	400 CPS 115 V LO
*	BB134	J20-M4	J19-R4	STRUCTURE GROUND
*	CC 57A	J20-M4	SHLD CC 57	STRUCTURE GROUND

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SCALE - NONE	REV LTR D	SHEET 53

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC284	J20-M5	TB1-K72	+28 VDC MDV	
*	BB106	J20-M5	J17-R5	+28 VDC MDV	
*	BB 34	J20-M6	J12-G4	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
	BB153	J20-N1	J20-N2	+28 VDC IMU	
*	BB 2	J20-N1	J11-S1	+28 VDC IMU	
*	BB152	J20-N1	J20-M1	+28 VDC IMU	
*	BB 3	J20-N2	J11-S2	+28 VDC IMU	
*	BB153	J20-N2	J20-N1	+28 VDC IMU	
*	BB154	J20-N2	J20-M2	+28 VDC IMU	
	CC311R	J20-N3	TB1-B78	400 CPS 115 V HI	
	CC280	J20-N4	TB1-B71	+28 VDC OPTICS TRACKER POWER	
	CC 58	J20-N5	J23- 47	+28 VDC MDV	157R
	CC283	J20-N5	TB1-K71	+28 VDC MDV	
*	BB 46	J20-N5	J12-L1	+28 VDC MDV	
	CC279	J20-N6	TB1-H71	+28 VDC OPTICS	
*	BB111	J20-N6	J17-T6	+28 VDC OPTICS	
*	BB114	J20-N6	J18-T2	+28 VDC OPTICS	
	BB148	J20-P1	J20-T1	+28 VDC IMU BUSS A	
	CC313	J20-P1	TB1-H76	+28 VDC IMU BUSS A	
	BB150	J20-P2	J20-T2	+28 VDC IMU BUSS B	
	CC315	J20-P2	TB1-H75	+28 VDC IMU BUSS B	
	CC323	J20-P3	TB1-D78	0 VDC OPTICS	
	CC324	J20-P4	TB1-F78	0 VDC OPTICS	
*	BB 32	J20-P5	J12-S6	+28 VDC OPTICS	
*	BB 90	J20-P5	J16-S5	+28 VDC OPTICS	
*	BB 91	J20-P6	J16-S6	+28 VDC OPTICS	
	BB149	J20-R1	J20-S1	+28 VDC IMU BUSS A	
	CC312	J20-R1	TB1-K76	+28 VDC IMU BUSS A	
	BB151	J20-R2	J20-S2	+28 VDC IMU BUSS B	
	CC314	J20-R2	TB1-K75	+28 VDC IMU BUSS B	
	CC301	J20-R3	TB1-H72	+28 VDC STBY	
*	BB104	J20-R3	J17-T1	+28 VDC STBY	
*	BB105	J20-R4	J17-T2	+28 VDC STBY	
	BB157	J20-R5	J20-T5	+28 VDC OPTICS BUSS A	
	BB158	J20-R5	J20-S5	+28 VDC OPTICS BUSS A	
	CC318	J20-R5	TB1-G78	+28 VDC OPTICS BUSS A	
	BB159	J20-R6	J20-T6	+28 VDC OPTICS BUSS B	
	BB160	J20-R6	J20-S6	+28 VDC OPTICS BUSS B	

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SCALE - NONE	REV LTR D	SHEET 54

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC319	J20-R6	TB1-G77	+28 VDC OPTICS BUSS B
	CC296	J20-S1	TB1-H76	+28 VDC IMU BUSS A
*	BB149	J20-S1	J20-R1	+28 VDC IMU BUSS A
	CC298	J20-S2	TB1-H75	+28 VDC IMU BUSS B
*	BB151	J20-S2	J20-R2	+28 VDC IMU BUSS B
	BB155	J20-S3	J20-T3	+28 VDC STBY BUSS A
	CC316	J20-S3	TB1-G76	+28 VDC STBY BUSS A
	BB156	J20-S4	J20-T4	+28 VDC STBY BUSS B
	CC317	J20-S4	TB1-G75	+28 VDC STBY BUSS B
	CC303	J20-S5	TB1-H78	+28 VDC OPTICS BUSS A
*	BB158	J20-S5	J20-R5	+28 VDC OPTICS BUSS A
	CC305	J20-S6	TB1-G77	+28 VDC OPTICS BUSS B
*	BB160	J20-S6	J20-R6	+28 VDC OPTICS BUSS B
	CC295	J20-T1	TB1-K76	+28 VDC IMU BUSS A
*	BB148	J20-T1	J20-P1	+28 VDC IMU BUSS A
	CC297	J20-T2	TB1-K75	+28 VDC IMU BUSS B
*	BB150	J20-T2	J20-P2	+28 VDC IMU BUSS B
	CC299	J20-T3	TB1-G76	+28 VDC STBY BUSS A
*	BB155	J20-T3	J20-S3	+28 VDC STBY BUSS A
	CC300	J20-T4	TB1-G75	+28 VDC STBY BUSS B
*	BB156	J20-T4	J20-S4	+28 VDC STBY BUSS B
	CC302	J20-T5	TB1-G78	+28 VDC OPTICS BUSS A
*	BB157	J20-T5	J20-R5	+28 VDC OPTICS BUSS A
	CC304	J20-T6	TB1-H77	+28 VDC OPTICS BUSS B
*	BB159	J20-T6	J20-R6	+28 VDC OPTICS BUSS B

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SCALE - NONE	REV LTR D	SHEET 55

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 429Y	J21- 1	E 29	COMMONED RETURNS GROUND	233R
*	A 425Y	J21- 2	E 28	COMMONED RETURNS GROUND	228R
*	A 430R	J21- 3	J10- 44	PARITY FAIL ALARM	234S
*	A 422Y	J21- 4	E 28	COMMONED RETURNS GROUND	244R
*	A 422R	J21- 5	J10- 42	TIMING (1.5 CPS)	244S
*	A 429R	J21- 6	J10- 33	SCALER FAIL ALARM	233S
*	A 425R	J21- 7	J10- 18	OUT 0 15	228S
*	A 444R	J21- 8	J10- 14	OUT 0 11	224S
*	A 444Y	J21- 9	E 33	COMMONED RETURNS GROUND	224R
*	A 426R	J21- 10	J10- 40	PROGRAM ALARM	229S
*	A 430Y	J21- 11	E 29	COMMONED RETURNS GROUND	234R
*	A 450	J21- 12	J10- 70	SPARE	211
*	A 467Y	J21- 13	E 26	COMMONED RETURNS GROUND	208R
*	A 467R	J21- 14	J10- 48	ERROR RESET	208S
*	A 459Y	J21- 15	E 27	COMMONED RETURNS GROUND	205R
*	A 434Y	J21- 16	E 30	COMMONED RETURNS GROUND	238R
*	A 423Y	J21- 17	E 28	COMMONED RETURNS GROUND	232R
*	A 424Y	J21- 18	E 28	COMMONED RETURNS GROUND	227R
*	A 443Y	J21- 19	E 32	COMMONED RETURNS GROUND	223R
*	A 440Y	J21- 20	E 32	COMMONED RETURNS GROUND	219R
*	A 446R	J21- 21	J10- 31	OUT 0 7	220S
*	A 446Y	J21- 22	E 33	COMMONED RETURNS GROUND	220R
*	A 447R	J21- 23	J10- 15	OUT 0 12	225S
*	A 426Y	J21- 24	E 28	COMMONED RETURNS GROUND	229R
*	A 431R	J21- 25	J10- 43	COUNTER FAIL ALARM	235S
*	A 449	J21- 26	J10- 71	POWER SUPPLY SYNC	212
*	A 465R	J21- 27	J10- 47	OR OF C1 THRU C33	210S
*	A 466Y	J21- 28	E 26	COMMONED RETURNS GROUND	201R
*	A 466R	J21- 29	J10- 34	KEY CODE 1	201S
*	A 462Y	J21- 30	E 27	COMMONED RETURNS GROUND	207R
*	A 462R	J21- 31	J10- 39	TEST ALARM	207S
*	A 459R	J21- 32	J10- 38	KEY CODE 5	205S
*	A 434R	J21- 33	J10- 64	TC TRAP ALARM	238S
*	A 423R	J21- 34	J10- 32	PROGRAM CHECK FAIL ALARM	232S
*	A 424R	J21- 35	J10- 17	OUT 0 14	227S
*	A 443R	J21- 36	J10- 63	OUT 0 10	223S
*	A 440R	J21- 37	J10- 30	OUT 0 6	219S
*	A 436R	J21- 38	J10- 74	OUT 0 2	215S

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SCALE - NONE	REV LTR D	SHEET 56

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 436Y	J21- 39	E 31	COMMONED RETURNS GROUND	215R
*	A 437R	J21- 40	J10- 60	OUT 0 3	216S
*	A 437Y	J21- 41	E 31	COMMONED RETURNS GROUND	216R
*	A 441R	J21- 42	J10- 61	OUT 0 8	221S
*	A 447Y	J21- 43	E 33	COMMONED RETURNS GROUND	225R
*	A 427R	J21- 44	J10- 41	COMPUTER ACTIVITY	230S
*	A 431Y	J21- 45	E 29	COMMONED RETURNS GROUND	235R
*	A 448	J21- 46	J10- 72	SPARE	213
*	A 465Y	J21- 47	E 26	COMMONED RETURNS GROUND	210R
*	A 464R	J21- 48	J10- 35	KEY CODE 2	202S
	A 556	J21- 50	E 35	GROUP 3 SHIELD	250
*	A 463Y	J21- 51	E 27	COMMONED RETURNS GROUND	204R
*	A 463R	J21- 52	J10- 37	KEY CODE 4	204S
*	A 461Y	J21- 53	E 27	COMMONED RETURNS GROUND	203R
*	A 460Y	J21- 54	E 27	COMMONED RETURNS GROUND	209R
*	A 469	J21- 55	J10- 46	SPARE	249
*	A 433Y	J21- 56	E 30	COMMONED RETURNS GROUND	237R
*	A 428Y	J21- 57	E 29	COMMONED RETURNS GROUND	231R
*	A 445Y	J21- 58	E 33	COMMONED RETURNS GROUND	226R
*	A 442Y	J21- 59	E 32	COMMONED RETURNS GROUND	222R
*	A 439Y	J21- 60	E 31	COMMONED RETURNS GROUND	218R
*	A 435Y	J21- 61	E 30	COMMONED RETURNS GROUND	214R
*	A 484	J21- 62	J10- 58	DISKY GROUND	251
*	A 486	J21- 63	J10- 55	SPARE	240
*	A 480	J21- 64	J10- 57	+13 V B	241
*	A 482	J21- 65	J10- 59	+28 VDC AGC	243
*	A 438Y	J21- 66	E 31	COMMONED RETURNS GROUND	217R
*	A 438R	J21- 67	J10- 28	OUT 0 4	217S
*	A 441Y	J21- 68	E 32	COMMONED RETURNS GROUND	221R
*	A 427Y	J21- 69	E 29	COMMONED RETURNS GROUND	230R
*	A 432Y	J21- 70	E 30	COMMONED RETURNS GROUND	236R
*	A 432R	J21- 71	J10- 53	KEY RELEASE	236S
*	A 451	J21- 72	J10- 75	SPARE	247
	A 557	J21- 73	E 37	GROUP 2 SHIELD	245
*	A 464Y	J21- 74	E 26	COMMONED RETURNS GROUND	202R
*	A 461R	J21- 82	J10- 36	KEY CODE 3	203S
*	A 460R	J21- 83	J10- 49	KEY RESET NAV	209S
*	A 468	J21- 84	J10- 45	SPARE	248

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 433R	J21- 85	J10- 51	RUPT LOCK ALARM	237S
*	A 428R	J21- 86	J10- 19	TELEMETRY FAIL ALARM	231S
*	A 445R	J21- 87	J10- 16	OUT 0 13	226S
*	A 442R	J21- 88	J10- 62	OUT 0 9	222S
*	A 439R	J21- 89	J10- 29	OUT 0 5	218S
*	A 435R	J21- 90	J10- 73	OUT 0 1	214S
*	A 485	J21- 91	J10- 56	DISKY GROUND	239

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 303G	J22- 2	J09- 50	ATTITUDE DISABLE SIG TO NAA
*	CC349W	J22- 4	J16-B8	COS AOG 1X S3
*	A 303R	J22- 7	J09- 41	+28 VDC FROM NAA
*	A 303Y	J22- 8	J09- 40	0 VDC FROM NAA
*	CC348R	J22- 12	J16-A8	SIN AOG 1X S2
*	CC349R	J22- 13	J16-C8	COS AOG 1X S1
	CC327R	J22- 14	TB1-B16	SIN AMG 1X
	CC327W	J22- 15	TB1-B15	SIN AMG 1X RET
	CC328W	J22- 16	TB1-B13	COS AMG 1X S3
*	A 288Y	J22- 18	J09- 4	PITCH ATTIT IMPULSE CONTR OUTPUT UP
*	CC348W	J22- 26	J16-A9	SIN AOG 1X S4
	CC328R	J22- 32	TB1-B14	COS AMG 1X S1
	CC329W	J22- 33	TB1-A15	SIN AIG 1X RET
*	A 288R	J22- 35	J09- 5	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN
*	A 288G	J22- 36	J09- 18	PITCH ATTIT IMPULSE CONTR INPUT
*	CC347	J22- 38	J17-L3	IMU TEMP LIGHT (MAIN PANEL)
*	CC346	J22- 39	J17-M3	0 VDC SPACECRAFT
*	A 157	J22- 40	J08- 43	MASTER CAUTION LIGHT RET
	CC326	J22- 41	TB1-C 4	+28 VDC SPACECRAFT
	CC325W	J22- 42	TB1-G 3	ATTITUDE CONTROL RELAY CONTROL
	CC 43B	J22- 48	SHLD CC 43	NAA SHIELD GROUND
*	CC 44R	J22- 49	J17-C4	YAW ERROR BODY AXIS HI
	CC 48B	J22- 51	SHLD CC 48	NAA SHIELD GROUND
*	CC 45R	J22- 53	J17-C3	YAW ERROR BODY OFFSET AXIS HI
	CC 47B	J22- 54	SHLD CC 47	NAA SHIELD GROUND
	CC329R	J22- 56	TB1-A16	SIN AIG 1X
*	A 289Y	J22- 58	J09- 20	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT
*	A 287R	J22- 60	J09- 17	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT
*	A 407	J22- 62	P10- 8	MAIN PANEL GIMBAL LOCK LIGHT
*	CC 4	J22- 63	J12-G3	G+N ERROR LIGHT (MAIN PANEL)
*	A 295	J22- 64	J09- 14	SPACECRAFT LAMP TEST
*	A 160	J22- 65	J08- 53	MASTER WARNING LIGHT RET
	CC325R	J22- 67	TB1-G 5	LOCK CDU RELAY CONTROL
	CC325L	J22- 68	TB1-H 5	FINE ALIGN RELAY CONTROL
*	CC 59R	J22- 72	J20-F9	800 CPS 28 V 1 PCT HI IMU
*	CC 59W	J22- 73	J20-F8	800 CPS 28 V 1 PCT LO IMU
*	CC 43R	J22- 74	J17-A4	ROLL ERROR BODY AXIS HI
*	CC 43W	J22- 75	J17-B4	ROLL ERROR BODY AXIS LO

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC 44W	J22- 76	J17-D4	YAW ERROR BODY AXIS LO
	CC 44B	J22- 77	SHLD CC 44	NAA SHIELD GROUND
*	CC 48R	J22- 78	J17-D1	PITCH ERROR BODY AND BODY OFFSET AXIS HI
*	CC 48W	J22- 79	J17-C1	PITCH ERROR BODY AND BODY OFFSET AXIS LO
	CC 45B	J22- 80	SHLD CC 45	NAA SHIELD GROUND
*	CC 45W	J22- 81	J17-D3	YAW ERROR BODY OFFSET AXIS LO
*	CC 47W	J22- 82	J17-B3	ROLL ERROR BODY OFFSET AXIS LO
*	CC 47R	J22- 83	J17-A3	ROLL ERROR BODY OFFSET AXIS HI
	CC330R	J22- 84	TB1-A13	COS AIG 1X
	CC330W	J22- 85	TB1-A14	COS AIG 1X RET
*	A 289R	J22- 87	J09- 6	YAW ATTIT IMPULSE CONTR OUTPUT LEFT
*	A 289G	J22- 88	J09- 7	YAW ATTIT IMPULSE CONTR INPUT
*	A 287Y	J22- 89	J09- 3	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT
*	A 287G	J22- 90	J09- 16	ROLL ATTIT IMPULSE CONTR INPUT

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC 12W	J23- 1	E 5	0 VDC IMU	140R
*	CC 12R	J23- 2	J13-N6	PIPA SWITCHING PULSE	140S
*	CC 13R	J23- 3	J14-D1	+ DX GYRO RATE	142R
*	CC 40R	J23- 4	J16-M4	COMPUTER 800 PPS IN PHASE SYNC	149S
*	CC 18W	J23- 5	E 6	0 VDC IMU	147S
*	CC 11W	J23- 6	E 5	0 VDC IMU	139R
*	CC 11R	J23- 7	J13-N5	PIPA INTERROGATE PULSE	139S
*	CC 36R	J23- 8	E 13	OG DAC MDA SIG LO	126R
*	CC 37W	J23- 9	E 13	OG DAC MDA SIG LO	127R
*	CC 13W	J23- 10	E 6	0 VDC IMU	142S
*	CC 14R	J23- 11	J14-D2	- DX GYRO RATE	143R
*	CC 39R	J23- 12	J16-L4	COMPUTER 800 PPS OUT OF PHASE SYNC	150S
*	CC 40W	J23- 13	J16-L3	COMPUTER 800 PPS SYNC RET	149R
*	CC 18R	J23- 14	J14-D6	- DZ GYRO RATE	147R
*	CC 17R	J23- 15	J14-D5	+ DZ GYRO RATE	146R
*	CC 17W	J23- 16	E 6	0 VDC IMU	146S
*	CC 35W	J23- 17	E 11	MG DAC MDA SIG LO	131R
*	CC 35R	J23- 18	J15-C7	MG CDU - DELTA THETA COMMAND	131S
*	CC 53W	J23- 19	J18-H3	SHAFT DELTA THETA COMMAND COMMON	115R
*	CC 53R	J23- 20	J18-K3	SHAFT - DELTA THETA COMMAND	115S
*	CC 36W	J23- 21	J15-B9	OG CDU + DELTA THETA COMMAND	126S
*	CC 37R	J23- 22	J15-C9	OG CDU - DELTA THETA COMMAND	127S
*	CC 32R	J23- 23	E 9	IG DAC MDA SIG LO	128R
*	CC 14W	J23- 24	E 6	0 VDC IMU	143S
*	CC 19R	J23- 25	J14-K4	GYRO RESET PULSE	148R
*	CC 5	J23- 26	J12-M1	AGC POWER SUPPLY FAIL SIG HI	157S
*	CC 39W	J23- 27	J16-L3	COMPUTER 800 PPS SYNC RET	150R
*	CC 51R	J23- 28	J17-R3	COMPUTER 12.8 KPPS SYNC	155S
*	CC 7R	J23- 29	J12-G2	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154S
*	CC 6R	J23- 30	J12-G1	COMPUTER 25.6 KPPS IN PHASE SYNC	153S
*	CC 1R	J23- 31	J11-L6	COMPUTER 3200 PPS OUT OF PHASE SYNC	152S
*	CC 16R	J23- 32	J14-D4	- DY GYRO RATE	145R
*	CC 16W	J23- 33	E 6	0 VDC IMU	145S
*	CC 34R	J23- 34	E 11	MG DAC MDA SIG LO	130R
*	CC 34W	J23- 35	J15-B7	MG CDU + DELTA THETA COMMAND	130S
*	CC 55W	J23- 36	J18-H3	SHAFT DELTA THETA COMMAND COMMON	114R
*	CC 55R	J23- 37	J18-G3	SHAFT + DELTA THETA COMMAND	114S
*	A 503	J23- 38	P11-A	+28 VDC AGC BUSS A	167

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 531	J23- 39	P12-A	+28 VDC AGC BUSS B	168
*	A 532	J23- 40	P12-A	+28 VDC AGC BUSS B	168
*	A 551	J23- 41	P12-J	0 VDC AGC	170
*	CC 32W	J23- 42	J15-B5	IG CDU + DELTA THETA COMMAND	128S
*	CC 33R	J23- 43	J15-C5	IG CDU - DELTA THETA COMMAND	129S
*	CC 19W	J23- 44	E 6	0 VDC IMU	148S
*	CC 3R	J23- 46	J12-K1	COMPUTER 102.4 KPPS SYNC	156S
*	CC 58	J23- 47	J20-N5	+28 VDC MDV	157R
	A 562	J23- 48	TB1-D71	CONDITION LAMP TEST	157T
*	CC 51W	J23- 49	J17-S3	0 VDC IMU	155R
*	CC 7W	J23- 50	J12-F2	COMPUTER 25.6 KPPS SYNC RET	154R
*	CC 6W	J23- 51	J12-F2	COMPUTER 25.6 KPPS SYNC RET	153R
*	CC 1W	J23- 52	J11-M5	COMPUTER 3200 PPS SYNC RET	152R
*	CC 2W	J23- 53	J11-M5	COMPUTER 3200 PPS SYNC RET	151R
*	CC 2R	J23- 54	J11-M6	COMPUTER 3200 PPS IN PHASE SYNC	151S
*	CC 15R	J23- 55	J14-D3	+ DY GYRO RATE	144R
*	CC 15W	J23- 56	E 6	0 VDC IMU	144S
	CC331	J23- 57	TB1-F52	THERMISTER LO	199R
*	A 400	J23- 58	P09-115	AGC THERMISTER HI	199S
*	CC 54W	J23- 59	J18-H5	TRUNNION DELTA THETA COMMAND COMMON	117R
*	CC 54R	J23- 60	J18-K5	TRUNNION - DELTA THETA COMMAND	117S
*	A 504	J23- 61	P11-A	+28 VDC AGC BUSS A	167
	A 558	J23- 62	TB1-K78	+28 VDC AGC BUSS A	167
	A 559	J23- 63	TB1-K78	+28 VDC AGC BUSS A	167
	A 560	J23- 64	TB1-K77	+28 VDC AGC BUSS B	168
	A 561	J23- 65	TB1-K77	+28 VDC AGC BUSS B	168
*	A 552	J23- 66	P12-J	0 VDC AGC	170
*	CC 33W	J23- 69	E 9	IG DAC MDA SIG LO	129R
*	CC 3W	J23- 73	J12-H1	COMPUTER 102.4 KPPS SYNC RET	156R
*	CC 57R	J23- 74	J20-F3	102.4 KPPS INPUT HI	056S
*	CC 57W	J23- 75	J20-D3	102.4 KPPS INPUT LO	056R
*	CC 52W	J23- 88	J18-H5	TRUNNION DELTA THETA COMMAND COMMON	116R
*	CC 52R	J23- 89	J18-G5	TRUNNION + DELTA THETA COMMAND	116S
*	A 523	J23- 90	P11-J	0 VDC AGC	169
*	A 524	J23- 91	P11-J	0 VDC AGC	169

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC333	J24- 1	TB1-G74	+13 VDC AGC	176
*	CC 20R	J24- 2	J15-M5	+ DELTA V X	132R
	CC334	J24- 3	TB1-H73	0 VDC AGC	177
*	A 132Y	J24- 4	P01- 49	FINE ALIGN MODE INDICATION TO AGC	161
*	CC 41W	J24- 5	J16-A7	ZERO ENCODER MODE INDICATION TO AGC	158
	CC335	J24- 6	TB1-G73	+3 VDC AGC	175
*	CC 29W	J24- 7	E 10	MG DAC MDA SIG LO	123R
*	CC 29R	J24- 8	J15-C6	MG ENCODER - DELTA THETA	123S
*	CC 20W	J24- 9	E 14	COMPUTER RET	132S
*	CC 21R	J24- 10	J15-M6	- DELTA V X	133R
	CC290	J24- 11	TB1-H74	+28 VDC AGC	166
*	A 114Y	J24- 12	J06- 69	TRANSFER SWITCH INDICATION TO AGC	164
*	A 136Y	J24- 13	P01- 76	ATTIT CONT MODE INDICATION TO AGC	162
*	A 133Y	J24- 14	P01- 59	COARSE ALIGN MODE INDICATION TO AGC	159
	A 564R	J24- 15	TB1-A69	OPTICS ZERO ENCODER INDICATION	104
*	CC 56W	J24- 16	J20-C3	STAR PRESENCE LO	183R
*	CC 56R	J24- 17	J20-C4	STAR PRESENCE HI	183S
*	CC 28R	J24- 18	E 10	MG DAC MDA SIG LO	122R
*	CC 28W	J24- 19	J15-B6	MG ENCODER + DELTA THETA	122S
*	CC 30R	J24- 20	E 12	OG DAC MDA SIG LO	118R
*	CC 31W	J24- 21	E 12	OG DAC MDA SIG LO	119R
*	CC 26R	J24- 22	E 8	IG DAC MDA SIG LO	120R
*	CC 21W	J24- 23	E 14	COMPUTER RET	133S
*	CC 22R	J24- 24	J15-L6	+ DELTA V Y	134R
*	CC 8R	J24- 25	J12-D6	IMU FAIL	141S
	CC332W	J24- 26	TB1-C56	AGC COMMON (ISS)	165
*	A 131Y	J24- 29	P01- 39	ENTRY MODE INDICATION TO AGC	163
*	CC 38W	J24- 30	J15-A3	MANUAL CDU MODE INDICATION TO AGC	160
*	A 304Y	J24- 31	J09- 42	TRACKER ON INDICATION TO AGC	107
*	A 414Y	J24- 32	P10- 19	NOT MARK	103
*	CC 24R	J24- 33	J15-K4	- DELTA V Z	137R
*	CC 24W	J24- 34	E 16	COMPUTER RET	137S
*	CC 46W	J24- 35	J17-H4	SHAFT ENCODER DELTA THETA OUT COMMON	109R
*	CC 46R	J24- 36	J17-K4	SHAFT ENCODER - DELTA THETA OUTPUT	109S
*	CC 49W	J24- 37	J17-H6	TRUNNION ENCODER DELTA THETA OUT COM	111R
*	CC 49R	J24- 38	J17-K6	TRUNNION ENCODER - DELTA THETA OUT	111S
*	CC 30W	J24- 39	J15-B8	OG ENCODER + DELTA THETA	118S
*	CC 31R	J24- 40	J15-C8	OG ENCODER - DELTA THETA	119S

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC 26W	J24- 41	J15-B4	IG ENCODER + DELTA THETA	120S
*	CC 27W	J24- 42	E 8	IG DAC MDA SIG LO	121R
*	CC 22W	J24- 43	E 15	COMPUTER RET	134S
*	CC 23R	J24- 44	J15-K6	- DELTA V Y	135R
*	CC 10R	J24- 45	J12-D4	ACCEL FAIL	138S
*	CC 8W	J24- 46	J12-F6	IMU FAIL RET	141R
	A 563	J24- 51	E 23	AGC SIGNAL 178 SHIELD RETURN	178
*	A 309Y	J24- 54	J09- 49	OPTICS MODE SW COMPUTER INDICATION	106
*	A 417Y	J24- 55	P10- 44	MARK	102
*	CC 25R	J24- 56	J15-K5	+ DELTA V Z	136R
*	CC 25W	J24- 57	E 16	COMPUTER RET	136S
*	CC 50W	J24- 58	J17-H4	SHAFT ENCODER DELTA THETA OUT COMMON	108R
*	CC 50R	J24- 59	J17-G4	SHAFT ENCODER + DELTA THETA OUTPUT	108S
*	CC 42W	J24- 60	J17-H6	TRUNNION ENCODER DELTA THETA OUT COM	110R
*	CC 42R	J24- 61	J17-G6	TRUNNION ENCODER + DELTA THETA OUT	110S
	CC337	J24- 64	E 20	AGC SIGNAL 179 SHIELD RETURN	179
*	CC 27R	J24- 67	J15-C4	IG ENCODER - DELTA THETA	121S
*	CC 23W	J24- 69	E 15	COMPUTER RET	135S
*	CC 9R	J24- 70	J12-D5	CDU FAIL	124S
*	CC 9W	J24- 71	J12-F5	CDU FAIL RET	124R
*	CC 10W	J24- 72	J12-F4	ACCEL FAIL RET	138R
	A 566Y	J24- 83	TB1-A68	SXT POWER ON INDICATION	105
	A 564Y	J24- 84	TB1-A68	AGC COMMON (OSS)	101
	CC336	J24- 87	E 18	AGC SIGNAL 179 SHIELD RETURN	179

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* A 96R	P01- 1	J06- 1	PITCH ATTITUDE ERROR METER +	
* A 96Y	P01- 2	J06- 2	PITCH ATTITUDE ERROR METER -	
A 124G	P01- 4	TB1-K 3	COARSE ALIGN RELAY CONTROL	
A 124R	P01- 5	TB1-H 5	FINE ALIGN RELAY CONTROL	
* A 97	P01- 6	J06- 6	ENTRY RELAY CONTROL RESET	
A 125	P01- 7	TB1-G 7	+28 VDC IMU	
* A 98	P01- 9	J06- 9	MODE SWITCH INTERLOCK	
A 126Y	P01- 10	TB1-B 7	800 CPS 28 V 1 PCT LO IMU	
A 126R	P01- 11	TB1-A 7	800 CPS 28 V 1 PCT HI IMU	
A 124Y	P01- 12	TB1-K 5	ZERO ENCODER RELAY CONTROL	
A 127R	P01- 13	TB1-B50	FINE ALIGN MODE COMMAND FROM AGC	
* A 100R	P01- 14	J06- 14	YAW ATTITUDE ERROR METER +	
* A 100Y	P01- 15	J06- 15	YAW ATTITUDE ERROR METER -	
* A 101	P01- 18	J06- 18	MODE RELAY COMMON TO D AND C ELECT	
* A 102	P01- 22	J06- 22	ATTITUDE CONTROL MODE LIGHT	
* A 103	P01- 23	J06- 23	FINE ALIGN RELAY CONTROL	
A 128Y	P01- 24	TB1-G 3	ATTITUDE CONTROL RELAY CONTROL	
* A 105	P01- 25	J06- 25	ENTRY RELAY CONTROL	
A 129	P01- 26	TB1-A26	IMU DELAY LIGHT HI	
A 130Y	P01- 27	TB1-C48	CDU MANUAL MODE COMMAND FROM AGC	
* A 106Y	P01- 28	J06- 28	ROLL ATTITUDE ERROR METER -	
* A 106R	P01- 29	J06- 29	ROLL ATTITUDE ERROR METER +	
* A 107	P01- 34	J06- 34	ZERO ENCODER RELAY CONTROL	
* A 108	P01- 35	J06- 35	COARSE ALIGN RELAY CONTROL	
* A 109	P01- 36	J06- 36	CDU MANUAL RELAY CONTROL	
* A 110	P01- 37	J06- 37	MANUAL ALIGN	
A 127Y	P01- 38	TB1-C50	ZERO ENCODER MODE COMMAND FROM AGC	
A 131Y	P01- 39	J24- 29	ENTRY MODE INDICATION TO AGC	163
* A 111	P01- 46	J06- 46	ATTITUDE CONTROL MODE INTERLOCK	
A 127G	P01- 48	TB1-A50	COARSE ALIGN MODE COMMAND FROM AGC	
A 132Y	P01- 49	J24- 4	FINE ALIGN MODE INDICATION TO AGC	161
* A 112	P01- 56	J06- 56	MANUAL ALIGN ENABLE	
A 128G	P01- 57	TB1-H 3	ENTRY RELAY CONTROL	
A 130R	P01- 58	TB1-C49	ENTRY MODE COMMAND FROM AGC	
A 133Y	P01- 59	J24- 14	COARSE ALIGN MODE INDICATION TO AGC	159
A 134Y	P01- 68	TB1-C56	AGC COMMON (ISS)	
A 128R	P01- 69	TB1-G 5	LOCK CDU RELAY CONTROL	
A 135R	P01- 70	TB1-K33	IG CDU 1X ERROR SIG	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 135Y	P01- 71	TB1-K34	IG CDU ERROR SIG RET	
A 136Y	P01- 76	J24- 13	ATTIT CONT MODE INDICATION TO AGC	162
A 137	P01- 78	TB1-D 3	0 VDC IMU	
* A 116	P01- 79	J06- 79	ENTRY MODE LIGHT	
A 138R	P01- 80	TB1-A54	PANEL BRIGHTNESS CONTROL	
A 139R	P01- 82	TB1-H33	MG CDU 1X ERROR SIG	
A 139Y	P01- 83	TB1-H34	MG CDU ERROR SIG RET	
A 140	P01- 84	TB1-G 8	STRUCTURE GROUND	
A 141	P01- 88	TB1-D71	CONDITION LAMP TEST	
A 142	P01- 89	TB1-K72	+28 VDC MDV	
A 143N	P01- 90	TB1-C 2	400 CPS 6 V HI	
A 144	P01- 91	TB1-C 3	MODE LAMP TEST PWR	
* A 118	P01- 92	J06- 92	COARSE ALIGN MODE LIGHT	
* A 119	P01- 93	J06- 93	MODE RELAY COMMON	
* A 120	P01- 94	J06- 94	FINE ALIGN MODE LIGHT	
A 138Y	P01- 95	TB1-A55	PANEL BRIGHTNESS CONTROL	
A 145R	P01- 96	TB1-G33	OG CDU 1X ERROR SIG	
A 145Y	P01- 97	TB1-G34	OG CDU ERROR SIG RET	
A 143R	P01-103	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER	
* A 121	P01-104	J06-104	ZERO ENCODER MODE LIGHT	
* A 122	P01-105	J06-105	CDU MANUAL MODE LIGHT	
A 143G	P01-106	TB1-C 1	400 CPS 6 V HI	
A 143Y	P01-108	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 178R	P02-A	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
A 179R	P02-A*	TB1-A13	COS AIG 1X S3
A 178Y	P02-B	TB1-B 5	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
A 179Y	P02-B*	TB1-A14	COS AIG 1X RET S1
A 180R	P02-C	TB1-F15	COS AOG 16X S3
A 180Y	P02-D	TB1-F14	COS AOG 16X S1
A 181R	P02-E	TB1-G14	SIN AOG 16X S2
A 181Y	P02-F	TB1-G15	SIN AOG 16X S4
A 182R	P02-F*	TB1-A15	SIN AIG 1X RET S2
A 183R	P02-G	TB1-H10	COS AMG 16X S3
A 182Y	P02-G*	TB1-A16	SIN AIG 1X S4
A 183Y	P02-H	TB1-H 9	COS AMG 16X S1
A 184R	P02-J	TB1-K 9	SIN AMG 16X S2
A 184Y	P02-K	TB1-K10	SIN AMG 16X S4
A 185R	P02-L	TB1-B13	COS AMG 1X S3
A 185Y	P02-M	TB1-B14	COS AMG 1X S1
A 186Y	P02-N	TB1-B15	SIN AMG 1X RET S2
A 186R	P02-P	TB1-B16	SIN AMG 1X S4
A 187R	P02-R	TB1-K 7	3200 CPS 2 V HI
A 187Y	P02-S	TB1-H 7	3200 CPS 2 V LO
A 188R	P02-T	TB1-K 8	3200 CPS 2 V FEEDBACK HI
A 188Y	P02-U	TB1-H 8	3200 CPS 2 V FEEDBACK LO
A 189R	P02-W	TB1-H15	COS AIG 16X S3
A 189Y	P02-X	TB1-H14	COS AIG 16X S1
A 190R	P02-Y	TB1-K14	SIN AIG 16X S2
A 190Y	P02-Z	TB1-K15	SIN AIG 16X S4

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 191Y	P03-A	TB1-G28	X GYRO ERROR SIG
A 192Y	P03-A*	TB1-D19	MG TORQUE MOTOR RET
A 193Y	P03-B	TB1-F28	Z GYRO ERROR SIG
A 194Y	P03-B*	TB1-D19	MG TORQUE MOTOR RET
A 195R	P03-C	TB1-A28	IMU OG ERROR SIG
A 194R	P03-C*	TB1-D18	MG TORQUE MOTOR HI
A 196R	P03-D	TB1-C14	COS AOG 1X S3
A 197R	P03-D*	TB1-F18	IG TORQUE MOTOR HI
A 196Y	P03-E	TB1-C15	COS AOG 1X S1
A 197Y	P03-E*	TB1-F19	IG TORQUE MOTOR RET
A 198R	P03-F	TB1-D15	SIN AOG 1X S4
A 199Y	P03-F*	TB1-F19	IG TORQUE MOTOR RET
A 198Y	P03-G	TB1-D14	SIN AOG 1X S2
A 199R	P03-G*	TB1-F18	IG TORQUE MOTOR HI
A 200Y	P03-H	TB1-K29	IG CDU ATTITUDE STEERING ERROR
A 201	P03-H*	TB1-G 7	+28 VDC IMU
A 200R	P03-J	TB1-K28	IG CDU ERROR SIG RET
A 202	P03-J*	TB1-A56	GIMBAL LOCK SIGNAL
A 203R	P03-K	TB1-H28	MG CDU ERROR SIG RET
A 203Y	P03-L	TB1-H29	MG CDU ATTITUDE STEERING ERROR
A 204Y	P03-M	TB1-K13	YAW ERROR BODY OFFSET AXIS LO
A 204R	P03-N	TB1-H13	PITCH YAW RSVR S3
A 205Y	P03-P	TB1-G13	PITCH ERROR BODY AND BODY OFFSET AXIS LO
A 205R	P03-R	TB1-F13	PITCH-YAW RSVR S4
A 195G	P03-U	TB1-C28	IMU IG AND Y GYRO ERROR SIG
A 195Y	P03-V	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO
A 195N	P03-W	TB1-B28	IMU MG ERROR SIG
A 206Y	P03-X	TB1-C19	OG TORQUE MOTOR RET
A 206R	P03-Y	TB1-C18	OG TORQUE MOTOR HI
A 192R	P03-Z	TB1-D18	MG TORQUE MOTOR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 209R	P04- 1	P05- 59	SXT TRUNNION 64X RSVR P4
A 209Y	P04- 2	P05- 58	SXT TRUNNION 64X RSVR P2
A 208R	P04- 3	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
A 208Y	P04- 4	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
A 207R	P04- 5	P05- 30	SXT SHAFT 16X RSVR P4
A 207Y	P04- 6	P05- 27	SXT SHAFT 16X RSVR P2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 210	P05- 1	TB1-G11	STRUCTURE GROUND
A 211Y	P05- 2	TB1-C46	SXT SHAFT 1/2X RSVR S4
A 211R	P05- 3	TB1-C45	SXT SHAFT 1/2X RSVR S2
A 212R	P05- 5	TB1-G51	SXT TRUNNION MOTOR PHASE 2
A 213R	P05- 6	TB1-D45	SXT SHAFT 1/2X RSVR S1
A 213Y	P05- 7	TB1-D46	SXT SHAFT 1/2X RSVR S3
A 214R	P05- 8	TB1-G49	SXT SHAFT MOTOR PHASE 2
A 215	P05- 9	TB1-B67	0 VDC OPTICS
A 216Y	P05- 10	TB1-A65	TRACKER Y REFERENCE
A 216R	P05- 11	TB1-A66	TRACKER Y REFERENCE
A 217R	P05- 12	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
A 217Y	P05- 13	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
A 217G	P05- 14	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
A 212G	P05- 16	TB1-G50	0 VDC OPTICS
A 218R	P05- 17	TB1-B66	TRACKER X REFERENCE
A 218Y	P05- 18	TB1-B65	TRACKER X REFERENCE
A 214G	P05- 19	TB1-G50	0 VDC OPTICS
A 219R	P05- 23	TB1-H37	SXT SHAFT TACH HI
A 219Y	P05- 24	TB1-H38	SXT SHAFT TACH LO
* A 207Y	P05- 27	P04- 6	SXT SHAFT 16X RSVR P2
* A 207R	P05- 30	P04- 5	SXT SHAFT 16X RSVR P4
A 220R	P05- 32	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
A 212Y	P05- 33	TB1-G52	SXT TRUNNION MOTOR PHASE 1
A 221R	P05- 34	TB1-D37	SXT TRUNNION TACH HI
A 221Y	P05- 35	TB1-D38	SXT TRUNNION TACH LO
A 214Y	P05- 36	TB1-G48	SXT SHAFT MOTOR PHASE 1
A 222	P05- 37	TB1-C67	0 VDC OPTICS
A 223R	P05- 38	TB1-D43	SXT TRUNNION 1X RSVR S3
A 223Y	P05- 39	TB1-D44	SXT TRUNNION 1X RSVR S1
A 224Y	P05- 40	TB1-C43	SXT TRUNNION 1X RSVR S2
A 224R	P05- 41	TB1-C44	SXT TRUNNION 1X RSVR S4
A 225R	P05- 43	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
A 225Y	P05- 44	TB1-B 3	400 CPS 6 V LO
A 226Y	P05- 51	TB1-G45	SXT SHAFT 1X RSVR S4
A 226R	P05- 52	TB1-G46	SXT SHAFT 1X RSVR S2
A 227R	P05- 53	TB1-F46	SXT SHAFT 1X RSVR S1
A 227Y	P05- 54	TB1-F45	SXT SHAFT 1X RSVR S3
A 220Y	P05- 55	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 209Y	P05- 58	P04- 2	SXT TRUNNION 64X RSVR P2
* A 209R	P05- 59	P04- 1	SXT TRUNNION 64X RSVR P4
A 228R	P05- 64	TB1-D66	TRACKER PREAMP OUTPUT HI
A 228Y	P05- 65	TB1-D65	TRACKER PREAMP OUTPUT LO
A 229	P05- 68	TB1-B71	+28 VDC OPTICS TRACKER POWER
A 230	P05- 69	TB1-D78	0 VDC OPTICS
A 231Y	P05- 70	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS
A 231R	P05- 71	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
A 232R	P05- 72	TB1-C66	TRACKER AUTOMATIC GAIN CONTROL HI
A 232Y	P05- 73	TB1-C65	TRACKER AUTOMATIC GAIN CONTROL LO
A 233R	P05- 76	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 233Y	P05- 77	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 234Y	P05- 78	TB1-B46	SXT SHAFT 16X RSVR S4
A 234R	P05- 79	TB1-B45	SXT SHAFT 16X RSVR S2
A 235R	P05- 80	TB1-K66	PHOTOMETER SIGNAL HI
A 235Y	P05- 81	TB1-K65	PHOTOMETER SIGNAL LO
A 236Y	P05- 82	TB1-A45	SXT SHAFT 16X RSVR S1
A 2[illegible]	P05- 83	TB1-A46	SXT SHAFT 16X RSVR S3
A 237R	P05- 84	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
A 237Y	P05- 85	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS
A 238Y	P05- 86	TB1-A44	SXT TRUNNION 64X RSVR S1
A 238R	P05- 87	TB1-A43	SXT TRUNNION 64X RSVR S3
A 239R	P05- 88	TB1-H66	STAR PRESENCE INPUT HI
A 239Y	P05- 89	TB1-H65	STAR PRESENCE INPUT LO
A 240Y	P05- 90	TB1-B44	SXT TRUNNION 64X RSVR S4
A 240R	P05- 91	TB1-B43	SXT TRUNNION 64X RSVR S2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 241G	P06-A	TB1-C74	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
A 242Y	P06-A*	TB1-K64	IRIG TEMP IND SENSOR RET
A 241Y	P06-B	TB1-C73	800 CPS 28 V 5 PCT IMU WHEELS LO
A 243R	P06-B*	TB1-K74	PRESSURE SENSOR +28 VDC HI
A 241R	P06-C	TB1-C72	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
A 243Y	P06-C*	TB1-K73	PRESSURE SENSOR +28 VDC LO
A 244	P06-D	TB1-G71	+28 VDC IMU
A 245R	P06-D*	TB1-D68	IMU PRESSURE MONITOR HI
A 246	P06-E	TB1-H26	0 VDC IMU
A 245Y	P06-E*	TB1-D69	IMU PRESSURE MONITOR LO
A 247	P06-F	TB1-C54	-28 VDC
A 248R	P06-F*	TB1-C77	800 CPS 28 V 5 PCT HI TO BLOWERS
A 249	P06-G	TB1-G70	STRUCTURE GROUND
A 248Y	P06-G*	TB1-C76	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 250R	P06-H	TB1-C18	OG TORQUE MOTOR HI
A 250Y	P06-J	TB1-C19	OG TORQUE MOTOR RET
A 251	P06-K	TB1-H61	IMU TEMP SENSOR COM
A 252Y	P06-L	TB1-H64	IRIG TEMP CONT SENSOR RET
A 252R	P06-M	TB1-H63	IRIG TEMP CONT SENSOR HI
A 253R	P06-N	TB1-H62	ACCEL INDICATING SENSOR HI
A 253Y	P06-P	TB1-G61	ACCEL TEMP IND SENSOR RET
A 254Y	P06-R	TB1-C61	EMERGENCY HTR LO-OPER AND STBY
A 255R	P06-V	TB1-D60	IMU CONTROL HTR HI
A 255Y	P06-W	TB1-D61	IMU CONTROL HTR LO
A 254R	P06-X	TB1-C60	IMU EMERGENCY HTR HI
A 256	P06-Y	TB1-D62	EMERG HTR CONT MODULE LO
A 242R	P06-Z	TB1-K63	IRIG TEMP IND SENSOR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 257L	P07-A	TB1-C23	Z GYRO TORQUE +
A 258Y	P07-A*	TB1-D10	Y PIP ERROR LO
A 257W	P07-B	TB1-C22	Z GYRO TORQUE RET
A 259R	P07-B*	TB1-C11	Z PIP ERROR HI
A 257R	P07-C	TB1-C21	Z GYRO TORQUE -
A 259Y	P07-C*	TB1-C10	Z PIP ERROR LO
A 260L	P07-D	TB1-F23	X GYRO TORQUE +
A 260W	P07-E	TB1-F22	X GYRO TORQUE RET
A 260R	P07-F	TB1-F21	X GYRO TORQUE -
A 261G	P07-F*	TB1-A10	OG ADA
A 262L	P07-G	TB1-D23	Y GYRO TORQUE +
A 261N	P07-G*	TB1-A11	MG ADA
A 262W	P07-H	TB1-D22	Y GYRO TORQUE RET
A 261R	P07-H*	TB1-B11	IG ADA
A 262R	P07-J	TB1-D21	Y GYRO TORQUE -
A 261Y	P07-J*	TB1-B10	0 VDC IMU
A 263L	P07-K	TB1-G23	Z PIP TORQUE +
A 263W	P07-L	TB1-G22	Z PIP TORQUE RET
A 263R	P07-M	TB1-G21	Z PIP TORQUE -
A 264L	P07-N	TB1-H23	Y PIP TORQUE +
A 264W	P07-P	TB1-H22	Y PIP TORQUE RET
A 264R	P07-R	TB1-H21	Y PIP TORQUE -
A 265L	P07-U	TB1-K23	X PIP TORQUE +
A 265W	P07-V	TB1-K22	X PIP TORQUE RET
A 265R	P07-W	TB1-K21	X PIP TORQUE -
A 266R	P07-X	TB1-F11	X PIP ERROR HI
A 266Y	P07-Y	TB1-F10	X PIP ERROR LO
A 258R	P07-Z	TB1-D11	Y PIP ERROR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 267G	P08- 1	TB1-K50	0 VDC OPTICS
A 267R	P08- 2	TB1-K51	SCT TRUNNION MOTOR PHASE 2
A 267Y	P08- 3	TB1-K52	SCT TRUNNION MOTOR PHASE 1
A 268R	P08- 5	TB1-H51	SCT SHAFT MOTOR PHASE 2
A 268Y	P08- 6	TB1-H52	SCT SHAFT MOTOR PHASE 1
A 268G	P08- 7	TB1-H50	0 VDC OPTICS
A 269R	P08- 9	TB1-F44	SCT TRUNNION 1X RSVR P2
A 269Y	P08- 10	TB1-F43	SCT TRUNNION 1X RSVR P4
A 270R	P08- 12	TB1-G43	SCT TRUNNION 1X RSVR P3
A 270Y	P08- 13	TB1-G44	SCT TRUNNION 1X RSVR P1
A 271Y	P08- 18	TB1-F40	SCT TRUNNION 1X RSVR S2
A 271R	P08- 19	TB1-F41	SCT TRUNNION 1X RSVR S4
A 272R	P08- 21	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 272Y	P08- 22	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 273R	P08- 24	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 273Y	P08- 25	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 274R	P08- 27	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS
A 274Y	P08- 28	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
A 275R	P08- 30	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS
A 275Y	P08- 31	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
A 276R	P08- 33	TB1-F37	SCT TRUNNION TACH HI
A 276Y	P08- 34	TB1-F38	SCT TRUNNION TACH LO
* A 276A	P08- 35	SHLD A 276	0 VDC OPTICS
* A 278A	P08- 37	SHLD A 278	0 VDC OPTICS
A 278R	P08- 38	TB1-K37	SCT SHAFT TACH HI
A 278Y	P08- 39	TB1-K38	SCT SHAFT TACH LO
A 279R	P08- 41	TB1-G46	SCT SHAFT 1X RSVR P2
A 279Y	P08- 42	TB1-G45	SCT SHAFT 1X RSVR P4
A 280R	P08- 44	TB1-F46	SCT SHAFT 1X RSVR P3
A 280Y	P08- 45	TB1-F45	SCT SHAFT 1X RSVR P1
A 281R	P08- 50	TB1-K41	SCT SHAFT 1X RSVR S2
A 281Y	P08- 51	TB1-K40	SCT SHAFT 1X RSVR S4
A 282R	P08- 53	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER
A 282Y	P08- 54	TB1-B 4	400 CPS 6 V LO
A 283R	P08- 56	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER
A 283Y	P08- 57	TB1-B 4	400 CPS 6 V LO
A 284	P08- 59	TB1-G70	STRUCTURE GROUND

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 332Y	P09- 1	TB1-A16	SIN AIG 1X
A 333Y	P09- 2	TB1-A13	COS AIG 1X
A 333R	P09- 3	TB1-A14	COS AIG 1X RET
A 334Y	P09- 4	TB1-D15	SIN AOG 1X S4
A 335	P09- 5	TB1-D77	0 VDC OPTICS
A 336	P09- 6	TB1-H71	+28 VDC OPTICS
A 337R	P09- 7	TB1-A63	+120 VDC PIP
A 338R	P09- 9	TB1-G31	OG CDU 16X ERROR SIG
A 339	P09- 10	TB1-H70	STRUCTURE GROUND
A 340R	P09- 11	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
A 340Y	P09- 12	TB1-B 7	800 CPS 28 V 1 PCT LO IMU
A 341R	P09- 13	TB1-C75	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 341Y	P09- 14	TB1-C76	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 342	P09- 19	TB1-G57	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
A 343	P09- 20	TB1-H58	SHAFT CDU 16X ERROR SIG BUFFERED
A 344	P09- 21	TB1-H55	SXT TRUNNION TACH FEEDBACK BUFFERED
A 345	P09- 22	TB1-H57	TRUNNION CDU TACH FEEDBACK BUFFERED
A 332R	P09- 23	TB1-A15	SIN AIG 1X RET
A 346Y	P09- 24	TB1-B16	SIN AMG 1X
A 347R	P09- 25	TB1-B13	COS AMG 1X S3
A 334R	P09- 26	TB1-D14	SIN AOG 1X S2
A 348Y	P09- 27	TB1-C15	COS AOG 1X S1
A 337G	P09- 28	TB1-C63	+32 VDC PIP
A 337Y	P09- 29	TB1-B63	+32, +120 VDC RET PIP
A 338Y	P09- 31	TB1-G30	OG CDU ERROR SIG RET
A 349G	P09- 32	TB1-C74	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
A 349R	P09- 33	TB1-C72	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
A 350	P09- 37	TB1-K57	SCT TRUNNION 1X ERROR SIG BUFFERED
A 351	P09- 38	TB1-H54	SCT SHAFT 1X ERROR SIG BUFFERED
A 352	P09- 39	TB1-G58	SHAFT CDU TACH FEEDBACK SIG BUFFERED
A 353	P09- 40	TB1-F58	SCT TRUNNION TACH FEEDBACK BUFFERED
A 354Y	P09- 41	TB1-K34	IG CDU ERROR SIG RET
A 346R	P09- 42	TB1-B15	SIN AMG 1X RET
A 355Y	P09- 43	TB1-H34	MG CDU ERROR SIG RET
A 347Y	P09- 44	TB1-B14	COS AMG 1X S1
A 348R	P09- 45	TB1-C14	COS AOG 1X S3
A 356	P09- 46	TB1-G73	+3 VDC AGC
A 357	P09- 47	TB1-H72	+28 VDC STBY

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 358	P09- 48	TB1-B62	0 VDC IMU
A 359	P09- 49	TB1-G71	+28 VDC IMU
A 349Y	P09- 50	TB1-C73	800 CPS 28 V 5 PCT IMU WHEELS LO
A 360	P09- 54	TB1-G55	TRACKER X DRIVE BUFFERED HI
A 361	P09- 55	TB1-G54	TRACKER Y DRIVE BUFFERED HI
A 362	P09- 56	TB1-F57	0 VDC OPTICS
A 363	P09- 57	TB1-K55	SXT SHAFT TACH FEEDBACK BUFFERED
A 364	P09- 58	TB1-K54	SCT SHAFT TACH FEEDBACK BUFFERED
A 354R	P09- 59	TB1-K33	IG CDU 1X ERROR SIG
A 355R	P09- 60	TB1-H33	MG CDU 1X ERROR SIG
A 365Y	P09- 61	TB1-G34	OG CDU ERROR SIG RET
A 366	P09- 62	TB1-G74	+13 VDC AGC
A 367	P09- 63	TB1-H73	0 VDC AGC
A 368	P09- 64	TB1-H74	+28 VDC AGC
A 369R	P09- 65	TB1-F70	+2.5 VDC CONDITIONING LO
A 370	P09- 66	TB1-C54	-28 VDC
A 371	P09- 67	TB1-D26	AGC POWER SUPPLY FAIL SIG HI
A 372	P09- 68	TB1-B62	0 VDC IMU
A 373	P09- 69	TB1-A26	IMU DELAY LIGHT HI
A 374R	P09- 70	TB1-K 8	3200 CPS 2 V FEEDBACK HI
A 375	P09- 71	TB1-G56	TRACKER PREAMP OUTPUT BUFFERED HI
A 376	P09- 72	TB1-K58	PHOTOMETER PREAMP OUTPUT BUFFERED HI
A 377	P09- 73	TB1-H56	SXT TRUNNION MDA INPUT BUFFERED
A 378	P09- 74	TB1-K56	SXT SHAFT MDA INPUT BUFFERED
A 379Y	P09- 75	TB1-F28	Z GYRO ERROR SIG
A 380Y	P09- 76	TB1-G28	X GYRO ERROR SIG
A 365R	P09- 77	TB1-G33	OG CDU 1X ERROR SIG
A 381Y	P09- 78	TB1-D69	IMU PRESSURE MONITOR LO
A 381R	P09- 79	TB1-D68	IMU PRESSURE MONITOR HI
A 382	P09- 80	TB1-D52	TRAY 4 THERMISTER HI
A 369Y	P09- 81	TB1-F71	+2.5 VDC CONDITIONING HI
A 383R	P09- 82	TB1-G72	+20 VDC CONDITIONING
A 383Y	P09- 83	TB1-F72	0 VDC CONDITIONING
A 384	P09- 84	TB1-C26	G+N ERROR LIGHT HI
A 385	P09- 85	TB1-A56	GIMBAL LOCK SIGNAL
A 386	P09- 86	TB1-B26	IMU TEMP CONT FAIL LIGHT HI
A 387Y	P09- 87	TB1-H 2	25.6 KC LO IMU
A 374Y	P09- 88	TB1-H 8	3200 CPS 2 V FEEDBACK LO

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 388G	P09- 89	TB1-C58	IG CDU FAILURE INDICATION	
A 388N	P09- 90	TB1-C57	MG CDU FAILURE INDICATION	
A 389Y	P09- 91	TB1-F19	IG TORQUE MOTOR RET	
A 389R	P09- 92	TB1-F18	IG TORQUE MOTOR HI	
A 390N	P09- 93	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO	
A 390G	P09- 94	TB1-C28	IMU IG AND Y GYRO ERROR SIG	
A 391G	P09- 95	TB1-B40	X PIP ERROR MONITOR	
A 391R	P09- 96	TB1-A40	Y PIP ERROR MONITOR	
A 392	P09- 97	TB1-F52	THERMISTER LO	
A 393	P09- 98	TB1-D51	TRAY 3 THERMISTER HI	
A 394Y	P09-102	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
A 394R	P09-103	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
A 395Y	P09-104	TB1-K 2	25.6 KC LO OPTICS	
A 387R	P09-105	TB1-H 1	25.6 KC HI IMU	
A 396	P09-106	TB1-F64	ACCEL TEMP (TELEMETRY)	
A 397	P09-107	TB1-A64	BLOWER CURRENT SENSOR (TELEMETRY)	
A 388Y	P09-108	TB1-D58	0 VDC IMU	
A 398Y	P09-109	TB1-C19	OG TORQUE MOTOR RET	
A 399Y	P09-110	TB1-D19	MG TORQUE MOTOR RET	
A 390Y	P09-111	TB1-A28	IMU OG ERROR SIG	
A 390R	P09-112	TB1-B28	IMU MG ERROR SIG	
A 391Y	P09-113	TB1-A41	Z PIP ERROR MONITOR	
A 391N	P09-114	TB1-B41	0 VDC IMU	
A 400	P09-115	J23- 58	AGC THERMISTER HI	199S
A 401	P09-116	TB1-F51	TRAY 2 THERMISTER HI	
A 402Y	P09-124	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS	
A 402R	P09-125	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS	
A 395R	P09-126	TB1-K 1	25.6 KC HI OPTICS	
A 403	P09-127	TB1-D64	IRIG TEMP (TELEMETRY)	
A 404	P09-128	TB1-C64	TEMPERATURE CONTROL SIG LO	
A 405	P09-129	TB1-B64	HTR CURRENT (TELEMETRY)	
A 388R	P09-130	TB1-D57	OG CDU FAILURE INDICATION	
A 398R	P09-131	TB1-C18	OG TORQUE MOTOR HI	
A 399R	P09-132	TB1-D18	MG TORQUE MOTOR HI	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 406	P10- 1	TB1-H70	STRUCTURE GROUND	
A 407	P10- 8	J22- 62	MAIN PANEL GIMBAL LOCK LIGHT	
A 408	P10- 9	TB1-D70	0 VDC SPACECRAFT	
A 409	P10- 10	TB1-D72	CONDITION LAMP TEST	
A 410	P10- 12	TB1-A56	GIMBAL LOCK SIGNAL	
A 411	P10- 13	TB1-C62	0 VDC IMU	
A 412	P10- 14	TB1-H71	+28 VDC OPTICS	
A 413Y	P10- 15	TB1-B61	AUTOMATIC MARK COMMAND	
* A 299	P10- 16	J09- 31	MANUAL MARK COMMAND	
A 414Y	P10- 19	J24- 32	NOT MARK	103
A 415	P10- 24	TB1-A23	GIMBAL LOCK LIGHT HI	
* A 298Y	P10- 32	J09- 30	ACCEPT MARK	
* A 301Y	P10- 33	J09- 33	MARK REJECT	
* A 314Y	P10- 38	J09- 77	400 CPS 1.5 V ZERO PHASE	
* A 314R	P10- 39	J09- 65	400 CPS 1.5 V PI PHASE	
A 416Y	P10- 43	TB1-A69	OPTICS ZERO ENCODER INDICATION	
A 417Y	P10- 44	J24- 55	MARK	102
* A 314G	P10- 48	J09- 95	400 CPS 26 V HI	
A 418R	P10- 49	TB1-A75	400 CPS 26 V LO	
A 419Y	P10- 68	TB1-C78	400 CPS 115 V LO	
A 419R	P10- 69	TB1-B78	400 CPS 115 V HI	
* A 311Y	P10- 92	J09- 52	400 CPS 6 V LO	
A 420R	P10- 93	TB1-B 2	400 CPS 6 V LO	
A 420Y	P10- 94	TB1-B 4	400 CPS 6 V LO	
A 418Y	P10- 95	TB1-B75	400 CPS 6 V LO	
A 421	P10-104	TB1-K71	+28 VDC MDV	
* A 311G	P10-105	J09- 61	400 CPS 6 V HI	
* A 311R	P10-106	J09- 53	400 CPS 6 V HI	
A 420G	P10-107	TB1-C 1	400 CPS 6 V HI	
A 420N	P10-108	TB1-C 2	400 CPS 6 V HI	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 502	P11-A	TB1-K78	+28 VDC AGC BUSS A	
A 503	P11-A	J23- 38	+28 VDC AGC BUSS A	167
A 504	P11-A	J23- 61	+28 VDC AGC BUSS A	167
A 505	P11-B	TB1-K76	+28 VDC IMU BUSS A	
A 506	P11-B	TB1-K76	+28 VDC IMU BUSS A	
A 507	P11-B	TB1-K76	+28 VDC IMU BUSS A	
A 508	P11-C	TB1-H76	+28 VDC IMU BUSS A	
A 509	P11-C	TB1-H76	+28 VDC IMU BUSS A	
A 510	P11-C	TB1-H76	+28 VDC IMU BUSS A	
A 511	P11-D	TB1-F75	0 VDC IMU	
A 512	P11-D	TB1-B68	0 VDC IMU	
A 513	P11-E	TB1-C69	0 VDC IMU	
A 514	P11-E	TB1-D74	0 VDC IMU	
A 515	P11-F	TB1-F73	0 VDC IMU	
A 516	P11-F	TB1-B70	0 VDC IMU	
A 517	P11-G	TB1-F78	0 VDC OPTICS	
A 518	P11-G	TB1-K53	0 VDC OPTICS	
A 519	P11-G	TB1-K50	0 VDC OPTICS	
A 520	P11-H	TB1-G78	+28 VDC OPTICS BUSS A	
A 521	P11-H	TB1-G78	+28 VDC OPTICS BUSS A	
A 522	P11-H	TB1-H78	+28 VDC OPTICS BUSS A	
A 523	P11-J	J23- 90	0 VDC AGC	169
A 524	P11-J	J23- 91	0 VDC AGC	169
A 525	P11-J	P12-J	0 VDC AGC	
A 526Y	P11-K	TB1-C78	400 CPS 115 V LO	
A 527	P11-L	TB1-G70	STRUCTURE GROUND	
A 528	P11-M	TB1-G76	+28 VDC STBY BUSS A	
A 529	P11-M	TB1-G76	+28 VDC STBY BUSS A	
A 526R	P11-N	TB1-B78	400 CPS 115 V HI	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 530	P12-A	TB1-K77	+28 VDC AGC BUSS B	
A 531	P12-A	J23- 39	+28 VDC AGC BUSS B	168
A 532	P12-A	J23- 40	+28 VDC AGC BUSS B	168
A 533	P12-B	TB1-K75	+28 VDC IMU BUSS B	
A 534	P12-B	TB1-K75	+28 VDC IMU BUSS B	
A 535	P12-B	TB1-K75	+28 VDC IMU BUSS B	
A 536	P12-C	TB1-H75	+28 VDC IMU BUSS B	
A 537	P12-C	TB1-H75	+28 VDC IMU BUSS B	
A 538	P12-C	TB1-H75	+28 VDC IMU BUSS B	
A 539	P12-D	TB1-C70	0 VDC IMU	
A 540	P12-D	TB1-D73	0 VDC IMU	
A 541	P12-E	TB1-F74	0 VDC IMU	
A 542	P12-E	TB1-B69	0 VDC IMU	
A 543	P12-F	TB1-C68	0 VDC IMU	
A 544	P12-F	TB1-D75	0 VDC IMU	
A 545	P12-G	TB1-D78	0 VDC OPTICS	
A 546	P12-G	TB1-G53	0 VDC OPTICS	
A 547	P12-G	TB1-G50	0 VDC OPTICS	
A 548	P12-H	TB1-G77	+28 VDC OPTICS BUSS B	
A 549	P12-H	TB1-G77	+28 VDC OPTICS BUSS B	
A 550	P12-H	TB1-H77	+28 VDC OPTICS BUSS B	
A 551	P12-J	J23- 41	0 VDC AGC	170
A 552	P12-J	J23- 66	0 VDC AGC	170
* A 525	P12-J	P11-J	0 VDC AGC	
A 553	P12-L	TB1-K70	STRUCTURE GROUND	
A 554	P12-M	TB1-G75	+28 VDC STBY BUSS B	
A 555	P12-M	TB1-G75	+28 VDC STBY BUSS B	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 490R	P13- 1	TB1-C66	TRACKER AUTOMATIC GAIN CONTROL HI
A 491R	P13- 2	TB1-D66	TRACKER PREAMP OUTPUT HI
A 493R	P13- 5	TB1-G55	TRACKER X DRIVE BUFFERED HI
A 494R	P13- 6	TB1-G54	TRACKER Y DRIVE BUFFERED HI
A 495Y	P13- 7	TB1-F57	TRACKER PREAMP OUTPUT BUFFERED LO
A 490Y	P13- 9	TB1-C65	TRACKER AUTOMATIC GAIN CONTROL LO
A 491Y	P13- 10	TB1-D65	TRACKER PREAMP OUTPUT LO
A 493Y	P13- 13	TB1-F56	TRACKER X DRIVE BUFFERED LO
A 494Y	P13- 14	TB1-F56	TRACKER Y DRIVE BUFFERED LO
A 495R	P13- 15	TB1-G56	TRACKER PREAMP OUTPUT BUFFERED HI
A 496Y	P13- 23	TB1-F65	TRACKER Y ERROR LO
A 497Y	P13- 24	TB1-G65	TRACKER X ERROR LO
A 498Y	P13- 27	TB1-A65	TRACKER Y REFERENCE
A 498R	P13- 28	TB1-A66	TRACKER Y REFERENCE
A 594Y	P13- 30	TB1-D76	0 VDC OPTICS
A 496R	P13- 31	TB1-F66	TRACKER Y ERROR HI
A 497R	P13- 32	TB1-G66	TRACKER X ERROR HI
A 499R	P13- 35	TB1-B66	TRACKER X REFERENCE
A 499Y	P13- 36	TB1-B65	TRACKER X REFERENCE
A 500	P13- 37	TB1-K70	STRUCTURE GROUND
A 594R	P13- 38	TB1-B71	+28 VDC OPTICS TRACKER POWER

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 3B	SHLD A 3	TB1-A12	0 VDC IMU
* A 4B	SHLD A 4	TB1-A17	0 VDC IMU
* A 12B	SHLD A 12	TB1-K32	IG CDU ERROR SIG RET
* A 16B	SHLD A 16	TB1-H17	0 VDC IMU
* A 17B	SHLD A 17	TB1-K17	0 VDC IMU
* A 18B	SHLD A 18	TB1-K30	IG CDU ERROR SIG RET
* A 19B	SHLD A 19	TB1-F30	IG CDU MDA INPUT RET
* A 20B	SHLD A 20	TB1-F34	IG CDU ENCODER COMMON
* A 23B	SHLD A 23	TB1-B12	0 VDC IMU
* A 24B	SHLD A 24	TB1-B17	0 VDC IMU
* A 32B	SHLD A 32	TB1-H32	MG CDU ERROR SIG RET
* A 36B	SHLD A 36	TB1-H12	0 VDC IMU
* A 37B	SHLD A 37	TB1-K12	0 VDC IMU
* A 38B	SHLD A 38	TB1-H30	MG CDU ERROR SIG RET
* A 39B	SHLD A 39	TB1-D30	MG CDU MDA INPUT RET
* A 40B	SHLD A 40	TB1-D34	MG CDU ENCODER COMMON
* A 43B	SHLD A 43	TB1-C17	0 VDC IMU
* A 44B	SHLD A 44	TB1-D17	0 VDC IMU
* A 52B	SHLD A 52	TB1-G32	OG CDU ERROR SIG RET
* A 56B	SHLD A 56	TB1-F17	0 VDC IMU
* A 57B	SHLD A 57	TB1-G17	0 VDC IMU
* A 59B	SHLD A 59	TB1-F32	OG CDU ERROR SIG RET
* A 60B	SHLD A 60	TB1-C30	OG CDU MDA INPUT RET
* A 61B	SHLD A 61	TB1-C34	OG CDU ENCODER COMMON
* A 64B	SHLD A 64	TB1-H47	0 VDC OPTICS
* A 65B	SHLD A 65	TB1-K47	0 VDC OPTICS
* A 66B	SHLD A 66	TB1-H39	0 VDC OPTICS
* A 72B	SHLD A 72	TB1-C47	0 VDC OPTICS
* A 73B	SHLD A 73	TB1-D47	0 VDC OPTICS
* A 74B	SHLD A 74	TB1-A47	0 VDC OPTICS
* A 75B	SHLD A 75	TB1-B47	0 VDC OPTICS
* A 76B	SHLD A 76	TB1-G39	0 VDC OPTICS
* A 77B	SHLD A 77	TB1-G36	0 VDC OPTICS
* A 78B	SHLD A 78	TB1-A34	SHAFT CDU ENCODER COMMON
* A 81B	SHLD A 81	TB1-D39	0 VDC OPTICS
* A 82B	SHLD A 82	TB1-D42	0 VDC OPTICS
* A 83B	SHLD A 83	TB1-C42	0 VDC OPTICS
* A 89B	SHLD A 89	TB1-H42	0 VDC OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 90B	SHLD A 90	TB1-K42	0 VDC OPTICS
* A 91B	SHLD A 91	TB1-A42	0 VDC OPTICS
* A 92B	SHLD A 92	TB1-B42	0 VDC OPTICS
* A 93B	SHLD A 93	TB1-C42	0 VDC OPTICS
* A 94B	SHLD A 94	TB1-C36	0 VDC OPTICS
* A 95B	SHLD A 95	TB1-B34	TRUNNION CDU ENCODER COMMON
* A 99B	SHLD A 99	TB1-A49	STRUCTURE GROUND
* A 104B	SHLD A 104	TB1-H 4	STRUCTURE GROUND
* A 113B	SHLD A 113	TB1-D56	AGC SIGNAL 178 SHIELD RETURN
* A 114B	SHLD A 114	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 124B	SHLD A 124	TB1-K 4	STRUCTURE GROUND
* A 127B	SHLD A 127	TB1-A49	STRUCTURE GROUND
* A 128B	SHLD A 128	TB1-G 4	STRUCTURE GROUND
* A 130B	SHLD A 130	TB1-B49	STRUCTURE GROUND
* A 131B	SHLD A 131	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 132B	SHLD A 132	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 133B	SHLD A 133	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 134B	SHLD A 134	TB1-D56	AGC SIGNAL 178 SHIELD RETURN
* A 135B	SHLD A 135	TB1-K32	IG CDU ERROR SIG RET
* A 136B	SHLD A 136	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 139B	SHLD A 139	TB1-H32	MG CDU ERROR SIG RET
* A 145B	SHLD A 145	TB1-G32	OG CDU ERROR SIG RET
* A 179B	SHLD A 179	TB1-A12	0 VDC IMU
* A 180B	SHLD A 180	TB1-F17	0 VDC IMU
* A 181B	SHLD A 181	TB1-G17	0 VDC IMU
* A 182B	SHLD A 182	TB1-A17	0 VDC IMU
* A 183B	SHLD A 183	TB1-H12	0 VDC IMU
* A 184B	SHLD A 184	TB1-K12	0 VDC IMU
* A 185B	SHLD A 185	TB1-B12	0 VDC IMU
* A 186B	SHLD A 186	TB1-B17	0 VDC IMU
* A 188B	SHLD A 188	TB1-H12	0 VDC IMU
* A 189B	SHLD A 189	TB1-H17	0 VDC IMU
* A 190B	SHLD A 190	TB1-K17	0 VDC IMU
* A 191B	SHLD A 191	TB1-G27	0 VDC IMU
* A 193B	SHLD A 193	TB1-G27	0 VDC IMU
* A 196B	SHLD A 196	TB1-C17	0 VDC IMU
* A 198B	SHLD A 198	TB1-D17	0 VDC IMU
* A 200B	SHLD A 200	TB1-K28	IG CDU ERROR SIG RET

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 203B	SHLD A 203	TB1-H28	MG CDU ERROR SIG RET
* A 204B	SHLD A 204	TB1-G12	0 VDC IMU
* A 205B	SHLD A 205	TB1-F12	0 VDC IMU
* A 211B	SHLD A 211	TB1-C47	0 VDC OPTICS
* A 213B	SHLD A 213	TB1-D47	0 VDC OPTICS
* A 216B	SHLD A 216	TB1-A67	0 VDC OPTICS
* A 218B	SHLD A 218	TB1-B67	0 VDC OPTICS
* A 219B	SHLD A 219	TB1-H36	0 VDC OPTICS
* A 221B	SHLD A 221	TB1-D36	0 VDC OPTICS
* A 223B	SHLD A 223	TB1-D42	0 VDC OPTICS
* A 224B	SHLD A 224	TB1-C42	0 VDC OPTICS
* A 226B	SHLD A 226	TB1-G47	0 VDC OPTICS
* A 227B	SHLD A 227	TB1-F47	0 VDC OPTICS
* A 228B	SHLD A 228	TB1-D67	0 VDC OPTICS
* A 232B	SHLD A 232	TB1-C67	0 VDC OPTICS
* A 234B	SHLD A 234	TB1-B47	0 VDC OPTICS
* A 235B	SHLD A 235	TB1-K67	0 VDC OPTICS
* A 236B	SHLD A 236	TB1-A47	0 VDC OPTICS
* A 238B	SHLD A 238	TB1-A42	0 VDC OPTICS
* A 239B	SHLD A 239	TB1-H67	0 VDC OPTICS
* A 240B	SHLD A 240	TB1-B42	0 VDC OPTICS
* A 254B	SHLD A 254	TB1-C59	0 VDC IMU
* A 255B	SHLD A 255	TB1-C59	0 VDC IMU
* A 257B	SHLD A 257	TB1-C24	0 VDC IMU
* A 260B	SHLD A 260	TB1-F24	0 VDC IMU
* A 262B	SHLD A 262	TB1-D24	0 VDC IMU
* A 263B	SHLD A 263	TB1-G24	0 VDC IMU
* A 264B	SHLD A 264	TB1-H24	0 VDC IMU
* A 265B	SHLD A 265	TB1-K24	0 VDC IMU
* A 269B	SHLD A 269	TB1-F42	0 VDC OPTICS
* A 270B	SHLD A 270	TB1-G42	0 VDC OPTICS
* A 271B	SHLD A 271	TB1-F39	0 VDC OPTICS
A 276A	SHLD A 276	P08- 35	0 VDC OPTICS
* A 276B	SHLD A 276	TB1-F36	0 VDC OPTICS
A 278A	SHLD A 278	P08- 37	0 VDC OPTICS
* A 278B	SHLD A 278	TB1-K36	0 VDC OPTICS
* A 279B	SHLD A 279	TB1-G47	0 VDC OPTICS
* A 280B	SHLD A 280	TB1-F47	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 281B	SHLD A 281	TB1-K39	0 VDC OPTICS
*	A 286B	SHLD A 286	TB1-A59	STRUCTURE GROUND
*	A 290B	SHLD A 290	TB1-K67	0 VDC OPTICS
*	A 291B	SHLD A 291	TB1-H67	0 VDC OPTICS
	A 298A	SHLD A 298	E 24	AGC SIGNAL 178 SHIELD RETURN
	A 301A	SHLD A 301	E 24	AGC SIGNAL 178 SHIELD RETURN
*	A 302B	SHLD A 302	TB1-F67	0 VDC OPTICS
*	A 304B	SHLD A 304	E 23	AGC SIGNAL 178 SHIELD RETURN
*	A 305B	SHLD A 305	TB1-G67	0 VDC OPTICS
	A 308A	SHLD A 308	E 24	AGC SIGNAL 178 SHIELD RETURN
*	A 308B	SHLD A 308	TB1-A70	AGC SIGNAL 178 SHIELD RETURN
	A 309A	SHLD A 309	E 24	AGC SIGNAL 178 SHIELD RETURN
*	A 309B	SHLD A 309	E 23	AGC SIGNAL 178 SHIELD RETURN
*	A 313B	SHLD A 313	TB1-A58	STRUCTURE GROUND
*	A 332B	SHLD A 332	TB1-A17	0 VDC IMU
*	A 333B	SHLD A 333	TB1-A12	0 VDC IMU
*	A 334B	SHLD A 334	TB1-D17	0 VDC IMU
*	A 338B	SHLD A 338	TB1-F32	OG CDU ERROR SIG RET
*	A 346B	SHLD A 346	TB1-B17	0 VDC IMU
*	A 347B	SHLD A 347	TB1-B12	0 VDC IMU
*	A 348B	SHLD A 348	TB1-C17	0 VDC IMU
*	A 354B	SHLD A 354	TB1-K32	IG CDU ERROR SIG RET
*	A 355B	SHLD A 355	TB1-H32	MG CDU ERROR SIG RET
*	A 365B	SHLD A 365	TB1-G32	OG CDU ERROR SIG RET
*	A 379B	SHLD A 379	TB1-F27	0 VDC IMU
*	A 380B	SHLD A 380	TB1-F27	0 VDC IMU
*	A 413B	SHLD A 413	TB1-A58	STRUCTURE GROUND
*	A 414B	SHLD A 414	E 23	AGC SIGNAL 178 SHIELD RETURN
*	A 416B	SHLD A 416	TB1-A70	AGC SIGNAL 178 SHIELD RETURN
*	A 417B	SHLD A 417	E 23	AGC SIGNAL 178 SHIELD RETURN
*	A 472B	SHLD A 472	TB1-A59	STRUCTURE GROUND
*	A 474B	SHLD A 474	TB1-A49	STRUCTURE GROUND
*	A 475B	SHLD A 475	TB1-B49	STRUCTURE GROUND
*	A 476B	SHLD A 476	TB1-B49	STRUCTURE GROUND
*	A 490B	SHLD A 490	TB1-C67	0 VDC OPTICS
*	A 491B	SHLD A 491	TB1-D67	0 VDC OPTICS
*	A 496B	SHLD A 496	TB1-F67	0 VDC OPTICS
*	A 497B	SHLD A 497	TB1-G67	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 498B	SHLD A 498	TB1-A67	0 VDC OPTICS
*	A 499B	SHLD A 499	TB1-B67	0 VDC OPTICS
*	A 564B	SHLD A 564	TB1-A70	AGC SIGNAL 178 SHIELD RETURN
	A 566A	SHLD A 566	E 23	AGC SIGNAL 178 SHIELD RETURN
*	BB 50B	SHLD BB 50	J17-S4	0 VDC IMU
*	BB 94B	SHLD BB 94	E 4	0 VDC IMU
	CC 1A	SHLD CC 1	E 4	0 VDC IMU
	CC 2A	SHLD CC 2	E 4	0 VDC IMU
	CC 3A	SHLD CC 3	J12-K3	STRUCTURE GROUND
	CC 6A	SHLD CC 6	E 4	0 VDC IMU
	CC 7A	SHLD CC 7	E 4	0 VDC IMU
*	CC 8B	SHLD CC 8	E 18	AGC SIGNAL 179 SHIELD RETURN
*	CC 9B	SHLD CC 9	E 18	AGC SIGNAL 179 SHIELD RETURN
*	CC 10B	SHLD CC 10	E 18	AGC SIGNAL 179 SHIELD RETURN
	CC 13A	SHLD CC 13	E 7	0 VDC IMU
	CC 14A	SHLD CC 14	E 7	0 VDC IMU
	CC 15A	SHLD CC 15	E 7	0 VDC IMU
	CC 16A	SHLD CC 16	E 7	0 VDC IMU
	CC 17A	SHLD CC 17	E 7	0 VDC IMU
	CC 18A	SHLD CC 18	E 7	0 VDC IMU
	CC 19A	SHLD CC 19	E 7	0 VDC IMU
*	CC 20B	SHLD CC 20	E 17	AGC SIGNAL 179 SHIELD RETURN
*	CC 21B	SHLD CC 21	E 17	AGC SIGNAL 179 SHIELD RETURN
*	CC 22B	SHLD CC 22	E 17	AGC SIGNAL 179 SHIELD RETURN
*	CC 23B	SHLD CC 23	E 17	AGC SIGNAL 179 SHIELD RETURN
*	CC 24B	SHLD CC 24	E 17	AGC SIGNAL 179 SHIELD RETURN
*	CC 25B	SHLD CC 25	E 17	AGC SIGNAL 179 SHIELD RETURN
*	CC 26B	SHLD CC 26	E 19	AGC SIGNAL 179 SHIELD RETURN
*	CC 27B	SHLD CC 27	E 19	AGC SIGNAL 179 SHIELD RETURN
*	CC 28B	SHLD CC 28	E 19	AGC SIGNAL 179 SHIELD RETURN
*	CC 29B	SHLD CC 29	E 19	AGC SIGNAL 179 SHIELD RETURN
*	CC 30B	SHLD CC 30	E 19	AGC SIGNAL 179 SHIELD RETURN
*	CC 31B	SHLD CC 31	E 19	AGC SIGNAL 179 SHIELD RETURN
	CC 32A	SHLD CC 32	E 9	IG DAC MDA SIG LO
	CC 33A	SHLD CC 33	E 9	IG DAC MDA SIG LO
	CC 34A	SHLD CC 34	E 11	MG DAC MDA SIG LO
	CC 35A	SHLD CC 35	E 11	MG DAC MDA SIG LO
	CC 36A	SHLD CC 36	E 13	OG DAC MDA SIG LO

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC 37A	SHLD CC 37	E 13	OG DAC MDA SIG LO
*	CC 38B	SHLD CC 38	E 21	AGC SIGNAL 178 SHIELD RETURN
	CC 39A	SHLD CC 39	J16-P2	0 VDC IMU
	CC 40A	SHLD CC 40	J16-P2	0 VDC IMU
*	CC 41B	SHLD CC 41	E 21	AGC SIGNAL 178 SHIELD RETURN
*	CC 42B	SHLD CC 42	E 20	AGC SIGNAL 179 SHIELD RETURN
*	CC 43B	SHLD CC 43	J22- 48	NAA SHIELD GROUND
*	CC 44B	SHLD CC 44	J22- 77	NAA SHIELD GROUND
*	CC 45B	SHLD CC 45	J22- 80	NAA SHIELD GROUND
*	CC 46B	SHLD CC 46	E 20	AGC SIGNAL 179 SHIELD RETURN
*	CC 47B	SHLD CC 47	J22- 54	NAA SHIELD GROUND
*	CC 48B	SHLD CC 48	J22- 51	NAA SHIELD GROUND
*	CC 49B	SHLD CC 49	E 20	AGC SIGNAL 179 SHIELD RETURN
*	CC 50B	SHLD CC 50	E 20	AGC SIGNAL 179 SHIELD RETURN
	CC 51A	SHLD CC 51	J17-S4	0 VDC IMU
	CC 57A	SHLD CC 57	J20-M4	STRUCTURE GROUND
*	CC 96B	SHLD CC 96	TB1-K24	0 VDC IMU
*	CC 99B	SHLD CC 99	TB1-H24	0 VDC IMU
*	CC101B	SHLD CC101	TB1-F24	0 VDC IMU
*	CC106B	SHLD CC106	TB1-G24	0 VDC IMU
*	CC108B	SHLD CC108	TB1-D24	0 VDC IMU
*	CC109B	SHLD CC109	TB1-C24	0 VDC IMU
*	CC126B	SHLD CC126	TB1-K17	0 VDC IMU
*	CC127B	SHLD CC127	TB1-K12	0 VDC IMU
*	CC128B	SHLD CC128	TB1-H 4	STRUCTURE GROUND
	CC136A	SHLD CC136	J16-B1	IG CDU MDA INPUT RET
	CC141A	SHLD CC141	J16-B3	MG CDU MDA INPUT RET
*	CC143B	SHLD CC143	TB1-C17	0 VDC IMU
*	CC144B	SHLD CC144	TB1-D17	0 VDC IMU
*	CC148B	SHLD CC148	TB1-F17	0 VDC IMU
*	CC152B	SHLD CC152	TB1-G17	0 VDC IMU
	CC153A	SHLD CC153	J16-B5	OG CDU MDA INPUT RET
*	CC159B	SHLD CC159	TB1-K 4	STRUCTURE GROUND
*	CC163B	SHLD CC163	TB1-H17	0 VDC IMU
*	CC164B	SHLD CC164	TB1-H12	0 VDC IMU
*	CC173B	SHLD CC173	TB1-D56	AGC SIGNAL 178 SHIELD RETURN
*	CC182B	SHLD CC182	TB1-G12	0 VDC IMU
*	CC190B	SHLD CC190	TB1-C59	0 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC192B	SHLD CC192	TB1-C59	0 VDC IMU
*	CC201B	SHLD CC201	TB1-F12	0 VDC IMU
*	CC204B	SHLD CC204	TB1-G32	OG CDU ERROR SIG RET
*	CC218B	SHLD CC218	TB1-D47	0 VDC OPTICS
*	CC219B	SHLD CC219	TB1-B47	0 VDC OPTICS
*	CC221B	SHLD CC221	TB1-G42	0 VDC OPTICS
*	CC223B	SHLD CC223	TB1-A58	STRUCTURE GROUND
*	CC225B	SHLD CC225	TB1-A59	STRUCTURE GROUND
*	CC229B	SHLD CC229	TB1-D42	0 VDC OPTICS
*	CC230B	SHLD CC230	TB1-C42	0 VDC OPTICS
*	CC231B	SHLD CC231	TB1-F42	0 VDC OPTICS
*	CC233B	SHLD CC233	TB1-D36	0 VDC OPTICS
*	CC234B	SHLD CC234	TB1-B42	0 VDC OPTICS
*	CC235B	SHLD CC235	TB1-K39	0 VDC OPTICS
*	CC237B	SHLD CC237	TB1-K36	0 VDC OPTICS
*	CC239B	SHLD CC239	TB1-H36	0 VDC OPTICS
*	CC251B	SHLD CC251	TB1-A59	STRUCTURE GROUND
*	CC253B	SHLD CC253	TB1-K42	0 VDC OPTICS
*	CC254B	SHLD CC254	TB1-H42	0 VDC OPTICS
*	CC255B	SHLD CC255	TB1-D39	0 VDC OPTICS
*	CC256B	SHLD CC256	TB1-C42	0 VDC OPTICS
*	CC258B	SHLD CC258	TB1-C36	0 VDC OPTICS
*	CC259B	SHLD CC259	TB1-F39	0 VDC OPTICS
*	CC261B	SHLD CC261	TB1-F36	0 VDC OPTICS
*	CC263B	SHLD CC263	TB1-H39	0 VDC OPTICS
*	CC265B	SHLD CC265	TB1-H47	0 VDC OPTICS
*	CC266B	SHLD CC266	TB1-K47	0 VDC OPTICS
*	CC267B	SHLD CC267	TB1-G39	0 VDC OPTICS
*	CC269B	SHLD CC269	TB1-G36	0 VDC OPTICS
*	CC276B	SHLD CC276	TB1-A58	STRUCTURE GROUND
*	CC278B	SHLD CC278	TB1-K67	0 VDC OPTICS
*	CC281B	SHLD CC281	TB1-G67	0 VDC OPTICS
*	CC325B	SHLD CC325	TB1-G 4	STRUCTURE GROUND
*	CC327B	SHLD CC327	TB1-B17	0 VDC IMU
*	CC328B	SHLD CC328	TB1-B12	0 VDC IMU
*	CC329B	SHLD CC329	TB1-A17	0 VDC IMU
*	CC330B	SHLD CC330	TB1-A12	0 VDC IMU
	CC332A	SHLD CC332	E 21	AGC SIGNAL 178 SHIELD RETURN

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* CC332B	SHLD CC332	TB1-D56	AGC SIGNAL 178 SHIELD RETURN

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MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
TB 1	TB1-A 1	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
* A 8R	TB1-A 1	J01- 28	400 CPS VARIABLE ILLUMINATION POWER
* A 28R	TB1-A 1	J02- 28	400 CPS VARIABLE ILLUMINATION POWER
* A 48R	TB1-A 1	J03- 28	400 CPS VARIABLE ILLUMINATION POWER
TB 1	TB1-A 2	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
* A 67R	TB1-A 2	J04- 28	400 CPS VARIABLE ILLUMINATION POWER
* A 85R	TB1-A 2	J05- 28	400 CPS VARIABLE ILLUMINATION POWER
* A 143R	TB1-A 2	P01-103	400 CPS VARIABLE ILLUMINATION POWER
* TB 1	TB1-A 2	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
TB 1	TB1-A 3	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER
* A 123R	TB1-A 3	J06-108	400 CPS VARIABLE ILLUMINATION POWER
* A 225R	TB1-A 3	P05- 43	400 CPS VARIABLE ILLUMINATION POWER
* A 312R	TB1-A 3	J09- 54	400 CPS VARIABLE ILLUMINATION POWER
* TB 1	TB1-A 3	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
* A 143Y	TB1-A 4	P01-108	400 CPS VARIABLE ILLUMINATION POWER
* A 282R	TB1-A 4	P08- 53	400 CPS VARIABLE ILLUMINATION POWER
* A 283R	TB1-A 4	P08- 56	400 CPS VARIABLE ILLUMINATION POWER
* TB 1	TB1-A 4	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
TB 8	TB1-A 5	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
* A 25G	TB1-A 5	J02- 11	800 CPS 28 V 1 PCT HI IMU
* A 25R	TB1-A 5	J02- 25	800 CPS 28 V 1 PCT HI IMU
* A 178R	TB1-A 5	P02-A	800 CPS 28 V 1 PCT HI IMU
* CC160L	TB1-A 5	J16-S4	800 CPS 28 V 1 PCT HI IMU
TB 8	TB1-A 6	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
* A 5G	TB1-A 6	J01- 11	800 CPS 28 V 1 PCT HI IMU
* A 5R	TB1-A 6	J01- 25	800 CPS 28 V 1 PCT HI IMU
* A 45R	TB1-A 6	J03- 25	800 CPS 28 V 1 PCT HI IMU
* TB 8	TB1-A 6	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
TB 8	TB1-A 7	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
* A 45G	TB1-A 7	J03- 11	800 CPS 28 V 1 PCT HI IMU
* A 126R	TB1-A 7	P01- 11	800 CPS 28 V 1 PCT HI IMU
* A 340R	TB1-A 7	P09- 11	800 CPS 28 V 1 PCT HI IMU
* TB 8	TB1-A 7	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
* A 1R	TB1-A 8	J01- 1	800 CPS 28 V 1 PCT HI IMU
* A 21R	TB1-A 8	J02- 1	800 CPS 28 V 1 PCT HI IMU
* A 41R	TB1-A 8	J03- 1	800 CPS 28 V 1 PCT HI IMU
* TB 8	TB1-A 8	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
* A 261G	TB1-A10	P07-F*	OG ADA

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* CC 65K	TB1-A10	J11-G1	OG ADA	
* A 261N	TB1-A11	P07-G*	MG ADA	
* CC 65L	TB1-A11	J11-H1	MG ADA	
A 3B	TB1-A12	SHLD A 3	0 VDC IMU	
A 179B	TB1-A12	SHLD A 179	0 VDC IMU	
A 333B	TB1-A12	SHLD A 333	0 VDC IMU	
AA 1	TB1-A12	TB1-B17	0 VDC IMU	
CC330B	TB1-A12	SHLD CC330	0 VDC IMU	
TB 14	TB1-A12	TB1-B12	0 VDC IMU	
* A 3R	TB1-A13	J01- 20	COS AIG 1X P3	
* A 179R	TB1-A13	P02-A*	COS AIG 1X S3	
* A 333Y	TB1-A13	P09- 2	COS AIG 1X	
* CC330R	TB1-A13	J22- 84	COS AIG 1X	
* A 3Y	TB1-A14	J01- 6	COS AIG 1X RET P1	
* A 179Y	TB1-A14	P02-B*	COS AIG 1X RET S1	
* A 333R	TB1-A14	P09- 3	COS AIG 1X RET	
* CC330W	TB1-A14	J22- 85	COS AIG 1X RET	
* A 4R	TB1-A15	J01- 21	SIN AIG 1X RET P4	
* A 182R	TB1-A15	P02-F*	SIN AIG 1X RET S2	
* A 332R	TB1-A15	P09- 23	SIN AIG 1X RET	
* CC329W	TB1-A15	J22- 33	SIN AIG 1X RET	
* A 4Y	TB1-A16	J01- 7	SIN AIG 1X P2	
* A 182Y	TB1-A16	P02-G*	SIN AIG 1X S4	
* A 332Y	TB1-A16	P09- 1	SIN AIG 1X	
* CC329R	TB1-A16	J22- 56	SIN AIG 1X	
A 4B	TB1-A17	SHLD A 4	0 VDC IMU	
A 182B	TB1-A17	SHLD A 182	0 VDC IMU	
A 332B	TB1-A17	SHLD A 332	0 VDC IMU	
AA 2	TB1-A17	TB1-C24	0 VDC IMU	
CC329B	TB1-A17	SHLD CC329	0 VDC IMU	
TB 15	TB1-A17	TB1-B17	0 VDC IMU	
* A 158	TB1-A20	J08- 50	SPARE FAIL LIGHT 1 HI	
* A 479	TB1-A20	J10- 7	SPARE FAIL LIGHT 1 HI	305
* A 155	TB1-A21	J08- 41	ZERO ENCODER LIGHT HI	
* A 473G	TB1-A21	J10- 3	ZERO ENCODER LIGHT HI	301
* A 162	TB1-A22	J08- 60	IMU FAIL LIGHT HI	
* A 478	TB1-A22	J10- 6	IMU FAIL LIGHT HI	304
* A 147	TB1-A23	J08- 18	GIMBAL LOCK LIGHT HI	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* A 415	TB1-A23	P10- 24	GIMBAL LOCK LIGHT HI	
* A 169	TB1-A24	J08- 72	CDU FAIL LIGHT HI	
* A 473R	TB1-A24	J10- 4	CDU FAIL LIGHT HI	302
* A 152	TB1-A25	J08- 31	IMU DELAY LIGHT LO	
* A 589	TB1-A25	J09-107	IMU DELAY LIGHT LO	
* A 129	TB1-A26	P01- 26	IMU DELAY LIGHT HI	
* A 156	TB1-A26	J08- 42	IMU DELAY LIGHT HI	
* A 373	TB1-A26	P09- 69	IMU DELAY LIGHT HI	
* A 195R	TB1-A28	P03-C	IMU OG ERROR SIG	
* A 390Y	TB1-A28	P09-111	IMU OG ERROR SIG	
* CC 68L	TB1-A28	J11-A6	IMU OG ERROR SIG	
* A 55R	TB1-A29	J03- 67	OG CDU 1/2X ERROR SIG	
* CC145W	TB1-A29	J16-D5	OG CDU 1/2X ERROR SIG	
* A 35R	TB1-A30	J02- 67	MG CDU 1/2X ERROR SIG	
* CC138W	TB1-A30	J16-D3	MG CDU 1/2X ERROR SIG	
* A 15R	TB1-A31	J01- 67	IG CDU 1/2X ERROR SIG S3	
* CC133W	TB1-A31	J16-D1	IG CDU 1/2X ERROR SIG	
* A 78R	TB1-A33	J04-108	SHAFT CDU ENCODER PHASE 2	
* CC203R	TB1-A33	J17-F9	SHAFT CDU ENCODER PHASE 2	
A 78B	TB1-A34	SHLD A 78	SHAFT CDU ENCODER COMMON	
* A 78Y	TB1-A34	J04- 94	SHAFT CDU ENCODER COMMON	
* CC203W	TB1-A34	J17-D9	SHAFT CDU ENCODER COMMON	
* A 78G	TB1-A35	J04-107	SHAFT CDU ENCODER PHASE 1	
* CC203L	TB1-A35	J17-C9	SHAFT CDU ENCODER PHASE 1	
TB 23	TB1-A36	TB1-B36	0 VDC OPTICS	
AA 3	TB1-A39	TB1-B36	0 VDC OPTICS	
TB 24	TB1-A39	TB1-B39	0 VDC OPTICS	
* A 391R	TB1-A40	P09- 96	Y PIP ERROR MONITOR	
* CC100	TB1-A40	J13-F2	Y PIP ERROR MONITOR	
* A 391Y	TB1-A41	P09-113	Z PIP ERROR MONITOR	
* CC107	TB1-A41	J14-H6	Z PIP ERROR MONITOR	
A 91B	TB1-A42	SHLD A 91	0 VDC OPTICS	
A 238B	TB1-A42	SHLD A 238	0 VDC OPTICS	
AA 4	TB1-A42	TB1-B39	0 VDC OPTICS	
TB 25	TB1-A42	TB1-B42	0 VDC OPTICS	
* A 91R	TB1-A43	J05-100	TRUNNION CDU 16X RSVR P3	
* A 238R	TB1-A43	P05- 87	SXT TRUNNION 64X RSVR S3	
* A 91Y	TB1-A44	J05- 86	TRUNNION CDU 16X RSVR P1	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* A 238Y	TB1-A44	P05- 86	SXT TRUNNION 64X RSVR S1	
* A 74Y	TB1-A45	J04- 86	SHAFT CDU 16X RSVR P1	
* A 236Y	TB1-A45	P05- 82	SXT SHAFT 16X RSVR S1	
* A 74R	TB1-A46	J04-100	SHAFT CDU 16X RSVR P3	
* A 236R	TB1-A46	P05- 83	SXT SHAFT 16X RSVR S3	
A 74B	TB1-A47	SHLD A 74	0 VDC OPTICS	
A 236B	TB1-A47	SHLD A 236	0 VDC OPTICS	
AA 5	TB1-A47	TB1-B42	0 VDC OPTICS	
TB 26	TB1-A47	TB1-B47	0 VDC OPTICS	
* A 99Y	TB1-A48	J06- 12	MODE RELAY COMMON TO AGC	
* A 474R	TB1-A48	J10- 26	MODE RELAY COMMON TO AGC	312
* A 474Y	TB1-A48	J10- 13	MODE RELAY COMMON TO AGC	315
A 99B	TB1-A49	SHLD A 99	STRUCTURE GROUND	
A 127B	TB1-A49	SHLD A 127	STRUCTURE GROUND	
A 474B	TB1-A49	SHLD A 474	STRUCTURE GROUND	
TB 27	TB1-A49	TB1-B49	STRUCTURE GROUND	
* A 127G	TB1-A50	P01- 48	COARSE ALIGN MODE COMMAND FROM AGC	
* A 475G	TB1-A50	J10- 22	COARSE ALIGN MODE COMMAND FROM AGC	308
* A 176	TB1-A51	J08- 93	STEP-DOWN-R	
* A 327	TB1-A51	J09- 93	STEP-DOWN-R	
* A 172	TB1-A52	J08- 79	STEP-DOWN-C	
* A 323	TB1-A52	J09- 79	STEP-DOWN-C	
* A 166	TB1-A53	J08- 67	+28 VDC MDV SWITCHED	
* A 316	TB1-A53	J09- 67	+28 VDC MDV SWITCHED	
* A 138R	TB1-A54	P01- 80	PANEL BRIGHTNESS CONTROL	
* A 300R	TB1-A54	J09- 32	PANEL BRIGHTNESS CONTROL	
* A 138Y	TB1-A55	P01- 95	PANEL BRIGHTNESS CONTROL	
* A 300Y	TB1-A55	J09- 44	PANEL BRIGHTNESS CONTROL	
* A 202	TB1-A56	P03-J*	GIMBAL LOCK SIGNAL	
* A 385	TB1-A56	P09- 85	GIMBAL LOCK SIGNAL	
* A 410	TB1-A56	P10- 12	GIMBAL LOCK SIGNAL	
* A 313G	TB1-A57	J09- 82	RESOLVED MODE RELAY COMMAND	
* CC251R	TB1-A57	J19-P6	RESOLVED MODE RELAY COMMAND	
A 313B	TB1-A58	SHLD A 313	STRUCTURE GROUND	
A 413B	TB1-A58	SHLD A 413	STRUCTURE GROUND	
CC223B	TB1-A58	SHLD CC223	STRUCTURE GROUND	
CC276B	TB1-A58	SHLD CC276	STRUCTURE GROUND	
TB 31	TB1-A58	TB1-A59	STRUCTURE GROUND	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 286B	TB1-A59	SHLD A 286	STRUCTURE GROUND	
A 472B	TB1-A59	SHLD A 472	STRUCTURE GROUND	
CC225B	TB1-A59	SHLD CC225	STRUCTURE GROUND	
CC251B	TB1-A59	SHLD CC251	STRUCTURE GROUND	
TB 31	TB1-A59	TB1-A60	STRUCTURE GROUND	
* TB 31	TB1-A59	TB1-A58	STRUCTURE GROUND	
* CC180	TB1-A60	J16-N4	STRUCTURE GROUND	
* TB 31	TB1-A60	TB1-A59	STRUCTURE GROUND	
* A 286R	TB1-A61	J09- 2	TRACKER MODE RELAY COMMAND	
* A 472R	TB1-A61	J10- 66	TRACKER MODE RELAY COMMAND	317
* CC251W	TB1-A61	J19-R6	TRACKER MODE RELAY COMMAND	
* A 337R	TB1-A63	P09- 7	+120 VDC PIP	
* CC206R	TB1-A63	J17-L5	+120 VDC PIP	
* A 397	TB1-A64	P09-107	BLOWER CURRENT SENSOR (TELEMETRY)	
* CC193	TB1-A64	J17-F6	BLOWER CURRENT SENSOR (TELEMETRY)	
* A 216Y	TB1-A65	P05- 10	TRACKER Y REFERENCE	
* A 498Y	TB1-A65	P13- 27	TRACKER Y REFERENCE	
* A 216R	TB1-A66	P05- 11	TRACKER Y REFERENCE	
* A 498R	TB1-A66	P13- 28	TRACKER Y REFERENCE	
A 216B	TB1-A67	SHLD A 216	0 VDC OPTICS	
A 498B	TB1-A67	SHLD A 498	0 VDC OPTICS	
AA 6	TB1-A67	TB1-B47	0 VDC OPTICS	
TB 34	TB1-A67	TB1-B67	0 VDC OPTICS	
* A 308Y	TB1-A68	J09- 47	AGC COMMON (OSS)	
* A 564Y	TB1-A68	J24- 84	AGC COMMON (OSS)	101
* A 566Y	TB1-A68	J24- 83	SXT POWER ON INDICATION	105
* A 308R	TB1-A69	J09- 48	OPTICS ZERO ENCODER INDICATION	
* A 416Y	TB1-A69	P10- 43	OPTICS ZERO ENCODER INDICATION	
* A 564R	TB1-A69	J24- 15	OPTICS ZERO ENCODER INDICATION	104
A 308B	TB1-A70	SHLD A 308	AGC SIGNAL 178 SHIELD RETURN	
A 416B	TB1-A70	SHLD A 416	AGC SIGNAL 178 SHIELD RETURN	
A 564B	TB1-A70	SHLD A 564	AGC SIGNAL 178 SHIELD RETURN	
* A 306G	TB1-A71	J09- 45	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR	
* CC273L	TB1-A71	J20-H4	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR	
TB 40	TB1-A72	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS	
* A 306R	TB1-A72	J09- 80	800 CPS 28 V 1 PCT HI OPTICS	
* A 402R	TB1-A72	P09-125	800 CPS 28 V 1 PCT HI OPTICS	
* CC172W	TB1-A72	J16-P5	800 CPS 28 V 1 PCT HI OPTICS	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR D	SHEET 94	

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 274R	TB1-A73	P08- 27	800 CPS 28 V 1 PCT HI OPTICS
* A 275R	TB1-A73	P08- 30	800 CPS 28 V 1 PCT HI OPTICS
* CC273W	TB1-A73	J20-G6	800 CPS 28 V 1 PCT HI OPTICS
* TB 40	TB1-A73	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS
* A 272R	TB1-A74	P08- 21	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 273R	TB1-A74	P08- 24	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 394R	TB1-A74	P09-103	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* CC174R	TB1-A74	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 165N	TB1-A75	J08- 95	400 CPS 26 V LO
* A 418R	TB1-A75	P10- 49	400 CPS 26 V LO
* A 165G	TB1-A76	J08- 66	MDV SLEW CONTROL 1.5 V 400 CPS
* A 315G	TB1-A76	J09- 66	MDV SLEW CONTROL 1.5 V 400 CPS
* A 165R	TB1-A77	J08- 68	400 CPS 26 V MDV RSVR EXC
* A 315R	TB1-A77	J09- 68	400 CPS 26 V MDV RSVR EXC
* A 165Y	TB1-A78	J08- 81	400 CPS 26 V SLEW
* A 315Y	TB1-A78	J09- 81	400 CPS 26 V SLEW
TB 2	TB1-B 1	TB1-B 2	400 CPS 6 V LO
* A 8Y	TB1-B 1	J01- 29	400 CPS 6 V LO
* A 28Y	TB1-B 1	J02- 29	400 CPS 6 V LO
* A 48Y	TB1-B 1	J03- 29	400 CPS 6 V LO
TB 2	TB1-B 2	TB1-B 3	400 CPS 6 V LO
* A 67Y	TB1-B 2	J04- 29	400 CPS 6 V LO
* A 85Y	TB1-B 2	J05- 29	400 CPS 6 V LO
* A 420R	TB1-B 2	P10- 93	400 CPS 6 V LO
* TB 2	TB1-B 2	TB1-B 1	400 CPS 6 V LO
TB 2	TB1-B 3	TB1-B 4	400 CPS 6 V LO
* A 123Y	TB1-B 3	J06-107	400 CPS 6 V LO
* A 225Y	TB1-B 3	P05- 44	400 CPS 6 V LO
* TB 2	TB1-B 3	TB1-B 2	400 CPS 6 V LO
AA 7	TB1-B 4	TB1-D 3	0 VDC IMU
* A 282Y	TB1-B 4	P08- 54	400 CPS 6 V LO
* A 283Y	TB1-B 4	P08- 57	400 CPS 6 V LO
* A 420Y	TB1-B 4	P10- 94	400 CPS 6 V LO
* TB 2	TB1-B 4	TB1-B 3	400 CPS 6 V LO
* A 178Y	TB1-B 5	P02-B	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
* CC160W	TB1-B 5	J16-P4	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
* A 5Y	TB1-B 6	J01- 12	ZEROING RSVR 800 CPS
* A 25Y	TB1-B 6	J02- 12	ZEROING RSVR 800 CPS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR D	SHEET 95	

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 45Y	TB1-B 6	J03- 12	ZEROING RSVR 800 CPS
* CC160K	TB1-B 6	J16-R4	ZEROING RSVR 800 CPS
TB 12	TB1-B 7	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
* A 126Y	TB1-B 7	P01- 10	800 CPS 28 V 1 PCT LO IMU
* A 340Y	TB1-B 7	P09- 12	800 CPS 28 V 1 PCT LO IMU
* CC160R	TB1-B 7	J16-S3	800 CPS 28 V 1 PCT LO IMU
* A 1Y	TB1-B 8	J01- 14	800 CPS 28 V 1 PCT LO IMU
* A 21Y	TB1-B 8	J02- 14	800 CPS 28 V 1 PCT LO IMU
* A 41Y	TB1-B 8	J03- 14	800 CPS 28 V 1 PCT LO IMU
* TB 12	TB1-B 8	TB1-B 7	800 CPS 28 V 1 PCT LO IMU
* A 261Y	TB1-B10	P07-J*	0 VDC IMU
* CC 65W	TB1-B10	J11-G2	0 VDC IMU
* A 261R	TB1-B11	P07-H*	IG ADA
* CC 65R	TB1-B11	J11-F1	IG ADA
A 23B	TB1-B12	SHLD A 23	0 VDC IMU
A 185B	TB1-B12	SHLD A 185	0 VDC IMU
A 347B	TB1-B12	SHLD A 347	0 VDC IMU
CC328B	TB1-B12	SHLD CC328	0 VDC IMU
TB 14	TB1-B12	TB1-C12	0 VDC IMU
* TB 14	TB1-B12	TB1-A12	0 VDC IMU
* A 23R	TB1-B13	J02- 20	COS AMG 1X S3
* A 185R	TB1-B13	P02-L	COS AMG 1X S3
* A 347R	TB1-B13	P09- 25	COS AMG 1X S3
* CC328W	TB1-B13	J22- 16	COS AMG 1X S3
* A 23Y	TB1-B14	J02- 6	COS AMG 1X S1
* A 185Y	TB1-B14	P02-M	COS AMG 1X S1
* A 347Y	TB1-B14	P09- 44	COS AMG 1X S1
* CC328R	TB1-B14	J22- 32	COS AMG 1X S1
* A 24R	TB1-B15	J02- 21	SIN AMG 1X RET
* A 186Y	TB1-B15	P02-N	SIN AMG 1X RET S2
* A 346R	TB1-B15	P09- 42	SIN AMG 1X RET
* CC327W	TB1-B15	J22- 15	SIN AMG 1X RET
* A 24Y	TB1-B16	J02- 7	SIN AMG 1X
* A 186R	TB1-B16	P02-P	SIN AMG 1X S4
* A 346Y	TB1-B16	P09- 24	SIN AMG 1X
* CC327R	TB1-B16	J22- 14	SIN AMG 1X
A 24B	TB1-B17	SHLD A 24	0 VDC IMU
A 186B	TB1-B17	SHLD A 186	0 VDC IMU

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR D	SHEET 96	

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 346B	TB1-B17	SHLD A 346	0 VDC IMU	
	CC327B	TB1-B17	SHLD CC327	0 VDC IMU	
	TB 15	TB1-B17	TB1-C17	0 VDC IMU	
*	AA 1	TB1-B17	TB1-A12	0 VDC IMU	
*	TB 15	TB1-B17	TB1-A17	0 VDC IMU	
*	A 84Y	TB1-B18	J05- 12	TRUNNION CDU 1/2X RSVR P2	
*	CC252W	TB1-B18	J19-P2	TRUNNION CDU 1/2X RSVR P2	
*	A 84G	TB1-B19	J05- 11	TRUNNION CDU 1/2X RSVR P1 AND P3	
*	A 84R	TB1-B19	J05- 25	TRUNNION CDU 1/2X RSVR P3	
*	CC252R	TB1-B19	J19-P1	TRUNNION CDU 1/2X RSVR P3	
	TB 17	TB1-B21	TB1-B22	CONDITION LAMPS COMMON	
*	A 146	TB1-B21	J08- 17	SPARE FAIL LIGHT 3 LO	
*	A 148	TB1-B21	J08- 19	GIMBAL LOCK LIGHT LO	
*	A 149	TB1-B21	J08- 28	SPARE FAIL LIGHT 2 LO	
	TB 17	TB1-B22	TB1-B23	CONDITION LAMPS COMMON	
*	A 151	TB1-B22	J08- 30	ZERO ENCODER LIGHT LO	
*	A 163	TB1-B22	J08- 61	IMU FAIL LIGHT LO	
*	A 167	TB1-B22	J08- 70	SPARE FAIL LIGHT 1 LO	
*	TB 17	TB1-B22	TB1-B21	CONDITION LAMPS COMMON	
*	A 173	TB1-B23	J08- 83	CDU FAIL LIGHT LO	
*	A 174	TB1-B23	J08- 84	ACCEL FAIL LIGHT LO	
*	A 292	TB1-B23	J09- 99	CONDITION LAMPS COMMON	
*	TB 17	TB1-B23	TB1-B22	CONDITION LAMPS COMMON	
*	A 170	TB1-B24	J08- 73	ACCEL FAIL LIGHT HI	
*	A 473Y	TB1-B24	J10- 5	ACCEL FAIL LIGHT HI	303
*	A 164Y	TB1-B25	J08- 63	IMU TEMP CONT FAIL LIGHT LO	
*	A 591	TB1-B25	J09- 38	IMU TEMP CONT FAIL LIGHT LO	
*	A 164R	TB1-B26	J08- 62	IMU TEMP CONT FAIL LIGHT HI	
*	A 386	TB1-B26	P09- 86	IMU TEMP CONT FAIL LIGHT HI	
*	CC197	TB1-B26	J17-P5	IMU TEMP CONT FAIL LIGHT HI	
*	A 195N	TB1-B28	P03-W	IMU MG ERROR SIG	
*	A 390R	TB1-B28	P09-112	IMU MG ERROR SIG	
*	CC 68R	TB1-B28	J11-A5	IMU MG ERROR SIG	
*	A 55Y	TB1-B29	J03- 57	OG CDU 1/2X ERROR SIG LO	
*	CC145R	TB1-B29	J16-F5	OG CDU 1/2X ERROR SIG LO	
*	A 35Y	TB1-B30	J02- 57	MG CDU 1/2X ERROR SIG LO	
*	CC138R	TB1-B30	J16-F3	MG CDU 1/2X ERROR SIG LO	
*	A 15Y	TB1-B31	J01- 57	IG CDU 1/2X ERROR SIG LO	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC133R	TB1-B31	J16-F1	IG CDU 1/2X ERROR SIG LO
*	A 95R	TB1-B33	J05-108	TRUNNION CDU ENCODER PHASE 2
*	CC202R	TB1-B33	J17-A8	TRUNNION CDU ENCODER PHASE 2
	A 95B	TB1-B34	SHLD A 95	TRUNNION CDU ENCODER COMMON
*	A 95Y	TB1-B34	J05- 94	TRUNNION CDU ENCODER COMMON
*	CC202W	TB1-B34	J17-A7	TRUNNION CDU ENCODER COMMON
*	A 95G	TB1-B35	J05-107	TRUNNION CDU ENCODER PHASE 1
*	CC202L	TB1-B35	J17-A6	TRUNNION CDU ENCODER PHASE 1
	TB 23	TB1-B36	TB1-C36	0 VDC OPTICS
*	AA 3	TB1-B36	TB1-A39	0 VDC OPTICS
*	TB 23	TB1-B36	TB1-A36	0 VDC OPTICS
	TB 24	TB1-B39	TB1-C39	0 VDC OPTICS
*	AA 4	TB1-B39	TB1-A42	0 VDC OPTICS
*	TB 24	TB1-B39	TB1-A39	0 VDC OPTICS
*	A 391G	TB1-B40	P09- 95	X PIP ERROR MONITOR
*	CC 97	TB1-B40	J13-D2	X PIP ERROR MONITOR
*	A 391N	TB1-B41	P09-114	0 VDC IMU
*	CC 89	TB1-B41	J12-B5	0 VDC IMU
	A 92B	TB1-B42	SHLD A 92	0 VDC OPTICS
	A 240B	TB1-B42	SHLD A 240	0 VDC OPTICS
	CC234B	TB1-B42	SHLD CC234	0 VDC OPTICS
	TB 25	TB1-B42	TB1-C42	0 VDC OPTICS
*	AA 5	TB1-B42	TB1-A47	0 VDC OPTICS
*	TB 25	TB1-B42	TB1-A42	0 VDC OPTICS
*	A 92R	TB1-B43	J05-101	TRUNNION CDU 16X RSVR P4
*	A 240R	TB1-B43	P05- 91	SXT TRUNNION 64X RSVR S2
*	CC234R	TB1-B43	J18-C1	SXT TRUNNION 64X RSVR S2
*	A 92Y	TB1-B44	J05- 87	TRUNNION CDU 16X RSVR P2
*	A 240Y	TB1-B44	P05- 90	SXT TRUNNION 64X RSVR S4
*	CC234W	TB1-B44	J18-C2	SXT TRUNNION 64X RSVR S4
*	A 75R	TB1-B45	J04- 87	SHAFT CDU 16X RSVR P2
*	A 234R	TB1-B45	P05- 79	SXT SHAFT 16X RSVR S2
*	CC219R	TB1-B45	J18-A3	SXT SHAFT 16X RSVR S2
*	A 75Y	TB1-B46	J04-101	SHAFT CDU 16X RSVR P4
*	A 234Y	TB1-B46	P05- 78	SXT SHAFT 16X RSVR S4
*	CC219W	TB1-B46	J18-A2	SXT SHAFT 16X RSVR S4
	A 75B	TB1-B47	SHLD A 75	0 VDC OPTICS
	A 234B	TB1-B47	SHLD A 234	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC219B	TB1-B47	SHLD CC219	0 VDC OPTICS	
	TB 26	TB1-B47	TB1-C47	0 VDC OPTICS	
*	AA 6	TB1-B47	TB1-A67	0 VDC OPTICS	
*	TB 26	TB1-B47	TB1-A47	0 VDC OPTICS	
*	A 99R	TB1-B48	J06- 81	ATTIT CONT MODE COMMAND FROM AGC	
*	A 474G	TB1-B48	J10- 12	ATTIT CONT MODE COMMAND FROM AGC	314
	A 130B	TB1-B49	SHLD A 130	STRUCTURE GROUND	
	A 475B	TB1-B49	SHLD A 475	STRUCTURE GROUND	
	A 476B	TB1-B49	SHLD A 476	STRUCTURE GROUND	
*	CC132	TB1-B49	J15-K3	STRUCTURE GROUND	
*	TB 27	TB1-B49	TB1-A49	STRUCTURE GROUND	
*	A 127R	TB1-B50	P01- 13	FINE ALIGN MODE COMMAND FROM AGC	
*	A 475R	TB1-B50	J10- 24	FINE ALIGN MODE COMMAND FROM AGC	310
*	A 177	TB1-B51	J08-106	STEP-UP-R	
*	A 330	TB1-B51	J09-106	STEP-UP-R	
*	A 171	TB1-B52	J08- 78	STEP-UP-C	
*	A 322	TB1-B52	J09- 78	STEP-UP-C	
*	A 6	TB1-B53	J01- 15	+28 VDC CDU NOT LOCK	
*	A 26	TB1-B53	J02- 15	+28 VDC CDU NOT LOCK	
*	A 46	TB1-B53	J03- 15	+28 VDC CDU NOT LOCK	
*	CC129	TB1-B53	J15-R6	+28 VDC CDU NOT LOCK	
*	A 481	TB1-B56	J10- 9	AGC FAIL SIG	326
*	CC 84	TB1-B56	J12-M3	AGC FAIL SIG	
*	A 313Y	TB1-B57	J09- 58	0 DEG OFFSET RELAY COMMAND	
*	CC223W	TB1-B57	J18-P2	0 DEG OFFSET RELAY COMMAND	
*	A 313R	TB1-B58	J09- 59	25 DEG OFFSET RELAY COMMAND	
*	CC223R	TB1-B58	J18-R2	25 DEG OFFSET RELAY COMMAND	
*	A 286G	TB1-B59	J09- 70	COMPUTER RELAY COMMAND	
*	A 472G	TB1-B59	J10- 67	COMPUTER RELAY COMMAND	331
*	CC225W	TB1-B59	J18-P3	COMPUTER RELAY COMMAND	
*	A 286Y	TB1-B60	J09- 72	ZERO OPTICS MODE COMMAND	
*	A 472Y	TB1-B60	J10- 65	ZERO OPTICS MODE COMMAND	316
*	CC225R	TB1-B60	J18-P1	ZERO OPTICS MODE COMMAND	
*	A 413Y	TB1-B61	P10- 15	AUTOMATIC MARK COMMAND	
*	CC276W	TB1-B61	J20-F2	AUTOMATIC MARK COMMAND	
	AA 8	TB1-B62	TB1-D 4	0 VDC IMU	
	TB 33	TB1-B62	TB1-C62	0 VDC IMU	
*	A 358	TB1-B62	P09- 48	0 VDC IMU	

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SCALE - NONE
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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 372	TB1-B62	P09- 68	0 VDC IMU
*	A 337Y	TB1-B63	P09- 29	+32, +120 VDC RET PIP
*	CC206W	TB1-B63	J17-L4	+32, +120 VDC RET PIP
*	A 405	TB1-B64	P09-129	HTR CURRENT (TELEMETRY)
*	CC196	TB1-B64	J17-F3	HTR CURRENT (TELEMETRY)
*	A 218Y	TB1-B65	P05- 18	TRACKER X REFERENCE
*	A 499Y	TB1-B65	P13- 36	TRACKER X REFERENCE
*	A 218R	TB1-B66	P05- 17	TRACKER X REFERENCE
*	A 499R	TB1-B66	P13- 35	TRACKER X REFERENCE
	A 218B	TB1-B67	SHLD A 218	0 VDC OPTICS
	A 499B	TB1-B67	SHLD A 499	0 VDC OPTICS
	AA 9	TB1-B67	TB1-D76	0 VDC OPTICS
	TB 34	TB1-B67	TB1-C67	0 VDC OPTICS
*	A 215	TB1-B67	P05- 9	0 VDC OPTICS
*	TB 34	TB1-B67	TB1-A67	0 VDC OPTICS
	A 573	TB1-B68	TB1-C68	0 VDC IMU
	AA 10	TB1-B68	TB1-C62	0 VDC IMU
	TB 35	TB1-B68	TB1-B69	0 VDC IMU
*	A 512	TB1-B68	P11-D	0 VDC IMU
*	CC 75	TB1-B68	J11-R3	0 VDC IMU
	TB 35	TB1-B69	TB1-B70	0 VDC IMU
*	A 542	TB1-B69	P12-E	0 VDC IMU
*	CC211	TB1-B69	J17-S3	0 VDC IMU
*	TB 35	TB1-B69	TB1-B68	0 VDC IMU
	A 578	TB1-B70	TB1-D73	0 VDC IMU
	AA 11	TB1-B70	TB1-K20	0 VDC IMU
*	A 516	TB1-B70	P11-F	0 VDC IMU
*	CC212	TB1-B70	J17-S4	0 VDC IMU
*	TB 35	TB1-B70	TB1-B69	0 VDC IMU
*	A 229	TB1-B71	P05- 68	+28 VDC OPTICS TRACKER POWER
*	A 328	TB1-B71	J09- 96	+28 VDC OPTICS TRACKER POWER
*	A 594R	TB1-B71	P13- 38	+28 VDC OPTICS TRACKER POWER
*	CC280	TB1-B71	J20-N4	+28 VDC OPTICS TRACKER POWER
	TB 41	TB1-B72	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
*	A 306Y	TB1-B72	J09- 69	800 CPS 28 V 1 PCT LO OPTICS
*	A 402Y	TB1-B72	P09-124	800 CPS 28 V 1 PCT LO OPTICS
*	CC172R	TB1-B72	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
*	A 274Y	TB1-B73	P08- 28	800 CPS 28 V 1 PCT LO OPTICS

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015087
SCALE - NONE
REV LTR D
SHEET 100

MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 275Y	TB1-B73	P08- 31	800 CPS 28 V 1 PCT LO OPTICS
* CC273R	TB1-B73	J20-G5	800 CPS 28 V 1 PCT LO OPTICS
* TB 41	TB1-B73	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS
* A 272Y	TB1-B74	P08- 22	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 273Y	TB1-B74	P08- 25	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 394Y	TB1-B74	P09-102	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* CC174W	TB1-B74	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
* A 154Y	TB1-B75	J08- 36	400 CPS 6 V LO
* A 418Y	TB1-B75	P10- 95	400 CPS 6 V LO
* A 154R	TB1-B76	J08- 55	PROJECTION LAMP HI INTENSITY
* A 307R	TB1-B76	J09- 55	PROJECTION LAMP HI INTENSITY
* A 154G	TB1-B77	J08- 46	PROJECTION LAMP LO INTENSITY
* A 307Y	TB1-B77	J09- 46	PROJECTION LAMP LO INTENSITY
* A 419R	TB1-B78	P10- 69	400 CPS 115 V HI
* A 526R	TB1-B78	P11-N	400 CPS 115 V HI
* CC311R	TB1-B78	J20-N3	400 CPS 115 V HI
TB 3	TB1-C 1	TB1-C 2	400 CPS 6 V HI
* A 143G	TB1-C 1	P01-106	400 CPS 6 V HI
* A 420G	TB1-C 1	P10-107	400 CPS 6 V HI
* A 143N	TB1-C 2	P01- 90	400 CPS 6 V HI
* A 420N	TB1-C 2	P10-108	400 CPS 6 V HI
* TB 3	TB1-C 2	TB1-C 1	400 CPS 6 V HI
* A 144	TB1-C 3	P01- 91	MODE LAMP TEST PWR
* A 312Y	TB1-C 3	J09- 84	MODE LAMP TEST PWR
* A 153	TB1-C 4	J08- 32	MASTER CAUTION LIGHT HI
* A 161	TB1-C 4	J08- 54	MASTER WARNING LIGHT HI
* CC326	TB1-C 4	J22- 41	+28 VDC SPACECRAFT
* A 259Y	TB1-C10	P07-C*	Z PIP ERROR LO
* CC105W	TB1-C10	J14-A2	Z PIP ERROR LO
* A 259R	TB1-C11	P07-B*	Z PIP ERROR HI
* CC105R	TB1-C11	J14-A1	Z PIP ERROR HI
TB 14	TB1-C12	TB1-D12	0 VDC IMU
* TB 14	TB1-C12	TB1-B12	0 VDC IMU
* A 196R	TB1-C14	P03-D	COS AOG 1X S3
* A 348R	TB1-C14	P09- 45	COS AOG 1X S3
* CC143W	TB1-C14	J16-B8	COS AOG 1X S3
* A 43Y	TB1-C15	J03- 6	COS AOG 1X S1
* A 196Y	TB1-C15	P03-E	COS AOG 1X S1

MANNED
SPACECRAFT
CENTER
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SIZE A

1015087

SCALE - NONE
REV LTR D
SHEET 101

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 348Y	TB1-C15	P09- 27	COS AOG 1X S1
* CC143R	TB1-C15	J16-C8	COS AOG 1X S1
* A 43R	TB1-C16	J03- 20	COS AOG 1X TO CDU
* CC143L	TB1-C16	J16-C9	COS AOG 1X TO CDU
A 43B	TB1-C17	SHLD A 43	0 VDC IMU
A 196B	TB1-C17	SHLD A 196	0 VDC IMU
A 348B	TB1-C17	SHLD A 348	0 VDC IMU
CC143B	TB1-C17	SHLD CC143	0 VDC IMU
TB 15	TB1-C17	TB1-D17	0 VDC IMU
* TB 15	TB1-C17	TB1-B17	0 VDC IMU
* A 206R	TB1-C18	P03-Y	OG TORQUE MOTOR HI
* A 250R	TB1-C18	P06-H	OG TORQUE MOTOR HI
* A 398R	TB1-C18	P09-131	OG TORQUE MOTOR HI
* CC 71R	TB1-C18	J11-H6	OG TORQUE MOTOR HI
* A 206Y	TB1-C19	P03-X	OG TORQUE MOTOR RET
* A 250Y	TB1-C19	P06-J	OG TORQUE MOTOR RET
* A 398Y	TB1-C19	P09-109	OG TORQUE MOTOR RET
* CC 71W	TB1-C19	J11-H5	OG TORQUE MOTOR RET
* A 257R	TB1-C21	P07-C	Z GYRO TORQUE -
* CC109R	TB1-C21	J14-M6	Z GYRO TORQUE -
* A 257W	TB1-C22	P07-B	Z GYRO TORQUE RET
* CC109W	TB1-C22	J14-N6	Z GYRO TORQUE RET
* A 257L	TB1-C23	P07-A	Z GYRO TORQUE +
* CC109L	TB1-C23	J14-L6	Z GYRO TORQUE +
A 257B	TB1-C24	SHLD A 257	0 VDC IMU
CC109B	TB1-C24	SHLD CC109	0 VDC IMU
TB 18	TB1-C24	TB1-D24	0 VDC IMU
* AA 2	TB1-C24	TB1-A17	0 VDC IMU
* A 159R	TB1-C25	J08- 52	G+N ERROR LIGHT LO
* A 590	TB1-C25	J09- 62	G+N ERROR LIGHT LO
* A 159Y	TB1-C26	J08- 51	G+N ERROR LIGHT HI
* A 384	TB1-C26	P09- 84	G+N ERROR LIGHT HI
* CC 86	TB1-C26	J12-L2	G+N ERROR LIGHT HI
* A 195G	TB1-C28	P03-U	IMU IG AND Y GYRO ERROR SIG
* A 390G	TB1-C28	P09- 94	IMU IG AND Y GYRO ERROR SIG
* CC 68W	TB1-C28	J11-B6	IMU IG AND Y GYRO ERROR SIG
* A 60R	TB1-C29	J03-106	OG CDU MDA TACH SIG
* CC153R	TB1-C29	J16-A5	OG CDU MDA TACH SIG

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 60B	TB1-C30	SHLD A 60	OG CDU MDA INPUT RET
* A 60Y	TB1-C30	J03- 92	OG CDU MDA INPUT RET
* CC153L	TB1-C30	J16-B5	OG CDU MDA INPUT RET
* A 60G	TB1-C31	J03-105	OG CDU MDA SLEW SIG
* CC153W	TB1-C31	J16-A6	OG CDU MDA SLEW SIG
* A 61R	TB1-C33	J03-108	OG CDU ENCODER PHASE 2
* CC119R	TB1-C33	J15-C3	OG CDU ENCODER PHASE 2
A 61B	TB1-C34	SHLD A 61	OG CDU ENCODER COMMON
* A 61Y	TB1-C34	J03- 94	OG CDU ENCODER COMMON
* CC119W	TB1-C34	J15-D3	OG CDU ENCODER COMMON
* A 61G	TB1-C35	J03-107	OG CDU ENCODER PHASE 1
* CC119L	TB1-C35	J15-D4	OG CDU ENCODER PHASE 1
A 94B	TB1-C36	SHLD A 94	0 VDC OPTICS
CC258B	TB1-C36	SHLD CC258	0 VDC OPTICS
TB 23	TB1-C36	TB1-D36	0 VDC OPTICS
* TB 23	TB1-C36	TB1-B36	0 VDC OPTICS
* A 94R	TB1-C37	J05-106	TRUNNION CDU TACHOMETER HI
* CC258R	TB1-C37	J19-A6	TRUNNION CDU TACHOMETER HI
* A 94Y	TB1-C38	J05- 92	TRUNNION CDU TACHOMETER LO
* CC258W	TB1-C38	J19-B6	TRUNNION CDU TACHOMETER LO
TB 24	TB1-C39	TB1-D39	0 VDC OPTICS
* TB 24	TB1-C39	TB1-B39	0 VDC OPTICS
* A 93Y	TB1-C40	J05-104	TRUNNION CDU 16X RSVR S2
* CC256W	TB1-C40	J19-B5	TRUNNION CDU 16X RSVR S2
* A 93R	TB1-C41	J05- 90	TRUNNION CDU 16X RSVR S3
* CC256R	TB1-C41	J19-B4	TRUNNION CDU 16X RSVR S3
A 83B	TB1-C42	SHLD A 83	0 VDC OPTICS
A 93B	TB1-C42	SHLD A 93	0 VDC OPTICS
A 224B	TB1-C42	SHLD A 224	0 VDC OPTICS
CC230B	TB1-C42	SHLD CC230	0 VDC OPTICS
CC256B	TB1-C42	SHLD CC256	0 VDC OPTICS
TB 25	TB1-C42	TB1-D42	0 VDC OPTICS
* TB 25	TB1-C42	TB1-B42	0 VDC OPTICS
* A 83Y	TB1-C43	J05- 10	TRUNNION CDU 1/4X RSVR S4
* A 224Y	TB1-C43	P05- 40	SXT TRUNNION 1X RSVR S2
* CC230W	TB1-C43	J18-D1	TRUNNION CDU 1/4X RSVR S4
* A 83R	TB1-C44	J05- 9	TRUNNION CDU 1/4X RSVR S2
* A 224R	TB1-C44	P05- 41	SXT TRUNNION 1X RSVR S4

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
* CC230R	TB1-C44	J18-F1	TRUNNION CDU 1/4X RSVR S2	
* A 72R	TB1-C45	J04- 56	SHAFT CDU 1/2X RSVR S2	
* A 211R	TB1-C45	P05- 3	SXT SHAFT 1/2X RSVR S2	
* A 72Y	TB1-C46	J04- 66	SHAFT CDU 1/2X RSVR S4	
* A 211Y	TB1-C46	P05- 2	SXT SHAFT 1/2X RSVR S4	
A 72B	TB1-C47	SHLD A 72	0 VDC OPTICS	
A 211B	TB1-C47	SHLD A 211	0 VDC OPTICS	
TB 26	TB1-C47	TB1-D47	0 VDC OPTICS	
* TB 26	TB1-C47	TB1-B47	0 VDC OPTICS	
* A 130Y	TB1-C48	P01- 27	CDU MANUAL MODE COMMAND FROM AGC	
* A 476Y	TB1-C48	J10- 23	CDU MANUAL MODE COMMAND FROM AGC	309
* A 130R	TB1-C49	P01- 58	ENTRY MODE COMMAND FROM AGC	
* A 476R	TB1-C49	J10- 25	ENTRY MODE COMMAND FROM AGC	311
* A 127Y	TB1-C50	P01- 38	ZERO ENCODER MODE COMMAND FROM AGC	
* A 475Y	TB1-C50	J10- 21	ZERO ENCODER MODE COMMAND FROM AGC	307
* A 49	TB1-C51	J03- 30	+28 VDC IMU FOR OG MDA	
* CC151	TB1-C51	J16-T2	+28 VDC IMU FOR OG MDA	
* A 29	TB1-C52	J02- 30	+28 VDC IMU FOR MG MDA	
* CC150	TB1-C52	J16-T1	+28 VDC IMU FOR MG MDA	
* A 9	TB1-C53	J01- 30	+28 VDC IMU FOR IG MDA	
* CC149	TB1-C53	J16-S1	+28 VDC IMU FOR IG MDA	
* A 247	TB1-C54	P06-F	-28 VDC	
* A 370	TB1-C54	P09- 66	-28 VDC	
* CC 66	TB1-C54	J11-N6	-28 VDC	
* A 113Y	TB1-C56	J06- 68	AGC COMMON (ISS)	
* A 134Y	TB1-C56	P01- 68	AGC COMMON (ISS)	
* CC173W	TB1-C56	J16-B7	AGC COMMON (ISS)	
* CC332W	TB1-C56	J24- 26	AGC COMMON (ISS)	165
* A 388N	TB1-C57	P09- 90	MG CDU FAILURE INDICATION	
* CC175L	TB1-C57	J16-M3	MG CDU FAILURE INDICATION	
* A 388G	TB1-C58	P09- 89	IG CDU FAILURE INDICATION	
* CC175K	TB1-C58	J16-M2	IG CDU FAILURE INDICATION	
A 254B	TB1-C59	SHLD A 254	0 VDC IMU	
A 255B	TB1-C59	SHLD A 255	0 VDC IMU	
CC190B	TB1-C59	SHLD CC190	0 VDC IMU	
CC192B	TB1-C59	SHLD CC192	0 VDC IMU	
TB 32	TB1-C59	TB1-D59	0 VDC IMU	
* A 254R	TB1-C60	P06-X	IMU EMERGENCY HTR HI	

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CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* CC190W	TB1-C60	J17-M4	IMU EMERGENCY HTR HI
* A 254Y	TB1-C61	P06-R	EMERGENCY HTR LO-OPER AND STBY
* CC190R	TB1-C61	J17-N4	EMERGENCY HTR LO-OPER AND STBY
* A 297	TB1-C62	J09- 26	0 VDC IMU
* A 411	TB1-C62	P10- 13	0 VDC IMU
* AA 10	TB1-C62	TB1-B68	0 VDC IMU
* TB 33	TB1-C62	TB1-B62	0 VDC IMU
* A 337G	TB1-C63	P09- 28	+32 VDC PIP
* CC206L	TB1-C63	J17-T5	+32 VDC PIP
* A 404	TB1-C64	P09-128	TEMPERATURE CONTROL SIG LO
* CC205	TB1-C64	J17-F2	TEMPERATURE CONTROL SIG LO
* A 232Y	TB1-C65	P05- 73	TRACKER AUTOMATIC GAIN CONTROL LO
* A 490Y	TB1-C65	P13- 9	TRACKER AUTOMATIC GAIN CONTROL LO
* A 232R	TB1-C66	P05- 72	TRACKER AUTOMATIC GAIN CONTROL HI
* A 490R	TB1-C66	P13- 1	TRACKER AUTOMATIC GAIN CONTROL HI
A 232B	TB1-C67	SHLD A 232	0 VDC OPTICS
A 490B	TB1-C67	SHLD A 490	0 VDC OPTICS
TB 34	TB1-C67	TB1-D67	0 VDC OPTICS
* A 222	TB1-C67	P05- 37	0 VDC OPTICS
* TB 34	TB1-C67	TB1-B67	0 VDC OPTICS
TB 36	TB1-C68	TB1-C69	0 VDC IMU
* A 543	TB1-C68	P12-F	0 VDC IMU
* A 573	TB1-C68	TB1-B68	0 VDC IMU
* CC 92	TB1-C68	J12-R4	0 VDC IMU
* CC322	TB1-C68	J20-K2	0 VDC IMU
TB 36	TB1-C69	TB1-C70	0 VDC IMU
* A 513	TB1-C69	P11-E	0 VDC IMU
* CC 78	TB1-C69	J11-R1	0 VDC IMU
* CC 91	TB1-C69	J12-R3	0 VDC IMU
* TB 36	TB1-C69	TB1-C68	0 VDC IMU
A 577	TB1-C70	TB1-F73	0 VDC IMU
* A 539	TB1-C70	P12-D	0 VDC IMU
* CC 74	TB1-C70	J11-R2	0 VDC IMU
* CC 90	TB1-C70	J12-R2	0 VDC IMU
* TB 36	TB1-C70	TB1-C69	0 VDC IMU
* A 331	TB1-C71	J09-108	+28 VDC OPTICS DAC POWER
* CC224	TB1-C71	J18-T3	+28 VDC OPTICS DAC POWER
* A 241R	TB1-C72	P06-C	800 CPS 28 V 5 PCT IMU WHEELS PHASE B

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 349R	TB1-C72	P09- 33	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
* CC 81R	TB1-C72	J12-P2	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
* A 241Y	TB1-C73	P06-B	800 CPS 28 V 5 PCT IMU WHEELS LO
* A 349Y	TB1-C73	P09- 50	800 CPS 28 V 5 PCT IMU WHEELS LO
* CC 81W	TB1-C73	J12-R1	800 CPS 28 V 5 PCT IMU WHEELS LO
* A 241G	TB1-C74	P06-A	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
* A 349G	TB1-C74	P09- 32	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
* CC 81L	TB1-C74	J12-P1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
* A 341R	TB1-C75	P09- 13	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* CC183W	TB1-C75	J17-R4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* CC285R	TB1-C75	J20-L6	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 248Y	TB1-C76	P06-G*	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 341Y	TB1-C76	P09- 14	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* CC285W	TB1-C76	J20-L5	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 248R	TB1-C77	P06-F*	800 CPS 28 V 5 PCT HI TO BLOWERS
* CC183R	TB1-C77	J17-P4	800 CPS 28 V 5 PCT HI TO BLOWERS
* A 419Y	TB1-C78	P10- 68	400 CPS 115 V LO
* A 526Y	TB1-C78	P11-K	400 CPS 115 V LO
* CC311W	TB1-C78	J20-M3	400 CPS 115 V LO
* A 2R	TB1-D 1	J01- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 22R	TB1-D 1	J02- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 42R	TB1-D 1	J03- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* CC 88R	TB1-D 1	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 2Y	TB1-D 2	J01- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 22Y	TB1-D 2	J02- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 42Y	TB1-D 2	J03- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* CC 88W	TB1-D 2	J12-K4	800 CPS 28 V 5 PCT L-90 DEG LO IMU
TB 6	TB1-D 3	TB1-D 4	0 VDC IMU
* A 115	TB1-D 3	J06- 78	0 VDC IMU
* A 137	TB1-D 3	P01- 78	0 VDC IMU
* AA 7	TB1-D 3	TB1-B 4	0 VDC IMU
* A 175	TB1-D 4	J08- 92	0 VDC IMU
* AA 8	TB1-D 4	TB1-B62	0 VDC IMU
* TB 6	TB1-D 4	TB1-D 3	0 VDC IMU
TB 9	TB1-D 5	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
* A 62R	TB1-D 5	J04- 1	800 CPS 28 V 1 PCT HI OPTICS
* A 79R	TB1-D 5	J05- 1	800 CPS 28 V 1 PCT HI OPTICS
* CC161W	TB1-D 5	J16-P5	800 CPS 28 V 1 PCT HI OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
TB 9	TB1-D 6	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
* A 208R	TB1-D 6	P04- 3	800 CPS 28 V 1 PCT HI OPTICS
* A 217R	TB1-D 6	P05- 12	800 CPS 28 V 1 PCT HI OPTICS
* TB 9	TB1-D 6	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS
* A 220R	TB1-D 7	P05- 32	800 CPS 28 V 1 PCT HI OPTICS
* A 231R	TB1-D 7	P05- 71	800 CPS 28 V 1 PCT HI OPTICS
* A 237R	TB1-D 7	P05- 84	800 CPS 28 V 1 PCT HI OPTICS
* TB 9	TB1-D 7	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
* A 63R	TB1-D 8	J04- 5	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 80R	TB1-D 8	J05- 5	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 233R	TB1-D 8	P05- 76	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* CC162R	TB1-D 8	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 258Y	TB1-D10	P07-A*	Y PIP ERROR LO
* CC 98W	TB1-D10	J13-B3	Y PIP ERROR LO
* A 258R	TB1-D11	P07-Z	Y PIP ERROR HI
* CC 98R	TB1-D11	J13-A3	Y PIP ERROR HI
TB 14	TB1-D12	TB1-F12	0 VDC IMU
* TB 14	TB1-D12	TB1-C12	0 VDC IMU
* A 198Y	TB1-D14	P03-G	SIN AOG 1X S2
* A 334R	TB1-D14	P09- 26	SIN AOG 1X S2
* CC144W	TB1-D14	J16-A8	SIN AOG 1X S2
* A 44Y	TB1-D15	J03- 7	SIN AOG 1X S4
* A 198R	TB1-D15	P03-F	SIN AOG 1X S4
* A 334Y	TB1-D15	P09- 4	SIN AOG 1X S4
* CC144R	TB1-D15	J16-A9	SIN AOG 1X S4
* A 44R	TB1-D16	J03- 21	SIN AOG 1X TO CDU
* CC144L	TB1-D16	J16-B9	SIN AOG 1X TO CDU
A 44B	TB1-D17	SHLD A 44	0 VDC IMU
A 198B	TB1-D17	SHLD A 198	0 VDC IMU
A 334B	TB1-D17	SHLD A 334	0 VDC IMU
CC144B	TB1-D17	SHLD CC144	0 VDC IMU
TB 15	TB1-D17	TB1-F17	0 VDC IMU
* TB 15	TB1-D17	TB1-C17	0 VDC IMU
* A 192R	TB1-D18	P03-Z	MG TORQUE MOTOR HI
* A 194R	TB1-D18	P03-C*	MG TORQUE MOTOR HI
* A 399R	TB1-D18	P09-132	MG TORQUE MOTOR HI
* CC 70R	TB1-D18	J11-F6	MG TORQUE MOTOR HI
* A 192Y	TB1-D19	P03-A*	MG TORQUE MOTOR RET

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 194Y	TB1-D19	P03-B*	MG TORQUE MOTOR RET
* A 399Y	TB1-D19	P09-110	MG TORQUE MOTOR RET
* CC 70W	TB1-D19	J11-G6	MG TORQUE MOTOR RET
* A 262R	TB1-D21	P07-J	Y GYRO TORQUE -
* CC108R	TB1-D21	J14-M2	Y GYRO TORQUE -
* A 262W	TB1-D22	P07-H	Y GYRO TORQUE RET
* CC108W	TB1-D22	J14-M3	Y GYRO TORQUE RET
* A 262L	TB1-D23	P07-G	Y GYRO TORQUE +
* CC108L	TB1-D23	J14-M1	Y GYRO TORQUE +
A 262B	TB1-D24	SHLD A 262	0 VDC IMU
A 567	TB1-D24	TB1-D59	0 VDC IMU
CC108B	TB1-D24	SHLD CC108	0 VDC IMU
TB 18	TB1-D24	TB1-F24	0 VDC IMU
* TB 18	TB1-D24	TB1-C24	0 VDC IMU
* A 168Y	TB1-D25	J08- 82	AGC POWER SUPPLY FAIL LIGHT LO
* A 592	TB1-D25	J09- 39	AGC POWER SUPPLY FAIL LIGHT LO
* A 168R	TB1-D26	J08- 71	AGC POWER SUPPLY FAIL SIG HI
* A 371	TB1-D26	P09- 67	AGC POWER SUPPLY FAIL SIG HI
* CC 85	TB1-D26	J12-M1	AGC POWER SUPPLY FAIL SIG HI
* A 195Y	TB1-D28	P03-V	IMU GIMBAL AND GYRO ERROR SIG LO
* A 390N	TB1-D28	P09- 93	IMU GIMBAL AND GYRO ERROR SIG LO
* CC 68K	TB1-D28	J11-B5	IMU GIMBAL AND GYRO ERROR SIG LO
* CC130R	TB1-D28	J15-B2	IMU GIMBAL AND GYRO ERROR SIG LO
* A 39R	TB1-D29	J02-106	MG CDU MDA TACH SIG
* CC141R	TB1-D29	J16-A3	MG CDU MDA TACH SIG
A 39B	TB1-D30	SHLD A 39	MG CDU MDA INPUT RET
* A 39Y	TB1-D30	J02- 92	MG CDU MDA INPUT RET
* CC141L	TB1-D30	J16-B3	MG CDU MDA INPUT RET
* A 39G	TB1-D31	J02-105	MG CDU MDA SLEW SIG
* CC141W	TB1-D31	J16-A4	MG CDU MDA SLEW SIG
* A 40R	TB1-D33	J02-108	MG CDU ENCODER PHASE 2
* CC118R	TB1-D33	J15-D2	MG CDU ENCODER PHASE 2
A 40B	TB1-D34	SHLD A 40	MG CDU ENCODER COMMON
* A 40Y	TB1-D34	J02- 94	MG CDU ENCODER COMMON
* CC118W	TB1-D34	J15-F2	MG CDU ENCODER COMMON
* A 40G	TB1-D35	J02-107	MG CDU ENCODER PHASE 1
* CC118L	TB1-D35	J15-F1	MG CDU ENCODER PHASE 1
A 221B	TB1-D36	SHLD A 221	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC233B	TB1-D36	SHLD CC233	0 VDC OPTICS
	TB 23	TB1-D36	TB1-F36	0 VDC OPTICS
*	TB 23	TB1-D36	TB1-C36	0 VDC OPTICS
*	A 221R	TB1-D37	P05- 34	SXT TRUNNION TACH HI
*	CC233R	TB1-D37	J18-A9	SXT TRUNNION TACH HI
*	A 221Y	TB1-D38	P05- 35	SXT TRUNNION TACH LO
*	CC233W	TB1-D38	J18-B9	SXT TRUNNION TACH LO
	A 81B	TB1-D39	SHLD A 81	0 VDC OPTICS
	CC255B	TB1-D39	SHLD CC255	0 VDC OPTICS
	TB 24	TB1-D39	TB1-F39	0 VDC OPTICS
*	TB 24	TB1-D39	TB1-C39	0 VDC OPTICS
*	A 81R	TB1-D40	J05- 17	TRUNNION CDU 1/4X RSVR P2
*	CC255R	TB1-D40	J19-C5	TRUNNION CDU 1/4X RSVR P2
*	A 81Y	TB1-D41	J05- 4	TRUNNION CDU 1/4X RSVR P3
*	CC255W	TB1-D41	J19-C6	TRUNNION CDU 1/4X RSVR P3
	A 82B	TB1-D42	SHLD A 82	0 VDC OPTICS
	A 223B	TB1-D42	SHLD A 223	0 VDC OPTICS
	CC229B	TB1-D42	SHLD CC229	0 VDC OPTICS
	TB 25	TB1-D42	TB1-F42	0 VDC OPTICS
*	TB 25	TB1-D42	TB1-C42	0 VDC OPTICS
*	A 82R	TB1-D43	J05- 22	TRUNNION CDU 1/4X RSVR S3
*	A 223R	TB1-D43	P05- 38	SXT TRUNNION 1X RSVR S3
*	CC229R	TB1-D43	J18-F3	TRUNNION CDU 1/4X RSVR S3
*	A 82Y	TB1-D44	J05- 8	TRUNNION CDU 1/4X RSVR S1
*	A 223Y	TB1-D44	P05- 39	SXT TRUNNION 1X RSVR S1
*	CC229W	TB1-D44	J18-F2	TRUNNION CDU 1/4X RSVR S1
*	A 73R	TB1-D45	J04- 57	SHAFT CDU 1/2X RSVR S1
*	A 213R	TB1-D45	P05- 6	SXT SHAFT 1/2X RSVR S1
*	CC218R	TB1-D45	J18-B1	SXT SHAFT 1/2X RSVR S1
*	A 73Y	TB1-D46	J04- 67	SHAFT CDU 1/2X RSVR S3
*	A 213Y	TB1-D46	P05- 7	SXT SHAFT 1/2X RSVR S3
*	CC218W	TB1-D46	J18-A1	SXT SHAFT 1/2X RSVR S3
	A 73B	TB1-D47	SHLD A 73	0 VDC OPTICS
	A 213B	TB1-D47	SHLD A 213	0 VDC OPTICS
	CC218B	TB1-D47	SHLD CC218	0 VDC OPTICS
	TB 26	TB1-D47	TB1-F47	0 VDC OPTICS
*	TB 26	TB1-D47	TB1-C47	0 VDC OPTICS
*	A 68N	TB1-D49	J04- 44	CDU SHAFT MDA TUNING CAPACITOR

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC268L	TB1-D49	J19-N2	CDU SHAFT MDA TUNING CAPACITOR
*	A 86N	TB1-D50	J05- 44	CDU TRUNNION MDA TUNING CAPACITOR
*	CC257L	TB1-D50	J19-N1	CDU TRUNNION MDA TUNING CAPACITOR
*	A 393	TB1-D51	P09- 98	TRAY 3 THERMISTER HI
*	CC104	TB1-D51	J13-C1	TRAY 3 THERMISTER HI
*	A 382	TB1-D52	P09- 80	TRAY 4 THERMISTER HI
*	CC111	TB1-D52	J14-B1	TRAY 4 THERMISTER HI
	A 113B	TB1-D56	SHLD A 113	AGC SIGNAL 178 SHIELD RETURN
	A 134B	TB1-D56	SHLD A 134	AGC SIGNAL 178 SHIELD RETURN
	CC173B	TB1-D56	SHLD CC173	AGC SIGNAL 178 SHIELD RETURN
	CC332B	TB1-D56	SHLD CC332	AGC SIGNAL 178 SHIELD RETURN
*	A 388R	TB1-D57	P09-130	OG CDU FAILURE INDICATION
*	CC175R	TB1-D57	J16-N3	OG CDU FAILURE INDICATION
*	A 388Y	TB1-D58	P09-108	0 VDC IMU
*	CC175W	TB1-D58	J16-R2	0 VDC IMU
	AA 12	TB1-D59	TB1-F74	0 VDC IMU
*	A 567	TB1-D59	TB1-D24	0 VDC IMU
*	CC176	TB1-D59	J16-P2	0 VDC IMU
*	TB 32	TB1-D59	TB1-C59	0 VDC IMU
*	A 255R	TB1-D60	P06-V	IMU CONTROL HTR HI
*	CC192R	TB1-D60	J17-P1	IMU CONTROL HTR HI
*	A 255Y	TB1-D61	P06-W	IMU CONTROL HTR LO
*	CC192W	TB1-D61	J17-N1	IMU CONTROL HTR LO
*	A 256	TB1-D62	P06-Y	EMERG HTR CONT MODULE LO
*	A 321R	TB1-D62	J09- 90	EMERG HTR CONT MODULE LO
*	A 321Y	TB1-D63	J09- 76	IMU TEMP CONT K2 PIN 6
*	CC189W	TB1-D63	J17-L1	IMU TEMP CONT K2 PIN 6
*	A 403	TB1-D64	P09-127	IRIG TEMP (TELEMETRY)
*	CC195	TB1-D64	J17-F4	IRIG TEMP (TELEMETRY)
*	A 228Y	TB1-D65	P05- 65	TRACKER PREAMP OUTPUT LO
*	A 491Y	TB1-D65	P13- 10	TRACKER PREAMP OUTPUT LO
*	A 228R	TB1-D66	P05- 64	TRACKER PREAMP OUTPUT HI
*	A 491R	TB1-D66	P13- 2	TRACKER PREAMP OUTPUT HI
	A 228B	TB1-D67	SHLD A 228	0 VDC OPTICS
	A 491B	TB1-D67	SHLD A 491	0 VDC OPTICS
	TB 34	TB1-D67	TB1-F67	0 VDC OPTICS
*	TB 34	TB1-D67	TB1-C67	0 VDC OPTICS
*	A 245R	TB1-D68	P06-D*	IMU PRESSURE MONITOR HI

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 381R	TB1-D68	P09- 79	IMU PRESSURE MONITOR HI	
*	CC286R	TB1-D68	J20-A4	IMU PRESSURE MONITOR HI	
*	A 245Y	TB1-D69	P06-E*	IMU PRESSURE MONITOR LO	
*	A 381Y	TB1-D69	P09- 78	IMU PRESSURE MONITOR LO	
*	CC286W	TB1-D69	J20-B4	IMU PRESSURE MONITOR LO	
*	A 296	TB1-D70	J09- 15	0 VDC SPACECRAFT	
*	A 408	TB1-D70	P10- 9	0 VDC SPACECRAFT	
*	CC200	TB1-D70	J17-M3	0 VDC SPACECRAFT	
	TB 38	TB1-D71	TB1-D72	CONDITION LAMP TEST	
*	A 141	TB1-D71	P01- 88	CONDITION LAMP TEST	
*	A 562	TB1-D71	J23- 48	CONDITION LAMP TEST	157T
*	CC181	TB1-D71	J17-P6	CONDITION LAMP TEST	
*	A 318	TB1-D72	J09- 73	CONDITION LAMP TEST	
*	A 409	TB1-D72	P10- 10	CONDITION LAMP TEST	
*	A 477	TB1-D72	J10- 2	CONDITION LAMP TEST	328
*	TB 38	TB1-D72	TB1-D71	CONDITION LAMP TEST	
	AA 13	TB1-D73	TB1-F73	0 VDC IMU	
	AA 14	TB1-D73	TB1-G20	0 VDC IMU	
	TB 42	TB1-D73	TB1-D74	0 VDC IMU	
*	A 540	TB1-D73	P12-D	0 VDC IMU	
*	A 578	TB1-D73	TB1-B70	0 VDC IMU	
	AA 15	TB1-D74	TB1-H25	0 VDC IMU	
	TB 42	TB1-D74	TB1-D75	0 VDC IMU	
*	A 514	TB1-D74	P11-E	0 VDC IMU	
*	CC210	TB1-D74	J17-S2	0 VDC IMU	
*	TB 42	TB1-D74	TB1-D73	0 VDC IMU	
	A 583	TB1-D75	TB1-F75	0 VDC IMU	
	AA 16	TB1-D75	TB1-K25	0 VDC IMU	
*	A 544	TB1-D75	P12-F	0 VDC IMU	
*	CC209	TB1-D75	J17-S1	0 VDC IMU	
*	TB 42	TB1-D75	TB1-D74	0 VDC IMU	
	A 586	TB1-D76	TB1-K67	0 VDC OPTICS	
	TB 44	TB1-D76	TB1-D77	0 VDC OPTICS	
*	A 594Y	TB1-D76	P13- 30	0 VDC OPTICS	
*	AA 9	TB1-D76	TB1-B67	0 VDC OPTICS	
*	CC213	TB1-D76	J17-S6	0 VDC OPTICS	
	AA 17	TB1-D77	TB1-F77	0 VDC OPTICS	
	TB 44	TB1-D77	TB1-D78	0 VDC OPTICS	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 335	TB1-D77	P09- 5	0 VDC OPTICS
*	CC240	TB1-D77	J18-R6	0 VDC OPTICS
*	TB 44	TB1-D77	TB1-D76	0 VDC OPTICS
*	A 230	TB1-D78	P05- 69	0 VDC OPTICS
*	A 545	TB1-D78	P12-G	0 VDC OPTICS
*	CC272	TB1-D78	J19-R3	0 VDC OPTICS
*	CC323	TB1-D78	J20-P3	0 VDC OPTICS
*	TB 44	TB1-D78	TB1-D77	0 VDC OPTICS
	TB 10	TB1-F 5	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
*	A 62Y	TB1-F 5	J04- 14	800 CPS 28 V 1 PCT LO OPTICS
*	A 79Y	TB1-F 5	J05- 14	800 CPS 28 V 1 PCT LO OPTICS
*	CC161R	TB1-F 5	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
	TB 10	TB1-F 6	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS
*	A 208Y	TB1-F 6	P04- 4	800 CPS 28 V 1 PCT LO OPTICS
*	A 217G	TB1-F 6	P05- 14	800 CPS 28 V 1 PCT LO OPTICS
*	A 217Y	TB1-F 6	P05- 13	800 CPS 28 V 1 PCT LO OPTICS
*	TB 10	TB1-F 6	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS
*	A 220Y	TB1-F 7	P05- 55	800 CPS 28 V 1 PCT LO OPTICS
*	A 231Y	TB1-F 7	P05- 70	800 CPS 28 V 1 PCT LO OPTICS
*	A 237Y	TB1-F 7	P05- 85	800 CPS 28 V 1 PCT LO OPTICS
*	TB 10	TB1-F 7	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
*	A 63Y	TB1-F 8	J04- 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 80Y	TB1-F 8	J05- 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 233Y	TB1-F 8	P05- 77	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	CC162W	TB1-F 8	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 266Y	TB1-F10	P07-Y	X PIP ERROR LO
*	CC 95W	TB1-F10	J13-B1	X PIP ERROR LO
*	A 266R	TB1-F11	P07-X	X PIP ERROR HI
*	CC 95R	TB1-F11	J13-A1	X PIP ERROR HI
	A 205B	TB1-F12	SHLD A 205	0 VDC IMU
	CC201B	TB1-F12	SHLD CC201	0 VDC IMU
	TB 14	TB1-F12	TB1-G12	0 VDC IMU
*	TB 14	TB1-F12	TB1-D12	0 VDC IMU
*	A 205R	TB1-F13	P03-R	PITCH-YAW RSVR S4
*	CC201R	TB1-F13	J17-C2	PITCH-YAW RSVR S4
*	A 180Y	TB1-F14	P02-D	COS AOG 16X S1
*	CC148R	TB1-F14	J16-D7	COS AOG 16X S1
*	A 56R	TB1-F15	J03-100	COS AOG 16X S3

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 180R	TB1-F15	P02-C	COS AOG 16X S3
*	CC148W	TB1-F15	J16-F7	COS AOG 16X S3
*	A 56Y	TB1-F16	J03- 86	COS AOG 16X TO CDU
*	CC148L	TB1-F16	J16-F8	COS AOG 16X TO CDU
	A 56B	TB1-F17	SHLD A 56	0 VDC IMU
	A 180B	TB1-F17	SHLD A 180	0 VDC IMU
	CC148B	TB1-F17	SHLD CC148	0 VDC IMU
	TB 15	TB1-F17	TB1-G17	0 VDC IMU
*	TB 15	TB1-F17	TB1-D17	0 VDC IMU
*	A 197R	TB1-F18	P03-D*	IG TORQUE MOTOR HI
*	A 199R	TB1-F18	P03-G*	IG TORQUE MOTOR HI
*	A 389R	TB1-F18	P09- 92	IG TORQUE MOTOR HI
*	CC 69R	TB1-F18	J11-D6	IG TORQUE MOTOR HI
*	A 197Y	TB1-F19	P03-E*	IG TORQUE MOTOR RET
*	A 199Y	TB1-F19	P03-F*	IG TORQUE MOTOR RET
*	A 389Y	TB1-F19	P09- 91	IG TORQUE MOTOR RET
*	CC 69W	TB1-F19	J11-D5	IG TORQUE MOTOR RET
*	A 260R	TB1-F21	P07-F	X GYRO TORQUE -
*	CC101R	TB1-F21	J13-G6	X GYRO TORQUE -
*	A 260W	TB1-F22	P07-E	X GYRO TORQUE RET
*	CC101W	TB1-F22	J13-F6	X GYRO TORQUE RET
*	A 260L	TB1-F23	P07-D	X GYRO TORQUE +
*	CC101L	TB1-F23	J13-D6	X GYRO TORQUE +
	A 260B	TB1-F24	SHLD A 260	0 VDC IMU
	CC101B	TB1-F24	SHLD CC101	0 VDC IMU
	TB 18	TB1-F24	TB1-G24	0 VDC IMU
*	TB 18	TB1-F24	TB1-D24	0 VDC IMU
	A 379B	TB1-F27	SHLD A 379	0 VDC IMU
	A 380B	TB1-F27	SHLD A 380	0 VDC IMU
	TB 21	TB1-F27	TB1-G27	0 VDC IMU
*	A 193Y	TB1-F28	P03-B	Z GYRO ERROR SIG
*	A 379Y	TB1-F28	P09- 75	Z GYRO ERROR SIG
*	CC130W	TB1-F28	J15-A1	Z GYRO ERROR SIG
*	A 19R	TB1-F29	J01-106	IG CDU MDA TACH SIG
*	CC136R	TB1-F29	J16-A1	IG CDU MDA TACH SIG
	A 19B	TB1-F30	SHLD A 19	IG CDU MDA INPUT RET
*	A 19Y	TB1-F30	J01- 92	IG CDU MDA INPUT RET
*	CC136L	TB1-F30	J16-B1	IG CDU MDA INPUT RET

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 19G	TB1-F31	J01-105	IG CDU MDA SLEW SIG
*	CC136W	TB1-F31	J16-A2	IG CDU MDA SLEW SIG
	A 59B	TB1-F32	SHLD A 59	OG CDU ERROR SIG RET
	A 338B	TB1-F32	SHLD A 338	OG CDU ERROR SIG RET
	TB 22	TB1-F32	TB1-G32	OG CDU ERROR SIG RET
*	A 571	TB1-F32	TB1-G30	OG CDU ERROR SIG RET
*	A 20R	TB1-F33	J01-108	IG CDU ENCODER PHASE 2
*	CC117R	TB1-F33	J15-D1	IG CDU ENCODER PHASE 2
	A 20B	TB1-F34	SHLD A 20	IG CDU ENCODER COMMON
*	A 20Y	TB1-F34	J01- 94	IG CDU ENCODER COMMON
*	CC117W	TB1-F34	J15-C1	IG CDU ENCODER COMMON
*	A 20G	TB1-F35	J01-107	IG CDU ENCODER PHASE 1
*	CC117L	TB1-F35	J15-C2	IG CDU ENCODER PHASE 1
	A 276B	TB1-F36	SHLD A 276	0 VDC OPTICS
	CC261B	TB1-F36	SHLD CC261	0 VDC OPTICS
	TB 23	TB1-F36	TB1-G36	0 VDC OPTICS
*	TB 23	TB1-F36	TB1-D36	0 VDC OPTICS
*	A 276R	TB1-F37	P08- 33	SCT TRUNNION TACH HI
*	CC261R	TB1-F37	J19-A1	SCT TRUNNION TACH HI
*	A 276Y	TB1-F38	P08- 34	SCT TRUNNION TACH LO
*	CC261W	TB1-F38	J19-B1	SCT TRUNNION TACH LO
	A 271B	TB1-F39	SHLD A 271	0 VDC OPTICS
	CC259B	TB1-F39	SHLD CC259	0 VDC OPTICS
	TB 24	TB1-F39	TB1-G39	0 VDC OPTICS
*	TB 24	TB1-F39	TB1-D39	0 VDC OPTICS
*	A 271Y	TB1-F40	P08- 18	SCT TRUNNION 1X RSVR S2
*	CC259W	TB1-F40	J19-C1	SCT TRUNNION 1X RSVR S2
*	A 271R	TB1-F41	P08- 19	SCT TRUNNION 1X RSVR S4
*	CC259R	TB1-F41	J19-C2	SCT TRUNNION 1X RSVR S4
	A 269B	TB1-F42	SHLD A 269	0 VDC OPTICS
	CC231B	TB1-F42	SHLD CC231	0 VDC OPTICS
	TB 25	TB1-F42	TB1-G42	0 VDC OPTICS
*	TB 25	TB1-F42	TB1-D42	0 VDC OPTICS
*	A 269Y	TB1-F43	P08- 10	SCT TRUNNION 1X RSVR P4
*	CC231W	TB1-F43	J18-F5	SCT TRUNNION 1X RSVR P4
*	A 269R	TB1-F44	P08- 9	SCT TRUNNION 1X RSVR P2
*	CC231R	TB1-F44	J18-F4	SCT TRUNNION 1X RSVR P2
*	A 227Y	TB1-F45	P05- 54	SXT SHAFT 1X RSVR S3

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 280Y	TB1-F45	P08- 45	SCT SHAFT 1X RSVR P1
*	A 227R	TB1-F46	P05- 53	SXT SHAFT 1X RSVR S1
*	A 280R	TB1-F46	P08- 44	SCT SHAFT 1X RSVR P3
	A 227B	TB1-F47	SHLD A 227	0 VDC OPTICS
	A 280B	TB1-F47	SHLD A 280	0 VDC OPTICS
	TB 26	TB1-F47	TB1-G47	0 VDC OPTICS
*	TB 26	TB1-F47	TB1-D47	0 VDC OPTICS
*	A 69G	TB1-F48	J04- 35	SHAFT CDU 1X RSVR S2
*	CC264L	TB1-F48	J19-P3	SHAFT CDU 1X RSVR S2
*	A 69R	TB1-F49	J04- 45	SHAFT CDU 1X RSVR S3
*	CC264R	TB1-F49	J19-P4	SHAFT CDU 1X RSVR S3
*	A 69Y	TB1-F50	J04- 34	SHAFT CDU 1X RSVR S1
*	CC264W	TB1-F50	J19-P5	SHAFT CDU 1X RSVR S1
*	A 401	TB1-F51	P09-116	TRAY 2 THERMISTER HI
*	CC 87	TB1-F51	J12-C1	TRAY 2 THERMISTER HI
*	A 392	TB1-F52	P09- 97	THERMISTER LO
*	CC112	TB1-F52	J14-B2	THERMISTER LO
*	CC331	TB1-F52	J23- 57	THERMISTER LO
	AA 18	TB1-F56	TB1-F76	0 VDC OPTICS
	TB 30	TB1-F56	TB1-F57	0 VDC OPTICS
*	A 493Y	TB1-F56	P13- 13	TRACKER X DRIVE BUFFERED LO
*	A 494Y	TB1-F56	P13- 14	TRACKER Y DRIVE BUFFERED LO
*	CC270	TB1-F56	J19-L6	0 VDC OPTICS
*	A 362	TB1-F57	P09- 56	0 VDC OPTICS
*	A 495Y	TB1-F57	P13- 7	TRACKER PREAMP OUTPUT BUFFERED LO
*	TB 30	TB1-F57	TB1-F56	0 VDC OPTICS
*	A 353	TB1-F58	P09- 40	SCT TRUNNION TACH FEEDBACK BUFFERED
*	CC246	TB1-F58	J19-M6	SCT TRUNNION TACH FEEDBACK BUFFERED
*	A 320	TB1-F59	J09- 75	IMU TEMP ALARM AMP PIN 14
*	CC188	TB1-F59	J17-G1	IMU TEMP ALARM AMP PIN 14
*	A 319R	TB1-F60	J09- 74	IMU TEMP ALARM AMP PIN 15
*	CC187R	TB1-F60	J17-G2	IMU TEMP ALARM AMP PIN 15
*	A 319G	TB1-F61	J09-105	IMU TEMP ALARM BIAS RESISTOR
*	CC187L	TB1-F61	J17-H1	IMU TEMP ALARM BIAS RESISTOR
*	A 319Y	TB1-F62	J09- 92	IMU TEMP ALARM AMP PIN 5
*	CC187W	TB1-F62	J17-H2	IMU TEMP ALARM AMP PIN 5
*	A 321G	TB1-F63	J09- 94	TEMPERATURE CONTROLLER 0 VDC IMU
*	CC189R	TB1-F63	J17-M1	TEMPERATURE CONTROLLER 0 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 396	TB1-F64	P09-106	ACCEL TEMP (TELEMETRY)
*	CC194	TB1-F64	J17-F5	ACCEL TEMP (TELEMETRY)
*	A 496Y	TB1-F65	P13- 23	TRACKER Y ERROR LO
*	CC275W	TB1-F65	J20-D7	TRACKER Y ERROR LO
*	A 496R	TB1-F66	P13- 31	TRACKER Y ERROR HI
*	CC275R	TB1-F66	J20-D6	TRACKER Y ERROR HI
	A 302B	TB1-F67	SHLD A 302	0 VDC OPTICS
	A 496B	TB1-F67	SHLD A 496	0 VDC OPTICS
	TB 34	TB1-F67	TB1-G67	0 VDC OPTICS
*	TB 34	TB1-F67	TB1-D67	0 VDC OPTICS
*	A 302R	TB1-F68	J09- 34	SCT TRUNNION TRACKER MODE INPUT HI
*	CC262R	TB1-F68	J19-D3	SCT TRUNNION TRACKER MODE INPUT HI
*	A 302Y	TB1-F69	J09- 35	SCT TRUNNION TRACKER MODE INPUT LO
*	CC262W	TB1-F69	J19-D2	SCT TRUNNION TRACKER MODE INPUT LO
*	A 369R	TB1-F70	P09- 65	+2.5 VDC CONDITIONING LO
*	CC309W	TB1-F70	J20-F1	+2.5 VDC CONDITIONING LO
*	A 369Y	TB1-F71	P09- 81	+2.5 VDC CONDITIONING HI
*	CC309R	TB1-F71	J20-D1	+2.5 VDC CONDITIONING HI
*	A 383Y	TB1-F72	P09- 83	0 VDC CONDITIONING
*	CC294W	TB1-F72	J20-G1	0 VDC CONDITIONING
	TB 43	TB1-F73	TB1-F74	0 VDC IMU
*	A 515	TB1-F73	P11-F	0 VDC IMU
*	A 577	TB1-F73	TB1-C70	0 VDC IMU
*	AA 13	TB1-F73	TB1-D73	0 VDC IMU
*	CC321	TB1-F73	J20-K1	0 VDC IMU
	AA 19	TB1-F74	TB1-H24	0 VDC IMU
	TB 43	TB1-F74	TB1-F75	0 VDC IMU
*	A 541	TB1-F74	P12-E	0 VDC IMU
*	AA 12	TB1-F74	TB1-D59	0 VDC IMU
*	TB 43	TB1-F74	TB1-F73	0 VDC IMU
*	A 511	TB1-F75	P11-D	0 VDC IMU
*	A 583	TB1-F75	TB1-D75	0 VDC IMU
*	CC177	TB1-F75	J16-R2	0 VDC IMU
*	CC320	TB1-F75	J20-H1	0 VDC IMU
*	TB 43	TB1-F75	TB1-F74	0 VDC IMU
	TB 45	TB1-F76	TB1-F77	0 VDC OPTICS
*	A 593	TB1-F76	J09- 83	0 VDC OPTICS
*	AA 18	TB1-F76	TB1-F56	0 VDC OPTICS

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SCALE - NONE
REV LTR D
SHEET 116

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC208	TB1-F76	J17-R6	0 VDC OPTICS
	TB 45	TB1-F77	TB1-F78	0 VDC OPTICS
*	A 285	TB1-F77	J09- 1	0 VDC OPTICS
*	AA 17	TB1-F77	TB1-D77	0 VDC OPTICS
*	CC241	TB1-F77	J18-R4	0 VDC OPTICS
*	TB 45	TB1-F77	TB1-F76	0 VDC OPTICS
*	A 517	TB1-F78	P11-G	0 VDC OPTICS
*	CC271	TB1-F78	J19-R1	0 VDC OPTICS
*	CC324	TB1-F78	J20-P4	0 VDC OPTICS
*	TB 45	TB1-F78	TB1-F77	0 VDC OPTICS
	TB 4	TB1-G 1	TB1-H 1	25.6 KC HI IMU
*	A 14R	TB1-G 1	J01- 50	25.6 KC HI IMU
*	A 34R	TB1-G 1	J02- 50	25.6 KC HI IMU
*	CC 83R	TB1-G 1	J12-N4	25.6 KC HI IMU
	TB 5	TB1-G 2	TB1-H 2	0 VDC IMU
*	A 14Y	TB1-G 2	J01- 60	25.6 KC LO IMU
*	A 34Y	TB1-G 2	J02- 60	25.6 KC LO IMU
*	CC 83W	TB1-G 2	J12-P5	25.6 KC LO IMU
*	A 104Y	TB1-G 3	J06- 24	ATTITUDE CONTROL RELAY CONTROL
*	A 128Y	TB1-G 3	P01- 24	ATTITUDE CONTROL RELAY CONTROL
*	CC325W	TB1-G 3	J22- 42	ATTITUDE CONTROL RELAY CONTROL
	A 128B	TB1-G 4	SHLD A 128	STRUCTURE GROUND
	AA 20	TB1-G 4	TB1-G 8	STRUCTURE GROUND
	CC325B	TB1-G 4	SHLD CC325	STRUCTURE GROUND
	TB 7	TB1-G 4	TB1-H 4	STRUCTURE GROUND
*	A 128R	TB1-G 5	P01- 69	LOCK CDU RELAY CONTROL
*	CC128W	TB1-G 5	J15-S3	LOCK CDU RELAY CONTROL
*	CC325R	TB1-G 5	J22- 67	LOCK CDU RELAY CONTROL
	TB 11	TB1-G 6	TB1-G 7	+28 VDC IMU
*	A 7	TB1-G 6	J01- 16	+28 VDC IMU
*	A 27	TB1-G 6	J02- 16	+28 VDC IMU
*	A 47	TB1-G 6	J03- 16	+28 VDC IMU
*	CC103	TB1-G 6	J13-S6	+28 VDC IMU
*	A 125	TB1-G 7	P01- 7	+28 VDC IMU
*	A 201	TB1-G 7	P03-H*	+28 VDC IMU
*	CC306	TB1-G 7	J20-L1	+28 VDC IMU
*	TB 11	TB1-G 7	TB1-G 6	+28 VDC IMU
	TB 13	TB1-G 8	TB1-G 9	STRUCTURE GROUND

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MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 117	TB1-G 8	J06- 91	STRUCTURE GROUND
*	A 140	TB1-G 8	P01- 84	STRUCTURE GROUND
*	A 150	TB1-G 8	J08- 29	STRUCTURE GROUND
*	AA 20	TB1-G 8	TB1-G 4	STRUCTURE GROUND
	TB 13	TB1-G 9	TB1-G10	STRUCTURE GROUND
*	A 13	TB1-G 9	J01- 41	STRUCTURE GROUND
*	A 33	TB1-G 9	J02- 41	STRUCTURE GROUND
*	TB 13	TB1-G 9	TB1-G 8	STRUCTURE GROUND
	TB 13	TB1-G10	TB1-G11	STRUCTURE GROUND
*	A 53	TB1-G10	J03- 41	STRUCTURE GROUND
*	A 70	TB1-G10	J04- 41	STRUCTURE GROUND
*	TB 13	TB1-G10	TB1-G 9	STRUCTURE GROUND
*	A 87	TB1-G11	J05- 41	STRUCTURE GROUND
*	A 210	TB1-G11	P05- 1	STRUCTURE GROUND
*	TB 13	TB1-G11	TB1-G10	STRUCTURE GROUND
	A 204B	TB1-G12	SHLD A 204	0 VDC IMU
	CC182B	TB1-G12	SHLD CC182	0 VDC IMU
	TB 14	TB1-G12	TB1-H12	0 VDC IMU
*	TB 14	TB1-G12	TB1-F12	0 VDC IMU
*	A 205Y	TB1-G13	P03-P	PITCH ERROR BODY AND BODY OFFSET AXIS LO
*	CC201W	TB1-G13	J17-C1	PITCH ERROR BODY AND BODY OFFSET AXIS LO
*	A 181R	TB1-G14	P02-E	SIN AOG 16X S2
*	CC152W	TB1-G14	J16-D8	SIN AOG 16X S2
*	A 57R	TB1-G15	J03-101	SIN AOG 16X S4
*	A 181Y	TB1-G15	P02-F	SIN AOG 16X S4
*	CC152R	TB1-G15	J16-D9	SIN AOG 16X S4
*	A 57Y	TB1-G16	J03- 87	SIN AOG 16X TO CDU
*	CC152L	TB1-G16	J16-F9	SIN AOG 16X TO CDU
	A 57B	TB1-G17	SHLD A 57	0 VDC IMU
	A 181B	TB1-G17	SHLD A 181	0 VDC IMU
	CC152B	TB1-G17	SHLD CC152	0 VDC IMU
	TB 15	TB1-G17	TB1-H17	0 VDC IMU
*	TB 15	TB1-G17	TB1-F17	0 VDC IMU
*	A 50Y	TB1-G18	J03- 32	OG CDU MDA OUTPUT
*	CC154R	TB1-G18	J16-N2	OG CDU MDA OUTPUT
*	A 50G	TB1-G19	J03- 31	OG CDU MDA OUTPUT
*	CC154W	TB1-G19	J16-N1	OG CDU MDA OUTPUT
	TB 16	TB1-G20	TB1-H20	0 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 50R	TB1-G20	J03- 43	0 VDC IMU
*	AA 14	TB1-G20	TB1-D73	0 VDC IMU
*	A 263R	TB1-G21	P07-M	Z PIP TORQUE -
*	CC106R	TB1-G21	J14-P2	Z PIP TORQUE -
*	A 263W	TB1-G22	P07-L	Z PIP TORQUE RET
*	CC106W	TB1-G22	J14-P3	Z PIP TORQUE RET
*	A 263L	TB1-G23	P07-K	Z PIP TORQUE +
*	CC106L	TB1-G23	J14-P1	Z PIP TORQUE +
	A 263B	TB1-G24	SHLD A 263	0 VDC IMU
	AA 21	TB1-G24	TB1-G27	0 VDC IMU
	CC106B	TB1-G24	SHLD CC106	0 VDC IMU
	TB 18	TB1-G24	TB1-H24	0 VDC IMU
*	TB 18	TB1-G24	TB1-F24	0 VDC IMU
	A 191B	TB1-G27	SHLD A 191	0 VDC IMU
	A 193B	TB1-G27	SHLD A 193	0 VDC IMU
*	AA 21	TB1-G27	TB1-G24	0 VDC IMU
*	TB 21	TB1-G27	TB1-F27	0 VDC IMU
*	A 191Y	TB1-G28	P03-A	X GYRO ERROR SIG
*	A 380Y	TB1-G28	P09- 76	X GYRO ERROR SIG
*	CC130L	TB1-G28	J15-B1	X GYRO ERROR SIG
*	A 58	TB1-G29	J03- 89	OG CDU 16X RSVR LOAD
*	CC158	TB1-G29	J16-C7	OG CDU 16X RSVR LOAD
	A 571	TB1-G30	TB1-F32	OG CDU ERROR SIG RET
*	A 59Y	TB1-G30	J03- 90	OG CDU ERROR SIG RET
*	A 338Y	TB1-G30	P09- 31	OG CDU ERROR SIG RET
*	CC147W	TB1-G30	J16-D6	OG CDU ERROR SIG RET
*	CC204R	TB1-G30	J17-B2	OG CDU ERROR SIG RET
*	A 59R	TB1-G31	J03-104	OG CDU 16X ERROR SIG
*	A 338R	TB1-G31	P09- 9	OG CDU 16X ERROR SIG
*	CC147R	TB1-G31	J16-C5	OG CDU 16X ERROR SIG
*	CC204W	TB1-G31	J17-A2	OG CDU 16X ERROR SIG
	A 52B	TB1-G32	SHLD A 52	OG CDU ERROR SIG RET
	A 145B	TB1-G32	SHLD A 145	OG CDU ERROR SIG RET
	A 365B	TB1-G32	SHLD A 365	OG CDU ERROR SIG RET
	CC204B	TB1-G32	SHLD CC204	OG CDU ERROR SIG RET
*	TB 22	TB1-G32	TB1-F32	OG CDU ERROR SIG RET
*	A 52R	TB1-G33	J03- 35	OG CDU 1X ERROR SIG
*	A 145R	TB1-G33	P01- 96	OG CDU 1X ERROR SIG

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 365R	TB1-G33	P09- 77	OG CDU 1X ERROR SIG
*	CC 64W	TB1-G33	J11-A3	OG CDU 1X ERROR SIG
*	CC146W	TB1-G33	J16-C6	OG CDU 1X ERROR SIG
*	A 52Y	TB1-G34	J03- 45	OG CDU ERROR SIG RET
*	A 145Y	TB1-G34	P01- 97	OG CDU ERROR SIG RET
*	A 365Y	TB1-G34	P09- 61	OG CDU ERROR SIG RET
*	CC 64R	TB1-G34	J11-B3	OG CDU ERROR SIG RET
*	CC146R	TB1-G34	J16-D6	OG CDU ERROR SIG RET
*	A 51	TB1-G35	J03- 34	OG CDU 1X RSVR LOAD
*	CC157	TB1-G35	J16-F6	OG CDU 1X RSVR LOAD
	A 77B	TB1-G36	SHLD A 77	0 VDC OPTICS
	CC269B	TB1-G36	SHLD CC269	0 VDC OPTICS
	TB 23	TB1-G36	TB1-H36	0 VDC OPTICS
*	TB 23	TB1-G36	TB1-F36	0 VDC OPTICS
*	A 77R	TB1-G37	J04-106	SHAFT CDU TACH HI
*	CC269R	TB1-G37	J19-A9	SHAFT CDU TACH HI
*	A 77Y	TB1-G38	J04- 92	SHAFT CDU TACH LO
*	CC269W	TB1-G38	J19-B9	SHAFT CDU TACH LO
	A 76B	TB1-G39	SHLD A 76	0 VDC OPTICS
	CC267B	TB1-G39	SHLD CC267	0 VDC OPTICS
	TB 24	TB1-G39	TB1-H39	0 VDC OPTICS
*	TB 24	TB1-G39	TB1-F39	0 VDC OPTICS
*	A 76Y	TB1-G40	J04-104	SHAFT CDU 16X RSVR S2
*	CC267W	TB1-G40	J19-B8	SHAFT CDU 16X RSVR S2
*	A 76R	TB1-G41	J04- 90	SHAFT CDU 16X RSVR S3
*	CC267R	TB1-G41	J19-B7	SHAFT CDU 16X RSVR S3
	A 270B	TB1-G42	SHLD A 270	0 VDC OPTICS
	CC221B	TB1-G42	SHLD CC221	0 VDC OPTICS
	TB 25	TB1-G42	TB1-H42	0 VDC OPTICS
*	TB 25	TB1-G42	TB1-F42	0 VDC OPTICS
*	A 270R	TB1-G43	P08- 12	SCT TRUNNION 1X RSVR P3
*	CC221R	TB1-G43	J18-D4	SCT TRUNNION 1X RSVR P3
*	A 270Y	TB1-G44	P08- 13	SCT TRUNNION 1X RSVR P1
*	CC221W	TB1-G44	J18-D3	SCT TRUNNION 1X RSVR P1
*	A 226Y	TB1-G45	P05- 51	SXT SHAFT 1X RSVR S4
*	A 279Y	TB1-G45	P08- 42	SCT SHAFT 1X RSVR P4
*	A 226R	TB1-G46	P05- 52	SXT SHAFT 1X RSVR S2
*	A 279R	TB1-G46	P08- 41	SCT SHAFT 1X RSVR P2

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	A 226B	TB1-G47	SHLD A 226	0 VDC OPTICS
	A 279B	TB1-G47	SHLD A 279	0 VDC OPTICS
	TB 26	TB1-G47	TB1-H47	0 VDC OPTICS
*	TB 26	TB1-G47	TB1-F47	0 VDC OPTICS
*	A 214Y	TB1-G48	P05- 36	SXT SHAFT MOTOR PHASE 1
*	CC238W	TB1-G48	J18-T5	SXT SHAFT MOTOR PHASE 1
*	A 214R	TB1-G49	P05- 8	SXT SHAFT MOTOR PHASE 2
*	CC238R	TB1-G49	J18-S5	SXT SHAFT MOTOR PHASE 2
	TB 28	TB1-G50	TB1-H50	0 VDC OPTICS
*	A 212G	TB1-G50	P05- 16	0 VDC OPTICS
*	A 214G	TB1-G50	P05- 19	0 VDC OPTICS
*	A 547	TB1-G50	P12-G	0 VDC OPTICS
*	A 212R	TB1-G51	P05- 5	SXT TRUNNION MOTOR PHASE 2
*	CC232R	TB1-G51	J18-S6	SXT TRUNNION MOTOR PHASE 2
*	A 212Y	TB1-G52	P05- 33	SXT TRUNNION MOTOR PHASE 1
*	CC232W	TB1-G52	J18-T6	SXT TRUNNION MOTOR PHASE 1
	TB 29	TB1-G53	TB1-H53	0 VDC OPTICS
*	A 546	TB1-G53	P12-G	0 VDC OPTICS
*	CC179	TB1-G53	J16-R6	0 VDC OPTICS
*	A 361	TB1-G54	P09- 55	TRACKER Y DRIVE BUFFERED HI
*	A 494R	TB1-G54	P13- 6	TRACKER Y DRIVE BUFFERED HI
*	CC227	TB1-G54	J18-C8	TRACKER Y DRIVE BUFFERED HI
*	A 360	TB1-G55	P09- 54	TRACKER X DRIVE BUFFERED HI
*	A 493R	TB1-G55	P13- 5	TRACKFR X DRIVE BUFFERED HI
*	CC226	TB1-G55	J18-C7	TRACKER X DRIVE BUFFERED HI
*	A 375	TB1-G56	P09- 71	TRACKER PREAMP OUTPUT BUFFERED HI
*	A 495R	TB1-G56	P13- 15	TRACKER PREAMP OUTPUT BUFFERED HI
*	CC228	TB1-G56	J18-C9	TRACKER PREAMP OUTPUT BUFFERED HI
*	A 342	TB1-G57	P09- 19	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
*	CC243	TB1-G57	J19-M1	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
*	A 352	TB1-G58	P09- 39	SHAFT CDU TACH FEEDBACK SIG BUFFERED
*	CC248	TB1-G58	J19-M4	SHAFT CDU TACH FEEDBACK SIG BUFFERED
*	A 325R	TB1-G59	J09-100	IMU HTR CURRENT AMP PIN 5
*	CC186K	TB1-G59	J17-N6	IMU HTR CURRENT AMP PIN 5
*	A 325N	TB1-G60	J09- 88	IMU TEMP CONT K2 PIN 5
*	CC186L	TB1-G60	J17-N5	IMU TEMP CONT K2 PIN 5
*	A 253Y	TB1-G61	P06-P	ACCEL TEMP IND SENSOR RET
*	CC185W	TB1-G61	J17-D5	ACCEL TEMP IND SENSOR RET

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 329N	TB1-G62	J09- 98	ACCEL BRIDGE AMP PIN 6	
*	CC185K	TB1-G62	J17-F7	ACCEL BRIDGE AMP PIN 6	
*	A 329R	TB1-G63	J09-104	ACCEL ZERO DEVIATION CHECK	
*	CC185R	TB1-G63	J17-D7	ACCEL ZERO DEVIATION CHECK	
*	A 329G	TB1-G64	J09-103	IMU IMU TEMP CONT +5 DEG GAIN CHECK	
*	CC185L	TB1-G64	J17-D6	IMU IMU TEMP CONT +5 DEG GAIN CHECK	
*	A 497Y	TB1-G65	P13- 24	TRACKER X ERROR LO	
*	CC274W	TB1-G65	J20-C7	TRACKER X ERROR LO	
*	A 497R	TB1-G66	P13- 32	TRACKER X ERROR HI	
*	CC274R	TB1-G66	J20-C6	TRACKER X ERROR HI	
	A 305B	TB1-G67	SHLD A 305	0 VDC OPTICS	
	A 497B	TB1-G67	SHLD A 497	0 VDC OPTICS	
	CC281B	TB1-G67	SHLD CC281	0 VDC OPTICS	
	TB 34	TB1-G67	TB1-H67	0 VDC OPTICS	
*	TB 34	TB1-G67	TB1-F67	0 VDC OPTICS	
*	A 305R	TB1-G68	J09- 43	PHOTOMETER MARK REJECT HI	
*	CC281R	TB1-G68	J20-F6	PHOTOMETER MARK REJECT HI	
*	A 305Y	TB1-G69	J09- 60	PHOTOMETER MARK REJECT LO	
*	CC281W	TB1-G69	J20-F7	PHOTOMETER MARK REJECT LO	
	TB 37	TB1-G70	TB1-H70	STRUCTURE GROUND	
*	A 249	TB1-G70	P06-G	STRUCTURE GROUND	
*	A 284	TB1-G70	P08- 59	STRUCTURE GROUND	
*	A 527	TB1-G70	P11-L	STRUCTURE GROUND	
*	CC207	TB1-G70	J17-L6	STRUCTURE GROUND	
*	A 244	TB1-G71	P06-D	+28 VDC IMU	
*	A 359	TB1-G71	P09- 49	+28 VDC IMU	
*	CC307	TB1-G71	J20-L1	+28 VDC IMU	
*	CC308	TB1-G71	J20-L2	+28 VDC IMU	
*	A 383R	TB1-G72	P09- 82	+20 VDC CONDITIONING	
*	CC294R	TB1-G72	J20-G2	+20 VDC CONDITIONING	
*	A 356	TB1-G73	P09- 46	+3 VDC AGC	
*	CC293	TB1-G73	J20-F4	+3 VDC AGC	
*	CC335	TB1-G73	J24- 6	+3 VDC AGC	175
*	A 366	TB1-G74	P09- 62	+13 VDC AGC	
*	CC292	TB1-G74	J20-D4	+13 VDC AGC	
*	CC333	TB1-G74	J24- 1	+13 VDC AGC	176
*	A 554	TB1-G75	P12-M	+28 VDC STBY BUSS B	
*	A 555	TB1-G75	P12-M	+28 VDC STBY BUSS B	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC300	TB1-G75	J20-T4	+28 VDC STBY BUSS B
*	CC317	TB1-G75	J20-S4	+28 VDC STBY BUSS B
*	A 528	TB1-G76	P11-M	+28 VDC STBY BUSS A
*	A 529	TB1-G76	P11-M	+28 VDC STBY BUSS A
*	CC299	TB1-G76	J20-T3	+28 VDC STBY BUSS A
*	CC316	TB1-G76	J20-S3	+28 VDC STBY BUSS A
*	A 548	TB1-G77	P12-H	+28 VDC OPTICS BUSS B
*	A 549	TB1-G77	P12-H	+28 VDC OPTICS BUSS B
*	CC305	TB1-G77	J20-S6	+28 VDC OPTICS BUSS B
*	CC319	TB1-G77	J20-R6	+28 VDC OPTICS BUSS B
*	A 520	TB1-G78	P11-H	+28 VDC OPTICS BUSS A
*	A 521	TB1-G78	P11-H	+28 VDC OPTICS BUSS A
*	CC302	TB1-G78	J20-T5	+28 VDC OPTICS BUSS A
*	CC318	TB1-G78	J20-R5	+28 VDC OPTICS BUSS A
*	A 54R	TB1-H 1	J03- 50	25.6 KC HI IMU
*	A 387R	TB1-H 1	P09-105	25.6 KC HI IMU
*	TB 4	TB1-H 1	TB1-G 1	25.6 KC HI IMU
*	A 54Y	TB1-H 2	J03- 60	25.6 KC LO IMU
*	A 387Y	TB1-H 2	P09- 87	25.6 KC LO IMU
*	TB 5	TB1-H 2	TB1-G 2	0 VDC IMU
*	A 128G	TB1-H 3	P01- 57	ENTRY RELAY CONTROL
*	CC159W	TB1-H 3	J16-M1	ENTRY RELAY CONTROL
	A 104B	TB1-H 4	SHLD A 104	STRUCTURE GROUND
	CC128B	TB1-H 4	SHLD CC128	STRUCTURE GROUND
	TB 7	TB1-H 4	TB1-K 4	STRUCTURE GROUND
*	CC 80	TB1-H 4	J11-L4	STRUCTURE GROUND
*	TB 7	TB1-H 4	TB1-G 4	STRUCTURE GROUND
*	A 124R	TB1-H 5	P01- 5	FINE ALIGN RELAY CONTROL
*	CC128R	TB1-H 5	J15-H4	FINE ALIGN RELAY CONTROL
*	CC325L	TB1-H 5	J22- 68	FINE ALIGN RELAY CONTROL
*	A 187Y	TB1-H 7	P02-S	3200 CPS 2 V LO
*	CC 67R	TB1-H 7	J11-M2	3200 CPS 2 V LO
*	CC 67W	TB1-H 7	J11-L2	3200 CPS 2 V LO
*	A 188Y	TB1-H 8	P02-U	3200 CPS 2 V FEEDBACK LO
*	A 374Y	TB1-H 8	P09- 88	3200 CPS 2 V FEEDBACK LO
*	CC 73W	TB1-H 8	J11-G3	3200 CPS 2 V FEEDBACK LO
*	A 183Y	TB1-H 9	P02-H	COS AMG 16X S1
*	CC164R	TB1-H 9	J16-H3	COS AMG 16X S1

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 36R	TB1-H10	J02-100	COS AMG 16X S3
*	A 183R	TB1-H10	P02-G	COS AMG 16X S3
*	CC164W	TB1-H10	J16-G3	COS AMG 16X S3
*	A 36Y	TB1-H11	J02- 86	COS AMG 16X TO CDU
*	CC164L	TB1-H11	J16-G4	COS AMG 16X TO CDU
	A 36B	TB1-H12	SHLD A 36	0 VDC IMU
	A 183B	TB1-H12	SHLD A 183	0 VDC IMU
	A 188B	TB1-H12	SHLD A 188	0 VDC IMU
	AA 22	TB1-H12	TB1-K17	0 VDC IMU
	CC164B	TB1-H12	SHLD CC164	0 VDC IMU
	TB 14	TB1-H12	TB1-K12	0 VDC IMU
*	TB 14	TB1-H12	TB1-G12	0 VDC IMU
*	A 204R	TB1-H13	P03-N	PITCH YAW RSVR S3
*	CC182R	TB1-H13	J17-D2	PITCH YAW RSVR S3
*	A 189Y	TB1-H14	P02-X	COS AIG 16X S1
*	CC163R	TB1-H14	J16-H1	COS AIG 16X S1
*	A 16R	TB1-H15	J01-100	COS AIG 16X S3
*	A 189R	TB1-H15	P02-W	COS AIG 16X S3
*	CC163W	TB1-H15	J16-G1	COS AIG 16X S3
*	A 16Y	TB1-H16	J01- 86	COS AIG 16X TO CDU
*	CC163L	TB1-H16	J16-G2	COS AIG 16X TO CDU
	A 16B	TB1-H17	SHLD A 16	0 VDC IMU
	A 189B	TB1-H17	SHLD A 189	0 VDC IMU
	AA 23	TB1-H17	TB1-K24	0 VDC IMU
	CC163B	TB1-H17	SHLD CC163	0 VDC IMU
	TB 15	TB1-H17	TB1-K17	0 VDC IMU
*	TB 15	TB1-H17	TB1-G17	0 VDC IMU
*	A 30Y	TB1-H18	J02- 32	MG CDU MDA OUTPUT
*	CC142R	TB1-H18	J16-P3	MG CDU MDA OUTPUT
*	A 30G	TB1-H19	J02- 31	MG CDU MDA OUTPUT
*	CC142W	TB1-H19	J16-R3	MG CDU MDA OUTPUT
	TB 16	TB1-H20	TB1-K20	0 VDC IMU
*	A 30R	TB1-H20	J02- 43	0 VDC IMU
*	TB 16	TB1-H20	TB1-G20	0 VDC IMU
*	A 264R	TB1-H21	P07-R	Y PIP TORQUE -
*	CC 99R	TB1-H21	J13-N3	Y PIP TORQUE -
*	A 264W	TB1-H22	P07-P	Y PIP TORQUE RET
*	CC 99W	TB1-H22	J13-M3	Y PIP TORQUE RET

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 264L	TB1-H23	P07-N	Y PIP TORQUE +
*	CC 99L	TB1-H23	J13-L3	Y PIP TORQUE +
	A 264B	TB1-H24	SHLD A 264	0 VDC IMU
	CC 99B	TB1-H24	SHLD CC 99	0 VDC IMU
	TB 18	TB1-H24	TB1-K24	0 VDC IMU
*	AA 19	TB1-H24	TB1-F74	0 VDC IMU
*	TB 18	TB1-H24	TB1-G24	0 VDC IMU
	TB 19	TB1-H25	TB1-H26	0 VDC IMU
*	AA 15	TB1-H25	TB1-D74	0 VDC IMU
*	CC113	TB1-H25	J14-R6	0 VDC IMU
	A 570	TB1-H26	TB1-K26	0 VDC IMU
*	A 246	TB1-H26	P06-E	0 VDC IMU
*	CC 76	TB1-H26	J11-R5	0 VDC IMU
*	TB 19	TB1-H26	TB1-H25	0 VDC IMU
	A 203B	TB1-H28	SHLD A 203	MG CDU ERROR SIG RET
*	A 203R	TB1-H28	P03-K	MG CDU ERROR SIG RET
*	CC 63W	TB1-H28	J11-B2	MG CDU ERROR SIG RET
*	A 203Y	TB1-H29	P03-L	MG CDU ATTITUDE STEERING ERROR
*	CC 63R	TB1-H29	J11-C2	MG CDU ATTITUDE STEERING ERROR
	A 38B	TB1-H30	SHLD A 38	MG CDU ERROR SIG RET
	AA 24	TB1-H30	TB1-H32	MG CDU ERROR SIG RET
*	A 38Y	TB1-H30	J02- 90	MG CDU ERROR SIG RET
*	CC140R	TB1-H30	J16-D4	MG CDU ERROR SIG RET
*	A 38R	TB1-H31	J02-104	MG CDU 16X ERROR SIG
*	CC140W	TB1-H31	J16-C3	MG CDU 16X ERROR SIG
	A 32B	TB1-H32	SHLD A 32	MG CDU ERROR SIG RET
	A 139B	TB1-H32	SHLD A 139	MG CDU ERROR SIG RET
	A 355B	TB1-H32	SHLD A 355	MG CDU ERROR SIG RET
*	AA 24	TB1-H32	TB1-H30	MG CDU ERROR SIG RET
*	A 32R	TB1-H33	J02- 35	MG CDU 1X ERROR SIG
*	A 139R	TB1-H33	P01- 82	MG CDU 1X ERROR SIG
*	A 355R	TB1-H33	P09- 60	MG CDU 1X ERROR SIG
*	CC 62W	TB1-H33	J11-A2	MG CDU 1X ERROR SIG
*	CC139W	TB1-H33	J16-C4	MG CDU 1X ERROR SIG
*	A 32Y	TB1-H34	J02- 45	MG CDU ERROR SIG RET
*	A 139Y	TB1-H34	P01- 83	MG CDU ERROR SIG RET
*	A 355Y	TB1-H34	P09- 43	MG CDU ERROR SIG RET
*	CC 62R	TB1-H34	J11-B2	MG CDU ERROR SIG RET

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC139R	TB1-H34	J16-D4	MG CDU ERROR SIG RET
*	A 31	TB1-H35	J02- 34	MG CDU 1X RSVR LOAD
*	CC156	TB1-H35	J16-F4	MG CDU 1X RSVR LOAD
	A 219B	TB1-H36	SHLD A 219	0 VDC OPTICS
	CC239B	TB1-H36	SHLD CC239	0 VDC OPTICS
	TB 23	TB1-H36	TB1-K36	0 VDC OPTICS
*	TB 23	TB1-H36	TB1-G36	0 VDC OPTICS
*	A 219R	TB1-H37	P05- 23	SXT SHAFT TACH HI
*	CC239R	TB1-H37	J18-A7	SXT SHAFT TACH HI
*	A 219Y	TB1-H38	P05- 24	SXT SHAFT TACH LO
*	CC239W	TB1-H38	J18-B7	SXT SHAFT TACH LO
	A 66B	TB1-H39	SHLD A 66	0 VDC OPTICS
	AA 25	TB1-H39	TB1-K36	0 VDC OPTICS
	CC263B	TB1-H39	SHLD CC263	0 VDC OPTICS
	TB 24	TB1-H39	TB1-K39	0 VDC OPTICS
*	TB 24	TB1-H39	TB1-G39	0 VDC OPTICS
*	A 66Y	TB1-H40	J04- 11	SHAFT CDU 1/2X RSVR P1
*	CC263W	TB1-H40	J19-C8	SHAFT CDU 1/2X RSVR P1
*	A 66R	TB1-H41	J04- 25	SHAFT CDU 1/2X RSVR P3
*	CC263R	TB1-H41	J19-C9	SHAFT CDU 1/2X RSVR P3
	A 89B	TB1-H42	SHLD A 89	0 VDC OPTICS
	AA 26	TB1-H42	TB1-K39	0 VDC OPTICS
	CC254B	TB1-H42	SHLD CC254	0 VDC OPTICS
	TB 25	TB1-H42	TB1-K42	0 VDC OPTICS
*	TB 25	TB1-H42	TB1-G42	0 VDC OPTICS
*	A 89Y	TB1-H43	J05- 66	TRUNNION CDU 1/2X RSVR S4
*	CC254W	TB1-H43	J19-K2	TRUNNION CDU 1/2X RSVR S4
*	A 89R	TB1-H44	J05- 56	TRUNNION CDU 1/2X RSVR S2
*	CC254R	TB1-H44	J19-K1	TRUNNION CDU 1/2X RSVR S2
*	A 64R	TB1-H45	J04- 20	SHAFT CDU 1X RSVR P3
*	CC265R	TB1-H45	J19-K5	SHAFT CDU 1X RSVR P3
*	A 64Y	TB1-H46	J04- 6	SHAFT CDU 1X RSVR P1
*	CC265W	TB1-H46	J19-K4	SHAFT CDU 1X RSVR P1
	A 64B	TB1-H47	SHLD A 64	0 VDC OPTICS
	AA 27	TB1-H47	TB1-K42	0 VDC OPTICS
	CC265B	TB1-H47	SHLD CC265	0 VDC OPTICS
	TB 26	TB1-H47	TB1-K47	0 VDC OPTICS
*	TB 26	TB1-H47	TB1-G47	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 68Y	TB1-H48	J04- 31	SHAFT CDU MOTOR PHASE 1
*	CC268W	TB1-H48	J19-S2	SHAFT CDU MOTOR PHASE 1
*	A 68R	TB1-H49	J04- 32	SHAFT CDU MOTOR PHASE 2
*	CC268R	TB1-H49	J19-T2	SHAFT CDU MOTOR PHASE 2
	TB 28	TB1-H50	TB1-K50	0 VDC OPTICS
*	A 68G	TB1-H50	J04- 43	0 VDC OPTICS
*	A 268G	TB1-H50	P08- 7	0 VDC OPTICS
*	TB 28	TB1-H50	TB1-G50	0 VDC OPTICS
*	A 268R	TB1-H51	P08- 5	SCT SHAFT MOTOR PHASE 2
*	CC236R	TB1-H51	J18-S4	SCT SHAFT MOTOR PHASE 2
*	A 268Y	TB1-H52	P08- 6	SCT SHAFT MOTOR PHASE 1
*	CC236W	TB1-H52	J18-T4	SCT SHAFT MOTOR PHASE 1
	TB 29	TB1-H53	TB1-K53	0 VDC OPTICS
*	CC 94	TB1-H53	J12-R6	0 VDC OPTICS
*	TB 29	TB1-H53	TB1-G53	0 VDC OPTICS
*	A 351	TB1-H54	P09- 38	SCT SHAFT 1X ERROR SIG BUFFERED
*	CC217	TB1-H54	J18-M5	SCT SHAFT 1X ERROR SIG BUFFERED
*	A 344	TB1-H55	P09- 21	SXT TRUNNION TACH FEEDBACK BUFFERED
*	CC220	TB1-H55	J18-M2	SXT TRUNNION TACH FEEDBACK BUFFERED
*	A 377	TB1-H56	P09- 73	SXT TRUNNION MDA INPUT BUFFERED
*	CC222	TB1-H56	J18-M1	SXT TRUNNION MDA INPUT BUFFERED
*	A 345	TB1-H57	P09- 22	TRUNNION CDU TACH FEEDBACK BUFFERED
*	CC244	TB1-H57	J19-M2	TRUNNION CDU TACH FEEDBACK BUFFERED
*	A 343	TB1-H58	P09- 20	SHAFT CDU 16X ERROR SIG BUFFERED
*	CC242	TB1-H58	J19-M3	SHAFT CDU 16X ERROR SIG BUFFERED
*	A 325Y	TB1-H59	J09-101	IMU TEMP CONT K1 PIN 3
*	CC186W	TB1-H59	J17-M5	IMU TEMP CONT K1 PIN 3
*	A 325G	TB1-H60	J09- 87	IMU TEMP CONT AMP PIN 5
*	CC186R	TB1-H60	J17-M6	IMU TEMP CONT AMP PIN 5
*	A 251	TB1-H61	P06-K	IMU TEMP SENSOR COM
*	CC199	TB1-H61	J17-M2	IMU TEMP SENSOR COM
*	A 253R	TB1-H62	P06-N	ACCEL INDICATING SENSOR HI
*	A 329Y	TB1-H62	J09- 97	ACCEL INDICATING SENSOR HI
*	A 252R	TB1-H63	P06-M	IRIG TEMP CONT SENSOR HI
*	CC191R	TB1-H63	J17-B6	IRIG TEMP CONT SENSOR HI
*	A 252Y	TB1-H64	P06-L	IRIG TEMP CONT SENSOR RET
*	CC191W	TB1-H64	J17-B5	IRIG TEMP CONT SENSOR RET
*	A 239Y	TB1-H65	P05- 89	STAR PRESENCE INPUT LO

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC277W	TB1-H65	J20-A8	STAR PRESENCE INPUT LO	
*	A 239R	TB1-H66	P05- 88	STAR PRESENCE INPUT HI	
*	CC277R	TB1-H66	J20-A7	STAR PRESENCE INPUT HI	
	A 239B	TB1-H67	SHLD A 239	0 VDC OPTICS	
	A 291B	TB1-H67	SHLD A 291	0 VDC OPTICS	
	AA 28	TB1-H67	TB1-K47	0 VDC OPTICS	
	TB 34	TB1-H67	TB1-K67	0 VDC OPTICS	
*	TB 34	TB1-H67	TB1-G67	0 VDC OPTICS	
*	A 291R	TB1-H68	J09- 10	SHAFT HAND CONTROLLER OUTPUT HI	
*	CC250R	TB1-H68	J19-D8	SHAFT HAND CONTROLLER OUTPUT HI	
*	A 291Y	TB1-H69	J09- 24	SHAFT HAND CONTROLLER OUTPUT LO	
*	CC250W	TB1-H69	J19-D7	SHAFT HAND CONTROLLER OUTPUT LO	
	TB 37	TB1-H70	TB1-K70	STRUCTURE GROUND	
*	A 326	TB1-H70	J09- 91	STRUCTURE GROUND	
*	A 339	TB1-H70	P09- 10	STRUCTURE GROUND	
*	A 406	TB1-H70	P10- 1	STRUCTURE GROUND	
*	TB 37	TB1-H70	TB1-G70	STRUCTURE GROUND	
*	A 317	TB1-H71	J09- 71	+28 VDC OPTICS	
*	A 336	TB1-H71	P09- 6	+28 VDC OPTICS	
*	A 412	TB1-H71	P10- 14	+28 VDC OPTICS	
*	CC247	TB1-H71	J19-T5	+28 VDC OPTICS	
*	CC279	TB1-H71	J20-N6	+28 VDC OPTICS	
*	A 357	TB1-H72	P09- 47	+28 VDC STBY	
*	CC301	TB1-H72	J20-R3	+28 VDC STBY	
*	A 367	TB1-H73	P09- 63	0 VDC AGC	
*	CC291	TB1-H73	J20-G3	0 VDC AGC	
*	CC334	TB1-H73	J24- 3	0 VDC AGC	177
*	A 368	TB1-H74	P09- 64	+28 VDC AGC	
*	CC289	TB1-H74	J20-F5	+28 VDC AGC	
*	CC290	TB1-H74	J24- 11	+28 VDC AGC	166
*	A 536	TB1-H75	P12-C	+28 VDC IMU BUSS B	
*	A 537	TB1-H75	P12-C	+28 VDC IMU BUSS B	
*	A 538	TB1-H75	P12-C	+28 VDC IMU BUSS B	
*	CC298	TB1-H75	J20-S2	+28 VDC IMU BUSS B	
*	CC315	TB1-H75	J20-P2	+28 VDC IMU BUSS B	
*	A 508	TB1-H76	P11-C	+28 VDC IMU BUSS A	
*	A 509	TB1-H76	P11-C	+28 VDC IMU BUSS A	
*	A 510	TB1-H76	P11-C	+28 VDC IMU BUSS A	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC296	TB1-H76	J20-S1	+28 VDC IMU BUSS A
*	CC313	TB1-H76	J20-P1	+28 VDC IMU BUSS A
*	A 550	TB1-H77	P12-H	+28 VDC OPTICS BUSS B
*	CC304	TB1-H77	J20-T6	+28 VDC OPTICS BUSS B
*	A 522	TB1-H78	P11-H	+28 VDC OPTICS BUSS A
*	CC303	TB1-H78	J20-S5	+28 VDC OPTICS BUSS A
*	A 71R	TB1-K 1	J04- 50	25.6 KC HI OPTICS
*	A 88R	TB1-K 1	J05- 50	25.6 KC HI OPTICS
*	A 395R	TB1-K 1	P09-126	25.6 KC HI OPTICS
*	CC 82R	TB1-K 1	J12-P6	25.6 KC HI OPTICS
*	A 71Y	TB1-K 2	J04- 60	25.6 KC LO OPTICS
*	A 88Y	TB1-K 2	J05- 60	25.6 KC LO OPTICS
*	A 395Y	TB1-K 2	P09-104	25.6 KC LO OPTICS
*	CC 82W	TB1-K 2	J12-N6	25.6 KC LO OPTICS
*	A 124G	TB1-K 3	P01- 4	COARSE ALIGN RELAY CONTROL
*	CC 72	TB1-K 3	J11-L3	COARSE ALIGN RELAY CONTROL
	A 124B	TB1-K 4	SHLD A 124	STRUCTURE GROUND
	CC159B	TB1-K 4	SHLD CC159	STRUCTURE GROUND
	CC341	TB1-K 4	E 2	STRUCTURE GROUND
*	TB 7	TB1-K 4	TB1-H 4	STRUCTURE GROUND
*	A 124Y	TB1-K 5	P01- 12	ZERO ENCODER RELAY CONTROL
*	CC128L	TB1-K 5	J15-S1	ZERO ENCODER RELAY CONTROL
*	A 187R	TB1-K 7	P02-R	3200 CPS 2 V HI
*	CC 67K	TB1-K 7	J11-M1	3200 CPS 2 V HI
*	CC 67L	TB1-K 7	J11-L1	3200 CPS 2 V HI
*	A 188R	TB1-K 8	P02-T	3200 CPS 2 V FEEDBACK HI
*	A 374R	TB1-K 8	P09- 70	3200 CPS 2 V FEEDBACK HI
*	CC 73R	TB1-K 8	J11-F3	3200 CPS 2 V FEEDBACK HI
*	A 184R	TB1-K 9	P02-J	SIN AMG 16X S2
*	CC127W	TB1-K 9	J15-F8	SIN AMG 16X S2
*	A 37R	TB1-K10	J02-101	SIN AMG 16X S4
*	A 184Y	TB1-K10	P02-K	SIN AMG 16X S4
*	CC127R	TB1-K10	J15-F9	SIN AMG 16X S4
*	A 37Y	TB1-K11	J02- 87	SIN AMG 16X TO CDU
*	CC127L	TB1-K11	J15-D9	SIN AMG 16X TO CDU
	A 37B	TB1-K12	SHLD A 37	0 VDC IMU
	A 184B	TB1-K12	SHLD A 184	0 VDC IMU
	CC127B	TB1-K12	SHLD CC127	0 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	TB 14	TB1-K12	TB1-H12	0 VDC IMU
*	A 204Y	TB1-K13	P03-M	YAW ERROR BODY OFFSET AXIS LO
*	CC182W	TB1-K13	J17-D3	YAW ERROR BODY OFFSET AXIS LO
*	A 190R	TB1-K14	P02-Y	SIN AIG 16X S2
*	CC126W	TB1-K14	J15-D8	SIN AIG 16X S2
*	A 17R	TB1-K15	J01-101	SIN AIG 16X S4
*	A 190Y	TB1-K15	P02-Z	SIN AIG 16X S4
*	CC126R	TB1-K15	J15-D7	SIN AIG 16X S4
*	A 17Y	TB1-K16	J01- 87	SIN AIG 16X TO CDU
*	CC126L	TB1-K16	J15-F7	SIN AIG 16X TO CDU
	A 17B	TB1-K17	SHLD A 17	0 VDC IMU
	A 190B	TB1-K17	SHLD A 190	0 VDC IMU
	CC126B	TB1-K17	SHLD CC126	0 VDC IMU
*	AA 22	TB1-K17	TB1-H12	0 VDC IMU
*	TB 15	TB1-K17	TB1-H17	0 VDC IMU
*	A 10G	TB1-K18	J01- 31	IG CDU MDA OUTPUT
*	CC137W	TB1-K18	J16-R1	IG CDU MDA OUTPUT
*	A 10Y	TB1-K19	J01- 32	IG CDU MDA OUTPUT
*	CC137R	TB1-K19	J16-P1	IG CDU MDA OUTPUT
*	A 10R	TB1-K20	J01- 43	0 VDC IMU
*	AA 11	TB1-K20	TB1-B70	0 VDC IMU
*	TB 16	TB1-K20	TB1-H20	0 VDC IMU
*	A 265R	TB1-K21	P07-W	X PIP TORQUE -
*	CC 96R	TB1-K21	J13-L1	X PIP TORQUE -
*	A 265W	TB1-K22	P07-V	X PIP TORQUE RET
*	CC 96W	TB1-K22	J13-K1	X PIP TORQUE RET
*	A 265L	TB1-K23	P07-U	X PIP TORQUE +
*	CC 96L	TB1-K23	J13-H1	X PIP TORQUE +
	A 265B	TB1-K24	SHLD A 265	0 VDC IMU
	CC 96B	TB1-K24	SHLD CC 96	0 VDC IMU
*	AA 23	TB1-K24	TB1-H17	0 VDC IMU
*	TB 18	TB1-K24	TB1-H24	0 VDC IMU
	TB 20	TB1-K25	TB1-K26	0 VDC IMU
*	AA 16	TB1-K25	TB1-D75	0 VDC IMU
*	CC 93	TB1-K25	J12-R5	0 VDC IMU
*	A 570	TB1-K26	TB1-H26	0 VDC IMU
*	CC 77	TB1-K26	J11-S6	0 VDC IMU
*	CC131	TB1-K26	J15-R2	0 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	TB 20	TB1-K26	TB1-K25	0 VDC IMU
	A 200B	TB1-K28	SHLD A 200	IG CDU ERROR SIG RET
*	A 200R	TB1-K28	P03-J	IG CDU ERROR SIG RET
*	CC 61W	TB1-K28	J11-B1	IG CDU ERROR SIG RET
*	A 200Y	TB1-K29	P03-H	IG CDU ATTITUDE STEERING ERROR
*	CC 61R	TB1-K29	J11-C1	IG CDU ATTITUDE STEERING ERROR
	A 18B	TB1-K30	SHLD A 18	IG CDU ERROR SIG RET
	AA 29	TB1-K30	TB1-K32	IG CDU ERROR SIG RET
*	A 18Y	TB1-K30	J01- 90	IG CDU ERROR SIG RET
*	CC135R	TB1-K30	J16-D2	IG CDU ERROR SIG RET
*	A 18R	TB1-K31	J01-104	IG CDU 16X ERROR SIG
*	CC135W	TB1-K31	J16-C1	IG CDU 16X ERROR SIG
	A 12B	TB1-K32	SHLD A 12	IG CDU ERROR SIG RET
	A 135B	TB1-K32	SHLD A 135	IG CDU ERROR SIG RET
	A 354B	TB1-K32	SHLD A 354	IG CDU ERROR SIG RET
*	AA 29	TB1-K32	TB1-K30	IG CDU ERROR SIG RET
*	A 12R	TB1-K33	J01- 35	IG CDU 1X ERROR SIG S2
*	A 135R	TB1-K33	P01- 70	IG CDU 1X ERROR SIG
*	A 354R	TB1-K33	P09- 59	IG CDU 1X ERROR SIG
*	CC 60W	TB1-K33	J11-A1	IG CDU 1X ERROR SIG
*	CC134W	TB1-K33	J16-C2	IG CDU 1X ERROR SIG
*	A 12Y	TB1-K34	J01- 45	IG CDU ERROR SIG RET
*	A 135Y	TB1-K34	P01- 71	IG CDU ERROR SIG RET
*	A 354Y	TB1-K34	P09- 41	IG CDU ERROR SIG RET
*	CC 60R	TB1-K34	J11-B1	IG CDU ERROR SIG RET
*	CC134R	TB1-K34	J16-D2	IG CDU ERROR SIG RET
*	A 11	TB1-K35	J01- 34	IG CDU 1X RSVR LOAD S1
*	CC155	TB1-K35	J16-F2	IG CDU 1X RSVR LOAD
	A 278B	TB1-K36	SHLD A 278	0 VDC OPTICS
	CC237B	TB1-K36	SHLD CC237	0 VDC OPTICS
*	AA 25	TB1-K36	TB1-H39	0 VDC OPTICS
*	TB 23	TB1-K36	TB1-H36	0 VDC OPTICS
*	A 278R	TB1-K37	P08- 38	SCT SHAFT TACH HI
*	CC237R	TB1-K37	J18-A5	SCT SHAFT TACH HI
*	A 278Y	TB1-K38	P08- 39	SCT SHAFT TACH LO
*	CC237W	TB1-K38	J18-B5	SCT SHAFT TACH LO
	A 281B	TB1-K39	SHLD A 281	0 VDC OPTICS
	CC235B	TB1-K39	SHLD CC235	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	AA 26	TB1-K39	TB1-H42	0 VDC OPTICS
*	TB 24	TB1-K39	TB1-H39	0 VDC OPTICS
*	A 281Y	TB1-K40	P08- 51	SCT SHAFT 1X RSVR S4
*	CC235W	TB1-K40	J18-D5	SCT SHAFT 1X RSVR S4
*	A 281R	TB1-K41	P08- 50	SCT SHAFT 1X RSVR S2
*	CC235R	TB1-K41	J18-C5	SCT SHAFT 1X RSVR S2
	A 90B	TB1-K42	SHLD A 90	0 VDC OPTICS
	CC253B	TB1-K42	SHLD CC253	0 VDC OPTICS
*	AA 27	TB1-K42	TB1-H47	0 VDC OPTICS
*	TB 25	TB1-K42	TB1-H42	0 VDC OPTICS
*	A 90Y	TB1-K43	J05- 67	TRUNNION CDU 1/2X RSVR S3
*	CC253W	TB1-K43	J19-H1	TRUNNION CDU 1/2X RSVR S3
*	A 90R	TB1-K44	J05- 68	TRUNNION CDU 1/2X RSVR S1
*	CC253R	TB1-K44	J19-G1	TRUNNION CDU 1/2X RSVR S1
*	A 65Y	TB1-K45	J04- 21	SHAFT CDU 1X RSVR P4
*	CC266W	TB1-K45	J19-G3	SHAFT CDU 1X RSVR P4
*	A 65R	TB1-K46	J04- 7	SHAFT CDU 1X RSVR P2
*	CC266R	TB1-K46	J19-G4	SHAFT CDU 1X RSVR P2
	A 65B	TB1-K47	SHLD A 65	0 VDC OPTICS
	CC266B	TB1-K47	SHLD CC266	0 VDC OPTICS
*	AA 28	TB1-K47	TB1-H67	0 VDC OPTICS
*	TB 26	TB1-K47	TB1-H47	0 VDC OPTICS
*	A 86Y	TB1-K48	J05- 31	TRUNNION CDU MOTOR PHASE 1
*	CC257W	TB1-K48	J19-S1	TRUNNION CDU MOTOR PHASE 1
*	A 86R	TB1-K49	J05- 32	TRUNNION CDU MOTOR PHASE 2
*	CC257R	TB1-K49	J19-T1	TRUNNION CDU MOTOR PHASE 2
*	A 86G	TB1-K50	J05- 43	0 VDC OPTICS
*	A 267G	TB1-K50	P08- 1	0 VDC OPTICS
*	A 519	TB1-K50	P11-G	0 VDC OPTICS
*	TB 28	TB1-K50	TB1-H50	0 VDC OPTICS
*	A 267R	TB1-K51	P08- 2	SCT TRUNNION MOTOR PHASE 2
*	CC260R	TB1-K51	J19-T3	SCT TRUNNION MOTOR PHASE 2
*	A 267Y	TB1-K52	P08- 3	SCT TRUNNION MOTOR PHASE 1
*	CC260W	TB1-K52	J19-S3	SCT TRUNNION MOTOR PHASE 1
*	A 518	TB1-K53	P11-G	0 VDC OPTICS
*	CC178	TB1-K53	J16-R5	0 VDC OPTICS
*	TB 29	TB1-K53	TB1-H53	0 VDC OPTICS
*	A 364	TB1-K54	P09- 58	SCT SHAFT TACH FEEDBACK BUFFERED

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015087
SCALE - NONE
REV LTR D
SHEET 132

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC216	TB1-K54	J18-M6	SCT SHAFT TACH FEEDBACK BUFFERED
*	A 363	TB1-K55	P09- 57	SXT SHAFT TACH FEEDBACK BUFFERED
*	CC215	TB1-K55	J18-M4	SXT SHAFT TACH FEEDBACK BUFFERED
*	A 378	TB1-K56	P09- 74	SXT SHAFT MDA INPUT BUFFERED
*	CC214	TB1-K56	J18-M3	SXT SHAFT MDA INPUT BUFFERED
*	A 350	TB1-K57	P09- 37	SCT TRUNNION 1X ERROR SIG BUFFERED
*	CC245	TB1-K57	J19-M5	SCT TRUNNION 1X ERROR SIG BUFFERED
*	A 376	TB1-K58	P09- 72	PHOTOMETER PREAMP OUTPUT BUFFERED HI
*	CC282	TB1-K58	J20-B8	PHOTOMETER PREAMP OUTPUT BUFFERED HI
*	A 324Y	TB1-K59	J09-102	IMU TEMP CONT -5 DEG GAIN CHECK
*	CC184W	TB1-K59	J17-B7	IMU TEMP CONT -5 DEG GAIN CHECK
*	A 324R	TB1-K60	J09- 86	IRIG TEMP GAIN SWITCH NC
*	CC184R	TB1-K60	J17-C8	IRIG TEMP GAIN SWITCH NC
*	A 324N	TB1-K61	J09- 89	IRIG ZERO DEVIATION CHECK
*	CC184L	TB1-K61	J17-B8	IRIG ZERO DEVIATION CHECK
*	A 324G	TB1-K62	J09- 85	IRIG TEMP BRIDGE AMP PIN 6
*	CC184K	TB1-K62	J17-C7	IRIG TEMP BRIDGE AMP PIN 6
*	A 242R	TB1-K63	P06-Z	IRIG TEMP IND SENSOR HI
*	CC198R	TB1-K63	J17-C6	IRIG TEMP IND SENSOR HI
*	A 242Y	TB1-K64	P06-A*	IRIG TEMP IND SENSOR RET
*	CC198W	TB1-K64	J17-C5	IRIG TEMP IND SENSOR RET
*	A 235Y	TB1-K65	P05- 81	PHOTOMETER SIGNAL LO
*	CC278W	TB1-K65	J20-B9	PHOTOMETER SIGNAL LO
*	A 235R	TB1-K66	P05- 80	PHOTOMETER SIGNAL HI
*	CC278R	TB1-K66	J20-A9	PHOTOMETER SIGNAL HI
	A 235B	TB1-K67	SHLD A 235	0 VDC OPTICS
	A 290B	TB1-K67	SHLD A 290	0 VDC OPTICS
	CC278B	TB1-K67	SHLD CC278	0 VDC OPTICS
*	A 586	TB1-K67	TB1-D76	0 VDC OPTICS
*	TB 34	TB1-K67	TB1-H67	0 VDC OPTICS
*	A 290R	TB1-K68	J09- 8	TRUNNION HAND CONTROLLER OUTPUT HI
*	CC249R	TB1-K68	J19-F9	TRUNNION HAND CONTROLLER OUTPUT HI
*	A 290Y	TB1-K69	J09- 22	TRUNNION HAND CONTROLLER OUTPUT LO
*	CC249W	TB1-K69	J19-F8	TRUNNION HAND CONTROLLER OUTPUT LO
	CC343	TB1-K70	E 3	STRUCTURE GROUND
*	A 500	TB1-K70	P13- 37	STRUCTURE GROUND
*	A 553	TB1-K70	P12-L	STRUCTURE GROUND
*	TB 37	TB1-K70	TB1-H70	STRUCTURE GROUND

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR D	SHEET 133

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	TB 39	TB1-K71	TB1-K72	+28 VDC MDV	
*	A 421	TB1-K71	P10-104	+28 VDC MDV	
*	A 483	TB1-K71	J10- 8	+28 VDC MDV	306
*	A 489	TB1-K71	J10- 10	+28 VDC MDV	327
*	CC283	TB1-K71	J20-N5	+28 VDC MDV	
*	A 142	TB1-K72	P01- 89	+28 VDC MDV	
*	A 310	TB1-K72	J09- 51	+28 VDC MDV	
*	CC284	TB1-K72	J20-M5	+28 VDC MDV	
*	TB 39	TB1-K72	TB1-K71	+28 VDC MDV	
*	A 243Y	TB1-K73	P06-C*	PRESSURE SENSOR +28 VDC LO	
*	CC310W	TB1-K73	J20-B6	PRESSURE SENSOR +28 VDC LO	
*	A 243R	TB1-K74	P06-B*	PRESSURE SENSOR +28 VDC HI	
*	CC310R	TB1-K74	J20-A6	PRESSURE SENSOR +28 VDC HI	
*	A 533	TB1-K75	P12-B	+28 VDC IMU BUSS B	
*	A 534	TB1-K75	P12-B	+28 VDC IMU BUSS B	
*	A 535	TB1-K75	P12-B	+28 VDC IMU BUSS B	
*	CC297	TB1-K75	J20-T2	+28 VDC IMU BUSS B	
*	CC314	TB1-K75	J20-R2	+28 VDC IMU BUSS B	
*	A 505	TB1-K76	P11-B	+28 VDC IMU BUSS A	
*	A 506	TB1-K76	P11-B	+28 VDC IMU BUSS A	
*	A 507	TB1-K76	P11-B	+28 VDC IMU BUSS A	
*	CC295	TB1-K76	J20-T1	+28 VDC IMU BUSS A	
*	CC312	TB1-K76	J20-R1	+28 VDC IMU BUSS A	
*	A 530	TB1-K77	P12-A	+28 VDC AGC BUSS B	
*	A 560	TB1-K77	J23- 64	+28 VDC AGC BUSS B	168
*	A 561	TB1-K77	J23- 65	+28 VDC AGC BUSS B	168
*	CC288	TB1-K77	J20-H3	+28 VDC AGC BUSS B	
*	A 502	TB1-K78	P11-A	+28 VDC AGC BUSS A	
*	A 558	TB1-K78	J23- 62	+28 VDC AGC BUSS A	167
*	A 559	TB1-K78	J23- 63	+28 VDC AGC BUSS A	167
*	CC287	TB1-K78	J20-H2	+28 VDC AGC BUSS A	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR D	SHEET 134

MIL 2084-4-64

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		E	REVISED PER TDRR 28917	5-17-66	

Ⓔ REPLACES REVISION D WITH CHANGE

REV	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E						
SHEET	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146						
REV	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
SHEET	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
REV	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
SHEET	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101
REV	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
SHEET	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
REV	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
SHEET	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
REV STATUS	REV	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
OF SHEETS	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN DATE 5/17/66
CHECKED 5-17-66
APPROVAL 5/18/66
APPROVAL 5/17/66
NASA APPROVAL A. C. METZGER
MIT APPROVAL 5-17-66
CONTRACT

INTERCONNECTION LIST OF AGE INTERCONNECT HARNESS AND PSA END CONNECTOR ASSEMBLY

CODE IDENT NO.	SIZE		REV
80230	A	1015087	E
SCALE —		SHEET 1 OF 146	

FROM TO COND NO CIRCUIT FUNCTION

GENERAL NOTES

1. PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

2. THE INTERCONNECT LIST IS A COMPLIATION OF THE ASSEMBLY DRAWINGS THAT ARE USED TO BUILD THE AGE INTERCONNECTING HARNESS AND PSA END CONNECTOR ASSEMBLY. THESE DRAWINGS ARE IDENTIFIED BY THE CONDUCTOR PREFIX LETTER AS FOLLOWS:

A - WIRING HARNESS "A", PART NUMBER 1015085
AA - WIRE LIST "AA", PART NUMBER 1021792
BB - WIRE LIST "BB", PART NUMBER 1021791
CC - WIRE LIST "CC", PART NUMBER 1015088
TB - BUS BARS THAT ARE INSTALLED ON CONNECTOR PLATE ASSEMBLY (TERMINAL BOARD), PART NUMBER 1007583

SIZE	CODE IDENT NO.			
A	80230	1015087		
SCALE-NONE	REV LTR	E	SHEET 2	OF 146

FROM	TO	COND NO	CIRCUIT FUNCTION	
56E 1			LOCATED ON PSA FRONT PLATE NEAR 56J13	
E 1	J13-C6	CC342	STRUCTURE GROUND	
56E 2			LOCATED ON TERMINAL BOARD NEAR 56TB1-K8	
E 2	TB1-K 4	CC341	STRUCTURE GROUND	
56E 3			LOCATED ON PSA BOTTOM PLATE NEAR 56J22	
E 3	TB1-K70	CC343	STRUCTURE GROUND	
56E 4			LOCATED BETWEEN 56J11 AND 56J12	
E 4	SHLD BB 94	BB 94B	0 VDC IMU	
E 4	SHLD CC 1	CC 1A	0 VDC IMU	
E 4	SHLD CC 2	CC 2A	0 VDC IMU	
E 4	SHLD CC 6	CC 6A	0 VDC IMU	
E 4	SHLD CC 7	CC 7A	0 VDC IMU	
E 4	J11-P2	CC 79	0 VDC IMU	
56E 5			LOCATED NEAR 56J13	
E 5	J23- 6	CC 11W	0 VDC IMU	139R
E 5	J23- 1	CC 12W	0 VDC IMU	140R
E 5	J13-R6	CC102	0 VDC IMU	

SIZE	CODE IDENT NO.			
A	80230	1015087		
SCALE-NONE	REV LTR	E	SHEET 3	OF 146

FROM	TO	COND NO	CIRCUIT FUNCTION	
56E 6			LOCATED NEAR 56J14	
E 6	J23- 10	CC 13W	0 VDC IMU	142S
E 6	J23- 24	CC 14W	0 VDC IMU	143S
E 6	J23- 56	CC 15W	0 VDC IMU	144S
E 6	J23- 33	CC 16W	0 VDC IMU	145S
E 6	J23- 16	CC 17W	0 VDC IMU	146S
E 6	J23- 5	CC 18W	0 VDC IMU	147S
E 6	J23- 44	CC 19W	0 VDC IMU	148S
E 6	E 7	CC338	0 VDC IMU	
E 6	J14-R6	CC110	0 VDC IMU	
56E 7			LOCATED NEAR 56J14	
E 7	SHLD CC 13	CC 13A	0 VDC IMU	
E 7	SHLD CC 14	CC 14A	0 VDC IMU	
E 7	SHLD CC 15	CC 15A	0 VDC IMU	
E 7	SHLD CC 16	CC 16A	0 VDC IMU	
E 7	SHLD CC 17	CC 17A	0 VDC IMU	
E 7	SHLD CC 18	CC 18A	0 VDC IMU	
E 7	SHLD CC 19	CC 19A	0 VDC IMU	
E 7	E 6	CC338	0 VDC IMU	
56E 8			LOCATED NEAR 56J15	
E 8	J24- 22	CC 26R	IG DAC MDA SIG LO	120R
E 8	J24- 42	CC 27W	IG DAC MDA SIG LO	121R
E 8	J15-A5	CC120	IG DAC MDA SIG LO	

SIZE	CODE IDENT NO.			
A	80230	1015087		
SCALE-NONE	REV LTR	E	SHEET 4	OF 146

```
FROM        TO          COND NO  C I R C U I T   F U N C T I O N

        56E  9       LOCATED NEAR 56J15

 E  9        J23- 23     CC 32R IG DAC MDA SIG LO                        128R
 E  9        J23- 69     CC 33W IG DAC MDA SIG LO                        129R
 E  9        SHLD CC 32  CC 32A IG DAC MDA SIG LO
 E  9        SHLD CC 33  CC 33A IG DAC MDA SIG LO
 E  9        J15-A5      CC123  IG DAC MDA SIG LO


        56E 10       LOCATED NEAR 56J15

 E 10        J24- 18     CC 28R MG DAC MDA SIG LO                        122R
 E 10        J24-  7     CC 29W MG DAC MDA SIG LO                        123R
 E 10        J15-A7      CC121  MG DAC MDA SIG LO


        56E 11       LOCATED NEAR 56J15

 E 11        J23- 34     CC 34R MG DAC MDA SIG LO                        130R
 E 11        J23- 17     CC 35W MG DAC MDA SIG LO                        131R
 E 11        SHLD CC 34  CC 34A MG DAC MDA SIG LO
 E 11        SHLD CC 35  CC 35A MG DAC MDA SIG LO
 E 11        J15-A7      CC124  MG DAC MDA SIG LO


        56E 12       LOCATED NEAR 56J15

 E 12        J24- 20     CC 30R OG DAC MDA SIG LO                        118R
 E 12        J24- 21     CC 31W OG DAC MDA SIG LO                        119R
 E 12        J15-A9      CC122  OG DAC MDA SIG LO
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SIZE A	CODE IDENT NO. 80230	1015087
SCALE-NONE	REV LTR E	SHEET 5 OF 146

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FROM        TO          COND NO  C I R C U I T   F U N C T I O N

        56E 13       LOCATED NEAR 56J15

 E 13        J23-  8     CC 36R OG DAC MDA SIG LO                        126R
 E 13        J23-  9     CC 37W OG DAC MDA SIG LO                        127R
 E 13        SHLD CC 36  CC 36A OG DAC MDA SIG LO
 E 13        SHLD CC 37  CC 37A OG DAC MDA SIG LO
 E 13        J15-A9      CC125  OG DAC MDA SIG LO


        56E 14       LOCATED NEAR 56J15

 E 14        J24-  9     CC 20W COMPUTER RET                             132S
 E 14        J24- 23     CC 21W COMPUTER RET                             133S
 E 14        J15-L5      CC114  COMPUTER RET


        56E 15       LOCATED NEAR 56J15

 E 15        J24- 43     CC 22W COMPUTER RET                             134S
 E 15        J24- 69     CC 23W COMPUTER RET                             135S
 E 15        J15-L5      CC115  COMPUTER RET


        56E 16       LOCATED NEAR 56J15

 E 16        J24- 34     CC 24W COMPUTER RET                             137S
 E 16        J24- 57     CC 25W COMPUTER RET                             136S
 E 16        J15-L5      CC116  COMPUTER RET
```

SIZE A	CODE IDENT NO. 80230	1015087
SCALE-NONE	REV LTR E	SHEET 6 OF 146

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FROM        TO          COND NO  C I R C U I T   F U N C T I O N

        56E 17       LOCATED NEAR 56J24

 E 17        SHLD CC 20  CC 20B AGC SIGNAL 179 SHIELD RETURN
 E 17        SHLD CC 21  CC 21B AGC SIGNAL 179 SHIELD RETURN
 E 17        SHLD CC 22  CC 22B AGC SIGNAL 179 SHIELD RETURN
 E 17        SHLD CC 23  CC 23B AGC SIGNAL 179 SHIELD RETURN
 E 17        SHLD CC 24  CC 24B AGC SIGNAL 179 SHIELD RETURN
 E 17        SHLD CC 25  CC 25B AGC SIGNAL 179 SHIELD RETURN
 E 17        E 18        CC339  AGC SIGNAL 179 SHIELD RETURN


        56E 18       LOCATED NEAR 56J24

 E 18        SHLD CC  8  CC  8B AGC SIGNAL 179 SHIELD RETURN
 E 18        SHLD CC  9  CC  9B AGC SIGNAL 179 SHIELD RETURN
 E 18        SHLD CC 10  CC 10B AGC SIGNAL 179 SHIELD RETURN
 E 18        J24- 87     CC336  AGC SIGNAL 179 SHIELD RETURN          179
 E 18        E 17        CC339  AGC SIGNAL 179 SHIELD RETURN


        56E 19       LOCATED NEAR 56J24

 E 19        SHLD CC 26  CC 26B AGC SIGNAL 179 SHIELD RETURN
 E 19        SHLD CC 27  CC 27B AGC SIGNAL 179 SHIELD RETURN
 E 19        SHLD CC 28  CC 28B AGC SIGNAL 179 SHIELD RETURN
 E 19        SHLD CC 29  CC 29B AGC SIGNAL 179 SHIELD RETURN
 E 19        SHLD CC 30  CC 30B AGC SIGNAL 179 SHIELD RETURN
 E 19        SHLD CC 31  CC 31B AGC SIGNAL 179 SHIELD RETURN
 E 19        E 20        CC340  AGC SIGNAL 179 SHIELD RETURN
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SIZE A	CODE IDENT NO. 80230	1015087
SCALE-NONE	REV LTR E	SHEET 7 OF 146

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FROM        TO          COND NO  C I R C U I T   F U N C T I O N

        56E 20       LOCATED NEAR 56J24

 E 20        SHLD CC 42  CC 42B AGC SIGNAL 179 SHIELD RETURN
 E 20        SHLD CC 46  CC 46B AGC SIGNAL 179 SHIELD RETURN
 E 20        SHLD CC 49  CC 49B AGC SIGNAL 179 SHIELD RETURN
 E 20        SHLD CC 50  CC 50B AGC SIGNAL 179 SHIELD RETURN
 E 20        J24- 64     CC337  AGC SIGNAL 179 SHIELD RETURN          179
 E 20        E 19        CC340  AGC SIGNAL 179 SHIELD RETURN


        56E 21       LOCATED NEAR 56J24

 E 21        SHLD CC 38  CC 38B AGC SIGNAL 178 SHIELD RETURN
 E 21        SHLD CC 41  CC 41B AGC SIGNAL 178 SHIELD RETURN
 E 21        E 22        CC344  AGC SIGNAL 178 SHIELD RETURN
 E 21        E 23        CC345  AGC SIGNAL 178 SHIELD RETURN
 E 21        SHLD CC332  CC332A AGC SIGNAL 178 SHIELD RETURN


        56E 22       LOCATED NEAR 56J24

 E 22        SHLD A 114  A 114B AGC SIGNAL 178 SHIELD RETURN
 E 22        SHLD A 131  A 131B AGC SIGNAL 178 SHIELD RETURN
 E 22        SHLD A 132  A 132B AGC SIGNAL 178 SHIELD RETURN
 E 22        SHLD A 133  A 133B AGC SIGNAL 178 SHIELD RETURN
 E 22        SHLD A 136  A 136B AGC SIGNAL 178 SHIELD RETURN
 E 22        E 21        CC344  AGC SIGNAL 178 SHIELD RETURN
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SIZE A	CODE IDENT NO. 80230	1015087
SCALE-NONE	REV LTR E	SHEET 8 OF 146

56E 23 LOCATED NEAR 56J24

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 23	SHLD A 304	A 304B	AGC SIGNAL 178 SHIELD RETURN	
E 23	SHLD A 309	A 309B	AGC SIGNAL 178 SHIELD RETURN	
E 23	SHLD A 414	A 414B	AGC SIGNAL 178 SHIELD RETURN	
E 23	SHLD A 417	A 417B	AGC SIGNAL 178 SHIELD RETURN	
E 23	J24- 51	A 563	AGC SIGNAL 178 SHIELD RETURN	178
E 23	SHLD A 566	A 566A	AGC SIGNAL 178 SHIELD RETURN	
E 23	E 21	CC345	AGC SIGNAL 178 SHIELD RETURN	

56E 24 LOCATED NEAR 56J09

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 24	SHLD A 298	A 298A	AGC SIGNAL 178 SHIELD RETURN	
E 24	SHLD A 301	A 301A	AGC SIGNAL 178 SHIELD RETURN	
E 24	SHLD A 308	A 308A	AGC SIGNAL 178 SHIELD RETURN	
E 24	SHLD A 309	A 309A	AGC SIGNAL 178 SHIELD RETURN	

56E 26 LOCATED IN GROUP III SHIELD NEAR 56J10

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 26	J21- 74	A 464Y	COMMONED RETURNS GROUND	202R
E 26	J21- 47	A 465Y	COMMONED RETURNS GROUND	210R
E 26	J21- 28	A 466Y	COMMONED RETURNS GROUND	201R
E 26	J21- 13	A 467Y	COMMONED RETURNS GROUND	208R
E 26	E 27	A 471	COMMONED RETURNS GROUND	
E 26	J10- 69	A 470	COMMONED RETURNS GROUND	252

SIZE A	CODE IDENT NO. 80230	1015087	
SCALE-NONE	REV LTR	E	SHEET 9 OF 146

56E 27 LOCATED IN GROUP III SHIELD NEAR 56J10

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 27	J21- 15	A 459Y	COMMONED RETURNS GROUND	205R
E 27	J21- 54	A 460Y	COMMONED RETURNS GROUND	209R
E 27	J21- 53	A 461Y	COMMONED RETURNS GROUND	203R
E 27	J21- 30	A 462Y	COMMONED RETURNS GROUND	207R
E 27	J21- 51	A 463Y	COMMONED RETURNS GROUND	204R
E 27	E 26	A 471	COMMONED RETURNS GROUND	

56E 28 LOCATED IN GROUP II SHIELD NEAR 56J10

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 28	J21- 4	A 422Y	COMMONED RETURNS GROUND	244R
E 28	J21- 17	A 423Y	COMMONED RETURNS GROUND	232R
E 28	J21- 18	A 424Y	COMMONED RETURNS GROUND	227R
E 28	J21- 2	A 425Y	COMMONED RETURNS GROUND	228R
E 28	J21- 24	A 426Y	COMMONED RETURNS GROUND	229R
E 28	E 34	A 453	COMMONED RETURNS GROUND	

56E 29 LOCATED IN GROUP II SHIELD NEAR 56J10

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 29	J21- 69	A 427Y	COMMONED RETURNS GROUND	230R
E 29	J21- 57	A 428Y	COMMONED RETURNS GROUND	231R
E 29	J21- 1	A 429Y	COMMONED RETURNS GROUND	233R
E 29	J21- 11	A 430Y	COMMONED RETURNS GROUND	234R
E 29	J21- 45	A 431Y	COMMONED RETURNS GROUND	235R
E 29	E 34	A 454	COMMONED RETURNS GROUND	

SIZE A	CODE IDENT NO. 80230	1015087	
SCALE-NONE	REV LTR	E	SHEET 10 OF 146

56E 30 LOCATED IN GROUP II SHIELD NEAR 56J10

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 30	J21- 70	A 432Y	COMMONED RETURNS GROUND	236R
E 30	J21- 56	A 433Y	COMMONED RETURNS GROUND	237R
E 30	J21- 16	A 434Y	COMMONED RETURNS GROUND	238R
E 30	J21- 61	A 435Y	COMMONED RETURNS GROUND	214R
E 30	E 34	A 455	COMMONED RETURNS GROUND	

56E 31 LOCATED IN GROUP II SHIELD NEAR 56J10

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 31	J21- 39	A 436Y	COMMONED RETURNS GROUND	215R
E 31	J21- 41	A 437Y	COMMONED RETURNS GROUND	216R
E 31	J21- 66	A 438Y	COMMONED RETURNS GROUND	217R
E 31	J21- 60	A 439Y	COMMONED RETURNS GROUND	218R
E 31	E 34	A 456	COMMONED RETURNS GROUND	

56E 32 LOCATED IN GROUP II SHIELD NEAR 56J10

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 32	J21- 20	A 440Y	COMMONED RETURNS GROUND	219R
E 32	J21- 68	A 441Y	COMMONED RETURNS GROUND	221R
E 32	J21- 59	A 442Y	COMMONED RETURNS GROUND	222R
E 32	J21- 19	A 443Y	COMMONED RETURNS GROUND	223R
E 32	E 34	A 457	COMMONED RETURNS GROUND	

56E 33 LOCATED IN GROUP II SHIELD NEAR 56J10

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 33	J21- 9	A 444Y	COMMONED RETURNS GROUND	224R
E 33	J21- 58	A 445Y	COMMONED RETURNS GROUND	226R

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(CONT.) 56E 33 LOCATED IN GROUP II SHIELD NEAR 56J10

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 33	J21- 22	A 446Y	COMMONED RETURNS GROUND	220R
E 33	J21- 43	A 447Y	COMMONED RETURNS GROUND	225R
E 33	E 34	A 458	COMMONED RETURNS GROUND	

56E 34 LOCATED IN GROUP II SHIELD NEAR 56J10

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 34	J10- 82	A 452	COMMONED RETURNS GROUND	330
E 34	E 28	A 453	COMMONED RETURNS GROUND	
E 34	E 29	A 454	COMMONED RETURNS GROUND	
E 34	E 30	A 455	COMMONED RETURNS GROUND	
E 34	E 31	A 456	COMMONED RETURNS GROUND	
E 34	E 32	A 457	COMMONED RETURNS GROUND	
E 34	E 33	A 458	COMMONED RETURNS GROUND	

56E 35 GROUP III SHIELD TERMINATION NEAR 56J21

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 35	J21- 50	A 556	GROUP 3 SHIELD	250

56E 36 GROUP III SHIELD TERMINATION NEAR 56J10

FROM	TO	COND NO	CIRCUIT FUNCTION	
E 36	J10- 27	A 487	GROUP 3 SHIELD	250

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SCALE-NONE	REV LTR	E	SHEET 12 OF 146

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FROM          TO        COND NO   C I R C U I T   F U N C T I O N

        56E 37       GROUP II  SHIELD TERMINATION NEAR 56J21

E 37          J21- 73    A 557  GROUP 2 SHIELD                        245


        56E 38       GROUP II  SHIELD TERMINATION NEAR 56J10

E 38          J10-  1    A 488  GROUP 2 SHIELD                        245


        56J01     (40A4P1)     PITCH CDU

J01-  1       TB1-A 8     A    1R 800 CPS 28 V 1 PCT HI IMU
J01-  2       TB1-D 2     A    2Y 800 CPS 28 V 5 PCT L-90 DEG LO IMU
J01-  3       TB1-D 1     A    2R 800 CPS 28 V 5 PCT L-90 DEG HI IMU
J01-  6       TB1-A14     A    3Y COS AIG 1X RET P1
J01-  7       TB1-A16     A    4Y SIN AIG 1X P2
J01- 11       TB1-A 6     A    5G 800 CPS 28 V 1 PCT HI IMU
J01- 12       TB1-B 6     A    5Y ZEROING RSVR 800 CPS
J01- 14       TB1-B 8     A    1Y 800 CPS 28 V 1 PCT LO IMU
J01- 15       TB1-B53     A    6  +28 VDC CDU NOT LOCK
J01- 16       TB1-G 6     A    7  +28 VDC IMU
J01- 20       TB1-A13     A    3R COS AIG 1X P3
J01- 21       TB1-A15     A    4R SIN AIG 1X RET P4
J01- 25       TB1-A 6     A    5R 800 CPS 28 V 1 PCT HI IMU
J01- 28       TB1-A 1     A    8R 400 CPS VARIABLE ILLUMINATION POWER
J01- 29       TB1-B 1     A    8Y 400 CPS 6 V LO
J01- 30       TB1-C53     A    9  +28 VDC IMU FOR IG MDA
J01- 31       TB1-K18     A   10G IG CDU MDA OUTPUT
J01- 32       TB1-K19     A   10Y IG CDU MDA OUTPUT
J01- 34       TB1-K35     A   11  IG CDU 1X RSVR LOAD S1
J01- 35       TB1-K33     A   12R IG CDU 1X ERROR SIG S2
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        FROM          TO        COND NO   C I R C U I T   F U N C T I O N

(CONT.)       56J01     (40A4P1)     PITCH CDU

        J01- 41       TB1-G 9     A   13  STRUCTURE GROUND
        J01- 43       TB1-K20     A   10R 0 VDC IMU
        J01- 45       TB1-K34     A   12Y IG CDU ERROR SIG RET
        J01- 50       TB1-G 1     A   14R 25.6 KC HI IMU
        J01- 57       TB1-B31     A   15Y IG CDU 1/2X ERROR SIG LO
        J01- 60       TB1-G 2     A   14Y 25.6 KC LO IMU
        J01- 67       TB1-A31     A   15R IG CDU 1/2X ERROR SIG S3
        J01- 86       TB1-H16     A   16Y COS AIG 16X TO CDU
        J01- 87       TB1-K16     A   17Y SIN AIG 16X TO CDU
        J01- 90       TB1-K30     A   18Y IG CDU ERROR SIG RET
        J01- 92       TB1-F30     A   19Y IG CDU MDA INPUT RET
        J01- 94       TB1-F34     A   20Y IG CDU ENCODER COMMON
        J01-100       TB1-H15     A   16R COS AIG 16X S3
        J01-101       TB1-K15     A   17R SIN AIG 16X S4
        J01-104       TB1-K31     A   18R IG CDU 16X ERROR SIG
        J01-105       TB1-F31     A   19G IG CDU MDA SLEW SIG
        J01-106       TB1-F29     A   19R IG CDU MDA TACH SIG
        J01-107       TB1-F35     A   20G IG CDU ENCODER PHASE 1
        J01-108       TB1-F33     A   20R IG CDU ENCODER PHASE 2


              56J02     (40A5P1)     YAW CDU

        J02-  1       TB1-A 8     A   21R 800 CPS 28 V 1 PCT HI IMU
        J02-  2       TB1-D 2     A   22Y 800 CPS 28 V 5 PCT L-90 DEG LO IMU
        J02-  3       TB1-D 1     A   22R 800 CPS 28 V 5 PCT L-90 DEG HI IMU
        J02-  6       TB1-B14     A   23Y COS AMG 1X S1
        J02-  7       TB1-B16     A   24Y SIN AMG 1X
        J02- 11       TB1-A 5     A   25G 800 CPS 28 V 1 PCT HI IMU
        J02- 12       TB1-B 6     A   25Y ZEROING RSVR 800 CPS
        J02- 14       TB1-B 8     A   21Y 800 CPS 28 V 1 PCT LO IMU
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        FROM          TO        COND NO   C I R C U I T   F U N C T I O N

(CONT.)       56J02     (40A5P1)     YAW CDU

        J02- 15       TB1-B53     A   26  +28 VDC CDU NOT LOCK
        J02- 16       TB1-G 6     A   27  +28 VDC IMU
        J02- 20       TB1-B13     A   23R COS AMG 1X S3
        J02- 21       TB1-B15     A   24R SIN AMG 1X RET
        J02- 25       TB1-A 5     A   25R 800 CPS 28 V 1 PCT HI IMU
        J02- 28       TB1-A 1     A   28R 400 CPS VARIABLE ILLUMINATION POWER
        J02- 29       TB1-B 1     A   28Y 400 CPS 6 V LO
        J02- 30       TB1-C52     A   29  +28 VDC IMU FOR MG MDA
        J02- 31       TB1-H19     A   30G MG CDU MDA OUTPUT
        J02- 32       TB1-H18     A   30Y MG CDU MDA OUTPUT
        J02- 34       TB1-H35     A   31  MG CDU 1X RSVR LOAD
        J02- 35       TB1-H33     A   32R MG CDU 1X ERROR SIG
        J02- 41       TB1-G 9     A   33  STRUCTURE GROUND
        J02- 43       TB1-H20     A   30R 0 VDC IMU
        J02- 45       TB1-H34     A   32Y MG CDU ERROR SIG RET
        J02- 50       TB1-G 1     A   34R 25.6 KC HI IMU
        J02- 57       TB1-B30     A   35Y MG CDU 1/2X ERROR SIG LO
        J02- 60       TB1-G 2     A   34Y 25.6 KC LO IMU
        J02- 67       TB1-A30     A   35R MG CDU 1/2X ERROR SIG
        J02- 86       TB1-H11     A   36Y COS AMG 16X TO CDU
        J02- 87       TB1-K11     A   37Y SIN AMG 16X TO CDU
        J02- 90       TB1-H30     A   38Y MG CDU ERROR SIG RET
        J02- 92       TB1-D30     A   39Y MG CDU MDA INPUT RET
        J02- 94       TB1-D34     A   40Y MG CDU ENCODER COMMON
        J02-100       TB1-H10     A   36R COS AMG 16X S3
        J02-101       TB1-K10     A   37R SIN AMG 16X S4
        J02-104       TB1-H31     A   38R MG CDU 16X ERROR SIG
        J02-105       TB1-D31     A   39G MG CDU MDA SLEW SIG
        J02-106       TB1-D29     A   39R MG CDU MDA TACH SIG
        J02-107       TB1-D35     A   40G MG CDU ENCODER PHASE 1
        J02-108       TB1-D33     A   40R MG CDU ENCODER PHASE 2
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        FROM          TO        COND NO   C I R C U I T   F U N C T I O N

              56J03     (40A3P1)     ROLL CDU

        J03-  1       TB1-A 8     A   41R 800 CPS 28 V 1 PCT HI IMU
        J03-  2       TB1-D 2     A   42Y 800 CPS 28 V 5 PCT L-90 DEG LO IMU
        J03-  3       TB1-D 1     A   42R 800 CPS 28 V 5 PCT L-90 DEG HI IMU
        J03-  6       TB1-C15     A   43Y COS AOG 1X S1
        J03-  7       TB1-D15     A   44Y SIN AOG 1X S4
        J03- 11       TB1-A 7     A   45G 800 CPS 28 V 1 PCT HI IMU
        J03- 12       TB1-B 6     A   45Y ZEROING RSVR 800 CPS
        J03- 14       TB1-B 8     A   41Y 800 CPS 28 V 1 PCT LO IMU
        J03- 15       TB1-B53     A   46  +28 VDC CDU NOT LOCK
        J03- 16       TB1-G 6     A   47  +28 VDC IMU
        J03- 20       TB1-C16     A   43R COS AOG 1X TO CDU
        J03- 21       TB1-D16     A   44R SIN AOG 1X TO CDU
        J03- 25       TB1-A 6     A   45R 800 CPS 28 V 1 PCT HI IMU
        J03- 28       TB1-A 1     A   48R 400 CPS VARIABLE ILLUMINATION POWER
        J03- 29       TB1-B 1     A   48Y 400 CPS 6 V LO
        J03- 30       TB1-C51     A   49  +28 VDC IMU FOR OG MDA
        J03- 31       TB1-G19     A   50G OG CDU MDA OUTPUT
        J03- 32       TB1-G18     A   50Y OG CDU MDA OUTPUT
        J03- 34       TB1-G35     A   51  OG CDU 1X RSVR LOAD
        J03- 35       TB1-G33     A   52R OG CDU 1X ERROR SIG
        J03- 41       TB1-G10     A   53  STRUCTURE GROUND
        J03- 43       TB1-G20     A   50R 0 VDC IMU
        J03- 45       TB1-G34     A   52Y OG CDU ERROR SIG RET
        J03- 50       TB1-H 1     A   54R 25.6 KC HI IMU
        J03- 57       TB1-B29     A   55Y OG CDU 1/2X ERROR SIG LO
        J03- 60       TB1-H 2     A   54Y 25.6 KC LO IMU
        J03- 67       TB1-A29     A   55R OG CDU 1/2X ERROR SIG
        J03- 86       TB1-F16     A   56Y COS AOG 16X TO CDU
        J03- 87       TB1-G16     A   57Y SIN AOG 16X TO CDU
        J03- 89       TB1-G29     A   58  OG CDU 16X RSVR LOAD
        J03- 90       TB1-G30     A   59Y OG CDU ERROR SIG RET
        J03- 92       TB1-C30     A   60Y OG CDU MDA INPUT RET
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(CONT.) 56J03 (40A3P1) ROLL CDU

FROM	TO	COND	NO	CIRCUIT FUNCTION
J03- 94	TB1-C34	A	61Y	OG CDU ENCODER COMMON
J03-100	TB1-F15	A	56R	COS AOG 16X S3
J03-101	TB1-G15	A	57R	SIN AOG 16X S4
J03-104	TB1-G31	A	59R	OG CDU 16X ERROR SIG
J03-105	TB1-C31	A	60G	OG CDU MDA SLEW SIG
J03-106	TB1-C29	A	60R	OG CDU MDA TACH SIG
J03-107	TB1-C35	A	61G	OG CDU ENCODER PHASE 1
J03-108	TB1-C33	A	61R	OG CDU ENCODER PHASE 2

56J04 (40A2P1) SHAFT CDU

FROM	TO	COND	NO	CIRCUIT FUNCTION
J04- 1	TB1-D 5	A	62R	800 CPS 28 V 1 PCT HI OPTICS
J04- 2	TB1-F 8	A	63Y	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
J04- 5	TB1-D 8	A	63R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
J04- 6	TB1-H46	A	64Y	SHAFT CDU 1X RSVR P1
J04- 7	TB1-K46	A	65R	SHAFT CDU 1X RSVR P2
J04- 11	TB1-H40	A	66Y	SHAFT CDU 1/2X RSVR P1
J04- 14	TB1-F 5	A	62Y	800 CPS 28 V 1 PCT LO OPTICS
J04- 20	TB1-H45	A	64R	SHAFT CDU 1X RSVR P3
J04- 21	TB1-K45	A	65Y	SHAFT CDU 1X RSVR P4
J04- 25	TB1-H41	A	66R	SHAFT CDU 1/2X RSVR P3
J04- 28	TB1-A 2	A	67R	400 CPS VARIABLE ILLUMINATION POWER
J04- 29	TB1-B 2	A	67Y	400 CPS 6 V LO
J04- 31	TB1-H48	A	68Y	SHAFT CDU MOTOR PHASE 1
J04- 32	TB1-H49	A	68R	SHAFT CDU MOTOR PHASE 2
J04- 34	TB1-F50	A	69Y	SHAFT CDU 1X RSVR S1
J04- 35	TB1-F48	A	69G	SHAFT CDU 1X RSVR S2
J04- 41	TB1-G10	A	70	STRUCTURE GROUND
J04- 43	TB1-H50	A	68G	0 VDC OPTICS
J04- 44	TB1-D49	A	68N	CDU SHAFT MDA TUNING CAPACITOR

(CONT.) 56J04 (40A2P1) SHAFT CDU

FROM	TO	COND	NO	CIRCUIT FUNCTION
J04- 45	TB1-F49	A	69R	SHAFT CDU 1X RSVR S3
J04- 50	TB1-K 1	A	71R	25.6 KC HI OPTICS
J04- 56	TB1-C45	A	72R	SHAFT CDU 1/2X RSVR S2
J04- 57	TB1-D45	A	73R	SHAFT CDU 1/2X RSVR S1
J04- 60	TB1-K 2	A	71Y	25.6 KC LO OPTICS
J04- 66	TB1-C46	A	72Y	SHAFT CDU 1/2X RSVR S4
J04- 67	TB1-D46	A	73Y	SHAFT CDU 1/2X RSVR S3
J04- 86	TB1-A45	A	74Y	SHAFT CDU 16X RSVR P1
J04- 87	TB1-B45	A	75R	SHAFT CDU 16X RSVR P2
J04- 90	TB1-G41	A	76R	SHAFT CDU 16X RSVR S3
J04- 92	TB1-G38	A	77Y	SHAFT CDU TACH LO
J04- 94	TB1-A34	A	78Y	SHAFT CDU ENCODER COMMON
J04-100	TB1-A46	A	74R	SHAFT CDU 16X RSVR P3
J04-101	TB1-B46	A	75Y	SHAFT CDU 16X RSVR P4
J04-104	TB1-G40	A	76Y	SHAFT CDU 16X RSVR S2
J04-106	TB1-G37	A	77R	SHAFT CDU TACH HI
J04-107	TB1-A35	A	78G	SHAFT CDU ENCODER PHASE 1
J04-108	TB1-A33	A	78R	SHAFT CDU ENCODER PHASE 2

56J05 (40A1P1) TRUNNION CDU

FROM	TO	COND	NO	CIRCUIT FUNCTION
J05- 1	TB1-D 5	A	79R	800 CPS 28 V 1 PCT HI OPTICS
J05- 2	TB1-F 8	A	80Y	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
J05- 4	TB1-D41	A	81Y	TRUNNION CDU 1/4X RSVR P3
J05- 5	TB1-D 8	A	80R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
J05- 8	TB1-D44	A	82Y	TRUNNION CDU 1/4X RSVR S1
J05- 9	TB1-C44	A	83R	TRUNNION CDU 1/4X RSVR S2
J05- 10	TB1-C43	A	83Y	TRUNNION CDU 1/4X RSVR S4
J05- 11	TB1-B19	A	84G	TRUNNION CDU 1/2X RSVR P1 AND P3
J05- 12	TB1-B18	A	84Y	TRUNNION CDU 1/2X RSVR P2

(CONT.) 56J05 (40A1P1) TRUNNION CDU

FROM	TO	COND	NO	CIRCUIT FUNCTION
J05- 14	TB1-F 5	A	79Y	800 CPS 28 V 1 PCT LO OPTICS
J05- 17	TB1-D40	A	81R	TRUNNION CDU 1/4X RSVR P2
J05- 22	TB1-D43	A	82R	TRUNNION CDU 1/4X RSVR S3
J05- 25	TB1-B19	A	84R	TRUNNION CDU 1/2X RSVR P3
J05- 28	TB1-A 2	A	85R	400 CPS VARIABLE ILLUMINATION POWER
J05- 29	TB1-B 2	A	85Y	400 CPS 6 V LO
J05- 31	TB1-K48	A	86Y	TRUNNION CDU MOTOR PHASE 1
J05- 32	TB1-K49	A	86R	TRUNNION CDU MOTOR PHASE 2
J05- 41	TB1-G11	A	87	STRUCTURE GROUND
J05- 43	TB1-K50	A	86G	0 VDC OPTICS
J05- 44	TB1-D50	A	86N	CDU TRUNNION MDA TUNING CAPACITOR
J05- 50	TB1-K 1	A	88R	25.6 KC HI OPTICS
J05- 56	TB1-H44	A	89R	TRUNNION CDU 1/2X RSVR S2
J05- 60	TB1-K 2	A	88Y	25.6 KC LO OPTICS
J05- 66	TB1-H43	A	89Y	TRUNNION CDU 1/2X RSVR S4
J05- 67	TB1-K43	A	90Y	TRUNNION CDU 1/2X RSVR S3
J05- 68	TB1-K44	A	90R	TRUNNION CDU 1/2X RSVR S1
J05- 86	TB1-A44	A	91Y	TRUNNION CDU 16X RSVR P1
J05- 87	TB1-B44	A	92Y	TRUNNION CDU 16X RSVR P2
J05- 90	TB1-C41	A	93R	TRUNNION CDU 16X RSVR S3
J05- 92	TB1-C38	A	94Y	TRUNNION CDU TACHOMETER LO
J05- 94	TB1-B34	A	95Y	TRUNNION CDU ENCODER COMMON
J05-100	TB1-A43	A	91R	TRUNNION CDU 16X RSVR P3
J05-101	TB1-B43	A	92R	TRUNNION CDU 16X RSVR P4
J05-104	TB1-C40	A	93Y	TRUNNION CDU 16X RSVR S2
J05-106	TB1-C37	A	94R	TRUNNION CDU TACHOMETER HI
J05-107	TB1-B35	A	95G	TRUNNION CDU ENCODER PHASE 1
J05-108	TB1-B33	A	95R	TRUNNION CDU ENCODER PHASE 2

56J06 (50A2P1) IMU CONTROL PANEL

FROM	TO	COND	NO	CIRCUIT FUNCTION
J06- 1	P01- 1	A	96R	PITCH ATTITUDE ERROR METER +
J06- 2	P01- 2	A	96Y	PITCH ATTITUDE ERROR METER -
J06- 6	P01- 6	A	97	ENTRY RELAY CONTROL RESET
J06- 9	P01- 9	A	98	MODE SWITCH INTERLOCK
J06- 12	TB1-A48	A	99Y	MODE RELAY COMMON TO AGC
J06- 14	P01- 14	A	100R	YAW ATTITUDE ERROR METER +
J06- 15	P01- 15	A	100Y	YAW ATTITUDE ERROR METER -
J06- 18	P01- 18	A	101	MODE RELAY COMMON TO D AND C ELECT
J06- 22	P01- 22	A	102	ATTITUDE CONTROL MODE LIGHT
J06- 23	P01- 23	A	103	FINE ALIGN RELAY CONTROL
J06- 24	TB1-G 3	A	104Y	ATTITUDE CONTROL RELAY CONTROL
J06- 25	P01- 25	A	105	ENTRY RELAY CONTROL
J06- 28	P01- 28	A	106Y	ROLL ATTITUDE ERROR METER -
J06- 29	P01- 29	A	106R	ROLL ATTITUDE ERROR METER +
J06- 34	P01- 34	A	107	ZERO ENCODER RELAY CONTROL
J06- 35	P01- 35	A	108	COARSE ALIGN RELAY CONTROL
J06- 36	P01- 36	A	109	CDU MANUAL RELAY CONTROL
J06- 37	P01- 37	A	110	MANUAL ALIGN
J06- 46	P01- 46	A	111	ATTITUDE CONTROL MODE INTERLOCK
J06- 56	P01- 56	A	112	MANUAL ALIGN ENABLE
J06- 68	TB1-C56	A	113Y	AGC COMMON (ISS)
J06- 69	J24- 12	A	114Y	TRANSFER SWITCH INDICATION TO AGC 164
J06- 78	TB1-D 3	A	115	0 VDC IMU
J06- 79	P01- 79	A	116	ENTRY MODE LIGHT
J06- 81	TB1-B48	A	99R	ATTIT CONT MODE COMMAND FROM AGC
J06- 91	TB1-G 8	A	117	STRUCTURE GROUND
J06- 92	P01- 92	A	118	COARSE ALIGN MODE LIGHT
J06- 93	P01- 93	A	119	MODE RELAY COMMON
J06- 94	P01- 94	A	120	FINE ALIGN MODE LIGHT
J06-104	P01-104	A	121	ZERO ENCODER MODE LIGHT
J06-105	P01-105	A	122	CDU MANUAL MODE LIGHT
J06-107	TB1-B 3	A	123Y	400 CPS 6 V LO
J06-108	TB1-A 3	A	123R	400 CPS VARIABLE ILLUMINATION POWER

56J08 (62P1) EYEPIECE STOWAGE UNIT & CONDITION ANNUN ASSY

FROM	TO	COND NO	CIRCUIT FUNCTION
J08- 17	TB1-B21	A 146	SPARE FAIL LIGHT 3 LO
J08- 18	TB1-A23	A 147	GIMBAL LOCK LIGHT HI
J08- 19	TB1-B21	A 148	GIMBAL LOCK LIGHT LO
J08- 28	TB1-B21	A 149	SPARE FAIL LIGHT 2 LO
J08- 29	TB1-G 8	A 150	STRUCTURE GROUND
J08- 30	TB1-B22	A 151	ZERO ENCODER LIGHT LO
J08- 31	TB1-A25	A 152	IMU DELAY LIGHT LO
J08- 32	TB1-C 4	A 153	MASTER CAUTION LIGHT HI
J08- 36	TB1-B75	A 154Y	400 CPS 6 V LO
J08- 41	TB1-A21	A 155	ZERO ENCODER LIGHT HI
J08- 42	TB1-A26	A 156	IMU DELAY LIGHT HI
J08- 43	J22- 40	A 157	MASTER CAUTION LIGHT RET
J08- 46	TB1-B77	A 154G	PROJECTION LAMP LO INTENSITY
J08- 50	TB1-A20	A 158	SPARE FAIL LIGHT 1 HI
J08- 51	TB1-C26	A 159Y	G+N ERROR LIGHT HI
J08- 52	TB1-C25	A 159R	G+N ERROR LIGHT LO
J08- 53	J22- 65	A 160	MASTER WARNING LIGHT RET
J08- 54	TB1-C 4	A 161	MASTER WARNING LIGHT HI
J08- 55	TB1-B76	A 154R	PROJECTION LAMP HI INTENSITY
J08- 60	TB1-A22	A 162	IMU FAIL LIGHT HI
J08- 61	TB1-B22	A 163	IMU FAIL LIGHT LO
J08- 62	TB1-B26	A 164R	IMU TEMP CONT FAIL LIGHT HI
J08- 63	TB1-B25	A 164Y	IMU TEMP CONT FAIL LIGHT LO
J08- 66	TB1-A76	A 165G	MDV SLEW CONTROL 1.5 V 400 CPS
J08- 67	TB1-A53	A 166	+28 VDC MDV SWITCHED
J08- 68	TB1-A77	A 165R	400 CPS 26 V MDV RSVR EXC
J08- 70	TB1-B22	A 167	SPARE FAIL LIGHT 1 LO
J08- 71	TB1-D26	A 168R	AGC POWER SUPPLY FAIL SIG HI
J08- 72	TB1-A24	A 169	CDU FAIL LIGHT HI
J08- 73	TB1-B24	A 170	ACCEL FAIL LIGHT HI
J08- 78	TB1-B52	A 171	STEP-UP-C
J08- 79	TB1-A52	A 172	STEP-DOWN-C

(CONT.) 56J08 (62P1) EYEPIECE STOWAGE UNIT & CONDITION ANNUN ASSY

FROM	TO	COND NO	CIRCUIT FUNCTION
J08- 81	TB1-A78	A 165Y	400 CPS 26 V SLEW
J08- 82	TB1-D25	A 168Y	AGC POWER SUPPLY FAIL LIGHT LO
J08- 83	TB1-B23	A 173	CDU FAIL LIGHT LO
J08- 84	TB1-B23	A 174	ACCEL FAIL LIGHT LO
J08- 92	TB1-D 4	A 175	0 VDC IMU
J08- 93	TB1-A51	A 176	STEP-DOWN-R
J08- 95	TB1-A75	A 165N	400 CPS 26 V LO
J08-106	TB1-B51	A 177	STEP-UP-R

56J09 (50A1P1) G AND N INDICATOR CONTROL PANEL

FROM	TO	COND NO	CIRCUIT FUNCTION
J09- 1	TB1-F77	A 285	0 VDC OPTICS
J09- 2	TB1-A61	A 286R	TRACKER MODE RELAY COMMAND
J09- 3	J22- 89	A 287Y	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT
J09- 4	J22- 18	A 288Y	PITCH ATTIT IMPULSE CONTR OUTPUT UP
J09- 5	J22- 35	A 288R	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN
J09- 6	J22- 87	A 289R	YAW ATTIT IMPULSE CONTR OUTPUT LEFT
J09- 7	J22- 88	A 289G	YAW ATTIT IMPULSE CONTR INPUT
J09- 8	TB1-K68	A 290R	TRUNNION HAND CONTROLLER OUTPUT HI
J09- 10	TB1-H68	A 291R	SHAFT HAND CONTROLLER OUTPUT HI
J09- 14	J22- 64	A 295	SPACECRAFT LAMP TEST
J09- 15	TB1-D70	A 296	0 VDC SPACECRAFT
J09- 16	J22- 90	A 287G	ROLL ATTIT IMPULSE CONTR INPUT
J09- 17	J22- 60	A 287R	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT
J09- 18	J22- 36	A 288G	PITCH ATTIT IMPULSE CONTR INPUT
J09- 20	J22- 58	A 289Y	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT
J09- 22	TB1-K69	A 290Y	TRUNNION HAND CONTROLLER OUTPUT LO
J09- 24	TB1-H69	A 291Y	SHAFT HAND CONTROLLER OUTPUT LO
J09- 26	TB1-C62	A 297	0 VDC IMU
J09- 30	P10- 32	A 298Y	ACCEPT MARK

(CONT.) 56J09 (50A1P1) G AND N INDICATOR CONTROL PANEL

FROM	TO	COND NO	CIRCUIT FUNCTION
J09- 31	P10- 16	A 299	MANUAL MARK COMMAND
J09- 32	TB1-A54	A 300R	PANEL BRIGHTNESS CONTROL
J09- 33	P10- 33	A 301Y	MARK REJECT
J09- 34	TB1-F68	A 302R	SCT TRUNNION TRACKER MODE INPUT HI
J09- 35	TB1-F69	A 302Y	SCT TRUNNION TRACKER MODE INPUT LO
J09- 38	TB1-B25	A 591	IMU TEMP CONT FAIL LIGHT LO
J09- 39	TB1-D25	A 592	AGC POWER SUPPLY FAIL LIGHT LO
J09- 40	J22- 8	A 303Y	0 VDC FROM NAA
J09- 41	J22- 7	A 303R	+28 VDC FROM NAA
J09- 42	J24- 31	A 304Y	TRACKER ON INDICATION TO AGC 107
J09- 43	TB1-G68	A 305R	PHOTOMETER MARK REJECT HI
J09- 44	TB1-A55	A 300Y	PANEL BRIGHTNESS CONTROL
J09- 45	TB1-A71	A 306G	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR
J09- 46	TB1-B77	A 307Y	PROJECTION LAMP LO INTENSITY
J09- 47	TB1-A68	A 308Y	AGC COMMON (OSS)
J09- 48	TB1-A69	A 308R	OPTICS ZERO ENCODER INDICATION
J09- 49	J24- 54	A 309Y	OPTICS MODE SW COMPUTER INDICATION 106
J09- 50	J22- 2	A 303G	ATTITUDE DISABLE SIG TO NAA
J09- 51	TB1-K72	A 310	+28 VDC MDV
J09- 52	P10- 92	A 311Y	400 CPS 6 V LO
J09- 53	P10-106	A 311R	400 CPS 6 V HI
J09- 54	TB1-A 3	A 312R	400 CPS VARIABLE ILLUMINATION POWER
J09- 55	TB1-B76	A 307R	PROJECTION LAMP HI INTENSITY
J09- 58	TB1-B57	A 313Y	0 DEG OFFSET RELAY COMMAND
J09- 59	TB1-B58	A 313R	25 DEG OFFSET RELAY COMMAND
J09- 60	TB1-G69	A 305Y	PHOTOMETER MARK REJECT LO
J09- 61	P10-105	A 311G	400 CPS 6 V HI
J09- 62	TB1-C25	A 590	G+N ERROR LIGHT LO
J09- 65	P10- 39	A 314R	400 CPS 1.5 V PI PHASE
J09- 66	TB1-A76	A 315G	MDV SLEW CONTROL 1.5 V 400 CPS
J09- 67	TB1-A53	A 316	+28 VDC MDV SWITCHED
J09- 68	TB1-A77	A 315R	400 CPS 26 V MDV RSVR EXC

(CONT.) 56J09 (50A1P1) G AND N INDICATOR CONTROL PANEL

FROM	TO	COND NO	CIRCUIT FUNCTION
J09- 69	TB1-B72	A 306Y	800 CPS 28 V 1 PCT LO OPTICS
J09- 70	TB1-B59	A 286G	COMPUTER RELAY COMMAND
J09- 71	TB1-H71	A 317	+28 VDC OPTICS
J09- 72	TB1-B60	A 286Y	ZERO OPTICS MODE COMMAND
J09- 73	TB1-D72	A 318	CONDITION LAMP TEST
J09- 74	TB1-F60	A 319R	IMU TEMP ALARM AMP PIN 15
J09- 75	TB1-F59	A 320	IMU TEMP ALARM AMP PIN 14
J09- 76	TB1-D63	A 321Y	IMU TEMP CONT K2 PIN 6
J09- 77	P10- 38	A 314Y	400 CPS 1.5 V ZERO PHASE
J09- 78	TB1-B52	A 322	STEP-UP-C
J09- 79	TB1-A52	A 323	STEP-DOWN-C
J09- 80	TB1-A72	A 306R	800 CPS 28 V 1 PCT HI OPTICS
J09- 81	TB1-A78	A 315Y	400 CPS 26 V SLEW
J09- 82	TB1-A57	A 313G	RESOLVED MODE RELAY COMMAND
J09- 83	TB1-F76	A 593	0 VDC OPTICS
J09- 84	TB1-C 3	A 312Y	MODE LAMP TEST PWR
J09- 85	TB1-K62	A 324G	IRIG TEMP BRIDGE AMP PIN 6
J09- 86	TB1-K60	A 324R	IRIG TEMP GAIN SWITCH NC
J09- 87	TB1-H60	A 325G	IMU TEMP CONT AMP PIN 5
J09- 88	TB1-G60	A 325N	IMU TEMP CONT K2 PIN 5
J09- 89	TB1-K61	A 324N	IRIG ZERO DEVIATION CHECK
J09- 90	TB1-D62	A 321R	EMERG HTR CONT MODULE LO
J09- 91	TB1-H70	A 326	STRUCTURE GROUND
J09- 92	TB1-F62	A 319Y	IMU TEMP ALARM AMP PIN 5
J09- 93	TB1-A51	A 327	STEP-DOWN-R
J09- 94	TB1-F63	A 321G	TEMPERATURE CONTROLLER 0 VDC IMU
J09- 95	P10- 48	A 314G	400 CPS 26 V HI
J09- 96	TB1-B71	A 328	+28 VDC OPTICS TRACKER POWER
J09- 97	TB1-H62	A 329Y	ACCEL INDICATING SENSOR HI
J09- 98	TB1-G62	A 329N	ACCEL BRIDGE AMP PIN 6
J09- 99	TB1-B23	A 292	CONDITION LAMPS COMMON
J09-100	TB1-G59	A 325R	IMU HTR CURRENT AMP PIN 5

(CONT.) 56J09 (50A1P1) G AND N INDICATOR CONTROL PANEL

FROM	TO	COND NO	CIRCUIT FUNCTION	
J09-101	TB1-H59	A 325Y	IMU TEMP CONT K1 PIN 3	
J09-102	TB1-K59	A 324Y	IMU TEMP CONT -5 DEG GAIN CHECK	
J09-103	TB1-G64	A 329G	IMU IMU TEMP CONT +5 DEG GAIN CHECK	
J09-104	TB1-G63	A 329R	ACCEL ZERO DEVIATION CHECK	
J09-105	TB1-F61	A 319G	IMU TEMP ALARM BIAS RESISTOR	
J09-106	TB1-B51	A 330	STEP-UP-R	
J09-107	TB1-A25	A 589	IMU DELAY LIGHT LO	
J09-108	TB1-C71	A 331	+28 VDC OPTICS DAC POWER	

56J10 (05A6P1) NAV KEYBOARD AND DISPLAY PANEL (DSKY)

FROM	TO	COND NO	CIRCUIT FUNCTION	
J10- 1	E 38	A 488	GROUP 2 SHIELD	245
J10- 2	TB1-D72	A 477	CONDITION LAMP TEST	328
J10- 3	TB1-A21	A 473G	ZERO ENCODER LIGHT HI	301
J10- 4	TB1-A24	A 473R	CDU FAIL LIGHT HI	302
J10- 5	TB1-B24	A 473Y	ACCEL FAIL LIGHT HI	303
J10- 6	TB1-A22	A 478	IMU FAIL LIGHT HI	304
J10- 7	TB1-A20	A 479	SPARE FAIL LIGHT 1 HI	305
J10- 8	TB1-K71	A 483	+28 VDC MDV	306
J10- 9	TB1-B56	A 481	AGC FAIL SIG	326
J10- 10	TB1-K71	A 489	+28 VDC MDV	327
J10- 12	TB1-B48	A 474G	ATTIT CONT MODE COMMAND FROM AGC	314
J10- 13	TB1-A48	A 474Y	MODE RELAY COMMON TO AGC	315
J10- 14	J21- 8	A 444R	OUT 0 11	224S
J10- 15	J21- 23	A 447R	OUT 0 12	225S
J10- 16	J21- 87	A 445R	OUT 0 13	226S
J10- 17	J21- 35	A 424R	OUT 0 14	227S
J10- 18	J21- 7	A 425R	OUT 0 15	228S
J10- 19	J21- 86	A 428R	TELEMETRY FAIL ALARM	231S
J10- 21	TB1-C50	A 475Y	ZERO ENCODER MODE COMMAND FROM AGC	307

(CONT.) 56J10 (05A6P1) NAV KEYBOARD AND DISPLAY PANEL (DSKY)

FROM	TO	COND NO	CIRCUIT FUNCTION	
J10- 22	TB1-A50	A 475G	COARSE ALIGN MODE COMMAND FROM AGC	308
J10- 23	TB1-C48	A 476Y	CDU MANUAL MODE COMMAND FROM AGC	309
J10- 24	TB1-B50	A 475R	FINE ALIGN MODE COMMAND FROM AGC	310
J10- 25	TB1-C49	A 476R	ENTRY MODE COMMAND FROM AGC	311
J10- 26	TB1-A48	A 474R	MODE RELAY COMMON TO AGC	312
J10- 27	E 36	A 487	GROUP 3 SHIELD	250
J10- 28	J21- 67	A 438R	OUT 0 4	217S
J10- 29	J21- 89	A 439R	OUT 0 5	218S
J10- 30	J21- 37	A 440R	OUT 0 6	219S
J10- 31	J21- 21	A 446R	OUT 0 7	220S
J10- 32	J21- 34	A 423R	PROGRAM CHECK FAIL ALARM	232S
J10- 33	J21- 6	A 429R	SCALER FAIL ALARM	233S
J10- 34	J21- 29	A 466R	KEY CODE 1	201S
J10- 35	J21- 48	A 464R	KEY CODE 2	202S
J10- 36	J21- 82	A 461R	KEY CODE 3	203S
J10- 37	J21- 52	A 463R	KEY CODE 4	204S
J10- 38	J21- 32	A 459R	KEY CODE 5	205S
J10- 39	J21- 31	A 462R	TEST ALARM	207S
J10- 40	J21- 10	A 426R	PROGRAM ALARM	229S
J10- 41	J21- 44	A 427R	COMPUTER ACTIVITY	230S
J10- 42	J21- 5	A 422R	TIMING (1.5 CPS)	244S
J10- 43	J21- 25	A 431R	COUNTER FAIL ALARM	235S
J10- 44	J21- 3	A 430R	PARITY FAIL ALARM	234S
J10- 45	J21- 84	A 468	SPARE	248
J10- 46	J21- 55	A 469	SPARE	249
J10- 47	J21- 27	A 465R	OR OF C1 THRU C33	210S
J10- 48	J21- 14	A 467R	ERROR RESET	208S
J10- 49	J21- 83	A 460R	KEY RESET NAV	209S
J10- 51	J21- 85	A 433R	RUPT LOCK ALARM	237S
J10- 53	J21- 71	A 432R	KEY RELEASE	236S
J10- 55	J21- 63	A 486	SPARE	240
J10- 56	J21- 91	A 485	DISKY GROUND	239

(CONT.) 56J10 (05A6P1) NAV KEYBOARD AND DISPLAY PANEL (DSKY)

FROM	TO	COND NO	CIRCUIT FUNCTION	
J10- 57	J21- 64	A 480	+13 V B	241
J10- 58	J21- 62	A 484	DISKY GROUND	251
J10- 59	J21- 65	A 482	+28 VDC AGC	243
J10- 60	J21- 40	A 437R	OUT 0 3	216S
J10- 61	J21- 42	A 441R	OUT 0 8	221S
J10- 62	J21- 88	A 442R	OUT 0 9	222S
J10- 63	J21- 36	A 443R	OUT 0 10	223S
J10- 64	J21- 33	A 434R	TC TRAP ALARM	238S
J10- 65	TB1-B60	A 472Y	ZERO OPTICS MODE COMMAND	316
J10- 66	TB1-A61	A 472R	TRACKER MODE RELAY COMMAND	317
J10- 67	TB1-B59	A 472G	COMPUTER RELAY COMMAND	331
J10- 69	E 26	A 470	COMMONED RETURNS GROUND	252
J10- 70	J21- 12	A 450	SPARE	211
J10- 71	J21- 26	A 449	POWER SUPPLY SYNC	212
J10- 72	J21- 46	A 448	SPARE	213
J10- 73	J21- 90	A 435R	OUT 0 1	214S
J10- 74	J21- 38	A 436R	OUT 0 2	215S
J10- 75	J21- 72	A 451	SPARE	247
J10- 82	E 34	A 452	COMMONED RETURNS GROUND	330

56J11 (45A1P1) PSA TRAY 1

FROM	TO	COND NO	CIRCUIT FUNCTION
J11-A1	TB1-K33	CC 60W	IG CDU 1X ERROR SIG
J11-A2	TB1-H33	CC 62W	MG CDU 1X ERROR SIG
J11-A3	TB1-G33	CC 64W	OG CDU 1X ERROR SIG
J11-A5	J12-A2	BB 9R	IMU MG ERROR SIG
J11-A5	TB1-B28	CC 68R	IMU MG ERROR SIG
J11-A6	J12-B1	BB 9L	IMU OG ERROR SIG
J11-A6	TB1-A28	CC 68L	IMU OG ERROR SIG
J11-B1	TB1-K34	CC 60R	IG CDU ERROR SIG RET

(CONT.) 56J11 (45A1P1) PSA TRAY 1

FROM	TO	COND NO	CIRCUIT FUNCTION
J11-B1	TB1-K28	CC 61W	IG CDU ERROR SIG RET
J11-B2	TB1-H34	CC 62R	MG CDU ERROR SIG RET
J11-B2	TB1-H28	CC 63W	MG CDU ERROR SIG RET
J11-B3	J17-B1	BB 10R	OG CDU ERROR SIG RET
J11-B3	TB1-G34	CC 64R	OG CDU ERROR SIG RET
J11-B5	J12-B2	BB 9K	IMU GIMBAL AND GYRO ERROR SIG LO
J11-B5	J11-56	BB 28	0 VDC IMU
J11-B5	TB1-D28	CC 68K	IMU GIMBAL AND GYRO ERROR SIG LO
J11-B6	J12-A1	BB 9W	IMU IG AND Y GYRO ERROR SIG
J11-B6	TB1-C28	CC 68W	IMU IG AND Y GYRO ERROR SIG
J11-C1	TB1-K29	CC 61R	IG CDU ATTITUDE STEERING ERROR
J11-C2	TB1-H29	CC 63R	MG CDU ATTITUDE STEERING ERROR
J11-C3	J17-A1	BB 10W	OG CDU ATTITUDE STEERING ERROR
J11-D5	TB1-F19	CC 69W	IG TORQUE MOTOR RET
J11-D6	TB1-F18	CC 69R	IG TORQUE MOTOR HI
J11-F1	TB1-B11	CC 65R	IG ADA
J11-F3	TB1-K 8	CC 73R	3200 CPS 2 V FEEDBACK HI
J11-F6	TB1-D18	CC 70R	MG TORQUE MOTOR HI
J11-G1	TB1-A10	CC 65K	OG ADA
J11-G2	J11-P6	BB 17	0 VDC IMU
J11-G2	TB1-B10	CC 65W	0 VDC IMU
J11-G3	TB1-H 8	CC 73W	3200 CPS 2 V FEEDBACK LO
J11-G6	TB1-D19	CC 70W	MG TORQUE MOTOR RET
J11-H1	TB1-A11	CC 65L	MG ADA
J11-H5	TB1-C19	CC 71W	OG TORQUE MOTOR RET
J11-H6	TB1-C18	CC 71R	OG TORQUE MOTOR HI
J11-L1	J12-H2	BB 8R	3200 CPS 2 V HI
J11-L1	TB1-K 7	CC 67L	3200 CPS 2 V HI
J11-L2	J12-K2	BB 8W	3200 CPS 2 V LO
J11-L2	TB1-H 7	CC 67W	3200 CPS 2 V LO
J11-L3	TB1-K 3	CC 72	COARSE ALIGN RELAY CONTROL
J11-L4	J12-K3	BB 7	STRUCTURE GROUND

(CONT.) 56J11 (45A1P1) PSA TRAY 1

FROM	TO	COND NO	CIRCUIT FUNCTION	
J11-L4	TB1-H 4	CC 80	STRUCTURE GROUND	
J11-L6	J23- 31	CC 1R	COMPUTER 3200 PPS OUT OF PHASE SYNC	152S
J11-M1	TB1-K 7	CC 67K	3200 CPS 2 V HI	
J11-M2	TB1-H 7	CC 67R	3200 CPS 2 V LO	
J11-M5	J11-P3	BB 18	0 VDC IMU	
J11-M5	J23- 52	CC 1W	COMPUTER 3200 PPS SYNC RET	152R
J11-M5	J23- 53	CC 2W	COMPUTER 3200 PPS SYNC RET	151R
J11-M6	J23- 54	CC 2R	COMPUTER 3200 PPS IN PHASE SYNC	151S
J11-N1	J17-P2	BB 11R	3200 CPS 20 V CT	
J11-N2	J17-R2	BB 11W	3200 CPS 20 V LO	
J11-N3	J12-P4	BB 16	COMPUTER 12.8 KPPS SYNC	
J11-N4	J12-P3	BB 5W	800 CPS 28 V 1 PCT LO IMU	
J11-N5	J12-N3	BB 5R	800 CPS 28 V 1 PCT HI IMU	
J11-N6	J13-P6	BB 13	-28 VDC	
J11-N6	TB1-C54	CC 66	-28 VDC	
J11-P1	J17-N2	BB 11L	3200 CPS 20 V HI	
J11-P2	J11-P3	BB 19	0 VDC IMU	
J11-P2	E 4	CC 79	0 VDC IMU	
J11-P3	J11-R3	BB 20	0 VDC IMU	
J11-P3	J11-M5	BB 18	0 VDC IMU	
J11-P3	J11-P2	BB 19	0 VDC IMU	
J11-P4	J11-P5	BB 21	0 VDC IMU	
J11-P4	J11-R4	BB 27	0 VDC IMU	
J11-P5	J11-P4	BB 21	0 VDC IMU	
J11-P6	J11-R6	BB 22	0 VDC IMU	
J11-P6	J11-G2	BB 17	0 VDC IMU	
J11-R1	J11-R2	BB 23	0 VDC IMU	
J11-R1	TB1-C69	CC 78	0 VDC IMU	
J11-R2	TB1-C70	CC 74	0 VDC IMU	
J11-R2	J11-R1	BB 23	0 VDC IMU	
J11-R3	TB1-B68	CC 75	0 VDC IMU	
J11-R3	J11-P3	BB 20	0 VDC IMU	

(CONT.) 56J11 (45A1P1) PSA TRAY 1

FROM	TO	COND NO	CIRCUIT FUNCTION
J11-R4	J11-R5	BB 24	0 VDC IMU
J11-R4	J11-P4	BB 27	0 VDC IMU
J11-R5	J11-R6	BB 26	0 VDC IMU
J11-R5	TB1-H26	CC 76	0 VDC IMU
J11-R5	J11-R4	BB 24	0 VDC IMU
J11-R6	J11-S6	BB 25	0 VDC IMU
J11-R6	J11-P6	BB 22	0 VDC IMU
J11-R6	J11-R5	BB 26	0 VDC IMU
J11-S1	J20-N1	BB 2	+28 VDC IMU
J11-S1	J11-S2	BB 15	+28 VDC IMU
J11-S2	J20-N2	BB 3	+28 VDC IMU
J11-S2	J11-S1	BB 15	+28 VDC IMU
J11-S3	J17-R1	BB 12	+28 VDC STBY TO 3200 CPS POWER SUPPLY
J11-S4	J15-S6	BB 1	+28 VDC IMU
J11-S4	J12-S5	BB 6	+28 VDC IMU
J11-S4	J11-S5	BB 14	+28 VDC IMU
J11-S5	J20-L2	BB 4	+28 VDC IMU
J11-S5	J11-S4	BB 14	+28 VDC IMU
J11-S6	TB1-K26	CC 77	0 VDC IMU
J11-S6	J11-R6	BB 25	0 VDC IMU
J11-S6	J11-B5	BB 28	0 VDC IMU

56J12 (45A2P1) PSA TRAY 2

FROM	TO	COND NO	CIRCUIT FUNCTION
J12-A1	J11-B6	BB 9W	IMU IG AND Y GYRO ERROR SIG
J12-A2	J11-A5	BB 9R	IMU MG ERROR SIG
J12-A5	J13-D2	BB 44	X PIP ERROR MONITOR
J12-A6	J13-F2	BB 45	Y PIP ERROR MONITOR
J12-B1	J11-A6	BB 9L	IMU OG ERROR SIG
J12-B2	J11-B5	BB 9K	IMU GIMBAL AND GYRO ERROR SIG LO

(CONT.) 56J12 (45A2P1) PSA TRAY 2

FROM	TO	COND NO	CIRCUIT FUNCTION	
J12-B5	J13-R6	BB 59	0 VDC IMU	
J12-B5	TB1-B41	CC 89	0 VDC IMU	
J12-B6	J14-H6	BB 29	Z PIP ERROR MONITOR	
J12-C1	TB1-F51	CC 87	TRAY 2 THERMISTER HI	
J12-C2	J13-C2	BB 55	THERMISTER LO	
J12-D1	J16-L4	BB 94R	COMPUTER 800 PPS OUT OF PHASE SYNC	
J12-D2	J16-M4	BB 94L	COMPUTER 800 PPS IN PHASE SYNC	
J12-D4	J24- 45	CC 10R	ACCEL FAIL	138S
J12-D5	J24- 70	CC 9R	CDU FAIL	124S
J12-D6	J24- 25	CC 8R	IMU FAIL	141S
J12-F1	J12-F2	BB 41	COMPUTER 800 PPS SYNC RET	
J12-F1	J12-R4	BB 49	0 VDC IMU	
J12-F1	J16-L3	BB 94W	COMPUTER 800 PPS SYNC RET	
J12-F2	J23- 51	CC 6W	COMPUTER 25.6 KPPS SYNC RET	153R
J12-F2	J23- 50	CC 7W	COMPUTER 25.6 KPPS SYNC RET	154R
J12-F2	J12-F1	BB 41	COMPUTER 800 PPS SYNC RET	
J12-F3	J17-M3	BB 52	0 VDC SPACECRAFT	
J12-F4	J24- 72	CC 10W	ACCEL FAIL RET	138R
J12-F5	J24- 71	CC 9W	CDU FAIL RET	124R
J12-F6	J24- 46	CC 8W	IMU FAIL RET	141R
J12-G1	J23- 30	CC 6R	COMPUTER 25.6 KPPS IN PHASE SYNC	153S
J12-G2	J23- 29	CC 7R	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154S
J12-G3	J22- 63	CC 4	G+N ERROR LIGHT (MAIN PANEL)	
J12-G4	J20-M6	BB 34	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
J12-G5	J16-R2	BB 56	0 VDC IMU	
J12-G6	J16-N3	BB 37W	OG CDU FAILURE INDICATION	
J12-H1	J23- 73	CC 3W	COMPUTER 102.4 KPPS SYNC RET	156R
J12-H2	J11-L1	BB 8R	3200 CPS 2 V HI	
J12-H4	J20-K6	BB 33R	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
J12-H4	J12-N2	BB 39	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
J12-H4	TB1-D 1	CC 88R	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
J12-H5	J16-M2	BB 37L	IG CDU FAILURE INDICATION	

(CONT.) 56J12 (45A2P1) PSA TRAY 2

FROM	TO	COND NO	CIRCUIT FUNCTION	
J12-H6	J16-M3	BB 37R	MG CDU FAILURE INDICATION	
J12-K1	J23- 46	CC 3R	COMPUTER 102.4 KPPS SYNC	156S
J12-K2	J11-L2	BB 8W	3200 CPS 2 V LO	
J12-K3	J13-C6	BB 42	STRUCTURE GROUND	
J12-K3	J11-L4	BB 7	STRUCTURE GROUND	
J12-K3	SHLD CC 3	CC 3A	STRUCTURE GROUND	
J12-K4	J20-K5	BB 33W	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
J12-K4	TB1-D 2	CC 88W	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
J12-K6	J14-R2	BB 43W	+12, +32, +120 VDC RET GYRO	
J12-L1	J20-N5	BB 46	+28 VDC MDV	
J12-L2	TB1-C26	CC 86	G+N ERROR LIGHT HI	
J12-L6	J14-S2	BB 43R	+120 VDC GYRO	
J12-M1	J23- 26	CC 5	AGC POWER SUPPLY FAIL SIG HI	157S
J12-M1	TB1-D26	CC 85	AGC POWER SUPPLY FAIL SIG HI	
J12-M3	TB1-B56	CC 84	AGC FAIL SIG	
J12-M5	J14-S5	BB 43K	+32 VDC GYRO	
J12-M6	J14-S3	BB 43L	+12 VDC GYRO	
J12-N1	J12-P1	BB 38	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
J12-N2	J12-H4	BB 39	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
J12-N3	J15-P6	BB 30R	800 CPS 28 V 1 PCT HI IMU	
J12-N3	J11-N5	BB 5R	800 CPS 28 V 1 PCT HI IMU	
J12-N4	J12-N5	BB 40	25.6 KC HI IMU	
J12-N4	TB1-G 1	CC 83R	25.6 KC HI IMU	
J12-N5	J15-N6	BB 31R	25.6 KC HI IMU	
J12-N5	J12-N4	BB 40	25.6 KC HI IMU	
J12-N6	J17-N3	BB 51W	25.6 KC LO OPTICS	
J12-N6	J12-R6	BB 53	0 VDC OPTICS	
J12-N6	TB1-K 2	CC 82W	25.6 KC LO OPTICS	
J12-P1	TB1-C74	CC 81L	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
J12-P1	J12-N1	BB 38	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
J12-P2	TB1-C72	CC 81R	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
J12-P3	J15-P5	BB 30W	800 CPS 28 V 1 PCT LO IMU	

(CONT.) 56J12 (45A2P1) PSA TRAY 2

FROM	TO	COND NO	CIRCUIT FUNCTION
J12-P3	J11-N4	BB 5W	800 CPS 28 V 1 PCT LO IMU
J12-P4	J17-R3	BB 50W	COMPUTER 12.8 KPPS SYNC
J12-P4	J11-N3	BB 16	COMPUTER 12.8 KPPS SYNC
J12-P5	J15-N5	BB 31W	25.6 KC LO IMU
J12-P5	J12-R2	BB 54	0 VDC IMU
J12-P5	TB1-G 2	CC 83W	25.6 KC LO IMU
J12-P6	J17-P3	BB 51R	25.6 KC HI OPTICS
J12-P6	TB1-K 1	CC 82R	25.6 KC HI OPTICS
J12-R1	TB1-C73	CC 81W	800 CPS 28 V 5 PCT IMU WHEELS LO
J12-R2	J12-R3	BB 57	0 VDC IMU
J12-R2	TB1-C70	CC 90	0 VDC IMU
J12-R2	J12-P5	BB 54	0 VDC IMU
J12-R3	J12-R4	BB 58	0 VDC IMU
J12-R3	TB1-C69	CC 91	0 VDC IMU
J12-R3	J12-R2	BB 57	0 VDC IMU
J12-R4	J12-F1	BB 49	0 VDC IMU
J12-R4	TB1-C68	CC 92	0 VDC IMU
J12-R4	J12-R3	BB 58	0 VDC IMU
J12-R5	TB1-K25	CC 93	0 VDC IMU
J12-R6	TB1-H53	CC 94	0 VDC OPTICS
J12-R6	J12-N6	BB 53	0 VDC OPTICS
J12-S1	J20-M1	BB 35	+28 VDC IMU
J12-S1	J12-S3	BB 47	+28 VDC IMU
J12-S2	J20-M2	BB 36	+28 VDC IMU
J12-S2	J12-S4	BB 48	+28 VDC IMU
J12-S3	J12-S1	BB 47	+28 VDC IMU
J12-S4	J12-S2	BB 48	+28 VDC IMU
J12-S5	J11-S4	BB 6	+28 VDC IMU
J12-S6	J20-P5	BB 32	+28 VDC OPTICS

56J13 (45A3P1) PSA TRAY 3

FROM	TO	COND NO	CIRCUIT FUNCTION
J13-A1	TB1-F11	CC 95R	X PIP ERROR HI
J13-A3	TB1-D11	CC 98R	Y PIP ERROR HI
J13-A6	J14-A6	BB 62	X GYRO DC DIFF AMP OUTPUT
J13-B1	TB1-F10	CC 95W	X PIP ERROR LO
J13-B3	TB1-D10	CC 98W	Y PIP ERROR LO
J13-C1	TB1-D51	CC104	TRAY 3 THERMISTER HI
J13-C2	J14-B2	BB 73	THERMISTER LO
J13-C2	J12-C2	BB 55	THERMISTER LO
J13-C6	J14-H5	BB 64	STRUCTURE GROUND
J13-C6	E 1	CC342	STRUCTURE GROUND
J13-C6	J12-K3	BB 42	STRUCTURE GROUND
J13-D1	J15-L4	BB 69	P X
J13-D2	TB1-B40	CC 97	X PIP ERROR MONITOR
J13-D2	J12-A5	BB 44	X PIP ERROR MONITOR
J13-D3	J15-L3	BB 71	P Y
J13-D6	TB1-F23	CC101L	X GYRO TORQUE +
J13-F1	J15-M4	BB 70	N X
J13-F2	TB1-A40	CC100	Y PIP ERROR MONITOR
J13-F2	J12-A6	BB 45	Y PIP ERROR MONITOR
J13-F3	J15-M3	BB 72	N Y
J13-F6	TB1-F22	CC101W	X GYRO TORQUE RET
J13-G6	TB1-F21	CC101R	X GYRO TORQUE -
J13-H1	TB1-K23	CC 96L	X PIP TORQUE +
J13-H6	J14-G1	BB 63L	X GYRO CAL DUMMY
J13-K1	TB1-K22	CC 96W	X PIP TORQUE RET
J13-K6	J14-H1	BB 63R	X GYRO TERNARY CUR SW TORQUE +
J13-L1	TB1-K21	CC 96R	X PIP TORQUE -
J13-L3	TB1-H23	CC 99L	Y PIP TORQUE +
J13-L6	J14-K1	BB 63W	X GYRO TERNARY CUR SW TORQUE -
J13-M3	TB1-H22	CC 99W	Y PIP TORQUE RET
J13-N3	TB1-H21	CC 99R	Y PIP TORQUE -
J13-N5	J14-H3	BB 60	PIPA INTERROGATE PULSE

(CONT.) 56J13 (45A3P1) PSA TRAY 3

FROM	TO	COND NO	CIRCUIT FUNCTION	
J13-N5	J23- 7	CC 11R	PIPA INTERROGATE PULSE	139S
J13-N6	J14-K3	BB 61	PIPA SWITCHING PULSE	
J13-N6	J23- 2	CC 12R	PIPA SWITCHING PULSE	140S
J13-P6	J14-P6	BB 68	-28 VDC	
J13-P6	J11-N6	BB 13	-28 VDC	
J13-R1	J14-R2	BB 67W	+12, +32, +120 VDC RET GYRO	
J13-R2	J14-R1	BB 66W	+32, +120 VDC RET PIP	
J13-R6	J14-R6	BB 74	0 VDC IMU	
J13-R6	E 5	CC102	0 VDC IMU	
J13-R6	J12-B5	BB 59	0 VDC IMU	
J13-S1	J14-S2	BB 67R	+120 VDC GYRO	
J13-S2	J14-S1	BB 66R	+120 VDC PIP	
J13-S3	J14-S5	BB 67L	+32 VDC GYRO	
J13-S4	J14-S4	BB 66L	+32 VDC PIP	
J13-S6	J14-S6	BB 65	+28 VDC IMU	
J13-S6	TB1-G 6	CC103	+28 VDC IMU	

56J14 (45A4P1) PSA TRAY 4

FROM	TO	COND NO	CIRCUIT FUNCTION	
J14-A1	TB1-C11	CC105R	Z PIP ERROR HI	
J14-A2	TB1-C10	CC105W	Z PIP ERROR LO	
J14-A6	J13-A6	BB 62	X GYRO DC DIFF AMP OUTPUT	
J14-B1	TB1-D52	CC111	TRAY 4 THERMISTER HI	
J14-B2	TB1-F52	CC112	THERMISTER LO	
J14-B2	J13-C2	BB 73	THERMISTER LO	
J14-D1	J23- 3	CC 13R	+ DX GYRO RATE	142R
J14-D2	J23- 11	CC 14R	- DX GYRO RATE	143R
J14-D3	J23- 55	CC 15R	+ DY GYRO RATE	144R
J14-D4	J23- 32	CC 16R	- DY GYRO RATE	145R
J14-D5	J23- 15	CC 17R	+ DZ GYRO RATE	146R

(CONT.) 56J14 (45A4P1) PSA TRAY 4

FROM	TO	COND NO	CIRCUIT FUNCTION	
J14-D6	J23- 14	CC 18R	- DZ GYRO RATE	147R
J14-F6	J15-L2	BB 75	P Z	
J14-G1	J13-H6	BB 63L	X GYRO CAL DUMMY	
J14-G6	J15-M2	BB 76	N Z	
J14-H1	J13-K6	BB 63R	X GYRO TERNARY CUR SW TORQUE +	
J14-H3	J13-N5	BB 60	PIPA INTERROGATE PULSE	
J14-H5	J15-K3	BB 77	STRUCTURE GROUND	
J14-H5	J13-C6	BB 64	STRUCTURE GROUND	
J14-H6	TB1-A41	CC107	Z PIP ERROR MONITOR	
J14-H6	J12-B6	BB 29	Z PIP ERROR MONITOR	
J14-K1	J13-L6	BB 63W	X GYRO TERNARY CUR SW TORQUE -	
J14-K3	J13-N6	BB 61	PIPA SWITCHING PULSE	
J14-K4	J23- 25	CC 19R	GYRO RESET PULSE	148R
J14-L6	TB1-C23	CC109L	Z GYRO TORQUE +	
J14-M1	TB1-D23	CC108L	Y GYRO TORQUE +	
J14-M2	TB1-D21	CC108R	Y GYRO TORQUE -	
J14-M3	TB1-D22	CC108W	Y GYRO TORQUE RET	
J14-M6	TB1-C21	CC109R	Z GYRO TORQUE -	
J14-N6	TB1-C22	CC109W	Z GYRO TORQUE RET	
J14-P1	TB1-G23	CC106L	Z PIP TORQUE +	
J14-P2	TB1-G21	CC106R	Z PIP TORQUE -	
J14-P3	TB1-G22	CC106W	Z PIP TORQUE RET	
J14-P6	J13-P6	BB 68	-28 VDC	
J14-R1	J17-L4	BB 79W	+32, +120 VDC RET PIP	
J14-R1	J13-R2	BB 66W	+32, +120 VDC RET PIP	
J14-R2	J12-K6	BB 43W	+12, +32, +120 VDC RET GYRO	
J14-R2	J13-R1	BB 67W	+12, +32, +120 VDC RET GYRO	
J14-R6	E 6	CC110	0 VDC IMU	
J14-R6	TB1-H25	CC113	0 VDC IMU	
J14-R6	J13-R6	BB 74	0 VDC IMU	
J14-S1	J17-L5	BB 79R	+120 VDC PIP	
J14-S1	J13-S2	BB 66R	+120 VDC PIP	

(CONT.) 56J14 (45A4P1) PSA TRAY 4

FROM	TO	COND NO	CIRCUIT FUNCTION	
J14-S2	J12-L6	BB 43R	+120 VDC GYRO	
J14-S2	J13-S1	BB 67R	+120 VDC GYRO	
J14-S3	J12-M6	BB 43L	+12 VDC GYRO	
J14-S4	J17-T5	BB 79L	+32 VDC PIP	
J14-S4	J13-S4	BB 66L	+32 VDC PIP	
J14-S5	J12-M5	BB 43K	+32 VDC GYRO	
J14-S5	J13-S3	BB 67L	+32 VDC GYRO	
J14-S6	J15-S2	BB 78	+28 VDC IMU	
J14-S6	J13-S6	BB 65	+28 VDC IMU	

56J15 (45A5P1) PSA TRAY 5

FROM	TO	COND NO	CIRCUIT FUNCTION	
J15-A1	TB1-F28	CC130W	Z GYRO ERROR SIG	
J15-A3	J24- 30	CC 38W	MANUAL CDU MODE INDICATION TO AGC	160
J15-A4	J16-B2	BB 82R	IG DAC MDA SIG HI	
J15-A5	J16-B1	BB 82W	IG DAC MDA SIG LO	
J15-A5	E 8	CC120	IG DAC MDA SIG LO	
J15-A5	E 9	CC123	IG DAC MDA SIG LO	
J15-A6	J16-B4	BB 83R	MG DAC MDA SIG HI	
J15-A7	J16-B3	BB 83W	MG DAC MDA SIG LO	
J15-A7	E 10	CC121	MG DAC MDA SIG LO	
J15-A7	E 11	CC124	MG DAC MDA SIG LO	
J15-A8	J16-B6	BB 84R	OG DAC MDA SIG HI	
J15-A9	J16-B5	BB 84W	OG DAC MDA SIG LO	
J15-A9	E 12	CC122	OG DAC MDA SIG LO	
J15-A9	E 13	CC125	OG DAC MDA SIG LO	
J15-B1	TB1-G28	CC130L	X GYRO ERROR SIG	
J15-B2	TB1-D28	CC130R	IMU GIMBAL AND GYRO ERROR SIG LO	
J15-B3	J16-B7	BB 80	AGC COMMON (ISS)	
J15-B4	J24- 41	CC 26W	IG ENCODER + DELTA THETA	120S

SIZE	CODE IDENT NO.	
A	80230	1015087
SCALE-NONE	REV LTR E	SHEET 37 OF 146

(CONT.) 56J15 (45A5P1) PSA TRAY 5

FROM	TO	COND NO	CIRCUIT FUNCTION	
J15-B5	J23- 42	CC 32W	IG CDU + DELTA THETA COMMAND	128S
J15-B6	J24- 19	CC 28W	MG ENCODER + DELTA THETA	122S
J15-B7	J23- 35	CC 34W	MG CDU + DELTA THETA COMMAND	130S
J15-B8	J24- 39	CC 30W	OG ENCODER + DELTA THETA	118S
J15-B9	J23- 21	CC 36W	OG CDU + DELTA THETA COMMAND	126S
J15-C1	TB1-F34	CC117W	IG CDU ENCODER COMMON	
J15-C2	TB1-F35	CC117L	IG CDU ENCODER PHASE 1	
J15-C3	TB1-C33	CC119R	OG CDU ENCODER PHASE 2	
J15-C4	J24- 67	CC 27R	IG ENCODER - DELTA THETA	121S
J15-C5	J23- 43	CC 33R	IG CDU - DELTA THETA COMMAND	129S
J15-C6	J24- 8	CC 29R	MG ENCODER - DELTA THETA	123S
J15-C7	J23- 18	CC 35R	MG CDU - DELTA THETA COMMAND	131S
J15-C8	J24- 40	CC 31R	OG ENCODER - DELTA THETA	119S
J15-C9	J23- 22	CC 37R	OG CDU - DELTA THETA COMMAND	127S
J15-D1	TB1-F33	CC117R	IG CDU ENCODER PHASE 2	
J15-D2	TB1-D33	CC118R	MG CDU ENCODER PHASE 2	
J15-D3	TB1-C34	CC119W	OG CDU ENCODER COMMON	
J15-D4	TB1-C35	CC119L	OG CDU ENCODER PHASE 1	
J15-D7	TB1-K15	CC126R	SIN AIG 16X S4	
J15-D8	TB1-K14	CC126W	SIN AIG 16X S2	
J15-D9	TB1-K11	CC127L	SIN AMG 16X TO CDU	
J15-F1	TB1-D35	CC118L	MG CDU ENCODER PHASE 1	
J15-F2	TB1-D34	CC118W	MG CDU ENCODER COMMON	
J15-F7	TB1-K16	CC126L	SIN AIG 16X TO CDU	
J15-F8	TB1-K 9	CC127W	SIN AMG 16X S2	
J15-F9	TB1-K10	CC127R	SIN AMG 16X S4	
J15-H4	J16-L1	BB 85W	FINE ALIGN RELAY CONTROL	
J15-H4	TB1-H 5	CC128R	FINE ALIGN RELAY CONTROL	
J15-K3	J16-N4	BB 88	STRUCTURE GROUND	
J15-K3	TB1-B49	CC132	STRUCTURE GROUND	
J15-K3	J14-H5	BB 77	STRUCTURE GROUND	
J15-K4	J24- 33	CC 24R	- DELTA V Z	137R

SIZE	CODE IDENT NO.	
A	80230	1015087
SCALE-NONE	REV LTR E	SHEET 38 OF 146

(CONT.) 56J15 (45A5P1) PSA TRAY 5

FROM	TO	COND NO	CIRCUIT FUNCTION	
J15-K5	J24- 56	CC 25R	+ DELTA V Z	136R
J15-K6	J24- 44	CC 23R	- DELTA V Y	135R
J15-L2	J14-F6	BB 75	P Z	
J15-L3	J13-D3	BB 71	P Y	
J15-L4	J13-D1	BB 69	P X	
J15-L5	E 14	CC114	COMPUTER RET	
J15-L5	E 15	CC115	COMPUTER RET	
J15-L5	E 16	CC116	COMPUTER RET	
J15-L6	J24- 24	CC 22R	+ DELTA V Y	134R
J15-M2	J14-G6	BB 76	N Z	
J15-M3	J13-F3	BB 72	N Y	
J15-M4	J13-F1	BB 70	N X	
J15-M5	J24- 2	CC 20R	+ DELTA V X	132R
J15-M6	J24- 10	CC 21R	- DELTA V X	133R
J15-N5	J12-P5	BB 31W	25.6 KC LO IMU	
J15-N6	J12-N5	BB 31R	25.6 KC HI IMU	
J15-P5	J16-S3	BB 86W	800 CPS 28 V 1 PCT LO IMU	
J15-P5	J12-P3	BB 30W	800 CPS 28 V 1 PCT LO IMU	
J15-P6	J16-S4	BB 86R	800 CPS 28 V 1 PCT HI IMU	
J15-P6	J12-N3	BB 30R	800 CPS 28 V 1 PCT HI IMU	
J15-R2	TB1-K26	CC131	0 VDC IMU	
J15-R6	TB1-B53	CC129	+28 VDC CDU NOT LOCK	
J15-S1	J16-L2	BB 85R	ZERO ENCODER RELAY CONTROL	
J15-S1	TB1-K 5	CC128L	ZERO ENCODER RELAY CONTROL	
J15-S2	J20-L1	BB 81	+28 VDC IMU	
J15-S2	J14-S6	BB 78	+28 VDC IMU	
J15-S3	TB1-G 5	CC128W	LOCK CDU RELAY CONTROL	
J15-S6	J16-S2	BB 87	+28 VDC IMU	
J15-S6	J11-S4	BB 1	+28 VDC IMU	

SIZE	CODE IDENT NO.	
A	80230	1015087
SCALE-NONE	REV LTR E	SHEET 39 OF 146

56J16 (45A6P1) PSA TRAY 6

FROM	TO	COND NO	CIRCUIT FUNCTION
J16-A1	TB1-F29	CC136R	IG CDU MDA TACH SIG
J16-A2	TB1-F31	CC136W	IG CDU MDA SLEW SIG
J16-A3	TB1-D29	CC141R	MG CDU MDA TACH SIG
J16-A4	TB1-D31	CC141W	MG CDU MDA SLEW SIG
J16-A5	TB1-C29	CC153R	OG CDU MDA TACH SIG
J16-A6	TB1-C31	CC153W	OG CDU MDA SLEW SIG
J16-A7	J24- 5	CC 41W	ZERO ENCODER MODE INDICATION TO AGC 158
J16-A8	TB1-D14	CC144W	SIN AOG 1X S2
J16-A8	J22- 12	CC348R	SIN AOG 1X S2
J16-A9	TB1-D15	CC144R	SIN AOG 1X S4
J16-A9	J22- 26	CC348W	SIN AOG 1X S4
J16-B1	TB1-F30	CC136L	IG CDU MDA INPUT RET
J16-B1	J15-A5	BB 82W	IG DAC MDA SIG LO
J16-B1	SHLD CC136	CC136A	IG CDU MDA INPUT RET
J16-B2	J15-A4	BB 82R	IG DAC MDA SIG HI
J16-B3	TB1-D30	CC141L	MG CDU MDA INPUT RET
J16-B3	J15-A7	BB 83W	MG DAC MDA SIG LO
J16-B3	SHLD CC141	CC141A	MG CDU MDA INPUT RET
J16-B4	J15-A6	BB 83R	MG DAC MDA SIG HI
J16-B5	TB1-C30	CC153L	OG CDU MDA INPUT RET
J16-B5	J15-A9	BB 84W	OG DAC MDA SIG LO
J16-B5	SHLD CC153	CC153A	OG CDU MDA INPUT RET
J16-B6	J15-A8	BB 84R	OG DAC MDA SIG HI
J16-B7	TB1-C56	CC173W	AGC COMMON (ISS)
J16-B7	J15-B3	BB 80	AGC COMMON (ISS)
J16-B8	TB1-C14	CC143W	COS AOG 1X S3
J16-B8	J22- 4	CC349W	COS AOG 1X S3
J16-B9	TB1-D16	CC144L	SIN AOG 1X TO CDU
J16-C1	TB1-K31	CC135W	IG CDU 16X ERROR SIG
J16-C2	TB1-K33	CC134W	IG CDU 1X ERROR SIG
J16-C3	TB1-H31	CC140W	MG CDU 16X ERROR SIG
J16-C4	TB1-H33	CC139W	MG CDU 1X ERROR SIG

SIZE	CODE IDENT NO.	
A	80230	1015087
SCALE-NONE	REV LTR E	SHEET 40 OF 146

(CONT.) 56J16 (45A6P1) PSA TRAY 6

FROM	TO	COND NO	CIRCUIT FUNCTION
J16-C5	TB1-G31	CC147R	OG CDU 16X ERROR SIG
J16-C6	TB1-G33	CC146W	OG CDU 1X ERROR SIG
J16-C7	TB1-G29	CC158	OG CDU 16X RSVR LOAD
J16-C8	TB1-C15	CC143R	COS AOG 1X S1
J16-C8	J22- 13	CC349R	COS AOG 1X S1
J16-C9	TB1-C16	CC143L	COS AOG 1X TO CDU
J16-D1	TB1-A31	CC133W	IG CDU 1/2X ERROR SIG
J16-D2	TB1-K34	CC134R	IG CDU ERROR SIG RET
J16-D2	TB1-K30	CC135R	IG CDU ERROR SIG RET
J16-D3	TB1-A30	CC138W	MG CDU 1/2X ERROR SIG
J16-D4	TB1-H34	CC139R	MG CDU ERROR SIG RET
J16-D4	TB1-H30	CC140R	MG CDU ERROR SIG RET
J16-D5	TB1-A29	CC145W	OG CDU 1/2X ERROR SIG
J16-D6	TB1-G34	CC146R	OG CDU ERROR SIG RET
J16-D6	TB1-G30	CC147W	OG CDU ERROR SIG RET
J16-D7	TB1-F14	CC148R	COS AOG 16X S1
J16-D8	TB1-G14	CC152W	SIN AOG 16X S2
J16-D9	TB1-G15	CC152R	SIN AOG 16X S4
J16-F1	TB1-B31	CC133R	IG CDU 1/2X ERROR SIG LO
J16-F2	TB1-K35	CC155	IG CDU 1X RSVR LOAD
J16-F3	TB1-B30	CC138R	MG CDU 1/2X ERROR SIG LO
J16-F4	TB1-H35	CC156	MG CDU 1X RSVR LOAD
J16-F5	TB1-B29	CC145R	OG CDU 1/2X ERROR SIG LO
J16-F6	TB1-G35	CC157	OG CDU 1X RSVR LOAD
J16-F7	TB1-F15	CC148W	COS AOG 16X S3
J16-F8	TB1-F16	CC148L	COS AOG 16X TO CDU
J16-F9	TB1-G16	CC152L	SIN AOG 16X TO CDU
J16-G1	TB1-H15	CC163W	COS AIG 16X S3
J16-G2	TB1-H16	CC163L	COS AIG 16X TO CDU
J16-G3	TB1-H10	CC164W	COS AMG 16X S3
J16-G4	TB1-H11	CC164L	COS AMG 16X TO CDU
J16-H1	TB1-H14	CC163R	COS AIG 16X S1

(CONT.) 56J16 (45A6P1) PSA TRAY 6

FROM	TO	COND NO	CIRCUIT FUNCTION	
J16-H3	TB1-H 9	CC164R	COS AMG 16X S1	
J16-L1	J15-H4	BB 85W	FINE ALIGN RELAY CONTROL	
J16-L2	J15-S1	BB 85R	ZERO ENCODER RELAY CONTROL	
J16-L3	J12-F1	BB 94W	COMPUTER 800 PPS SYNC RET	
J16-L3	J23- 27	CC 39W	COMPUTER 800 PPS SYNC RET	150R
J16-L3	J23- 13	CC 40W	COMPUTER 800 PPS SYNC RET	149R
J16-L4	J12-D1	BB 94R	COMPUTER 800 PPS OUT OF PHASE SYNC	
J16-L4	J23- 12	CC 39R	COMPUTER 800 PPS OUT OF PHASE SYNC	150S
J16-M1	TB1-H 3	CC159W	ENTRY RELAY CONTROL	
J16-M2	TB1-C58	CC175K	IG CDU FAILURE INDICATION	
J16-M2	J12-H5	BB 37L	IG CDU FAILURE INDICATION	
J16-M3	TB1-C57	CC175L	MG CDU FAILURE INDICATION	
J16-M3	J12-H6	BB 37R	MG CDU FAILURE INDICATION	
J16-M4	J12-D2	BB 94L	COMPUTER 800 PPS IN PHASE SYNC	
J16-M4	J23- 4	CC 40R	COMPUTER 800 PPS IN PHASE SYNC	149S
J16-N1	TB1-G19	CC154W	OG CDU MDA OUTPUT	
J16-N2	TB1-G18	CC154R	OG CDU MDA OUTPUT	
J16-N3	TB1-D57	CC175R	OG CDU FAILURE INDICATION	
J16-N3	J12-G6	BB 37W	OG CDU FAILURE INDICATION	
J16-N4	J17-L6	BB 95	STRUCTURE GROUND	
J16-N4	TB1-A60	CC180	STRUCTURE GROUND	
J16-N4	J15-K3	BB 88	STRUCTURE GROUND	
J16-N5	J18-S1	BB 89W	800 CPS 28 V 1 PCT LO OPTICS	
J16-N5	TB1-F 5	CC161R	800 CPS 28 V 1 PCT LO OPTICS	
J16-N5	TB1-B72	CC172R	800 CPS 28 V 1 PCT LO OPTICS	
J16-N6	J20-H5	BB 92W	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
J16-N6	TB1-F 8	CC162W	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
J16-N6	TB1-B74	CC174W	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
J16-P1	TB1-K19	CC137R	IG CDU MDA OUTPUT	
J16-P2	TB1-D59	CC176	0 VDC IMU	
J16-P2	SHLD CC 39	CC 39A	0 VDC IMU	
J16-P2	SHLD CC 40	CC 40A	0 VDC IMU	

(CONT.) 56J16 (45A6P1) PSA TRAY 6

FROM	TO	COND NO	CIRCUIT FUNCTION
J16-P3	TB1-H18	CC142R	MG CDU MDA OUTPUT
J16-P4	TB1-B 5	CC160W	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
J16-P5	J18-T1	BB 89R	800 CPS 28 V 1 PCT HI OPTICS
J16-P5	TB1-D 5	CC161W	800 CPS 28 V 1 PCT HI OPTICS
J16-P5	TB1-A72	CC172W	800 CPS 28 V 1 PCT HI OPTICS
J16-P6	J20-H6	BB 92R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
J16-P6	TB1-D 8	CC162R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
J16-P6	TB1-A74	CC174R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
J16-R1	TB1-K18	CC137W	IG CDU MDA OUTPUT
J16-R2	TB1-D58	CC175W	0 VDC IMU
J16-R2	TB1-F75	CC177	0 VDC IMU
J16-R2	J12-G5	BB 56	0 VDC IMU
J16-R3	TB1-H19	CC142W	MG CDU MDA OUTPUT
J16-R4	TB1-B 6	CC160K	ZEROING RSVR 800 CPS
J16-R5	TB1-K53	CC178	0 VDC OPTICS
J16-R6	TB1-G53	CC179	0 VDC OPTICS
J16-S1	TB1-C53	CC149	+28 VDC IMU FOR IG MDA
J16-S2	J20-L2	BB 93	+28 VDC IMU
J16-S2	J15-S6	BB 87	+28 VDC IMU
J16-S3	J20-F8	BB 97W	800 CPS 28 V 1 PCT LO IMU
J16-S3	TB1-B 7	CC160R	800 CPS 28 V 1 PCT LO IMU
J16-S3	J15-P5	BB 86W	800 CPS 28 V 1 PCT LO IMU
J16-S4	J20-F9	BB 97R	800 CPS 28 V 1 PCT HI IMU
J16-S4	TB1-A 5	CC160L	800 CPS 28 V 1 PCT HI IMU
J16-S4	J15-P6	BB 86R	800 CPS 28 V 1 PCT HI IMU
J16-S5	J20-P5	BB 90	+28 VDC OPTICS
J16-S5	J16-S6	BB 96	+28 VDC OPTICS
J16-S6	J20-P6	BB 91	+28 VDC OPTICS
J16-S6	J16-S5	BB 96	+28 VDC OPTICS
J16-T1	TB1-C52	CC150	+28 VDC IMU FOR MG MDA
J16-T2	TB1-C51	CC151	+28 VDC IMU FOR OG MDA

56J17 (45A7P1) PSA TRAY 7

FROM	TO	COND NO	CIRCUIT FUNCTION
J17-A1	J11-C3	BB 10W	OG CDU ATTITUDE STEERING ERROR
J17-A2	TB1-G31	CC204W	OG CDU 16X ERROR SIG
J17-A3	J22- 83	CC 47R	ROLL ERROR BODY OFFSET AXIS HI
J17-A4	J22- 74	CC 43R	ROLL ERROR BODY AXIS HI
J17-A6	TB1-B35	CC202L	TRUNNION CDU ENCODER PHASE 1
J17-A7	TB1-B34	CC202W	TRUNNION CDU ENCODER COMMON
J17-A8	TB1-B33	CC202R	TRUNNION CDU ENCODER PHASE 2
J17-A9	J17-B9	BB112	TRUNNION ENCODER SCALE SELECT
J17-B1	J11-B3	BB 10R	OG CDU ERROR SIG RET
J17-B2	TB1-G30	CC204R	OG CDU ERROR SIG RET
J17-B3	J22- 82	CC 47W	ROLL ERROR BODY OFFSET AXIS LO
J17-B4	J22- 75	CC 43W	ROLL ERROR BODY AXIS LO
J17-B5	TB1-H64	CC191W	IRIG TEMP CONT SENSOR RET
J17-B6	TB1-H63	CC191R	IRIG TEMP CONT SENSOR HI
J17-B7	TB1-K59	CC184W	IMU TEMP CONT -5 DEG GAIN CHECK
J17-B8	TB1-K61	CC184L	IRIG ZERO DEVIATION CHECK
J17-B9	J17-A9	BB112	TRUNNION ENCODER SCALE SELECT
J17-C1	J22- 79	CC 48W	PITCH ERROR BODY AND BODY OFFSET AXIS LO
J17-C1	TB1-G13	CC201W	PITCH ERROR BODY AND BODY OFFSET AXIS LO
J17-C2	TB1-F13	CC201R	PITCH-YAW RSVR S4
J17-C3	J22- 53	CC 45R	YAW ERROR BODY OFFSET AXIS HI
J17-C4	J22- 49	CC 44R	YAW ERROR BODY AXIS HI
J17-C5	TB1-K64	CC198W	IRIG TEMP IND SENSOR RET
J17-C6	TB1-K63	CC198R	IRIG TEMP IND SENSOR HI
J17-C7	TB1-K62	CC184K	IRIG TEMP BRIDGE AMP PIN 6
J17-C8	TB1-K60	CC184R	IRIG TEMP GAIN SWITCH NC
J17-C9	TB1-A35	CC203L	SHAFT CDU ENCODER PHASE 1
J17-D1	J22- 78	CC 48R	PITCH ERROR BODY AND BODY OFFSET AXIS HI
J17-D2	TB1-H13	CC182R	PITCH YAW RSVR S3
J17-D3	J22- 81	CC 45W	YAW ERROR BODY OFFSET AXIS LO
J17-D3	TB1-K13	CC182W	YAW ERROR BODY OFFSET AXIS LO
J17-D4	J22- 76	CC 44W	YAW ERROR BODY AXIS LO

(CONT.) 56J17 (45A7P1) PSA TRAY 7

FROM	TO	COND NO	CIRCUIT FUNCTION	
J17-D5	TB1-G61	CC185W	ACCEL TEMP IND SENSOR RET	
J17-D6	TB1-G64	CC185L	IMU IMU TEMP CONT +5 DEG GAIN CHECK	
J17-D7	TB1-G63	CC185R	ACCEL ZERO DEVIATION CHECK	
J17-D9	TB1-A34	CC203W	SHAFT CDU ENCODER COMMON	
J17-F2	TB1-C64	CC205	TEMPERATURE CONTROL SIG LO	
J17-F3	TB1-B64	CC196	HTP CURRENT (TELEMETRY)	
J17-F4	TB1-D64	CC195	IRIG TEMP (TELEMETRY)	
J17-F5	TB1-F64	CC194	ACCEL TEMP (TELEMETRY)	
J17-F6	TB1-A64	CC193	BLOWER CURRENT SENSOR (TELEMETRY)	
J17-F7	TB1-G62	CC185K	ACCEL BRIDGE AMP PIN 6	
J17-F9	TB1-A33	CC203R	SHAFT CDU ENCODER PHASE 2	
J17-G1	TB1-F59	CC188	IMU TEMP ALARM AMP PIN 14	
J17-G2	TB1-F60	CC187R	IMU TEMP ALARM AMP PIN 15	
J17-G4	J18-G4	BB107L	SHAFT ENCODER + DELTA THETA OUTPUT	
J17-G4	J24- 59	CC 50R	SHAFT ENCODER + DELTA THETA OUTPUT	108S
J17-G6	J18-G6	BB101L	TRUNNION ENCODER + DELTA THETA OUTPUT	
J17-G6	J24- 61	CC 42R	TRUNNION ENCODER + DELTA THETA OUT	110S
J17-H1	TB1-F61	CC187L	IMU TEMP ALARM BIAS RESISTOR	
J17-H2	TB1-F62	CC187W	IMU TEMP ALARM AMP PIN 5	
J17-H4	J18-H4	BB107W	SHAFT ENCODER DELTA THETA OUT COMMON	
J17-H4	J24- 35	CC 46W	SHAFT ENCODER DELTA THETA OUT COMMON	109R
J17-H4	J24- 58	CC 50W	SHAFT ENCODER DELTA THETA OUT COMMON	108R
J17-H6	J18-H6	BB101W	TRUNNION ENCODER DELTA THETA OUT COM	
J17-H6	J24- 60	CC 42W	TRUNNION ENCODER DELTA THETA OUT COM	110R
J17-H6	J24- 37	CC 49W	TRUNNION ENCODER DELTA THETA OUT COM	111R
J17-K4	J18-K4	BB107R	SHAFT ENCODER - DELTA THETA OUTPUT	
J17-K4	J24- 36	CC 46R	SHAFT ENCODER - DELTA THETA OUTPUT	109S
J17-K6	J18-K6	BB101R	TRUNNION ENCODER - DELTA THETA OUTPUT	
J17-K6	J24- 38	CC 49R	TRUNNION ENCODER - DELTA THETA OUT	111S
J17-L1	TB1-D63	CC189W	IMU TEMP CONT K2 PIN 6	
J17-L3	J22- 38	CC347	IMU TEMP LIGHT (MAIN PANEL)	
J17-L4	TB1-B63	CC206W	+32, +120 VDC RET PIP	

(CONT.) 56J17 (45A7P1) PSA TRAY 7

FROM	TO	COND NO	CIRCUIT FUNCTION	
J17-L4	J14-R1	BB 79W	+32, +120 VDC RET PIP	
J17-L5	TB1-A63	CC206R	+120 VDC PIP	
J17-L5	J14-S1	BB 79R	+120 VDC PIP	
J17-L6	J18-P4	BB100	STRUCTURE GROUND	
J17-L6	TB1-G70	CC207	STRUCTURE GROUND	
J17-L6	J16-N4	BB 95	STRUCTURE GROUND	
J17-M1	TB1-F63	CC189R	TEMPERATURE CONTROLLER 0 VDC IMU	
J17-M2	TB1-H61	CC199	IMU TEMP SENSOR COM	
J17-M3	TB1-D70	CC200	0 VDC SPACECRAFT	
J17-M3	J22- 39	CC346	0 VDC SPACECRAFT	
J17-M3	J12-F3	BB 52	0 VDC SPACECRAFT	
J17-M4	TB1-C60	CC190W	IMU EMERGENCY HTR HI	
J17-M5	TB1-H59	CC186W	IMU TEMP CONT K1 PIN 3	
J17-M6	TB1-H60	CC186R	IMU TEMP CONT AMP PIN 5	
J17-N1	TB1-D61	CC192W	IMU CONTROL HTR LO	
J17-N2	J11-P1	BB 11L	3200 CPS 20 V HI	
J17-N3	J12-N6	BB 51W	25.6 KC LO OPTICS	
J17-N4	TB1-C61	CC190R	EMERGENCY HTR LO-OPER AND STBY	
J17-N5	TB1-G60	CC186L	IMU TEMP CONT K2 PIN 5	
J17-N6	TB1-G59	CC186K	IMU HTR CURRENT AMP PIN 5	
J17-P1	TB1-D60	CC192R	IMU CONTROL HTR HI	
J17-P2	J11-N1	BB 11R	3200 CPS 20 V CT	
J17-P3	J12-P6	BB 51R	25.6 KC HI OPTICS	
J17-P4	TB1-C77	CC183R	800 CPS 28 V 5 PCT HI TO BLOWERS	
J17-P5	TB1-B26	CC197	IMU TEMP CONT FAIL LIGHT HI	
J17-P6	TB1-D71	CC181	CONDITION LAMP TEST	
J17-R1	J11-S3	BB 12	+28 VDC STBY TO 3200 CPS POWER SUPPLY	
J17-R2	J11-N2	BB 11W	3200 CPS 20 V LO	
J17-R3	J23- 28	CC 51R	COMPUTER 12.8 KPPS SYNC	155S
J17-R3	J12-P4	BB 50W	COMPUTER 12.8 KPPS SYNC	
J17-R4	TB1-C75	CC183W	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
J17-R5	J20-M5	BB106	+28 VDC MDV	

(CONT.) 56J17 (45A7P1) PSA TRAY 7

FROM	TO	COND NO	CIRCUIT FUNCTION	
J17-R6	TB1-F76	CC208	0 VDC OPTICS	
J17-S1	J17-S2	BB113	0 VDC IMU	
J17-S1	TB1-D75	CC209	0 VDC IMU	
J17-S2	TB1-D74	CC210	0 VDC IMU	
J17-S2	J17-S1	BB113	0 VDC IMU	
J17-S3	J23- 49	CC 51W	0 VDC IMU	155R
J17-S3	TB1-B69	CC211	0 VDC IMU	
J17-S4	SHLD BB 50	BB 50B	0 VDC IMU	
J17-S4	TB1-B70	CC212	0 VDC IMU	
J17-S4	SHLD CC 51	CC 51A	0 VDC IMU	
J17-S6	TB1-D76	CC213	0 VDC OPTICS	
J17-T1	J20-R3	BB104	+28 VDC STBY	
J17-T1	J17-T2	BB110	+28 VDC STBY	
J17-T2	J20-R4	BB105	+28 VDC STBY	
J17-T2	J17-T1	BB110	+28 VDC STBY	
J17-T3	J20-M2	BB103	+28 VDC IMU	
J17-T4	J20-M1	BB102	+28 VDC IMU	
J17-T5	TB1-C63	CC206L	+32 VDC PIP	
J17-T5	J14-S4	BB 79L	+32 VDC PIP	
J17-T6	J20-N6	BB111	+28 VDC OPTICS	

56J18 (45A8P1) PSA TRAY 8

FROM	TO	COND NO	CIRCUIT FUNCTION
J18-A1	TB1-D46	CC218W	SXT SHAFT 1/2X RSVR S3
J18-A2	TB1-B46	CC219W	SXT SHAFT 16X RSVR S4
J18-A3	TB1-B45	CC219R	SXT SHAFT 16X RSVR S2
J18-A5	TB1-K37	CC237R	SCT SHAFT TACH HI
J18-A7	TB1-H37	CC239R	SXT SHAFT TACH HI
J18-A9	TB1-D37	CC233R	SXT TRUNNION TACH HI
J18-B1	TB1-D45	CC218R	SXT SHAFT 1/2X RSVR S1

(CONT.) 56J18 (45A8P1) PSA TRAY 8

FROM	TO	COND NO	CIRCUIT FUNCTION	
J18-B5	TB1-K38	CC237W	SCT SHAFT TACH LO	
J18-B7	TB1-H38	CC239W	SXT SHAFT TACH LO	
J18-B9	TB1-D38	CC233W	SXT TRUNNION TACH LO	
J18-C1	TB1-B43	CC234R	SXT TRUNNION 64X RSVR S2	
J18-C2	TB1-B44	CC234W	SXT TRUNNION 64X RSVR S4	
J18-C5	TB1-K41	CC235R	SCT SHAFT 1X RSVR S2	
J18-C7	TB1-G55	CC226	TRACKER X DRIVE BUFFERED HI	
J18-C8	TB1-G54	CC227	TRACKER Y DRIVE BUFFERED HI	
J18-C9	TB1-G56	CC228	TRACKER PREAMP OUTPUT BUFFERED HI	
J18-D1	TB1-C43	CC230W	TRUNNION CDU 1/4X RSVR S4	
J18-D3	TB1-G44	CC221W	SCT TRUNNION 1X RSVR P1	
J18-D4	TB1-G43	CC221R	SCT TRUNNION 1X RSVR P3	
J18-D5	TB1-K40	CC235W	SCT SHAFT 1X RSVR S4	
J18-D7	J18-D8	BB120	0 VDC OPTICS	
J18-D7	J18-L1	BB122	0 VDC OPTICS	
J18-D8	J18-D9	BB121	0 VDC OPTICS	
J18-D8	J18-D7	BB120	0 VDC OPTICS	
J18-D9	J18-D8	BB121	0 VDC OPTICS	
J18-F1	TB1-C44	CC230R	TRUNNION CDU 1/4X RSVR S2	
J18-F2	TB1-D44	CC229W	TRUNNION CDU 1/4X RSVR S1	
J18-F3	TB1-D43	CC229R	TRUNNION CDU 1/4X RSVR S3	
J18-F4	TB1-F44	CC231R	SCT TRUNNION 1X RSVR P2	
J18-F5	TB1-F43	CC231W	SCT TRUNNION 1X RSVR P4	
J18-G1	J19-G6	BB118R	SXT SHAFT MDA INPUT HI	
J18-G2	J19-G5	BB118W	SXT SHAFT MDA INPUT LO	
J18-G3	J23- 37	CC 55R	SHAFT + DELTA THETA COMMAND	114S
J18-G4	J17-G4	BB107L	SHAFT ENCODER + DELTA THETA OUTPUT	
J18-G5	J23- 89	CC 52R	TRUNNION + DELTA THETA COMMAND	116S
J18-G6	J17-G6	BB101L	TRUNNION ENCODER + DELTA THETA OUTPUT	
J18-H1	J19-H6	BB119W	SXT TRUNNION MDA INPUT LO	
J18-H3	J23- 19	CC 53W	SHAFT DELTA THETA COMMAND COMMON	115R
J18-H3	J23- 36	CC 55W	SHAFT DELTA THETA COMMAND COMMON	114R

(CONT.) 56J18 (45A8P1) PSA TRAY 8

FROM	TO	COND NO	CIRCUIT FUNCTION
J18-H4	J17-H4	BB107W	SHAFT ENCODER DELTA THETA OUT COMMON
J18-H5	J23- 88	CC 52W	TRUNNION DELTA THETA COMMAND COMMON 116R
J18-H5	J23- 59	CC 54W	TRUNNION DELTA THETA COMMAND COMMON 117R
J18-H6	J17-H6	BB101W	TRUNNION ENCODER DELTA THETA OUT COM
J18-K1	J19-K6	BB119R	SXT TRUNNION MDA INPUT HI
J18-K3	J23- 20	CC 53R	SHAFT - DELTA THETA COMMAND 115S
J18-K4	J17-K4	BB107R	SHAFT ENCODER - DELTA THETA OUTPUT
J18-K5	J23- 60	CC 54R	TRUNNION - DELTA THETA COMMAND 117S
J18-K6	J17-K6	BB101R	TRUNNION ENCODER - DELTA THETA OUTPUT
J18-L1	J18-L2	BB123	0 VDC OPTICS
J18-L1	J19-L6	BB131	0 VDC OPTICS
J18-L1	J18-D7	BB122	0 VDC OPTICS
J18-L2	J18-L3	BB124	0 VDC OPTICS
J18-L2	J18-L1	BB123	0 VDC OPTICS
J18-L3	J18-L4	BB125	0 VDC OPTICS
J18-L3	J18-L2	BB124	0 VDC OPTICS
J18-L4	J18-L5	BB126	0 VDC OPTICS
J18-L4	J18-L3	BB125	0 VDC OPTICS
J18-L5	J18-L6	BB127	0 VDC OPTICS
J18-L5	J18-L4	BB126	0 VDC OPTICS
J18-L6	J18-L5	BB127	0 VDC OPTICS
J18-M1	TB1-H56	CC222	SXT TRUNNION MDA INPUT BUFFERED
J18-M2	TB1-H55	CC220	SXT TRUNNION TACH FEEDBACK BUFFERED
J18-M3	TB1-K56	CC214	SXT SHAFT MDA INPUT BUFFERED
J18-M4	TB1-K55	CC215	SXT SHAFT TACH FEEDBACK BUFFERED
J18-M5	TB1-H54	CC217	SCT SHAFT 1X ERROR SIG BUFFERED
J18-M6	TB1-K54	CC216	SCT SHAFT TACH FEEDBACK BUFFERED
J18-P1	TB1-B60	CC225R	ZERO OPTICS MODE COMMAND
J18-P2	TB1-B57	CC223W	0 DEG OFFSET RELAY COMMAND
J18-P3	TB1-B59	CC225W	COMPUTER RELAY COMMAND
J18-P4	J19-R4	BB115	STRUCTURE GROUND
J18-P4	J17-L6	BB100	STRUCTURE GROUND

(CONT.) 56J18 (45A8P1) PSA TRAY 8

FROM	TO	COND NO	CIRCUIT FUNCTION
J18-R1	J19-R6	BB116	TRACKER MODE RELAY COMMAND
J18-R2	TB1-B58	CC223R	25 DEG OFFSET RELAY COMMAND
J18-R4	J18-R5	BB128	0 VDC OPTICS
J18-R4	J18-S3	BB130	0 VDC OPTICS
J18-R4	TB1-F77	CC241	0 VDC OPTICS
J18-R5	J18-R6	BB129	0 VDC OPTICS
J18-R5	J18-R4	BB128	0 VDC OPTICS
J18-R6	TB1-D77	CC240	0 VDC OPTICS
J18-R6	J18-R5	BB129	0 VDC OPTICS
J18-S1	J19-S6	BB117W	800 CPS 28 V 1 PCT LO OPTICS
J18-S1	J16-N5	BB 89W	800 CPS 28 V 1 PCT LO OPTICS
J18-S3	J18-R4	BB130	0 VDC OPTICS
J18-S4	TB1-H51	CC236R	SCT SHAFT MOTOR PHASE 2
J18-S5	TB1-G49	CC238R	SXT SHAFT MOTOR PHASE 2
J18-S6	TB1-G51	CC232R	SXT TRUNNION MOTOR PHASE 2
J18-T1	J19-T6	BB117R	800 CPS 28 V 1 PCT HI OPTICS
J18-T1	J16-P5	BB 89R	800 CPS 28 V 1 PCT HI OPTICS
J18-T2	J20-N6	BB114	+28 VDC OPTICS
J18-T3	TB1-C71	CC224	+28 VDC OPTICS DAC POWER
J18-T4	TB1-H52	CC236W	SCT SHAFT MOTOR PHASE 1
J18-T5	TB1-G48	CC238W	SXT SHAFT MOTOR PHASE 1
J18-T6	TB1-G52	CC232W	SXT TRUNNION MOTOR PHASE 1

56J19 (45A9P1) PSA TRAY 9

FROM	TO	COND NO	CIRCUIT FUNCTION
J19-A1	TB1-F37	CC261R	SCT TRUNNION TACH HI
J19-A6	TB1-C37	CC258R	TRUNNION CDU TACHOMETER HI
J19-A9	TB1-G37	CC269R	SHAFT CDU TACH HI
J19-B1	TB1-F38	CC261W	SCT TRUNNION TACH LO
J19-B4	TB1-C41	CC256R	TRUNNION CDU 16X RSVR S3

(CONT.) 56J19 (45A9P1) PSA TRAY 9

FROM	TO	COND NO	CIRCUIT FUNCTION
J19-B5	TB1-C40	CC256W	TRUNNION CDU 16X RSVR S2
J19-B6	TB1-C38	CC258W	TRUNNION CDU TACHOMETER LO
J19-B7	TB1-G41	CC267R	SHAFT CDU 16X RSVR S3
J19-B8	TB1-G40	CC267W	SHAFT CDU 16X RSVR S2
J19-B9	TB1-G38	CC269W	SHAFT CDU TACH LO
J19-C1	TB1-F40	CC259W	SCT TRUNNION 1X RSVR S2
J19-C2	TB1-F41	CC259R	SCT TRUNNION 1X RSVR S4
J19-C5	TB1-D40	CC255R	TRUNNION CDU 1/4X RSVR P2
J19-C6	TB1-D41	CC255W	TRUNNION CDU 1/4X RSVR P3
J19-C8	TB1-H40	CC263W	SHAFT CDU 1/2X RSVR P1
J19-C9	TB1-H41	CC263R	SHAFT CDU 1/2X RSVR P3
J19-D2	TB1-F69	CC262W	SCT TRUNNION TRACKER MODE INPUT LO
J19-D3	TB1-F68	CC262R	SCT TRUNNION TRACKER MODE INPUT HI
J19-D7	TB1-H69	CC250W	SHAFT HAND CONTROLLER OUTPUT LO
J19-D8	TB1-H68	CC250R	SHAFT HAND CONTROLLER OUTPUT HI
J19-F8	TB1-K69	CC249W	TRUNNION HAND CONTROLLER OUTPUT LO
J19-F9	TB1-K68	CC249R	TRUNNION HAND CONTROLLER OUTPUT HI
J19-G1	TB1-K44	CC253R	TRUNNION CDU 1/2X RSVR S1
J19-G3	TB1-K45	CC266W	SHAFT CDU 1X RSVR P4
J19-G4	J20-D9	BB133R	Y TRACKER OUTPUT LO
J19-G4	TB1-K46	CC266R	SHAFT CDU 1X RSVR P2
J19-G5	J18-G2	BB118W	SXT SHAFT MDA INPUT LO
J19-G6	J18-G1	BB118R	SXT SHAFT MDA INPUT HI
J19-H1	TB1-K43	CC253W	TRUNNION CDU 1/2X RSVR S3
J19-H4	J20-C9	BB133W	Y TRACKER OUTPUT HI
J19-H5	J20-C8	BB132W	X TRACKER OUTPUT HI
J19-H6	J18-H1	BB119W	SXT TRUNNION MDA INPUT LO
J19-K1	TB1-H44	CC254R	TRUNNION CDU 1/2X RSVR S2
J19-K2	TB1-H43	CC254W	TRUNNION CDU 1/2X RSVR S4
J19-K4	TB1-H46	CC265W	SHAFT CDU 1X RSVR P1
J19-K5	J20-D8	BB132R	X TRACKER OUTPUT LO
J19-K5	TB1-H45	CC265R	SHAFT CDU 1X RSVR P3

(CONT.) 56J19 (45A9P1) PSA TRAY 9

FROM	TO	COND NO	CIRCUIT FUNCTION
J19-K6	J18-K1	BB119R	SXT TRUNNION MDA INPUT HI
J19-L1	J20-B7	BB135	0 VDC OPTICS
J19-L1	J19-L2	BB136	0 VDC OPTICS
J19-L2	J19-L3	BB137	0 VDC OPTICS
J19-L2	J19-L1	BB136	0 VDC OPTICS
J19-L3	J19-L4	BB138	0 VDC OPTICS
J19-L3	J19-L2	BB137	0 VDC OPTICS
J19-L4	J19-L5	BB139	0 VDC OPTICS
J19-L4	J19-L3	BB138	0 VDC OPTICS
J19-L5	J19-L6	BB140	0 VDC OPTICS
J19-L5	J19-L4	BB139	0 VDC OPTICS
J19-L6	TB1-F56	CC270	0 VDC OPTICS
J19-L6	J18-L1	BB131	0 VDC OPTICS
J19-L6	J19-L5	BB140	0 VDC OPTICS
J19-M1	TB1-G57	CC243	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
J19-M2	TB1-H57	CC244	TRUNNION CDU TACH FEEDBACK BUFFERED
J19-M3	TB1-H58	CC242	SHAFT CDU 16X ERROR SIG BUFFERED
J19-M4	TB1-G58	CC248	SHAFT CDU TACH FEEDBACK SIG BUFFERED
J19-M5	TB1-K57	CC245	SCT TRUNNION 1X ERROR SIG BUFFERED
J19-M6	TB1-F58	CC246	SCT TRUNNION TACH FEEDBACK BUFFERED
J19-N1	TB1-D50	CC257L	CDU TRUNNION MDA TUNING CAPACITOR
J19-N2	TB1-D49	CC268L	CDU SHAFT MDA TUNING CAPACITOR
J19-P1	TB1-B19	CC252R	TRUNNION CDU 1/2X RSVR P3
J19-P2	TB1-B18	CC252W	TRUNNION CDU 1/2X RSVR P2
J19-P3	TB1-F48	CC264L	SHAFT CDU 1X RSVR S2
J19-P4	TB1-F49	CC264R	SHAFT CDU 1X RSVR S3
J19-P5	TB1-F50	CC264W	SHAFT CDU 1X RSVR S1
J19-P6	TB1-A57	CC251R	RESOLVED MODE RELAY COMMAND
J19-R1	J19-R2	BB141	0 VDC OPTICS
J19-R1	TB1-F78	CC271	0 VDC OPTICS
J19-R2	J19-R3	BB142	0 VDC OPTICS
J19-R2	J19-R1	BB141	0 VDC OPTICS

(CONT.) 56J19 (45A9P1) PSA TRAY 9

FROM	TO	COND NO	CIRCUIT FUNCTION
J19-R3	J19-S4	BB143	0 VDC OPTICS
J19-R3	TB1-D78	CC272	0 VDC OPTICS
J19-R3	J19-R2	BB142	0 VDC OPTICS
J19-R4	J20-M4	BB134	STRUCTURE GROUND
J19-R4	J18-P4	BB115	STRUCTURE GROUND
J19-R6	TB1-A61	CC251W	TRACKER MODE RELAY COMMAND
J19-R6	J18-R1	BB116	TRACKER MODE RELAY COMMAND
J19-S1	TB1-K48	CC257W	TRUNNION CDU MOTOR PHASE 1
J19-S2	TB1-H48	CC268W	SHAFT CDU MOTOR PHASE 1
J19-S3	TB1-K52	CC260W	SCT TRUNNION MOTOR PHASE 1
J19-S4	J19-S5	BB144	0 VDC OPTICS
J19-S4	J19-R3	BB143	0 VDC OPTICS
J19-S5	J19-S4	BB144	0 VDC OPTICS
J19-S6	J18-S1	BB117W	800 CPS 28 V 1 PCT LO OPTICS
J19-T1	TB1-K49	CC257R	TRUNNION CDU MOTOR PHASE 2
J19-T2	TB1-H49	CC268R	SHAFT CDU MOTOR PHASE 2
J19-T3	TB1-K51	CC260R	SCT TRUNNION MOTOR PHASE 2
J19-T5	TB1-H71	CC247	+28 VDC OPTICS
J19-T6	J18-T1	BB117R	800 CPS 28 V 1 PCT HI OPTICS

56J20 (45A10P1) PSA TRAY 10

FROM	TO	COND NO	CIRCUIT FUNCTION
J20-A4	TB1-D68	CC286R	IMU PRESSURE MONITOR HI
J20-A6	TB1-K74	CC310R	PRESSURE SENSOR +28 VDC HI
J20-A7	TB1-H66	CC277R	STAR PRESENCE INPUT HI
J20-A8	TB1-H65	CC277W	STAR PRESENCE INPUT LO
J20-A9	TB1-K66	CC278R	PHOTOMETER SIGNAL HI
J20-B4	TB1-D69	CC286W	IMU PRESSURE MONITOR LO
J20-B6	TB1-K73	CC310W	PRESSURE SENSOR +28 VDC LO
J20-B7	J19-L1	BB135	0 VDC OPTICS

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A	80230	1015087
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(CONT.) 56J20 (45A10P1) PSA TRAY 10

FROM	TO	COND NO	CIRCUIT FUNCTION	
J20-B8	TB1-K58	CC282	PHOTOMETER PREAMP OUTPUT BUFFERED HI	
J20-B9	TB1-K65	CC278W	PHOTOMETER SIGNAL LO	
J20-C3	J24- 16	CC 56W	STAR PRESENCE LO	183R
J20-C4	J24- 17	CC 56R	STAR PRESENCE HI	183S
J20-C6	TB1-G66	CC274R	TRACKER X ERROR HI	
J20-C7	TB1-G65	CC274W	TRACKER X ERROR LO	
J20-C8	J19-H5	BB132W	X TRACKER OUTPUT HI	
J20-C9	J19-H4	BB133W	Y TRACKER OUTPUT HI	
J20-D1	TB1-F71	CC309R	+2.5 VDC CONDITIONING HI	
J20-D3	J23- 75	CC 57W	102.4 KPPS INPUT LO	056R
J20-D4	TB1-G74	CC292	+13 VDC AGC	
J20-D6	TB1-F66	CC275R	TRACKER Y ERROR HI	
J20-D7	TB1-F65	CC275W	TRACKER Y ERROR LO	
J20-D8	J19-K5	BB132R	X TRACKER OUTPUT LO	
J20-D9	J19-G4	BB133R	Y TRACKER OUTPUT LO	
J20-F1	TB1-F70	CC309W	+2.5 VDC CONDITIONING LO	
J20-F2	TB1-B61	CC276W	AUTOMATIC MARK COMMAND	
J20-F3	J23- 74	CC 57R	102.4 KPPS INPUT HI	056S
J20-F4	TB1-G73	CC293	+3 VDC AGC	
J20-F5	TB1-H74	CC289	+28 VDC AGC	
J20-F6	TB1-G68	CC281R	PHOTOMETER MARK REJECT HI	
J20-F7	TB1-G69	CC281W	PHOTOMETER MARK REJECT LO	
J20-F8	J22- 73	CC 59W	800 CPS 28 V 1 PCT LO IMU	
J20-F8	J16-S3	BB 97W	800 CPS 28 V 1 PCT LO IMU	
J20-F9	J22- 72	CC 59R	800 CPS 28 V 1 PCT HI IMU	
J20-F9	J16-S4	BB 97R	800 CPS 28 V 1 PCT HI IMU	
J20-G1	TB1-F72	CC294W	0 VDC CONDITIONING	
J20-G2	TB1-G72	CC294R	+20 VDC CONDITIONING	
J20-G3	TB1-H73	CC291	0 VDC AGC	
J20-G4	J20-G5	BB145	800 CPS 28 V 1 PCT LO OPTICS	
J20-G5	TB1-B73	CC273R	800 CPS 28 V 1 PCT LO OPTICS	
J20-G5	J20-G4	BB145	800 CPS 28 V 1 PCT LO OPTICS	

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A	80230	1015087
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(CONT.) 56J20 (45A10P1) PSA TRAY 10

FROM	TO	COND NO	CIRCUIT FUNCTION
J20-G6	TB1-A73	CC273W	800 CPS 28 V 1 PCT HI OPTICS
J20-H1	J20-K1	BB161	0 VDC IMU
J20-H1	TB1-F75	CC320	0 VDC IMU
J20-H2	TB1-K78	CC287	+28 VDC AGC BUSS A
J20-H3	TB1-K77	CC288	+28 VDC AGC BUSS B
J20-H4	TB1-A71	CC273L	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR
J20-H5	J16-N6	BB 92W	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
J20-H6	J16-P6	BB 92R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
J20-K1	J20-K2	BB162	0 VDC IMU
J20-K1	TB1-F73	CC321	0 VDC IMU
J20-K1	J20-H1	BB161	0 VDC IMU
J20-K2	TB1-C68	CC322	0 VDC IMU
J20-K2	J20-K1	BB162	0 VDC IMU
J20-K5	J20-L5	BB147	800 CPS 28 V 5 PCT L-90 DEG LO IMU
J20-K5	J12-K4	BB 33W	800 CPS 28 V 5 PCT L-90 DEG LO IMU
J20-K6	J20-L6	BB146	800 CPS 28 V 5 PCT L-90 DEG HI IMU
J20-K6	J12-H4	BB 33R	800 CPS 28 V 5 PCT L-90 DEG HI IMU
J20-L1	TB1-G 7	CC306	+28 VDC IMU
J20-L1	TB1-G71	CC307	+28 VDC IMU
J20-L1	J15-S2	BB 81	+28 VDC IMU
J20-L2	TB1-G71	CC308	+28 VDC IMU
J20-L2	J11-S5	BB 4	+28 VDC IMU
J20-L2	J16-S2	BB 93	+28 VDC IMU
J20-L5	TB1-C76	CC285W	800 CPS 28 V 5 PCT L-90 DEG LO IMU
J20-L5	J20-K5	BB147	800 CPS 28 V 5 PCT L-90 DEG LO IMU
J20-L6	TB1-C75	CC285R	800 CPS 28 V 5 PCT L-90 DEG HI IMU
J20-L6	J20-K6	BB146	800 CPS 28 V 5 PCT L-90 DEG HI IMU
J20-M1	J20-N1	BB152	+28 VDC IMU
J20-M1	J12-S1	BB 35	+28 VDC IMU
J20-M1	J17-T4	BB102	+28 VDC IMU
J20-M2	J20-N2	BB154	+28 VDC IMU
J20-M2	J12-S2	BB 36	+28 VDC IMU

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(CONT.) 56J20 (45A10P1) PSA TRAY 10

FROM	TO	COND NO	CIRCUIT FUNCTION	
J20-M2	J17-T3	BB103	+28 VDC IMU	
J20-M3	TB1-C78	CC311W	400 CPS 115 V LO	
J20-M4	J19-R4	BB134	STRUCTURE GROUND	
J20-M4	SHLD CC 57	CC 57A	STRUCTURE GROUND	
J20-M5	TB1-K72	CC284	+28 VDC MDV	
J20-M5	J17-R5	BB106	+28 VDC MDV	
J20-M6	J12-G4	BB 34	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
J20-N1	J20-N2	BB153	+28 VDC IMU	
J20-N1	J11-S1	BB 2	+28 VDC IMU	
J20-N1	J20-M1	BB152	+28 VDC IMU	
J20-N2	J11-S2	BB 3	+28 VDC IMU	
J20-N2	J20-N1	BB153	+28 VDC IMU	
J20-N2	J20-M2	BB154	+28 VDC IMU	
J20-N3	TB1-B78	CC311R	400 CPS 115 V HI	
J20-N4	TB1-B71	CC280	+28 VDC OPTICS TRACKER POWER	
J20-N5	J23- 47	CC 58	+28 VDC MDV	157R
J20-N5	TB1-K71	CC283	+28 VDC MDV	
J20-N5	J12-L1	BB 46	+28 VDC MDV	
J20-N6	TB1-H71	CC279	+28 VDC OPTICS	
J20-N6	J17-T6	BB111	+28 VDC OPTICS	
J20-N6	J18-T2	BB114	+28 VDC OPTICS	
J20-P1	J20-T1	BB148	+28 VDC IMU BUSS A	
J20-P1	TB1-H76	CC313	+28 VDC IMU BUSS A	
J20-P2	J20-T2	BB150	+28 VDC IMU BUSS B	
J20-P2	TB1-H75	CC315	+28 VDC IMU BUSS B	
J20-P3	TB1-D78	CC323	0 VDC OPTICS	
J20-P4	TB1-F73	CC324	0 VDC OPTICS	
J20-P5	J12-S6	BB 32	+28 VDC OPTICS	
J20-P5	J16-S5	BB 90	+28 VDC OPTICS	
J20-P6	J16-S6	BB 91	+28 VDC OPTICS	
J20-R1	J20-S1	BB149	+28 VDC IMU BUSS A	
J20-R1	TB1-K76	CC312	+28 VDC IMU BUSS A	

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(CONT.) 56J20 (45A10P1) PSA TRAY 10

FROM	TO	COND NO	CIRCUIT FUNCTION
J20-R2	J20-S2	BB151	+28 VDC IMU BUSS B
J20-R2	TB1-K75	CC314	+28 VDC IMU BUSS B
J20-R3	TB1-H72	CC301	+28 VDC STBY
J20-R3	J17-T1	BB104	+28 VDC STBY
J20-R4	J17-T2	BB105	+28 VDC STBY
J20-R5	J20-T5	BB157	+28 VDC OPTICS BUSS A
J20-R5	J20-S5	BB158	+28 VDC OPTICS BUSS A
J20-R5	TB1-G78	CC318	+28 VDC OPTICS BUSS A
J20-R6	J20-T6	BB159	+28 VDC OPTICS BUSS B
J20-R6	J20-S6	BB160	+28 VDC OPTICS BUSS B
J20-R6	TB1-G77	CC319	+28 VDC OPTICS BUSS B
J20-S1	TB1-H76	CC296	+28 VDC IMU BUSS A
J20-S1	J20-R1	BB149	+28 VDC IMU BUSS A
J20-S2	TB1-H75	CC298	+28 VDC IMU BUSS B
J20-S2	J20-R2	BB151	+28 VDC IMU BUSS B
J20-S3	J20-T3	BB155	+28 VDC STBY BUSS A
J20-S3	TB1-G76	CC316	+28 VDC STBY BUSS A
J20-S4	J20-T4	BB156	+28 VDC STBY BUSS B
J20-S4	TB1-G75	CC317	+28 VDC STBY BUSS B
J20-S5	TB1-H78	CC303	+28 VDC OPTICS BUSS A
J20-S5	J20-R5	BB158	+28 VDC OPTICS BUSS A
J20-S6	TB1-G77	CC305	+28 VDC OPTICS BUSS B
J20-S6	J20-R6	BB160	+28 VDC OPTICS BUSS B
J20-T1	TB1-K76	CC295	+28 VDC IMU BUSS A
J20-T1	J20-P1	BB148	+28 VDC IMU BUSS A
J20-T2	TB1-K75	CC297	+28 VDC IMU BUSS B
J20-T2	J20-P2	BB150	+28 VDC IMU BUSS B
J20-T3	TB1-G76	CC299	+28 VDC STBY BUSS A
J20-T3	J20-S3	BB155	+28 VDC STBY BUSS A
J20-T4	TB1-G75	CC300	+28 VDC STBY BUSS B
J20-T4	J20-S4	BB156	+28 VDC STBY BUSS B
J20-T5	TB1-G78	CC302	+28 VDC OPTICS BUSS A

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(CONT.) 56J20 (45A10P1) PSA TRAY 10

FROM	TO	COND NO	CIRCUIT FUNCTION
J20-T5	J20-R5	BB157	+28 VDC OPTICS BUSS A
J20-T6	TB1-H77	CC304	+28 VDC OPTICS BUSS B
J20-T6	J20-R6	BB159	+28 VDC OPTICS BUSS B

56J21 (05A5P1) AGC HARNESS - AGC SIGNALS

FROM	TO	COND NO	CIRCUIT FUNCTION	
J21- 1	E 29	A 429Y	COMMONED RETURNS GROUND	233R
J21- 2	E 28	A 425Y	COMMONED RETURNS GROUND	228R
J21- 3	J10- 44	A 430R	PARITY FAIL ALARM	234S
J21- 4	E 28	A 422Y	COMMONED RETURNS GROUND	244R
J21- 5	J10- 42	A 422R	TIMING (1.5 CPS)	244S
J21- 6	J10- 33	A 429R	SCALER FAIL ALARM	233S
J21- 7	J10- 18	A 425R	OUT 0 15	228S
J21- 8	J10- 14	A 444R	OUT 0 11	224S
J21- 9	E 33	A 444Y	COMMONED RETURNS GROUND	224R
J21- 10	J10- 40	A 426R	PROGRAM ALARM	229S
J21- 11	E 29	A 430Y	COMMONED RETURNS GROUND	234R
J21- 12	J10- 70	A 450	SPARE	211
J21- 13	E 26	A 467Y	COMMONED RETURNS GROUND	208R
J21- 14	J10- 48	A 467R	ERROR RESET	208S
J21- 15	E 27	A 459Y	COMMONED RETURNS GROUND	205R
J21- 16	E 30	A 434Y	COMMONED RETURNS GROUND	238R
J21- 17	E 28	A 423Y	COMMONED RETURNS GROUND	232R
J21- 18	E 28	A 424Y	COMMONED RETURNS GROUND	227R
J21- 19	E 32	A 443Y	COMMONED RETURNS GROUND	223R
J21- 20	E 32	A 440Y	COMMONED RETURNS GROUND	219R
J21- 21	J10- 31	A 446R	OUT 0 7	220S
J21- 22	E 33	A 446Y	COMMONED RETURNS GROUND	220R
J21- 23	J10- 15	A 447R	OUT 0 12	225S
J21- 24	E 28	A 426Y	COMMONED RETURNS GROUND	229R

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(CONT.) 56J21 (05A5P1) AGC HARNESS - AGC SIGNALS

FROM	TO	COND NO	CIRCUIT FUNCTION	
J21- 25	J10- 43	A 431R	COUNTER FAIL ALARM	235S
J21- 26	J10- 71	A 449	POWER SUPPLY SYNC	212
J21- 27	J10- 47	A 465R	OR OF C1 THRU C33	210S
J21- 28	E 26	A 466Y	COMMONED RETURNS GROUND	201R
J21- 29	J10- 34	A 466R	KEY CODE 1	201S
J21- 30	E 27	A 462Y	COMMONED RETURNS GROUND	207R
J21- 31	J10- 39	A 462R	TEST ALARM	207S
J21- 32	J10- 38	A 459R	KEY CODE 5	205S
J21- 33	J10- 64	A 434R	TC TRAP ALARM	238S
J21- 34	J10- 32	A 423R	PROGRAM CHECK FAIL ALARM	232S
J21- 35	J10- 17	A 424R	OUT 0 14	227S
J21- 36	J10- 63	A 443R	OUT 0 10	223S
J21- 37	J10- 30	A 440R	OUT 0 6	219S
J21- 38	J10- 74	A 436R	OUT 0 2	215S
J21- 39	E 31	A 436Y	COMMONED RETURNS GROUND	215R
J21- 40	J10- 60	A 437R	OUT 0 3	216S
J21- 41	E 31	A 437Y	COMMONED RETURNS GROUND	216R
J21- 42	J10- 61	A 441R	OUT 0 8	221S
J21- 43	E 33	A 447Y	COMMONED RETURNS GROUND	225R
J21- 44	J10- 41	A 427R	COMPUTER ACTIVITY	230S
J21- 45	E 29	A 431Y	COMMONED RETURNS GROUND	235R
J21- 46	J10- 72	A 448	SPARE	213
J21- 47	E 26	A 465Y	COMMONED RETURNS GROUND	210R
J21- 48	J10- 35	A 464R	KEY CODE 2	202S
J21- 50	E 35	A 556	GROUP 3 SHIELD	250
J21- 51	E 27	A 463Y	COMMONED RETURNS GROUND	204R
J21- 52	J10- 37	A 463R	KEY CODE 4	204S
J21- 53	E 27	A 461Y	COMMONED RETURNS GROUND	203R
J21- 54	E 27	A 460Y	COMMONED RETURNS GROUND	209R
J21- 55	J10- 46	A 469	SPARE	249
J21- 56	E 30	A 433Y	COMMONED RETURNS GROUND	237R
J21- 57	E 29	A 428Y	COMMONED RETURNS GROUND	231R

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(CONT.) 56J21 (05A5P1) AGC HARNESS - AGC SIGNALS

FROM	TO	COND NO	CIRCUIT FUNCTION	
J21- 58	E 33	A 445Y	COMMONED RETURNS GROUND	226R
J21- 59	E 32	A 442Y	COMMONED RETURNS GROUND	222R
J21- 60	E 31	A 439Y	COMMONED RETURNS GROUND	218R
J21- 61	E 30	A 435Y	COMMONED RETURNS GROUND	214R
J21- 62	J10- 58	A 484	DISKY GROUND	251
J21- 63	J10- 55	A 486	SPARE	240
J21- 64	J10- 57	A 480	+13 V B	241
J21- 65	J10- 59	A 482	+28 VDC AGC	243
J21- 66	E 31	A 438Y	COMMONED RETURNS GROUND	217R
J21- 67	J10- 28	A 438R	OUT 0 4	217S
J21- 68	E 32	A 441Y	COMMONED RETURNS GROUND	221R
J21- 69	E 29	A 427Y	COMMONED RETURNS GROUND	230R
J21- 70	E 30	A 432Y	COMMONED RETURNS GROUND	236R
J21- 71	J10- 53	A 432R	KEY RELEASE	236S
J21- 72	J10- 75	A 451	SPARE	247
J21- 73	E 37	A 557	GROUP 2 SHIELD	245
J21- 74	E 26	A 464Y	COMMONED RETURNS GROUND	202R
J21- 82	J10- 36	A 461R	KEY CODE 3	203S
J21- 83	J10- 49	A 460R	KEY RESET NAV	209S
J21- 84	J10- 45	A 468	SPARE	248
J21- 85	J10- 51	A 433R	RUPT LOCK ALARM	237S
J21- 86	J10- 19	A 428R	TELEMETRY FAIL ALARM	231S
J21- 87	J10- 16	A 445R	OUT 0 13	226S
J21- 88	J10- 62	A 442R	OUT 0 9	222S
J21- 89	J10- 29	A 439R	OUT 0 5	218S
J21- 90	J10- 73	A 435R	OUT 0 1	214S
J21- 91	J10- 56	A 485	DISKY GROUND	239

SIZE	CODE IDENT NO	
A	80230	1015087
SCALE-NONE	REV LTR E	SHEET 60 OF 146

56J22 (05A5P2) AGC HARNESS - PSA SIGNALS

FROM	TO	COND NO	CIRCUIT FUNCTION
J22- 2	J09- 50	A 303G	ATTITUDE DISABLE SIG TO NAA
J22- 4	J16-B8	CC349W	COS AOG 1X S3
J22- 7	J09- 41	A 303R	+28 VDC FROM NAA
J22- 8	J09- 40	A 303Y	0 VDC FROM NAA
J22- 12	J16-A8	CC348R	SIN AOG 1X S2
J22- 13	J16-C8	CC349R	COS AOG 1X S1
J22- 14	TB1-B16	CC327R	SIN AMG 1X
J22- 15	TB1-B15	CC327W	SIN AMG 1X RET
J22- 16	TB1-B13	CC328W	COS AMG 1X S3
J22- 18	J09- 4	A 288Y	PITCH ATTIT IMPULSE CONTR OUTPUT UP
J22- 26	J16-A9	CC348W	SIN AOG 1X S4
J22- 32	TB1-B14	CC328R	COS AMG 1X S1
J22- 33	TB1-A15	CC329W	SIN AIG 1X RET
J22- 35	J09- 5	A 288R	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN
J22- 36	J09- 18	A 288G	PITCH ATTIT IMPULSE CONTR INPUT
J22- 38	J17-L3	CC347	IMU TEMP LIGHT (MAIN PANEL)
J22- 39	J17-M3	CC346	0 VDC SPACECRAFT
J22- 40	J08- 43	A 157	MASTER CAUTION LIGHT RET
J22- 41	TB1-C 4	CC326	+28 VDC SPACECRAFT
J22- 42	TB1-G 3	CC325W	ATTITUDE CONTROL RELAY CONTROL
J22- 48	SHLD CC 43	CC 43B	NAA SHIELD GROUND
J22- 49	J17-C4	CC 44R	YAW ERROR BODY AXIS HI
J22- 51	SHLD CC 48	CC 48B	NAA SHIELD GROUND
J22- 53	J17-C3	CC 45R	YAW ERROR BODY OFFSET AXIS HI
J22- 54	SHLD CC 47	CC 47B	NAA SHIELD GROUND
J22- 56	TB1-A16	CC329R	SIN AIG 1X
J22- 58	J09- 20	A 289Y	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT
J22- 60	J09- 17	A 287R	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT
J22- 62	P10- 8	A 407	MAIN PANEL GIMBAL LOCK LIGHT
J22- 63	J12-G3	CC 4	G+N ERROR LIGHT (MAIN PANEL)
J22- 64	J09- 14	A 295	SPACECRAFT LAMP TEST
J22- 65	J08- 53	A 160	MASTER WARNING LIGHT RET

(CONT.) 56J22 (05A5P2) AGC HARNESS - PSA SIGNALS

FROM	TO	COND NO	CIRCUIT FUNCTION
J22- 67	TB1-G 5	CC325R	LOCK CDU RELAY CONTROL
J22- 68	TB1-H 5	CC325L	FINE ALIGN RELAY CONTROL
J22- 72	J20-F9	CC 59R	800 CPS 28 V 1 PCT HI IMU
J22- 73	J20-F8	CC 59W	800 CPS 28 V 1 PCT LO IMU
J22- 74	J17-A4	CC 43R	ROLL ERROR BODY AXIS HI
J22- 75	J17-B4	CC 43W	ROLL ERROR BODY AXIS LO
J22- 76	J17-D4	CC 44W	YAW ERROR BODY AXIS LO
J22- 77	SHLD CC 44	CC 44B	NAA SHIELD GROUND
J22- 78	J17-D1	CC 48R	PITCH ERROR BODY AND BODY OFFSET AXIS HI
J22- 79	J17-C1	CC 48W	PITCH ERROR BODY AND BODY OFFSET AXIS LO
J22- 80	SHLD CC 45	CC 45B	NAA SHIELD GROUND
J22- 81	J17-D3	CC 45W	YAW ERROR BODY OFFSET AXIS LO
J22- 82	J17-B3	CC 47W	ROLL ERROR BODY OFFSET AXIS LO
J22- 83	J17-A3	CC 47R	ROLL ERROR BODY OFFSET AXIS HI
J22- 84	TB1-A13	CC330R	COS AIG 1X
J22- 85	TB1-A14	CC330W	COS AIG 1X RET
J22- 87	J09- 6	A 289R	YAW ATTIT IMPULSE CONTR OUTPUT LEFT
J22- 88	J09- 7	A 289G	YAW ATTIT IMPULSE CONTR INPUT
J22- 89	J09- 3	A 287Y	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT
J22- 90	J09- 16	A 287G	ROLL ATTIT IMPULSE CONTR INPUT

56J23 (05A5P6) AGC HARNESS - AGC SIGNALS

FROM	TO	COND NO	CIRCUIT FUNCTION	
J23- 1	E 5	CC 12W	0 VDC IMU	140R
J23- 2	J13-N6	CC 12R	PIPA SWITCHING PULSE	140S
J23- 3	J14-D1	CC 13R	+ DX GYRO RATE	142R
J23- 4	J16-M4	CC 40R	COMPUTER 800 PPS IN PHASE SYNC	149S
J23- 5	E 6	CC 18W	0 VDC IMU	147S
J23- 6	E 5	CC 11W	0 VDC IMU	139R
J23- 7	J13-N5	CC 11R	PIPA INTERROGATE PULSE	139S

(CONT.) 56J23 (05A5P6) AGC HARNESS - AGC SIGNALS

FROM	TO	COND NO	CIRCUIT FUNCTION	
J23- 8	E 13	CC 36R	OG DAC MDA SIG LO	126R
J23- 9	E 13	CC 37W	OG DAC MDA SIG LO	127R
J23- 10	E 6	CC 13W	0 VDC IMU	142S
J23- 11	J14-D2	CC 14R	- DX GYRO RATE	143R
J23- 12	J16-L4	CC 39R	COMPUTER 800 PPS OUT OF PHASE SYNC	150S
J23- 13	J16-L3	CC 40W	COMPUTER 800 PPS SYNC RET	149R
J23- 14	J14-D6	CC 18R	- DZ GYRO RATE	147R
J23- 15	J14-D5	CC 17R	+ DZ GYRO RATE	146R
J23- 16	E 6	CC 17W	0 VDC IMU	146S
J23- 17	E 11	CC 35W	MG DAC MDA SIG LO	131R
J23- 18	J15-C7	CC 35R	MG CDU - DELTA THETA COMMAND	131S
J23- 19	J18-H3	CC 53W	SHAFT DELTA THETA COMMAND COMMON	115R
J23- 20	J18-K3	CC 53R	SHAFT - DELTA THETA COMMAND	115S
J23- 21	J15-B9	CC 36W	OG CDU + DELTA THETA COMMAND	126S
J23- 22	J15-C9	CC 37R	OG CDU - DELTA THETA COMMAND	127S
J23- 23	E 9	CC 32R	IG DAC MDA SIG LO	128R
J23- 24	E 6	CC 14W	0 VDC IMU	143S
J23- 25	J14-K4	CC 19R	GYRO RESET PULSE	148R
J23- 26	J12-M1	CC 5	AGC POWER SUPPLY FAIL SIG HI	157S
J23- 27	J16-L3	CC 39W	COMPUTER 800 PPS SYNC RET	150R
J23- 28	J17-R3	CC 51R	COMPUTER 12.8 KPPS SYNC	155S
J23- 29	J12-G2	CC 7R	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154S
J23- 30	J12-G1	CC 6R	COMPUTER 25.6 KPPS IN PHASE SYNC	153S
J23- 31	J11-L6	CC 1R	COMPUTER 3200 PPS OUT OF PHASE SYNC	152S
J23- 32	J14-D4	CC 16R	- DY GYRO RATE	145R
J23- 33	E 6	CC 16W	0 VDC IMU	145S
J23- 34	E 11	CC 34R	MG DAC MDA SIG LO	130R
J23- 35	J15-B7	CC 34W	MG CDU + DELTA THETA COMMAND	130S
J23- 36	J18-H3	CC 55W	SHAFT DELTA THETA COMMAND COMMON	114R
J23- 37	J18-G3	CC 55R	SHAFT + DELTA THETA COMMAND	114S
J23- 38	P11-A	A 503	+28 VDC AGC BUSS A	167
J23- 39	P12-A	A 531	+28 VDC AGC BUSS B	168

(CONT.) 56J23 (05A5P6) AGC HARNESS - AGC SIGNALS

FROM	TO	COND NO	CIRCUIT FUNCTION	
J23- 40	P12-A	A 532	+28 VDC AGC BUSS B	168
J23- 41	P12-J	A 551	0 VDC AGC	170
J23- 42	J15-B5	CC 32W	IG CDU + DELTA THETA COMMAND	128S
J23- 43	J15-C5	CC 33R	IG CDU - DELTA THETA COMMAND	129S
J23- 44	E 6	CC 19W	0 VDC IMU	148S
J23- 46	J12-K1	CC 3R	COMPUTER 102.4 KPPS SYNC	156S
J23- 47	J20-N5	CC 58	+28 VDC MDV	157R
J23- 48	TB1-D71	A 562	CONDITION LAMP TEST	157T
J23- 49	J17-S3	CC 51W	0 VDC IMU	155R
J23- 50	J12-F2	CC 7W	COMPUTER 25.6 KPPS SYNC RET	154R
J23- 51	J12-F2	CC 6W	COMPUTER 25.6 KPPS SYNC RET	153R
J23- 52	J11-M5	CC 1W	COMPUTER 3200 PPS SYNC RET	152R
J23- 53	J11-M5	CC 2W	COMPUTER 3200 PPS SYNC RET	151R
J23- 54	J11-M6	CC 2R	COMPUTER 3200 PPS IN PHASE SYNC	151S
J23- 55	J14-D3	CC 15R	+ DY GYRO RATE	144R
J23- 56	E 6	CC 15W	0 VDC IMU	144S
J23- 57	TB1-F52	CC331	THERMISTER LO	199R
J23- 58	P09-115	A 400	AGC THERMISTER HI	199S
J23- 59	J18-H5	CC 54W	TRUNNION DELTA THETA COMMAND COMMON	117R
J23- 60	J18-K5	CC 54R	TRUNNION - DELTA THETA COMMAND	117S
J23- 61	P11-A	A 504	+28 VDC AGC BUSS A	167
J23- 62	TB1-K78	A 558	+28 VDC AGC BUSS A	167
J23- 63	TB1-K78	A 559	+28 VDC AGC BUSS A	167
J23- 64	TB1-K77	A 560	+28 VDC AGC BUSS B	168
J23- 65	TB1-K77	A 561	+28 VDC AGC BUSS B	168
J23- 66	P12-J	A 552	0 VDC AGC	170
J23- 69	E 9	CC 33W	IG DAC MDA SIG LO	129R
J23- 73	J12-H1	CC 3W	COMPUTER 102.4 KPPS SYNC RET	156R
J23- 74	J20-F3	CC 57R	102.4 KPPS INPUT HI	056S
J23- 75	J20-D3	CC 57W	102.4 KPPS INPUT LO	056R
J23- 88	J18-H5	CC 52W	TRUNNION DELTA THETA COMMAND COMMON	116R
J23- 89	J18-G5	CC 52R	TRUNNION + DELTA THETA COMMAND	116S

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           FROM         TO        COND NO  C I R C U I T   F U N C T I O N

(CONT.)           56J23    (05A5P6)     AGC HARNESS - AGC SIGNALS

           J23- 90      P11-J       A 523  0 VDC AGC                             169
           J23- 91      P11-J       A 524  0 VDC AGC                             169


                  56J24    (05A5P7)     AGC HARNESS - AGC SIGNALS

           J24-  1      TB1-G74     CC333  +13 VDC AGC                           176
           J24-  2      J15-M5      CC 20R + DELTA V X                           132R
           J24-  3      TB1-H73     CC334  0 VDC AGC                             177
           J24-  4      P01- 49     A 132Y FINE ALIGN MODE INDICATION TO AGC     161
           J24-  5      J16-A7      CC 41W ZERO ENCODER MODE INDICATION TO AGC   158
           J24-  6      TB1-G73     CC335  +3 VDC AGC                            175
           J24-  7      E 10        CC 29W MG DAC MDA SIG LO                     123R
           J24-  8      J15-C6      CC 29R MG ENCODER - DELTA THETA              123S
           J24-  9      E 14        CC 20W COMPUTER RET                          132S
           J24- 10      J15-M6      CC 21R - DELTA V X                           133R
           J24- 11      TB1-H74     CC290  +28 VDC AGC                           166
           J24- 12      J06- 69     A 114Y TRANSFER SWITCH INDICATION TO AGC     164
           J24- 13      P01- 76     A 136Y ATTIT CONT MODE INDICATION TO AGC     162
           J24- 14      P01- 59     A 133Y COARSE ALIGN MODE INDICATION TO AGC   159
           J24- 15      TB1-A69     A 564R OPTICS ZERO ENCODER INDICATION        104
           J24- 16      J20-C3      CC 56W STAR PRESENCE LO                      183R
           J24- 17      J20-C4      CC 56R STAR PRESENCE HI                      183S
           J24- 18      E 10        CC 28R MG DAC MDA SIG LO                     122R
           J24- 19      J15-B6      CC 28W MG ENCODER + DELTA THETA              122S
           J24- 20      E 12        CC 30R OG DAC MDA SIG LO                     118R
           J24- 21      E 12        CC 31W OG DAC MDA SIG LO                     119R
           J24- 22      E  8        CC 26R IG DAC MDA SIG LO                     120R
           J24- 23      E 14        CC 21W COMPUTER RET                          133S
           J24- 24      J15-L6      CC 22R + DELTA V Y                           134R
           J24- 25      J12-D6      CC  8R IMU FAIL                              141S
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           FROM         TO        COND NO  C I R C U I T   F U N C T I O N

(CONT.)           56J24    (05A5P7)     AGC HARNESS - AGC SIGNALS

           J24- 26      TB1-C56     CC332W AGC COMMON (ISS)                      165
           J24- 29      P01- 39     A 131Y ENTRY MODE INDICATION TO AGC          163
           J24- 30      J15-A3      CC 38W MANUAL CDU MODE INDICATION TO AGC     160
           J24- 31      J09- 42     A 304Y TRACKER ON INDICATION TO AGC          107
           J24- 32      P10- 19     A 414Y NOT MARK                              103
           J24- 33      J15-K4      CC 24R - DELTA V Z                           137R
           J24- 34      E 16        CC 24W COMPUTER RET                          137S
           J24- 35      J17-H4      CC 46W SHAFT ENCODER DELTA THETA OUT COMMON109R
           J24- 36      J17-K4      CC 46R SHAFT ENCODER - DELTA THETA OUTPUT  109S
           J24- 37      J17-H6      CC 49W TRUNNION ENCODER DELTA THETA OUT COM111R
           J24- 38      J17-K6      CC 49R TRUNNION ENCODER - DELTA THETA OUT  111S
           J24- 39      J15-B8      CC 30W OG ENCODER + DELTA THETA              118S
           J24- 40      J15-C8      CC 31R OG ENCODER - DELTA THETA              119S
           J24- 41      J15-B4      CC 26W IG ENCODER + DELTA THETA              120S
           J24- 42      E  8        CC 27W IG DAC MDA SIG LO                     121R
           J24- 43      E 15        CC 22W COMPUTER RET                          134S
           J24- 44      J15-K6      CC 23R - DELTA V Y                           135R
           J24- 45      J12-D4      CC 10R ACCEL FAIL                            138S
           J24- 46      J12-F6      CC  8W IMU FAIL RET                          141R
           J24- 51      E 23        A 563  AGC SIGNAL 178 SHIELD RETURN          178
           J24- 54      J09- 49     A 309Y OPTICS MODE SW COMPUTER INDICATION    106
           J24- 55      P10- 44     A 417Y MARK                                  102
           J24- 56      J15-K5      CC 25R + DELTA V Z                           136R
           J24- 57      E 16        CC 25W COMPUTER RET                          136S
           J24- 58      J17-H4      CC 50W SHAFT ENCODER DELTA THETA OUT COMMON108R
           J24- 59      J17-G4      CC 50R SHAFT ENCODER + DELTA THETA OUTPUT  108S
           J24- 60      J17-H6      CC 42W TRUNNION ENCODER DELTA THETA OUT COM110R
           J24- 61      J17-G6      CC 42R TRUNNION ENCODER + DELTA THETA OUT  110S
           J24- 64      E 20        CC337  AGC SIGNAL 179 SHIELD RETURN          179
           J24- 67      J15-C4      CC 27R IG ENCODER - DELTA THETA              121S
           J24- 69      E 15        CC 23W COMPUTER RET                          135S
           J24- 70      J12-D5      CC  9R CDU FAIL                              124S
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           FROM         TO        COND NO  C I R C U I T   F U N C T I O N

(CONT.)           56J24    (05A5P7)     AGC HARNESS - AGC SIGNALS

           J24- 71      J12-F5      CC  9W CDU FAIL RET                          124R
           J24- 72      J12-F4      CC 10W ACCEL FAIL RET                        138R
           J24- 83      TB1-A68     A 566Y SXT POWER ON INDICATION               105
           J24- 84      TB1-A68     A 564Y AGC COMMON (OSS)                      101
           J24- 87      E 18        CC336  AGC SIGNAL 179 SHIELD RETURN          179


                  56P01    (50A3J1)     D AND C ELECTRONICS

           P01-  1      J06-  1     A  96R PITCH ATTITUDE ERROR METER +
           P01-  2      J06-  2     A  96Y PITCH ATTITUDE ERROR METER -
           P01-  4      TB1-K 3     A 124G COARSE ALIGN RELAY CONTROL
           P01-  5      TB1-H 5     A 124R FINE ALIGN RELAY CONTROL
           P01-  6      J06-  6     A  97  ENTRY RELAY CONTROL RESET
           P01-  7      TB1-G 7     A 125  +28 VDC IMU
           P01-  9      J06-  9     A  98  MODE SWITCH INTERLOCK
           P01- 10      TB1-B 7     A 126Y 800 CPS 28 V 1 PCT LO IMU
           P01- 11      TB1-A 7     A 126R 800 CPS 28 V 1 PCT HI IMU
           P01- 12      TB1-K 5     A 124Y ZERO ENCODER RELAY CONTROL
           P01- 13      TB1-B50     A 127R FINE ALIGN MODE COMMAND FROM AGC
           P01- 14      J06- 14     A 100R YAW ATTITUDE ERROR METER +
           P01- 15      J06- 15     A 100Y YAW ATTITUDE ERROR METER -
           P01- 18      J06- 18     A 101  MODE RELAY COMMON TO D AND C ELECT
           P01- 22      J06- 22     A 102  ATTITUDE CONTROL MODE LIGHT
           P01- 23      J06- 23     A 103  FINE ALIGN RELAY CONTROL
           P01- 24      TB1-G 3     A 128Y ATTITUDE CONTROL RELAY CONTROL
           P01- 25      J06- 25     A 105  ENTRY RELAY CONTROL
           P01- 26      TB1-A26     A 129  IMU DELAY LIGHT HI
           P01- 27      TB1-C48     A 130Y CDU MANUAL MODE COMMAND FROM AGC
           P01- 28      J06- 28     A 106Y ROLL ATTITUDE ERROR METER -
           P01- 29      J06- 29     A 106R ROLL ATTITUDE ERROR METER +
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           FROM         TO        COND NO  C I R C U I T   F U N C T I O N

(CONT.)           56P01    (50A3J1)     D AND C ELECTRONICS

           P01- 34      J06- 34     A 107  ZERO ENCODER RELAY CONTROL
           P01- 35      J06- 35     A 108  COARSE ALIGN RELAY CONTROL
           P01- 36      J06- 36     A 109  CDU MANUAL RELAY CONTROL
           P01- 37      J06- 37     A 110  MANUAL ALIGN
           P01- 38      TB1-C50     A 127Y ZERO ENCODER MODE COMMAND FROM AGC
           P01- 39      J24- 29     A 131Y ENTRY MODE INDICATION TO AGC          163
           P01- 46      J06- 46     A 111  ATTITUDE CONTROL MODE INTERLOCK
           P01- 48      TB1-A50     A 127G COARSE ALIGN MODE COMMAND FROM AGC
           P01- 49      J24-  4     A 132Y FINE ALIGN MODE INDICATION TO AGC     161
           P01- 56      J06- 56     A 112  MANUAL ALIGN ENABLE
           P01- 57      TB1-H 3     A 128G ENTRY RELAY CONTROL
           P01- 58      TB1-C49     A 130R ENTRY MODE COMMAND FROM AGC
           P01- 59      J24- 14     A 133Y COARSE ALIGN MODE INDICATION TO AGC   159
           P01- 68      TB1-C56     A 134Y AGC COMMON (ISS)
           P01- 69      TB1-G 5     A 128R LOCK CDU RELAY CONTROL
           P01- 70      TB1-K33     A 135R IG CDU 1X ERROR SIG
           P01- 71      TB1-K34     A 135Y IG CDU ERROR SIG RET
           P01- 76      J24- 13     A 136Y ATTIT CONT MODE INDICATION TO AGC     162
           P01- 78      TB1-D 3     A 137  0 VDC IMU
           P01- 79      J06- 79     A 116  ENTRY MODE LIGHT
           P01- 80      TB1-A54     A 138R PANEL BRIGHTNESS CONTROL
           P01- 82      TB1-H33     A 139R MG CDU 1X ERROR SIG
           P01- 83      TB1-H34     A 139Y MG CDU ERROR SIG RET
           P01- 84      TB1-G 8     A 140  STRUCTURE GROUND
           P01- 88      TB1-D71     A 141  CONDITION LAMP TEST
           P01- 89      TB1-K72     A 142  +28 VDC MDV
           P01- 90      TB1-C 2     A 143N 400 CPS 6 V HI
           P01- 91      TB1-C 3     A 144  MODE LAMP TEST PWR
           P01- 92      J06- 92     A 118  COARSE ALIGN MODE LIGHT
           P01- 93      J06- 93     A 119  MODE RELAY COMMON
           P01- 94      J06- 94     A 120  FINE ALIGN MODE LIGHT
           P01- 95      TB1-A55     A 138Y PANEL BRIGHTNESS CONTROL
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(CONT.) 56P01 (50A3J1) D AND C ELECTRONICS

FROM	TO	COND NO	CIRCUIT FUNCTION
P01- 96	TB1-G33	A 145R	OG CDU 1X ERROR SIG
P01- 97	TB1-G34	A 145Y	OG CDU ERROR SIG RET
P01-103	TB1-A 2	A 143R	400 CPS VARIABLE ILLUMINATION POWER
P01-104	J06-104	A 121	ZERO ENCODER MODE LIGHT
P01-105	J06-105	A 122	CDU MANUAL MODE LIGHT
P01-106	TB1-C 1	A 143G	400 CPS 6 V HI
P01-108	TB1-A 4	A 143Y	400 CPS VARIABLE ILLUMINATION POWER

56P02 (35J1) IMU

FROM	TO	COND NO	CIRCUIT FUNCTION
P02-A	TB1-A 5	A 178R	800 CPS 28 V 1 PCT HI IMU
P02-A*	TB1-A13	A 179R	COS AIG 1X S3
P02-B	TB1-B 5	A 178Y	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
P02-B*	TB1-A14	A 179Y	COS AIG 1X RET S1
P02-C	TB1-F15	A 180R	COS AOG 16X S3
P02-D	TB1-F14	A 180Y	COS AOG 16X S1
P02-E	TB1-G14	A 181R	SIN AOG 16X S2
P02-F	TB1-G15	A 181Y	SIN AOG 16X S4
P02-F*	TB1-A15	A 182R	SIN AIG 1X RET S2
P02-G	TB1-H10	A 183R	COS AMG 16X S3
P02-G*	TB1-A16	A 182Y	SIN AIG 1X S4
P02-H	TB1-H 9	A 183Y	COS AMG 16X S1
P02-J	TB1-K 9	A 184R	SIN AMG 16X S2
P02-K	TB1-K10	A 184Y	SIN AMG 16X S4
P02-L	TB1-B13	A 185R	COS AMG 1X S3
P02-M	TB1-B14	A 185Y	COS AMG 1X S1
P02-N	TB1-B15	A 186Y	SIN AMG 1X RET S2
P02-P	TB1-B16	A 186R	SIN AMG 1X S4
P02-R	TB1-K 7	A 187R	3200 CPS 2 V HI
P02-S	TB1-H 7	A 187Y	3200 CPS 2 V LO

(CONT.) 56P02 (35J1) IMU

FROM	TO	COND NO	CIRCUIT FUNCTION
P02-T	TB1-K 8	A 188R	3200 CPS 2 V FEEDBACK HI
P02-U	TB1-H 8	A 188Y	3200 CPS 2 V FEEDBACK LO
P02-W	TB1-H15	A 189R	COS AIG 16X S3
P02-X	TB1-H14	A 189Y	COS AIG 16X S1
P02-Y	TB1-K14	A 190R	SIN AIG 16X S2
P02-Z	TB1-K15	A 190Y	SIN AIG 16X S4

56P03 (35J3) IMU

FROM	TO	COND NO	CIRCUIT FUNCTION
P03-A	TB1-G28	A 191Y	X GYRO ERROR SIG
P03-A*	TB1-D19	A 192Y	MG TORQUE MOTOR RET
P03-B	TB1-F28	A 193Y	Z GYRO ERROR SIG
P03-B*	TB1-D19	A 194Y	MG TORQUE MOTOR RET
P03-C	TB1-A28	A 195R	IMU OG ERROR SIG
P03-C*	TB1-D18	A 194R	MG TORQUE MOTOR HI
P03-D	TB1-C14	A 196R	COS AOG 1X S3
P03-D*	TB1-F18	A 197R	IG TORQUE MOTOR HI
P03-E	TB1-C15	A 196Y	COS AOG 1X S1
P03-E*	TB1-F19	A 197Y	IG TORQUE MOTOR RET
P03-F	TB1-D15	A 198R	SIN AOG 1X S4
P03-F*	TB1-F19	A 199Y	IG TORQUE MOTOR RET
P03-G	TB1-D14	A 198Y	SIN AOG 1X S2
P03-G*	TB1-F18	A 199R	IG TORQUE MOTOR HI
P03-H	TB1-K29	A 200Y	IG CDU ATTITUDE STEERING ERROR
P03-H*	TB1-G 7	A 201	+28 VDC IMU
P03-J	TB1-K28	A 200R	IG CDU ERROR SIG RET
P03-J*	TB1-A56	A 202	GIMBAL LOCK SIGNAL
P03-K	TB1-H28	A 203R	MG CDU ERROR SIG RET
P03-L	TB1-H29	A 203Y	MG CDU ATTITUDE STEERING ERROR
P03-M	TB1-K13	A 204Y	YAW ERROR BODY OFFSET AXIS LO

(CONT.) 56P03 (35J3) IMU

FROM	TO	COND NO	CIRCUIT FUNCTION
P03-N	TB1-H13	A 204R	PITCH YAW RSVR S3
P03-P	TB1-G13	A 205Y	PITCH ERROR BODY AND BODY OFFSET AXIS LO
P03-R	TB1-F13	A 205R	PITCH-YAW RSVR S4
P03-U	TB1-C28	A 195G	IMU IG AND Y GYRO ERROR SIG
P03-V	TB1-D28	A 195Y	IMU GIMBAL AND GYRO ERROR SIG LO
P03-W	TB1-B28	A 195N	IMU MG ERROR SIG
P03-X	TB1-C19	A 206Y	OG TORQUE MOTOR RET
P03-Y	TB1-C18	A 206R	OG TORQUE MOTOR HI
P03-Z	TB1-D18	A 192R	MG TORQUE MOTOR HI

56P04 (65A1J2) SEXTANT RESOLVER TRIMMING MODULE

FROM	TO	COND NO	CIRCUIT FUNCTION
P04-D1	P05- 27	A 207Y	SXT SHAFT 16X RSVR P2
P04-D2	P05- 30	A 207R	SXT SHAFT 16X RSVR P4
P04-E1	TB1-D 6	A 208R	800 CPS 28 V 1 PCT HI OPTICS
P04-E2	TB1-F 6	A 208Y	800 CPS 28 V 1 PCT LO OPTICS
P04-F1	P05- 59	A 209R	SXT TRUNNION 64X RSVR P4
P04-F2	P05- 58	A 209Y	SXT TRUNNION 64X RSVR P2

56P05 (65A1J1) SEXTANT

FROM	TO	COND NO	CIRCUIT FUNCTION
P05- 1	TB1-G11	A 210	STRUCTURE GROUND
P05- 2	TB1-C46	A 211Y	SXT SHAFT 1/2X RSVR S4
P05- 3	TB1-C45	A 211R	SXT SHAFT 1/2X RSVR S2
P05- 5	TB1-G51	A 212R	SXT TRUNNION MOTOR PHASE 2
P05- 6	TB1-D45	A 213R	SXT SHAFT 1/2X RSVR S1
P05- 7	TB1-D46	A 213Y	SXT SHAFT 1/2X RSVR S3
P05- 8	TB1-G49	A 214R	SXT SHAFT MOTOR PHASE 2

(CONT.) 56P05 (65A1J1) SEXTANT

FROM	TO	COND NO	CIRCUIT FUNCTION
P05- 9	TB1-B67	A 215	0 VDC OPTICS
P05- 10	TB1-A65	A 216Y	TRACKER Y REFERENCE
P05- 11	TB1-A66	A 216R	TRACKER Y REFERENCE
P05- 12	TB1-D 6	A 217R	800 CPS 28 V 1 PCT HI OPTICS
P05- 13	TB1-F 6	A 217Y	800 CPS 28 V 1 PCT LO OPTICS
P05- 14	TB1-F 6	A 217G	800 CPS 28 V 1 PCT LO OPTICS
P05- 16	TB1-G50	A 212G	0 VDC OPTICS
P05- 17	TB1-B66	A 218R	TRACKER X REFERENCE
P05- 18	TB1-B65	A 218Y	TRACKER X REFERENCE
P05- 19	TB1-G50	A 214G	0 VDC OPTICS
P05- 23	TB1-H37	A 219R	SXT SHAFT TACH HI
P05- 24	TB1-H38	A 219Y	SXT SHAFT TACH LO
P05- 27	P04-D1	A 207Y	SXT SHAFT 16X RSVR P2
P05- 30	P04-D2	A 207R	SXT SHAFT 16X RSVR P4
P05- 32	TB1-D 7	A 220R	800 CPS 28 V 1 PCT HI OPTICS
P05- 33	TB1-G52	A 212Y	SXT TRUNNION MOTOR PHASE 1
P05- 34	TB1-D37	A 221R	SXT TRUNNION TACH HI
P05- 35	TB1-D38	A 221Y	SXT TRUNNION TACH LO
P05- 36	TB1-G48	A 214Y	SXT SHAFT MOTOR PHASE 1
P05- 37	TB1-C67	A 222	0 VDC OPTICS
P05- 38	TB1-D43	A 223R	SXT TRUNNION 1X RSVR S3
P05- 39	TB1-D44	A 223Y	SXT TRUNNION 1X RSVR S1
P05- 40	TB1-C43	A 224Y	SXT TRUNNION 1X RSVR S2
P05- 41	TB1-C44	A 224R	SXT TRUNNION 1X RSVR S4
P05- 43	TB1-A 3	A 225R	400 CPS VARIABLE ILLUMINATION POWER
P05- 44	TB1-B 3	A 225Y	400 CPS 6 V LO
P05- 51	TB1-G45	A 226Y	SXT SHAFT 1X RSVR S4
P05- 52	TB1-G46	A 226R	SXT SHAFT 1X RSVR S2
P05- 53	TB1-F46	A 227R	SXT SHAFT 1X RSVR S1
P05- 54	TB1-F45	A 227Y	SXT SHAFT 1X RSVR S3
P05- 55	TB1-F 7	A 220Y	800 CPS 28 V 1 PCT LO OPTICS
P05- 58	P04-F2	A 209Y	SXT TRUNNION 64X RSVR P2

(CONT.) 56P05 (65A1J1) SEXTANT

FROM	TO	COND NO	CIRCUIT FUNCTION
P05- 59	P04-F1	A 209R	SXT TRUNNION 64X RSVR P4
P05- 64	TB1-D66	A 228R	TRACKER PREAMP OUTPUT HI
P05- 65	TB1-D65	A 228Y	TRACKER PREAMP OUTPUT LO
P05- 68	TB1-B71	A 229	+28 VDC OPTICS TRACKER POWER
P05- 69	TB1-D78	A 230	0 VDC OPTICS
P05- 70	TB1-F 7	A 231Y	800 CPS 28 V 1 PCT LO OPTICS
P05- 71	TB1-D 7	A 231R	800 CPS 28 V 1 PCT HI OPTICS
P05- 72	TB1-C66	A 232R	TRACKER AUTOMATIC GAIN CONTROL HI
P05- 73	TB1-C65	A 232Y	TRACKER AUTOMATIC GAIN CONTROL LO
P05- 76	TB1-D 8	A 233R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
P05- 77	TB1-F 8	A 233Y	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
P05- 78	TB1-B46	A 234Y	SXT SHAFT 16X RSVR S4
P05- 79	TB1-B45	A 234R	SXT SHAFT 16X RSVR S2
P05- 80	TB1-K66	A 235R	PHOTOMETER SIGNAL HI
P05- 81	TB1-K65	A 235Y	PHOTOMETER SIGNAL LO
P05- 82	TB1-A45	A 236Y	SXT SHAFT 16X RSVR S1
P05- 83	TB1-A46	A 236R	SXT SHAFT 16X RSVR S3
P05- 84	TB1-D 7	A 237R	800 CPS 28 V 1 PCT HI OPTICS
P05- 85	TB1-F 7	A 237Y	800 CPS 28 V 1 PCT LO OPTICS
P05- 86	TB1-A44	A 238Y	SXT TRUNNION 64X RSVR S1
P05- 87	TB1-A43	A 238R	SXT TRUNNION 64X RSVR S3
P05- 88	TB1-H66	A 239R	STAR PRESENCE INPUT HI
P05- 89	TB1-H65	A 239Y	STAR PRESENCE INPUT LO
P05- 90	TB1-B44	A 240Y	SXT TRUNNION 64X RSVR S4
P05- 91	TB1-B43	A 240R	SXT TRUNNION 64X RSVR S2

56P06 (35J2) IMU

FROM	TO	COND NO	CIRCUIT FUNCTION
P06-A	TB1-C74	A 241G	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
P06-A*	TB1-K64	A 242Y	IRIG TEMP IND SENSOR RET

SIZE A
CODE IDENT NO 80230
1015087
SCALE-NONE
REV LTR E

(CONT.) 56P06 (35J2) IMU

FROM	TO	COND NO	CIRCUIT FUNCTION
P06-B	TB1-C73	A 241Y	800 CPS 28 V 5 PCT IMU WHEELS LO
P06-B*	TB1-K74	A 243R	PRESSURE SENSOR +28 VDC HI
P06-C	TB1-C72	A 241R	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
P06-C*	TB1-K73	A 243Y	PRESSURE SENSOR +28 VDC LO
P06-D	TB1-G71	A 244	+28 VDC IMU
P06-D*	TB1-D68	A 245R	IMU PRESSURE MONITOR HI
P06-E	TB1-H26	A 246	0 VDC IMU
P06-E*	TB1-D69	A 245Y	IMU PRESSURE MONITOR LO
P06-F	TB1-C54	A 247	-28 VDC
P06-F*	TB1-C77	A 248R	800 CPS 28 V 5 PCT HI TO BLOWERS
P06-G	TB1-G70	A 249	STRUCTURE GROUND
P06-G*	TB1-C76	A 248Y	800 CPS 28 V 5 PCT L-90 DEG LO IMU
P06-H	TB1-C18	A 250R	OG TORQUE MOTOR HI
P06-J	TB1-C19	A 250Y	OG TORQUE MOTOR RET
P06-K	TB1-H61	A 251	IMU TEMP SENSOR COM
P06-L	TB1-H64	A 252Y	IRIG TEMP CONT SENSOR RET
P06-M	TB1-H63	A 252R	IRIG TEMP CONT SENSOR HI
P06-N	TB1-H62	A 253R	ACCEL INDICATING SENSOR HI
P06-P	TB1-G61	A 253Y	ACCEL TEMP IND SENSOR RET
P06-R	TB1-C61	A 254Y	EMERGENCY HTR LO-OPER AND STBY
P06-V	TB1-D60	A 255R	IMU CONTROL HTR HI
P06-W	TB1-D61	A 255Y	IMU CONTROL HTR LO
P06-X	TB1-C60	A 254R	IMU EMERGENCY HTR HI
P06-Y	TB1-D62	A 256	EMERG HTR CONT MODULE LO
P06-Z	TB1-K63	A 242R	IRIG TEMP IND SENSOR HI

56P07 (35J4) IMU

FROM	TO	COND NO	CIRCUIT FUNCTION
P07-A	TB1-C23	A 257L	Z GYRO TORQUE +
P07-A*	TB1-D10	A 258Y	Y PIP ERROR LO

SIZE A
CODE IDENT NO 80230
1015087
SCALE-NONE
REV LTR E

(CONT.) 56P07 (35J4) IMU

FROM	TO	COND NO	CIRCUIT FUNCTION
P07-B	TB1-C22	A 257W	Z GYRO TORQUE RET
P07-B*	TB1-C11	A 259R	Z PIP ERROR HI
P07-C	TB1-C21	A 257R	Z GYRO TORQUE -
P07-C*	TB1-C10	A 259Y	Z PIP ERROR LO
P07-D	TB1-F23	A 260L	X GYRO TORQUE +
P07-E	TB1-F22	A 260W	X GYRO TORQUE RET
P07-F	TB1-F21	A 260R	X GYRO TORQUE -
P07-F*	TB1-A10	A 261G	OG ADA
P07-G	TB1-D23	A 262L	Y GYRO TORQUE +
P07-G*	TB1-A11	A 261N	MG ADA
P07-H	TB1-D22	A 262W	Y GYRO TORQUE RET
P07-H*	TB1-B11	A 261R	IG ADA
P07-J	TB1-D21	A 262R	Y GYRO TORQUE -
P07-J*	TB1-B10	A 261Y	0 VDC IMU
P07-K	TB1-G23	A 263L	Z PIP TORQUE +
P07-L	TB1-G22	A 263W	Z PIP TORQUE RET
P07-M	TB1-G21	A 263R	Z PIP TORQUE -
P07-N	TB1-H23	A 264L	Y PIP TORQUE +
P07-P	TB1-H22	A 264W	Y PIP TORQUE RET
P07-R	TB1-H21	A 264R	Y PIP TORQUE -
P07-U	TB1-K23	A 265L	X PIP TORQUE +
P07-V	TB1-K22	A 265W	X PIP TORQUE RET
P07-W	TB1-K21	A 265R	X PIP TORQUE -
P07-X	TB1-F11	A 266R	X PIP ERROR HI
P07-Y	TB1-F10	A 266Y	X PIP ERROR LO
P07-Z	TB1-D11	A 258R	Y PIP ERROR HI

SIZE A
CODE IDENT NO 80230
1015087
SCALE-NONE
REV LTR E

56P08 (65A2J1) SCANNING TELESCOPE

FROM	TO	COND NO	CIRCUIT FUNCTION
P08- 1	TB1-K50	A 267G	0 VDC OPTICS
P08- 2	TB1-K51	A 267R	SCT TRUNNION MOTOR PHASE 2
P08- 3	TB1-K52	A 267Y	SCT TRUNNION MOTOR PHASE 1
P08- 5	TB1-H51	A 268R	SCT SHAFT MOTOR PHASE 2
P08- 6	TB1-H52	A 268Y	SCT SHAFT MOTOR PHASE 1
P08- 7	TB1-H50	A 268G	0 VDC OPTICS
P08- 9	TB1-F44	A 269R	SCT TRUNNION 1X RSVR P2
P08- 10	TB1-F43	A 269Y	SCT TRUNNION 1X RSVR P4
P08- 12	TB1-G43	A 270R	SCT TRUNNION 1X RSVR P3
P08- 13	TB1-G44	A 270Y	SCT TRUNNION 1X RSVR P1
P08- 18	TB1-F40	A 271Y	SCT TRUNNION 1X RSVR S2
P08- 19	TB1-F41	A 271R	SCT TRUNNION 1X RSVR S4
P08- 21	TB1-A74	A 272R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
P08- 22	TB1-B74	A 272Y	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
P08- 24	TB1-A74	A 273R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
P08- 25	TB1-B74	A 273Y	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
P08- 27	TB1-A73	A 274R	800 CPS 28 V 1 PCT HI OPTICS
P08- 28	TB1-B73	A 274Y	800 CPS 28 V 1 PCT LO OPTICS
P08- 30	TB1-A73	A 275R	800 CPS 28 V 1 PCT HI OPTICS
P08- 31	TB1-B73	A 275Y	800 CPS 28 V 1 PCT LO OPTICS
P08- 33	TB1-F37	A 276R	SCT TRUNNION TACH HI
P08- 34	TB1-F38	A 276Y	SCT TRUNNION TACH LO
P08- 35	SHLD A 276	A 276A	0 VDC OPTICS
P08- 37	SHLD A 278	A 278A	0 VDC OPTICS
P08- 38	TB1-K37	A 278R	SCT SHAFT TACH HI
P08- 39	TB1-K38	A 278Y	SCT SHAFT TACH LO
P08- 41	TB1-G46	A 279R	SCT SHAFT 1X RSVR P2
P08- 42	TB1-G45	A 279Y	SCT SHAFT 1X RSVR P4
P08- 44	TB1-F46	A 280R	SCT SHAFT 1X RSVR P3
P08- 45	TB1-F45	A 280Y	SCT SHAFT 1X RSVR P1
P08- 50	TB1-K41	A 281R	SCT SHAFT 1X RSVR S2
P08- 51	TB1-K40	A 281Y	SCT SHAFT 1X RSVR S4

SIZE A
CODE IDENT NO 80230
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SCALE-NONE
REV LTR E

(CONT.) 56P08 (65A2J1) SCANNING TELESCOPE

FROM	TO	COND NO	CIRCUIT FUNCTION
P08- 53	TB1-A 4	A 282R	400 CPS VARIABLE ILLUMINATION POWER
P08- 54	TB1-B 4	A 282Y	400 CPS 6 V LO
P08- 56	TB1-A 4	A 283R	400 CPS VARIABLE ILLUMINATION POWER
P08- 57	TB1-B 4	A 283Y	400 CPS 6 V LO
P08- 59	TB1-G70	A 284	STRUCTURE GROUND

56P09 (30J1) SIGNAL CONDITIONER

FROM	TO	COND NO	CIRCUIT FUNCTION
P09- 1	TB1-A16	A 332Y	SIN AIG 1X
P09- 2	TB1-A13	A 333Y	COS AIG 1X
P09- 3	TB1-A14	A 333R	COS AIG 1X RET
P09- 4	TB1-D15	A 334Y	SIN AOG 1X S4
P09- 5	TB1-D77	A 335	0 VDC OPTICS
P09- 6	TB1-H71	A 336	+28 VDC OPTICS
P09- 7	TB1-A63	A 337R	+120 VDC PIP
P09- 9	TB1-G31	A 338R	OG CDU 16X ERROR SIG
P09- 10	TB1-H70	A 339	STRUCTURE GROUND
P09- 11	TB1-A 7	A 340R	800 CPS 28 V 1 PCT HI IMU
P09- 12	TB1-B 7	A 340Y	800 CPS 28 V 1 PCT LO IMU
P09- 13	TB1-C75	A 341R	800 CPS 28 V 5 PCT L-90 DEG HI IMU
P09- 14	TB1-C76	A 341Y	800 CPS 28 V 5 PCT L-90 DEG LO IMU
P09- 19	TB1-G57	A 342	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
P09- 20	TB1-H58	A 343	SHAFT CDU 16X ERROR SIG BUFFERED
P09- 21	TB1-H55	A 344	SXT TRUNNION TACH FEEDBACK BUFFERED
P09- 22	TB1-H57	A 345	TRUNNION CDU TACH FEEDBACK BUFFERED
P09- 23	TB1-A15	A 332R	SIN AIG 1X RET
P09- 24	TB1-B16	A 346Y	SIN AMG 1X
P09- 25	TB1-B13	A 347R	COS AMG 1X S3
P09- 26	TB1-D14	A 334R	SIN AOG 1X S2
P09- 27	TB1-C15	A 348Y	COS AOG 1X S1

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(CONT.) 56P09 (30J1) SIGNAL CONDITIONER

FROM	TO	COND NO	CIRCUIT FUNCTION
P09- 28	TB1-C63	A 337G	+32 VDC PIP
P09- 29	TB1-B63	A 337Y	+32, +120 VDC RET PIP
P09- 31	TB1-G30	A 338Y	OG CDU ERROR SIG RET
P09- 32	TB1-C74	A 349G	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
P09- 33	TB1-C72	A 349R	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
P09- 37	TB1-K57	A 350	SCT TRUNNION 1X ERROR SIG BUFFERED
P09- 38	TB1-H54	A 351	SCT SHAFT 1X ERROR SIG BUFFERED
P09- 39	TB1-G58	A 352	SHAFT CDU TACH FEEDBACK SIG BUFFERED
P09- 40	TB1-F58	A 353	SCT TRUNNION TACH FEEDBACK BUFFERED
P09- 41	TB1-K34	A 354Y	IG CDU ERROR SIG RET
P09- 42	TB1-B15	A 346R	SIN AMG 1X RET
P09- 43	TB1-H34	A 355Y	MG CDU ERROR SIG RET
P09- 44	TB1-B14	A 347Y	COS AMG 1X S1
P09- 45	TB1-C14	A 348R	COS AOG 1X S3
P09- 46	TB1-G73	A 356	+3 VDC AGC
P09- 47	TB1-H72	A 357	+28 VDC STBY
P09- 48	TB1-B62	A 358	0 VDC IMU
P09- 49	TB1-G71	A 359	+28 VDC IMU
P09- 50	TB1-C73	A 349Y	800 CPS 28 V 5 PCT IMU WHEELS LO
P09- 54	TB1-G55	A 360	TRACKER X DRIVE BUFFERED HI
P09- 55	TB1-G54	A 361	TRACKER Y DRIVE BUFFERED HI
P09- 56	TB1-F57	A 362	0 VDC OPTICS
P09- 57	TB1-K55	A 363	SXT SHAFT TACH FEEDBACK BUFFERED
P09- 58	TB1-K54	A 364	SCT SHAFT TACH FEEDBACK BUFFERED
P09- 59	TB1-K33	A 354R	IG CDU 1X ERROR SIG
P09- 60	TB1-H33	A 355R	MG CDU 1X ERROR SIG
P09- 61	TB1-G34	A 365Y	OG CDU ERROR SIG RET
P09- 62	TB1-G74	A 366	+13 VDC AGC
P09- 63	TB1-H73	A 367	0 VDC AGC
P09- 64	TB1-H74	A 368	+28 VDC AGC
P09- 65	TB1-F70	A 369R	+2.5 VDC CONDITIONING LO
P09- 66	TB1-C54	A 370	-28 VDC

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(CONT.) 56P09 (30J1) SIGNAL CONDITIONER

FROM	TO	COND NO	CIRCUIT FUNCTION
P09- 67	TB1-D26	A 371	AGC POWER SUPPLY FAIL SIG HI
P09- 68	TB1-B62	A 372	0 VDC IMU
P09- 69	TB1-A26	A 373	IMU DELAY LIGHT HI
P09- 70	TB1-K 8	A 374R	3200 CPS 2 V FEEDBACK HI
P09- 71	TB1-G56	A 375	TRACKER PREAMP OUTPUT BUFFERED HI
P09- 72	TB1-K58	A 376	PHOTOMETER PREAMP OUTPUT BUFFERED HI
P09- 73	TB1-H56	A 377	SXT TRUNNION MDA INPUT BUFFERED
P09- 74	TB1-K56	A 378	SXT SHAFT MDA INPUT BUFFERED
P09- 75	TB1-F28	A 379Y	Z GYRO ERROR SIG
P09- 76	TB1-G28	A 380Y	X GYRO ERROR SIG
P09- 77	TB1-G33	A 365R	OG CDU 1X ERROR SIG
P09- 78	TB1-D69	A 381Y	IMU PRESSURE MONITOR LO
P09- 79	TB1-D68	A 381R	IMU PRESSURE MONITOR HI
P09- 80	TB1-D52	A 382	TRAY 4 THERMISTER HI
P09- 81	TB1-F71	A 369Y	+2.5 VDC CONDITIONING HI
P09- 82	TB1-G72	A 383R	+20 VDC CONDITIONING
P09- 83	TB1-F72	A 383Y	0 VDC CONDITIONING
P09- 84	TB1-C26	A 384	G+N ERROR LIGHT HI
P09- 85	TB1-A56	A 385	GIMBAL LOCK SIGNAL
P09- 86	TB1-B26	A 386	IMU TEMP CONT FAIL LIGHT HI
P09- 87	TB1-H 2	A 387Y	25.6 KC LO IMU
P09- 88	TB1-H 8	A 374Y	3200 CPS 2 V FEEDBACK LO
P09- 89	TB1-C58	A 388G	IG CDU FAILURE INDICATION
P09- 90	TB1-C57	A 388N	MG CDU FAILURE INDICATION
P09- 91	TB1-F19	A 389Y	IG TORQUE MOTOR RET
P09- 92	TB1-F18	A 389R	IG TORQUE MOTOR HI
P09- 93	TB1-D28	A 390N	IMU GIMBAL AND GYRO ERROR SIG LO
P09- 94	TB1-C28	A 390G	IMU IG AND Y GYRO ERROR SIG
P09- 95	TB1-B40	A 391G	X PIP ERROR MONITOR
P09- 96	TB1-A40	A 391R	Y PIP ERROR MONITOR
P09- 97	TB1-F52	A 392	THERMISTER LO
P09- 98	TB1-D51	A 393	TRAY 3 THERMISTER HI

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(CONT.) 56P09 (30J1) SIGNAL CONDITIONER

FROM	TO	COND NO	CIRCUIT FUNCTION	
P09-102	TB1-B74	A 394Y	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
P09-103	TB1-A74	A 394R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
P09-104	TB1-K 2	A 395Y	25.6 KC LO OPTICS	
P09-105	TB1-H 1	A 387R	25.6 KC HI IMU	
P09-106	TB1-F64	A 396	ACCEL TEMP (TELEMETRY)	
P09-107	TB1-A64	A 397	BLOWER CURRENT SENSOR (TELEMETRY)	
P09-108	TB1-D58	A 388Y	0 VDC IMU	
P09-109	TB1-C19	A 398Y	OG TORQUE MOTOR RET	
P09-110	TB1-D19	A 399Y	MG TORQUE MOTOR RET	
P09-111	TB1-A28	A 390Y	IMU OG ERROR SIG	
P09-112	TB1-B28	A 390R	IMU MG ERROR SIG	
P09-113	TB1-A41	A 391Y	Z PIP ERROR MONITOR	
P09-114	TB1-B41	A 391N	0 VDC IMU	
P09-115	J23- 58	A 400	AGC THERMISTER HI	1995
P09-116	TB1-F51	A 401	TRAY 2 THERMISTER HI	
P09-124	TB1-B72	A 402Y	800 CPS 28 V 1 PCT LO OPTICS	
P09-125	TB1-A72	A 402R	800 CPS 28 V 1 PCT HI OPTICS	
P09-126	TB1-K 1	A 395R	25.6 KC HI OPTICS	
P09-127	TB1-D64	A 403	IRIG TEMP (TELEMETRY)	
P09-128	TB1-C64	A 404	TEMPERATURE CONTROL SIG LO	
P09-129	TB1-B64	A 405	HTR CURRENT (TELEMETRY)	
P09-130	TB1-D57	A 388R	OG CDU FAILURE INDICATION	
P09-131	TB1-C18	A 398R	OG TORQUE MOTOR HI	
P09-132	TB1-D18	A 399R	MG TORQUE MOTOR HI	

56P10 (50A4J1) CONTROL ELECTRONICS

FROM	TO	COND NO	CIRCUIT FUNCTION
P10- 1	TB1-H70	A 406	STRUCTURE GROUND
P10- 8	J22- 62	A 407	MAIN PANEL GIMBAL LOCK LIGHT
P10- 9	TB1-D70	A 408	0 VDC SPACECRAFT

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      FROM          TO        COND NO   C I R C U I T   F U N C T I O N

(CONT.)        56P10     (50A4J1)     CONTROL ELECTRONICS

          P10- 10       TB1-D72      A 409   CONDITION LAMP TEST
          P10- 12       TB1-A56      A 410   GIMBAL LOCK SIGNAL
          P10- 13       TB1-C62      A 411   0 VDC IMU
          P10- 14       TB1-H71      A 412   +28 VDC OPTICS
          P10- 15       TB1-B61      A 413Y  AUTOMATIC MARK COMMAND
          P10- 16       J09- 31      A 299   MANUAL MARK COMMAND
          P10- 19       J24- 32      A 414Y  NOT MARK                                  103
          P10- 24       TB1-A23      A 415   GIMBAL LOCK LIGHT HI
          P10- 32       J09- 30      A 298Y  ACCEPT MARK
          P10- 33       J09- 33      A 301Y  MARK REJECT
          P10- 38       J09- 77      A 314Y  400 CPS 1.5 V ZERO PHASE
          P10- 39       J09- 65      A 314R  400 CPS 1.5 V PI PHASE
          P10- 43       TB1-A69      A 416Y  OPTICS ZERO ENCODER INDICATION
          P10- 44       J24- 55      A 417Y  MARK                                      102
          P10- 48       J09- 95      A 314G  400 CPS 26 V HI
          P10- 49       TB1-A75      A 418R  400 CPS 26 V LO
          P10- 68       TB1-C78      A 419Y  400 CPS 115 V LO
          P10- 69       TB1-B78      A 419R  400 CPS 115 V HI
          P10- 92       J09- 52      A 311Y  400 CPS 6 V LO
          P10- 93       TB1-B 2      A 420R  400 CPS 6 V LO
          P10- 94       TB1-B 4      A 420Y  400 CPS 6 V LO
          P10- 95       TB1-B75      A 418Y  400 CPS 6 V LO
          P10-104       TB1-K71      A 421   +28 VDC MDV
          P10-105       J09- 61      A 311G  400 CPS 6 V HI
          P10-106       J09- 53      A 311R  400 CPS 6 V HI
          P10-107       TB1-C 1      A 420G  400 CPS 6 V HI
          P10-108       TB1-C 2      A 420N  400 CPS 6 V HI
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      FROM          TO        COND NO   C I R C U I T   F U N C T I O N

               56P11     (A16J190)    SPACECRAFT POWER CONNECTOR - WITH 400 CPS

          P11-A         TB1-K78      A 502   +28 VDC AGC BUSS A
          P11-A         J23- 38      A 503   +28 VDC AGC BUSS A                        167
          P11-A         J23- 61      A 504   +28 VDC AGC BUSS A                        167
          P11-B         TB1-K76      A 505   +28 VDC IMU BUSS A
          P11-B         TB1-K76      A 506   +28 VDC IMU BUSS A
          P11-B         TB1-K76      A 507   +28 VDC IMU BUSS A
          P11-C         TB1-H76      A 508   +28 VDC IMU BUSS A
          P11-C         TB1-H76      A 509   +28 VDC IMU BUSS A
          P11-C         TB1-H76      A 510   +28 VDC IMU BUSS A
          P11-D         TB1-F75      A 511   0 VDC IMU
          P11-D         TB1-B68      A 512   0 VDC IMU
          P11-E         TB1-C69      A 513   0 VDC IMU
          P11-E         TB1-D74      A 514   0 VDC IMU
          P11-F         TB1-F73      A 515   0 VDC IMU
          P11-F         TB1-B70      A 516   0 VDC IMU
          P11-G         TB1-F78      A 517   0 VDC OPTICS
          P11-G         TB1-K53      A 518   0 VDC OPTICS
          P11-G         TB1-K50      A 519   0 VDC OPTICS
          P11-H         TB1-G78      A 520   +28 VDC OPTICS BUSS A
          P11-H         TB1-G78      A 521   +28 VDC OPTICS BUSS A
          P11-H         TB1-H78      A 522   +28 VDC OPTICS BUSS A
          P11-J         J23- 90      A 523   0 VDC AGC                                 169
          P11-J         J23- 91      A 524   0 VDC AGC                                 169
          P11-J         P12-J        A 525   0 VDC AGC
          P11-K         TB1-C78      A 526Y  400 CPS 115 V LO
          P11-L         TB1-G70      A 527   STRUCTURE GROUND
          P11-M         TB1-G76      A 528   +28 VDC STBY BUSS A
          P11-M         TB1-G76      A 529   +28 VDC STBY BUSS A
          P11-N         TB1-B78      A 526R  400 CPS 115 V HI
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      FROM          TO        COND NO   C I R C U I T   F U N C T I O N

               56P12     (A16J191)    SPACECRAFT POWER CONNECTOR

          P12-A         TB1-K77      A 530   +28 VDC AGC BUSS B
          P12-A         J23- 39      A 531   +28 VDC AGC BUSS B                        168
          P12-A         J23- 40      A 532   +28 VDC AGC BUSS B                        168
          P12-B         TB1-K75      A 533   +28 VDC IMU BUSS B
          P12-B         TB1-K75      A 534   +28 VDC IMU BUSS B
          P12-B         TB1-K75      A 535   +28 VDC IMU BUSS B
          P12-C         TB1-H75      A 536   +28 VDC IMU BUSS B
          P12-C         TB1-H75      A 537   +28 VDC IMU BUSS B
          P12-C         TB1-H75      A 538   +28 VDC IMU BUSS B
          P12-D         TB1-C70      A 539   0 VDC IMU
          P12-D         TB1-D73      A 540   0 VDC IMU
          P12-E         TB1-F74      A 541   0 VDC IMU
          P12-E         TB1-B69      A 542   0 VDC IMU
          P12-F         TB1-C68      A 543   0 VDC IMU
          P12-F         TB1-D75      A 544   0 VDC IMU
          P12-G         TB1-D78      A 545   0 VDC OPTICS
          P12-G         TB1-G53      A 546   0 VDC OPTICS
          P12-G         TB1-G50      A 547   0 VDC OPTICS
          P12-H         TB1-G77      A 548   +28 VDC OPTICS BUSS B
          P12-H         TB1-G77      A 549   +28 VDC OPTICS BUSS B
          P12-H         TB1-H77      A 550   +28 VDC OPTICS BUSS B
          P12-J         J23- 41      A 551   0 VDC AGC                                 170
          P12-J         J23- 66      A 552   0 VDC AGC                                 170
          P12-J         P11-J        A 525   0 VDC AGC
          P12-L         TB1-K70      A 553   STRUCTURE GROUND
          P12-M         TB1-G75      A 554   +28 VDC STBY BUSS B
          P12-M         TB1-G75      A 555   +28 VDC STBY BUSS B
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      FROM          TO        COND NO   C I R C U I T   F U N C T I O N

               56P13     (45A12J1)    TRACKER

          P13-  1       TB1-C66      A 490R  TRACKER AUTOMATIC GAIN CONTROL HI
          P13-  2       TB1-D66      A 491R  TRACKER PREAMP OUTPUT HI
          P13-  5       TB1-G55      A 493R  TRACKER X DRIVE BUFFERED HI
          P13-  6       TB1-G54      A 494R  TRACKER Y DRIVE BUFFERED HI
          P13-  7       TB1-F57      A 495Y  TRACKER PREAMP OUTPUT BUFFERED LO
          P13-  9       TB1-C65      A 490Y  TRACKER AUTOMATIC GAIN CONTROL LO
          P13- 10       TB1-D65      A 491Y  TRACKER PREAMP OUTPUT LO
          P13- 13       TB1-F56      A 493Y  TRACKER X DRIVE BUFFERED LO
          P13- 14       TB1-F56      A 494Y  TRACKER Y DRIVE BUFFERED LO
          P13- 15       TB1-G56      A 495R  TRACKER PREAMP OUTPUT BUFFERED HI
          P13- 23       TB1-F65      A 496Y  TRACKER Y ERROR LO
          P13- 24       TB1-G65      A 497Y  TRACKER X ERROR LO
          P13- 27       TB1-A65      A 498Y  TRACKER Y REFERENCE
          P13- 28       TB1-A66      A 498R  TRACKER Y REFERENCE
          P13- 30       TB1-D76      A 594Y  0 VDC OPTICS
          P13- 31       TB1-F66      A 496R  TRACKER Y ERROR HI
          P13- 32       TB1-G66      A 497R  TRACKER X ERROR HI
          P13- 35       TB1-B66      A 499R  TRACKER X REFERENCE
          P13- 36       TB1-B65      A 499Y  TRACKER X REFERENCE
          P13- 37       TB1-K70      A 500   STRUCTURE GROUND
          P13- 38       TB1-B71      A 594R  +28 VDC OPTICS TRACKER POWER


               56SHLD        CONDUCTOR SHIELDING TERMINATIONS

          SHLD A   3   TB1-A12     A    3B 0 VDC IMU
          SHLD A   4   TB1-A17     A    4B 0 VDC IMU
          SHLD A  12   TB1-K32     A   12B IG CDU ERROR SIG RET
          SHLD A  16   TB1-H17     A   16B 0 VDC IMU
          SHLD A  17   TB1-K17     A   17B 0 VDC IMU
          SHLD A  18   TB1-K30     A   18B IG CDU ERROR SIG RET
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         FROM        TO       COND NO  C I R C U I T   F U N C T I O N

(CONT.)        56SHLD      CONDUCTOR SHIELDING TERMINATIONS

         SHLD A  19   TB1-F30    A  19B IG CDU MDA INPUT RET
         SHLD A  20   TB1-F34    A  20B IG CDU ENCODER COMMON
         SHLD A  23   TB1-B12    A  23B 0 VDC IMU
         SHLD A  24   TB1-B17    A  24B 0 VDC IMU
         SHLD A  32   TB1-H32    A  32B MG CDU ERROR SIG RET
         SHLD A  36   TB1-H12    A  36B 0 VDC IMU
         SHLD A  37   TB1-K12    A  37B 0 VDC IMU
         SHLD A  38   TB1-H30    A  38B MG CDU ERROR SIG RET
         SHLD A  39   TB1-D30    A  39B MG CDU MDA INPUT RET
         SHLD A  40   TB1-D34    A  40B MG CDU ENCODER COMMON
         SHLD A  43   TB1-C17    A  43B 0 VDC IMU
         SHLD A  44   TB1-D17    A  44B 0 VDC IMU
         SHLD A  52   TB1-G32    A  52B OG CDU ERROR SIG RET
         SHLD A  56   TB1-F17    A  56B 0 VDC IMU
         SHLD A  57   TB1-G17    A  57B 0 VDC IMU
         SHLD A  59   TB1-F32    A  59B OG CDU ERROR SIG RET
         SHLD A  60   TB1-C30    A  60B OG CDU MDA INPUT RET
         SHLD A  61   TB1-C34    A  61B OG CDU ENCODER COMMON
         SHLD A  64   TB1-H47    A  64B 0 VDC OPTICS
         SHLD A  65   TB1-K47    A  65B 0 VDC OPTICS
         SHLD A  66   TB1-H39    A  66B 0 VDC OPTICS
         SHLD A  72   TB1-C47    A  72B 0 VDC OPTICS
         SHLD A  73   TB1-D47    A  73B 0 VDC OPTICS
         SHLD A  74   TB1-A47    A  74B 0 VDC OPTICS
         SHLD A  75   TB1-B47    A  75B 0 VDC OPTICS
         SHLD A  76   TB1-G39    A  76B 0 VDC OPTICS
         SHLD A  77   TB1-G36    A  77B 0 VDC OPTICS
         SHLD A  78   TB1-A34    A  78B SHAFT CDU ENCODER COMMON
         SHLD A  81   TB1-D39    A  81B 0 VDC OPTICS
         SHLD A  82   TB1-D42    A  82B 0 VDC OPTICS
         SHLD A  83   TB1-C42    A  83B 0 VDC OPTICS
         SHLD A  89   TB1-H42    A  89B 0 VDC OPTICS
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         FROM        TO       COND NO  C I R C U I T   F U N C T I O N

(CONT.)        56SHLD      CONDUCTOR SHIELDING TERMINATIONS

         SHLD A  90   TB1-K42    A  90B 0 VDC OPTICS
         SHLD A  91   TB1-A42    A  91B 0 VDC OPTICS
         SHLD A  92   TB1-B42    A  92B 0 VDC OPTICS
         SHLD A  93   TB1-C42    A  93B 0 VDC OPTICS
         SHLD A  94   TB1-C36    A  94B 0 VDC OPTICS
         SHLD A  95   TB1-B34    A  95B TRUNNION CDU ENCODER COMMON
         SHLD A  99   TB1-A49    A  99B STRUCTURE GROUND
         SHLD A 104   TB1-H 4    A 104B STRUCTURE GROUND
         SHLD A 113   TB1-D56    A 113B AGC SIGNAL 178 SHIELD RETURN
         SHLD A 114   E 22       A 114B AGC SIGNAL 178 SHIELD RETURN
         SHLD A 124   TB1-K 4    A 124B STRUCTURE GROUND
         SHLD A 127   TB1-A49    A 127B STRUCTURE GROUND
         SHLD A 128   TB1-G 4    A 128B STRUCTURE GROUND
         SHLD A 130   TB1-B49    A 130B STRUCTURE GROUND
         SHLD A 131   E 22       A 131B AGC SIGNAL 178 SHIELD RETURN
         SHLD A 132   E 22       A 132B AGC SIGNAL 178 SHIELD RETURN
         SHLD A 133   E 22       A 133B AGC SIGNAL 178 SHIELD RETURN
         SHLD A 134   TB1-D56    A 134B AGC SIGNAL 178 SHIELD RETURN
         SHLD A 135   TB1-K32    A 135B IG CDU ERROR SIG RET
         SHLD A 136   E 22       A 136B AGC SIGNAL 178 SHIELD RETURN
         SHLD A 139   TB1-H32    A 139B MG CDU ERROR SIG RET
         SHLD A 145   TB1-G32    A 145B OG CDU ERROR SIG RET
         SHLD A 179   TB1-A12    A 179B 0 VDC IMU
         SHLD A 180   TB1-F17    A 180B 0 VDC IMU
         SHLD A 181   TB1-G17    A 181B 0 VDC IMU
         SHLD A 182   TB1-A17    A 182B 0 VDC IMU
         SHLD A 183   TB1-H12    A 183B 0 VDC IMU
         SHLD A 184   TB1-K12    A 184B 0 VDC IMU
         SHLD A 185   TB1-B12    A 185B 0 VDC IMU
         SHLD A 186   TB1-B17    A 186B 0 VDC IMU
         SHLD A 188   TB1-H12    A 188B 0 VDC IMU
         SHLD A 189   TB1-H17    A 189B 0 VDC IMU
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         FROM        TO       COND NO  C I R C U I T   F U N C T I O N

(CONT.)        56SHLD      CONDUCTOR SHIELDING TERMINATIONS

         SHLD A 190   TB1-K17    A 190B 0 VDC IMU
         SHLD A 191   TB1-G27    A 191B 0 VDC IMU
         SHLD A 193   TB1-G27    A 193B 0 VDC IMU
         SHLD A 196   TB1-C17    A 196B 0 VDC IMU
         SHLD A 198   TB1-D17    A 198B 0 VDC IMU
         SHLD A 200   TB1-K28    A 200B IG CDU ERROR SIG RET
         SHLD A 203   TB1-H28    A 203B MG CDU ERROR SIG RET
         SHLD A 204   TB1-G12    A 204B 0 VDC IMU
         SHLD A 205   TB1-F12    A 205B 0 VDC IMU
         SHLD A 211   TB1-C47    A 211B 0 VDC OPTICS
         SHLD A 213   TB1-D47    A 213B 0 VDC OPTICS
         SHLD A 216   TB1-A67    A 216B 0 VDC OPTICS
         SHLD A 218   TB1-B67    A 218B 0 VDC OPTICS
         SHLD A 219   TB1-H36    A 219B 0 VDC OPTICS
         SHLD A 221   TB1-D36    A 221B 0 VDC OPTICS
         SHLD A 223   TB1-D42    A 223B 0 VDC OPTICS
         SHLD A 224   TB1-C42    A 224B 0 VDC OPTICS
         SHLD A 226   TB1-G47    A 226B 0 VDC OPTICS
         SHLD A 227   TB1-F47    A 227B 0 VDC OPTICS
         SHLD A 228   TB1-D67    A 228B 0 VDC OPTICS
         SHLD A 232   TB1-C67    A 232B 0 VDC OPTICS
         SHLD A 234   TB1-B47    A 234B 0 VDC OPTICS
         SHLD A 235   TB1-K67    A 235B 0 VDC OPTICS
         SHLD A 236   TB1-A47    A 236B 0 VDC OPTICS
         SHLD A 238   TB1-A42    A 238B 0 VDC OPTICS
         SHLD A 239   TB1-H67    A 239B 0 VDC OPTICS
         SHLD A 240   TB1-B42    A 240B 0 VDC OPTICS
         SHLD A 254   TB1-C59    A 254B 0 VDC IMU
         SHLD A 255   TB1-C59    A 255B 0 VDC IMU
         SHLD A 257   TB1-C24    A 257B 0 VDC IMU
         SHLD A 260   TB1-F24    A 260B 0 VDC IMU
         SHLD A 262   TB1-D24    A 262B 0 VDC IMU
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         FROM        TO       COND NO  C I R C U I T   F U N C T I O N

(CONT.)        56SHLD      CONDUCTOR SHIELDING TERMINATIONS

         SHLD A 263   TB1-G24    A 263B 0 VDC IMU
         SHLD A 264   TB1-H24    A 264B 0 VDC IMU
         SHLD A 265   TB1-K24    A 265B 0 VDC IMU
         SHLD A 269   TB1-F42    A 269B 0 VDC OPTICS
         SHLD A 270   TB1-G42    A 270B 0 VDC OPTICS
         SHLD A 271   TB1-F39    A 271B 0 VDC OPTICS
         SHLD A 276   P08- 35    A 276A 0 VDC OPTICS
         SHLD A 276   TB1-F36    A 276B 0 VDC OPTICS
         SHLD A 278   P08- 37    A 278A 0 VDC OPTICS
         SHLD A 278   TB1-K36    A 278B 0 VDC OPTICS
         SHLD A 279   TB1-G47    A 279B 0 VDC OPTICS
         SHLD A 280   TB1-F47    A 280B 0 VDC OPTICS
         SHLD A 281   TB1-K39    A 281B 0 VDC OPTICS
         SHLD A 286   TB1-A59    A 286B STRUCTURE GROUND
         SHLD A 290   TB1-K67    A 290B 0 VDC OPTICS
         SHLD A 291   TB1-H67    A 291B 0 VDC OPTICS
         SHLD A 298   E 24       A 298A AGC SIGNAL 178 SHIELD RETURN
         SHLD A 301   E 24       A 301A AGC SIGNAL 178 SHIELD RETURN
         SHLD A 302   TB1-F67    A 302B 0 VDC OPTICS
         SHLD A 304   E 23       A 304B AGC SIGNAL 178 SHIELD RETURN
         SHLD A 305   TB1-G67    A 305B 0 VDC OPTICS
         SHLD A 308   E 24       A 308A AGC SIGNAL 178 SHIELD RETURN
         SHLD A 308   TB1-A70    A 308B AGC SIGNAL 178 SHIELD RETURN
         SHLD A 309   E 24       A 309A AGC SIGNAL 178 SHIELD RETURN
         SHLD A 309   E 23       A 309B AGC SIGNAL 178 SHIELD RETURN
         SHLD A 313   TB1-A58    A 313B STRUCTURE GROUND
         SHLD A 332   TB1-A17    A 332B 0 VDC IMU
         SHLD A 333   TB1-A12    A 333B 0 VDC IMU
         SHLD A 334   TB1-D17    A 334B 0 VDC IMU
         SHLD A 338   TB1-F32    A 338B OG CDU ERROR SIG RET
         SHLD A 346   TB1-B17    A 346B 0 VDC IMU
         SHLD A 347   TB1-B12    A 347B 0 VDC IMU
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           FROM           TO        COND NO   C I R C U I T   F U N C T I O N

(CONT.)          56SHLD       CONDUCTOR SHIELDING TERMINATIONS

           SHLD A 348    TB1-C17     A 348B 0 VDC IMU
           SHLD A 354    TB1-K32     A 354B IG CDU ERROR SIG RET
           SHLD A 355    TB1-H32     A 355B MG CDU ERROR SIG RET
           SHLD A 365    TB1-G32     A 365B OG CDU ERROR SIG RET
           SHLD A 379    TB1-F27     A 379B 0 VDC IMU
           SHLD A 380    TB1-F27     A 380B 0 VDC IMU
           SHLD A 413    TB1-A58     A 413B STRUCTURE GROUND
           SHLD A 414    E 23        A 414B AGC SIGNAL 178 SHIELD RETURN
           SHLD A 416    TB1-A70     A 416B AGC SIGNAL 178 SHIELD RETURN
           SHLD A 417    E 23        A 417B AGC SIGNAL 178 SHIELD RETURN
           SHLD A 472    TB1-A59     A 472B STRUCTURE GROUND
           SHLD A 474    TB1-A49     A 474B STRUCTURE GROUND
           SHLD A 475    TB1-B49     A 475B STRUCTURE GROUND
           SHLD A 476    TB1-B49     A 476B STRUCTURE GROUND
           SHLD A 490    TB1-C67     A 490B 0 VDC OPTICS
           SHLD A 491    TB1-D67     A 491B 0 VDC OPTICS
           SHLD A 496    TB1-F67     A 496B 0 VDC OPTICS
           SHLD A 497    TB1-G67     A 497B 0 VDC OPTICS
           SHLD A 498    TB1-A67     A 498B 0 VDC OPTICS
           SHLD A 499    TB1-B67     A 499B 0 VDC OPTICS
           SHLD A 564    TB1-A70     A 564B AGC SIGNAL 178 SHIELD RETURN
           SHLD A 566    E 23        A 566A AGC SIGNAL 178 SHIELD RETURN
           SHLD BB 50    J17-S4      BB 50B 0 VDC IMU
           SHLD BB 94    E  4        BB 94B 0 VDC IMU
           SHLD CC  1    E  4        CC  1A 0 VDC IMU
           SHLD CC  2    E  4        CC  2A 0 VDC IMU
           SHLD CC  3    J12-K3      CC  3A STRUCTURE GROUND
           SHLD CC  6    E  4        CC  6A 0 VDC IMU
           SHLD CC  7    E  4        CC  7A 0 VDC IMU
           SHLD CC  8    E 18        CC  8B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC  9    E 18        CC  9B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 10    E 18        CC 10B AGC SIGNAL 179 SHIELD RETURN
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           FROM           TO        COND NO   C I R C U I T   F U N C T I O N

(CONT.)          56SHLD       CONDUCTOR SHIELDING TERMINATIONS

           SHLD CC 13    E  7        CC 13A 0 VDC IMU
           SHLD CC 14    E  7        CC 14A 0 VDC IMU
           SHLD CC 15    E  7        CC 15A 0 VDC IMU
           SHLD CC 16    E  7        CC 16A 0 VDC IMU
           SHLD CC 17    E  7        CC 17A 0 VDC IMU
           SHLD CC 18    E  7        CC 18A 0 VDC IMU
           SHLD CC 19    E  7        CC 19A 0 VDC IMU
           SHLD CC 20    E 17        CC 20B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 21    E 17        CC 21B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 22    E 17        CC 22B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 23    E 17        CC 23B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 24    E 17        CC 24B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 25    E 17        CC 25B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 26    E 19        CC 26B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 27    E 19        CC 27B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 28    E 19        CC 28B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 29    E 19        CC 29B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 30    E 19        CC 30B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 31    E 19        CC 31B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 32    E  9        CC 32A IG DAC MDA SIG LO
           SHLD CC 33    E  9        CC 33A IG DAC MDA SIG LO
           SHLD CC 34    E 11        CC 34A MG DAC MDA SIG LO
           SHLD CC 35    E 11        CC 35A MG DAC MDA SIG LO
           SHLD CC 36    E 13        CC 36A OG DAC MDA SIG LO
           SHLD CC 37    E 13        CC 37A OG DAC MDA SIG LO
           SHLD CC 38    E 21        CC 38B AGC SIGNAL 178 SHIELD RETURN
           SHLD CC 39    J16-P2      CC 39A 0 VDC IMU
           SHLD CC 40    J16-P2      CC 40A 0 VDC IMU
           SHLD CC 41    E 21        CC 41B AGC SIGNAL 178 SHIELD RETURN
           SHLD CC 42    E 20        CC 42B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 43    J22- 48     CC 43B NAA SHIELD GROUND
           SHLD CC 44    J22- 77     CC 44B NAA SHIELD GROUND
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SIZE	CODE IDENT NO.		
A	80230	1015087	
SCALE-NONE	REV LTR	E	SHEET 90 OF 146

MIL 2084 9-65

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           FROM           TO        COND NO   C I R C U I T   F U N C T I O N

(CONT.)          56SHLD       CONDUCTOR SHIELDING TERMINATIONS

           SHLD CC 45    J22- 80     CC 45B NAA SHIELD GROUND
           SHLD CC 46    E 20        CC 46B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 47    J22- 54     CC 47B NAA SHIELD GROUND
           SHLD CC 48    J22- 51     CC 48B NAA SHIELD GROUND
           SHLD CC 49    E 20        CC 49B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 50    E 20        CC 50B AGC SIGNAL 179 SHIELD RETURN
           SHLD CC 51    J17-S4      CC 51A 0 VDC IMU
           SHLD CC 57    J20-M4      CC 57A STRUCTURE GROUND
           SHLD CC 96    TB1-K24     CC 96B 0 VDC IMU
           SHLD CC 99    TB1-H24     CC 99B 0 VDC IMU
           SHLD CC101    TB1-F24     CC101B 0 VDC IMU
           SHLD CC106    TB1-G24     CC106B 0 VDC IMU
           SHLD CC108    TB1-D24     CC108B 0 VDC IMU
           SHLD CC109    TB1-C24     CC109B 0 VDC IMU
           SHLD CC126    TB1-K17     CC126B 0 VDC IMU
           SHLD CC127    TB1-K12     CC127B 0 VDC IMU
           SHLD CC128    TB1-H 4     CC128B STRUCTURE GROUND
           SHLD CC136    J16-B1      CC136A IG CDU MDA INPUT RET
           SHLD CC141    J16-B3      CC141A MG CDU MDA INPUT RET
           SHLD CC143    TB1-C17     CC143B 0 VDC IMU
           SHLD CC144    TB1-D17     CC144B 0 VDC IMU
           SHLD CC148    TB1-F17     CC148B 0 VDC IMU
           SHLD CC152    TB1-G17     CC152B 0 VDC IMU
           SHLD CC153    J16-B5      CC153A OG CDU MDA INPUT RET
           SHLD CC159    TB1-K 4     CC159B STRUCTURE GROUND
           SHLD CC163    TB1-H17     CC163B 0 VDC IMU
           SHLD CC164    TB1-H12     CC164B 0 VDC IMU
           SHLD CC173    TB1-D56     CC173B AGC SIGNAL 178 SHIELD RETURN
           SHLD CC182    TB1-G12     CC182B 0 VDC IMU
           SHLD CC190    TB1-C59     CC190B 0 VDC IMU
           SHLD CC192    TB1-C59     CC192B 0 VDC IMU
           SHLD CC201    TB1-F12     CC201B 0 VDC IMU
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SIZE	CODE IDENT NO.		
A	80230	1015087	
SCALE-NONE	REV LTR	E	SHEET 91 OF 146

MIL 2084 9-65

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           FROM           TO        COND NO   C I R C U I T   F U N C T I O N

(CONT.)          56SHLD       CONDUCTOR SHIELDING TERMINATIONS

           SHLD CC204    TB1-G32     CC204B OG CDU ERROR SIG RET
           SHLD CC218    TB1-D47     CC218B 0 VDC OPTICS
           SHLD CC219    TB1-B47     CC219B 0 VDC OPTICS
           SHLD CC221    TB1-G42     CC221B 0 VDC OPTICS
           SHLD CC223    TB1-A58     CC223B STRUCTURE GROUND
           SHLD CC225    TB1-A59     CC225B STRUCTURE GROUND
           SHLD CC229    TB1-D42     CC229B 0 VDC OPTICS
           SHLD CC230    TB1-C42     CC230B 0 VDC OPTICS
           SHLD CC231    TB1-F42     CC231B 0 VDC OPTICS
           SHLD CC233    TB1-D36     CC233B 0 VDC OPTICS
           SHLD CC234    TB1-B42     CC234B 0 VDC OPTICS
           SHLD CC235    TB1-K39     CC235B 0 VDC OPTICS
           SHLD CC237    TB1-K36     CC237B 0 VDC OPTICS
           SHLD CC239    TB1-H36     CC239B 0 VDC OPTICS
           SHLD CC251    TB1-A59     CC251B STRUCTURE GROUND
           SHLD CC253    TB1-K42     CC253B 0 VDC OPTICS
           SHLD CC254    TB1-H42     CC254B 0 VDC OPTICS
           SHLD CC255    TB1-D39     CC255B 0 VDC OPTICS
           SHLD CC256    TB1-C42     CC256B 0 VDC OPTICS
           SHLD CC258    TB1-C36     CC258B 0 VDC OPTICS
           SHLD CC259    TB1-F39     CC259B 0 VDC OPTICS
           SHLD CC261    TB1-F36     CC261B 0 VDC OPTICS
           SHLD CC263    TB1-H39     CC263B 0 VDC OPTICS
           SHLD CC265    TB1-H47     CC265B 0 VDC OPTICS
           SHLD CC266    TB1-K47     CC266B 0 VDC OPTICS
           SHLD CC267    TB1-G39     CC267B 0 VDC OPTICS
           SHLD CC269    TB1-G36     CC269B 0 VDC OPTICS
           SHLD CC276    TB1-A58     CC276B STRUCTURE GROUND
           SHLD CC278    TB1-K67     CC278B 0 VDC OPTICS
           SHLD CC281    TB1-G67     CC281B 0 VDC OPTICS
           SHLD CC325    TB1-G 4     CC325B STRUCTURE GROUND
           SHLD CC327    TB1-B17     CC327B 0 VDC IMU
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SIZE	CODE IDENT NO.		
A	80230	1015087	
SCALE-NONE	REV LTR	E	SHEET 92 OF 146

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          FROM          TO        COND NO  C I R C U I T   F U N C T I O N

(CONT.)          56SHLD       CONDUCTOR SHIELDING TERMINATIONS

           SHLD CC328   TB1-B12    CC328B 0 VDC IMU
           SHLD CC329   TB1-A17    CC329B 0 VDC IMU
           SHLD CC330   TB1-A12    CC330B 0 VDC IMU
           SHLD CC332   E 21       CC332A AGC SIGNAL 178 SHIELD RETURN
           SHLD CC332   TB1-D56    CC332B AGC SIGNAL 178 SHIELD RETURN


                 56TB1        PSA TERMINAL BOARD

           TB1-A 1      TB1-A 2    TB  1  400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 1      J01- 28    A   8R 400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 1      J02- 28    A  28R 400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 1      J03- 28    A  48R 400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 2      TB1-A 3    TB  1  400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 2      J04- 28    A  67R 400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 2      J05- 28    A  85R 400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 2      P01-103    A 143R 400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 2      TB1-A 1    TB  1  400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 3      TB1-A 4    TB  1  400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 3      J06-108    A 123R 400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 3      P05- 43    A 225R 400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 3      J09- 54    A 312R 400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 3      TB1-A 2    TB  1  400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 4      P01-108    A 143Y 400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 4      P08- 53    A 282R 400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 4      P08- 56    A 283R 400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 4      TB1-A 3    TB  1  400 CPS VARIABLE ILLUMINATION POWER
           TB1-A 5      TB1-A 6    TB  8  800 CPS 28 V 1 PCT HI IMU
           TB1-A 5      J02- 11    A  25G 800 CPS 28 V 1 PCT HI IMU
           TB1-A 5      J02- 25    A  25R 800 CPS 28 V 1 PCT HI IMU
           TB1-A 5      P02-A      A 178R 800 CPS 28 V 1 PCT HI IMU
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          FROM          TO        COND NO  C I R C U I T   F U N C T I O N

(CONT.)          56TB1        PSA TERMINAL BOARD

           TB1-A 5      J16-S4     CC160L 800 CPS 28 V 1 PCT HI IMU
           TB1-A 6      TB1-A 7    TB  8  800 CPS 28 V 1 PCT HI IMU
           TB1-A 6      J01- 11    A   5G 800 CPS 28 V 1 PCT HI IMU
           TB1-A 6      J01- 25    A   5R 800 CPS 28 V 1 PCT HI IMU
           TB1-A 6      J03- 25    A  45R 800 CPS 28 V 1 PCT HI IMU
           TB1-A 6      TB1-A 5    TB  8  800 CPS 28 V 1 PCT HI IMU
           TB1-A 7      TB1-A 8    TB  8  800 CPS 28 V 1 PCT HI IMU
           TB1-A 7      J03- 11    A  45G 800 CPS 28 V 1 PCT HI IMU
           TB1-A 7      P01- 11    A 126R 800 CPS 28 V 1 PCT HI IMU
           TB1-A 7      P09- 11    A 340R 800 CPS 28 V 1 PCT HI IMU
           TB1-A 7      TB1-A 6    TB  8  800 CPS 28 V 1 PCT HI IMU
           TB1-A 8      J01-  1    A   1R 800 CPS 28 V 1 PCT HI IMU
           TB1-A 8      J02-  1    A  21R 800 CPS 28 V 1 PCT HI IMU
           TB1-A 8      J03-  1    A  41R 800 CPS 28 V 1 PCT HI IMU
           TB1-A 8      TB1-A 7    TB  8  800 CPS 28 V 1 PCT HI IMU
           TB1-A10      P07-F*     A 261G OG ADA
           TB1-A10      J11-G1     CC 65K OG ADA
           TB1-A11      P07-G*     A 261N MG ADA
           TB1-A11      J11-H1     CC 65L MG ADA
           TB1-A12      SHLD A   3 A   3B 0 VDC IMU
           TB1-A12      SHLD A 179 A 179B 0 VDC IMU
           TB1-A12      SHLD A 333 A 333B 0 VDC IMU
           TB1-A12      TB1-B17    AA  1  0 VDC IMU
           TB1-A12      SHLD CC330 CC330B 0 VDC IMU
           TB1-A12      TB1-B12    TB 14  0 VDC IMU
           TB1-A13      J01- 20    A   3R COS AIG 1X P3
           TB1-A13      P02-A*     A 179R COS AIG 1X S3
           TB1-A13      P09-  2    A 333Y COS AIG 1X
           TB1-A13      J22- 84    CC330R COS AIG 1X
           TB1-A14      J01-  6    A   3Y COS AIG 1X RET P1
           TB1-A14      P02-B*     A 179Y COS AIG 1X RET S1
           TB1-A14      P09-  3    A 333R COS AIG 1X RET
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          FROM          TO        COND NO  C I R C U I T   F U N C T I O N

(CONT.)          56TB1        PSA TERMINAL BOARD

           TB1-A14      J22- 85    CC330W COS AIG 1X RET
           TB1-A15      J01- 21    A   4R SIN AIG 1X RET P4
           TB1-A15      P02-F*     A 182R SIN AIG 1X RET S2
           TB1-A15      P09- 23    A 332R SIN AIG 1X RET
           TB1-A15      J22- 33    CC329W SIN AIG 1X RET
           TB1-A16      J01-  7    A   4Y SIN AIG 1X P2
           TB1-A16      P02-G*     A 182Y SIN AIG 1X S4
           TB1-A16      P09-  1    A 332Y SIN AIG 1X
           TB1-A16      J22- 56    CC329R SIN AIG 1X
           TB1-A17      SHLD A   4 A   4B 0 VDC IMU
           TB1-A17      SHLD A 182 A 182B 0 VDC IMU
           TB1-A17      SHLD A 332 A 332B 0 VDC IMU
           TB1-A17      TB1-C24    AA  2  0 VDC IMU
           TB1-A17      SHLD CC329 CC329B 0 VDC IMU
           TB1-A17      TB1-B17    TB 15  0 VDC IMU
           TB1-A20      J08- 50    A 158  SPARE FAIL LIGHT 1 HI
           TB1-A20      J10-  7    A 479  SPARE FAIL LIGHT 1 HI             305
           TB1-A21      J08- 41    A 155  ZERO ENCODER LIGHT HI
           TB1-A21      J10-  3    A 473G ZERO ENCODER LIGHT HI             301
           TB1-A22      J08- 60    A 162  IMU FAIL LIGHT HI
           TB1-A22      J10-  6    A 478  IMU FAIL LIGHT HI                 304
           TB1-A23      J08- 18    A 147  GIMBAL LOCK LIGHT HI
           TB1-A23      P10- 24    A 415  GIMBAL LOCK LIGHT HI
           TB1-A24      J08- 72    A 169  CDU FAIL LIGHT HI
           TB1-A24      J10-  4    A 473R CDU FAIL LIGHT HI                 302
           TB1-A25      J08- 31    A 152  IMU DELAY LIGHT LO
           TB1-A25      J09-107    A 589  IMU DELAY LIGHT LO
           TB1-A26      P01- 26    A 129  IMU DELAY LIGHT HI
           TB1-A26      J08- 42    A 156  IMU DELAY LIGHT HI
           TB1-A26      P09- 69    A 373  IMU DELAY LIGHT HI
           TB1-A28      P03-C      A 195R IMU OG ERROR SIG
           TB1-A28      P09-111    A 390Y IMU OG ERROR SIG
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          FROM          TO        COND NO  C I R C U I T   F U N C T I O N

(CONT.)          56TB1        PSA TERMINAL BOARD

           TB1-A28      J11-A6     CC 68L IMU OG ERROR SIG
           TB1-A29      J03- 67    A  55R OG CDU 1/2X ERROR SIG
           TB1-A29      J16-D5     CC145W OG CDU 1/2X ERROR SIG
           TB1-A30      J02- 67    A  35R MG CDU 1/2X ERROR SIG
           TB1-A30      J16-D3     CC138W MG CDU 1/2X ERROR SIG
           TB1-A31      J01- 67    A  15R IG CDU 1/2X ERROR SIG S3
           TB1-A31      J16-D1     CC133W IG CDU 1/2X ERROR SIG
           TB1-A33      J04-108    A  78R SHAFT CDU ENCODER PHASE 2
           TB1-A33      J17-F9     CC203R SHAFT CDU ENCODER PHASE 2
           TB1-A34      SHLD A  78 A  78B SHAFT CDU ENCODER COMMON
           TB1-A34      J04- 94    A  78Y SHAFT CDU ENCODER COMMON
           TB1-A34      J17-D9     CC203W SHAFT CDU ENCODER COMMON
           TB1-A35      J04-107    A  78G SHAFT CDU ENCODER PHASE 1
           TB1-A35      J17-C9     CC203L SHAFT CDU ENCODER PHASE 1
           TB1-A36      TB1-B36    TB 23  0 VDC OPTICS
           TB1-A39      TB1-B36    AA  3  0 VDC OPTICS
           TB1-A39      TB1-B39    TB 24  0 VDC OPTICS
           TB1-A40      P09- 96    A 391R Y PIP ERROR MONITOR
           TB1-A40      J13-F2     CC100  Y PIP ERROR MONITOR
           TB1-A41      P09-113    A 391Y Z PIP ERROR MONITOR
           TB1-A41      J14-H6     CC107  Z PIP ERROR MONITOR
           TB1-A42      SHLD A  91 A  91B 0 VDC OPTICS
           TB1-A42      SHLD A 238 A 238B 0 VDC OPTICS
           TB1-A42      TB1-B39    AA  4  0 VDC OPTICS
           TB1-A42      TB1-B42    TB 25  0 VDC OPTICS
           TB1-A43      J05-100    A  91R TRUNNION CDU 16X RSVR P3
           TB1-A43      P05- 87    A 238R SXT TRUNNION 64X RSVR S3
           TB1-A44      J05- 86    A  91Y TRUNNION CDU 16X RSVR P1
           TB1-A44      P05- 86    A 238Y SXT TRUNNION 64X RSVR S1
           TB1-A45      J04- 86    A  74Y SHAFT CDU 16X RSVR P1
           TB1-A45      P05- 82    A 236Y SXT SHAFT 16X RSVR S1
           TB1-A46      J04-100    A  74R SHAFT CDU 16X RSVR P3
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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION	
TB1-A46	P05- 83	A 236R	SXT SHAFT 16X RSVR S3	
TB1-A47	SHLD A 74	A 74B	0 VDC OPTICS	
TB1-A47	SHLD A 236	A 236B	0 VDC OPTICS	
TB1-A47	TB1-B42	AA 5	0 VDC OPTICS	
TB1-A47	TB1-B47	TB 26	0 VDC OPTICS	
TB1-A48	J06- 12	A 99Y	MODE RELAY COMMON TO AGC	
TB1-A48	J10- 26	A 474R	MODE RELAY COMMON TO AGC	312
TB1-A48	J10- 13	A 474Y	MODE RELAY COMMON TO AGC	315
TB1-A49	SHLD A 99	A 99B	STRUCTURE GROUND	
TB1-A49	SHLD A 127	A 127B	STRUCTURE GROUND	
TB1-A49	SHLD A 474	A 474B	STRUCTURE GROUND	
TB1-A49	TB1-B49	TB 27	STRUCTURE GROUND	
TB1-A50	P01- 48	A 127G	COARSE ALIGN MODE COMMAND FROM AGC	
TB1-A50	J10- 22	A 475G	COARSE ALIGN MODE COMMAND FROM AGC	308
TB1-A51	J08- 93	A 176	STEP-DOWN-R	
TB1-A51	J09- 93	A 327	STEP-DOWN-R	
TB1-A52	J08- 79	A 172	STEP-DOWN-C	
TB1-A52	J09- 79	A 323	STEP-DOWN-C	
TB1-A53	J08- 67	A 166	+28 VDC MDV SWITCHED	
TB1-A53	J09- 67	A 316	+28 VDC MDV SWITCHED	
TB1-A54	P01- 80	A 138R	PANEL BRIGHTNESS CONTROL	
TB1-A54	J09- 32	A 300R	PANEL BRIGHTNESS CONTROL	
TB1-A55	P01- 95	A 138Y	PANEL BRIGHTNESS CONTROL	
TB1-A55	J09- 44	A 300Y	PANEL BRIGHTNESS CONTROL	
TB1-A56	P03-J*	A 202	GIMBAL LOCK SIGNAL	
TB1-A56	P09- 85	A 385	GIMBAL LOCK SIGNAL	
TB1-A56	P10- 12	A 410	GIMBAL LOCK SIGNAL	
TB1-A57	J09- 82	A 313G	RESOLVED MODE RELAY COMMAND	
TB1-A57	J19-P6	CC251R	RESOLVED MODE RELAY COMMAND	
TB1-A58	SHLD A 313	A 313B	STRUCTURE GROUND	
TB1-A58	SHLD A 413	A 413B	STRUCTURE GROUND	
TB1-A58	SHLD CC223	CC223B	STRUCTURE GROUND	

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION	
TB1-A58	SHLD CC276	CC276B	STRUCTURE GROUND	
TB1-A58	TB1-A59	TB 31	STRUCTURE GROUND	
TB1-A59	SHLD A 286	A 286B	STRUCTURE GROUND	
TB1-A59	SHLD A 472	A 472B	STRUCTURE GROUND	
TB1-A59	SHLD CC225	CC225B	STRUCTURE GROUND	
TB1-A59	SHLD CC251	CC251B	STRUCTURE GROUND	
TB1-A59	TB1-A60	TB 31	STRUCTURE GROUND	
TB1-A59	TB1-A58	TB 31	STRUCTURE GROUND	
TB1-A60	J16-N4	CC180	STRUCTURE GROUND	
TB1-A60	TB1-A59	TB 31	STRUCTURE GROUND	
TB1-A61	J09- 2	A 286R	TRACKER MODE RELAY COMMAND	
TB1-A61	J10- 66	A 472R	TRACKER MODE RELAY COMMAND	317
TB1-A61	J19-R6	CC251W	TRACKER MODE RELAY COMMAND	
TB1-A63	P09- 7	A 337R	+120 VDC PIP	
TB1-A63	J17-L5	CC206R	+120 VDC PIP	
TB1-A64	P09-107	A 397	BLOWER CURRENT SENSOR (TELEMETRY)	
TB1-A64	J17-F6	CC193	BLOWER CURRENT SENSOR (TELEMETRY)	
TB1-A65	P05- 10	A 216Y	TRACKER Y REFERENCE	
TB1-A65	P13- 27	A 498Y	TRACKER Y REFERENCE	
TB1-A66	P05- 11	A 216R	TRACKER Y REFERENCE	
TB1-A66	P13- 28	A 498R	TRACKER Y REFERENCE	
TB1-A67	SHLD A 216	A 216B	0 VDC OPTICS	
TB1-A67	SHLD A 498	A 498B	0 VDC OPTICS	
TB1-A67	TB1-B47	AA 6	0 VDC OPTICS	
TB1-A67	TB1-B67	TB 34	0 VDC OPTICS	
TB1-A68	J09- 47	A 308Y	AGC COMMON (OSS)	
TB1-A68	J24- 84	A 564Y	AGC COMMON (OSS)	101
TB1-A68	J24- 83	A 566Y	SXT POWER ON INDICATION	105
TB1-A69	J09- 48	A 308R	OPTICS ZERO ENCODER INDICATION	
TB1-A69	P10- 43	A 416Y	OPTICS ZERO ENCODER INDICATION	
TB1-A69	J24- 15	A 564R	OPTICS ZERO ENCODER INDICATION	104
TB1-A70	SHLD A 308	A 308B	AGC SIGNAL 178 SHIELD RETURN	

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-A70	SHLD A 416	A 416B	AGC SIGNAL 178 SHIELD RETURN
TB1-A70	SHLD A 564	A 564B	AGC SIGNAL 178 SHIELD RETURN
TB1-A71	J09- 45	A 306G	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR
TB1-A71	J20-H4	CC273L	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR
TB1-A72	TB1-A73	TB 40	800 CPS 28 V 1 PCT HI OPTICS
TB1-A72	J09- 80	A 306R	800 CPS 28 V 1 PCT HI OPTICS
TB1-A72	P09-125	A 402R	800 CPS 28 V 1 PCT HI OPTICS
TB1-A72	J16-P5	CC172W	800 CPS 28 V 1 PCT HI OPTICS
TB1-A73	P08- 27	A 274R	800 CPS 28 V 1 PCT HI OPTICS
TB1-A73	P08- 30	A 275R	800 CPS 28 V 1 PCT HI OPTICS
TB1-A73	J20-G6	CC273W	800 CPS 28 V 1 PCT HI OPTICS
TB1-A73	TB1-A72	TB 40	800 CPS 28 V 1 PCT HI OPTICS
TB1-A74	P08- 21	A 272R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
TB1-A74	P08- 24	A 273R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
TB1-A74	P09-103	A 394R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
TB1-A74	J16-P6	CC174R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
TB1-A75	J08- 95	A 165N	400 CPS 26 V LO
TB1-A75	P10- 49	A 418R	400 CPS 26 V LO
TB1-A76	J08- 66	A 165G	MDV SLEW CONTROL 1.5 V 400 CPS
TB1-A76	J09- 66	A 315G	MDV SLEW CONTROL 1.5 V 400 CPS
TB1-A77	J08- 68	A 165R	400 CPS 26 V MDV RSVR EXC
TB1-A77	J09- 68	A 315R	400 CPS 26 V MDV RSVR EXC
TB1-A78	J08- 81	A 165Y	400 CPS 26 V SLEW
TB1-A78	J09- 81	A 315Y	400 CPS 26 V SLEW
TB1-B 1	TB1-B 2	TB 2	400 CPS 6 V LO
TB1-B 1	J01- 29	A 8Y	400 CPS 6 V LO
TB1-B 1	J02- 29	A 28Y	400 CPS 6 V LO
TB1-B 1	J03- 29	A 48Y	400 CPS 6 V LO
TB1-B 2	TB1-B 3	TB 2	400 CPS 6 V LO
TB1-B 2	J04- 29	A 67Y	400 CPS 6 V LO
TB1-B 2	J05- 29	A 85Y	400 CPS 6 V LO
TB1-B 2	P10- 93	A 420R	400 CPS 6 V LO

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-B 2	TB1-B 1	TB 2	400 CPS 6 V LO
TB1-B 3	TB1-B 4	TB 2	400 CPS 6 V LO
TB1-B 3	J06-107	A 123Y	400 CPS 6 V LO
TB1-B 3	P05- 44	A 225Y	400 CPS 6 V LO
TB1-B 3	TB1-B 2	TB 2	400 CPS 6 V LO
TB1-B 4	TB1-D 3	AA 7	0 VDC IMU
TB1-B 4	P08- 54	A 282Y	400 CPS 6 V LO
TB1-B 4	P08- 57	A 283Y	400 CPS 6 V LO
TB1-B 4	P10- 94	A 420Y	400 CPS 6 V LO
TB1-B 4	TB1-B 3	TB 2	400 CPS 6 V LO
TB1-B 5	P02-B	A 178Y	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
TB1-B 5	J16-P4	CC160W	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
TB1-B 6	J01- 12	A 5Y	ZEROING RSVR 800 CPS
TB1-B 6	J02- 12	A 25Y	ZEROING RSVR 800 CPS
TB1-B 6	J03- 12	A 45Y	ZEROING RSVR 800 CPS
TB1-B 6	J16-R4	CC160K	ZEROING RSVR 800 CPS
TB1-B 7	TB1-B 8	TB 12	800 CPS 28 V 1 PCT LO IMU
TB1-B 7	P01- 10	A 126Y	800 CPS 28 V 1 PCT LO IMU
TB1-B 7	P09- 12	A 340Y	800 CPS 28 V 1 PCT LO IMU
TB1-B 7	J16-S3	CC160R	800 CPS 28 V 1 PCT LO IMU
TB1-B 8	J01- 14	A 1Y	800 CPS 28 V 1 PCT LO IMU
TB1-B 8	J02- 14	A 21Y	800 CPS 28 V 1 PCT LO IMU
TB1-B 8	J03- 14	A 41Y	800 CPS 28 V 1 PCT LO IMU
TB1-B 8	TB1-B 7	TB 12	800 CPS 28 V 1 PCT LO IMU
TB1-B10	P07-J*	A 261Y	0 VDC IMU
TB1-B10	J11-G2	CC 65W	0 VDC IMU
TB1-B11	P07-H*	A 261R	IG ADA
TB1-B11	J11-F1	CC 65R	IG ADA
TB1-B12	SHLD A 23	A 23B	0 VDC IMU
TB1-B12	SHLD A 185	A 185B	0 VDC IMU
TB1-B12	SHLD A 347	A 347B	0 VDC IMU
TB1-B12	SHLD CC328	CC328B	0 VDC IMU

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-B12	TB1-C12	TB 14	0 VDC IMU
TB1-B12	TB1-A12	TB 14	0 VDC IMU
TB1-B13	J02- 20	A 23R	COS AMG 1X S3
TB1-B13	P02-L	A 185R	COS AMG 1X S3
TB1-B13	P09- 25	A 347R	COS AMG 1X S3
TB1-B13	J22- 16	CC328W	COS AMG 1X S3
TB1-B14	J02- 6	A 23Y	COS AMG 1X S1
TB1-B14	P02-M	A 185Y	COS AMG 1X S1
TB1-B14	P09- 44	A 347Y	COS AMG 1X S1
TB1-B14	J22- 32	CC328R	COS AMG 1X S1
TB1-B15	J02- 21	A 24R	SIN AMG 1X RET
TB1-B15	P02-N	A 186Y	SIN AMG 1X RET S2
TB1-B15	P09- 42	A 346R	SIN AMG 1X RET
TB1-B15	J22- 15	CC327W	SIN AMG 1X RET
TB1-B16	J02- 7	A 24Y	SIN AMG 1X
TB1-B16	P02-P	A 186R	SIN AMG 1X S4
TB1-B16	P09- 24	A 346Y	SIN AMG 1X
TB1-B16	J22- 14	CC327R	SIN AMG 1X
TB1-B17	SHLD A 24	A 24B	0 VDC IMU
TB1-B17	SHLD A 186	A 186B	0 VDC IMU
TB1-B17	SHLD A 346	A 346B	0 VDC IMU
TB1-B17	SHLD CC327	CC327B	0 VDC IMU
TB1-B17	TB1-C17	TB 15	0 VDC IMU
TB1-B17	TB1-A12	AA 1	0 VDC IMU
TB1-B17	TB1-A17	TB 15	0 VDC IMU
TB1-B18	J05- 12	A 84Y	TRUNNION CDU 1/2X RSVR P2
TB1-B18	J19-P2	CC252W	TRUNNION CDU 1/2X RSVR P2
TB1-B19	J05- 11	A 84G	TRUNNION CDU 1/2X RSVR P1 AND P3
TB1-B19	J05- 25	A 84R	TRUNNION CDU 1/2X RSVR P3
TB1-B19	J19-P1	CC252R	TRUNNION CDU 1/2X RSVR P3
TB1-B21	TB1-B22	TB 17	CONDITION LAMPS COMMON
TB1-B21	J08- 17	A 146	SPARE FAIL LIGHT 3 LO

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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION	
TB1-B21	J08- 19	A 148	GIMBAL LOCK LIGHT LO	
TB1-B21	J08- 28	A 149	SPARE FAIL LIGHT 2 LO	
TB1-B22	TB1-B23	TB 17	CONDITION LAMPS COMMON	
TB1-B22	J08- 30	A 151	ZERO ENCODER LIGHT LO	
TB1-B22	J08- 61	A 163	IMU FAIL LIGHT LO	
TB1-B22	J08- 70	A 167	SPARE FAIL LIGHT 1 LO	
TB1-B22	TB1-B21	TB 17	CONDITION LAMPS COMMON	
TB1-B23	J08- 83	A 173	CDU FAIL LIGHT LO	
TB1-B23	J08- 84	A 174	ACCEL FAIL LIGHT LO	
TB1-B23	J09- 99	A 292	CONDITION LAMPS COMMON	
TB1-B23	TB1-B22	TB 17	CONDITION LAMPS COMMON	
TB1-B24	J08- 73	A 170	ACCEL FAIL LIGHT HI	
TB1-B24	J10- 5	A 473Y	ACCEL FAIL LIGHT HI	303
TB1-B25	J08- 63	A 164Y	IMU TEMP CONT FAIL LIGHT LO	
TB1-B25	J09- 38	A 591	IMU TEMP CONT FAIL LIGHT LO	
TB1-B26	J08- 62	A 164R	IMU TEMP CONT FAIL LIGHT HI	
TB1-B26	P09- 86	A 386	IMU TEMP CONT FAIL LIGHT HI	
TB1-B26	J17-P5	CC197	IMU TEMP CONT FAIL LIGHT HI	
TB1-B28	P03-W	A 195N	IMU MG ERROR SIG	
TB1-B28	P09-112	A 390R	IMU MG ERROR SIG	
TB1-B28	J11-A5	CC 68R	IMU MG ERROR SIG	
TB1-B29	J03- 57	A 55Y	OG CDU 1/2X ERROR SIG LO	
TB1-B29	J16-F5	CC145R	OG CDU 1/2X ERROR SIG LO	
TB1-B30	J02- 57	A 35Y	MG CDU 1/2X ERROR SIG LO	
TB1-B30	J16-F3	CC138R	MG CDU 1/2X ERROR SIG LO	
TB1-B31	J01- 57	A 15Y	IG CDU 1/2X ERROR SIG LO	
TB1-B31	J16-F1	CC133R	IG CDU 1/2X ERROR SIG LO	
TB1-B33	J05-108	A 95R	TRUNNION CDU ENCODER PHASE 2	
TB1-B33	J17-A8	CC202R	TRUNNION CDU ENCODER PHASE 2	
TB1-B34	SHLD A 95	A 95B	TRUNNION CDU ENCODER COMMON	
TB1-B34	J05- 94	A 95Y	TRUNNION CDU ENCODER COMMON	
TB1-B34	J17-A7	CC202W	TRUNNION CDU ENCODER COMMON	

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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-B35	J05-107	A 95G	TRUNNION CDU ENCODER PHASE 1
TB1-B35	J17-A6	CC202L	TRUNNION CDU ENCODER PHASE 1
TB1-B36	TB1-C36	TB 23	0 VDC OPTICS
TB1-B36	TB1-A39	AA 3	0 VDC OPTICS
TB1-B36	TB1-A36	TB 23	0 VDC OPTICS
TB1-B39	TB1-C39	TB 24	0 VDC OPTICS
TB1-B39	TB1-A42	AA 4	0 VDC OPTICS
TB1-B39	TB1-A39	TB 24	0 VDC OPTICS
TB1-B40	P09- 95	A 391G	X PIP ERROR MONITOR
TB1-B40	J13-D2	CC 97	X PIP ERROR MONITOR
TB1-B41	P09-114	A 391N	0 VDC IMU
TB1-B41	J12-B5	CC 89	0 VDC IMU
TB1-B42	SHLD A 92	A 92B	0 VDC OPTICS
TB1-B42	SHLD A 240	A 240B	0 VDC OPTICS
TB1-B42	SHLD CC234	CC234B	0 VDC OPTICS
TB1-B42	TB1-C42	TB 25	0 VDC OPTICS
TB1-B42	TB1-A47	AA 5	0 VDC OPTICS
TB1-B42	TB1-A42	TB 25	0 VDC OPTICS
TB1-B43	J05-101	A 92R	TRUNNION CDU 16X RSVR P4
TB1-B43	P05- 91	A 240R	SXT TRUNNION 64X RSVR S2
TB1-B43	J18-C1	CC234R	SXT TRUNNION 64X RSVR S2
TB1-B44	J05- 87	A 92Y	TRUNNION CDU 16X RSVR P2
TB1-B44	P05- 90	A 240Y	SXT TRUNNION 64X RSVR S4
TB1-B44	J18-C2	CC234W	SXT TRUNNION 64X RSVR S4
TB1-B45	J04- 87	A 75R	SHAFT CDU 16X RSVR P2
TB1-B45	P05- 79	A 234R	SXT SHAFT 16X RSVR S2
TB1-B45	J18-A3	CC219R	SXT SHAFT 16X RSVR S2
TB1-B46	J04-101	A 75Y	SHAFT CDU 16X RSVR P4
TB1-B46	P05- 78	A 234Y	SXT SHAFT 16X RSVR S4
TB1-B46	J18-A2	CC219W	SXT SHAFT 16X RSVR S4
TB1-B47	SHLD A 75	A 75B	0 VDC OPTICS
TB1-B47	SHLD A 234	A 234B	0 VDC OPTICS

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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION	
TB1-B47	SHLD CC219	CC219B	0 VDC OPTICS	
TB1-B47	TB1-C47	TB 26	0 VDC OPTICS	
TB1-B47	TB1-A67	AA 6	0 VDC OPTICS	
TB1-B47	TB1-A47	TB 26	0 VDC OPTICS	
TB1-B48	J06- 81	A 99R	ATTIT CONT MODE COMMAND FROM AGC	
TB1-B48	J10- 12	A 474G	ATTIT CONT MODE COMMAND FROM AGC	314
TB1-B49	SHLD A 130	A 130B	STRUCTURE GROUND	
TB1-B49	SHLD A 475	A 475B	STRUCTURE GROUND	
TB1-B49	SHLD A 476	A 476B	STRUCTURE GROUND	
TB1-B49	J15-K3	CC132	STRUCTURE GROUND	
TB1-B49	TB1-A49	TB 27	STRUCTURE GROUND	
TB1-B50	P01- 13	A 127R	FINE ALIGN MODE COMMAND FROM AGC	
TB1-B50	J10- 24	A 475R	FINE ALIGN MODE COMMAND FROM AGC	310
TB1-B51	J08-106	A 177	STEP-UP-R	
TB1-B51	J09-106	A 330	STEP-UP-R	
TB1-B52	J08- 78	A 171	STEP-UP-C	
TB1-B52	J09- 78	A 322	STEP-UP-C	
TB1-B53	J01- 15	A 6	+28 VDC CDU NOT LOCK	
TB1-B53	J02- 15	A 26	+28 VDC CDU NOT LOCK	
TB1-B53	J03- 15	A 46	+23 VDC CDU NOT LOCK	
TB1-B53	J15-R6	CC129	+28 VDC CDU NOT LOCK	
TB1-B56	J10- 9	A 481	AGC FAIL SIG	326
TB1-B56	J12-M3	CC 84	AGC FAIL SIG	
TB1-B57	J09- 58	A 313Y	0 DEG OFFSET RELAY COMMAND	
TB1-B57	J18-P2	CC223W	0 DEG OFFSET RELAY COMMAND	
TB1-B58	J09- 59	A 313R	25 DEG OFFSET RELAY COMMAND	
TB1-B58	J18-R2	CC223R	25 DEG OFFSET RELAY COMMAND	
TB1-B59	J09- 70	A 286G	COMPUTER RELAY COMMAND	
TB1-B59	J10- 67	A 472G	COMPUTER RELAY COMMAND	331
TB1-B59	J18-P3	CC225W	COMPUTER RELAY COMMAND	
TB1-B60	J09- 72	A 286Y	ZERO OPTICS MODE COMMAND	
TB1-B60	J10- 65	A 472Y	ZERO OPTICS MODE COMMAND	316

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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-B60	J18-P1	CC225R	ZERO OPTICS MODE COMMAND
TB1-B61	P10- 15	A 413Y	AUTOMATIC MARK COMMAND
TB1-B61	J20-F2	CC276W	AUTOMATIC MARK COMMAND
TB1-B62	TB1-D 4	AA 8	0 VDC IMU
TB1-B62	TB1-C62	TB 33	0 VDC IMU
TB1-B62	P09- 48	A 358	0 VDC IMU
TB1-B62	P09- 68	A 372	0 VDC IMU
TB1-B63	P09- 29	A 337Y	+32, +120 VDC RET PIP
TB1-B63	J17-L4	CC206W	+32, +120 VDC RET PIP
TB1-B64	P09-129	A 405	HTR CURRENT (TELEMETRY)
TB1-B64	J17-F3	CC196	HTR CURRENT (TELEMETRY)
TB1-B65	P05- 18	A 218Y	TRACKER X REFERENCE
TB1-B65	P13- 36	A 499Y	TRACKER X REFERENCE
TB1-B66	P05- 17	A 218R	TRACKER X REFERENCE
TB1-B66	P13- 35	A 499R	TRACKER X REFERENCE
TB1-B67	SHLD A 218	A 218B	0 VDC OPTICS
TB1-B67	SHLD A 499	A 499B	0 VDC OPTICS
TB1-B67	TB1-D76	AA 9	0 VDC OPTICS
TB1-B67	TB1-C67	TB 34	0 VDC OPTICS
TB1-B67	P05- 9	A 215	0 VDC OPTICS
TB1-B67	TB1-A67	TB 34	0 VDC OPTICS
TB1-B68	TB1-C68	A 573	0 VDC IMU
TB1-B68	TB1-C62	AA 10	0 VDC IMU
TB1-B68	TB1-B69	TB 35	0 VDC IMU
TB1-B68	P11-D	A 512	0 VDC IMU
TB1-B68	J11-R3	CC 75	0 VDC IMU
TB1-B69	TB1-B70	TB 35	0 VDC IMU
TB1-B69	P12-E	A 542	0 VDC IMU
TB1-B69	J17-S3	CC211	0 VDC IMU
TB1-B69	TB1-B68	TB 35	0 VDC IMU
TB1-B70	TB1-D73	A 578	0 VDC IMU
TB1-B70	TB1-K20	AA 11	0 VDC IMU

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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-B70	P11-F	A 516	0 VDC IMU
TB1-B70	J17-S4	CC212	0 VDC IMU
TB1-B70	TB1-B69	TB 35	0 VDC IMU
TB1-B71	P05- 68	A 229	+28 VDC OPTICS TRACKER POWER
TB1-B71	J09- 96	A 328	+28 VDC OPTICS TRACKER POWER
TB1-B71	P13- 38	A 594R	+28 VDC OPTICS TRACKER POWER
TB1-B71	J20-N4	CC280	+28 VDC OPTICS TRACKER POWER
TB1-B72	TB1-B73	TB 41	800 CPS 28 V 1 PCT LO OPTICS
TB1-B72	J09- 69	A 306Y	800 CPS 28 V 1 PCT LO OPTICS
TB1-B72	P09-124	A 402Y	800 CPS 28 V 1 PCT LO OPTICS
TB1-B72	J16-N5	CC172R	800 CPS 28 V 1 PCT LO OPTICS
TB1-B73	P08- 28	A 274Y	800 CPS 28 V 1 PCT LO OPTICS
TB1-B73	P08- 31	A 275Y	800 CPS 28 V 1 PCT LO OPTICS
TB1-B73	J20-G5	CC273R	800 CPS 28 V 1 PCT LO OPTICS
TB1-B73	TB1-B72	TB 41	800 CPS 28 V 1 PCT LO OPTICS
TB1-B74	P08- 22	A 272Y	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
TB1-B74	P08- 25	A 273Y	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
TB1-B74	P09-102	A 394Y	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
TB1-B74	J16-N6	CC174W	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
TB1-B75	J08- 36	A 154Y	400 CPS 6 V LO
TB1-B75	P10- 95	A 418Y	400 CPS 6 V LO
TB1-B76	J08- 55	A 154R	PROJECTION LAMP HI INTENSITY
TB1-B76	J09- 55	A 307R	PROJECTION LAMP HI INTENSITY
TB1-B77	J08- 46	A 154G	PROJECTION LAMP LO INTENSITY
TB1-B77	J09- 46	A 307Y	PROJECTION LAMP LO INTENSITY
TB1-B78	P10- 69	A 419R	400 CPS 115 V HI
TB1-B78	P11-N	A 526R	400 CPS 115 V HI
TB1-B78	J20-N3	CC311R	400 CPS 115 V HI
TB1-C 1	TB1-C 2	TB 3	400 CPS 6 V HI
TB1-C 1	P01-106	A 143G	400 CPS 6 V HI
TB1-C 1	P10-107	A 420G	400 CPS 6 V HI
TB1-C 2	P01- 90	A 143N	400 CPS 6 V HI

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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-C 2	P10-108	A 420N	400 CPS 6 V HI
TB1-C 2	TB1-C 1	TB 3	400 CPS 6 V HI
TB1-C 3	P01- 91	A 144	MODE LAMP TEST PWR
TB1-C 3	J09- 84	A 312Y	MODE LAMP TEST PWR
TB1-C 4	J08- 32	A 153	MASTER CAUTION LIGHT HI
TB1-C 4	J08- 54	A 161	MASTER WARNING LIGHT HI
TB1-C 4	J22- 41	CC326	+28 VDC SPACECRAFT
TB1-C10	P07-C*	A 259Y	Z PIP ERROR LO
TB1-C10	J14-A2	CC105W	Z PIP ERROR LO
TB1-C11	P07-B*	A 259R	Z PIP ERROR HI
TB1-C11	J14-A1	CC105R	Z PIP ERROR HI
TB1-C12	TB1-D12	TB 14	0 VDC IMU
TB1-C12	TB1-B12	TB 14	0 VDC IMU
TB1-C14	P03-D	A 196R	COS AOG 1X S3
TB1-C14	P09- 45	A 348R	COS AOG 1X S3
TB1-C14	J16-B8	CC143W	COS AOG 1X S3
TB1-C15	J03- 6	A 43Y	COS AOG 1X S1
TB1-C15	P03-E	A 196Y	COS AOG 1X S1
TB1-C15	P09- 27	A 348Y	COS AOG 1X S1
TB1-C15	J16-C8	CC143R	COS AOG 1X S1
TB1-C16	J03- 20	A 43R	COS AOG 1X TO CDU
TB1-C16	J16-C9	CC143L	COS AOG 1X TO CDU
TB1-C17	SHLD A 43	A 43B	0 VDC IMU
TB1-C17	SHLD A 196	A 196B	0 VDC IMU
TB1-C17	SHLD A 348	A 348B	0 VDC IMU
TB1-C17	SHLD CC143	CC143B	0 VDC IMU
TB1-C17	TB1-D17	TB 15	0 VDC IMU
TB1-C17	TB1-B17	TB 15	0 VDC IMU
TB1-C18	P03-Y	A 206R	OG TORQUE MOTOR HI
TB1-C18	P06-H	A 250R	OG TORQUE MOTOR HI
TB1-C18	P09-131	A 398R	OG TORQUE MOTOR HI
TB1-C18	J11-H6	CC 71R	OG TORQUE MOTOR HI

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FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-C19	P03-X	A 206Y	OG TORQUE MOTOR RET
TB1-C19	P06-J	A 250Y	OG TORQUE MOTOR RET
TB1-C19	P09-109	A 398Y	OG TORQUE MOTOR RET
TB1-C19	J11-H5	CC 71W	OG TORQUE MOTOR RET
TB1-C21	P07-C	A 257R	Z GYRO TORQUE -
TB1-C21	J14-M6	CC109R	Z GYRO TORQUE -
TB1-C22	P07-B	A 257W	Z GYRO TORQUE RET
TB1-C22	J14-N6	CC109W	Z GYRO TORQUE RET
TB1-C23	P07-A	A 257L	Z GYRO TORQUE +
TB1-C23	J14-L6	CC109L	Z GYRO TORQUE +
TB1-C24	SHLD A 257	A 257B	0 VDC IMU
TB1-C24	SHLD CC109	CC109B	0 VDC IMU
TB1-C24	TB1-D24	TB 18	0 VDC IMU
TB1-C24	TB1-A17	AA 2	0 VDC IMU
TB1-C25	J08- 52	A 159R	G+N ERROR LIGHT LO
TB1-C25	J09- 62	A 590	G+N ERROR LIGHT LO
TB1-C26	J08- 51	A 159Y	G+N ERROR LIGHT HI
TB1-C26	P09- 84	A 384	G+N ERROR LIGHT HI
TB1-C26	J12-L2	CC 86	G+N ERROR LIGHT HI
TB1-C28	P03-U	A 195G	IMU IG AND Y GYRO ERROR SIG
TB1-C28	P09- 94	A 390G	IMU IG AND Y GYRO ERROR SIG
TB1-C28	J11-B6	CC 68W	IMU IG AND Y GYRO ERROR SIG
TB1-C29	J03-106	A 60R	OG CDU MDA TACH SIG
TB1-C29	J16-A5	CC153R	OG CDU MDA TACH SIG
TB1-C30	SHLD A 60	A 60B	OG CDU MDA INPUT RET
TB1-C30	J03- 92	A 60Y	OG CDU MDA INPUT RET
TB1-C30	J16-B5	CC153L	OG CDU MDA INPUT RET
TB1-C31	J03-105	A 60G	OG CDU MDA SLEW SIG
TB1-C31	J16-A6	CC153W	OG CDU MDA SLEW SIG
TB1-C33	J03-108	A 61R	OG CDU ENCODER PHASE 2
TB1-C33	J15-C3	CC119R	OG CDU ENCODER PHASE 2
TB1-C34	SHLD A 61	A 61B	OG CDU ENCODER COMMON

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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-C34	J03- 94	A 61Y	OG CDU ENCODER COMMON
TB1-C34	J15-D3	CC119W	OG CDU ENCODER COMMON
TB1-C35	J03-107	A 61G	OG CDU ENCODER PHASE 1
TB1-C35	J15-D4	CC119L	OG CDU ENCODER PHASE 1
TB1-C36	SHLD A 94	A 94B	0 VDC OPTICS
TB1-C36	SHLD CC258	CC258B	0 VDC OPTICS
TB1-C36	TB1-D36	TB 23	0 VDC OPTICS
TB1-C36	TB1-B36	TB 23	0 VDC OPTICS
TB1-C37	J05-106	A 94R	TRUNNION CDU TACHOMETER HI
TB1-C37	J19-A6	CC258R	TRUNNION CDU TACHOMETER HI
TB1-C38	J05- 92	A 94Y	TRUNNION CDU TACHOMETER LO
TB1-C38	J19-B6	CC258W	TRUNNION CDU TACHOMETER LO
TB1-C39	TB1-D39	TB 24	0 VDC OPTICS
TB1-C39	TB1-B39	TB 24	0 VDC OPTICS
TB1-C40	J05-104	A 93Y	TRUNNION CDU 16X RSVR S2
TB1-C40	J19-B5	CC256W	TRUNNION CDU 16X RSVR S2
TB1-C41	J05- 90	A 93R	TRUNNION CDU 16X RSVR S3
TB1-C41	J19-B4	CC256R	TRUNNION CDU 16X RSVR S3
TB1-C42	SHLD A 83	A 83B	0 VDC OPTICS
TB1-C42	SHLD A 93	A 93B	0 VDC OPTICS
TB1-C42	SHLD A 224	A 224B	0 VDC OPTICS
TB1-C42	SHLD CC230	CC230B	0 VDC OPTICS
TB1-C42	SHLD CC256	CC256B	0 VDC OPTICS
TB1-C42	TB1-D42	TB 25	0 VDC OPTICS
TB1-C42	TB1-B42	TB 25	0 VDC OPTICS
TB1-C43	J05- 10	A 83Y	TRUNNION CDU 1/4X RSVR S4
TB1-C43	P05- 40	A 224Y	SXT TRUNNION 1X RSVR S2
TB1-C43	J18-D1	CC230W	TRUNNION CDU 1/4X RSVR S4
TB1-C44	J05- 9	A 83R	TRUNNION CDU 1/4X RSVR S2
TB1-C44	P05- 41	A 224R	SXT TRUNNION 1X RSVR S4
TB1-C44	J18-F1	CC230R	TRUNNION CDU 1/4X RSVR S2
TB1-C45	J04- 56	A 72R	SHAFT CDU 1/2X RSVR S2

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION	
TB1-C45	P05- 3	A 211R	SXT SHAFT 1/2X RSVR S2	
TB1-C46	J04- 66	A 72Y	SHAFT CDU 1/2X RSVR S4	
TB1-C46	P05- 2	A 211Y	SXT SHAFT 1/2X RSVR S4	
TB1-C47	SHLD A 72	A 72B	0 VDC OPTICS	
TB1-C47	SHLD A 211	A 211B	0 VDC OPTICS	
TB1-C47	TB1-D47	TB 26	0 VDC OPTICS	
TB1-C47	TB1-B47	TB 26	0 VDC OPTICS	
TB1-C48	P01- 27	A 130Y	CDU MANUAL MODE COMMAND FROM AGC	
TB1-C48	J10- 23	A 476Y	CDU MANUAL MODE COMMAND FROM AGC	309
TB1-C49	P01- 58	A 130R	ENTRY MODE COMMAND FROM AGC	
TB1-C49	J10- 25	A 476R	ENTRY MODE COMMAND FROM AGC	311
TB1-C50	P01- 38	A 127Y	ZERO ENCODER MODE COMMAND FROM AGC	
TB1-C50	J10- 21	A 475Y	ZERO ENCODER MODE COMMAND FROM AGC	307
TB1-C51	J03- 30	A 49	+28 VDC IMU FOR OG MDA	
TB1-C51	J16-T2	CC151	+28 VDC IMU FOR OG MDA	
TB1-C52	J02- 30	A 29	+28 VDC IMU FOR MG MDA	
TB1-C52	J16-T1	CC150	+28 VDC IMU FOR MG MDA	
TB1-C53	J01- 30	A 9	+28 VDC IMU FOR IG MDA	
TB1-C53	J16-S1	CC149	+28 VDC IMU FOR IG MDA	
TB1-C54	P06-F	A 247	-28 VDC	
TB1-C54	P09- 66	A 370	-28 VDC	
TB1-C54	J11-N6	CC 66	-28 VDC	
TB1-C56	J06- 68	A 113Y	AGC COMMON (ISS)	
TB1-C56	P01- 68	A 134Y	AGC COMMON (ISS)	
TB1-C56	J16-B7	CC173W	AGC COMMON (ISS)	
TB1-C56	J24- 26	CC332W	AGC COMMON (ISS)	165
TB1-C57	P09- 90	A 388N	MG CDU FAILURE INDICATION	
TB1-C57	J16-M3	CC175L	MG CDU FAILURE INDICATION	
TB1-C58	P09- 89	A 388G	IG CDU FAILURE INDICATION	
TB1-C58	J16-M2	CC175K	IG CDU FAILURE INDICATION	
TB1-C59	SHLD A 254	A 254B	0 VDC IMU	
TB1-C59	SHLD A 255	A 255B	0 VDC IMU	

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-C59	SHLD CC190	CC190B	0 VDC IMU
TB1-C59	SHLD CC192	CC192B	0 VDC IMU
TB1-C59	TB1-D59	TB 32	0 VDC IMU
TB1-C60	P06-X	A 254R	IMU EMERGENCY HTR HI
TB1-C60	J17-M4	CC190W	IMU EMERGENCY HTR HI
TB1-C61	P06-R	A 254Y	EMERGENCY HTR LO-OPER AND STBY
TB1-C61	J17-N4	CC190R	EMERGENCY HTR LO-OPER AND STBY
TB1-C62	J09- 26	A 297	0 VDC IMU
TB1-C62	P10- 13	A 411	0 VDC IMU
TB1-C62	TB1-B68	AA 10	0 VDC IMU
TB1-C62	TB1-B62	TB 33	0 VDC IMU
TB1-C63	P09- 28	A 337G	+32 VDC PIP
TB1-C63	J17-T5	CC206L	+32 VDC PIP
TB1-C64	P09-128	A 404	TEMPERATURE CONTROL SIG LO
TB1-C64	J17-F2	CC205	TEMPERATURE CONTROL SIG LO
TB1-C65	P05- 73	A 232Y	TRACKER AUTOMATIC GAIN CONTROL LO
TB1-C65	P13- 9	A 490Y	TRACKER AUTOMATIC GAIN CONTROL LO
TB1-C66	P05- 72	A 232R	TRACKER AUTOMATIC GAIN CONTROL HI
TB1-C66	P13- 1	A 490R	TRACKER AUTOMATIC GAIN CONTROL HI
TB1-C67	SHLD A 232	A 232B	0 VDC OPTICS
TB1-C67	SHLD A 490	A 490B	0 VDC OPTICS
TB1-C67	TB1-D67	TB 34	0 VDC OPTICS
TB1-C67	P05- 37	A 222	0 VDC OPTICS
TB1-C67	TB1-B67	TB 34	0 VDC OPTICS
TB1-C68	TB1-C69	TB 36	0 VDC IMU
TB1-C68	P12-F	A 543	0 VDC IMU
TB1-C68	TB1-B68	A 573	0 VDC IMU
TB1-C68	J12-R4	CC 92	0 VDC IMU
TB1-C68	J20-K2	CC322	0 VDC IMU
TB1-C69	TB1-C70	TB 36	0 VDC IMU
TB1-C69	P11-E	A 513	0 VDC IMU
TB1-C69	J11-R1	CC 78	0 VDC IMU

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-C69	J12-R3	CC 91	0 VDC IMU
TB1-C69	TB1-C68	TB 36	0 VDC IMU
TB1-C70	TB1-F73	A 577	0 VDC IMU
TB1-C70	P12-D	A 539	0 VDC IMU
TB1-C70	J11-R2	CC 74	0 VDC IMU
TB1-C70	J12-R2	CC 90	0 VDC IMU
TB1-C70	TB1-C69	TB 36	0 VDC IMU
TB1-C71	J09-108	A 331	+28 VDC OPTICS DAC POWER
TB1-C71	J18-T3	CC224	+28 VDC OPTICS DAC POWER
TB1-C72	P06-C	A 241R	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
TB1-C72	P09- 33	A 349R	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
TB1-C72	J12-P2	CC 81R	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
TB1-C73	P06-B	A 241Y	800 CPS 28 V 5 PCT IMU WHEELS LO
TB1-C73	P09- 50	A 349Y	800 CPS 28 V 5 PCT IMU WHEELS LO
TB1-C73	J12-R1	CC 81W	800 CPS 28 V 5 PCT IMU WHEELS LO
TB1-C74	P06-A	A 241G	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
TB1-C74	P09- 32	A 349G	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
TB1-C74	J12-P1	CC 81L	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
TB1-C75	P09- 13	A 341R	800 CPS 28 V 5 PCT L-90 DEG HI IMU
TB1-C75	J17-R4	CC183W	800 CPS 28 V 5 PCT L-90 DEG HI IMU
TB1-C75	J20-L6	CC285R	800 CPS 28 V 5 PCT L-90 DEG HI IMU
TB1-C76	P06-G#	A 248Y	800 CPS 28 V 5 PCT L-90 DEG LO IMU
TB1-C76	P09- 14	A 341Y	800 CPS 28 V 5 PCT L-90 DEG LO IMU
TB1-C76	J20-L5	CC285W	800 CPS 28 V 5 PCT L-90 DEG LO IMU
TB1-C77	P06-F#	A 248R	800 CPS 28 V 5 PCT HI TO BLOWERS
TB1-C77	J17-P4	CC183R	800 CPS 28 V 5 PCT HI TO BLOWERS
TB1-C78	P10- 68	A 419Y	400 CPS 115 V LO
TB1-C78	P11-K	A 526Y	400 CPS 115 V LO
TB1-C78	J20-M3	CC311W	400 CPS 115 V LO
TB1-D 1	J01- 3	A 2R	800 CPS 28 V 5 PCT L-90 DEG HI IMU
TB1-D 1	J02- 3	A 22R	800 CPS 28 V 5 PCT L-90 DEG HI IMU
TB1-D 1	J03- 3	A 42R	800 CPS 28 V 5 PCT L-90 DEG HI IMU

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-D 1	J12-H4	CC 88R	800 CPS 28 V 5 PCT L-90 DEG HI IMU
TB1-D 2	J01- 2	A 2Y	800 CPS 28 V 5 PCT L-90 DEG LO IMU
TB1-D 2	J02- 2	A 22Y	800 CPS 28 V 5 PCT L-90 DEG LO IMU
TB1-D 2	J03- 2	A 42Y	800 CPS 28 V 5 PCT L-90 DEG LO IMU
TB1-D 2	J12-K4	CC 88W	800 CPS 28 V 5 PCT L-90 DEG LO IMU
TB1-D 3	TB1-D 4	TB 6	0 VDC IMU
TB1-D 3	J06- 78	A 115	0 VDC IMU
TB1-D 3	P01- 78	A 137	0 VDC IMU
TB1-D 3	TB1-B 4	AA 7	0 VDC IMU
TB1-D 4	J08- 92	A 175	0 VDC IMU
TB1-D 4	TB1-B62	AA 8	0 VDC IMU
TB1-D 4	TB1-D 3	TB 6	0 VDC IMU
TB1-D 5	TB1-D 6	TB 9	800 CPS 28 V 1 PCT HI OPTICS
TB1-D 5	J04- 1	A 62R	800 CPS 28 V 1 PCT HI OPTICS
TB1-D 5	J05- 1	A 79R	800 CPS 28 V 1 PCT HI OPTICS
TB1-D 5	J16-P5	CC161W	800 CPS 28 V 1 PCT HI OPTICS
TB1-D 6	TB1-D 7	TB 9	800 CPS 28 V 1 PCT HI OPTICS
TB1-D 6	P04-E1	A 208R	800 CPS 28 V 1 PCT HI OPTICS
TB1-D 6	P05- 12	A 217R	800 CPS 28 V 1 PCT HI OPTICS
TB1-D 6	TB1-D 5	TB 9	800 CPS 28 V 1 PCT HI OPTICS
TB1-D 7	P05- 32	A 220R	800 CPS 28 V 1 PCT HI OPTICS
TB1-D 7	P05- 71	A 231R	800 CPS 28 V 1 PCT HI OPTICS
TB1-D 7	P05- 84	A 237R	800 CPS 28 V 1 PCT HI OPTICS
TB1-D 7	TB1-D 6	TB 9	800 CPS 28 V 1 PCT HI OPTICS
TB1-D 8	J04- 5	A 63R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
TB1-D 8	J05- 5	A 80R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
TB1-D 8	P05- 76	A 233R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
TB1-D 8	J16-P6	CC162R	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
TB1-D10	P07-A*	A 258Y	Y PIP ERROR LO
TB1-D10	J13-B3	CC 98W	Y PIP ERROR LO
TB1-D11	P07-Z	A 258R	Y PIP ERROR HI
TB1-D11	J13-A3	CC 98R	Y PIP ERROR HI

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-D12	TB1-F12	TB 14	0 VDC IMU
TB1-D12	TB1-C12	TB 14	0 VDC IMU
TB1-D14	P03-G	A 198Y	SIN AOG 1X S2
TB1-D14	P09- 26	A 334R	SIN AOG 1X S2
TB1-D14	J16-A8	CC144W	SIN AOG 1X S2
TB1-D15	J03- 7	A 44Y	SIN AOG 1X S4
TB1-D15	P03-F	A 198R	SIN AOG 1X S4
TB1-D15	P09- 4	A 334Y	SIN AOG 1X S4
TB1-D15	J16-A9	CC144R	SIN AOG 1X S4
TB1-D16	J03- 21	A 44R	SIN AOG 1X TO CDU
TB1-D16	J16-B9	CC144L	SIN AOG 1X TO CDU
TB1-D17	SHLD A 44	A 44B	0 VDC IMU
TB1-D17	SHLD A 198	A 198B	0 VDC IMU
TB1-D17	SHLD A 334	A 334B	0 VDC IMU
TB1-D17	SHLD CC144	CC144B	0 VDC IMU
TB1-D17	TB1-F17	TB 15	0 VDC IMU
TB1-D17	TB1-C17	TB 15	0 VDC IMU
TB1-D18	P03-Z	A 192R	MG TORQUE MOTOR HI
TB1-D18	P03-C*	A 194R	MG TORQUE MOTOR HI
TB1-D18	P09-132	A 399R	MG TORQUE MOTOR HI
TB1-D18	J11-F6	CC 70R	MG TORQUE MOTOR HI
TB1-D19	P03-A*	A 192Y	MG TORQUE MOTOR RET
TB1-D19	P03-B*	A 194Y	MG TORQUE MOTOR RET
TB1-D19	P09-110	A 399Y	MG TORQUE MOTOR RET
TB1-D19	J11-G6	CC 70W	MG TORQUE MOTOR RET
TB1-D21	P07-J	A 262R	Y GYRO TORQUE -
TB1-D21	J14-M2	CC108R	Y GYRO TORQUE -
TB1-D22	P07-H	A 262W	Y GYRO TORQUE RET
TB1-D22	J14-M3	CC108W	Y GYRO TORQUE RET
TB1-D23	P07-G	A 262L	Y GYRO TORQUE +
TB1-D23	J14-M1	CC108L	Y GYRO TORQUE +
TB1-D24	SHLD A 262	A 262B	0 VDC IMU

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-D24	TB1-D59	A 567	0 VDC IMU
TB1-D24	SHLD CC108	CC108B	0 VDC IMU
TB1-D24	TB1-F24	TB 18	0 VDC IMU
TB1-D24	TB1-C24	TB 18	0 VDC IMU
TB1-D25	J08- 82	A 168Y	AGC POWER SUPPLY FAIL LIGHT LO
TB1-D25	J09- 39	A 592	AGC POWER SUPPLY FAIL LIGHT LO
TB1-D26	J08- 71	A 168R	AGC POWER SUPPLY FAIL SIG HI
TB1-D26	P09- 67	A 371	AGC POWER SUPPLY FAIL SIG HI
TB1-D26	J12-M1	CC 85	AGC POWER SUPPLY FAIL SIG HI
TB1-D28	P03-V	A 195Y	IMU GIMBAL AND GYRO ERROR SIG LO
TB1-D28	P09- 93	A 390N	IMU GIMBAL AND GYRO ERROR SIG LO
TB1-D28	J11-B5	CC 68K	IMU GIMBAL AND GYRO ERROR SIG LO
TB1-D28	J15-B2	CC130R	IMU GIMBAL AND GYRO ERROR SIG LO
TB1-D29	J02-106	A 39R	MG CDU MDA TACH SIG
TB1-D29	J16-A3	CC141R	MG CDU MDA TACH SIG
TB1-D30	SHLD A 39	A 39B	MG CDU MDA INPUT RET
TB1-D30	J02- 92	A 39Y	MG CDU MDA INPUT RET
TB1-D30	J16-B3	CC141L	MG CDU MDA INPUT RET
TB1-D31	J02-105	A 39G	MG CDU MDA SLEW SIG
TB1-D31	J16-A4	CC141W	MG CDU MDA SLEW SIG
TB1-D33	J02-108	A 40R	MG CDU ENCODER PHASE 2
TB1-D33	J15-D2	CC118R	MG CDU ENCODER PHASE 2
TB1-D34	SHLD A 40	A 40B	MG CDU ENCODER COMMON
TB1-D34	J02- 94	A 40Y	MG CDU ENCODER COMMON
TB1-D34	J15-F2	CC118W	MG CDU ENCODER COMMON
TB1-D35	J02-107	A 40G	MG CDU ENCODER PHASE 1
TB1-D35	J15-F1	CC118L	MG CDU ENCODER PHASE 1
TB1-D36	SHLD A 221	A 221B	0 VDC OPTICS
TB1-D36	SHLD CC233	CC233B	0 VDC OPTICS
TB1-D36	TB1-F36	TB 23	0 VDC OPTICS
TB1-D36	TB1-C36	TB 23	0 VDC OPTICS
TB1-D37	P05- 34	A 221R	SXT TRUNNION TACH HI

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-D37	J18-A9	CC233R	SXT TRUNNION TACH HI
TB1-D38	P05- 35	A 221Y	SXT TRUNNION TACH LO
TB1-D38	J18-B9	CC233W	SXT TRUNNION TACH LO
TB1-D39	SHLD A 81	A 81B	0 VDC OPTICS
TB1-D39	SHLD CC255	CC255B	0 VDC OPTICS
TB1-D39	TB1-F39	TB 24	0 VDC OPTICS
TB1-D39	TB1-C39	TB 24	0 VDC OPTICS
TB1-D40	J05- 17	A 81R	TRUNNION CDU 1/4X RSVR P2
TB1-D40	J19-C5	CC255R	TRUNNION CDU 1/4X RSVR P2
TB1-D41	J05- 4	A 81Y	TRUNNION CDU 1/4X RSVR P3
TB1-D41	J19-C6	CC255W	TRUNNION CDU 1/4X RSVR P3
TB1-D42	SHLD A 82	A 82B	0 VDC OPTICS
TB1-D42	SHLD A 223	A 223B	0 VDC OPTICS
TB1-D42	SHLD CC229	CC229B	0 VDC OPTICS
TB1-D42	TB1-F42	TB 25	0 VDC OPTICS
TB1-D42	TB1-C42	TB 25	0 VDC OPTICS
TB1-D43	J05- 22	A 82R	TRUNNION CDU 1/4X RSVR S3
TB1-D43	P05- 38	A 223R	SXT TRUNNION 1X RSVR S3
TB1-D43	J18-F3	CC229R	TRUNNION CDU 1/4X RSVR S3
TB1-D44	J05- 8	A 82Y	TRUNNION CDU 1/4X RSVR S1
TB1-D44	P05- 39	A 223Y	SXT TRUNNION 1X RSVR S1
TB1-D44	J18-F2	CC229W	TRUNNION CDU 1/4X RSVR S1
TB1-D45	J04- 57	A 73R	SHAFT CDU 1/2X RSVR S1
TB1-D45	P05- 6	A 213R	SXT SHAFT 1/2X RSVR S1
TB1-D45	J18-B1	CC218R	SXT SHAFT 1/2X RSVR S1
TB1-D46	J04- 67	A 73Y	SHAFT CDU 1/2X RSVR S3
TB1-D46	P05- 7	A 213Y	SXT SHAFT 1/2X RSVR S3
TB1-D46	J18-A1	CC218W	SXT SHAFT 1/2X RSVR S3
TB1-D47	SHLD A 73	A 73B	0 VDC OPTICS
TB1-D47	SHLD A 213	A 213B	0 VDC OPTICS
TB1-D47	SHLD CC218	CC218B	0 VDC OPTICS
TB1-D47	TB1-F47	TB 26	0 VDC OPTICS

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-D47	TB1-C47	TB 26	0 VDC OPTICS
TB1-D49	J04- 44	A 68N	CDU SHAFT MDA TUNING CAPACITOR
TB1-D49	J19-N2	CC268L	CDU SHAFT MDA TUNING CAPACITOR
TB1-D50	J05- 44	A 86N	CDU TRUNNION MDA TUNING CAPACITOR
TB1-D50	J19-N1	CC257L	CDU TRUNNION MDA TUNING CAPACITOR
TB1-D51	P09- 98	A 393	TRAY 3 THERMISTER HI
TB1-D51	J13-C1	CC104	TRAY 3 THERMISTER HI
TB1-D52	P09- 80	A 382	TRAY 4 THERMISTER HI
TB1-D52	J14-B1	CC111	TRAY 4 THERMISTER HI
TB1-D56	SHLD A 113	A 113B	AGC SIGNAL 178 SHIELD RETURN
TB1-D56	SHLD A 134	A 134B	AGC SIGNAL 178 SHIELD RETURN
TB1-D56	SHLD CC173	CC173B	AGC SIGNAL 178 SHIELD RETURN
TB1-D56	SHLD CC332	CC332B	AGC SIGNAL 178 SHIELD RETURN
TB1-D57	P09-130	A 388R	OG CDU FAILURE INDICATION
TB1-D57	J16-N3	CC175R	OG CDU FAILURE INDICATION
TB1-D58	P09-108	A 388Y	0 VDC IMU
TB1-D58	J16-R2	CC175W	0 VDC IMU
TB1-D59	TB1-F74	AA 12	0 VDC IMU
TB1-D59	TB1-D24	A 567	0 VDC IMU
TB1-D59	J16-P2	CC176	0 VDC IMU
TB1-D59	TB1-C59	TB 32	0 VDC IMU
TB1-D60	P06-V	A 255R	IMU CONTROL HTR HI
TB1-D60	J17-P1	CC192R	IMU CONTROL HTR HI
TB1-D61	P06-W	A 255Y	IMU CONTROL HTR LO
TB1-D61	J17-N1	CC192W	IMU CONTROL HTR LO
TB1-D62	P06-Y	A 256	EMERG HTR CONT MODULE LO
TB1-D62	J09- 90	A 321R	EMERG HTR CONT MODULE LO
TB1-D63	J09- 76	A 321Y	IMU TEMP CONT K2 PIN 6
TB1-D63	J17-L1	CC189W	IMU TEMP CONT K2 PIN 6
TB1-D64	P09-127	A 403	IRIG TEMP (TELEMETRY)
TB1-D64	J17-F4	CC195	IRIG TEMP (TELEMETRY)
TB1-D65	P05- 65	A 228Y	TRACKER PREAMP OUTPUT LO

SIZE	CODE IDENT NO	
A	80230	1015087
SCALE-NONE	REV LTR E	SHEET 117 OF 146

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION	
TB1-D65	P13- 10	A 491Y	TRACKER PREAMP OUTPUT LO	
TB1-D66	P05- 64	A 228R	TRACKER PREAMP OUTPUT HI	
TB1-D66	P13- 2	A 491R	TRACKER PREAMP OUTPUT HI	
TB1-D67	SHLD A 228	A 228B	0 VDC OPTICS	
TB1-D67	SHLD A 491	A 491B	0 VDC OPTICS	
TB1-D67	TB1-F67	TB 34	0 VDC OPTICS	
TB1-D67	TB1-C67	TB 34	0 VDC OPTICS	
TB1-D68	P06-D*	A 245R	IMU PRESSURE MONITOR HI	
TB1-D68	P09- 79	A 381R	IMU PRESSURE MONITOR HI	
TB1-D68	J20-A4	CC286R	IMU PRESSURE MONITOR HI	
TB1-D69	P06-E*	A 245Y	IMU PRESSURE MONITOR LO	
TB1-D69	P09- 78	A 381Y	IMU PRESSURE MONITOR LO	
TB1-D69	J20-B4	CC286W	IMU PRESSURE MONITOR LO	
TB1-D70	J09- 15	A 296	0 VDC SPACECRAFT	
TB1-D70	P10- 9	A 408	0 VDC SPACECRAFT	
TB1-D70	J17-M3	CC200	0 VDC SPACECRAFT	
TB1-D71	TB1-D72	TB 38	CONDITION LAMP TEST	
TB1-D71	P01- 88	A 141	CONDITION LAMP TEST	
TB1-D71	J23- 48	A 562	CONDITION LAMP TEST	157T
TB1-D71	J17-P6	CC181	CONDITION LAMP TEST	
TB1-D72	J09- 73	A 318	CONDITION LAMP TEST	
TB1-D72	P10- 10	A 409	CONDITION LAMP TEST	
TB1-D72	J10- 2	A 477	CONDITION LAMP TEST	328
TB1-D72	TB1-D71	TB 38	CONDITION LAMP TEST	
TB1-D73	TB1-F73	AA 13	0 VDC IMU	
TB1-D73	TB1-G20	AA 14	0 VDC IMU	
TB1-D73	TB1-D74	TB 42	0 VDC IMU	
TB1-D73	P12-D	A 540	0 VDC IMU	
TB1-D73	TB1-B70	A 578	0 VDC IMU	
TB1-D74	TB1-H25	AA 15	0 VDC IMU	
TB1-D74	TB1-D75	TB 42	0 VDC IMU	
TB1-D74	P11-E	A 514	0 VDC IMU	

SIZE	CODE IDENT NO	
A	80230	1015087
SCALE-NONE	REV LTR E	SHEET 118 OF 146

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-D74	J17-S2	CC210	0 VDC IMU
TB1-D74	TB1-D73	TB 42	0 VDC IMU
TB1-D75	TB1-F75	A 583	0 VDC IMU
TB1-D75	TB1-K25	AA 16	0 VDC IMU
TB1-D75	P12-F	A 544	0 VDC IMU
TB1-D75	J17-S1	CC209	0 VDC IMU
TB1-D75	TB1-D74	TB 42	0 VDC IMU
TB1-D76	TB1-K67	A 586	0 VDC OPTICS
TB1-D76	TB1-D77	TB 44	0 VDC OPTICS
TB1-D76	P13- 30	A 594Y	0 VDC OPTICS
TB1-D76	TB1-B67	AA 9	0 VDC OPTICS
TB1-D76	J17-S6	CC213	0 VDC OPTICS
TB1-D77	TB1-F77	AA 17	0 VDC OPTICS
TB1-D77	TB1-D78	TB 44	0 VDC OPTICS
TB1-D77	P09- 5	A 335	0 VDC OPTICS
TB1-D77	J18-R6	CC240	0 VDC OPTICS
TB1-D77	TB1-D76	TB 44	0 VDC OPTICS
TB1-D78	P05- 69	A 230	0 VDC OPTICS
TB1-D78	P12-G	A 545	0 VDC OPTICS
TB1-D78	J19-R3	CC272	0 VDC OPTICS
TB1-D78	J20-P3	CC323	0 VDC OPTICS
TB1-D78	TB1-D77	TB 44	0 VDC OPTICS
TB1-F 5	TB1-F 6	TB 10	800 CPS 28 V 1 PCT LO OPTICS
TB1-F 5	J04- 14	A 62Y	800 CPS 28 V 1 PCT LO OPTICS
TB1-F 5	J05- 14	A 79Y	800 CPS 28 V 1 PCT LO OPTICS
TB1-F 5	J16-N5	CC161R	800 CPS 28 V 1 PCT LO OPTICS
TB1-F 6	TB1-F 7	TB 10	800 CPS 28 V 1 PCT LO OPTICS
TB1-F 6	P04-E2	A 208Y	800 CPS 28 V 1 PCT LO OPTICS
TB1-F 6	P05- 14	A 217G	800 CPS 28 V 1 PCT LO OPTICS
TB1-F 6	P05- 13	A 217Y	800 CPS 28 V 1 PCT LO OPTICS
TB1-F 6	TB1-F 5	TB 10	800 CPS 28 V 1 PCT LO OPTICS
TB1-F 7	P05- 55	A 220Y	800 CPS 28 V 1 PCT LO OPTICS

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A	80230	1015087
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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-F 7	P05- 70	A 231Y	800 CPS 28 V 1 PCT LO OPTICS
TB1-F 7	P05- 85	A 237Y	800 CPS 28 V 1 PCT LO OPTICS
TB1-F 7	TB1-F 6	TB 10	800 CPS 28 V 1 PCT LO OPTICS
TB1-F 8	J04- 2	A 63Y	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
TB1-F 8	J05- 2	A 80Y	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
TB1-F 8	P05- 77	A 233Y	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
TB1-F 8	J16-N6	CC162W	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
TB1-F10	P07-Y	A 266Y	X PIP ERROR LO
TB1-F10	J13-B1	CC 95W	X PIP ERROR LO
TB1-F11	P07-X	A 266R	X PIP ERROR HI
TB1-F11	J13-A1	CC 95R	X PIP ERROR HI
TB1-F12	SHLD A 205	A 205B	0 VDC IMU
TB1-F12	SHLD CC201	CC201B	0 VDC IMU
TB1-F12	TB1-G12	TB 14	0 VDC IMU
TB1-F12	TB1-D12	TB 14	0 VDC IMU
TB1-F13	P03-R	A 205R	PITCH-YAW RSVR S4
TB1-F13	J17-C2	CC201R	PITCH-YAW RSVR S4
TB1-F14	P02-D	A 180Y	COS AOG 16X S1
TB1-F14	J16-D7	CC148R	COS AOG 16X S1
TB1-F15	J03-100	A 56R	COS AOG 16X S3
TB1-F15	P02-C	A 180R	COS AOG 16X S3
TB1-F15	J16-F7	CC148W	COS AOG 16X S3
TB1-F16	J03- 86	A 56Y	COS AOG 16X TO CDU
TB1-F16	J16-F8	CC148L	COS AOG 16X TO CDU
TB1-F17	SHLD A 56	A 56B	0 VDC IMU
TB1-F17	SHLD A 180	A 180B	0 VDC IMU
TB1-F17	SHLD CC148	CC148B	0 VDC IMU
TB1-F17	TB1-G17	TB 15	0 VDC IMU
TB1-F17	TB1-D17	TB 15	0 VDC IMU
TB1-F18	P03-D*	A 197R	IG TORQUE MOTOR HI
TB1-F18	P03-G*	A 199R	IG TORQUE MOTOR HI
TB1-F18	P09- 92	A 389R	IG TORQUE MOTOR HI

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A	80230	1015087
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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-F18	J11-D6	CC 69R	IG TORQUE MOTOR HI
TB1-F19	P03-E*	A 197Y	IG TORQUE MOTOR RET
TB1-F19	P03-F*	A 199Y	IG TORQUE MOTOR RET
TB1-F19	P09- 91	A 389Y	IG TORQUE MOTOR RET
TB1-F19	J11-D5	CC 69W	IG TORQUE MOTOR RET
TB1-F21	P07-F	A 260R	X GYRO TORQUE -
TB1-F21	J13-G6	CC101R	X GYRO TORQUE -
TB1-F22	P07-E	A 260W	X GYRO TORQUE RET
TB1-F22	J13-F6	CC101W	X GYRO TORQUE RET
TB1-F23	P07-D	A 260L	X GYRO TORQUE +
TB1-F23	J13-D6	CC101L	X GYRO TORQUE +
TB1-F24	SHLD A 260	A 260B	0 VDC IMU
TB1-F24	SHLD CC101	CC101B	0 VDC IMU
TB1-F24	TB1-G24	TB 18	0 VDC IMU
TB1-F24	TB1-D24	TB 18	0 VDC IMU
TB1-F27	SHLD A 379	A 379B	0 VDC IMU
TB1-F27	SHLD A 380	A 380B	0 VDC IMU
TB1-F27	TB1-G27	TB 21	0 VDC IMU
TB1-F28	P03-B	A 193Y	Z GYRO ERROR SIG
TB1-F28	P09- 75	A 379Y	Z GYRO ERROR SIG
TB1-F28	J15-A1	CC130W	Z GYRO ERROR SIG
TB1-F29	J01-106	A 19R	IG CDU MDA TACH SIG
TB1-F29	J16-A1	CC136R	IG CDU MDA TACH SIG
TB1-F30	SHLD A 19	A 19B	IG CDU MDA INPUT RET
TB1-F30	J01- 92	A 19Y	IG CDU MDA INPUT RET
TB1-F30	J16-B1	CC136L	IG CDU MDA INPUT RET
TB1-F31	J01-105	A 19G	IG CDU MDA SLEW SIG
TB1-F31	J16-A2	CC136W	IG CDU MDA SLEW SIG
TB1-F32	SHLD A 59	A 59B	OG CDU ERROR SIG RET
TB1-F32	SHLD A 338	A 338B	OG CDU ERROR SIG RET
TB1-F32	TB1-G32	TB 22	OG CDU ERROR SIG RET
TB1-F32	TB1-G30	A 571	OG CDU ERROR SIG RET

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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-F33	J01-108	A 20R	IG CDU ENCODER PHASE 2
TB1-F33	J15-D1	CC117R	IG CDU ENCODER PHASE 2
TB1-F34	SHLD A 20	A 20B	IG CDU ENCODER COMMON
TB1-F34	J01- 94	A 20Y	IG CDU ENCODER COMMON
TB1-F34	J15-C1	CC117W	IG CDU ENCODER COMMON
TB1-F35	J01-107	A 20G	IG CDU ENCODER PHASE 1
TB1-F35	J15-C2	CC117L	IG CDU ENCODER PHASE 1
TB1-F36	SHLD A 276	A 276B	0 VDC OPTICS
TB1-F36	SHLD CC261	CC261B	0 VDC OPTICS
TB1-F36	TB1-G36	TB 23	0 VDC OPTICS
TB1-F36	TB1-D36	TB 23	0 VDC OPTICS
TB1-F37	P08- 33	A 276R	SCT TRUNNION TACH HI
TB1-F37	J19-A1	CC261R	SCT TRUNNION TACH HI
TB1-F38	P08- 34	A 276Y	SCT TRUNNION TACH LO
TB1-F38	J19-B1	CC261W	SCT TRUNNION TACH LO
TB1-F39	SHLD A 271	A 271B	0 VDC OPTICS
TB1-F39	SHLD CC259	CC259B	0 VDC OPTICS
TB1-F39	TB1-G39	TB 24	0 VDC OPTICS
TB1-F39	TB1-D39	TB 24	0 VDC OPTICS
TB1-F40	P08- 18	A 271Y	SCT TRUNNION 1X RSVR S2
TB1-F40	J19-C1	CC259W	SCT TRUNNION 1X RSVR S2
TB1-F41	P08- 19	A 271R	SCT TRUNNION 1X RSVR S4
TB1-F41	J19-C2	CC259R	SCT TRUNNION 1X RSVR S4
TB1-F42	SHLD A 269	A 269B	0 VDC OPTICS
TB1-F42	SHLD CC231	CC231B	0 VDC OPTICS
TB1-F42	TB1-G42	TB 25	0 VDC OPTICS
TB1-F42	TB1-D42	TB 25	0 VDC OPTICS
TB1-F43	P08- 10	A 269Y	SCT TRUNNION 1X RSVR P4
TB1-F43	J18-F5	CC231W	SCT TRUNNION 1X RSVR P4
TB1-F44	P08- 9	A 269R	SCT TRUNNION 1X RSVR P2
TB1-F44	J18-F4	CC231R	SCT TRUNNION 1X RSVR P2
TB1-F45	P05- 54	A 227Y	SXT SHAFT 1X RSVR S3

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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-F45	P08- 45	A 280Y	SCT SHAFT 1X RSVR P1
TB1-F46	P05- 53	A 227R	SXT SHAFT 1X RSVR S1
TB1-F46	P08- 44	A 280R	SCT SHAFT 1X RSVR P3
TB1-F47	SHLD A 227	A 227B	0 VDC OPTICS
TB1-F47	SHLD A 280	A 280B	0 VDC OPTICS
TB1-F47	TB1-G47	TB 26	0 VDC OPTICS
TB1-F47	TB1-D47	TB 26	0 VDC OPTICS
TB1-F48	J04- 35	A 69G	SHAFT CDU 1X RSVR S2
TB1-F48	J19-P3	CC264L	SHAFT CDU 1X RSVR S2
TB1-F49	J04- 45	A 69R	SHAFT CDU 1X RSVR S3
TB1-F49	J19-P4	CC264R	SHAFT CDU 1X RSVR S3
TB1-F50	J04- 34	A 69Y	SHAFT CDU 1X RSVR S1
TB1-F50	J19-P5	CC264W	SHAFT CDU 1X RSVR S1
TB1-F51	P09-116	A 401	TRAY 2 THERMISTER HI
TB1-F51	J12-C1	CC 87	TRAY 2 THERMISTER HI
TB1-F52	P09- 97	A 392	THERMISTER LO
TB1-F52	J14-B2	CC112	THERMISTER LO
TB1-F52	J23- 57	CC331	THERMISTER LO
TB1-F56	TB1-F76	AA 18	0 VDC OPTICS
TB1-F56	TB1-F57	TB 30	0 VDC OPTICS
TB1-F56	P13- 13	A 493Y	TRACKER X DRIVE BUFFERED LO
TB1-F56	P13- 14	A 494Y	TRACKER Y DRIVE BUFFERED LO
TB1-F56	J19-L6	CC270	0 VDC OPTICS
TB1-F57	P09- 56	A 362	0 VDC OPTICS
TB1-F57	P13- 7	A 495Y	TRACKER PREAMP OUTPUT BUFFERED LO
TB1-F57	TB1-F56	TB 30	0 VDC OPTICS
TB1-F58	P09- 40	A 353	SCT TRUNNION TACH FEEDBACK BUFFERED
TB1-F58	J19-M6	CC246	SCT TRUNNION TACH FEEDBACK BUFFERED
TB1-F59	J09- 75	A 320	IMU TEMP ALARM AMP PIN 14
TB1-F59	J17-G1	CC188	IMU TEMP ALARM AMP PIN 14
TB1-F60	J09- 74	A 319R	IMU TEMP ALARM AMP PIN 15
TB1-F60	J17-G2	CC187R	IMU TEMP ALARM AMP PIN 15

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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-F61	J09-105	A 319G	IMU TEMP ALARM BIAS RESISTOR
TB1-F61	J17-H1	CC187L	IMU TEMP ALARM BIAS RESISTOR
TB1-F62	J09- 92	A 319Y	IMU TEMP ALARM AMP PIN 5
TB1-F62	J17-H2	CC187W	IMU TEMP ALARM AMP PIN 5
TB1-F63	J09- 94	A 321G	TEMPERATURE CONTROLLER 0 VDC IMU
TB1-F63	J17-M1	CC189R	TEMPERATURE CONTROLLER 0 VDC IMU
TB1-F64	P09-106	A 396	ACCEL TEMP (TELEMETRY)
TB1-F64	J17-F5	CC194	ACCEL TEMP (TELEMETRY)
T31-F65	P13- 23	A 496Y	TRACKER Y ERROR LO
TB1-F65	J20-D7	CC275W	TRACKER Y ERROR LO
TB1-F66	P13- 31	A 496R	TRACKER Y ERROR HI
TB1-F66	J20-D6	CC275R	TRACKER Y ERROR HI
TB1-F67	SHLD A 302	A 302B	0 VDC OPTICS
TB1-F67	SHLD A 496	A 496B	0 VDC OPTICS
TB1-F67	TB1-G67	TB 34	0 VDC OPTICS
TB1-F67	TB1-D67	TB 34	0 VDC OPTICS
TB1-F68	J09- 34	A 302R	SCT TRUNNION TRACKER MODE INPUT HI
TB1-F68	J19-D3	CC262R	SCT TRUNNION TRACKER MODE INPUT HI
TB1-F69	J09- 35	A 302Y	SCT TRUNNION TRACKER MODE INPUT LO
TB1-F69	J19-D2	CC262W	SCT TRUNNION TRACKER MODE INPUT LO
TB1-F70	P09- 65	A 369R	+2.5 VDC CONDITIONING LO
TB1-F70	J20-F1	CC309W	+2.5 VDC CONDITIONING LO
TB1-F71	P09- 81	A 369Y	+2.5 VDC CONDITIONING HI
TB1-F71	J20-D1	CC309R	+2.5 VDC CONDITIONING HI
TB1-F72	P09- 83	A 383Y	0 VDC CONDITIONING
TB1-F72	J20-G1	CC294W	0 VDC CONDITIONING
TB1-F73	TB1-F74	TB 43	0 VDC IMU
TB1-F73	P11-F	A 515	0 VDC IMU
TB1-F73	TB1-C70	A 577	0 VDC IMU
TB1-F73	TB1-D73	AA 13	0 VDC IMU
TB1-F73	J20-K1	CC321	0 VDC IMU
TB1-F74	TB1-H24	AA 19	0 VDC IMU

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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-F74	TB1-F75	TB 43	0 VDC IMU
TB1-F74	P12-E	A 541	0 VDC IMU
TB1-F74	TB1-D59	AA 12	0 VDC IMU
TB1-F74	TB1-F73	TB 43	0 VDC IMU
TB1-F75	P11-D	A 511	0 VDC IMU
TB1-F75	TB1-D75	A 583	0 VDC IMU
TB1-F75	J16-R2	CC177	0 VDC IMU
TB1-F75	J20-H1	CC320	0 VDC IMU
TB1-F75	TB1-F74	TB 43	0 VDC IMU
TB1-F76	TB1-F77	TB 45	0 VDC OPTICS
TB1-F76	J09- 83	A 593	0 VDC OPTICS
TB1-F76	TB1-F56	AA 18	0 VDC OPTICS
TB1-F76	J17-R6	CC208	0 VDC OPTICS
TB1-F77	TB1-F78	TB 45	0 VDC OPTICS
TB1-F77	J09- 1	A 285	0 VDC OPTICS
TB1-F77	TB1-D77	AA 17	0 VDC OPTICS
TB1-F77	J18-R4	CC241	0 VDC OPTICS
TB1-F77	TB1-F76	TB 45	0 VDC OPTICS
TB1-F78	P11-G	A 517	0 VDC OPTICS
TB1-F78	J19-R1	CC271	0 VDC OPTICS
TB1-F78	J20-P4	CC324	0 VDC OPTICS
TB1-F78	TB1-F77	TB 45	0 VDC OPTICS
TB1-G 1	TB1-H 1	TB 4	25.6 KC HI IMU
TB1-G 1	J01- 50	A 14R	25.6 KC HI IMU
TB1-G 1	J02- 50	A 34R	25.6 KC HI IMU
TB1-G 1	J12-N4	CC 83R	25.6 KC HI IMU
TB1-G 2	TB1-H 2	TB 5	0 VDC IMU
TB1-G 2	J01- 60	A 14Y	25.6 KC LO IMU
TB1-G 2	J02- 60	A 34Y	25.6 KC LO IMU
TB1-G 2	J12-P5	CC 83W	25.6 KC LO IMU
TB1-G 3	J06- 24	A 104Y	ATTITUDE CONTROL RELAY CONTROL
TB1-G 3	P01- 24	A 128Y	ATTITUDE CONTROL RELAY CONTROL

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-G 3	J22- 42	CC325W	ATTITUDE CONTROL RELAY CONTROL
TB1-G 4	SHLD A 128	A 128B	STRUCTURE GROUND
TB1-G 4	TB1-G 8	AA 20	STRUCTURE GROUND
TB1-G 4	SHLD CC325	CC325B	STRUCTURE GROUND
TB1-G 4	TB1-H 4	TB 7	STRUCTURE GROUND
TB1-G 5	P01- 69	A 128R	LOCK CDU RELAY CONTROL
TB1-G 5	J15-53	CC128W	LOCK CDU RELAY CONTROL
TB1-G 5	J22- 67	CC325R	LOCK CDU RELAY CONTROL
TB1-G 6	TB1-G 7	TB 11	+28 VDC IMU
TB1-G 6	J01- 16	A 7	+28 VDC IMU
TB1-G 6	J02- 16	A 27	+28 VDC IMU
TB1-G 6	J03- 16	A 47	+28 VDC IMU
TB1-G 6	J13-56	CC103	+28 VDC IMU
TB1-G 7	P01- 7	A 125	+28 VDC IMU
TB1-G 7	P03-H*	A 201	+28 VDC IMU
TB1-G 7	J20-L1	CC306	+28 VDC IMU
TB1-G 7	TB1-G 6	TB 11	+28 VDC IMU
TB1-G 8	TB1-G 9	TB 13	STRUCTURE GROUND
TB1-G 8	J06- 91	A 117	STRUCTURE GROUND
TB1-G 8	P01- 84	A 140	STRUCTURE GROUND
TB1-G 8	J08- 29	A 150	STRUCTURE GROUND
TB1-G 8	TB1-G 4	AA 20	STRUCTURE GROUND
TB1-G 9	TB1-G10	TB 13	STRUCTURE GROUND
TB1-G 9	J01- 41	A 13	STRUCTURE GROUND
TB1-G 9	J02- 41	A 33	STRUCTURE GROUND
TB1-G 9	TB1-G 8	TB 13	STRUCTURE GROUND
TB1-G10	TB1-G11	TB 13	STRUCTURE GROUND
TB1-G10	J03- 41	A 53	STRUCTURE GROUND
TB1-G10	J04- 41	A 70	STRUCTURE GROUND
TB1-G10	TB1-G 9	TB 13	STRUCTURE GROUND
TB1-G11	J05- 41	A 87	STRUCTURE GROUND
TB1-G11	P05- 1	A 210	STRUCTURE GROUND

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-G11	TB1-G10	TB 13	STRUCTURE GROUND
TB1-G12	SHLD A 204	A 204B	0 VDC IMU
TB1-G12	SHLD CC182	CC182B	0 VDC IMU
TB1-G12	TB1-H12	TB 14	0 VDC IMU
TB1-G12	TB1-F12	TB 14	0 VDC IMU
TB1-G13	P03-P	A 205Y	PITCH ERROR BODY AND BODY OFFSET AXIS LO
TB1-G13	J17-C1	CC201W	PITCH ERROR BODY AND BODY OFFSET AXIS LO
TB1-G14	P02-E	A 181R	SIN AOG 16X S2
TB1-G14	J16-D8	CC152W	SIN AOG 16X S2
TB1-G15	J03-101	A 57R	SIN AOG 16X S4
TB1-G15	P02-F	A 181Y	SIN AOG 16X S4
TB1-G15	J16-D9	CC152R	SIN AOG 16X S4
TB1-G16	J03- 87	A 57Y	SIN AOG 16X TO CDU
TB1-G16	J16-F9	CC152L	SIN AOG 16X TO CDU
TB1-G17	SHLD A 57	A 57B	0 VDC IMU
TB1-G17	SHLD A 181	A 181B	0 VDC IMU
TB1-G17	SHLD CC152	CC152B	0 VDC IMU
TB1-G17	TB1-H17	TB 15	0 VDC IMU
TB1-G17	TB1-F17	TB 15	0 VDC IMU
TB1-G18	J03- 32	A 50Y	OG CDU MDA OUTPUT
TB1-G18	J16-N2	CC154R	OG CDU MDA OUTPUT
TB1-G19	J03- 31	A 50G	OG CDU MDA OUTPUT
TB1-G19	J16-N1	CC154W	OG CDU MDA OUTPUT
TB1-G20	TB1-H20	TB 16	0 VDC IMU
TB1-G20	J03- 43	A 50R	0 VDC IMU
TB1-G20	TB1-D73	AA 14	0 VDC IMU
TB1-G21	P07-M	A 263R	Z PIP TORQUE -
TB1-G21	J14-P2	CC106R	Z PIP TORQUE -
TB1-G22	P07-L	A 263W	Z PIP TORQUE RET
TB1-G22	J14-P3	CC106W	Z PIP TORQUE RET
TB1-G23	P07-K	A 263L	Z PIP TORQUE +
TB1-G23	J14-P1	CC106L	Z PIP TORQUE +

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-G24	SHLD A 263	A 263B	0 VDC IMU
TB1-G24	TB1-G27	AA 21	0 VDC IMU
TB1-G24	SHLD CC106	CC106B	0 VDC IMU
TB1-G24	TB1-H24	TB 18	0 VDC IMU
TB1-G24	TB1-F24	TB 18	0 VDC IMU
TB1-G27	SHLD A 191	A 191B	0 VDC IMU
TB1-G27	SHLD A 193	A 193B	0 VDC IMU
TB1-G27	TB1-G24	AA 21	0 VDC IMU
TB1-G27	TB1-F27	TB 21	0 VDC IMU
TB1-G28	P03-A	A 191Y	X GYRO ERROR SIG
TB1-G28	P09- 76	A 380Y	X GYRO ERROR SIG
TB1-G28	J15-B1	CC130L	X GYRO ERROR SIG
TB1-G29	J03- 89	A 58	OG CDU 16X RSVR LOAD
TB1-G29	J16-C7	CC158	OG CDU 16X RSVR LOAD
TB1-G30	TB1-F32	A 571	OG CDU ERROR SIG RET
TB1-G30	J03- 90	A 59Y	OG CDU ERROR SIG RET
TB1-G30	P09- 31	A 338Y	OG CDU ERROR SIG RET
TB1-G30	J16-D6	CC147W	OG CDU ERROR SIG RET
TB1-G30	J17-B2	CC204R	OG CDU ERROR SIG RET
TB1-G31	J03-104	A 59R	OG CDU 16X ERROR SIG
TB1-G31	P09- 9	A 338R	OG CDU 16X ERROR SIG
TB1-G31	J16-C5	CC147R	OG CDU 16X ERROR SIG
TB1-G31	J17-A2	CC204W	OG CDU 16X ERROR SIG
TB1-G32	SHLD A 52	A 52B	OG CDU ERROR SIG RET
TB1-G32	SHLD A 145	A 145B	OG CDU ERROR SIG RET
TB1-G32	SHLD A 365	A 365B	OG CDU ERROR SIG RET
TB1-G32	SHLD CC204	CC204B	OG CDU ERROR SIG RET
TB1-G32	TB1-F32	TB 22	OG CDU ERROR SIG RET
TB1-G33	J03- 35	A 52R	OG CDU 1X ERROR SIG
TB1-G33	P01- 96	A 145R	OG CDU 1X ERROR SIG
TB1-G33	P09- 77	A 365R	OG CDU 1X ERROR SIG
TB1-G33	J11-A3	CC 64W	OG CDU 1X ERROR SIG

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-G33	J16-C6	CC146W	OG CDU 1X ERROR SIG
TB1-G34	J03- 45	A 52Y	OG CDU ERROR SIG RET
TB1-G34	P01- 97	A 145Y	OG CDU ERROR SIG RET
TB1-G34	P09- 61	A 365Y	OG CDU ERROR SIG RET
TB1-G34	J11-B3	CC 64R	OG CDU ERROR SIG RET
TB1-G34	J16-D6	CC146R	OG CDU ERROR SIG RET
TB1-G35	J03- 34	A 51	OG CDU 1X RSVR LOAD
TB1-G35	J16-F6	CC157	OG CDU 1X RSVR LOAD
TB1-G36	SHLD A 77	A 77B	0 VDC OPTICS
TB1-G36	SHLD CC269	CC269B	0 VDC OPTICS
TB1-G36	TB1-H36	TB 23	0 VDC OPTICS
TB1-G36	TB1-F36	TB 23	0 VDC OPTICS
TB1-G37	J04-106	A 77R	SHAFT CDU TACH HI
TB1-G37	J19-A9	CC269R	SHAFT CDU TACH HI
TB1-G38	J04- 92	A 77Y	SHAFT CDU TACH LO
TB1-G38	J19-B9	CC269W	SHAFT CDU TACH LO
TB1-G39	SHLD A 76	A 76B	0 VDC OPTICS
TB1-G39	SHLD CC267	CC267B	0 VDC OPTICS
TB1-G39	TB1-H39	TB 24	0 VDC OPTICS
TB1-G39	TB1-F39	TB 24	0 VDC OPTICS
TB1-G40	J04-104	A 76Y	SHAFT CDU 16X RSVR S2
TB1-G40	J19-B8	CC267W	SHAFT CDU 16X RSVR S2
TB1-G41	J04- 90	A 76R	SHAFT CDU 16X RSVR S3
TB1-G41	J19-B7	CC267R	SHAFT CDU 16X RSVR S3
TB1-G42	SHLD A 270	A 270B	0 VDC OPTICS
TB1-G42	SHLD CC221	CC221B	0 VDC OPTICS
TB1-G42	TB1-H42	TB 25	0 VDC OPTICS
TB1-G42	TB1-F42	TB 25	0 VDC OPTICS
TB1-G43	P08- 12	A 270R	SCT TRUNNION 1X RSVR P3
TB1-G43	J18-D4	CC221R	SCT TRUNNION 1X RSVR P3
TB1-G44	P08- 13	A 270Y	SCT TRUNNION 1X RSVR P1
TB1-G44	J18-D3	CC221W	SCT TRUNNION 1X RSVR P1

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-G45	P05- 51	A 226Y	SXT SHAFT 1X RSVR S4
TB1-G45	P08- 42	A 279Y	SCT SHAFT 1X RSVR P4
TB1-G46	P05- 52	A 226R	SXT SHAFT 1X RSVR S2
TB1-G46	P08- 41	A 279R	SCT SHAFT 1X RSVR P2
TB1-G47	SHLD A 226	A 226B	0 VDC OPTICS
TB1-G47	SHLD A 279	A 279B	0 VDC OPTICS
TB1-G47	TB1-H47	TB 26	0 VDC OPTICS
TB1-G47	TB1-F47	TB 26	0 VDC OPTICS
TB1-G48	P05- 36	A 214Y	SXT SHAFT MOTOR PHASE 1
TB1-G48	J18-T5	CC238W	SXT SHAFT MOTOR PHASE 1
TB1-G49	P05- 8	A 214R	SXT SHAFT MOTOR PHASE 2
TB1-G49	J18-S5	CC238R	SXT SHAFT MOTOR PHASE 2
TB1-G50	TB1-H50	TB 28	0 VDC OPTICS
TB1-G50	P05- 16	A 212G	0 VDC OPTICS
TB1-G50	P05- 19	A 214G	0 VDC OPTICS
TB1-G50	P12-G	A 547	0 VDC OPTICS
TB1-G51	P05- 5	A 212R	SXT TRUNNION MOTOR PHASE 2
TB1-G51	J18-S6	CC232R	SXT TRUNNION MOTOR PHASE 2
TB1-G52	P05- 33	A 212Y	SXT TRUNNION MOTOR PHASE 1
TB1-G52	J18-T6	CC232W	SXT TRUNNION MOTOR PHASE 1
TB1-G53	TB1-H53	TB 29	0 VDC OPTICS
TB1-G53	P12-G	A 546	0 VDC OPTICS
TB1-G53	J16-R6	CC179	0 VDC OPTICS
TB1-G54	P09- 55	A 361	TRACKER Y DRIVE BUFFERED HI
TB1-G54	P13- 6	A 494R	TRACKER Y DRIVE BUFFERED HI
TB1-G54	J18-C8	CC227	TRACKER Y DRIVE BUFFERED HI
TB1-G55	P09- 54	A 360	TRACKER X DRIVE BUFFERED HI
TB1-G55	P13- 5	A 493R	TRACKER X DRIVE BUFFERED HI
TB1-G55	J18-C7	CC226	TRACKER X DRIVE BUFFERED HI
TB1-G56	P09- 71	A 375	TRACKER PREAMP OUTPUT BUFFERED HI
TB1-G56	P13- 15	A 495R	TRACKER PREAMP OUTPUT BUFFERED HI
TB1-G56	J18-C9	CC228	TRACKER PREAMP OUTPUT BUFFERED HI

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION
TB1-G57	P09- 19	A 342	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
TB1-G57	J19-M1	CC243	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
TB1-G58	P09- 39	A 352	SHAFT CDU TACH FEEDBACK SIG BUFFERED
TB1-G58	J19-M4	CC248	SHAFT CDU TACH FEEDBACK SIG BUFFERED
TB1-G59	J09-100	A 325R	IMU HTR CURRENT AMP PIN 5
TB1-G59	J17-N6	CC186K	IMU HTR CURRENT AMP PIN 5
TB1-G60	J09- 88	A 325N	IMU TEMP CONT K2 PIN 5
TB1-G60	J17-N5	CC186L	IMU TEMP CONT K2 PIN 5
TB1-G61	P06-P	A 253Y	ACCEL TEMP IND SENSOR RET
TB1-G61	J17-D5	CC185W	ACCEL TEMP IND SENSOR RET
TB1-G62	J09- 98	A 329N	ACCEL BRIDGE AMP PIN 6
TB1-G62	J17-F7	CC185K	ACCEL BRIDGE AMP PIN 6
TB1-G63	J09-104	A 329R	ACCEL ZERO DEVIATION CHECK
TB1-G63	J17-D7	CC185R	ACCEL ZERO DEVIATION CHECK
TB1-G64	J09-103	A 329G	IMU IMU TEMP CONT +5 DEG GAIN CHECK
TB1-G64	J17-D6	CC185L	IMU IMU TEMP CONT +5 DEG GAIN CHECK
TB1-G65	P13- 24	A 497Y	TRACKER X ERROR LO
TB1-G65	J20-C7	CC274W	TRACKER X ERROR LO
TB1-G66	P13- 32	A 497R	TRACKER X ERROR HI
TB1-G66	J20-C6	CC274R	TRACKER X ERROR HI
TB1-G67	SHLD A 305	A 305B	0 VDC OPTICS
TB1-G67	SHLD A 497	A 497B	0 VDC OPTICS
TB1-G67	SHLD CC281	CC281B	0 VDC OPTICS
TB1-G67	TB1-H67	TB 34	0 VDC OPTICS
TB1-G67	TB1-F67	TB 34	0 VDC OPTICS
TB1-G68	J09- 43	A 305R	PHOTOMETER MARK REJECT HI
TB1-G68	J20-F6	CC281R	PHOTOMETER MARK REJECT HI
TB1-G69	J09- 60	A 305Y	PHOTOMETER MARK REJECT LO
TB1-G69	J20-F7	CC281W	PHOTOMETER MARK REJECT LO
TB1-G70	TB1-H70	TB 37	STRUCTURE GROUND
TB1-G70	P06-G	A 249	STRUCTURE GROUND
TB1-G70	P08- 59	A 284	STRUCTURE GROUND

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION	
TB1-G70	P11-L	A 527	STRUCTURE GROUND	
TB1-G70	J17-L6	CC207	STRUCTURE GROUND	
TB1-G71	P06-D	A 244	+28 VDC IMU	
TB1-G71	P09- 49	A 359	+28 VDC IMU	
TB1-G71	J20-L1	CC307	+28 VDC IMU	
TB1-G71	J20-L2	CC308	+28 VDC IMU	
TB1-G72	P09- 82	A 383R	+20 VDC CONDITIONING	
TB1-G72	J20-G2	CC294R	+20 VDC CONDITIONING	
TB1-G73	P09- 46	A 356	+3 VDC AGC	
TB1-G73	J20-F4	CC293	+3 VDC AGC	
TB1-G73	J24- 6	CC335	+3 VDC AGC	175
TB1-G74	P09- 62	A 366	+13 VDC AGC	
TB1-G74	J20-D4	CC292	+13 VDC AGC	
TB1-G74	J24- 1	CC333	+13 VDC AGC	176
TB1-G75	P12-M	A 554	+28 VDC STBY BUSS B	
TB1-G75	P12-M	A 555	+28 VDC STBY BUSS B	
TB1-G75	J20-T4	CC300	+28 VDC STBY BUSS B	
TB1-G75	J20-S4	CC317	+28 VDC STBY BUSS B	
TB1-G76	P11-M	A 528	+28 VDC STBY BUSS A	
TB1-G76	P11-M	A 529	+28 VDC STBY BUSS A	
TB1-G76	J20-T3	CC299	+28 VDC STBY BUSS A	
TB1-G76	J20-S3	CC316	+28 VDC STBY BUSS A	
TB1-G77	P12-H	A 548	+28 VDC OPTICS BUSS B	
TB1-G77	P12-H	A 549	+28 VDC OPTICS BUSS B	
TB1-G77	J20-S6	CC305	+28 VDC OPTICS BUSS B	
TB1-G77	J20-R6	CC319	+28 VDC OPTICS BUSS B	
TB1-G78	P11-H	A 520	+28 VDC OPTICS BUSS A	
TB1-G78	P11-H	A 521	+28 VDC OPTICS BUSS A	
TB1-G78	J20-T5	CC302	+28 VDC OPTICS BUSS A	
TB1-G78	J20-R5	CC318	+28 VDC OPTICS BUSS A	
TB1-H 1	J03- 50	A 54R	25.6 KC HI IMU	
TB1-H 1	P09-105	A 387R	25.6 KC HI IMU	

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          FROM           TO        COND NO  C I R C U I T   F U N C T I O N

(CONT.)         56TB1       PSA TERMINAL BOARD

          TB1-H 1       TB1-G 1    TB   4 25.6 KC HI IMU
          TB1-H 2       J03- 60    A  54Y 25.6 KC LO IMU
          TB1-H 2       P09- 87    A 387Y 25.6 KC LO IMU
          TB1-H 2       TB1-G 2    TB   5 0 VDC IMU
          TB1-H 3       P01- 57    A 128G ENTRY RELAY CONTROL
          TB1-H 3       J16-M1     CC159W ENTRY RELAY CONTROL
          TB1-H 4       SHLD A 104 A 104B STRUCTURE GROUND
          TB1-H 4       SHLD CC128 CC128B STRUCTURE GROUND
          TB1-H 4       TB1-K 4    TB   7 STRUCTURE GROUND
          TB1-H 4       J11-L4     CC 80  STRUCTURE GROUND
          TB1-H 4       TB1-G 4    TB   7 STRUCTURE GROUND
          TB1-H 5       P01-  5    A 124R FINE ALIGN RELAY CONTROL
          TB1-H 5       J15-H4     CC128R FINE ALIGN RELAY CONTROL
          TB1-H 5       J22- 68    CC325L FINE ALIGN RELAY CONTROL
          TB1-H 7       P02-S      A 187Y 3200 CPS 2 V LO
          TB1-H 7       J11-M2     CC 67R 3200 CPS 2 V LO
          TB1-H 7       J11-L2     CC 67W 3200 CPS 2 V LO
          TB1-H 8       P02-U      A 188Y 3200 CPS 2 V FEEDBACK LO
          TB1-H 8       P09- 88    A 374Y 3200 CPS 2 V FEEDBACK LO
          TB1-H 8       J11-G3     CC 73W 3200 CPS 2 V FEEDBACK LO
          TB1-H 9       P02-H      A 183Y COS AMG 16X S1
          TB1-H 9       J16-H3     CC164R CCS AMG 16X S1
          TB1-H10       J02-100    A  36R COS AMG 16X S3
          TB1-H10       P02-G      A 183R COS AMG 16X S3
          TB1-H10       J16-G3     CC164W COS AMG 16X S3
          TB1-H11       J02- 86    A  36Y COS AMG 16X TO CDU
          TB1-H11       J16-G4     CC164L COS AMG 16X TO CDU
          TB1-H12       SHLD A  36 A  36B 0 VDC IMU
          TB1-H12       SHLD A 183 A 183B 0 VDC IMU
          TB1-H12       SHLD A 188 A 188B 0 VDC IMU
          TB1-H12       TB1-K17    AA 22  0 VDC IMU
          TB1-H12       SHLD CC164 CC164B 0 VDC IMU
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          FROM           TO        COND NO  C I R C U I T   F U N C T I O N

(CONT.)         56TB1       PSA TERMINAL BOARD

          TB1-H12       TB1-K12    TB 14  0 VDC IMU
          TB1-H12       TB1-G12    TB 14  0 VDC IMU
          TB1-H13       P03-N      A 204R PITCH YAW RSVR S3
          TB1-H13       J17-D2     CC182R PITCH YAW RSVR S3
          TB1-H14       P02-X      A 189Y COS AIG 16X S1
          TB1-H14       J16-H1     CC163R COS AIG 16X S1
          TB1-H15       J01-100    A  16R COS AIG 16X S3
          TB1-H15       P02-W      A 189R COS AIG 16X S3
          TB1-H15       J16-G1     CC163W COS AIG 16X S3
          TB1-H16       J01- 86    A  16Y COS AIG 16X TO CDU
          TB1-H16       J16-G2     CC163L COS AIG 16X TO CDU
          TB1-H17       SHLD A  16 A  16B 0 VDC IMU
          TB1-H17       SHLD A 189 A 189B 0 VDC IMU
          TB1-H17       TB1-K24    AA 23  0 VDC IMU
          TB1-H17       SHLD CC163 CC163B 0 VDC IMU
          TB1-H17       TB1-K17    TB 15  0 VDC IMU
          TB1-H17       TB1-G17    TB 15  0 VDC IMU
          TB1-H18       J02- 32    A  30Y MG CDU MDA OUTPUT
          TB1-H18       J16-P3     CC142R MG CDU MDA OUTPUT
          TB1-H19       J02- 31    A  30G MG CDU MDA OUTPUT
          TB1-H19       J16-R3     CC142W MG CDU MDA OUTPUT
          TB1-H20       TB1-K20    TB 16  0 VDC IMU
          TB1-H20       J02- 43    A  30R 0 VDC IMU
          TB1-H20       TB1-G20    TB 16  0 VDC IMU
          TB1-H21       P07-R      A 264R Y PIP TORQUE -
          TB1-H21       J13-N3     CC 99R Y PIP TORQUE -
          TB1-H22       P07-P      A 264W Y PIP TORQUE RET
          TB1-H22       J13-M3     CC 99W Y PIP TORQUE RET
          TB1-H23       P07-N      A 264L Y PIP TORQUE +
          TB1-H23       J13-L3     CC 99L Y PIP TORQUE +
          TB1-H24       SHLD A 264 A 264B 0 VDC IMU
          TB1-H24       SHLD CC 99 CC 99B 0 VDC IMU
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          FROM           TO        COND NO  C I R C U I T   F U N C T I O N

(CONT.)         56TB1       PSA TERMINAL BOARD

          TB1-H24       TB1-K24    TB 18  0 VDC IMU
          TB1-H24       TB1-F74    AA 19  0 VDC IMU
          TB1-H24       TB1-G24    TB 18  0 VDC IMU
          TB1-H25       TB1-H26    TB 19  0 VDC IMU
          TB1-H25       TB1-D74    AA 15  0 VDC IMU
          TB1-H25       J14-R6     CC113  0 VDC IMU
          TB1-H26       TB1-K26    A 570  0 VDC IMU
          TB1-H26       P06-E      A 246  0 VDC IMU
          TB1-H26       J11-R5     CC 76  0 VDC IMU
          TB1-H26       TB1-H25    TB 19  0 VDC IMU
          TB1-H28       SHLD A 203 A 203B MG CDU ERROR SIG RET
          TB1-H28       P03-K      A 203R MG CDU ERROR SIG RET
          TB1-H28       J11-B2     CC 63W MG CDU ERROR SIG RET
          TB1-H29       P03-L      A 203Y MG CDU ATTITUDE STEERING ERROR
          TB1-H29       J11-C2     CC 63R MG CDU ATTITUDE STEERING ERROR
          TB1-H30       SHLD A  38 A  38B MG CDU ERROR SIG RET
          TB1-H30       TB1-H32    AA 24  MG CDU ERROR SIG RET
          TB1-H30       J02- 90    A  38Y MG CDU ERROR SIG RET
          TB1-H30       J16-D4     CC140R MG CDU ERROR SIG RET
          TB1-H31       J02-104    A  38R MG CDU 16X ERROR SIG
          TB1-H31       J16-C3     CC140W MG CDU 16X ERROR SIG
          TB1-H32       SHLD A  32 A  32B MG CDU ERROR SIG RET
          TB1-H32       SHLD A 139 A 139B MG CDU ERROR SIG RET
          TB1-H32       SHLD A 355 A 355B MG CDU ERROR SIG RET
          TB1-H32       TB1-H30    AA 24  MG CDU ERROR SIG RET
          TB1-H33       J02- 35    A  32R MG CDU 1X ERROR SIG
          TB1-H33       P01- 82    A 139R MG CDU 1X ERROR SIG
          TB1-H33       P09- 60    A 355R MG CDU 1X ERROR SIG
          TB1-H33       J11-A2     CC 62W MG CDU 1X ERROR SIG
          TB1-H33       J16-C4     CC139W MG CDU 1X ERROR SIG
          TB1-H34       J02- 45    A  32Y MG CDU ERROR SIG RET
          TB1-H34       P01- 83    A 139Y MG CDU ERROR SIG RET
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          FROM           TO        COND NO  C I R C U I T   F U N C T I O N

(CONT.)         56TB1       PSA TERMINAL BOARD

          TB1-H34       P09- 43    A 355Y MG CDU ERROR SIG RET
          TB1-H34       J11-B2     CC 62R MG CDU ERROR SIG RET
          TB1-H34       J16-D4     CC139R MG CDU ERROR SIG RET
          TB1-H35       J02- 34    A  31  MG CDU 1X RSVR LOAD
          TB1-H35       J16-F4     CC156  MG CDU 1X RSVR LOAD
          TB1-H36       SHLD A 219 A 219B 0 VDC OPTICS
          TB1-H36       SHLD CC239 CC239B 0 VDC OPTICS
          TB1-H36       TB1-K36    TB 23  0 VDC OPTICS
          TB1-H36       TB1-G36    TB 23  0 VDC OPTICS
          TB1-H37       P05- 23    A 219R SXT SHAFT TACH HI
          TB1-H37       J18-A7     CC239R SXT SHAFT TACH HI
          TB1-H38       P05- 24    A 219Y SXT SHAFT TACH LO
          TB1-H38       J18-B7     CC239W SXT SHAFT TACH LO
          TB1-H39       SHLD A  66 A  66B 0 VDC OPTICS
          TB1-H39       TB1-K36    AA 25  0 VDC OPTICS
          TB1-H39       SHLD CC263 CC263B 0 VDC OPTICS
          TB1-H39       TB1-K39    TB 24  0 VDC OPTICS
          TB1-H39       TB1-G39    TB 24  0 VDC OPTICS
          TB1-H40       J04- 11    A  66Y SHAFT CDU 1/2X RSVR P1
          TB1-H40       J19-C8     CC263W SHAFT CDU 1/2X RSVR P1
          TB1-H41       J04- 25    A  66R SHAFT CDU 1/2X RSVR P3
          TB1-H41       J19-C9     CC263R SHAFT CDU 1/2X RSVR P3
          TB1-H42       SHLD A  89 A  89B 0 VDC OPTICS
          TB1-H42       TB1-K39    AA 26  0 VDC OPTICS
          TB1-H42       SHLD CC254 CC254B 0 VDC OPTICS
          TB1-H42       TB1-K42    TB 25  0 VDC OPTICS
          TB1-H42       TB1-G42    TB 25  0 VDC OPTICS
          TB1-H43       J05- 66    A  89Y TRUNNION CDU 1/2X RSVR S4
          TB1-H43       J19-K2     CC254W TRUNNION CDU 1/2X RSVR S4
          TB1-H44       J05- 56    A  89R TRUNNION CDU 1/2X RSVR S2
          TB1-H44       J19-K1     CC254R TRUNNION CDU 1/2X RSVR S2
          TB1-H45       J04- 20    A  64R SHAFT CDU 1X RSVR P3
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          FROM         TO        COND NO  C I R C U I T  F U N C T I O N

(CONT.)          56TB1       PSA TERMINAL BOARD

              TB1-H45      J19-K5      CC265R SHAFT CDU 1X RSVR P3
              TB1-H46      J04-  6     A  64Y SHAFT CDU 1X RSVR P1
              TB1-H46      J19-K4      CC265W SHAFT CDU 1X RSVR P1
              TB1-H47      SHLD A   64 A  64B 0 VDC OPTICS
              TB1-H47      TB1-K42     AA 27  0 VDC OPTICS
              TB1-H47      SHLD CC265  CC265B 0 VDC OPTICS
              TB1-H47      TB1-K47     TB 26  0 VDC OPTICS
              TB1-H47      TB1-G47     TB 26  0 VDC OPTICS
              TB1-H48      J04- 31     A  68Y SHAFT CDU MOTOR PHASE 1
              TB1-H48      J19-S2      CC268W SHAFT CDU MOTOR PHASE 1
              TB1-H49      J04- 32     A  68R SHAFT CDU MOTOR PHASE 2
              TB1-H49      J19-T2      CC268R SHAFT CDU MOTOR PHASE 2
              TB1-H50      TB1-K50     TB 28  0 VDC OPTICS
              TB1-H50      J04- 43     A  68G 0 VDC OPTICS
              TB1-H50      P08-  7     A 268G 0 VDC OPTICS
              TB1-H50      TB1-G50     TB 28  0 VDC OPTICS
              TB1-H51      P08-  5     A 268R SCT SHAFT MOTOR PHASE 2
              TB1-H51      J18-S4      CC236R SCT SHAFT MOTOR PHASE 2
              TB1-H52      P08-  6     A 268Y SCT SHAFT MOTOR PHASE 1
              TB1-H52      J18-T4      CC236W SCT SHAFT MOTOR PHASE 1
              TB1-H53      TB1-K53     TB 29  0 VDC OPTICS
              TB1-H53      J12-R6      CC 94  0 VDC OPTICS
              TB1-H53      TB1-G53     TB 29  0 VDC OPTICS
              TB1-H54      P09- 38     A 351  SCT SHAFT 1X ERROR SIG BUFFERED
              TB1-H54      J18-M5      CC217  SCT SHAFT 1X ERROR SIG BUFFERED
              TB1-H55      P09- 21     A 344  SXT TRUNNION TACH FEEDBACK BUFFERED
              TB1-H55      J18-M2      CC220  SXT TRUNNION TACH FEEDBACK BUFFERED
              TB1-H56      P09- 73     A 377  SXT TRUNNION MDA INPUT BUFFERED
              TB1-H56      J18-M1      CC222  SXT TRUNNION MDA INPUT BUFFERED
              TB1-H57      P09- 22     A 345  TRUNNION CDU TACH FEEDBACK BUFFERED
              TB1-H57      J19-M2      CC244  TRUNNION CDU TACH FEEDBACK BUFFERED
              TB1-H58      P09- 20     A 343  SHAFT CDU 16X ERROR SIG BUFFERED
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          FROM         TO        COND NO  C I R C U I T  F U N C T I O N

(CONT.)          56TB1       PSA TERMINAL BOARD

              TB1-H58      J19-M3      CC242  SHAFT CDU 16X ERROR SIG BUFFERED
              TB1-H59      J09-101     A 325Y IMU TEMP CONT K1 PIN 3
              TB1-H59      J17-M5      CC186W IMU TEMP CONT K1 PIN 3
              TB1-H60      J09- 87     A 325G IMU TEMP CONT AMP PIN 5
              TB1-H60      J17-M6      CC186R IMU TEMP CONT AMP PIN 5
              TB1-H61      P06-K       A 251  IMU TEMP SENSOR COM
              TB1-H61      J17-M2      CC199  IMU TEMP SENSOR COM
              TB1-H62      P06-N       A 253R ACCEL INDICATING SENSOR HI
              TB1-H62      J09- 97     A 329Y ACCEL INDICATING SENSOR HI
              TB1-H63      P06-M       A 252R IRIG TEMP CONT SENSOR HI
              TB1-H63      J17-B6      CC191R IRIG TEMP CONT SENSOR HI
              TB1-H64      P06-L       A 252Y IRIG TEMP CONT SENSOR RET
              TB1-H64      J17-B5      CC191W IRIG TEMP CONT SENSOR RET
              TB1-H65      P05- 89     A 239Y STAR PRESENCE INPUT LO
              TB1-H65      J20-A8      CC277W STAR PRESENCE INPUT LO
              TB1-H66      P05- 88     A 239R STAR PRESENCE INPUT HI
              TB1-H66      J20-A7      CC277R STAR PRESENCE INPUT HI
              TB1-H67      SHLD A 239  A 239B 0 VDC OPTICS
              TB1-H67      SHLD A 291  A 291B 0 VDC OPTICS
              TB1-H67      TB1-K47     AA 28  0 VDC OPTICS
              TB1-H67      TB1-K67     TB 34  0 VDC OPTICS
              TB1-H67      TB1-G67     TB 34  0 VDC OPTICS
              TB1-H68      J09- 10     A 291R SHAFT HAND CONTROLLER OUTPUT HI
              TB1-H68      J19-D8      CC250R SHAFT HAND CONTROLLER OUTPUT HI
              TB1-H69      J09- 24     A 291Y SHAFT HAND CONTROLLER OUTPUT LO
              TB1-H69      J19-D7      CC250W SHAFT HAND CONTROLLER OUTPUT LO
              TB1-H70      TB1-K70     TB 37  STRUCTURE GROUND
              TB1-H70      J09- 91     A 326  STRUCTURE GROUND
              TB1-H70      P09- 10     A 339  STRUCTURE GROUND
              TB1-H70      P10-  1     A 406  STRUCTURE GROUND
              TB1-H70      TB1-G70     TB 37  STRUCTURE GROUND
              TB1-H71      J09- 71     A 317  +28 VDC OPTICS
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SIZE A	CODE IDENT NO 80230	1015087
SCALE-NONE	REV LTR E	SHEET 138 OF 146

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          FROM         TO        COND NO  C I R C U I T  F U N C T I O N

(CONT.)          56TB1       PSA TERMINAL BOARD

              TB1-H71      P09-  6     A 336  +28 VDC OPTICS
              TB1-H71      P10- 14     A 412  +28 VDC OPTICS
              TB1-H71      J19-T5      CC247  +28 VDC OPTICS
              TB1-H71      J20-N6      CC279  +28 VDC OPTICS
              TB1-H72      P09- 47     A 357  +28 VDC STBY
              TB1-H72      J20-R3      CC301  +28 VDC STBY
              TB1-H73      P09- 63     A 367  0 VDC AGC
              TB1-H73      J20-G3      CC291  0 VDC AGC
              TB1-H73      J24-  3     CC334  0 VDC AGC                           177
              TB1-H74      P09- 64     A 368  +28 VDC AGC
              TB1-H74      J20-F5      CC289  +28 VDC AGC
              TB1-H74      J24- 11     CC290  +28 VDC AGC                         166
              TB1-H75      P12-C       A 536  +28 VDC IMU BUSS B
              TB1-H75      P12-C       A 537  +28 VDC IMU BUSS B
              TB1-H75      P12-C       A 538  +28 VDC IMU BUSS B
              TB1-H75      J20-S2      CC298  +28 VDC IMU BUSS B
              TB1-H75      J20-P2      CC315  +28 VDC IMU BUSS B
              TB1-H76      P11-C       A 508  +28 VDC IMU BUSS A
              TB1-H76      P11-C       A 509  +28 VDC IMU BUSS A
              TB1-H76      P11-C       A 510  +28 VDC IMU BUSS A
              TB1-H76      J20-S1      CC296  +28 VDC IMU BUSS A
              TB1-H76      J20-P1      CC313  +28 VDC IMU BUSS A
              TB1-H77      P12-H       A 550  +28 VDC OPTICS BUSS B
              TB1-H77      J20-T6      CC304  +28 VDC OPTICS BUSS B
              TB1-H78      P11-H       A 522  +28 VDC OPTICS BUSS A
              TB1-H78      J20-S5      CC303  +28 VDC OPTICS BUSS A
              TB1-K 1      J04- 50     A  71R 25.6 KC HI OPTICS
              TB1-K 1      J05- 50     A  88R 25.6 KC HI OPTICS
              TB1-K 1      P09-126     A 395R 25.6 KC HI OPTICS
              TB1-K 1      J12-P6      CC 82R 25.6 KC HI OPTICS
              TB1-K 2      J04- 60     A  71Y 25.6 KC LO OPTICS
              TB1-K 2      J05- 60     A  88Y 25.6 KC LO OPTICS
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SIZE A	CODE IDENT NO 80230	1015087
SCALE-NONE	REV LTR E	SHEET 139 OF 146

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          FROM         TO        COND NO  C I R C U I T  F U N C T I O N

(CONT.)          56TB1       PSA TERMINAL BOARD

              TB1-K 2      P09-104     A 395Y 25.6 KC LO OPTICS
              TB1-K 2      J12-N6      CC 82W 25.6 KC LO OPTICS
              TB1-K 3      P01-  4     A 124G COARSE ALIGN RELAY CONTROL
              TB1-K 3      J11-L3      CC 72  COARSE ALIGN RELAY CONTROL
              TB1-K 4      SHLD A 124  A 124B STRUCTURE GROUND
              TB1-K 4      SHLD CC159  CC159B STRUCTURE GROUND
              TB1-K 4      E  2        CC341  STRUCTURE GROUND
              TB1-K 4      TB1-H 4     TB  7  STRUCTURE GROUND
              TB1-K 5      P01- 12     A 124Y ZERO ENCODER RELAY CONTROL
              TB1-K 5      J15-S1      CC128L ZERO ENCODER RELAY CONTROL
              TB1-K 7      P02-R       A 187R 3200 CPS 2 V HI
              TB1-K 7      J11-M1      CC 67K 3200 CPS 2 V HI
              TB1-K 7      J11-L1      CC 67L 3200 CPS 2 V HI
              TB1-K 8      P02-T       A 188R 3200 CPS 2 V FEEDBACK HI
              TB1-K 8      P09- 70     A 374R 3200 CPS 2 V FEEDBACK HI
              TB1-K 8      J11-F3      CC 73R 3200 CPS 2 V FEEDBACK HI
              TB1-K 9      P02-J       A 184R SIN AMG 16X S2
              TB1-K 9      J15-F8      CC127W SIN AMG 16X S2
              TB1-K10      J02-101     A  37R SIN AMG 16X S4
              TB1-K10      P02-K       A 184Y SIN AMG 16X S4
              TB1-K10      J15-F9      CC127R SIN AMG 16X S4
              TB1-K11      J02- 87     A  37Y SIN AMG 16X TO CDU
              TB1-K11      J15-D9      CC127L SIN AMG 16X TO CDU
              TB1-K12      SHLD A   37 A  37B 0 VDC IMU
              TB1-K12      SHLD A 184  A 184B 0 VDC IMU
              TB1-K12      SHLD CC127  CC127B 0 VDC IMU
              TB1-K12      TB1-H12     TB 14  0 VDC IMU
              TB1-K13      P03-M       A 204Y YAW ERROR BODY OFFSET AXIS LO
              TB1-K13      J17-D3      CC182W YAW ERROR BODY OFFSET AXIS LO
              TB1-K14      P02-Y       A 190R SIN AIG 16X S2
              TB1-K14      J15-D8      CC126W SIN AIG 16X S2
              TB1-K15      J01-101     A  17R SIN AIG 16X S4
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SIZE A	CODE IDENT NO 80230	1015087
SCALE-NONE	REV LTR E	SHEET 140 OF 146

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FROM        TO         COND NO  CIRCUIT FUNCTION

(CONT.)     56TB1      PSA TERMINAL BOARD

TB1-K15     P02-Z      A 190Y SIN AIG 16X S4
TB1-K15     J15-D7     CC126R SIN AIG 16X S4
TB1-K16     J01- 87    A  17Y SIN AIG 16X TO CDU
TB1-K16     J15-F7     CC126L SIN AIG 16X TO CDU
TB1-K17     SHLD A  17 A  17B 0 VDC IMU
TB1-K17     SHLD A 190 A 190B 0 VDC IMU
TB1-K17     SHLD CC126 CC126B 0 VDC IMU
TB1-K17     TB1-H12    AA 22  0 VDC IMU
TB1-K17     TB1-H17    TB 15  0 VDC IMU
TB1-K18     J01- 31    A  10G IG CDU MDA OUTPUT
TB1-K18     J16-R1     CC137W IG CDU MDA OUTPUT
TB1-K19     J01- 32    A  10Y IG CDU MDA OUTPUT
TB1-K19     J16-P1     CC137R IG CDU MDA OUTPUT
TB1-K20     J01- 43    A  10R 0 VDC IMU
TB1-K20     TB1-B70    AA 11  0 VDC IMU
TB1-K20     TB1-H20    TB 16  0 VDC IMU
TB1-K21     P07-W      A 265R X PIP TORQUE -
TB1-K21     J13-L1     CC 96R X PIP TORQUE -
TB1-K22     P07-V      A 265W X PIP TORQUE RET
TB1-K22     J13-K1     CC 96W X PIP TORQUE RET
TB1-K23     P07-U      A 265L X PIP TORQUE +
TB1-K23     J13-H1     CC 96L X PIP TORQUE +
TB1-K24     SHLD A 265 A 265B 0 VDC IMU
TB1-K24     SHLD CC 96 CC 96B 0 VDC IMU
TB1-K24     TB1-H17    AA 23  0 VDC IMU
TB1-K24     TB1-H24    TB 18  0 VDC IMU
TB1-K25     TB1-K26    TB 20  0 VDC IMU
TB1-K25     TB1-D75    AA 16  0 VDC IMU
TB1-K25     J12-R5     CC 93  0 VDC IMU
TB1-K26     TB1-H26    A 570  0 VDC IMU
TB1-K26     J11-S6     CC 77  0 VDC IMU
TB1-K26     J15-R2     CC131  0 VDC IMU
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FROM        TO         COND NO  CIRCUIT FUNCTION

(CONT.)     56TB1      PSA TERMINAL BOARD

TB1-K26     TB1-K25    TB 20  0 VDC IMU
TB1-K28     SHLD A 200 A 200B IG CDU ERROR SIG RET
TB1-K28     P03-J      A 200R IG CDU ERROR SIG RET
TB1-K28     J11-B1     CC 61W IG CDU ERROR SIG RET
TB1-K29     P03-H      A 200Y IG CDU ATTITUDE STEERING ERROR
TB1-K29     J11-C1     CC 61R IG CDU ATTITUDE STEERING ERROR
TB1-K30     SHLD A  18 A  18B IG CDU ERROR SIG RET
TB1-K30     TB1-K32    AA 29  IG CDU ERROR SIG RET
TB1-K30     J01- 90    A  18Y IG CDU ERROR SIG RET
TB1-K30     J16-D2     CC135R IG CDU ERROR SIG RET
TB1-K31     J01-104    A  18R IG CDU 16X ERROR SIG
TB1-K31     J16-C1     CC135W IG CDU 16X ERROR SIG
TB1-K32     SHLD A  12 A  12B IG CDU ERROR SIG RET
TB1-K32     SHLD A 135 A 135B IG CDU ERROR SIG RET
TB1-K32     SHLD A 354 A 354B IG CDU ERROR SIG RET
TB1-K32     TB1-K30    AA 29  IG CDU ERROR SIG RET
TB1-K33     J01- 35    A  12R IG CDU 1X ERROR SIG S2
TB1-K33     P01- 70    A 135R IG CDU 1X ERROR SIG
TB1-K33     P09- 59    A 354R IG CDU 1X ERROR SIG
TB1-K33     J11-A1     CC 60W IG CDU 1X ERROR SIG
TB1-K33     J16-C2     CC134W IG CDU 1X ERROR SIG
TB1-K34     J01- 45    A  12Y IG CDU ERROR SIG RET
TB1-K34     P01- 71    A 135Y IG CDU ERROR SIG RET
TB1-K34     P09- 41    A 354Y IG CDU ERROR SIG RET
TB1-K34     J11-B1     CC 60R IG CDU ERROR SIG RET
TB1-K34     J16-D2     CC134R IG CDU ERROR SIG RET
TB1-K35     J01- 34    A  11  IG CDU 1X RSVR LOAD S1
TB1-K35     J16-F2     CC155  IG CDU 1X RSVR LOAD
TB1-K36     SHLD A 278 A 278B 0 VDC OPTICS
TB1-K36     SHLD CC237 CC237B 0 VDC OPTICS
TB1-K36     TB1-H39    AA 25  0 VDC OPTICS
TB1-K36     TB1-H36    TB 23  0 VDC OPTICS
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FROM        TO         COND NO  CIRCUIT FUNCTION

(CONT.)     56TB1      PSA TERMINAL BOARD

TB1-K37     P08- 38    A 278R SCT SHAFT TACH HI
TB1-K37     J18-A5     CC237R SCT SHAFT TACH HI
TB1-K38     P08- 39    A 278Y SCT SHAFT TACH LO
TB1-K38     J18-B5     CC237W SCT SHAFT TACH LO
TB1-K39     SHLD A 281 A 281B 0 VDC OPTICS
TB1-K39     SHLD CC235 CC235B 0 VDC OPTICS
TB1-K39     TB1-H42    AA 26  0 VDC OPTICS
TB1-K39     TB1-H39    TB 24  0 VDC OPTICS
TB1-K40     P08- 51    A 281Y SCT SHAFT 1X RSVR S4
TB1-K40     J18-D5     CC235W SCT SHAFT 1X RSVR S4
TB1-K41     P08- 50    A 281R SCT SHAFT 1X RSVR S2
TB1-K41     J18-C5     CC235R SCT SHAFT 1X RSVR S2
TB1-K42     SHLD A  90 A  90B 0 VDC OPTICS
TB1-K42     SHLD CC253 CC253B 0 VDC OPTICS
TB1-K42     TB1-H47    AA 27  0 VDC OPTICS
TB1-K42     TB1-H42    TB 25  0 VDC OPTICS
TB1-K43     J05- 67    A  90Y TRUNNION CDU 1/2X RSVR S3
TB1-K43     J19-H1     CC253W TRUNNION CDU 1/2X RSVR S3
TB1-K44     J05- 68    A  90R TRUNNION CDU 1/2X RSVR S1
TB1-K44     J19-G1     CC253R TRUNNION CDU 1/2X RSVR S1
TB1-K45     J04- 21    A  65Y SHAFT CDU 1X RSVR P4
TB1-K45     J19-G3     CC266W SHAFT CDU 1X RSVR P4
TB1-K46     J04-  7    A  65R SHAFT CDU 1X RSVR P2
TB1-K46     J19-G4     CC266R SHAFT CDU 1X RSVR P2
TB1-K47     SHLD A  65 A  65B 0 VDC OPTICS
TB1-K47     SHLD CC266 CC266B 0 VDC OPTICS
TB1-K47     TB1-H67    AA 28  0 VDC OPTICS
TB1-K47     TB1-H47    TB 26  0 VDC OPTICS
TB1-K48     J05- 31    A  86Y TRUNNION CDU MOTOR PHASE 1
TB1-K48     J19-S1     CC257W TRUNNION CDU MOTOR PHASE 1
TB1-K49     J05- 32    A  86R TRUNNION CDU MOTOR PHASE 2
TB1-K49     J19-T1     CC257R TRUNNION CDU MOTOR PHASE 2
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FROM        TO         COND NO  CIRCUIT FUNCTION

(CONT.)     56TB1      PSA TERMINAL BOARD

TB1-K50     J05- 43    A  86G 0 VDC OPTICS
TB1-K50     P08-  1    A 267G 0 VDC OPTICS
TB1-K50     P11-G      A 519  0 VDC OPTICS
TB1-K50     TB1-H50    TB 28  0 VDC OPTICS
TB1-K51     P08-  2    A 267R SCT TRUNNION MOTOR PHASE 2
TB1-K51     J19-T3     CC260R SCT TRUNNION MOTOR PHASE 2
TB1-K52     P08-  3    A 267Y SCT TRUNNION MOTOR PHASE 1
TB1-K52     J19-S3     CC260W SCT TRUNNION MOTOR PHASE 1
TB1-K53     P11-G      A 518  0 VDC OPTICS
TB1-K53     J16-R5     CC178  0 VDC OPTICS
TB1-K53     TB1-H53    TB 29  0 VDC OPTICS
TB1-K54     P09- 58    A 364  SCT SHAFT TACH FEEDBACK BUFFERED
TB1-K54     J18-M6     CC216  SCT SHAFT TACH FEEDBACK BUFFERED
TB1-K55     P09- 57    A 363  SXT SHAFT TACH FEEDBACK BUFFERED
TB1-K55     J18-M4     CC215  SXT SHAFT TACH FEEDBACK BUFFERED
TB1-K56     P09- 74    A 378  SXT SHAFT MDA INPUT BUFFERED
TB1-K56     J18-M3     CC214  SXT SHAFT MDA INPUT BUFFERED
TB1-K57     P09- 37    A 350  SCT TRUNNION 1X ERROR SIG BUFFERED
TB1-K57     J19-M5     CC245  SCT TRUNNION 1X ERROR SIG BUFFERED
TB1-K58     P09- 72    A 376  PHOTOMETER PREAMP OUTPUT BUFFERED HI
TB1-K58     J20-B8     CC282  PHOTOMETER PREAMP OUTPUT BUFFERED HI
TB1-K59     J09-102    A 324Y IMU TEMP CONT -5 DEG GAIN CHECK
TB1-K59     J17-B7     CC184W IMU TEMP CONT -5 DEG GAIN CHECK
TB1-K60     J09- 86    A 324R IRIG TEMP GAIN SWITCH NC
TB1-K60     J17-C8     CC184R IRIG TEMP GAIN SWITCH NC
TB1-K61     J09- 89    A 324N IRIG ZERO DEVIATION CHECK
TB1-K61     J17-B8     CC184L IRIG ZERO DEVIATION CHECK
TB1-K62     J09- 85    A 324G IRIG TEMP BRIDGE AMP PIN 6
TB1-K62     J17-C7     CC184K IRIG TEMP BRIDGE AMP PIN 6
TB1-K63     P06-Z      A 242R IRIG TEMP IND SENSOR HI
TB1-K63     J17-C6     CC198R IRIG TEMP IND SENSOR HI
TB1-K64     P06-A*     A 242Y IRIG TEMP IND SENSOR RET
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(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION	
TB1-K64	J17-C5	CC198W	IRIG TEMP IND SENSOR RET	
TB1-K65	P05- 81	A 235Y	PHOTOMETER SIGNAL LO	
TB1-K65	J20-B9	CC278W	PHOTOMETER SIGNAL LO	
TB1-K66	P05- 80	A 235R	PHOTOMETER SIGNAL HI	
TB1-K66	J20-A9	CC278R	PHOTOMETER SIGNAL HI	
TB1-K67	SHLD A 235	A 235B	0 VDC OPTICS	
TB1-K67	SHLD A 290	A 290B	0 VDC OPTICS	
TB1-K67	SHLD CC278	CC278B	0 VDC OPTICS	
TB1-K67	TB1-D76	A 586	0 VDC OPTICS	
TB1-K67	TB1-H67	TB 34	0 VDC OPTICS	
TB1-K68	J09- 8	A 290R	TRUNNION HAND CONTROLLER OUTPUT HI	
TB1-K68	J19-F9	CC249R	TRUNNION HAND CONTROLLER OUTPUT HI	
TB1-K69	J09- 22	A 290Y	TRUNNION HAND CONTROLLER OUTPUT LO	
TB1-K69	J19-F8	CC249W	TRUNNION HAND CONTROLLER OUTPUT LO	
TB1-K70	E 3	CC343	STRUCTURE GROUND	
TB1-K70	P13- 37	A 500	STRUCTURE GROUND	
TB1-K70	P12-L	A 553	STRUCTURE GROUND	
TB1-K70	TB1-H70	TB 37	STRUCTURE GROUND	
TB1-K71	TB1-K72	TB 39	+28 VDC MDV	
TB1-K71	P10-104	A 421	+28 VDC MDV	
TB1-K71	J10- 8	A 483	+28 VDC MDV	306
TB1-K71	J10- 10	A 489	+28 VDC MDV	327
TB1-K71	J20-N5	CC283	+28 VDC MDV	
TB1-K72	P01- 89	A 142	+28 VDC MDV	
TB1-K72	J09- 51	A 310	+28 VDC MDV	
TB1-K72	J20-M5	CC284	+28 VDC MDV	
TB1-K72	TB1-K71	TB 39	+28 VDC MDV	
TB1-K73	P06-C*	A 243Y	PRESSURE SENSOR +28 VDC LO	
TB1-K73	J20-B6	CC310W	PRESSURE SENSOR +28 VDC LO	
TB1-K74	P06-B*	A 243R	PRESSURE SENSOR +28 VDC HI	
TB1-K74	J20-A6	CC310R	PRESSURE SENSOR +28 VDC HI	
TB1-K75	P12-B	A 533	+28 VDC IMU BUSS B	

SIZE	CODE IDENT NO.		
A	80230	1015087	
SCALE-NONE	REV LTR	E	SHEET 145 OF 146

(CONT.) 56TB1 PSA TERMINAL BOARD

FROM	TO	COND NO	CIRCUIT FUNCTION	
TB1-K75	P12-B	A 534	+28 VDC IMU BUSS B	
TB1-K75	P12-B	A 535	+28 VDC IMU BUSS B	
TB1-K75	J20-T2	CC297	+28 VDC IMU BUSS B	
TB1-K75	J20-R2	CC314	+28 VDC IMU BUSS B	
TB1-K76	P11-B	A 505	+28 VDC IMU BUSS A	
TB1-K76	P11-B	A 506	+28 VDC IMU BUSS A	
TB1-K76	P11-B	A 507	+28 VDC IMU BUSS A	
TB1-K76	J20-T1	CC295	+28 VDC IMU BUSS A	
TB1-K76	J20-R1	CC312	+28 VDC IMU BUSS A	
TB1-K77	P12-A	A 530	+28 VDC AGC BUSS B	
TB1-K77	J23- 64	A 560	+28 VDC AGC BUSS B	168
TB1-K77	J23- 65	A 561	+28 VDC AGC BUSS B	168
TB1-K77	J20-H3	CC288	+28 VDC AGC BUSS B	
TB1-K78	P11-A	A 502	+28 VDC AGC BUSS A	
TB1-K78	J23- 62	A 558	+28 VDC AGC BUSS A	167
TB1-K78	J23- 63	A 559	+28 VDC AGC BUSS A	167
TB1-K78	J20-H2	CC287	+28 VDC AGC BUSS A	

SIZE	CODE IDENT NO.		
A	80230	1015087	
SCALE-NONE	REV LTR	E	SHEET 146 OF 146

TDRR 15073 DEC 22 1964

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL

SEE SHEET 2 FOR REVISION RECORD

REV	
SHEET	
REV STATUS OF SHEETS	REV
	SHEET

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Wunderlich DATE 21-DEC 64
CHECKED R.E. Albertson 12-22-64
APPROVAL 12/22/64
APPROVAL

NASA APPROVAL 12-22-64
MIT APPROVAL 12/22/64

CONTRACT

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTERCONNECTION LIST OF AGE INTERCONNECT HARNESS AND PSA END CONNECTOR

CODE IDENT NO.
SIZE A
1015087
REV +
SCALE
SHEET 1 OF 133

TDRR 15073 DEC 22 1964

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
1	+	37	+	73	+	109	+								
2	+	38	+	74	+	110	+								
3	+	39	+	75	+	111	+								
4	+	40	+	76	+	112	+								
5	+	41	+	77	+	113	+								
6	+	42	+	78	+	114	+								
7	+	43	+	79	+	115	+								
8	+	44	+	80	+	116	+								
9	+	45	+	81	+	117	+								
10	+	46	+	82	+	118	+								
11	+	47	+	83	+	119	+								
12	+	48	+	84	+	120	+								
13	+	49	+	85	+	121	+								
14	+	50	+	86	+	122	+								
15	+	51	+	87	+	123	+								
16	+	52	+	88	+	124	+								
17	+	53	+	89	+	125	+								
18	+	54	+	90	+	126	+								
19	+	55	+	91	+	127	+								
20	+	56	+	92	+	128	+								
21	+	57	+	93	+	129	+								
22	+	58	+	94	+	130	+								
23	+	59	+	95	+	131	+								
24	+	60	+	96	+	132	+								
25	+	61	+	97	+	133	+								
26	+	62	+	98	+										
27	+	63	+	99	+										
28	+	64	+	100	+										
29	+	65	+	101	+										
30	+	66	+	102	+										
31	+	67	+	103	+										
32	+	68	+	104	+										
33	+	69	+	105	+										
34	+	70	+	106	+										
35	+	71	+	107	+										
36	+	72	+	108	+										

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION

NASA DRAWING NO.
1015087
SHEET 2 OF 133

TDRR 15073 DEC 22 1964

INTERCONNECT LIST

GENERAL NOTES

1 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087
SCALE - NONE	REV LTR +	SHEET 3

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC342	E 1	J13-C6	STRUCTURE GROUND	
*	CC341	E 2	TB1-K 4	STRUCTURE GROUND	
*	CC343	E 3	TB1-K70	STRUCTURE GROUND	
	BB 94B	E 4	SHLD BB 94	0 VDC IMU	
*	CC 1A	E 4	SHLD CC 1	0 VDC IMU	
*	CC 2A	E 4	SHLD CC 2	0 VDC IMU	
*	CC 6A	E 4	SHLD CC 6	0 VDC IMU	
*	CC 7A	E 4	SHLD CC 7	0 VDC IMU	
*	CC 79	E 4	J11-P2	0 VDC IMU	
	CC 11W	E 5	J23- 6	0 VDC IMU	139R
	CC 12W	E 5	J23- 1	0 VDC IMU	140R
*	CC102	E 5	J13-R6	0 VDC IMU	
	CC 13W	E 6	J23- 10	0 VDC IMU	142S
	CC 14W	E 6	J23- 24	0 VDC IMU	143S
	CC 15W	E 6	J23- 56	0 VDC IMU	144S
	CC 16W	E 6	J23- 33	0 VDC IMU	145S
	CC 17W	E 6	J23- 16	0 VDC IMU	146S
	CC 18W	E 6	J23- 5	0 VDC IMU	147S
	CC 19W	E 6	J23- 44	0 VDC IMU	148S
	CC338	E 6	E 7	0 VDC IMU	
*	CC110	E 6	J14-R6	0 VDC IMU	
*	CC 13A	E 7	SHLD CC 13	0 VDC IMU	
*	CC 14A	E 7	SHLD CC 14	0 VDC IMU	
*	CC 15A	E 7	SHLD CC 15	0 VDC IMU	
*	CC 16A	E 7	SHLD CC 16	0 VDC IMU	
*	CC 17A	E 7	SHLD CC 17	0 VDC IMU	
*	CC 18A	E 7	SHLD CC 18	0 VDC IMU	
*	CC 19A	E 7	SHLD CC 19	0 VDC IMU	
*	CC338	E 7	E 6	0 VDC IMU	
	CC 26R	E 8	J24- 22	IG DAC MDA SIG LO	120R
	CC 27W	E 8	J24- 42	IG DAC MDA SIG LO	121R
*	CC120	E 8	J15-A5	IG DAC MDA SIG LO	
	CC 32R	E 9	J23- 23	IG DAC MDA SIG LO	128R
	CC 33W	E 9	J23- 69	IG DAC MDA SIG LO	129R
*	CC 32A	E 9	SHLD CC 32	IG DAC MDA SIG LO	
*	CC 33A	E 9	SHLD CC 33	IG DAC MDA SIG LO	
*	CC123	E 9	J15-A5	IG DAC MDA SIG LO	
	CC 28R	E 10	J24- 18	MG DAC MDA SIG LO	122R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC 28B	E 19	SHLD CC 28	AGC SIGNAL 179 SHIELD RETURN	
CC 29B	E 19	SHLD CC 29	AGC SIGNAL 179 SHIELD RETURN	
CC 30B	E 19	SHLD CC 30	AGC SIGNAL 179 SHIELD RETURN	
CC 31B	E 19	SHLD CC 31	AGC SIGNAL 179 SHIELD RETURN	
CC340	E 19	E 20	AGC SIGNAL 179 SHIELD RETURN	
CC 42B	E 20	SHLD CC 42	AGC SIGNAL 179 SHIELD RETURN	
CC 46B	E 20	SHLD CC 46	AGC SIGNAL 179 SHIELD RETURN	
CC 49B	E 20	SHLD CC 49	AGC SIGNAL 179 SHIELD RETURN	
CC 50B	E 20	SHLD CC 50	AGC SIGNAL 179 SHIELD RETURN	
* CC337	E 20	J24- 64	AGC SIGNAL 179 SHIELD RETURN	179
* CC340	E 20	E 19	AGC SIGNAL 179 SHIELD RETURN	
CC 38B	E 21	SHLD CC 38	AGC SIGNAL 178 SHIELD RETURN	
CC 41B	E 21	SHLD CC 41	AGC SIGNAL 178 SHIELD RETURN	
CC344	E 21	E 22	AGC SIGNAL 178 SHIELD RETURN	
CC345	E 21	E 23	AGC SIGNAL 178 SHIELD RETURN	
* CC332A	E 21	SHLD CC332	AGC SIGNAL 178 SHIELD RETURN	
A 114B	E 22	SHLD A 114	AGC SIGNAL 178 SHIELD RETURN	
A 131B	E 22	SHLD A 131	AGC SIGNAL 178 SHIELD RETURN	
A 132B	E 22	SHLD A 132	AGC SIGNAL 178 SHIELD RETURN	
A 133B	E 22	SHLD A 133	AGC SIGNAL 178 SHIELD RETURN	
A 136B	E 22	SHLD A 136	AGC SIGNAL 178 SHIELD RETURN	
* CC344	E 22	E 21	AGC SIGNAL 178 SHIELD RETURN	
A 304B	E 23	SHLD A 304	AGC SIGNAL 178 SHIELD RETURN	
A 414B	E 23	SHLD A 414	AGC SIGNAL 178 SHIELD RETURN	
A 417B	E 23	SHLD A 417	AGC SIGNAL 178 SHIELD RETURN	
A 566B	E 23	SHLD A 566	AGC SIGNAL 178 SHIELD RETURN	
* A 308A	E 23	SHLD A 308	AGC SIGNAL 178 SHIELD RETURN	
* A 309A	E 23	SHLD A 309	AGC SIGNAL 178 SHIELD RETURN	
* A 563	E 23	J24- 51	AGC SIGNAL 178 SHIELD RETURN	178
* CC345	E 23	E 21	AGC SIGNAL 178 SHIELD RETURN	
A 309B	E 24	SHLD A 309	AGC SIGNAL 178 SHIELD RETURN	
* A 298A	E 24	SHLD A 298	AGC SIGNAL 178 SHIELD RETURN	
* A 301A	E 24	SHLD A 301	AGC SIGNAL 178 SHIELD RETURN	
A 490Y	E 25	TB1-C65	TRACKER AUTOMATIC GAIN CONTROL LO	
A 491Y	E 25	TB1-D65	TRACKER PREAMP OUTPUT LO	
* A 492	E 25	P13- 10	TRACKER SIGNAL COMMON	
A 464Y	E 26	J21- 74	COMMONED RETURNS GROUND	202R
A 465Y	E 26	J21- 47	COMMONED RETURNS GROUND	210R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 466Y	E 26	J21- 28	COMMONED RETURNS GROUND	201R
A 467Y	E 26	J21- 13	COMMONED RETURNS GROUND	208R
A 471	E 26	E 27	COMMONED RETURNS GROUND	
* A 470	E 26	J10- 69	COMMONED RETURNS GROUND	252
A 459Y	E 27	J21- 15	COMMONED RETURNS GROUND	205R
A 460Y	E 27	J21- 54	COMMONED RETURNS GROUND	209R
A 461Y	E 27	J21- 53	COMMONED RETURNS GROUND	203R
A 462Y	E 27	J21- 30	COMMONED RETURNS GROUND	207R
A 463Y	E 27	J21- 51	COMMONED RETURNS GROUND	204R
* A 471	E 27	E 26	COMMONED RETURNS GROUND	
A 422Y	E 28	J21- 4	COMMONED RETURNS GROUND	244R
A 423Y	E 28	J21- 17	COMMONED RETURNS GROUND	232R
A 424Y	E 28	J21- 18	COMMONED RETURNS GROUND	227R
A 425Y	E 28	J21- 2	COMMONED RETURNS GROUND	228R
A 426Y	E 28	J21- 24	COMMONED RETURNS GROUND	229R
A 453	E 28	E 34	COMMONED RETURNS GROUND	
A 427Y	E 29	J21- 69	COMMONED RETURNS GROUND	230R
A 428Y	E 29	J21- 57	COMMONED RETURNS GROUND	231R
A 429Y	E 29	J21- 1	COMMONED RETURNS GROUND	233R
A 430Y	E 29	J21- 11	COMMONED RETURNS GROUND	234R
A 431Y	E 29	J21- 45	COMMONED RETURNS GROUND	235R
A 454	E 29	E 34	COMMONED RETURNS GROUND	
A 432Y	E 30	J21- 70	COMMONED RETURNS GROUND	236R
A 433Y	E 30	J21- 56	COMMONED RETURNS GROUND	237R
A 434Y	E 30	J21- 16	COMMONED RETURNS GROUND	238R
A 435Y	E 30	J21- 61	COMMONED RETURNS GROUND	214R
A 455	E 30	E 34	COMMONED RETURNS GROUND	
A 436Y	E 31	J21- 39	COMMONED RETURNS GROUND	215R
A 437Y	E 31	J21- 41	COMMONED RETURNS GROUND	216R
A 438Y	E 31	J21- 66	COMMONED RETURNS GROUND	217R
A 439Y	E 31	J21- 60	COMMONED RETURNS GROUND	218R
A 456	E 31	E 34	COMMONED RETURNS GROUND	
A 440Y	E 32	J21- 20	COMMONED RETURNS GROUND	219R
A 441Y	E 32	J21- 68	COMMONED RETURNS GROUND	221R
A 442Y	E 32	J21- 59	COMMONED RETURNS GROUND	222R
A 443Y	E 32	J21- 19	COMMONED RETURNS GROUND	223R
A 457	E 32	E 34	COMMONED RETURNS GROUND	
A 444Y	E 33	J21- 9	COMMONED RETURNS GROUND	224R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC 29W	E 10	J24- 7	MG DAC MDA SIG LO	123R
* CC121	E 10	J15-A7	MG DAC MDA SIG LO	
CC 34R	E 11	J23- 34	MG DAC MDA SIG LO	130R
CC 35W	E 11	J23- 17	MG DAC MDA SIG LO	131R
* CC 34A	E 11	SHLD CC 34	MG DAC MDA SIG LO	
* CC 35A	E 11	SHLD CC 35	MG DAC MDA SIG LO	
* CC124	E 11	J15-A7	MG DAC MDA SIG LO	
CC 30R	E 12	J24- 20	OG DAC MDA SIG LO	118R
CC 31W	E 12	J24- 21	OG DAC MDA SIG LO	119R
* CC122	E 12	J15-A9	OG DAC MDA SIG LO	
CC 36R	E 13	J23- 8	OG DAC MDA SIG LO	126R
CC 37W	E 13	J23- 9	OG DAC MDA SIG LO	127R
* CC 36A	E 13	SHLD CC 36	OG DAC MDA SIG LO	
* CC 37A	E 13	SHLD CC 37	OG DAC MDA SIG LO	
* CC125	E 13	J15-A9	OG DAC MDA SIG LO	
CC 20W	E 14	J24- 9	COMPUTER RET	132S
CC 21W	E 14	J24- 23	COMPUTER RET	133S
* CC114	E 14	J15-L5	COMPUTER RET	
CC 22W	E 15	J24- 43	COMPUTER RET	134S
CC 23W	E 15	J24- 69	COMPUTER RET	135S
* CC115	E 15	J15-L5	COMPUTER RET	
CC 24W	E 16	J24- 34	COMPUTER RET	137S
CC 25W	E 16	J24- 57	COMPUTER RET	136S
* CC116	E 16	J15-L5	COMPUTER RET	
CC 20B	E 17	SHLD CC 20	AGC SIGNAL 179 SHIELD RETURN	
CC 21B	E 17	SHLD CC 21	AGC SIGNAL 179 SHIELD RETURN	
CC 22B	E 17	SHLD CC 22	AGC SIGNAL 179 SHIELD RETURN	
CC 23B	E 17	SHLD CC 23	AGC SIGNAL 179 SHIELD RETURN	
CC 24B	E 17	SHLD CC 24	AGC SIGNAL 179 SHIELD RETURN	
CC 25B	E 17	SHLD CC 25	AGC SIGNAL 179 SHIELD RETURN	
CC339	E 17	E 18	AGC SIGNAL 179 SHIELD RETURN	
CC 8B	E 18	SHLD CC 8	AGC SIGNAL 179 SHIELD RETURN	
CC 9B	E 18	SHLD CC 9	AGC SIGNAL 179 SHIELD RETURN	
CC 10B	E 18	SHLD CC 10	AGC SIGNAL 179 SHIELD RETURN	
* CC336	E 18	J24- 87	AGC SIGNAL 179 SHIELD RETURN	179
* CC339	E 18	E 17	AGC SIGNAL 179 SHIELD RETURN	
CC 26B	E 19	SHLD CC 26	AGC SIGNAL 179 SHIELD RETURN	
CC 27B	E 19	SHLD CC 27	AGC SIGNAL 179 SHIELD RETURN	

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REV LTR

SHEET 5

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 445Y	E 33	J21- 58	COMMONED RETURNS GROUND	226R
A 446Y	E 33	J21- 22	COMMONED RETURNS GROUND	220R
A 447Y	E 33	J21- 43	COMMONED RETURNS GROUND	225R
A 458	E 33	E 34	COMMONED RETURNS GROUND	
* A 452	E 34	J10- 82	COMMONED RETURNS GROUND	330
* A 453	E 34	E 28	COMMONED RETURNS GROUND	
* A 454	E 34	E 29	COMMONED RETURNS GROUND	
* A 455	E 34	E 30	COMMONED RETURNS GROUND	
* A 456	E 34	E 31	COMMONED RETURNS GROUND	
* A 457	E 34	E 32	COMMONED RETURNS GROUND	
* A 458	E 34	E 33	COMMONED RETURNS GROUND	
* A 556	E 35	J21- 50	GROUP 3 SHIELD	250
* A 487	E 36	J10- 27	GROUP 3 SHIELD	250
* A 557	E 37	J21- 73	GROUP 2 SHIELD	245
* A 488	E 38	J10- 1	GROUP 2 SHIELD	245

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 20R	J01-108	TB1-F33	IG CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 21R	J02- 1	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
A 22Y	J02- 2	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 22R	J02- 3	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 23Y	J02- 6	TB1-B14	COS AMG 1X S1
A 24Y	J02- 7	TB1-B16	SIN AMG 1X
A 25G	J02- 11	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
A 25Y	J02- 12	TB1-B 6	ZEROING RSVR 800 CPS
A 21Y	J02- 14	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
A 26	J02- 15	TB1-B53	+28 VDC CDU NOT LOCK
A 27	J02- 16	TB1-G 6	+28 VDC IMU
A 23R	J02- 20	TB1-B13	COS AMG 1X S3
A 24R	J02- 21	TB1-B15	SIN AMG 1X RET
A 25R	J02- 25	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
A 28R	J02- 28	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
A 28Y	J02- 29	TB1-B 1	400 CPS 6 V LO
A 29	J02- 30	TB1-C52	+28 VDC IMU FOR MG MDA
A 30G	J02- 31	TB1-H19	MG CDU MDA OUTPUT
A 30Y	J02- 32	TB1-H18	MG CDU MDA OUTPUT
A 31	J02- 34	TB1-H35	MG CDU 1X RSVR LOAD
A 32R	J02- 35	TB1-H33	MG CDU 1X ERROR SIG
A 33	J02- 41	TB1-G 9	STRUCTURE GROUND
A 30R	J02- 43	TB1-H20	0 VDC IMU
A 32Y	J02- 45	TB1-H34	MG CDU ERROR SIG RET
A 34R	J02- 50	TB1-G 1	25.6 KC HI IMU
A 35Y	J02- 57	TB1-B30	MG CDU ERROR SIG RET
A 34Y	J02- 60	TB1-G 2	25.6 KC LO IMU
A 35R	J02- 67	TB1-A30	MG CDU 1/2X ERROR SIG
A 36Y	J02- 86	TB1-H11	COS AMG 16X TO CDU
A 37Y	J02- 87	TB1-K11	SIN AMG 16X TO CDU
A 38Y	J02- 90	TB1-H30	MG CDU ERROR SIG RET
A 39Y	J02- 92	TB1-D30	MG CDU MDA INPUT RET
A 40Y	J02- 94	TB1-D34	MG CDU ENCODER COMMON
A 36R	J02-100	TB1-H10	COS AMG 16X S3
A 37R	J02-101	TB1-K10	SIN AMG 16X S4
A 38R	J02-104	TB1-H31	MG CDU 16X ERROR SIG
A 39G	J02-105	TB1-D31	MG CDU MDA SLEW SIG
A 39R	J02-106	TB1-D29	MG CDU MDA TACH SIG
A 40G	J02-107	TB1-D35	MG CDU ENCODER PHASE 1

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 1R	J01- 1	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
A 2Y	J01- 2	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 2R	J01- 3	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 3Y	J01- 6	TB1-A14	COS AIG 1X RET P1
A 4Y	J01- 7	TB1-A16	SIN AIG 1X P2
A 5G	J01- 11	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
A 5Y	J01- 12	TB1-B 6	ZEROING RSVR 800 CPS
A 1Y	J01- 14	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
A 6	J01- 15	TB1-B53	+28 VDC CDU NOT LOCK
A 7	J01- 16	TB1-G 6	+28 VDC IMU
A 3R	J01- 20	TB1-A13	COS AIG 1X P3
A 4R	J01- 21	TB1-A15	SIN AIG 1X RET P4
A 5R	J01- 25	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
A 8R	J01- 28	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
A 8Y	J01- 29	TB1-B 1	400 CPS 6 V LO
A 9	J01- 30	TB1-C53	+28 VDC IMU FOR IG MDA
A 10G	J01- 31	TB1-K18	IG CDU MDA OUTPUT
A 10Y	J01- 32	TB1-K19	IG CDU MDA OUTPUT
A 11	J01- 34	TB1-K35	IG CDU 1X RSVR LOAD S1
A 12R	J01- 35	TB1-K33	IG CDU 1X ERROR SIG S2
A 13	J01- 41	TB1-G 9	STRUCTURE GROUND
A 10R	J01- 43	TB1-K20	0 VDC IMU
A 12Y	J01- 45	TB1-K34	IG CDU ERROR SIG RET
A 14R	J01- 50	TB1-G 1	25.6 KC HI IMU
A 15Y	J01- 57	TB1-B31	IG CDU ERROR SIG RET S1
A 14Y	J01- 60	TB1-G 2	25.6 KC LO IMU
A 15R	J01- 67	TB1-A31	IG CDU 1/2X ERROR SIG S3
A 16Y	J01- 86	TB1-H16	COS AIG 16X TO CDU
A 17Y	J01- 87	TB1-K16	SIN AIG 16X TO CDU
A 18Y	J01- 90	TB1-K30	IG CDU ERROR SIG RET
A 19Y	J01- 92	TB1-F30	IG CDU MDA INPUT RET
A 20Y	J01- 94	TB1-F34	IG CDU ENCODER COMMON
A 16R	J01-100	TB1-H15	COS AIG 16X S3
A 17R	J01-101	TB1-K15	SIN AIG 16X S4
A 18R	J01-104	TB1-K31	IG CDU 16X ERROR SIG
A 19G	J01-105	TB1-F31	IG CDU MDA SLEW SIG
A 19R	J01-106	TB1-F29	IG CDU MDA TACH SIG
A 20G	J01-107	TB1-F35	IG CDU ENCODER PHASE 1

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 40R	J02-108	TB1-D33	MG CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 61G	J03-107	TB1-C35	OG CDU ENCODER PHASE 1
A 61R	J03-108	TB1-C33	OG CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 62R	J04- 1	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS
A 63Y	J04- 2	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 63R	J04- 3	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 64Y	J04- 6	TB1-H46	SHAFT CDU 1X RSVR P1
A 65R	J04- 7	TB1-K46	SHAFT CDU 1X RSVR P2
A 66Y	J04- 11	TB1-H40	SHAFT CDU 1/2X RSVR P1
A 62Y	J04- 14	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS
A 64R	J04- 20	TB1-H45	SHAFT CDU 1X RSVR P3
A 65Y	J04- 21	TB1-K45	SHAFT CDU 1X RSVR P4
A 66R	J04- 25	TB1-H41	SHAFT CDU 1/2X RSVR P3
A 67R	J04- 28	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
A 67Y	J04- 29	TB1-B 2	400 CPS 6 V LO
A 68Y	J04- 31	TB1-H48	SHAFT CDU MOTOR PHASE 1
A 68R	J04- 32	TB1-H49	SHAFT CDU MOTOR PHASE 2
A 69Y	J04- 34	TB1-F50	SHAFT CDU 1X RSVR S1
A 69G	J04- 35	TB1-F48	SHAFT CDU 1X RSVR S2
A 70	J04- 41	TB1-G10	STRUCTURE GROUND
A 68G	J04- 43	TB1-H50	0 VDC OPTICS
A 69R	J04- 45	TB1-F49	SHAFT CDU 1X RSVR S3
A 71R	J04- 50	TB1-K 1	25.6 KC HI OPTICS
A 72R	J04- 56	TB1-C45	SHAFT CDU 1/2X RSVR S2
A 73R	J04- 57	TB1-D45	SHAFT CDU 1/2X RSVR S1
A 71Y	J04- 60	TB1-K 2	25.6 KC LO OPTICS
A 72Y	J04- 66	TB1-C46	SHAFT CDU 1/2X RSVR S4
A 73Y	J04- 67	TB1-D46	SHAFT CDU 1/2X RSVR S3
A 74Y	J04- 86	TB1-A45	SHAFT CDU 16X RSVR P1
A 75R	J04- 87	TB1-B45	SHAFT CDU 16X RSVR P2
A 76R	J04- 90	TB1-G41	SHAFT CDU 16X RSVR S3
A 77Y	J04- 92	TB1-G38	SHAFT CDU TACH LO
A 78Y	J04- 94	TB1-A34	SHAFT CDU ENCODER COMMON
A 74R	J04-100	TB1-A46	SHAFT CDU 16X RSVR P3
A 75Y	J04-101	TB1-B46	SHAFT CDU 16X RSVR P4
A 76Y	J04-104	TB1-G40	SHAFT CDU 16X RSVR S2
A 77R	J04-106	TB1-G37	SHAFT CDU TACH HI
A 78G	J04-107	TB1-A35	SHAFT CDU ENCODER PHASE 1
A 78R	J04-108	TB1-A33	SHAFT CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 41R	J03- 1	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
A 42Y	J03- 2	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 42R	J03- 3	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 43Y	J03- 6	TB1-C15	COS AOG 1X S1
A 44Y	J03- 7	TB1-D15	SIN AOG 1X S4
A 45G	J03- 11	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
A 45Y	J03- 12	TB1-B 6	ZEROING RSVR 800 CPS
A 41Y	J03- 14	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
A 46	J03- 15	TB1-B53	+28 VDC CDU NOT LOCK
A 47	J03- 16	TB1-G 6	+28 VDC IMU
A 43R	J03- 20	TB1-C16	COS AOG 1X TO CDU
A 44R	J03- 21	TB1-D16	SIN AOG 1X TO CDU
A 45R	J03- 25	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
A 48R	J03- 28	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
A 48Y	J03- 29	TB1-B 1	400 CPS 6 V LO
A 49	J03- 30	TB1-C51	+28 VDC IMU FOR OG MDA
A 50G	J03- 31	TB1-G19	OG CDU MDA OUTPUT
A 50Y	J03- 32	TB1-G18	OG CDU MDA OUTPUT
A 51	J03- 34	TB1-G35	OG CDU 1X RSVR LOAD
A 52R	J03- 35	TB1-G33	OG CDU 1X ERROR SIG
A 53	J03- 41	TB1-G10	STRUCTURE GROUND
A 50R	J03- 43	TB1-G20	0 VDC IMU
A 52Y	J03- 45	TB1-G34	OG CDU ERROR SIG RET
A 54R	J03- 50	TB1-H 1	25.6 KC HI IMU
A 55Y	J03- 57	TB1-B29	OG CDU ERROR SIG RET
A 54Y	J03- 60	TB1-H 2	25.6 KC LO IMU
A 55R	J03- 67	TB1-A29	OG CDU 1/2X ERROR SIG
A 56Y	J03- 86	TB1-F16	COS AOG 16X TO CDU
A 57Y	J03- 87	TB1-G16	SIN AOG 16X TO CDU
A 58	J03- 89	TB1-G29	OG CDU 16X RSVR LOAD
A 59Y	J03- 90	TB1-G30	OG CDU ERROR SIG RET
A 60Y	J03- 92	TB1-C30	OG CDU MDA INPUT RET
A 61Y	J03- 94	TB1-C34	OG CDU ENCODER COMMON
A 56R	J03-100	TB1-F15	COS AOG 16X S3
A 57R	J03-101	TB1-G15	SIN AOG 16X S4
A 59R	J03-104	TB1-G31	OG CDU 16X ERROR SIG
A 60G	J03-105	TB1-C31	OG CDU MDA SLEW SIG
A 60R	J03-106	TB1-C29	OG CDU MDA TACH SIG

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 79R	J05- 1	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS
A 80Y	J05- 2	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 80R	J05- 3	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 81Y	J05- 4	TB1-D41	TRUNNION CDU 1/4X RSVR P3
A 82Y	J05- 8	TB1-D44	TRUNNION CDU 1/4X RSVR S1
A 83R	J05- 9	TB1-C44	TRUNNION CDU 1/4X RSVR S2
A 83Y	J05- 10	TB1-C43	TRUNNION CDU 1/4X RSVR S4
A 84G	J05- 11	TB1-B19	TRUNNION CDU 1/2X RSVR P1 AND P3
A 84Y	J05- 12	TB1-B18	TRUNNION CDU 1/2X RSVR P2
A 79Y	J05- 14	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS
A 81R	J05- 17	TB1-D40	TRUNNION CDU 1/4X RSVR P2
A 82R	J05- 22	TB1-D43	TRUNNION CDU 1/4X RSVR S3
A 84R	J05- 25	TB1-B19	TRUNNION CDU 1/2X RSVR P3
A 85R	J05- 28	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
A 85Y	J05- 29	TB1-B 2	400 CPS 6 V LO
A 86Y	J05- 31	TB1-K48	TRUNNION CDU MOTOR PHASE 1
A 86R	J05- 32	TB1-K49	TRUNNION CDU MOTOR PHASE 2
A 87	J05- 41	TB1-G11	STRUCTURE GROUND
A 86G	J05- 43	TB1-K50	0 VDC OPTICS
A 88R	J05- 50	TB1-K 1	25.6 KC HI OPTICS
A 89R	J05- 56	TB1-H44	TRUNNION CDU 1/2X RSVR S2
A 90R	J05- 57	TB1-K44	TRUNNION CDU 1/2X RSVR S1
A 88Y	J05- 60	TB1-K 2	25.6 KC LO OPTICS
A 89Y	J05- 66	TB1-H43	TRUNNION CDU 1/2X RSVR S4
A 90Y	J05- 67	TB1-K43	TRUNNION CDU 1/2X RSVR S3
A 91Y	J05- 86	TB1-A44	TRUNNION CDU 16X RSVR P1
A 92Y	J05- 87	TB1-B44	TRUNNION CDU 16X RSVR P2
A 93R	J05- 90	TB1-C41	TRUNNION CDU 16X RSVR S3
A 94Y	J05- 92	TB1-C38	TRUNNION CDU TACHOMETER LO
A 95Y	J05- 94	TB1-B34	TRUNNION CDU ENCODER COMMON
A 91R	J05-100	TB1-A43	TRUNNION CDU 16X RSVR P3
A 92R	J05-101	TB1-B43	TRUNNION CDU 16X RSVR P4
A 93Y	J05-104	TB1-C40	TRUNNION CDU 16X RSVR S2
A 94R	J05-106	TB1-C37	TRUNNION CDU TACHOMETER HI
A 95G	J05-107	TB1-B35	TRUNNION CDU ENCODER PHASE 1
A 95R	J05-108	TB1-B33	TRUNNION CDU ENCODER PHASE 2

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 146	J08- 17	TB1-B21	SPARE FAIL LIGHT 3 LO
A 147	J08- 18	TB1-A23	GIMBAL LOCK LIGHT HI
A 148	J08- 19	TB1-B21	GIMBAL LOCK LIGHT LO
A 149	J08- 28	TB1-B21	SPARE FAIL LIGHT 2 LO
A 150	J08- 29	TB1-G 8	STRUCTURE GROUND
A 151	J08- 30	TB1-B22	ZERO ENCODER LIGHT LO
A 152	J08- 31	TB1-A25	IMU DELAY LIGHT LO
A 153	J08- 32	TB1-C 4	MASTER CAUTION LIGHT HI
A 154Y	J08- 36	TB1-B75	400 CPS 6 V LO
A 155	J08- 41	TB1-A21	ZERO ENCODER LIGHT HI
A 156	J08- 42	TB1-A26	IMU DELAY LIGHT HI
A 157	J08- 43	J22- 40	MASTER CAUTION LIGHT RET
A 154G	J08- 46	TB1-B77	PROJECTION LAMP LO INTENSITY
A 158	J08- 50	TB1-A20	SPARE FAIL LIGHT 1 HI
A 159Y	J08- 51	TB1-C26	G+N ERROR LIGHT HI
A 159R	J08- 52	TB1-C25	G+N ERROR LIGHT LO
A 160	J08- 53	J22- 65	MASTER WARNING LIGHT RET
A 161	J08- 54	TB1-C 4	MASTER WARNING LIGHT HI
A 154R	J08- 55	TB1-B76	PROJECTION LAMP HI INTENSITY
A 162	J08- 60	TB1-A22	IMU FAIL LIGHT HI
A 163	J08- 61	TB1-B22	IMU FAIL LIGHT LO
A 164R	J08- 62	TB1-B26	IMU TEMP CONT FAIL LIGHT HI
A 164Y	J08- 63	TB1-B25	IMU TEMP CONT FAIL LIGHT LO
A 165G	J08- 66	TB1-A76	MDV SLEW CONTROL 1.5 V 400 CPS
A 166	J08- 67	TB1-A53	+28 VDC MDV SWITCHED
A 165R	J08- 68	TB1-A77	400 CPS 26 V MDV RSVR EXC
A 167	J08- 70	TB1-B22	SPARE FAIL LIGHT 1 LO
A 168R	J08- 71	TB1-D26	AGC POWER SUPPLY FAIL SIG HI
A 169	J08- 72	TB1-A24	CDU FAIL LIGHT HI
A 170	J08- 73	TB1-B24	ACCEL FAIL LIGHT HI
A 171	J08- 78	TB1-B52	STEP-UP-C
A 172	J08- 79	TB1-A52	STEP-DOWN-C
A 165Y	J08- 81	TB1-A78	400 CPS 26 V SLEW
A 168Y	J08- 82	TB1-D25	AGC POWER SUPPLY FAIL LIGHT LO
A 173	J08- 83	TB1-B23	CDU FAIL LIGHT LO
A 174	J08- 84	TB1-B23	ACCEL FAIL LIGHT LO
A 175	J08- 92	TB1-D 4	0 VDC IMU
A 176	J08- 93	TB1-A51	STEP-DOWN-R

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CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 165N	J08- 95	TB1-A75	400 CPS 26 V LO
A 177	J08-106	TB1-B51	STEP-UP-R

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CONDUCTOR			SIGNAL DESCRIPTION
A 96R	J0 -		PITCH ATTITUDE ERROR METER +
A 96Y	J06- 2		PITCH ATTITUDE ERROR METER -
A 97	J06- 6		ENTRY RELAY CONTROL RESET
A 98	J06- 9	- 9	MODE SWITCH INTERLOCK
A 99Y	J06- 12	TB1-A48	MODE RELAY COMMON TO AGC
A 100R	J06- 14	P01- 14	YAW ATTITUDE ERROR METER +
A 100Y	J06- 15	P01- 15	YAW ATTITUDE ERROR METER -
A 101	J06- 18	P01- 18	MODE RELAY COMMON TO D AND C ELECT
A 102	J06- 22	P01- 22	ATTITUDE CONTROL MODE LIGHT
A 103	J06- 23	P01- 23	FINE ALIGN RELAY CONTROL
A 104Y	J06- 24	TB1-G 3	ATTITUDE CONTROL RELAY CONTROL
A 105	J06- 25	P01- 25	ENTRY RELAY CONTROL
A 106Y	J06- 28	P01- 28	ROLL ATTITUDE ERROR METER -
A 106R	J06- 29	P01- 29	ROLL ATTITUDE ERROR METER +
A 107	J06- 34	P01- 34	ZERO ENCODER RELAY CONTROL
A 108	J06- 35	P01- 35	COARSE ALIGN RELAY CONTROL
A 109	J06- 36	P01- 36	CDU MANUAL RELAY CONTROL
A 110	J06- 37	P01- 37	MANUAL ALIGN
A 111	J06- 46	P01- 46	ATTITUDE CONTROL MODE INTERLOCK
A 112	J06- 56	P01- 56	MANUAL ALIGN
A 113Y	J06- 68	TB1-C56	AGC COMMON (ISS)
A 114Y	J06- 69	J24- 12	TRANSFER SWITCH INDICATION TO AGC 164
A 115	J06- 78	TB1-D 3	0 VDC IMU
A 116	J06- 79	P01- 79	ENTRY MODE LIGHT
A 99R	J06- 81	TB1-B48	ATTIT CONT MODE COMMAND FROM AGC
A 117	J06- 91	TB1-G 8	STRUCTURE GROUND
A 118	J06- 92	P01- 92	COARSE ALIGN MODE LIGHT
A 119	J06- 93	P01- 93	MODE RELAY COMMON
A 120	J06- 94	P01- 94	FINE ALIGN MODE LIGHT
A 121	J06-104	P01-104	ZERO ENCODER MODE LIGHT
A 122	J06-105	P01-105	CDU MANUAL MODE LIGHT
A 123Y	J06-107	TB1-B 3	400 CPS 6 V LO
A 123R	J06-108	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 285	J09- 1	TB1-F77	0 VDC OPTICS
A 286R	J09- 2	TB1-A61	TRACKER MODE RELAY COMMAND
A 287Y	J09- 3	J22- 89	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT
A 288Y	J09- 4	J22- 18	PITCH ATTIT IMPULSE CONTR OUTPUT UP
A 288R	J09- 5	J22- 35	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN
A 289R	J09- 6	J22- 87	YAW ATTIT IMPULSE CONTR OUTPUT LEFT
A 289G	J09- 7	J22- 88	YAW ATTIT IMPULSE CONTR INPUT
A 290R	J09- 8	TB1-K68	TRUNNION HAND CONTROLLER OUTPUT HI
A 291R	J09- 10	TB1-H68	SHAFT HAND CONTROLLER OUTPUT HI
A 292	J09- 11	TB1-B23	CONDITION LAMP DIMMER EMITTER
A 293	J09- 12	TB1-B54	CONDITION LAMP DIMMER BASE
A 294	J09- 13	TB1-B55	CONDITION LAMP DIMMER COLLECTOR
A 295	J09- 14	J22- 64	SPACECRAFT LAMP TEST
A 296	J09- 15	TB1-D70	0 VDC SPACECRAFT
A 287G	J09- 16	J22- 90	ROLL ATTIT IMPULSE CONTR INPUT
A 287R	J09- 17	J22- 60	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT
A 288G	J09- 18	J22- 36	PITCH ATTIT IMPULSE CONTR INPUT
A 289Y	J09- 20	J22- 58	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT
A 290Y	J09- 22	TB1-K69	TRUNNION HAND CONTROLLER OUTPUT LO
A 291Y	J09- 24	TB1-H69	SHAFT HAND CONTROLLER OUTPUT LO
A 297	J09- 26	TB1-C62	0 VDC IMU
A 298Y	J09- 30	P10- 32	ACCEPT MARK
A 299	J09- 31	P10- 16	MANUAL MARK COMMAND
A 300R	J09- 32	TB1-A54	PANEL BRIGHTNESS CONTROL
A 301Y	J09- 33	P10- 33	MARK REJECT
A 302R	J09- 34	TB1-F68	SCT TRUNNION TRACKER MODE INPUT HI
A 302Y	J09- 35	TB1-F69	SCT TRUNNION TRACKER MODE INPUT LO
A 303Y	J09- 40	J22- 8	0 VDC FROM NAA
A 303R	J09- 41	J22- 7	+28 VDC FROM NAA
A 304Y	J09- 42	J24- 31	TRACKER ON INDICATION TO AGC 107
A 305R	J09- 43	TB1-G68	PHOTOMETER MARK REJECT HI
A 300Y	J09- 44	TB1-A55	PANEL BRIGHTNESS CONTROL
A 306G	J09- 45	TB1-A71	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR
A 307Y	J09- 46	TB1-B77	PROJECTION LAMP LO INTENSITY
A 308Y	J09- 47	TB1-A68	AGC COMMON (OSS)
A 308R	J09- 48	TB1-A69	OPTICS ZERO ENCODER INDICATION
A 309Y	J09- 49	J24- 54	OPTICS MODE SW COMPUTER INDICATION 106
A 303G	J09- 50	J22- 2	ATTITUDE DISABLE SIG TO NAA

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 314G	J09- 95	P10- 48	400 CPS 26 V HI
A 328	J09- 96	TB1-B71	+28 VDC OPTICS TRACKER POWE.
A 329Y	J09- 97	TB1-H62	ACCEL INDICATING SENSOR HI
A 329N	J09- 98	TB1-G62	ACCEL BRIDGE AMP PIN 6
A 325R	J09-100	TB1-G59	IMU HTR CURRENT AMP PIN 5
A 325Y	J09-101	TB1-H59	IMU TEMP CONT K1 PIN 3
A 324Y	J09-102	TB1-K59	IMU TEMP CONT -5 DEG GAIN CHECK
A 329G	J09-103	TB1-G64	IMU IMU TEMP CONT +5 DEG GAIN CHECK
A 329R	J09-104	TB1-G63	ACCEL ZERO DEVIATION CHECK
A 319G	J09-105	TB1-F61	IMU TEMP ALARM BIAS RESISTOR
A 330	J09-106	TB1-B51	STEP-UP-R
A 331	J09-108	TB1-C71	+28 VDC OPTICS DAC POWER

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 488	J10- 1	E 38	GROUP 2 SHIELD	245
A 477	J10- 2	TB1-D72	CONDITION LAMP TEST	328
A 473G	J10- 3	TB1-A21	ZERO ENCODER LIGHT HI	301
A 473R	J10- 4	TB1-A24	CDU FAIL LIGHT HI	302
A 473Y	J10- 5	TB1-B24	ACCEL FAIL LIGHT HI	303
A 478	J10- 6	TB1-A22	IMU FAIL LIGHT HI	304
A 479	J10- 7	TB1-A20	SPARE FAIL LIGHT 1 HI	305
A 483	J10- 8	TB1-K71	+28 VDC MDV	306
A 481	J10- 9	TB1-B56	AGC FAIL SIG	326
A 489	J10- 10	TB1-K71	+28 VDC MDV	327
A 474G	J10- 12	TB1-B48	ATTIT CONT MODE COMMAND FROM AGC	314
A 474Y	J10- 13	TB1-A48	MODE RELAY COMMON TO AGC	315
A 444R	J10- 14	J21- 8	OUT 0 11	224S
A 447R	J10- 15	J21- 23	OUT 0 12	225S
A 445R	J10- 16	J21- 87	OUT 0 13	226S
A 424R	J10- 17	J21- 35	OUT 0 14	227S
A 425R	J10- 18	J21- 7	OUT 0 15	228S
A 428R	J10- 19	J21- 86	TELEMETRY FAIL ALARM	231S
A 475Y	J10- 21	TB1-C50	ZERO ENCODER MODE COMMAND FROM AGC	307
A 475G	J10- 22	TB1-A50	COARSE ALIGN MODE COMMAND FROM AGC	308
A 476Y	J10- 23	TB1-C48	CDU MANUAL MODE COMMAND FROM AGC	309
A 475R	J10- 24	TB1-B50	FINE ALIGN MODE COMMAND FROM AGC	310
A 476R	J10- 25	TB1-C49	ENTRY MODE COMMAND FROM AGC	311
A 474R	J10- 26	TB1-A48	MODE RELAY COMMON TO AGC	312
A 487	J10- 27	E 36	GROUP 3 SHIELD	250
A 438R	J10- 28	J21- 67	OUT 0 4	217S
A 439R	J10- 29	J21- 89	OUT 0 5	218S
A 440R	J10- 30	J21- 37	OUT 0 6	219S
A 446R	J10- 31	J21- 21	OUT 0 7	220S
A 423R	J10- 32	J21- 34	PROGRAM CHECK FAIL ALARM	232S
A 429R	J10- 33	J21- 6	SCALER FAIL ALARM	233S
A 466R	J10- 34	J21- 29	KEY CODE 1	201S
A 464R	J10- 35	J21- 48	KEY CODE 2	202S
A 461R	J10- 36	J21- 82	KEY CODE 3	203S
A 463R	J10- 37	J21- 52	KEY CODE 4	204S
A 459R	J10- 38	J21- 32	KEY CODE 5	205S
A 462R	J10- 39	J21- 31	TEST ALARM	207S
A 426R	J10- 40	J21- 10	PROGRAM ALARM	229S

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 310	J09- 51	TB1-K72	+28 VDC MDV
A 311Y	J09- 52	P10- 92	400 CPS 6 V LO
A 311R	J09- 53	P10-106	400 CPS 6 V HI
A 312R	J09- 54	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
A 307R	J09- 55	TB1-B76	PROJECTION LAMP HI INTENSITY
A 313Y	J09- 58	TB1-B57	0 DEG OFFSET RELAY COMMAND
A 313R	J09- 59	TB1-B58	25 DEG OFFSET RELAY COMMAND
A 305Y	J09- 60	TB1-G69	PHOTOMETER MARK REJECT LO
A 311G	J09- 61	P10-105	400 CPS 6 V HI
A 314R	J09- 65	P10- 39	400 CPS 1.5 V PI PHASE
A 315G	J09- 66	TB1-A76	MDV SLEW CONTROL 1.5 V 400 CPS
A 316	J09- 67	TB1-A53	+28 VDC MDV SWITCHED
A 315R	J09- 68	TB1-A77	400 CPS 26 V MDV RSVR EXC
A 306Y	J09- 69	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS
A 286G	J09- 70	TB1-B59	COMPUTER RELAY COMMAND
A 317	J09- 71	TB1-H71	+28 VDC OPTICS
A 286Y	J09- 72	TB1-B60	ZERO OPTICS MODE COMMAND
A 318	J09- 73	TB1-D72	CONDITION LAMP TEST
A 319R	J09- 74	TB1-F60	IMU TEMP ALARM AMP PIN 15
A 320	J09- 75	TB1-F59	IMU TEMP ALARM AMP PIN 14
A 321Y	J09- 76	TB1-D63	IMU TEMP CONT K2 PIN 6
A 314Y	J09- 77	P10- 38	400 CPS 1.5 V ZERO PHASE
A 322	J09- 78	TB1-B52	STEP-UP-C
A 323	J09- 79	TB1-A52	STEP-DOWN-C
A 306R	J09- 80	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS
A 315Y	J09- 81	TB1-A78	400 CPS 26 V SLEW
A 313G	J09- 82	TB1-A57	RESOLVED MODE RELAY COMMAND
A 312Y	J09- 84	TB1-C 3	MODE LAMP TEST PWR
A 324G	J09- 85	TB1-K62	IRIG TEMP BRIDGE AMP PIN 6
A 324R	J09- 86	TB1-K60	IRIG TEMP GAIN SWITCH NC
A 325G	J09- 87	TB1-H60	IMU TEMP CONT AMP PIN 5
A 325N	J09- 88	TB1-G60	IMU TEMP CONT K2 PIN 5
A 324N	J09- 89	TB1-K61	IRIG ZERO DEVIATION CHECK
A 321R	J09- 90	TB1-D62	EMERG HTR CONT MODULE LO
A 326	J09- 91	TB1-H70	STRUCTURE GROUND
A 319Y	J09- 92	TB1-F62	IMU TEMP ALARM AMP PIN 5
A 327	J09- 93	TB1-A51	STEP-DOWN-R
A 321G	J09- 94	TB1-F63	TEMPERATURE CONTROLLER 0 VDC IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 427R	J10- 41	J21- 44	COMPUTER ACTIVITY	230S
A 422R	J10- 42	J21- 5	TIMING (1.5 CPS)	244S
A 431R	J10- 43	J21- 25	COUNTER FAIL ALARM	235S
A 430R	J10- 44	J21- 3	PARITY FAIL ALARM	234S
A 468	J10- 45	J21- 84	SPARE	248
A 469	J10- 46	J21- 55	SPARE	249
A 465R	J10- 47	J21- 27	OR OF C1 THRU C33	210S
A 467R	J10- 48	J21- 14	ERROR RESET	208S
A 460R	J10- 49	J21- 83	KEY RESET NAV	209S
A 433R	J10- 51	J21- 85	RUPT LOCK ALARM	237S
A 432R	J10- 53	J21- 71	KEY RELEASE	236S
A 486	J10- 55	J21- 63	SPARE	240
A 485	J10- 56	J21- 91	DISKY GROUND	239
A 480	J10- 57	J21- 64	+13 V B	241
A 484	J10- 58	J21- 62	DISKY GROUND	251
A 482	J10- 59	J21- 65	+28 VDC AGC	243
A 437R	J10- 60	J21- 40	OUT 0 3	216S
A 441R	J10- 61	J21- 42	OUT 0 8	221S
A 442R	J10- 62	J21- 88	OUT 0 9	222S
A 443R	J10- 63	J21- 36	OUT 0 10	223S
A 434R	J10- 64	J21- 33	TC TRAP ALARM	238S
A 472Y	J10- 65	TB1-B60	ZERO OPTICS MODE COMMAND	316
A 472R	J10- 66	TB1-A61	TRACKER MODE RELAY COMMAND	317
A 472G	J10- 67	TB1-B59	COMPUTER RELAY COMMAND	331
A 470	J10- 69	E 26	COMMONED RETURNS GROUND	252
A 450	J10- 70	J21- 12	SPARE	211
A 449	J10- 71	J21- 26	POWER SUPPLY SYNC	212
A 448	J10- 72	J21- 46	SPARE	213
A 435R	J10- 73	J21- 90	OUT 0 1	214S
A 436R	J10- 74	J21- 38	OUT 0 2	215S
A 451	J10- 75	J21- 72	SPARE	247
A 452	J10- 82	E 34	COMMONED RETURNS GROUND	330

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC 72	J11-L3	TB1-K 3	COARSE ALIGN RELAY CONTROL	
	BB 7	J11-L4	J12-K3	STRUCTURE GROUND	
	CC 80	J11-L4	TB1-H 4	STRUCTURE GROUND	
	CC 1R	J11-L6	J23- 31	COMPUTER 3200 PPS OUT OF PHASE SYNC	152S
	CC 67K	J11-M1	TB1-K 7	3200 CPS 2 V HI	
	CC 67R	J11-M2	TB1-H 7	3200 CPS 2 V LO	
	BB 18	J11-M5	J11-P3	0 VDC IMU	
	CC 1W	J11-M5	J23- 52	COMPUTER 3200 PPS SYNC RET	152R
	CC 2W	J11-M5	J23- 53	COMPUTER 3200 PPS SYNC RET	151R
	CC 2R	J11-M6	J23- 54	COMPUTER 3200 PPS IN PHASE SYNC	151S
	BB 11R	J11-N1	J17-P2	3200 CPS 20 V CT	
	BB 11W	J11-N2	J17-R2	3200 CPS 20 V LO	
	BB 16	J11-N3	J12-P4	COMPUTER 12.8 KPPS SYNC	
	BB 5W	J11-N4	J12-P3	800 CPS 28 V 1 PCT LO IMU	
	BB 5R	J11-N5	J12-N3	800 CPS 28 V 1 PCT HI IMU	
	BB 13	J11-N6	J13-P6	-28 VDC	
	CC 66	J11-N6	TB1-C54	-28 VDC	
	BB 11L	J11-P1	J17-N2	3200 CPS 20 V HI	
	BB 19	J11-P2	J11-P3	0 VDC IMU	
	CC 79	J11-P2	E 4	0 VDC IMU	
	BB 20	J11-P3	J11-R3	0 VDC IMU	
*	BB 18	J11-P3	J11-M5	0 VDC IMU	
*	BB 19	J11-P3	J11-P2	0 VDC IMU	
	BB 21	J11-P4	J11-P5	0 VDC IMU	
	BB 27	J11-P4	J11-R4	0 VDC IMU	
*	BB 21	J11-P5	J11-P4	0 VDC IMU	
	BB 22	J11-P6	J11-R6	0 VDC IMU	
*	BB 17	J11-P6	J11-G2	0 VDC IMU	
	BB 23	J11-R1	J11-R2	0 VDC IMU	
	CC 78	J11-R1	TB1-C69	0 VDC IMU	
	CC 74	J11-R2	TB1-C70	0 VDC IMU	
*	BB 23	J11-R2	J11-R1	0 VDC IMU	
	CC 75	J11-R3	TB1-B68	0 VDC IMU	
*	BB 20	J11-R3	J11-P3	0 VDC IMU	
	BB 24	J11-R4	J11-R5	0 VDC IMU	
*	BB 27	J11-R4	J11-P4	0 VDC IMU	
	BB 26	J11-R5	J11-R6	0 VDC IMU	
	CC 76	J11-R5	TB1-H26	0 VDC IMU	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	BB 24	J11-R5	J11-R4	0 VDC IMU
	BB 25	J11-R6	J11-S6	0 VDC IMU
*	BB 22	J11-R6	J11-P6	0 VDC IMU
*	BB 26	J11-R6	J11-R5	0 VDC IMU
	BB 2	J11-S1	J20-N1	+28 VDC IMU
	BB 15	J11-S1	J11-S2	+28 VDC IMU
	BB 3	J11-S2	J20-N2	+28 VDC IMU
*	BB 15	J11-S2	J11-S1	+28 VDC IMU
	BB 12	J11-S3	J17-R1	+28 VDC STBY TO 3200 CPS POWER SUPPLY
	BB 1	J11-S4	J15-S6	+28 VDC IMU
	BB 6	J11-S4	J12-S5	+28 VDC IMU
	BB 14	J11-S4	J11-S5	+28 VDC IMU
	BB 4	J11-S5	J20-L2	+28 VDC IMU
*	BB 14	J11-S5	J11-S4	+28 VDC IMU
	CC 77	J11-S6	TB1-K26	0 VDC IMU
*	BB 25	J11-S6	J11-R6	0 VDC IMU
*	BB 28	J11-S6	J11-B5	0 VDC IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC 60W	J11-A1	TB1-K33	IG CDU 1X ERROR SIG
CC 62W	J11-A2	TB1-H33	MG CDU 1X ERROR SIG
CC 64W	J11-A3	TB1-G33	OG CDU 1X ERROR SIG
BB 9R	J11-A5	J12-A2	IMU MG ERROR SIG
CC 68R	J11-A5	TB1-B28	IMU MG ERROR SIG
BB 9L	J11-A6	J12-B1	IMU OG ERROR SIG
CC 68L	J11-A6	TB1-A28	IMU OG ERROR SIG
CC 60R	J11-B1	TB1-K34	IG CDU ERROR SIG RET
CC 61W	J11-B1	TB1-K28	IG CDU ERROR SIG RET
CC 62R	J11-B2	TB1-H34	MG CDU ERROR SIG RET
CC 63W	J11-B2	TB1-H28	MG CDU ERROR SIG RET
BB 10R	J11-B3	J17-B1	OG CDU ERROR SIG RET
CC 64R	J11-B3	TB1-G34	OG CDU ERROR SIG RET
BB 9K	J11-B5	J12-B2	IMU GIMBAL AND GYRO ERROR SIG LO
BB 28	J11-B5	J11-S6	0 VDC IMU
CC 68K	J11-B5	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO
BB 9W	J11-B6	J12-A1	IMU IG AND Y GYRO ERROR SIG
CC 68W	J11-B6	TB1-C28	IMU IG AND Y GYRO ERROR SIG
CC 61R	J11-C1	TB1-K29	IG CDU ATTITUDE STEERING ERROR
CC 63R	J11-C2	TB1-H29	MG CDU ATTITUDE STEERING ERROR
BB 10W	J11-C3	J17-A1	OG CDU ATTITUDE STEERING ERROR
CC 69W	J11-D5	TB1-F19	IG TORQUE MOTOR RET
CC 69R	J11-D6	TB1-F18	IG TORQUE MOTOR HI
CC 65R	J11-F1	TB1-B11	IG ADA
CC 73R	J11-F3	TB1-K 8	3200 CPS 2 V FEEDBACK HI
CC 70R	J11-F6	TB1-D18	MG TORQUE MOTOR HI
CC 65K	J11-G1	TB1-A10	OG ADA
BB 17	J11-G2	J11-P6	0 VDC IMU
CC 65W	J11-G2	TB1-B10	0 VDC IMU
CC 73W	J11-G3	TB1-H 8	3200 CPS 2 V FEEDBACK LO
CC 70W	J11-G6	TB1-D19	MG TORQUE MOTOR RET
CC 65L	J11-H1	TB1-A11	MG ADA
CC 71W	J11-H5	TB1-C19	OG TORQUE MOTOR RET
CC 71R	J11-H6	TB1-C18	OG TORQUE MOTOR HI
BB 8R	J11-L1	J12-H2	3200 CPS 2 V HI
CC 67L	J11-L1	TB1-K 7	3200 CPS 2 V HI
BB 8W	J11-L2	J12-K2	3200 CPS 2 V LO
CC 67W	J11-L2	TB1-H 7	3200 CPS 2 V LO

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	BB 9W	J12-A1	J11-B6	IMU IG AND Y GYRO ERROR SIG	
*	BB 9R	J12-A2	J11-A5	IMU MG ERROR SIG	
	BB 44	J12-A5	J13-D2	X PIP ERROR MONITOR	
	BB 45	J12-A6	J13-F2	Y PIP ERROR MONITOR	
*	BB 9L	J12-B1	J11-A6	IMU OG ERROR SIG	
*	BB 9K	J12-B2	J11-B5	IMU GIMBAL AND GYRO ERROR SIG LO	
	BB 59	J12-B5	J13-R6	0 VDC IMU	
	CC 89	J12-B5	TB1-B41	0 VDC IMU	
	BB 29	J12-B6	J14-H6	Z PIP ERROR MONITOR	
	CC 87	J12-C1	TB1-F51	TRAY 2 THERMISTER HI	
	BB 55	J12-C2	J13-C2	THERMISTER LO	
*	BB 94R	J12-D1	J16-L4	COMPUTER 800 PPS OUT OF PHASE SYNC	
*	BB 94L	J12-D2	J16-M4	COMPUTER 800 PPS IN PHASE SYNC	
	CC 10R	J12-D4	J24- 45	ACCEL FAIL	138S
	CC 9R	J12-D5	J24- 70	CDU FAIL	124S
	CC 8R	J12-D6	J24- 25	IMU FAIL	141S
	BB 41	J12-F1	J12-F2	COMPUTER 800 PPS SYNC RET	
*	BB 49	J12-F1	J12-R4	0 VDC IMU	
*	BB 94W	J12-F1	J16-L3	COMPUTER 800 PPS SYNC RET	
	CC 6W	J12-F2	J23- 51	COMPUTER 25.6 KPPS SYNC RET	153R
	CC 7W	J12-F2	J23- 50	COMPUTER 25.6 KPPS SYNC RET	154R
*	BB 41	J12-F2	J12-F1	COMPUTER 800 PPS SYNC RET	
	BB 52	J12-F3	J17-M3	0 VDC SPACECRAFT	
	CC 10W	J12-F4	J24- 72	ACCEL FAIL RET	138R
	CC 9W	J12-F5	J24- 71	CDU FAIL RET	124R
	CC 8W	J12-F6	J24- 46	IMU FAIL RET	141R
	CC 6R	J12-G1	J23- 30	COMPUTER 25.6 KPPS IN PHASE SYNC	153S
	CC 7R	J12-G2	J23- 29	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154S
	CC 4	J12-G3	J22- 63	G+N ERROR LIGHT (MAIN PANEL)	
	BB 34	J12-G4	J20-M6	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
	BB 56	J12-G5	J16-R2	0 VDC IMU	
	BB 37W	J12-G6	J16-N3	OG CDU FAILURE INDICATION	
	CC 3W	J12-H1	J23- 73	COMPUTER 102.4 KPPS SYNC RET	156R
*	BB 8R	J12-H2	J11-L1	3200 CPS 2 V HI	
	BB 33R	J12-H4	J20-K6	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	BB 39	J12-H4	J12-N2	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	CC 88R	J12-H4	TB1-D 1	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	BB 37L	J12-H5	J16-M2	IG CDU FAILURE INDICATION	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	BB 51R	J12-P6	J17-P3	25.6 KC HI OPTICS	
	CC 82R	J12-P6	TB1-K 1	25.6 KC HI OPTICS	
	CC 81W	J12-R1	TB1-C73	800 CPS 28 V 5 PCT IMU WHEELS LO	
	BB 57	J12-R2	J12-R3	0 VDC IMU	
	CC 90	J12-R2	TB1-C70	0 VDC IMU	
*	BB 54	J12-R2	J12-P5	0 VDC IMU	
	BB 58	J12-R3	J12-R4	0 VDC IMU	
	CC 91	J12-R3	TB1-C69	0 VDC IMU	
*	BB 57	J12-R3	J12-R2	0 VDC IMU	
	BB 49	J12-R4	J12-F1	0 VDC IMU	
	CC 92	J12-R4	TB1-C68	0 VDC IMU	
*	BB 58	J12-R4	J12-R3	0 VDC IMU	
	CC 93	J12-R5	TB1-K25	0 VDC IMU	
	CC 94	J12-R6	TB1-H53	0 VDC OPTICS	
*	BB 53	J12-R6	J12-N6	0 VDC OPTICS	
	BB 35	J12-S1	J20-M1	+28 VDC IMU	
	BB 47	J12-S1	J12-S3	+28 VDC IMU	
	BB 36	J12-S2	J20-M2	+28 VDC IMU	
	BB 48	J12-S2	J12-S4	+28 VDC IMU	
*	BB 47	J12-S3	J12-S1	+28 VDC IMU	
*	BB 48	J12-S4	J12-S2	+28 VDC IMU	
*	BB 6	J12-S5	J11-S4	+28 VDC IMU	
	BB 32	J12-S6	J20-P5	+28 VDC OPTICS	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC 95R	J13-A1	TB1-F11	X PIP ERROR HI	
	CC 98R	J13-A3	TB1-D11	Y PIP ERROR HI	
	BB 62	J13-A6	J14-A6	X GYRO DC DIFF AMP OUTPUT	
	CC 95W	J13-B1	TB1-F10	X PIP ERROR LO	
	CC 98W	J13-B3	TB1-D10	Y PIP ERROR LO	
	CC104	J13-C1	TB1-D51	TRAY 3 THERMISTER HI	
	BB 73	J13-C2	J14-B2	THERMISTER LO	
*	BB 55	J13-C2	J12-C2	THERMISTER LO	
	BB 64	J13-C6	J14-H5	STRUCTURE GROUND	
	CC342	J13-C6	E 1	STRUCTURE GROUND	
*	BB 42	J13-C6	J12-K3	STRUCTURE GROUND	
	BB 69	J13-D1	J15-L4	P X	
	CC 97	J13-D2	TB1-B40	X PIP ERROR MONITOR	
*	BB 44	J13-D2	J12-A5	X PIP ERROR MONITOR	
	BB 71	J13-D3	J15-L3	P Y	
	CC101L	J13-D6	TB1-F23	X GYRO TORQUE +	
	BB 70	J13-F1	J15-M4	N X	
	CC100	J13-F2	TB1-A40	Y PIP ERROR MONITOR	
*	BB 45	J13-F2	J12-A6	Y PIP ERROR MONITOR	
	BB 72	J13-F3	J15-M3	N Y	
	CC101W	J13-F6	TB1-F22	X GYRO TORQUE RET	
	CC101R	J13-G6	TB1-F21	X GYRO TORQUE -	
	CC 96L	J13-H1	TB1-K23	X PIP TORQUE +	
	BB 63L	J13-H6	J14-G1	X GYRO CAL DUMMY	
	CC 96W	J13-K1	TB1-K22	X PIP TORQUE RET	
	BB 63R	J13-K6	J14-H1	X GYRO TERNARY CUR SW TORQUE +	
	CC 96R	J13-L1	TB1-K21	X PIP TORQUE -	
	CC 99L	J13-L3	TB1-H23	Y PIP TORQUE +	
	BB 63W	J13-L6	J14-K1	X GYRO TERNARY CUR SW TORQUE -	
	CC 99W	J13-M3	TB1-H22	Y PIP TORQUE RET	
	CC 99R	J13-N3	TB1-H21	Y PIP TORQUE -	
	BB 60	J13-N5	J14-H3	PIPA INTERROGATE PULSE	
	CC 11R	J13-N5	J23- 7	PIPA INTERROGATE PULSE	139S
	BB 61	J13-N6	J14-K3	PIPA SWITCHING PULSE	
	CC 12R	J13-N6	J23- 2	PIPA SWITCHING PULSE	140S
	BB 68	J13-P6	J14-P6	-28 VDC	
*	BB 13	J13-P6	J11-N6	-28 VDC	
	BB 67W	J13-R1	J14-R2	+12, +32, +120 VDC RET GYRO	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	BB 37R	J12-H6	J16-M3	MG CDU FAILURE INDICATION	
	CC 3R	J12-K1	J23- 46	COMPUTER 102.4 KPPS SYNC	156S
*	BB 8W	J12-K2	J11-L2	3200 CPS 2 V LO	
	BB 42	J12-K3	J13-C6	STRUCTURE GROUND	
*	BB 7	J12-K3	J11-L4	STRUCTURE GROUND	
*	CC 3A	J12-K3	SHLD CC 3	STRUCTURE GROUND	
	BB 33W	J12-K4	J20-K5	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
	CC 88W	J12-K4	TB1-D 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU	
	BB 43W	J12-K6	J14-R2	+12, +32, +120 VDC RET GYRO	
	BB 46	J12-L1	J20-N5	+28 VDC MDV	
	CC 86	J12-L2	TB1-C26	G+N ERROR LIGHT HI	
	BB 43R	J12-L6	J14-S2	+120 VDC GYRO	
	CC 5	J12-M1	J23- 26	AGC POWER SUPPLY FAIL SIG HI	157S
	CC 85	J12-M1	TB1-D26	AGC POWER SUPPLY FAIL SIG HI	
	CC 84	J12-M3	TB1-B56	AGC FAIL SIG	
	BB 43K	J12-M5	J14-S5	+32 VDC GYRO	
	BB 43L	J12-M6	J14-S3	+12 VDC GYRO	
	BB 38	J12-N1	J12-P1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	BB 39	J12-N2	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU	
	BB 30R	J12-N3	J15-P6	800 CPS 28 V 1 PCT HI IMU	
*	BB 5R	J12-N3	J11-N5	800 CPS 28 V 1 PCT HI IMU	
	BB 40	J12-N4	J12-N5	25.6 KC HI IMU	
	CC 83R	J12-N4	TB1-G 1	25.6 KC HI IMU	
	BB 31R	J12-N5	J15-N6	25.6 KC HI IMU	
*	BB 40	J12-N5	J12-N4	25.6 KC HI IMU	
	BB 51W	J12-N6	J17-N3	25.6 KC LO OPTICS	
	BB 53	J12-N6	J12-R6	0 VDC OPTICS	
	CC 82W	J12-N6	TB1-K 2	25.6 KC LO OPTICS	
	CC 81L	J12-P1	TB1-C74	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
*	BB 38	J12-P1	J12-N1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A	
	CC 81R	J12-P2	TB1-C72	800 CPS 28 V 5 PCT IMU WHEELS PHASE B	
	BB 30W	J12-P3	J15-P5	800 CPS 28 V 1 PCT LO IMU	
*	BB 5W	J12-P3	J11-N4	800 CPS 28 V 1 PCT LO IMU	
	BB 50W	J12-P4	J17-R3	COMPUTER 12.8 KPPS SYNC	
*	BB 16	J12-P4	J11-N3	COMPUTER 12.8 KPPS SYNC	
	BB 31W	J12-P5	J15-N5	25.6 KC LO IMU	
	BB 54	J12-P5	J12-R2	0 VDC IMU	
	CC 83W	J12-P5	TB1-G 2	25.6 KC LO IMU	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB 66W	J13-R2	J14-R1	+32, +120 VDC RET PIP
	BB 74	J13-R6	J14-R6	0 VDC IMU
	CC102	J13-R6	E 5	0 VDC IMU
*	BB 59	J13-R6	J12-B5	0 VDC IMU
	BB 67R	J13-S1	J14-S2	+120 VDC GYRO
	BB 66R	J13-S2	J14-S1	+120 VDC PIP
	BB 67L	J13-S3	J14-S5	+32 VDC GYRO
	BB 66L	J13-S4	J14-S4	+32 VDC PIP
	BB 65	J13-S6	J14-S6	+28 VDC IMU
	CC103	J13-S6	TB1-G 6	+28 VDC IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC110	J14-R6	E 6	0 VDC IMU
CC113	J14-R6	TB1-H25	0 VDC IMU
* BB 74	J14-R6	J13-R6	0 VDC IMU
BB 79R	J14-S1	J17-L5	+120 VDC PIP
* BB 66R	J14-S1	J13-S2	+120 VDC PIP
* BB 43R	J14-S2	J12-L6	+120 VDC GYRO
* BB 67R	J14-S2	J13-S1	+120 VDC GYRO
* BB 43L	J14-S3	J12-M6	+12 VDC GYRO
BB 79L	J14-S4	J17-T5	+32 VDC PIP
* BB 66L	J14-S4	J13-S4	+32 VDC PIP
* BB 43K	J14-S5	J12-M5	+32 VDC GYRO
* BB 67L	J14-S5	J13-S3	+32 VDC GYRO
BB 78	J14-S6	J15-S2	+28 VDC IMU
* BB 65	J14-S6	J13-S6	+28 VDC IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC130W	J15-A1	TB1-F28	Z GYRO ERROR SIG	
CC 38W	J15-A3	J24- 30	MANUAL CDU MODE INDICATION TO AGC	160
BB 82R	J15-A4	J16-B2	IG DAC MDA SIG HI	
BB 82W	J15-A5	J16-B1	IG DAC MDA SIG LO	
CC120	J15-A5	E 8	IG DAC MDA SIG LO	
CC123	J15-A5	E 9	IG DAC MDA SIG LO	
BB 83R	J15-A6	J16-B4	MG DAC MDA SIG HI	
BB 83W	J15-A7	J16-B3	MG DAC MDA SIG LO	
CC121	J15-A7	E 10	MG DAC MDA SIG LO	
CC124	J15-A7	E 11	MG DAC MDA SIG LO	
BB 84R	J15-A8	J16-B6	OG DAC MDA SIG HI	
BB 84W	J15-A9	J16-B5	OG DAC MDA SIG LO	
CC122	J15-A9	E 12	OG DAC MDA SIG LO	
CC125	J15-A9	E 13	OG DAC MDA SIG LO	
CC130L	J15-B1	TB1-G28	X GYRO ERROR SIG	
CC130R	J15-B2	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO	
BB 80	J15-B3	J16-B7	AGC COMMON (ISS)	
CC 26W	J15-B4	J24- 41	IG ENCODER + DELTA THETA	120S
CC 32W	J15-B5	J23- 42	IG CDU + DELTA THETA COMMAND	128S
CC 28W	J15-B6	J24- 19	MG ENCODER + DELTA THETA	122S
CC 34W	J15-B7	J23- 35	MG CDU + DELTA THETA COMMAND	130S
CC 30W	J15-B8	J24- 39	OG ENCODER + DELTA THETA	118S
CC 36W	J15-B9	J23- 21	OG CDU + DELTA THETA COMMAND	126S
CC117W	J15-C1	TB1-F34	IG CDU ENCODER COMMON	
CC117L	J15-C2	TB1-F35	IG CDU ENCODER PHASE 1	
CC119R	J15-C3	TB1-C33	OG CDU ENCODER PHASE 2	
CC 27R	J15-C4	J24- 67	IG ENCODER - DELTA THETA	121S
CC 33R	J15-C5	J23- 43	IG CDU - DELTA THETA COMMAND	129S
CC 29R	J15-C6	J24- 8	MG ENCODER - DELTA THETA	123S
CC 35R	J15-C7	J23- 18	MG CDU - DELTA THETA COMMAND	131S
CC 31R	J15-C8	J24- 40	OG ENCODER - DELTA THETA	119S
CC 37R	J15-C9	J23- 22	OG CDU - DELTA THETA COMMAND	127S
CC117R	J15-D1	TB1-F33	IG CDU ENCODER PHASE 2	
CC118R	J15-D2	TB1-D33	MG CDU ENCODER PHASE 2	
CC119W	J15-D3	TB1-C34	OG CDU ENCODER COMMON	
CC119L	J15-D4	TB1-C35	OG CDU ENCODER PHASE 1	
CC126R	J15-D7	TB1-K15	SIN AIG 16X S4	
CC126W	J15-D8	TB1-K14	SIN AIG 16X S2	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC105R	J14-A1	TB1-C11	Z PIP ERROR HI	
CC105W	J14-A2	TB1-C10	Z PIP ERROR LO	
* BB 62	J14-A6	J13-A6	X GYRO DC DIFF AMP OUTPUT	
CC111	J14-B1	TB1-D52	TRAY 4 THERMISTER HI	
CC112	J14-B2	TB1-F52	THERMISTER LO	
* BB 73	J14-B2	J13-C2	THERMISTER LO	
CC 13R	J14-D1	J23- 3	+ DX GYRO RATE	142R
CC 14R	J14-D2	J23- 11	- DX GYRO RATE	143R
CC 15R	J14-D3	J23- 55	+ DY GYRO RATE	144R
CC 16R	J14-D4	J23- 32	- DY GYRO RATE	145R
CC 17R	J14-D5	J23- 15	+ DZ GYRO RATE	146R
CC 18R	J14-D6	J23- 14	- DZ GYRO RATE	147R
BB 75	J14-F6	J15-L2	P Z	
* BB 63L	J14-G1	J13-H6	X GYRO CAL DUMMY	
BB 76	J14-G6	J15-M2	N Z	
* BB 63R	J14-H1	J13-K6	X GYRO TERNARY CUR SW TORQUE +	
* BB 60	J14-H3	J13-N5	PIPA INTERROGATE PULSE	
BB 77	J14-H5	J15-K3	STRUCTURE GROUND	
* BB 64	J14-H5	J13-C6	STRUCTURE GROUND	
CC107	J14-H6	TB1-A41	Z PIP ERROR MONITOR	
* BB 29	J14-H6	J12-B6	Z PIP ERROR MONITOR	
* BB 63W	J14-K1	J13-L6	X GYRO TERNARY CUR SW TORQUE -	
* BB 61	J14-K3	J13-N6	PIPA SWITCHING PULSE	
CC 19R	J14-K4	J23- 25	GYRO RESET PULSE	148R
CC109L	J14-L6	TB1-C23	Z GYRO TORQUE +	
CC108L	J14-M1	TB1-D23	Y GYRO TORQUE +	
CC108R	J14-M2	TB1-D21	Y GYRO TORQUE -	
CC108W	J14-M3	TB1-D22	Y GYRO TORQUE RET	
CC109R	J14-M6	TB1-C21	Z GYRO TORQUE -	
CC109W	J14-N6	TB1-C22	Z GYRO TORQUE RET	
CC106L	J14-P1	TB1-G23	Z PIP TORQUE +	
CC106R	J14-P2	TB1-G21	Z PIP TORQUE -	
CC106W	J14-P3	TB1-G22	Z PIP TORQUE RET	
* BB 68	J14-P6	J13-P6	-28 VDC	
BB 79W	J14-R1	J17-L4	+32, +120 VDC RET PIP	
* BB 66W	J14-R1	J13-R2	+32, +120 VDC RET PIP	
* BB 43W	J14-R2	J12-K6	+12, +32, +120 VDC RET GYRO	
* BB 67W	J14-R2	J13-R1	+12, +32, +120 VDC RET GYRO	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC127L	J15-D9	TB1-K11	SIN AMG 16X TO CDU	
CC118L	J15-F1	TB1-D35	MG CDU ENCODER PHASE 1	
CC118W	J15-F2	TB1-D34	MG CDU ENCODER COMMON	
CC126L	J15-F7	TB1-K16	SIN AIG 16X TO CDU	
CC127W	J15-F8	TB1-K 9	SIN AMG 16X S2	
CC127R	J15-F9	TB1-K10	SIN AMG 16X S4	
BB 85W	J15-H4	J16-L1	FINE ALIGN RELAY CONTROL	
CC128R	J15-H4	TB1-H 5	FINE ALIGN RELAY CONTROL	
BB 88	J15-K3	J16-N4	STRUCTURE GROUND	
CC132	J15-K3	TB1-B49	STRUCTURE GROUND	
* BB 77	J15-K3	J14-H5	STRUCTURE GROUND	
CC 24R	J15-K4	J24- 33	- DELTA V Z	137R
CC 25R	J15-K5	J24- 56	+ DELTA V Z	136R
CC 23R	J15-K6	J24- 44	- DELTA V Y	135R
* BB 75	J15-L2	J14-F6	P Z	
* BB 71	J15-L3	J13-D3	P Y	
* BB 69	J15-L4	J13-D1	P X	
CC114	J15-L5	E 14	COMPUTER RET	
CC115	J15-L5	E 15	COMPUTER RET	
CC116	J15-L5	E 16	COMPUTER RET	
CC 22R	J15-L6	J24- 24	+ DELTA V Y	134R
* BB 76	J15-M2	J14-G6	N Z	
* BB 72	J15-M3	J13-F3	N Y	
* BB 70	J15-M4	J13-F1	N X	
CC 20R	J15-M5	J24- 2	+ DELTA V X	132R
CC 21R	J15-M6	J24- 10	- DELTA V X	133R
* BB 31W	J15-N5	J12-P5	25.6 KC LO IMU	
* BB 31R	J15-N6	J12-N5	25.6 KC HI IMU	
BB 86W	J15-P5	J16-S3	800 CPS 28 V 1 PCT LO IMU	
* BB 30W	J15-P5	J12-P3	800 CPS 28 V 1 PCT LO IMU	
BB 86R	J15-P6	J16-S4	800 CPS 28 V 1 PCT HI IMU	
* BB 30R	J15-P6	J12-N3	800 CPS 28 V 1 PCT HI IMU	
CC131	J15-R2	TB1-K26	0 VDC IMU	
CC129	J15-R6	TB1-B53	+28 VDC CDU NOT LOCK	
BB 85R	J15-S1	J16-L2	ZERO ENCODER RELAY CONTROL	
CC128L	J15-S1	TB1-K 5	ZERO ENCODER RELAY CONTROL	
BB 81	J15-S2	J20-L1	+28 VDC IMU	
* BB 78	J15-S2	J14-S6	+28 VDC IMU	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC136R	J16-A1	TB1-F29	IG CDU MDA TACH SIG
CC136W	J16-A2	TB1-F31	IG CDU MDA SLEW SIG
CC141R	J16-A3	TB1-D29	MG CDU MDA TACH SIG
CC141W	J16-A4	TB1-D31	MG CDU MDA SLEW SIG
CC153R	J16-A5	TB1-C29	OG CDU MDA TACH SIG
CC153W	J16-A6	TB1-C31	OG CDU MDA SLEW SIG
CC 41W	J16-A7	J24- 5	ZERO ENCODER MODE INDICATION TO AGC 158
BB 98R	J16-A8	J22- 12	SIN AOG 1X S2
CC144W	J16-A8	TB1-D14	SIN AOG 1X S2
BB 98W	J16-A9	J22- 26	SIN AOG 1X S4
CC144R	J16-A9	TB1-D15	SIN AOG 1X S4
CC136L	J16-B1	TB1-F30	IG CDU MDA INPUT RET
* BB 82W	J16-B1	J15-A5	IG DAC MDA SIG LO
* CC136A	J16-B1	SHLD CC136	IG CDU MDA INPUT RET
* BB 82R	J16-B2	J15-A4	IG DAC MDA SIG HI
CC141L	J16-B3	TB1-D30	MG CDU MDA INPUT RET
* BB 83W	J16-B3	J15-A7	MG DAC MDA SIG LO
* CC141A	J16-B3	SHLD CC141	MG CDU MDA INPUT RET
* BB 83R	J16-B4	J15-A6	MG DAC MDA SIG HI
CC153L	J16-B5	TB1-C30	OG CDU MDA INPUT RET
* BB 84W	J16-B5	J15-A9	OG DAC MDA SIG LO
* CC153A	J16-B5	SHLD CC153	OG CDU MDA INPUT RET
* BB 84R	J16-B6	J15-A8	OG DAC MDA SIG HI
CC173W	J16-B7	TB1-C56	AGC COMMON (ISS)
* BB 80	J16-B7	J15-B3	AGC COMMON (ISS)
BB 99W	J16-B8	J22- 4	COS AOG 1X S3
CC143W	J16-B8	TB1-C14	COS AOG 1X S3
CC144L	J16-B9	TB1-D16	SIN AOG 1X TO CDU
CC135W	J16-C1	TB1-K31	IG CDU 16X ERROR SIG
CC134W	J16-C2	TB1-K33	IG CDU 1X ERROR SIG
CC140W	J16-C3	TB1-H31	MG CDU 16X ERROR SIG
CC139W	J16-C4	TB1-H33	MG CDU 1X ERROR SIG
CC147R	J16-C5	TB1-G31	OG CDU 16X ERROR SIG
CC146W	J16-C6	TB1-G33	OG CDU 1X ERROR SIG
CC158	J16-C7	TB1-G29	OG CDU 16X RSVR LOAD
BB 99R	J16-C8	J22- 13	COS AOG 1X S1
CC143R	J16-C8	TB1-C15	COS AOG 1X S1
CC143L	J16-C9	TB1-C16	COS AOG 1X TO CDU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC133W	J16-D1	TB1-A31	IG CDU 1/2X ERROR SIG	
CC134R	J16-D2	TB1-K34	IG CDU ERROR SIG RET	
CC135R	J16-D2	TB1-K30	IG CDU ERROR SIG RET	
CC138W	J16-D3	TB1-A30	MG CDU 1/2X ERROR SIG	
CC139R	J16-D4	TB1-H34	MG CDU ERROR SIG RET	
CC140R	J16-D4	TB1-H30	MG CDU ERROR SIG RET	
CC145W	J16-D5	TB1-A29	OG CDU 1/2X ERROR SIG	
CC146R	J16-D6	TB1-G34	OG CDU ERROR SIG RET	
CC147W	J16-D6	TB1-G30	OG CDU ERROR SIG RET	
CC148R	J16-D7	TB1-F14	COS AOG 16X S1	
CC152W	J16-D8	TB1-G14	SIN AOG 16X S2	
CC152R	J16-D9	TB1-G15	SIN AOG 16X S4	
CC133R	J16-F1	TB1-B31	IG CDU ERROR SIG RET	
CC155	J16-F2	TB1-K35	IG CDU 1X RSVR LOAD	
CC138R	J16-F3	TB1-B30	MG CDU ERROR SIG RET	
CC156	J16-F4	TB1-H35	MG CDU 1X RSVR LOAD	
CC145R	J16-F5	TB1-B29	OG CDU ERROR SIG RET	
CC157	J16-F6	TB1-G35	OG CDU 1X RSVR LOAD	
CC148W	J16-F7	TB1-F15	COS AOG 16X S3	
CC148L	J16-F8	TB1-F16	COS AOG 16X TO CDU	
CC152L	J16-F9	TB1-G16	SIN AOG 16X TO CDU	
CC163W	J16-G1	TB1-H15	COS AIG 16X S3	
CC163L	J16-G2	TB1-H16	COS AIG 16X TO CDU	
CC164W	J16-G3	TB1-H10	COS AMG 16X S3	
CC164L	J16-G4	TB1-H11	COS AMG 16X TO CDU	
CC163R	J16-H1	TB1-H14	COS AIG 16X S1	
CC165	J16-H2	TB1-B54	CONDITION LAMP DIMMER BASE	
CC164R	J16-H3	TB1-H 9	COS AMG 16X S1	
CC166	J16-H4	TB1-B25	IMU TEMP CONT FAIL LIGHT LO	
CC167	J16-K1	TB1-B23	CONDITION LAMP DIMMER EMITTER	
CC168	J16-K2	TB1-B55	CONDITION LAMP DIMMER COLLECTOR	
CC171	J16-K3	TB1-A25	IMU DELAY LIGHT LO	
CC169	J16-K4	TB1-D25	AGC POWER SUPPLY FAIL LIGHT LO	
CC170	J16-K5	TB1-C25	G+N ERROR LIGHT LO	
* BB 85W	J16-L1	J15-H4	FINE ALIGN RELAY CONTROL	
* BB 85R	J16-L2	J15-S1	ZERO ENCODER RELAY CONTROL	
BB 94W	J16-L3	J12-F1	COMPUTER 800 PPS SYNC RET	
CC 39W	J16-L3	J23- 27	COMPUTER 800 PPS SYNC RET	150R

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC128W	J15-S3	TB1-G 5	LOCK CDU RELAY CONTROL
BB 87	J15-S6	J16-S2	+28 VDC IMU
* BB 1	J15-S6	J11-S4	+28 VDC IMU

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
CC 40W	J16-L3	J23- 13	COMPUTER 800 PPS SYNC RET	149R
BB 94R	J16-L4	J12-D1	COMPUTER 800 PPS OUT OF PHASE SYNC	
CC 39R	J16-L4	J23- 12	COMPUTER 800 PPS OUT OF PHASE SYNC	150S
CC159W	J16-M1	TB1-H 3	ENTRY RELAY CONTROL	
CC175K	J16-M2	TB1-C58	IG CDU FAILURE INDICATION	
* BB 37L	J16-M2	J12-H5	IG CDU FAILURE INDICATION	
CC175L	J16-M3	TB1-C57	MG CDU FAILURE INDICATION	
* BB 37R	J16-M3	J12-H6	MG CDU FAILURE INDICATION	
BB 94L	J16-M4	J12-D2	COMPUTER 800 PPS IN PHASE SYNC	
CC 40R	J16-M4	J23- 4	COMPUTER 800 PPS IN PHASE SYNC	149S
CC154W	J16-N1	TB1-G19	OG CDU MDA OUTPUT	
CC154R	J16-N2	TB1-G18	OG CDU MDA OUTPUT	
CC175R	J16-N3	TB1-D57	OG CDU FAILURE INDICATION	
* BB 37W	J16-N3	J12-G6	OG CDU FAILURE INDICATION	
BB 95	J16-N4	J17-L6	STRUCTURE GROUND	
CC180	J16-N4	TB1-A60	STRUCTURE GROUND	
* BB 88	J16-N4	J15-K3	STRUCTURE GROUND	
BB 89W	J16-N5	J18-S1	800 CPS 28 V 1 PCT LO OPTICS	
CC161R	J16-N5	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS	
CC172R	J16-N5	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS	
BB 92W	J16-N6	J20-H5	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
CC162W	J16-N6	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
CC174W	J16-N6	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
CC137R	J16-P1	TB1-K19	IG CDU MDA OUTPUT	
CC176	J16-P2	TB1-D59	0 VDC IMU	
* CC 39A	J16-P2	SHLD CC 39	0 VDC IMU	
* CC 40A	J16-P2	SHLD CC 40	0 VDC IMU	
CC142R	J16-P3	TB1-H18	MG CDU MDA OUTPUT	
CC160W	J16-P4	TB1-B 5	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU	
BB 89R	J16-P5	J18-T1	800 CPS 28 V 1 PCT HI OPTICS	
CC161W	J16-P5	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS	
CC172W	J16-P5	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS	
BB 92R	J16-P6	J20-H6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
CC162R	J16-P6	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
CC174R	J16-P6	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
CC137W	J16-R1	TB1-K18	IG CDU MDA OUTPUT	
CC175W	J16-R2	TB1-D58	0 VDC IMU	
CC177	J16-R2	TB1-F75	0 VDC IMU	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* BB 10W	J17-A1	J11-C3	OG CDU ATTITUDE STEERING ERROR
CC204W	J17-A2	TB1-G31	OG CDU 16X ERROR SIG
CC 47R	J17-A3	J22- 83	ROLL ERROR BODY OFFSET AXIS HI
CC 43R	J17-A4	J22- 74	ROLL ERROR BODY AXIS HI
CC202L	J17-A6	TB1-B35	TRUNNION CDU ENCODER PHASE 1
CC202W	J17-A7	TB1-B34	TRUNNION CDU ENCODER COMMON
CC202R	J17-A8	TB1-B33	TRUNNION CDU ENCODER PHASE 2
BB112	J17-A9	J17-B9	TRUNNION ENCODER SCALE SELECT
* BB 10R	J17-B1	J11-B3	OG CDU ERROR SIG RET
CC204R	J17-B2	TB1-G30	OG CDU ERROR SIG RET
CC 47W	J17-B3	J22- 82	ROLL ERROR BODY OFFSET AXIS LO
CC 43W	J17-B4	J22- 75	ROLL ERROR BODY AXIS LO
CC191W	J17-B5	TB1-H64	IRIG TEMP CONT SENSOR RET
CC191R	J17-B6	TB1-H63	IRIG TEMP CONT SENSOR HI
CC184W	J17-B7	TB1-K59	IMU TEMP CONT -5 DEG GAIN CHECK
CC184L	J17-B8	TB1-K61	IRIG ZERO DEVIATION CHECK
* BB112	J17-B9	J17-A9	TRUNNION ENCODER SCALE SELECT
CC 48W	J17-C1	J22- 79	PITCH ERROR BODY AND BODY OFFSET AXIS LO
CC201W	J17-C1	TB1-G13	PITCH ERROR BODY AND BODY OFFSET AXIS LO
CC201R	J17-C2	TB1-F13	PITCH-YAW RSVR S4
CC 45R	J17-C3	J22- 53	YAW ERROR BODY OFFSET AXIS HI
CC 44R	J17-C4	J22- 49	YAW ERROR BODY AXIS HI
CC198W	J17-C5	TB1-K64	IRIG TEMP IND SENSOR RET
CC198R	J17-C6	TB1-K63	IRIG TEMP IND SENSOR HI
CC184K	J17-C7	TB1-K62	IRIG TEMP BRIDGE AMP PIN 6
CC184R	J17-C8	TB1-K60	IRIG TEMP GAIN SWITCH NC
CC203L	J17-C9	TB1-A35	SHAFT CDU ENCODER PHASE 1
CC 48R	J17-D1	J22- 78	PITCH ERROR BODY AND BODY OFFSET AXIS HI
CC182R	J17-D2	TB1-H13	PITCH YAW RSVR S3
CC 45W	J17-D3	J22- 81	YAW ERROR BODY OFFSET AXIS LO
CC182W	J17-D3	TB1-K13	YAW ERROR BODY OFFSET AXIS LO
CC 44W	J17-D4	J22- 76	YAW ERROR BODY AXIS LO
CC185W	J17-D5	TB1-G61	ACCEL TEMP IND SENSOR RET
CC185L	J17-D6	TB1-G64	IMU IMU TEMP CONT +5 DEG GAIN CHECK
CC185R	J17-D7	TB1-G63	ACCEL ZERO DEVIATION CHECK
CC203W	J17-D9	TB1-A34	SHAFT CDU ENCODER COMMON
CC205	J17-F2	TB1-C64	TEMPERATURE CONTROL SIG LO
CC196	J17-F3	TB1-B64	HTR CURRENT (TELEMETRY)

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC195	J17-F4	TB1-D64	IRIG TEMP (TELEMETRY)
CC194	J17-F5	TB1-F64	ACCEL TEMP (TELEMETRY)
CC193	J17-F6	TB1-A64	BLOWER CURRENT SENSOR (TELEMETRY)
CC185K	J17-F7	TB1-G62	ACCEL BRIDGE AMP PIN 6
CC203R	J17-F9	TB1-A33	SHAFT CDU ENCODER PHASE 2
CC188	J17-G1	TB1-F59	IMU TEMP ALARM AMP PIN 14
CC187R	J17-G2	TB1-F60	IMU TEMP ALARM AMP PIN 15
BB107L	J17-G4	J18-G4	SHAFT ENCODER + DELTA THETA OUTPUT
CC 50R	J17-G4	J24- 59	SHAFT ENCODER + DELTA THETA OUTPUT 108S
BB101L	J17-G6	J18-G6	TRUNNION ENCODER + DELTA THETA OUTPUT
CC 42R	J17-G6	J24- 61	TRUNNION ENCODER + DELTA THETA OUT 110S
CC187L	J17-H1	TB1-F61	IMU TEMP ALARM BIAS RESISTOR
CC187W	J17-H2	TB1-F62	IMU TEMP ALARM AMP PIN 5
BB107W	J17-H4	J18-H4	SHAFT ENCODER DELTA THETA OUT COMMON
CC 46W	J17-H4	J24- 35	SHAFT ENCODER DELTA THETA OUT COMMON109R
CC 50W	J17-H4	J24- 58	SHAFT ENCODER DELTA THETA OUT COMMON108R
BB101W	J17-H6	J18-H6	TRUNNION ENCODER DELTA THETA OUT COM
CC 42W	J17-H6	J24- 60	TRUNNION ENCODER DELTA THETA OUT COM110R
CC 49W	J17-H6	J24- 37	TRUNNION ENCODER DELTA THETA OUT COM111R
BB107R	J17-K4	J18-K4	SHAFT ENCODER - DELTA THETA OUTPUT
CC 46R	J17-K4	J24- 36	SHAFT ENCODER - DELTA THETA OUTPUT 109S
BB101R	J17-K6	J18-K6	TRUNNION ENCODER - DELTA THETA OUTPUT
CC 49R	J17-K6	J24- 38	TRUNNION ENCODER - DELTA THETA OUT 111S
CC189W	J17-L1	TB1-D63	IMU TEMP CONT K2 PIN 6
BB109	J17-L3	J22- 38	IMU TEMP LIGHT (MAIN PANEL)
CC206W	J17-L4	TB1-B63	+32, +120 VDC RET PIP
* BB 79W	J17-L4	J14-R1	+32, +120 VDC RET PIP
CC206R	J17-L5	TB1-A63	+120 VDC PIP
* BB 79R	J17-L5	J14-S1	+120 VDC PIP
BB100	J17-L6	J18-P4	STRUCTURE GROUND
CC207	J17-L6	TB1-G70	STRUCTURE GROUND
* BB 95	J17-L6	J16-N4	STRUCTURE GROUND
CC189R	J17-M1	TB1-F63	TEMPERATURE CONTROLLER 0 VDC IMU
CC199	J17-M2	TB1-H61	IMU TEMP SENSOR COM
BB108	J17-M3	J22- 39	0 VDC SPACECRAFT
CC200	J17-M3	TB1-D70	0 VDC SPACECRAFT
* BB 52	J17-M3	J12-F3	0 VDC SPACECRAFT
CC190W	J17-M4	TB1-C60	IMU EMERGENCY HTR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* BB 56	J16-R2	J12-G5	0 VDC IMU
CC142W	J16-R3	TB1-H19	MG CDU MDA OUTPUT
CC160K	J16-R4	TB1-B 6	ZEROING RSVR 800 CPS
CC178	J16-R5	TB1-K53	0 VDC OPTICS
CC179	J16-R6	TB1-G53	0 VDC OPTICS
CC149	J16-S1	TB1-C53	+28 VDC IMU FOR IG MDA
BB 93	J16-S2	J20-L2	+28 VDC IMU
* BB 87	J16-S2	J15-S6	+28 VDC IMU
BB 97W	J16-S3	J20-F8	800 CPS 28 V 1 PCT LO IMU
CC160R	J16-S3	TB1-B 7	800 CPS 28 V 1 PCT LO IMU
* BB 86W	J16-S3	J15-P5	800 CPS 28 V 1 PCT LO IMU
BB 97R	J16-S4	J20-F9	800 CPS 28 V 1 PCT HI IMU
CC160L	J16-S4	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
* BB 86R	J16-S4	J15-P6	800 CPS 28 V 1 PCT HI IMU
BB 90	J16-S5	J20-P5	+28 VDC OPTICS
BB 96	J16-S5	J16-S6	+28 VDC OPTICS
BB 91	J16-S6	J20-P6	+28 VDC OPTICS
* BB 96	J16-S6	J16-S5	+28 VDC OPTICS
CC150	J16-T1	TB1-C52	+28 VDC IMU FOR MG MDA
CC151	J16-T2	TB1-C51	+28 VDC IMU FOR OG MDA

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC186W	J17-M5	TB1-H59	IMU TEMP CONT K1 PIN 3
CC186R	J17-M6	TB1-H60	IMU TEMP CONT AMP PIN 5
CC192W	J17-N1	TB1-D61	IMU CONTROL HTR LO
* BB 11L	J17-N2	J11-P1	3200 CPS 20 V HI
* BB 51W	J17-N3	J12-N6	25.6 KC LO OPTICS
CC190R	J17-N4	TB1-C61	EMERGENCY HTR LO-OPER AND STBY
CC186L	J17-N5	TB1-G60	IMU TEMP CONT K2 PIN 5
CC186K	J17-N6	TB1-G59	IMU HTR CURRENT AMP PIN 5
CC192R	J17-P1	TB1-D60	IMU CONTROL HTR HI
* BB 11R	J17-P2	J11-N1	3200 CPS 20 V CT
* BB 51R	J17-P3	J12-P6	25.6 KC HI OPTICS
CC183R	J17-P4	TB1-C77	800 CPS 28 V 5 PCT HI TO BLOWERS
CC197	J17-P5	TB1-B26	IMU TEMP CONT FAIL LIGHT HI
CC181	J17-P6	TB1-D71	CONDITION LAMP TEST
* BB 12	J17-R1	J11-S3	+28 VDC STBY TO 3200 CPS POWER SUPPLY
* BB 11W	J17-R2	J11-N2	3200 CPS 20 V LO
CC 51R	J17-R3	J23- 28	COMPUTER 12.8 KPPS SYNC 155S
* BB 50W	J17-R3	J12-P4	COMPUTER 12.8 KPPS SYNC
CC183W	J17-R4	TB1-C75	800 CPS 28 V 5 PCT L-90 DEG HI IMU
BB106	J17-R5	J20-M5	+28 VDC MDV
CC208	J17-R6	TB1-F76	0 VDC OPTICS
BB113	J17-S1	J17-S2	0 VDC IMU
CC209	J17-S1	TB1-D75	0 VDC IMU
CC210	J17-S2	TB1-D74	0 VDC IMU
* BB113	J17-S2	J17-S1	0 VDC IMU
CC 51W	J17-S3	J23- 49	0 VDC IMU 155R
CC211	J17-S3	TB1-B69	0 VDC IMU
BB 50B	J17-S4	SHLD BB 50	0 VDC IMU
CC212	J17-S4	TB1-B70	0 VDC IMU
* CC 51A	J17-S4	SHLD CC 51	0 VDC IMU
CC213	J17-S6	TB1-D76	0 VDC OPTICS
BB104	J17-T1	J20-R3	+28 VDC STBY
BB110	J17-T1	J17-T2	+28 VDC STBY
BB105	J17-T2	J20-R4	+28 VDC STBY
* BB110	J17-T2	J17-T1	+28 VDC STBY
BB103	J17-T3	J20-M2	+28 VDC IMU
BB102	J17-T4	J20-M1	+28 VDC IMU
CC206L	J17-T5	TB1-C63	+32 VDC PIP

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC218W	J18-A1	TB1-D46	SXT SHAFT 1/2X RSVR S1
CC219W	J18-A2	TB1-B46	SXT SHAFT 16X RSVR S4
CC219R	J18-A3	TB1-B45	SXT SHAFT 16X RSVR S2
CC237R	J18-A5	TB1-K37	SCT SHAFT TACH HI
CC239R	J18-A7	TB1-H37	SXT SHAFT TACH HI
CC233R	J18-A9	TB1-D37	SXT TRUNNION TACH HI
CC218R	J18-B1	TB1-D45	SXT SHAFT 1/2X RSVR S3
CC237W	J18-B5	TB1-K38	SCT SHAFT TACH LO
CC239W	J18-B7	TB1-H38	SXT SHAFT TACH LO
CC233W	J18-B9	TB1-D38	SXT TRUNNION TACH LO
CC234R	J18-C1	TB1-B43	SXT TRUNNION 64X RSVR S2
CC234W	J18-C2	TB1-B44	SXT TRUNNION 64X RSVR S4
CC235R	J18-C5	TB1-K41	SCT SHAFT 1X RSVR S2
CC226	J18-C7	TB1-G55	TRACKER X DRIVE BUFFERED HI
CC227	J18-C8	TB1-G54	TRACKER Y DRIVE BUFFERED HI
CC228	J18-C9	TB1-G56	TRACKER PREAMP OUTPUT BUFFERED HI
CC230W	J18-D1	TB1-C43	TRUNNION CDU 1/4X RSVR S4
CC221W	J18-D3	TB1-G44	SCT TRUNNION 1X RSVR P1
CC221R	J18-D4	TB1-G43	SCT TRUNNION 1X RSVR P3
CC235W	J18-D5	TB1-K40	SCT SHAFT 1X RSVR S4
BB120	J18-D7	J18-D8	0 VDC OPTICS
BB122	J18-D7	J18-L1	0 VDC OPTICS
BB121	J18-D8	J18-D9	0 VDC OPTICS
* BB120	J18-D8	J18-D7	0 VDC OPTICS
* BB121	J18-D9	J18-D8	0 VDC OPTICS
CC230R	J18-F1	TB1-C44	TRUNNION CDU 1/4X RSVR S2
CC229W	J18-F2	TB1-D44	TRUNNION CDU 1/4X RSVR S1
CC229R	J18-F3	TB1-D43	TRUNNION CDU 1/4X RSVR S3
CC231R	J18-F4	TB1-F44	SCT TRUNNION 1X RSVR P2
CC231W	J18-F5	TB1-F43	SCT TRUNNION 1X RSVR P4
BB118R	J18-G1	J19-G6	SXT SHAFT MDA INPUT HI
BB118W	J18-G2	J19-G5	SXT SHAFT MDA INPUT LO
CC 55R	J18-G3	J23- 37	SHAFT + DELTA THETA COMMAND 114S
* BB107L	J18-G4	J17-G4	SHAFT ENCODER + DELTA THETA OUTPUT
CC 54R	J18-G5	J23- 60	TRUNNION - DELTA THETA COMMAND 117S
* BB101L	J18-G6	J17-G6	TRUNNION ENCODER + DELTA THETA OUTPUT
BB119W	J18-H1	J19-H6	SXT TRUNNION MDA INPUT LO
CC 53W	J18-H3	J23- 19	SHAFT DELTA THETA COMMAND COMMON 115R

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CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
CC 55W	J18-H3	J23- 36	SHAFT DELTA THETA COMMAND COMMON 114R
* BB107W	J18-H4	J17-H4	SHAFT ENCODER DELTA THETA OUT COMMON
CC 52W	J18-H5	J23- 88	TRUNNION DELTA THETA COMMAND COMMON 116R
CC 54W	J18-H5	J23- 59	TRUNNION DELTA THETA COMMAND COMMON 117R
* BB101W	J18-H6	J17-H6	TRUNNION ENCODER DELTA THETA OUT COM
BB119R	J18-K1	J19-K6	SXT TRUNNION MDA INPUT HI
CC 53R	J18-K3	J23- 20	SHAFT - DELTA THETA COMMAND 115S
* BB107R	J18-K4	J17-K4	SHAFT ENCODER - DELTA THETA OUTPUT
CC 52R	J18-K5	J23- 89	TRUNNION + DELTA THETA COMMAND 116S
* BB101R	J18-K6	J17-K6	TRUNNION ENCODER - DELTA THETA OUTPUT
BB123	J18-L1	J18-L2	0 VDC OPTICS
BB131	J18-L1	J19-L6	0 VDC OPTICS
* BB122	J18-L1	J18-D7	0 VDC OPTICS
BB124	J18-L2	J18-L3	0 VDC OPTICS
* BB123	J18-L2	J18-L1	0 VDC OPTICS
BB125	J18-L3	J18-L4	0 VDC OPTICS
* BB124	J18-L3	J18-L2	0 VDC OPTICS
BB126	J18-L4	J18-L5	0 VDC OPTICS
* BB125	J18-L4	J18-L3	0 VDC OPTICS
BB127	J18-L5	J18-L6	0 VDC OPTICS
* BB126	J18-L5	J18-L4	0 VDC OPTICS
* BB127	J18-L6	J18-L5	0 VDC OPTICS
CC222	J18-M1	TB1-H56	SXT TRUNNION MDA INPUT BUFFERED
CC220	J18-M2	TB1-H55	SXT TRUNNION TACH FEEDBACK BUFFERED
CC214	J18-M3	TB1-K56	SXT SHAFT MDA INPUT BUFFERED
CC215	J18-M4	TB1-K55	SXT SHAFT TACH FEEDBACK BUFFERED
CC217	J18-M5	TB1-H54	SCT SHAFT 1X ERROR SIG BUFFERED
CC216	J18-M6	TB1-K54	SCT SHAFT TACH FEEDBACK BUFFERED
CC225R	J18-P1	TB1-B60	ZERO OPTICS MODE COMMAND
CC223W	J18-P2	TB1-B57	0 DEG OFFSET RELAY COMMAND
CC225W	J18-P3	TB1-B59	COMPUTER RELAY COMMAND
BB115	J18-P4	J19-R4	STRUCTURE GROUND
* BB100	J18-P4	J17-L6	STRUCTURE GROUND
BB116	J18-R1	J19-R6	TRACKER MODE RELAY COMMAND
CC223R	J18-R2	TB1-B58	25 DEG OFFSET RELAY COMMAND
BB128	J18-R4	J18-R5	0 VDC OPTICS
BB130	J18-R4	J18-S3	0 VDC OPTICS
CC241	J18-R4	TB1-F77	0 VDC OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* BB 79L	J17-T5	J14-S4	+32 VDC PIP
BB111	J17-T6	J20-N6	+28 VDC OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
BB129	J18-R5	J18-R6	0 VDC OPTICS
* BB128	J18-R5	J18-R4	0 VDC OPTICS
CC240	J18-R6	TB1-D77	0 VDC OPTICS
* BB129	J18-R6	J18-R5	0 VDC OPTICS
BB117W	J18-S1	J19-S6	800 CPS 28 V 1 PCT LO OPTICS
* BB [illegible]W	J18-S1	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
* BB130	J18-S3	J18-R4	0 VDC OPTICS
CC236R	J18-S4	TB1-H51	SCT SHAFT MOTOR PHASE 2
CC238R	J18-S5	TB1-G49	SXT SHAFT MOTOR PHASE 2
CC232R	J18-S6	TB1-G51	SXT TRUNNION MOTOR PHASE 2
BB117R	J18-T1	J19-T6	800 CPS 28 V 1 PCT HI OPTICS
* BB 89R	J18-T1	J16-P5	800 CPS 28 V 1 PCT HI OPTICS
BB114	J18-T2	J20-N6	+28 VDC OPTICS
CC224	J18-T3	TB1-C71	+28 VDC OPTICS DAC POWER
CC236W	J18-T4	TB1-H52	SCT SHAFT MOTOR PHASE 1
CC238W	J18-T5	TB1-G48	SXT SHAFT MOTOR PHASE 1
CC232W	J18-T6	TB1-G52	SXT TRUNNION MOTOR PHASE 1

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB135	J19-L1	J20-B8	0 VDC OPTICS
	BB136	J19-L1	J19-L2	0 VDC OPTICS
	BB137	J19-L2	J19-L3	0 VDC OPTICS
*	BB136	J19-L2	J19-L1	0 VDC OPTICS
	BB138	J19-L3	J19-L4	0 VDC OPTICS
*	BB137	J19-L3	J19-L2	0 VDC OPTICS
	BB139	J19-L4	J19-L5	0 VDC OPTICS
*	BB138	J19-L4	J19-L3	0 VDC OPTICS
	BB140	J19-L5	J19-L6	0 VDC OPTICS
*	BB139	J19-L5	J19-L4	0 VDC OPTICS
	CC270	J19-L6	TB1-F56	0 VDC OPTICS
*	BB131	J19-L6	J18-L1	0 VDC OPTICS
*	BB140	J19-L6	J19-L5	0 VDC OPTICS
	CC243	J19-M1	TB1-G57	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
	CC244	J19-M2	TB1-H57	TRUNNION CDU TACH FEEDBACK BUFFERED
	CC242	J19-M3	TB1-H58	SHAFT CDU 16X ERROR SIG BUFFERED
	CC248	J19-M4	TB1-G58	SHAFT CDU TACH FEEDBACK SIG BUFFERED
	CC245	J19-M5	TB1-K57	SCT TRUNNION 1X ERROR SIG BUFFERED
	CC246	J19-M6	TB1-F58	SCT TRUNNION TACH FEEDBACK BUFFERED
	CC252R	J19-P1	TB1-B19	TRUNNION CDU 1/2X RSVR P3
	CC252W	J19-P2	TB1-B18	TRUNNION CDU 1/2X RSVR P2
	CC264L	J19-P3	TB1-F48	SHAFT CDU 1X RSVR S2
	CC264R	J19-P4	TB1-F49	SHAFT CDU 1X RSVR S3
	CC264W	J19-P5	TB1-F50	SHAFT CDU 1X RSVR S1
	CC251R	J19-P6	TB1-A57	RESOLVED MODE RELAY COMMAND
	BB141	J19-R1	J19-R2	0 VDC OPTICS
	CC271	J19-R1	TB1-F78	0 VDC OPTICS
	BB142	J19-R2	J19-R3	0 VDC OPTICS
*	BB141	J19-R2	J19-R1	0 VDC OPTICS
	BB143	J19-R3	J19-S4	0 VDC OPTICS
	CC272	J19-R3	TB1-D78	0 VDC OPTICS
*	BB142	J19-R3	J19-R2	0 VDC OPTICS
	BB134	J19-R4	J20-M4	STRUCTURE GROUND
*	BB115	J19-R4	J18-P4	STRUCTURE GROUND
	CC251W	J19-R6	TB1-A61	TRACKER MODE RELAY COMMAND
*	BB116	J19-R6	J18-R1	TRACKER MODE RELAY COMMAND
	CC257W	J19-S1	TB1-K48	TRUNNION CDU MOTOR PHASE 1
	CC268W	J19-S2	TB1-H48	SHAFT CDU MOTOR PHASE 1

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC260W	J19-S3	TB1-K52	SCT TRUNNION MOTOR PHASE 1
	BB144	J19-S4	J19-S5	0 VDC OPTICS
*	BB143	J19-S4	J19-R3	0 VDC OPTICS
*	BB144	J19-S5	J19-S4	0 VDC OPTICS
*	BB117W	J19-S6	J18-S1	800 CPS 28 V 1 PCT LO OPTICS
	CC257R	J19-T1	TB1-K49	TRUNNION CDU MOTOR PHASE 2
	CC268R	J19-T2	TB1-H49	SHAFT CDU MOTOR PHASE 2
	CC260R	J19-T3	TB1-K51	SCT TRUNNION MOTOR PHASE 2
	CC247	J19-T5	TB1-H71	+28 VDC OPTICS
*	BB117R	J19-T6	J18-T1	800 CPS 28 V 1 PCT HI OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC261R	J19-A1	TB1-F37	SCT TRUNNION TACH HI
	CC258R	J19-A6	TB1-C37	TRUNNION CDU TACHOMETER HI
	CC269R	J19-A9	TB1-G37	SHAFT CDU TACH HI
	CC261W	J19-B1	TB1-F38	SCT TRUNNION TACH LO
	CC256R	J19-B4	TB1-C41	TRUNNION CDU 16X RSVR S3
	CC256W	J19-B5	TB1-C40	TRUNNION CDU 16X RSVR S2
	CC258W	J19-B6	TB1-C38	TRUNNION CDU TACHOMETER LO
	CC267R	J19-B7	TB1-G41	SHAFT CDU 16X RSVR S3
	CC267W	J19-B8	TB1-G40	SHAFT CDU 16X RSVR S2
	CC269W	J19-B9	TB1-G38	SHAFT CDU TACH LO
	CC259W	J19-C1	TB1-F40	SCT TRUNNION 1X RSVR S2
	CC259R	J19-C2	TB1-F41	SCT TRUNNION 1X RSVR S4
	CC255R	J19-C5	TB1-D40	TRUNNION CDU 1/4X RSVR P2
	CC255W	J19-C6	TB1-D41	TRUNNION CDU 1/4X RSVR P3
	CC263W	J19-C8	TB1-H40	SHAFT CDU 1/2X RSVR P1
	CC263R	J19-C9	TB1-H41	SHAFT CDU 1/2X RSVR P3
	CC262W	J19-D2	TB1-F69	SCT TRUNNION TRACKER MODE INPUT LO
	CC262R	J19-D3	TB1-F68	SCT TRUNNION TRACKER MODE INPUT HI
	CC250W	J19-D7	TB1-H69	SHAFT HAND CONTROLLER OUTPUT LO
	CC250R	J19-D8	TB1-H68	SHAFT HAND CONTROLLER OUTPUT HI
	CC249W	J19-F8	TB1-K69	TRUNNION HAND CONTROLLER OUTPUT LO
	CC249R	J19-F9	TB1-K68	TRUNNION HAND CONTROLLER OUTPUT HI
	CC253R	J19-G1	TB1-K44	TRUNNION CDU 1/2X RSVR S1
	CC266W	J19-G3	TB1-K45	SHAFT CDU 1X RSVR P4
	BB133R	J19-G4	J20-D8	SHAFT CDU 1X RSVR P2
	CC266R	J19-G4	TB1-K46	SHAFT CDU 1X RSVR P2
*	BB118W	J19-G5	J18-G2	SXT SHAFT MDA INPUT LO
*	BB118R	J19-G6	J18-G1	SXT SHAFT MDA INPUT HI
	CC253W	J19-H1	TB1-K43	TRUNNION CDU 1/2X RSVR S3
	BB133W	J19-H4	J20-C8	X TRACKER OUTPUT HI
	BB132W	J19-H5	J20-C9	Y TRACKER OUTPUT HI
*	BB119W	J19-H6	J18-H1	SXT TRUNNION MDA INPUT LO
	CC254R	J19-K1	TB1-H44	TRUNNION CDU 1/2X RSVR S2
	CC254W	J19-K2	TB1-H43	TRUNNION CDU 1/2X RSVR S4
	CC265W	J19-K4	TB1-H46	SHAFT CDU 1X RSVR P1
	BB132R	J19-K5	J20-D9	SHAFT CDU 1X RSVR P3
	CC265R	J19-K5	TB1-H45	SHAFT CDU 1X RSVR P3
*	BB119R	J19-K6	J18-K1	SXT TRUNNION MDA INPUT HI

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC286R	J20-A4	TB1-D68	IMU PRESSURE MONITOR HI	
	CC310R	J20-A6	TB1-K74	PRESSURE SENSOR +28 VDC HI	
	CC277R	J20-A7	TB1-H66	STAR PRESENCE INPUT HI	
	CC277W	J20-A8	TB1-H65	STAR PRESENCE INPUT LO	
	CC278R	J20-A9	TB1-K66	PHOTOMETER SIGNAL HI	
	CC286W	J20-B4	TB1-D69	IMU PRESSURE MONITOR LO	
	CC310W	J20-B6	TB1-K73	PRESSURE SENSOR +28 VDC LO	
	CC282	J20-B7	TB1-K58	PHOTOMETER PREAMP OUTPUT BUFFERED HI	
*	BB135	J20-B8	J19-L1	0 VDC OPTICS	
	CC278W	J20-B9	TB1-K65	PHOTOMETER SIGNAL LO	
	CC 56W	J20-C3	J24- 16	STAR PRESENCE LO	183R
	CC 56R	J20-C4	J24- 17	STAR PRESENCE HI	183S
	CC274R	J20-C6	TB1-G66	TRACKER X ERROR HI	
	CC274W	J20-C7	TB1-G65	TRACKER X ERROR LO	
*	BB133W	J20-C8	J19-H4	X TRACKER OUTPUT HI	
*	BB132W	J20-C9	J19-H5	Y TRACKER OUTPUT HI	
	CC309R	J20-D1	TB1-F71	+2.5 VDC CONDITIONING HI	
	CC 57W	J20-D3	J23- 75	102.4 KPPS INPUT LO	056R
	CC292	J20-D4	TB1-G74	+13 VDC AGC	
	CC275R	J20-D6	TB1-F66	TRACKER Y ERROR HI	
	CC275W	J20-D7	TB1-F65	TRACKER Y ERROR LO	
*	BB133R	J20-D8	J19-G4	SHAFT CDU 1X RSVR P2	
*	BB132R	J20-D9	J19-K5	SHAFT CDU 1X RSVR P3	
	CC309W	J20-F1	TB1-F70	+2.5 VDC CONDITIONING LO	
	CC276W	J20-F2	TB1-B61	AUTOMATIC MARK COMMAND	
	CC 57R	J20-F3	J23- 74	102.4 KPPS INPUT HI	056S
	CC293	J20-F4	TB1-G73	+3 VDC AGC	
	CC289	J20-F5	TB1-H74	+28 VDC AGC	
	CC290	J20-F5	TB1-H74	+28 VDC AGC	166
	CC281R	J20-F6	TB1-G68	PHOTOMETER MARK REJECT HI	
	CC281W	J20-F7	TB1-G69	PHOTOMETER MARK REJECT LO	
	CC 59W	J20-F8	J22- 73	800 CPS 28 V 1 PCT LO IMU	
*	BB 97W	J20-F8	J16-S3	800 CPS 28 V 1 PCT LO IMU	
	CC 59R	J20-F9	J22- 72	800 CPS 28 V 1 PCT HI IMU	
*	BB 97R	J20-F9	J16-S4	800 CPS 28 V 1 PCT HI IMU	
	CC294W	J20-G1	TB1-F72	0 VDC CONDITIONING	
	CC294R	J20-G2	TB1-G72	+20 VDC CONDITIONING	
	CC291	J20-G3	TB1-H73	0 VDC AGC	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC 57A	J20-M4	SHLD CC 57	STRUCTURE GROUND	
	CC284	J20-M5	TB1-K72	+28 VDC MDV	
*	BB106	J20-M5	J17-R5	+28 VDC MDV	
*	BB 34	J20-M6	J12-G4	+28 VDC IMU FOR 800 CPS 5 PCT MTR PWRAMP	
	BB153	J20-N1	J20-N2	+28 VDC IMU	
*	BB 2	J20-N1	J11-S1	+28 VDC IMU	
*	BB152	J20-N1	J20-M1	+28 VDC IMU	
*	BB 3	J20-N2	J11-S2	+28 VDC IMU	
*	BB153	J20-N2	J20-N1	+28 VDC IMU	
*	BB154	J20-N2	J20-M2	+28 VDC IMU	
	CC311R	J20-N3	TB1-B78	400 CPS 115 V HI	
	CC280	J20-N4	TB1-B71	+28 VDC OPTICS TRACKER POWER	
	CC 58	J20-N5	J23- 47	+28 VDC MDV	157R
	CC283	J20-N5	TB1-K71	+28 VDC MDV	
*	BB 46	J20-N5	J12-L1	+28 VDC MDV	
	CC279	J20-N6	TB1-H71	+28 VDC OPTICS	
*	BB111	J20-N6	J17-T6	+28 VDC OPTICS	
*	BB114	J20-N6	J18-T2	+28 VDC OPTICS	
	BB148	J20-P1	J20-T1	+28 VDC IMU BUSS A	
	CC313	J20-P1	TB1-H76	+28 VDC IMU BUSS A	
	BB150	J20-P2	J20-T2	+28 VDC IMU BUSS B	
	CC315	J20-P2	TB1-H75	+28 VDC IMU BUSS B	
	CC323	J20-P3	TB1-D78	0 VDC OPTICS	
	CC324	J20-P4	TB1-F78	0 VDC OPTICS	
*	BB 32	J20-P5	J12-S6	+28 VDC OPTICS	
*	BB 90	J20-P5	J16-S5	+28 VDC OPTICS	
*	BB 91	J20-P6	J16-S6	+28 VDC OPTICS	
	BB149	J20-R1	J20-S1	+28 VDC IMU BUSS A	
	CC312	J20-R1	TB1-K76	+28 VDC IMU BUSS A	
	BB151	J20-R2	J20-S2	+28 VDC IMU BUSS B	
	CC314	J20-R2	TB1-K75	+28 VDC IMU BUSS B	
	CC301	J20-R3	TB1-H72	+28 VDC STBY	
*	BB104	J20-R3	J17-T1	+28 VDC STBY	
*	BB105	J20-R4	J17-T2	+28 VDC STBY	
	BB157	J20-R5	J20-T5	+28 VDC OPTICS BUSS A	
	BB158	J20-R5	J20-S5	+28 VDC OPTICS BUSS A	
	CC318	J20-R5	TB1-G78	+28 VDC OPTICS BUSS A	
	BB159	J20-R6	J20-T6	+28 VDC OPTICS BUSS B	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB160	J20-R6	J20-S6	+28 VDC OPTICS BUSS B
	CC319	J20-R6	TB1-G77	+28 VDC OPTICS BUSS B
	CC296	J20-S1	TB1-H76	+28 VDC IMU BUSS A
*	BB149	J20-S1	J20-R1	+28 VDC IMU BUSS A
	CC298	J20-S2	TB1-H75	+28 VDC IMU BUSS B
*	BB151	J20-S2	J20-R2	+28 VDC IMU BUSS B
	BB155	J20-S3	J20-T3	+28 VDC STBY BUSS A
	CC316	J20-S3	TB1-G76	+28 VDC STBY BUSS A
	BB156	J20-S4	J20-T4	+28 VDC STBY BUSS B
	CC317	J20-S4	TB1-G75	+28 VDC STBY BUSS B
	CC303	J20-S5	TB1-H78	+28 VDC OPTICS BUSS A
*	BB158	J20-S5	J20-R5	+28 VDC OPTICS BUSS A
	CC305	J20-S6	TB1-G77	+28 VDC OPTICS BUSS B
*	BB160	J20-S6	J20-R6	+28 VDC OPTICS BUSS B
	CC295	J20-T1	TB1-K76	+28 VDC IMU BUSS A
*	BB148	J20-T1	J20-P1	+28 VDC IMU BUSS A
	CC297	J20-T2	TB1-K75	+28 VDC IMU BUSS B
*	BB150	J20-T2	J20-P2	+28 VDC IMU BUSS B
	CC299	J20-T3	TB1-G76	+28 VDC STBY BUSS A
*	BB155	J20-T3	J20-S3	+28 VDC STBY BUSS A
	CC300	J20-T4	TB1-G75	+28 VDC STBY BUSS B
*	BB156	J20-T4	J20-S4	+28 VDC STBY BUSS B
	CC302	J20-T5	TB1-G78	+28 VDC OPTICS BUSS A
*	BB157	J20-T5	J20-R5	+28 VDC OPTICS BUSS A
	CC304	J20-T6	TB1-H77	+28 VDC OPTICS BUSS B
*	BB159	J20-T6	J20-R6	+28 VDC OPTICS BUSS B

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	BB145	J20-G4	J20-G5	800 CPS 28 V 1 PCT LO OPTICS
	CC273R	J20-G5	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
*	BB145	J20-G5	J20-G4	800 CPS 28 V 1 PCT LO OPTICS
	CC273W	J20-G6	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS
	BB161	J20-H1	J20-K1	0 VDC IMU
	CC320	J20-H1	TB1-F75	0 VDC IMU
	CC287	J20-H2	TB1-K78	+28 VDC AGC BUSS A
	CC288	J20-H3	TB1-K77	+28 VDC AGC BUSS B
	CC273L	J20-H4	TB1-A71	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR
*	BB 92W	J20-H5	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	BB 92R	J20-H6	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
	BB162	J20-K1	J20-K2	0 VDC IMU
	CC321	J20-K1	TB1-F73	0 VDC IMU
*	BB161	J20-K1	J20-H1	0 VDC IMU
	CC322	J20-K2	TB1-C68	0 VDC IMU
*	BB162	J20-K2	J20-K1	0 VDC IMU
	BB147	J20-K5	J20-L5	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	BB 33W	J20-K5	J12-K4	800 CPS 28 V 5 PCT L-90 DEG LO IMU
	BB146	J20-K6	J20-L6	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	BB 33R	J20-K6	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	CC306	J20-L1	TB1-G 7	+28 VDC IMU
	CC307	J20-L1	TB1-G71	+28 VDC IMU
*	BB 81	J20-L1	J15-S2	+28 VDC IMU
	CC308	J20-L2	TB1-G71	+28 VDC IMU
*	BB 4	J20-L2	J11-S5	+28 VDC IMU
*	BB 93	J20-L2	J16-S2	+28 VDC IMU
	CC285W	J20-L5	TB1-C76	800 CPS 28 V 5 PCT L-90 DEG LO IMU
*	BB147	J20-L5	J20-K5	800 CPS 28 V 5 PCT L-90 DEG LO IMU
	CC285R	J20-L6	TB1-C75	800 CPS 28 V 5 PCT L-90 DEG HI IMU
*	BB146	J20-L6	J20-K6	800 CPS 28 V 5 PCT L-90 DEG HI IMU
	BB152	J20-M1	J20-N1	+28 VDC IMU
*	BB 35	J20-M1	J12-S1	+28 VDC IMU
*	BB102	J20-M1	J17-T4	+28 VDC IMU
	BB154	J20-M2	J20-N2	+28 VDC IMU
*	BB 36	J20-M2	J12-S2	+28 VDC IMU
*	BB103	J20-M2	J17-T3	+28 VDC IMU
	CC311W	J20-M3	TB1-C78	400 CPS 115 V LO
*	BB134	J20-M4	J19-R4	STRUCTURE GROUND

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 429Y	J21- 1	E 29	COMMONED RETURNS GROUND	233R
*	A 425Y	J21- 2	E 28	COMMONED RETURNS GROUND	228R
*	A 430R	J21- 3	J10- 44	PARITY FAIL ALARM	234S
*	A 422Y	J21- 4	E 28	COMMONED RETURNS GROUND	244R
*	A 422R	J21- 5	J10- 42	TIMING (1.5 CPS)	244S
*	A 429R	J21- 6	J10- 33	SCALER FAIL ALARM	233S
*	A 425R	J21- 7	J10- 18	OUT 0 15	228S
*	A 444R	J21- 8	J10- 14	OUT 0 11	224S
*	A 444Y	J21- 9	E 33	COMMONED RETURNS GROUND	224R
*	A 426R	J21- 10	J10- 40	PROGRAM ALARM	229S
*	A 430Y	J21- 11	E 29	COMMONED RETURNS GROUND	234R
*	A 450	J21- 12	J10- 70	SPARE	211
*	A 467Y	J21- 13	E 26	COMMONED RETURNS GROUND	208R
*	A 467R	J21- 14	J10- 48	ERROR RESET	208S
*	A 459Y	J21- 15	E 27	COMMONED RETURNS GROUND	205R
*	A 434Y	J21- 16	E 30	COMMONED RETURNS GROUND	238R
*	A 423Y	J21- 17	E 28	COMMONED RETURNS GROUND	232R
*	A 424Y	J21- 18	E 28	COMMONED RETURNS GROUND	227R
*	A 443Y	J21- 19	E 32	COMMONED RETURNS GROUND	223R
*	A 440Y	J21- 20	E 32	COMMONED RETURNS GROUND	219R
*	A 446R	J21- 21	J10- 31	OUT 0 7	220S
*	A 446Y	J21- 22	E 33	COMMONED RETURNS GROUND	220R
*	A 447R	J21- 23	J10- 15	OUT 0 12	225S
*	A 426Y	J21- 24	E 28	COMMONED RETURNS GROUND	229R
*	A 431R	J21- 25	J10- 43	COUNTER FAIL ALARM	235S
*	A 449	J21- 26	J10- 71	POWER SUPPLY SYNC	212
*	A 465R	J21- 27	J10- 47	OR OF C1 THRU C33	210S
*	A 466Y	J21- 28	E 26	COMMONED RETURNS GROUND	201R
*	A 466R	J21- 29	J10- 34	KEY CODE 1	201S
*	A 462Y	J21- 30	E 27	COMMONED RETURNS GROUND	207R
*	A 462R	J21- 31	J10- 39	TEST ALARM	207S
*	A 459R	J21- 32	J10- 38	KEY CODE 5	205S
*	A 434R	J21- 33	J10- 64	TC TRAP ALARM	238S
*	A 423R	J21- 34	J10- 32	PROGRAM CHECK FAIL ALARM	232S
*	A 424R	J21- 35	J10- 17	OUT 0 14	227S
*	A 443R	J21- 36	J10- 63	OUT 0 10	223S
*	A 440R	J21- 37	J10- 30	OUT 0 6	219S
*	A 436R	J21- 38	J10- 74	OUT 0 2	215S

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 433R	J21- 85	J10- 51	RUPT LOCK ALARM	237S
*	A 428R	J21- 86	J10- 19	TELEMETRY FAIL ALARM	231S
*	A 445R	J21- 87	J10- 16	OUT 0 13	226S
*	A 442R	J21- 88	J10- 62	OUT 0 9	222S
*	A 439R	J21- 89	J10- 29	OUT 0 5	218S
*	A 435R	J21- 90	J10- 73	OUT 0 1	214S
*	A 485	J21- 91	J10- 56	DISKY GROUND	239

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 303G	J22- 2	J09- 50	ATTITUDE DISABLE SIG TO NAA
*	BB 99W	J22- 4	J16-B8	COS AOG 1X S3
*	A 303R	J22- 7	J09- 41	+28 VDC FROM NAA
*	A 303Y	J22- 8	J09- 40	0 VDC FROM NAA
*	BB 98R	J22- 12	J16-A8	SIN AOG 1X S2
*	BB 99R	J22- 13	J16-C8	COS AOG 1X S1
	CC327R	J22- 14	TB1-B16	SIN AMG 1X
	CC327W	J22- 15	TB1-B15	SIN AMG 1X RET
	CC328W	J22- 16	TB1-B13	COS AMG 1X S3
*	A 288Y	J22- 18	J09- 4	PITCH ATTIT IMPULSE CONTR OUTPUT UP
*	BB 98W	J22- 26	J16-A9	SIN AOG 1X S4
	CC328R	J22- 32	TB1-B14	COS AMG 1X S1
	CC329W	J22- 33	TB1-A15	SIN AIG 1X RET
*	A 288R	J22- 35	J09- 5	PITCH ATTIT IMPULSE CONTR OUTPUT DOWN
*	A 288G	J22- 36	J09- 18	PITCH ATTIT IMPULSE CONTR INPUT
*	BB109	J22- 38	J17-L3	IMU TEMP LIGHT (MAIN PANEL)
*	BB108	J22- 39	J17-M3	0 VDC SPACECRAFT
*	A 157	J22- 40	J08- 43	MASTER CAUTION LIGHT RET
	CC326	J22- 41	TB1-C 4	+28 VDC SPACECRAFT
	CC325W	J22- 42	TB1-G 3	ATTITUDE CONTROL RELAY CONTROL
	CC 43B	J22- 48	SHLD CC 43	NAA SHIELD GROUND
*	CC 44R	J22- 49	J17-C4	YAW ERROR BODY AXIS HI
	CC 48B	J22- 51	SHLD CC 48	NAA SHIELD GROUND
*	CC 45R	J22- 53	J17-C3	YAW ERROR BODY OFFSET AXIS HI
	CC 47B	J22- 54	SHLD CC 47	NAA SHIELD GROUND
	CC329R	J22- 56	TB1-A16	SIN AIG 1X
*	A 289Y	J22- 58	J09- 20	YAW ATTIT IMPULSE CONTR OUTPUT RIGHT
*	A 287R	J22- 60	J09- 17	ROLL ATTIT IMPULSE CONTR OUTPUT LEFT
*	A 407	J22- 62	P10- 8	MAIN PANEL GIMBAL LOCK LIGHT
*	CC 4	J22- 63	J12-G3	G+N ERROR LIGHT (MAIN PANEL)
*	A 295	J22- 64	J09- 14	SPACECRAFT LAMP TEST
*	A 160	J22- 65	J08- 53	MASTER WARNING LIGHT RET
	CC325R	J22- 67	TB1-G 5	LOCK CDU RELAY CONTROL
	CC325L	J22- 68	TB1-H 5	FINE ALIGN RELAY CONTROL
*	CC 59R	J22- 72	J20-F9	800 CPS 28 V 1 PCT HI IMU
*	CC 59W	J22- 73	J20-F8	800 CPS 28 V 1 PCT LO IMU
*	CC 43R	J22- 74	J17-A4	ROLL ERROR BODY AXIS HI
*	CC 43W	J22- 75	J17-B4	ROLL ERROR BODY AXIS LO

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 436Y	J21- 39	E 31	COMMONED RETURNS GROUND	215R
*	A 437R	J21- 40	J10- 60	OUT 0 3	216S
*	A 437Y	J21- 41	E 31	COMMONED RETURNS GROUND	216R
*	A 441R	J21- 42	J10- 61	OUT 0 8	221S
*	A 447Y	J21- 43	E 33	COMMONED RETURNS GROUND	225R
*	A 427R	J21- 44	J10- 41	COMPUTER ACTIVITY	230S
*	A 431Y	J21- 45	E 29	COMMONED RETURNS GROUND	235R
*	A 448	J21- 46	J10- 72	SPARE	213
*	A 465Y	J21- 47	E 26	COMMONED RETURNS GROUND	210R
*	A 464R	J21- 48	J10- 35	KEY CODE 2	202S
	A 556	J21- 50	E 35	GROUP 3 SHIELD	250
*	A 463Y	J21- 51	E 27	COMMONED RETURNS GROUND	204R
*	A 463R	J21- 52	J10- 37	KEY CODE 4	204S
*	A 461Y	J21- 53	E 27	COMMONED RETURNS GROUND	203R
*	A 460Y	J21- 54	E 27	COMMONED RETURNS GROUND	209R
*	A 469	J21- 55	J10- 46	SPARE	249
*	A 433Y	J21- 56	E 30	COMMONED RETURNS GROUND	237R
*	A 428Y	J21- 57	E 29	COMMONED RETURNS GROUND	231R
*	A 445Y	J21- 58	E 33	COMMONED RETURNS GROUND	226R
*	A 442Y	J21- 59	E 32	COMMONED RETURNS GROUND	222R
*	A 439Y	J21- 60	E 31	COMMONED RETURNS GROUND	218R
*	A 435Y	J21- 61	E 30	COMMONED RETURNS GROUND	214R
*	A 484	J21- 62	J10- 58	DISKY GROUND	251
*	A 486	J21- 63	J10- 55	SPARE	240
*	A 480	J21- 64	J10- 57	+13 V B	241
*	A 482	J21- 65	J10- 59	+28 VDC AGC	243
*	A 438Y	J21- 66	E 31	COMMONED RETURNS GROUND	217R
*	A 438R	J21- 67	J10- 28	OUT 0 4	217S
*	A 441Y	J21- 68	E 32	COMMONED RETURNS GROUND	221R
*	A 427Y	J21- 69	E 29	COMMONED RETURNS GROUND	230R
*	A 432Y	J21- 70	E 30	COMMONED RETURNS GROUND	236R
*	A 432R	J21- 71	J10- 53	KEY RELEASE	236S
*	A 451	J21- 72	J10- 75	SPARE	247
	A 557	J21- 73	E 37	GROUP 2 SHIELD	245
*	A 464Y	J21- 74	E 26	COMMONED RETURNS GROUND	202R
*	A 461R	J21- 82	J10- 36	KEY CODE 3	203S
*	A 460R	J21- 83	J10- 49	KEY RESET NAV	209S
*	A 468	J21- 84	J10- 45	SPARE	248

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC 44W	J22- 76	J17-D4	YAW ERROR BODY AXIS LO
	CC 44B	J22- 77	SHLD CC 44	NAA SHIELD GROUND
*	CC 48R	J22- 78	J17-D1	PITCH ERROR BODY AND BODY OFFSET AXIS HI
*	CC 48W	J22- 79	J17-C1	PITCH ERROR BODY AND BODY OFFSET AXIS LO
	CC 45B	J22- 80	SHLD CC 45	NAA SHIELD GROUND
*	CC 45W	J22- 81	J17-D3	YAW ERROR BODY OFFSET AXIS LO
*	CC 47W	J22- 82	J17-B3	ROLL ERROR BODY OFFSET AXIS LO
*	CC 47R	J22- 83	J17-A3	ROLL ERROR BODY OFFSET AXIS HI
	CC330R	J22- 84	TB1-A13	COS AIG 1X
	CC330W	J22- 85	TB1-A14	COS AIG 1X RET
*	A 289R	J22- 87	J09- 6	YAW ATTIT IMPULSE CONTR OUTPUT LEFT
*	A 289G	J22- 88	J09- 7	YAW ATTIT IMPULSE CONTR INPUT
*	A 287Y	J22- 89	J09- 3	ROLL ATTIT IMPULSE CONTR OUTPUT RIGHT
*	A 287G	J22- 90	J09- 16	ROLL ATTIT IMPULSE CONTR INPUT

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SCALE - NONE	REV LTR	SHEET 60

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 531	J23- 39	P12-A	+28 VDC AGC BUSS B	168
*	A 532	J23- 40	P12-A	+28 VDC AGC BUSS B	168
*	A 551	J23- 41	P12-J	0 VDC AGC	170
*	CC 32W	J23- 42	J15-B5	IG CDU + DELTA THETA COMMAND	128S
*	CC 33R	J23- 43	J15-C5	IG CDU - DELTA THETA COMMAND	129S
*	CC 19W	J23- 44	E 6	0 VDC IMU	148S
*	CC 3R	J23- 46	J12-K1	COMPUTER 102.4 KPPS SYNC	156S
*	CC 58	J23- 47	J20-N5	+28 VDC MDV	157R
	A 562	J23- 48	TB1-D71	CONDITION LAMP TEST	157T
*	CC 51W	J23- 49	J17-S3	0 VDC IMU	155R
*	CC 7W	J23- 50	J12-F2	COMPUTER 25.6 KPPS SYNC RET	154R
*	CC 6W	J23- 51	J12-F2	COMPUTER 25.6 KPPS SYNC RET	153R
*	CC 1W	J23- 52	J11-M5	COMPUTER 3200 PPS SYNC RET	152R
*	CC 2W	J23- 53	J11-M5	COMPUTER 3200 PPS SYNC RET	151R
*	CC 2R	J23- 54	J11-M6	COMPUTER 3200 PPS IN PHASE SYNC	151S
*	CC 15R	J23- 55	J14-D3	+ DY GYRO RATE	144R
*	CC 15W	J23- 56	E 6	0 VDC IMU	144S
	CC331	J23- 57	TB1-F52	THERMISTER LO	199R
*	A 400	J23- 58	P09-115	AGC THERMISTER HI	199S
*	CC 54W	J23- 59	J18-H5	TRUNNION DELTA THETA COMMAND COMMON	117R
*	CC 54R	J23- 60	J18-G5	TRUNNION - DELTA THETA COMMAND	117S
*	A 504	J23- 61	P11-A	+28 VDC AGC BUSS A	167
	A 558	J23- 62	TB1-K78	+28 VDC AGC BUSS A	167
	A 559	J23- 63	TB1-K78	+28 VDC AGC BUSS A	167
	A 560	J23- 64	TB1-K77	+28 VDC AGC BUSS B	168
	A 561	J23- 65	TB1-K77	+28 VDC AGC BUSS B	168
*	A 552	J23- 66	P12-J	0 VDC AGC	170
*	CC 33W	J23- 69	E 9	IG DAC MDA SIG LO	129R
*	CC 3W	J23- 73	J12-H1	COMPUTER 102.4 KPPS SYNC RET	156R
*	CC 57R	J23- 74	J20-F3	102.4 KPPS INPUT HI	056S
*	CC 57W	J23- 75	J20-D3	102.4 KPPS INPUT LO	056R
*	CC 52W	J23- 88	J18-H5	TRUNNION DELTA THETA COMMAND COMMON	116R
*	CC 52R	J23- 89	J18-K5	TRUNNION + DELTA THETA COMMAND	116S
*	A 523	J23- 90	P11-J	0 VDC AGC	169
*	A 524	J23- 91	P11-J	0 VDC AGC	169

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	CC333	J24- 1	TB1-G74	+13 VDC AGC	176
*	CC 20R	J24- 2	J15-M5	+ DELTA V X	132R
	CC334	J24- 3	TB1-H73	0 VDC AGC	177
*	A 132Y	J24- 4	P01- 49	FINE ALIGN MODE INDICATION TO AGC	161
*	CC 41W	J24- 5	J16-A7	ZERO ENCODER MODE INDICATION TO AGC	158
	CC335	J24- 6	TB1-G73	+3 VDC AGC	175
*	CC 29W	J24- 7	E 10	MG DAC MDA SIG LO	123R
*	CC 29R	J24- 8	J15-C6	MG ENCODER - DELTA THETA	123S
*	CC 20W	J24- 9	E 14	COMPUTER RET	132S
*	CC 21R	J24- 10	J15-M6	- DELTA V X	133R
*	A 114Y	J24- 12	J06- 69	TRANSFER SWITCH INDICATION TO AGC	164
*	A 136Y	J24- 13	P01- 76	ATTIT CONT MODE INDICATION TO AGC	162
*	A 133Y	J24- 14	P01- 59	COARSE ALIGN MODE INDICATION TO AGC	159
	A 564R	J24- 15	TB1-A69	OPTICS ZERO ENCODER INDICATION	104
*	CC 56W	J24- 16	J20-C3	STAR PRESENCE LO	183R
*	CC 56R	J24- 17	J20-C4	STAR PRESENCE HI	183S
*	CC 28R	J24- 18	E 10	MG DAC MDA SIG LO	122R
*	CC 28W	J24- 19	J15-B6	MG ENCODER + DELTA THETA	122S
*	CC 30R	J24- 20	E 12	OG DAC MDA SIG LO	118R
*	CC 31W	J24- 21	E 12	OG DAC MDA SIG LO	119R
*	CC 26R	J24- 22	E 8	IG DAC MDA SIG LO	120R
*	CC 21W	J24- 23	E 14	COMPUTER RET	133S
*	CC 22R	J24- 24	J15-L6	+ DELTA V Y	134R
*	CC 8R	J24- 25	J12-D6	IMU FAIL	141S
	CC332W	J24- 26	TB1-C56	AGC COMMON (ISS)	165
*	A 131Y	J24- 29	P01- 39	ENTRY MODE INDICATION TO AGC	163
*	CC 38W	J24- 30	J15-A3	MANUAL CDU MODE INDICATION TO AGC	160
*	A 304Y	J24- 31	J09- 42	TRACKER ON INDICATION TO AGC	107
*	A 414Y	J24- 32	P10- 19	NOT MARK	103
*	CC 24R	J24- 33	J15-K4	- DELTA V Z	137R
*	CC 24W	J24- 34	E 16	COMPUTER RET	137S
*	CC 46W	J24- 35	J17-H4	SHAFT ENCODER DELTA THETA OUT COMMON	109R
*	CC 46R	J24- 36	J17-K4	SHAFT ENCODER - DELTA THETA OUTPUT	109S
*	CC 49W	J24- 37	J17-H6	TRUNNION ENCODER DELTA THETA OUT COM	111R
*	CC 49R	J24- 38	J17-K6	TRUNNION ENCODER - DELTA THETA OUT	111S
*	CC 30W	J24- 39	J15-B8	OG ENCODER + DELTA THETA	118S
*	CC 31R	J24- 40	J15-C8	OG ENCODER - DELTA THETA	119S
*	CC 26W	J24- 41	J15-B4	IG ENCODER + DELTA THETA	120S

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SCALE - NONE | REV LTR + | SHEET 63

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC 12W	J23- 1	E 5	0 VDC IMU	140R
*	CC 12R	J23- 2	J13-N6	PIPA SWITCHING PULSE	140S
*	CC 13R	J23- 3	J14-D1	+ DX GYRO RATE	142R
*	CC 40R	J23- 4	J16-M4	COMPUTER 800 PPS IN PHASE SYNC	149S
*	CC 18W	J23- 5	E 6	0 VDC IMU	147S
*	CC 11W	J23- 6	E 5	0 VDC IMU	139R
*	CC 11R	J23- 7	J13-N5	PIPA INTERROGATE PULSE	139S
*	CC 36R	J23- 8	E 13	OG DAC MDA SIG LO	126R
*	CC 37W	J23- 9	E 13	OG DAC MDA SIG LO	127R
*	CC 13W	J23- 10	E 6	0 VDC IMU	142S
*	CC 14R	J23- 11	J14-D2	- DX GYRO RATE	143R
*	CC 39R	J23- 12	J16-L4	COMPUTER 800 PPS OUT OF PHASE SYNC	150S
*	CC 40W	J23- 13	J16-L3	COMPUTER 800 PPS SYNC RET	149R
*	CC 18R	J23- 14	J14-D6	- DZ GYRO RATE	147R
*	CC 17R	J23- 15	J14-D5	+ DZ GYRO RATE	146R
*	CC 17W	J23- 16	E 6	0 VDC IMU	146S
*	CC 35W	J23- 17	E 11	MG DAC MDA SIG LO	131R
*	CC 35R	J23- 18	J15-C7	MG CDU - DELTA THETA COMMAND	131S
*	CC 53W	J23- 19	J18-H3	SHAFT DELTA THETA COMMAND COMMON	115R
*	CC 53R	J23- 20	J18-K3	SHAFT - DELTA THETA COMMAND	115S
*	CC 36W	J23- 21	J15-B9	OG CDU + DELTA THETA COMMAND	126S
*	CC 37R	J23- 22	J15-C9	OG CDU - DELTA THETA COMMAND	127S
*	CC 32R	J23- 23	E 9	IG DAC MDA SIG LO	128R
*	CC 14W	J23- 24	E 6	0 VDC IMU	143S
*	CC 19R	J23- 25	J14-K4	GYRO RESET PULSE	148R
*	CC 5	J23- 26	J12-M1	AGC POWER SUPPLY FAIL SIG HI	157S
*	CC 39W	J23- 27	J16-L3	COMPUTER 800 PPS SYNC RET	150R
*	CC 51R	J23- 28	J17-R3	COMPUTER 12.8 KPPS SYNC	155S
*	CC 7R	J23- 29	J12-G2	COMPUTER 25.6 KPPS OUT OF PHASE SYNC	154S
*	CC 6R	J23- 30	J12-G1	COMPUTER 25.6 KPPS IN PHASE SYNC	153S
*	CC 1R	J23- 31	J11-L6	COMPUTER 3200 PPS OUT OF PHASE SYNC	152S
*	CC 16R	J23- 32	J14-D4	- DY GYRO RATE	145R
*	CC 16W	J23- 33	E 6	0 VDC IMU	145S
*	CC 34R	J23- 34	E 11	MG DAC MDA SIG LO	130R
*	CC 34W	J23- 35	J15-B7	MG CDU + DELTA THETA COMMAND	130S
*	CC 55W	J23- 36	J18-H3	SHAFT DELTA THETA COMMAND COMMON	114R
*	CC 55R	J23- 37	J18-G3	SHAFT + DELTA THETA COMMAND	114S
*	A 503	J23- 38	P11-A	+28 VDC AGC BUSS A	167

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SCALE - NONE | REV LTR + | SHEET 61

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC 27W	J24- 42	E 8	IG DAC MDA SIG LO	121R
*	CC 22W	J24- 43	E 15	COMPUTER RET	134S
*	CC 23R	J24- 44	J15-K6	- DELTA V Y	135R
*	CC 10R	J24- 45	J12-D4	ACCEL FAIL	138S
*	CC 8W	J24- 46	J12-F6	IMU FAIL RET	141R
	A 563	J24- 51	E 23	AGC SIGNAL 178 SHIELD RETURN	178
*	A 309Y	J24- 54	J09- 49	OPTICS MODE SW COMPUTER INDICATION	106
*	A 417Y	J24- 55	P10- 44	MARK	102
*	CC 25R	J24- 56	J15-K5	+ DELTA V Z	136R
*	CC 25W	J24- 57	E 16	COMPUTER RET	136S
*	CC 50W	J24- 58	J17-H4	SHAFT ENCODER DELTA THETA OUT COMMON	108R
*	CC 50R	J24- 59	J17-G4	SHAFT ENCODER + DELTA THETA OUTPUT	108S
*	CC 42W	J24- 60	J17-H6	TRUNNION ENCODER DELTA THETA OUT COM	110R
*	CC 42R	J24- 61	J17-G6	TRUNNION ENCODER + DELTA THETA OUT	110S
	CC337	J24- 64	E 20	AGC SIGNAL 179 SHIELD RETURN	179
*	CC 27R	J24- 67	J15-C4	IG ENCODER - DELTA THETA	121S
*	CC 23W	J24- 69	E 15	COMPUTER RET	135S
*	CC 9R	J24- 70	J12-D5	CDU FAIL	124S
*	CC 9W	J24- 71	J12-F5	CDU FAIL RET	124R
*	CC 10W	J24- 72	J12-F4	ACCEL FAIL RET	138R
	A 566Y	J24- 83	TB1-A68	SXT POWER ON INDICATION	105
	A 564Y	J24- 84	TB1-A68	AGC COMMON (OSS)	101
	CC336	J24- 87	E 18	AGC SIGNAL 179 SHIELD RETURN	179

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SCALE - NONE | REV LTR + | SHEET 64

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 135Y	P01- 71	TB1-K34	IG CDU ERROR SIG RET
A 136Y	P01- 76	J24- 13	ATTIT CONT MODE INDICATION TO AGC 162
A 137	P01- 78	TB1-D 3	0 VDC IMU
* A 116	P01- 79	J06- 79	ENTRY MODE LIGHT
A 138R	P01- 80	TB1-A54	PANEL BRIGHTNESS CONTROL
A 139R	P01- 82	TB1-H33	MG CDU 1X ERROR SIG
A 139Y	P01- 83	TB1-H34	MG CDU ERROR SIG RET
A 140	P01- 84	TB1-G 8	STRUCTURE GROUND
A 141	P01- 88	TB1-D71	CONDITION LAMP TEST
A 142	P01- 89	TB1-K72	+28 VDC MDV
A 143N	P01- 90	TB1-C 2	400 CPS 6 V HI
A 144	P01- 91	TB1-C 3	MODE LAMP TEST PWR
* A 118	P01- 92	J06- 92	COARSE ALIGN MODE LIGHT
* A 119	P01- 93	J06- 93	MODE RELAY COMMON
* A 120	P01- 94	J06- 94	FINE ALIGN MODE LIGHT
A 138Y	P01- 95	TB1-A55	PANEL BRIGHTNESS CONTROL
A 145R	P01- 96	TB1-G33	OG CDU 1X ERROR SIG
A 145Y	P01- 97	TB1-G34	OG CDU ERROR SIG RET
A 143R	P01-103	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
* A 121	P01-104	J06-104	ZERO ENCODER MODE LIGHT
* A 122	P01-105	J06-105	CDU MANUAL MODE LIGHT
A 143G	P01-106	TB1-C 1	400 CPS 6 V HI
A 143Y	P01-108	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER

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SCALE - NONE	REV LTR	SHEET 66

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 178R	P02-A	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
A 179R	P02-A*	TB1-A13	COS AIG 1X S3
A 178Y	P02-B	TB1-B 5	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
A 179Y	P02-B*	TB1-A14	COS AIG 1X RET S1
A 180R	P02-C	TB1-F15	COS AOG 16X S3
A 180Y	P02-D	TB1-F14	COS AOG 16X S1
A 181R	P02-E	TB1-G14	SIN AOG 16X S2
A 181Y	P02-F	TB1-G15	SIN AOG 16X S4
A 182R	P02-F*	TB1-A15	SIN AIG 1X RET S2
A 183R	P02-G	TB1-H10	COS AMG 16X S3
A 182Y	P02-G*	TB1-A16	SIN AIG 1X S4
A 183Y	P02-H	TB1-H 9	COS AMG 16X S1
A 184R	P02-J	TB1-K 9	SIN AMG 16X S2
A 184Y	P02-K	TB1-K10	SIN AMG 16X S4
A 185R	P02-L	TB1-B13	COS AMG 1X S3
A 185Y	P02-M	TB1-B14	COS AMG 1X S1
A 186Y	P02-N	TB1-B15	SIN AMG 1X RET S2
A 186R	P02-P	TB1-B16	SIN AMG 1X S4
A 187R	P02-R	TB1-K 7	3200 CPS 2 V HI
A 187Y	P02-S	TB1-H 7	3200 CPS 2 V LO
A 188R	P02-T	TB1-K 8	3200 CPS 2 V FEEDBACK HI
A 188Y	P02-U	TB1-H 8	3200 CPS 2 V FEEDBACK LO
A 189R	P02-W	TB1-H15	COS AIG 16X S3
A 189Y	P02-X	TB1-H14	COS AIG 16X S1
A 190R	P02-Y	TB1-K14	SIN AIG 16X S2
A 190Y	P02-Z	TB1-K15	SIN AIG 16X S4

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SCALE - NONE	REV LTR	SHEET 67

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 96R	P01- 1	J06- 1	PITCH ATTITUDE ERROR METER +
* A 96Y	P01- 2	J06- 2	PITCH ATTITUDE ERROR METER -
A 124G	P01- 4	TB1-K 3	COARSE ALIGN RELAY CONTROL
A 124R	P01- 5	TB1-H 5	FINE ALIGN RELAY CONTROL
* A 97	P01- 6	J06- 6	ENTRY RELAY CONTROL RESET
A 125	P01- 7	TB1-G 7	+28 VDC IMU
* A 98	P01- 9	J06- 9	MODE SWITCH INTERLOCK
A 126Y	P01- 10	TB1-B 7	800 CPS 28 V 1 PCT LO IMU
A 126R	P01- 11	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
A 124Y	P01- 12	TB1-K 5	ZERO ENCODER RELAY CONTROL
A 127R	P01- 13	TB1-B50	FINE ALIGN MODE COMMAND FROM AGC
* A 100R	P01- 14	J06- 14	YAW ATTITUDE ERROR METER +
* A 100Y	P01- 15	J06- 15	YAW ATTITUDE ERROR METER -
* A 101	P01- 18	J06- 18	MODE RELAY COMMON TO D AND C ELECT
* A 102	P01- 22	J06- 22	ATTITUDE CONTROL MODE LIGHT
* A 103	P01- 23	J06- 23	FINE ALIGN RELAY CONTROL
A 128Y	P01- 24	TB1-G 3	ATTITUDE CONTROL RELAY CONTROL
* A 105	P01- 25	J06- 25	ENTRY RELAY CONTROL
A 129	P01- 26	TB1-A26	IMU DELAY LIGHT HI
A 130Y	P01- 27	TB1-C48	CDU MANUAL MODE COMMAND FROM AGC
* A 106Y	P01- 28	J06- 28	ROLL ATTITUDE ERROR METER -
* A 106R	P01- 29	J06- 29	ROLL ATTITUDE ERROR METER +
* A 107	P01- 34	J06- 34	ZERO ENCODER RELAY CONTROL
* A 108	P01- 35	J06- 35	COARSE ALIGN RELAY CONTROL
* A 109	P01- 36	J06- 36	CDU MANUAL RELAY CONTROL
* A 110	P01- 37	J06- 37	MANUAL ALIGN
A 127Y	P01- 38	TB1-C50	ZERO ENCODER MODE COMMAND FROM AGC
A 131Y	P01- 39	J24- 29	ENTRY MODE INDICATION TO AGC 163
* A 111	P01- 46	J06- 46	ATTITUDE CONTROL MODE INTERLOCK
A 127G	P01- 48	TB1-A50	COARSE ALIGN MODE COMMAND FROM AGC
A 132Y	P01- 49	J24- 4	FINE ALIGN MODE INDICATION TO AGC 161
* A 112	P01- 56	J06- 56	MANUAL ALIGN
A 128G	P01- 57	TB1-H 3	ENTRY RELAY CONTROL
A 130R	P01- 58	TB1-C49	ENTRY MODE COMMAND FROM AGC
A 133Y	P01- 59	J24- 14	COARSE ALIGN MODE INDICATION TO AGC 159
A 134Y	P01- 68	TB1-C56	AGC COMMON (ISS)
A 128R	P01- 69	TB1-G 5	LOCK CDU RELAY CONTROL
A 135R	P01- 70	TB1-K33	IG CDU 1X ERROR SIG

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SCALE - NONE	REV LTR	SHEET 65

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 191Y	P03-A	TB1-G28	X GYRO ERROR SIG
A 192Y	P03-A*	TB1-D19	MG TORQUE MOTOR RET
A 193Y	P03-B	TB1-F28	Z GYRO ERROR SIG
A 194Y	P03-B*	TB1-D19	MG TORQUE MOTOR RET
A 195R	P03-C	TB1-A28	IMU OG ERROR SIG
A 194R	P03-C*	TB1-D18	MG TORQUE MOTOR HI
A 196R	P03-D	TB1-C14	COS AOG 1X S3
A 197R	P03-D*	TB1-F18	IG TORQUE MOTOR HI
A 196Y	P03-E	TB1-C15	COS AOG 1X S1
A 197Y	P03-E*	TB1-F19	IG TORQUE MOTOR RET
A 198R	P03-F	TB1-D15	SIN AOG 1X S4
A 199Y	P03-F*	TB1-F19	IG TORQUE MOTOR RET
A 198Y	P03-G	TB1-D14	SIN AOG 1X S2
A 199R	P03-G*	TB1-F18	IG TORQUE MOTOR HI
A 200Y	P03-H	TB1-K29	IG CDU ATTITUDE STEERING ERROR
A 201	P03-H*	TB1-G 7	+28 VDC IMU
A 200R	P03-J	TB1-K28	IG CDU ERROR SIG RET
A 202	P03-J*	TB1-A56	GIMBAL LOCK SIGNAL
A 203R	P03-K	TB1-H28	MG CDU ERROR SIG RET
A 203Y	P03-L	TB1-H29	MG CDU ATTITUDE STEERING ERROR
A 204Y	P03-M	TB1-K13	YAW ERROR BODY OFFSET AXIS LO
A 204R	P03-N	TB1-H13	PITCH YAW RSVR S3
A 205Y	P03-P	TB1-G13	PITCH ERROR BODY AND BODY OFFSET AXIS LO
A 205R	P03-R	TB1-F13	PITCH-YAW RSVR S4
A 195G	P03-U	TB1-C28	IMU IG AND Y GYRO ERROR SIG
A 195Y	P03-V	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO
A 195N	P03-W	TB1-B28	IMU MG ERROR SIG
A 206Y	P03-X	TB1-C19	OG TORQUE MOTOR RET
A 206R	P03-Y	TB1-C18	OG TORQUE MOTOR HI
A 192R	P03-Z	TB1-D18	MG TORQUE MOTOR HI

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SCALE - NONE	REV LTR	SHEET 68

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 210	P05- 1	TB1-G11	STRUCTURE GROUND
A 211Y	P05- 2	TB1-C46	SXT SHAFT 1/2X RSVR S4
A 211R	P05- 3	TB1-C45	SXT SHAFT 1/2X RSVR S2
A 212R	P05- 5	TB1-G51	SXT TRUNNION MOTOR PHASE 2
A 213Y	P05- 6	TB1-D46	SXT SHAFT 1/2X RSVR S1
A 213R	P05- 7	TB1-D45	SXT SHAFT 1/2X RSVR S3
A 214R	P05- 8	TB1-G49	SXT SHAFT MOTOR PHASE 2
A 215	P05- 9	TB1-B67	0 VDC OPTICS
A 216Y	P05- 10	TB1-A65	TRACKER Y REFERENCE
A 216R	P05- 11	TB1-A66	TRACKER Y REFERENCE
A 217R	P05- 12	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
A 217Y	P05- 13	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
A 217G	P05- 14	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
A 212G	P05- 16	TB1-G50	0 VDC OPTICS
A 218R	P05- 17	TB1-B66	TRACKER X REFERENCE
A 218Y	P05- 18	TB1-B65	TRACKER X REFERENCE
A 214G	P05- 19	TB1-G50	0 VDC OPTICS
A 219R	P05- 23	TB1-H37	SXT SHAFT TACH HI
A 219Y	P05- 24	TB1-H38	SXT SHAFT TACH LO
* A 207Y	P05- 27	P04-D1	SXT SHAFT 16X RSVR P2
* A 207R	P05- 30	P04-D2	SXT SHAFT 16X RSVR P4
A 220R	P05- 32	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
A 212Y	P05- 33	TB1-G52	SXT TRUNNION MOTOR PHASE 1
A 221R	P05- 34	TB1-D37	SXT TRUNNION TACH HI
A 221Y	P05- 35	TB1-D38	SXT TRUNNION TACH LO
A 214Y	P05- 36	TB1-G48	SXT SHAFT MOTOR PHASE 1
A 222	P05- 37	TB1-C67	0 VDC OPTICS
A 223R	P05- 38	TB1-D43	SXT TRUNNION 1X RSVR S3
A 223Y	P05- 39	TB1-D44	SXT TRUNNION 1X RSVR S1
A 224Y	P05- 40	TB1-C43	SXT TRUNNION 1X RSVR S2
A 224R	P05- 41	TB1-C44	SXT TRUNNION 1X RSVR S4
A 225R	P05- 43	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
A 225Y	P05- 44	TB1-B 3	400 CPS 6 V LO
A 226Y	P05- 51	TB1-G45	SXT SHAFT 1X RSVR S4
A 226R	P05- 52	TB1-G46	SXT SHAFT 1X RSVR S2
A 227R	P05- 53	TB1-F46	SXT SHAFT 1X RSVR S1
A 227Y	P05- 54	TB1-F45	SXT SHAFT 1X RSVR S3
A 220Y	P05- 55	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 209Y	P05- 58	P04-F2	SXT TRUNNION 64X RSVR P2
* A 209R	P05- 59	P04-F1	SXT TRUNNION 64X RSVR P4
A 228R	P05- 64	TB1-D66	TRACKER PREAMP OUTPUT HI
A 228Y	P05- 65	TB1-D65	TRACKER PREAMP OUTPUT LO
A 229	P05- 68	TB1-B71	+28 VDC OPTICS TRACKER POWER
A 230	P05- 69	TB1-D78	0 VDC OPTICS
A 231Y	P05- 70	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS
A 231R	P05- 71	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
A 232R	P05- 72	TB1-C66	TRACKER AUTOMATIC GAIN CONTROL HI
A 232Y	P05- 73	TB1-C65	TRACKER AUTOMATIC GAIN CONTROL LO
A 233R	P05- 76	TB1-D 8	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 233Y	P05- 77	TB1-F 8	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 234Y	P05- 78	TB1-B46	SXT SHAFT 16X RSVR S4
A 234R	P05- 79	TB1-B45	SXT SHAFT 16X RSVR S2
A 235R	P05- 80	TB1-K66	PHOTOMETER SIGNAL HI
A 235Y	P05- 81	TB1-K65	PHOTOMETER SIGNAL LO
A 236Y	P05- 82	TB1-A45	SXT SHAFT 16X RSVR S1
A 236R	P05- 83	TB1-A46	SXT SHAFT 16X RSVR S3
A 237R	P05- 84	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
A 237Y	P05- 85	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS
A 238Y	P05- 86	TB1-A44	SXT TRUNNION 64X RSVR S1
A 238R	P05- 87	TB1-A43	SXT TRUNNION 64X RSVR S3
A 239R	P05- 88	TB1-H66	STAR PRESENCE INPUT HI
A 239Y	P05- 89	TB1-H65	STAR PRESENCE INPUT LO
A 240Y	P05- 90	TB1-B44	SXT TRUNNION 64X RSVR S4
A 240R	P05- 91	TB1-B43	SXT TRUNNION 64X RSVR S2

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 207Y	P04-D1	P05- 27	SXT SHAFT 16X RSVR P2
A 207R	P04-D2	P05- 30	SXT SHAFT 16X RSVR P4
A 208R	P04-E1	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
A 208Y	P04-E2	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
A 209R	P04-F1	P05- 59	SXT TRUNNION 64X RSVR P4
A 209Y	P04-F2	P05- 58	SXT TRUNNION 64X RSVR P2

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 241G	P06-A	TB1-C74	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
A 242Y	P06-A*	TB1-K64	IRIG TEMP IND SENSOR RET
A 241Y	P06-B	TB1-C73	800 CPS 28 V 5 PCT IMU WHEELS LO
A 243R	P06-B*	TB1-K74	PRESSURE SENSOR +28 VDC HI
A 241R	P06-C	TB1-C72	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
A 243Y	P06-C*	TB1-K73	PRESSURE SENSOR +28 VDC LO
A 244	P06-D	TB1-G71	+28 VDC IMU
A 245R	P06-D*	TB1-D68	IMU PRESSURE MONITOR HI
A 246	P06-E	TB1-H26	0 VDC IMU
A 245Y	P06-E*	TB1-D69	IMU PRESSURE MONITOR LO
A 247	P06-F	TB1-C54	-28 VDC
A 248R	P06-F*	TB1-C77	800 CPS 28 V 5 PCT HI TO BLOWERS
A 249	P06-G	TB1-G70	STRUCTURE GROUND
A 248Y	P06-G*	TB1-C76	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 250R	P06-H	TB1-C18	OG TORQUE MOTOR HI
A 250Y	P06-J	TB1-C19	OG TORQUE MOTOR RET
A 251	P06-K	TB1-H61	IMU TEMP SENSOR COM
A 252Y	P06-L	TB1-H64	IRIG TEMP CONT SENSOR RET
A 252R	P06-M	TB1-H63	IRIG TEMP CONT SENSOR HI
A 253R	P06-N	TB1-H62	ACCEL INDICATING SENSOR HI
A 253Y	P06-P	TB1-G61	ACCEL TEMP IND SENSOR RET
A 254Y	P06-R	TB1-C61	EMERGENCY HTR LO-OPER AND STBY
A 255R	P06-V	TB1-D60	IMU CONTROL HTR HI
A 255Y	P06-W	TB1-D61	IMU CONTROL HTR LO
A 254R	P06-X	TB1-C60	IMU EMERGENCY HTR HI
A 256	P06-Y	TB1-D62	EMERG HTR CONT MODULE LO
A 242R	P06-Z	TB1-K63	IRIG TEMP IND SENSOR HI

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 267G	P08- 1	TB1-K50	0 VDC OPTICS
A 267R	P08- 2	TB1-K51	SCT TRUNNION MOTOR PHASE 2
A 267Y	P08- 3	TB1-K52	SCT TRUNNION MOTOR PHASE 1
A 268R	P08- 5	TB1-H51	SCT SHAFT MOTOR PHASE 2
A 268Y	P08- 6	TB1-H52	SCT SHAFT MOTOR PHASE 1
A 268G	P08- 7	TB1-H50	0 VDC OPTICS
A 269R	P08- 9	TB1-F44	SCT TRUNNION 1X RSVR P2
A 269Y	P08- 10	TB1-F43	SCT TRUNNION 1X RSVR P4
A 270R	P08- 12	TB1-G43	SCT TRUNNION 1X RSVR P3
A 270Y	P08- 13	TB1-G44	SCT TRUNNION 1X RSVR P1
A 271Y	P08- 18	TB1-F40	SCT TRUNNION 1X RSVR S2
A 271R	P08- 19	TB1-F41	SCT TRUNNION 1X RSVR S4
A 272R	P08- 21	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 272Y	P08- 22	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 273R	P08- 24	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
A 273Y	P08- 25	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
A 274R	P08- 27	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS
A 274Y	P08- 28	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
A 275R	P08- 30	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS
A 275Y	P08- 31	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS
A 276R	P08- 33	TB1-F37	SCT TRUNNION TACH HI
A 276Y	P08- 34	TB1-F38	SCT TRUNNION TACH LO
A 277	P08- 37	TB1-D67	0 VDC OPTICS
A 278R	P08- 38	TB1-K37	SCT SHAFT TACH HI
A 278Y	P08- 39	TB1-K38	SCT SHAFT TACH LO
A 279R	P08- 41	TB1-G46	SCT SHAFT 1X RSVR P2
A 279Y	P08- 42	TB1-G45	SCT SHAFT 1X RSVR P4
A 280R	P08- 44	TB1-F46	SCT SHAFT 1X RSVR P3
A 280Y	P08- 45	TB1-F45	SCT SHAFT 1X RSVR P1
A 281R	P08- 50	TB1-K41	SCT SHAFT 1X RSVR S2
A 281Y	P08- 51	TB1-K40	SCT SHAFT 1X RSVR S4
A 282R	P08- 53	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER
A 282Y	P08- 54	TB1-B 4	400 CPS 6 V LO
A 283R	P08- 56	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER
A 283Y	P08- 57	TB1-B 4	400 CPS 6 V LO
A 284	P08- 59	TB1-G70	STRUCTURE GROUND

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SCALE - NONE	REV LTR		SHEET 74

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 332Y	P09- 1	TB1-A16	SIN AIG 1X
A 333Y	P09- 2	TB1-A13	COS AIG 1X
A 333R	P09- 3	TB1-A14	COS AIG 1X RET
A 334Y	P09- 4	TB1-D15	SIN AOG 1X S4
A 335	P09- 5	TB1-D77	0 VDC OPTICS
A 336	P09- 6	TB1-H71	+28 VDC OPTICS
A 337R	P09- 7	TB1-A63	+120 VDC PIP
A 338R	P09- 9	TB1-G31	OG CDU 16X ERROR SIG
A 339	P09- 10	TB1-H70	STRUCTURE GROUND
A 340R	P09- 11	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
A 340Y	P09- 12	TB1-B 7	800 CPS 28 V 1 PCT LO IMU
A 341R	P09- 13	TB1-C75	800 CPS 28 V 5 PCT L-90 DEG HI IMU
A 341Y	P09- 14	TB1-C76	800 CPS 28 V 5 PCT L-90 DEG LO IMU
A 342	P09- 19	TB1-G57	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
A 343	P09- 20	TB1-H58	SHAFT CDU 16X ERROR SIG BUFFERED
A 344	P09- 21	TB1-H55	SXT TRUNNION TACH FEEDBACK BUFFERED
A 345	P09- 22	TB1-H57	TRUNNION CDU TACH FEEDBACK BUFFERED
A 332R	P09- 23	TB1-A15	SIN AIG 1X RET
A 346Y	P09- 24	TB1-B16	SIN AMG 1X
A 347R	P09- 25	TB1-B13	COS AMG 1X S3
A 334R	P09- 26	TB1-D14	SIN AOG 1X S2
A 348Y	P09- 27	TB1-C15	COS AOG 1X S1
A 337G	P09- 28	TB1-C63	+32 VDC PIP
A 337Y	P09- 29	TB1-B63	+32, +120 VDC RET PIP
A 338Y	P09- 31	TB1-G30	OG CDU ERROR SIG RET
A 349G	P09- 32	TB1-C74	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
A 349R	P09- 33	TB1-C72	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
A 350	P09- 37	TB1-K57	SCT TRUNNION 1X ERROR SIG BUFFERED
A 351	P09- 38	TB1-H54	SCT SHAFT 1X ERROR SIG BUFFERED
A 352	P09- 39	TB1-G58	SHAFT CDU TACH FEEDBACK SIG BUFFERED
A 353	P09- 40	TB1-F58	SCT TRUNNION TACH FEEDBACK BUFFERED
A 354Y	P09- 41	TB1-K34	IG CDU ERROR SIG RET
A 346R	P09- 42	TB1-B15	SIN AMG 1X RET
A 355Y	P09- 43	TB1-H34	MG CDU ERROR SIG RET
A 347Y	P09- 44	TB1-B14	COS AMG 1X S1
A 348R	P09- 45	TB1-C14	COS AOG 1X S3
A 356	P09- 46	TB1-G73	+3 VDC AGC
A 357	P09- 47	TB1-H72	+28 VDC STBY

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 257L	P07-A	TB1-C23	Z GYRO TORQUE +
A 258Y	P07-A*	TB1-D10	Y PIP ERROR LO
A 257W	P07-B	TB1-C22	Z GYRO TORQUE RET
A 259R	P07-B*	TB1-C11	Z PIP ERROR HI
A 257R	P07-C	TB1-C21	Z GYRO TORQUE -
A 259Y	P07-C*	TB1-C10	Z PIP ERROR LO
A 260L	P07-D	TB1-F23	X GYRO TORQUE +
A 260W	P07-E	TB1-F22	X GYRO TORQUE RET
A 260R	P07-F	TB1-F21	X GYRO TORQUE -
A 261G	P07-F*	TB1-A10	OG ADA
A 262L	P07-G	TB1-D23	Y GYRO TORQUE +
A 261N	P07-G*	TB1-A11	MG ADA
A 262W	P07-H	TB1-D22	Y GYRO TORQUE RET
A 261R	P07-H*	TB1-B11	IG ADA
A 262R	P07-J	TB1-D21	Y GYRO TORQUE -
A 261Y	P07-J*	TB1-B10	0 VDC IMU
A 263L	P07-K	TB1-G23	Z PIP TORQUE +
A 263W	P07-L	TB1-G22	Z PIP TORQUE RET
A 263R	P07-M	TB1-G21	Z PIP TORQUE -
A 264L	P07-N	TB1-H23	Y PIP TORQUE +
A 264W	P07-P	TB1-H22	Y PIP TORQUE RET
A 264R	P07-R	TB1-H21	Y PIP TORQUE -
A 265L	P07-U	TB1-K23	X PIP TORQUE +
A 265W	P07-V	TB1-K22	X PIP TORQUE RET
A 265R	P07-W	TB1-K21	X PIP TORQUE -
A 266R	P07-X	TB1-F11	X PIP ERROR HI
A 266Y	P07-Y	TB1-F10	X PIP ERROR LO
A 258R	P07-Z	TB1-D11	Y PIP ERROR HI

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SCALE - NONE	REV LTR		SHEET 73

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 358	P09- 48	TB1-B62	0 VDC IMU
A 359	P09- 49	TB1-G71	+28 VDC IMU
A 349Y	P09- 50	TB1-C73	800 CPS 28 V 5 PCT IMU WHEELS LO
A 360	P09- 54	TB1-G55	TRACKER X DRIVE BUFFERED HI
A 361	P09- 55	TB1-G54	TRACKER Y DRIVE BUFFERED HI
A 362	P09- 56	TB1-F57	0 VDC OPTICS
A 363	P09- 57	TB1-K55	SXT SHAFT TACH FEEDBACK BUFFERED
A 364	P09- 58	TB1-K54	SCT SHAFT TACH FEEDBACK BUFFERED
A 354R	P09- 59	TB1-K33	IG CDU 1X ERROR SIG
A 355R	P09- 60	TB1-H33	MG CDU 1X ERROR SIG
A 365Y	P09- 61	TB1-G34	OG CDU ERROR SIG RET
A 366	P09- 62	TB1-G74	+13 VDC AGC
A 367	P09- 63	TB1-H73	0 VDC AGC
A 368	P09- 64	TB1-H74	+28 VDC AGC
A 369R	P09- 65	TB1-F70	+2.5 VDC CONDITIONING LO
A 370	P09- 66	TB1-C54	-28 VDC
A 371	P09- 67	TB1-D26	AGC POWER SUPPLY FAIL SIG HI
A 372	P09- 68	TB1-B62	0 VDC IMU
A 373	P09- 69	TB1-A26	IMU DELAY LIGHT HI
A 374R	P09- 70	TB1-K 8	3200 CPS 2 V FEEDBACK HI
A 375	P09- 71	TB1-G56	TRACKER PREAMP OUTPUT BUFFERED HI
A 376	P09- 72	TB1-K58	PHOTOMETER PREAMP OUTPUT BUFFERED HI
A 377	P09- 73	TB1-H56	SXT TRUNNION MDA INPUT BUFFERED
A 378	P09- 74	TB1-K56	SXT SHAFT MDA INPUT BUFFERED
A 379Y	P09- 75	TB1-F28	Z GYRO ERROR SIG
A 380Y	P09- 76	TB1-G28	X GYRO ERROR SIG
A 365R	P09- 77	TB1-G33	OG CDU 1X ERROR SIG
A 381Y	P09- 78	TB1-D69	IMU PRESSURE MONITOR LO
A 381R	P09- 79	TB1-D68	IMU PRESSURE MONITOR HI
A 382	P09- 80	TB1-D52	TRAY 4 THERMISTER HI
A 369Y	P09- 81	TB1-F71	+2.5 VDC CONDITIONING HI
A 383R	P09- 82	TB1-G72	+20 VDC CONDITIONING
A 383Y	P09- 83	TB1-F72	0 VDC CONDITIONING
A 384	P09- 84	TB1-C26	G+N ERROR LIGHT HI
A 385	P09- 85	TB1-A56	GIMBAL LOCK SIGNAL
A 386	P09- 86	TB1-B26	IMU TEMP CONT FAIL LIGHT HI
A 387Y	P09- 87	TB1-H 2	25.6 KC LO IMU
A 374Y	P09- 88	TB1-H 8	3200 CPS 2 V FEEDBACK LO

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 406	P10- 1	TB1-H70	STRUCTURE GROUND	
	A 407	P10- 8	J22- 62	MAIN PANEL GIMBAL LOCK LIGHT	
	A 408	P10- 9	TB1-D70	0 VDC SPACECRAFT	
	A 409	P10- 10	TB1-D72	CONDITION LAMP TEST	
	A 410	P10- 12	TB1-A56	GIMBAL LOCK SIGNAL	
	A 411	P10- 13	TB1-C62	0 VDC IMU	
	A 412	P10- 14	TB1-H71	+28 VDC OPTICS	
	A 413Y	P10- 15	TB1-B61	AUTOMATIC MARK COMMAND	
*	A 299	P10- 16	J09- 31	MANUAL MARK COMMAND	
	A 414Y	P10- 19	J24- 32	NOT MARK	103
	A 415	P10- 24	TB1-A23	GIMBAL LOCK LIGHT HI	
*	A 298Y	P10- 32	J09- 30	ACCEPT MARK	
*	A 301Y	P10- 33	J09- 33	MARK REJECT	
*	A 314Y	P10- 38	J09- 77	400 CPS 1.5 V ZERO PHASE	
*	A 314R	P10- 39	J09- 65	400 CPS 1.5 V PI PHASE	
	A 416Y	P10- 43	TB1-A69	OPTICS ZERO ENCODER INDICATION	
	A 417Y	P10- 44	J24- 55	MARK	102
*	A 314G	P10- 48	J09- 95	400 CPS 26 V HI	
	A 418R	P10- 49	TB1-A75	400 CPS 26 V LO	
	A 419Y	P10- 68	TB1-C78	400 CPS 115 V LO	
	A 419R	P10- 69	TB1-B78	400 CPS 115 V HI	
*	A 311Y	P10- 92	J09- 52	400 CPS 6 V LO	
	A 420R	P10- 93	TB1-B 2	400 CPS 6 V LO	
	A 420Y	P10- 94	TB1-B 4	400 CPS 6 V LO	
	A 418Y	P10- 95	TB1-B75	400 CPS 6 V LO	
	A 421	P10-104	TB1-K71	+28 VDC MDV	
*	A 311G	P10-105	J09- 61	400 CPS 6 V HI	
*	A 311R	P10-106	J09- 53	400 CPS 6 V HI	
	A 420G	P10-107	TB1-C 1	400 CPS 6 V HI	
	A 420N	P10-108	TB1-C 2	400 CPS 6 V HI	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 502	P11-A	TB1-K78	+28 VDC AGC BUSS A	
A 503	P11-A	J23- 38	+28 VDC AGC BUSS A	167
A 504	P11-A	J23- 61	+28 VDC AGC BUSS A	167
A 505	P11-B	TB1-K76	+28 VDC IMU BUSS A	
A 506	P11-B	TB1-K76	+28 VDC IMU BUSS A	
A 507	P11-B	TB1-K76	+28 VDC IMU BUSS A	
A 508	P11-C	TB1-H76	+28 VDC IMU BUSS A	
A 509	P11-C	TB1-H76	+28 VDC IMU BUSS A	
A 510	P11-C	TB1-H76	+28 VDC IMU BUSS A	
A 511	P11-D	TB1-F75	0 VDC IMU	
A 512	P11-D	TB1-B68	0 VDC IMU	
A 513	P11-E	TB1-C69	0 VDC IMU	
A 514	P11-E	TB1-D74	0 VDC IMU	
A 515	P11-F	TB1-F73	0 VDC IMU	
A 516	P11-F	TB1-B70	0 VDC IMU	
A 517	P11-G	TB1-F78	0 VDC OPTICS	
A 518	P11-G	TB1-K53	0 VDC OPTICS	
A 519	P11-G	TB1-K50	0 VDC OPTICS	
A 520	P11-H	TB1-G78	+28 VDC OPTICS BUSS A	
A 521	P11-H	TB1-G78	+28 VDC OPTICS BUSS A	
A 522	P11-H	TB1-H78	+28 VDC OPTICS BUSS A	
A 523	P11-J	J23- 90	0 VDC AGC	169
A 524	P11-J	J23- 91	0 VDC AGC	169
A 525	P11-J	P12-J	0 VDC AGC	
A 526Y	P11-K	TB1-C78	400 CPS 115 V LO	
A 527	P11-L	TB1-G70	STRUCTURE GROUND	
A 528	P11-M	TB1-G76	+28 VDC STBY BUSS A	
A 529	P11-M	TB1-G76	+28 VDC STBY BUSS A	
A 526R	P11-N	TB1-B78	400 CPS 115 V HI	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
A 388G	P09- 89	TB1-C58	IG CDU FAILURE INDICATION	
A 388N	P09- 90	TB1-C57	MG CDU FAILURE INDICATION	
A 389Y	P09- 91	TB1-F19	IG TORQUE MOTOR RET	
A 389R	P09- 92	TB1-F18	IG TORQUE MOTOR HI	
A 390N	P09- 93	TB1-D28	IMU GIMBAL AND GYRO ERROR SIG LO	
A 390G	P09- 94	TB1-C28	IMU IG AND Y GYRO ERROR SIG	
A 391G	P09- 95	TB1-B40	X PIP ERROR MONITOR	
A 391R	P09- 96	TB1-A40	Y PIP ERROR MONITOR	
A 392	P09- 97	TB1-F52	THERMISTER LO	
A 393	P09- 98	TB1-D51	TRAY 3 THERMISTER HI	
A 394Y	P09-102	TB1-B74	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS	
A 394R	P09-103	TB1-A74	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS	
A 395Y	P09-104	TB1-K 2	25.6 KC LO OPTICS	
A 387R	P09-105	TB1-H 1	25.6 KC HI IMU	
A 396	P09-106	TB1-F64	ACCEL TEMP (TELEMETRY)	
A 397	P09-107	TB1-A64	BLOWER CURRENT SENSOR (TELEMETRY)	
A 388Y	P09-108	TB1-D58	0 VDC IMU	
A 398Y	P09-109	TB1-C19	OG TORQUE MOTOR RET	
A 399Y	P09-110	TB1-D19	MG TORQUE MOTOR RET	
A 390Y	P09-111	TB1-A28	IMU OG ERROR SIG	
A 390R	P09-112	TB1-B28	IMU MG ERROR SIG	
A 391Y	P09-113	TB1-A41	Z PIP ERROR MONITOR	
A 391N	P09-114	TB1-B41	0 VDC IMU	
A 400	P09-115	J23- 58	AGC THERMISTER HI	199S
A 401	P09-116	TB1-F51	TRAY 2 THERMISTER HI	
A 402Y	P09-124	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS	
A 402R	P09-125	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS	
A 395R	P09-126	TB1-K 1	25.6 KC HI OPTICS	
A 403	P09-127	TB1-D64	IRIG TEMP (TELEMETRY)	
A 404	P09-128	TB1-C64	TEMPERATURE CONTROL SIG LO	
A 405	P09-129	TB1-B64	HTR CURRENT (TELEMETRY)	
A 388R	P09-130	TB1-D57	OG CDU FAILURE INDICATION	
A 398R	P09-131	TB1-C18	OG TORQUE MOTOR HI	
A 399R	P09-132	TB1-D18	MG TORQUE MOTOR HI	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 530	P12-A	TB1-K77	+28 VDC AGC BUSS B	
	A 531	P12-A	J23- 39	+28 VDC AGC BUSS B	168
	A 532	P12-A	J23- 40	+28 VDC AGC BUSS B	168
	A 533	P12-B	TB1-K75	+28 VDC IMU BUSS B	
	A 534	P12-B	TB1-K75	+28 VDC IMU BUSS B	
	A 535	P12-B	TB1-K75	+28 VDC IMU BUSS B	
	A 536	P12-C	TB1-H75	+28 VDC IMU BUSS B	
	A 537	P12-C	TB1-H75	+28 VDC IMU BUSS B	
	A 538	P12-C	TB1-H75	+28 VDC IMU BUSS B	
	A 539	P12-D	TB1-C70	0 VDC IMU	
	A 540	P12-D	TB1-D73	0 VDC IMU	
	A 541	P12-E	TB1-F74	0 VDC IMU	
	A 542	P12-E	TB1-B69	0 VDC IMU	
	A 543	P12-F	TB1-C68	0 VDC IMU	
	A 544	P12-F	TB1-D75	0 VDC IMU	
	A 545	P12-G	TB1-D78	0 VDC OPTICS	
	A 546	P12-G	TB1-G53	0 VDC OPTICS	
	A 547	P12-G	TB1-G50	0 VDC OPTICS	
	A 548	P12-H	TB1-G77	+28 VDC OPTICS BUSS B	
	A 549	P12-H	TB1-G77	+28 VDC OPTICS BUSS B	
	A 550	P12-H	TB1-H77	+28 VDC OPTICS BUSS B	
	A 551	P12-J	J23- 41	0 VDC AGC	170
	A 552	P12-J	J23- 66	0 VDC AGC	170
*	A 525	P12-J	P11-J	0 VDC AGC	
	A 553	P12-L	TB1-K70	STRUCTURE GROUND	
	A 554	P12-M	TB1-G75	+28 VDC STBY BUSS B	
	A 555	P12-M	TB1-G75	+28 VDC STBY BUSS B	

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 3B	SHLD A 3	TB1-A12	0 VDC IMU
* A 4B	SHLD A 4	TB1-A17	0 VDC IMU
* A 12B	SHLD A 12	TB1-K32	IG CDU ERROR SIG RET
* A 16B	SHLD A 16	TB1-H17	0 VDC IMU
* A 17B	SHLD A 17	TB1-K17	0 VDC IMU
* A 18B	SHLD A 18	TB1-K30	IG CDU ERROR SIG RET
* A 19B	SHLD A 19	TB1-F30	IG CDU MDA INPUT RET
* A 20B	SHLD A 20	TB1-F34	IG CDU ENCODER COMMON
* A 23B	SHLD A 23	TB1-B12	0 VDC IMU
* A 24B	SHLD A 24	TB1-B17	0 VDC IMU
* A 32B	SHLD A 32	TB1-H32	MG CDU ERROR SIG RET
* A 36B	SHLD A 36	TB1-H12	0 VDC IMU
* A 37B	SHLD A 37	TB1-K12	0 VDC IMU
* A 38B	SHLD A 38	TB1-H30	MG CDU ERROR SIG RET
* A 39B	SHLD A 39	TB1-D30	MG CDU MDA INPUT RET
* A 40B	SHLD A 40	TB1-D34	MG CDU ENCODER COMMON
* A 43B	SHLD A 43	TB1-C17	0 VDC IMU
* A 44B	SHLD A 44	TB1-D17	0 VDC IMU
* A 52B	SHLD A 52	TB1-G32	OG CDU ERROR SIG RET
* A 56B	SHLD A 56	TB1-F17	0 VDC IMU
* A 57B	SHLD A 57	TB1-G17	0 VDC IMU
* A 59B	SHLD A 59	TB1-F32	OG CDU ERROR SIG RET
* A 60B	SHLD A 60	TB1-C30	OG CDU MDA INPUT RET
* A 61B	SHLD A 61	TB1-C34	OG CDU ENCODER COMMON
* A 64B	SHLD A 64	TB1-H47	0 VDC OPTICS
* A 65B	SHLD A 65	TB1-K47	0 VDC OPTICS
* A 66B	SHLD A 66	TB1-H39	0 VDC OPTICS
* A 72B	SHLD A 72	TB1-C47	0 VDC OPTICS
* A 73B	SHLD A 73	TB1-D47	0 VDC OPTICS
* A 74B	SHLD A 74	TB1-A47	0 VDC OPTICS
* A 75B	SHLD A 75	TB1-B47	0 VDC OPTICS
* A 76B	SHLD A 76	TB1-G39	0 VDC OPTICS
* A 77B	SHLD A 77	TB1-G36	0 VDC OPTICS
* A 78B	SHLD A 78	TB1-A34	SHAFT CDU ENCODER COMMON
* A 81B	SHLD A 81	TB1-D39	0 VDC OPTICS
* A 82B	SHLD A 82	TB1-D42	0 VDC OPTICS
* A 83B	SHLD A 83	TB1-C42	0 VDC OPTICS
* A 89B	SHLD A 89	TB1-H42	0 VDC OPTICS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR	+	SHEET 82

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 90B	SHLD A 90	TB1-K42	0 VDC OPTICS
* A 91B	SHLD A 91	TB1-A42	0 VDC OPTICS
* A 92B	SHLD A 92	TB1-B42	0 VDC OPTICS
* A 93B	SHLD A 93	TB1-C42	0 VDC OPTICS
* A 94B	SHLD A 94	TB1-C36	0 VDC OPTICS
* A 95B	SHLD A 95	TB1-B34	TRUNNION CDU ENCODER COMMON
* A 99B	SHLD A 99	TB1-A49	STRUCTURE GROUND
* A 104B	SHLD A 104	TB1-H 4	STRUCTURE GROUND
* A 113B	SHLD A 113	TB1-D56	AGC SIGNAL 178 SHIELD RETURN
* A 114B	SHLD A 114	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 124B	SHLD A 124	TB1-K 4	STRUCTURE GROUND
* A 127B	SHLD A 127	TB1-A49	STRUCTURE GROUND
* A 128B	SHLD A 128	TB1-G 4	STRUCTURE GROUND
* A 130B	SHLD A 130	TB1-B49	STRUCTURE GROUND
* A 131B	SHLD A 131	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 132B	SHLD A 132	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 133B	SHLD A 133	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 134B	SHLD A 134	TB1-D56	AGC SIGNAL 178 SHIELD RETURN
* A 135B	SHLD A 135	TB1-K32	IG CDU ERROR SIG RET
* A 136B	SHLD A 136	E 22	AGC SIGNAL 178 SHIELD RETURN
* A 139B	SHLD A 139	TB1-H32	MG CDU ERROR SIG RET
* A 145B	SHLD A 145	TB1-G32	OG CDU ERROR SIG RET
* A 179B	SHLD A 179	TB1-A12	0 VDC IMU
* A 180B	SHLD A 180	TB1-F17	0 VDC IMU
* A 181B	SHLD A 181	TB1-G17	0 VDC IMU
* A 182B	SHLD A 182	TB1-A17	0 VDC IMU
* A 183B	SHLD A 183	TB1-H12	0 VDC IMU
* A 184B	SHLD A 184	TB1-K12	0 VDC IMU
* A 185B	SHLD A 185	TB1-B12	0 VDC IMU
* A 186B	SHLD A 186	TB1-B17	0 VDC IMU
* A 188B	SHLD A 188	TB1-H12	0 VDC IMU
* A 189B	SHLD A 189	TB1-H17	0 VDC IMU
* A 190B	SHLD A 190	TB1-K17	0 VDC IMU
* A 191B	SHLD A 191	TB1-G27	0 VDC IMU
* A 193B	SHLD A 193	TB1-G27	0 VDC IMU
* A 196B	SHLD A 196	TB1-C17	0 VDC IMU
* A 198B	SHLD A 198	TB1-D17	0 VDC IMU
* A 200B	SHLD A 200	TB1-K28	IG CDU ERROR SIG RET

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR	+	SHEET 83

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 490R	P13- 1	TB1-C66	TRACKER AUTOMATIC GAIN CONTROL HI
A 491R	P13- 2	TB1-D66	TRACKER PREAMP OUTPUT HI
A 493R	P13- 5	TB1-G55	TRACKER X DRIVE BUFFERED HI
A 494R	P13- 6	TB1-G54	TRACKER Y DRIVE BUFFERED HI
A 495Y	P13- 7	TB1-F57	TRACKER PREAMP OUTPUT BUFFERED LO
A 492	P13- 10	E 25	TRACKER SIGNAL COMMON
A 493Y	P13- 13	TB1-F56	TRACKER X DRIVE BUFFERED LO
A 494Y	P13- 14	TB1-F56	TRACKER Y DRIVE BUFFERED LO
A 495R	P13- 15	TB1-G56	TRACKER PREAMP OUTPUT BUFFERED HI
A 496Y	P13- 23	TB1-F65	TRACKER Y ERROR LO
A 497Y	P13- 24	TB1-G65	TRACKER X ERROR LO
A 498Y	P13- 27	TB1-A65	TRACKER Y REFERENCE
A 498R	P13- 28	TB1-A66	TRACKER Y REFERENCE
A 496R	P13- 31	TB1-F66	TRACKER Y ERROR HI
A 497R	P13- 32	TB1-G66	TRACKER X ERROR HI
A 499R	P13- 35	TB1-B66	TRACKER X REFERENCE
A 499Y	P13- 36	TB1-B65	TRACKER X REFERENCE
A 500	P13- 37	TB1-K70	STRUCTURE GROUND
A 501	P13- 38	TB1-B71	+28 VDC OPTICS TRACKER POWER

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR	+	SHEET 81

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 203B	SHLD A 203	TB1-H28	MG CDU ERROR SIG RET
* A 204B	SHLD A 204	TB1-G12	0 VDC IMU
* A 205B	SHLD A 205	TB1-F12	0 VDC IMU
* A 211B	SHLD A 211	TB1-C47	0 VDC OPTICS
* A 213B	SHLD A 213	TB1-D47	0 VDC OPTICS
* A 216B	SHLD A 216	TB1-A67	0 VDC OPTICS
* A 218B	SHLD A 218	TB1-B67	0 VDC OPTICS
* A 219B	SHLD A 219	TB1-H36	0 VDC OPTICS
* A 221B	SHLD A 221	TB1-D36	0 VDC OPTICS
* A 223B	SHLD A 223	TB1-D42	0 VDC OPTICS
* A 224B	SHLD A 224	TB1-C42	0 VDC OPTICS
* A 226B	SHLD A 226	TB1-G47	0 VDC OPTICS
* A 227B	SHLD A 227	TB1-F47	0 VDC OPTICS
* A 228B	SHLD A 228	TB1-D67	0 VDC OPTICS
* A 232B	SHLD A 232	TB1-C67	0 VDC OPTICS
* A 234B	SHLD A 234	TB1-B47	0 VDC OPTICS
* A 235B	SHLD A 235	TB1-K67	0 VDC OPTICS
* A 236B	SHLD A 236	TB1-A47	0 VDC OPTICS
* A 238B	SHLD A 238	TB1-A42	0 VDC OPTICS
* A 239B	SHLD A 239	TB1-H67	0 VDC OPTICS
* A 240B	SHLD A 240	TB1-B42	0 VDC OPTICS
* A 254B	SHLD A 254	TB1-C59	0 VDC IMU
* A 255B	SHLD A 255	TB1-C59	0 VDC IMU
* A 257B	SHLD A 257	TB1-C24	0 VDC IMU
* A 260B	SHLD A 260	TB1-F24	0 VDC IMU
* A 262B	SHLD A 262	TB1-D24	0 VDC IMU
* A 263B	SHLD A 263	TB1-G24	0 VDC IMU
* A 264B	SHLD A 264	TB1-H24	0 VDC IMU
* A 265B	SHLD A 265	TB1-K24	0 VDC IMU
* A 269B	SHLD A 269	TB1-F42	0 VDC OPTICS
* A 270B	SHLD A 270	TB1-G42	0 VDC OPTICS
* A 271B	SHLD A 271	TB1-F39	0 VDC OPTICS
* A 276B	SHLD A 276	TB1-F36	0 VDC OPTICS
* A 278B	SHLD A 278	TB1-K36	0 VDC OPTICS
* A 279B	SHLD A 279	TB1-G47	0 VDC OPTICS
* A 280B	SHLD A 280	TB1-F47	0 VDC OPTICS
* A 281B	SHLD A 281	TB1-K39	0 VDC OPTICS
* A 286B	SHLD A 286	TB1-A59	STRUCTURE GROUND

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR	+	SHEET 84

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 564B	SHLD A 564	TB1-A70	AGC SIGNAL 178 SHIELD RETURN
*	A 566B	SHLD A 566	E 23	AGC SIGNAL 178 SHIELD RETURN
*	BB 50B	SHLD BB 50	J17-S4	0 VDC IMU
*	BB 94B	SHLD BB 94	E 4	0 VDC IMU
	CC 1A	SHLD CC 1	E 4	0 VDC IMU
	CC 2A	SHLD CC 2	E 4	0 VDC IMU
	CC 3A	SHLD CC 3	J12-K3	STRUCTURE GROUND
	CC 6A	SHLD CC 6	E 4	0 VDC IMU
	CC 7A	SHLD CC 7	E 4	0 VDC IMU
*	CC 8B	SHLD CC 8	E 18	AGC SIGNAL 179 SHIELD RETURN
*	CC 9B	SHLD CC 9	E 18	AGC SIGNAL 179 SHIELD RETURN
*	CC 10B	SHLD CC 10	E 18	AGC SIGNAL 179 SHIELD RETURN
	CC 13A	SHLD CC 13	E 7	0 VDC IMU
	CC 14A	SHLD CC 14	E 7	0 VDC IMU
	CC 15A	SHLD CC 15	E 7	0 VDC IMU
	CC 16A	SHLD CC 16	E 7	0 VDC IMU
	CC 17A	SHLD CC 17	E 7	0 VDC IMU
	CC 18A	SHLD CC 18	E 7	0 VDC IMU
	CC 19A	SHLD CC 19	E 7	0 VDC IMU
*	CC 20B	SHLD CC 20	E 17	AGC SIGNAL 179 SHIELD RETURN
*	CC 21B	SHLD CC 21	E 17	AGC SIGNAL 179 SHIELD RETURN
*	CC 22B	SHLD CC 22	E 17	AGC SIGNAL 179 SHIELD RETURN
*	CC 23B	SHLD CC 23	E 17	AGC SIGNAL 179 SHIELD RETURN
*	CC 24B	SHLD CC 24	E 17	AGC SIGNAL 179 SHIELD RETURN
*	CC 25B	SHLD CC 25	E 17	AGC SIGNAL 179 SHIELD RETURN
*	CC 26B	SHLD CC 26	E 19	AGC SIGNAL 179 SHIELD RETURN
*	CC 27B	SHLD CC 27	E 19	AGC SIGNAL 179 SHIELD RETURN
*	CC 28B	SHLD CC 28	E 19	AGC SIGNAL 179 SHIELD RETURN
*	CC 29B	SHLD CC 29	E 19	AGC SIGNAL 179 SHIELD RETURN
*	CC 30B	SHLD CC 30	E 19	AGC SIGNAL 179 SHIELD RETURN
*	CC 31B	SHLD CC 31	E 19	AGC SIGNAL 179 SHIELD RETURN
	CC 32A	SHLD CC 32	E 9	IG DAC MDA SIG LO
	CC 33A	SHLD CC 33	E 9	IG DAC MDA SIG LO
	CC 34A	SHLD CC 34	E 11	MG DAC MDA SIG LO
	CC 35A	SHLD CC 35	E 11	MG DAC MDA SIG LO
	CC 36A	SHLD CC 36	E 13	OG DAC MDA SIG LO
	CC 37A	SHLD CC 37	E 13	OG DAC MDA SIG LO
*	CC 38B	SHLD CC 38	E 21	AGC SIGNAL 178 SHIELD RETURN

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR		SHEET 86

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC 39A	SHLD CC 39	J16-P2	0 VDC IMU
	CC 40A	SHLD CC 40	J16-P2	0 VDC IMU
*	CC 41B	SHLD CC 41	E 21	AGC SIGNAL 178 SHIELD RETURN
*	CC 42B	SHLD CC 42	E 20	AGC SIGNAL 179 SHIELD RETURN
*	CC 43B	SHLD CC 43	J22- 48	NAA SHIELD GROUND
*	CC 44B	SHLD CC 44	J22- 77	NAA SHIELD GROUND
*	CC 45B	SHLD CC 45	J22- 80	NAA SHIELD GROUND
*	CC 46B	SHLD CC 46	E 20	AGC SIGNAL 179 SHIELD RETURN
*	CC 47B	SHLD CC 47	J22- 54	NAA SHIELD GROUND
*	CC 48B	SHLD CC 48	J22- 51	NAA SHIELD GROUND
*	CC 49B	SHLD CC 49	E 20	AGC SIGNAL 179 SHIELD RETURN
*	CC 50B	SHLD CC 50	E 20	AGC SIGNAL 179 SHIELD RETURN
	CC 51A	SHLD CC 51	J17-S4	0 VDC IMU
	CC 57A	SHLD CC 57	J20-M4	STRUCTURE GROUND
*	CC 96B	SHLD CC 96	TB1-K24	0 VDC IMU
*	CC 99B	SHLD CC 99	TB1-H24	0 VDC IMU
*	CC101B	SHLD CC101	TB1-F24	0 VDC IMU
*	CC106B	SHLD CC106	TB1-G24	0 VDC IMU
*	CC108B	SHLD CC108	TB1-D24	0 VDC IMU
*	CC109B	SHLD CC109	TB1-C24	0 VDC IMU
*	CC126B	SHLD CC126	TB1-K17	0 VDC IMU
*	CC127B	SHLD CC127	TB1-K12	0 VDC IMU
*	CC128B	SHLD CC128	TB1-H 4	STRUCTURE GROUND
	CC136A	SHLD CC136	J16-B1	IG CDU MDA INPUT RET
	CC141A	SHLD CC141	J16-B3	MG CDU MDA INPUT RET
*	CC143B	SHLD CC143	TB1-C17	0 VDC IMU
*	CC144B	SHLD CC144	TB1-D17	0 VDC IMU
*	CC148B	SHLD CC148	TB1-F17	0 VDC IMU
*	CC152B	SHLD CC152	TB1-G17	0 VDC IMU
	CC153A	SHLD CC153	J16-B5	OG CDU MDA INPUT RET
*	CC159B	SHLD CC159	TB1-K 4	STRUCTURE GROUND
*	CC163B	SHLD CC163	TB1-H17	0 VDC IMU
*	CC164B	SHLD CC164	TB1-H12	0 VDC IMU
*	CC173B	SHLD CC173	TB1-D56	AGC SIGNAL 178 SHIELD RETURN
*	CC182B	SHLD CC182	TB1-G12	0 VDC IMU
*	CC190B	SHLD CC190	TB1-C59	0 VDC IMU
*	CC192B	SHLD CC192	TB1-C59	0 VDC IMU
*	CC201B	SHLD CC201	TB1-F12	0 VDC IMU

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR		SHEET 87

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 290B	SHLD A 290	TB1-K67	0 VDC OPTICS
*	A 291B	SHLD A 291	TB1-H67	0 VDC OPTICS
	A 298A	SHLD A 298	E 24	AGC SIGNAL 178 SHIELD RETURN
	A 301A	SHLD A 301	E 24	AGC SIGNAL 178 SHIELD RETURN
*	A 302B	SHLD A 302	TB1-F67	0 VDC OPTICS
*	A 304B	SHLD A 304	E 23	AGC SIGNAL 178 SHIELD RETURN
*	A 305B	SHLD A 305	TB1-G67	0 VDC OPTICS
	A 308A	SHLD A 308	E 23	AGC SIGNAL 178 SHIELD RETURN
*	A 308B	SHLD A 308	TB1-A70	AGC SIGNAL 178 SHIELD RETURN
	A 309A	SHLD A 309	E 23	AGC SIGNAL 178 SHIELD RETURN
*	A 309B	SHLD A 309	E 24	AGC SIGNAL 178 SHIELD RETURN
*	A 313B	SHLD A 313	TB1-A58	STRUCTURE GROUND
*	A 332B	SHLD A 332	TB1-A17	0 VDC IMU
*	A 333B	SHLD A 333	TB1-A12	0 VDC IMU
*	A 334B	SHLD A 334	TB1-D17	0 VDC IMU
*	A 338B	SHLD A 338	TB1-F32	OG CDU ERROR SIG RET
*	A 346B	SHLD A 346	TB1-B17	0 VDC IMU
*	A 347B	SHLD A 347	TB1-B12	0 VDC IMU
*	A 348B	SHLD A 348	TB1-C17	0 VDC IMU
*	A 354B	SHLD A 354	TB1-K32	IG CDU ERROR SIG RET
*	A 355B	SHLD A 355	TB1-H32	MG CDU ERROR SIG RET
*	A 365B	SHLD A 365	TB1-G32	OG CDU ERROR SIG RET
*	A 379B	SHLD A 379	TB1-F27	0 VDC IMU
*	A 380B	SHLD A 380	TB1-F27	0 VDC IMU
*	A 413B	SHLD A 413	TB1-A58	STRUCTURE GROUND
*	A 414B	SHLD A 414	E 23	AGC SIGNAL 178 SHIELD RETURN
*	A 416B	SHLD A 416	TB1-A70	AGC SIGNAL 178 SHIELD RETURN
*	A 417B	SHLD A 417	E 23	AGC SIGNAL 178 SHIELD RETURN
*	A 472B	SHLD A 472	TB1-A59	STRUCTURE GROUND
*	A 474B	SHLD A 474	TB1-A49	STRUCTURE GROUND
*	A 475B	SHLD A 475	TB1-B49	STRUCTURE GROUND
*	A 476B	SHLD A 476	TB1-B49	STRUCTURE GROUND
*	A 490B	SHLD A 490	TB1-C67	0 VDC OPTICS
*	A 491B	SHLD A 491	TB1-D67	0 VDC OPTICS
*	A 496B	SHLD A 496	TB1-F67	0 VDC OPTICS
*	A 497B	SHLD A 497	TB1-G67	0 VDC OPTICS
*	A 498B	SHLD A 498	TB1-A67	0 VDC OPTICS
*	A 499B	SHLD A 499	TB1-B67	0 VDC OPTICS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR		SHEET 85

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC204B	SHLD CC204	TB1-G32	OG CDU ERROR SIG RET
*	CC218B	SHLD CC218	TB1-D47	0 VDC OPTICS
*	CC219B	SHLD CC219	TB1-B47	0 VDC OPTICS
*	CC221B	SHLD CC221	TB1-G42	0 VDC OPTICS
*	CC223B	SHLD CC223	TB1-A58	STRUCTURE GROUND
*	CC225B	SHLD CC225	TB1-A59	STRUCTURE GROUND
*	CC229B	SHLD CC229	TB1-D42	0 VDC OPTICS
*	CC230B	SHLD CC230	TB1-C42	0 VDC OPTICS
*	CC231B	SHLD CC231	TB1-F42	0 VDC OPTICS
*	CC233B	SHLD CC233	TB1-D36	0 VDC OPTICS
*	CC234B	SHLD CC234	TB1-B42	0 VDC OPTICS
*	CC235B	SHLD CC235	TB1-K39	0 VDC OPTICS
*	CC237B	SHLD CC237	TB1-K36	0 VDC OPTICS
*	CC239B	SHLD CC239	TB1-H36	0 VDC OPTICS
*	CC251B	SHLD CC251	TB1-A59	STRUCTURE GROUND
*	CC253B	SHLD CC253	TB1-K42	0 VDC OPTICS
*	CC254B	SHLD CC254	TB1-H42	0 VDC OPTICS
*	CC255B	SHLD CC255	TB1-D39	0 VDC OPTICS
*	CC256B	SHLD CC256	TB1-C42	0 VDC OPTICS
*	CC258B	SHLD CC258	TB1-C36	0 VDC OPTICS
*	CC259B	SHLD CC259	TB1-F39	0 VDC OPTICS
*	CC261B	SHLD CC261	TB1-F36	0 VDC OPTICS
*	CC263B	SHLD CC263	TB1-H39	0 VDC OPTICS
*	CC265B	SHLD CC265	TB1-H47	0 VDC OPTICS
*	CC266B	SHLD CC266	TB1-K47	0 VDC OPTICS
*	CC267B	SHLD CC267	TB1-G39	0 VDC OPTICS
*	CC269B	SHLD CC269	TB1-G36	0 VDC OPTICS
*	CC276B	SHLD CC276	TB1-A58	STRUCTURE GROUND
*	CC278B	SHLD CC278	TB1-K67	0 VDC OPTICS
*	CC281B	SHLD CC281	TB1-G67	0 VDC OPTICS
*	CC325B	SHLD CC325	TB1-G 4	STRUCTURE GROUND
*	CC327B	SHLD CC327	TB1-B17	0 VDC IMU
*	CC328B	SHLD CC328	TB1-B12	0 VDC IMU
*	CC329B	SHLD CC329	TB1-A17	0 VDC IMU
*	CC330B	SHLD CC330	TB1-A12	0 VDC IMU
	CC332A	SHLD CC332	E 21	AGC SIGNAL 178 SHIELD RETURN
*	CC332B	SHLD CC332	TB1-D56	AGC SIGNAL 178 SHIELD RETURN

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015087	
SCALE - NONE	REV LTR		SHEET 88

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC 65K	TB1-A10	J11-G1	OG ADA	
*	A 261N	TB1-A11	P07-G*	MG ADA	
*	CC 65L	TB1-A11	J11-H1	MG ADA	
	A 3B	TB1-A12	SHLD A 3	0 VDC IMU	
	A 179B	TB1-A12	SHLD A 179	0 VDC IMU	
	A 333B	TB1-A12	SHLD A 333	0 VDC IMU	
	AA 3	TB1-A12	TB1-B12	0 VDC IMU	
	AA 93	TB1-A12	TB1-B17	0 VDC IMU	
	CC330B	TB1-A12	SHLD CC330	0 VDC IMU	
*	A 3R	TB1-A13	J01- 20	COS AIG 1X P3	
*	A 179R	TB1-A13	P02-A*	COS AIG 1X S3	
*	A 333Y	TB1-A13	P09- 2	COS AIG 1X	
*	CC330R	TB1-A13	J22- 84	COS AIG 1X	
*	A 3Y	TB1-A14	J01- 6	COS AIG 1X RET P1	
*	A 179Y	TB1-A14	P02-B*	COS AIG 1X RET S1	
*	A 333R	TB1-A14	P09- 3	COS AIG 1X RET	
*	CC330W	TB1-A14	J22- 85	COS AIG 1X RET	
*	A 4R	TB1-A15	J01- 21	SIN AIG 1X RET P4	
*	A 182R	TB1-A15	P02-F*	SIN AIG 1X RET S2	
*	A 332R	TB1-A15	P09- 23	SIN AIG 1X RET	
*	CC329W	TB1-A15	J22- 33	SIN AIG 1X RET	
*	A 4Y	TB1-A16	J01- 7	SIN AIG 1X P2	
*	A 182Y	TB1-A16	P02-G*	SIN AIG 1X S4	
*	A 332Y	TB1-A16	P09- 1	SIN AIG 1X	
*	CC329R	TB1-A16	J22- 56	SIN AIG 1X	
	A 4B	TB1-A17	SHLD A 4	0 VDC IMU	
	A 182B	TB1-A17	SHLD A 182	0 VDC IMU	
	A 332B	TB1-A17	SHLD A 332	0 VDC IMU	
	AA 10	TB1-A17	TB1-B17	0 VDC IMU	
	AA 95	TB1-A17	TB1-C24	0 VDC IMU	
	CC329B	TB1-A17	SHLD CC329	0 VDC IMU	
*	A 158	TB1-A20	J08- 50	SPARE FAIL LIGHT 1 HI	
*	A 479	TB1-A20	J10- 7	SPARE FAIL LIGHT 1 HI	305
*	A 155	TB1-A21	J08- 41	ZERO ENCODER LIGHT HI	
*	A 473G	TB1-A21	J10- 3	ZERO ENCODER LIGHT HI	301
*	A 162	TB1-A22	J08- 60	IMU FAIL LIGHT HI	
*	A 478	TB1-A22	J10- 6	IMU FAIL LIGHT HI	304
*	A 147	TB1-A23	J08- 18	GIMBAL LOCK LIGHT HI	

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015087
SCALE - NONE
REV LTR
SHEET 90

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 415	TB1-A23	P10- 24	GIMBAL LOCK LIGHT HI	
*	A 169	TB1-A24	J08- 72	CDU FAIL LIGHT HI	
*	A 473R	TB1-A24	J10- 4	CDU FAIL LIGHT HI	302
*	A 152	TB1-A25	J08- 31	IMU DELAY LIGHT LO	
*	CC171	TB1-A25	J16-K3	IMU DELAY LIGHT LO	
*	A 129	TB1-A26	P01- 26	IMU DELAY LIGHT HI	
*	A 156	TB1-A26	J08- 42	IMU DELAY LIGHT HI	
*	A 373	TB1-A26	P09- 69	IMU DELAY LIGHT HI	
*	A 195R	TB1-A28	P03-C	IMU OG ERROR SIG	
*	A 390Y	TB1-A28	P09-111	IMU OG ERROR SIG	
*	CC 68L	TB1-A28	J11-A6	IMU OG ERROR SIG	
*	A 55R	TB1-A29	J03- 67	OG CDU 1/2X ERROR SIG	
*	CC145W	TB1-A29	J16-D5	OG CDU 1/2X ERROR SIG	
*	A 35R	TB1-A30	J02- 67	MG CDU 1/2X ERROR SIG	
*	CC138W	TB1-A30	J16-D3	MG CDU 1/2X ERROR SIG	
*	A 15R	TB1-A31	J01- 67	IG CDU 1/2X ERROR SIG S3	
*	CC133W	TB1-A31	J16-D1	IG CDU 1/2X ERROR SIG	
*	A 78R	TB1-A33	J04-108	SHAFT CDU ENCODER PHASE 2	
*	CC203R	TB1-A33	J17-F9	SHAFT CDU ENCODER PHASE 2	
	A 78B	TB1-A34	SHLD A 78	SHAFT CDU ENCODER COMMON	
*	A 78Y	TB1-A34	J04- 94	SHAFT CDU ENCODER COMMON	
*	CC203W	TB1-A34	J17-D9	SHAFT CDU ENCODER COMMON	
*	A 78G	TB1-A35	J04-107	SHAFT CDU ENCODER PHASE 1	
*	CC203L	TB1-A35	J17-C9	SHAFT CDU ENCODER PHASE 1	
	AA 25	TB1-A36	TB1-B36	0 VDC OPTICS	
	AA 32	TB1-A39	TB1-B39	0 VDC OPTICS	
	AA103	TB1-A39	TB1-B36	0 VDC OPTICS	
*	A 391R	TB1-A40	P09- 96	Y PIP ERROR MONITOR	
*	CC100	TB1-A40	J13-F2	Y PIP ERROR MONITOR	
*	A 391Y	TB1-A41	P09-113	Z PIP ERROR MONITOR	
*	CC107	TB1-A41	J14-H6	Z PIP ERROR MONITOR	
	A 91B	TB1-A42	SHLD A 91	0 VDC OPTICS	
	A 238B	TB1-A42	SHLD A 238	0 VDC OPTICS	
	AA 39	TB1-A42	TB1-B42	0 VDC OPTICS	
	AA105	TB1-A42	TB1-B39	0 VDC OPTICS	
*	A 91R	TB1-A43	J05-100	TRUNNION CDU 16X RSVR P3	
*	A 238R	TB1-A43	P05- 87	SXT TRUNNION 64X RSVR S3	
*	A 91Y	TB1-A44	J05- 86	TRUNNION CDU 16X RSVR P1	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA 70	TB1-A 1	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
*	A 8R	TB1-A 1	J01- 28	400 CPS VARIABLE ILLUMINATION POWER
*	A 28R	TB1-A 1	J02- 28	400 CPS VARIABLE ILLUMINATION POWER
*	A 48R	TB1-A 1	J03- 28	400 CPS VARIABLE ILLUMINATION POWER
	AA 74	TB1-A 2	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
*	A 67R	TB1-A 2	J04- 28	400 CPS VARIABLE ILLUMINATION POWER
*	A 85R	TB1-A 2	J05- 28	400 CPS VARIABLE ILLUMINATION POWER
*	A 143R	TB1-A 2	P01-103	400 CPS VARIABLE ILLUMINATION POWER
*	AA 70	TB1-A 2	TB1-A 1	400 CPS VARIABLE ILLUMINATION POWER
	AA 77	TB1-A 3	TB1-A 4	400 CPS VARIABLE ILLUMINATION POWER
*	A 123R	TB1-A 3	J06-108	400 CPS VARIABLE ILLUMINATION POWER
*	A 225R	TB1-A 3	P05- 43	400 CPS VARIABLE ILLUMINATION POWER
*	A 312R	TB1-A 3	J09- 54	400 CPS VARIABLE ILLUMINATION POWER
*	AA 74	TB1-A 3	TB1-A 2	400 CPS VARIABLE ILLUMINATION POWER
*	A 143Y	TB1-A 4	P01-108	400 CPS VARIABLE ILLUMINATION POWER
*	A 282R	TB1-A 4	P08- 53	400 CPS VARIABLE ILLUMINATION POWER
*	A 283R	TB1-A 4	P08- 56	400 CPS VARIABLE ILLUMINATION POWER
*	AA 77	TB1-A 4	TB1-A 3	400 CPS VARIABLE ILLUMINATION POWER
	AA 81	TB1-A 5	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
*	A 25G	TB1-A 5	J02- 11	800 CPS 28 V 1 PCT HI IMU
*	A 25R	TB1-A 5	J02- 25	800 CPS 28 V 1 PCT HI IMU
*	A 178R	TB1-A 5	P02-A	800 CPS 28 V 1 PCT HI IMU
*	CC160L	TB1-A 5	J16-S4	800 CPS 28 V 1 PCT HI IMU
	AA 84	TB1-A 6	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
*	A 5G	TB1-A 6	J01- 11	800 CPS 28 V 1 PCT HI IMU
*	A 5R	TB1-A 6	J01- 25	800 CPS 28 V 1 PCT HI IMU
*	A 45R	TB1-A 6	J03- 25	800 CPS 28 V 1 PCT HI IMU
*	AA 81	TB1-A 6	TB1-A 5	800 CPS 28 V 1 PCT HI IMU
	AA 88	TB1-A 7	TB1-A 8	800 CPS 28 V 1 PCT HI IMU
*	A 45G	TB1-A 7	J03- 11	800 CPS 28 V 1 PCT HI IMU
*	A 126R	TB1-A 7	P01- 11	800 CPS 28 V 1 PCT HI IMU
*	A 340R	TB1-A 7	P09- 11	800 CPS 28 V 1 PCT HI IMU
*	AA 84	TB1-A 7	TB1-A 6	800 CPS 28 V 1 PCT HI IMU
*	A 1R	TB1-A 8	J01- 1	800 CPS 28 V 1 PCT HI IMU
*	A 21R	TB1-A 8	J02- 1	800 CPS 28 V 1 PCT HI IMU
*	A 41R	TB1-A 8	J03- 1	800 CPS 28 V 1 PCT HI IMU
*	AA 88	TB1-A 8	TB1-A 7	800 CPS 28 V 1 PCT HI IMU
*	A 261G	TB1-A10	P07-F*	OG ADA

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 238Y	TB1-A44	P05- 86	SXT TRUNNION 64X RSVR S1	
*	A 74Y	TB1-A45	J04- 86	SHAFT CDU 16X RSVR P1	
*	A 236Y	TB1-A45	P05- 82	SXT SHAFT 16X RSVR S1	
*	A 74R	TB1-A46	J04-100	SHAFT CDU 16X RSVR P3	
*	A 236R	TB1-A46	P05- 83	SXT SHAFT 16X RSVR S3	
	A 74B	TB1-A47	SHLD A 74	0 VDC OPTICS	
	A 236B	TB1-A47	SHLD A 236	0 VDC OPTICS	
	AA 46	TB1-A47	TB1-B47	0 VDC OPTICS	
	AA107	TB1-A47	TB1-B42	0 VDC OPTICS	
*	A 99Y	TB1-A48	J06- 12	MODE RELAY COMMON TO AGC	
*	A 474R	TB1-A48	J10- 26	MODE RELAY COMMON TO AGC	312
*	A 474Y	TB1-A48	J10- 13	MODE RELAY COMMON TO AGC	315
	A 99B	TB1-A49	SHLD A 99	STRUCTURE GROUND	
	A 127B	TB1-A49	SHLD A 127	STRUCTURE GROUND	
	A 474B	TB1-A49	SHLD A 474	STRUCTURE GROUND	
	AA 53	TB1-A49	TB1-B49	STRUCTURE GROUND	
*	A 127G	TB1-A50	P01- 48	COARSE ALIGN MODE COMMAND FROM AGC	
*	A 475G	TB1-A50	J10- 22	COARSE ALIGN MODE COMMAND FROM AGC	308
*	A 176	TB1-A51	J08- 93	STEP-DOWN-R	
*	A 327	TB1-A51	J09- 93	STEP-DOWN-R	
*	A 172	TB1-A52	J08- 79	STEP-DOWN-C	
*	A 323	TB1-A52	J09- 79	STEP-DOWN-C	
*	A 166	TB1-A53	J08- 67	+28 VDC MDV SWITCHED	
*	A 316	TB1-A53	J09- 67	+28 VDC MDV SWITCHED	
*	A 138R	TB1-A54	P01- 80	PANEL BRIGHTNESS CONTROL	
*	A 300R	TB1-A54	J09- 32	PANEL BRIGHTNESS CONTROL	
*	A 138Y	TB1-A55	P01- 95	PANEL BRIGHTNESS CONTROL	
*	A 300Y	TB1-A55	J09- 44	PANEL BRIGHTNESS CONTROL	
*	A 202	TB1-A56	P03-J*	GIMBAL LOCK SIGNAL	
*	A 385	TB1-A56	P09- 85	GIMBAL LOCK SIGNAL	
*	A 410	TB1-A56	P10- 12	GIMBAL LOCK SIGNAL	
*	A 313G	TB1-A57	J09- 82	RESOLVED MODE RELAY COMMAND	
*	CC251R	TB1-A57	J19-P6	RESOLVED MODE RELAY COMMAND	
	A 313B	TB1-A58	SHLD A 313	STRUCTURE GROUND	
	A 413B	TB1-A58	SHLD A 413	STRUCTURE GROUND	
	AA 58	TB1-A58	TB1-A59	STRUCTURE GROUND	
	CC223B	TB1-A58	SHLD CC223	STRUCTURE GROUND	
	CC276B	TB1-A58	SHLD CC276	STRUCTURE GROUND	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 274R	TB1-A73	P08- 27	800 CPS 28 V 1 PCT HI OPTICS
*	A 275R	TB1-A73	P08- 30	800 CPS 28 V 1 PCT HI OPTICS
*	AA121	TB1-A73	TB1-A72	800 CPS 28 V 1 PCT HI OPTICS
*	CC273W	TB1-A73	J20-G6	800 CPS 28 V 1 PCT HI OPTICS
*	A 272R	TB1-A74	P08- 21	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 273R	TB1-A74	P08- 24	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 394R	TB1-A74	P09-103	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	CC174R	TB1-A74	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
*	A 165N	TB1-A75	J08- 95	400 CPS 26 V LO
*	A 418R	TB1-A75	P10- 49	400 CPS 26 V LO
*	A 165G	TB1-A76	J08- 66	MDV SLEW CONTROL 1.5 V 400 CPS
*	A 315G	TB1-A76	J09- 66	MDV SLEW CONTROL 1.5 V 400 CPS
*	A 165R	TB1-A77	J08- 68	400 CPS 26 V MDV RSVR EXC
*	A 315R	TB1-A77	J09- 68	400 CPS 26 V MDV RSVR EXC
*	A 165Y	TB1-A78	J08- 81	400 CPS 26 V SLEW
*	A 315Y	TB1-A78	J09- 81	400 CPS 26 V SLEW
	AA 71	TB1-B 1	TB1-B 2	400 CPS 6 V LO
*	A 8Y	TB1-B 1	J01- 29	400 CPS 6 V LO
*	A 28Y	TB1-B 1	J02- 29	400 CPS 6 V LO
*	A 48Y	TB1-B 1	J03- 29	400 CPS 6 V LO
	AA 75	TB1-B 2	TB1-B 3	400 CPS 6 V LO
*	A 67Y	TB1-B 2	J04- 29	400 CPS 6 V LO
*	A 85Y	TB1-B 2	J05- 29	400 CPS 6 V LO
*	A 420R	TB1-B 2	P10- 93	400 CPS 6 V LO
*	AA 71	TB1-B 2	TB1-B 1	400 CPS 6 V LO
	AA 78	TB1-B 3	TB1-B 4	400 CPS 6 V LO
*	A 123Y	TB1-B 3	J06-107	400 CPS 6 V LO
*	A 225Y	TB1-B 3	P05- 44	400 CPS 6 V LO
*	AA 75	TB1-B 3	TB1-B 2	400 CPS 6 V LO
*	A 282Y	TB1-B 4	P08- 54	400 CPS 6 V LO
*	A 283Y	TB1-B 4	P08- 57	400 CPS 6 V LO
*	A 420Y	TB1-B 4	P10- 94	400 CPS 6 V LO
*	AA 78	TB1-B 4	TB1-B 3	400 CPS 6 V LO
*	A 178Y	TB1-B 5	P02-B	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
*	CC160W	TB1-B 5	J16-P4	IMU RSVR EXC 800 CPS 28 V 1 PCT LO IMU
*	A 5Y	TB1-B 6	J01- 12	ZEROING RSVR 800 CPS
*	A 25Y	TB1-B 6	J02- 12	ZEROING RSVR 800 CPS
*	A 45Y	TB1-B 6	J03- 12	ZEROING RSVR 800 CPS

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC160K	TB1-B 6	J16-R4	ZEROING RSVR 800 CPS
	AA 89	TB1-B 7	TB1-B 8	800 CPS 28 V 1 PCT LO IMU
*	A 126Y	TB1-B 7	P01- 10	800 CPS 28 V 1 PCT LO IMU
*	A 340Y	TB1-B 7	P09- 12	800 CPS 28 V 1 PCT LO IMU
*	CC160R	TB1-B 7	J16-S3	800 CPS 28 V 1 PCT LO IMU
*	A 1Y	TB1-B 8	J01- 14	800 CPS 28 V 1 PCT LO IMU
*	A 21Y	TB1-B 8	J02- 14	800 CPS 28 V 1 PCT LO IMU
*	A 41Y	TB1-B 8	J03- 14	800 CPS 28 V 1 PCT LO IMU
*	AA 89	TB1-B 8	TB1-B 7	800 CPS 28 V 1 PCT LO IMU
*	A 261Y	TB1-B10	P07-J*	0 VDC IMU
*	CC 65W	TB1-B10	J11-G2	0 VDC IMU
*	A 261R	TB1-B11	P07-H*	IG ADA
*	CC 65R	TB1-B11	J11-F1	IG ADA
	A 23B	TB1-B12	SHLD A 23	0 VDC IMU
	A 185B	TB1-B12	SHLD A 185	0 VDC IMU
	A 347B	TB1-B12	SHLD A 347	0 VDC IMU
	AA 4	TB1-B12	TB1-C12	0 VDC IMU
	CC328B	TB1-B12	SHLD CC328	0 VDC IMU
*	AA 3	TB1-B12	TB1-A12	0 VDC IMU
*	A 23R	TB1-B13	J02- 20	COS AMG 1X S3
*	A 185R	TB1-B13	P02-L	COS AMG 1X S3
*	A 347R	TB1-B13	P09- 25	COS AMG 1X S3
*	CC328W	TB1-B13	J22- 16	COS AMG 1X S3
*	A 23Y	TB1-B14	J02- 6	COS AMG 1X S1
*	A 185Y	TB1-B14	P02-M	COS AMG 1X S1
*	A 347Y	TB1-B14	P09- 44	COS AMG 1X S1
*	CC328R	TB1-B14	J22- 32	COS AMG 1X S1
*	A 24R	TB1-B15	J02- 21	SIN AMG 1X RET
*	A 186Y	TB1-B15	P02-N	SIN AMG 1X RET S2
*	A 346R	TB1-B15	P09- 42	SIN AMG 1X RET
*	CC327W	TB1-B15	J22- 15	SIN AMG 1X RET
*	A 24Y	TB1-B16	J02- 7	SIN AMG 1X
*	A 186R	TB1-B16	P02-P	SIN AMG 1X S4
*	A 346Y	TB1-B16	P09- 24	SIN AMG 1X
*	CC327R	TB1-B16	J22- 14	SIN AMG 1X
	A 24B	TB1-B17	SHLD A 24	0 VDC IMU
	A 186B	TB1-B17	SHLD A 186	0 VDC IMU
	A 346B	TB1-B17	SHLD A 346	0 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	A 286B	TB1-A59	SHLD A 286	STRUCTURE GROUND	
	A 472B	TB1-A59	SHLD A 472	STRUCTURE GROUND	
	AA 59	TB1-A59	TB1-A60	STRUCTURE GROUND	
	CC225B	TB1-A59	SHLD CC225	STRUCTURE GROUND	
	CC251B	TB1-A59	SHLD CC251	STRUCTURE GROUND	
*	AA 58	TB1-A59	TB1-A58	STRUCTURE GROUND	
*	AA 59	TB1-A60	TB1-A59	STRUCTURE GROUND	
*	CC180	TB1-A60	J16-N4	STRUCTURE GROUND	
*	A 286R	TB1-A61	J09- 2	TRACKER MODE RELAY COMMAND	
*	A 472R	TB1-A61	J10- 66	TRACKER MODE RELAY COMMAND	317
*	CC251W	TB1-A61	J19-R6	TRACKER MODE RELAY COMMAND	
*	A 337R	TB1-A63	P09- 7	+120 VDC PIP	
*	CC206R	TB1-A63	J17-L5	+120 VDC PIP	
*	A 397	TB1-A64	P09-107	BLOWER CURRENT SENSOR (TELEMETRY)	
*	CC193	TB1-A64	J17-F6	BLOWER CURRENT SENSOR (TELEMETRY)	
*	A 216Y	TB1-A65	P05- 10	TRACKER Y REFERENCE	
*	A 498Y	TB1-A65	P13- 27	TRACKER Y REFERENCE	
*	A 216R	TB1-A66	P05- 11	TRACKER Y REFERENCE	
*	A 498R	TB1-A66	P13- 28	TRACKER Y REFERENCE	
	A 216B	TB1-A67	SHLD A 216	0 VDC OPTICS	
	A 498B	TB1-A67	SHLD A 498	0 VDC OPTICS	
	AA 61	TB1-A67	TB1-B67	0 VDC OPTICS	
	AA114	TB1-A67	TB1-B47	0 VDC OPTICS	
*	A 308Y	TB1-A68	J09- 47	AGC COMMON (OSS)	
*	A 564Y	TB1-A68	J24- 84	AGC COMMON (OSS)	101
*	A 566Y	TB1-A68	J24- 83	SXT POWER ON INDICATION	105
*	A 308R	TB1-A69	J09- 48	OPTICS ZERO ENCODER INDICATION	
*	A 416Y	TB1-A69	P10- 43	OPTICS ZERO ENCODER INDICATION	
*	A 564R	TB1-A69	J24- 15	OPTICS ZERO ENCODER INDICATION	104
	A 308B	TB1-A70	SHLD A 308	AGC SIGNAL 178 SHIELD RETURN	
	A 416B	TB1-A70	SHLD A 416	AGC SIGNAL 178 SHIELD RETURN	
	A 564B	TB1-A70	SHLD A 564	AGC SIGNAL 178 SHIELD RETURN	
*	A 306G	TB1-A71	J09- 45	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR	
*	CC273L	TB1-A71	J20-H4	800 CPS 28 V 1 PCT HI OPTICS TRACKER PWR	
	AA121	TB1-A72	TB1-A73	800 CPS 28 V 1 PCT HI OPTICS	
*	A 306R	TB1-A72	J09- 80	800 CPS 28 V 1 PCT HI OPTICS	
*	A 402R	TB1-A72	P09-125	800 CPS 28 V 1 PCT HI OPTICS	
*	CC172W	TB1-A72	J16-P5	800 CPS 28 V 1 PCT HI OPTICS	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA 11	TB1-B17	TB1-C17	0 VDC IMU	
	CC327B	TB1-B17	SHLD CC327	0 VDC IMU	
*	AA 10	TB1-B17	TB1-A17	0 VDC IMU	
*	AA 93	TB1-B17	TB1-A12	0 VDC IMU	
*	A 84Y	TB1-B18	J05- 12	TRUNNION CDU 1/2X RSVR P2	
*	CC252W	TB1-B18	J19-P2	TRUNNION CDU 1/2X RSVR P2	
*	A 84G	TB1-B19	J05- 11	TRUNNION CDU 1/2X RSVR P1 AND P3	
*	A 84R	TB1-B19	J05- 25	TRUNNION CDU 1/2X RSVR P3	
*	CC252R	TB1-B19	J19-P1	TRUNNION CDU 1/2X RSVR P3	
	AA 97	TB1-B21	TB1-B22	CONDITION LAMPS COMMON	
*	A 146	TB1-B21	J08- 17	SPARE FAIL LIGHT 3 LO	
*	A 148	TB1-B21	J08- 19	GIMBAL LOCK LIGHT LO	
*	A 149	TB1-B21	J08- 28	SPARE FAIL LIGHT 2 LO	
	AA 98	TB1-B22	TB1-B23	CONDITION LAMPS COMMON	
*	A 151	TB1-B22	J08- 30	ZERO ENCODER LIGHT LO	
*	A 163	TB1-B22	J08- 61	IMU FAIL LIGHT LO	
*	A 167	TB1-B22	J08- 70	SPARE FAIL LIGHT 1 LO	
*	AA 97	TB1-B22	TB1-B21	CONDITION LAMPS COMMON	
*	A 173	TB1-B23	J08- 83	CDU FAIL LIGHT LO	
*	A 174	TB1-B23	J08- 84	ACCEL FAIL LIGHT LO	
*	A 292	TB1-B23	J09- 11	CONDITION LAMP DIMMER EMITTER	
*	AA 98	TB1-B23	TB1-B22	CONDITION LAMPS COMMON	
*	CC167	TB1-B23	J16-K1	CONDITION LAMP DIMMER EMITTER	
*	A 170	TB1-B24	J08- 73	ACCEL FAIL LIGHT HI	
*	A 473Y	TB1-B24	J10- 5	ACCEL FAIL LIGHT HI	303
*	A 164Y	TB1-B25	J08- 63	IMU TEMP CONT FAIL LIGHT LO	
*	CC166	TB1-B25	J16-H4	IMU TEMP CONT FAIL LIGHT LO	
*	A 164R	TB1-B26	J08- 62	IMU TEMP CONT FAIL LIGHT HI	
*	A 386	TB1-B26	P09- 86	IMU TEMP CONT FAIL LIGHT HI	
*	CC197	TB1-B26	J17-P5	IMU TEMP CONT FAIL LIGHT HI	
*	A 195N	TB1-B28	P03-W	IMU MG ERROR SIG	
*	A 390R	TB1-B28	P09-112	IMU MG ERROR SIG	
*	CC 68R	TB1-B28	J11-A5	IMU MG ERROR SIG	
*	A 55Y	TB1-B29	J03- 57	OG CDU ERROR SIG RET	
*	CC145R	TB1-B29	J16-F5	OG CDU ERROR SIG RET	
*	A 35Y	TB1-B30	J02- 57	MG CDU ERROR SIG RET	
*	CC138R	TB1-B30	J16-F3	MG CDU ERROR SIG RET	
*	A 15Y	TB1-B31	J01- 57	IG CDU ERROR SIG RET S1	

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	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
	AA 47	TB1-B47	TB1-C47	0 VDC OPTICS	
	CC219B	TB1-B47	SHLD CC219	0 VDC OPTICS	
*	AA 46	TB1-B47	TB1-A47	0 VDC OPTICS	
*	AA114	TB1-B47	TB1-A67	0 VDC OPTICS	
*	A 99R	TB1-B48	J06- 81	ATTIT CONT MODE COMMAND FROM AGC	
*	A 474G	TB1-B48	J10- 12	ATTIT CONT MODE COMMAND FROM AGC	314
	A 130B	TB1-B49	SHLD A 130	STRUCTURE GROUND	
	A 475B	TB1-B49	SHLD A 475	STRUCTURE GROUND	
	A 476B	TB1-B49	SHLD A 476	STRUCTURE GROUND	
*	AA 53	TB1-B49	TB1-A49	STRUCTURE GROUND	
*	CC132	TB1-B49	J15-K3	STRUCTURE GROUND	
*	A 127R	TB1-B50	P01- 13	FINE ALIGN MODE COMMAND FROM AGC	
*	A 475R	TB1-B50	J10- 24	FINE ALIGN MODE COMMAND FROM AGC	310
*	A 177	TB1-B51	J08-106	STEP-UP-R	
*	A 330	TB1-B51	J09-106	STEP-UP-R	
*	A 171	TB1-B52	J08- 78	STEP-UP-C	
*	A 322	TB1-B52	J09- 78	STEP-UP-C	
*	A 6	TB1-B53	J01- 15	+28 VDC CDU NOT LOCK	
*	A 26	TB1-B53	J02- 15	+28 VDC CDU NOT LOCK	
*	A 46	TB1-B53	J03- 15	+28 VDC CDU NOT LOCK	
*	CC129	TB1-B53	J15-R6	+28 VDC CDU NOT LOCK	
*	A 293	TB1-B54	J09- 12	CONDITION LAMP DIMMER BASE	
*	CC165	TB1-B54	J16-H2	CONDITION LAMP DIMMER BASE	
*	A 294	TB1-B55	J09- 13	CONDITION LAMP DIMMER COLLECTOR	
*	CC168	TB1-B55	J16-K2	CONDITION LAMP DIMMER COLLECTOR	
*	A 481	TB1-B56	J10- 9	AGC FAIL SIG	326
*	CC 84	TB1-B56	J12-M3	AGC FAIL SIG	
*	A 313Y	TB1-B57	J09- 58	0 DEG OFFSET RELAY COMMAND	
*	CC223W	TB1-B57	J18-P2	0 DEG OFFSET RELAY COMMAND	
*	A 313R	TB1-B58	J09- 59	25 DEG OFFSET RELAY COMMAND	
*	CC223R	TB1-B58	J18-R2	25 DEG OFFSET RELAY COMMAND	
*	A 286G	TB1-B59	J09- 70	COMPUTER RELAY COMMAND	
*	A 472G	TB1-B59	J10- 67	COMPUTER RELAY COMMAND	331
*	CC225W	TB1-B59	J18-P3	COMPUTER RELAY COMMAND	
*	A 286Y	TB1-B60	J09- 72	ZERO OPTICS MODE COMMAND	
*	A 472Y	TB1-B60	J10- 65	ZERO OPTICS MODE COMMAND	316
*	CC225R	TB1-B60	J18-P1	ZERO OPTICS MODE COMMAND	
*	A 413Y	TB1-B61	P10- 15	AUTOMATIC MARK COMMAND	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC276W	TB1-B61	J20-F2	AUTOMATIC MARK COMMAND
	AA112	TB1-B62	TB1-C62	0 VDC IMU
	AA113	TB1-B62	TB1-D 4	0 VDC IMU
*	A 358	TB1-B62	P09- 48	0 VDC IMU
*	A 372	TB1-B62	P09- 68	0 VDC IMU
*	A 337Y	TB1-B63	P09- 29	+32, +120 VDC RET PIP
*	CC206W	TB1-B63	J17-L4	+32, +120 VDC RET PIP
*	A 405	TB1-B64	P09-129	HTR CURRENT (TELEMETRY)
*	CC196	TB1-B64	J17-F3	HTR CURRENT (TELEMETRY)
*	A 218Y	TB1-B65	P05- 18	TRACKER X REFERENCE
*	A 499Y	TB1-B65	P13- 36	TRACKER X REFERENCE
*	A 218R	TB1-B66	P05- 17	TRACKER X REFERENCE
*	A 499R	TB1-B66	P13- 35	TRACKER X REFERENCE
	A 218B	TB1-B67	SHLD A 218	0 VDC OPTICS
	A 499B	TB1-B67	SHLD A 499	0 VDC OPTICS
	AA 62	TB1-B67	TB1-C67	0 VDC OPTICS
	AA115	TB1-B67	TB1-D76	0 VDC OPTICS
*	A 215	TB1-B67	P05- 9	0 VDC OPTICS
*	AA 61	TB1-B67	TB1-A67	0 VDC OPTICS
	A 573	TB1-B68	TB1-C68	0 VDC IMU
	A 574	TB1-B68	TB1-B69	0 VDC IMU
	AA117	TB1-B68	TB1-C62	0 VDC IMU
*	A 512	TB1-B68	P11-D	0 VDC IMU
*	CC 75	TB1-B68	J11-R3	0 VDC IMU
	A 576	TB1-B69	TB1-B70	0 VDC IMU
*	A 542	TB1-B69	P12-E	0 VDC IMU
*	A 574	TB1-B69	TB1-B68	0 VDC IMU
*	CC211	TB1-B69	J17-S3	0 VDC IMU
	A 578	TB1-B70	TB1-D73	0 VDC IMU
	AA118	TB1-B70	TB1-K20	0 VDC IMU
*	A 516	TB1-B70	P11-F	0 VDC IMU
*	A 576	TB1-B70	TB1-B69	0 VDC IMU
*	CC212	TB1-B70	J17-S4	0 VDC IMU
*	A 229	TB1-B71	P05- 68	+28 VDC OPTICS TRACKER POWER
*	A 328	TB1-B71	J09- 96	+28 VDC OPTICS TRACKER POWER
*	A 501	TB1-B71	P13- 38	+28 VDC OPTICS TRACKER POWER
*	CC280	TB1-B71	J20-N4	+28 VDC OPTICS TRACKER POWER
	AA122	TB1-B72	TB1-B73	800 CPS 28 V 1 PCT LO OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC133R	TB1-B31	J16-F1	IG CDU ERROR SIG RET
*	A 95R	TB1-B33	J05-108	TRUNNION CDU ENCODER PHASE 2
*	CC202R	TB1-B33	J17-A8	TRUNNION CDU ENCODER PHASE 2
	A 95B	TB1-B34	SHLD A 95	TRUNNION CDU ENCODER COMMON
*	A 95Y	TB1-B34	J05- 94	TRUNNION CDU ENCODER COMMON
*	CC202W	TB1-B34	J17-A7	TRUNNION CDU ENCODER COMMON
*	A 95G	TB1-B35	J05-107	TRUNNION CDU ENCODER PHASE 1
*	CC202L	TB1-B35	J17-A6	TRUNNION CDU ENCODER PHASE 1
	AA 26	TB1-B36	TB1-C36	0 VDC OPTICS
*	AA 25	TB1-B36	TB1-A36	0 VDC OPTICS
*	AA103	TB1-B36	TB1-A39	0 VDC OPTICS
	AA 33	TB1-B39	TB1-C39	0 VDC OPTICS
*	AA 32	TB1-B39	TB1-A39	0 VDC OPTICS
*	AA105	TB1-B39	TB1-A42	0 VDC OPTICS
*	A 391G	TB1-B40	P09- 95	X PIP ERROR MONITOR
*	CC 97	TB1-B40	J13-D2	X PIP ERROR MONITOR
*	A 391N	TB1-B41	P09-114	0 VDC IMU
*	CC 89	TB1-B41	J12-B5	0 VDC IMU
	A 92B	TB1-B42	SHLD A 92	0 VDC OPTICS
	A 240B	TB1-B42	SHLD A 240	0 VDC OPTICS
	AA 40	TB1-B42	TB1-C42	0 VDC OPTICS
	CC234B	TB1-B42	SHLD CC234	0 VDC OPTICS
*	AA 39	TB1-B42	TB1-A42	0 VDC OPTICS
*	AA107	TB1-B42	TB1-A47	0 VDC OPTICS
*	A 92R	TB1-B43	J05-101	TRUNNION CDU 16X RSVR P4
*	A 240R	TB1-B43	P05- 91	SXT TRUNNION 64X RSVR S2
*	CC234R	TB1-B43	J18-C1	SXT TRUNNION 64X RSVR S2
*	A 92Y	TB1-B44	J05- 87	TRUNNION CDU 16X RSVR P2
*	A 240Y	TB1-B44	P05- 90	SXT TRUNNION 64X RSVR S4
*	CC234W	TB1-B44	J18-C2	SXT TRUNNION 64X RSVR S4
*	A 75R	TB1-B45	J04- 87	SHAFT CDU 16X RSVR P2
*	A 234R	TB1-B45	P05- 79	SXT SHAFT 16X RSVR S2
*	CC219R	TB1-B45	J18-A3	SXT SHAFT 16X RSVR S2
*	A 75Y	TB1-B46	J04-101	SHAFT CDU 16X RSVR P4
*	A 234Y	TB1-B46	P05- 78	SXT SHAFT 16X RSVR S4
*	CC219W	TB1-B46	J18-A2	SXT SHAFT 16X RSVR S4
	A 75B	TB1-B47	SHLD A 75	0 VDC OPTICS
	A 234B	TB1-B47	SHLD A 234	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 306Y	TB1-B72	J09- 69	800 CPS 28 V 1 PCT LO OPTICS
*	A 402Y	TB1-B72	P09-124	800 CPS 28 V 1 PCT LO OPTICS
*	CC172R	TB1-B72	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
*	A 274Y	TB1-B73	P08- 28	800 CPS 28 V 1 PCT LO OPTICS
*	A 275Y	TB1-B73	P08- 31	800 CPS 28 V 1 PCT LO OPTICS
*	AA122	TB1-B73	TB1-B72	800 CPS 28 V 1 PCT LO OPTICS
*	CC273R	TB1-B73	J20-G5	800 CPS 28 V 1 PCT LO OPTICS
*	A 272Y	TB1-B74	P08- 22	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 273Y	TB1-B74	P08- 25	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 394Y	TB1-B74	P09-102	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	CC174W	TB1-B74	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 154Y	TB1-B75	J08- 36	400 CPS 6 V LO
*	A 418Y	TB1-B75	P10- 95	400 CPS 6 V LO
*	A 154R	TB1-B76	J08- 55	PROJECTION LAMP HI INTENSITY
*	A 307R	TB1-B76	J09- 55	PROJECTION LAMP HI INTENSITY
*	A 154G	TB1-B77	J08- 46	PROJECTION LAMP LO INTENSITY
*	A 307Y	TB1-B77	J09- 46	PROJECTION LAMP LO INTENSITY
*	A 419R	TB1-B78	P10- 69	400 CPS 115 V HI
*	A 526R	TB1-B78	P11-N	400 CPS 115 V HI
*	CC311R	TB1-B78	J20-N3	400 CPS 115 V HI
	AA 72	TB1-C 1	TB1-C 2	400 CPS 6 V HI
*	A 143G	TB1-C 1	P01-106	400 CPS 6 V HI
*	A 420G	TB1-C 1	P10-107	400 CPS 6 V HI
*	A 143N	TB1-C 2	P01- 90	400 CPS 6 V HI
*	A 420N	TB1-C 2	P10-108	400 CPS 6 V HI
*	AA 72	TB1-C 2	TB1-C 1	400 CPS 6 V HI
*	A 144	TB1-C 3	P01- 91	MODE LAMP TEST PWR
*	A 312Y	TB1-C 3	J09- 84	MODE LAMP TEST PWR
*	A 153	TB1-C 4	J08- 32	MASTER CAUTION LIGHT HI
*	A 161	TB1-C 4	J08- 54	MASTER WARNING LIGHT HI
*	CC326	TB1-C 4	J22- 41	+28 VDC SPACECRAFT
*	A 259Y	TB1-C10	P07-C*	Z PIP ERROR LO
*	CC105W	TB1-C10	J14-A2	Z PIP ERROR LO
*	A 259R	TB1-C11	P07-B*	Z PIP ERROR HI
*	CC105R	TB1-C11	J14-A1	Z PIP ERROR HI
	AA 5	TB1-C12	TB1-D12	0 VDC IMU
*	AA 4	TB1-C12	TB1-B12	0 VDC IMU
*	A 196R	TB1-C14	P03-D	COS AOG 1X S3

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 390G	TB1-C28	P09- 94	IMU IG AND Y GYRO ERROR SIG
*	CC 68W	TB1-C28	J11-B6	IMU IG AND Y GYRO ERROR SIG
*	A 60R	TB1-C29	J03-106	OG CDU MDA TACH SIG
*	CC153R	TB1-C29	J16-A5	OG CDU MDA TACH SIG
	A 60B	TB1-C30	SHLD A 60	OG CDU MDA INPUT RET
*	A 60Y	TB1-C30	J03- 92	OG CDU MDA INPUT RET
*	CC153L	TB1-C30	J16-B5	OG CDU MDA INPUT RET
*	A 60G	TB1-C31	J03-105	OG CDU MDA SLEW SIG
*	CC153W	TB1-C31	J16-A6	OG CDU MDA SLEW SIG
*	A 61R	TB1-C33	J03-108	OG CDU ENCODER PHASE 2
*	CC119R	TB1-C33	J15-C3	OG CDU ENCODER PHASE 2
	A 61B	TB1-C34	SHLD A 61	OG CDU ENCODER COMMON
*	A 61Y	TB1-C34	J03- 94	OG CDU ENCODER COMMON
*	CC119W	TB1-C34	J15-D3	OG CDU ENCODER COMMON
*	A 61G	TB1-C35	J03-107	OG CDU ENCODER PHASE 1
*	CC119L	TB1-C35	J15-D4	OG CDU ENCODER PHASE 1
	A 94B	TB1-C36	SHLD A 94	0 VDC OPTICS
	AA 27	TB1-C36	TB1-D36	0 VDC OPTICS
	CC258B	TB1-C36	SHLD CC258	0 VDC OPTICS
*	AA 26	TB1-C36	TB1-B36	0 VDC OPTICS
*	A 94R	TB1-C37	J05-106	TRUNNION CDU TACHOMETER HI
*	CC258R	TB1-C37	J19-A6	TRUNNION CDU TACHOMETER HI
*	A 94Y	TB1-C38	J05- 92	TRUNNION CDU TACHOMETER LO
*	CC258W	TB1-C38	J19-B6	TRUNNION CDU TACHOMETER LO
	AA 34	TB1-C39	TB1-D39	0 VDC OPTICS
*	AA 33	TB1-C39	TB1-B39	0 VDC OPTICS
*	A 93Y	TB1-C40	J05-104	TRUNNION CDU 16X RSVR S2
*	CC256W	TB1-C40	J19-B5	TRUNNION CDU 16X RSVR S2
*	A 93R	TB1-C41	J05- 90	TRUNNION CDU 16X RSVR S3
*	CC256R	TB1-C41	J19-B4	TRUNNION CDU 16X RSVR S3
	A 83B	TB1-C42	SHLD A 83	0 VDC OPTICS
	A 93B	TB1-C42	SHLD A 93	0 VDC OPTICS
	A 224B	TB1-C42	SHLD A 224	0 VDC OPTICS
	AA 41	TB1-C42	TB1-D42	0 VDC OPTICS
	CC230B	TB1-C42	SHLD CC230	0 VDC OPTICS
	CC256B	TB1-C42	SHLD CC256	0 VDC OPTICS
*	AA 40	TB1-C42	TB1-B42	0 VDC OPTICS
*	A 83Y	TB1-C43	J05- 10	TRUNNION CDU 1/4X RSVR S4

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 224Y	TB1-C43	P05- 40	SXT TRUNNION 1X RSVR S2	
*	CC230W	TB1-C43	J18-D1	TRUNNION CDU 1/4X RSVR S4	
*	A 83R	TB1-C44	J05- 9	TRUNNION CDU 1/4X RSVR S2	
*	A 224R	TB1-C44	P05- 41	SXT TRUNNION 1X RSVR S4	
*	CC230R	TB1-C44	J18-F1	TRUNNION CDU 1/4X RSVR S2	
*	A 72R	TB1-C45	J04- 56	SHAFT CDU 1/2X RSVR S2	
*	A 211R	TB1-C45	P05- 3	SXT SHAFT 1/2X RSVR S2	
*	A 72Y	TB1-C46	J04- 66	SHAFT CDU 1/2X RSVR S4	
*	A 211Y	TB1-C46	P05- 2	SXT SHAFT 1/2X RSVR S4	
	A 72B	TB1-C47	SHLD A 72	0 VDC OPTICS	
	A 211B	TB1-C47	SHLD A 211	0 VDC OPTICS	
	AA 48	TB1-C47	TB1-D47	0 VDC OPTICS	
*	AA 47	TB1-C47	TB1-B47	0 VDC OPTICS	
*	A 130Y	TB1-C48	P01- 27	CDU MANUAL MODE COMMAND FROM AGC	
*	A 476Y	TB1-C48	J10- 23	CDU MANUAL MODE COMMAND FROM AGC	309
*	A 130R	TB1-C49	P01- 58	ENTRY MODE COMMAND FROM AGC	
*	A 476R	TB1-C49	J10- 25	ENTRY MODE COMMAND FROM AGC	311
*	A 127Y	TB1-C50	P01- 38	ZERO ENCODER MODE COMMAND FROM AGC	
*	A 475Y	TB1-C50	J10- 21	ZERO ENCODER MODE COMMAND FROM AGC	307
*	A 49	TB1-C51	J03- 30	+28 VDC IMU FOR OG MDA	
*	CC151	TB1-C51	J16-T2	+28 VDC IMU FOR OG MDA	
*	A 29	TB1-C52	J02- 30	+28 VDC IMU FOR MG MDA	
*	CC150	TB1-C52	J16-T1	+28 VDC IMU FOR MG MDA	
*	A 9	TB1-C53	J01- 30	+28 VDC IMU FOR IG MDA	
*	CC149	TB1-C53	J16-S1	+28 VDC IMU FOR IG MDA	
*	A 247	TB1-C54	P06-F	-28 VDC	
*	A 370	TB1-C54	P09- 66	-28 VDC	
*	CC 66	TB1-C54	J11-N6	-28 VDC	
*	A 113Y	TB1-C56	J06- 68	AGC COMMON (ISS)	
*	A 134Y	TB1-C56	P01- 68	AGC COMMON (ISS)	
*	CC173W	TB1-C56	J16-B7	AGC COMMON (ISS)	
*	CC332W	TB1-C56	J24- 26	AGC COMMON (ISS)	165
*	A 388N	TB1-C57	P09- 90	MG CDU FAILURE INDICATION	
*	CC175L	TB1-C57	J16-M3	MG CDU FAILURE INDICATION	
*	A 388G	TB1-C58	P09- 89	IG CDU FAILURE INDICATION	
*	CC175K	TB1-C58	J16-M2	IG CDU FAILURE INDICATION	
	A 254B	TB1-C59	SHLD A 254	0 VDC IMU	
	A 255B	TB1-C59	SHLD A 255	0 VDC IMU	

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 348R	TB1-C14	P09- 45	COS AOG 1X S3
*	CC143W	TB1-C14	J16-B8	COS AOG 1X S3
*	A 43Y	TB1-C15	J03- 6	COS AOG 1X S1
*	A 196Y	TB1-C15	P03-E	COS AOG 1X S1
*	A 348Y	TB1-C15	P09- 27	COS AOG 1X S1
*	CC143R	TB1-C15	J16-C8	COS AOG 1X S1
*	A 43R	TB1-C16	J03- 20	COS AOG 1X TO CDU
*	CC143L	TB1-C16	J16-C9	COS AOG 1X TO CDU
	A 43B	TB1-C17	SHLD A 43	0 VDC IMU
	A 196B	TB1-C17	SHLD A 196	0 VDC IMU
	A 348B	TB1-C17	SHLD A 348	0 VDC IMU
	AA 12	TB1-C17	TB1-D17	0 VDC IMU
	CC143B	TB1-C17	SHLD CC143	0 VDC IMU
*	AA 11	TB1-C17	TB1-B17	0 VDC IMU
*	A 206R	TB1-C18	P03-Y	OG TORQUE MOTOR HI
*	A 250R	TB1-C18	P06-H	OG TORQUE MOTOR HI
*	A 398R	TB1-C18	P09-131	OG TORQUE MOTOR HI
*	CC 71R	TB1-C18	J11-H6	OG TORQUE MOTOR HI
*	A 206Y	TB1-C19	P03-X	OG TORQUE MOTOR RET
*	A 250Y	TB1-C19	P06-J	OG TORQUE MOTOR RET
*	A 398Y	TB1-C19	P09-109	OG TORQUE MOTOR RET
*	CC 71W	TB1-C19	J11-H5	OG TORQUE MOTOR RET
*	A 257R	TB1-C21	P07-C	Z GYRO TORQUE -
*	CC109R	TB1-C21	J14-M6	Z GYRO TORQUE -
*	A 257W	TB1-C22	P07-B	Z GYRO TORQUE RET
*	CC109W	TB1-C22	J14-N6	Z GYRO TORQUE RET
*	A 257L	TB1-C23	P07-A	Z GYRO TORQUE +
*	CC109L	TB1-C23	J14-L6	Z GYRO TORQUE +
	A 257B	TB1-C24	SHLD A 257	0 VDC IMU
	AA 19	TB1-C24	TB1-D24	0 VDC IMU
	CC109B	TB1-C24	SHLD CC109	0 VDC IMU
*	AA 95	TB1-C24	TB1-A17	0 VDC IMU
*	A 159R	TB1-C25	J08- 52	G+N ERROR LIGHT LO
*	CC170	TB1-C25	J16-K5	G+N ERROR LIGHT LO
*	A 159Y	TB1-C26	J08- 51	G+N ERROR LIGHT HI
*	A 384	TB1-C26	P09- 84	G+N ERROR LIGHT HI
*	CC 86	TB1-C26	J12-L2	G+N ERROR LIGHT HI
*	A 195G	TB1-C28	P03-U	IMU IG AND Y GYRO ERROR SIG

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA 60	TB1-C59	TB1-D59	0 VDC IMU
	CC190B	TB1-C59	SHLD CC190	0 VDC IMU
	CC192B	TB1-C59	SHLD CC192	0 VDC IMU
*	A 254R	TB1-C60	P06-X	IMU EMERGENCY HTR HI
*	CC190W	TB1-C60	J17-M4	IMU EMERGENCY HTR HI
*	A 254Y	TB1-C61	P06-R	EMERGENCY HTR LO-OPER AND STBY
*	CC190R	TB1-C61	J17-N4	EMERGENCY HTR LO-OPER AND STBY
*	A 297	TB1-C62	J09- 26	0 VDC IMU
*	A 411	TB1-C62	P10- 13	0 VDC IMU
*	AA112	TB1-C62	TB1-B62	0 VDC IMU
*	AA117	TB1-C62	TB1-B68	0 VDC IMU
*	A 337G	TB1-C63	P09- 28	+32 VDC PIP
*	CC206L	TB1-C63	J17-T5	+32 VDC PIP
*	A 404	TB1-C64	P09-128	TEMPERATURE CONTROL SIG LO
*	CC205	TB1-C64	J17-F2	TEMPERATURE CONTROL SIG LO
*	A 232Y	TB1-C65	P05- 73	TRACKER AUTOMATIC GAIN CONTROL LO
*	A 490Y	TB1-C65	E 25	TRACKER AUTOMATIC GAIN CONTROL LO
*	A 232R	TB1-C66	P05- 72	TRACKER AUTOMATIC GAIN CONTROL HI
*	A 490R	TB1-C66	P13- 1	TRACKER AUTOMATIC GAIN CONTROL HI
	A 232B	TB1-C67	SHLD A 232	0 VDC OPTICS
	A 490B	TB1-C67	SHLD A 490	0 VDC OPTICS
	AA 63	TB1-C67	TB1-D67	0 VDC OPTICS
*	A 222	TB1-C67	P05- 37	0 VDC OPTICS
*	AA 62	TB1-C67	TB1-B67	0 VDC OPTICS
	A 572	TB1-C68	TB1-C69	0 VDC IMU
*	A 543	TB1-C68	P12-F	0 VDC IMU
*	A 573	TB1-C68	TB1-B68	0 VDC IMU
*	CC 92	TB1-C68	J12-R4	0 VDC IMU
*	CC322	TB1-C68	J20-K2	0 VDC IMU
	A 575	TB1-C69	TB1-C70	0 VDC IMU
*	A 513	TB1-C69	P11-E	0 VDC IMU
*	A 572	TB1-C69	TB1-C68	0 VDC IMU
*	CC 78	TB1-C69	J11-R1	0 VDC IMU
*	CC 91	TB1-C69	J12-R3	0 VDC IMU
	A 577	TB1-C70	TB1-F73	0 VDC IMU
*	A 539	TB1-C70	P12-D	0 VDC IMU
*	A 575	TB1-C70	TB1-C69	0 VDC IMU
*	CC 74	TB1-C70	J11-R2	0 VDC IMU

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SCALE-NONE REV LTR SHEET 104

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 62R	TB1-D 5	J04- 1	800 CPS 28 V 1 PCT HI OPTICS
* A 79R	TB1-D 5	J05- 1	800 CPS 28 V 1 PCT HI OPTICS
* CC161W	TB1-D 5	J16-P5	800 CPS 28 V 1 PCT HI OPTICS
AA 85	TB1-D 6	TB1-D 7	800 CPS 28 V 1 PCT HI OPTICS
* A 208R	TB1-D 6	P04-E1	800 CPS 28 V 1 PCT HI OPTICS
* A 217R	TB1-D 6	P05- 12	800 CPS 28 V 1 PCT HI OPTICS
* AA 82	TB1-D 6	TB1-D 5	800 CPS 28 V 1 PCT HI OPTICS
* A 220R	TB1-D 7	P05- 32	800 CPS 28 V 1 PCT HI OPTICS
* A 231R	TB1-D 7	P05- 71	800 CPS 28 V 1 PCT HI OPTICS
* A 237R	TB1-D 7	P05- 84	800 CPS 28 V 1 PCT HI OPTICS
* AA 85	TB1-D 7	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS
* A 63R	TB1-D 8	J04- 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 80R	TB1-D 8	J05- 3	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 233R	TB1-D 8	P05- 76	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* CC162R	TB1-D 8	J16-P6	800 CPS 28 V 5 PCT L-90 DEG HI OPTICS
* A 258Y	TB1-D10	P07-A*	Y PIP ERROR LO
* CC 98W	TB1-D10	J13-B3	Y PIP ERROR LO
* A 258R	TB1-D11	P07-Z	Y PIP ERROR HI
* CC 98R	TB1-D11	J13-A3	Y PIP ERROR HI
AA 6	TB1-D12	TB1-F12	0 VDC IMU
* AA 5	TB1-D12	TB1-C12	0 VDC IMU
* A 198Y	TB1-D14	P03-G	SIN AOG 1X S2
* A 334R	TB1-D14	P09- 26	SIN AOG 1X S2
* CC144W	TB1-D14	J16-A8	SIN AOG 1X S2
* A 44Y	TB1-D15	J03- 7	SIN AOG 1X S4
* A 198R	TB1-D15	P03-F	SIN AOG 1X S4
* A 334Y	TB1-D15	P09- 4	SIN AOG 1X S4
* CC144R	TB1-D15	J16-A9	SIN AOG 1X S4
* A 44R	TB1-D16	J03- 21	SIN AOG 1X TO CDU
* CC144L	TB1-D16	J16-B9	SIN AOG 1X TO CDU
A 44B	TB1-D17	SHLD A 44	0 VDC IMU
A 198B	TB1-D17	SHLD A 198	0 VDC IMU
A 334B	TB1-D17	SHLD A 334	0 VDC IMU
AA 13	TB1-D17	TB1-F17	0 VDC IMU
CC144B	TB1-D17	SHLD CC144	0 VDC IMU
* AA 12	TB1-D17	TB1-C17	0 VDC IMU
* A 192R	TB1-D18	P03-Z	MG TORQUE MOTOR HI
* A 194R	TB1-D18	P03-C*	MG TORQUE MOTOR HI

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 399R	TB1-D18	P09-132	MG TORQUE MOTOR HI
* CC 70R	TB1-D18	J11-F6	MG TORQUE MOTOR HI
* A 192Y	TB1-D19	P03-A*	MG TORQUE MOTOR RET
* A 194Y	TB1-D19	P03-B*	MG TORQUE MOTOR RET
* A 399Y	TB1-D19	P09-110	MG TORQUE MOTOR RET
* CC 70W	TB1-D19	J11-G6	MG TORQUE MOTOR RET
* A 262R	TB1-D21	P07-J	Y GYRO TORQUE -
* CC108R	TB1-D21	J14-M2	Y GYRO TORQUE -
* A 262W	TB1-D22	P07-H	Y GYRO TORQUE RET
* CC108W	TB1-D22	J14-M3	Y GYRO TORQUE RET
* A 262L	TB1-D23	P07-G	Y GYRO TORQUE +
* CC108L	TB1-D23	J14-M1	Y GYRO TORQUE +
A 262B	TB1-D24	SHLD A 262	0 VDC IMU
A 567	TB1-D24	TB1-D59	0 VDC IMU
AA 20	TB1-D24	TB1-F24	0 VDC IMU
CC108B	TB1-D24	SHLD CC108	0 VDC IMU
* AA 19	TB1-D24	TB1-C24	0 VDC IMU
* A 168Y	TB1-D25	J08- 82	AGC POWER SUPPLY FAIL LIGHT LO
* CC169	TB1-D25	J16-K4	AGC POWER SUPPLY FAIL LIGHT LO
* A 168R	TB1-D26	J08- 71	AGC POWER SUPPLY FAIL SIG HI
* A 371	TB1-D26	P09- 67	AGC POWER SUPPLY FAIL SIG HI
* CC 85	TB1-D26	J12-M1	AGC POWER SUPPLY FAIL SIG HI
* A 195Y	TB1-D28	P03-V	IMU GIMBAL AND GYRO ERROR SIG LO
* A 390N	TB1-D28	P09- 93	IMU GIMBAL AND GYRO ERROR SIG LO
* CC 68K	TB1-D28	J11-B5	IMU GIMBAL AND GYRO ERROR SIG LO
* CC130R	TB1-D28	J15-B2	IMU GIMBAL AND GYRO ERROR SIG LO
* A 39R	TB1-D29	J02-106	MG CDU MDA TACH SIG
* CC141R	TB1-D29	J16-A3	MG CDU MDA TACH SIG
A 39B	TB1-D30	SHLD A 39	MG CDU MDA INPUT RET
* A 39Y	TB1-D30	J02- 92	MG CDU MDA INPUT RET
* CC141L	TB1-D30	J16-B3	MG CDU MDA INPUT RET
* A 39G	TB1-D31	J02-105	MG CDU MDA SLEW SIG
* CC141W	TB1-D31	J16-A4	MG CDU MDA SLEW SIG
* A 40R	TB1-D33	J02-108	MG CDU ENCODER PHASE 2
* CC118R	TB1-D33	J15-D2	MG CDU ENCODER PHASE 2
A 40B	TB1-D34	SHLD A 40	MG CDU ENCODER COMMON
* A 40Y	TB1-D34	J02- 94	MG CDU ENCODER COMMON
* CC118W	TB1-D34	J15-F2	MG CDU ENCODER COMMON

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* CC 90	TB1-C70	J12-R2	0 VDC IMU
* A 331	TB1-C71	J09-108	+28 VDC OPTICS DAC POWER
* CC224	TB1-C71	J18-T3	+28 VDC OPTICS DAC POWER
* A 241R	TB1-C72	P06-C	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
* A 349R	TB1-C72	P09- 33	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
* CC 81R	TB1-C72	J12-P2	800 CPS 28 V 5 PCT IMU WHEELS PHASE B
* A 241Y	TB1-C73	P06-B	800 CPS 28 V 5 PCT IMU WHEELS LO
* A 349Y	TB1-C73	P09- 50	800 CPS 28 V 5 PCT IMU WHEELS LO
* CC 81W	TB1-C73	J12-R1	800 CPS 28 V 5 PCT IMU WHEELS LO
* A 241G	TB1-C74	P06-A	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
* A 349G	TB1-C74	P09- 32	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
* CC 81L	TB1-C74	J12-P1	800 CPS 28 V 5 PCT IMU WHEELS PHASE A
* A 341R	TB1-C75	P09- 13	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* CC183W	TB1-C75	J17-R4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* CC285R	TB1-C75	J20-L6	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 248Y	TB1-C76	P06-G*	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 341Y	TB1-C76	P09- 14	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* CC285W	TB1-C76	J20-L5	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 248R	TB1-C77	P06-F*	800 CPS 28 V 5 PCT HI TO BLOWERS
* CC183R	TB1-C77	J17-P4	800 CPS 28 V 5 PCT HI TO BLOWERS
* A 419Y	TB1-C78	P10- 68	400 CPS 115 V LO
* A 526Y	TB1-C78	P11-K	400 CPS 115 V LO
* CC311W	TB1-C78	J20-M3	400 CPS 115 V LO
* A 2R	TB1-D 1	J01- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 22R	TB1-D 1	J02- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 42R	TB1-D 1	J03- 3	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* CC 88R	TB1-D 1	J12-H4	800 CPS 28 V 5 PCT L-90 DEG HI IMU
* A 2Y	TB1-D 2	J01- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 22Y	TB1-D 2	J02- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* A 42Y	TB1-D 2	J03- 2	800 CPS 28 V 5 PCT L-90 DEG LO IMU
* CC 88W	TB1-D 2	J12-K4	800 CPS 28 V 5 PCT L-90 DEG LO IMU
AA 79	TB1-D 3	TB1-D 4	0 VDC IMU
* A 115	TB1-D 3	J06- 78	0 VDC IMU
* A 137	TB1-D 3	P01- 78	0 VDC IMU
* A 175	TB1-D 4	J08- 92	0 VDC IMU
* AA 79	TB1-D 4	TB1-D 3	0 VDC IMU
* AA113	TB1-D 4	TB1-B62	0 VDC IMU
AA 82	TB1-D 5	TB1-D 6	800 CPS 28 V 1 PCT HI OPTICS

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 40G	TB1-D35	J02-107	MG CDU ENCODER PHASE 1
* CC118L	TB1-D35	J15-F1	MG CDU ENCODER PHASE 1
A 221B	TB1-D36	SHLD A 221	0 VDC OPTICS
AA 28	TB1-D36	TB1-F36	0 VDC OPTICS
CC233B	TB1-D36	SHLD CC233	0 VDC OPTICS
* AA 27	TB1-D36	TB1-C36	0 VDC OPTICS
* A 221R	TB1-D37	P05- 34	SXT TRUNNION TACH HI
* CC233R	TB1-D37	J18-A9	SXT TRUNNION TACH HI
* A 221Y	TB1-D38	P05- 35	SXT TRUNNION TACH LO
* CC233W	TB1-D38	J18-B9	SXT TRUNNION TACH LO
A 81B	TB1-D39	SHLD A 81	0 VDC OPTICS
AA 35	TB1-D39	TB1-F39	0 VDC OPTICS
CC255B	TB1-D39	SHLD CC255	0 VDC OPTICS
* AA 34	TB1-D39	TB1-C39	0 VDC OPTICS
* A 81R	TB1-D40	J05- 17	TRUNNION CDU 1/4X RSVR P2
* CC255R	TB1-D40	J19-C5	TRUNNION CDU 1/4X RSVR P2
* A 81Y	TB1-D41	J05- 4	TRUNNION CDU 1/4X RSVR P3
* CC255W	TB1-D41	J19-C6	TRUNNION CDU 1/4X RSVR P3
A 82B	TB1-D42	SHLD A 82	0 VDC OPTICS
A 223B	TB1-D42	SHLD A 223	0 VDC OPTICS
AA 42	TB1-D42	TB1-F42	0 VDC OPTICS
CC229B	TB1-D42	SHLD CC229	0 VDC OPTICS
* AA 41	TB1-D42	TB1-C42	0 VDC OPTICS
* A 82R	TB1-D43	J05- 22	TRUNNION CDU 1/4X RSVR S3
* A 223R	TB1-D43	P05- 38	SXT TRUNNION 1X RSVR S3
* CC229R	TB1-D43	J18-F3	TRUNNION CDU 1/4X RSVR S3
* A 82Y	TB1-D44	J05- 8	TRUNNION CDU 1/4X RSVR S1
* A 223Y	TB1-D44	P05- 39	SXT TRUNNION 1X RSVR S1
* CC229W	TB1-D44	J18-F2	TRUNNION CDU 1/4X RSVR S1
* A 73R	TB1-D45	J04- 57	SHAFT CDU 1/2X RSVR S1
* A 213R	TB1-D45	P05- 7	SXT SHAFT 1/2X RSVR S3
* CC218R	TB1-D45	J18-B1	SXT SHAFT 1/2X RSVR S3
* A 73Y	TB1-D46	J04- 67	SHAFT CDU 1/2X RSVR S3
* A 213Y	TB1-D46	P05- 6	SXT SHAFT 1/2X RSVR S1
* CC218W	TB1-D46	J18-A1	SXT SHAFT 1/2X RSVR S1
A 73B	TB1-D47	SHLD A 73	0 VDC OPTICS
A 213B	TB1-D47	SHLD A 213	0 VDC OPTICS
AA 49	TB1-D47	TB1-F47	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 381R	TB1-D68	P09- 79	IMU PRESSURE MONITOR HI
*	CC286R	TB1-D68	J20-A4	IMU PRESSURE MONITOR HI
*	A 245Y	TB1-D69	P06-E*	IMU PRESSURE MONITOR LO
*	A 381Y	TB1-D69	P09- 78	IMU PRESSURE MONITOR LO
*	CC286W	TB1-D69	J20-B4	IMU PRESSURE MONITOR LO
*	A 296	TB1-D70	J09- 15	0 VDC SPACECRAFT
*	A 408	TB1-D70	P10- 9	0 VDC SPACECRAFT
*	CC200	TB1-D70	J17-M3	0 VDC SPACECRAFT
	AA119	TB1-D71	TB1-D72	CONDITION LAMP TEST
*	A 141	TB1-D71	P01- 88	CONDITION LAMP TEST
*	A 562	TB1-D71	J23- 48	CONDITION LAMP TEST
*	CC181	TB1-D71	J17-P6	CONDITION LAMP TEST
*	A 318	TB1-D72	J09- 73	CONDITION LAMP TEST
*	A 409	TB1-D72	P10- 10	CONDITION LAMP TEST
*	A 477	TB1-D72	J10- 2	CONDITION LAMP TEST
*	AA119	TB1-D72	TB1-D71	CONDITION LAMP TEST
	A 580	TB1-D73	TB1-D74	0 VDC IMU
	AA123	TB1-D73	TB1-F73	0 VDC IMU
	AA124	TB1-D73	TB1-G20	0 VDC IMU
*	A 540	TB1-D73	P12-D	0 VDC IMU
*	A 578	TB1-D73	TB1-B70	0 VDC IMU
	A 582	TB1-D74	TB1-D75	0 VDC IMU
	AA125	TB1-D74	TB1-H25	0 VDC IMU
*	A 514	TB1-D74	P11-E	0 VDC IMU
*	A 580	TB1-D74	TB1-D73	0 VDC IMU
*	CC210	TB1-D74	J17-S2	0 VDC IMU
	A 583	TB1-D75	TB1-F75	0 VDC IMU
	AA127	TB1-D75	TB1-K25	0 VDC IMU
*	A 544	TB1-D75	P12-F	0 VDC IMU
*	A 582	TB1-D75	TB1-D74	0 VDC IMU
*	CC209	TB1-D75	J17-S1	0 VDC IMU
	A 585	TB1-D76	TB1-D77	0 VDC OPTICS
	A 586	TB1-D76	TB1-K67	0 VDC OPTICS
*	AA115	TB1-D76	TB1-B67	0 VDC OPTICS
*	CC213	TB1-D76	J17-S6	0 VDC OPTICS
	A 588	TB1-D77	TB1-D78	0 VDC OPTICS
	AA128	TB1-D77	TB1-F77	0 VDC OPTICS
*	A 335	TB1-D77	P09- 5	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 585	TB1-D77	TB1-D76	0 VDC OPTICS
*	CC240	TB1-D77	J18-R6	0 VDC OPTICS
*	A 230	TB1-D78	P05- 69	0 VDC OPTICS
*	A 545	TB1-D78	P12-G	0 VDC OPTICS
*	A 588	TB1-D78	TB1-D77	0 VDC OPTICS
*	CC272	TB1-D78	J19-R3	0 VDC OPTICS
*	CC323	TB1-D78	J20-P3	0 VDC OPTICS
	AA 83	TB1-F 5	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
*	A 62Y	TB1-F 5	J04- 14	800 CPS 28 V 1 PCT LO OPTICS
*	A 79Y	TB1-F 5	J05- 14	800 CPS 28 V 1 PCT LO OPTICS
*	CC161R	TB1-F 5	J16-N5	800 CPS 28 V 1 PCT LO OPTICS
	AA 86	TB1-F 6	TB1-F 7	800 CPS 28 V 1 PCT LO OPTICS
*	A 208Y	TB1-F 6	P04-E2	800 CPS 28 V 1 PCT LO OPTICS
*	A 217G	TB1-F 6	P05- 14	800 CPS 28 V 1 PCT LO OPTICS
*	A 217Y	TB1-F 6	P05- 13	800 CPS 28 V 1 PCT LO OPTICS
*	AA 83	TB1-F 6	TB1-F 5	800 CPS 28 V 1 PCT LO OPTICS
*	A 220Y	TB1-F 7	P05- 55	800 CPS 28 V 1 PCT LO OPTICS
*	A 231Y	TB1-F 7	P05- 70	800 CPS 28 V 1 PCT LO OPTICS
*	A 237Y	TB1-F 7	P05- 85	800 CPS 28 V 1 PCT LO OPTICS
*	AA 86	TB1-F 7	TB1-F 6	800 CPS 28 V 1 PCT LO OPTICS
*	A 63Y	TB1-F 8	J04- 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 80Y	TB1-F 8	J05- 2	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 233Y	TB1-F 8	P05- 77	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	CC162W	TB1-F 8	J16-N6	800 CPS 28 V 5 PCT L-90 DEG LO OPTICS
*	A 266Y	TB1-F10	P07-Y	X PIP ERROR LO
*	CC 95W	TB1-F10	J13-B1	X PIP ERROR LO
*	A 266R	TB1-F11	P07-X	X PIP ERROR HI
*	CC 95R	TB1-F11	J13-A1	X PIP ERROR HI
	A 205B	TB1-F12	SHLD A 205	0 VDC IMU
	AA 7	TB1-F12	TB1-G12	0 VDC IMU
	CC201B	TB1-F12	SHLD CC201	0 VDC IMU
*	AA 6	TB1-F12	TB1-D12	0 VDC IMU
*	A 205R	TB1-F13	P03-R	PITCH-YAW RSVR S4
*	CC201R	TB1-F13	J17-C2	PITCH-YAW RSVR S4
*	A 180Y	TB1-F14	P02-D	COS AOG 16X S1
*	CC148R	TB1-F14	J16-D7	COS AOG 16X S1
*	A 56R	TB1-F15	J03-100	COS AOG 16X S3
*	A 180R	TB1-F15	P02-C	COS AOG 16X S3

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	CC218B	TB1-D47	SHLD CC218	0 VDC OPTICS
*	AA 48	TB1-D47	TB1-C47	0 VDC OPTICS
*	A 393	TB1-D51	P09- 98	TRAY 3 THERMISTER HI
*	CC104	TB1-D51	J13-C1	TRAY 3 THERMISTER HI
*	A 382	TB1-D52	P09- 80	TRAY 4 THERMISTER HI
*	CC111	TB1-D52	J14-B1	TRAY 4 THERMISTER HI
	A 113B	TB1-D56	SHLD A 113	AGC SIGNAL 178 SHIELD RETURN
	A 134B	TB1-D56	SHLD A 134	AGC SIGNAL 178 SHIELD RETURN
	CC173B	TB1-D56	SHLD CC173	AGC SIGNAL 178 SHIELD RETURN
	CC332B	TB1-D56	SHLD CC332	AGC SIGNAL 178 SHIELD RETURN
*	A 388R	TB1-D57	P09-130	OG CDU FAILURE INDICATION
*	CC175R	TB1-D57	J16-N3	OG CDU FAILURE INDICATION
*	A 388Y	TB1-D58	P09-108	0 VDC IMU
*	CC175W	TB1-D58	J16-R2	0 VDC IMU
	AA111	TB1-D59	TB1-F74	0 VDC IMU
*	A 567	TB1-D59	TB1-D24	0 VDC IMU
*	AA 60	TB1-D59	TB1-C59	0 VDC IMU
*	CC176	TB1-D59	J16-P2	0 VDC IMU
*	A 255R	TB1-D60	P06-V	IMU CONTROL HTR HI
*	CC192R	TB1-D60	J17-P1	IMU CONTROL HTR HI
*	A 255Y	TB1-D61	P06-W	IMU CONTROL HTR LO
*	CC192W	TB1-D61	J17-N1	IMU CONTROL HTR LO
*	A 256	TB1-D62	P06-Y	EMERG HTR CONT MODULE LO
*	A 321R	TB1-D62	J09- 90	EMERG HTR CONT MODULE LO
*	A 321Y	TB1-D63	J09- 76	IMU TEMP CONT K2 PIN 6
*	CC189W	TB1-D63	J17-L1	IMU TEMP CONT K2 PIN 6
*	A 403	TB1-D64	P09-127	IRIG TEMP (TELEMETRY)
*	CC195	TB1-D64	J17-F4	IRIG TEMP (TELEMETRY)
*	A 228Y	TB1-D65	P05- 65	TRACKER PREAMP OUTPUT LO
*	A 491Y	TB1-D65	E 25	TRACKER PREAMP OUTPUT LO
*	A 228R	TB1-D66	P05- 64	TRACKER PREAMP OUTPUT HI
*	A 491R	TB1-D66	P13- 2	TRACKER PREAMP OUTPUT HI
	A 228B	TB1-D67	SHLD A 228	0 VDC OPTICS
	A 491B	TB1-D67	SHLD A 491	0 VDC OPTICS
	AA 64	TB1-D67	TB1-F67	0 VDC OPTICS
*	A 277	TB1-D67	P08- 37	0 VDC OPTICS
*	AA 63	TB1-D67	TB1-C67	0 VDC OPTICS
*	A 245R	TB1-D68	P06-D*	IMU PRESSURE MONITOR HI

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC148W	TB1-F15	J16-F7	COS AOG 16X S3
*	A 56Y	TB1-F16	J03- 86	COS AOG 16X TO CDU
*	CC148L	TB1-F16	J16-F8	COS AOG 16X TO CDU
	A 56B	TB1-F17	SHLD A 56	0 VDC IMU
	A 180B	TB1-F17	SHLD A 180	0 VDC IMU
	AA 14	TB1-F17	TB1-G17	0 VDC IMU
	CC148B	TB1-F17	SHLD CC148	0 VDC IMU
*	AA 13	TB1-F17	TB1-D17	0 VDC IMU
*	A 197R	TB1-F18	P03-D*	IG TORQUE MOTOR HI
*	A 199R	TB1-F18	P03-G*	IG TORQUE MOTOR HI
*	A 389R	TB1-F18	P09- 92	IG TORQUE MOTOR HI
*	CC 69R	TB1-F18	J11-D6	IG TORQUE MOTOR HI
*	A 197Y	TB1-F19	P03-E*	IG TORQUE MOTOR RET
*	A 199Y	TB1-F19	P03-F*	IG TORQUE MOTOR RET
*	A 389Y	TB1-F19	P09- 91	IG TORQUE MOTOR RET
*	CC 69W	TB1-F19	J11-D5	IG TORQUE MOTOR RET
*	A 260R	TB1-F21	P07-F	X GYRO TORQUE -
*	CC101R	TB1-F21	J13-G6	X GYRO TORQUE -
*	A 260W	TB1-F22	P07-E	X GYRO TORQUE RET
*	CC101W	TB1-F22	J13-F6	X GYRO TORQUE RET
*	A 260L	TB1-F23	P07-D	X GYRO TORQUE +
*	CC101L	TB1-F23	J13-D6	X GYRO TORQUE +
	A 260B	TB1-F24	SHLD A 260	0 VDC IMU
	AA 21	TB1-F24	TB1-G24	0 VDC IMU
	CC101B	TB1-F24	SHLD CC101	0 VDC IMU
*	AA 20	TB1-F24	TB1-D24	0 VDC IMU
	A 379B	TB1-F27	SHLD A 379	0 VDC IMU
	A 380B	TB1-F27	SHLD A 380	0 VDC IMU
	AA 24	TB1-F27	TB1-G27	0 VDC IMU
*	A 193Y	TB1-F28	P03-B	Z GYRO ERROR SIG
*	A 379Y	TB1-F28	P09- 75	Z GYRO ERROR SIG
*	CC130W	TB1-F28	J15-A1	Z GYRO ERROR SIG
*	A 19R	TB1-F29	J01-106	IG CDU MDA TACH SIG
*	CC136R	TB1-F29	J16-A1	IG CDU MDA TACH SIG
	A 19B	TB1-F30	SHLD A 19	IG CDU MDA INPUT RET
*	A 19Y	TB1-F30	J01- 92	IG CDU MDA INPUT RET
*	CC136L	TB1-F30	J16-B1	IG CDU MDA INPUT RET
*	A 19G	TB1-F31	J01-105	IG CDU MDA SLEW SIG

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 227R	TB1-F46	P05- 53	SXT SHAFT 1X RSVR S1
* A 280R	TB1-F46	P08- 44	SCT SHAFT 1X RSVR P3
A 227B	TB1-F47	SHLD A 227	0 VDC OPTICS
A 280B	TB1-F47	SHLD A 280	0 VDC OPTICS
AA 50	TB1-F47	TB1-G47	0 VDC OPTICS
* AA 49	TB1-F47	TB1-D47	0 VDC OPTICS
* A 69G	TB1-F48	J04- 35	SHAFT CDU 1X RSVR S2
* CC264L	TB1-F48	J19-P3	SHAFT CDU 1X RSVR S2
* A 69R	TB1-F49	J04- 45	SHAFT CDU 1X RSVR S3
* CC264R	TB1-F49	J19-P4	SHAFT CDU 1X RSVR S3
* A 69Y	TB1-F50	J04- 34	SHAFT CDU 1X RSVR S1
* CC264W	TB1-F50	J19-P5	SHAFT CDU 1X RSVR S1
* A 401	TB1-F51	P09-116	TRAY 2 THERMISTER HI
* CC 87	TB1-F51	J12-C1	TRAY 2 THERMISTER HI
* A 392	TB1-F52	P09- 97	THERMISTER LO
* CC112	TB1-F52	J14-B2	THERMISTER LO
* CC331	TB1-F52	J23- 57	THERMISTER LO
AA109	TB1-F56	TB1-F57	0 VDC OPTICS
AA110	TB1-F56	TB1-F76	0 VDC OPTICS
* A 493Y	TB1-F56	P13- 13	TRACKER X DRIVE BUFFERED LO
* A 494Y	TB1-F56	P13- 14	TRACKER Y DRIVE BUFFERED LO
* CC270	TB1-F56	J19-L6	0 VDC OPTICS
* A 362	TB1-F57	P09- 56	0 VDC OPTICS
* A 495Y	TB1-F57	P13- 7	TRACKER PREAMP OUTPUT BUFFERED LO
* AA109	TB1-F57	TB1-F56	0 VDC OPTICS
* A 353	TB1-F58	P09- 40	SCT TRUNNION TACH FEEDBACK BUFFERED
* CC246	TB1-F58	J19-M6	SCT TRUNNION TACH FEEDBACK BUFFERED
* A 320	TB1-F59	J09- 75	IMU TEMP ALARM AMP PIN 14
* CC188	TB1-F59	J17-G1	IMU TEMP ALARM AMP PIN 14
* A 319R	TB1-F60	J09- 74	IMU TEMP ALARM AMP PIN 15
* CC187R	TB1-F60	J17-G2	IMU TEMP ALARM AMP PIN 15
* A 319G	TB1-F61	J09-105	IMU TEMP ALARM BIAS RESISTOR
* CC187L	TB1-F61	J17-H1	IMU TEMP ALARM BIAS RESISTOR
* A 319Y	TB1-F62	J09- 92	IMU TEMP ALARM AMP PIN 5
* CC187W	TB1-F62	J17-H2	IMU TEMP ALARM AMP PIN 5
* A 321G	TB1-F63	J09- 94	TEMPERATURE CONTROLLER 0 VDC IMU
* CC189R	TB1-F63	J17-M1	TEMPERATURE CONTROLLER 0 VDC IMU
* A 396	TB1-F64	P09-106	ACCEL TEMP (TELEMETRY)

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INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* CC194	TB1-F64	J17-F5	ACCEL TEMP (TELEMETRY)
* A 496Y	TB1-F65	P13- 23	TRACKER Y ERROR LO
* CC275W	TB1-F65	J20-D7	TRACKER Y ERROR LO
* A 496R	TB1-F66	P13- 31	TRACKER Y ERROR HI
* CC275R	TB1-F66	J20-D6	TRACKER Y ERROR HI
A 302B	TB1-F67	SHLD A 302	0 VDC OPTICS
A 496B	TB1-F67	SHLD A 496	0 VDC OPTICS
AA 65	TB1-F67	TB1-G67	0 VDC OPTICS
* AA 64	TB1-F67	TB1-D67	0 VDC OPTICS
* A 302R	TB1-F68	J09- 34	SCT TRUNNION TRACKER MODE INPUT HI
* CC262R	TB1-F68	J19-D3	SCT TRUNNION TRACKER MODE INPUT HI
* A 302Y	TB1-F69	J09- 35	SCT TRUNNION TRACKER MODE INPUT LO
* CC262W	TB1-F69	J19-D2	SCT TRUNNION TRACKER MODE INPUT LO
* A 369R	TB1-F70	P09- 65	+2.5 VDC CONDITIONING LO
* CC309W	TB1-F70	J20-F1	+2.5 VDC CONDITIONING LO
* A 369Y	TB1-F71	P09- 81	+2.5 VDC CONDITIONING HI
* CC309R	TB1-F71	J20-D1	+2.5 VDC CONDITIONING HI
* A 383Y	TB1-F72	P09- 83	0 VDC CONDITIONING
* CC294W	TB1-F72	J20-G1	0 VDC CONDITIONING
A 579	TB1-F73	TB1-F74	0 VDC IMU
* A 515	TB1-F73	P11-F	0 VDC IMU
* A 577	TB1-F73	TB1-C70	0 VDC IMU
* AA123	TB1-F73	TB1-D73	0 VDC IMU
* CC321	TB1-F73	J20-K1	0 VDC IMU
A 581	TB1-F74	TB1-F75	0 VDC IMU
AA126	TB1-F74	TB1-H24	0 VDC IMU
* A 541	TB1-F74	P12-E	0 VDC IMU
* A 579	TB1-F74	TB1-F73	0 VDC IMU
* AA111	TB1-F74	TB1-D59	0 VDC IMU
* A 511	TB1-F75	P11-D	0 VDC IMU
* A 581	TB1-F75	TB1-F74	0 VDC IMU
* A 583	TB1-F75	TB1-D75	0 VDC IMU
* CC177	TB1-F75	J16-R2	0 VDC IMU
* CC320	TB1-F75	J20-H1	0 VDC IMU
A 584	TB1-F76	TB1-F77	0 VDC OPTICS
* AA110	TB1-F76	TB1-F56	0 VDC OPTICS
* CC208	TB1-F76	J17-R6	0 VDC OPTICS
A 587	TB1-F77	TB1-F78	0 VDC OPTICS

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SCALE-NONE
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MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* CC136W	TB1-F31	J16-A2	IG CDU MDA SLEW SIG
A 59B	TB1-F32	SHLD A 59	OG CDU ERROR SIG RET
A 338B	TB1-F32	SHLD A 338	OG CDU ERROR SIG RET
* A 571	TB1-F32	TB1-G30	OG CDU ERROR SIG RET
* AA102	TB1-F32	TB1-G32	OG CDU ERROR SIG RET
* A 20R	TB1-F33	J01-108	IG CDU ENCODER PHASE 2
* CC117R	TB1-F33	J15-D1	IG CDU ENCODER PHASE 2
A 20B	TB1-F34	SHLD A 20	IG CDU ENCODER COMMON
* A 20Y	TB1-F34	J01- 94	IG CDU ENCODER COMMON
* CC117W	TB1-F34	J15-C1	IG CDU ENCODER COMMON
* A 20G	TB1-F35	J01-107	IG CDU ENCODER PHASE 1
* CC117L	TB1-F35	J15-C2	IG CDU ENCODER PHASE 1
A 276B	TB1-F36	SHLD A 276	0 VDC OPTICS
AA 29	TB1-F36	TB1-G36	0 VDC OPTICS
CC261B	TB1-F36	SHLD CC261	0 VDC OPTICS
* AA 28	TB1-F36	TB1-D36	0 VDC OPTICS
* A 276R	TB1-F37	P08- 33	SCT TRUNNION TACH HI
* CC261R	TB1-F37	J19-A1	SCT TRUNNION TACH HI
* A 276Y	TB1-F38	P08- 34	SCT TRUNNION TACH LO
* CC261W	TB1-F38	J19-B1	SCT TRUNNION TACH LO
A 271B	TB1-F39	SHLD A 271	0 VDC OPTICS
AA 36	TB1-F39	TB1-G39	0 VDC OPTICS
CC259B	TB1-F39	SHLD CC259	0 VDC OPTICS
* AA 35	TB1-F39	TB1-D39	0 VDC OPTICS
* A 271Y	TB1-F40	P08- 18	SCT TRUNNION 1X RSVR S2
* CC259W	TB1-F40	J19-C1	SCT TRUNNION 1X RSVR S2
* A 271R	TB1-F41	P08- 19	SCT TRUNNION 1X RSVR S4
* CC259R	TB1-F41	J19-C2	SCT TRUNNION 1X RSVR S4
A 269B	TB1-F42	SHLD A 269	0 VDC OPTICS
AA 43	TB1-F42	TB1-G42	0 VDC OPTICS
CC231B	TB1-F42	SHLD CC231	0 VDC OPTICS
* AA 42	TB1-F42	TB1-D42	0 VDC OPTICS
* A 269Y	TB1-F43	P08- 10	SCT TRUNNION 1X RSVR P4
* CC231W	TB1-F43	J18-F5	SCT TRUNNION 1X RSVR P4
* A 269R	TB1-F44	P08- 9	SCT TRUNNION 1X RSVR P2
* CC231R	TB1-F44	J18-F4	SCT TRUNNION 1X RSVR P2
* A 227Y	TB1-F45	P05- 54	SXT SHAFT 1X RSVR S3
* A 280Y	TB1-F45	P08- 45	SCT SHAFT 1X RSVR P1

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MIL 2084-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 285	TB1-F77	J09- 1	0 VDC OPTICS
* A 584	TB1-F77	TB1-F76	0 VDC OPTICS
* AA128	TB1-F77	TB1-D77	0 VDC OPTICS
* CC241	TB1-F77	J18-R4	0 VDC OPTICS
* A 517	TB1-F78	P11-G	0 VDC OPTICS
* A 587	TB1-F78	TB1-F77	0 VDC OPTICS
* CC271	TB1-F78	J19-R1	0 VDC OPTICS
* CC324	TB1-F78	J20-P4	0 VDC OPTICS
AA 73	TB1-G 1	TB1-H 1	25.6 KC HI IMU
* A 14R	TB1-G 1	J01- 50	25.6 KC HI IMU
* A 34R	TB1-G 1	J02- 50	25.6 KC HI IMU
* CC 83R	TB1-G 1	J12-N4	25.6 KC HI IMU
AA 76	TB1-G 2	TB1-H 2	0 VDC IMU
* A 14Y	TB1-G 2	J01- 60	25.6 KC LO IMU
* A 34Y	TB1-G 2	J02- 60	25.6 KC LO IMU
* CC 83W	TB1-G 2	J12-P5	25.6 KC LO IMU
* A 104Y	TB1-G 3	J06- 24	ATTITUDE CONTROL RELAY CONTROL
* A 128Y	TB1-G 3	P01- 24	ATTITUDE CONTROL RELAY CONTROL
* CC325W	TB1-G 3	J22- 42	ATTITUDE CONTROL RELAY CONTROL
A 128B	TB1-G 4	SHLD A 128	STRUCTURE GROUND
AA 1	TB1-G 4	TB1-H 4	STRUCTURE GROUND
AA 80	TB1-G 4	TB1-G 8	STRUCTURE GROUND
CC325B	TB1-G 4	SHLD CC325	STRUCTURE GROUND
* A 128R	TB1-G 5	P01- 69	LOCK CDU RELAY CONTROL
* CC128W	TB1-G 5	J15-S3	LOCK CDU RELAY CONTROL
* CC325R	TB1-G 5	J22- 67	LOCK CDU RELAY CONTROL
AA 87	TB1-G 6	TB1-G 7	+28 VDC IMU
* A 7	TB1-G 6	J01- 16	+28 VDC IMU
* A 27	TB1-G 6	J02- 16	+28 VDC IMU
* A 47	TB1-G 6	J03- 16	+28 VDC IMU
* CC103	TB1-G 6	J13-S6	+28 VDC IMU
* A 125	TB1-G 7	P01- 7	+28 VDC IMU
* A 201	TB1-G 7	P03-H*	+28 VDC IMU
* AA 87	TB1-G 7	TB1-G 6	+28 VDC IMU
* CC306	TB1-G 7	J20-L1	+28 VDC IMU
AA 90	TB1-G 8	TB1-G 9	STRUCTURE GROUND
* A 117	TB1-G 8	J06- 91	STRUCTURE GROUND
* A 140	TB1-G 8	P01- 84	STRUCTURE GROUND

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 263R	TB1-G21	P07-M	Z PIP TORQUE -
*	CC106R	TB1-G21	J14-P2	Z PIP TORQUE -
*	A 263W	TB1-G22	P07-L	Z PIP TORQUE RET
*	CC106W	TB1-G22	J14-P3	Z PIP TORQUE RET
*	A 263L	TB1-G23	P07-K	Z PIP TORQUE +
*	CC106L	TB1-G23	J14-P1	Z PIP TORQUE +
	A 263B	TB1-G24	SHLD A 263	0 VDC IMU
	AA 22	TB1-G24	TB1-H24	0 VDC IMU
	AA 99	TB1-G24	TB1-G27	0 VDC IMU
	CC106B	TB1-G24	SHLD CC106	0 VDC IMU
*	AA 21	TB1-G24	TB1-F24	0 VDC IMU
	A 191B	TB1-G27	SHLD A 191	0 VDC IMU
	A 193B	TB1-G27	SHLD A 193	0 VDC IMU
*	AA 24	TB1-G27	TB1-F27	0 VDC IMU
*	AA 99	TB1-G27	TB1-G24	0 VDC IMU
*	A 191Y	TB1-G28	P03-A	X GYRO ERROR SIG
*	A 380Y	TB1-G28	P09- 76	X GYRO ERROR SIG
*	CC130L	TB1-G28	J15-B1	X GYRO ERROR SIG
*	A 58	TB1-G29	J03- 89	OG CDU 16X RSVR LOAD
*	CC158	TB1-G29	J16-C7	OG CDU 16X RSVR LOAD
	A 571	TB1-G30	TB1-F32	OG CDU ERROR SIG RET
*	A 59Y	TB1-G30	J03- 90	OG CDU ERROR SIG RET
*	A 338Y	TB1-G30	P09- 31	OG CDU ERROR SIG RET
*	CC147W	TB1-G30	J16-D6	OG CDU ERROR SIG RET
*	CC204R	TB1-G30	J17-B2	OG CDU ERROR SIG RET
*	A 59R	TB1-G31	J03-104	OG CDU 16X ERROR SIG
*	A 338R	TB1-G31	P09- 9	OG CDU 16X ERROR SIG
*	CC147R	TB1-G31	J16-C5	OG CDU 16X ERROR SIG
*	CC204W	TB1-G31	J17-A2	OG CDU 16X ERROR SIG
	A 52B	TB1-G32	SHLD A 52	OG CDU ERROR SIG RET
	A 145B	TB1-G32	SHLD A 145	OG CDU ERROR SIG RET
	A 365B	TB1-G32	SHLD A 365	OG CDU ERROR SIG RET
	AA102	TB1-G32	TB1-F32	OG CDU ERROR SIG RET
	CC204B	TB1-G32	SHLD CC204	OG CDU ERROR SIG RET
*	A 52R	TB1-G33	J03- 35	OG CDU 1X ERROR SIG
*	A 145R	TB1-G33	P01- 96	OG CDU 1X ERROR SIG
*	A 365R	TB1-G33	P09- 77	OG CDU 1X ERROR SIG
*	CC 64W	TB1-G33	J11-A3	OG CDU 1X ERROR SIG

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC146W	TB1-G33	J16-C6	OG CDU 1X ERROR SIG
*	A 52Y	TB1-G34	J03- 45	OG CDU ERROR SIG RET
*	A 145Y	TB1-G34	P01- 97	OG CDU ERROR SIG RET
*	A 365Y	TB1-G34	P09- 61	OG CDU ERROR SIG RET
*	CC 64R	TB1-G34	J11-B3	OG CDU ERROR SIG RET
*	CC146R	TB1-G34	J16-D6	OG CDU ERROR SIG RET
*	A 51	TB1-G35	J03- 34	OG CDU 1X RSVR LOAD
*	CC157	TB1-G35	J16-F6	OG CDU 1X RSVR LOAD
	A 77B	TB1-G36	SHLD A 77	0 VDC OPTICS
	AA 30	TB1-G36	TB1-H36	0 VDC OPTICS
	CC269B	TB1-G36	SHLD CC269	0 VDC OPTICS
*	AA 29	TB1-G36	TB1-F36	0 VDC OPTICS
*	A 77R	TB1-G37	J04-106	SHAFT CDU TACH HI
*	CC269R	TB1-G37	J19-A9	SHAFT CDU TACH HI
*	A 77Y	TB1-G38	J04- 92	SHAFT CDU TACH LO
*	CC269W	TB1-G38	J19-B9	SHAFT CDU TACH LO
	A 76B	TB1-G39	SHLD A 76	0 VDC OPTICS
	AA 37	TB1-G39	TB1-H39	0 VDC OPTICS
	CC267B	TB1-G39	SHLD CC267	0 VDC OPTICS
*	AA 36	TB1-G39	TB1-F39	0 VDC OPTICS
*	A 76Y	TB1-G40	J04-104	SHAFT CDU 16X RSVR S2
*	CC267W	TB1-G40	J19-B8	SHAFT CDU 16X RSVR S2
*	A 76R	TB1-G41	J04- 90	SHAFT CDU 16X RSVR S3
*	CC267R	TB1-G41	J19-B7	SHAFT CDU 16X RSVR S3
	A 270B	TB1-G42	SHLD A 270	0 VDC OPTICS
	AA 44	TB1-G42	TB1-H42	0 VDC OPTICS
	CC221B	TB1-G42	SHLD CC221	0 VDC OPTICS
*	AA 43	TB1-G42	TB1-F42	0 VDC OPTICS
*	A 270R	TB1-G43	P08- 12	SCT TRUNNION 1X RSVR P3
*	CC221R	TB1-G43	J18-D4	SCT TRUNNION 1X RSVR P3
*	A 270Y	TB1-G44	P08- 13	SCT TRUNNION 1X RSVR P1
*	CC221W	TB1-G44	J18-D3	SCT TRUNNION 1X RSVR P1
*	A 226Y	TB1-G45	P05- 51	SXT SHAFT 1X RSVR S4
*	A 279Y	TB1-G45	P08- 42	SCT SHAFT 1X RSVR P4
*	A 226R	TB1-G46	P05- 52	SXT SHAFT 1X RSVR S2
*	A 279R	TB1-G46	P08- 41	SCT SHAFT 1X RSVR P2
	A 226B	TB1-G.7	SHLD A 226	0 VDC OPTICS
	A 279B	TB1-G47	SHLD A 279	0 VDC OPTICS

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	CONDUCTOR			SIGNAL DESCRIPTION
*	A 150	TB.-G		STRUCTURE GROUND
*	AA 80	TB1-G 8		STRUCTURE GROUND
	AA 91	TB1-G 9		STRUCTURE GROUND
*	A 13	TB1-G 9	- 41	STRUCTURE GROUND
*	A 33	TB1-G 9	J.2- 41	STRUCTURE GROUND
*	AA 90	TB1-G 9	TB1-G 8	STRUCTURE GROUND
	AA 92	TB1-G10	TB1-G11	STRUCTURE GROUND
*	A 53	TB1-G10	J03- 41	STRUCTURE GROUND
*	A 70	TB1-G10	J04- 41	STRUCTURE GROUND
*	AA 91	TB1-G10	TB1-G 9	STRUCTURE GROUND
*	A 87	TB1-G11	J05- 41	STRUCTURE GROUND
*	A 210	TB1-G11	P05- 1	STRUCTURE GROUND
*	AA 92	TB1-G11	TB1-G10	STRUCTURE GROUND
	A 204B	TB1-G12	SHLD A 204	0 VDC IMU
	AA 8	TB1-G12	TB1-H12	0 VDC IMU
	CC182B	TB1-G12	SHLD CC182	0 VDC IMU
*	AA 7	TB1-G12	TB1-F12	0 VDC IMU
*	A 205Y	TB1-G13	P03-P	PITCH ERROR BODY AND BODY OFFSET AXIS LO
*	CC201W	TB1-G13	J17-C1	PITCH ERROR BODY AND BODY OFFSET AXIS LO
*	A 181R	TB1-G14	P02-E	SIN AOG 16X S2
*	CC152W	TB1-G14	J16-D8	SIN AOG 16X S2
*	A 57R	TB1-G15	J03-101	SIN AOG 16X S4
*	A 181Y	TB1-G15	P02-F	SIN AOG 16X S4
*	CC152R	TB1-G15	J16-D9	SIN AOG 16X S4
*	A 57Y	TB1-G16	J03- 87	SIN AOG 16X TO CDU
*	CC152L	TB1-G16	J16-F9	SIN AOG 16X TO CDU
	A 57B	TB1-G17	SHLD A 57	0 VDC IMU
	A 181B	TB1-G17	SHLD A 181	0 VDC IMU
	AA 15	TB1-G17	TB1-H17	0 VDC IMU
	CC152B	TB1-G17	SHLD CC152	0 VDC IMU
*	AA 14	TB1-G17	TB1-F17	0 VDC IMU
*	A 50Y	TB1-G18	J03- 32	OG CDU MDA OUTPUT
*	CC154R	TB1-G18	J16-N2	OG CDU MDA OUTPUT
*	A 50G	TB1-G19	J03- 31	OG CDU MDA OUTPUT
*	CC154W	TB1-G19	J16-N1	OG CDU MDA OUTPUT
	AA 17	TB1-G20	TB1-H20	0 VDC IMU
*	A 50R	TB1-G20	J03- 43	0 VDC IMU
*	AA124	TB1-G20	TB1-D73	0 VDC IMU

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
	AA 51	TB1-G47	TB1-H47	0 VDC OPTICS
*	AA 50	TB1-G47	TB1-F47	0 VDC OPTICS
*	A 214Y	TB1-G48	P05- 36	SXT SHAFT MOTOR PHASE 1
*	CC238W	TB1-G48	J18-T5	SXT SHAFT MOTOR PHASE 1
*	A 214R	TB1-G49	P05- 8	SXT SHAFT MOTOR PHASE 2
*	CC238R	TB1-G49	J18-S5	SXT SHAFT MOTOR PHASE 2
	AA 54	TB1-G50	TB1-H50	0 VDC OPTICS
*	A 212G	TB1-G50	P05- 16	0 VDC OPTICS
*	A 214G	TB1-G50	P05- 19	0 VDC OPTICS
*	A 547	TB1-G50	P12-G	0 VDC OPTICS
*	A 212R	TB1-G51	P05- 5	SXT TRUNNION MOTOR PHASE 2
*	CC232R	TB1-G51	J18-S6	SXT TRUNNION MOTOR PHASE 2
*	A 212Y	TB1-G52	P05- 33	SXT TRUNNION MOTOR PHASE 1
*	CC232W	TB1-G52	J18-T6	SXT TRUNNION MOTOR PHASE 1
	AA 56	TB1-G53	TB1-H53	0 VDC OPTICS
*	A 546	TB1-G53	P12-G	0 VDC OPTICS
*	CC179	TB1-G53	J16-R6	0 VDC OPTICS
*	A 361	TB1-G54	P09- 55	TRACKER Y DRIVE BUFFERED HI
*	A 494R	TB1-G54	P13- 6	TRACKER Y DRIVE BUFFERED HI
*	CC227	TB1-G54	J18-C8	TRACKER Y DRIVE BUFFERED HI
*	A 360	TB1-G55	P09- 54	TRACKER X DRIVE BUFFERED HI
*	A 493R	TB1-G55	P13- 5	TRACKER X DRIVE BUFFERED HI
*	CC226	TB1-G55	J18-C7	TRACKER X DRIVE BUFFERED HI
*	A 375	TB1-G56	P09- 71	TRACKER PREAMP OUTPUT BUFFERED HI
*	A 495R	TB1-G56	P13- 15	TRACKER PREAMP OUTPUT BUFFERED HI
*	CC228	TB1-G56	J18-C9	TRACKER PREAMP OUTPUT BUFFERED HI
*	A 342	TB1-G57	P09- 19	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
*	CC243	TB1-G57	J19-M1	CDU TRUNNION 16X RSVR ERROR SIG BUFFERED
*	A 352	TB1-G58	P09- 39	SHAFT CDU TACH FEEDBACK SIG BUFFERED
*	CC248	TB1-G58	J19-M4	SHAFT CDU TACH FEEDBACK SIG BUFFERED
*	A 325R	TB1-G59	J09-100	IMU HTR CURRENT AMP PIN 5
*	CC186K	TB1-G59	J17-N6	IMU HTR CURRENT AMP PIN 5
*	A 325N	TB1-G60	J09- 88	IMU TEMP CONT K2 PIN 5
*	CC186L	TB1-G60	J17-N5	IMU TEMP CONT K2 PIN 5
*	A 253Y	TB1-G61	P06-P	ACCEL TEMP IND SENSOR RET
*	CC185W	TB1-G61	J17-D5	ACCEL TEMP IND SENSOR RET
*	A 329N	TB1-G62	J09- 98	ACCEL BRIDGE AMP PIN 6
*	CC185K	TB1-G62	J17-F7	ACCEL BRIDGE AMP PIN 6

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
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SCALE - NONE
REV LTR
SHEET 120

MI 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 528	TB1-G76	P11-M	+28 VDC STBY BUSS A
* A 529	TB1-G76	P11-M	+28 VDC STBY BUSS A
* CC299	TB1-G76	J20-T3	+28 VDC STBY BUSS A
* CC316	TB1-G76	J20-S3	+28 VDC STBY BUSS A
* A 548	TB1-G77	P12-H	+28 VDC OPTICS BUSS B
* A 549	TB1-G77	P12-H	+28 VDC OPTICS BUSS B
* CC305	TB1-G77	J20-S6	+28 VDC OPTICS BUSS B
* CC319	TB1-G77	J20-R6	+28 VDC OPTICS BUSS B
* A 520	TB1-G78	P11-H	+28 VDC OPTICS BUSS A
* A 521	TB1-G78	P11-H	+28 VDC OPTICS BUSS A
* CC302	TB1-G78	J20-T5	+28 VDC OPTICS BUSS A
* CC318	TB1-G78	J20-R5	+28 VDC OPTICS BUSS A
* A 54R	TB1-H 1	J03- 50	25.6 KC HI IMU
* A 387R	TB1-H 1	P09-105	25.6 KC HI IMU
* AA 73	TB1-H 1	TB1-G 1	25.6 KC HI IMU
* A 54Y	TB1-H 2	J03- 60	25.6 KC LO IMU
* A 387Y	TB1-H 2	P09- 87	25.6 KC LO IMU
* AA 76	TB1-H 2	TB1-G 2	0 VDC IMU
* A 128G	TB1-H 3	P01- 57	ENTRY RELAY CONTROL
* CC159W	TB1-H 3	J16-M1	ENTRY RELAY CONTROL
A 104B	TB1-H 4	SHLD A 104	STRUCTURE GROUND
AA 2	TB1-H 4	TB1-K 4	STRUCTURE GROUND
CC128B	TB1-H 4	SHLD CC128	STRUCTURE GROUND
* AA 1	TB1-H 4	TB1-G 4	STRUCTURE GROUND
* CC 80	TB1-H 4	J11-L4	STRUCTURE GROUND
* A 124R	TB1-H 5	P01- 5	FINE ALIGN RELAY CONTROL
* CC128R	TB1-H 5	J15-H4	FINE ALIGN RELAY CONTROL
* CC325L	TB1-H 5	J22- 68	FINE ALIGN RELAY CONTROL
* A 187Y	TB1-H 7	P02-S	3200 CPS 2 V LO
* CC 67R	TB1-H 7	J11-M2	3200 CPS 2 V LO
* CC 67W	TB1-H 7	J11-L2	3200 CPS 2 V LO
* A 188Y	TB1-H 8	P02-U	3200 CPS 2 V FEEDBACK LO
* A 374Y	TB1-H 8	P09- 88	3200 CPS 2 V FEEDBACK LO
* CC 73W	TB1-H 8	J11-G3	3200 CPS 2 V FEEDBACK LO
* A 183Y	TB1-H 9	P02-H	COS AMG 16X S1
* CC164R	TB1-H 9	J16-H3	COS AMG 16X S1
* A 36R	TB1-H10	J02-100	COS AMG 16X S3
* A 183R	TB1-H10	P02-G	COS AMG 16X S3

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

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SCALE - NONE
REV LTR
SHEET 122

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* CC164W	TB1-H10	J16-G3	COS AMG 16X S3
* A 36Y	TB1-H11	J02- 86	COS AMG 16X TO CDU
* CC164L	TB1-H11	J16-G4	COS AMG 16X TO CDU
A 36B	TB1-H12	SHLD A 36	0 VDC IMU
A 183B	TB1-H12	SHLD A 183	0 VDC IMU
A 188B	TB1-H12	SHLD A 188	0 VDC IMU
AA 9	TB1-H12	TB1-K12	0 VDC IMU
AA 94	TB1-H12	TB1-K17	0 VDC IMU
CC164B	TB1-H12	SHLD CC164	0 VDC IMU
* AA 8	TB1-H12	TB1-G12	0 VDC IMU
* A 204R	TB1-H13	P03-N	PITCH YAW RSVR S3
* CC182R	TB1-H13	J17-D2	PITCH YAW RSVR S3
* A 189Y	TB1-H14	P02-X	COS AIG 16X S1
* CC163R	TB1-H14	J16-H1	COS AIG 16X S1
* A 16R	TB1-H15	J01-100	COS AIG 16X S3
* A 189R	TB1-H15	P02-W	COS AIG 16X S3
* CC163W	TB1-H15	J16-G1	COS AIG 16X S3
* A 16Y	TB1-H16	J01- 86	COS AIG 16X TO CDU
* CC163L	TB1-H16	J16-G2	COS AIG 16X TO CDU
A 16B	TB1-H17	SHLD A 16	0 VDC IMU
A 189B	TB1-H17	SHLD A 189	0 VDC IMU
AA 16	TB1-H17	TB1-K17	0 VDC IMU
AA 96	TB1-H17	TB1-K24	0 VDC IMU
CC163B	TB1-H17	SHLD CC163	0 VDC IMU
* AA 15	TB1-H17	TB1-G17	0 VDC IMU
* A 30Y	TB1-H18	J02- 32	MG CDU MDA OUTPUT
* CC142R	TB1-H18	J16-P3	MG CDU MDA OUTPUT
* A 30G	TB1-H19	J02- 31	MG CDU MDA OUTPUT
* CC142W	TB1-H19	J16-R3	MG CDU MDA OUTPUT
AA 18	TB1-H20	TB1-K20	0 VDC IMU
* A 30R	TB1-H20	J02- 43	0 VDC IMU
* AA 17	TB1-H20	TB1-G20	0 VDC IMU
* A 264R	TB1-H21	P07-R	Y PIP TORQUE -
* CC 99R	TB1-H21	J13-N3	Y PIP TORQUE -
* A 264W	TB1-H22	P07-P	Y PIP TORQUE RET
* CC 99W	TB1-H22	J13-M3	Y PIP TORQUE RET
* A 264L	TB1-H23	P07-N	Y PIP TORQUE +
* CC 99L	TB1-H23	J13-L3	Y PIP TORQUE +

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

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SCALE - NONE
REV LTR
SHEET 123

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
* A 329R	TB1-G63	J09-104	ACCEL ZERO DEVIATION CHECK
* CC185R	TB1-G63	J17-D7	ACCEL ZERO DEVIATION CHECK
* A 329G	TB1-G64	J09-103	IMU IMU TEMP CONT +5 DEG GAIN CHECK
* CC185L	TB1-G64	J17-D6	IMU IMU TEMP CONT +5 DEG GAIN CHECK
* A 497Y	TB1-G65	P13- 24	TRACKER X ERROR LO
* CC274W	TB1-G65	J20-C7	TRACKER X ERROR LO
* A 497R	TB1-G66	P13- 32	TRACKER X ERROR HI
* CC274R	TB1-G66	J20-C6	TRACKER X ERROR HI
A 305B	TB1-G67	SHLD A 305	0 VDC OPTICS
A 497B	TB1-G67	SHLD A 497	0 VDC OPTICS
AA 66	TB1-G67	TB1-H67	0 VDC OPTICS
CC281B	TB1-G67	SHLD CC281	0 VDC OPTICS
* AA 65	TB1-G67	TB1-F67	0 VDC OPTICS
* A 305R	TB1-G68	J09- 43	PHOTOMETER MARK REJECT HI
* CC281R	TB1-G68	J20-F6	PHOTOMETER MARK REJECT HI
* A 305Y	TB1-G69	J09- 60	PHOTOMETER MARK REJECT LO
* CC281W	TB1-G69	J20-F7	PHOTOMETER MARK REJECT LO
AA 68	TB1-G70	TB1-H70	STRUCTURE GROUND
* A 249	TB1-G70	P06-G	STRUCTURE GROUND
* A 284	TB1-G70	P08- 59	STRUCTURE GROUND
* A 527	TB1-G70	P11-L	STRUCTURE GROUND
* CC207	TB1-G70	J17-L6	STRUCTURE GROUND
* A 244	TB1-G71	P06-D	+28 VDC IMU
* A 359	TB1-G71	P09- 49	+28 VDC IMU
* CC307	TB1-G71	J20-L1	+28 VDC IMU
* CC308	TB1-G71	J20-L2	+28 VDC IMU
* A 383R	TB1-G72	P09- 82	+20 VDC CONDITIONING
* CC294R	TB1-G72	J20-G2	+20 VDC CONDITIONING
* A 356	TB1-G73	P09- 46	+3 VDC AGC
* CC293	TB1-G73	J20-F4	+3 VDC AGC
* CC335	TB1-G73	J24- 6	+3 VDC AGC 175
* A 366	TB1-G74	P09- 62	+13 VDC AGC
* CC292	TB1-G74	J20-D4	+13 VDC AGC
* CC333	TB1-G74	J24- 1	+13 VDC AGC 176
* A 554	TB1-G75	P12-M	+28 VDC STBY BUSS B
* A 555	TB1-G75	P12-M	+28 VDC STBY BUSS B
* CC300	TB1-G75	J20-T4	+28 VDC STBY BUSS B
* CC317	TB1-G75	J20-S4	+28 VDC STBY BUSS B

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

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SCALE - NONE
REV LTR
SHEET 121

MIL 2064-4-64

INTERCONNECT LIST

CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
A 264B	TB1-H24	SHLD A 264	0 VDC IMU
AA 23	TB1-H24	TB1-K24	0 VDC IMU
CC 99B	TB1-H24	SHLD CC 99	0 VDC IMU
* AA 22	TB1-H24	TB1-G24	0 VDC IMU
* AA126	TB1-H24	TB1-F74	0 VDC IMU
A 569	TB1-H25	TB1-H26	0 VDC IMU
* AA125	TB1-H25	TB1-D74	0 VDC IMU
* CC113	TB1-H25	J14-R6	0 VDC IMU
A 570	TB1-H26	TB1-K26	0 VDC IMU
* A 246	TB1-H26	P06-E	0 VDC IMU
* A 569	TB1-H26	TB1-H25	0 VDC IMU
* CC 76	TB1-H26	J11-R5	0 VDC IMU
A 203B	TB1-H28	SHLD A 203	MG CDU ERROR SIG RET
* A 203R	TB1-H28	P03-K	MG CDU ERROR SIG RET
* CC 63W	TB1-H28	J11-B2	MG CDU ERROR SIG RET
* A 203Y	TB1-H29	P03-L	MG CDU ATTITUDE STEERING ERROR
* CC 63R	TB1-H29	J11-C2	MG CDU ATTITUDE STEERING ERROR
A 38B	TB1-H30	SHLD A 38	MG CDU ERROR SIG RET
AA100	TB1-H30	TB1-H32	MG CDU ERROR SIG RET
* A 38Y	TB1-H30	J02- 90	MG CDU ERROR SIG RET
* CC140R	TB1-H30	J16-D4	MG CDU ERROR SIG RET
* A 38R	TB1-H31	J02-104	MG CDU 16X ERROR SIG
* CC140W	TB1-H31	J16-C3	MG CDU 16X ERROR SIG
A 32B	TB1-H32	SHLD A 32	MG CDU ERROR SIG RET
A 139B	TB1-H32	SHLD A 139	MG CDU ERROR SIG RET
A 355B	TB1-H32	SHLD A 355	MG CDU ERROR SIG RET
* AA100	TB1-H32	TB1-H30	MG CDU ERROR SIG RET
* A 32R	TB1-H33	J02- 35	MG CDU 1X ERROR SIG
* A 139R	TB1-H33	P01- 82	MG CDU 1X ERROR SIG
* A 355R	TB1-H33	P09- 60	MG CDU 1X ERROR SIG
* CC 62W	TB1-H33	J11-A2	MG CDU 1X ERROR SIG
* CC139W	TB1-H33	J16-C4	MG CDU 1X ERROR SIG
* A 32Y	TB1-H34	J02- 45	MG CDU ERROR SIG RET
* A 139Y	TB1-H34	P01- 83	MG CDU ERROR SIG RET
* A 355Y	TB1-H34	P09- 43	MG CDU ERROR SIG RET
* CC 62R	TB1-H34	J11-B2	MG CDU ERROR SIG RET
* CC139R	TB1-H34	J16-D4	MG CDU ERROR SIG RET
* A 31	TB1-H35	J02- 34	MG CDU 1X RSVR LOAD

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

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SCALE - NONE
REV LTR
SHEET 124

MIL 2064-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 68R	TB1-H49	J04- 32	SHAFT CDU MOTOR PHASE 2
*	CC268R	TB1-H49	J19-T2	SHAFT CDU MOTOR PHASE 2
	AA 55	TB1-H50	TB1-K50	0 VDC OPTICS
*	A 68G	TB1-H50	J04- 43	0 VDC OPTICS
*	A 268G	TB1-H50	P08- 7	0 VDC OPTICS
*	AA 54	TB1-H50	TB1-G50	0 VDC OPTICS
*	A 268R	TB1-H51	P08- 5	SCT SHAFT MOTOR PHASE 2
*	CC236R	TB1-H51	J18-S4	SCT SHAFT MOTOR PHASE 2
*	A 268Y	TB1-H52	P08- 6	SCT SHAFT MOTOR PHASE 1
*	CC236W	TB1-H52	J18-T4	SCT SHAFT MOTOR PHASE 1
	AA 57	TB1-H53	TB1-K53	0 VDC OPTICS
*	AA 56	TB1-H53	TB1-G53	0 VDC OPTICS
*	CC 94	TB1-H53	J12-R6	0 VDC OPTICS
*	A 351	TB1-H54	P09- 38	SCT SHAFT 1X ERROR SIG BUFFERED
*	CC217	TB1-H54	J18-M5	SCT SHAFT 1X ERROR SIG BUFFERED
*	A 344	TB1-H55	P09- 21	SXT TRUNNION TACH FEEDBACK BUFFERED
*	CC220	TB1-H55	J18-M2	SXT TRUNNION TACH FEEDBACK BUFFERED
*	A 377	TB1-H56	P09- 73	SXT TRUNNION MDA INPUT BUFFERED
*	CC222	TB1-H56	J18-M1	SXT TRUNNION MDA INPUT BUFFERED
*	A 345	TB1-H57	P09- 22	TRUNNION CDU TACH FEEDBACK BUFFERED
*	CC244	TB1-H57	J19-M2	TRUNNION CDU TACH FEEDBACK BUFFERED
*	A 343	TB1-H58	P09- 20	SHAFT CDU 16X ERROR SIG BUFFERED
*	CC242	TB1-H58	J19-M3	SHAFT CDU 16X ERROR SIG BUFFERED
*	A 325Y	TB1-H59	J09-101	IMU TEMP CONT K1 PIN 3
*	CC186W	TB1-H59	J17-M5	IMU TEMP CONT K1 PIN 3
*	A 325G	TB1-H60	J09- 87	IMU TEMP CONT AMP PIN 5
*	CC186R	TB1-H60	J17-M6	IMU TEMP CONT AMP PIN 5
*	A 251	TB1-H61	P06-K	IMU TEMP SENSOR COM
*	CC199	TB1-H61	J17-M2	IMU TEMP SENSOR COM
*	A 253R	TB1-H62	P06-N	ACCEL INDICATING SENSOR HI
*	A 329Y	TB1-H62	J09- 97	ACCEL INDICATING SENSOR HI
*	A 252R	TB1-H63	P06-M	IRIG TEMP CONT SENSOR HI
*	CC191R	TB1-H63	J17-B6	IRIG TEMP CONT SENSOR HI
*	A 252Y	TB1-H64	P06-L	IRIG TEMP CONT SENSOR RET
*	CC191W	TB1-H64	J17-B5	IRIG TEMP CONT SENSOR RET
*	A 239Y	TB1-H65	P05- 89	STAR PRESENCE INPUT LO
*	CC277W	TB1-H65	J20-A8	STAR PRESENCE INPUT LO
*	A 239R	TB1-H66	P05- 88	STAR PRESENCE INPUT HI

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
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SCALE-NONE
REV LTR
SHEET 126

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	CC277R	TB1-H66	J20-A7	STAR PRESENCE INPUT HI	
	A 239B	TB1-H67	SHLD A 239	0 VDC OPTICS	
	A 291B	TB1-H67	SHLD A 291	0 VDC OPTICS	
	AA 67	TB1-H67	TB1-K67	0 VDC OPTICS	
	AA116	TB1-H67	TB1-K47	0 VDC OPTICS	
*	AA 66	TB1-H67	TB1-G67	0 VDC OPTICS	
*	A 291R	TB1-H68	J09- 10	SHAFT HAND CONTROLLER OUTPUT HI	
*	CC250R	TB1-H68	J19-D8	SHAFT HAND CONTROLLER OUTPUT HI	
*	A 291Y	TB1-H69	J09- 24	SHAFT HAND CONTROLLER OUTPUT LO	
*	CC250W	TB1-H69	J19-D7	SHAFT HAND CONTROLLER OUTPUT LO	
	AA 69	TB1-H70	TB1-K70	STRUCTURE GROUND	
*	A 326	TB1-H70	J09- 91	STRUCTURE GROUND	
*	A 339	TB1-H70	P09- 10	STRUCTURE GROUND	
*	A 406	TB1-H70	P10- 1	STRUCTURE GROUND	
*	AA 68	TB1-H70	TB1-G70	STRUCTURE GROUND	
*	A 317	TB1-H71	J09- 71	+28 VDC OPTICS	
*	A 336	TB1-H71	P09- 6	+28 VDC OPTICS	
*	A 412	TB1-H71	P10- 14	+28 VDC OPTICS	
*	CC247	TB1-H71	J19-T5	+28 VDC OPTICS	
*	CC279	TB1-H71	J20-N6	+28 VDC OPTICS	
*	A 357	TB1-H72	P09- 47	+28 VDC STBY	
*	CC301	TB1-H72	J20-R3	+28 VDC STBY	
*	A 367	TB1-H73	P09- 63	0 VDC AGC	
*	CC291	TB1-H73	J20-G3	0 VDC AGC	
*	CC334	TB1-H73	J24- 3	0 VDC AGC	177
*	A 368	TB1-H74	P09- 64	+28 VDC AGC	
*	CC289	TB1-H74	J20-F5	+28 VDC AGC	
*	CC290	TB1-H74	J20-F5	+28 VDC AGC	166
*	A 536	TB1-H75	P12-C	+28 VDC IMU BUSS B	
*	A 537	TB1-H75	P12-C	+28 VDC IMU BUSS B	
*	A 538	TB1-H75	P12-C	+28 VDC IMU BUSS B	
*	CC298	TB1-H75	J20-S2	+28 VDC IMU BUSS B	
*	CC315	TB1-H75	J20-P2	+28 VDC IMU BUSS B	
*	A 508	TB1-H76	P11-C	+28 VDC IMU BUSS A	
*	A 509	TB1-H76	P11-C	+28 VDC IMU BUSS A	
*	A 510	TB1-H76	P11-C	+28 VDC IMU BUSS A	
*	CC296	TB1-H76	J20-S1	+28 VDC IMU BUSS A	
*	CC313	TB1-H76	J20-P1	+28 VDC IMU BUSS A	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015087
SCALE-NONE
REV LTR
SHEET 127

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC156	TB1-H35	J16-F4	MG CDU 1X RSVR LOAD
	A 219B	TB1-H36	SHLD A 219	0 VDC OPTICS
	AA 31	TB1-H36	TB1-K36	0 VDC OPTICS
	CC239B	TB1-H36	SHLD CC239	0 VDC OPTICS
*	AA 30	TB1-H36	TB1-G36	0 VDC OPTICS
*	A 219R	TB1-H37	P05- 23	SXT SHAFT TACH HI
*	CC239R	TB1-H37	J18-A7	SXT SHAFT TACH HI
*	A 219Y	TB1-H38	P05- 24	SXT SHAFT TACH LO
*	CC239W	TB1-H38	J18-B7	SXT SHAFT TACH LO
	A 66B	TB1-H39	SHLD A 66	0 VDC OPTICS
	AA 38	TB1-H39	TB1-K39	0 VDC OPTICS
	AA104	TB1-H39	TB1-K36	0 VDC OPTICS
	CC263B	TB1-H39	SHLD CC263	0 VDC OPTICS
*	AA 37	TB1-H39	TB1-G39	0 VDC OPTICS
*	A 66Y	TB1-H40	J04- 11	SHAFT CDU 1/2X RSVR P1
*	CC263W	TB1-H40	J19-C8	SHAFT CDU 1/2X RSVR P1
*	A 66R	TB1-H41	J04- 25	SHAFT CDU 1/2X RSVR P3
*	CC263R	TB1-H41	J19-C9	SHAFT CDU 1/2X RSVR P3
	A 89B	TB1-H42	SHLD A 89	0 VDC OPTICS
	AA 45	TB1-H42	TB1-K42	0 VDC OPTICS
	AA106	TB1-H42	TB1-K39	0 VDC OPTICS
	CC254B	TB1-H42	SHLD CC254	0 VDC OPTICS
*	AA 44	TB1-H42	TB1-G42	0 VDC OPTICS
*	A 89Y	TB1-H43	J05- 66	TRUNNION CDU 1/2X RSVR S4
*	CC254W	TB1-H43	J19-K2	TRUNNION CDU 1/2X RSVR S4
*	A 89R	TB1-H44	J05- 56	TRUNNION CDU 1/2X RSVR S2
*	CC254R	TB1-H44	J19-K1	TRUNNION CDU 1/2X RSVR S2
*	A 64R	TB1-H45	J04- 20	SHAFT CDU 1X RSVR P3
*	CC265R	TB1-H45	J19-K5	SHAFT CDU 1X RSVR P3
*	A 64Y	TB1-H46	J04- 6	SHAFT CDU 1X RSVR P1
*	CC265W	TB1-H46	J19-K4	SHAFT CDU 1X RSVR P1
	A 64B	TB1-H47	SHLD A 64	0 VDC OPTICS
	AA 52	TB1-H47	TB1-K47	0 VDC OPTICS
	AA108	TB1-H47	TB1-K42	0 VDC OPTICS
	CC265B	TB1-H47	SHLD CC265	0 VDC OPTICS
*	AA 51	TB1-H47	TB1-G47	0 VDC OPTICS
*	A 68Y	TB1-H48	J04- 31	SHAFT CDU MOTOR PHASE 1
*	CC268W	TB1-H48	J19-S2	SHAFT CDU MOTOR PHASE 1

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015087
SCALE-NONE
REV LTR
SHEET 125

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 550	TB1-H77	P12-H	+28 VDC OPTICS BUSS B
*	CC304	TB1-H77	J20-T6	+28 VDC OPTICS BUSS B
*	A 522	TB1-H78	P11-H	+28 VDC OPTICS BUSS A
*	CC303	TB1-H78	J20-S5	+28 VDC OPTICS BUSS A
*	A 71R	TB1-K 1	J04- 50	25.6 KC HI OPTICS
*	A 88R	TB1-K 1	J05- 50	25.6 KC HI OPTICS
*	A 395R	TB1-K 1	P09-126	25.6 KC HI OPTICS
*	CC 82R	TB1-K 1	J12-P6	25.6 KC HI OPTICS
*	A 71Y	TB1-K 2	J04- 60	25.6 KC LO OPTICS
*	A 88Y	TB1-K 2	J05- 60	25.6 KC LO OPTICS
*	A 395Y	TB1-K 2	P09-104	25.6 KC LO OPTICS
*	CC 82W	TB1-K 2	J12-N6	25.6 KC LO OPTICS
*	A 124G	TB1-K 3	P01- 4	COARSE ALIGN RELAY CONTROL
*	CC 72	TB1-K 3	J11-L3	COARSE ALIGN RELAY CONTROL
	A 124B	TB1-K 4	SHLD A 124	STRUCTURE GROUND
	CC159B	TB1-K 4	SHLD CC159	STRUCTURE GROUND
	CC341	TB1-K 4	E 2	STRUCTURE GROUND
*	AA 2	TB1-K 4	TB1-H 4	STRUCTURE GROUND
*	A 124Y	TB1-K 5	P01- 12	ZERO ENCODER RELAY CONTROL
*	CC128L	TB1-K 5	J15-S1	ZERO ENCODER RELAY CONTROL
*	A 187R	TB1-K 7	P02-R	3200 CPS 2 V HI
*	CC 67K	TB1-K 7	J11-M1	3200 CPS 2 V HI
*	CC 67L	TB1-K 7	J11-L1	3200 CPS 2 V HI
*	A 188R	TB1-K 8	P02-T	3200 CPS 2 V FEEDBACK HI
*	A 374R	TB1-K 8	P09- 70	3200 CPS 2 V FEEDBACK HI
*	CC 73R	TB1-K 8	J11-F3	3200 CPS 2 V FEEDBACK HI
*	A 184R	TB1-K 9	P02-J	SIN AMG 16X S2
*	CC127W	TB1-K 9	J15-F8	SIN AMG 16X S2
*	A 37R	TB1-K10	J02-101	SIN AMG 16X S4
*	A 184Y	TB1-K10	P02-K	SIN AMG 16X S4
*	CC127R	TB1-K10	J15-F9	SIN AMG 16X S4
*	A 37Y	TB1-K11	J02- 87	SIN AMG 16X TO CDU
*	CC127L	TB1-K11	J15-D9	SIN AMG 16X TO CDU
	A 37B	TB1-K12	SHLD A 37	0 VDC IMU
	A 184B	TB1-K12	SHLD A 184	0 VDC IMU
	CC127B	TB1-K12	SHLD CC127	0 VDC IMU
*	AA 9	TB1-K12	TB1-H12	0 VDC IMU
*	A 204Y	TB1-K13	P03-M	YAW ERROR BODY OFFSET AXIS LO

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015087
SCALE-NONE
REV LTR
SHEET 128

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 200R	TB1-K28	P03-J	IG CDU ERROR SIG RET
*	CC 61W	TB1-K28	J11-B1	IG CDU ERROR SIG RET
*	A 200Y	TB1-K29	P03-H	IG CDU ATTITUDE STEERING ERROR
*	CC 61R	TB1-K29	J11-C1	IG CDU ATTITUDE STEERING ERROR
	A 18B	TB1-K30	SHLD A 18	IG CDU ERROR SIG RET
	AA101	TB1-K30	TB1-K32	IG CDU ERROR SIG RET
*	A 18Y	TB1-K30	J01- 90	IG CDU ERROR SIG RET
*	CC135R	TB1-K30	J16-D2	IG CDU ERROR SIG RET
*	A 18R	TB1-K31	J01-104	IG CDU 16X ERROR SIG
*	CC135W	TB1-K31	J16-C1	IG CDU 16X ERROR SIG
	A 12B	TB1-K32	SHLD A 12	IG CDU ERROR SIG RET
	A 135B	TB1-K32	SHLD A 135	IG CDU ERROR SIG RET
	A 354B	TB1-K32	SHLD A 354	IG CDU ERROR SIG RET
*	AA101	TB1-K32	TB1-K30	IG CDU ERROR SIG RET
*	A 12R	TB1-K33	J01- 35	IG CDU 1X ERROR SIG S2
*	A 135R	TB1-K33	P01- 70	IG CDU 1X ERROR SIG
*	A 354R	TB1-K33	P09- 59	IG CDU 1X ERROR SIG
*	CC 60W	TB1-K33	J11-A1	IG CDU 1X ERROR SIG
*	CC134W	TB1-K33	J16-C2	IG CDU 1X ERROR SIG
*	A 12Y	TB1-K34	J01- 45	IG CDU ERROR SIG RET
*	A 135Y	TB1-K34	P01- 71	IG CDU ERROR SIG RET
*	A 354Y	TB1-K34	P09- 41	IG CDU ERROR SIG RET
*	CC 60R	TB1-K34	J11-B1	IG CDU ERROR SIG RET
*	CC134R	TB1-K34	J16-D2	IG CDU ERROR SIG RET
*	A 11	TB1-K35	J01- 34	IG CDU 1X RSVR LOAD S1
*	CC155	TB1-K35	J16-F2	IG CDU 1X RSVR LOAD
	A 278B	TB1-K36	SHLD A 278	0 VDC OPTICS
	CC237B	TB1-K36	SHLD CC237	0 VDC OPTICS
*	AA 31	TB1-K36	TB1-H36	0 VDC OPTICS
*	AA104	TB1-K36	TB1-H39	0 VDC OPTICS
*	A 278R	TB1-K37	P08- 38	SCT SHAFT TACH HI
*	CC237R	TB1-K37	J18-A5	SCT SHAFT TACH HI
*	A 278Y	TB1-K38	P08- 39	SCT SHAFT TACH LO
*	CC237W	TB1-K38	J18-B5	SCT SHAFT TACH LO
	A 281B	TB1-K39	SHLD A 281	0 VDC OPTICS
	CC235B	TB1-K39	SHLD CC235	0 VDC OPTICS
*	AA 38	TB1-K39	TB1-H39	0 VDC OPTICS
*	AA106	TB1-K39	TB1-H42	0 VDC OPTICS

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	A 281Y	TB1-K40	P08- 51	SCT SHAFT 1X RSVR S4
*	CC235W	TB1-K40	J18-D5	SCT SHAFT 1X RSVR S4
*	A 281R	TB1-K41	P08- 50	SCT SHAFT 1X RSVR S2
*	CC235R	TB1-K41	J18-C5	SCT SHAFT 1X RSVR S2
	A 90B	TB1-K42	SHLD A 90	0 VDC OPTICS
	CC253B	TB1-K42	SHLD CC253	0 VDC OPTICS
*	AA 45	TB1-K42	TB1-H42	0 VDC OPTICS
*	AA108	TB1-K42	TB1-H47	0 VDC OPTICS
*	A 90Y	TB1-K43	J05- 67	TRUNNION CDU 1/2X RSVR S3
*	CC253W	TB1-K43	J19-H1	TRUNNION CDU 1/2X RSVR S3
*	A 90R	TB1-K44	J05- 57	TRUNNION CDU 1/2X RSVR S1
*	CC253R	TB1-K44	J19-G1	TRUNNION CDU 1/2X RSVR S1
*	A 65Y	TB1-K45	J04- 21	SHAFT CDU 1X RSVR P4
*	CC266W	TB1-K45	J19-G3	SHAFT CDU 1X RSVR P4
*	A 65R	TB1-K46	J04- 7	SHAFT CDU 1X RSVR P2
*	CC266R	TB1-K46	J19-G4	SHAFT CDU 1X RSVR P2
	A 65B	TB1-K47	SHLD A 65	0 VDC OPTICS
	CC266B	TB1-K47	SHLD CC266	0 VDC OPTICS
*	AA 52	TB1-K47	TB1-H47	0 VDC OPTICS
*	AA116	TB1-K47	TB1-H67	0 VDC OPTICS
*	A 86Y	TB1-K48	J05- 31	TRUNNION CDU MOTOR PHASE 1
*	CC257W	TB1-K48	J19-S1	TRUNNION CDU MOTOR PHASE 1
*	A 86R	TB1-K49	J05- 32	TRUNNION CDU MOTOR PHASE 2
*	CC257R	TB1-K49	J19-T1	TRUNNION CDU MOTOR PHASE 2
*	A 86G	TB1-K50	J05- 43	0 VDC OPTICS
*	A 267G	TB1-K50	P08- 1	0 VDC OPTICS
*	A 519	TB1-K50	P11-G	0 VDC OPTICS
*	AA 55	TB1-K50	TB1-H50	0 VDC OPTICS
*	A 267R	TB1-K51	P08- 2	SCT TRUNNION MOTOR PHASE 2
*	CC260R	TB1-K51	J19-T3	SCT TRUNNION MOTOR PHASE 2
*	A 267Y	TB1-K52	P08- 3	SCT TRUNNION MOTOR PHASE 1
*	CC260W	TB1-K52	J19-S3	SCT TRUNNION MOTOR PHASE 1
*	A 518	TB1-K53	P11-G	0 VDC OPTICS
*	AA 57	TB1-K53	TB1-H53	0 VDC OPTICS
*	CC178	TB1-K53	J16-R5	0 VDC OPTICS
*	A 364	TB1-K54	P09- 58	SCT SHAFT TACH FEEDBACK BUFFERED
*	CC216	TB1-K54	J18-M6	SCT SHAFT TACH FEEDBACK BUFFERED
*	A 363	TB1-K55	P09- 57	SXT SHAFT TACH FEEDBACK BUFFERED

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INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC182W	TB1-K13	J17-D3	YAW ERROR BODY OFFSET AXIS LO
*	A 190R	TB1-K14	P02-Y	SIN AIG 16X S2
*	CC126W	TB1-K14	J15-D8	SIN AIG 16X S2
*	A 17R	TB1-K15	J01-101	SIN AIG 16X S4
*	A 190Y	TB1-K15	P02-Z	SIN AIG 16X S4
*	CC126R	TB1-K15	J15-D7	SIN AIG 16X S4
*	A 17Y	TB1-K16	J01- 87	SIN AIG 16X TO CDU
*	CC126L	TB1-K16	J15-F7	SIN AIG 16X TO CDU
	A 17B	TB1-K17	SHLD A 17	0 VDC IMU
	A 190B	TB1-K17	SHLD A 190	0 VDC IMU
	CC126B	TB1-K17	SHLD CC126	0 VDC IMU
*	AA 16	TB1-K17	TB1-H17	0 VDC IMU
*	AA 94	TB1-K17	TB1-H12	0 VDC IMU
*	A 10G	TB1-K18	J01- 31	IG CDU MDA OUTPUT
*	CC137W	TB1-K18	J16-R1	IG CDU MDA OUTPUT
*	A 10Y	TB1-K19	J01- 32	IG CDU MDA OUTPUT
*	CC137R	TB1-K19	J16-P1	IG CDU MDA OUTPUT
*	A 10R	TB1-K20	J01- 43	0 VDC IMU
*	AA 18	TB1-K20	TB1-H20	0 VDC IMU
*	AA118	TB1-K20	TB1-B70	0 VDC IMU
*	A 265R	TB1-K21	P07-W	X PIP TORQUE -
*	CC 96R	TB1-K21	J13-L1	X PIP TORQUE -
*	A 265W	TB1-K22	P07-V	X PIP TORQUE RET
*	CC 96W	TB1-K22	J13-K1	X PIP TORQUE RET
*	A 265L	TB1-K23	P07-U	X PIP TORQUE +
*	CC 96L	TB1-K23	J13-H1	X PIP TORQUE +
	A 265B	TB1-K24	SHLD A 265	0 VDC IMU
	CC 96B	TB1-K24	SHLD CC 96	0 VDC IMU
*	AA 23	TB1-K24	TB1-H24	0 VDC IMU
*	AA 96	TB1-K24	TB1-H17	0 VDC IMU
	A 568	TB1-K25	TB1-K26	0 VDC IMU
*	AA127	TB1-K25	TB1-D75	0 VDC IMU
*	CC 93	TB1-K25	J12-R5	0 VDC IMU
*	A 568	TB1-K26	TB1-K25	0 VDC IMU
*	A 570	TB1-K26	TB1-H26	0 VDC IMU
*	CC 77	TB1-K26	J11-S6	0 VDC IMU
*	CC131	TB1-K26	J15-R2	0 VDC IMU
	A 200B	TB1-K28	SHLD A 200	IG CDU ERROR SIG RET

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REV LTR
SHEET 129

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION
*	CC215	TB1-K55	J18-M4	SXT SHAFT TACH FEEDBACK BUFFERED
*	A 378	TB1-K56	P09- 74	SXT SHAFT MDA INPUT BUFFERED
*	CC214	TB1-K56	J18-M3	SXT SHAFT MDA INPUT BUFFERED
*	A 350	TB1-K57	P09- 37	SCT TRUNNION 1X ERROR SIG BUFFERED
*	CC245	TB1-K57	J19-M5	SCT TRUNNION 1X ERROR SIG BUFFERED
*	A 376	TB1-K58	P09- 72	PHOTOMETER PREAMP OUTPUT BUFFERED HI
*	CC282	TB1-K58	J20-B7	PHOTOMETER PREAMP OUTPUT BUFFERED HI
*	A 324Y	TB1-K59	J09-102	IMU TEMP CONT -5 DEG GAIN CHECK
*	CC184W	TB1-K59	J17-B7	IMU TEMP CONT -5 DEG GAIN CHECK
*	A 324R	TB1-K60	J09- 86	IRIG TEMP GAIN SWITCH NC
*	CC184R	TB1-K60	J17-C8	IRIG TEMP GAIN SWITCH NC
*	A 324N	TB1-K61	J09- 89	IRIG ZERO DEVIATION CHECK
*	CC184L	TB1-K61	J17-B8	IRIG ZERO DEVIATION CHECK
*	A 324G	TB1-K62	J09- 85	IRIG TEMP BRIDGE AMP PIN 6
*	CC184K	TB1-K62	J17-C7	IRIG TEMP BRIDGE AMP PIN 6
*	A 242R	TB1-K63	P06-Z	IRIG TEMP IND SENSOR HI
*	CC198R	TB1-K63	J17-C6	IRIG TEMP IND SENSOR HI
*	A 242Y	TB1-K64	P06-A*	IRIG TEMP IND SENSOR RET
*	CC198W	TB1-K64	J17-C5	IRIG TEMP IND SENSOR RET
*	A 235Y	TB1-K65	P05- 81	PHOTOMETER SIGNAL LO
*	CC278W	TB1-K65	J20-B9	PHOTOMETER SIGNAL LO
*	A 235R	TB1-K66	P05- 80	PHOTOMETER SIGNAL HI
*	CC278R	TB1-K66	J20-A9	PHOTOMETER SIGNAL HI
	A 235B	TB1-K67	SHLD A 235	0 VDC OPTICS
	A 290B	TB1-K67	SHLD A 290	0 VDC OPTICS
	CC278B	TB1-K67	SHLD CC278	0 VDC OPTICS
*	A 586	TB1-K67	TB1-D76	0 VDC OPTICS
*	AA 67	TB1-K67	TB1-H67	0 VDC OPTICS
*	A 290R	TB1-K68	J09- 8	TRUNNION HAND CONTROLLER OUTPUT HI
*	CC249R	TB1-K68	J19-F9	TRUNNION HAND CONTROLLER OUTPUT HI
*	A 290Y	TB1-K69	J09- 22	TRUNNION HAND CONTROLLER OUTPUT LO
*	CC249W	TB1-K69	J19-F8	TRUNNION HAND CONTROLLER OUTPUT LO
	CC343	TB1-K70	E 3	STRUCTURE GROUND
*	A 500	TB1-K70	P13- 37	STRUCTURE GROUND
*	A 553	TB1-K70	P12-L	STRUCTURE GROUND
*	AA 69	TB1-K70	TB1-H70	STRUCTURE GROUND
	AA120	TB1-K71	TB1-K72	+28 VDC MDV
*	A 421	TB1-K71	P10-104	+28 VDC MDV

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015087
SCALE - NONE
REV LTR
SHEET 132

MIL 2084-4-64

INTERCONNECT LIST

	CONDUCTOR	FROM	TO	SIGNAL DESCRIPTION	
*	A 483	TB1-K71	J10- 8	+28 VDC MDV	306
*	A 489	TB1-K71	J10- 10	+28 VDC MDV	327
*	CC283	TB1-K71	J20-N5	+28 VDC MDV	
*	A 142	TB1-K72	P01- 89	+28 VDC MDV	
*	A 310	TB1-K72	J09- 51	+28 VDC MDV	
*	AA120	TB1-K72	TB1-K71	+28 VDC MDV	
*	CC284	TB1-K72	J20-M5	+28 VDC MDV	
*	A 243Y	TB1-K73	P06-C*	PRESSURE SENSOR +28 VDC LO	
*	CC310W	TB1-K73	J20-B6	PRESSURE SENSOR +28 VDC LO	
*	A 243R	TB1-K74	P06-B*	PRESSURE SENSOR +28 VDC HI	
*	CC310R	TB1-K74	J20-A6	PRESSURE SENSOR +28 VDC HI	
*	A 533	TB1-K75	P12-B	+28 VDC IMU BUSS B	
*	A 534	TB1-K75	P12-B	+28 VDC IMU BUSS B	
*	A 535	TB1-K75	P12-B	+28 VDC IMU BUSS B	
*	CC297	TB1-K75	J20-T2	+28 VDC IMU BUSS B	
*	CC314	TB1-K75	J20-R2	+28 VDC IMU BUSS B	
*	A 505	TB1-K76	P11-B	+28 VDC IMU BUSS A	
*	A 506	TB1-K76	P11-B	+28 VDC IMU BUSS A	
*	A 507	TB1-K76	P11-B	+28 VDC IMU BUSS A	
*	CC295	TB1-K76	J20-T1	+28 VDC IMU BUSS A	
*	CC312	TB1-K76	J20-R1	+28 VDC IMU BUSS A	
*	A 530	TB1-K77	P12-A	+28 VDC AGC BUSS B	
*	A 560	TB1-K77	J23- 64	+28 VDC AGC BUSS B	168
*	A 561	TB1-K77	J23- 65	+28 VDC AGC BUSS B	168
*	CC288	TB1-K77	J20-H3	+28 VDC AGC BUSS B	
*	A 502	TB1-K78	P11-A	+28 VDC AGC BUSS A	
*	A 558	TB1-K78	J23- 62	+28 VDC AGC BUSS A	167
*	A 559	TB1-K78	J23- 63	+28 VDC AGC BUSS A	167
*	CC287	TB1-K78	J20-H2	+28 VDC AGC BUSS A	

MANNED
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HOUSTON, TEXAS

SIZE A	1015087	
SCALE - NONE	REV LTR	SHEET 133

MIL 2084-4-64

D.O.
58761

APPLICATION		REVISIONS 15658			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		A	REVISED & UPGRADED TO CLASS A PER TDRR 16220		CW W.D.

Ⓐ **REPLACED WITH CHANGE BY REV** Ⓑ

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. THIS IS AN INCOMPLETE DRAWING.
3. VENDOR ITEM-SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

REV STATUS OF SHEETS	REV	A	A
	SHEET	1	2

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN
DRAWN DATE 18 DEC 64
CHECKED 19 DEC 64
APPROVAL 22 DEC 64
APPROVAL 21 DEC 64
NASA APPROVAL 1-19-65
MIT APPROVAL

WIRE LIST CC
AGE HARNESS AND PSA END
CONNECTOR ASSEMBLY

CODE IDENT NO.
SIZE
1015088
REV A

CONTRACT NAS 9-497
SCALE NONE
SHEET 1 OF 2

NOTE	QTY	PART NUMBER	NOMENCLATURE
	1	1015088-1	WIRE PER 1010707-2 RED JKT 29 AWG WHT, RED, BLU 13 FT 1.0 IN. TOTAL LG
	1	1015088-2	WIRE PER 1010807-4 28 AWG WHT 180 FT 6.0 IN. TOTAL LG
	1	1015088-3	WIRE PER 1010807-5 24 AWG WHITE 615 FT 6.0 IN. TOTAL LG
	1	1015088-4	WIRE PER 1010807-3 WHT JKT 24 AWG WHT, RED 130 FT 8.0 IN. TOTAL LG
3	364	1010770-2	CONTACT, SOCKET
3	27	1010763-1	SLEEVE, SOLDER
3	78	1010763-2	SLEEVE, SOLDER
3	64	1010490-110	INSULATION-SLEEVING, ELEC
3	9	1010490-112	INSULATION-SLEEVING, ELEC
	4	MS-25036-44	TERMINAL LUG
3	66	1010490-142	INSULATION-SLEEVING, ELEC

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088
SCALE - NONE	REV LTR A	SHEET 2 of 2

APPLICATION	
NEXT ASSY	USED ON
1007599-011	1015086

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES WORD DWG REV A PER TDRR C220	2/3/65	WK.

Ⓑ REPLACES WORD DWG REV A

REV	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
SHEET	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
REV STATUS REV								B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
OF SHEETS SHEET								1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN R. LaDue 13 JAN 65 DATE
CHECKED C. Pizyda 19 JAN 65
APPROVAL D. Barta 19 JAN 65
APPROVAL 19 JAN 65
NASA APPROVAL 2/3
MIT APPROVAL W 3 Feb 65
CONTRACT NAS 9-497

WIRE LIST "CC"
AGE : INTERCONNECT

CODE IDENT NO. | SIZE | 1015088 | REV B

SCALE — | SHEET 1 OF 50

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
46	B																
47	B																
48	B																
49	B																
50	B																

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION B

NASA DRAWING NO.
1015088
SHEET 1A OF 50

WIRE LIST CC

GENERAL NOTES

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

5 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

6 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, OR TWISTING
A - FROM END SHIELD
B - TO END SHIELD
K - TWISTED
L - BLUE
R - RED
W - WHITE

7 CONDUCTORS WITH THE SAME NUMBER ARE TWISTED TOGETHER

8 TWIST CONDUCTORS PER ND1002032

9 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT

10 MARK SLEEVING ON MULTI-SHIELDED CONDUCTORS .12 INCH HIGH AND SLEEVING OF SINGLE SHIELDED CONDUCTORS .08 INCH HIGH WITH CONDUCTOR NUMBER, COLOR BLACK PER ND1002019.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015088
SCALE-NONE | REV LTR B | SHEET 3

MIL 2084-4-64

WIRE LIST CC

GENERAL NOTES

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE				
	WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015088
SCALE-NONE | REV LTR B | SHEET 4

MIL 2084-4-64

WIRE LIST CC

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
5	1	1	1015088-001	WIRE PER 1010807- 5 24AWG COLOR WHITE 442 FT 8 INCHES TOTAL LENGTH
5	2	1	1015088-002	WIRE PER 1010807- 4 28AWG COLOR WHITE 170 FT 11 INCHES TOTAL LENGTH
5	3	1	1015088-003	WIRE PER 1010807- 3 WHT JKT 24AWG COLOR WHT,RD 100 FT 0 IN TOTAL LGTH
5	4	1	1015088-004	WIRE PER 1010707- 2 RED JKT 29AWG COLOR WHT,RD,BL 13 FT 1 IN TOTAL LGTH
5	5	95	1010763- 1	SLEEVE, SOLDER
5	6	31	1010763- 2	SLEEVE, SOLDER
5	7	216	1010490-142	INSULATION, SLEEVING, ELEC HEAT SHRINK
5	8	273	1010770- 2	CONTACT, SOCKET
	9	2	MS25036- 44	TERMINAL LUG
5	10	1	1015088-005	WIRE PER 1010807- 1 WHT JKT 28AWG COLOR WHT,RD,BL 19 FT 0 IN TOTAL LGTH
	11	1	MS25036- 45	TERMINAL LUG
5	12	1	1015088-006	WIRE PER 1010807- 2 WHT JKT 28AWG WHT,RD 100 FT TOTAL LENGTH
5	13	1	1015088-007	WIRE PER 1010807- 12 WHT JKT 24AWG WHT 100 FT TOTAL LENGTH

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088
SCALE - NONE	REV LTR B	SHEET 5

MIL 2084-4-64

WIRE LIST CC

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
5	14	1	1015088-008	WIRE PER 1010807- 13 WHT JKT 24AWG WHT RED BLUE 25 FT TOTAL LENGTH

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088
SCALE - NONE	REV LTR B	SHEET 6

MIL 2084-4-64

WIRE LIST CC

CONDUCTOR INDIVIDUAL LENGTH		FROM							TO							
NUMBER	ITEM NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.		NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.		NO.	ROUTING
CC 1	3		300		275	5	7			200		175	7			
CC 1A	1	SHLD CC 1	20	N					E4	20	N		6			
CC 1R		J11-L6	138	N					J23- 31	13	N		8			
CC 1W		J11-M5	138	N					J23- 52	13	N		8			
CC 2	3		300		275	5	7			200		175	7			
CC 2A	1	SHLD CC 2	20	N					E4	20	N					
CC 2R		J11-M6	138	N					J23- 54	13	N		8			
CC 2W		J11-M5	138	N					J23- 53	13	N		8			
CC 3	3		300		275	5	7			200		175	7			
CC 3A	1	SHLD CC 3	20	N					J12-K3	138	N					
CC 3R		J12-K1	138	N					J23- 46	13	N		8			
CC 3W		J12-H1	138	N					J23- 73	13	N		8			
CC 4	1	J12-G3	138	N					J22- 63	13	N		8			
CC 5	1	J12-M1	138	N					J23- 26	13	N		8			
CC 6	3		300		275	5	7			200		175	7			
CC 6A	1	SHLD CC 6	20	N					E4	20	N					
CC 6R		J12-G1	138	N					J23- 30	13	N		8			
CC 6W		J12-F2	138	N					J23- 51	13	N		8			

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088
SCALE - NONE	REV LTR B	SHEET 7

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR INDIVIDUAL LENGTH		FROM							TO							
NUMBER	ITEM NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET	TERMINATION SPEC. ITEM NO.		NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	T I N	STRIP WIRE OR JACKET	TERMINATION SPEC ITEM NO.		NO.	ROUTING
CC 7	3		300		275	5	7			200		175	7			
CC 7A	1	SHLD CC 7	20	N					E4	20	N					
CC 7R		J12-G2	138	N					J23- 29	13	N		8			
CC 7W		J12-F2	138	N					J23- 50	13	N		8			
CC 8	3		300		275	7				200		175	5	7		
CC 8B	1	E18	20	N		6			SHLD CC 8	20	N					
CC 8R		J12-D6	138	N					J24- 25	13	N		8			
CC 8W		J12-F6	138	N					J24- 46	13	N		8			
CC 9	3		300		275	7				200		175	5	7		
CC 9B	1	E18	20	N					SHLD CC 9	20	N					
CC 9R		J12-D5	138	N					J24- 70	13	N		8			
CC 9W		J12-F5	138	N					J24- 71	13	N		8			
CC 10	3		300		275	7				200		175	5	7		
CC 10B	1	E18	20	N					SHLD CC 10	20	N					
CC 10R		J12-D4	138	N					J24- 45	13	N		8			
CC 10W		J12-F4	138	N					J24- 72	13	N		8			
CC 11R	1	J13-N5	138	N					J23- 7	13	N		8			
CC 11W	1	E5	20	N		5			J23- 6	13	N		8			

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088
SCALE - NONE	REV LTR B	SHEET 8

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR		FROM						TO						ROUTING
NUMBER	ITEM NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC ITEM NO.	NO.	
CC 12R	1	J13-N6	138		N			J23- 2	13		N	8		
CC 12W	1	E5	20		N			J23- 1	13		N	8		
CC 13	3		300	275		5	7		200	175		7		
CC 13A	1	SHLD CC 13	20		N			E7	20		N	6		
CC 13R		J14-D1	138		N			J23- 3	13		N	8		
CC 13W		E6	20		N	6		J23- 10	13		N	8		
CC 14	3		300	275		5	7		200	175		7		
CC 14A	1	SHLD CC 14	20		N			E7	20		N			
CC 14R		J14-D2	138		N			J23- 11	13		N	8		
CC 14W		E6	20		N			J23- 24	13		N	8		
CC 15	3		300	275		5	7		200	175		7		
CC 15A	1	SHLD CC 15	20		N			E7	20		N			
CC 15R		J14-D3	138		N			J23- 55	13		N	8		
CC 15W		E6	20		N			J23- 56	13		N	8		
CC 16	3		300	275		5	7		200	175		7		
CC 16A	1	SHLD CC 16	20		N			E7	20		N			
CC 16R		J14-D4	138		N			J23- 32	13		N	8		
CC 16W		E6	20		N			J23- 33	13		N	8		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 9

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR		FROM						TO						ROUTING
NUMBER	ITEM NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC ITEM NO.	NO.	
CC 17	3		300	275		5	7		200	175		7		
CC 17A	1	SHLD CC 17	20		N			E7	20		N			
CC 17R		J14-D5	138		N			J23- 15	13		N	8		
CC 17W		E6	20		N			J23- 16	13		N	8		
CC 18	3		300	275		5	7		200	175		7		
CC 18A	1	SHLD CC 18	20		N			E7	20		N			
CC 18R		J14-D6	138		N			J23- 14	13		N	8		
CC 18W		E6	20		N			J23- 5	13		N	8		
CC 19	3		300	275		5	7		200	175		7		
CC 19A	1	SHLD CC 19	20		N			E7	20		N			
CC 19R		J14-K4	138		N			J23- 25	13		N	8		
CC 19W		E6	20		N			J23- 44	13		N	8		
CC 20	3		300	275		7			200	175		5	7	
CC 20B	1	E17	20		N	6		SHLD CC 20	20		N			
CC 20R		J15-M5	138		N			J24- 2	13		N	8		
CC 20W		E14	20		N	5		J24- 9	13		N	8		
CC 21	3		300	275		7			200	175		5	7	
CC 21B	1	E17	20		N			SHLD CC 21	20		N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 10

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR		FROM						TO						ROUTING
NUMBER	ITEM NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC ITEM NO.	NO.	
CC 21R		J15-M6	138		N			J24- 10	13		N	8		
CC 21W		E14	20		N			J24- 23	13		N	8		
CC 22	3		300	275		7			200	175		5	7	
CC 22B	1	E17	20		N			SHLD CC 22	20		N			
CC 22R		J15-L6	138		N			J24- 24	13		N	8		
CC 22W		E15	20		N	5		J24- 43	13		N	8		
CC 23	3		300	275		7			200	175		5	7	
CC 23B	1	E17	20		N			SHLD CC 23	20		N			
CC 23R		J15-K6	138		N			J24- 44	13		N	8		
CC 23W		E15	20		N			J24- 69	13		N	8		
CC 24	3		300	275		7			200	175		5	7	
CC 24B	1	E17	20		N			SHLD CC 24	20		N			
CC 24R		J15-K4	138		N			J24- 33	13		N	8		
CC 24W		E16	20		N	5		J24- 34	13		N	8		
CC 25	3		300	275		7			200	175		5	7	
CC 25B	1	E17	20		N			SHLD CC 25	20		N			
CC 25R		J15-K5	138		N			J24- 56	13		N	8		
CC 25W		E16	20		N			J24- 57	13		N	8		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 11

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR		FROM						TO						ROUTING
NUMBER	ITEM NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	CUT WIRE OR SHIELD	STRIP WIRE OR JACKET	T I N	TERMINATION SPEC ITEM NO.	NO.	
CC 26	3		225	200		7			200	175		5	7	
CC 26B	1	E19	20		N	6		SHLD CC 26	20		N			
CC 26R		E8	20		N	5		J24- 22	13		N	8		
CC 26W		J15-B4	88		N			J24- 41	13		N	8		
CC 27	3		225	200		7			200	175		5	7	
CC 27B	1	E19	20		N			SHLD CC 27	20		N			
CC 27R		J15-C4	88		N			J24- 67	13		N	8		
CC 27W		E8	20		N			J24- 42	13		N	8		
CC 28	3		225	200		7			200	175		5	7	
CC 28B	1	E19	20		N			SHLD CC 28	20		N			
CC 28R		E10	20		N	5		J24- 18	13		N	8		
CC 28W		J15-B6	88		N			J24- 19	13		N	8		
CC 29	3		225	200		7			200	175		5	7	
CC 29B	1	E19	20		N			SHLD CC 29	20		N			
CC 29R		J15-C6	88		N			J24- 8	13		N	8		
CC 29W		E10	20		N			J24- 7	13		N	8		
CC 30	3		225	200		7			200	175		5	7	
CC 30B	1	E19	20		N			SHLD CC 30	20		N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 12

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
CC 30R			E12	20	N		5			J24- 20	13	N		8			
CC 30W			J15-B8	88	N					J24- 39	13	N		8			
CC 31	3			225		200	7				200		175	5	7		
CC 31B	1		E19	20	N					SHLD CC 31	20	N					
CC 31R			J15-C8	88	N					J24- 40	13	N		8			
CC 31W			E12	20	N					J24- 21	13	N		8			
CC 32	3			225		200	5	7			200		175	7			
CC 32A	1		SHLD CC 32	20	N					E9	20	N					
CC 32R			E9	20	N		6			J23- 23	13	N		8			
CC 32W			J15-B5	88	N					J23- 42	13	N		8			
CC 33	3			225		200	5	7			200		175	7			
CC 33A	1		SHLD CC 33	20	N					E9	20	N					
CC 33R			J15-C5	88	N					J23- 43	13	N		8			
CC 33W			E9	20	N					J23- 69	13	N		8			
CC 34	3			225		200	5	7			200		175	7			
CC 34A	1		SHLD CC 34	20	N					E11	20	N					
CC 34R			E11	20	N		6			J23- 34	13	N		8			
CC 34W			J15-B7	88	N					J23- 35	13	N		8			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088
SCALE - NONE	REV LTR B	SHEET 13

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
CC 35	3			225		200	5	7			200		175	7			
CC 35A	1		SHLD CC 35	20	N					E11	20	N					
CC 35R			J15-C7	88	N					J23- 18	13	N		8			
CC 35W			E11	20	N					J23- 17	13	N		8			
CC 36	3			225		200	5	7			200		175	7			
CC 36A	1		SHLD CC 36	20	N					E13	20	N					
CC 36R			E13	20	N		6			J23- 8	13	N		8			
CC 36W			J15-B9	88	N					J23- 21	13	N		8			
CC 37	3			225		200	5	7			200		175	7			
CC 37A	1		SHLD CC 37	20	N					E13	20	N					
CC 37R			J15-C9	88	N					J23- 22	13	N		8			
CC 37W			E13	20	N					J23- 9	13	N		8			
CC 38	13			225		200	7				200		175	5	7		
CC 38B	1		E21	20	N		6			SHLD CC 38	20	N					
CC 38W			J15-A3	88	N					J24- 30	13	N		8			
CC 39	3			300		275	5	7			200		175	7			
CC 39A	1		SHLD CC 39	20	N					J16-P2	138	N					
CC 39R			J16-L4	138	N					J23- 12	13	N		8			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088
SCALE - NONE	REV LTR B	SHEET 14

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
CC 39W			J16-L3	138	N					J23- 27	13	N		8			
CC 40	3			300		275	5	7			200		175	7			
CC 40A	1		SHLD CC 40	20	N					J16-P2	138	N					
CC 40R			J16-M4	138	N					J23- 4	13	N		8			
CC 40W			J16-L3	138	N					J23- 13	13	N		8			
CC 41	13			225		200	7				200		175	5	7		
CC 41B	1		E21	20	N					SHLD CC 41	20	N					
CC 41W			J16-A7	88	N					J24- 5	13	N		8			
CC 42	3			300		275	7				200		175	5	7		
CC 42B	1		E20	20	N		6			SHLD CC 42	20	N					
CC 42R			J17-G6	138	N					J24- 61	13	N		8			
CC 42W			J17-H6	138	N					J24- 60	13	N		8			
CC 43	3			225		200	7				200		175	5	7		
CC 43B	1		J22- 48	13	N					SHLD CC 43	20	N					
CC 43R			J17-A4	88	N					J22- 74	13	N		8			
CC 43W			J17-B4	88	N					J22- 75	13	N		8			
CC 44	3			225		200	7				200		175	5	7		
CC 44B	1		J22- 77	13	N					SHLD CC 44	20	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088
SCALE - NONE	REV LTR B	SHEET 15

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
CC 44R			J17-C4	88	N					J22- 49	13	N		8			
CC 44W			J17-D4	88	N					J22- 76	13	N		8			
C 5	3			225		200	7				200		175	5	7		
CC 45E	1		J22- 80	13	N					SHLD CC 45	20	N					
CC 45R			J17-C3	88	N					J22- 53	13	N		8			
CC 45W			J17-D3	88	N					J22- 81	13	N		8			
CC 46	3			300		275	7				200		175	5	7		
CC 46B	1		E20	20	N					SHLD CC 46	20	N					
CC 46R			J17-K4	138	N					J24- 36	13	N		8			
CC 46W			J17-H4	138	N					J24- 35	13	N		8			
CC 47	3			225		200	7				200		175	5	7		
CC 47B	1		J22- 54	13	N					SHLD CC 47	20	N					
CC 47R			J17-A3	88	N					J22- 83	13	N		8			
CC 47W			J17-B3	88	N					J22- 82	13	N		8			
CC 48	3			225		200	7				200		175	5	7		
CC 48B	1		J22- 51	13	N					SHLD CC 48	20	N					
CC 48R			J17-D1	88	N					J22- 78	13	N		8			
CC 48W			J17-C1	88	N					J22- 79	13	N		8			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088
SCALE - NONE	REV LTR B	SHEET 16

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
CC 49	3			300		275	7				200		175	5	7		
CC 49B	1		E20	20	N					SHLD CC 49	20	N					
CC 49R			J17-K6	138	N					J24- 38	13	N		8			
CC 49W			J17-H6	138	N					J24- 37	13	N		8			
CC 50	3			300		275	7				200		175	5	7		
CC 50B	1		E20	20	N					SHLD CC 50	20	N					
CC 50R			J17-G4	138	N					J24- 59	13	N		8			
CC 50W			J17-H4	138	N					J24- 58	13	N		8			
CC 51	3			300		275	5	7			200		175	7			
CC 51A	1		SHLD CC 51	20	N					J17-S4	138	N					
CC 51R			J17-R3	138	N					J23- 28	13	N		8			
CC 51W			J17-S3	138	N					J23- 49	13	N		8			
CC 52R	1		J18-K5	138	N					J23- 89	13	N		8			
CC 52W	1		J18-H5	138	N					J23- 88	13	N		8			
CC 53R	1		J18-K3	138	N					J23- 20	13	N		8			
CC 53W	1		J18-H3	138	N					J23- 19	13	N		8			
CC 54R	1		J18-G5	138	N					J23- 60	13	N		8			
CC 54W	1		J18-H5	138	N					J23- 59	13	N		8			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088	
SCALE - NONE	REV LTR B	SHEET 17	

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
CC 55R	1		J18-G3	138	N					J23- 37	13	N		8			
CC 55W	1		J18-H3	138	N					J23- 36	13	N		8			
CC 56R	1		J20-C4	88	N					J24- 17	13	N		8			
CC 56W	1		J20-C3	88	N					J24- 16	13	N		8			
CC 57	3			300		275	5	7			200		175	7			
CC 57A	1		SHLD CC 57	20	N					J20-M4	138	N					
CC 57R			J20-F3	88	N					J23- 74	13	N		8			
CC 57W			J20-D3	88	N					J23- 75	13	N		8			
CC 58	1		J20-N5	138	N					J23- 47	13	N		8			
CC 59R	1		J20-F9	88	N					J22- 72	13	N		8			
CC 59W	1		J20-F8	88	N					J22- 73	13	N		8			
CC 60R	1		J11-B1	138	N					TB1-K34	138	N					
CC 60W	1		J11-A1	138	N					TB1-K33	138	N					
CC 61R	1		J11-C1	138	N					TB1-K29	138	N					
CC 61W	1		J11-B1	138	N					TB1-K28	138	N					
CC 62R	1		J11-B2	138	N					TB1-H34	138	N					
CC 62W	1		J11-A2	138	N					TB1-H33	138	N					
CC 63R	1		J11-C2	138	N					TB1-H29	138	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088	
SCALE - NONE	REV LTR B	SHEET 18	

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
CC 63W	1		J11-B2	138	N					TB1-H28	138	N					
CC 64R	1		J11-B3	138	N					TB1-G34	138	N					
CC 64W	1		J11-A3	138	N					TB1-G33	138	N					
CC 65K	1		J11-G1	138	N					TB1-A10	138	N					
CC 65L	1		J11-H1	138	N					TB1-A11	138	N					
CC 65R	1		J11-F1	138	N					TB1-B11	138	N					
CC 65W	1		J11-G2	138	N					TB1-B10	138	N					
CC 66	1		J11-N6	138	N					TB1-C54	138	N					
CC 67K	1		J11-M1	138	N					TB1-K7	138	N					
CC 67L	1		J11-L1	138	N					TB1-K7	138	N					
CC 67R	1		J11-M2	138	N					TB1-H7	138	N					
CC 67W	1		J11-L2	138	N					TB1-H7	138	N					
CC 68K	1		J11-B5	138	N					TB1-D28	138	N					
CC 68L	1		J11-A6	138	N					TB1-A28	138	N					
CC 68R	1		J11-A5	138	N					TB1-B28	138	N					
CC 68W	1		J11-B6	138	N					TB1-C28	138	N					
CC 69R	1		J11-D6	138	N					TB1-F18	138	N					
CC 69W	1		J11-D5	138	N					TB1-F19	138	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088	
SCALE - NONE	REV LTR B	SHEET 19	

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
CC 70R	1		J11-F6	138	N					TB1-D18	138	N					
CC 70W	1		J11-G6	138	N					TB1-D19	138	N					
CC 71R	1		J11-H6	138	N					TB1-C18	138	N					
CC 71W	1		J11-H5	138	N					TB1-C19	138	N					
CC 72	1		J11-L3	138	N					TB1-K3	138	N					
CC 73R	1		J11-F3	138	N					TB1-K8	138	N					
CC 73W	1		J11-G3	138	N					TB1-H8	138	N					
CC 74	1		J11-R2	138	N					TB1-C70	138	N					
CC 75	1		J11-R3	138	N					TB1-B68	138	N					
CC 76	1		J11-R5	138	N					TB1-H26	138	N					
CC 77	1		J11-S6	138	N					TB1-K26	138	N					
CC 78	1		J11-R1	138	N					TB1-C69	138	N					
CC 79	1		J11-P2	138	N					E4	20	N					
CC 80	1		J11-L4	138	N					TB1-H4	138	N					
CC 81L	1		J12-P1	138	N					TB1-C74	138	N					
CC 81R	1		J12-P2	138	N					TB1-C72	138	N					
CC 81W	1		J12-R1	138	N					TB1-C73	138	N					
CC 82R	1		J12-P6	138	N					TB1-K1	138	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088	
SCALE - NONE	REV LTR B	SHEET 20	

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC 82W	1		J12-N6	138	N			TB1-K2	138	N			
CC 83R	1		J12-N4	138	N			TB1-G1	138	N			
CC 83W	1		J12-P5	138	N			TB1-G2	138	N			
CC 84	1		J12-M3	138	N			TB1-B56	138	N			
CC 85	1		J12-M1	138	N			TB1-D26	138	N			
CC 86	1		J12-L2	138	N			TB1-C26	138	N			
CC 87	1		J12-C1	138	N			TB1-F51	138	N			
CC 88R	1		J12-H4	138	N			TB1-D1	138	N			
CC 88W	1		J12-K4	138	N			TB1-D2	138	N			
CC 89	1		J12-B5	138	N			TB1-B41	138	N			
CC 90	1		J12-R2	138	N			TB1-C70	138	N			
CC 91	1		J12-R3	138	N			TB1-C69	138	N			
CC 92	1		J12-R4	138	N			TB1-C68	138	N			
CC 93	1		J12-R5	138	N			TB1-K25	138	N			
CC 94	1		J12-R6	138	N			TB1-H53	138	N			
CC 95R	1		J13-A1	138	N			TB1-F11	138	N			
CC 95W	1		J13-B1	138	N			TB1-F10	138	N			
CC 96	4			300		275 7			300		275 6 7		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A | 1015088

SCALE - NONE | REV LTR B | SHEET 21

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC 96B	1		TB1-K24	138	N			SHLD CC 96	20	N			
CC 96L			J13-H1	163	N			TB1-K23	163	N			
CC 96R			J13-L1	163	N			TB1-K21	163	N			
CC 96W			J13-K1	163	N			TB1-K22	163	N			
CC 97	1		J13-D2	163	N			TB1-B40	163	N			
CC 98R	1		J13-A3	138	N			TB1-D11	138	N			
CC 98W	1		J13-B3	138	N			TB1-D10	138	N			
CC 99	4			300		275 7			300		275 6 7		
CC 99B	1		TB1-H24	138	N			SHLD CC 99	20	N			
CC 99L			J13-L3	163	N			TB1-H23	163	N			
CC 99R			J13-N3	163	N			TB1-H21	163	N			
CC 99W			J13-M3	163	N			TB1-H22	163	N			
CC100	1		J13-F2	138	N			TB1-A40	138	N			
CC101	4			300		275 7			300		275 6 7		
CC101B	1		TB1-F24	138	N			SHLD CC101	20	N			
CC101L			J13-D6	163	N			TB1-F23	163	N			
CC101R			J13-G6	163	N			TB1-F21	163	N			
CC101W			J13-F6	163	N			TB1-F22	163	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A | 1015088

SCALE - NONE | REV LTR B | SHEET 22

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC102	1		J13-R6	138	N			E5	20	N			
CC103	1		J13-S6	138	N			TB1-G6	138	N			
CC104	1		J13-C1	138	N			TB1-D51	138	N			
CC105R	1		J14-A1	138	N			TB1-C11	138	N			
CC105W	1		J14-A2	138	N			TB1-C10	138	N			
CC106	4			300		275 7			300		275 6 7		
CC106B	1		TB1-G24	138	N			SHLD CC106	20	N			
CC106L			J14-P1	163	N			TB1-G23	163	N			
CC106R			J14-P2	163	N			TB1-G21	163	N			
CC106W			14-P3	163	N			TB1-G22	163	N			
CC107	1		J14-H6	138	N			TB1-A41	138	N			
CC108	4			300		275 7			300		275 6 7		
CC108B	1		TB1-D24	138	N			SHLD CC108	20	N			
CC108L			J14-M1	163	N			TB1-D23	163	N			
CC108R			J14-M2	163	N			TB1-D21	163	N			
CC108W			J14-M3	163	N			TB1-D22	163	N			
CC109	4			300		275 7			300		275 6 7		
CC109B	1		TB1-C24	138	N			SHLD CC109	20	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A | 1015088

SCALE - NONE | REV LTR B | SHEET 23

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC109L			J14-L6	163	N			TB1-C23	163	N			
CC109R			J14-M6	163	N			TB1-C21	163	N			
CC109W			J14-N6	163	N			TB1-C22	163	N			
CC110	1		J14-R6	138	N			E6	20	N			
CC111	1		J14-B1	138	N			TB1-D52	138	N			
CC112	1		J14-B2	138	N			TB1-F52	138	N			
CC113	1		J14-R6	138	N			TB1-H25	138	N			
CC114	1		J15-L5	138	N			E14	20	N			
CC115	1		J15-L5	138	N			E15	20	N			
CC116	1		J15-L5	138	N			E16	20	N			
CC117L	2		J15-C2	88	N			TB1-F35	163	N			
CC117R	2		J15-D1	88	N			TB1-F33	163	N			
CC117W	2		J15-C1	88	N			TB1-F34	163	N			
CC118L	2		J15-F1	88	N			TB1-D35	163	N			
CC118R	2		J15-D2	88	N			TB1-D33	163	N			
CC118W	2		J15-F2	88	N			TB1-D34	163	N			
CC119L	2		J15-D4	88	N			TB1-C35	163	N			
CC119R	2		J15-C3	88	N			TB1-C33	163	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A | 1015088

SCALE - NONE | REV LTR B | SHEET 24

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC119W	2		J15-D3	88	N				TB1-C34	163	N				
CC120	2		J15-A5	88	N				E8	20	N				
CC121	2		J15-A7	88	N				E10	20	N				
CC122	2		J15-A9	88	N				E12	20	N				
CC123	2		J15-A5	88	N				E9	20	N				
CC124	2		J15-A7	88	N				E11	20	N				
CC125	2		J15-A9	88	N				E13	20	N				
CC126	10			225		200	7			300		275	6 7		
CC126B	1		TB1-K17	138	N				SHLD CC126	20	N				
CC126L			J15-F7	88	N				TB1-K16	163	N				
CC126R			J15-D7	88	N				TB1-K15	163	N				
CC126W			J15-D8	88	N				TB1-K14	163	N				
CC127	10			225		200	7			300		275	6 7		
CC127B	1		TB1-K12	138	N				SHLD CC127	20	N				
CC127L			J15-D9	88	N				TB1-K11	163	N				
CC127R			J15-F9	88	N				TB1-K10	163	N				
CC127W			J15-F8	88	N				TB1-K9	163	N				
CC128	14			300		275	7			300		275	6 7		

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088	
SCALE - NONE	REV LTR B	SHEET 25	

MIL 2089-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC128B	1		TB1-H4	138	N				SHLD CC128	20	N				
CC128L			J15-S1	138	N				TB1-K5	138	N				
CC128R			J15-H4	138	N				TB1-H5	138	N				
CC128W			J15-S3	138	N				TB1-G5	138	N				
CC129	1		J15-R6	138	N				TB1-B53	138	N				
CC130L	2		J15-B1	88	N				TB1-G28	163	N				
CC130R	2		J15-B2	88	N				TB1-D28	163	N				
CC130W	2		J15-A1	88	N				TB1-F28	163	N				
CC131	1		J15-R2	138	N				TB1-K26	138	N				
CC132	4		J15-K3	138	N				TB1-B49	138	N				
CC133R	2		J16-F1	88	N				TB1-B31	163	N				
CC133W	2		J16-D1	88	N				TB1-A31	163	N				
CC134R	2		J16-D2	88	N				TB1-K34	163	N				
CC134W	2		J16-C2	88	N				TB1-K33	163	N				
CC135R	2		J16-D2	88	N				TB1-K30	163	N				
CC135W	2		J16-C1	88	N				TB1-K31	163	N				
CC136	10			225		200	6 7			300		275	7		
CC136A	1		SHLD CC136	20	N				J16-B1	138	N				

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088	
SCALE - NONE	REV LTR B	SHEET 26	

MIL 2089-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC136L			J16-B1	88	N				TB1-F30	163	N				
CC136R			J16-A1	88	N				TB1-F29	163	N				
CC136W			J16-A2	88	N				TB1-F31	163	N				
CC137R	1		J16-P1	138	N				TB1-K19	138	N				
CC137W	1		J16-R1	138	N				TB1-K18	138	N				
CC138R	2		J16-F3	88	N				TB1-B30	163	N				
CC138W	2		J16-D3	88	N				TB1-A30	163	N				
CC139R	2		J16-D4	88	N				TB1-H34	163	N				
CC139W	2		J16-C4	88	N				TB1-H33	163	N				
CC140R	2		J16-D4	88	N				TB1-H30	163	N				
CC140W	2		J16-C3	88	N				TB1-H31	163	N				
CC141	10			225		200	6 7			300		275	7		
CC141A	1		SHLD CC141	20	N				J16-B3	88	N				
CC141L			J16-B3	88	N				TB1-D30	163	N				
CC141R			J16-A3	88	N				TB1-D29	163	N				
CC141W			J16-A4	88	N				TB1-D31	163	N				
CC142R	1		J16-P3	138	N				TB1-H18	138	N				
CC142W	1		J16-R3	138	N				TB1-H19	138	N				

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088	
SCALE - NONE	REV LTR B	SHEET 27	

MIL 2089-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC143	10			225		200	7			[illegible]		275	6 7		
CC143B	1		TB1-C17	138	N				SHLD CC143	20	N				
CC143L			J16-C9	88	N				TB1-C16	163	N				
CC143R			J16-C8	88	N				TB1-C15	163	N				
CC143W			J16-B8	88	N				TB1-C14	163	N				
CC144	10			225		200	7			300		275	6 7		
CC144B	1		TB1-D17	138	N				SHLD CC144	20	N				
CC144L			J16-B9	88	N				TB1-D16	163	N				
CC144R			J16-A9	88	N				TB1-D15	163	N				
CC144W			J16-A8	88	N				TB1-D14	163	N				
CC145R	2		J16-F5	88	N				TB1-B29	163	N				
CC145W	2		J16-D5	88	N				TB1-A29	163	N				
CC146R	2		J16-D6	88	N				TB1-G34	163	N				
CC146W	2		J16-C6	88	N				TB1-G33	163	N				
CC147R	2		J16-C5	88	N				TB1-G31	163	N				
CC147W	2		J16-D6	88	N				TB1-G30	163	N				
CC148	10			225		200	7			300		275	6 7		
CC148B	1		TB1-F17	138	N				SHLD CC148	20	N				

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088	
SCALE - NONE	REV LTR B	SHEET 28	

MIL 2089-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	FROM CIRCUIT POINT	FROM STRIP WIRE OR JACKET 2	FROM TIN	FROM CUT WIRE OR SHIELD 2	FROM TERMINATION SPEC. 1 ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO STRIP WIRE OR JACKET 2	TO TIN	TO CUT WIRE OR SHIELD 2	TO TERMINATION SPEC 1 ITEM NO.	TO NO.	ROUTING
CC148L		J16-F8	88	N				TB1-F16	163	N				
CC148R		J16-D7	88	N				TB1-F14	163	N				
CC148W		J16-F7	88	N				TB1-F15	163	N				
CC149	1	J16-S1	138	N				TB1-C53	138	N				
CC150	1	J16-T1	138	N				TB1-C52	138	N				
CC151	1	J16-T2	138	N				TB1-C51	138	N				
CC152	10		225		200	7			300		275	6 7		
CC152B	1	TB1-G17	138	N				SHLD CC152	20	N				
CC152L		J16-F9	88	N				TB1-G16	163	N				
CC152R		J16-D9	88	N				TB1-G15	163	N				
CC152W		J16-D8	88	N				TB1-G14	163	N				
CC153	10		225		200	6 7			300		275	7		
CC153A	1	SHLD CC153	20	N				J16-B5	88	N				
CC153L		J16-B5	88	N				TB1-C30	163	N				
CC153R		J16-A5	88	N				TB1-C29	163	N				
CC153W		J16-A6	88	N				TB1-C31	163	N				
CC154R	1	J16-N2	138	N				TB1-G18	138	N				
CC154W	1	J16-N1	138	N				TB1-G19	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 29

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	FROM CIRCUIT POINT	FROM STRIP WIRE OR JACKET 2	FROM TIN	FROM CUT WIRE OR SHIELD 2	FROM TERMINATION SPEC. 1 ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO STRIP WIRE OR JACKET 2	TO TIN	TO CUT WIRE OR SHIELD 2	TO TERMINATION SPEC 1 ITEM NO.	TO NO.	ROUTING
CC155	2	J16-F2	88	N				TB1-K35	163	N				
CC156	2	J16-F4	88	N				TB1-H35	163	N				
CC157	2	J16-F6	88	N				TB1-G35	163	N				
CC158	2	J16-C7	88	N				TB1-G29	163	N				
CC159	13		300		275	7			300		275	5 7		
CC159B	1	TB1-K4	138	N				SHLD CC159	20	N				
CC159W		J16-M1	138	N				TB1-H3	138	N				
CC160K	1	J16-R4	138	N				TB1-B6	138	N				
CC160L	1	J16-S4	138	N				TB1-A5	138	N				
CC160R	1	J16-S3	138	N				TB1-B7	138	N				
CC160W	1	J16-P4	138	N				TB1-B5	138	N				
CC161R	1	J16-N5	138	N				TB1-F5	138	N				
CC161W	1	J16-P5	138	N				TB1-D5	138	N				
CC162R	1	J16-P6	138	N				TB1-D8	138	N				
CC162W	1	J16-N6	138	N				TB1-F8	138	N				
CC163	14		300		275	7			300		275	6 7		
CC163B	1	TB1-H17	138	N				SHLD CC163	20	N				
CC163L		J16-G2	163	N				TB1-H16	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 30

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	FROM CIRCUIT POINT	FROM STRIP WIRE OR JACKET 2	FROM TIN	FROM CUT WIRE OR SHIELD 2	FROM TERMINATION SPEC. 1 ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO STRIP WIRE OR JACKET 2	TO TIN	TO CUT WIRE OR SHIELD 2	TO TERMINATION SPEC 1 ITEM NO.	TO NO.	ROUTING
CC163R		J16-H1	163	N				TB1-H14	138	N				
CC163W		J16-G1	163	N				TB1-H15	138	N				
CC164	14		300		275	7			300		275	6 7		
CC164B	1	TB1-H12	138	N				SHLD CC164	20	N				
CC164L		J16-G4	138	N				TB1-H11	138	N				
CC164R		J16-H3	138	N				TB1-H9	138	N				
CC164W		J16-G3	138	N				TB1-H10	138	N				
CC172R	1	J16-N5	138	N				TB1-B72	138	N				
CC172W	1	J16-P5	138	N				TB1-A72	138	N				
CC173	13		300		275	7			300		275	5 7		
CC173B	1	TB1-D56	138	N				SHLD CC173	20	N				
CC173W		J16-B7	88	N				TB1-C56	138	N				
CC174R	1	J16-P6	138	N				TB1-A74	138	N				
CC174W	1	J16-N6	138	N				TB1-B74	138	N				
CC175K	1	J16-M2	138	N				TB1-C58	138	N				
CC175L	1	J16-M3	138	N				TB1-C57	138	N				
CC175R	1	J16-N3	138	N				TB1-D57	138	N				
CC175W	1	J16-R2	138	N				TB1-D58	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 31

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	FROM CIRCUIT POINT	FROM STRIP WIRE OR JACKET 2	FROM TIN	FROM CUT WIRE OR SHIELD 2	FROM TERMINATION SPEC. 1 ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO STRIP WIRE OR JACKET 2	TO TIN	TO CUT WIRE OR SHIELD 2	TO TERMINATION SPEC 1 ITEM NO.	TO NO.	ROUTING
CC176	1	J16-P2	138	N				TB1-D59	138	N				
CC177	1	J16-R2	138	N				TB1-F75	138	N				
CC178	1	J16-R5	138	N				TB1-K53	138	N				
CC179	1	J16-R6	138	N				TB1-G53	138	N				
CC180	1	J16-N4	138	N				TB1-A60	138	N				
CC181	1	J17-P6	138	N				TB1-D71	138	N				
CC182	3		225		200	7			300		275	6 7		
CC182B	1	TB1-G12	138	N				SHLD CC182	20	N				
CC182R		J17-D2	88	N				TB1-H13	163	N				
CC182W		J17-D3	88	N				TB1-K13	163	N				
CC183R	1	J17-P4	138	N				TB1-C77	138	N				
CC183W	1	J17-R4	138	N				TB1-C75	138	N				
CC184K	2	J17-C7	88	N				TB1-K62	163	N				
CC184L	2	J17-B8	88	N				TB1-K61	163	N				
CC184R	2	J17-C8	88	N				TB1-K60	163	N				
CC184W	2	J17-B7	88	N				TB1-K59	163	N				
CC185K	2	J17-F7	88	N				TB1-G62	163	N				
CC185L	2	J17-D6	88	N				TB1-G64	163	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 32

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC185R	2	J17-D7	88	N				TB1-G63	163	N				
CC185W	2	J17-D5	88	N				TB1-G61	163	N				
CC186K	1	J17-N6	138	N				TB1-G59	138	N				
CC186L	1	J17-N5	138	N				TB1-G60	138	N				
CC186R	1	J17-M6	138	N				TB1-H60	138	N				
CC186W	1	J17-M5	138	N				TB1-H59	138	N				
CC187L	1	J17-H1	138	N				TB1-F61	138	N				
CC187R	1	J17-G2	138	N				TB1-F60	138	N				
CC187W	1	J17-H2	138	N				TB1-F62	138	N				
CC188	1	J17-G1	138	N				TB1-F59	138	N				
CC189R	1	J17-M1	138	N				TB1-F63	138	N				
CC189W	1	J17-L1	138	N				TB1-D63	138	N				
CC190	3		300		275	7			300		275	5	7	
CC190B	1	TB1-C59	138	N				SHLD CC190	20	N				
CC190R		J17-N4	138	N				TB1-C61	138	N				
CC190W		J17-M4	138	N				TB1-C60	138	N				
CC191R	2	J17-B6	88	N				TB1-H63	138	N				
CC191W	2	J17-B5	88	N				TB1-H64	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088
SCALE - NONE	REV LTR B	SHEET 33

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC192	3		300		275	7			300		275	5	7	
CC192B	1	TB1-C59	138	N				SHLD CC192	20	N				
CC192R		J17-P1	138	N				TB1-D60	138	N				
CC192W		J17-N1	138	N				TB1-D61	138	N				
CC193	2	J17-F6	88	N				TB1-A64	163	N				
CC194	2	J17-F5	88	N				TB1-F64	163	N				
CC195	2	J17-F4	88	N				TB1-D64	163	N				
CC196	2	J17-F3	88	N				TB1-B64	163	N				
CC197	1	J17-P5	138	N				TB1-B26	138	N				
CC198R	2	J17-C6	88	N				TB1-K63	163	N				
CC198W	2	J17-C5	88	N				TB1-K64	163	N				
CC199	1	J17-M2	138	N				TB1-H61	138	N				
CC200	1	J17-M3	138	N				TB1-D70	138	N				
CC201	12		225		200	7			300		275	5	7	
CC201B	1	TB1-F12	138	N				SHLD CC201	20	N				
CC201R		J17-C2	88	N				TB1-F13	138	N				
CC201W		J17-C1	88	N				TB1-G13	138	N				
CC202L	2	J17-A6	88	N				TB1-B35	163	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088
SCALE - NONE	REV LTR B	SHEET 34

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC202R	2	J17-A8	88	N				TB1-B33	163	N				
CC202W	2	J17-A7	88	N				TB1-B34	163	N				
CC203L	2	J17-C9	88	N				TB1-A35	163	N				
CC203R	2	J17-F9	88	N				TB1-A33	163	N				
CC203W	2	J17-D9	88	N				TB1-A34	163	N				
CC204	3		225		200	7			300		275	5	7	
CC204B	1	TB1-G32	138	N				SHLD CC204	20	N				
CC204R		J17-B2	88	N				TB1-G30	138	N				
CC204W		J17-A2	88	N				TB1-G31	138	N				
CC205	1	J17-F2	88	N				TB1-C64	138	N				
CC206L	1	J17-T5	138	N				TB1-C63	138	N				
CC206R	1	J17-L5	138	N				TB1-A63	138	N				
CC206W	1	J17-L4	138	N				TB1-B63	138	N				
CC207	1	J17-L6	138	N				TB1-G70	138	N				
CC208	1	J17-R6	138	N				TB1-F76	138	N				
CC209	1	J17-S1	138	N				TB1-D75	138	N				
CC210	1	J17-S2	138	N				TB1-D74	138	N				
CC211	1	J17-S3	138	N				TB1-B69	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088
SCALE - NONE	REV LTR B	SHEET 35

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC212	1	J17-S4	138	N				TB1-B70	138	N				
CC213	1	J17-S6	138	N				TB1-D76	138	N				
CC214	1	J18-M3	138	N				TB1-K56	138	N				
CC215	1	J18-M4	138	N				TB1-K55	138	N				
CC216	1	J18-M6	138	N				TB1-K54	138	N				
CC217	1	J18-M5	138	N				TB1-H54	138	N				
CC218	12		225		200	7			300		275	5	7	
CC218B	1	TB1-D47	138	N				SHLD CC218	20	N				
CC218R		J18-B1	88	N				TB1-D45	138	N				
CC218W		J18-A1	88	N				TB1-D46	138	N				
CC219	12		225		200	7			300		275	5	7	
CC219B	1	TB1-B47	138	N				SHLD CC219	20	N				
CC219R		J18-A3	88	N				TB1-B45	138	N				
CC219W		J18-A2	88	N				TB1-B46	138	N				
CC220	1	J18-M2	138	N				TB1-H55	138	N				
CC221	12		225		200	7			300		275	5	7	
CC221B	1	TB1-G42	138	N				SHLD CC221	20	N				
CC221R		J18-D4	88	N				TB1-G43	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015088
SCALE - NONE	REV LTR B	SHEET 36

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC221W			J18-D3	88	N				TB1-G44	138	N				
CC222	1		J18-M1	138	N				TB1-H56	138	N				
CC223	3			300		275	7			300		275	5 7		
CC223B	1		TB1-A58	138	N				SHLD CC223	20	N				
CC223R			J18-R2	138	N				TB1-B58	138	N				
CC223W			J18-P2	138	N				TB1-B57	138	N				
CC224	1		J18-T3	138	N				TB1-C71	138	N				
CC225	3			300		275	7			300		275	5 7		
CC225B	1		TB1-A59	138	N				SHLD CC225	20	N				
CC225R			J18-P1	138	N				TB1-B60	138	N				
CC225W			J18-P3	138	N				TB1-B59	138	N				
CC226	2		J18-C7	88	N				TB1-G55	163	N				
CC227	2		J18-C8	88	N				TB1-G54	163	N				
CC228	2		J18-C9	88	N				TB1-G56	163	N				
CC229	12			225		200	7			300		275	5 7		
CC229B	1		TB1-D42	138	N				SHLD CC229	20	N				
CC229R			J18-F3	88	N				TB1-D43	138	N				
CC229W			J18-F2	88	N				TB1-D44	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 37

WIRE LIST CC

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC230	12			225		200	7			300		275	5 7		
CC230B	1		TB1-C42	138	N				SHLD CC230	20	N				
CC230R			J18-F1	88	N				TB1-C44	138	N				
CC230W			J18-D1	88	N				TB1-C43	138	N				
CC231	12			225		200	7			300		275	5 7		
CC231B	1		TB1-F42	138	N				SHLD CC231	20	N				
CC231R			J18-F4	88	N				TB1-F44	138	N				
CC231W			J18-F5	88	N				TB1-F43	138	N				
CC232R	1		J18-S6	138	N				TB1-G51	138	N				
CC232W	1		J18-T6	138	N				TB1-G52	138	N				
CC233	3			225		200	7			300		275	5 7		
CC233B	1		TB1-D36	138	N				SHLD CC233	20	N				
CC233R			J18-A9	88	N				TB1-D37	163	N				
CC233W			J18-B9	88	N				TB1-D38	163	N				
CC234	3			225		200	7			300		275	5 7		
CC234B	1		TB1-B42	138	N				SHLD CC234	20	N				
CC234R			J18-C1	88	N				TB1-B43	163	N				
CC234W			J18-C2	88	N				TB1-B44	163	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 38

WIRE LIST CC

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC235	3			225		200	7			300		275	5 7		
CC235B	1		TB1-K39	138	N				SHLD CC235	20	N				
CC235R			J18-C5	88	N				TB1-K41	163	N				
CC235W			J18-D5	88	N				TB1-K40	163	N				
CC236R	1		J18-S4	138	N				TB1-H51	138	N				
CC236W	1		J18-T4	138	N				TB1-H52	138	N				
CC237	12			225		200	7			300		275	5 7		
CC237B	1		TB1-K36	138	N				SHLD CC237	20	N				
CC237R			J18-A5	88	N				TB1-K37	138	N				
CC237W			J18-B5	88	N				TB1-K38	138	N				
CC238R	1		J18-S5	138	N				TB1-G49	138	N				
CC238W	1		J18-T5	138	N				TB1-G48	138	N				
CC239	12			225		200	7			300		275	5 7		
CC239B	1		TB1-H36	138	N				SHLD CC239	20	N				
CC239R			J18-A7	88	N				TB1-H37	138	N				
CC239W			J18-B7	88	N				TB1-H38	138	N				
CC240	1		J18-R6	138	N				TB1-D77	138	N				
CC241	1		J18-R4	138	N				TB1-F77	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 39

WIRE LIST CC

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	T I N	2	TERMINATION SPEC 1 ITEM NO.	NO.	ROUTING
CC242	1		J19-M3	138	N				TB1-H58	138	N				
CC243	1		J19-M1	138	N				TB1-G57	138	N				
CC244	1		J19-M2	138	N				TB1-H57	138	N				
CC245	1		J19-M5	138	N				TB1-K57	138	N				
CC246	1		J19-M6	138	N				TB1-F58	138	N				
CC247	1		J19-T5	138	N				TB1-H71	138	N				
CC248	1		J19-M4	138	N				TB1-G58	138	N				
CC249R	2		J19-F9	88	N				TB1-K68	163	N				
CC249W	2		J19-F8	88	N				TB1-K69	163	N				
CC250R	2		J19-D8	88	N				TB1-H68	163	N				
CC250W	2		J19-D7	88	N				TB1-H69	163	N				
CC251	3			300		275	7			300		275	5 7		
CC251B	1		TB1-A59	138	N				SHLD CC251	20	N				
CC251R			J19-P6	138	N				TB1-A57	138	N				
CC251W			J19-R6	138	N				TB1-A61	138	N				
CC252R	1		J19-P1	138	N				TB1-B19	138	N				
CC252W	1		J19-P2	138	N				TB1-B18	138	N				
CC253	3			300		275	7			300		275	5 7		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 40

WIRE LIST CC

CONDUCTOR			FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2▷	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	T I N	2▷	TERMINATION SPEC. 1▷ ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	T I N	2▷	TERMINATION SPEC 1▷ ITEM NO.	NO.	ROUTING
CC253B	1		TB1-K42	138	N				SHLD CC253	20	N				
CC253R			J19-G1	138	N				TB1-K44	138	N				
CC253W			J19-H1	138	N				TB1-K43	138	N				
CC254	3			300		275	7			300		275	5 7		
CC254B	1		TB1-H42	138	N				SHLD CC254	20	N				
CC254R			J19-K1	138	N				TB1-H44	138	N				
CC254W			J19-K2	138	N				TB1-H43	138	N				
CC255	12			225		200	7			300		275	5 7		
CC255B	1		TB1-D39	138	N				SHLD CC255	20	N				
CC255R			J19-C5	88	N				TB1-D40	138	N				
CC255W			J19-C6	88	N				TB1-D41	138	N				
CC256	12			225		200	7			300		275	5 7		
CC256B	1		TB1-C42	138	N				SHLD CC256	20	N				
CC256R			J19-B4	88	N				TB1-C41	138	N				
CC256W			J19-B5	88	N				TB1-C40	138	N				
CC257R	1		J19-T1	138	N				TB1-K49	138	N				
CC257W	1		J19-S1	138	N				TB1-K48	138	N				
CC258	12			225		200	7			300		275	5 7		

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 41

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2▷	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	T I N	2▷	TERMINATION SPEC. 1▷ ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	T I N	2▷	TERMINATION SPEC 1▷ ITEM NO.	NO.	ROUTING
CC258B	1		TB1-C36	138	N				SHLD CC258	20	N				
CC258R			J19-A6	88	N				TB1-C37	138	N				
CC258W			J19-B6	88	N				TB1-C38	138	N				
CC259	12			225		200	7			300		275	5 7		
CC259B	1		TB1-F39	138	N				SHLD CC259	20	N				
CC259R			J19-C2	88	N				TB1-F41	138	N				
CC259W			J19-C1	88	N				TB1-F40	138	N				
CC260R	1		J19-T3	138	N				TB1-K51	138	N				
CC260W	1		J19-S3	138	N				TB1-K52	138	N				
CC261	12			225		200	7			300		275	5 7		
CC261B	1		TB1-F36	138	N				SHLD CC261	20	N				
CC261R			J19-A1	88	N				TB1-F37	138	N				
CC261W			J19-B1	88	N				TB1-F38	138	N				
CC262R	2		J19-D3	88	N				TB1-F68	163	N				
CC262W	2		J19-D2	88	N				TB1-F69	163	N				
CC263	12			225		200	7			300		275	5 7		
CC263B	1		TB1-H39	138	N				SHLD CC263	20	N				
CC263R			J19-C9	88	N				TB1-H41	138	N				

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 42

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2▷	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	T I N	2▷	TERMINATION SPEC. 1▷ ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	T I N	2▷	TERMINATION SPEC 1▷ ITEM NO.	NO.	ROUTING
CC263W			J19-C8	88	N				TB1-H40	138	N				
CC264L	1		J19-P3	138	N				TB1-F48	138	N				
CC264R	1		J19-P4	138	N				TB1-F49	138	N				
CC264W	1		J19-P5	138	N				TB1-F50	138	N				
CC265	3			300		275	7			300		275	5 7		
CC265B	1		TB1-H47	138	N				SHLD CC265	20	N				
CC265R			J19-K5	138	N				TB1-H45	138	N				
CC265W			J19-K4	138	N				TB1-H46	138	N				
CC266	3			300		275	7			300		275	5 7		
CC266B	1		TB1-K47	138	N				SHLD CC266	20	N				
CC266R			J19-G4	138	N				TB1-K46	138	N				
CC266W			J19-G3	138	N				TB1-K45	138	N				
CC267	12			225		200	7			300		275	5 7		
CC267B	1		TB1-G39	138	N				SHLD CC267	20	N				
CC267R			J19-B7	88	N				TB1-G41	138	N				
CC267W			J19-B8	88	N				TB1-G40	138	N				
CC268R	1		J19-T2	138	N				TB1-H49	138	N				
CC268W	1		J19-S2	138	N				TB1-H48	138	N				

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 43

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM						TO						
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2▷	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	T I N	2▷	TERMINATION SPEC. 1▷ ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2▷	T I N	2▷	TERMINATION SPEC 1▷ ITEM NO.	NO.	ROUTING
CC269	3			225		200	7			300		275	5 7		
CC269B	1		TB1-G36	138	N				SHLD CC269	20	N				
CC269R			J19-A9	88	N				TB1-G37	138	N				
CC269W			J19-B9	88	N				TB1-G38	138	N				
CC270	1		J19-L6	138	N				TB1-F56	138	N				
CC271	1		J19-R1	138	N				TB1-F78	138	N				
CC272	1		J19-R3	138	N				TB1-D78	138	N				
CC273L	1		J20-H4	138	N				TB1-A71	138	N				
CC273R	1		J20-G5	138	N				TB1-B73	138	N				
CC273W	1		J20-G6	138	N				TB1-A73	138	N				
CC274R	2		J20-C6	88	N				TB1-G66	163	N				
CC274W	2		J20-C7	88	N				TB1-G65	163	N				
CC275R	2		J20-D6	88	N				TB1-F66	163	N				
CC275W	2		J20-D7	88	N				TB1-F65	163	N				
CC276	13			225		200	7			300		275	5 7		
CC276B	1		TB1-A58	138	N				SHLD CC276	20	N				
CC276W			J20-F2	88	N				TB1-B61	138	N				
CC277R	2		J20-A7	88	N				TB1-H66	163	N				

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE
REV LTR B
SHEET 44

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD	FROM STRIP WIRE OR JACKET	TIN	FROM TERMINATION SPEC. ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD	TO STRIP WIRE OR JACKET	TIN	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
CC277W	2		J20-A8	88		N			TB1-H65	163		N			
CC278	3			225	200		7			300	275		5 7		
CC278B	1		TB1-K67	138		N			SHLD CC278	20		N			
CC278R			J20-A9	88		N			TB1-K66	138		N			
CC278W			J20-B9	88		N			TB1-K65	138		N			
CC279	1		J20-N6	138		N			TB1-H71	138		N			
CC280	1		J20-N4	138		N			TB1-B71	138		N			
CC281	3			225	200		7			300	275		5 7		
CC281B	1		TB1-G67	138		N			SHLD CC281	20		N			
CC281R			J20-F6	88		N			TB1-G68	138		N			
CC281W			J20-F7	88		N			TB1-G69	138		N			
CC282	2		J20-B7	88		N			TB1-K58	163		N			
CC283	1		J20-N5	138		N			TB1-K71	138		N			
CC284	1		J20-M5	138		N			TB1-K72	138		N			
CC285R	1		J20-L6	138		N			TB1-C75	138		N			
CC285W	1		J20-L5	138		N			TB1-C76	138		N			
CC286R	1		J20-A4	88		N			TB1-D68	138		N			
CC286W	1		J20-B4	88		N			TB1-D69	138		N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE | REV LTR B | SHEET 45

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD	FROM STRIP WIRE OR JACKET	TIN	FROM TERMINATION SPEC. ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD	TO STRIP WIRE OR JACKET	TIN	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
CC287	1		J20-H2	138		N			TB1-K78	138		N			
CC288	1		J20-H3	138		N			TB1-K77	138		N			
CC289	1		J20-F5	88		N			TB1-H74	138		N			
CC290	1		J24- 11	13		N			TB1-H74	138		N			
CC291	1		J20-G3	138		N			TB1-H73	138		N			
CC292	1		J20-D4	88		N	8		TB1-H74	138		N			
CC293	1		J20-F4	88		N			TB1-G73	138		N			
CC294R	1		J20-G2	138		N			TB1-G72	138		N			
CC294W	1		J20-G1	138		N			TB1-F72	138		N			
CC295	1		J20-T1	138		N			TB1-K76	138		N			
CC296	1		J20-S1	138		N			TB1-H76	138		N			
CC297	1		J20-T2	138		N			TB1-K75	138		N			
CC298	1		J20-S2	138		N			TB1-H75	138		N			
CC299	1		J20-T3	138		N			TB1-G76	138		N			
CC300	1		J20-T4	138		N			TB1-G75	138		N			
CC301	1		J20-R3	138		N			TB1-H72	138		N			
CC302	1		J20-T5	138		N			TB1-G78	138		N			
CC303	1		J20-S5	138		N			TB1-H78	138		N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE | REV LTR B | SHEET 46

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD	FROM STRIP WIRE OR JACKET	TIN	FROM TERMINATION SPEC. ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD	TO STRIP WIRE OR JACKET	TIN	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
CC304	1		J20-T6	138		N			TB1-H77	138		N			
CC305	1		J20-S6	138		N			TB1-G77	138		N			
CC306	1		J20-L1	138		N			TB1-G7	138		N			
CC307	1		J20-L1	138		N			TB1-G71	138		N			
CC308	1		J20-L2	138		N			TB1-G71	138		N			
CC309R	1		J20-D1	88		N			TB1-F71	138		N			
CC309W	1		J20-F1	88		N			TB1-F70	138		N			
CC310R	1		J20-A6	88		N			TB1-K74	138		N			
CC310W	1		J20-B6	88		N			TB1-K73	138		N			
CC311R	1		J20-N3	138		N			TB1-B78	138		N			
CC311W	1		J20-M3	138		N			TB1-C78	138		N			
CC312	1		J20-R1	138		N			TB1-K76	138		N			
CC313	1		J20-P1	138		N			TB1-H76	138		N			
CC314	1		J20-R2	138		N			TB1-K75	138		N			
CC315	1		J20-P2	138		N			TB1-H75	138		N			
CC316	1		J20-S3	138		N			TB1-G76	138		N			
CC317	1		J20-S4	138		N			TB1-G75	138		N			
CC318	1		J20-R5	138		N			TB1-G78	138		N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE | REV LTR B | SHEET 47

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	FROM CUT WIRE OR SHIELD	FROM STRIP WIRE OR JACKET	TIN	FROM TERMINATION SPEC. ITEM NO.	FROM NO.	TO CIRCUIT POINT	TO CUT WIRE OR SHIELD	TO STRIP WIRE OR JACKET	TIN	TO TERMINATION SPEC ITEM NO.	TO NO.	ROUTING
CC319	1		J20-R6	138		N			TB1-G77	138		N			
CC320	1		J20-H1	138		N			TB1-F75	138		N			
CC321	1		J20-K1	138		N			TB1-F73	138		N			
CC322	1		J20-K2	138		N			TB1-C68	138		N			
CC323	1		J20-P3	138		N			TB1-D78	138		N			
CC324	1		J20-P4	138		N			TB1-F78	138		N			
CC325	14			300	275		7			300	275		6 7		
CC325B	1		TB1-G4	138		N			SHLD CC325	20		N			
CC325L			J22- 68	13		N	8		TB1-H5	138		N			
CC325R			J22- 67	13		N	8		TB1-G5	138		N			
CC325W			J22- 42	13		N	8		TB1-G3	138		N			
CC326	1		J22- 41	13		N	8		TB1-C4	138		N			
CC327	3			300	275		7			300	275		5 7		
CC327B	1		TB1-B17	138		N			SHLD CC327	20		N			
CC327R			J22- 14	13		N	8		TB1-B16	138		N			
CC327W			J22- 15	13		N	8		TB1-B15	138		N			
CC328	3			300	275		7			300	275		5 7		
CC328B	1		TB1-B12	138		N			SHLD CC328	20		N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015088
SCALE - NONE | REV LTR B | SHEET 48

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.		NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
CC328R			J22- 32	13	N		8			TB1-B14	138	N					
CC328W			J22- 16	13	N		8			TB1-B13	138	N					
CC329	3			300		275	7				300		275	5	7		
CC329B	1		TB1-A17	138	N					SHLD CC329	20	N					
CC329R			J22- 56	13	N		8			TB1-A16	138	N					
CC329W			J22- 33	13	N		8			TB1-A15	138	N					
CC330	3			300		275	7				300		275	5	7		
CC330B	1		TB1-A12	138	N					SHLD CC330	20	N					
CC330R			J22- 84	13	N		8			TB1-A13	138	N					
CC330W			J22- 85	13	N		8			TB1-A14	138	N					
CC331	1		J23- 57	13	N		8			TB1-F52	138	N					
CC332	13			300		275	5				300		275	7	7		
CC332A	1		SHLD CC332	20	N					E21	20	N					
CC332B	1		TB1-D56	138	N					SHLD CC332	20	N					
CC332W			J24- 26	13	N		8			TB1-C56	138	N					
CC333	1		J24- 1	13	N		8			TB1-G74	138	N					
CC334	1		J24- 3	13	N		8			TB1-H73	138	N					
CC335	1		J24- 6	13	N		8			TB1-G73	138	N					

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015088

SCALE - NONE | REV LTR B | SHEET 49

MIL 2085-4-64 WIR

WIRE LIST CC

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC. 1 ITEM NO.		NO.	CIRCUIT POINT	CUT WIRE OR SHIELD 2	TIN	STRIP WIRE OR JACKET 2	TERMINATION SPEC 1 ITEM NO.		NO.	ROUTING
CC336	1		J24- 87	13	N		8			E18	20	N					
CC337	1		J24- 64	13	N		8			E20	20	N					
CC338	1		E6	20	N					E7	20	N					
CC339	1		E17	20	N					E18	20	N					
CC340	1		E19	20	N					E20	20	N					
CC341	1		TB1-K4	138	N					E2	20	N		11			
CC342	1		J13-C6	138	N					E1	20	N		9			
CC343	1		TB1-K70	138	N					E3	20	N		9			
CC344	1		E21	20	N					E22	20	N					
CC345	1		E21	20	N					E23	20	N					
CC346	1		J17-M3	138	N					J22- 39	13	N		8			
CC347	1		J17-L3	138	N					J22- 38	13	N		8			
CC348R	1		J16-A8	88	N					J22- 12	16	N		8			
CC348W	1		J16-A9	88	N					J22- 26	16	N		8			
CC349R	1		J16-C8	88	N					J22- 13	16	N		8			
CC349W	1		J16-B8	88	N					J22- 4	16	N		8			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

1015088

SCALE - NONE | REV LTR B | SHEET 50

MIL 2085-4-64 WIR

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1007699-011	1015086	B	REPLACES WORD DWG REV A PER TDRR 16220	2/3/65	WK.
		C	REVISED PER TDRR 17763	30 MAR 65	M.G. / W.R.

Ⓑ REPLACES WORD DWG REV A

REV	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
SHEET	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
REV STATUS OF SHEETS REV								C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
SHEET								1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R. LaRue DATE 13 JAN 65
CHECKED C. Pigda 19 JAN 65
APPROVAL D. Barta 19 JAN 65
APPROVAL 19 JAN 65

NASA APPROVAL
MIT APPROVAL W. 3 Feb 65

CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRE LIST "CC"
AGE INTERCONNECT

CODE IDENT NO.
SIZE
1015088
REV C

SCALE —
SHEET 1 OF 49

REVISION STATUS OF SHEETS

SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV	SH	REV
46	C														
47	C														
48	C														
49	C														

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION
C

NASA DRAWING NO.
1015088
SHEET 2 OF 49

PENNANT GENERAL NOTES

NOTE

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

5 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

6 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, OR TWISTING
A - FROM END SHIELD
B - TO END SHIELD
K - TWISTED
L - BLUE
R - RED
W - WHITE

7 CONDUCTORS WITH THE SAME NUMBER ARE TWISTED TOGETHER

8 TWIST CONDUCTORS PER ND1002032

9 PARTIAL CIRCUIT POINTS ARE SHOWN. PREFIX WITH UNIT NUMBER 56 FOR COMPLETE CIRCUIT POINT

10 MARK SLEEVING ON MULTI-SHIELDED CONDUCTORS .12 INCH HIGH AND SLEEVING OF SINGLE SHIELDED CONDUCTORS .08 INCH HIGH WITH CONDUCTOR NUMBER, COLOR BLACK PER ND1002019.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
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SCALE-NONE REV LTR C SHEET 3 OF 49

PENNANT GENERAL NOTES

NOTE

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

MANNED SPACECRAFT CENTER
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SCALE-NONE REV LTR C SHEET 4 OF 49

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
5	1	1	1015088-001	WIRE PER 1010807- 5 24AWG COLOR WHITE 442 FT 8 INCHES TOTAL LENGTH
5	2	1	1015088-002	WIRE PER 1010807- 4 28AWG COLOR WHITE 170 FT 11 INCHES TOTAL LENGTH
5	3	1	1015088-003	WIRE PER 1010807- 3 WHT JKT 24AWG COLOR WHT, RD 100 FEET 0 IN. TOTAL LENGTH
5	4	1	1015088-004	WIRE PER 1010707- 2 RED JKT 29AWG COLOR WHT, RD, BL, 13 FEET 1 INCH TOTAL LENGTH
5	5	95	1010763- 1	SLEEVE, SOLDER
5	6	31	1010763- 2	SLEEVE, SOLDER
5	7	216	1010490-142	INSULATION, SLEEVING, ELEC HEAT SHRINK
5	8	273	1010770- 2	CONTACT, SOCKET
	9	2	MS25036- 44	TERMINAL LUG
5	10	1	1015088-005	WIRE PER 1010807- 1 WHT JKT 28AWG COLOR WHT, RD, BL 19FEET 0 INCH TOTAL LENGTH
	11	1	MS25036- 45	TERMINAL LUG
5	12	1	1015088-006	WIRE PER 1010807- 2 WHT JKT 28AWG WHT, RD 100 FEET TOTAL LENGTH
5	13	1	1015088-007	WIRE PER 1010807- 12 WHT JKT 24AWG WHT 100 FEET TOTAL LENGTH
5	14	1	1015088-008	WIRE PER 1010807- 13 WHT JKT 24AWG WHT RED BLUE 25 FEET TOTAL LENGTH

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
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SCALE-NONE REV LTR C SHEET 5 OF 49

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	FROM CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.
CC 1	3		300		275	5	7			200		175	7	
CC 1A	1	SHLD CC 1	20	N					E4	20	N		6	
CC 1R		J11-L6	138	N					J23- 31	13	N		8	
CC 1W		J11-M5	138	N					J23- 52	13	N		8	
CC 2	3		300		275	5	7			200		175	7	
CC 2A	1	SHLD CC 2	20	N					E4	20	N			
CC 2R		J11-M6	138	N					J23- 54	13	N		8	
CC 2W		J11-M5	138	N					J23- 53	13	N		8	
CC 3	3		300		275	5	7			200		175	7	
CC 3A	1	SHLD CC 3	20	N					J12-K3	138	N			
CC 3R		J12-K1	138	N					J23- 46	13	N		8	
CC 3W		J12-H1	138	N					J23- 73	13	N		8	
CC 4	1	J12-G3	138	N					J22- 63	13	N		8	
CC 5	1	J12-M1	138	N					J23- 26	13	N		8	
CC 6	3		300		275	5	7			200		175	7	
CC 6A	1	SHLD CC 6	20	N					E4	20	N			
CC 6R		J12-G1	138	N					J23- 30	13	N		8	
CC 6W		J12-F2	138	N					J23- 51	13	N		8	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974
SIZE A
1015088
SCALE-NONE REV LTR C SHEET 6 OF 49

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC 7	3			300		275	5	7			200		175	7		
CC 7A	1		SHLD CC 7	20	N					E4	20	N				
CC 7R			J12-G2	138	N					J23- 29	13	N		8		
CC 7W			J12-F2	138	N					J23- 50	13	N		8		
CC 8	3			300		275	7				200		175	5	7	
CC 8B	1		E18	20	N		6			SHLD CC 8	20	N				
CC 8R			J12-D6	138	N					J24- 25	13	N		8		
CC 8W			J12-F6	138	N					J24- 46	13	N		8		
CC 9	3			300		275	7				200		175	5	7	
CC 9B	1		E18	20	N					SHLD CC 9	20	N				
CC 9R			J12-D5	138	N					J24- 70	13	N		8		
CC 9W			J12-F5	138	N					J24- 71	13	N		8		
CC 10	3			300		275	7				200		175	5	7	
CC 10B	1		E18	20	N					SHLD CC 10	20	N				
CC 10R			J12-D4	138	N					J24- 45	13	N		8		
CC 10W			J12-F4	138	N					J24- 72	13	N		8		
CC 11R	1		J13-N5	138	N					J23- 7	13	N		8		
CC 11W	1		E5	20	N		5			J23- 6	13	N		8		

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2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 7 OF 49

MIL 2079 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC 12R	1		J13-N6	138	N					J23- 2	13	N		8		
CC 12W	1		E5	20	N					J23- 1	13	N		8		
CC 13	3			300		275	5	7			200		175	7		
CC 13A	1		SHLD CC 13	20	N					E7	20	N		6		
CC 13R			J14-D1	138	N					J23- 3	13	N		8		
CC 13W			E6	20	N		6			J23- 10	13	N		8		
CC 14	3			300		275	5	7			200		175	7		
CC 14A	1		SHLD CC 14	20	N					E7	20	N				
CC 14R			J14-D2	138	N					J23- 11	13	N		8		
CC 14W			E6	20	N					J23- 24	13	N		8		
CC 15	3			300		275	5	7			200		175	7		
CC 15A	1		SHLD CC 15	20	N					E7	20	N				
CC 15R			J14-D3	138	N					J23- 55	13	N		8		
CC 15W			E6	20	N					J23- 56	13	N		8		
CC 16	3			300		275	5	7			200		175	7		
CC 16A	1		SHLD CC 16	20	N					E7	20	N				
CC 16R			J14-D4	138	N					J23- 32	13	N		8		
CC 16W			E6	20	N					J23- 33	13	N		8		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 8 OF 49

MIL 2079 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC 17	3			300		275	5	7			200		175	7		
CC 17A	1		SHLD CC 17	20	N					E7	20	N				
CC 17R			J14-D5	138	N					J23- 15	13	N		8		
CC 17W			E6	20	N					J23- 16	13	N		8		
CC 18	3			300		275	5	7			200		175	7		
CC 18A	1		SHLD CC 18	20	N					E7	20	N				
CC 18R			J14-D6	138	N					J23- 14	13	N		8		
CC 18W			E6	20	N					J23- 5	13	N		8		
CC 19	3			300		275	5	7			200		175	7		
CC 19A	1		SHLD CC 19	20	N					E7	20	N				
CC 19R			J14-K4	138	N					J23- 25	13	N		8		
CC 19W			E6	20	N					J23- 44	13	N		8		
CC 20	3			300		275	7				200		175	5	7	
CC 20B	1		E17	20	N		6			SHLD CC 20	20	N				
CC 20R			J15-M5	138	N					J24- 2	13	N		8		
CC 20W			E14	20	N		5			J24- 9	13	N		8		
CC 21	3			300		275	7				200		175	5	7	
CC 21B	1		E17	20	N					SHLD CC 21	20	N				

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2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 9 OF 49

MIL 2079 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC 21R			J15-M6	138	N					J24- 10	13	N		8		
CC 21W			E14	20	N					J24- 23	13	N		8		
CC 22	3			300		275	7				200		175	5	7	
CC 22B	1		E17	20	N					SHLD CC 22	20	N				
CC 22R			J15-L6	138	N					J24- 24	13	N		8		
CC 22W			E15	20	N		5			J24- 43	13	N		8		
CC 23	3			300		275	7				200		175	5	7	
CC 23B	1		E17	20	N					SHLD CC 23	20	N				
CC 23R			J15-K6	138	N					J24- 44	13	N		8		
CC 23W			E15	20	N					J24- 69	13	N		8		
CC 24	3			300		275	7				200		175	5	7	
CC 24B	1		E17	20	N					SHLD CC 24	20	N				
CC 24R			J15-K4	138	N					J24- 33	13	N		8		
CC 24W			E16	20	N		5			J24- 34	13	N		8		
CC 25	3			300		275	7				200		175	5	7	
CC 25B	1		E17	20	N					SHLD CC 25	20	N				
CC 25R			J15-K5	138	N					J24- 56	13	N		8		
CC 25W			E16	20	N					J24- 57	13	N		8		

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2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 10 OF 49

MIL 2079 3-63 WIR-R01

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC 26	3			225		200	7				200		175	5	7	
CC 26B	1		E19	20	N		6			SHLD CC 26	20	N				
CC 26R			E8	20	N		5			J24- 22	13	N		8		
CC 26W			J15-B4	88	N					J24- 41	13	N		8		
CC 27	3			225		200	7				200		175	5	7	
CC 27B	1		E19	20	N					SHLD CC 27	20	N				
CC 27R			J15-C4	88	N					J24- 67	13	N		8		
CC 27W			E8	20	N					J24- 42	13	N		8		
CC 28	3			225		200	7				200		175	5	7	
CC 28B	1		E19	20	N					SHLD CC 28	20	N				
CC 28R			E10	20	N		5			J24- 18	13	N		8		
CC 28W			J15-B6	88	N					J24- 19	13	N		8		
CC 29	3			225		200	7				200		175	5	7	
CC 29B	1		E19	20	N					SHLD CC 29	20	N				
CC 29R			J15-C6	88	N					J24- 8	13	N		8		
CC 29W			E10	20	N					J24- 7	13	N		8		
CC 30	3			225		200	7				200		175	5	7	
CC 30B	1		E19	20	N					SHLD CC 30	20	N				

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 SIZE A 1015088

SCALE - NONE REV LTR C SHEET 11 OF 49

MIL 2075 3-63 WIR-RO1

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC 30R			E12	20	N		5			J24- 20	13	N		8		
CC 30W			J15-B8	88	N					J24- 39	13	N		8		
CC 31	3			225		200	7				200		175	5	7	
CC 31B	1		E19	20	N					SHLD CC 31	20	N				
CC 31R			J15-C8	88	N					J24- 40	13	N		8		
CC 31W			E12	20	N					J24- 21	13	N		8		
CC 32	3			225		200	5	7			200		175	7		
CC 32A	1		SHLD CC 32	20	N					E9	20	N				
CC 32R			E9	20	N		6			J23- 23	13	N		8		
CC 32W			J15-B5	88	N					J23- 42	13	N		8		
CC 33	3			225		200	5	7			200		175	7		
CC 33A	1		SHLD CC 33	20	N					E9	20	N				
CC 33R			J15-C5	88	N					J23- 43	13	N		8		
CC 33W			E9	20	N					J23- 69	13	N		8		
CC 34	3			225		200	5	7			200		175	7		
CC 34A	1		SHLD CC 34	20	N					E11	20	N				
CC 34R			E11	20	N		6			J23- 34	13	N		8		
CC 34W			J15-B7	88	N					J23- 35	13	N		8		

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 SIZE A 1015088

SCALE - NONE REV LTR C SHEET 12 OF 49

MIL 2075 3-63 WIR-RO1

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC 35	3			225		200	5	7			200		175	7		
CC 35A	1		SHLD CC 35	20	N					E11	20	N				
CC 35R			J15-C7	88	N					J23- 18	13	N		8		
CC 35W			E11	20	N					J23- 17	13	N		8		
CC 36	3			225		200	5	7			200		175	7		
CC 36A	1		SHLD CC 36	20	N					E13	20	N				
CC 36R			E13	20	N		6			J23- 8	13	N		8		
CC 36W			J15-B9	88	N					J23- 21	13	N		8		
CC 37	3			225		200	5	7			200		175	7		
CC 37A	1		SHLD CC 37	20	N					E13	20	N				
CC 37R			J15-C9	88	N					J23- 22	13	N		8		
CC 37W			E13	20	N					J23- 9	13	N		8		
CC 38	13			225		200	7				200		175	5	7	
CC 38B	1		E21	20	N		6			SHLD CC 38	20	N				
CC 38W			J15-A3	88	N					J24- 30	13	N		8		
CC 39	3			300		275	5	7			200		175	7		
CC 39A	1		SHLD CC 39	20	N					J16-P2	138	N				
CC 39R			J16-L4	138	N					J23- 12	13	N		8		

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 SIZE A 1015088

SCALE - NONE REV LTR C SHEET 13 OF 49

MIL 2075 3-63 WIR-RO1

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO STRIP WIRE OR JACKET CIRCUIT POINT	2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC 39W			J16-L3	138	N					J23- 27	13	N		8		
CC 40	3			300		275	5	7			200		175	7		
CC 40A	1		SHLD CC 40	20	N					J16-P2	138	N				
CC 40R			J16-M4	138	N					J23- 4	13	N		8		
CC 40W			J16-L3	138	N					J23- 13	13	N		8		
CC 41	13			225		200	7				200		175	5	7	
CC 41B	1		E21	20	N					SHLD CC 41	20	N				
CC 41W			J16-A7	88	N					J24- 5	13	N		8		
CC 42	3			300		275	7				200		175	5	7	
CC 42B	1		E20	20	N		6			SHLD CC 42	20	N				
CC 42R			J17-G6	138	N					J24- 61	13	N		8		
CC 42W			J17-H6	138	N					J24- 60	13	N		8		
CC 43	3			225		200	7				200		175	5	7	
CC 43B	1		J22- 48	13	N					SHLD CC 43	20	N				
CC 43R			J17-A4	88	N					J22- 74	13	N		8		
CC 43W			J17-B4	88	N					J22- 75	13	N		8		
CC 44	3			225		200	7				200		175	5	7	
CC 44B	1		J22- 77	13	N					SHLD CC 44	20	N				

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 SIZE A 1015088

SCALE - NONE REV LTR C SHEET 14 OF 49

MIL 2075 3-63 WIR-RO1

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC 44R			J17-C4	88	N					J22- 49	13	N		8		
CC 44W			J17-D4	88	N					J22- 76	13	N		8		
CC 45	3			225		200	7				200		175	5	7	
CC 45B	1		J22- 80	13	N					SHLD CC 45	20	N				
CC 45R			J17-C3	88	N					J22- 53	13	N		8		
CC 45W			J17-D3	88	N					J22- 81	13	N		8		
CC 46	3			300		275	7				200		175	5	7	
CC 46B	1		E20	20	N					SHLD CC 46	20	N				
CC 46R			J17-K4	138	N					J24- 36	13	N		8		
CC 46W			J17-H4	138	N					J24- 35	13	N		8		
CC 47	3			225		200	7				200		175	5	7	
CC 47B	1		J22- 54	13	N					SHLD CC 47	20	N				
CC 47R			J17-A3	88	N					J22- 83	13	N		8		
CC 47W			J17-B3	88	N					J22- 82	13	N		8		
CC 48	3			225		200	7				200		175	5	7	
CC 48B	1		J22- 51	13	N					SHLD CC 48	20	N				
CC 48R			J17-D1	88	N					J22- 78	13	N		8		
CC 48W			J17-C1	88	N					J22- 79	13	N		8		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974
SIZE A
1015088
SCALE - NONE
REV LTR C
SHEET 15 OF 49

MIL 2078 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC 49	3			300		275	7				200		175	5	7	
CC 49B	1		E20	20	N					SHLD CC 49	20	N				
CC 49R			J17-K6	138	N					J24- 38	13	N		8		
CC 49W			J17-H6	138	N					J24- 37	13	N		8		
CC 50	3			300		275	7				200		175	5	7	
CC 50B	1		E20	20	N					SHLD CC 50	20	N				
CC 50R			J17-G4	138	N					J24- 59	13	N		8		
CC 50W			J17-H4	138	N					J24- 58	13	N		8		
CC 51	3			300		275	5	7			200		175	7		
CC 51A	1		SHLD CC 51	20	N					J17-S4	138	N				
CC 51R			J17-R3	138	N					J23- 28	13	N		8		
CC 51W			J17-S3	138	N					J23- 49	13	N		8		
CC 52R	1		J18-K5	138	N					J23- 89	13	N		8		
CC 52W	1		J18-H5	138	N					J23- 88	13	N		8		
CC 53R	1		J18-K3	138	N					J23- 20	13	N		8		
CC 53W	1		J18-H3	138	N					J23- 19	13	N		8		
CC 54R	1		J18-G5	138	N					J23- 60	13	N		8		
CC 54W	1		J18-H5	138	N					J23- 59	13	N		8		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974
SIZE A
1015088
SCALE - NONE
REV LTR C
SHEET 16 OF 49

MIL 2078 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC 55R	1		J18-G3	138	N					J23- 37	13	N		8		
CC 55W	1		J18-H3	138	N					J23- 36	13	N		8		
CC 56R	1		J20-C4	88	N					J24- 17	13	N		8		
CC 56W	1		J20-C3	88	N					J24- 16	13	N		8		
CC 57	3			300		275	5	7			200		175	7		
CC 57A	1		SHLD CC 57	20	N					J20-M4	138	N				
CC 57R			J20-F3	88	N					J23- 74	13	N		8		
CC 57W			J20-D3	88	N					J23- 75	13	N		8		
CC 58	1		J20-N5	138	N					J23- 47	13	N		8		
CC 59R	1		J20-F9	88	N					J22- 72	13	N		8		
CC 59W	1		J20-F8	88	N					J22- 73	13	N		8		
CC 60R	1		J11-B1	138	N					TB1-K34	138	N				
CC 60W	1		J11-A1	138	N					TB1-K33	138	N				
CC 61R	1		J11-C1	138	N					TB1-K29	138	N				
CC 61W	1		J11-B1	138	N					TB1-K28	138	N				
CC 62R	1		J11-B2	138	N					TB1-H34	138	N				
CC 62W	1		J11-A2	138	N					TB1-H33	138	N				
CC 63R	1		J11-C2	138	N					TB1-H29	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974
SIZE A
1015088
SCALE - NONE
REV LTR C
SHEET 17 OF 49

MIL 2078 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.		NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC 63W	1		J11-B2	138	N					TB1-H28	138	N				
CC 64R	1		J11-B3	138	N					TB1-G34	138	N				
CC 64W	1		J11-A3	138	N					TB1-G33	138	N				
CC 65K	1		J11-G1	138	N					TB1-A10	138	N				
CC 65L	1		J11-H1	138	N					TB1-A11	138	N				
CC 65R	1		J11-F1	138	N					TB1-B11	138	N				
CC 65W	1		J11-G2	138	N					TB1-B10	138	N				
CC 66	1		J11-N6	138	N					TB1-C54	138	N				
CC 67K	1		J11-M1	138	N					TB1-K7	138	N				
CC 67L	1		J11-L1	138	N					TB1-K7	138	N				
CC 67R	1		J11-M2	138	N					TB1-H7	138	N				
CC 67W	1		J11-L2	138	N					TB1-H7	138	N				
CC 68K	1		J11-B5	138	N					TB1-D28	138	N				
CC 68L	1		J11-A6	138	N					TB1-A28	138	N				
CC 68R	1		J11-A5	138	N					TB1-B28	138	N				
CC 68W	1		J11-B6	138	N					TB1-C28	138	N				
CC 69R	1		J11-D6	138	N					TB1-F18	138	N				
CC 69W	1		J11-D5	138	N					TB1-F19	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974
SIZE A
1015088
SCALE - NONE
REV LTR C
SHEET 18 OF 49

MIL 2078 3-63 WIR-R01

CONDUCTOR NUMBER	ITEM NO.	2	FROM CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.
CC 70R	1		J11-F6	138	N				TB1-D18	138	N			
CC 70W	1		J11-G6	138	N				TB1-D19	138	N			
CC 71R	1		J11-H6	138	N				TB1-C18	138	N			
CC 71W	1		J11-H5	138	N				TB1-C19	138	N			
CC 72	1		J11-L3	138	N				TB1-K3	138	N			
CC 73R	1		J11-F3	138	N				TB1-K8	138	N			
CC 73W	1		J11-G3	138	N				TB1-H8	138	N			
CC 74	1		J11-R2	138	N				TB1-C70	138	N			
CC 75	1		J11-R3	138	N				TB1-B68	138	N			
CC 76	1		J11-R5	138	N				TB1-H26	138	N			
CC 77	1		J11-S6	138	N				TB1-K26	138	N			
CC 78	1		J11-R1	138	N				TB1-C69	138	N			
CC 79	1		J11-P2	138	N				E4	20	N			
CC 80	1		J11-L4	138	N				TB1-H4	138	N			
CC 81L	1		J12-P1	138	N				TB1-C74	138	N			
CC 81R	1		J12-P2	138	N				TB1-C72	138	N			
CC 81W	1		J12-R1	138	N				TB1-C73	138	N			
CC 82R	1		J12-P6	138	N				TB1-K1	138	N			

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE-NONE	REV LTR C	SHEET 19 OF 49

MIL 2079 3-63 WIR-RO1

CONDUCTOR NUMBER	ITEM NO.	2	FROM CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.
CC 82W	1		J12-N6	138	N				TB1-K2	138	N			
CC 83R	1		J12-N4	138	N				TB1-G1	138	N			
CC 83W	1		J12-P5	138	N				TB1-G2	138	N			
CC 84	1		J12-M3	138	N				TB1-B56	138	N			
CC 85	1		J12-M1	138	N				TB1-D26	138	N			
CC 86	1		J12-L2	138	N				TB1-C26	138	N			
CC 87	1		J12-C1	138	N				TB1-F51	138	N			
CC 88R	1		J12-H4	138	N				TB1-D1	138	N			
CC 88W	1		J12-K4	138	N				TB1-D2	138	N			
CC 89	1		J12-B5	138	N				TB1-B41	138	N			
CC 90	1		J12-R2	138	N				TB1-C70	138	N			
CC 91	1		J12-R3	138	N				TB1-C69	138	N			
CC 92	1		J12-R4	138	N				TB1-C68	138	N			
CC 93	1		J12-R5	138	N				TB1-K25	138	N			
CC 94	1		J12-R6	138	N				TB1-H53	138	N			
CC 95R	1		J13-A1	138	N				TB1-F11	138	N			
CC 95W	1		J13-B1	138	N				TB1-F10	138	N			
CC 96	4			300		275	7			300		275	6 7	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE-NONE	REV LTR C	SHEET 20 OF 49

MIL 2079 3-63 WIR-RO1

CONDUCTOR NUMBER	ITEM NO.	2	FROM CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.
CC 96B	1		TB1-K24	138	N				SHLD CC 96	20	N			
CC 96L			J13-H1	163	N				TB1-K23	163	N			
CC 96R			J13-L1	163	N				TB1-K21	163	N			
CC 96W			J13-K1	163	N				TB1-K22	163	N			
CC 97	1		J13-D2	163	N				TB1-B40	163	N			
CC 98R	1		J13-A3	138	N				TB1-D11	138	N			
CC 98W	1		J13-B3	138	N				TB1-D10	138	N			
CC 99	4			300		275	7			300		275	6 7	
CC 99B	1		TB1-H24	138	N				SHLD CC 99	20	N			
CC 99L			J13-L3	163	N				TB1-H23	163	N			
CC 99R			J13-N3	163	N				TB1-H21	163	N			
CC 99W			J13-M3	163	N				TB1-H22	163	N			
CC100	1		J13-F2	138	N				TB1-A40	138	N			
CC101	4			300		275	7			300		275	6 7	
CC101B	1		TB1-F24	138	N				SHLD CC101	20	N			
CC101L			J13-D6	163	N				TB1-F23	163	N			
CC101R			J13-G6	163	N				TB1-F21	163	N			
CC101W			J13-F6	163	N				TB1-F22	163	N			

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE-NONE	REV LTR C	SHEET 21 OF 49

MIL 2079 3-63 WIR-RO1

CONDUCTOR NUMBER	ITEM NO.	2	FROM CIRCUIT POINT	2	TIN	2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	2	TIN	2	TERMINATION SPEC 1 ITEM NO.	NO.
CC102	1		J13-R6	138	N				E5	20	N			
CC103	1		J13-S6	138	N				TB1-G6	138	N			
CC104	1		J13-C1	138	N				TB1-D51	138	N			
CC105R	1		J14-A1	138	N				TB1-C11	138	N			
CC105W	1		J14-A2	138	N				TB1-C10	138	N			
CC106	4			300		275	7			300		275	6 7	
CC106B	1		TB1-G24	138	N				SHLD CC106	20	N			
CC106L			J14-P1	163	N				TB1-G23	163	N			
CC106R			J14-P2	163	N				TB1-G21	163	N			
CC106W			J14-P3	163	N				TB1-G22	163	N			
CC107	1		J14-H6	138	N				TB1-A41	138	N			
CC108	4			300		275	7			300		275	6 7	
CC108B	1		TB1-D24	138	N				SHLD CC108	20	N			
CC108L			J14-M1	163	N				TB1-D23	163	N			
CC108R			J14-M2	163	N				TB1-D21	163	N			
CC108W			J14-M3	163	N				TB1-D22	163	N			
CC109	4			300		275	7			300		275	6 7	
CC109B	1		TB1-C24	138	N				SHLD CC109	20	N			

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE-NONE	REV LTR C	SHEET 22 OF 49

MIL 2079 3-63 WIR-RO1

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION ITEM NO.	SPEC. 1	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION ITEM NO.	SPEC 1	NO.
CC109L			J14-L6	163	N					TB1-C23	163	N				
CC109R			J14-M6	163	N					TB1-C21	163	N				
CC109W			J14-N6	163	N					TB1-C22	163	N				
CC110	1		J14-R6	138	N					E6	20	N				
CC111	1		J14-B1	138	N					TB1-D52	138	N				
CC112	1		J14-B2	138	N					TB1-F52	138	N				
CC113	1		J14-R6	138	N					TB1-H25	138	N				
CC114	1		J15-L5	138	N					E14	20	N				
CC115	1		J15-L5	138	N					E15	20	N				
CC116	1		J15-L5	138	N					E16	20	N				
CC117L	2		J15-C2	88	N					TB1-F35	163	N				
CC117R	2		J15-D1	88	N					TB1-F33	163	N				
CC117W	2		J15-C1	88	N					TB1-F34	163	N				
CC118L	2		J15-F1	88	N					TB1-D35	163	N				
CC118R	2		J15-D2	88	N					TB1-D33	163	N				
CC118W	2		J15-F2	88	N					TB1-D34	163	N				
CC119L	2		J15-D4	88	N					TB1-C35	163	N				
CC119R	2		J15-C3	88	N					TB1-C33	163	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 23 OF 49

MIL 2075 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION ITEM NO.	SPEC. 1	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION ITEM NO.	SPEC 1	NO.
CC119W	2		J15-D3	88	N					TB1-C34	163	N				
CC120	2		J15-A5	88	N					E8	20	N				
CC121	2		J15-A7	88	N					E10	20	N				
CC122	2		J15-A9	88	N					E12	20	N				
CC123	2		J15-A5	88	N					E9	20	N				
CC124	2		J15-A7	88	N					E11	20	N				
CC125	2		J15-A9	88	N					E13	20	N				
CC126	10			225		200	7				300		275	6 7		
CC126B	1		TB1-K17	138	N					SHLD CC126	20	N				
CC126L			J15-F7	88	N					TB1-K16	163	N				
CC126R			J15-D7	88	N					TB1-K15	163	N				
CC126W			J15-D8	88	N					TB1-K14	163	N				
CC127	10			225		200	7				300		275	6 7		
CC127B	1		TB1-K12	138	N					SHLD CC127	20	N				
CC127L			J15-D9	88	N					TB1-K11	163	N				
CC127R			J15-F9	88	N					TB1-K10	163	N				
CC127W			J15-F8	88	N					TB1-K9	163	N				
CC128	14			300		275	7				300		275	6 7		

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 24 OF 49

MIL 2075 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION ITEM NO.	SPEC. 1	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION ITEM NO.	SPEC 1	NO.
CC128B	1		TB1-H4	138	N					SHLD CC128	20	N				
CC128L			J15-S1	138	N					TB1-K5	138	N				
CC128R			J15-H4	138	N					TB1-H5	138	N				
CC128W			J15-S3	138	N					TB1-G5	138	N				
CC129	1		J15-R6	138	N					TB1-B53	138	N				
CC130L	2		J15-B1	88	N					TB1-G28	163	N				
CC130R	2		J15-B2	88	N					TB1-D28	163	N				
CC130W	2		J15-A1	88	N					TB1-F28	163	N				
CC131	1		J15-R2	138	N					TB1-K26	138	N				
CC132	4		J15-K3	138	N					TB1-B49	138	N				
CC133R	2		J16-F1	88	N					TB1-B31	163	N				
CC133W	2		J16-D1	88	N					TB1-A31	163	N				
CC134R	2		J16-D2	88	N					TB1-K34	163	N				
CC134W	2		J16-C2	88	N					TB1-K33	163	N				
CC135R	2		J16-D2	88	N					TB1-K30	163	N				
CC135W	2		J16-C1	88	N					TB1-K31	163	N				
CC136	10			225		200	6 7				300		275	7		
CC136A	1		SHLD CC136	20	N					J16-B1	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 25 OF 49

MIL 2075 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION ITEM NO.	SPEC. 1	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	TERMINATION ITEM NO.	SPEC 1	NO.
CC136L			J16-B1	88	N					TB1-F30	163	N				
CC136R			J16-A1	88	N					TB1-F29	163	N				
CC136W			J16-A2	88	N					TB1-F31	163	N				
CC137R	1		J16-P1	138	N					TB1-K19	138	N				
CC137W	1		J16-R1	138	N					TB1-K18	138	N				
CC138R	2		J16-F3	88	N					TB1-B30	163	N				
CC138W	2		J16-D3	88	N					TB1-A30	163	N				
CC139R	2		J16-D4	88	N					TB1-H34	163	N				
CC139W	2		J16-C4	88	N					TB1-H33	163	N				
CC140R	2		J16-D4	88	N					TB1-H30	163	N				
CC140W	2		J16-C3	88	N					TB1-H31	163	N				
CC141	10			225		200	6 7				300		275	7		
CC141A	1		SHLD CC141	20	N					J16-B3	88	N				
CC141L			J16-B3	88	N					TB1-D30	163	N				
CC141R			J16-A3	88	N					TB1-D29	163	N				
CC141W			J16-A4	88	N					TB1-D31	163	N				
CC142R	1		J16-P3	138	N					TB1-H18	138	N				
CC142W	1		J16-R3	138	N					TB1-H19	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 26 OF 49

MIL 2075 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR			FROM							TO						
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	2	ITEM NO.		NO.	CIRCUIT POINT	2	TIN	2	ITEM NO.		NO.
CC143	10			225		200	7				300		275	6	7	
CC143B	1		TB1-C17	138	N					SHLD CC143	20	N				
CC143L			J16-C9	88	N					TB1-C16	163	N				
CC143R			J16-C8	88	N					TB1-C15	163	N				
CC143W			J16-B8	88	N					TB1-C14	163	N				
CC144	10			225		200	7				300		275	6	7	
CC144B	1		TB1-D17	138	N					SHLD CC144	20	N				
CC144L			J16-B9	88	N					TB1-D16	163	N				
CC144R			J16-A9	88	N					TB1-D15	163	N				
CC144W			J16-A8	88	N					TB1-D14	163	N				
CC145R	2		J16-F5	88	N					TB1-B29	163	N				
CC145W	2		J16-D5	88	N					TB1-A29	163	N				
CC146R	2		J16-D6	88	N					TB1-G34	163	N				
CC146W	2		J16-C6	88	N					TB1-G33	163	N				
CC147R	2		J16-C5	88	N					TB1-G31	163	N				
CC147W	2		J16-D6	88	N					TB1-G30	163	N				
CC148	10			225		200	7				300		275	6	7	
CC148B	1		TB1-F17	138	N					SHLD CC148	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 SIZE A 1015088
SCALE-NONE REV LTR C SHEET 27 OF 49

GYA WIRE LIST CC C 1015088

CONDUCTOR			FROM							TO						
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	2	ITEM NO.		NO.	CIRCUIT POINT	2	TIN	2	ITEM NO.		NO.
CC148L			J16-F8	88	N					TB1-F16	163	N				
CC148R			J16-D7	88	N					TB1-F14	163	N				
CC148W			J16-F7	88	N					TB1-F15	163	N				
CC149	1		J16-S1	138	N					TB1-C53	138	N				
CC150	1		J16-T1	138	N					TB1-C52	138	N				
CC151	1		J16-T2	138	N					TB1-C51	138	N				
CC152	10			225		200	7				300		275	6	7	
CC152B	1		TB1-G17	138	N					SHLD CC152	20	N				
CC152L			J16-F9	88	N					TB1-G16	163	N				
CC152R			J16-D9	88	N					TB1-G15	163	N				
CC152W			J16-D8	88	N					TB1-G14	163	N				
CC153	10			225		200	6	7			300		275	7		
CC153A	1		SHLD CC153	20	N					J16-B5	88	N				
CC153L			J16-B5	88	N					TB1-C30	163	N				
CC153R			J16-A5	88	N					TB1-C29	163	N				
CC153W			J16-A6	88	N					TB1-C31	163	N				
CC154R	1		J16-N2	138	N					TB1-G18	138	N				
CC154W	1		J16-N1	138	N					TB1-G19	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 SIZE A 1015088
SCALE-NONE REV LTR C SHEET 28 OF 49

GYA WIRE LIST CC C 1015088

CONDUCTOR			FROM							TO						
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	2	ITEM NO.		NO.	CIRCUIT POINT	2	TIN	2	ITEM NO.		NO.
CC155	2		J16-F2	88	N					TB1-K35	163	N				
CC156	2		J16-F4	88	N					TB1-H35	163	N				
CC157	2		J16-F6	88	N					TB1-G35	163	N				
CC158	2		J16-C7	88	N					TB1-G29	163	N				
CC159	13			300		275	7				300		275	5	7	
CC159B	1		TB1-K4	138	N					SHLD CC159	20	N				
CC159W			J16-M1	138	N					TB1-H3	138	N				
CC160K	1		J16-R4	138	N					TB1-B6	138	N				
CC160L	1		J16-S4	138	N					TB1-A5	138	N				
CC160R	1		J16-S3	138	N					TB1-B7	138	N				
CC160W	1		J16-P4	138	N					TB1-B5	138	N				
CC161R	1		J16-N5	138	N					TB1-F5	138	N				
CC161W	1		J16-P5	138	N					TB1-D5	138	N				
CC162R	1		J16-P6	138	N					TB1-D8	138	N				
CC162W	1		J16-N6	138	N					TB1-F8	138	N				
CC163	14			300		275	7				300		275	6	7	
CC163B	1		TB1-H17	138	N					SHLD CC163	20	N				
CC163L			J16-G2	163	N					TB1-H16	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 SIZE A 1015088
SCALE-NONE REV LTR C SHEET 29 OF 49

GYA WIRE LIST CC C 1015088

CONDUCTOR			FROM							TO						
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	2	ITEM NO.		NO.	CIRCUIT POINT	2	TIN	2	ITEM NO.		NO.
CC163R			J16-H1	163	N					TB1-H14	138	N				
CC163W			J16-G1	163	N					TB1-H15	138	N				
CC164	14			300		275	7				300		275	6	7	
CC164B	1		TB1-H12	138	N					SHLD CC164	20	N				
CC164L			J16-G4	138	N					TB1-H11	138	N				
CC164R			J16-H3	138	N					TB1-H9	138	N				
CC164W			J16-G3	138	N					TB1-H10	138	N				
CC172R	1		J16-N5	138	N					TB1-B72	138	N				
CC172W	1		J16-P5	138	N					TB1-A72	138	N				
CC173	13			300		275	7				300		275	5	7	
CC173B	1		TB1-D56	138	N					SHLD CC173	20	N				
CC173W			J16-B7	88	N					TB1-C56	138	N				
CC174R	1		J16-P6	138	N					TB1-A74	138	N				
CC174W	1		J16-N6	138	N					TB1-B74	138	N				
CC175K	1		J16-M2	138	N					TB1-C58	138	N				
CC175L	1		J16-M3	138	N					TB1-C57	138	N				
CC175R	1		J16-N3	138	N					TB1-D57	138	N				
CC175W	1		J16-R2	138	N					TB1-D58	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 SIZE A 1015088
SCALE-NONE REV LTR C SHEET 30 OF 49

GYA WIRE LIST CC C 1015088

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.
CC176	1		J16-P2	138	N				TB1-D59	138	N			
CC177	1		J16-R2	138	N				TB1-F75	138	N			
CC178	1		J16-R5	138	N				TB1-K53	138	N			
CC179	1		J16-R6	138	N				TB1-G53	138	N			
CC180	1		J16-N4	138	N				TB1-A60	138	N			
CC181	1		J17-P6	138	N				TB1-D71	138	N			
CC182	3			225		200	7			300		275	6 7	
CC182B	1		TB1-G12	138	N				SHLD CC182	20	N			
CC182R			J17-D2	88	N				TB1-H13	163	N			
CC182W			J17-D3	88	N				TB1-K13	163	N			
CC183R	1		J17-P4	138	N				TB1-C77	138	N			
CC183W	1		J17-R4	138	N				TB1-C75	138	N			
CC184K	2		J17-C7	88	N				TB1-K62	163	N			
CC184L	2		J17-B8	88	N				TB1-K61	163	N			
CC184R	2		J17-C8	88	N				TB1-K60	163	N			
CC184W	2		J17-B7	88	N				TB1-K59	163	N			
CC185K	2		J17-F7	88	N				TB1-G62	163	N			
CC185L	2		J17-D6	88	N				TB1-G64	163	N			

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 31 OF 49

MIL 2078 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.
CC185R	2		J17-D7	88	N				TB1-G63	163	N			
CC185W	2		J17-D5	88	N				TB1-G61	163	N			
CC186K	1		J17-N6	138	N				TB1-G59	138	N			
CC186L	1		J17-N5	138	N				TB1-G60	138	N			
CC186R	1		J17-M6	138	N				TB1-H60	138	N			
CC186W	1		J17-M5	138	N				TB1-H59	138	N			
CC187L	1		J17-H1	138	N				TB1-F61	138	N			
CC187R	1		J17-G2	138	N				TB1-F60	138	N			
CC187W	1		J17-H2	138	N				TB1-F62	138	N			
CC188	1		J17-G1	138	N				TB1-F59	138	N			
CC189R	1		J17-M1	138	N				TB1-F63	138	N			
CC189W	1		J17-L1	138	N				TB1-D63	138	N			
CC190	3			300		275	7			300		275	5 7	
CC190B	1		TB1-C59	138	N				SHLD CC190	20	N			
CC190R			J17-N4	138	N				TB1-C61	138	N			
CC190W			J17-M4	138	N				TB1-C60	138	N			
CC191R	2		J17-B6	88	N				TB1-H63	138	N			
CC191W	2		J17-B5	88	N				TB1-H64	138	N			

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 32 OF 49

MIL 2078 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.
CC192	3			300		275	7			300		275	5 7	
CC192B	1		TB1-C59	138	N				SHLD CC192	20	N			
CC192R			J17-P1	138	N				TB1-D60	138	N			
CC192W			J17-N1	138	N				TB1-D61	138	N			
CC193	2		J17-F6	88	N				TB1-A64	163	N			
CC194	2		J17-F5	88	N				TB1-F64	163	N			
CC195	2		J17-F4	88	N				TB1-D64	163	N			
CC196	2		J17-F3	88	N				TB1-B64	163	N			
CC197	1		J17-P5	138	N				TB1-B26	138	N			
CC198R	2		J17-C6	88	N				TB1-K63	163	N			
CC198W	2		J17-C5	88	N				TB1-K64	163	N			
CC199	1		J17-M2	138	N				TB1-H61	138	N			
CC200	1		J17-M3	138	N				TB1-D70	138	N			
CC201	12			225		200	7			300		275	5 7	
CC201B	1		TB1-F12	138	N				SHLD CC201	20	N			
CC201R			J17-C2	88	N				TB1-F13	138	N			
CC201W			J17-C1	88	N				TB1-G13	138	N			
CC202L	2		J17-A6	88	N				TB1-B35	163	N			

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 33 OF 49

MIL 2078 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.
CC202R	2		J17-A8	88	N				TB1-B33	163	N			
CC202W	2		J17-A7	88	N				TB1-B34	163	N			
CC203L	2		J17-C9	88	N				TB1-A35	163	N			
CC203R	2		J17-F9	88	N				TB1-A33	163	N			
CC203W	2		J17-D9	88	N				TB1-A34	163	N			
CC204	3			225		200	7			300		275	5 7	
CC204B	1		TB1-G32	138	N				SHLD CC204	20	N			
CC204R			J17-B2	88	N				TB1-G30	138	N			
CC204W			J17-A2	88	N				TB1-G31	138	N			
CC205	1		J17-F2	88	N				TB1-C64	138	N			
CC206L	1		J17-T5	138	N				TB1-C63	138	N			
CC206R	1		J17-L5	138	N				TB1-A63	138	N			
CC206W	1		J17-L4	138	N				TB1-B63	138	N			
CC207	1		J17-L6	138	N				TB1-G70	138	N			
CC208	1		J17-R6	138	N				TB1-F76	138	N			
CC209	1		J17-S1	138	N				TB1-D75	138	N			
CC210	1		J17-S2	138	N				TB1-D74	138	N			
CC211	1		J17-S3	138	N				TB1-B69	138	N			

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 34 OF 49

MIL 2078 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.
CC212	1	J17-S4	138	N				TB1-B70	138	N			
CC213	1	J17-S6	138	N				TB1-D76	138	N			
CC214	1	J18-M3	138	N				TB1-K56	138	N			
CC215	1	J18-M4	138	N				TB1-K55	138	N			
CC216	1	J18-M6	138	N				TB1-K54	138	N			
CC217	1	J18-M5	138	N				TB1-H54	138	N			
CC218	12		225		200	7			300		275	5 7	
CC218B	1	TB1-D47	138	N				SHLD CC218	20	N			
CC218R		J18-B1	88	N				TB1-D45	138	N			
CC218W		J18-A1	88	N				TB1-D46	138	N			
CC219	12		225		200	7			300		275	5 7	
CC219B	1	TB1-B47	138	N				SHLD CC219	20	N			
CC219R		J18-A3	88	N				TB1-B45	138	N			
CC219W		J18-A2	88	N				TB1-B46	138	N			
CC220	1	J18-M2	138	N				TB1-H55	138	N			
CC221	12		225		200	7			300		275	5 7	
CC221B	1	TB1-G42	138	N				SHLD CC221	20	N			
CC221R		J18-D4	88	N				TB1-G43	138	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 | SIZE A | 1015088
SCALE-NONE | REV LTR C | SHEET 35 OF 49

MIL 2075 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.
CC221W		J18-D3	88	N				TB1-G44	138	N			
CC222	1	J18-M1	138	N				TB1-H56	138	N			
CC223	3		300		275	7			300		275	5 7	
CC223B	1	TB1-A58	138	N				SHLD CC223	20	N			
CC223R		J18-R2	138	N				TB1-B58	138	N			
CC223W		J18-P2	138	N				TB1-B57	138	N			
CC224	1	J18-T3	138	N				TB1-C71	138	N			
CC225	3		300		275	7			300		275	5 7	
CC225B	1	TB1-A59	138	N				SHLD CC225	20	N			
CC225R		J18-P1	138	N				TB1-B60	138	N			
CC225W		J18-P3	138	N				TB1-B59	138	N			
CC226	2	J18-C7	88	N				TB1-G55	163	N			
CC227	2	J18-C8	88	N				TB1-G54	163	N			
CC228	2	J18-C9	88	N				TB1-G56	163	N			
CC229	12		225		200	7			300		275	5 7	
CC229B	1	TB1-D42	138	N				SHLD CC229	20	N			
CC229R		J18-F3	88	N				TB1-D43	138	N			
CC229W		J18-F2	88	N				TB1-D44	138	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 | SIZE A | 1015088
SCALE-NONE | REV LTR C | SHEET 36 OF 49

MIL 2075 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.
CC230	12		225		200	7			300		275	5 7	
CC230B	1	TB1-C42	138	N				SHLD CC230	20	N			
CC230R		J18-F1	88	N				TB1-C44	138	N			
CC230W		J18-D1	88	N				TB1-C43	138	N			
CC231	12		225		200	7			300		275	5 7	
CC231B	1	TB1-F42	138	N				SHLD CC231	20	N			
CC231R		J18-F4	88	N				TB1-F44	138	N			
CC231W		J18-F5	88	N				TB1-F43	138	N			
CC232R	1	J18-S6	138	N				TB1-G51	138	N			
CC232W	1	J18-T6	138	N				TB1-G52	138	N			
CC233	3		225		200	7			300		275	5 7	
CC233B	1	TB1-D36	138	N				SHLD CC233	20	N			
CC233R		J18-A9	88	N				TB1-D37	163	N			
CC233W		J18-B9	88	N				TB1-D38	163	N			
CC234	3		225		200	7			300		275	5 7	
CC234B	1	TB1-B42	138	N				SHLD CC234	20	N			
CC234R		J18-C1	88	N				TB1-B43	163	N			
CC234W		J18-C2	88	N				TB1-B44	163	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 | SIZE A | 1015088
SCALE-NONE | REV LTR C | SHEET 37 OF 49

MIL 2075 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.
CC235	3		225		200	7			300		275	5 7	
CC235B	1	TB1-K39	138	N				SHLD CC235	20	N			
CC235R		J18-C5	88	N				TB1-K41	163	N			
CC235W		J18-D5	88	N				TB1-K40	163	N			
CC236R	1	J18-S4	138	N				TB1-H51	138	N			
CC236W	1	J18-T4	138	N				TB1-H52	138	N			
CC237	12		225		200	7			300		275	5 7	
CC237B	1	TB1-K36	138	N				SHLD CC237	20	N			
CC237R		J18-A5	88	N				TB1-K37	138	N			
CC237W		J18-B5	88	N				TB1-K38	138	N			
CC238R	1	J18-S5	138	N				TB1-G49	138	N			
CC238W	1	J18-T5	138	N				TB1-G48	138	N			
CC239	12		225		200	7			300		275	5 7	
CC239B	1	TB1-H36	138	N				SHLD CC239	20	N			
CC239R		J18-A7	88	N				TB1-H37	138	N			
CC239W		J18-B7	88	N				TB1-H38	138	N			
CC240	1	J18-R6	138	N				TB1-D77	138	N			
CC241	1	J18-R4	138	N				TB1-F77	138	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 | SIZE A | 1015088
SCALE-NONE | REV LTR C | SHEET 38 OF 49

MIL 2075 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC242	1		J19-M3	138	N				TB1-H58	138	N				
CC243	1		J19-M1	138	N				TB1-G57	138	N				
CC244	1		J19-M2	138	N				TB1-H57	138	N				
CC245	1		J19-M5	138	N				TB1-K57	138	N				
CC246	1		J19-M6	138	N				TB1-F58	138	N				
CC247	1		J19-T5	138	N				TB1-H71	138	N				
CC248	1		J19-M4	138	N				TB1-G58	138	N				
CC249R	2		J19-F9	88	N				TB1-K68	163	N				
CC249W	2		J19-F8	88	N				TB1-K69	163	N				
CC250R	2		J19-D8	88	N				TB1-H68	163	N				
CC250W	2		J19-D7	88	N				TB1-H69	163	N				
CC251	3			300		275	7			300		275	5	7	
CC251B	1		TB1-A59	138	N				SHLD CC251	20	N				
CC251R			J19-P6	138	N				TB1-A57	138	N				
CC251W			J19-R6	138	N				TB1-A61	138	N				
CC252R	1		J19-P1	138	N				TB1-B19	138	N				
CC252W	1		J19-P2	138	N				TB1-B18	138	N				
CC253	3			300		275	7			300		275	5	7	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 39 OF 49

MIL 2078 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC253B	1		TB1-K42	138	N				SHLD CC253	20	N				
CC253R			J19-G1	138	N				TB1-K44	138	N				
CC253W			J19-H1	138	N				TB1-K43	138	N				
CC254	3			300		275	7			300		275	5	7	
CC254B	1		TB1-H42	138	N				SHLD CC254	20	N				
CC254R			J19-K1	138	N				TB1-H44	138	N				
CC254W			J19-K2	138	N				TB1-H43	138	N				
CC255	12			225		200	7			300		275	5	7	
CC255B	1		TB1-D39	138	N				SHLD CC255	20	N				
CC255R			J19-C5	88	N				TB1-D40	138	N				
CC255W			J19-C6	88	N				TB1-D41	138	N				
CC256	12			225		200	7			300		275	5	7	
CC256B	1		TB1-C42	138	N				SHLD CC256	20	N				
CC256R			J19-B4	88	N				TB1-C41	138	N				
CC256W			J19-B5	88	N				TB1-C40	138	N				
CC257L	1		J19-N1	138	N				TB1-D50	138	N				
CC257R	1		J19-T1	138	N				TB1-K49	138	N				
CC257W	1		J19-S1	138	N				TB1-K48	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 40 OF 49

MIL 2078 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC258	12			225		200	7			300		275	5	7	
CC258B	1		TB1-C36	138	N				SHLD CC258	20	N				
CC258R			J19-A6	88	N				TB1-C37	138	N				
CC258W			J19-B6	88	N				TB1-C38	138	N				
CC259	12			225		200	7			300		275	5	7	
CC259B	1		TB1-F39	138	N				SHLD CC259	20	N				
CC259R			J19-C2	88	N				TB1-F41	138	N				
CC259W			J19-C1	88	N				TB1-F40	138	N				
CC260R	1		J19-T3	138	N				TB1-K51	138	N				
CC260W	1		J19-S3	138	N				TB1-K52	138	N				
CC261	12			225		200	7			300		275	5	7	
CC261B	1		TB1-F36	138	N				SHLD CC261	20	N				
CC261R			J19-A1	88	N				TB1-F37	138	N				
CC261W			J19-B1	88	N				TB1-F38	138	N				
CC262R	2		J19-D3	88	N				TB1-F68	163	N				
CC262W	2		J19-D2	88	N				TB1-F69	163	N				
CC263	3			225		200	7			300		275	5	7	
CC263B	1		TB1-H39	138	N				SHLD CC263	20	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 41 OF 49

MIL 2078 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.		NO.
CC263R			J19-C9	88	N				TB1-H41	138	N				
CC263W			J19-C8	88	N				TB1-H40	138	N				
CC264L	1		J19-P3	138	N				TB1-F48	138	N				
CC264R	1		J19-P4	138	N				TB1-F49	138	N				
CC264W	1		J19-P5	138	N				TB1-F50	138	N				
CC265	3			300		275	7			300		275	5	7	
CC265B	1		TB1-H47	138	N				SHLD CC265	20	N				
CC265R			J19-K5	138	N				TB1-H45	138	N				
CC265W			J19-K4	138	N				TB1-H46	138	N				
CC266	3			300		275	7			300		275	5	7	
CC266B	1		TB1-K47	138	N				SHLD CC266	20	N				
CC266R			J19-G4	138	N				TB1-K46	138	N				
CC266W			J19-G3	138	N				TB1-K45	138	N				
CC267	12			225		200	7			300		275	5	7	
CC267B	1		TB1-G39	138	N				SHLD CC267	20	N				
CC267R			J19-B7	88	N				TB1-G41	138	N				
CC267W			J19-B8	88	N				TB1-G40	138	N				
CC268L	1		J19-N2	138	N				TB1-D49	138	N				

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 42 OF 49

MIL 2078 3-63 WIR-R01

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC ITEM NO.	NO.
CC268R	1	J19-T2	138	N				TB1-H49	138	N			
CC268W	1	J19-S2	138	N				TB1-H48	138	N			
CC269	3		225		200	7			300		275	5 7	
CC269B	1	TB1-G36	138	N				SHLD CC269	20	N			
CC269R		J19-A9	88	N				TB1-G37	138	N			
CC269W		J19-B9	68	N				TB1-G38	138	N			
CC270	1	J19-L6	138	N				TB1-F56	138	N			
CC271	1	J19-R1	138	N				TB1-F78	138	N			
CC272	1	J19-R3	138	N				TB1-D78	138	N			
CC273L	1	J20-H4	138	N				TB1-A71	138	N			
CC273R	1	J20-G5	138	N				TB1-B73	138	N			
CC273W	1	J20-G6	138	N				TB1-A73	138	N			
CC274R	2	J20-C6	88	N				TB1-G66	163	N			
CC274W	2	J20-C7	88	N				TB1-G65	163	N			
CC275R	2	J20-D6	88	N				TB1-F66	163	N			
CC275W	2	J20-D7	88	N				TB1-F65	163	N			
CC276	13		225		200	7			300		275	5 7	
CC276B	1	TB1-A58	138	N				SHLD CC276	20	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 SIZE A 1015088
SCALE-NONE REV LTR C SHEET 43 OF 49

MIL 2075 3-63 WIR-RD1

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC ITEM NO.	NO.
CC276W		J20-F2	88	N				TB1-B61	138	N			
CC277R	2	J20-A7	88	N				TB1-H66	163	N			
CC277W	2	J20-A8	88	N				TB1-H65	163	N			
CC278	3		225		200	7			300		275	5 7	
CC278B	1	TB1-K67	138	N				SHLD CC278	20	N			
CC278R		J20-A9	88	N				TB1-K66	138	N			
CC278W		J20-B9	88	N				TB1-K65	138	N			
CC279	1	J20-N6	138	N				TB1-H71	138	N			
CC280	1	J20-N4	138	N				TB1-B71	138	N			
CC281	3		225		200	7			300		275	5 7	
CC281B	1	TB1-G67	138	N				SHLD CC281	20	N			
CC281R		J20-F6	88	N				TB1-G68	138	N			
CC281W		J20-F7	88	N				TB1-G69	138	N			
CC282	2	J20-B7	88	N				TB1-K58	163	N			
CC283	1	J20-N5	138	N				TB1-K71	138	N			
CC284	1	J20-M5	138	N				TB1-K72	138	N			
CC285R	1	J20-L6	138	N				TB1-C75	138	N			
CC285W	1	J20-L5	138	N				TB1-C76	138	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 SIZE A 1015088
SCALE-NONE REV LTR C SHEET 44 OF 49

MIL 2075 3-63 WIR-RD1

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC ITEM NO.	NO.
CC286R	1	J20-A4	88	N				TB1-D68	138	N			
CC286W	1	J20-B4	88	N				TB1-D69	138	N			
CC287	1	J20-H2	138	N				TB1-K78	138	N			
CC288	1	J20-H3	138	N				TB1-K77	138	N			
CC289	1	J20-F5	88	N				TB1-H74	138	N			
CC290	1	J20-F5	88	N				TB1-H74	138	N			
CC291	1	J20-G3	138	N				TB1-H73	138	N			
CC292	1	J24- 11	13	N				TB1-H74	138	N			
CC293	1	J20-F4	88	N				TB1-G73	138	N			
CC294R	1	J20-G2	138	N				TB1-G72	138	N			
CC294W	1	J20-G1	138	N				TB1-F72	138	N			
CC295	1	J20-T1	138	N				TB1-K76	138	N			
CC296	1	J20-S1	138	N				TB1-H76	138	N			
CC297	1	J20-T2	138	N				TB1-K75	138	N			
CC298	1	J20-S2	138	N				TB1-H75	138	N			
CC299	1	J20-T3	138	N				TB1-G76	138	N			
CC300	1	J20-T4	138	N				TB1-G75	138	N			
CC301	1	J20-R3	138	N				TB1-H72	138	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 SIZE A 1015088
SCALE-NONE REV LTR C SHEET 45 OF 49

MIL 2075 3-63 WIR-RD1

GYA WIRE LIST CC C 1015088

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC ITEM NO.	NO.
CC302	1	J20-T5	138	N				TB1-G78	138	N			
CC303	1	J20-S5	138	N				TB1-H78	138	N			
CC304	1	J20-T6	138	N				TB1-H77	138	N			
CC305	1	J20-S6	138	N				TB1-G77	138	N			
CC306	1	J20-L1	138	N				TB1-G7	138	N			
CC307	1	J20-L1	138	N				TB1-G71	138	N			
CC308	1	J20-L2	138	N				TB1-G71	138	N			
CC309R	1	J20-D1	88	N				TB1-F71	138	N			
CC309W	1	J20-F1	88	N				TB1-F70	138	N			
CC310R	1	J20-A6	88	N				TB1-K74	138	N			
CC310W	1	J20-B6	88	N				TB1-K73	138	N			
CC311R	1	J20-N3	138	N				TB1-B78	138	N			
CC311W	1	J20-M3	138	N				TB1-C78	138	N			
CC312	1	J20-R1	138	N				TB1-K76	138	N			
CC313	1	J20-P1	138	N				TB1-H76	138	N			
CC314	1	J20-R2	138	N				TB1-K75	138	N			
CC315	1	J20-P2	138	N				TB1-H75	138	N			
CC316	1	J20-S3	138	N				TB1-G76	138	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO. 99974 SIZE A 1015088
SCALE-NONE REV LTR C SHEET 46 OF 49

MIL 2075 3-63 WIR-RD1

GYA WIRE LIST CC C 1015088

CONDUCTOR INDIVIDUAL LENGTH			FROM						TO					
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.
CC317	1		J20-S4	138	N				TB1-G75	138	N			
CC318	1		J20-R5	138	N				TB1-G78	138	N			
CC319	1		J20-R6	138	N				TB1-G77	138	N			
CC320	1		J20-H1	138	N				TB1-F75	138	N			
CC321	1		J20-K1	138	N				TB1-F73	138	N			
CC322	1		J20-K2	138	N				TB1-C68	138	N			
CC323	1		J20-P3	138	N				TB1-D78	138	N			
CC324	1		J20-P4	138	N				TB1-F78	138	N			
CC325	14			300		275	7			300		275	6 7	
CC325B	1		TB1-G4	138	N				SHLD CC325	20	N			
CC325L			J22- 68	13	N		8		TB1-H5	138	N			
CC325R			J22- 67	13	N		8		TB1-G5	138	N			
CC325W			J22- 42	13	N		8		TB1-G3	138	N			
CC326	1		J22- 41	13	N		8		TB1-C4	138	N			
CC327	3			300		275	7			300		275	5 7	
CC327B	1		TB1-B17	138	N				SHLD CC327	20	N			
CC327R			J22- 14	13	N		8		TB1-B16	138	N			
CC327W			J22- 15	13	N		8		TB1-B15	138	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 47 OF 49

MIL 2075 3-63 WIR-RD1

GYA WIRE LIST CC C 1015088

CONDUCTOR INDIVIDUAL LENGTH			FROM						TO					
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.
CC328	3			300		275	7			300		275	5 7	
CC328B	1		TB1-B12	138	N				SHLD CC328	20	N			
CC328R			J22- 32	13	N		8		TB1-B14	138	N			
CC328W			J22- 16	13	N		8		TB1-B13	138	N			
CC329	3			300		275	7			300		275	5 7	
CC329B	1		TB1-A17	138	N				SHLD CC329	20	N			
CC329R			J22- 56	13	N		8		TB1-A16	138	N			
CC329W			J22- 33	13	N		8		TB1-A15	138	N			
CC330	3			300		275	7			300		275	5 7	
CC330B	1		TB1-A12	138	N				SHLD CC330	20	N			
CC330R			J22- 84	13	N		8		TB1-A13	138	N			
CC330W			J22- 85	13	N		8		TB1-A14	138	N			
CC331	1		J23- 57	13	N		8		TB1-F52	138	N			
CC332	13			300		275	5			300		275	7 7	
CC332A	1		SHLD CC332	20	N				E21	20	N			
CC332B	1		TB1-D56	138	N				SHLD CC332	20	N			
CC332W			J24- 26	13	N		8		TB1-C56	138	N			
CC333	1		J24- 1	13	N		8		TB1-G74	138	N			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 48 OF 49

MIL 2075 3-63 WIR-RD1

GYA WIRE LIST CC C 1015088

CONDUCTOR INDIVIDUAL LENGTH			FROM						TO					
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.
CC334	1		J24- 3	13	N		8		TB1-H73	138	N			
CC335	1		J24- 6	13	N		8		TB1-G73	138	N			
CC336	1		J24- 87	13	N		8		E18	20	N			
CC337	1		J24- 64	13	N		8		E20	20	N			
CC338	1		E6	20	N				E7	20	N			
CC339	1		E17	20	N				E18	20	N			
CC340	1		E19	20	N				E20	20	N			
CC341	1		TB1-K4	138	N				E2	20	N		11	
CC342	1		J13-C6	138	N				E1	20	N		9	
CC343	1		TB1-K70	138	N				E3	20	N		9	
CC344	1		E21	20	N				E22	20	N			
CC345	1		E21	20	N				E23	20	N			
CC346	1		J17-M3	138	N				J22- 39	13	N		8	
CC347	1		J17-L3	138	N				J22- 38	13	N		8	
CC348R	1		J16-A8	88	N				J22- 12	16	N		8	
CC348W	1		J16-A9	88	N				J22- 26	16	N		8	
CC349R	1		J16-C8	88	N				J22- 13	16	N		8	
CC349W	1		J16-B8	88	N				J22- 4	16	N		8	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER ES-686.
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

CODE IDENT NO.	SIZE	
99974	A	1015088
SCALE - NONE	REV LTR C	SHEET 49 OF 49

MIL 2075 3-63 WIR-RD1

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1007699-011	1015086	B	REPLACES WORD DWG REV A PER TDRR 16220	2/3/65	WK
	Ⓜ	C	REVISED PER TDRR 17763	30 MAR 65	M.G. / W.D.
		D	REPLACED WITH CHANGE BY REV E PER TDRR 20530	3 JULY 65	WJR / MEM

Ⓓ **REPLACED WITH CHANGE BY REV E**

Ⓑ REPLACES WORD DWG REV A

REV	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
SHEET	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
REV STATUS OF SHEETS — REV								D	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
REV STATUS OF SHEETS — SHEET								1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R. LaDue DATE 13 JAN 65
CHECKED C. Pigda 19 JAN 65
APPROVAL D. Barta 19 JAN 65
APPROVAL [illegible] 19 JAN 65

NASA APPROVAL [illegible]
MIT APPROVAL W [illegible] 3 Feb 65

CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRE LIST "CC"
AGE INTERCONNECT

CODE IDENT NO.
SIZE
1015088
REV D

SCALE —
SHEET 1 OF 49

D.O.
58761

APPLICATION		REVISIONS 15658			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. THIS IS AN INCOMPLETE DRAWING.
3. VENDOR ITEM-SEE SOURCE CONTROL OR SPECIFICATION CONTROL DRAWING.

REV			
SHEET			
REV STATUS	REV	+	+
OF SHEETS	SHEET	1	2

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN G B[illegible] DATE 18 DEC 64
CHECKED 18 DEC 64
APPROVAL D. Bapton 22 DEC 64
APPROVAL A. Hensley 21 DEC 64
NASA APPROVAL W. J. Rhine 1-19-65
MIT APPROVAL Jan 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRE LIST CC
AGE HARNESS AND PSA END
CONNECTOR ASSEMBLY

CODE IDENT NO. | SIZE | 1015088 | REV

CONTRACT NAS 9-497
SCALE NONE
SHEET 1 OF 2

NOTE	QTY	PART NUMBER	NOMENCLATURE
	1	1015088-1	WIRE PER 1010707-2 RED JKT 29 AWG WHT, RED, BLU 13 FT 1.0 IN. TOTAL LG
	1	1015088-2	WIRE PER 1010807-4 28 AWG WHT 180 FT 6.0 IN. TOTAL LG
	1	1015088-3	WIRE PER 1010807-5 24 AWG WHITE 615 FT 6.0 IN. TOTAL LG
	1	1015088-4	WIRE PER 1010807-3 WHT JKT 24 AWG WHT, RED 130 FT 8.0 IN. TOTAL LG
3	364	1010770-2	CONTACT, SOCKET
3	27	1010763-1	SLEEVE, SOLDER
3	78	1010763-2	SLEEVE, SOLDER
3	64	1010490-110	INSULATION-SLEEVING, ELEC
3	9	1010490-112	INSULATION-SLEEVING, ELEC
	4	MS-25036-44	TERMINAL LUG
3	66	1010490-142	INSULATION-SLEEVING, ELEC

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A | 1015088
SCALE-NONE | REV LTR | SHEET 2 of 2

MIL 2084 4-63

APPLICATION	
NEXT ASSY	USED ON
1015053-011	1015023-011

REVISIONS TDRR 12892

SYM	DESCRIPTION	DATE	APPROVAL
C	UPGRADED FOR CLASS A RELEASE	20 OCT 64	FK

REV	C	C	C
SHEET	16	17	18

REV STATUS OF SHEETS															
REV	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN 21 SEP 64 DATE
CHECKED W. Diehl 24 Sep 64
APPROVAL D.W. Mieling 24 Sep 64
APPROVAL 10/21/64

NASA APPROVAL 10-26-64
MIT APPROVAL 27 Oct 64

CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
G&N INDICATOR CONTROL PANEL

CODE IDENT NO.	SIZE		REV
	A	1015093	C

SCALE —

SHEET 1 OF 18

GRH WIRE HARNESS A B 1015093

PENNANT NOTE — GENERAL NOTES

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION OMITTING ALL SUFFIX LETTERS EXCEPT A,B,C, AND D PER ND1002019. (ES-2475-7).

5 SOLDER PER ND 1002071 USING ITEMS 16 AND 17

6 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

7 GRID MODULE IS 1 INCH.

8 UNLESS OTHERWISE SPECIFIED -
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - 1/4 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - 1/8 INCH

9 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

10 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING OR CONDUCTOR COLOR.
A - FROM END SHIELD
B - TO END SHIELD
G - GREEN
R - RED
Y - YELLOW

11 INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND1002206.

12 BIND WIRES TOGETHER PER ND1002032 USING [redacted] ITEM 9 TAPE. FORM RUNNING LOCKSTITCH AT 1/2 INCH SPACING.

13 TWIST CONDUCTORS A1,A2 AND A3 APPROX 18 TURNS PER FOOT

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015093
SCALE-NONE
REV LTR ~~B~~ C
SHEET 2 OF 18

GRH WIRE HARNESS A B 1015093

PENNANT NOTE — GENERAL NOTES

14 TWIST CONDUCTORS A58 AND A59 APPROX 18 TURNS PER FOOT

15 TWIST CONDUCTORS A60 AND A61 APPROX 18 TURNS PER FOOT

16 TWIST CONDUCTORS A64 AND A65 APPROX 18 TURNS PER FOOT

17 TWIST CONDUCTORS A66,A67,A68,A79 AND A80 APPROX 18 TURNS PER FOOT

18 TWIST CONDUCTORS A97 AND A98 APPROX 18 TURNS PER FOOT

19 TWIST CONDUCTORS A99 AND A100 APPROX 18 TURNS PER FOOT

20 TWIST CONDUCTORS A112 AND A113 APPROX 18 TURNS PER FOOT

21 TWIST CONDUCTORS A130,A131 AND A132 APPROX 18 TURNS PER FOOT

22 TWIST CONDUCTORS A134,A135 AND A136 APPROX 18 TURNS PER FOOT

23 TWIST CONDUCTORS A138,A139 AND A140 APPROX 18 TURNS PER FOOT

24 TWIST CONDUCTORS A66,A68,A72 AND A73 APPROX 18 TURNS PER FOOT

25 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH 50A1

26 CONDUCTOR LENGTHS ARE FOR MFG. REF ONLY

27 USE A FIGURE EIGHT TYPE STITCH IN BRANCH A BETWEEN SECTION B-B AND C-C (APPROXIMATELY 4 INCH). WIDTH SHALL NOT EXCEED 5/16 INCH PER BUNDLE. CONDUCTORS BREAKING OUT ON TOP SIDE TO TERMINATION POINTS 34 THRU 39, 44 AND 55 SHALL BE ROUTED IN TOP BUNDLES.

28 INSULATION SHALL BE RECESSED INTO INSULATION CUP OF PIN BODY ON ALL CONDUCTORS TERMINATING IN TERMINATION NO. 1.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015093
SCALE-NONE
REV LTR ~~B~~ C
SHEET 3 OF 18

GRH WIRE HARNESS A B 1015093

PENNANT NOTE — GENERAL NOTES

29 TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	TOLERANCE STRIP JACKET	TOLERANCE CUT WIRE	TOLERANCE CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50

30 FABRICATE HARNESS IN ACCORDANCE WITH ND 1002032.

31 SERIALIZE PER ND 1002023.

32 Pot Back of Connector P1 in Accordance with ND 1002236

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015093
SCALE-NONE
REV LTR ~~B~~ C
SHEET 4 OF 18

GRH WIRE HARNESS A B 1015093

PENNANT — LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015093- 1	WIRE PER 1010789-11, YEL JKT 24AWG YEL. 9 FT. 5.5 INCH TOTAL LENGTH
	2	1	1015093- 2	WIRE PER 1010789-12, YEL JKT 24AWG YEL, RED. 10 FT. 7.0 INCH TOTAL LENGTH
	3	1	1015093- 3	WIRE PER 1010789-13, YEL JKT 24AWGYEL, RED, GREEN. 8 FT. 9.3 INCH TOTAL LENGTH
	4	1	1015093- 4	WIRE PER 1010789-1, 24AWG, YELLOW, 134 FEET 4.6 INCH TOTAL LENGTH
	5	1	1015093- 5	WIRE PER 1010789-6, 22AWG YELLOW. 3 FT. 11.0 INCH TOTAL LENGTH
9	6	7	1010490-170	INSULATION SLEEVING HEAT SHRINK
9	7	5	1010490-168	INSULATION SLEEVING HEAT SHRINK
9	8	149	1010476- 82	INSULATION SLEEVING HEAT SHRINK
9	9	AR	1012507- 1	LACING TAPE (WHITE)
9	10	5	1010402- 1	SOLDER SLEEVE
9	11	18	1010402- 2	SOLDER SLEEVE
9	12	5	1010490-172	INSULATION SLEEVING HEAT SHRINK
9	13	1	1010812- 3	SEAL,CONNECTOR
9	14	108	1010738- 5	CONTACT ELECTRICAL
9	15	1	1010825- 1	CONNECTOR, PLUG, ELECTRICAL (108 PIN)
	16	AR	QQ-S-571 SN60 WRAP2	SOLDER SN60 (ES-2175 ALLOY 1)

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015093
SCALE-NONE
REV LTR ~~B~~ C
SHEET 5 OF 18

WIRE HARNESS A

LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	17	AR	MIL-F-14256	FLUX
9	18	1	1010638- 6	TERMINAL
9	19	AR	1012503- 1	Compound Polyurethane
9	20	AR	1012503- 2	Compound Polyurethane
9	21	AR	1012504- 1	Primer Metal
9	22	AR	1012504- 2	Primer Metal
9	23	AR	1012505- 1	Primer PVC

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015093	
SCALE - NONE	REV LTR C		SHEET 6 of 18

MIL 2084 4-63

GRH WIRE HARNESS A B 1015093

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							
NUMBER	ITEM NO.	2>	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC. ITEM NO.	1>	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC ITEM NO.	1>	NO.	
A 1	4	[redacted]	A1- 1	25	Y		8		21	T1- 3	25	Y				22	
A 2	4	[redacted]	A1- 2	25	Y		8		21A	S3-2-C	25	Y		8		47	
A 3	4	[redacted]	A1- 3	25	Y		8		21A	S3-2-C	25	Y				47	
A 4	2	[redacted]		350		325	6	7A			800		775	11	8A		
A 4B	4	[redacted]	E2	25	N				48	SHLD A4	25	Y					
A 4R			A1- 4	25	Y		8		21A	S11-4-NC	25	Y		8		27A	
A 4Y			A1-12	25	Y	200	8		21A	S15-1-C	25	Y	200	8		29A	
A 5	2	[redacted]		350		325	6	7A			750		725	11	8A		
A 5B	4	[redacted]	E2	25	N				48	SHLD A5	25	Y					
A 5R			A1- 8	25	Y		8		21A	S11-3-NC	25	Y		8		27A	
A 5Y			A1-10	25	Y		8		21A	S11-9-NO	25	Y	100	8		28C	
A 8	2	[redacted]		250		225	11	8A			375		350	6	7A		
A 8A	4	[redacted]	SHLD A8	25	Y					E3	25	N				51	
A 8R			P1- 80	10			14		1	T1- 1	25	Y		8		22	
A 8Y			P1- 69	10	N		14		1	T1- 2	25	Y				22	
A 9	4	[redacted]	S3-2-NO	25	Y		8		47	T1- 1	25	Y				22	
A 10	4	[redacted]	S3-1-NC	25	Y		8		47	T1- 7	25	Y		8		22	
A 11	4	[redacted]	S3-1-NO	25	Y		8		47	T1- 5	25	Y		8		22	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015093	
SCALE - NONE	REV LTR ~~B~~ C		SHEET 7 OF 18

MIL 2085 - 4-63 WIR

GRH WIRE HARNESS A B 1015093

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							
NUMBER	ITEM NO.	2>	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC. ITEM NO.	1>	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC ITEM NO.	1>	NO.	
A 14	4	[redacted]	P1- 92	10	N		14		1	S16-7-C	25	Y				39	
A 15	4	[redacted]	P1- 74	10	N		14		1	S16-8-NC	25	Y		8		39	
A 16	4	[redacted]	P1- 90	10	N		14		1	S16-4-C	25	Y				55	
A 17	4	[redacted]	P1-100	10	N		14		1	S16-3-C	25	Y				55	
A 18	4	[redacted]	P1- 88	10	N		14		1	S16-1-NC	25	Y		8		55	
A 19	4	[redacted]	P1- 87	10	N		14		1	S16-2-NC	25	Y		8		55	
A 20	4	[redacted]	P1-101	10	N		14		1	S16-3-NC	25	Y		8		55	
A 21	4	[redacted]	P1- 94	10	N		14		1	S16-4-NC	25	Y		8		55	
A 22	4	[redacted]	S16-1-NC	25	Y				55	S16-6-C	25	Y		8		39	
A 23	4	[redacted]	P1- 76	10	N		14		1	S16-5-NC	25	Y		8		39	
A 24	4	[redacted]	P1- 75	10	N		14		1	S16-6-NC	25	Y		8		39	
A 25	4	[redacted]	P1-105	10	N		14		1	S16-7-NC	25	Y		8		39	
A 26	1	[redacted]		250		225	10	8A			350		325	12	7A		B
A 26A	4	[redacted]	SHLD A26	25	Y					E3	25	N				51	
A 26Y			P1- 56	10	N		14		1	S11-8-NC	25	Y		8		28C	
A 27	1	[redacted]		250		225	10	8A			350		325	12	7A		B
A 27A	4	[redacted]	SHLD A27	25	Y					E3	25	N				51	
A 27Y			P1- 47	10	N		14		1	S11-11-NC	25	Y		8		28A	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015093	
SCALE - NONE	REV LTR ~~B~~ C		SHEET 8 OF 18

MIL 2085 - 4-63 WIR

GRH WIRE HARNESS A B 1015093

CONDUCTOR INDIVIDUAL LENGTH			FROM							TO							
NUMBER	ITEM NO.	2>	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC. ITEM NO.	1>	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2>	T I N	CUT WIRE OR SHIELD 2>	TERMINATION SPEC ITEM NO.	1>	NO.	
A 28	1	[redacted]		250		225	10	8A			350		325	12	7A		B
A 28A	4	[redacted]	SHLD A28	25	Y					E3	25	N				51	
A 28Y			P1- 48	10	N		14		1	S11-10-NC	25	Y		8		28B	
A 34	4	[redacted]	P1- 72	10	N		14		1	S11-1-NC	25	Y		8		27C	
A 35	3	[redacted]		275		250	11	8B			800		775	7	7A		B
A 35A	4	[redacted]	SHLD A35	25	Y					E5	25	N				53	
A 35G			P1- 37	10	N		14		1	S11-12-NC	25	Y		8		28	
A 35R			P1- 25	10	N		14		1	S11-2-NC	25	Y		8		27B	
A 35Y			P1- 36	10	N		14		1	S11-12-C	25	Y		8		28C	
A 36	4	[redacted]	S11-12-C	25	Y				28	S11-2-C	25	Y		8		27C	
A 37	4	[redacted]	P1- 1	10	N		14		1	S15-7-NC	25	Y		8		30	A
A 38	4	[redacted]	S15-7-NC	25	Y				30A	S11-1-C	25	Y		8		27B	
A 39	4	[redacted]	S11-1-C	25	Y				27	S14-2-C	25	Y		8		25	
A 43	4	[redacted]	S11-6-NO	25	Y		8		27	S4-1-NC	25	Y		8		26	
A 44	4	[redacted]	S15-6-NC	25	Y		8		30A	S15-2-NC	25	Y		8		29A	
A 45	4	[redacted]	S11-4-C	25	Y		8		27	S15-2-NC	25	Y				29A	
A 46	4	[redacted]	S11-11-C	25	Y		8		28C	S11-6-C	25	Y		8		27A	
A 47	4	[redacted]	S11-4-NO	25	Y		8		27B	S11-10-C	25	Y		8		28A	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015093	
SCALE - NONE	REV LTR ~~B~~ C		SHEET 9 OF 18

MIL 2085 - 4-63 WIR

GRH WIRE HARNESS A B 1015093

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC. 1> ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC 1> ITEM NO.		NO.	
A 48	4	[redacted]	S11-10-NO	25	Y		8		28C	S15-1-NC	25	Y				29A	
A 49	2	[redacted]		350		325	11	8B			250		225	6	7A		A
A 49A	4	[redacted]	SHLD A49	25	Y					E4	25	N				52	
A 49R			P1- 35	10	N		14		1	S15-2-C	25	Y		8		29A	
A 49Y			P1- 34	10	N		14		1	S15-2-NO	25	Y				29A	
A 50	4	[redacted]	S11-3-C	25	Y		8		27B	S15-4-NC	25	Y				29	
A 51	4	[redacted]	S11-9-C	25	Y		8		28C	S15-3-C	25	Y		8		29A	
A 52	4	[redacted]	S11-8-NO	25	Y		8		28C	S15-3-NC	25	Y				29A	
A 53	2	[redacted]		350		325	11	8B			250		225	6	7A		A
A 53A	4	[redacted]	SHLD A53	25	Y					E4	25	N				52	
A 53R			P1- 19	10	N		14		1	S15-4-C	25	Y		8		29	
A 53Y			P1- 33	10	N		14		1	S15-4-NO	25	Y				29	
A 54	4	[redacted]	P1- 99	10	N		14		1	S15-7-C	25	Y		8		30A	A
A 55	3	[redacted]		300		275	7	7A			650		625	11	8A		
A 55B	4	[redacted]	E2	25	N				48	SHLD A55	25	Y					
A 55G			S12-3-NO	25	Y		8		24	S15-5-C	25	Y		8		30	
A 55R			S12-2-NO	25	Y		8		24	S15-3-NO	25	Y	300			29A	
A 55Y			S12-1-NO	25	Y		8		24	S15-6-C	25	Y		8		30	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015093
SCALE - NONE
REV LTR ~~B~~ C
SHEET 10 OF 18

MIL 2085 - 4-63 WIR

GRH WIRE HARNESS A B 1015093

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC. 1> ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC 1> ITEM NO.		NO.	
A 56	3	[redacted]		300		275	11	8A			325		300	7	7A		B
A 56A	4	[redacted]	SHLD A56	25	Y					E5	25	N				53	
A 56G			P1- 24	10	N	50	14		1	S12-1-C	25	Y		8		24	
A 56R			P1- 23	10	N	25	14		1	S12-2-C	25	Y		8		24	
A 56Y			P1- 10	10	N		14		1	S12-3-C	25	Y		8		24	
A 57	3	[redacted]		250		225	11	8A			350		325	7	7A		B
A 57A	4	[redacted]	SHLD A57	25	Y					E5	25	N				53	
A 57G			P1- 22	10	N	100	14		1	S12-3-NC	25	Y		8		24A	
A 57R			P1- 9	10	N	25	14		1	S12-2-NC	25	Y		8		24A	
A 57Y			P1- 8	10	N	50	14		1	S12-1-NC	25	Y		8		24	
A 58	4	[redacted]	P1- 84	10	N		14		1	S17-2-NC	25	Y		8		45	
A 59	4	[redacted]	P1- 54	10	N		14		1	S17-1-NC	25	Y		8		45	
A 60	4	[redacted]	S17-2-NC	25	Y				45	S12-4-NO	25	Y		8		24A	
A 61	4	[redacted]	S17-1-NC	25	Y				45	S12-4-NC	25	Y		8		24A	
A 62	4	[redacted]	S12-4-C	25	Y		8		24A	XDS12-HI	25	Y		8		23A	
A 64	4	[redacted]	XDS 4-LO	25	Y		8		20	XDS 3-LO	25	Y		8		5	
A 65	4	[redacted]	XDS 4-HI	25	Y		8		20	XDS 3-HI	25	Y				5	
A 66	4	[redacted]	P1- 52	10	N		14		1	XDS12-LO	25	Y		8		23A	A

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015093
SCALE - NONE
REV LTR ~~B~~ C
SHEET 11 OF 18

MIL 2085 - 4-63 WIR

GRH WIRE HARNESS A B 1015093

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC. 1> ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC 1> ITEM NO.		NO.	
A 67	4	[redacted]	P1- 61	10	N		14		1	S1-2-NC	25	Y				44	
A 68	4	[redacted]	P1- 62	10	N		14		1	S2-1-C	25	Y		8		19	A
A 69	4	[redacted]	S1-1-C	25	Y				44	S18-3-NC	25	Y				31A	
A 70	4	[redacted]	S17-2-C	25	Y				45A	S24-1-NO	25	Y		8		46	
A 72	4	[redacted]	S24-1-NO	25	Y				46	S2-1-C	25	Y				19A	
A 73	4	[redacted]	XDS12-LO	25	Y				23	XDS 4-LO	25	Y				20	
A 74	4	[redacted]	S2-1-NC	25	Y		8		19B	XDS 4-HI	25	Y				20	
A 75	4	[redacted]	P1- 32	10	N		14		1	S25-1-NO	25	Y		8		46	
A 76	4	[redacted]	S25-1-NO	25	Y				46	R1-CW	25	Y		8		46	
A 77	4	[redacted]	P1- 44	10	N		14		1	R1-CCW	25	Y				50	B
A 78	4	[redacted]	P1- 26	10	N		14		1	S25-1-C	25	Y		8		46	
A 79	4	[redacted]	P1- 63	10	N		14		1	S24-1-C	25	Y		8		46	
A 80	4	[redacted]	P1- 64	10	N		14		1	S24-1-C	25	Y				46	
A 87	4	[redacted]	P1- 41	10	N		14		1	S10-1	25	Y		8		6	
A 88	4	[redacted]	P1- 50	10	N		14		1	S10-3	25	Y				6	
A 93	4	[redacted]	P1- 73	10	N		14		1	S1-1-NC	25	Y		8		44	
A 95	4	[redacted]	P1- 28	10	N		14		1	S1-2-NO	25	Y		8		44	
A 96	4	[redacted]	P1- 71	10	N		14		1	S11-11-C	25	Y				28C	B

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015093
SCALE - NONE
REV LTR ~~B~~ C
SHEET 12 OF 18

MIL 2085 - 4-63 WIR

GRH WIRE HARNESS A B 1015093

CONDUCTOR			FROM							TO							
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC. 1> ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC 1> ITEM NO.		NO.	
A 102	4	[redacted]	P1- 58	10	N		14		1	S14-1-NC	25	Y		8		25	
A 103	4	[redacted]	P1- 59	10	N		14		1	S14-1-NO	25	Y		8		25	
A 104	3	[redacted]		250		225	11	8A			250		225	7	7A		
A 104A	4	[redacted]	SHLD A104	25	Y					E6	25	N				54	
A 104G			P1- 42	10	N		14		1	S13-1-C	25	Y		8		8	
A 104R			P1- 31	10	N		14		1	S13-1-NO	25	Y		8		8	
A 104Y			P1- 30	10	N		14		1	S13-1-NC	25	Y		8		8	
A 105	2	[redacted]		350		325	11	8B			250		225	6	7A		A
A 105A	4	[redacted]	SHLD A105	25	Y					E6	25	N				54	
A 105R			P1- 55	10	N		14		1	S18-2-NO	25	Y		8		31A	
A 105Y			P1- 46	10	N		14		1	S18-2-NC	25	Y		8		31A	
A 106	1	[redacted]		350		325	10	8B			250		225	12	7A		
A 106A	4	[redacted]	SHLD A106	25	Y					E6	25	N				54	
A 106Y			P1- 53	10	N		14		1	S18-1-NC	25	Y				31	
A 108	4	[redacted]	P1- 51	10	N		14		1	S18-3-NC	25	Y				31	
A 109	4	[redacted]	S18-3-C	25	Y		8		31A	S21-1-C	25	Y				33	
A 110	4	[redacted]	P1- 66	10	N		14		1	S9-2-C	25	Y				34	
A 111	2	[redacted]		250		225	11	8A			350		325	6	7A		

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015093
SCALE - NONE
REV LTR ~~B~~ C
SHEET 13 OF 18

MIL 2085 - 4-63 WIR

GRH WIRE HARNESS A B 1015093

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC. 1> ITEM NO	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.
A 111A	4	[redacted]	SHLD A111	25	Y			E6	25	N		54
A 111R			P1- 95	10	N	14	1	S9-1-C	25	Y		34
A 111Y			P1- 81	10	N	14	1	S9-1-NO	25	Y		34
A 112	4	[redacted]	P1- 65	10	N	14	1	S9-2-NO	25	Y	8	34A
A 113	4	[redacted]	P1- 77	10	N	14	1	S9-7-NO	25	Y	8	35C
A 114	4	[redacted]	P1- 67	10	N	14	1	S9-8-C	25	Y		35
A 115	4	[redacted]	P1- 78	10	N	14	1	S20-2-C	25	Y	8	32C
A 116	4	[redacted]	P1- 79	10	N	14	1	S21-3-C	25	Y	8	33
A 117	1	[redacted]		250	225	10	8A		450	425	12	7A
A 117A	4	[redacted]	SHLD A117	25	Y			E6	25	N		54
A 117Y			P1- 68	10	N	14	1	S20-4-C	25	Y		32E
A 118	4	[redacted]	P1- 93	10	N	14	1	S21-3-NO	25	Y	8	33
A 119	4	[redacted]	P1-106	10	N	14	1	S20-2-NO	25	Y	8	32D
A 120	4	[redacted]	P1- 85	10	N	14	1	S7-2-C	25	Y	8	40
A 121	4	[redacted]	P1- 86	10	N	14	1	S23-1-NO	25	Y	8	41
A 122	4	[redacted]	P1- 89	10	N	14	1	S7-2-NC	25	Y	8	40
A 123	4	[redacted]	P1- 97	10	N	14	1	S8-1-NO	25	Y	8	42
A 124	4	[redacted]	P1- 98	10	N	14	1	S7-1-C	25	Y	8	40

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015093
SCALE - NONE
REV LTR ~~B~~ C
SHEET 14 OF 18

MIL 2085 · 4-63 WIR

GRH WIRE HARNESS A B 1015093

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.
A 125	4	[redacted]	P1-102	10	N	14	1	S23-1-NC	25	Y	8	41
A 126	4	[redacted]	P1-103	10	N	14	1	S8-1-NC	25	Y	8	42
A 127	4	[redacted]	P1-104	10	N	14	1	S7-1-NC	25	Y	8	40
A 128	4	[redacted]	S7-1-NO	25	Y	8	40	S8-1-C	25	Y	8	42A
A 129	4	[redacted]	S7-2-NO	25	Y	8	40	S23-1-C	25	Y	8	41A
A 130	4	[redacted]	P1- 16	10	N	14	1	S19-6-C	25	Y		12
A 131	4	[redacted]	P1- 3	10	N	14	1	S19-5-NO	25	Y	8	15
A 132	4	[redacted]	P1- 17	10	N	14	1	S19-6-NO	25	Y	8	12
A 133	4	[redacted]	S19-5-C	25	Y	8	16	S19-6-C	25	Y	8	12
A 134	4	[redacted]	P1- 7	10	N	14	1	S19-3-C	25	Y		11
A 135	4	[redacted]	P1- 20	10	N	14	1	S19-3-NO	25	Y	8	11
A 136	4	[redacted]	P1- 6	10	N	14	1	S19-4-NO	25	Y	8	17
A 137	4	[redacted]	S19-4-C	25	Y	8	18	S19-3-C	25	Y	8	11
A 138	4	[redacted]	P1- 4	10	N	14	1	S19-1-NO	25	Y	8	9
A 139	4	[redacted]	P1- 5	10	N	14	1	S19-2-NO	25	Y	8	14
A 140	4	[redacted]	P1- 18	10	N	14	1	S19-2-C	25	Y		14A
A 141	4	[redacted]	S19-1-C	25	Y	8	10	S19-2-C	25	Y	8	13
A 142	5	[redacted]	P1-91	10	N	14	1	E1	25	N	18	3

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015093
SCALE - NONE
REV LTR ~~B~~ C
SHEET 15 OF 18

MIL 2085 · 4-63 WIR

GRH WIRE HARNESS A B 1015093

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.
A 143	5	[redacted]	P1-83	10	N	14	1	E7	25	N	11	2
A 144	5	[redacted]	E6	25	N	11	54	E7	25	N		2
A 145	5	[redacted]	E5	25	N	11	53	E7	25	N		2
A 146	5	[redacted]	E4	25	N	11	52	E7	25	N		2
A 147	5	[redacted]	E3	25	N	11	51	E7	25	N		2
A 148	5	[redacted]	E2	25	N	11	48	E7	25	N		2
A 149	4	[redacted]	P1-40	10	N	14	1	S10-5	25	Y	8	6
A 151	4	[redacted]	S17-1-C	25	Y		45A	S1-2-NC	25	Y		44
A 152	4	[redacted]	S11-3-NO	25	Y	8	27C	S11-8-C	25	Y	8	28C
A 153	4	[redacted]	S20-1-C	25	Y		32B	S9-4-NO	25	Y	8	34B
A 154	4	[redacted]	S9-8-NO	25	Y		35B	S20-2-NC	25	Y	8	32D
A 155	4	[redacted]	S9-5-C	25	Y		35A	S20-4-NC	25	Y	8	32
A 156	4	[redacted]	S9-4-C	25	Y		34B	S20-1-NC	25	Y	8	32A
A 157	4	[redacted]	S9-5-NO	25	Y		35A	S20-3-C	25	Y	8	32E
A 158	4	[redacted]	S16-4-C	25	Y		55	S16-5-C	25	Y	8	39
A 159	4	[redacted]	P1-14	10	N	14	1	S1-3-NC	25	Y	8	44
A 160	4	[redacted]	P1-15	10	N	14	1	S1-3-C	25	Y	8	44
A 161	4	[redacted]	P1-38	10	N	14	1	S4-1-NC	25	Y		26

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015093
SCALE - NONE
REV LTR ~~B~~ C
SHEET 16 OF 18

MIL 2085 · 4-63 WIR

GRH WIRE HARNESS A B 1015093

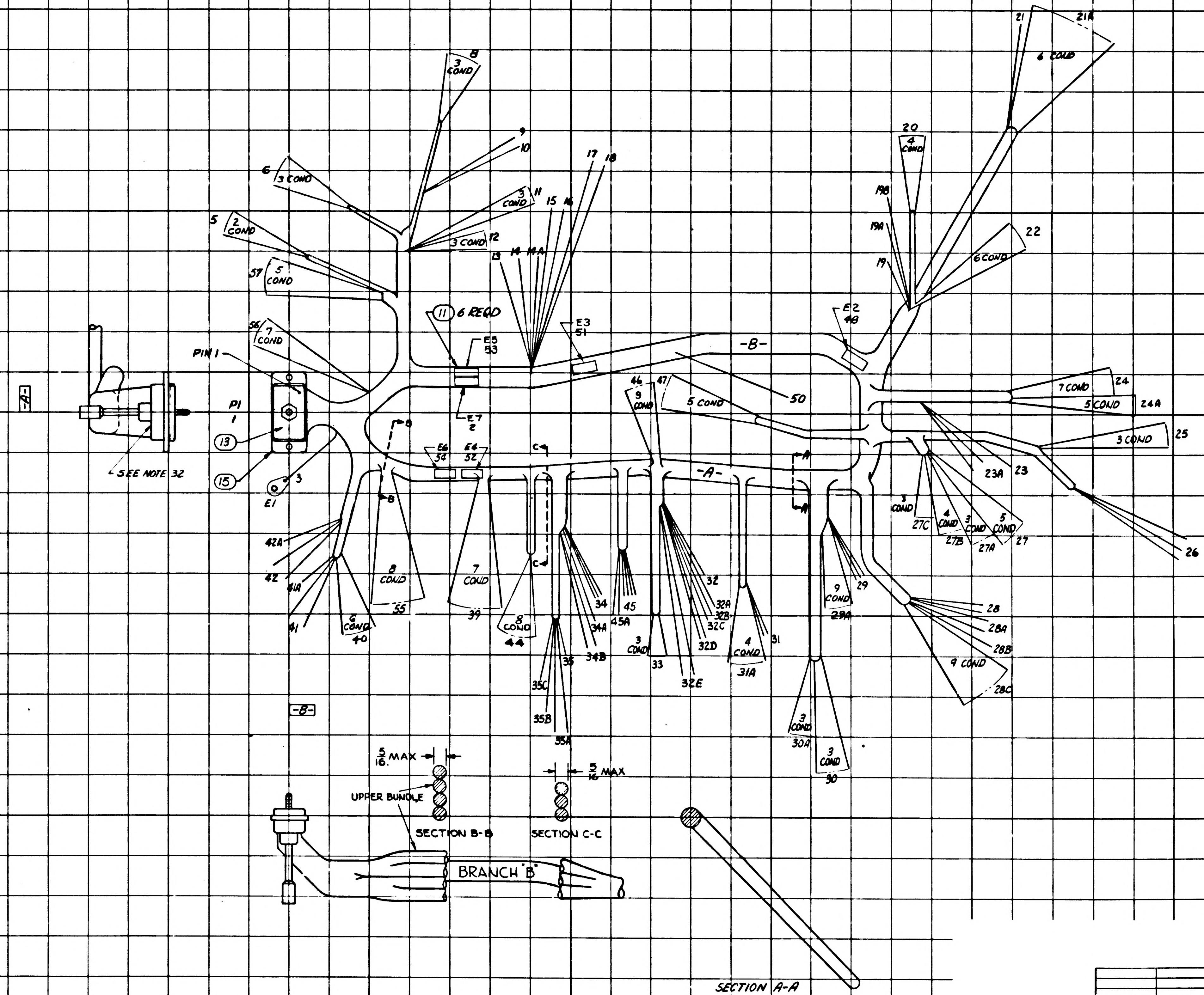
CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.
A 162	4	[redacted]	P1-49	10	N	14	1	S11-6-NO	25	Y		27
A 163	4	[redacted]	S4-1-C	25	Y	8	26	S11-6-NC	25	Y	8	27
A 164	4	[redacted]	S1-2-C	25	Y	8	44	S5-6-NO	25	Y	8	56
A 165	4	[redacted]	P1- 12	10	N	14	1	S5-1-C	25	Y	8	57
A 166	4	[redacted]	P1- 13	10	N	14	1	S5-2-C	25	Y	8	57
A 167	4	[redacted]	P1- 11	10	N	14	1	S5-3-C	25	Y	8	57
A 168	4	[redacted]	P1- 27	10	N	14	1	S5-4-C	25	Y	8	57
A 169	4	[redacted]	P1- 39	10	N	14	1	S5-5-C	25	Y	8	56
A 170	4	[redacted]	P1- 29	10	N	14	1	S5-6-C	25	Y	8	56
A 171	4	[redacted]	P1- 70	10	N	14	1	S5-7-C	25	Y	8	56
A 172	4	[redacted]	P1- 60	10	N	14	1	S5-7-NO	25	Y	8	56
A 173	4	[redacted]	S25-1-C	25	Y		46	S5-5-NO	25	Y	8	56
A 174	4	[redacted]	S5-5-NO	25	Y		56	S5-4-NC	25	Y	8	57

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015093
SCALE - NONE
REV LTR ~~B~~ C
SHEET 17 OF 18

MIL 2085 · 4-63 WIR

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		UPGRADED FOR CLASS A RELEASE TDRR 13892		20 OCT 64	FK



-A-
P1
1
PIN 1
13
15
3
E1
SEE NOTE 32
8
3 COND
9
10
6
3 COND
5
2 COND
57
5 COND
56
7 COND
3 COND 11
3 COND 12
13
14
14A
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16
17
18
11 6 REQD
E5
53
E3
51
E7
2
E6
54
E4
52
B
C
46
9 COND
47
5 COND
50
-B-
-A-
E2
48
A
21
21A
6 COND
20
4 COND
19B
19A
19
22
6 COND
7 COND
24
5 COND
24A
3 COND
25
23A
23
26
3 COND
27C
4 COND
27B
3 COND
27A
5 COND
27
42A
42
41A
41
6 COND
40
8 COND
55
7 COND
39
8 COND
44
35C
35
35B
35A
34
34A
34B
45
45A
3 COND
33
32
32A
32B
32C
32D
32E
4 COND
31
31A
9 COND
29
29A
28
28A
28B
9 COND
28C
3 COND
30A
3 COND
30
-B-
5/16 MAX
UPPER BUNDLE
SECTION B-B
BRANCH "B"
5/16 MAX
SECTION C-C
SECTION A-A TYPICAL

1015053-011	1015023-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± __ DECIMALS ± __ ANGLES ± __
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 23 SEP 64 DATE
CHECKED N. Siehl 24 Sep '64
APPROVAL 24 Sep 64
APPROVAL
NASA APPROVAL 10-29-64
MIT APPROVAL 27 Oct

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
G&N INDICATOR CONTROL PANEL

CODE IDENT NO. SIZE E 1015093
SCALE 1/1 SHEET 8 OF 8

APPLICATION	
NEXT ASSY	USED ON
1015053-011	1015023-011

REVISIONS TDRR 13892

SYM	DESCRIPTION	DATE	APPROVAL
C	UPGRADED FOR CLASS A RELEASE	20 OCT 64	FK
D	REVISED PER TDRR 14286 19 SHEET WAS 18 SHEETS	19 NOV 64	JWP EF

REV	D	D	D	D															
SHEET	16	17	18	19															
REV STATUS OF SHEETS	REV	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D			
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN DATE 21 SEP 64
CHECKED W. Siehl 24 Sep. 64
APPROVAL D.W. Mieling 24 Sep 64
APPROVAL J.H. Nimm 10/21/64

NASA APPROVAL 10-26-64
MIT APPROVAL 27 Oct 64

CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
G&N INDICATOR CONTROL PANEL

CODE IDENT NO.	SIZE		REV
	A	1015093	D

SCALE —

SHEET 1 OF 18

PENNANT NOTE GENERAL NOTES

1 SEE CONDUCTOR CHART. PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION OMITTING ALL SUFFIX LETTERS EXCEPT A,B,C, AND D PER ND1002019. (ES-2475-7).

5 SOLDER PER ND 1002071 USING ITEMS 16 AND 17

6 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

7 GRID MODULE IS 1 INCH.

8 UNLESS OTHERWISE SPECIFIED -
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - 1/4 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - 1/8 INCH

9 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

10 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING OR CONDUCTOR COLOR.
A - FROM END SHIELD
B - TO END SHIELD
G - GREEN
R - RED
Y - YELLOW

11 INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND1002206.

12 BIND WIRES TOGETHER PER ND1002032 USING ITEM 9 TAPE. FORM RUNNING LOCKSTITCH AT 1/2 INCH SPACING.

13 TWIST CONDUCTORS A1,A2 AND A3 APPROX 18 TURNS PER FOOT

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015093
SCALE-NONE | REV LTR D | SHEET 2 OF 19

PENNANT NOTE GENERAL NOTES

14 TWIST CONDUCTORS A58 AND A59 APPROX 18 TURNS PER FOOT

15 TWIST CONDUCTORS A60 AND A61 APPROX 18 TURNS PER FOOT

16 TWIST CONDUCTORS A64 AND A65 APPROX 18 TURNS PER FOOT

17 TWIST CONDUCTORS A66,A67,A68,A79 AND A80 APPROX 18 TURNS PER FOOT

18 TWIST CONDUCTORS A97 AND A98 APPROX 18 TURNS PER FOOT

19 TWIST CONDUCTORS A99 AND A100 APPROX 18 TURNS PER FOOT

20 TWIST CONDUCTORS A112 AND A113 APPROX 18 TURNS PER FOOT

21 TWIST CONDUCTORS A130,A131 AND A132 APPROX 18 TURNS PER FOOT

22 TWIST CONDUCTORS A134,A135 AND A136 APPROX 18 TURNS PER FOOT

23 TWIST CONDUCTORS A138,A139 AND A140 APPROX 18 TURNS PER FOOT

24 TWIST CONDUCTORS A66,A68,A72 AND A73 APPROX 18 TURNS PER FOOT

25 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH 50A1

26 DELETE

27 USE A FIGURE EIGHT TYPE STITCH IN BRANCH A BETWEEN SECTION B-B AND C-C (APPROXIMATELY 4 INCH). WIDTH SHALL NOT EXCEED 5/16 INCH PER BUNDLE. CONDUCTORS BREAKING OUT ON TOP SIDE TO TERMINATION POINTS 34 THRU 39, 44 AND 55 SHALL BE ROUTED IN TOP BUNDLES.

28 INSULATION SHALL BE RECESSED INTO INSULATION CUP OF PIN BODY ON ALL CONDUCTORS TERMINATING IN TERMINATION NO. 1.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015093
SCALE-NONE | REV LTR D | SHEET 3 OF 19

PENNANT NOTE GENERAL NOTES

30 FABRICATE HARNESS IN ACCORDANCE WITH ND1002032.

31 SERIALIZE PER ND1002023.

32 POT BACK OF CONNECTOR P1 IN ACCORDANCE WITH ND1002236

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	TOLERANCE STRIP JACKET	TOLERANCE CUT WIRE	TOLERANCE CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015093
SCALE-NONE | REV LTR D | SHEET 4 OF 19

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
	1	1	1015093- 1	WIRE PER 1010789-11, YEL JKT 24AWG YEL, 9 FT. 5.5 INCH TOTAL LENGTH
	2	1	1015093- 2	WIRE PER 1010789-12, YEL JKT 24AWG YEL, RED. 10 FT. 7.0 INCH TOTAL LENGTH
	3	1	1015093- 3	WIRE PER 1010789-13, YEL JKT 24AWGYEL, RED, GREEN. 8 FT. 9.3 INCH TOTAL LENGTH
	4	1	1015093- 4	WIRE PER 1010789-1, 24AWG, YELLOW, 134 FEET 4.6 INCH TOTAL LENGTH
	5	1	1015093- 5	WIRE PER 1010789-6, 22AWG YELLOW. 3 FT. 11.0 INCH TOTAL LENGTH
9	6	7	1010490-170	INSULATION SLEEVING HEAT SHRINK
9	7	5	1010490-168	INSULATION SLEEVING HEAT SHRINK
9	8	149	1010476- 82	INSULATION SLEEVING HEAT SHRINK
9	9	AR	1012507- 1	LACING TAPE (WHITE)
9	10	5	1010402- 1	SOLDER SLEEVE
9	11	18	1010402- 2	SOLDER SLEEVE
9	12	5	1010490-172	INSULATION SLEEVING HEAT SHRINK
9	13	1	1010812- 3	SEAL,CONNECTOR
9	14	108	1010738- 5	CONTACT ELECTRICAL
9	15	1	1010825- 4	CONNECTOR, PLUG, ELECTRICAL (108 PIN)

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015093
SCALE-NONE | REV LTR D | SHEET 5 OF 19

GRH WIRE HARNESS A D 1015093

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
	16	AR	QQ-S-571 SN60 WRAP2	SOLDER SN60 (ES-2175 ALLOY 1)
.	17	AR	MIL-F-14256	FLUX
9	18	1	1010638- 6	TERMINAL
9	19	AR	1012503- 1	COMPOUND POLYURETHANE
9	20	AR	1012503- 2	COMPOUND POLYURETHANE
9	21	AR	1012504- 1	PRIMER METAL
9	22	AR	1012504- 2	PRIMER METAL
9	23	AR	1012505- 1	PRIMER PVC

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1015093
SCALE-NONE REV LTR D SHEET 6 OF 19

GRH WIRE HARNESS A D 1015093

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	TERMINATION SPEC.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	TERMINATION SPEC	NO.
A 1	4	A1- 1	25	Y		8		21	T1- 3	25	Y				22
A 2	4	A1- 2	25	Y		8		21A	S3-2-C	25	Y		8		47
A 3	4	A1- 3	25	Y		8		21A	S3-2-C	25	Y				47
A 4	2		350		325	6	7A			800		775	11	8A	
A 4B	4	E2	25	N				48	SHLD A4	25	Y				
A 4R		A1- 4	25	Y		8		21A	S11-4-NC	25	Y		8		27A
A 4Y		A1-12	25	Y	200	8		21A	S15-1-C	25	Y	200	8		29A
A 5	2		350		325	6	7A			750		725	11	8A	
A 5B	4	E2	25	N				48	SHLD A5	25	Y				
A 5R		A1- 8	25	Y		8		21A	S11-3-NC	25	Y		8		27A
A 5Y		A1-10	25	Y		8		21A	S11-9-NO	25	Y	100	8		28C
A 8	2		250		225	11	8A			375		350	6	7A	
A 8A	4	SHLD A8	25	Y					E3	25	N				51
A 8R		P1- 80	10			14		1	T1- 1	25	Y		8		22
A 8Y		P1- 69	10	N		14		1	T1- 2	25	Y				22
A 9	4	S3-2-NO	25	Y		8		47	T1- 1	25	Y				22
A 10	4	S3-1-NC	25	Y		8		47	T1- 7	25	Y		8		22
A 11	4	S3-1-NO	25	Y		8		47	T1- 5	25	Y		8		22

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MIL 2085 4-63 W/R

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1015093
SCALE-NONE REV LTR D SHEET 7 OF 19

GRH D 1015093

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	TERMINATION SPEC.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	TERMINATION SPEC	NO.
A 14	4	P1- 92	10	N				1	S16-7-C	25	Y				39
A 15	4	P1- 74	10	N		14		1	S16-8-NC	25	Y		8		39
A 16	4	P1- 90	10	N		14		1	S16-4-C	25	Y				55
A 17	4	P1-100	10	N		14		1	S16-3-C	25	Y				55
A 18	4	P1- 88	10	N		14		1	S16-1-NC	25	Y		8		55
A 19	4	P1- 87	10	N		14		1	S16-2-NC	25	Y		8		55
A 20	4	P1-101	10	N		14		1	S16-3-NC	25	Y		8		55
A 21	4	P1- 94	10	N		14		1	S16-4-NC	25	Y		8		55
A 22	4	S16-1-NC	25	Y				55	S16-6-C	25	Y		8		39
A 23	4	P1- 76	10	N		14		1	S16-5-NC	25	Y		8		39
A 24	4	P1- 75	10	N		14		1	S16-6-NC	25	Y		8		39
A 25	4	P1-105	10	N		14		1	S16-7-NC	25	Y		8		39
A 26	1		250		225	10	8A			350		325	12	7A	
A 26														B	
A 26A	4	SHLD A26	25	Y					E3	25	N				51
A 26Y		P1- 56	10	N		14		1	S11-8-NC	25	Y		8		28C
A 27	1		250		225	10	8A			350		325	12	7A	
A 27														B	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MIL 2085 4-63 W/R

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1015093
SCALE-NONE REV LTR D SHEET 8 OF 19

GRH WIRE HARNESS A D 1015093

CONDUCTOR NUMBER	ITEM NO.	FROM CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	TERMINATION SPEC.	NO.	TO CIRCUIT POINT	CUT WIRE OR SHIELD	TIN	STRIP WIRE OR JACKET	TERMINATION ITEM NO.	TERMINATION SPEC	NO.
A 27A	4	SHLD A27	25	Y					E3	25	N				51
A 27Y		P1- 47	10	N		14		1	S11-11-NC	25	Y		8		28A
A 28	1		250		225	10	8A			350		325	12	7A	
A 28														B	
A 28A	4	SHLD A28	25	Y					E3	25	N				51
A 28Y		P1- 48	10	N		14		1	S11-10-NC	25	Y		8		28B
A 34	4	P1- 72	10	N		14		1	S11-1-NC	25	Y		8		27C
A 35	3		275		250	11	8B			800		775	7	7A	
A 35														B	
A 35A	4	SHLD A35	25	Y					E5	25	N				53
A 35G		P1- 37	10	N		14		1	S11-12-NC	25	Y		8		28
A 35R		P1- 25	10	N		14		1	S11-2-NC	25	Y		8		27B
A 35Y		P1- 36	10	N		14		1	S11-12-C	25	Y		8		28C
A 36	4	S11-12-C	25	Y				28	S11-2-C	25	Y		8		27C
A 37	4	P1- 1	10	N		14		1	S15-7-NC	25	Y		8		30
A 37														A	
A 38	4	S15-7-NC	25	Y				30A	S11-1-C	25	Y		8		27B
A 39	4	S11-1-C	25	Y				27	S14-2-C	25	Y		8		25

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MIL 2085 4-63 W/R

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1015093
SCALE-NONE REV LTR D SHEET 9 OF 19

GRH WIRE HARNESS A D 1015093

CONDUCTOR			FROM							TO							
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2>	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC. 1> ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC 1> ITEM NO.		NO.	
A 43	4		S11-6-NO	25	Y		8		27	S4-1-NC	25	Y		8		26	
A 44	4		S15-6-NC	25	Y		8		30A	S15-2-NC	25	Y		8		29A	
A 45	4		S11-4-C	25	Y		8		27	S15-2-NC	25	Y				29A	
A 46	4		S11-11-C	25	Y		8		28C	S11-6-C	25	Y		8		27A	
A 47	4		S11-4-NO	25	Y		8		27B	S11-10-C	25	Y		8		28A	
A 48	4		S11-10-NO	25	Y		8		28C	S15-1-NC	25	Y				29A	
A 49	2			350		325	11	8B			250		225	6	7A		
A 49															A		
A 49A	4		SHLD A49	25	Y					E4	25	N				52	
A 49R			P1- 35	10	N		14		1	S15-2-C	25	Y		8		29A	
A 49Y			P1- 34	10	N		14		1	S15-2-NO	25	Y				29A	
A 50	4		S11-3-C	25	Y		8		27B	S15-4-NC	25	Y				29	
A 51	4		S11-9-C	25	Y		8		28C	S15-3-C	25	Y		8		29A	
A 52	4		S11-8-NO	25	Y		8		28C	S15-3-NC	25	Y				29A	
A 53	2			350		325	11	8B			250		225	6	7A		
A 53															A		
A 53A	4		SHLD A53	25	Y					E4	25	N				52	
A 53R			P1- 19	10	N		14		1	S15-4-C	25	Y		8		29	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015093
SCALE - NONE	REV LTR D	SHEET 10 OF 19

MIL 2085 - 4-63 WIR

GRH WIRE HARNESS A D 1015093

CONDUCTOR			FROM							TO							
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2>	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC. 1> ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC 1> ITEM NO.		NO.	
A 53Y			P1- 33	10	N		14		1	S15-4-NO	25	Y				29	
A 54	4		P1- 99	10	N		14		1	S15-7-C	25	Y		8		30A	
A 54															A		
A 55	3			300		275	7	7A			650		625	11	8A		
A 55B	4		E2	25	N				48	SHLD A55	25	Y					
A 55G			S12-3-NO	25	Y		8		24	S15-5-C	25	Y		8		30	
A 55R			S12-2-NO	25	Y		8		24	S15-3-NO	25	Y	300			29A	
A 55Y			S12-1-NO	25	Y		8		24	S15-6-C	25	Y		8		30	
A 56	3			300		275	11	8A			325		300	7	7A		
A 56															B		
A 56A	4		SHLD A56	25	Y					E5	25	N				53	
A 56G			P1- 24	10	N	50	14		1	S12-1-C	25	Y		8		24	
A 56R			P1- 23	10	N	25	14		1	S12-2-C	25	Y		8		24	
A 56Y			P1- 10	10	N		14		1	S12-3-C	25	Y		8		24	
A 57	3			250		225	11	8A			350		325	7	7A		
A 57															B		
A 57A	4		SHLD A57	25	Y					E5	25	N				53	
A 57G			P1- 22	10	N	100	14		1	S12-3-NC	25	Y		8		24A	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015093
SCALE - NONE	REV LTR D	SHEET 11 OF 19

MIL 2085 - 4-63 WIR

GRH WIRE HARNESS A D 1015093

CONDUCTOR			FROM							TO							
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2>	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC. 1> ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC 1> ITEM NO.		NO.	
A 57R			P1- 9	10	N	25	14		1	S12-2-NC	25	Y		8		24A	
A 57Y			P1- 8	10	N	50	14		1	S12-1-NC	25	Y		8		24	
A 58	4		P1- 84	10	N		14		1	S17-2-NC	25	Y		8		45	
A 59	4		P1- 54	10	N		14		1	S17-1-NC	25	Y		8		45	
A 60	4		S17-2-NC	25	Y				45	S12-4-NO	25	Y		8		24A	
A 61	4		S17-1-NC	25	Y				45	S12-4-NC	25	Y		8		24A	
A 62	4		S12-4-C	25	Y		8		24A	XDS12-HI	25	Y		8		23A	
A 64	4		XDS 4-LO	25	Y		8		20	XDS 3-LO	25	Y		8		5	
A 65	4		XDS 4-HI	25	Y		8		20	XDS 3-HI	25	Y				5	
A 66	4		P1- 52	10	N		14		1	XDS12-LO	25	Y		8		23A	
A 66															A		
A 67	4		P1- 61	10	N		14		1	S1-2-NC	25	Y				44	
A 68	4		P1- 62	10	N		14		1	S2-1-C	25	Y		8		19	
A 68															A		
A 69	4		S1-1-C	25	Y				44	S18-3-NC	25	Y				31A	
A 70	4		S17-2-C	25	Y				45A	S24-1-NO	25	Y		8		46	
A 72	4		S24-1-NO	25	Y				46	S2-1-C	25	Y				19A	
A 73	4		XDS12-LO	25	Y				23	XDS 4-LO	25	Y				20	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015093
SCALE - NONE	REV LTR D	SHEET 12 OF 19

MIL 2085 - 4-63 WIR

GRH WIRE HARNESS A D 1015093

CONDUCTOR			FROM							TO							
NUMBER	INDIVIDUAL LENGTH ITEM NO.	2>	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC. 1> ITEM NO.		NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC 1> ITEM NO.		NO.	
A 74	4		S2-1-NC	25	Y		8		19B	XDS 4-HI	25	Y				20	
A 75	4		P1- 32	10	N		14		1	S25-1-NO	25	Y		8		46	
A 76	4		S25-1-NO	25	Y				46	R1-CW	25	Y		8		46	
A 77	4		P1- 44	10	N		14		1	R1-CCW	25	Y				50	
A 77															B		
A 78	4		P1- 26	10	N		14		1	S25-1-C	25	Y		8		46	
A 79	4		P1- 63	10	N		14		1	S24-1-C	25	Y		8		46	
A 80	4		P1- 64	10	N		14		1	S24-1-C	25	Y				46	
A 87	4		P1- 41	10	N		14		1	S10-1	25	Y		8		6	
A 88	4		P1- 50	10	N		14		1	S10-3	25	Y				6	
A 93	4		P1- 73	10	N		14		1	S1-1-NC	25	Y		8		44	
A 95	4		P1- 28	10	N		14		1	S1-2-NO	25	Y		8		44	
A 96	4		P1- 71	10	N		14		1	S11-11-C	25	Y				28C	
A 96															B		
A 102	4		P1- 58	10	N		14		1	S14-1-NC	25	Y		8		25	
A 103	4		P1- 59	10	N		14		1	S14-1-NO	25	Y		8		25	
A 104	3			250		225	11	8A			250		225	7	7A		
A 104A	4		SHLD A104	25	Y					E6	25	N				54	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015093
SCALE - NONE	REV LTR D	SHEET 13 OF 19

MIL 2085 - 4-63 WIR

GRH WIRE HARNESS A D 1015093

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET				FROM TERMINATION			TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TO TERMINATION		
NUMBER	ITEM NO.	2>	CIRCUIT POINT	2>	TIN	2>	ITEM NO.	SPEC. 1>	NO.	CIRCUIT POINT	2>	TIN	2>	ITEM NO.	SPEC 1>	NO.
A 104G			P1- 42	10	N		14		1	S13-1-C	25	Y		8		8
A 104R			P1- 31	10	N		14		1	S13-1-NO	25	Y		8		8
A 104Y			P1- 30	10	N		14		1	S13-1-NC	25	Y		8		8
A 105	2			350		325	11	8B			250		225	6	7A	
A 105															A	
A 105A	4		SHLD A105	25	Y					E6	25	N				54
A 105R			P1- 55	10	N		14		1	S18-2-NO	25	Y		8		31A
A 105Y			P1- 46	10	N		14		1	S18-2-NC	25	Y		8		31A
A 106	1			350		325	10	8B			250		225	12	7A	
A 106A	4		SHLD A106	25	Y					E6	25	N				54
A 106Y			P1- 53	10	N		14		1	S18-1-NC	25	Y				31
A 108	4		P1- 51	10	N		14		1	S18-3-NC	25	Y				31
A 109	4		S18-3-C	25	Y		8		31A	S21-1-C	25	Y				33
A 110	4		P1- 66	10	N		14		1	S9-2-C	25	Y				34
A 111	2			250		225	11	8A			350		325	6	7A	
A 111A	4		SHLD A111	25	Y					E6	25	N				54
A 111R			P1- 95	10	N		14		1	S9-1-C	25	Y				34
A 111Y			P1- 81	10	N		14		1	S9-1-NO	25	Y				34

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015093
SCALE - NONE | REV LTR D | SHEET 14 OF 19

MIL 2085 · 4-63 WIR

GRH WIRE HARNESS A D 1015093

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET				FROM TERMINATION			TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TO TERMINATION		
NUMBER	ITEM NO.	2>	CIRCUIT POINT	2>	TIN	2>	ITEM NO.	SPEC. 1>	NO.	CIRCUIT POINT	2>	TIN	2>	ITEM NO.	SPEC 1>	NO.
A 112	4		P1- 65	10	N		14		1	S9-2-NO	25	Y		8		34A
A 113	4		P1- 77	10	N		14		1	S9-7-NO	25	Y		8		35C
A 114	4		P1- 67	10	N		14		1	S9-8-C	25	Y				35
A 115	4		P1- 78	10	N		14		1	S20-2-C	25	Y		8		32C
A 116	4		P1- 79	10	N		14		1	S21-3-C	25	Y		8		33
A 117	1			250		225	10	8A			450		425	12	7A	
A 117A	4		SHLD A117	25	Y					E6	25	N				54
A 117Y			P1- 68	10	N		14		1	S20-4-C	25	Y				32E
A 118	4		P1- 93	10	N		14		1	S21-3-NO	25	Y		8		33
A 119	4		P1-106	10	N		14		1	S20-2-NO	25	Y		8		32D
A 120	4		P1- 85	10	N		14		1	S7-2-C	25	Y		8		40
A 121	4		P1- 86	10	N		14		1	S23-1-NO	25	Y		8		41
A 122	4		P1- 89	10	N		14		1	S7-2-NC	25	Y		8		40
A 123	4		P1- 97	10	N		14		1	S8-1-NO	25	Y		8		42
A 124	4		P1- 98	10	N		14		1	S7-1-C	25	Y		8		40
A 125	4		P1-102	10	N		14		1	S23-1-NC	25	Y		8		41
A 126	4		P1-103	10	N		14		1	S8-1-NC	25	Y		8		42
A 127	4		P1-104	10	N		14		1	S7-1-NC	25	Y		8		40

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015093
SCALE - NONE | REV LTR D | SHEET 15 OF 19

MIL 2085 · 4-63 WIR

GRH WIRE HARNESS A D 1015093

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET				FROM TERMINATION			TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TO TERMINATION		
NUMBER	ITEM NO.	2>	CIRCUIT POINT	2>	TIN	2>	ITEM NO.	SPEC. 1>	NO.	CIRCUIT POINT	2>	TIN	2>	ITEM NO.	SPEC 1>	NO.
A 128	4		S7-1-NO	25	Y		8		40	S8-1-C	25	Y		8		42A
A 129	4		S7-2-NO	25	Y		8		40	S23-1-C	25	Y		8		41A
A 130	4		P1- 16	10	N		14		1	S19-6-C	25	Y				12
A 131	4		P1- 3	10	N		14		1	S19-5-NO	25	Y		8		15
A 132	4		P1- 17	10	N		14		1	S19-6-NO	25	Y		8		12
A 133	4		S19-5-C	25	Y		8		16	S19-6-C	25	Y		8		12
A 134	4		P1- 7	10	N		14		1	S19-3-C	25	Y				11
A 135	4		P1- 20	10	N		14		1	S19-3-NO	25	Y		8		11
A 136	4		P1- 6	10	N		14		1	S19-4-NO	25	Y		8		17
A 137	4		S19-4-C	25	Y		8		18	S19-3-C	25	Y		8		11
A 138	4		P1- 4	10	N		14		1	S19-1-NO	25	Y		8		9
A 139	4		P1- 5	10	N		14		1	S19-2-NO	25	Y		8		14
A 140	4		P1- 18	10	N		14		1	S19-2-C	25	Y				14A
A 141	4		S19-1-C	25	Y		8		10	S19-2-C	25	Y		8		13
A 142	5		P1-91	10	N		14		1	E1	25	N		18		3
A 143	5		P1-83	10	N		14		1	E7	25	N		11		2
A 144	5		E6	25	N		11		54	E7	25	N				2
A 145	5		E5	25	N		11		53	E7	25	N				2

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015093
SCALE - NONE | REV LTR D | SHEET 16 OF 19

MIL 2085 · 4-63 WIR

GRH WIRE HARNESS A D 1015093

CONDUCTOR INDIVIDUAL LENGTH			FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET				FROM TERMINATION			TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET				TO TERMINATION		
NUMBER	ITEM NO.	2>	CIRCUIT POINT	2>	TIN	2>	ITEM NO.	SPEC. 1>	NO.	CIRCUIT POINT	2>	TIN	2>	ITEM NO.	SPEC 1>	NO.
A 146	5		E4	25	N		11		52	E7	25	N				2
A 147	5		E3	25	N		11		51	E7	25	N				2
A 148	5		E2	25	N		11		48	E7	25	N				2
A 149	4		P1-40	10	N		14		1	S10-5	25	Y		8		6
A 151	4		S17-1-C	25	Y				45A	S1-2-NC	25	Y				44
A 152	4		S11-3-NO	25	Y		8		27C	S11-8-C	25	Y		8		28C
A 153	4		S20-1-C	25	Y				32B	S9-4-NO	25	Y		8		34B
A 154	4		S9-8-NO	25	Y				35B	S20-2-NC	25	Y		8		32D
A 155	4		S9-5-C	25	Y				35A	S20-4-NC	25	Y		8		32
A 156	4		S9-4-C	25	Y				34B	S20-1-NC	25	Y		8		32A
A 157	4		S9-5-NO	25	Y				35A	S20-3-C	25	Y		8		32E
A 158	4		S16-4-C	25	Y				55	S16-5-C	25	Y		8		39
A 159	4		P1-14	10	N		14		1	S1-3-NC	25	Y		8		44
A 160	4		P1-15	10	N		14		1	S1-3-C	25	Y		8		44
A 161	4		P1-38	10	N		14		1	S4-1-NC	25	Y				26
A 162	4		P1-49	10	N		14		1	S11-6-NO	25	Y				27
A 163	4		S4-1-C	25	Y		8		26	S11-6-NC	25	Y		8		27
A 164	4		S1-2-C	25	Y		8		44	S5-6-NO	25	Y		8		56

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015093
SCALE - NONE | REV LTR D | SHEET 17 OF 19

MIL 2085 · 4-63 WIR

GRH WIRE HARNESS A D 1015093

CONDUCTOR			FROM						TO					
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD				TERMINATION SPEC. 1		CUT WIRE OR SHIELD				TERMINATION SPEC 1	
NUMBER	ITEM NO.	2	STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	ITEM NO.	NO.	STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	2	ITEM NO.	NO.
A 165	4		P1- 12	10	N		14	1	S5-1-C	25	Y		8	57
A 166	4		P1- 13	10	N		14	1	S5-2-C	25	Y		8	57
A 167	4		P1- 11	10	N		14	1	S5-3-C	25	Y		8	57
A 168	4		P1- 27	10	N		14	1	S5-4-C	25	Y		8	57
A 169	4		P1- 39	10	N		14	1	S5-5-C	25	Y		8	56
A 170	4		P1- 29	10	N		14	1	S5-6-C	25	Y		8	56
A 171	4		P1- 70	10	N		14	1	S5-7-C	25	Y		8	56
A 172	4		P1- 60	10	N		14	1	S5-7-NO	25	Y		8	56
A 173	4		S25-1-C	25	Y			46	S5-5-NO	25	Y		8	56
A 174	4		S5-5-NO	25	Y			56	S5-4-NC	25	Y		8	57

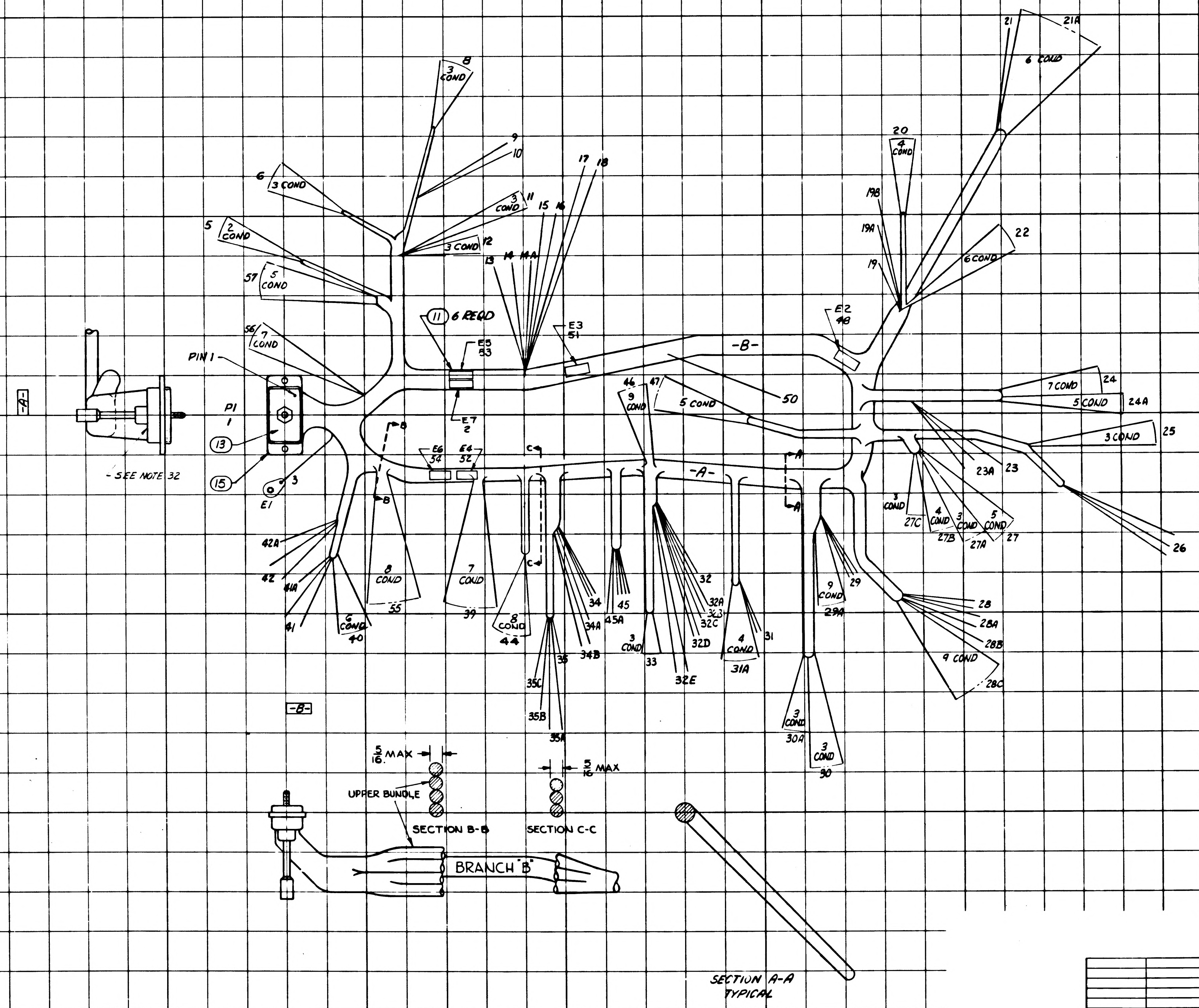
1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015093
SCALE - NONE	REV LTR D	SHEET 18 OF 19

MIL 2085 - 4-63 WIR

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
C		UPGRADED FOR CLASS A RELEASE TDRR 13892		20 OCT 64	FK



8
3 COND
9
10
6
3 COND
3 COND
11
15
16
17
18
5
2 COND
3 COND
12
13
14
14A
57
5 COND
11
6 REQD
E3
51
E5
53
56
7 COND
PIN 1
P1
1
13
15
E1
3
-A-
- SEE NOTE 32
E7
2
B
E6
54
E4
52
C
-B-
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46
9 COND
47
5 COND
-A-
A
A
21
21A
6 COND
20
4 COND
19B
19A
19
22
6 COND
E2
48
7 COND
24
5 COND
24A
3 COND
25
23A
23
3 COND
27C
4 COND
27B
3 COND
27A
5 COND
27
26
42A
42
41A
41
6 COND
40
8 COND
55
7 COND
39
C
8 COND
44
34
34A
34B
35
35C
35B
35A
45
45A
3 COND
33
32
32A
32B
32C
32D
32E
4 COND
31
31A
9 COND
29
29A
3 COND
30A
3 COND
30
28
28A
28B
9 COND
28C
-B-
5/16 MAX
UPPER BUNDLE
SECTION B-B
5/16 MAX
SECTION C-C
BRANCH "B"
SECTION A-A
TYPICAL

1015053-011	1015023-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 23 SEP 64 DATE
CHECKED W. Diehl 24 Sep 64
APPROVAL D.W. 24 Sep 64
APPROVAL 29-64
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
G&N INDICATOR CONTROL PANEL

CODE IDENT NO.
SIZE E
1015093
SCALE 1/1
SHEET 3 OF 3

1015093 D

Ⓜ

Ⓜ

APPLICATION	
NEXT ASSY	USED ON
1015053-011	1015023-011

REVISIONS TDRR 12892

SYM	DESCRIPTION	DATE	APPROVAL
C	UPGRADED FOR CLASS A RELEASE	20 OCT 64	FK
D	REVISED PER TDRR 14286 19 SHEET WAS 18 SHEETS	19 NOV 64	JWP EF
E	REVISED PER TDRR 16371	15-FEB-65	

REV	E	E	E	E
SHEET	16	17	18	19

REV STATUS OF SHEETS																
	REV	E	D	D	D	E	D	E	E	E	E	E	E	E	E	E
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN DATE 21 SEP 64
CHECKED W. Diehl 24 Sep. 64
APPROVAL 24 Sep 64
APPROVAL 10/21/64
NASA APPROVAL
MIT APPROVAL

WIRING HARNESS A
G&N INDICATOR CONTROL PANEL

CODE IDENT NO.
SIZE A
1015093
REV E

CONTRACT NAS 9-497
SCALE —
SHEET 1 OF 19

APPLICATION		REVISIONS TDRR 13592			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1015053-011	1015023-011	B	UPGRADED FOR CLASS A RELEASE	20 OCT 64	WB

REV STATUS OF SHEETS						
REV	B	B	B	B	B
SHEET	1	2	3	4	5

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN 21 SEP 64 DATE
CHECKED 24 Sep 64
APPROVAL 29 Sep 64
APPROVAL 10/21/64

NASA APPROVAL 10-29-64
MIT APPROVAL 27 Oct 64

CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRE LIST A-A
G & N INDICATOR CONTROL PANEL

CODE IDENT NO.
SIZE A
1015094
REV B

SCALE —
SHEET 1 OF 5

GRQ WIRE LIST AA A 1015094

PENNANT GENERAL NOTES

NOTE

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION OMITTING ALL SUFFIX LETTERS EXCEPT A,B,C, AND D PER ND1002019. (ES-2475-7)

5 SOLDER PER ND1002071 USING ITEMS 2 AND 3

6 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

7 PARTIAL REF. DESIGINATIONS ARE SHOWN. FOR COMPLETE DESIGINATION PREFIX WITH 50A1

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE WIRE OR CABLE	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+ .06-.00	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+ .50-.00	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET	+1.00-.00		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET	+2.00-.00				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015094
SCALE-NONE | REV LTR ✗ B | SHEET 2 OF 5

WIRE LIST AA

LIST OF MATERIALS

ITEM	QTY	PART NO	DESCRIPTION
1	1	1015094-001	WIRE, 1010789-001 24AWG YELLOW 7 FT 1.5 INCHES TOTAL LENGTH
2	AR	QQ-S-571 SN60 WRAP2	SOLDER (ES-2175 ALLOY 1)
3	AR	MIL-F-14256	FLUX
4	29	1010476-082	INSULATION SLEEVING HEAT SHRINK

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A
SCALE-NONE | REV LTR B | SHEET 3 OF 5

GRQ WIRE LIST AA A 1015094

CONDUCTOR		INDIVIDUAL LENGTH	FROM						TO					
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.
AA 1	1	[redacted]	T1- 2	25	Y				T1- 3	25	Y			
AA 4	1	[redacted]	S3- 1-C	25	Y		4		S3- 2-NC	25	Y		4	
AA 5	1	[redacted]	S16- 7-C	25	Y				S16- 8-C	25	Y		4	
AA 7	1	[redacted]	S16- 3-C	25	Y				S16- 2-C	25	Y		4	
AA 8	1	[redacted]	S16- 2-C	25	Y				S16- 1-C	25	Y		4	
AA 9	1	[redacted]	S15- 1-NC	25	Y				S15- 2-NO	25	Y			
AA 10	1	[redacted]	S15- 4-NC	25	Y				S15- 5-NC	25	Y		4	
AA 12	1	[redacted]	S15- 3-NC	25	Y				S15- 4-NO	25	Y			
AA 13	1	[redacted]	S15- 1-NO	25	Y		4		S15- 3-NO	25	Y			
AA 14	1	[redacted]	S15- 1-NO	25	Y				S15- 5-NO	25	Y		4	
AA 15	1	[redacted]	S15- 6-NO	25	Y		4		S15- 5-NO	25	Y			
AA 18	1	[redacted]	S17- 1-C	25	Y				S17- 2-C	25	Y			
AA 19	1	[redacted]	R1-WIPER	25	Y		4		R1-CW	25	Y			
AA 31	1	[redacted]	S10- 4	25	Y		4		S10- 3	25	Y			
AA 32	1	[redacted]	S14- 1-C	25	Y		4		S14- 2-NC	25	Y		4	
AA 33	1	[redacted]	S18- 2-C	25	Y				S18- 1-C	25	Y		4	
AA 34	1	[redacted]	S21- 3-NC	25	Y				S20- 2-NC	25	Y			
AA 35	1	[redacted]	S21- 1-C	25	Y				S20- 1-C	25	Y		4	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015094
SCALE-NONE | REV LTR ✗ B | SHEET 4 OF 5

MIL 2085 · 4-63 WIR

GRQ WIRE LIST AA A 1015094

CONDUCTOR		INDIVIDUAL LENGTH	FROM						TO					
NUMBER	ITEM NO.	2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.
AA 37	1	[redacted]	S9- 4-NO	25	Y				S9- 8-NO	25	Y		4	
AA 39	1	[redacted]	S9- 2-C	25	Y				S9- 7-C	25	Y		4	
AA 40	1	[redacted]	S9- 1-C	25	Y				S9- 5-C	25	Y		4	
AA 42	1	[redacted]	S20- 4-NC	25	Y				S20- 3-NC	25	Y		4	
AA 43	1	[redacted]	S20- 3-NC	25	Y				S21- 4-NC	25	Y		4	
AA 44	1	[redacted]	S21- 4-NC	25	Y				S21- 2-NC	25	Y		4	
AA 45	1	[redacted]	S9- 8-C	25	Y				S9- 4-C	25	Y		4	
AA 47	1	[redacted]	S20- 1-NC	25	Y				S21- 1-NC	25	Y		4	
AA 48	1	[redacted]	S9- 1-NO	25	Y				S9- 5-NO	25	Y		4	
AA 50	1	[redacted]	S20- 3-C	25	Y				S21- 4-C	25	Y		4	
AA 51	1	[redacted]	S20- 4-C	25	Y				S21- 2-C	25	Y		4	
AA 52	1	[redacted]	S5- 1-NC	25	Y		4		S5- 2-NC	25	Y			
AA 53	1	[redacted]	S5- 2-NC	25	Y		4		S5- 3-NC	25	Y			
AA 54	1	[redacted]	S5- 3-NC	25	Y		4		S5- 4-NC	25	Y			

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

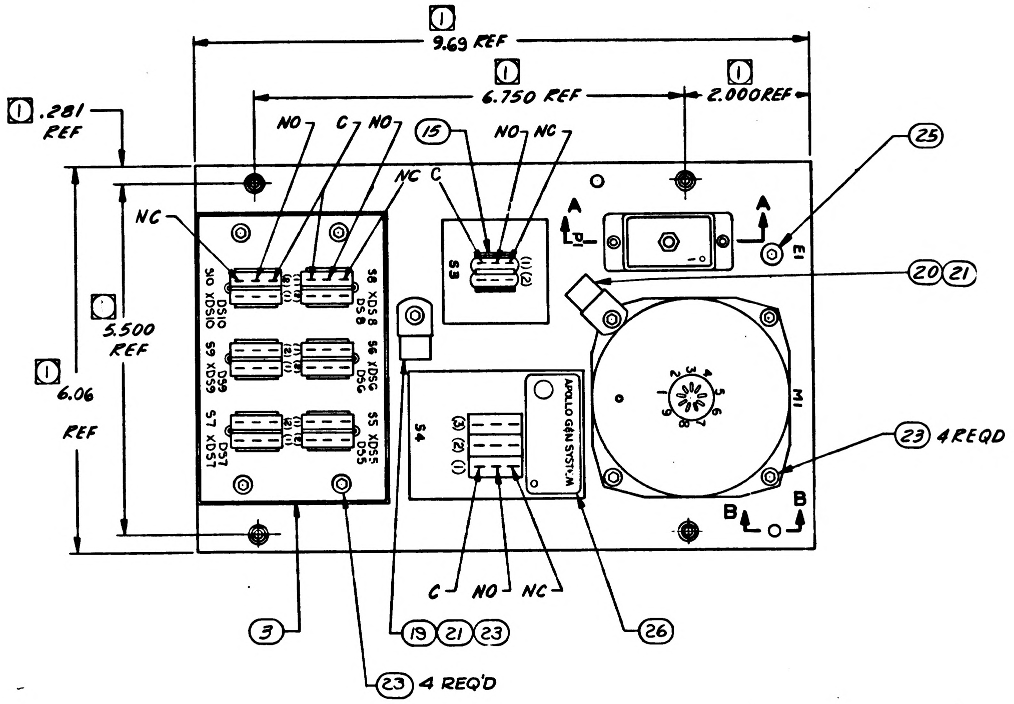
MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015094
SCALE-NONE | REV LTR ✗ B | SHEET 5 OF 5

MIL 2085 · 4-63 WIR

SYM	ZONE	REVISIONS DESCRIPTION	CHG NO.	DATE	APPD
A		UPGRADED FOR CLASS A RELEASE 13815		OCT	FK

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND MOISTUREPROOF PER ATP 1015095.
3. INSPECT PER PS 1015095.
4. SERIALIZE PER ND 1002023.
5. SOLDER ELECTRICAL CONNECTIONS PER ND 1002071 USING ITEM 29 AND ITEM 30.
6. $\boxed{1}$ DIMENSIONS CONTROLLED BY ICD MH01-01004-116.
7. VENDOR ITEM-SEE SPECIFICATION CONTROL DWG.
8. ② DIMENSION CONTROLLED BY ICD MH01-01006-116.



① 9.69 REF
① 6.750 REF
① 2.000 REF
① .281 REF
5.500 REF
① 6.06 REF
NO
C
NO
NC
NC
C
NO
NC
S8 XDS8 DS8
S6 XDS6 DS6
S5 XDS5 DS5
S10 XDS10 DS10
S9 XDS9 DS9
S7 XDS7 DS7
S3
S4
APOLLO G&N SYSTEM
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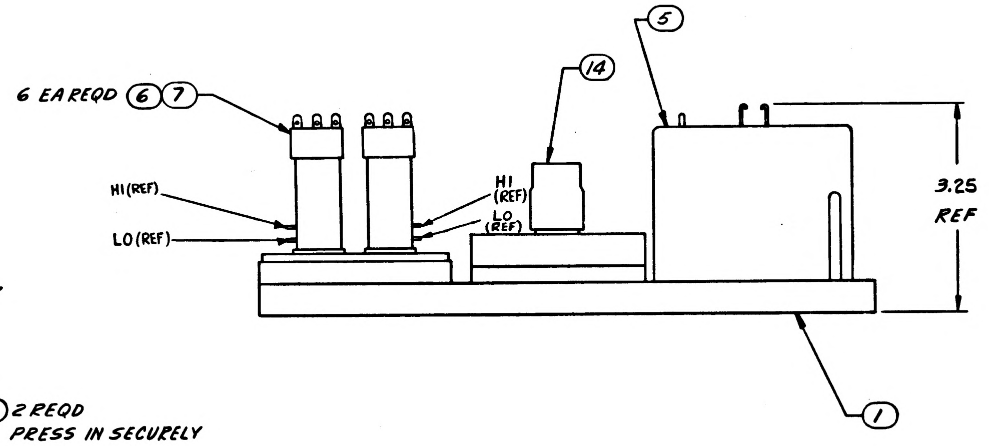

6 EA REQD 6 7
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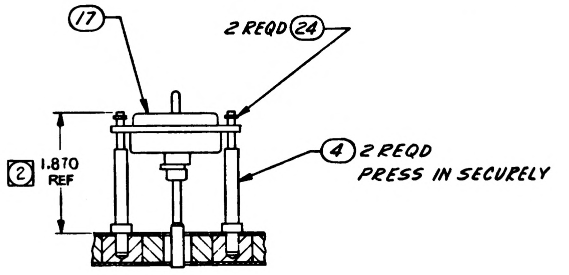
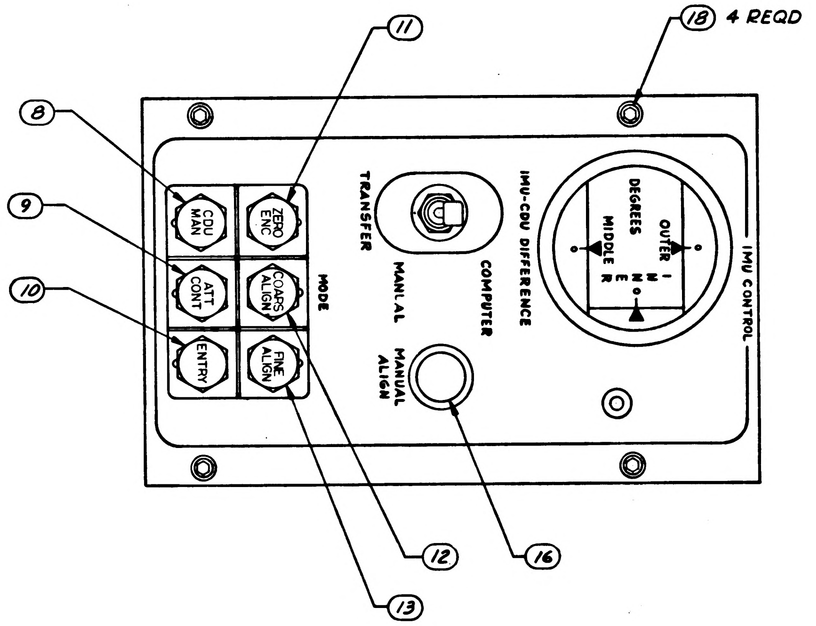
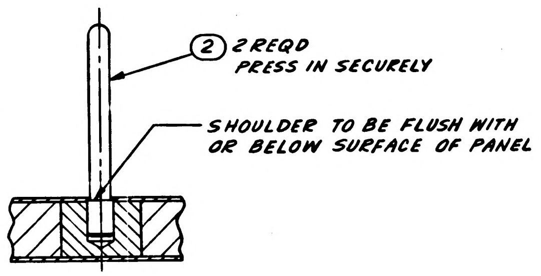


17
2 REQD 24
② 1.870 REF
4 2 REQD PRESS IN SECURELY

PARTIAL SECTION A-A



8
9
10
11
18 4 REQD
CDU MAN
ZERO ENC
ATT CONT
COARS ALIGN
ENTRY
FINE ALIGN
MODE
TRANSFER
MANUAL
COMPUTER
IMU-CDU DIFFERENCE
MANUAL ALIGN
DEGREES
OUTER
MIDDLE
INNER
IMU CONTROL
12
13
16



2 2 REQD PRESS IN SECURELY
SHOULDER TO BE FLUSH WITH OR BELOW SURFACE OF PANEL

PARTIAL SECTION B-B
SCALE-2:1

	QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
				011				
				AR		35	1012504-2	PRIMER, METAL
				AR		34	1012504-1	PRIMER, METAL
				AR		33	1012503-2	COMPOUND POLYURETHANE
				AR		32	1012503-1	COMPOUND POLYURETHANE
				X		31	1015096	SCHEMATIC DIAGRAM
				AR		30	QQ-S-571 SN60 WRAP2	SOLDER (ES-2175 ALLOY 1)
				AR		29	MIL-F-14256	FLUX (ES-2798)
						28		
						27		
				1		26	1014650-11	NAMEPLATE
SEE NOTE 7				1		25	1006783-21	SCREW, BUTTON HD
				2		24	MS-16633-4009	RING, RETAINING, EXTERNAL
SEE NOTE 7				9		23	1006783-22	SCREW, BUTTON HD
						22		
				2		21	1011918-3	WASHER-CABLE CLAMP
				1		20	1000220-6	CLAMP-CABLE
SEE NOTE 7				1		19	1000220-5	CLAMP-CABLE
				4		18	1014503	SCREW-CAPTIVE, CAP
				1		17	1015035	WIRE HARNESS
				1		16	1010475-1	CAP, PUSHBUTTON
				1		15	1010480-1	SWITCH, PUSH BUTTON
SEE NOTE 7				1		14	1010484-1	SWITCH, TOGGLE
				1		13	-6	
				1		12	-5	
				1		11	-4	
				1		10	-3	
				1		9	-2	
				1		8	1014651-1	CAP-ILLUMINATED, PUSH BUTTON
				6		7	1010624-2	LAMP, INCANDESCENT
				6		6	1010627-1	SWITCH, PUSH BUTTON
SEE NOTE 7				1		5	1010336	METER, ELECTRICAL INDICATING
				2		4	1014530	PIN-CONNECTOR
				1		3	1014529	PLATE-SWITCH
				2		2	1014528	PIN-PANEL
				1		1	1014627	PANEL-IMU CONTROL (INSEP)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 24 SEP 64
CHECKED 28 SEP 64
APPROVAL J. J. Moran 29 SEPT 64
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

IMU CONTROL PANEL ASSEMBLY

CODE IDENT NO. | SIZE E | 1015095
SCALE FULL | SHEET 1 OF 1

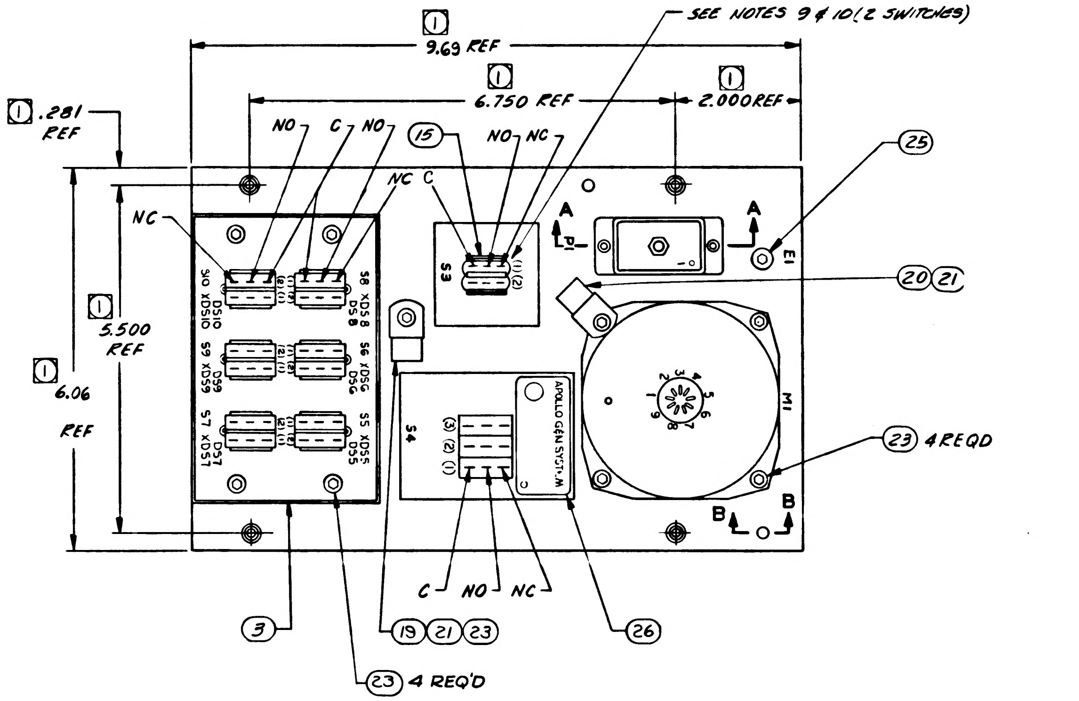
Charleston 28 SEP 64

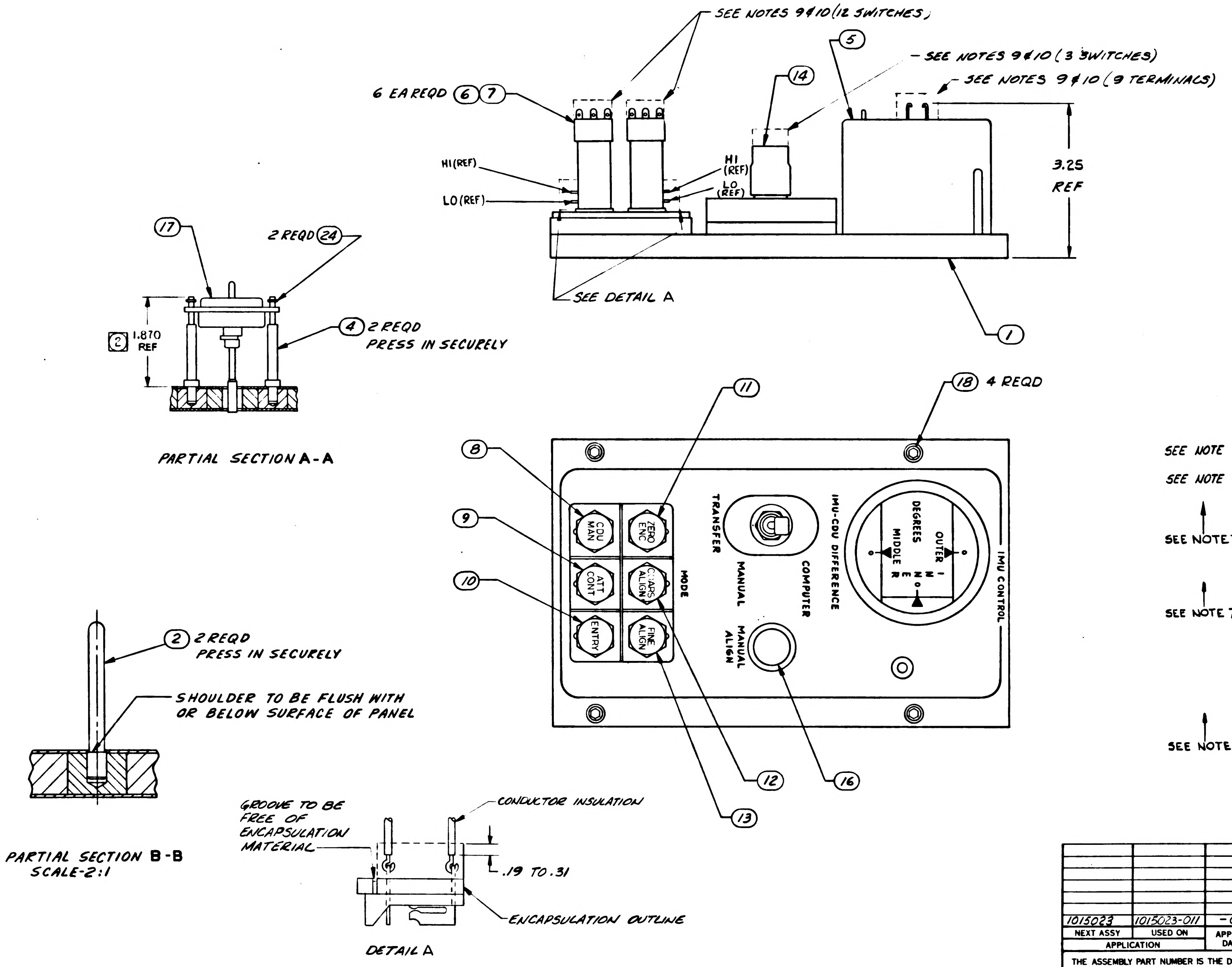
1015095 A

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
4		UPGRADED FOR CLASS A RELEASE 13815		[illegible]	[illegible]
3		REVISED PER TDRR [illegible]		[illegible]	[illegible]

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ~~ASSEMBLE AND MOISTUREPROOF PER ATP 1015095.~~
3. INSPECT PER PS 1014526.
4. SERIALIZE PER ND 1002023.
5. SOLDER ELECTRICAL CONNECTIONS PER ND 1002071 USING ITEM 29 AND ITEM 30.
6. [1] DIMENSIONS CONTROLLED BY ICD MH01-01004-116.
7. VENDOR ITEM-SEE SPECIFICATION CONTROL DWG.
8. (2) DIMENSION CONTROLLED BY ICD MH01-01006-116.
9. ENCAPSULATE WIRING TO SWITCHES AND TERMINALS PER ND 1002236 USING ITEMS 32 THROUGH 35 AS REQUIRED.
10. HEIGHT TO BE CONTROLLED BY REQUIREMENT THAT THE INSULATION ON THE WIRE MUST BE IMBEDDED INTO THE ENCAPSULATION MATERIAL BY .19 TO .31. WIRES MUST BE UNIFORMLY CENTERED IN ENCAPSULATING COMPOUND.


[1] 9.69 REF
[1] 6.750 REF
[1] 2.000 REF
[1] .281 REF
[1] 5.500 REF
[1] 6.06 REF
SEE NOTES 9 & 10 (2 SWITCHES)
NO C NO
NC
NC
15
NO NC
C
S3
A A
25
E1
20 21
M1
23 4 REQD
B B
S10 XDS10
S9 XDS9
S7 XDS7
S8 XDS8
S6 XDS6
S5 XDS5
S4
(3) (2) (1)
APOLLO GEN SYST-M
C NO NC
3
19 21 23
26
23 4 REQ'D


SEE NOTES 9 & 10 (12 SWITCHES)
5
SEE NOTES 9 & 10 (3 SWITCHES)
SEE NOTES 9 & 10 (9 TERMINALS)
14
6 EA REQD 6 7
HI (REF)
LO (REF)
HI (REF)
LO (REF)
3.25 REF
SEE DETAIL A
1
17
2 REQD 24
[2] 1.870 REF
4 2 REQD PRESS IN SECURELY
PARTIAL SECTION A-A
11
18 4 REQD
8
9
10
CDU MAN
ZERO ENC
ATT CONT
COARSE ALIGN
ENTRY
FINE ALIGN
MODE
TRANSFER
MANUAL
COMPUTER
IMU-CDU DIFFERENCE
MANUAL ALIGN
IMU CONTROL
DEGREES
OUTER
MIDDLE
INNER
12
13
16
2 2 REQD PRESS IN SECURELY
SHOULDER TO BE FLUSH WITH OR BELOW SURFACE OF PANEL
PARTIAL SECTION B-B SCALE-2:1
GROOVE TO BE FREE OF ENCAPSULATION MATERIAL
CONDUCTOR INSULATION
.19 TO .31
ENCAPSULATION OUTLINE
DETAIL A

				AR		35	1012504-2	PRIMER, METAL
				AR		34	1012504-1	PRIMER, METAL
				AR		33	1012503-2	COMPOUND POLYURETHANE
				AR		32	1012503-1	COMPOUND POLYURETHANE
				X		31	1015096	SCHEMATIC DIAGRAM
				AR		30	QQ-S-571 SN60 WRAP2	SOLDER (ES-2175 ALLOY 1)
				AR		29	MIL-F-14256	FLUX (ES-2798)
						28		
						27		
				1		26	1014650-11	NAMEPLATE
SEE NOTE 7				1		25	1006783-21	SCREW, BUTTON HD
				2		24	MS-16633-4009	RING, RETAINING, EXTERNAL
SEE NOTE 7				9		23	1006783-22	SCREW, BUTTON HD
						22		
				2		21	1011918-3	WASHER-CABLE CLAMP
				1		20	1000220-6	CLAMP-CABLE
SEE NOTE 7				1		19	1000220-5	CLAMP-CABLE
				4		18	1014503	SCREW-CAPTIVE, CAP
				1		17	1015035	WIRE HARNESS
				1		16	1010475-1	CAP, PUSHBUTTON
				1		15	1010480-1	SWITCH, PUSH BUTTON
SEE NOTE 7				1		14	1010484-1	SWITCH, TOGGLE
				1		13	-6	
				1		12	-5	
				1		11	-4	
				1		10	-3	
				1		9	-2	
				1		8	1014651-1	CAP-ILLUMINATED, PUSH BUTTON
				6		7	1010624-2	LAMP, INCANDESCENT
				6		6	1010627-1	SWITCH, PUSH BUTTON
SEE NOTE 7				1		5	1010336	METER, ELECTRICAL INDICATING
				2		4	1014530	PIN-CONNECTOR
				1		3	1014529	PLATE-SWITCH
				2		2	1014528	PIN-PANEL
				1		1	1014627	PANEL-IMU CONTROL (INSEP)
				011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015023	1015023-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 24 SEP 64
CHECKED 28 SEP 64
APPROVAL 29 SEPT 64
APPROVAL
NASA APPROVAL 10-20-64
MIT APPROVAL

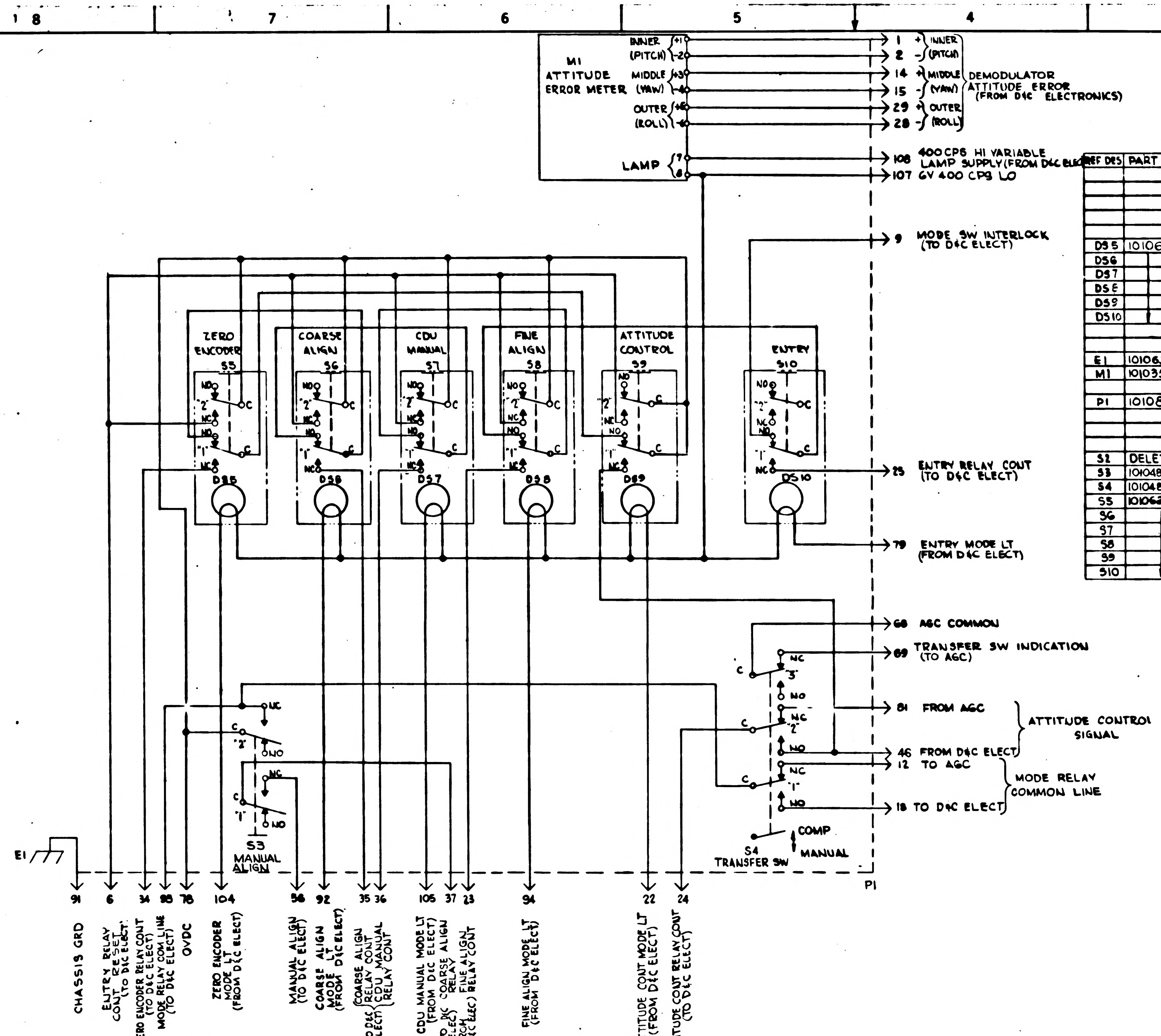
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

IMU CONTROL PANEL ASSEMBLY

CODE IDENT NO.
SIZE E
1015095
SCALE FULL
SHEET 1 OF 1

1015096 A

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		UPGRADED FOR CLASS A RELEASE TO RR 13892		OCT 64	FK


M1
ATTITUDE ERROR METER
INNER (PITCH) +1 -2
MIDDLE (YAW) +3 -4
OUTER (ROLL) +5 -6
LAMP 7 8
1 + INNER
2 - (PITCH)
14 + MIDDLE
15 - (YAW)
29 + OUTER
28 - (ROLL)
DEMODULATOR ATTITUDE ERROR (FROM D&C ELECTRONICS)
108 400CPS HI VARIABLE LAMP SUPPLY (FROM D&C ELEC
107 6V 400 CPS LO
9 MODE SW INTERLOCK (TO D&C ELECT)
ZERO ENCODER S5
COARSE ALIGN S6
CDU MANUAL S7
FINE ALIGN S8
ATTITUDE CONTROL S9
ENTRY S10
NO
"2"
NC
"1"
C
DS5
DS6
DS7
DS8
DS9
DS10
25 ENTRY RELAY COUT (TO D&C ELECT)
79 ENTRY MODE LT (FROM D&C ELECT)
68 AGC COMMON
69 TRANSFER SW INDICATION (TO AGC)
"3"
81 FROM AGC
46 FROM D&C ELECT
ATTITUDE CONTROL SIGNAL
12 TO AGC
18 TO D&C ELECT
MODE RELAY COMMON LINE
COMP
MANUAL
S4 TRANSFER SW
S3 MANUAL ALIGN
E1
P1
91 CHASSIS GRD
6 ENTRY RELAY CONT RESET (TO D&C ELECT)
34 ZERO ENCODER RELAY CONT (TO D&C ELECT)
98 MODE RELAY COM LINE (TO D&C ELECT)
78 OVDC
104 ZERO ENCODER MODE LT (FROM D&C ELECT)
56 MANUAL ALIGN (TO D&C ELECT)
92 COARSE ALIGN MODE LT (FROM D&C ELECT)
35 COARSE ALIGN RELAY CONT
36 CDU MANUAL RELAY CONT
(TO D&C ELECT)
105 CDU MANUAL MODE LT (FROM D&C ELECT)
37 (TO D&C ELECT) COARSE ALIGN RELAY
23 (FROM D&C ELEC) FINE ALIGN RELAY CONT
94 FINE ALIGN MODE LT (FROM D&C ELECT)
22 ATTITUDE CONT MODE LT (FROM D&C ELECT)
24 ATTITUDE CONT RELAY COUT (TO D&C ELECT)

REF DES	PART NO	DESCRIPTION	VALUE	~~TOL~~	RATING
DS5	1010624-2	LAMP			
DS6					
DS7					
DS8					
DS9					
DS10					
E1	1010638-6	TERMINAL LUG			
M1	1010336	METER			
P1	1010825-1	CONNECTOR			
S2	DELETED	SWITCH			
S3	1010480-1				
S4	1010484-1				
S5	1010627-1				
S6					
S7					
S8					
S9					
S10					

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX THEM WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
3. DRAWING FOR REFERENCE: 1015095, IMU CONTROL PANEL ASSEMBLY.

NEXT ASSY	USED ON
	1015095
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ ___ + ___ + ___
- - -
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 28 SEP 64
CHECKED 28 SEP 64
APPROVAL 10/2/64
APPROVAL
NASA APPROVAL 10-2-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

IMU CONTROL PANEL
SCHEMATIC DIAGRAM

CODE IDENT NO.
SIZE D
1015096
SCALE —
SHEET 1 OF 1

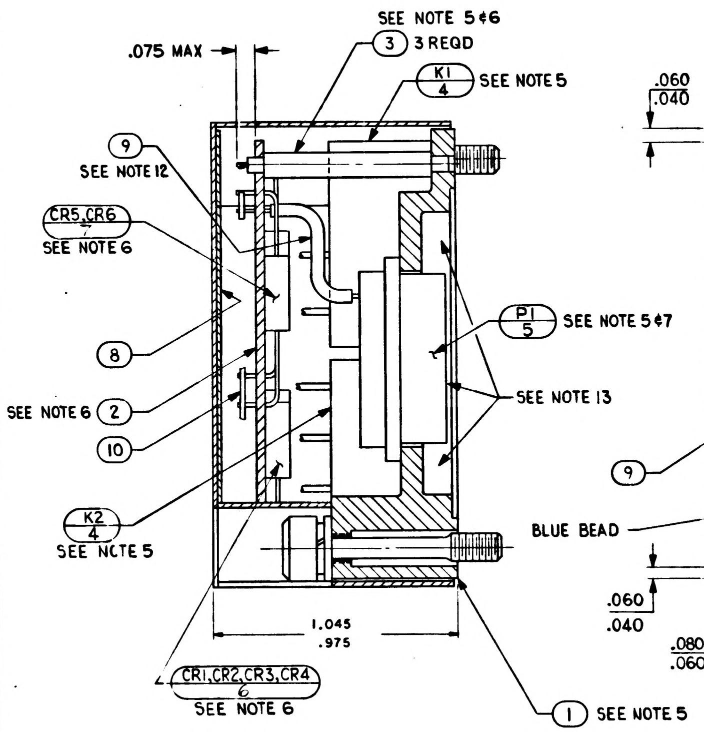
REVISIONS					
SYM	ZONE	DESCRIPTION		DATE	APPD
A		REVISED PER TDRR 6972	CHG NO	[illegible]	[illegible]

NOTES:

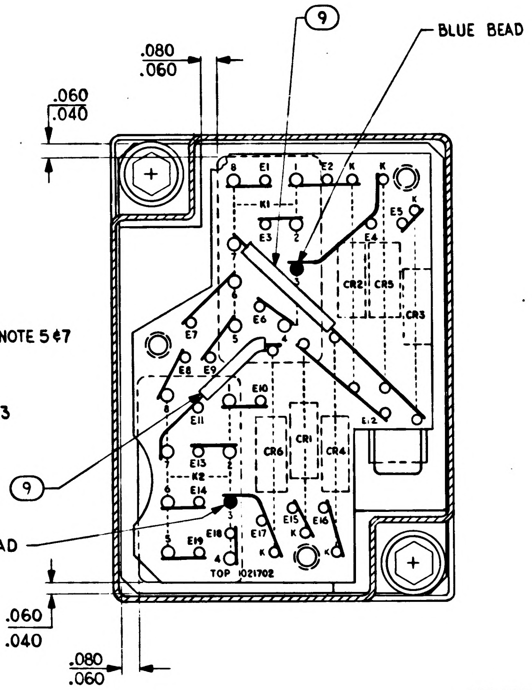
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. K DENOTES CATHODE SIDE OF DIODE
4. AR DENOTES AS REQUIRED
5. BOND ITEM NO. 3, 4, 5, TO ITEM NO. 1 PER ND 1002004, TYPE I
6. BOND ITEM NO. 3, 6, AND 7 TO ITEM 2 PER ND 1002004, TYPE I
7. SPARE LEADS ON ITEM NO. 5 TO BE CUT .030 TO .090 IN LENGTH
8. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
9. DIPCOAT PER ND1002068 PRIOR TO ENCAPSULATION
10. ENCAPSULATE PER ND 1002002 USING 1010798-1 AND 100798-2 REMOVE ALL FLASHING
11. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
12. ITEM NO. 9 TO BE USED ON ALL CONNECTOR LEADS
13. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
14. INSPECT PER PS1015097.
15. PROCURE PER PS 1015097

WIRING DATA

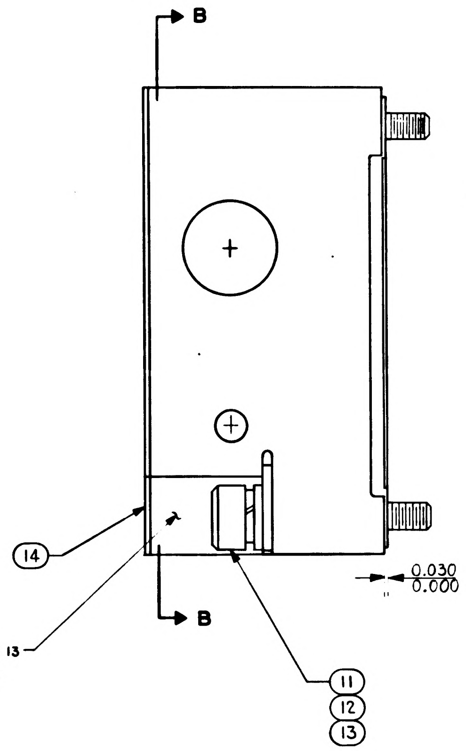
FROM CIRCUIT POINT	TO CIRCUIT POINT
P1-1	E5
P1-2	E2
P1-3	E1
P1-4	E6
P1-5	E8
P1-6	E10
P1-7	E13
P1-8	E19
P1-9	E17
P1-10	E15
P1-11	E16
P1-12	E4
P1-13	SPARE
P1-14	E3
P1-15	E7
P1-16	E9
P1-17	E11
P1-18	E14
P1-19	E18
P1-20	SPARE
P1-21	E12

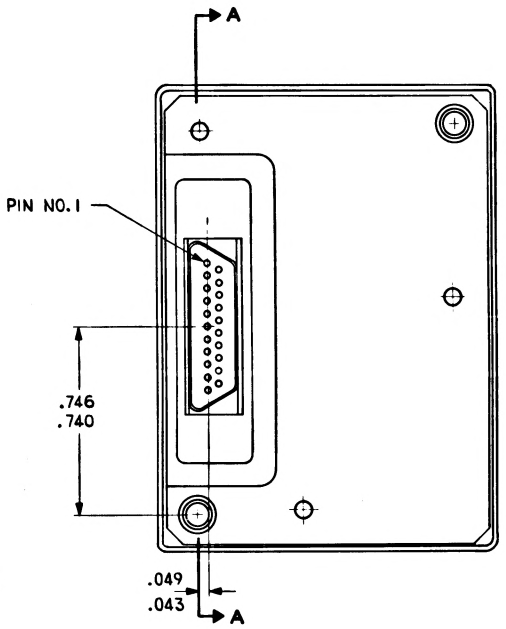

SEE NOTE 5&6
3 3 REQD
.075 MAX
K1 4 SEE NOTE 5
9 SEE NOTE 12
CR5,CR6 6 SEE NOTE 6
P1 5 SEE NOTE 5&7
8
SEE NOTE 6 2
10
SEE NOTE 13
K2 4 SEE NOTE 5
1.045
.975
CR1,CR2,CR3,CR4 6 SEE NOTE 6
1 SEE NOTE 5

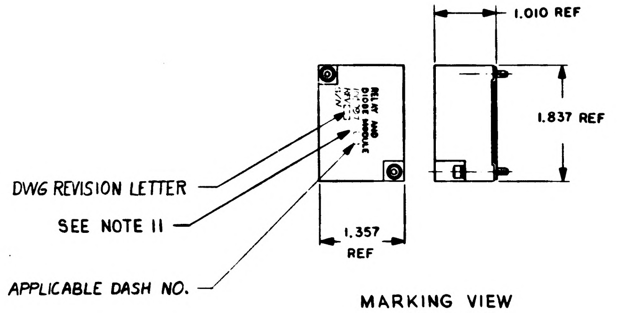
SECTION A-A


9
BLUE BEAD
.080
.060
.060
.040
E1 E2 K1 E3 E4 E5 E6 E7 E8 E9 E10 E11 E12 E13 E14 E15 E16 E17 E18 E19
CR1 CR2 CR3 CR4 CR5 CR6 K2
9
BLUE BEAD
TOP 1021702
.060
.040
.080
.060

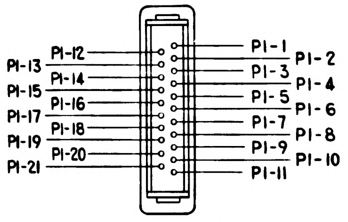
SECTION B-B


B
B
14
SEE NOTE 13 2 PLACES
0.030
0.000
11
12
13


A
PIN NO. 1
.746
.740
.049
.043
A


1.010 REF
1.837 REF
1.357 REF
DWG REVISION LETTER
SEE NOTE 11
APPLICABLE DASH NO.

MARKING VIEW
SCALE 1/1


P1-12
P1-13
P1-14
P1-15
P1-16
P1-17
P1-18
P1-19
P1-20
P1-21
P1-1
P1-2
P1-3
P1-4
P1-5
P1-6
P1-7
P1-8
P1-9
P1-10
P1-11

CONNECTOR TERMINAL IDENTIFICATION VIEW

QUANTITY REQUIRED -011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		RFT	1021739	SCHEMATIC
1		14	1015098	HOUSING
2		13	MS35338-78	WASHER-LOCK
2		12	MS15795-303	WASHER-FLAT
2		11	CC8069-1	SCREW-SOCKET HEAD
AR		10	1006757-1	WIRE, ELECTRICAL
AR		9	1006776-21	INSULATION-SLEEVING
1		8	1015032	INSULATOR-PLATE
2		7	1010362-3	SEMICONDUCTOR
4		6	1010392	SEMICONDUCTOR
1		5	1010472-2	CONNECTOR-RECEPTACLE
2		4	1010784-3	RELAY-ARMATURE
3		3	1021701	INSULATOR-ROD
1		2	1021702	WIRING BOARD
1		1	1015042	PLATE-BASE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015023	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R Becker DATE 3 NOV 64
CHECKED [illegible] 19 NOV 64
APPROVAL [illegible] 11/19/64
APPROVAL [illegible] 12-[illegible]-64
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RELAY AND DIODE MODULE
ASSEMBLY
(CONTROL ELECTRONICS)

CODE IDENT NO —
SIZE E
1015097
SCALE 4:1
SHEET 1 OF 1

19 NOV 64

APOLLO G&N Specification
PS1015097 A
Original Issue Date: 2-24-65
Release Authority: TDRR 16785
Class A Release

PROCUREMENT SPECIFICATION
FOR
RELAY AND DIODE MODULE ASSEMBLY
(CONTROL ELECTRONICS)

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
12/1/66	A	32246	2	MGM EA	--

This specification consists of page 1 to 5 inclusive.

APPROVALS	2/24/65	2/11/65 2/24/65	J. Watisiewicz
	NASA/MSC	MIT/IL	ACSP

APOLLO G&N Specification
PS1015097 A

PROCUREMENT SPECIFICATION
FOR
RELAY AND DIODE MODULE ASSEMBLY
(CONTROL ELECTRONICS)

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Relay and Diode Module Assembly (Control Electronics), Drawing 1015097, hereafter called the assembly.

1.2 CLASSIFICATION. The special requirements for Part Number 1015097-011 and 1015097-021 shall be designated as Type I.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS	
APOLLO G&N	
ND1002214	General Specification for Packaging AGE
ND1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM1015097	Final Test Method for Relay and Diode Module Assembly (Control Electronics)
STANDARDS	
Military	
MIL-STD-202	Test Methods for Electronic and Electrical Component Parts
DRAWINGS	
APOLLO G&N	
1015097	Relay and Diode Module Assembly

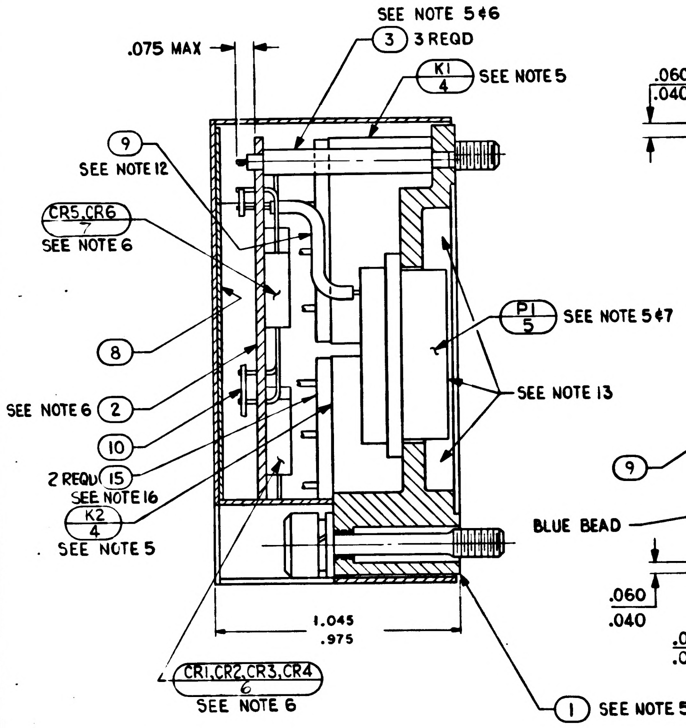
1015097

REVISIONS 14956					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 6972			
B		REVISED PER TDRR 22508		22 SEP 65	

NOTES:

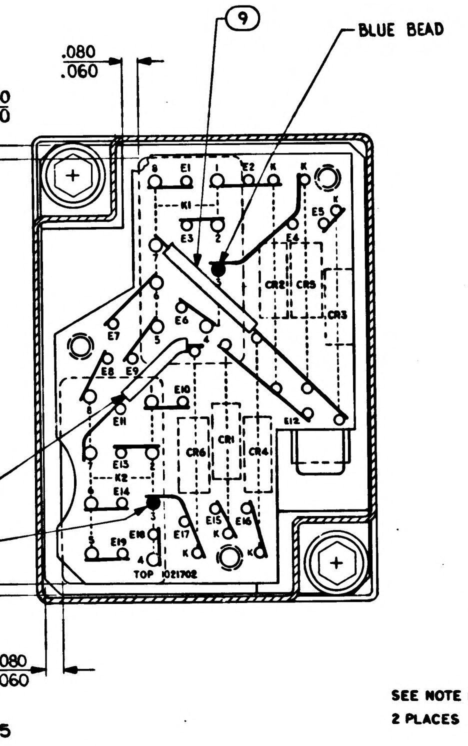
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. K DENOTES CATHODE SIDE OF DIODE
4. AR DENOTES AS REQUIRED
5. BOND ITEM NO. 3, 4, 5, TO ITEM NO. 1 PER ND 1002004, TYPE I
6. BOND ITEM NO. 3, 6, AND 7 TO ITEM 2 PER ND 1002004, TYPE I
7. SPARE LEADS ON ITEM NO. 5 TO BE CUT .030 TO .090 IN LENGTH
8. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
9. DIPCOAT PER ND 1002068 PRIOR TO ENCAPSULATION
10. ENCAPSULATE PER ND 1002002 USING 1010798-1 AND 100798-2 REMOVE ALL FLASHING
11. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
12. ITEM NO. 9 TO BE USED ON ALL CONNECTOR LEADS
13. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
14. INSPECT PER PS 1015097.
15. PROCURE PER PS 1015097
16. BOND ITEM ⑮ TO RELAYS K1 AND K2 PER ND 1002187, TYPE I, AND MARK ITEM ⑮ PER ND 1002019 WITH A BLUE DOT ADJACENT TO LEAD 3 FOR RELAYS K1 AND K2.

WIRING DATA	
FROM CIRCUIT POINT	TO CIRCUIT POINT
P1-1	E5
P1-2	E2
P1-3	E1
P1-4	E6
P1-5	E8
P1-6	E10
P1-7	E13
P1-8	E19
P1-9	E17
P1-10	E15
P1-11	E16
P1-12	E4
P1-13	SPARE
P1-14	E3
P1-15	E7
P1-16	E9
P1-17	E11
P1-18	E14
P1-19	E18
P1-20	SPARE
P1-21	E12



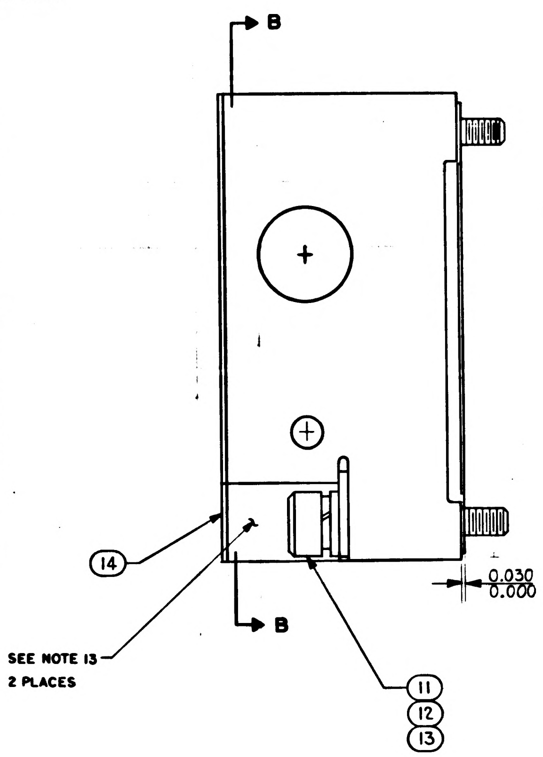
SEE NOTE 5&6
③ 3 REQD
.075 MAX
K1 4 SEE NOTE 5
⑨ SEE NOTE 12
CR5, CR6 7 SEE NOTE 6
P1 5 SEE NOTE 5&7
⑧
SEE NOTE 6 ②
SEE NOTE 13
⑩
2 REQD ⑮ SEE NOTE 16
K2 4 SEE NOTE 5
1.045 .975
CR1, CR2, CR3, CR4 6 SEE NOTE 6
① SEE NOTE 5

SECTION A-A

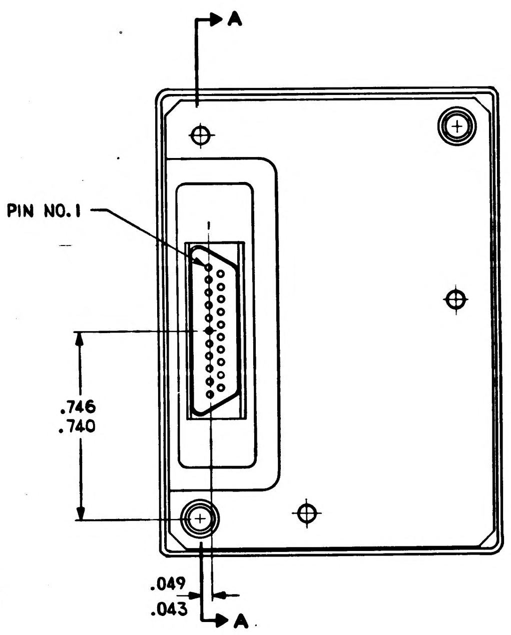


⑨
BLUE BEAD
.080 .060
.060 .040
K1
E1 E2 E3 E4 E5 E6 E7 E8 E9 E10 E11 E12 E13 E14 E15 E16 E17 E18 E19
CR2 CR3 CR5 CR6 CR1 CR4
K2
TOP 1021702
⑨
BLUE BEAD
.060 .040
.080 .060

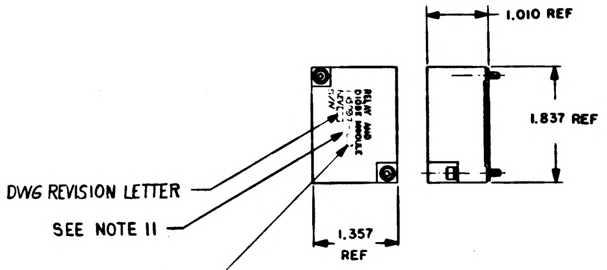
SECTION B-B



B
B
⑭
SEE NOTE 13 2 PLACES
0.030 0.000
⑪ ⑫ ⑬

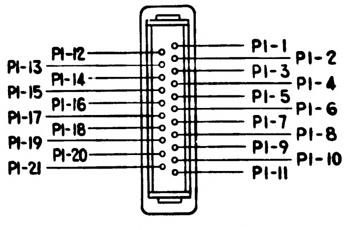


A
PIN NO. 1
.746 .740
.049 .043
A



1.010 REF
1.837 REF
DWG REVISION LETTER
SEE NOTE 11
APPLICABLE DASH NO.
1.357 REF

MARKING VIEW
SCALE 1/1



P1-12 P1-13 P1-14 P1-15 P1-16 P1-17 P1-18 P1-19 P1-20 P1-21
P1-1 P1-2 P1-3 P1-4 P1-5 P1-6 P1-7 P1-8 P1-9 P1-10 P1-11

CONNECTOR TERMINAL IDENTIFICATION VIEW

			☒		REF	1021739	SCHEMATIC
			2		15	1023025	PLATE, PROTECTION
			1		14	1015098	HOUSING
			2		13	MS35338-78	WASHER-LOCK
			2		12	MS15795-303	WASHER-FLAT
			2		11	1008069-1	SCREW-SOCKET HEAD
			AR		10	1006757-1	WIRE, ELECTRICAL
			AR		9	1006776-21	INSULATION-SLEEVING
			1		8	1015032	INSULATOR-PLATE
			2		7	1010362-3	SEMICONDUCTOR
			4		6	1010392	SEMICONDUCTOR
			1		5	1010472-2	CONNECTOR-RECEPTACLE
			2		4	1010784-3	RELAY-ARMATURE
			3		3	1021701	INSULATOR-ROD
			1		2	1021702	WIRING BOARD
			1		1	1015042	PLATE-BASE
			-011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

1015023	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Bicklu DATE 3 NOV 64
CHECKED 19 NOV 64
APPROVAL 11/19/64
APPROVAL
NASA APPROVAL
MIT APPROVAL W. Dodd

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RELAY AND DIODE MODULE ASSEMBLY (CONTROL ELECTRONICS)

CODE IDENT NO. — SIZE E 1015097
SCALE 4:1 SHEET 1 OF 1

Checked 19 Nov 64

1015097

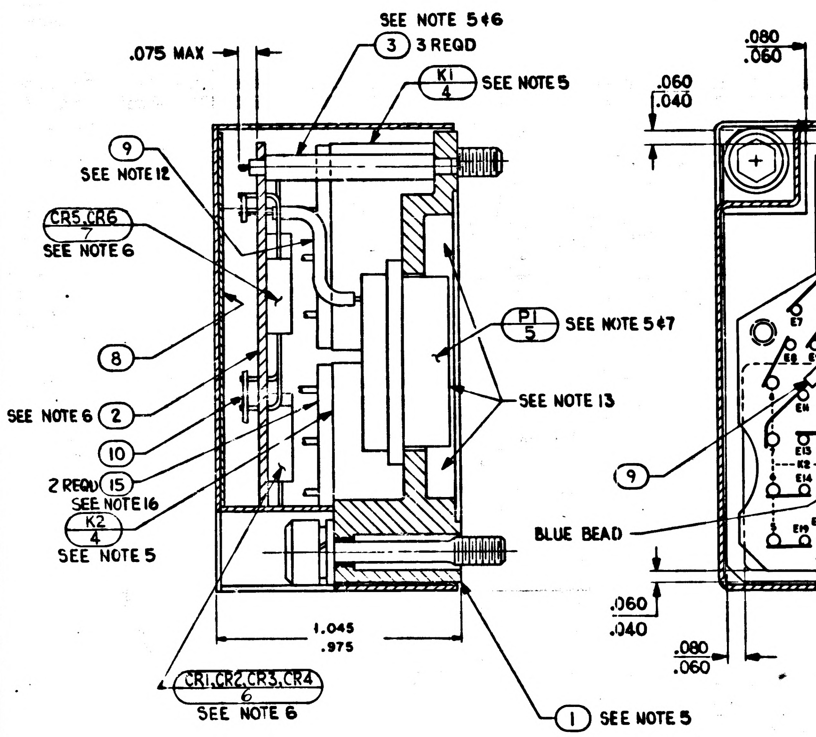
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. K DENOTES CATHODE SIDE OF DIODE
4. AR DENOTES AS REQUIRED
5. BOND ITEM NO.3, 4, 5, TO ITEM NO. 1 PER ND1002004, TYPE I
6. BOND ITEM NO. 3, 6, AND 7 TO ITEM 2 PER ND 1002004, TYPE I
7. SPARE LEADS ON ITEM NO.5 TO BE CUT .030 TO .090 IN LENGTH
8. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
9. DIPCOAT PER ND1002068 PRIOR TO ENCAPSULATION
10. ENCAPSULATE PER ND 1002002 USING 1010798-1 AND 100798-2 REMOVE ALL FLASHING
11. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
12. ITEM NO. 9 TO BE USED ON ALL CONNECTOR LEADS
13. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
14. INSPECT PER PS1015097.
15. PROCURE PER PS 1015097
16. BOND ITEM ⑮ TO RELAYS K1 AND K2 PER ND 1002187, TYPE I, AND MARK ITEM ⑮ PER ND 1002019 WITH A BLUE DOT ADJACENT TO LEAD 3 FOR RELAYS K1 AND K2.

WIRING DATA	
FROM CIRCUIT POINT	TO CIRCUIT POINT
P1-1	E5
P1-2	E2
P1-3	E1
P1-4	E6
P1-5	E8
P1-6	E10
P1-7	E13
P1-8	E19
P1-9	E17
P1-10	E15
P1-11	E16
P1-12	E4
P1-13	SPARE
P1-14	E3
P1-15	E7
P1-16	E9
P1-17	E11
P1-18	E14
P1-19	E18
P1-20	SPARE
P1-21	E12

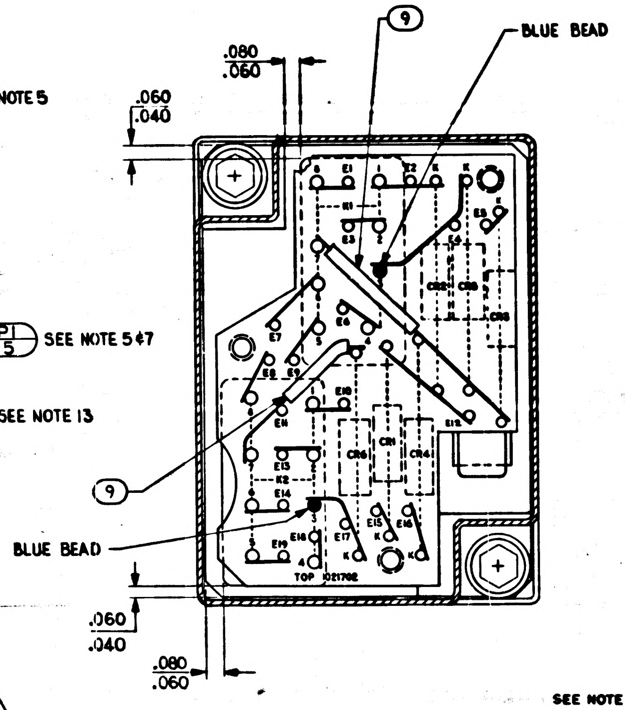
REVISIONS 14956

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 16972		8 MAR 65	JWR
B		REVISED PER TDRR 22508		22 SEP 65	BP
C		REVISED PER TDRR 31462		13 OCT 66	ME EW



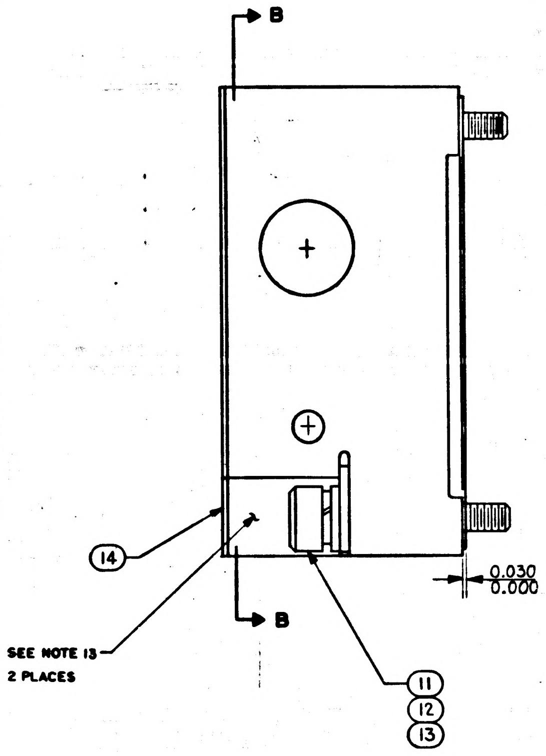
SEE NOTE 5&6
③ 3 REQD
.075 MAX
K1 / 4 SEE NOTE 5
⑨ SEE NOTE 12
CR5, CR6 / 7 SEE NOTE 6
P1 / 5 SEE NOTE 5&7
⑧
SEE NOTE 6 ②
⑩
SEE NOTE 13
2 REQD ⑮ SEE NOTE 16
K2 / 4 SEE NOTE 5
1.045 / .975
CR1, CR2, CR3, CR4 / 6 SEE NOTE 6
① SEE NOTE 5

SECTION A-A

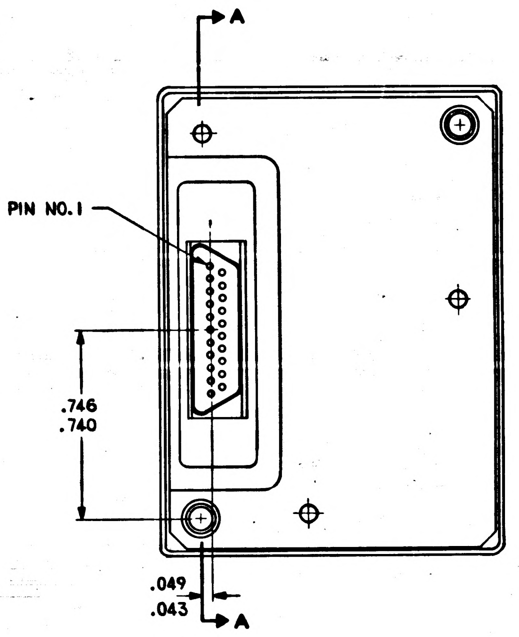


⑨
BLUE BEAD
.080 / .060
.060 / .040
E1 E2 K
CR2 CR3 CR5 CR6 CR1 CR4
E13 K2 E14 E16 E17 E19
⑨
BLUE BEAD
TOP 1021702
.060 / .040
.080 / .060

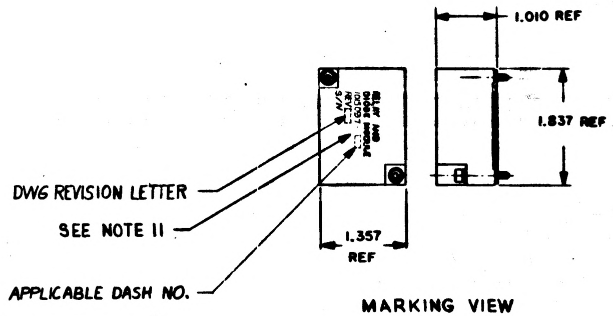
SECTION B-B



B
⑭
0.030 / 0.000
B
SEE NOTE 13 2 PLACES
⑪ ⑫ ⑬

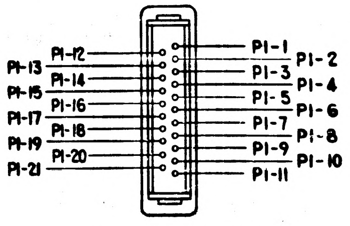


A
PIN NO. 1
.746 / .740
.049 / .043
A



1.010 REF
1.837 REF
1.357 REF
DWG REVISION LETTER
SEE NOTE 11
APPLICABLE DASH NO.

MARKING VIEW
SCALE 1/1



P1-12 P1-13 P1-14 P1-15 P1-16 P1-17 P1-18 P1-19 P1-20 P1-21
P1-1 P1-2 P1-3 P1-4 P1-5 P1-6 P1-7 P1-8 P1-9 P1-10 P1-11

CONNECTOR TERMINAL IDENTIFICATION VIEW

			-011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			☒		REF	1021739	SCHEMATIC
			2		15	1023025	PLATE, PROTECTION
			1		14	1015098	HOUSING
			2		13	MS35338-78	WASHER-LOCK
			2		12	MS15795-303	WASHER - FLAT
			2		11	1008069-1	SCREW-SOCKET HEAD
			AR		10	1006757-1	WIRE, ELECTRICAL
			AR		9	1006776-21	INSULATION - SLEEVING
			1		8	1015032	INSULATOR - PLATE
			2		7	1010362-3	SEMICONDUCTOR
			4		6	1010392-1	SEMICONDUCTOR
			1		5	1010472-2	CONNECTOR-RECEPTACLE
			2		4	1010784-3	RELAY-ARMATURE
			3		3	1021701	INSULATOR - ROD
			1		2	1021702	WIRING BOARD
			1		1	1015042	PLATE - BASE

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015023	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN R Becker DATE 5 NOV 64
CHECKED H. Upmeek 19 NOV 64
APPROVAL L. Sage 11/19/64
APPROVAL L. C. Schmitt
NASA APPROVAL
MIT APPROVAL W. Gyles K. Dodd

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RELAY AND DIODE MODULE
ASSEMBLY
(CONTROL ELECTRONICS)

CODE IDENT NO. 99974
SIZE E
1015097
SCALE 4:1
SHEET 1 OF 1

Charleston
LB. Novak
LB

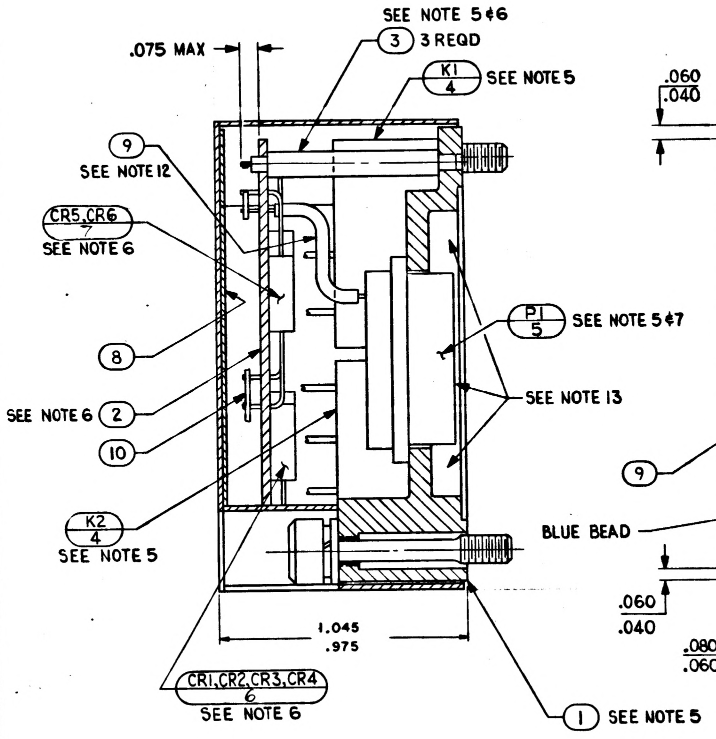
1015097

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD

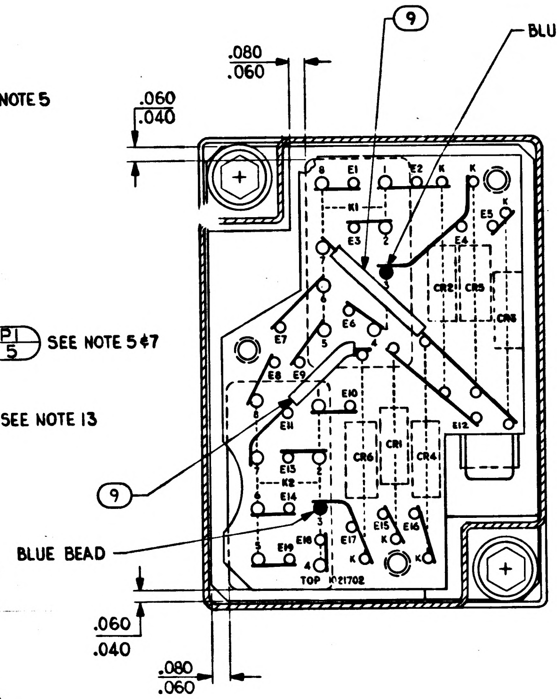
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. WELD PER ND 1002005
3. K DENOTES CATHODE SIDE OF DIODE
4. AR DENOTES AS REQUIRED
5. BOND ITEM NO.3, 4, 5, TO ITEM NO. 1 PER ND 1002004, TYPE I
6. BOND ITEM NO. 3, 6, AND 7 TO ITEM 2 PER ND 1002004, TYPE I
7. SPARE LEADS ON ITEM NO.5 TO BE CUT .030 TO .090 IN LENGTH
8. UNLESS OTHERWISE SPECIFIED ALL WIRING SHALL BE IN ACCORDANCE WITH ND 1002069
9. DIPCOAT PER ND1002068 PRIOR TO ENCAPSULATION
10. ENCAPSULATE PER ND 1002002 USING 1010798-1 AND 100798-2 REMOVE ALL FLASHING
11. MARK .140/.100 HIGH WHITE CHARACTERS PER ND 1002019 AND SERIALIZE PER ND 1002023. CENTRALIZE AS SHOWN
12. ITEM NO. 9 TO BE USED ON ALL CONNECTOR LEADS
13. INDICATED AREA TO BE FREE OF ENCAPSULATING COMPOUND
14. INSPECT PER PS1015097.
15. PROCURE PER PS 1015097

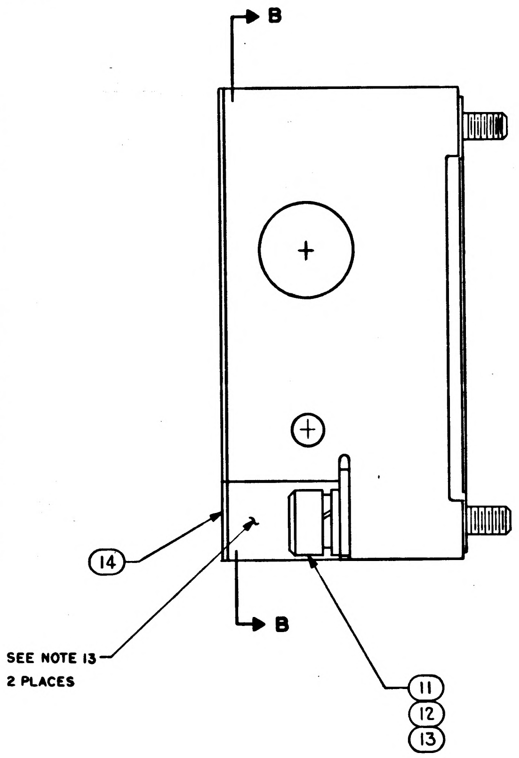
WIRING DATA	
FROM CIRCUIT POINT	TO CIRCUIT POINT
P1-1	E5
P1-2	E2
P1-3	E1
P1-4	E6
P1-5	E8
P1-6	E10
P1-7	E13
P1-8	E19
P1-9	E17
P1-10	E15
P1-11	E16
P1-12	E4
P1-13	SPARE
P1-14	E3
P1-15	E7
P1-16	E9
P1-17	E11
P1-18	E14
P1-19	E18
P1-20	SPARE
P1-21	E12

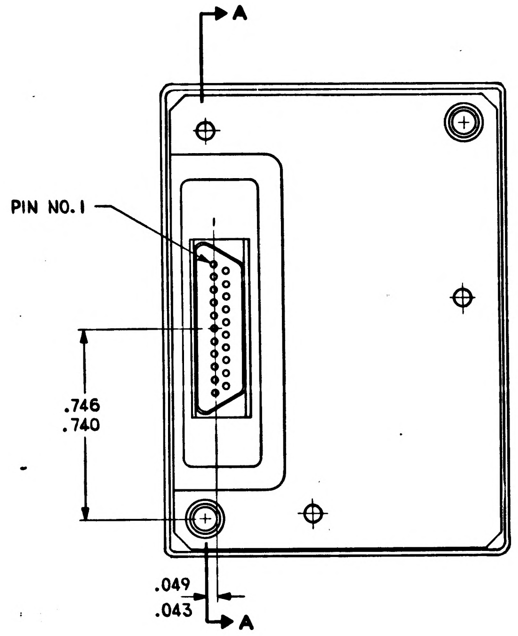

SEE NOTE 5&6
.075 MAX
3 3 REQD
K1 4 SEE NOTE 5
9 SEE NOTE 12
CR5, CR6 7 SEE NOTE 6
8
P1 5 SEE NOTE 5&7
SEE NOTE 13
SEE NOTE 6 2
10
K2 4 SEE NOTE 5
1.045
.975
CR1, CR2, CR3, CR4 6 SEE NOTE 6
1 SEE NOTE 5

SECTION A-A


9
BLUE BEAD
.080
.060
.060
.040
9
BLUE BEAD
.060
.040
.080
.060
E1
E2
E3
E4
E5
E6
E7
E8
E9
E10
E11
E13
E14
E15
E16
E17
E18
E19
K1
K2
CR1
CR2
CR3
CR4
CR5
CR6
K
TOP 1021702

SECTION B-B


B
B
14
SEE NOTE 13
2 PLACES
11
12
13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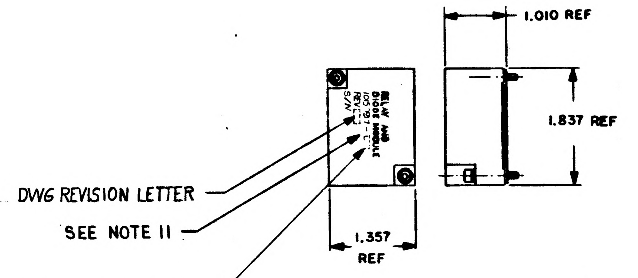
.049
.043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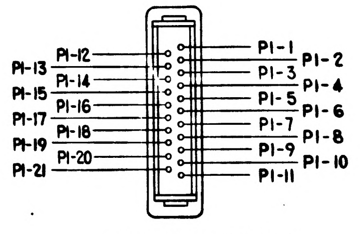
1.837 REF
1.357
REF
DWG REVISION LETTER
SEE NOTE 11
APPLICABLE DASH NO.

MARKING VIEW
SCALE 1/1


P1-12
P1-13
P1-14
P1-15
P1-16
P1-17
P1-18
P1-19
P1-20
P1-21
P1-1
P1-2
P1-3
P1-4
P1-5
P1-6
P1-7
P1-8
P1-9
P1-10
P1-11

CONNECTOR TERMINAL IDENTIFICATION VIEW

			☒		REF	1021739	SCHEMATIC
			1		14	1015098	HOUSING
			2		13	MS35338-78	WASHER-LOCK
			2		12	MS15795-303	WASHER-FLAT
			2		11	1008069-1	SCREW-SOCKET HEAD
			AR		10	1006757-1	WIRE, ELECTRICAL
			AR		9	1006776-21	INSULATION-SLEEVING
			1		8	1015032	INSULATOR-PLATE
			2		7	1010362-3	SEMICONDUCTOR
			4		6	1010392	SEMICONDUCTOR
			1		5	1010472-2	CONNECTOR-RECEPTACLE
			2		4	1010784-3	RELAY-ARMATURE
			3		3	1021701	INSULATOR-ROD
			1		2	1021702	WIRING BOARD
			1		1	1015042	PLATE-BASE
			-011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

1015023	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R Becker DATE 3 NOV 64
CHECKED H. Wawrzyk 19 NOV 64
APPROVAL F Saye 11/19/64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RELAY AND DIODE MODULE
ASSEMBLY
(CONTROL ELECTRONICS)

CODE IDENT NO. — SIZE E 1015097
SCALE 4:1 SHEET 1 OF 1

APOLLO G&N Specification
PS1015097
Original Issue Date: 2-24-65
Release Authority: TDRR 16785
Class A Release

PROCUREMENT SPECIFICATION

FOR

RELAY AND DIODE MODULE ASSEMBLY

(CONTROL ELECTRONICS)

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page 1 to 5 inclusive.

APPROVALS	2/24/65 NASA/MSC	2/11/65 2/24/65 MIT/IL	ACSP

PROCUREMENT SPECIFICATION

FOR

RELAY AND DIODE MODULE ASSEMBLY

(CONTROL ELECTRONICS)

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Relay and Diode Module Assembly (Control Electronics), Drawing 1015097, hereafter called the assembly.

1.2 CLASSIFICATION. The special requirements for Part Number 1015097-011 shall be designated as Type I.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND1002214	General Specification for Packaging AGE
ND1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM1015097	Final Test Method for Relay and Diode Module Assembly (Control Electronics)

STANDARDS

Military

MIL-STD-202	Test Methods for Electronic and Electrical Component Parts

DRAWINGS

APOLLO G&N

1015097	Relay and Diode Module Assembly

1-15-64

APOLLO G&N Specification
FTM1015097
Original Issue Date: 2-24-65
Release Authority: TDRR 16785
Class Release

FINAL TEST METHOD

FOR

RELAY AND DIODE MODULE ASSEMBLY

(CONTROL ELECTRONICS)

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page 1 to 4 inclusive.

APPROVALS	2/24/65 NASA/MSC	2/18/65 2/24/65 MIT/IL	ACSP

FINAL TEST METHOD
FOR
RELAY AND DIODE MODULE ASSEMBLY
(CONTROL ELECTRONICS)

1. GENERAL REQUIREMENTS. Unless otherwise specified, the supplier is responsible for the performance of all inspections to the satisfaction of the National Aeronautics and Space Administration (NASA) representative. Except as otherwise specified, the supplier may utilize his facilities or any commercial laboratory acceptable to NASA. Inspection records of the examinations and tests shall be kept complete and available to NASA as specified in the contract or order.

1.1 SCOPE. This specification lists the inspections for the Relay and Diode Module Assembly (Control Electronics), hereafter called the assembly, which must be conducted prior to acceptance. The procedures herein shall be followed in detail in order to ascertain whether the item merits acceptance or warrants rejection.

1.2 CLASSIFICATION. The test requirements for part number 1015097-011 shall be designated as Type I.

1.3 APPLICABLE DOCUMENTS. - This specification shall be used in conjunction with Drawing 1015097. When the requirements of Drawing 1015097 and this specification are in conflict, resolution must be obtained from NASA and the MIT APOLLO Management Office via the purchaser.

1.3.1 Drawings. Drawings for the assembly are listed on Drawing 1015097.

1.3.2 Supplementary Documents. The following documents supplement the instructions herein.

DRAWINGS

APOLLO G&N

1015097	Relay and Diode Module Assembly (Control Electronics)

1.4 SPECIAL NOTES

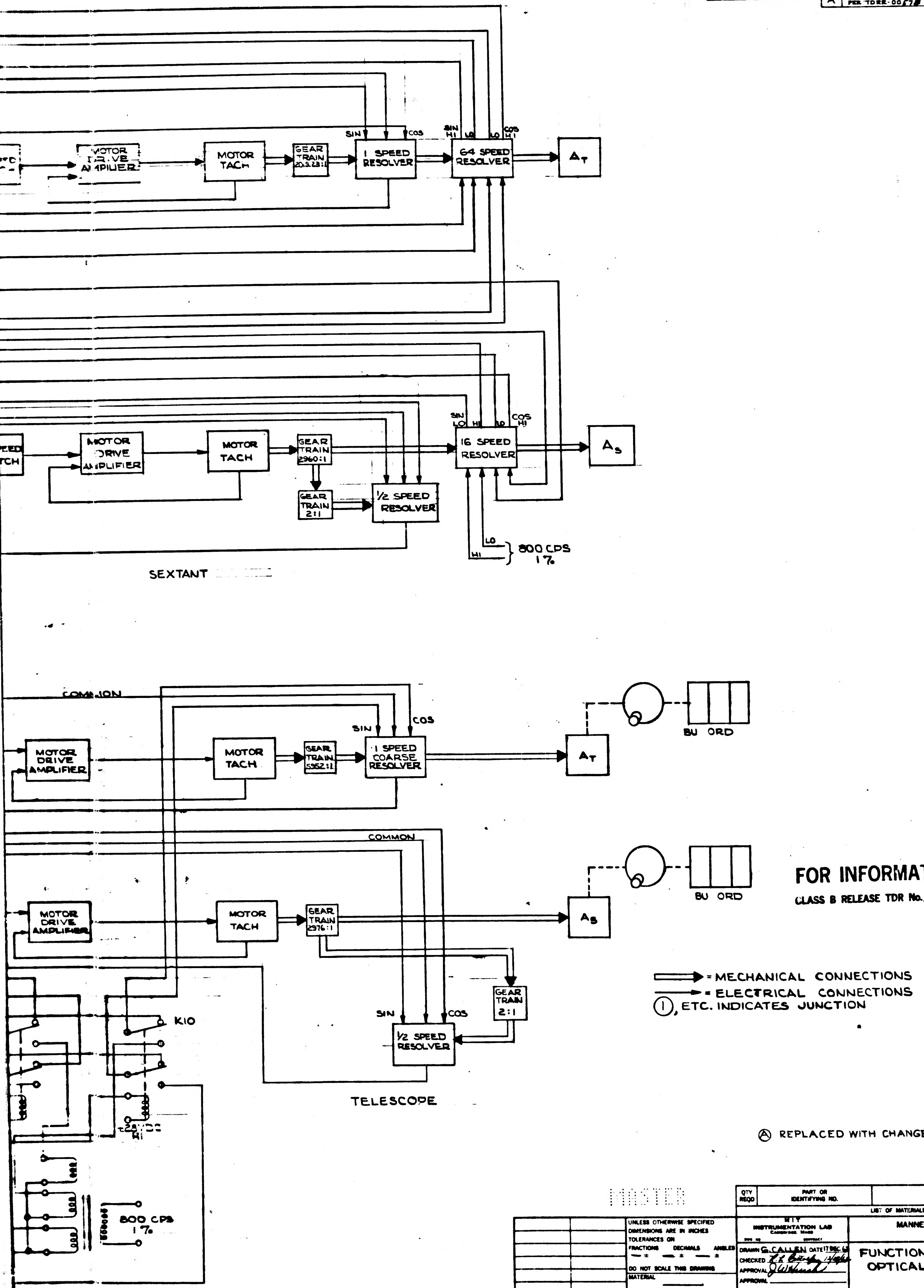
1.4.1 Test Conditions. The assembly shall be tested under the following conditions:

a. Ambient Temperature	25° ±10°C
b. Relative Humidity	90% max
c. Barometric Pressure	28 to 32 inches of Hg

1015100	Ⓐ

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED WITH CHANGE BY REV. B PER TDRR-00578	3-7-63	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COS
SIN HI
LO
LO
COS HI
MOTOR DRIVE AMPLIFIER
MOTOR TACH
GEAR TRAIN 20.2281:1
1 SPEED RESOLVER
64 SPEED RESOLVER
A_T
SIN LO
HI
LO
COS HI
MOTOR DRIVE AMPLIFIER
MOTOR TACH
GEAR TRAIN 2960:1
GEAR TRAIN 2:1
1/2 SPEED RESOLVER
16 SPEED RESOLVER
A_S
LO
HI
800 CPS 1%
SEXTANT
COMMON
SIN
COS
MOTOR DRIVE AMPLIFIER
MOTOR TACH
GEAR TRAIN 5952:1
1 SPEED COARSE RESOLVER
A_T
BU ORD
COMMON
MOTOR DRIVE AMPLIFIER
MOTOR TACH
GEAR TRAIN 2976:1
A_S
BU ORD
GEAR TRAIN 2:1
SIN
COS
1/2 SPEED RESOLVER
K10
28V DC HI
800 CPS 1%
TELESCOPE
= MECHANICAL CONNECTIONS
= ELECTRICAL CONNECTIONS
①, ETC. INDICATES JUNCTION

FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 00168 DATE 12-19-62

Ⓐ REPLACED WITH CHANGE BY REV. B

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

NEXT ASSY | USED ON
APPLICATION

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN G. CALLEN DATE 17 DEC 62
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL 12-19-62
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

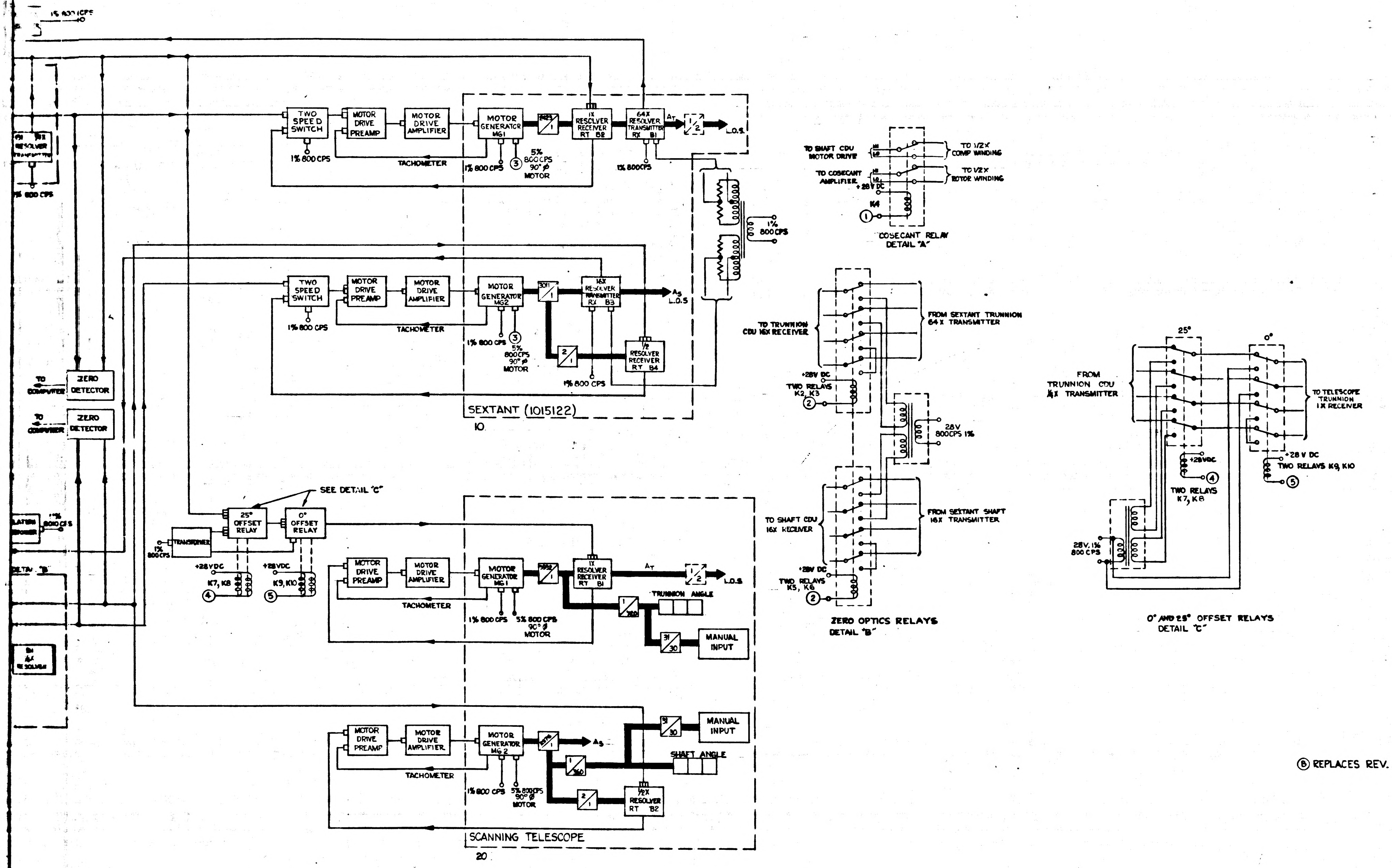
FUNCTIONAL DIAGRAM
OPTICAL SYSTEM

CODE IDENT NO. | SIZE J | NASA DRAWING NO 1015100
SCALE | WT | SHEET OF

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015100

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE TDRR 00578	3-7-63	WC



1% 800 CPS
RESOLVER TRANSMITTER
1% 800 CPS
TWO SPEED SWITCH
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
1X RESOLVER RECEIVER RT B2
64X RESOLVER TRANSMITTER RX B1
A_T
1/2
L.O.S.
1% 800 CPS
TACHOMETER
1% 800 CPS
③ 5% 800 CPS 90° φ MOTOR
1% 800CPS
1% 800CPS
TWO SPEED SWITCH
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG2
30/1
16X RESOLVER TRANSMITTER RX B3
A_S
L.O.S
1% 800 CPS
TACHOMETER
1% 800 CPS
③ 5% 800CPS 90° φ MOTOR
2/1
1/2 RESOLVER RECEIVER RT B4
1% 800 CPS
TO COMPUTER
ZERO DETECTOR
TO COMPUTER
ZERO DETECTOR
SEXTANT (1015122)
10
SEE DETAIL "C"
25° OFFSET RELAY
0° OFFSET RELAY
TRANSFORMER
1% 800CPS
1% 800 CPS
DETAIL "B"
+28VDC
K7, K8
④
+28VDC
K9, K10
⑤
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
1X RESOLVER RECEIVER RT B1
A_T
1/2
L.O.S
TRUNNION ANGLE
1/360
31/30
MANUAL INPUT
TACHOMETER
1% 800 CPS
5% 800 CPS 90° φ MOTOR
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG 2
A_S
31/30
MANUAL INPUT
SHAFT ANGLE
1/360
2/1
1/2X RESOLVER RT B2
TACHOMETER
1% 800 CPS
5% 800CPS 90° φ MOTOR
SCANNING TELESCOPE
20
TO SHAFT CDU MOTOR DRIVE
HI
LO
TO COSECANT AMPLIFIER
HI
LO
+28V DC
K4
①
TO 1/2X COMP WINDING
TO 1/2X ROTOR WINDING
COSECANT RELAY
DETAIL "A"
TO TRUNNION CDU 16X RECEIVER
FROM SEXTANT TRUNNION 64X TRANSMITTER
+28V DC
TWO RELAYS K2, K3
②
28V 800CPS 1%
TO SHAFT CDU 16X RECEIVER
FROM SEXTANT SHAFT 16X TRANSMITTER
+28V DC
TWO RELAYS K5, K6
②
ZERO OPTICS RELAYS
DETAIL "B"
25°
0°
FROM TRUNNION CDU 1/4X TRANSMITTER
TO TELESCOPE TRUNNION 1X RECEIVER
+28VDC
④
TWO RELAYS K7, K8
+28 V DC
TWO RELAYS K9, K10
⑤
28V, 1% 800 CPS
0° AND 25° OFFSET RELAYS
DETAIL "C"

Ⓑ REPLACES REV. A WITH CHANGE

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN R EMERY DATE 3-7-63
CHECKED R G Battey
APPROVAL D G Koso 3-8-63
APPROVAL 3-8-63
NASA APPROVAL 13 March 1963
MIT APPROVAL 13 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

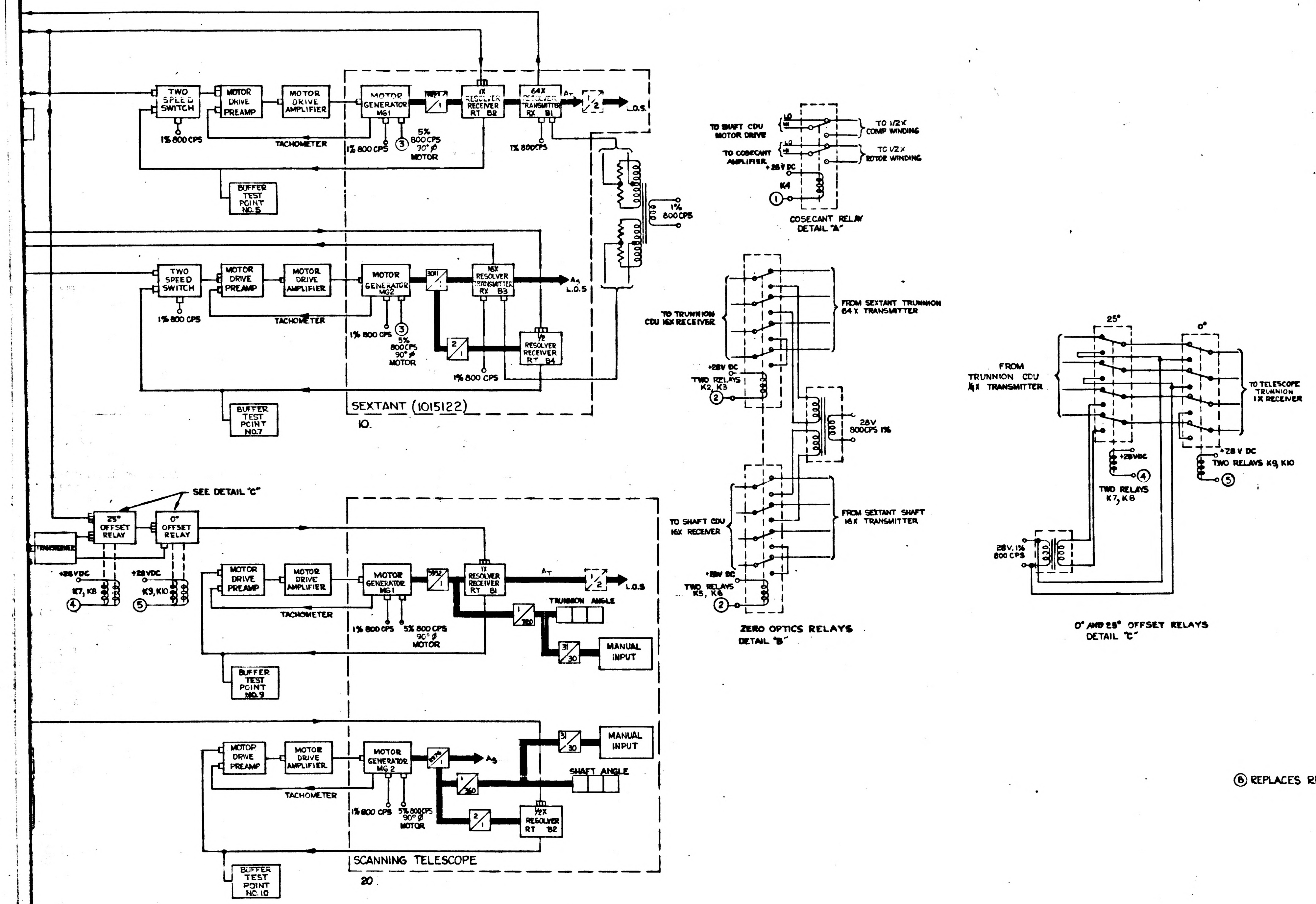
FUNCTIONAL DIAGRAM
OPTICAL SYSTEM

CODE IDENT NO.
SIZE H
NASA DRAWING NO. 1015100
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015100

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE TDRR 00578	3-7-63	WH
C	ADDED DETAIL "D" ADDED 1 THRU 12 BUFFER TEST POINTS. REVISED DETAIL A & C ADDED ANOTHER POSITION TO S15 REMOVED ZERO DETECTOR UPDATED A_T DECODER SWITCHING TDRR 00765	4-9-63	WH


TWO SPEED SWITCH
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
1X RESOLVER RECEIVER RT B2
64X RESOLVER TRANSMITTER RX B1
A_T
1/2
L.O.S.
1% 800 CPS
TACHOMETER
5% 800 CPS 90° Ø MOTOR
③
BUFFER TEST POINT NO. 5
1% 800 CPS
MOTOR GENERATOR MG2
16X RESOLVER TRANSMITTER RX B3
A_S
L.O.S
2/1
1/2 RESOLVER RECEIVER RT B4
BUFFER TEST POINT NO. 7
SEXTANT (1015122)
10.
SEE DETAIL "C"
25° OFFSET RELAY
0° OFFSET RELAY
TRANSFORMER
+28VDC
K7, K8
④
K9, K10
⑤
1X RESOLVER RECEIVER RT B1
TRUNNION ANGLE
MANUAL INPUT
31/30
BUFFER TEST POINT NO. 9
SHAFT ANGLE
1/360
1/2X RESOLVER RT B2
BUFFER TEST POINT NO. 10
SCANNING TELESCOPE
20
TO SHAFT CDU MOTOR DRIVE
TO COSECANT AMPLIFIER
LO
HI
TO 1/2X COMP WINDING
TO 1/2X ROTOR WINDING
+28V DC
K4
①
COSECANT RELAY DETAIL "A"
TO TRUNNION CDU 16X RECEIVER
FROM SEXTANT TRUNNION 64X TRANSMITTER
TWO RELAYS K2, K3
②
28V 800CPS 1%
TO SHAFT CDU 16X RECEIVER
FROM SEXTANT SHAFT 16X TRANSMITTER
TWO RELAYS K5, K6
ZERO OPTICS RELAYS DETAIL "B"
25°
0°
FROM TRUNNION CDU 1/4X TRANSMITTER
TO TELESCOPE TRUNNION 1X RECEIVER
TWO RELAYS K7, K8
TWO RELAYS K9, K10
28V, 1% 800 CPS
0° AND 25° OFFSET RELAYS DETAIL "C"

Ⓑ REPLACES REV. A WITH CHANGE

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

NEXT ASSY USED ON
APPLICATION

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INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 3-7-63
CHECKED
APPROVAL 3-8-63
APPROVAL 3-8-63
NASA APPROVAL
MIT APPROVAL 13 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FUNCTIONAL DIAGRAM OPTICAL SYSTEM

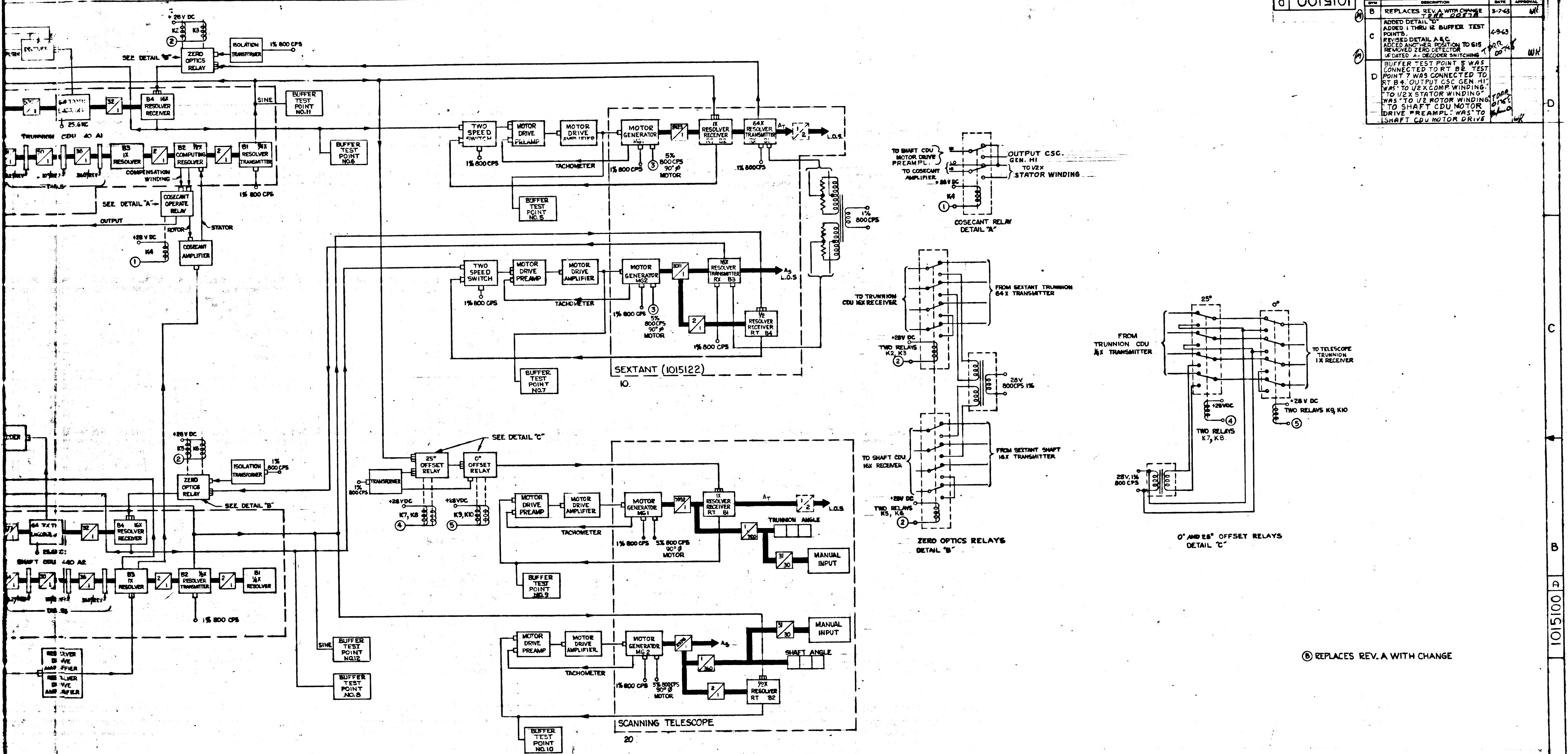
CODE IDENT NO. SIZE H NASA DRAWING NO. 1015100
SCALE WT SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015100

1015100	D

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE TDRR 00578	3-7-63	WK
C	ADDED DETAIL "D" ADDED 1 THRU 12 BUFFER TEST POINTS. REVISED DETAIL A & C ADDED ANOTHER POSITION TO S15 REMOVED ZERO DETECTOR UPDATED A- DECODER SWITCHING	4-9-63 TDRR 00748	WK
D	BUFFER TEST POINT 5 WAS CONNECTED TO RT B2. TEST POINT 7 WAS CONNECTED TO RT B4. "OUTPUT CSC GEN. HI" WAS "TO 1/2 X COMP. WINDING." "TO 1/2 X STATOR WINDING" WAS "TO 1/2 ROTOR WINDING." "TO SHAFT CDU MOTOR DRIVE PREAMPL." WAS "TO SHAFT CDU MOTOR DRIVE	TDRR 01262	WK



+28 V DC
K2
K3
②
ISOLATION TRANSFORMER
1% 800 CPS
SEE DETAIL "B"
ZERO OPTICS RELAY
B4 16X RESOLVER RECEIVER
SINE
BUFFER TEST POINT NO.11
64 TOOTH ENCODER
25.6KC
32/1
TRUNNION CDU 40 A1
50/1
36/1
360/REV
TAILS
B3 1X RESOLVER
2/1
B2 1/2X COMPUTING RESOLVER
B1 1/4X RESOLVER TRANSMITTER
COMPENSATION WINDING
1% 800 CPS
BUFFER TEST POINT NO.6
SEE DETAIL "A"
COSECANT OPERATE RELAY
OUTPUT
ROTOR
STATOR
+28 V DC
K4
①
COSECANT AMPLIFIER
TWO SPEED SWITCH
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
1X RESOLVER RECEIVER RX B2
64X RESOLVER TRANSMITTER
A_T
1/2
L.O.S.
1% 800 CPS
TACHOMETER
5% 800 CPS 90° φ MOTOR
③
BUFFER TEST POINT NO.5
TWO SPEED SWITCH
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG2
16X RESOLVER RECEIVER RX B3
A_S
L.O.S.
2/1
1/2X RESOLVER RECEIVER RT B4
1% 800 CPS
TACHOMETER
BUFFER TEST POINT NO.7
1% 800 CPS
SEXTANT (1015122)
10
SEE DETAIL "C"
25° OFFSET RELAY
0° OFFSET RELAY
TRANSFORMER
1% 800CPS
+28VDC
K7, K8
④
+28VDC
K9, K10
⑤
+28 V DC
K5
K6
②
ISOLATION TRANSFORMER
1% 800 CPS
ZERO OPTICS RELAY
SEE DETAIL "B"
64 TXT ENCODER
25.6KC
32/1
B4 16X RESOLVER RECEIVER
SHAFT CDU 440 A2
50/1
36/1
360/REV
B3 1X RESOLVER
2/1
B2 1/2X RESOLVER TRANSMITTER
B1 1/4X RESOLVER
1% 800 CPS
RESOLVER DRIVE AMPLIFIER
RESOLVER DRIVE AMPLIFIER
SINE
BUFFER TEST POINT NO.12
BUFFER TEST POINT NO.8
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
1X RESOLVER RECEIVER RT B1
A_T
1/2
L.O.S.
TRUNNION ANGLE
1/360
31/30
MANUAL INPUT
TACHOMETER
1% 800 CPS
5% 800 CPS 90° φ MOTOR
BUFFER TEST POINT NO.9
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG 2
A_S
31/30
MANUAL INPUT
SHAFT ANGLE
1/360
2/1
1/2X RESOLVER RT B2
TACHOMETER
1% 800 CPS
5% 800CPS 90° φ MOTOR
BUFFER TEST POINT NO.10
SCANNING TELESCOPE
20
TO SHAFT CDU MOTOR DRIVE PREAMPL.
TO COSECANT AMPLIFIER
HI
LO
+28 V DC
K4
①
OUTPUT CSC. GEN. HI
TO 1/2X STATOR WINDING
COSECANT RELAY DETAIL "A"
1% 800CPS
TO TRUNNION CDU 16X RECEIVER
FROM SEXTANT TRUNNION 64X TRANSMITTER
+28V DC
TWO RELAYS K2, K3
②
28V 800CPS 1%
TO SHAFT CDU 16X RECEIVER
FROM SEXTANT SHAFT 16X TRANSMITTER
+28V DC
TWO RELAYS K5, K6
②
ZERO OPTICS RELAYS DETAIL "B"
25°
0°
FROM TRUNNION CDU 1/4X TRANSMITTER
TO TELESCOPE TRUNNION 1X RECEIVER
+28VDC
④
TWO RELAYS K7, K8
+28 V DC
TWO RELAYS K9, K10
⑤
28V, 1% 800 CPS
0° AND 25° OFFSET RELAYS DETAIL "C"

Ⓑ REPLACES REV. A WITH CHANGE

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN R EMERY DATE 3-7-63
CHECKED
APPROVAL 3-8-63
APPROVAL 3-8-63
NASA APPROVAL
MIT APPROVAL 13 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FUNCTIONAL DIAGRAM
OPTICAL SYSTEM

CODE IDENT NO. | SIZE H | NASA DRAWING NO. 1015100
SCALE | WT | SHEET 1 OF 1

1015100

INCHES
PHOTOGRAPHIC SCALE ONLY

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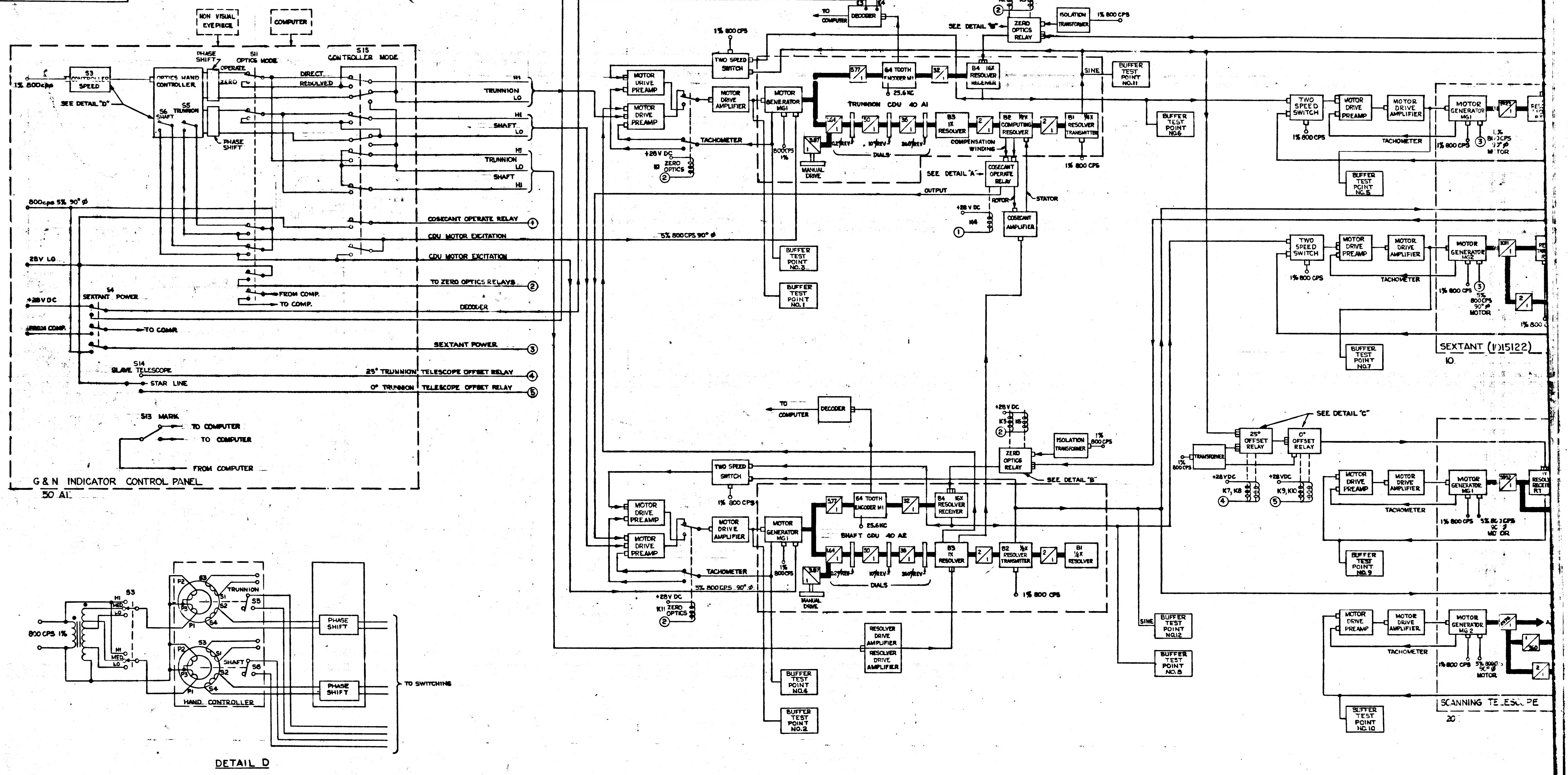
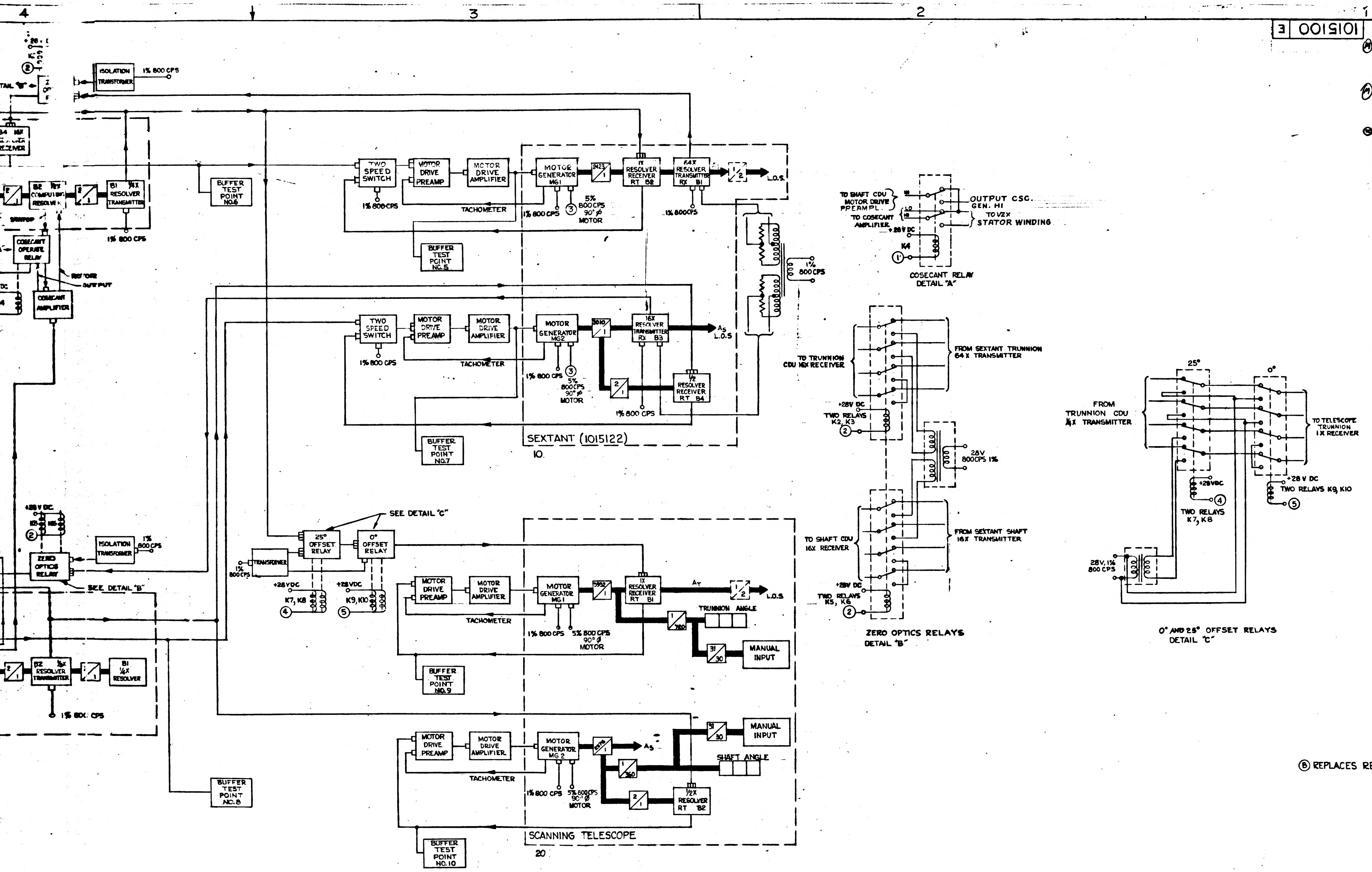

NON VISUAL EYEPIECE
COMPUTER
1% 800cps
S3 CONTROLLER SPEED
SEE DETAIL "D"
OPTICS HAND CONTROLLER
S6 SHAFT
S5 TRUNNION
PHASE SHIFT
S11 OPTICS MODE
OPERATE
ZERO
S15 CONTROLLER MODE
DIRECT
RESOLVED
TRUNNION HI LO
SHAFT HI LO
800cps 5% 90° ϕ
28V LO
+28VDC
FROM COMP.
S4 SEXTANT POWER
TO COMP.
COSECANT OPERATE RELAY ①
CDU MOTOR EXCITATION
CDU MOTOR EXCITATION
TO ZERO OPTICS RELAYS ②
FROM COMP.
TO COMP.
DECODER
SEXTANT POWER ③
S14 SLAVE TELESCOPE
STAR LINE
25° TRUNNION TELESCOPE OFFSET RELAY ④
0° TRUNNION TELESCOPE OFFSET RELAY ⑤
S13 MARK
TO COMPUTER
TO COMPUTER
FROM COMPUTER
G & N INDICATOR CONTROL PANEL
50 A1
TO COMPUTER
DECODER
E3
E4
+28 V DC
K2
K3
②
ISOLATION TRANSFORMER
1% 800 CPS
SEE DETAIL "B"
ZERO OPTICS RELAY
1% 800 CPS
TWO SPEED SWITCH
MOTOR DRIVE PREAMP
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
5.77/1
64 TOOTH ENCODER M1
25.6 KC
32/1
B4 16X RESOLVER RECEIVER
SINE
BUFFER TEST POINT NO.11
TRUNNION CDU 40 A1
1.64/1
50/1
36/1
B3 1X RESOLVER
2/1
B2 ½X COMPUTING RESOLVER
2/1
B1 ¼X RESOLVER TRANSMITTER
BUFFER TEST POINT NO.6
3.87/1
MANUAL DRIVE
0.2°/REV
10°/REV
360°/REV
DIALS
COMPENSATION WINDING
800CPS 1%
TACHOMETER
+28V DC
K1 ZERO OPTICS
②
1% 800 CPS
SEE DETAIL "A"
COSECANT OPERATE RELAY
OUTPUT
ROTOR
STATOR
+28 V DC
K4
①
COSECANT AMPLIFIER
5% 800CPS 90° ϕ
BUFFER TEST POINT NO.3
BUFFER TEST POINT NO.1
TWO SPEED SWITCH
1% 800 CPS
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
TACHOMETER
1% 800 CPS
③
1% 800CPS 90° ϕ MOTOR
BUFFER TEST POINT NO.5
TWO SPEED SWITCH
1% 800 CPS
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG2
30/1
TACHOMETER
1% 800 CPS
③
5% 800CPS 90° ϕ MOTOR
2/1
1% 800
BUFFER TEST POINT NO.7
SEXTANT (1015122)
10
TO COMPUTER
DECODER
+28V DC
K5
K6
②
ZERO OPTICS RELAY
ISOLATION TRANSFORMER
1% 800 CPS
SEE DETAIL "B"
TWO SPEED SWITCH
1% 800 CPS
MOTOR DRIVE PREAMP
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
5.77/1
64 TOOTH ENCODER M1
25.6KC
32/1
B4 16X RESOLVER RECEIVER
SHAFT CDU 40 A2
1.64/1
50/1
36/1
B3 1X RESOLVER
2/1
B2 ½X RESOLVER TRANSMITTER
2/1
B1 ¼X RESOLVER
3.87/1
MANUAL DRIVE
0.2°/REV
10°/REV
360°/REV
DIALS
1% 800 CPS
1% 800CPS
TACHOMETER
5% 800CPS 90° ϕ
+28V DC
K11 ZERO OPTICS
②
RESOLVER DRIVE AMPLIFIER
RESOLVER DRIVE AMPLIFIER
BUFFER TEST POINT NO.4
BUFFER TEST POINT NO.2
SINE
BUFFER TEST POINT NO.12
BUFFER TEST POINT NO.8
SEE DETAIL "C"
TRANSFORMER
1% 800CPS
25° OFFSET RELAY
0° OFFSET RELAY
+28VDC
K7, K8
④
+28VDC
K9, K10
⑤
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
TACHOMETER
1% 800 CPS
5% 800CPS 90° ϕ MOTOR
BUFFER TEST POINT NO.9
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG2
1/360
2/1
TACHOMETER
1% 800 CPS
5% 800CPS 90° ϕ MOTOR
BUFFER TEST POINT NO.10
SCANNING TELESCOPE
20
800 CPS 1%
S3
HI
MED
LO
HI
MED
LO
P2
P3
P1
S3
S1
S2
S4
TRUNNION
S5
P2
P3
P1
S3
S1
S2
S4
SHAFT
S6
HAND CONTROLLER
PHASE SHIFT
PHASE SHIFT
TO SWITCHING
DETAIL D

1015100 E

SYM	DESCRIPTION	DATE	APPROVAL
Ⓜ B	REPLACES REV. A WITH CHANGE TDRR 00578	3-7-63	WK
Ⓜ C	ADDED DETAIL "D" ADDED 1 THRU 12 BUFFER TEST POINTS. REVISED DETAIL A & C ADDED ANOTHER POSITION TO S15 REMOVED ZERO DETECTOR UPDATED A_T DECODER SWITCHING	4-9-63 TDRR 00748	WK
Ⓜ D	BUFFER TEST POINT 5 WAS CONNECTED TO RT B2. TEST POINT 7 WAS CONNECTED TO RT B4. "OUTPUT CSC GEN. HI" WAS "TO 1/2X COMP. WINDING." "TO 1/2X STATOR WINDING" WAS "TO 1/2 ROTOR WINDING." "TO SHAFT CDU MOTOR DRIVE PREAMPL." WAS "TO SHAFT CDU MOTOR DRIVE	TDRR 01768	WK
E	ADDED "BLOCK I" TO DWG TITLE ADDED COMPUTER MODE SWITCHING TO G&N INDICATOR CONTROL PANEL & DAC SIGNAL FLOW PATHS REVISED LOCATION OF BUFFER TEST POINTS 11 & 12 IN SXT. GEAR RATIO 3010/1 WAS 3011/1 REVISED COSECENT AMP & SPEED CONTROL TRANSFORMER WIRING REMOVED NON-VISUAL EYEPIECE	6 MAR 64 TDRR 06738	WK


4
3
2
1
ISOLATION TRANSFORMER
1% 800 CPS
B4 16X RECEIVER
B2 16X COMPUTING RESOLVER
B1 1/4X RESOLVER TRANSMITTER
1% 800 CPS
COSECANT OPERATE RELAY
ROTOR OUTPUT
COSECANT AMPLIFIER
BUFFER TEST POINT NO.6
TWO SPEED SWITCH
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
1X RESOLVER RECEIVER RT B2
64X RESOLVER TRANSMITTER RX B1
1/2
L.O.S.
1% 800 CPS
TACHOMETER
1% 800 CPS
5% 800 CPS 90° Ø MOTOR
3
1% 800CPS
BUFFER TEST POINT NO.5
1% 800 CPS
TWO SPEED SWITCH
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG2
3010/1
16X RESOLVER TRANSMITTER RX B3
A_S L.O.S
1% 800 CPS
TACHOMETER
1% 800 CPS
5% 800CPS 90° Ø MOTOR
2/1
1/2 RESOLVER RECEIVER RT B4
1% 800 CPS
BUFFER TEST POINT NO.7
SEXTANT (1015122)
10.
+28 V DC
ISOLATION TRANSFORMER
1% 800 CPS
ZERO OPTICS RELAY
SEE DETAIL "B"
SEE DETAIL "C"
TRANSFORMER
1% 800 CPS
25° OFFSET RELAY
0° OFFSET RELAY
+28 VDC
K7, K8
4
+28 VDC
K9, K10
5
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
1X RESOLVER RECEIVER RT B1
A_T
1/2
L.O.S
TACHOMETER
1% 800 CPS
5% 800 CPS 90° Ø MOTOR
1/180
TRUNNION ANGLE
31/30
MANUAL INPUT
BUFFER TEST POINT NO.9
B2 1/4X RESOLVER TRANSMITTER
B1 1/4X RESOLVER
1% 800 CPS
BUFFER TEST POINT NO.8
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG2
A_S
1/360
31/30
MANUAL INPUT
SHAFT ANGLE
TACHOMETER
1% 800 CPS
5% 800 CPS 90° Ø MOTOR
2/1
1/2X RESOLVER RT B2
BUFFER TEST POINT NO.10
SCANNING TELESCOPE
20
TO SHAFT CDU MOTOR DRIVE PREAMPL.
TO COSECANT AMPLIFIER
HI
LO
HI
+28 V DC
K4
1
OUTPUT CSC. GEN. HI
TO 1/2X STATOR WINDING
COSECANT RELAY DETAIL "A"
1% 800 CPS
TO TRUNNION CDU 16X RECEIVER
FROM SEXTANT TRUNNION 64X TRANSMITTER
+28V DC
TWO RELAYS K2, K3
2
28V 800CPS 1%
TO SHAFT CDU 16X RECEIVER
FROM SEXTANT SHAFT 16X TRANSMITTER
+28V DC
TWO RELAYS K5, K6
2
ZERO OPTICS RELAYS DETAIL "B"
25°
0°
FROM TRUNNION CDU 1/4X TRANSMITTER
TO TELESCOPE TRUNNION 1X RECEIVER
+28VDC
4
TWO RELAYS K7, K8
+28 V DC
TWO RELAYS K9, K10
5
28V, 1% 800 CPS
0° AND 25° OFFSET RELAYS DETAIL "C"
D
C
B
A

Ⓑ REPLACES REV. A WITH CHANGE

1015100 E

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 3-7-63
CHECKED
APPROVAL 3-8-63
APPROVAL 3-8-63
NASA APPROVAL 13 Mar 1963
MIT APPROVAL 13 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

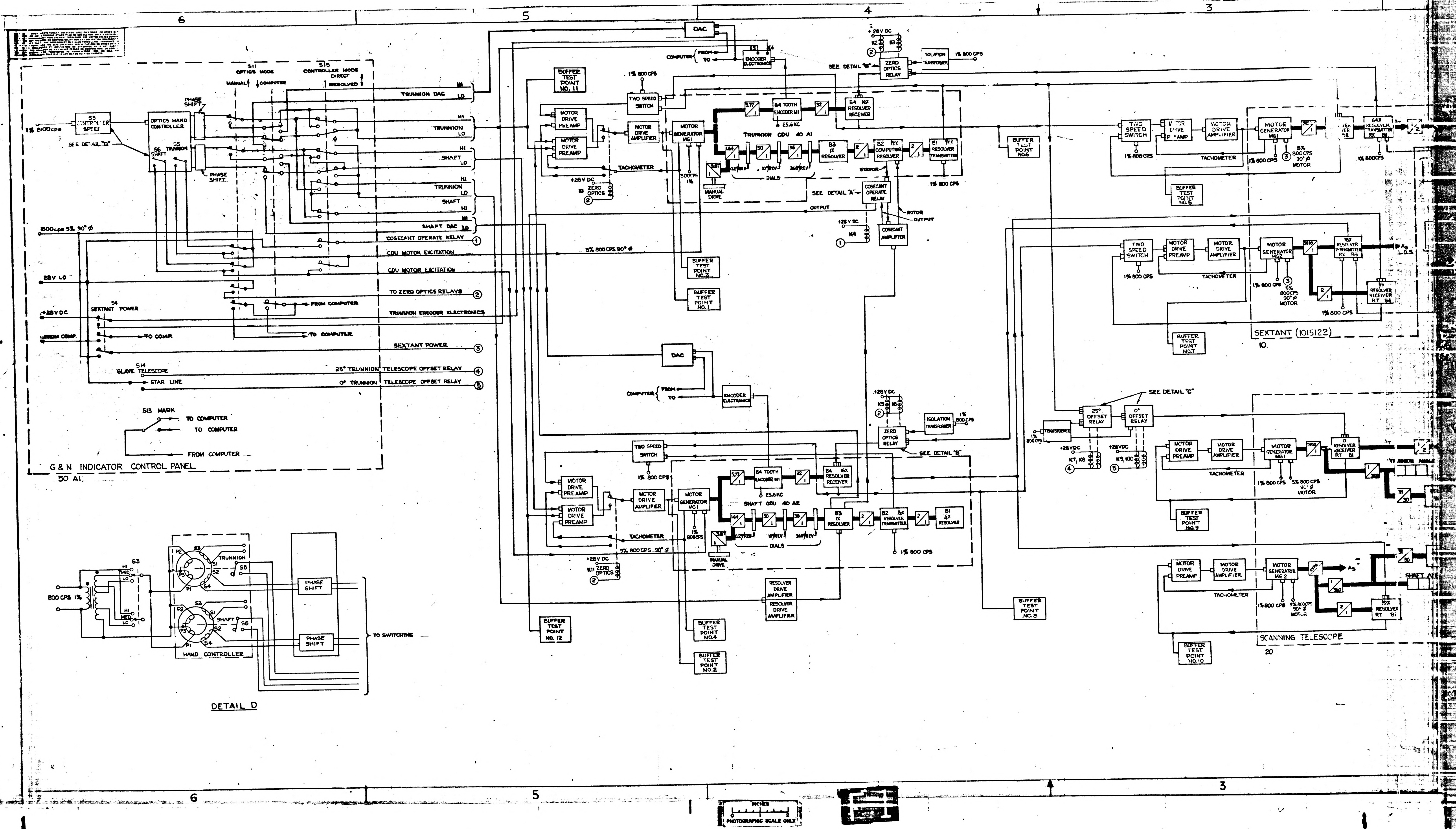
FUNCTIONAL DIAGRAM
OPTICAL SYSTEM
BLOCK I

CODE IDENT NO. SIZE H NASA DRAWING NO. 1015100
SCALE WT SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

F-2

BH


6
5
4
3
S11 OPTICS MODE
MANUAL
COMPUTER
S15 CONTROLLER MODE
DIRECT
RESOLVED
PHASE SHIFT
1% 800cps
S3 CONTROLLER SPEED
SEE DETAIL "D"
OPTICS HAND CONTROLLER
S6 SHAFT
S5 TRUNNION
TRUNNION DAC HI LO
TRUNNION HI LO
SHAFT HI LO
TRUNNION HI LO
SHAFT HI
SHAFT DAC HI LO
800cps 5% 90° ϕ
COSECANT OPERATE RELAY ①
CDU MOTOR EXCITATION
CDU MOTOR EXCITATION
28V LO
TO ZERO OPTICS RELAYS ②
FROM COMPUTER
+28VDC
S4 SEXTANT POWER
TRUNNION ENCODER ELECTRONICS
FROM COMP.
TO COMP.
TO COMPUTER
SEXTANT POWER ③
S14 SLAVE TELESCOPE
STAR LINE
25° TRUNNION TELESCOPE OFFSET RELAY ④
0° TRUNNION TELESCOPE OFFSET RELAY ⑤
S13 MARK
TO COMPUTER
TO COMPUTER
FROM COMPUTER
G & N INDICATOR CONTROL PANEL
50 A1
DAC
COMPUTER FROM TO
E3 E4
ENCODER ELECTRONICS
BUFFER TEST POINT NO. 11
1% 800 CPS
TWO SPEED SWITCH
MOTOR DRIVE PREAMP
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
TACHOMETER
+28V DC
K1 ZERO OPTICS ②
800CPS 1%
577/1
64 TOOTH ENCODER M1
25.6KC
32/1
B4 16X RESOLVER RECEIVER
TRUNNION CDU 40 A1
1.64/1
50/1
36/1
0.2°/REV
10°/REV
360°/REV
DIALS
3.87/1
MANUAL DRIVE
B3 1X RESOLVER
2/1
B2 1/2X COMPUTING RESOLVER
2/1
B1 1/4X RESOLVER TRANSMITTER
1% 800 CPS
STATOR
SEE DETAIL "A"
COSECANT OPERATE RELAY
OUTPUT
ROTOR
OUTPUT
+28 V DC
K4 ①
COSECANT AMPLIFIER
+28 V DC
K2 K3 ②
ZERO OPTICS RELAY
SEE DETAIL "B"
ISOLATION TRANSFORMER
1% 800 CPS
5% 800CPS 90° ϕ
BUFFER TEST POINT NO.3
BUFFER TEST POINT NO.1
BUFFER TEST POINT NO.6
TWO SPEED SWITCH
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
TACHOMETER
1% 800CPS
1% 800 CPS
③ 5% 800CPS 90° ϕ MOTOR
16X RESOLVER RECEIVER B2
64X RESOLVER TRANSMITTER RX B1
1/2
1% 800CPS
BUFFER TEST POINT NO.5
TWO SPEED SWITCH
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG2
3010/1
16X RESOLVER TRANSMITTER RX B3
A_S L.O.S
TACHOMETER
1% 800 CPS
1% 800 CPS
③ 5% 800CPS 90° ϕ MOTOR
2/1
1/2 RESOLVER RECEIVER RT B4
1% 800 CPS
SEXTANT (1015122)
10.
BUFFER TEST POINT NO.7
DAC
COMPUTER FROM TO
ENCODER ELECTRONICS
+28V DC
K5 K6 ②
ZERO OPTICS RELAY
ISOLATION TRANSFORMER
1% 800CPS
SEE DETAIL "B"
TWO SPEED SWITCH
1% 800 CPS
MOTOR DRIVE PREAMP
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
577/1
64 TOOTH ENCODER M1
25.6KC
32/1
B4 16X RESOLVER RECEIVER
SHAFT CDU 40 A2
1.64/1
50/1
36/1
0.2°/REV
10°/REV
360°/REV
DIALS
3.87/1
MANUAL DRIVE
B3 1X RESOLVER
2/1
B2 1/2X RESOLVER TRANSMITTER
2/1
B1 1/4X RESOLVER
1% 800 CPS
TACHOMETER
1% 800CPS
5% 800CPS 90° ϕ
+28V DC
K11 ZERO OPTICS ②
RESOLVER DRIVE AMPLIFIER
RESOLVER DRIVE AMPLIFIER
BUFFER TEST POINT NO. 12
BUFFER TEST POINT NO.4
BUFFER TEST POINT NO.2
BUFFER TEST POINT NO.8
SEE DETAIL "C"
25° OFFSET RELAY
0° OFFSET RELAY
TRANSFORMER
1% 800CPS
+28VDC
K7, K8 ④
+28VDC
K9, K10 ⑤
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG1
5952/1
1X RESOLVER RECEIVER RT B1
A_T
1/2
TRUNNION ANGLE
1/300
31/30
TACHOMETER
1% 800 CPS
5% 800 CPS 90° ϕ MOTOR
BUFFER TEST POINT NO.9
MOTOR DRIVE PREAMP
MOTOR DRIVE AMPLIFIER
MOTOR GENERATOR MG 2
A_S
1/360
31/30
SHAFT AN
2/1
1/2X RESOLVER RT B2
TACHOMETER
1% 800 CPS
5% 800CPS 90° ϕ MOTOR
SCANNING TELESCOPE
20
BUFFER TEST POINT NO.10
800 CPS 1%
S3
HI MED LO
HI MED LO
P1 P2 P3
S1 S2 S3 S4
TRUNNION
S5
SHAFT
S6
HAND CONTROLLER
PHASE SHIFT
PHASE SHIFT
TO SWITCHING
DETAIL D
INCHES
PHOTOGRAPHIC SCALE ONLY

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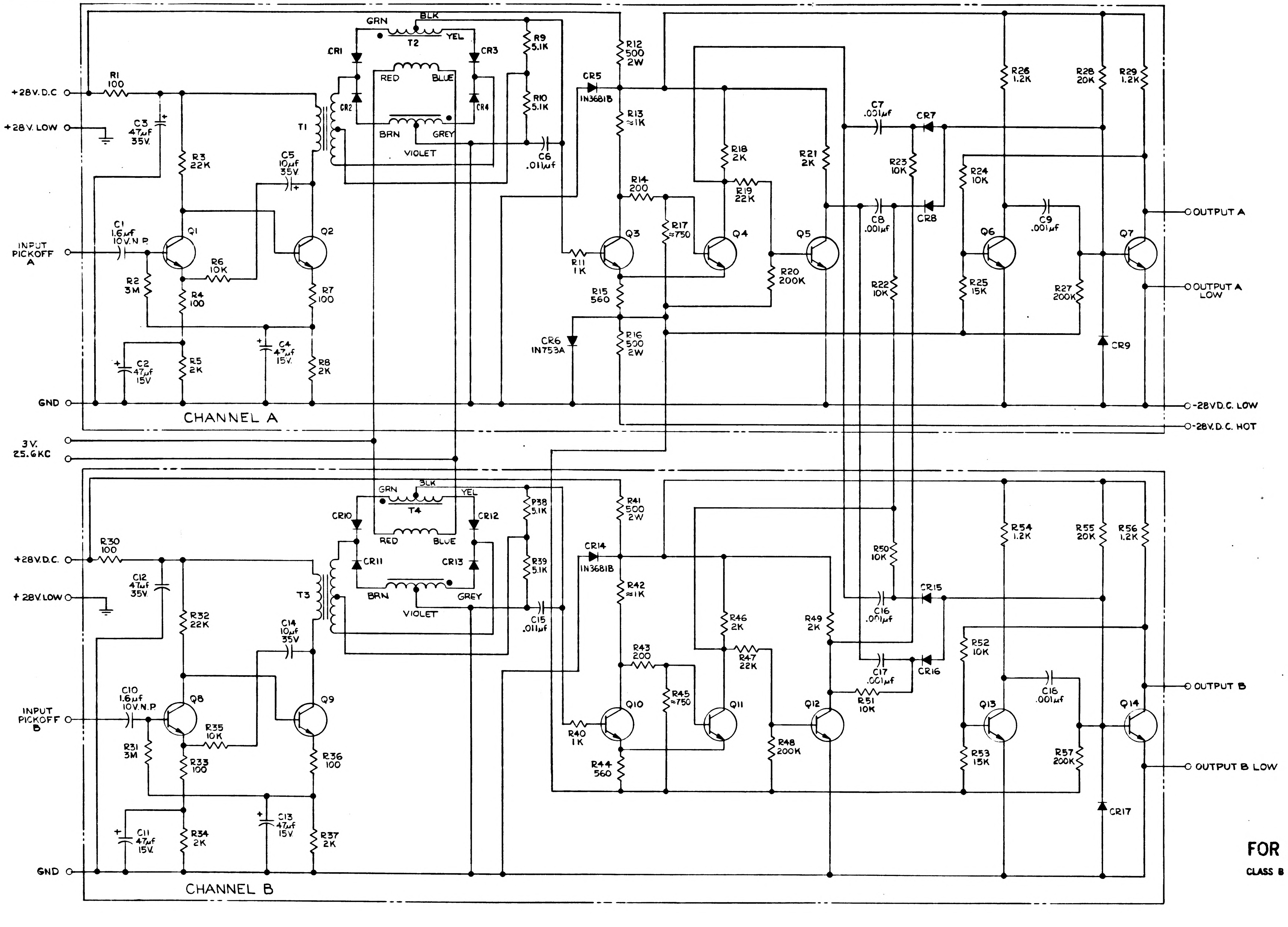
SYM	REVISIONS DESCRIPTION	DATE	APPROVAL



+28V.D.C
+28V. LOW
INPUT PICKOFF A
GND
CHANNEL A
R1 100
C3 47µf 35V.
R3 22K
C1 1.6µf 10V.N.P.
Q1
R2 3M
R6 10K
R4 100
C2 47µf 15V
R5 2K
C5 10µf 35V
Q2
R7 100
C4 47µf 15V.
R8 2K
T1
GRN
BLK
YEL
T2
CR1
CR2
CR3
CR4
RED
BLUE
BRN
GREY
VIOLET
R9 5.1K
R10 5.1K
C6 .011µf
R12 500 2W
CR5 1N3681B
R13 ≈1K
R14 200
R17 ≈750
R11 1K
Q3
R15 560
CR6 1N753A
R16 500 2W
R18 2K
R19 22K
Q4
R21 2K
Q5
R20 200K
C7 .001µf
CR7
R23 10K
C8 .001µf
CR8
R22 10K
R26 1.2K
R24 10K
Q6
R25 15K
C9 .001µf
R28 20K
R27 200K
CR9
R29 1.2K
Q7
OUTPUT A
OUTPUT A LOW
-28VD.C. LOW
-28V.D.C. HOT
3V. 25.6KC
+28V.D.C.
+28V LOW
INPUT PICKOFF B
GND
CHANNEL B
R30 100
C12 47µf 35V
R32 22K
C10 1.6µf 10V.N.P
Q8
R31 3M
R35 10K
R33 100
C11 47µf 15V.
R34 2K
C14 10µf 35V
Q9
R36 100
C13 47µf 15V
R37 2K
T3
GRN
BLK
YEL
T4
CR10
CR11
CR12
CR13
RED
BLUE
BRN
GREY
VIOLET
P38 5.1K
R39 5.1K
C15 .011µf
R41 500 2W
CR14 1N3681B
R42 ≈1K
R43 200
R45 ≈750
R40 1K
Q10
R44 560
R46 2K
R47 22K
Q11
R49 2K
Q12
R48 200K
R50 10K
C16 .001µf
CR15
C17 .001µf
CR16
R51 10K
R54 1.2K
R52 10K
Q13
R53 15K
C16 .001µf
R55 20K
R57 200K
CR17
R56 1.2K
Q14
OUTPUT B
OUTPUT B LOW

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00214 DATE 9 Jan 63

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± -//- DECIMALS ± -//- ANGLES ± -//-
DO NOT SCALE THIS DRAWING
MATERIAL -//-
HEAT TREATMENT -//-
FINAL FINISH -//-

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT

DRAWN R. L. Emery DATE 20 DEC 62
CHECKED R. L. Battalfano
APPROVAL R. L. Battalfano
APPROVAL
NASA APPROVAL W. J. Rhine 1-9-63
MIT APPROVAL 9 Jan 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
READ-OUT AMPLIFIER-DECODER

CODE IDENT NO
SIZE E
NASA DRAWING NO 1015101
SCALE -//-
WT
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-8	RESISTOR	100Ω	1%	1/4W
R2	1010368-132		3M	5%	1/4W
R3	1006750-64		22K	1%	1/4W
R4	1006750-8		100Ω	1%	1/4W
R5	1006750-39		2K	1%	1/4W
R6	1006750-56		10K	1%	1/4W
R7	1006750-8		100Ω	1%	1/4W
R8	1006750-39		2K	1%	1/4W
R9	1006750-49		5.1K	1%	1/4W
R10	1006750-49		5.1K	1%	1/4W
R11	1006750-39		1K	1%	1/4W
R12	240E5015		500Ω	5%	2W
R13	1006750-		≈1K	1%	1/4W
R14	1006750-15		200Ω	1%	1/4W
R15	1006750-26		560Ω	1%	1/4W
R16	240E5015		500Ω	1%	2W
R17	1006750-		≈750Ω	1%	1/4W
R18	1006750-39		2K	1%	1/4W
R19	1006750-64		22K	1%	1/4W
R20	1010368-128		200K	5%	1/4W
R21	1006750-39		2K	1%	1/4W
R22	1006750-56		10K	1%	1/4W
R23	1006750-56		10K	1%	1/4W
R24	1006750-56		10K	1%	1/4W
R25	1006750-60		15K	1%	1/4W
R26	1006750-34		1.2K	1%	1/4W
R27	1010368-128		200K	5%	1/4W
R28	1006750-63		20K	1%	1/4W
R29	1006750-34		1.2K	1%	1/4W
R30	1006750-8		100Ω	1%	1/4W
R31	1010368-132		3M	5%	1/4W
R32	1006750-64		22K	1%	1/4W
R33	1006750-8		100Ω	1%	1/4W
R34	1006750-39		2K	1%	1/4W
R35	1006750-56		10K	1%	1/4W
R36	1006750-8		100Ω	1%	1/4W
R37	1006750-39		2K	1%	1/4W
R38	1006750-49		5.1K	1%	1/4W
R39	1006750-49		5.1K	1%	1/4W
R40	1006750-39		1K	1%	1/4W
R41	240E5015		500Ω	5%	2W
R42	1006750-		≈1K	1%	1/4W
R43	1006750-15		200Ω	1%	1/4W
R44	1006750-26		560Ω	1%	1/4W
R45	1006750-		≈750Ω	1%	1/4W
R46	1006750-39		2K	1%	1/4W
R47	1006750-64		22K	1%	1/4W
R48	1010368-128		200K	5%	1/4W
R49	1006750-39		2K	1%	1/4W
R50	1006750-56		10K	1%	1/4W
R51	1006750-56		10K	1%	1/4W
R52	1006750-56		10K	1%	1/4W
R53	1006750-60		15K	1%	1/4W
R54	1006750-34		1.2K	1%	1/4W
R55	1006750-63		20K	1%	1/4W

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R56	1006750-34	RESISTOR	1.2K	1%	1/4W
R57	1010368-128	RESISTOR	200K	5%	1/4W
C1	1010279-	CAPACITOR	1.6	10%	10V
C2	1006755-36		47	10%	15V
C3	1006755-89		47	10%	35V
C4	1006755-36		47	10%	15V
C5	1006755-81		10	10%	35V
C6	1010279-		.011	10%	35V
C7	1010375-		.001	10%	300V
C8	1010375-		.001	10%	300V
C9	1010375-		.001	10%	300V
C10	1010279-		1.6	10%	10V
C11	1006755-36		47	10%	15V
C12	1006755-89		47	10%	35V
C13	1006755-36		47	10%	15V
C14	1006755-81		10	10%	35V
C15	1010279-		.011	10%	35V
C16	1010375-		.001	10%	300V
C17	1010375-		.001	10%	300V
C18	1010375-	CAPACITOR	.001	10%	300V
CR1	1010362-1	DIODE	IN645M		
CR2					
CR3					
CR4	1010362-1		IN645M		
CR5			IN3681B		
CR6			IN753A		
CR7	1010362-1		IN645M		
CR8					
CR9					
CR10					
CR11					
CR12					
CR13	1010362-1		IN645M		
CR14			IN3681B		
CR15	1010362-1		IN645M		
CR16	1010362-1		IN645M		
CR17	1010362-1	DIODE	IN645M		
Q1	1010397	TRANSISTOR	2N930		
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14	1010397	TRANSISTOR	2N930		
T1	UTC DI-T283	XFMR			
T2	MIT/IL				
T3	UTC DI-T283				
T4	MIT/IL	XFMR			

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00219 DATE 9 Jan 63

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISTOR VALUES ARE EXPRESSED IN OHMS, K INDICATES THOUSANDS OF OHMS, M INDICATES MILLIONS OF OHMS.
3. CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS.

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN R. Emery DATE 20 DEC 62
CHECKED R. L. Battalion
APPROVAL R. L. Battalion
APPROVAL
NASA APPROVAL D G R 1-9-63
MIT APPROVAL 9 Jan 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
READ-OUT AMPLIFIER - DECODER

CODE IDENT NO.
SIZE E
NASA DRAWING NO 1015101
SCALE —
WT
SHEET 2 OF 2

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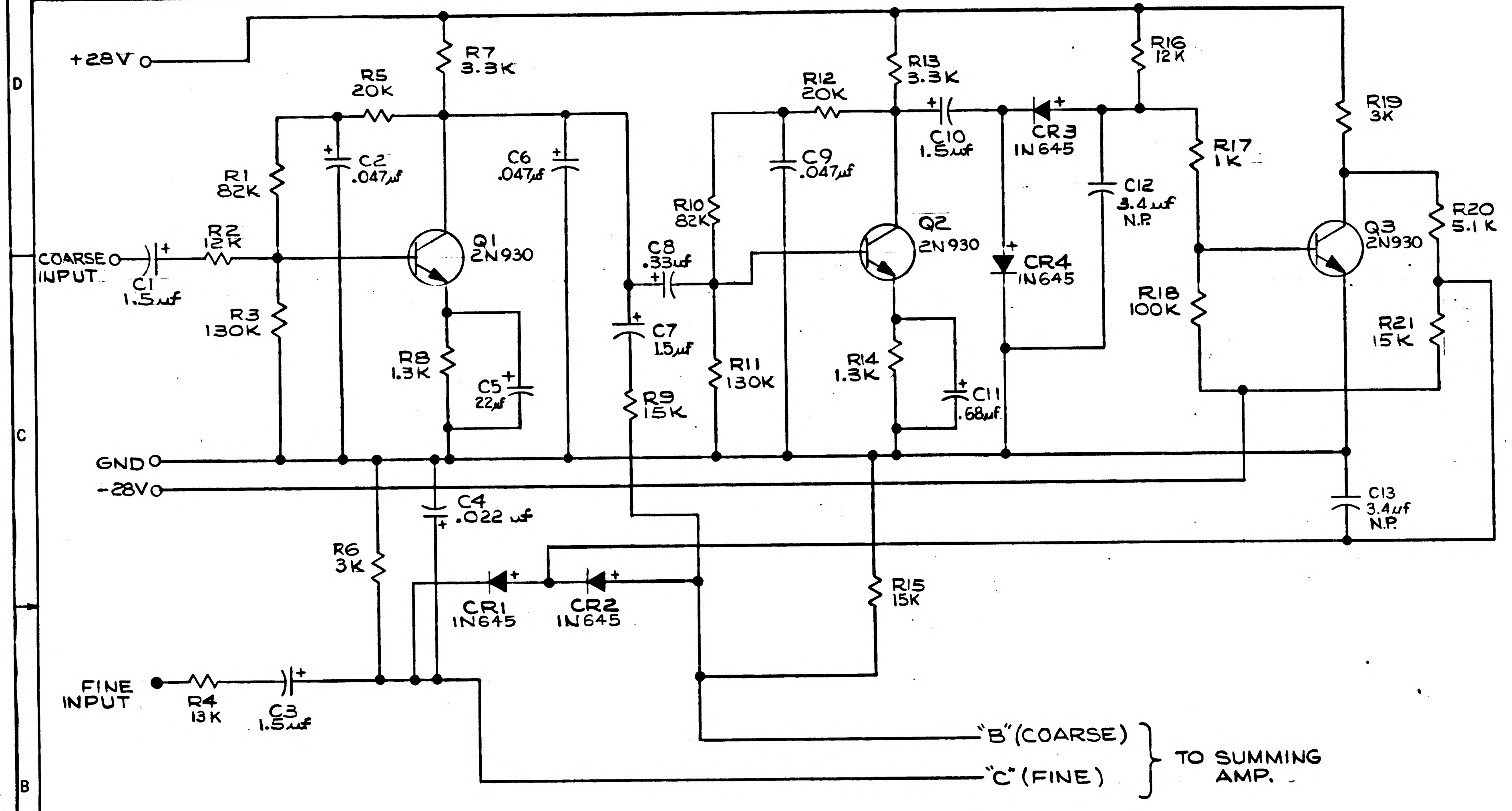
1015102

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
Ⓐ A	REPLACED WITH CHANGE BY REV. B 00854	4-12-63	WK



+28V
R7 3.3K
R5 20K
R1 82K
C2 .047µf
C6 .047µf
COARSE INPUT
C1 1.5µf
R2 12K
Q1 2N930
R3 130K
R8 1.3K
C5 22µf
C8 .33µf
C7 1.5µf
R9 15K
R10 82K
R11 130K
R12 20K
C9 .047µf
Q2 2N930
R13 3.3K
C10 1.5µf
R14 1.3K
C11 .68µf
CR3 1N645
CR4 1N645
C12 3.4µf N.P.
R16 12K
R17 1K
R18 100K
R19 3K
Q3 2N930
R20 5.1K
R21 15K
C13 3.4µf N.P.
GND
-28V
C4 .022µf
R6 3K
CR1 1N645
CR2 1N645
R15 15K
FINE INPUT
R4 13K
C3 1.5µf
"B" (COARSE)
"C" (FINE)
TO SUMMING AMP.

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00219 DATE 9 Jan 63

Ⓐ REPLACED WITH CHANGE BY REVISION B

1015102

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN G. CALLEN DATE 1/4/63
CHECKED R. L. [illegible]
APPROVAL A. R. [illegible]
APPROVAL
NASA APPROVAL [illegible] 1-14-63
MIT APPROVAL [illegible] 9 Jan

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
ELECTRICAL TWO SPEED SWITCH

CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015102
SCALE | WT | SHEET 1 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015102

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED WITH CHANGE BY REV. B 00854	4-12-63	WJR.

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-78	RESISTOR	82K	±1%	1/4 W
R2	1006750-58		12K		
R3	1006750-83		130K		
R4	1006750-59		13K		
R5	1006750-63		20K		
R6	1006750-43		3K		
R7	1006750-44		3.3K		
R8	1006750-35		1.3K		
R9	1006750-60		15K		
R10	1006750-78		82K		
R11	1006750-83		130K		
R12	1006750-63		20K		
R13	1006750-44		3.3K		
R14	1006750-35		1.3K		
R15	1006750-60		15K		
R16	1006750-58		12K		
R17	1006750-32		1K		
R18	1006750-80		100K		
R19	1006750-43		3K		
R20	1006750-49		5.1K		
R21	1006750-60	RESISTOR	15K	±1%	1/4 W

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
C1	1006755-71	CAPACITOR	1.5	±10%	35V
C2	-53		.047		
C3	-71		1.5		
C4	-49		.022		
C5	-85		22		
C6	-53		.047		
C7	-71		1.5		
C8	-63		.33		
C9	-53		.047		
C10	-71		1.5		
C11	1006755-67		.68		
C12	1010279-		3.4		
C13	1010279-	CAPACITOR	3.4	±10%	35V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010397	TRANSISTOR	2N930		
Q3	1010397	TRANSISTOR	2N930		
CR1	1010362-1	DIODE	1N645		
CR2					
CR3					
CR4	1010362-1	DIODE	1N645		

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00219 DATE 9 Jan 63

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISTOR VALUES ARE EXPRESSED IN OHMS; K INDICATES THOUSANDS OF OHMS; M INDICATES MILLIONS OF OHMS.
3. CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS.

Ⓐ REPLACED WITH CHANGE BY REVISION B

1015102

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± // DECIMALS ± // ANGLES ± //
DO NOT SCALE THIS DRAWING
MATERIAL //
HEAT TREATMENT //
FINAL FINISH //

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN T.C.P. DATE 1-7-63
CHECKED R.A. Connell
APPROVAL R.L. Battafarano
APPROVAL
NASA APPROVAL W.J. Rhine 1-9-63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

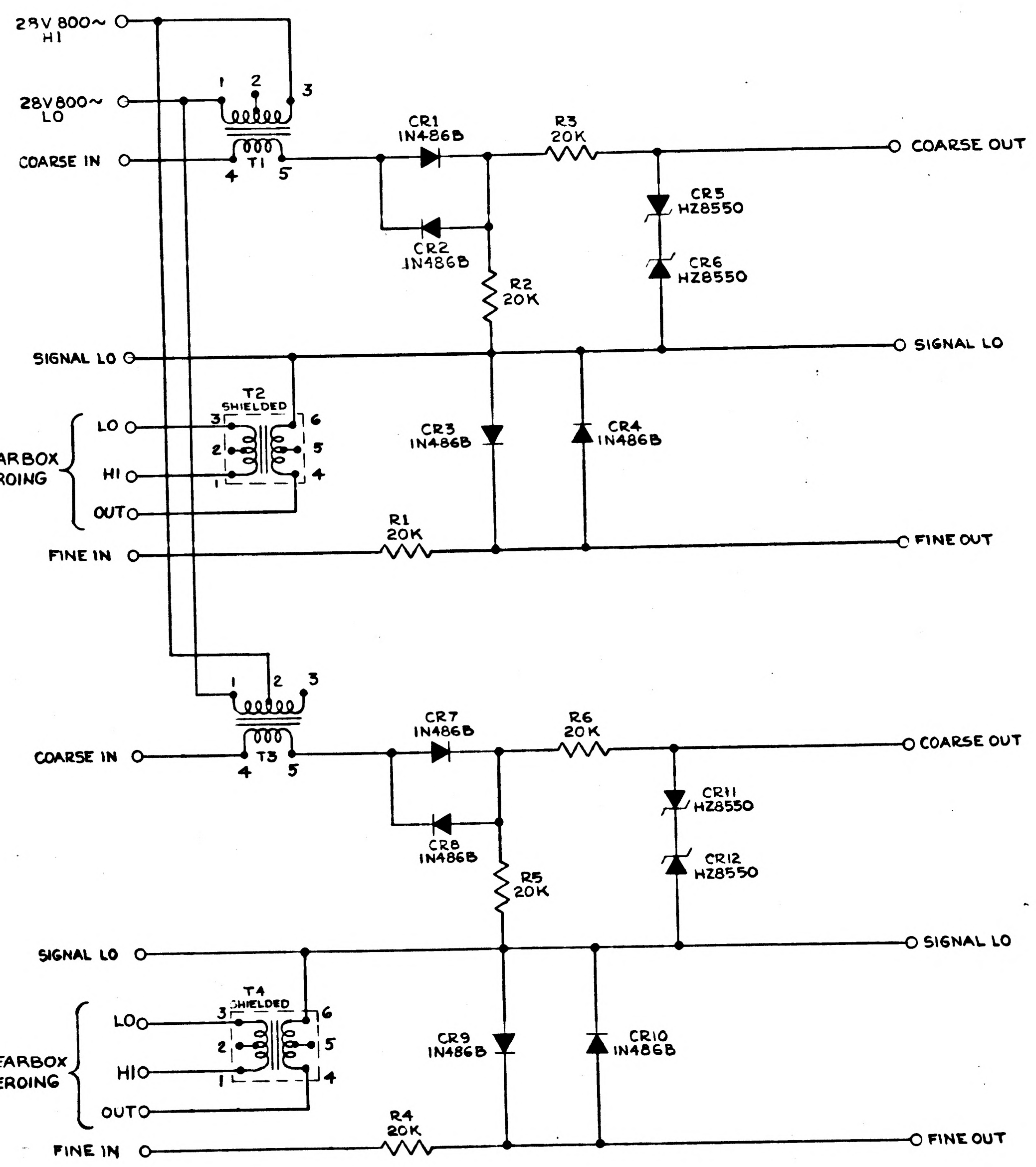
SCHEMATIC DIAGRAM
ELECTRICAL TWO SPEED SWITCH

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015102
SCALE
WT
SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE 00854	4-12-63	WK



28V 800~ HI
28V 800~ LO
1
2
3
T1
4
5
COARSE IN
CR1 1N486B
CR2 1N486B
R3 20K
R2 20K
CR5 HZ8550
CR6 HZ8550
COARSE OUT
SIGNAL LO
SIGNAL LO
T2 SHIELDED
GEARBOX ZEROING
LO
HI
OUT
3
2
1
6
5
4
CR3 1N486B
CR4 1N486B
R1 20K
FINE IN
FINE OUT
1
2
3
T3
4
5
COARSE IN
CR7 1N486B
CR8 1N486B
R6 20K
R5 20K
CR11 HZ8550
CR12 HZ8550
COARSE OUT
SIGNAL LO
SIGNAL LO
T4 SHIELDED
GEARBOX ZEROING
LO
HI
OUT
3
2
1
6
5
4
CR9 1N486B
CR10 1N486B
R4 20K
FINE IN
FINE OUT

REF. DESIG.	PART NUMBER	DESCRIPTION	VALUE	TOL.	RATING
R1	1006750-39	RESISTOR	20K	2%	1/4 W
R2	↕	↕	↕	↕	↕
R3	↕	↕	↕	↕	↕
R4	↕	↕	↕	↕	↕
R5	↕	↕	↕	↕	↕
R6	1006750-39	RESISTOR	20K	2%	1/4 W
CR1	1010392	DIODE	IN486B		
CR2	↕	↕	↕		
CR3	↕	↕	↕		
CR4	1010392	↕	IN486B		
CR5	1010372-21	↕	HZ8550		
CR6	1010372-21	↕	HZ8550		
CR7	1010392	↕	IN486B		
CR8	↕	↕	↕		
CR9	↕	↕	↕		
CR10	1010392	↕	IN486B		
CR11	1010372-21	↕	HZ8550		
CR12	1010372-21	DIODE	HZ8550		
T1	1010291-3	TRANSFORMER	SP-65		
T2	1010329-1	↕	SP-66		
T3	1010291-3	↕	SP-65		
T4	1010329-1	TRANSFORMER	SP-66		

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00219 DATE 9 JAN 63

Ⓑ REPLACES REVISION A WITH CHANGE TPRR 00854 17 Apr 63

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. RESISTOR VALUES ARE EXPRESSED IN OHMS K = THOUSANDS OF OHMS
3. REF DWG: TWO SPEED SWITCH MODULE ASSY 1015104

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN TCP DATE 1-7-63
CHECKED R A CONNELL
APPROVAL R.L BOTTOLESON
APPROVAL
NASA APPROVAL
MIT APPROVAL 17 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM TWO SPEED SWITCH

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015102
SCALE — WT SHEET 1 OF 2

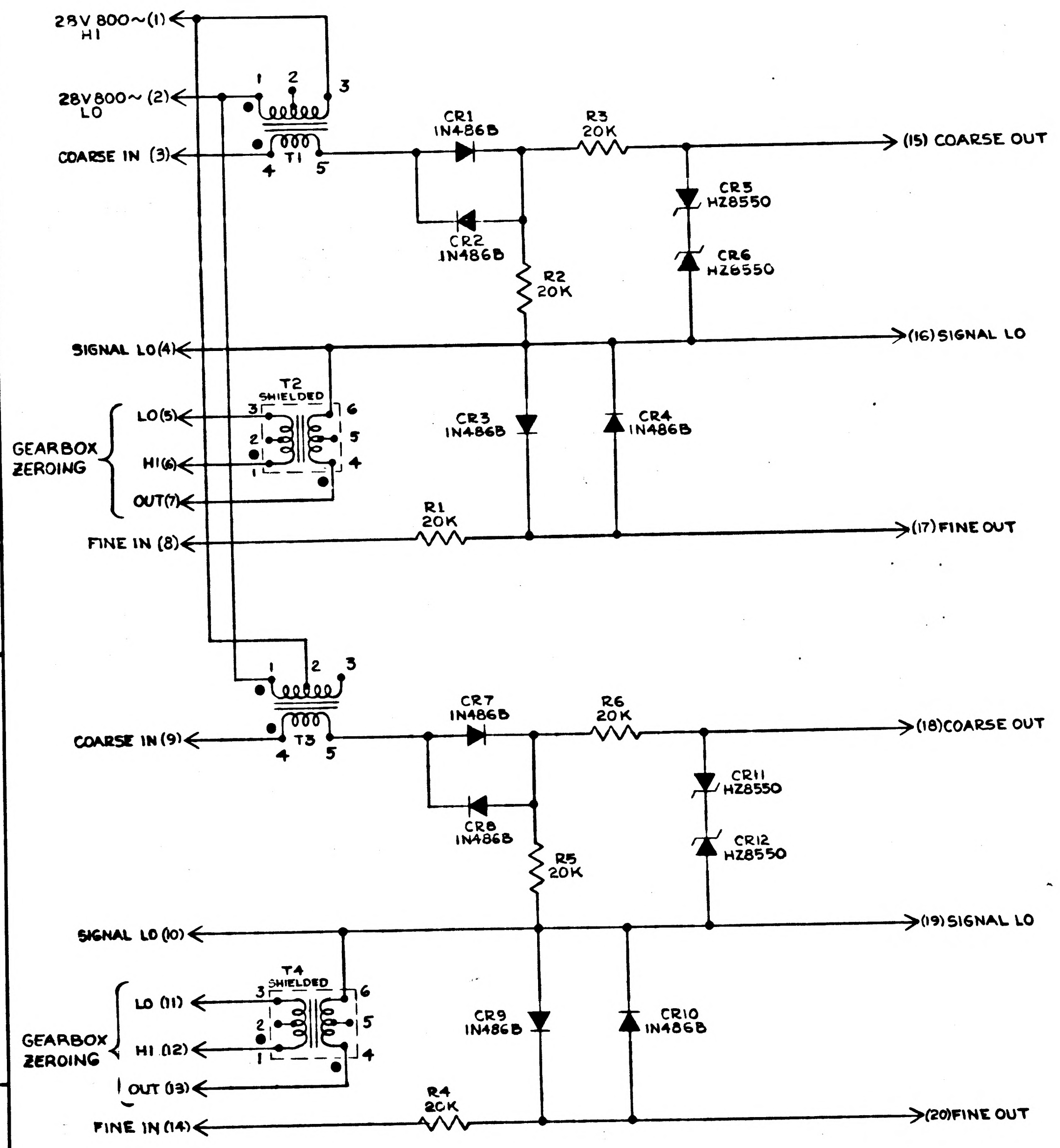
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015102 C

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE 00854	4-12-63	WK
C	ADDED PIN NOS. UPGRADE TO CLASS A TDRR 01373	5/24/63	wk


28V 800~(1) HI
28V 800~ (2) LO
1
2
3
COARSE IN (3)
T1
4
5
CR1 1N486B
R3 20K
(15) COARSE OUT
CR2 1N486B
CR5 HZ8550
CR6 HZ8550
R2 20K
SIGNAL LO(4)
(16) SIGNAL LO
T2 SHIELDED
GEARBOX ZEROING
LO(5)
HI(6)
OUT(7)
6
5
4
CR3 1N486B
CR4 1N486B
R1 20K
FINE IN (8)
(17) FINE OUT
T3
COARSE IN (9)
CR7 1N486B
R6 20K
(18) COARSE OUT
CR8 1N486B
CR11 HZ8550
CR12 HZ8550
R5 20K
SIGNAL LO (10)
(19) SIGNAL LO
T4 SHIELDED
LO (11)
HI (12)
OUT (13)
CR9 1N486B
CR10 1N486B
R4 20K
FINE IN (14)
(20) FINE OUT

REF. DESIG.	PART NUMBER	DESCRIPTION	VALUE	TOL.	RATING
R1	1006750-39	RESISTOR	20K	2%	1/4 W
R2					
R3					
R4					
R5					
R6	1006750-39	RESISTOR	20K	2%	1/4 W
CR1	1010392	DIODE	1N486B		
CR2					
CR3					
CR4	1010392		1N486B		
CR5	1010372-21		HZ8550		
CR6	1010372-21		HZ8550		
CR7	1010392		1N486B		
CR8					
CR9					
CR10	1010392		1N486B		
CR11	1010372-21		HZ8550		
CR12	1010372-21	DIODE	HZ8550		
T1	1010291-3	TRANSFORMER	SP-65		
T2	1010329-1		SP-66		
T3	1010291-3		SP-65		
T4	1010329-1	TRANSFORMER	SP-66		

Ⓑ REPLACES REVISION A WITH CHANGE TPRR 00854 17 Apr 63

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. RESISTOR VALUES ARE EXPRESSED IN OHMS K = THOUSANDS OF OHMS
3. REF DWG: TWO SPEED SWITCH MODULE ASSY 1015104

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO.
CONTRACT
DRAWN TCP DATE 1-7-63
CHECKED R.A CONNELL
APPROVAL R.L. BOTTOLFSON
APPROVAL
NASA APPROVAL
MIT APPROVAL 17 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
TWO SPEED SWITCH

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015102
SCALE —
WT
SHEET 1 OF 1

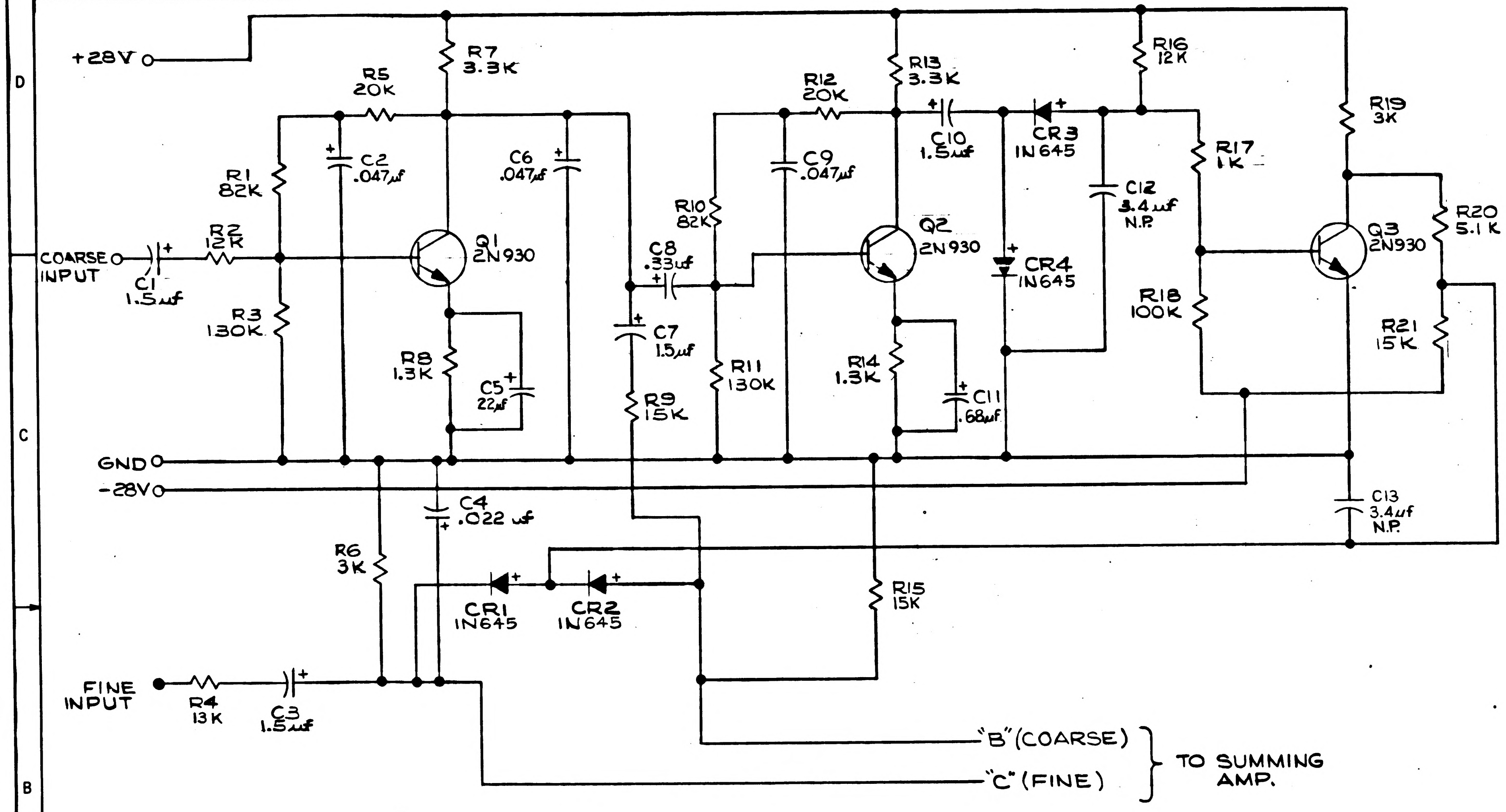
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015102 C

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

1015102

SYM	DESCRIPTION	DATE	APPROVAL
REVISIONS			


+28V
R7
3.3K
R5
20K
R12
20K
R13
3.3K
R16
12K
R19
3K
C2
.047µf
C6
.047µf
C9
.047µf
C10
1.5µf
CR3
IN645
R17
1K
R1
82K
R10
82K
C12
3.4µf
N.P.
R20
5.1K
COARSE
INPUT
C1
1.5µf
R2
12K
Q1
2N930
C8
.33µf
Q2
2N930
CR4
IN645
Q3
2N930
R3
130K
R18
100K
R21
15K
C7
1.5µf
R8
1.3K
C5
22µf
R11
130K
R14
1.3K
R9
15K
C11
.68µf
GND
-28V
C4
.022 µf
C13
3.4µf
N.P.
R6
3K
CR1
IN645
CR2
IN645
R15
15K
FINE
INPUT
R4
13K
C3
1.5µf
"B" (COARSE)
"C" (FINE)
TO SUMMING
AMP.

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00219 DATE 9 Jan 63

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN G CALLEN DATE 1/4/63
CHECKED
APPROVAL A R Botti
APPROVAL
NASA APPROVAL
1-9-63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
ELECTRICAL TWO SPEED SWITCH

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015102
SCALE
WT
SHEET 1 OF 2

1015102

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015102

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-78	RESISTOR	82K	±1%	1/4 W
R2	1006750-58	↑	12K	↑	↑
R3	1006750-83	│	130K	│	│
R4	1006750-59	│	13K	│	│
R5	1006750-63	│	20K	│	│
R6	1006750-43	│	3K	│	│
R7	1006750-44	│	3.3K	│	│
R8	1006750-35	│	1.3K	│	│
R9	1006750-60	│	15K	│	│
R10	1006750-78	│	82K	│	│
R11	1006750-83	│	130K	│	│
R12	1006750-63	│	20K	│	│
R13	1006750-44	│	3.3K	│	│
R14	1006750-35	│	1.3K	│	│
R15	1006750-60	│	15K	│	│
R16	1006750-58	│	12K	│	│
R17	1006750-32	│	1K	│	│
R18	1006750-80	│	100K	│	│
R19	1006750-43	│	3K	│	│
R20	1006750-49	↓	5.1K	↓	↓
R21	1006750-60	RESISTOR	15K	±1%	1/4 W

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
C1	1006755-71	CAPACITOR	1.5	±10%	35V
C2	↑ -53	↑	.047	↑	↑
C3	│ -71	│	1.5	│	│
C4	│ -47	│	.022	│	│
C5	│ -85	│	22	│	│
C6	│ -53	│	.047	│	│
C7	│ -71	│	1.5	│	│
C8	│ -63	│	.33	│	│
C9	│ -53	│	.047	│	│
C10	↓ -71	│	1.5	│	│
C11	1006755-67	│	.68	│	│
C12	1010279-	↓	3.4	↓	↓
C13	1010279-	CAPACITOR	3.4	±10%	35V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010397	TRANSISTOR	2N930		
Q3	1010397	TRANSISTOR	2N930		
CR1	1010362-1	DIODE	1N645		
CR2	↑	↑	↑		
CR3	↓	↓	↓		
CR4	1010362-1	DIODE	1N645		

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00219 **DATE** 9 Jan 63

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISTOR VALUES ARE EXPRESSED IN OHMS; K INDICATES THOUSANDS OF OHMS; M INDICATES MILLIONS OF OHMS.
3. CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN T.C.P. DATE 1-7-63
CHECKED R.A. Connell
APPROVAL R.L. Battafarano
APPROVAL
NASA APPROVAL W.J. Rhine 1-9-63
MIT APPROVAL W Kupfer

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
ELECTRICAL TWO SPEED SWITCH

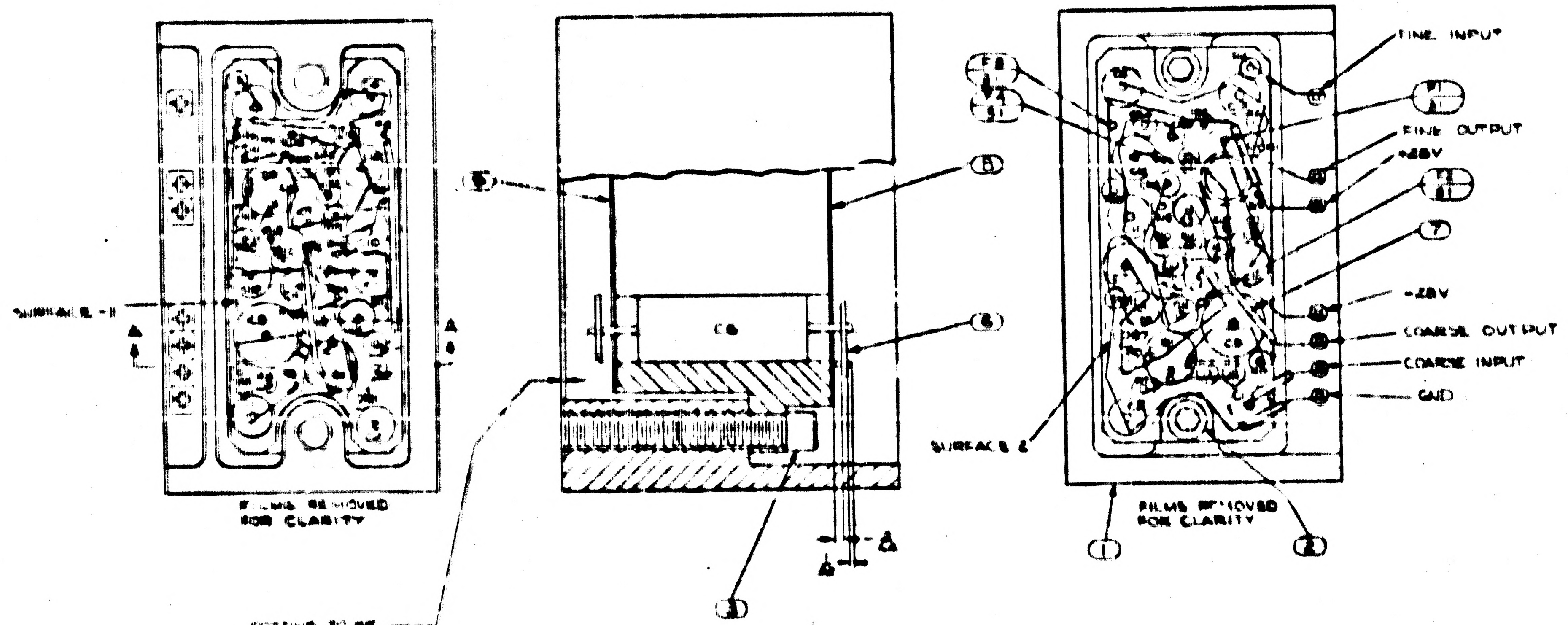
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015102
SCALE
WT
SHEET 2 OF 2

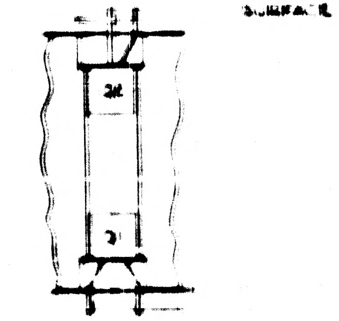
1015102

FIND NO	REF DESIG	SURFACE 1 POLARITY	SURFACE 2 POLARITY
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
4	46	—	—
4	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—

FIND NO	REF DESIG	SURFACE 1 POLARITY	SURFACE 2 POLARITY
20	R10	—	—
[illegible]	R4	—	—
8	R5	—	—
[illegible]	C1	POSITIVE	—
21	C7	—	POSITIVE
21	C10	POSITIVE	—
21	C3	—	POSITIVE
[illegible]	C2	POSITIVE	
[illegible]	C9		POSITIVE
[illegible]	C6		POSITIVE
[illegible]	C4	—	POSITIVE
24	C5	—	POSITIVE
[illegible]	C12	—	POSITIVE
[illegible]	C18	—	POSITIVE
[illegible]	C11	POSITIVE	—
[illegible]	C8	—	POSITIVE

FIND NO	REF DESIG	SURFACE 1 POLARITY	SURFACE 2 POLARITY
28	Q1	—	—
28	Q2	—	—
28	Q4	—	—
29	CR1	—	CATHODE
29	CR2	CATHODE	—
29	CR3	—	CATHODE
29	CR4	CATHODE	—


SURFACE - 1
A
A
FILMS REMOVED FOR CLARITY
C6
POTTING TO BE FLUSH TO .015 BELOW SURFACE
FINE INPUT
FINE OUTPUT
+28V
-28V
COARSE OUTPUT
COARSE INPUT
GND
SURFACE 2
FILMS REMOVED FOR CLARITY
1
2
3
5
6
7
8



PARTIAL SECTION A-A
ALSO APPLIES TO Q3

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL WELDING PER ND1002005

FOR INFORMATION ONLY

[illegible]

1	1000[illegible]	RESISTOR
AR	1000[illegible]	WIRE
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	TRANSISTOR [illegible]
[illegible]	[illegible]	CAPACITOR [illegible]
[illegible]	[illegible]	CAPACITOR [illegible]
[illegible]	[illegible]	CAPACITOR [illegible]
[illegible]	[illegible]	CAPACITOR [illegible]
[illegible]	[illegible]	CAPACITOR [illegible]
[illegible]	1000[illegible]	CAPACITOR [illegible]
[illegible]	[illegible]	RESISTOR [illegible]
[illegible]	[illegible]	RESISTOR [illegible]
[illegible]	[illegible]	RESISTOR [illegible]
[illegible]	[illegible]	RESISTOR [illegible]
[illegible]	[illegible]	RESISTOR [illegible]
[illegible]	[illegible]	RESISTOR [illegible]
[illegible]	[illegible]	RESISTOR [illegible]
[illegible]	[illegible]	RESISTOR [illegible]
[illegible]	[illegible]	RESISTOR [illegible]
[illegible]	1000[illegible]	[illegible]
[illegible]		WIRING [illegible]
1		[illegible]
AR	[illegible]	[illegible]
AR	1000[illegible]	[illegible] RIBBON
[illegible]	[illegible]	[illegible]
[illegible]		[illegible]
[illegible]		[illegible]
1	[illegible]	[illegible]
		[illegible] MODULE

MODULE ASSEMBLY
2 SPEED SWITCH

E [illegible]

1015104

REV	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV.A WITH CHANGES PER TDRR		

PART NO.	DESCRIPTION	REQD
1006750-63	RESISTOR	6
1010372-21	DIODE	4
1010392	DIODE	8
1010329	TRANSFORMER	2
1010291-3	TRANSFORMER	2

Ⓑ REPLACES REV. A WITH CHANGE.

NEXT ASSY	USED ON
1007108	
1007107	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN G CALLI
CHECKED R L BOTTOLFSON
APPROVAL R L BOTTOLFSON
APPROVAL
NASA APPROVAL
MIT APPROVAL 10 Jul 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
TWO SPEED SWITCH

CODE IDENT NO
SIZE C
NASA DRAWING NO 1015104
SCALE —
WT —
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1015104

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
(M) B	REPLACES REV. A WITH CHANGES PER TDRR 00794	10Apr63	WK.
C	REPLACED BY REV. D WITH CHANGES PER TDRR 01229	15May63	W/C

PART NO.	DESCRIPTION	REQD
1006750-63	RESISTOR	6
1010372-21	DIODE	4
1010392	DIODE	8
1010329	TRANSFORMER	2
1010291-3	TRANSFORMER	2

Ⓑ REPLACES REV. A WITH CHANGE.
Ⓒ REPLACED BY REV. D WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007108	
1007107	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN G CALLEN DATE 12/6/62
CHECKED R.L. BOTTOLFSON
APPROVAL R.L BOTTOLFSON
APPROVAL
NASA APPROVAL
MIT APPROVAL 10Apr63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
TWO SPEED SWITCH

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015104
SCALE —//—
WT —//—
SHEET 1 OF 1

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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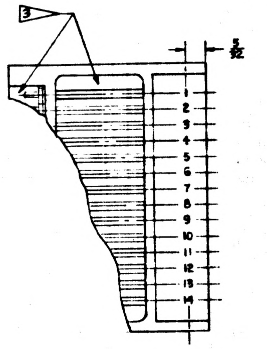
1015104 D

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES REV. C WITH CHANGES PER TDRR 01229	15 May 63	



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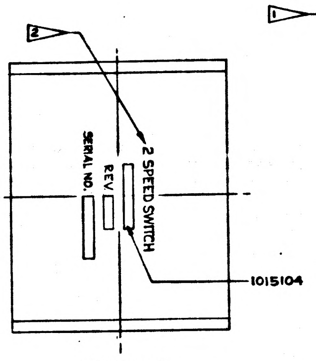
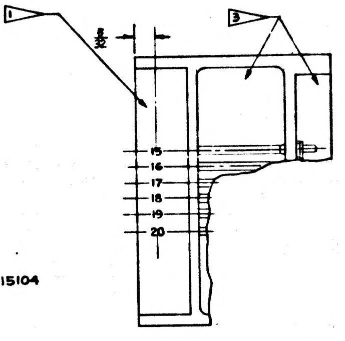


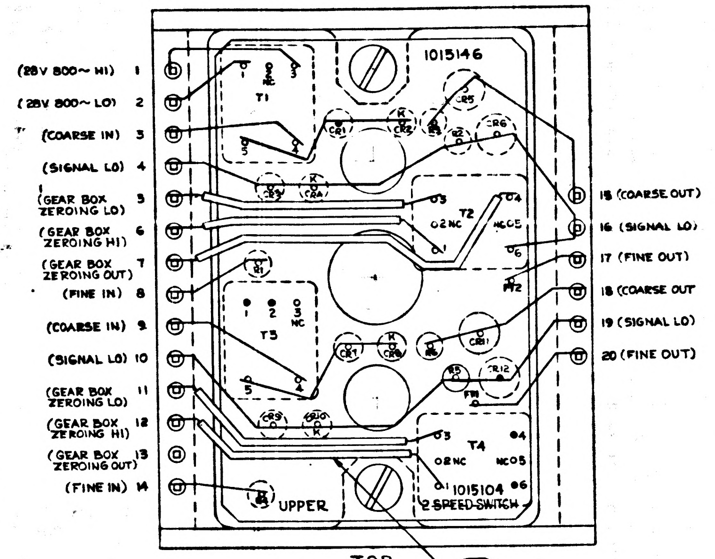
2
SERIAL NO.
REV
2 SPEED SWITCH
1015104

VIEW A-A
(SCALE 2:1)



1
5/32
3
15
16
17
18
19
20

FIND NO.	REF. DESIG.	POLARITY TOP	POLARITY BOTTOM
10	R1		
10	R2		
10	R3		
10	R4		
10	R5		
10	R6		
11	CR1		CATHODE
11	CR2	CATHODE	
11	CR3		CATHODE
11	CR4	CATHODE	
12	CR5		CATHODE
12	CR6		CATHODE
11	CR7		CATHODE
11	CR8	CATHODE	
11	CR9		CATHODE
11	CR10	CATHODE	
12	CR11		CATHODE
12	CR12		CATHODE
13	T1		
14	T2		
13	T3		
14	T4		
15	FT1		
15	FT2		



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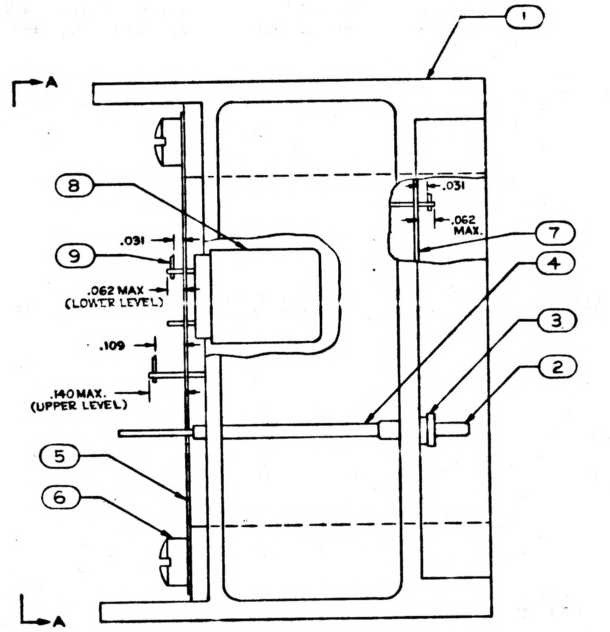
(28V 800~ LO) 2
(COARSE IN) 3
(SIGNAL LO) 4
(GEAR BOX ZEROING LO) 5
(GEAR BOX ZEROING HI) 6
(GEAR BOX ZEROING OUT) 7
(FINE IN) 8
(COARSE IN) 9
(SIGNAL LO) 10
(GEAR BOX ZEROING LO) 11
(GEAR BOX ZEROING HI) 12
(GEAR BOX ZEROING OUT) 13
(FINE IN) 14
15 (COARSE OUT)
16 (SIGNAL LO)
17 (FINE OUT)
18 (COARSE OUT)
19 (SIGNAL LO)
20 (FINE OUT)
1015146
T1
T2
T3
T4
CR1
CR2
CR3
CR4
CR5
CR6
CR7
CR8
CR9
CR10
CR11
CR12
R1
R2
R3
R5
R6
FT1
FT2
K
NC
UPPER
1015104
2 SPEED SWITCH
16

TOP



1
A
8
9
.031
.062 MAX
(LOWER LEVEL)
.109
.140 MAX.
(UPPER LEVEL)
5
6
.031
.062 MAX.
7
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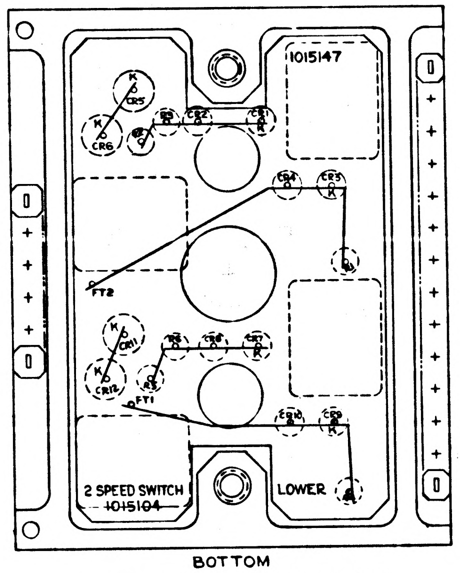
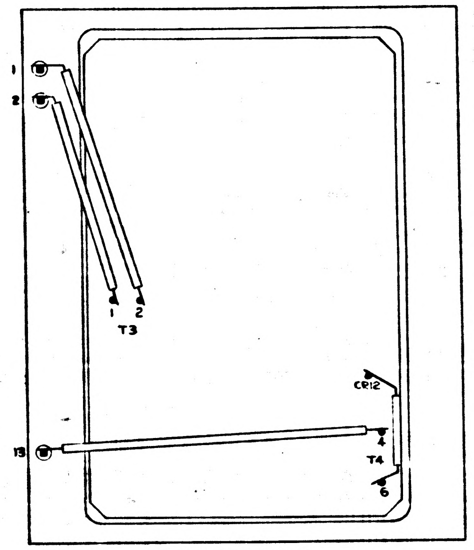
A



1015147
CR5
CR6
CR3
CR2
CR4
CR1
CR7
CR8
CR9
CR10
CR11
CR12
R
K
FT1
FT2
2 SPEED SWITCH
1015104
LOWER

BOTTOM

ASSEMBLY SHOWN WITHOUT ENCAPSULATION FOR CLARITY



1
2
T3
1
2
CR12
13
4
T4
6

UPPER LEVEL WIRING

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

UNLESS OTHERWISE SPECIFIED, COMPONENTS TO BE CENTERED BETWEEN ITEM 5 & 7.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005
WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND1002003

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

2 MARK CHARACTERS .080 HIGH WHITE PER ND1002019 CENTERED AS SHOWN.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

K INDICATES CATHODE SIDE OF DIODE.

BLACK DOT (●) INDICATES LEAD TO BE CUT FOR UPPER LEVEL WIRING

DRAWING FOR REFERENCE:
1015102 SCHEMATIC DIAGRAM, ELECTRICAL.

FT INDICATES FEED THRU WIRE.

Ⓓ REPLACES REV. C WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
AR	G&ND1002074	INSULATION SLEEVING NO. 22	16
AR	1006787-2	WIRE, FEED THRU	15
2	1010329-1	TRANSFORMER	14
2	1010291-3	TRANSFORMER	13
4	1010372-21	DIODE	12
8	1010392	DIODE	11
6	1006750-63	RESISTOR	10
AR	1006757-1	.010×.020 NICKEL RIBBON	9
4	1010461	TRANSFORMER SHIELD	8
1	1015147	WAFER BOARD, LOWER	7
2		#4-40 NC-3B FIL. HD. SCREW 3/16 LNG (NYLON)	6
1	1015146	WAFER BOARD, UPPER	5
AR	G&ND 1002074	INSULATION SLEEVING NO. 23	4
20	1006775	INSULATOR, WRAPOST-MALE, MINIATURE	3
20	1006782-5	CONTACT, WRAPOST-MALE MINIATURE	2
1	1015107	FRAME-MODULE	1

LIST OF MATERIALS

1015104 D

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN G. CALLEN DATE 6 DEC 62
CHECKED R.L. BOTTOLFSON
APPROVAL R.L. BOTTOLFSON
APPROVAL
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
TWO-SPEED SWITCH

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015104
SCALE —
WT
SHEET 1 OF 1

MASTER

INCHES
PHOTOGRAPHIC SCALE ONLY

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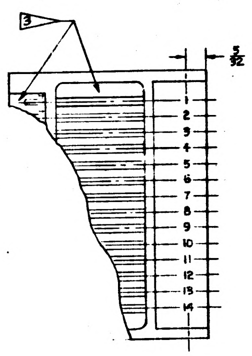
1015104 E

SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES REV. C WITH CHANGES PER TDRR 01229	15 May 63	
E	REVISED PER TDRR 03788		

FIND NO.	REF. DESIG.	POLARITY TOP	POLARITY BOTTOM
10	R1		
10	R2		
10	R3		
10	R4		
10	R5		
10	R6		
11	CR1		CATHODE
11	CR2	CATHODE	
11	CR3		CATHODE
11	CR4	CATHODE	
12	CR5		CATHODE
12	CR6		CATHODE
11	CR7		CATHODE
11	CR8	CATHODE	
11	CR9		CATHODE
11	CR10	CATHODE	
12	CR11		CATHODE
12	CR12		CATHODE
13	T1		
14	T2		
13	T3		
14	T4		
15	FT1		
15	FT2		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5/32
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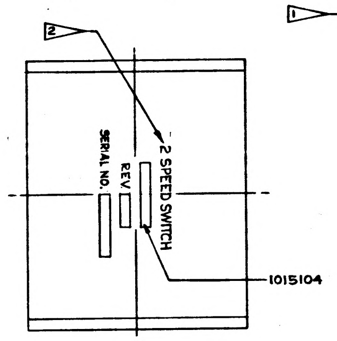
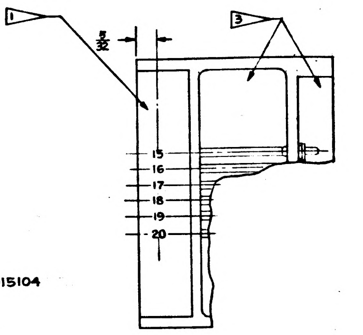

2
2 SPEED SWITCH
REV
SERIAL NO.
1015104

VIEW A-A
(SCALE 2:1)


1
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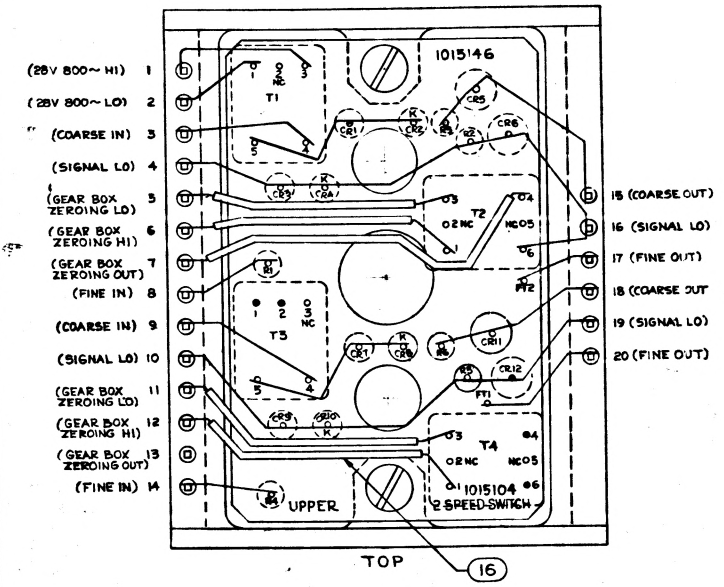
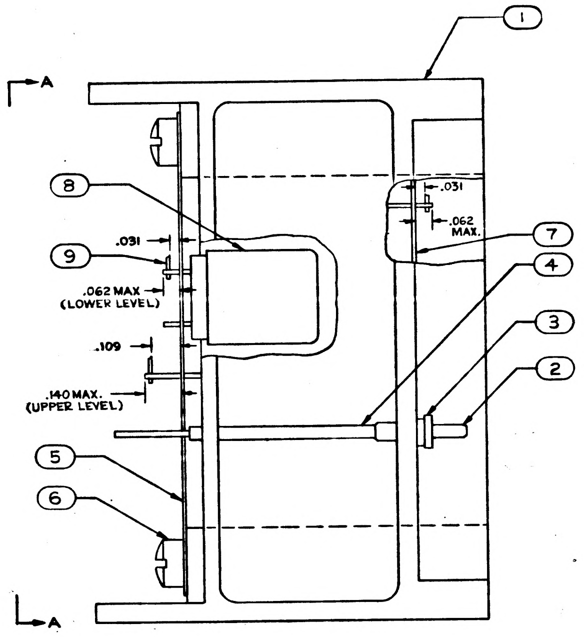

(28V 800~ HI) 1
(28V 800~ LO) 2
(COARSE IN) 3
(SIGNAL LO) 4
(GEAR BOX ZEROING LO) 5
(GEAR BOX ZEROING HI) 6
(GEAR BOX ZEROING OUT) 7
(FINE IN) 8
(COARSE IN) 9
(SIGNAL LO) 10
(GEAR BOX ZEROING LO) 11
(GEAR BOX ZEROING HI) 12
(GEAR BOX ZEROING OUT) 13
(FINE IN) 14
15 (COARSE OUT)
16 (SIGNAL LO)
17 (FINE OUT)
18 (COARSE OUT)
19 (SIGNAL LO)
20 (FINE OUT)
1015146
T1
T2
T3
T4
CR1
CR2
CR3
CR4
CR5
CR6
CR7
CR8
CR9
CR10
CR11
CR12
R1
R2
R3
R4
R5
R6
FT1
FT2
K
NC
UPPER
1015104
2 SPEED SWITCH
16

TOP


A
A
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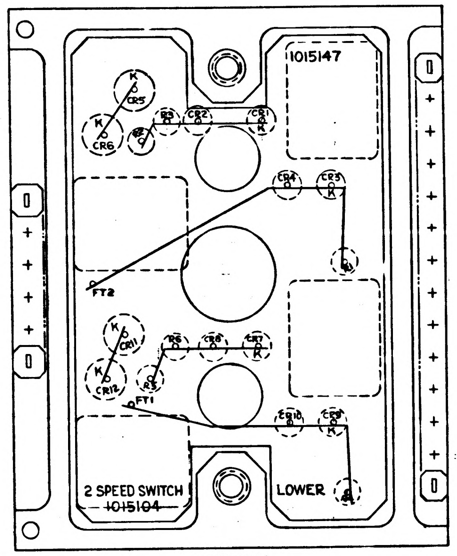
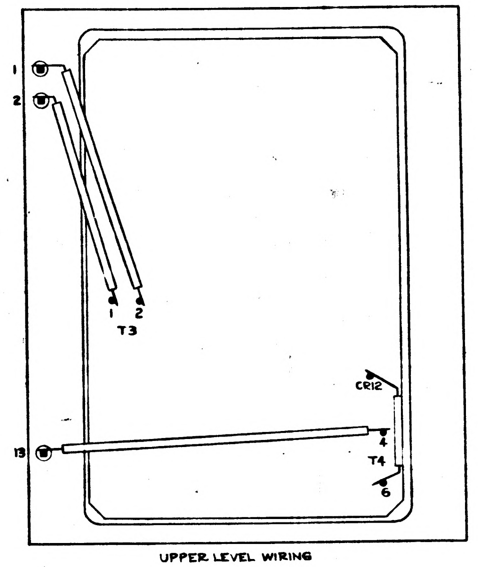
.031
.062 MAX
(LOWER LEVEL)
.109
.140 MAX.
(UPPER LEVEL)
.031
.062
MAX.


1015147
CR1
CR2
CR3
CR4
CR5
CR6
CR7
CR8
CR9
CR10
CR11
CR12
R1
R2
R3
R4
R5
R6
K
FT1
FT2
2 SPEED SWITCH
1015104
LOWER

BOTTOM
ASSEMBLY SHOWN WITHOUT ENCAPSULATION FOR CLARITY


1
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13
1
2
T3
CR12
4
T4
6

UPPER LEVEL WIRING

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

UNLESS OTHERWISE SPECIFIED, COMPONENTS TO BE CENTERED BETWEEN ITEM 5 & 7.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005 WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND1002003

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

2 MARK CHARACTERS .080 HIGH WHITE PER ND 1002019 CENTERED AS SHOWN.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

K INDICATES CATHODE SIDE OF DIODE.

BLACK DOT (●) INDICATES LEAD TO BE CUT FOR UPPER LEVEL WIRING

DRAWING FOR REFERENCE:
1015102 SCHEMATIC DIAGRAM, ELECTRICAL.

FT INDICATES FEED THRU WIRE.

Ⓓ REPLACES REV. C WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	G&ND 1002074	INSULATION SLEEVING NO. 22	16
AR	1006787-2	WIRE, FEED THRU	15
2	1010329-1	TRANSFORMER	14
2	1010291-3	TRANSFORMER	13
4	1010372-21	DIODE	12
8	1010392	DIODE	11
6	1006750-63	RESISTOR	10
AR	1006757-1	.010 x .020 NICKEL RIBBON	9
4	1010461	TRANSFORMER SHIELD	8
1	1015147	WAFER BOARD, LOWER	7
2	1010485-98	#4-40 NC-2B FIL HD SCREW 3/16 LNG (NYLON)	6
1	1015146	WAFER BOARD, UPPER	5
AR	G&ND 1002074	INSULATION SLEEVING NO. 23	4
20	1006775	INSULATOR, WRAPOST-MALE, MINIATURE	3
20	1006782-5	CONTACT, - WRAPOST-MALE MINIATURE	2
1	1015107	FRAME-MODULE	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN G. CALLEN DATE 6 DEC 62
CHECKED R.L. BOTTOLFSON
APPROVAL R.L. BOTTOLFSON
APPROVAL
NASA APPROVAL 5/13/63
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
TWO-SPEED SWITCH

CODE IDENT NO. SIZE E NASA DRAWING NO. 1015104
SCALE — WT SHEET 1 OF 1

MASTER

INCHES
PHOTOGRAPHIC SCALE ONLY

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REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES REV. C WITH CHANGES PER TDRR D 1229	15 May 63	UK
E	REVISED PER TDRR 03788		
F	REVISED PER TDRR 04114		

FIND NO.	REF. DESIG.	POLARITY TOP	POLARITY BOTTOM
10	R1		
10	R2		
10	R3		
10	R4		
10	R5		
10	R6		
11	CR1		CATHODE
11	CR2	CATHODE	
11	CR3		CATHODE
11	CR4	CATHODE	
12	CR5		CATHODE
12	CR6		CATHODE
11	CR7		CATHODE
11	CR8	CATHODE	
11	CR9		CATHODE
11	CR10	CATHODE	
12	CR11		CATHODE
12	CR12		CATHODE
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14	T4		
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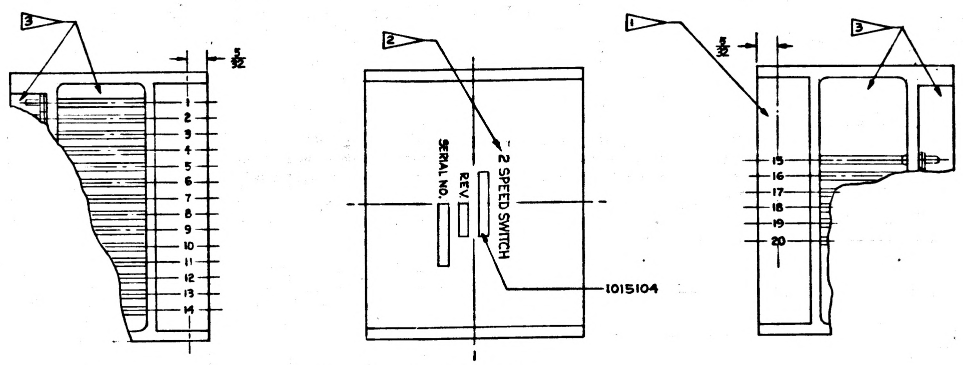
15	FT2		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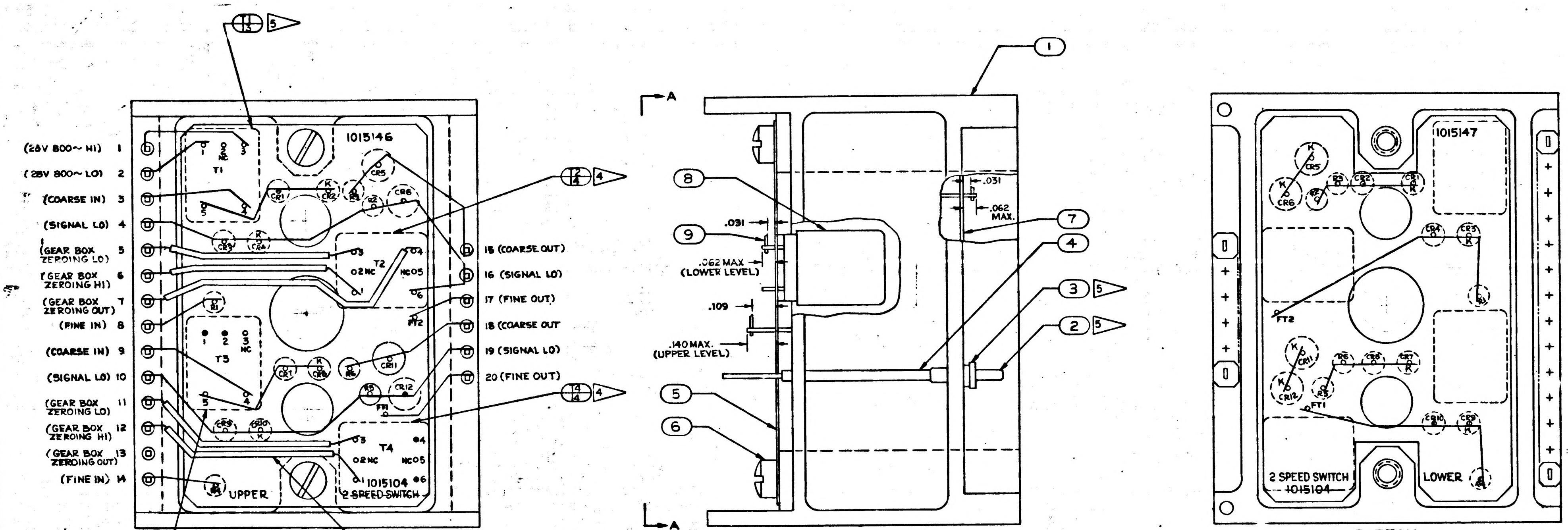
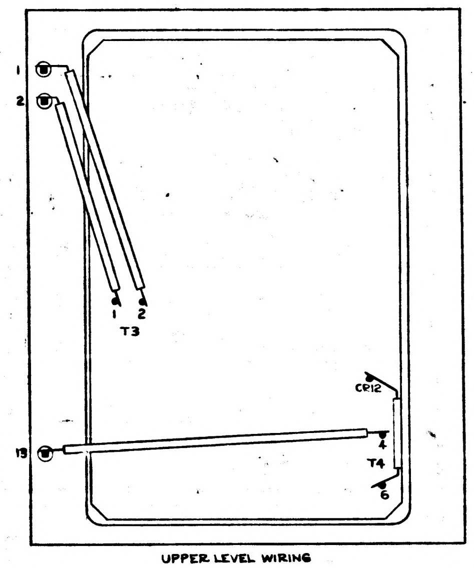
20
2 SPEED SWITCH
REV
SERIAL NO.
1015104

VIEW A-A
(SCALE 2:1)


5
1015146
(28V 800~ HI) 1
(28V 800~ LO) 2
(COARSE IN) 3
(SIGNAL LO) 4
(GEAR BOX ZEROING LO) 5
(GEAR BOX ZEROING HI) 6
(GEAR BOX ZEROING OUT) 7
(FINE IN) 8
(COARSE IN) 9
(SIGNAL LO) 10
(GEAR BOX ZEROING LO) 11
(GEAR BOX ZEROING HI) 12
(GEAR BOX ZEROING OUT) 13
(FINE IN) 14
15 (COARSE OUT)
16 (SIGNAL LO)
17 (FINE OUT)
18 (COARSE OUT)
19 (SIGNAL LO)
20 (FINE OUT)
T1
T2
T3
T4
CR1
CR2
CR3
CR4
CR5
CR6
CR7
CR8
CR9
CR10
CR11
CR12
R1
R2
R3
R4
R5
R6
FT1
FT2
K
NC
2NC
NC5
UPPER
1015104
2 SPEED SWITCH
4
16
A
A
1
8
9
7
4
3
2
5
6
.031
.062 MAX.
.031
.062 MAX
(LOWER LEVEL)
.109
.140 MAX.
(UPPER LEVEL)
1015147
2 SPEED SWITCH
1015104
LOWER

TOP

BOTTOM
ASSEMBLY SHOWN WITHOUT ENCAPSULATION FOR CLARITY


1
2
13
T3
1
2
CR12
4
T4

UPPER LEVEL WIRING

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

UNLESS OTHERWISE SPECIFIED, COMPONENTS TO BE CENTERED BETWEEN ITEM 5 & 7.

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

2 MARK CHARACTERS .080 HIGH WHITE PER ND 1002019 CENTERED AS SHOWN.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

K INDICATES CATHODE SIDE OF DIODE.

BLACK DOT (●) INDICATES LEAD TO BE CUT FOR UPPER LEVEL WIRING

DRAWING FOR REFERENCE:
1015102 SCHEMATIC DIAGRAM, ELECTRICAL.

FT INDICATES FEED THRU WIRE.

4 BOND T1 THRU T4 TO ITEM 5 PER ND 1002004

5 ASSEMBLE PER ND 1002136

Ⓓ REPLACES REV. C WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006776-21	INSULATION SLEEVING NO. 22	16
AR	1006787-2	WIRE, FEED THRU	15
2	1010329-1	TRANSFORMER	14
2	1010291-3	TRANSFORMER	13
4	1010372-21	DIODE	12
8	1010392-1	DIODE	11
6	1006750-63	RESISTOR	10
AR	1006757-1	.010×.020 NICKEL RIBBON	9
4	1010461	TRANSFORMER SHIELD	8
1	1015147	WAFER BOARD, LOWER	7
2	1010485-98	#4-40 NC-3B FIL. HD SCREW 3/16 LNG (NYLON)	6
1	1015146	WAFER BOARD, UPPER	5
AR	1006776-20	INSULATION SLEEVING	4
20	1006775	INSULATOR, WRAPOST-MALE, MINIATURE	3
20	1006782-5	CONTACT,- WRAPOST-MALE MINIATURE	2
1	1015107	FRAME-MODULE	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN G. CALLEN DATE 6 DEC 62
CHECKED R.L. BOTTOLFSON
APPROVAL R.L. BOTTOLFSON
APPROVAL
NASA APPROVAL 5/3/63
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
TWO-SPEED SWITCH

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015104
SCALE —
WT
SHEET 1 OF 1

MASTER

INCHES
PHOTOGRAPHIC SCALE ONLY

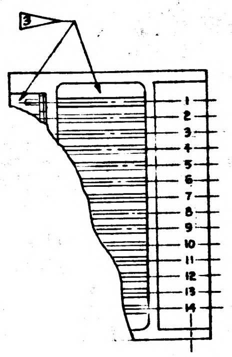
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

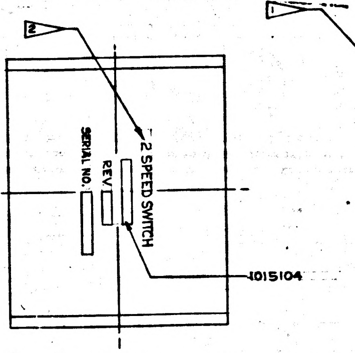
1015104 G

REVISIONS

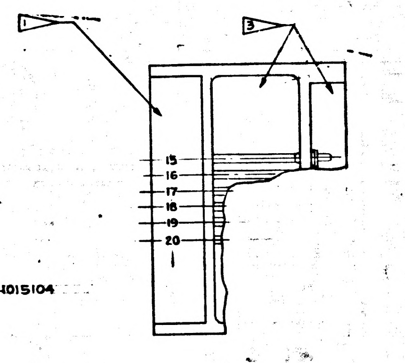
SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES REV. C WITH CHANGES PER TDRR 01229	15 May 63	WK
E	REVISED PER TDRR 03788		
F	REVISED PER TDRR 04114		
G	REVISED PER TDRR 05417	12/07/63	WK

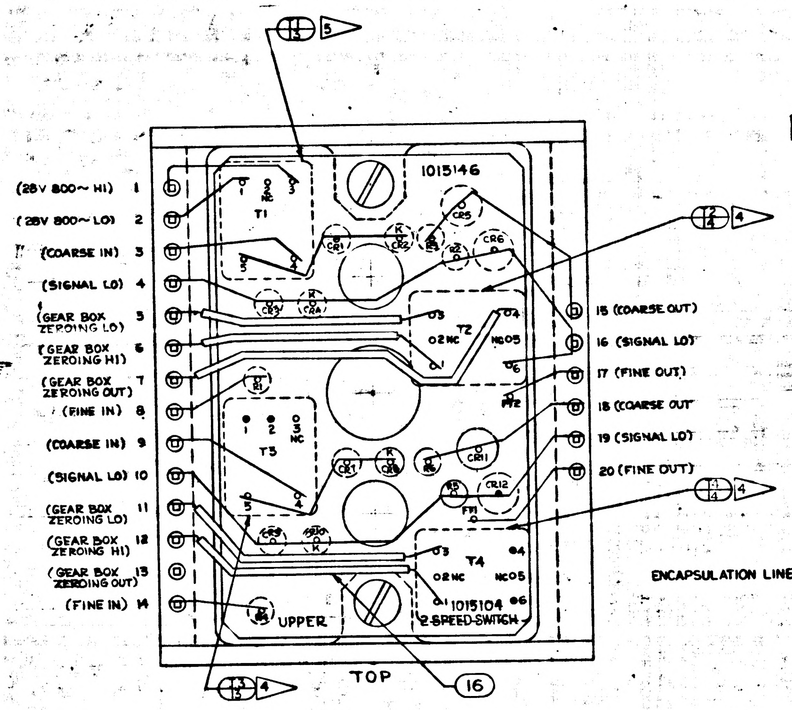
FIND NO.	REF. DESIG.	POLARITY TOP	POLARITY BOTTOM
10	R1		
10	R2		
10	R3		
10	R4		
10	R5		
10	R6		
11	CR1		CATHODE
11	CR2	CATHODE	
11	CR3		CATHODE
11	CR4	CATHODE	
12	CR5		CATHODE
12	CR6		CATHODE
11	CR7		CATHODE
11	CR8	CATHODE	
11	CR9		CATHODE
11	CR10	CATHODE	
12	CR11		CATHODE
12	CR12		CATHODE
13	T1		
14	T2		
13	T3		
14	T4		
15	FT1		
15	FT2		


3
1
2
3
4
5
6
7
8
9
10
11
12
13
14

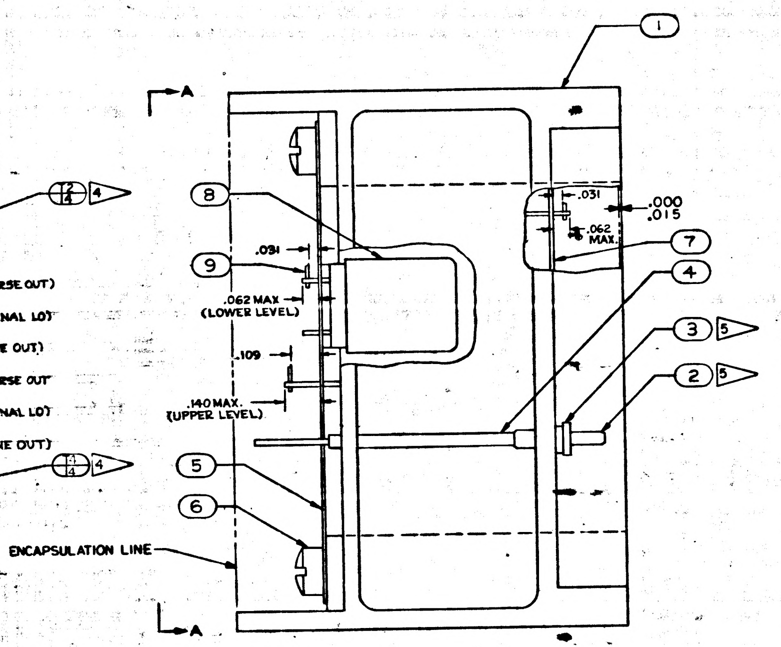

2
2 SPEED SWITCH
REV
SERIAL NO.
1015104

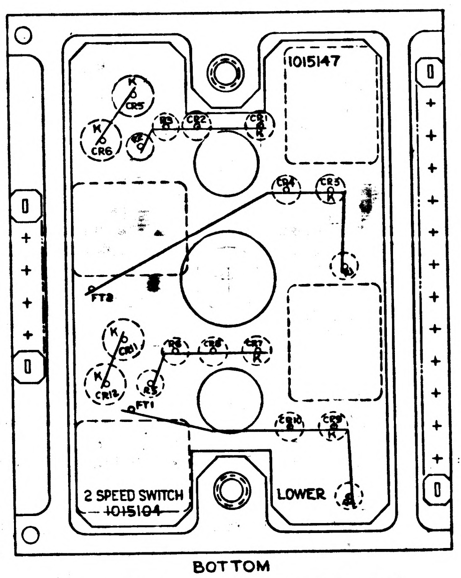
VIEW A-A
(SCALE 2:1)


1
3
15
16
17
18
19
20


13 5
(28V 800~ HI) 1
(28V 800~ LO) 2
(COARSE IN) 3
(SIGNAL LO) 4
(GEAR BOX ZEROING LO) 5
(GEAR BOX ZEROING HI) 6
(GEAR BOX ZEROING OUT) 7
(FINE IN) 8
(COARSE IN) 9
(SIGNAL LO) 10
(GEAR BOX ZEROING LO) 11
(GEAR BOX ZEROING HI) 12
(GEAR BOX ZEROING OUT) 13
(FINE IN) 14
1015146
T1
T2
T3
T4
CR1
CR2
CR3
CR4
CR5
CR6
CR11
CR12
FT2
14 4
15 (COARSE OUT)
16 (SIGNAL LO)
17 (FINE OUT)
18 (COARSE OUT)
19 (SIGNAL LO)
20 (FINE OUT)
1015104
2 SPEED SWITCH
UPPER
13 4
16

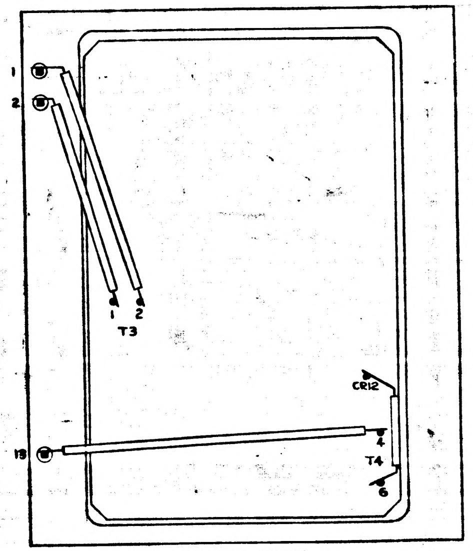
TOP


1
A
8
9
.031
.062 MAX
(LOWER LEVEL)
.109
.140 MAX.
(UPPER LEVEL)
.031
.000
.015
.062
MAX.
7
4
3 5
2 5
5
6
ENCAPSULATION LINE
A


1015147
CR5
CR6
CR7
CR8
CR9
CR10
FT1
FT2
2 SPEED SWITCH
1015104
LOWER

BOTTOM

ASSEMBLY SHOWN WITHOUT ENCAPSULATION FOR CLARITY


1
2
T3
CR12
19
T4

UPPER LEVEL WIRING

Ⓓ REPLACES REV. C WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

UNLESS OTHERWISE SPECIFIED, COMPONENTS TO BE CENTERED BETWEEN ITEM 5 & 7.

~~ALL WELDED CONNECTIONS TO BE MADE PER ND 1002003~~

1. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSION BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
2. MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN ABBREVIATIONS PERMISSIBLE
3. AREAS TO BE FREE OF ENCAPSULATING COMPOUND
K INDICATES CATHODE SIDE OF DIODE
BLACK DOT (●) INDICATES LEAD TO BE CUT FOR UPPER LEVEL WIRING
DRAWING FOR REFERENCE:
1015102 SCHEMATIC DIAGRAM, ELECTRICAL
FT INDICATES FEED THRU WIRE
4. BOND T1 THRU T4 TO ITEM 5 PER ND1002004
5. ASSEMBLE PER ND1002136

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
AR	1006776 - 21	INSULATION SLEEVING NO. 22	16
AR	1006787-2	WIRE, FEED THRU	15
2	1010329-1	TRANSFORMER	14
2	1010291-3	TRANSFORMER	13
4	1010372-21	DIODE	12
8	1010392-1	DIODE	11
6	1006750-63	RESISTOR	10
AR	1006757-1	.010×.020 NICKEL RIBBON	9
4	1010461	TRANSFORMER SHIELD	8
1	1015147	WAFER BOARD, LOWER	7
2	1010485-98	#4-40 NC-3B FIL. HD SCREW 3/16 LNG (NYLON)	6
1	1015146	WAFER BOARD, UPPER	5
AR	1006776-20	INSULATION SLEEVING	4
20	1006775	INSULATOR, WRAPOST-MALE, MINIATURE	3
20	1006782-5	CONTACT,-WRAPOST-MALE MINIATURE	2
1	1015107	FRAME-MODULE	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN G. CALLEN DATE 6 Nov 62
CHECKED R.L. BOTTOLFSON
APPROVAL R.L. BOTTOLFSON
APPROVAL
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
TWO-SPEED SWITCH

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015104
SCALE —/—
WT
SHEET 1 OF 1

MASTER

INCHES
PHOTOGRAPHIC SCALE ONLY

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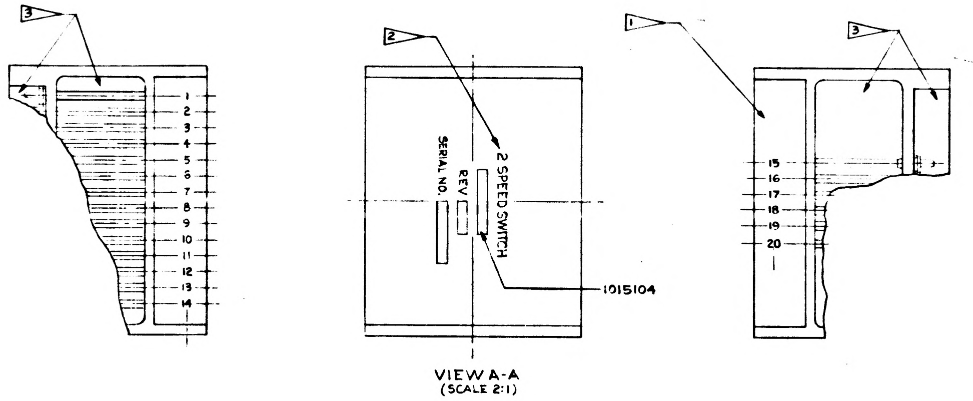
1015104 H

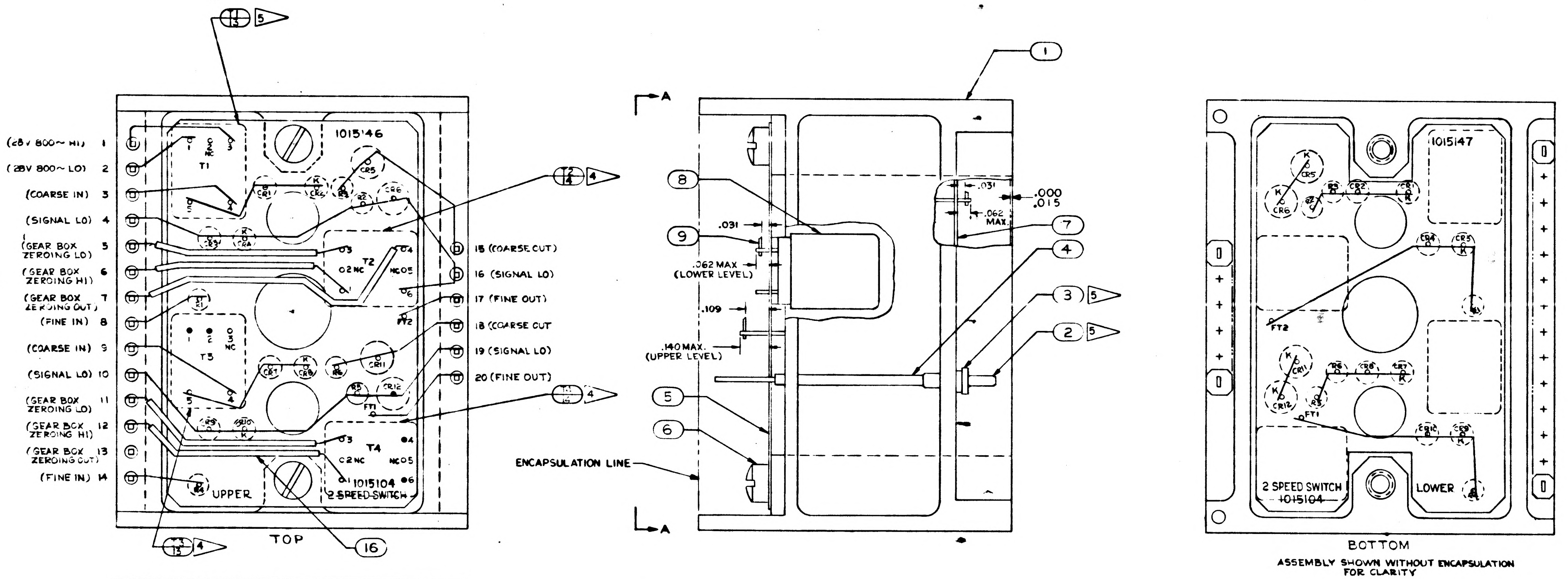
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
D	REPLACES REV. C WITH CHANGES PER TDRR 01229	15 May 63	WR
E	REVISED PER TDRR 03788		
F	REVISED PER TDRR 04114		
G	REVISED PER TDRR 05417	12/27/63	
H	REVISED PER TDRR 07285	6 APR 64	

FIND NO.	REF. DESIG.	POLARITY	
		TOP	BOTTOM
10	R1		
10	R2		
10	R3		
10	R4		
10	R5		
10	R6		
11	CR1		CATHODE
11	CR2	CATHODE	
11	CR3		CATHODE
11	CR4	CATHODE	
12	CR5		CATHODE
12	CR6		CATHODE
11	CR7		CATHODE
11	CR8	CATHODE	
11	CR9		CATHODE
11	CR10	CATHODE	
12	CR11		CATHODE
12	CR12		CATHODE
13	T1		
14	T2		
13	T3		
14	T4		
15	FT1		
15	FT2		



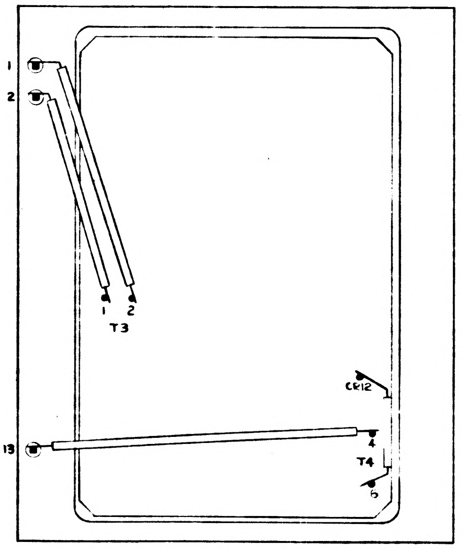
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14
2
2 SPEED SWITCH
REV
SERIAL NO.
1015104
1
3
15 16 17 18 19 20

VIEW A-A
(SCALE 2:1)



1015146
T1
(28V 800~ HI) 1
(28V 800~ LO) 2
(COARSE IN) 3
(SIGNAL LO) 4
(GEAR BOX ZEROING LO) 5
(GEAR BOX ZEROING HI) 6
(GEAR BOX ZEROING OUT) 7
(FINE IN) 8
(COARSE IN) 9
(SIGNAL LO) 10
(GEAR BOX ZEROING LO) 11
(GEAR BOX ZEROING HI) 12
(GEAR BOX ZEROING OUT) 13
(FINE IN) 14
15 (COARSE OUT)
16 (SIGNAL LO)
17 (FINE OUT)
18 (COARSE OUT)
19 (SIGNAL LO)
20 (FINE OUT)
T2
T3
T4
FT1
FT2
UPPER
1015104
2 SPEED SWITCH
16
4
5
TOP
A
A
1
8
9
.031
.062 MAX (LOWER LEVEL)
.109
.140 MAX. (UPPER LEVEL)
.031
.000
.015
.062 MAX
7
4
3
2
5
6
ENCAPSULATION LINE
1015147
2 SPEED SWITCH
1015104
LOWER
BOTTOM

ASSEMBLY SHOWN WITHOUT ENCAPSULATION FOR CLARITY



1
2
1 2
T3
CR12
13
T4

UPPER LEVEL WIRING

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

UNLESS OTHERWISE SPECIFIED, COMPONENTS TO BE CENTERED BETWEEN ITEM 5 & 7.

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

1▷ ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSION BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING

2▷ MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN ABBREVIATIONS PERMISSIBLE

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND

K INDICATES CATHODE SIDE OF DIODE

BLACK DOT (●) INDICATES LEAD TO BE CUT FOR UPPER LEVEL WIRING

DRAWING FOR REFERENCE:

1015102 SCHEMATIC DIAGRAM, ELECTRICAL

FT INDICATES FEEDTHRU WIRE

4▷ BOND T1 THRU T4 TO ITEM 5 PER ND1002004

5▷ ASSEMBLE PER ND1002136

PROCURE PER PS 1015104.

Ⓓ REPLACES REV. C WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
AR	1006776-21	INSULATION SLEEVING NO. 22	16
AR	1006787-2	WIRE, FEED THRU	15
2	1010329-1	TRANSFORMER	14
2	1010291-3	TRANSFORMER	13
4	1010372-21	DIODE	12
8	1010392-1	DIODE	11
6	1006750-63	RESISTOR	10
AR	1006757-1	.010x.020 NICKEL RIBBON	9
4	1010461	TRANSFORMER SHIELD	8
1	1015147	WAFER BOARD, LOWER	7
2	1010485-98	#4-40 NC-3B FIL HD SCREW 3/16 LNG (NYLON)	6
1	1015146	WAFER BOARD, UPPER	5
AR	1006776-20	INSULATION SLEEVING	4
20	1006775	INSULATOR, WRAPOST-MALE, MINIATURE	3
20	1006782-5	CONTACT, WRAPOST MALE MINIATURE	2
1	1015107	FRAME-MODULE	1

LIST OF MATERIALS

1007159	
1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO.
CONTRACT NAS-9-697

DRAWN G. CALLEN DATE 6 DEC 62
CHECKED R L BOTTOLFSON
APPROVAL R L BOTTOLFSON
APPROVAL
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
TWO-SPEED SWITCH

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015104
SCALE —
WT
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

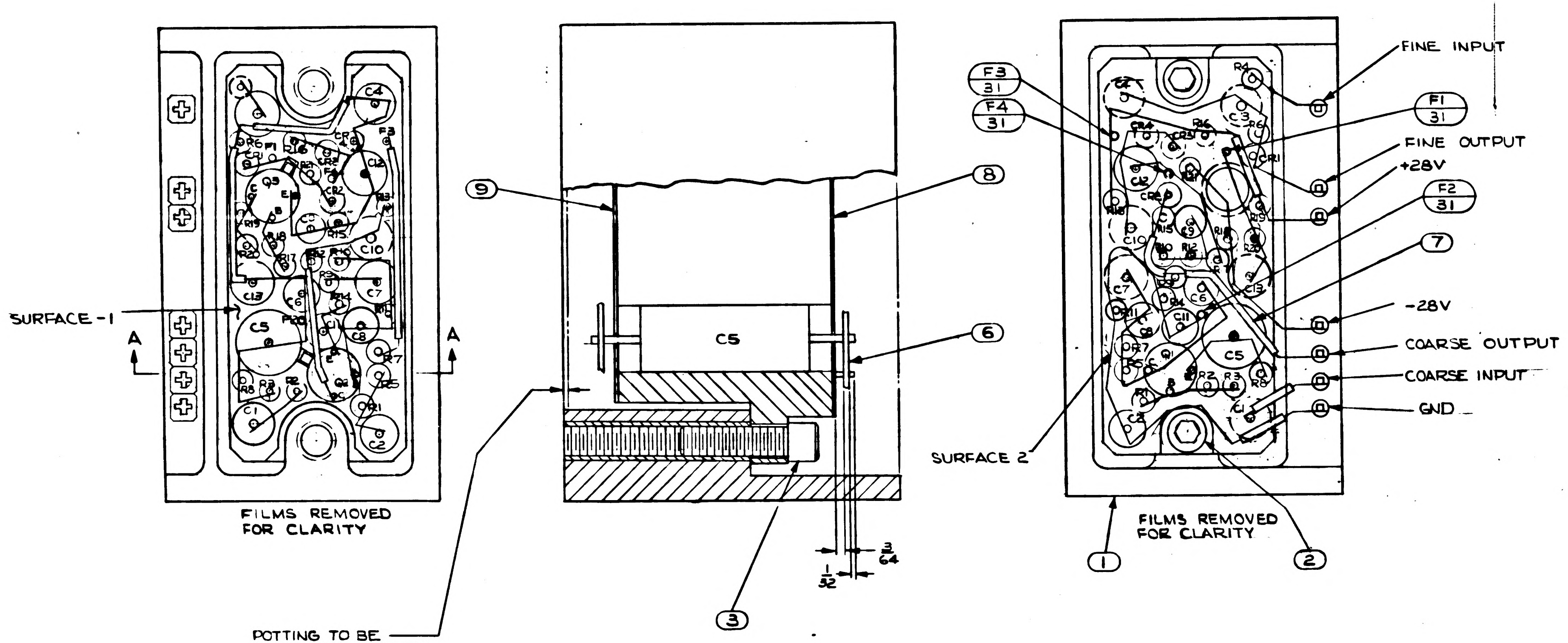
1015104

SYM	DESCRIPTION	DATE	APPROVAL
REVISIONS			

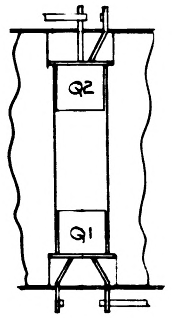
FIND NO.	REF DESIG.	SURFACE 1 POLARITY	SURFACE 2 POLARITY
		———	———
10	R5	———	———
10	R12	———	———
11	R1	———	———
11	R10	———	———
12	R2	———	———
12	R16	———	———
13	R3	———	———
13	R11	———	———
14	R6	———	———
		———	———
14	R19	———	———
15	R8	———	———
15	R14	———	———
16	R17	———	———
17	R18	———	———
18	R21	———	———
18	R9	———	———
19	R7	———	———
19	R13	———	———

FIND NO	REF DESIG	SURFACE 1 POLARITY	SURFACE 2 POLARITY
20	R20	———	———
32	R4	———	———
18	R15	———	———
21	C1	POSITIVE	———
21	C7	———	POSITIVE
21	C10	POSITIVE	———
21	C3	———	POSITIVE
22	C2	POSITIVE	
22	C9	———	POSITIVE
22	C6	———	POSITIVE
23	C4	———	POSITIVE
24	C5	———	POSITIVE
25	C12	———	POSITIVE
25	C13	———	POSITIVE
26	C11	POSITIVE	———
27	C8	———	POSITIVE

FIND NO	REF DESIG	SURFACE 1 POLARITY	SURFACE 2 POLARITY
28	Q1	———	———
28	Q2	———	———
28	Q3	———	———
29	CR1	———	CATHODE
29	CR2	CATHODE	———
29	CR3	———	CATHODE
29	CR4	CATHODE	———



POTTING TO BE FLUSH TO .015 BELOW SURFACE



PARTIAL SECTION AA
ALSO APPLIES TO Q3

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ALL WELDING PER ND 1002005

FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 00219 DATE 9 Jan 63

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
			46
			45
			44
			43
			42
			41
			40
			39
			38
			37
			36
			35
			34
			33
1	1006750-59	RESISTOR	32
AR	1006787-2	WIRE	31
			30
4	1010362-1	DIODE IN645	29
3	1010397	TRANSISTOR 2N930	28
1	1006755-63	CAPACITOR .33uf 35V	27
1	1006755-67	CAPACITOR .68uf 35V	26
2	1010279-	CAPACITOR 3.4uf 35V	25
1	1006755-85	CAPACITOR 22uf 35V	24
1	-49	CAPACITOR .022uf 35V	23
3	-53	CAPACITOR .047uf 35V	22
4	1006755-71	CAPACITOR 1.5uf 35V	21
1	1006750-49	RESISTOR 5.1K ¼W	20
2	-44	RESISTOR 3.3K ¼W	19
3	-60	RESISTOR, 15K ¼W	18
1	-80	RESISTOR, 100K ¼W	17
1	-32	RESISTOR, 1K ¼W	16
2	-35	RESISTOR, 1.3K ¼W	15
2	-43	RESISTOR, 3K ¼W	14
2	-83	RESISTOR, 130K ¼W	13
2	-58	RESISTOR, 12K ¼W	12
2	-78	RESISTOR, 82K ¼W	11
2	1006750-63	RESISTOR 20K ¼W	10
1		FILM, WIRING (BOTTOM)	9
1		FILM, WIRING (TOP)	8
AR	1006776-20	SLEEVING, ELECT. INSUL.	7
AR	1006757-1	WIRE-NICKEL RIBBON	6
7	1006775	INSULATOR, BUSHING, MALE	5
7		CONTACT, ELECT., MALE	4
2		SCREW, CAP	3
1	1015103	BLOCK, COMPONENT MTG	2
1		CASE, MODULE	1

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN D. Callan DATE
CHECKED R. L. Battafarano
APPROVAL R. L. Battafarano
APPROVAL
NASA APPROVAL W. J. 1-9-63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY, 2 SPEED SWITCH

CODE IDENT NO
SIZE E
NASA DRAWING NO. 1015104
SCALE 4:1
WT
SHEET 1 OF 1

1015104

APOLLO G&N Specification
PS-1015104
28 January 1964
Class A Release
TDRR 05984

PROCUREMENT SPECIFICATION

FOR

TWO SPEED SWITCH MODULE ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page i to iii and 1 to 7 inclusive.

APOLLO G&N Specification
PS-1015104
28 January 1964

PROCUREMENT SPECIFICATION

FOR

TWO SPEED SWITCH MODULE ASSEMBLY

The purpose of this document is to establish the requirements for the procurement of the Two Speed Switch Module Assembly.

W. S. Kupfer 28 Jan 64
MIT/IL DATE

1/28/64
NASA/MSC APPROVAL DATE

APOLLO G&N Specification
PS-1015104
28 January 1964

PROCUREMENT SPECIFICATION

FOR

TWO SPEED SWITCH MODULE ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Two Speed Switch Module Assembly, Drawing 1015104, hereafter called the assembly.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM-1015104	Final Test Method for Two Speed Switch Module Assembly

DRAWINGS

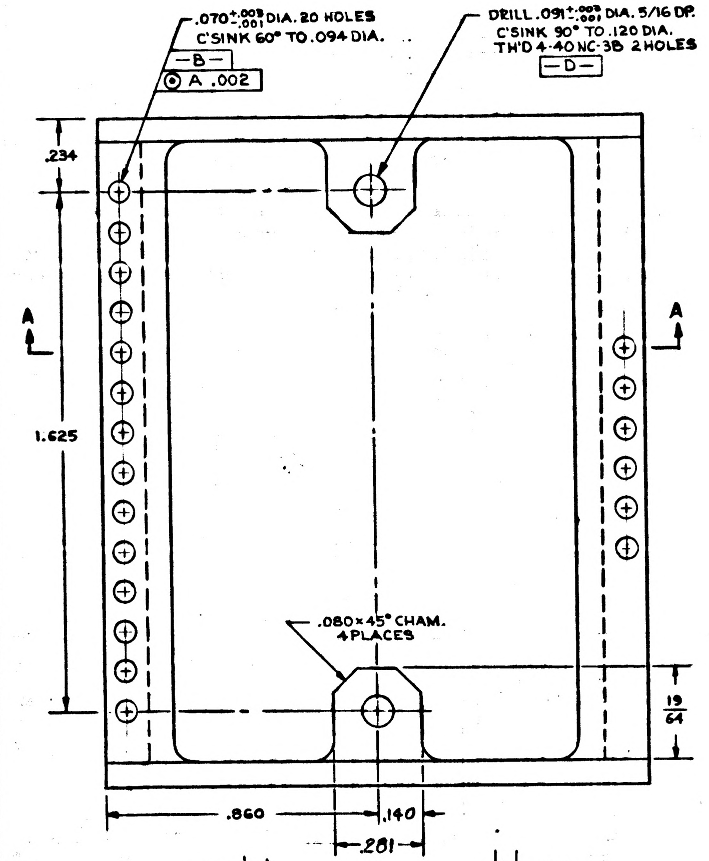
APOLLO G&N

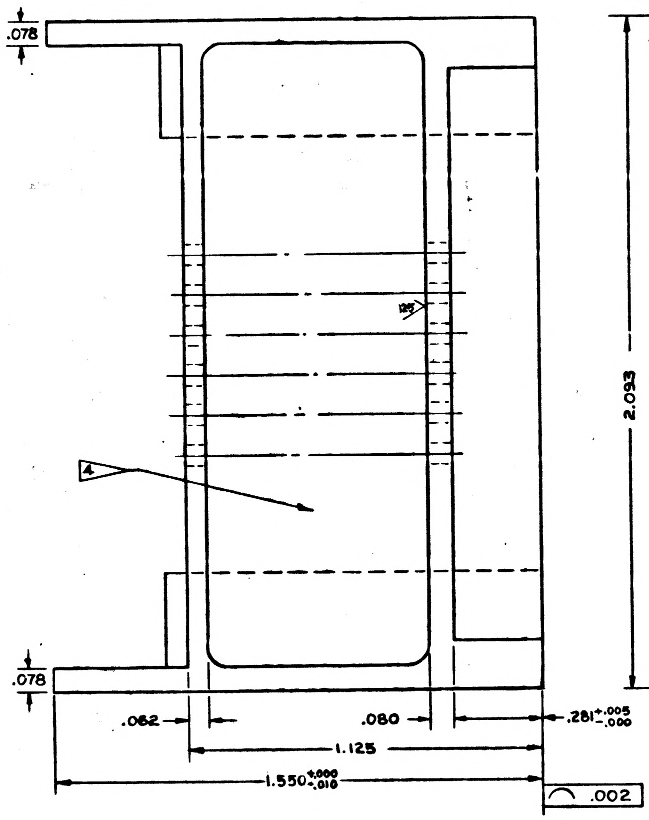
1015104	Two Speed Switch Module Assembly

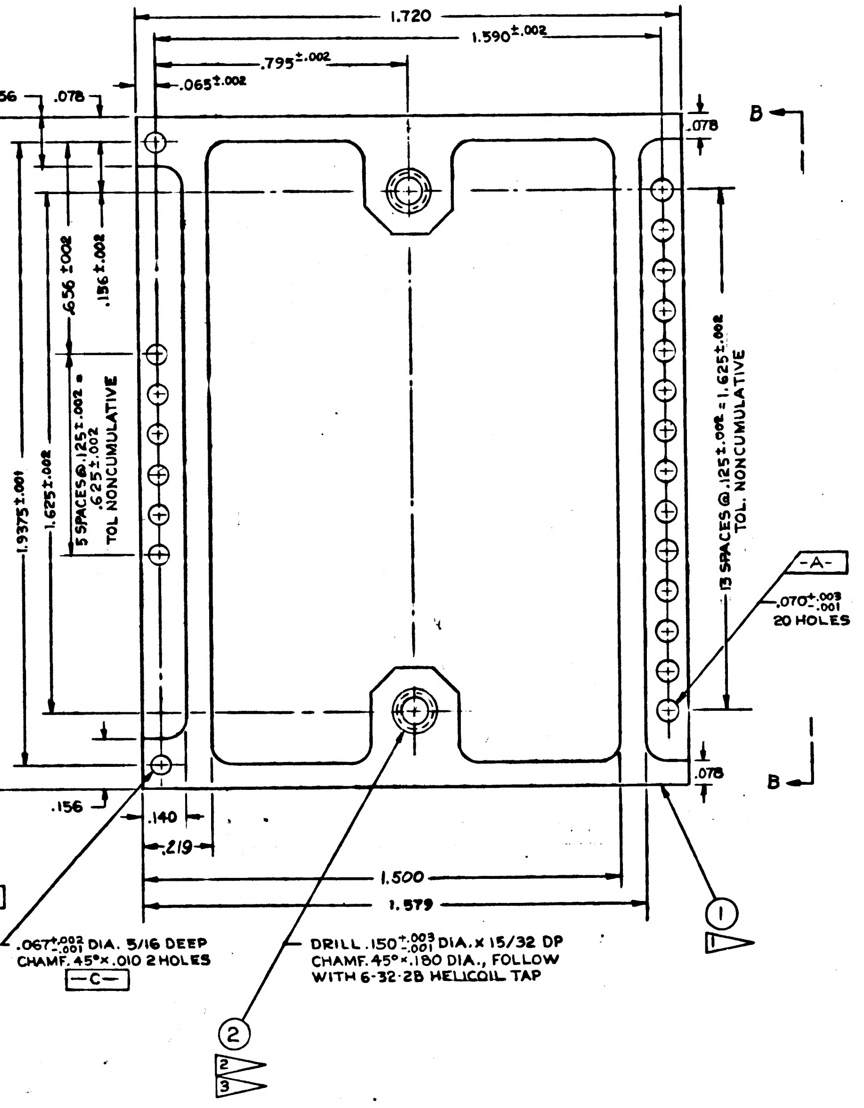
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

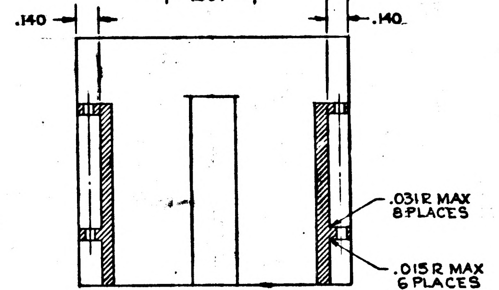
1015107 A

SYM	DESCRIPTION	DATE	APPROVAL
	REVISIONS TDRR 01230		
A	REVISED PER TDRR 02875	8-26-63	EPC

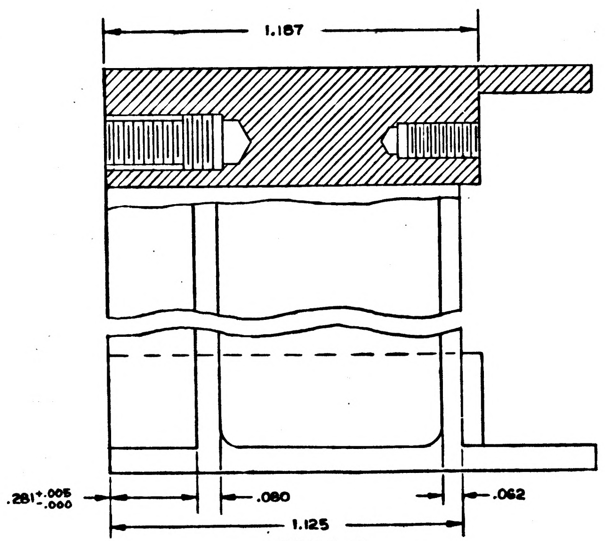

.070 +.003 -.001 DIA. 20 HOLES
C'SINK 60° TO .094 DIA.
-B-
⊙ A .002
DRILL .091 +.003 -.001 DIA. 5/16 DP.
C'SINK 90° TO .120 DIA.
TH'D 4-40 NC-3B 2 HOLES
-D-
.234
1.625
A
A
.080 × 45° CHAM.
4 PLACES
19/64
.860
.140
.281


.078
.078
4
.062
.080
.281 +.005 -.000
1.125
1.550 +.000 -.010
⌒ .002


1.720
1.590 ±.002
.795 ±.002
.065 ±.002
.156
.078
.078
.078
B
B
.656 ±.002
.156 ±.002
5 SPACES @ .125 ±.002 = .625 ±.002
TOL NONCUMULATIVE
2.093
1.9375 ±.001
1.625 ±.002
13 SPACES @ .125 ±.002 = 1.625 ±.002
TOL. NONCUMULATIVE
-A-
.070 +.003 -.001
20 HOLES
.156
.140
.219
1.500
1.579
.067 +.002 -.001 DIA. 5/16 DEEP
CHAMF. 45° × .010 2 HOLES
-C-
DRILL .150 +.003 -.001 DIA. × 15/32 DP
CHAMF. 45° × .180 DIA., FOLLOW
WITH 6-32-2B HELICOIL TAP
①
1
②
2
3


.140
.140
.031R MAX
8 PLACES
.015R MAX
6 PLACES

SECTION A-A
2x SIZE


1.187
.281 +.005 -.000
.080
.062
1.125

VIEW B-B

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV

INSERT HOLES & DIAS. C & D TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R
ALL CORNERS TO BE .005R TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 35

1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 ZINC CHROMATE PRIMER.

3 INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.

4 MARK 1015107 AND REV. LETTER PER MIL-STD-130 LOCATE APPROX. WHERE SHOWN.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS 122118	INSERT-CRES HELICAL COIL	2
1	1015107	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015104	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 4-28-63
CHECKED LAPlummer
APPROVAL R.L. Battey
APPROVAL
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME-INSEPARABLE ASSEMBLY
TWO-SPEED SWITCH

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015107
SCALE 4X
WT
SHEET 1 OF 1

1015107 A

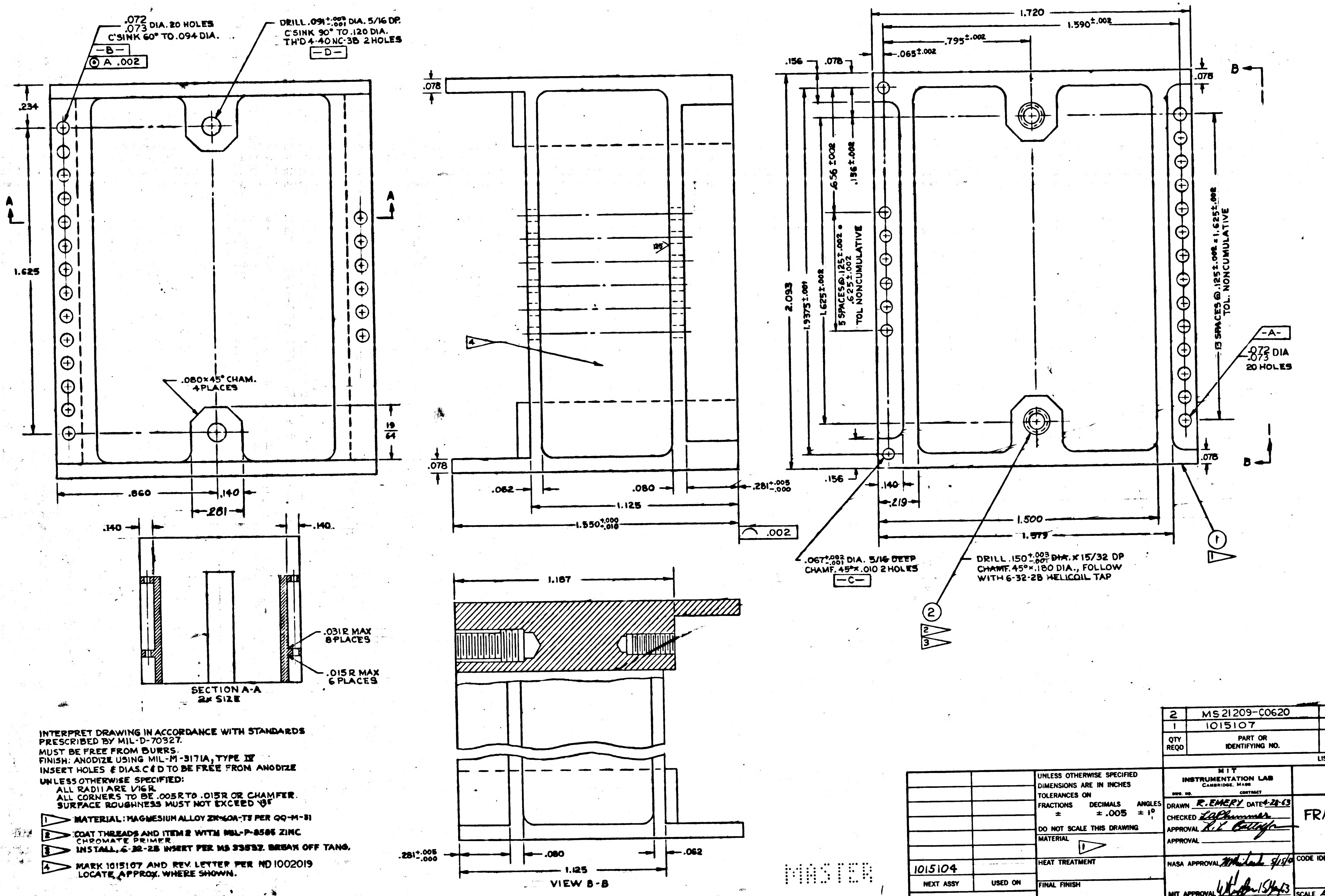
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015107 C

REVISIONS TDRR 01230

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02875	9-26-63	
B	REVISED PER TDRR 03851	10-15-63	
C	REVISED PER TDRR 03854	10-15-63	



.072/.073 DIA. 20 HOLES C'SINK 60° TO .094 DIA.
-B-
⊙ A .002
DRILL .091 +.003/-.001 DIA. 5/16 DP. C'SINK 90° TO .120 DIA. TH'D 4-40 NC-3B 2 HOLES
-D-
.234
1.625
A
.080×45° CHAM. 4 PLACES
19/64
.860
.140
.281
.078
.062
.080
1.125
1.550 +.000/-.010
.281 +.005/-.000
⌒ .002
4
1.720
1.590±.002
.795±.002
.065±.002
.156
.078
2.093
1.9375±.001
1.625±.002
.656±.002
.156±.002
5 SPACES @ .125±.002 = .625±.002 TOL NONCUMULATIVE
13 SPACES @ .125±.002 = 1.625±.002 TOL. NONCUMULATIVE
-A-
.072/.073 DIA 20 HOLES
B
.140
.219
1.500
1.579
1
.067 +.002/-.001 DIA. 5/16 DEEP CHAMF. 45°×.010 2 HOLES
-C-
DRILL .150 +.003/-.001 DIA. x 15/32 DP CHAMF. 45°×.180 DIA., FOLLOW WITH 6-32-2B HELICOIL TAP
2
3
.140
.140
.031R MAX 8 PLACES
.015R MAX 6 PLACES
SECTION A-A 2x SIZE
1.187
.281 +.005/-.000
.080
1.125
.062
VIEW B-B

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
MUST BE FREE FROM BURRS.
FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIAS. C & D TO BE FREE FROM ANODIZE
UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R
ALL CORNERS TO BE .005R TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED √35

1. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31
2. COAT THREADS AND ITEM 2 WITH MIL-P-8585 ZINC CHROMATE PRIMER
3. INSTALL 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.
4. MARK 1015107 AND REV. LETTER PER ND 1002019 LOCATE APPROX. WHERE SHOWN.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS 21209-C0620	INSERT-CRES HELICAL COIL	2
1	1015107	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015104	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 4-28-63
CHECKED L.A. Plummer
APPROVAL R.L. Battey
APPROVAL
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME-INSEPARABLE ASSEMBLY
TWO-SPEED SWITCH

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015107
SCALE 4X
WT
SHEET 1 OF 1

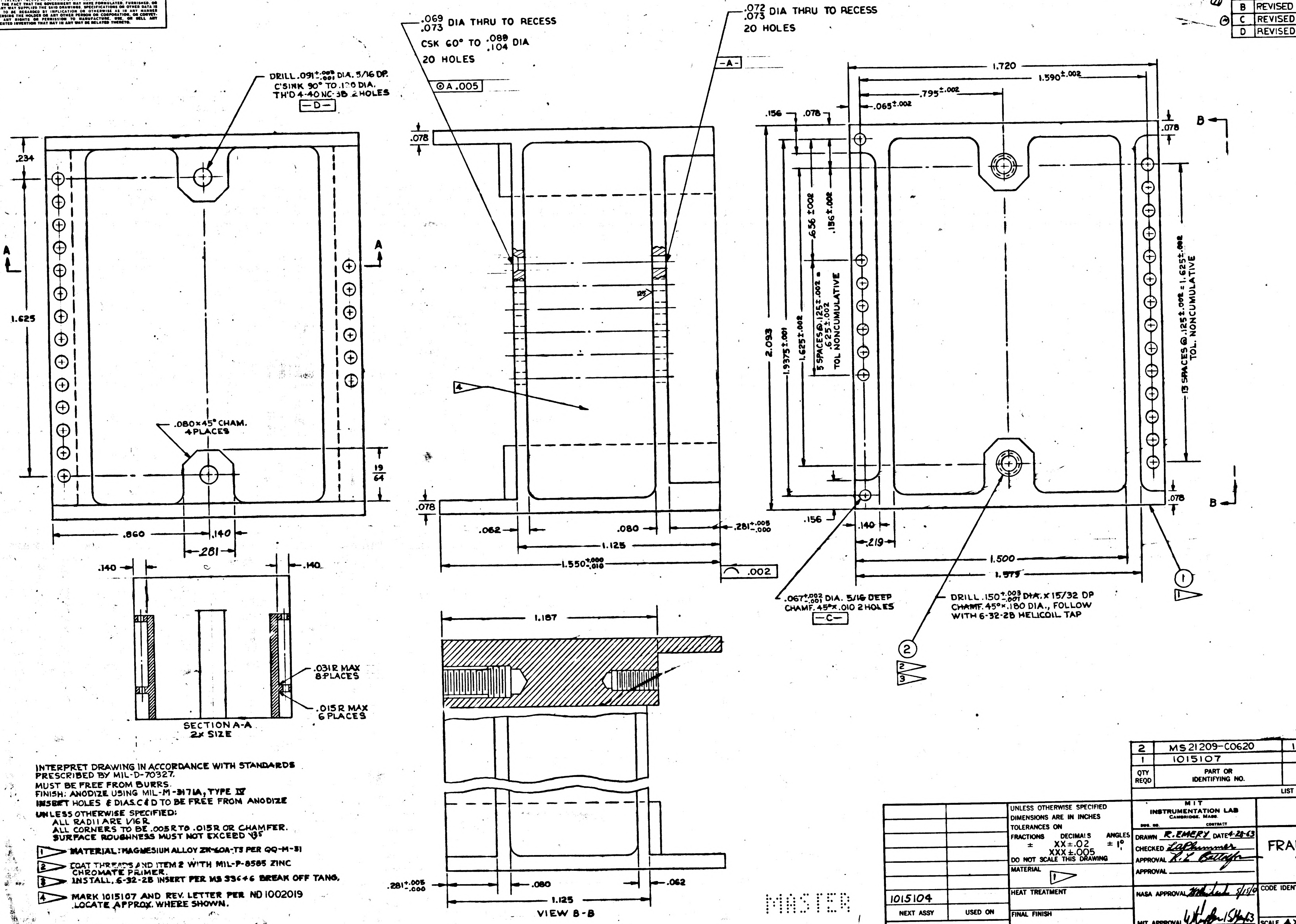
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015107 D

REVISIONS TDRR 01230

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02875	8-26-63	EPK
B	REVISED PER TDRR 03851	10-15-63	EPK
C	REVISED PER TDRR 03864	10-15-63	
D	REVISED PER TDRR 05415	27 Dec 63	EPK


DRILL .091 +.002 -.001 DIA. 5/16 DP.
C'SINK 90° TO .120 DIA.
TH'D 4-40 NC-3B 2 HOLES
-D-
.234
1.625
A
A
.080×45° CHAM. 4 PLACES
19/64
.860
.140
.281
.140
.140
.031 R MAX 8 PLACES
.015 R MAX 6 PLACES
SECTION A-A 2x SIZE
.069 .073 DIA THRU TO RECESS
CSK 60° TO .089 .104 DIA
20 HOLES
⊙ A .005
.072 .073 DIA THRU TO RECESS
20 HOLES
-A-
.078
.078
125
4
.062
.080
.281 +.005 -.000
1.125
1.550 +.000 -.010
⌒ .002
1.187
.281 +.005 -.000
.080
.062
1.125
VIEW B-B
1.720
1.590 ±.002
.795 ±.002
.065 ±.002
.156
.078
2.093
1.9375 ±.001
1.625 ±.002
.656 ±.002
.156 ±.002
5 SPACES @ .125 ±.002 = .625 ±.002 TOL NONCUMULATIVE
13 SPACES @ .125 ±.002 = 1.625 ±.002 TOL. NONCUMULATIVE
.078
.078
B
B
.156
.140
.219
1.500
1.579
.067 +.002 -.001 DIA. 5/16 DEEP
CHAMF. 45°×.010 2 HOLES
-C-
DRILL .150 +.003 -.001 ~~DIA.~~ × 15/32 DP
CHAMF. 45°×.180 DIA., FOLLOW WITH 6-32-2B HELICOIL TAP
①
1
②
2
3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV

INSERT HOLES & DIAS. C & D TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R
ALL CORNERS TO BE .005 R TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED √35

1. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31
2. COAT THREADS AND ITEM 2 WITH MIL-P-8585 ZINC CHROMATE PRIMER.
3. INSTALL, 6-32-2B INSERT PER MS 33646 BREAK OFF TANG.
4. MARK 1015107 AND REV. LETTER PER ND 1002019 LOCATE APPROX. WHERE SHOWN.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS21209-C0620	INSERT - CRES HELICAL COIL	2
1	1015107	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015104	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING

MATERIAL 1

HEAT TREATMENT

FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN R. EMERY DATE 4-28-63
CHECKED L.A. Plummer
APPROVAL R.L. Battey
APPROVAL

NASA APPROVAL 5/15/6
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME-INSEPARABLE ASSEMBLY
TWO-SPEED SWITCH

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015107
SCALE 4X
WT
SHEET 1 OF 1

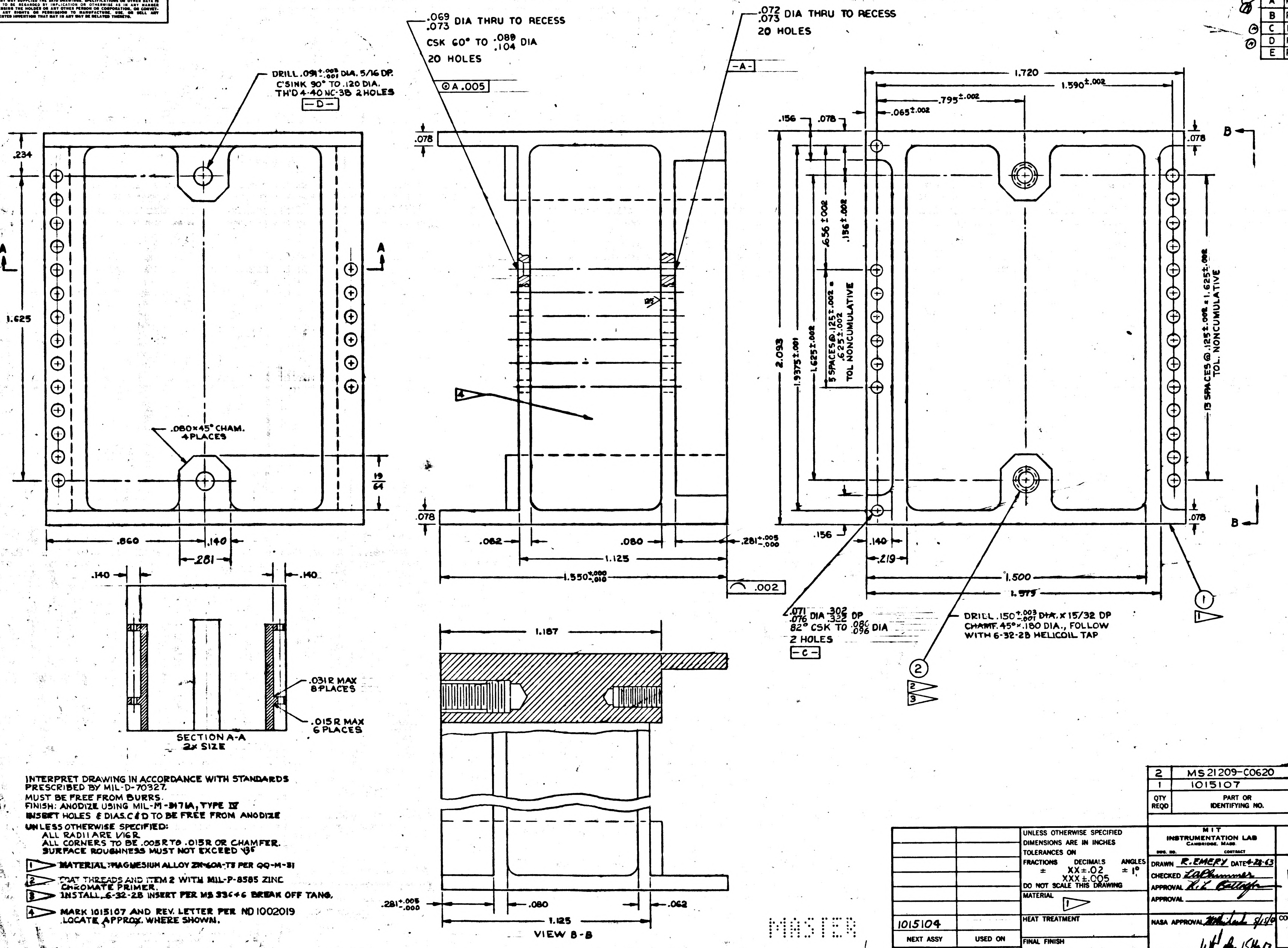
1015107 D

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015107 E

SYM	DESCRIPTION	DATE	APPROVAL
	REVISIONS TDRR 01238		
A	REVISED PER TDRR 02875	8-26-63	RPK
B	REVISED PER TDRR 03851	10-15-63	RPK
C	REVISED PER TDRR 03864	10-15-63	RPK
D	REVISED PER TDRR 05415	17 DEC 63	RPK WK
E	REVISED PER TDRR 05870	21 JAN 64	LK RPK WK



DRILL .091 +.003 -.001 DIA. 5/16 DP.
C'SINK 90° TO .120 DIA.
TH'D 4-40 NC-3B 2 HOLES
-D-
.069 .073 DIA THRU TO RECESS
CSK 60° TO .089 .104 DIA
20 HOLES
⊙ A .005
.072 .073 DIA THRU TO RECESS
20 HOLES
-A-
.234
1.625
A
A
.080×45° CHAM. 4 PLACES
19/64
.860
.140
.281
.078
.078
.082
.080
1.125
1.550 +.000 -.010
.281 +.005 -.000
⌒ .002
4
1.720
1.590 ±.002
.795 ±.002
.065 ±.002
.156
.078
.656 ±.002
.156 ±.002
5 SPACES @ .125 ±.002 = .625 ±.002 TOL NONCUMULATIVE
1.625 ±.002
1.9375 ±.001
2.093
13 SPACES @ .125 ±.002 = 1.625 ±.002 TOL. NONCUMULATIVE
B
B
.078
.078
.156
.140
.219
1.500
1.579
.071 .076 DIA .302 .322 DP
82° CSK TO .086 .096 DIA
2 HOLES
-C-
DRILL .150 +.003 -.001 DIA. X 15/32 DP
CHAMF. 45° × .180 DIA., FOLLOW WITH 6-32-2B HELICOIL TAP
1
1
2
2
3
.140
.140
.031 R MAX 8 PLACES
.015 R MAX 6 PLACES
SECTION A-A
2× SIZE
1.187
.281 +.005 -.000
.080
.062
1.125
VIEW B-B

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV

INSERT HOLES & DIAS. C & D TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R
ALL CORNERS TO BE .005 R TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED √35

1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 ZINC CHROMATE PRIMER.

3 INSTALL 6-32-2B INSERT PER MS 33646 BREAK OFF TANG.

4 MARK 1015107 AND REV. LETTER PER ND 1002019 LOCATE APPROX. WHERE SHOWN.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS 21209-C0620	INSERT-CRES HELICAL COIL	2
1	1015107	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015104	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING

MATERIAL 1

HEAT TREATMENT

FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT

DRAWN R. EMERY DATE 4-28-63
CHECKED L.A. Plummer
APPROVAL R. L. Battey
APPROVAL
NASA APPROVAL 5/15/64
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

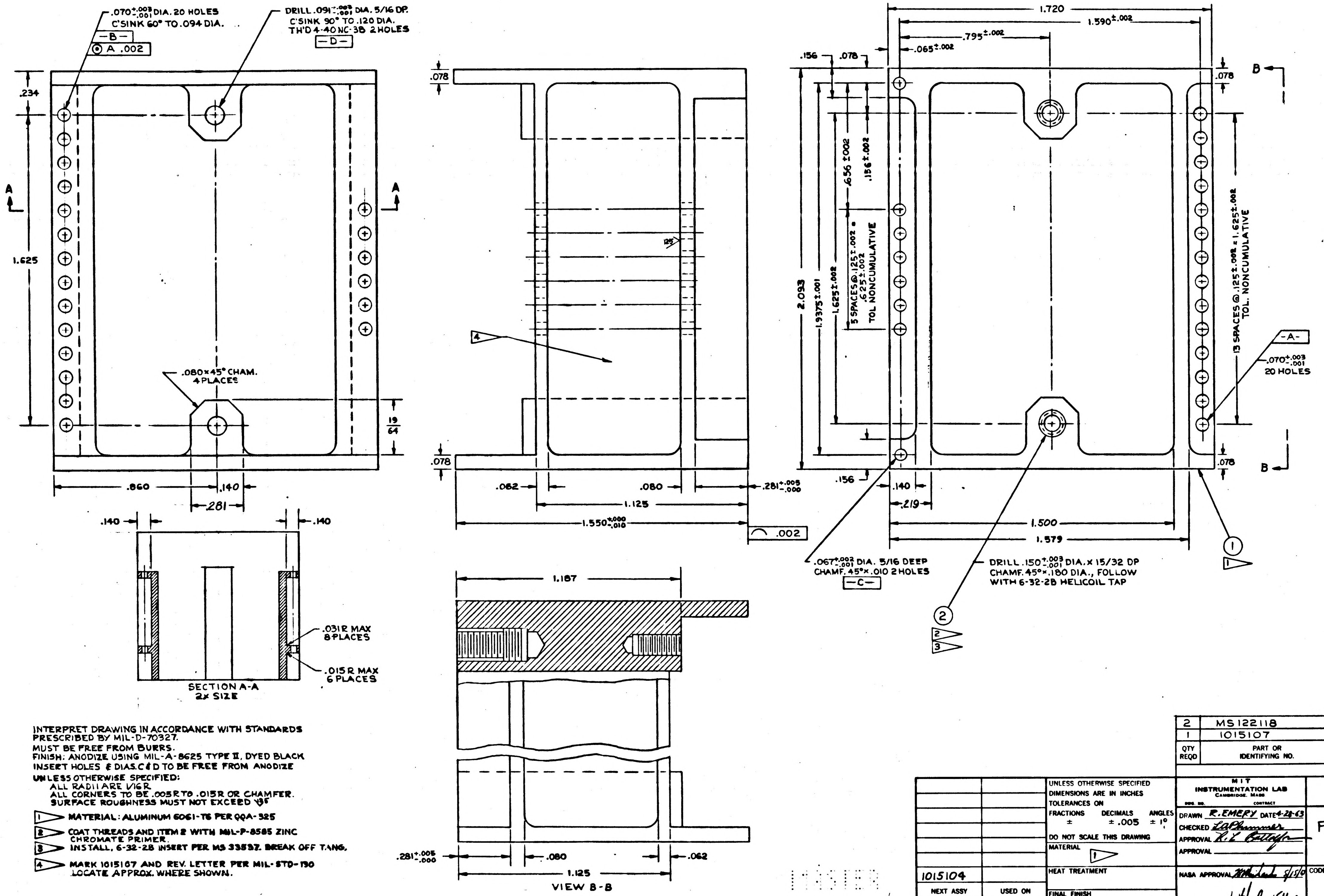
FRAME-INSEPARABLE ASSEMBLY
TWO-SPEED SWITCH

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015107
SCALE 4X
WT
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015107

REVISIONS TDRR 01239			
SYM	DESCRIPTION	DATE	APPROVAL


.070 +.003/-.001 DIA. 20 HOLES
C'SINK 60° TO .094 DIA.
-B-
A .002
DRILL .091 +.003/-.001 DIA. 5/16 DP.
C'SINK 90° TO .120 DIA.
TH'D 4-40 NC-3B 2 HOLES
-D-
.234
A
1.625
.080×45° CHAM.
4 PLACES
19/64
.860
.140
.281
.078
4
.062
.080
1.125
.281 +.005/-.000
1.550 +.000/-.010
.002
.140
.140
.031 R MAX
8 PLACES
.015 R MAX
6 PLACES
SECTION A-A
2x SIZE
1.187
.080
.062
1.125
.281 +.005/-.000
VIEW B-B
1.720
1.590 ±.002
.795 ±.002
.065 ±.002
.156
.078
B
.656 ±.002
.156 ±.002
2.093
1.9375 ±.001
1.625 ±.002
5 SPACES @ .125 ±.002 = .625 ±.002
TOL NONCUMULATIVE
13 SPACES @ .125 ±.002 = 1.625 ±.002
TOL. NONCUMULATIVE
-A-
.070 +.003/-.001
20 HOLES
.156
.140
.219
1.500
1.579
.067 +.002/-.001 DIA. 5/16 DEEP
CHAMF. 45°×.010 2 HOLES
-C-
DRILL .150 +.003/-.001 DIA. × 15/32 DP
CHAMF. 45°×.180 DIA., FOLLOW
WITH 6-32-2B HELICOIL TAP
①
1
②
2
3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-A-8625 TYPE II, DYED BLACK

INSERT HOLES & DIAS. C & D TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R
ALL CORNERS TO BE .005 R TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 35

1. MATERIAL: ALUMINUM 6061-T6 PER QQA-325
2. COAT THREADS AND ITEM 2 WITH MIL-P-8585 ZINC CHROMATE PRIMER.
3. INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.
4. MARK 1015107 AND REV. LETTER PER MIL-STD-130 LOCATE APPROX. WHERE SHOWN.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS122118	INSERT-CRES HELICAL COIL	2
1	1015107	FRAME	1

LIST OF MATERIALS

1015104	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 4-28-63
CHECKED LA Plummer
APPROVAL R. L. Battey
APPROVAL
NASA APPROVAL 5/15/0
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME-INSEPARABLE ASSEMBLY
TWO-SPEED SWITCH

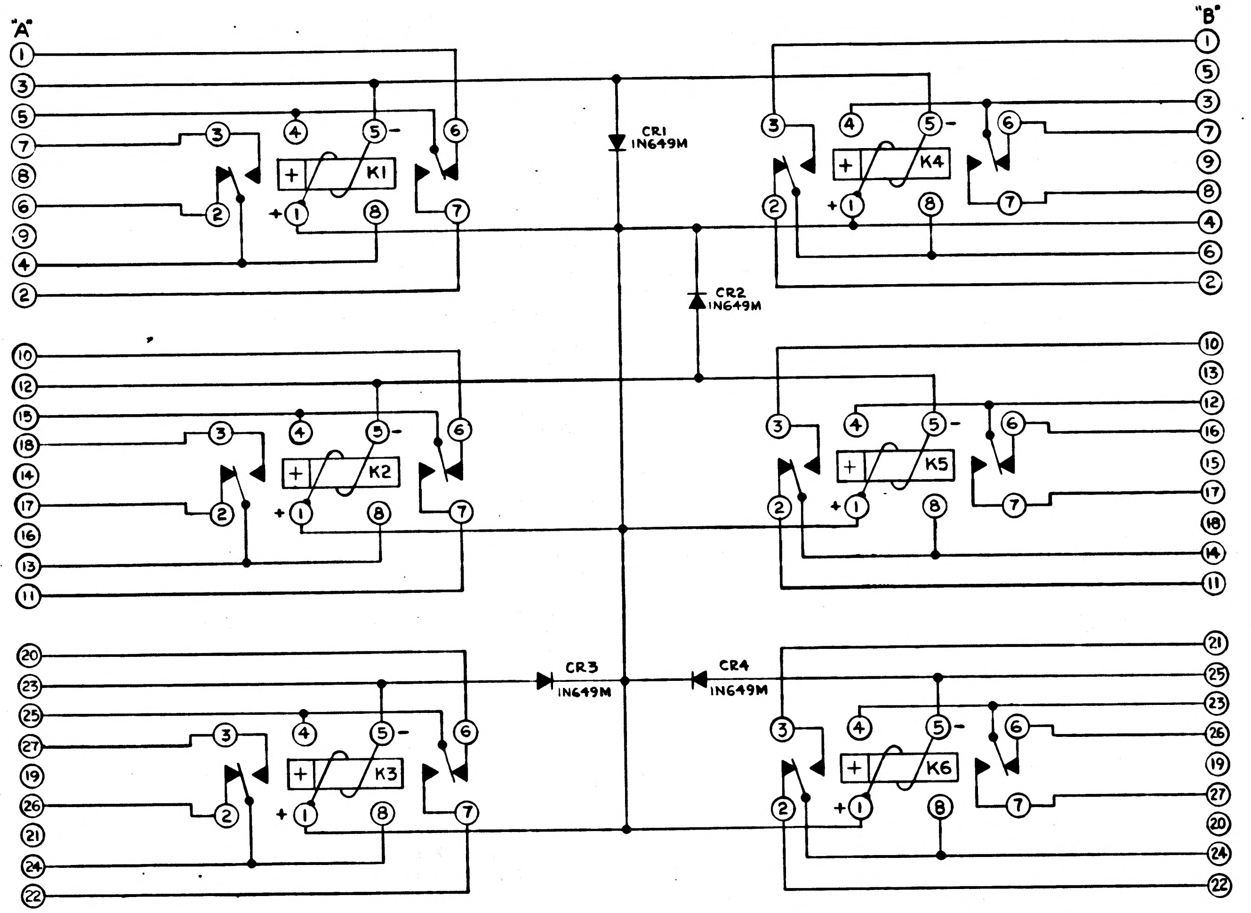
CODE IDENT NO. SIZE D NASA DRAWING NO. 1015107
SCALE 4X WT SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015108

SYM	REVISIONS DESCRIPTION	DATE	APPROVAL

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



REF. DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL.	RATING
CR1	1010362-3	DIODE	IN649M		
CR2	↕	↕	↕		
CR3					
CR4	1010362-3	DIODE	IN649M		
K1	1010353-4	RELAY			
K2	↕	↕			
K3					
K4					
K5					
K6	1010353-4	RELAY			

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00992 **DATE** 24Apr63

NOTE:
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 4-17-63
CHECKED W.A. Plummer
APPROVAL K.L. Kittredge
APPROVAL
NASA APPROVAL [illegible] 4/18/63
MIT APPROVAL W. Kupfer 24Apr63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
RELAY MODULE

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015108
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

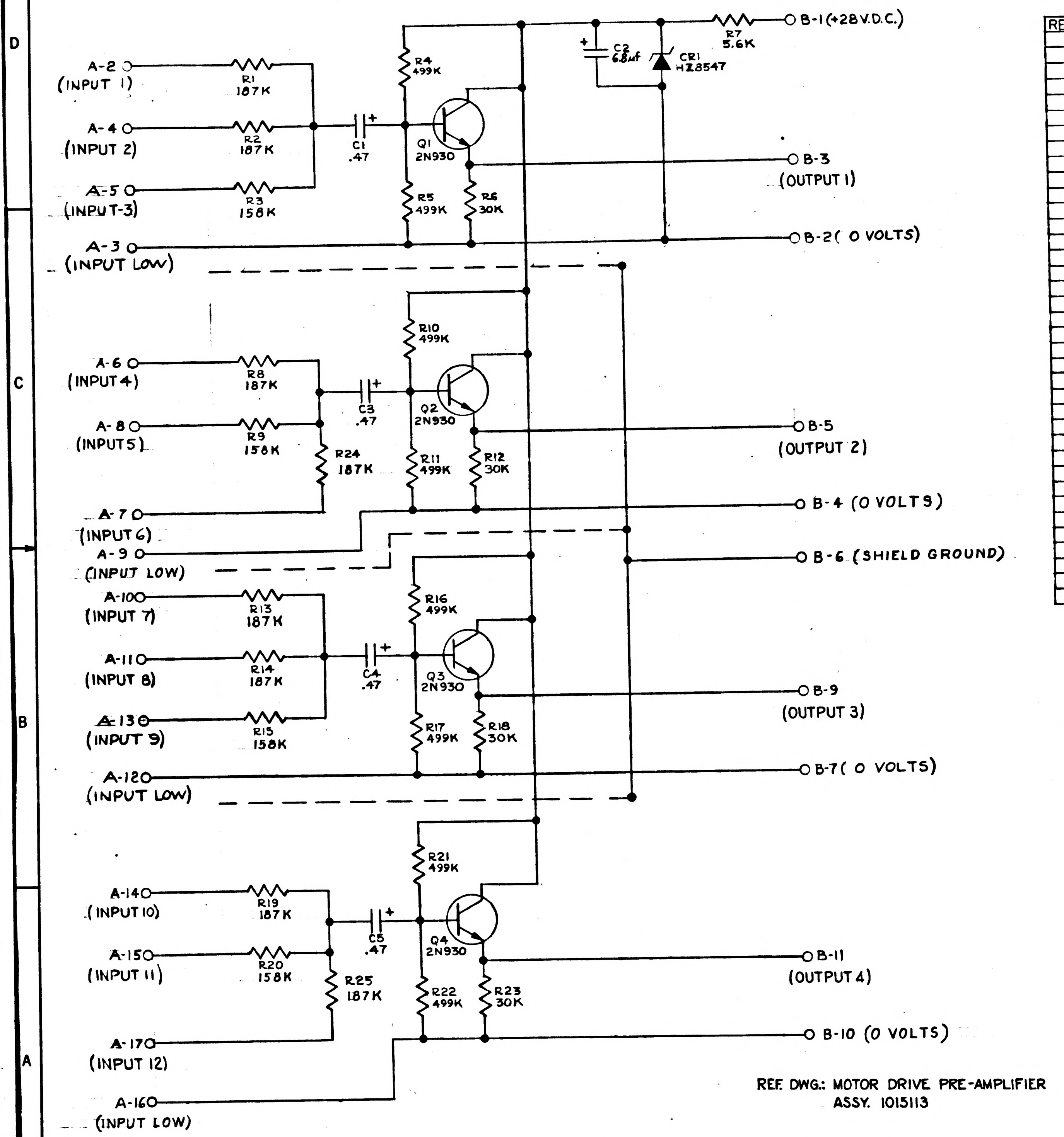
1015108

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

Ⓜ1015112

TDRR 00452 REVISIONS 27 Feb 63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00990	4-24-63	WR


A-2 (INPUT 1)
R1 187K
A-4 (INPUT 2)
R2 187K
A-5 (INPUT-3)
R3 158K
A-3 (INPUT LOW)
C1 .47
R4 499K
Q1 2N930
R5 499K
R6 30K
C2 6.8µf
CR1 HZ8547
R7 5.6K
B-1 (+28 V.D.C.)
B-3 (OUTPUT 1)
B-2 (0 VOLTS)
A-6 (INPUT 4)
R8 187K
A-8 (INPUT 5)
R9 158K
R24 187K
C3 .47
R10 499K
Q2 2N930
R11 499K
R12 30K
B-5 (OUTPUT 2)
A-7 (INPUT 6)
B-4 (0 VOLTS)
A-9 (INPUT LOW)
B-6 (SHIELD GROUND)
A-10 (INPUT 7)
R13 187K
A-11 (INPUT 8)
R14 187K
A-13 (INPUT 9)
R15 158K
C4 .47
R16 499K
Q3 2N930
R17 499K
R18 30K
B-9 (OUTPUT 3)
A-12 (INPUT LOW)
B-7 (0 VOLTS)
A-14 (INPUT 10)
R19 187K
A-15 (INPUT 11)
R20 158K
R25 187K
C5 .47
R21 499K
Q4 2N930
R22 499K
R23 30K
B-11 (OUTPUT 4)
A-17 (INPUT 12)
B-10 (0 VOLTS)
A-16 (INPUT LOW)

REF. DWG.: MOTOR DRIVE PRE-AMPLIFIER ASSY. 1015113

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1010364-687	RESISTOR	187K	1%	1/8W
R2	-687		187K	1%	1/8W
R3	-673		158K	1%	1/8W
R4	-769		499K	1%	1/8W
R5	1010364-769		499K	1%	1/8W
R6	1006750-67		30K	2%	1/4W
R7	1006760-50		5.6K	2%	1/2W
R8	1010364-687		187K	1%	1/8W
R9	-673		158K	1%	1/8W
R10	-769		499K	1%	1/8W
R11	1010364-769		499K	1%	1/8W
R12	1006750-67		30K	2%	1/4W
R13	1010364-687		187K	1%	1/8W
R14	-687		187K	1%	1/8W
R15	-673		158K	1%	1/8W
R16	-769		499K	1%	1/8W
R17	1010364-769		499K	1%	1/8W
R18	1006750-67		30K	2%	1/4W
R19	1010364-687		187K	1%	1/8W
R20	-673		158K	1%	1/8W
R21	-769		499K	1%	1/8W
R22	1010364-769		499K	1%	1/8W
R23	1006750-67		30K	2%	1/4W
R24	1010364-687		187K	1%	1/8W
R25	1010364-687	RESISTOR	187K	1%	1/8W
C1	1006755-65	CAPACITOR	.47	10%	35V.
C2	-79		6.8	10%	35V
C3	-65		.47	10%	35V
C4	-65		.47	10%	35V.
C5	1006755-65	CAPACITOR	.47	10%	35V.
Q1	1010397	TRANSISTOR			
Q2					
Q3					
Q4	1010397	TRANSISTOR			
CR1	1010372-18	DIODE		5%	10V

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISTOR VALUES ARE IN OHMS. K INDICATES THOUSANDS OF OHMS, M INDICATES MILLIONS OF OHMS.
3. CAPACITOR VALUES ARE IN MICROFARADS.
4. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE PARTS DESIGNATION WITH THE SUBASSEMBLY DESIGNATION.
5. PARTS LIST TO BE FOR REFERENCE ONLY.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 1-17-63
CHECKED R. L. Battalfon
APPROVAL R. C. Greenwood
APPROVAL H. Margolius
NASA APPROVAL W. J. Rhine 2-27-63
MIT APPROVAL 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

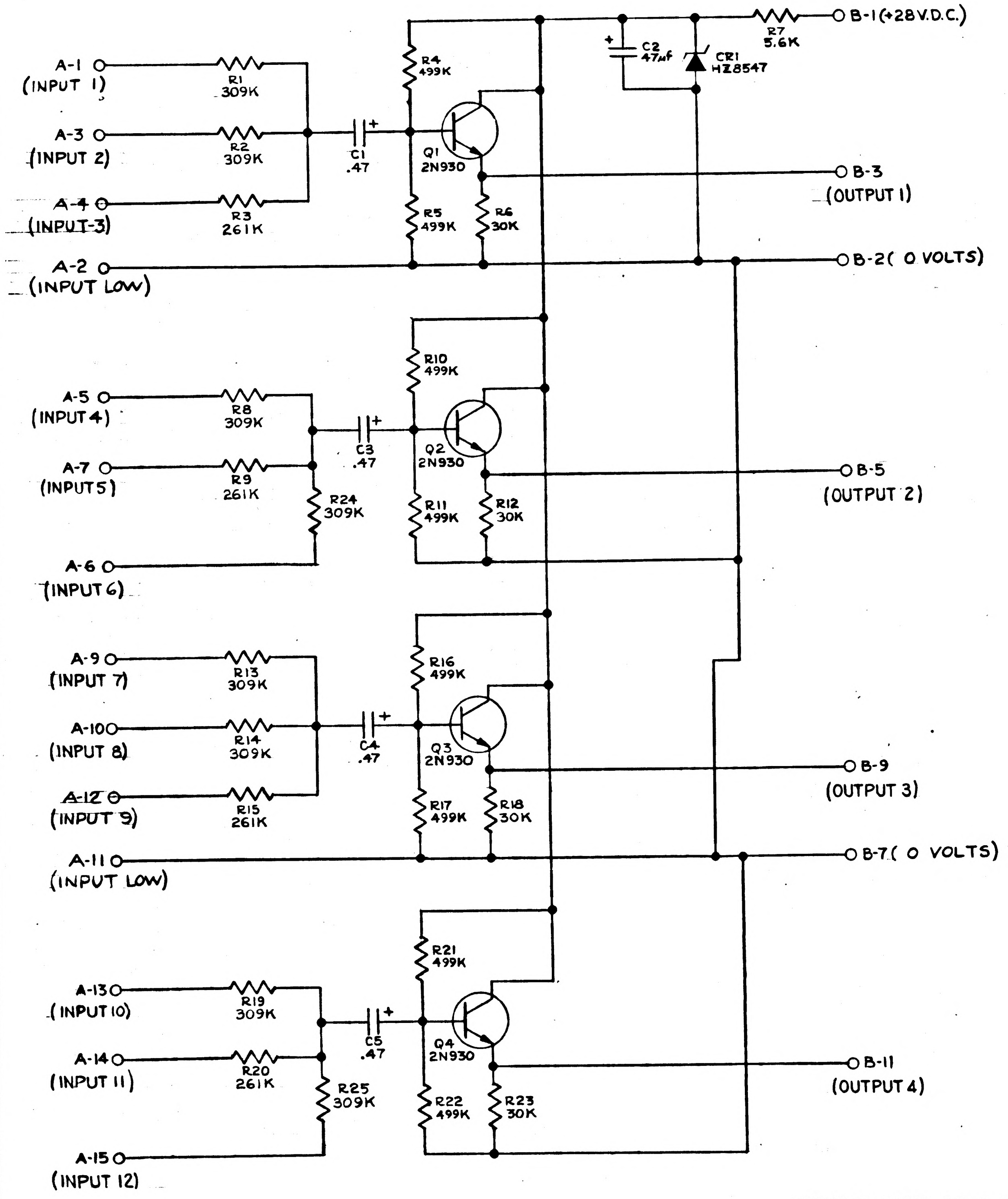
SCHEMATIC DIAGRAM
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015112
SCALE —
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015112	TDRR 00452	REVISIONS 27Feb63			
	SYM	DESCRIPTION	DATE	APPROVAL	

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



O B-1 (+28 V.D.C.)
R7 5.6K
C2 47µf
CR1 HZ8547
A-1 (INPUT 1)
R1 309K
A-3 (INPUT 2)
R2 309K
A-4 (INPUT 3)
R3 261K
C1 .47
R4 499K
Q1 2N930
R5 499K
R6 30K
B-3 (OUTPUT 1)
A-2 (INPUT LOW)
B-2 (0 VOLTS)
A-5 (INPUT 4)
R8 309K
A-7 (INPUT 5)
R9 261K
R24 309K
A-6 (INPUT 6)
C3 .47
R10 499K
Q2 2N930
R11 499K
R12 30K
B-5 (OUTPUT 2)
A-9 (INPUT 7)
R13 309K
A-10 (INPUT 8)
R14 309K
A-12 (INPUT 9)
R15 261K
C4 .47
R16 499K
Q3 2N930
R17 499K
R18 30K
B-9 (OUTPUT 3)
A-11 (INPUT LOW)
B-7 (0 VOLTS)
A-13 (INPUT 10)
R19 309K
A-14 (INPUT 11)
R20 261K
R25 309K
A-15 (INPUT 12)
C5 .47
R21 499K
Q4 2N930
R22 499K
R23 30K
B-11 (OUTPUT 4)

REF. DWG.: MOTOR DRIVE PRE-AMPLIFIER
ASSY. 1015113

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1010364-729	RESISTOR	309K	1%	1/8W
R2	-729		309K	1%	1/8W
R3	-715		261K	1%	1/8W
R4	-769		499K	1%	1/8W
R5	1010364-769		499K	1%	1/8W
R6	1006750-67		30K	2%	1/4W
R7	1006760-50		5.6K	2%	1/2W
R8	1010364-729		309K	1%	1/8W
R9	-715		261K	1%	1/8W
R10	-769		499K	1%	1/8W
R11	1010364-769		499K	1%	1/8W
R12	1006750-67		30K	2%	1/4W
R13	1010364-729		309K	1%	1/8W
R14	-729		309K	1%	1/8W
R15	-715		261K	1%	1/8W
R16	-769		499K	1%	1/8W
R17	1010364-769		499K	1%	1/8W
R18	1006750-67		30K	2%	1/4W
R19	1010364-729		309K	1%	1/8W
R20	-715		261K	1%	1/8W
R21	-769		499K	1%	1/8W
R22	1010364-769		499K	1%	1/8W
R23	1006750-67		30K	2%	1/4W
R24	1010364-729		309K	1%	1/8W
R25	1010364-729	RESISTOR	309K	1%	1/8W
C1	1006755-65	CAPACITOR	.47	10%	35V.
C2	-89		47	10%	35V.
C3	-65		.47	10%	35V.
C4	-65		.47	10%	35V.
C5	1006755-65	CAPACITOR	.47	10%	35V.
Q1	1010397	TRANSISTOR			
Q2					
Q3					
Q4	1010397	TRANSISTOR			
CR1	1010372-18	DIODE		5%	10V

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISTOR VALUES ARE IN OHMS. K INDICATES THOUSANDS OF OHMS, M INDICATES MILLIONS OF OHMS.
3. CAPACITOR VALUES ARE IN MICROFARADS.
4. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE PARTS DESIGNATION WITH THE SUBASSEMBLY DESIGNATION.
5. PARTS LIST TO BE FOR REFERENCE ONLY.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 1-17-63
CHECKED R. L. Battafson
APPROVAL R. C. Greenwood
APPROVAL H. Margolius
NASA APPROVAL 2-27-63
MIT APPROVAL 27Feb63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015112
SCALE — WT SHEET 1 OF 1

1015112

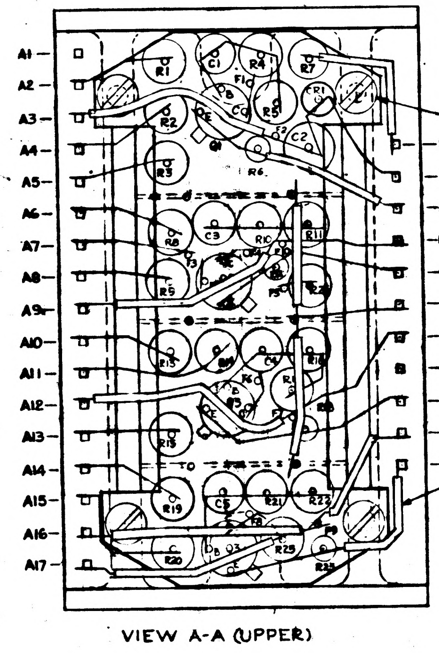
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

1015113 (A)

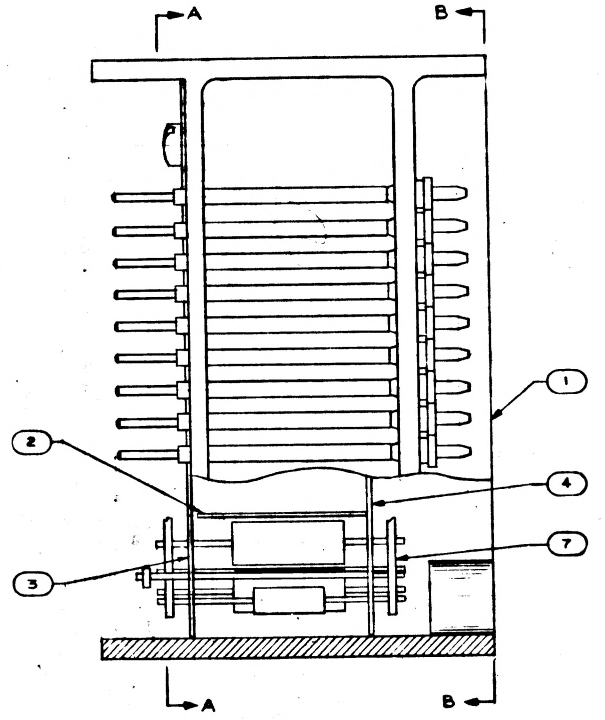
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDR 00596	20MAR63	WR

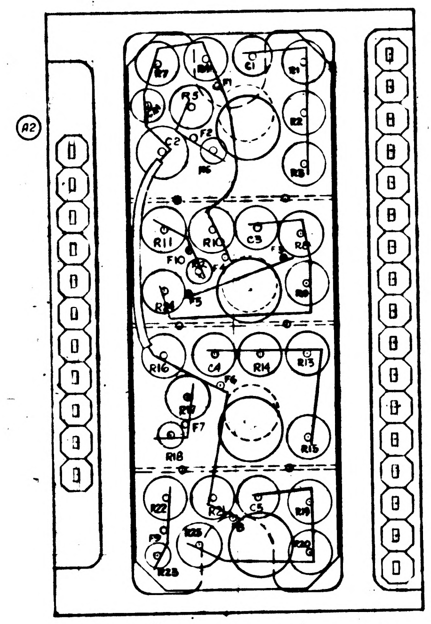
FIND NO.	REF. DES.	POLARITY	
		UPPER	LOWER
9	R1		
9	R2		
9	R8		
9	R13		
9	R14		
9	R19		
9	R24		
9	R25		
10	R3		
10	R9		
10	R15		
10	R20		
11	R4		
11	R5		
11	R10		
11	R11		
11	R16		
11	R17		
11	R21		
11	R22		
12	R6		
12	R12		

FIND NO.	REF. DES.	POLARITY	
		UPPER	LOWER
12	R18		
12	R23		
13	R7		
14	C1	POSITIVE	
14	C3	POSITIVE	
14	C4	POSITIVE	
14	C5	POSITIVE	
15	C2		POSITIVE
16	Q1		
16	Q2		
16	Q3		
16	Q4		
17	CR1		CATHODE
18	F1		
18	F2		
18	F3		
18	F4		
18	F5		
18	F6		
18	F7		
18	F8		
18	F9		
18	F10		


A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
5
6
R1
C1
R4
F1
R7
CR1
R2
C2
R6
R3
R8
C3
R5
R11
R12
R10
R16
R15
R13
C4
R14
R17
R18
R19
C5
R21
R22
C2
R20
R23
R25
R24
Q3

VIEW A-A (UPPER)




A2
R7
R18
R1
R3
R2
C2
F1
F2
R6
R9
R11
R13
C3
R8
F10
F3
R24
R16
C4
R14
R15
F6
F7
R18
R22
R21
C5
R19
F9
R23
R20
F8
R25

VIEW B-B (LOWER)

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00453 DATE 27Feb63

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBE BY MIL-D-70327
2. DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
			19
AR	1006787-2	WIRE, FEED THROUGH	18
1	1010372	DIODE	17
4	1010397	TRANSISTOR	16
1	1006755-79	CAPACITOR	15
4	1006755-65	CAPACITOR	14
1	1006760-50	RESISTOR	13
4	1006750-67	RESISTOR	12
8	1010364-769	RESISTOR	11
4	1010364-715	RESISTOR	10
8	1010364-729	RESISTOR	9
AR	1006776-22	SLEEVING, ELECT. INSULATING	8
AR	1006757-1	WIRE, NICKEL RIBBON	7
			6
4	MS35216-3	SCREW	5
1	1015132	WAFER BOARD LOWER	4
1	1015133	WAFER BOARD UPPER	3
3	1015118	SHIELD	2
1	1015115	CASE, MODULE	1

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN R.L. EMERY DATE 2-12-63
CHECKED R. L. Battaglini
APPROVAL R. L. Battaglini
APPROVAL
NASA APPROVAL
2-27-63
MIT APPROVAL 27Feb63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ASSEMBLY
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO. SIZE E NASA DRAWING NO. 1015113
SCALE 4 X WT SHEET OF

1015113

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015113

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDR 00596	20MAR63	WK
B	REPLACED WITH CHANGE BY REV C PER TDRR 00700	4-2-63	WK

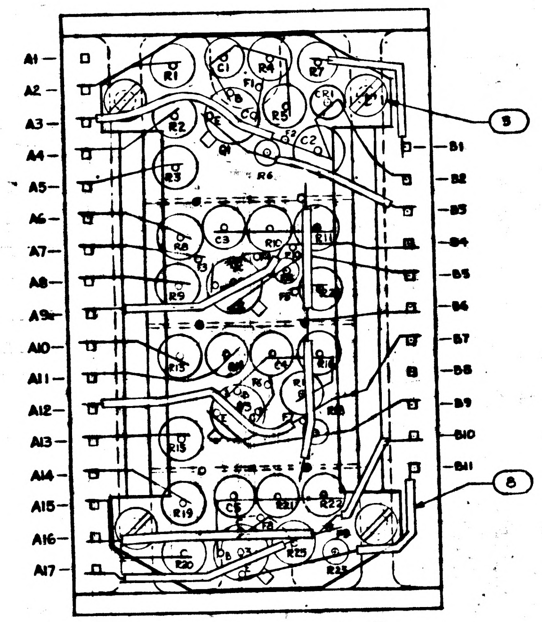
FIND NO.	REF. DES.	POLARITY	
		UPPER	LOWER
9	R1		
9	R2		
9	R8		
9	R13		
9	R14		
9	R19		
9	R24		
9	R25		
10	R3		
10	R9		
10	R15		
10	R20		
11	R4		
11	R5		
11	R10		
11	R11		
11	R16		
11	R17		
11	R21		
11	R22		
12	R6		
12	R12		

FIND NO.	REF. DES.	POLARITY	
		UPPER	LOWER
12	R18		
12	R23		
13	R7		
14	C1	POSITIVE	
14	C3	POSITIVE	
14	C4	POSITIVE	
14	C5	POSITIVE	
15	C2		POSITIVE
16	Q1		
16	Q2		
16	Q3		
16	Q4		
17	CR1		CATHODE
18	F1		
18	F2		
18	F3		
18	F4		
18	F5		
18	F6		
18	F7		
18	F8		
18	F9		
18	F10		

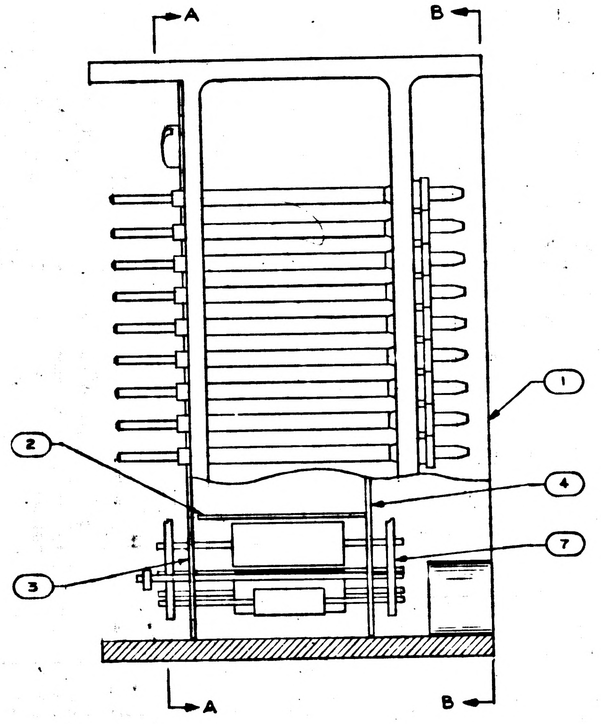
FOR INFORMATION ONLY

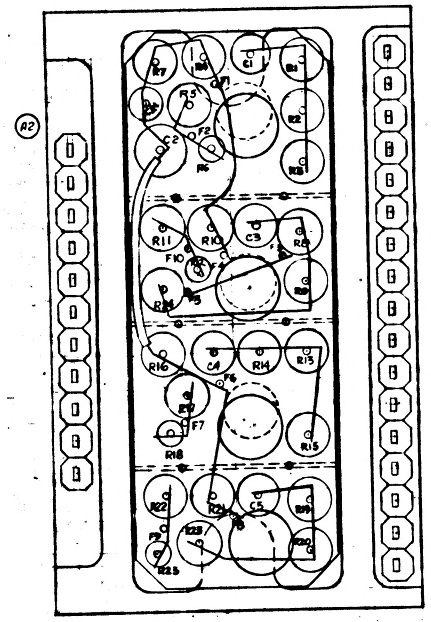
CLASS B RELEASE TDR No. 00453 DATE 27Feb63

Ⓑ REPLACED WITH CHANGE BY REV C



VIEW A-A (UPPER)





VIEW B-B (LOWER)

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBE BY MIL-D-70327
2. DRAWINGS FOR REFERENCE:
   1015116 SCHEMATIC DIAGRAM

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
			19
AR	1006787-2	WIRE, FEED THROUGH	18
1	1010372-18	DIODE	17
4	1010397	TRANSISTOR	16
1	1006755-79	CAPACITOR	15
4	1006755-65	CAPACITOR	14
1	1006760-50	RESISTOR	13
4	1006750-67	RESISTOR	12
8	1010364-769	RESISTOR	11
4	1010364-673	RESISTOR	10
8	1010364-687	RESISTOR	9
AR	1006776-22	SLEEVING, ELECT. INSULATING	8
AR	1006757-1	WIRE, NICKEL RIBBON	7
			6
4	MS35216-3	SCREW	5
1	1015132	WAFER BOARD LOWER	4
1	1015133	WAFER BOARD UPPER	3
3	1015118	SHIELD	2
1	1015115	CASE, MODULE	1

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT

DRAWN R.L. EMERY DATE 2-12-63
CHECKED R. L. Battallion
APPROVAL R. L. Battallion
APPROVAL
NASA APPROVAL 2-27-63
MIT APPROVAL 27Feb63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ASSEMBLY
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1015113

SCALE 4X | WT | SHEET OF

INCHES
PHOTOGRAPHIC SCALE ONLY

4 3 2 1

1015113

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
C	REPLACES REV B WITH CHANGE PER TDRR 00700	4-3-63	WK

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

PART NO	DESCRIPTION	REQD
1015115	CASE, MODULE	1
1015118	SHIELD	3
1015133	WAFER BOARD UPPER	1
1015132	WAFER BOARD LOWER	1
MS35216-3	SCREW	4
1006757-1	WIRE NICKEL RIBBON	AR
1006776-22	SLEEVING, ELECT INSUL	AR
1010364-687	RESISTOR	8
1010364-673		4
1010364-769		8
1006750-67		4
1006760-50	RESISTOR	1
1006755-65	CAPACITOR	4
1006755-79	CAPACITOR	1
1010397	TRANSISTOR	4
1010372-18	DIODE	1
1006787-2	WIRE FEED THROUGH	AR
1006782-5	CONTACT, BLADE EDGE CONN	28
1006775	INSULATOR, WRAPOST MALE	28
1006776-18	INSULATION SLEEVING ELEC.	AR

Ⓒ REPLACES REV B WITH CHANGE

1015113

REFERENCE DRAWING 1015116 SCHEMATIC

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL //
HEAT TREATMENT //
FINAL FINISH //

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN RL EMERY DATE
CHECKED F Akell
APPROVAL R L Battaglom
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL WKupfer 3Apr63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015113
SCALE
WT
SHEET OF

4 3 2 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015113 D

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
Ⓜ C	REPLACES REV B WITH CHANGE PER TDRR 00700	4-3-63	WK
D	REPLACED BY REV. E WITH CHANGE PER TDRR 01206.	5-8-63	WK.

PART NO	DESCRIPTION	REQD
1015115	CASE, MODULE	1
1015118	SHIELD	3
1015133	WAFER BOARD UPPER	1
1015132	WAFER BOARD LOWER	1
MS35216-3	SCREW	4
1006757-1	WIRE NICKEL RIBBON	AR
1006776-22	SLEEVING, ELECT INSUL	AR
1010364-687	RESISTOR	8
1010364-673		4
1010364-769		8
1006750-67		4
1006760-50	RESISTOR	1
1006755-65	CAPACITOR	4
1006755-79	CAPACITOR	1
1010397-	TRANSISTOR	4
1010372-18	DIODE	1
1006787-2	WIRE FEED THROUGH	AR
1006782-5	CONTACT, BLADE EDGE CONN	28
1006775	INSULATOR, WRAPOST MALE	28
1006776-18	INSULATION SLEEVING ELEC.	AR

OBS

Ⓒ REPLACES REV. B WITH CHANGE

Ⓓ REPLACED BY REV. E WITH CHANGE

1015113 D

REFERENCE DRAWING 1015116 SCHEMATIC

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL //
HEAT TREATMENT //
FINAL FINISH //

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN RL EMERY DATE
CHECKED F. Akel
APPROVAL R. L. Battalfon
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W. Kupfer 3 Apr 63

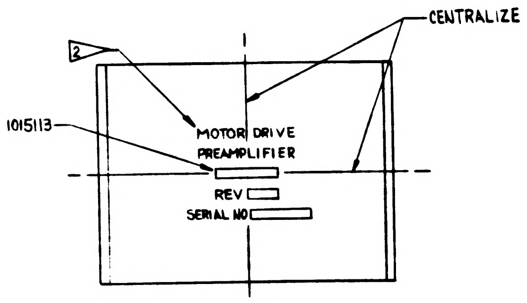
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO. SIZE C NASA DRAWING NO. 1015113
SCALE WT SHEET OF

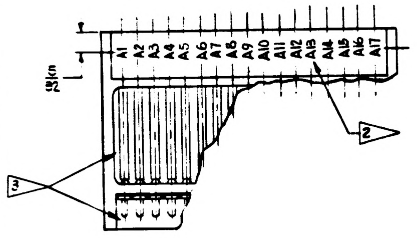
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		REPLACES REV D WITH CHANGE PER TDRR			

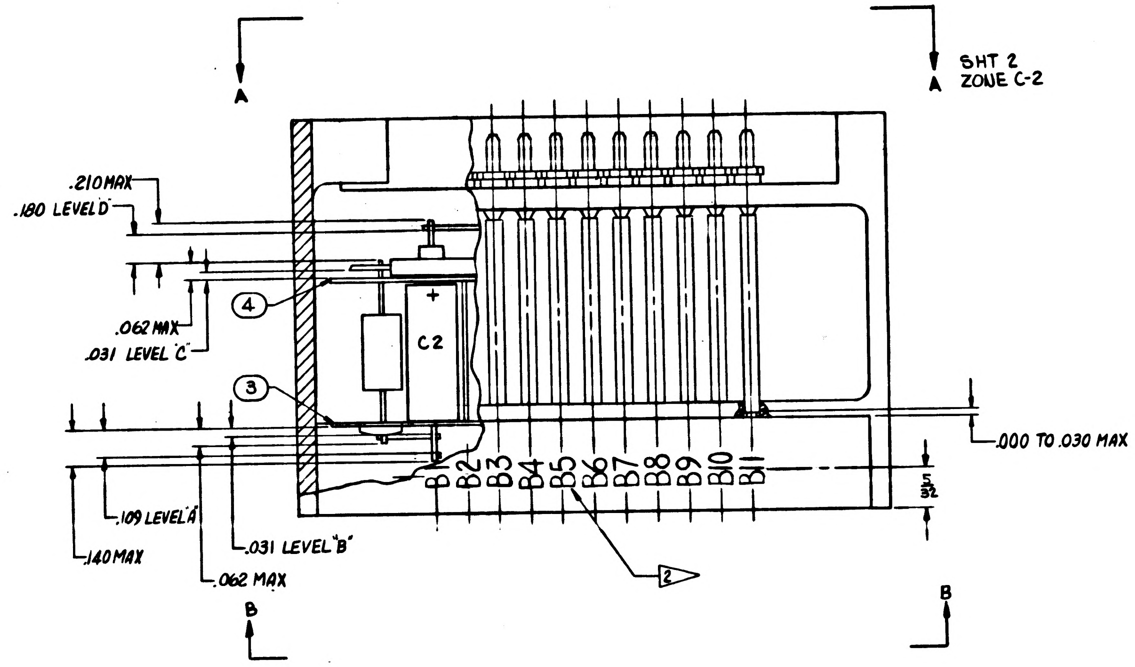


2
CENTRALIZE
1015113
MOTOR DRIVE PREAMPLIFIER
REV
SERIAL NO

VIEW B-B
SCALE 2:1



A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
.13 Rm
2
3



A
SHT 2
A ZONE C-2
.210 MAX
.180 LEVEL D
.062 MAX
.031 LEVEL C
4
3
C2
+
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
.000 TO .030 MAX
.109 LEVEL A
.140 MAX
.031 LEVEL B
.062 MAX
2
B
B

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

COMPONENTS TO BE CEMENTED IN PLACE PER G&ND 1002009

1 ENCAPSULATE MODULE PER G&ND 1002002 (BLACK POLYURETHANE FOAM).

ALL CONNECTIONS TO BE MADE BY WELDING PER G&ND 1002005

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH G&ND 1002003.

2 MARK CHARACTERS .080 HIGH WHITE PER G&ND 1002019 CENTRALIZED AS SHOWN

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING,
K INDICATES CATHODE SIDE OF DIODE,
FT( ) INDICATES FEED THRU,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
C-INDICATES COLLECTOR LEAD OF TRANSISTOR,
B-INDICATES BASE LEAD OF TRANSISTOR,
E-INDICATES EMITTER LEAD OF TRANSISTOR.

4 USE AS REQUIRED

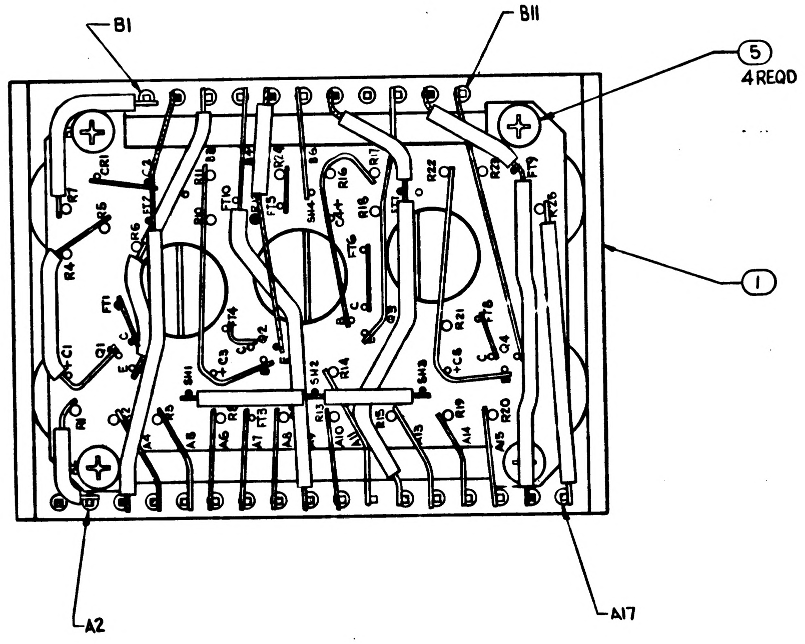
DRAWINGS FOR REFERENCE:
1015112 SCHEMATIC DIAGRAM, ELECTRICAL.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

ASSEMBLE PER

INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.



B1
B11
5
4 REQD
CR1
R1
R4
C1
C2
R2
R3
FT1
Q1
Q2
Q3
Q4
R21
R22
R20
A14
A15
1
A2
A17

Ⓔ REPLACES REV D WITH CHANGE

ITEM NO	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
20		1006757-1	WIRE, NICKEL RIBBON .010×.020
19		G&ND 1002074	SLEEVING, ELECT. INSULATING #23
18		G&ND 1002074	SLEEVING, ELECT. INSULATING #22
17		1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	4	1010364-673	RESISTOR, FIXED
6	8	1010364-687	RESISTOR, FIXED
5	4	MS 35216-3	SCREW ¼ #2-56NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007109	
1007108	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 26 APR 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/1/63
MIT APPROVAL

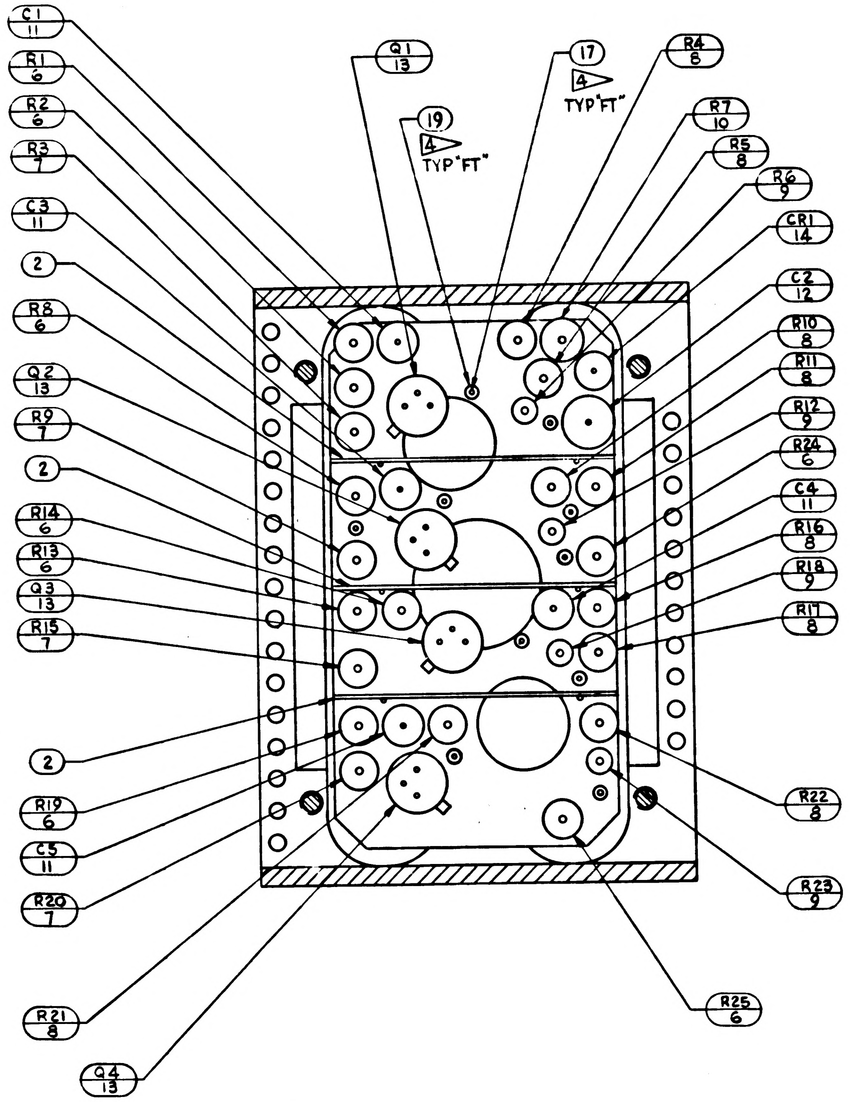
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTEGRATOR
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

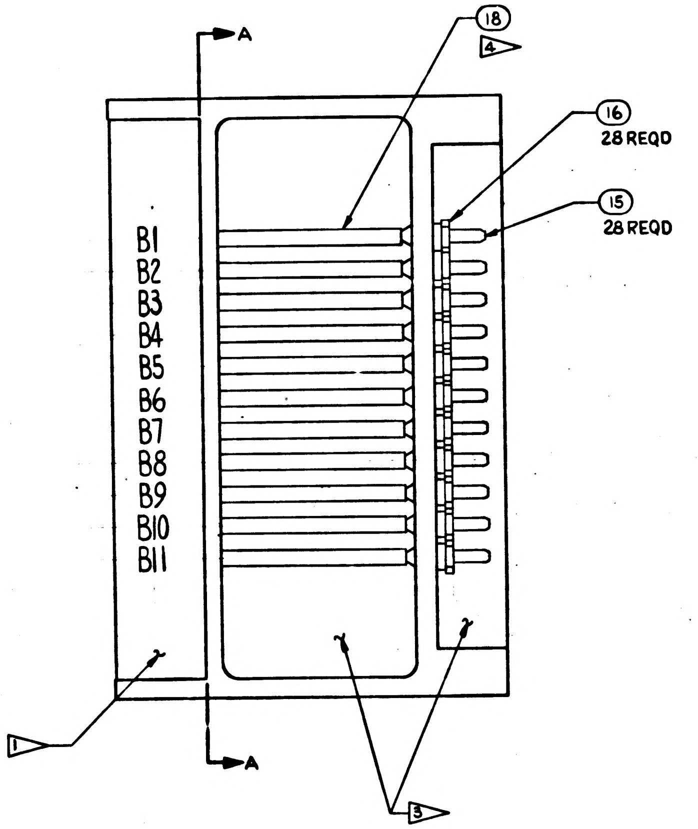
CODE IDENT NO
SIZE E
1015113
SCALE 4:1
SHEET 1 OF 2

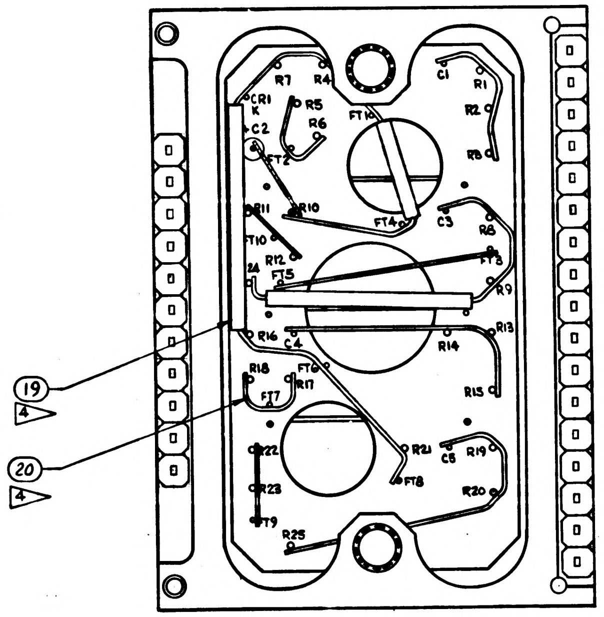
INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		SHT 2 ADDED [illegible] 206 FOR CHANGES, SEE SHEET 1			


C1 11
R1 6
R2 6
R3 7
C3 11
2
R8 6
Q2 13
R9 7
2
R14 6
R13 6
Q3 13
R15 7
2
R19 6
C5 11
R20 7
R21 8
Q4 13
Q1 13
19
4
TYP "FT"
17
4
TYP "FT"
R4 6
R7 10
R5 8
R6 9
CR1 14
C2 12
R10 8
R11 8
R12 9
R24 6
C4 11
R16 8
R18 9
R17 8
R22 8
R23 9
R25 6

SECTION A-A


A
18
4
16
28 REQD
15
28 REQD
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
1
3
A

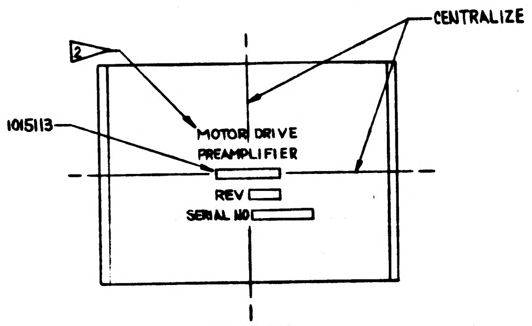

R7
R4
C1
R1
CR1
K
R5
R6
C2
FT11
FT12
R2
R3
R11
R10
FT4
C3
FT10
R12
R8
24
FT5
FT3
R9
R16
C4
R13
R14
R18
FT6
R17
FT7
R15
CR22
R21
C5
R19
CR23
FT8
R20
FT9
R25
19
4
20
4

VIEW A-A
ROTATED 90° CW
SHEET 1
ZONE H-5

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON TEXAS
		FRACTIONS DECIMALS ANGLES + — + — + — — — — — — —	ACSP PN	INTEGRATOR MOTOR DRIVE PREAMPLIFIER MODULE ASSEMBLY
			DRAWN Summerville DATE 26 APR 63	
			CHECKED 30 APR 63	
			APPROVAL 30 APR 63	
		DO NOT SCALE THIS DRAWING	APPROVAL 30 APR 63	
		MATERIAL —	NASA APPROVAL 5/6/63	CODE IDENT NO / SIZE E / 1015113
NEXT ASSY	USED ON		MIT APPROVAL	SCALE 4:1 / SHEET 2
APPLICATION		CONTRACT		

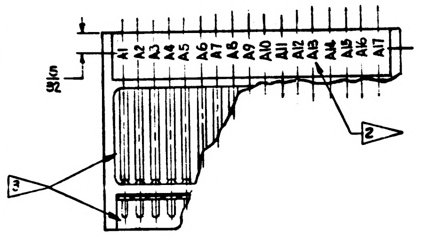
1015113

INCHES
PHOTOGRAPHIC SCALE ONLY

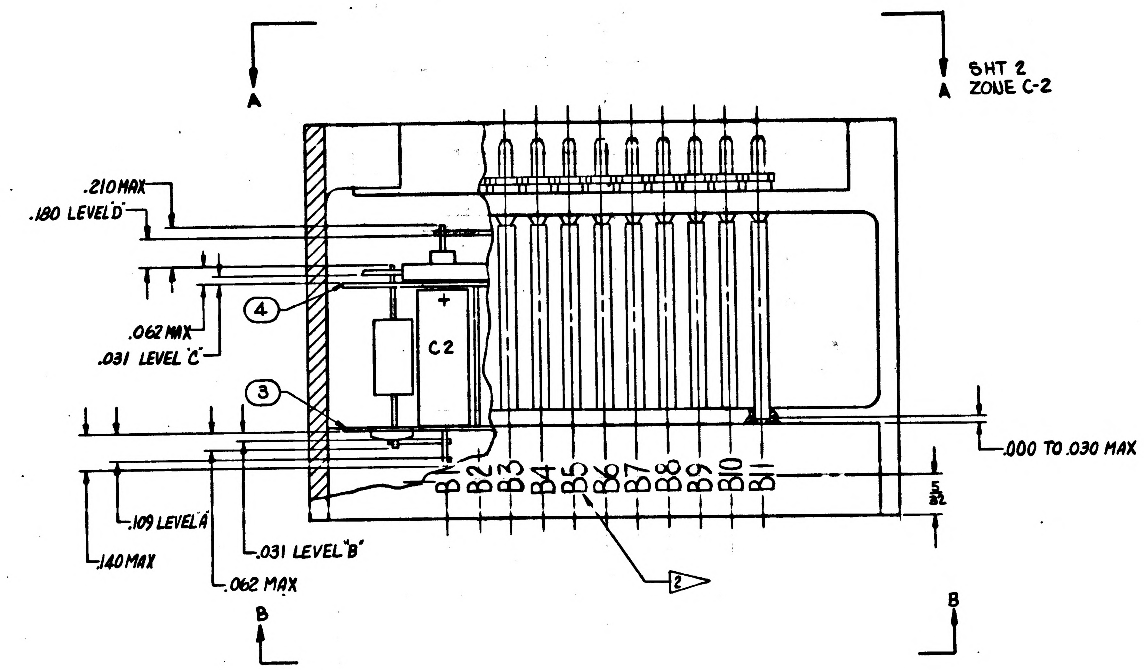


▷2
CENTRALIZE
1015113
MOTOR DRIVE
PREAMPLIFIER
REV
SERIAL NO

VIEW B-B
SCALE 2:1



A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
▷2
▷3



A
SHT 2
ZONE C-2
A
.210 MAX
.180 LEVEL 'D'
.062 MAX
.031 LEVEL 'C'
4
3
C2
+
.000 TO .030 MAX
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
.109 LEVEL 'A'
.140 MAX
.031 LEVEL 'B'
.062 MAX
▷2
B
B

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009

▷1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003.

▷2 MARK CHARACTERS .080 HIGH WHITE PER ND 1002019 CENTRALIZED AS SHOWN

▷3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING,
K INDICATES CATHODE SIDE OF DIODE,
FT( ) INDICATES FEED THRU,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
C-INDICATES COLLECTOR LEAD OF TRANSISTOR,
B-INDICATES BASE LEAD OF TRANSISTOR,
E-INDICATES EMITTER LEAD OF TRANSISTOR.

▷4 USE AS REQUIRED

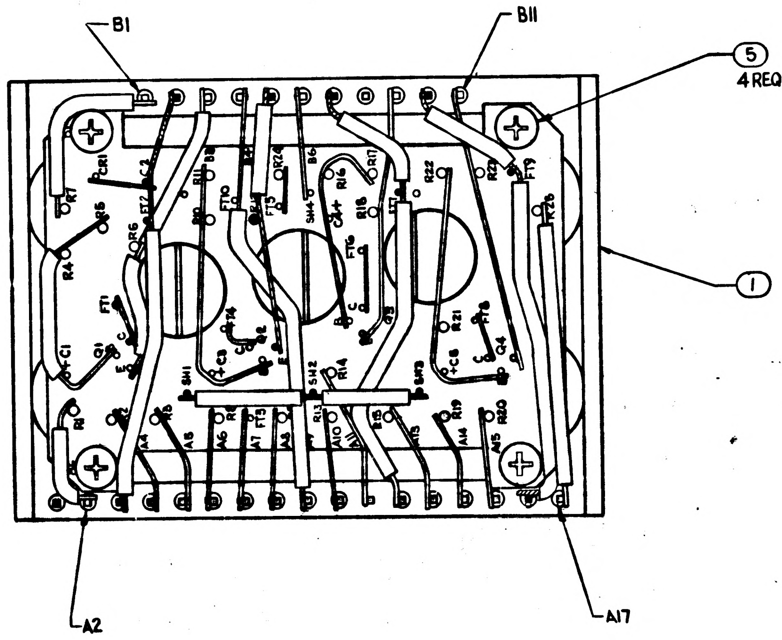
DRAWINGS FOR REFERENCE:
1015112 SCHEMATIC DIAGRAM, ELECTRICAL.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

ASSEMBLE PER ND 1002136

INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.



B1
B11
5
4 REQD
1
A2
A17
C2
FT
R
Q

Ⓔ REPLACES REV D WITH CHANGE

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		REPLACES REV D WITH CHANGE PER TDRR		MAY 63	
F		REVISED PER TDRR 325-3			

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
22	2	1010374-20	RESISTOR - FIXED
21	4	1010364-739	RESISTOR - FIXED
20		1006757-1	WIRE, NICKEL RIBBON .010×.020
19		1006776-21	SLEEVING, ELECT. INSULATING
18		1006776-20	SLEEVING, ELECT. INSULATING
17		1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	2	1010364-673	RESISTOR, FIXED
6	4	1010364-687	RESISTOR, FIXED
5	4	MS 35216-3	SCREW 1/4 #2-56NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 26 APR 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/1/63
MIT APPROVAL May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

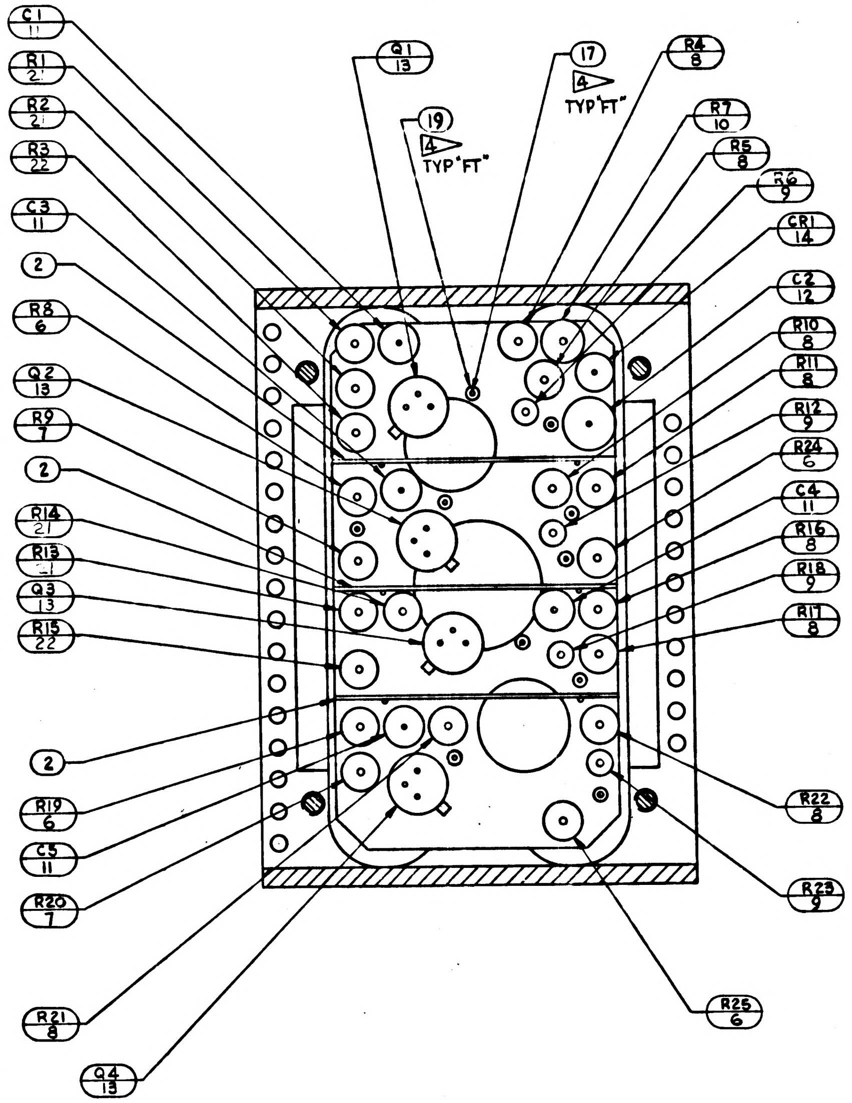
INTEGRATOR
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015113
SCALE 4:1
SHEET 1 OF 2

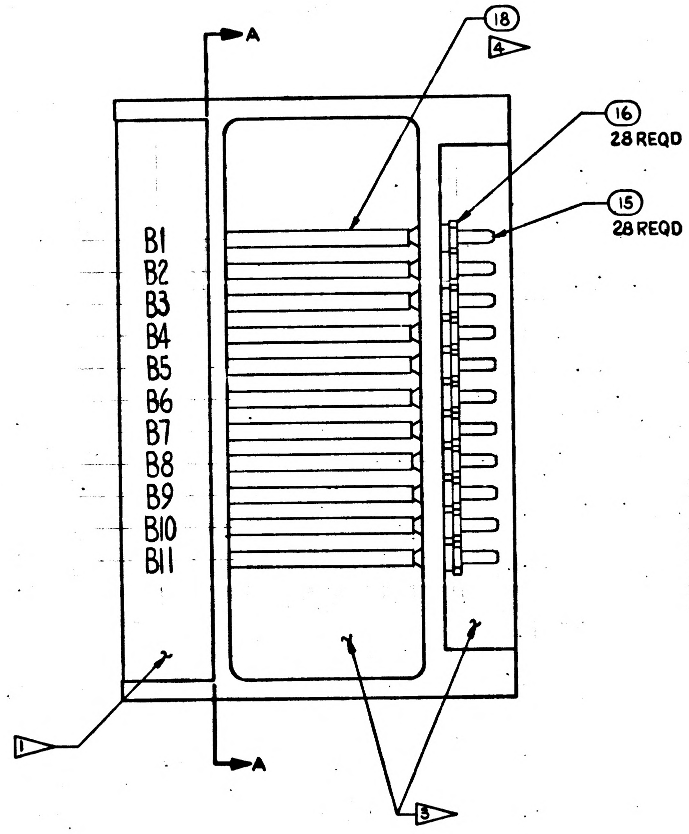
1015113

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		SHT 2 ADDED TDR 01206 FOR CHANGES, SEE SHEET 1		5 MAY 63	
F		REVISED PER TDR 02503		6/8/63	

(M)


C1 11
R1 21
R2 21
R3 22
C3 11
2
R8 6
Q2 13
R9 7
2
R14 21
R13 21
Q3 13
R15 22
2
R19 6
C5 11
R20 7
R21 8
Q4 13
Q1 13
19
4 TYP "FT"
17
4 TYP "FT"
R4 8
R7 10
R5 8
R6 9
CR1 14
C2 12
R10 8
R11 8
R12 9
R24 6
C4 11
R16 8
R18 9
R17 8
R22 8
R23 9
R25 6

SECTION A-A


A
A
18
4
16
28 REQD
15
28 REQD
B1
B2
B3
B4
B5
B6
B7
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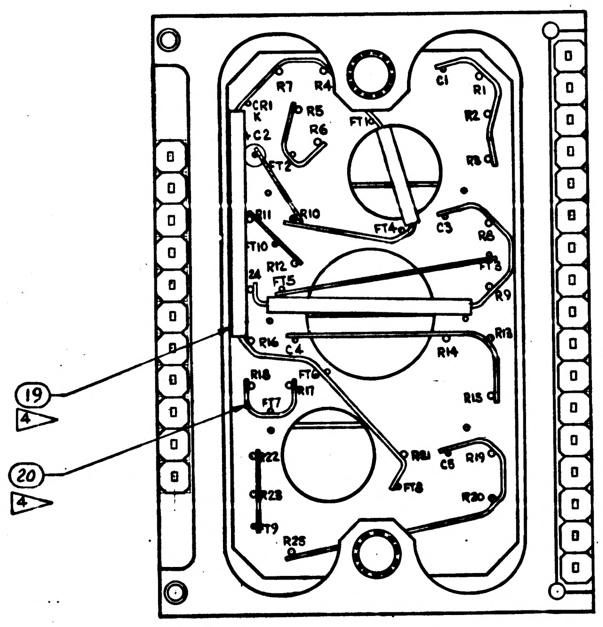
B9
B10
B11
1
3


R7
R4
C1
R1
CR1
K
R5
R6
R2
C2
FT1
R3
FT2
R11
R10
FT4
C3
R8
FT10
R12
FT3
24
FT5
R9
R16
C4
R13
R14
R18
FT6
R17
FT7
R15
R22
R21
C5
R19
FT8
R23
R20
FT9
R25
19
4
20
4

VIEW A-A
ROTATED 90° CW
SHEET 1
ZONE H-5

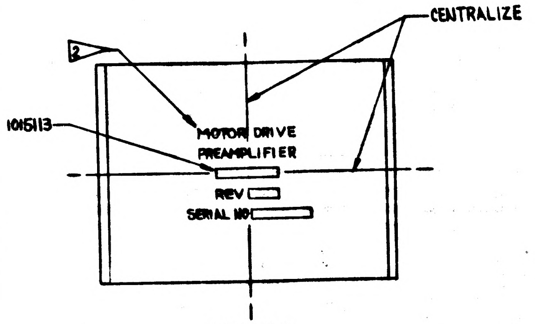
NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
APPLICATION		FRACTIONS ± DECIMALS ± ANGLES ±	ACSP PN	INTEGRATOR MOTOR DRIVE PREAMPLIFIER MODULE ASSEMBLY
		DO NOT SCALE THIS DRAWING	DRAWN Summerville DATE 26 APR 63	
		MATERIAL —	CHECKED 30 APR 63	
			APPROVAL 30 APR 63	
			APPROVAL 30 APR 63	
			NASA APPROVAL 5/8/63	CODE IDENT NO. / SIZE E / 1015113
		CONTRACT	MIT APPROVAL 6 May 63	SCALE 4:1 / SHEET 2 OF 2

1015113

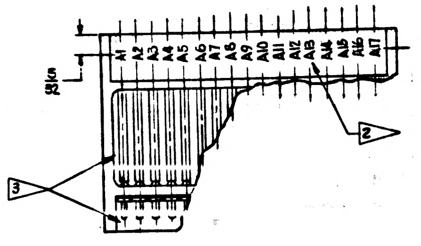
F

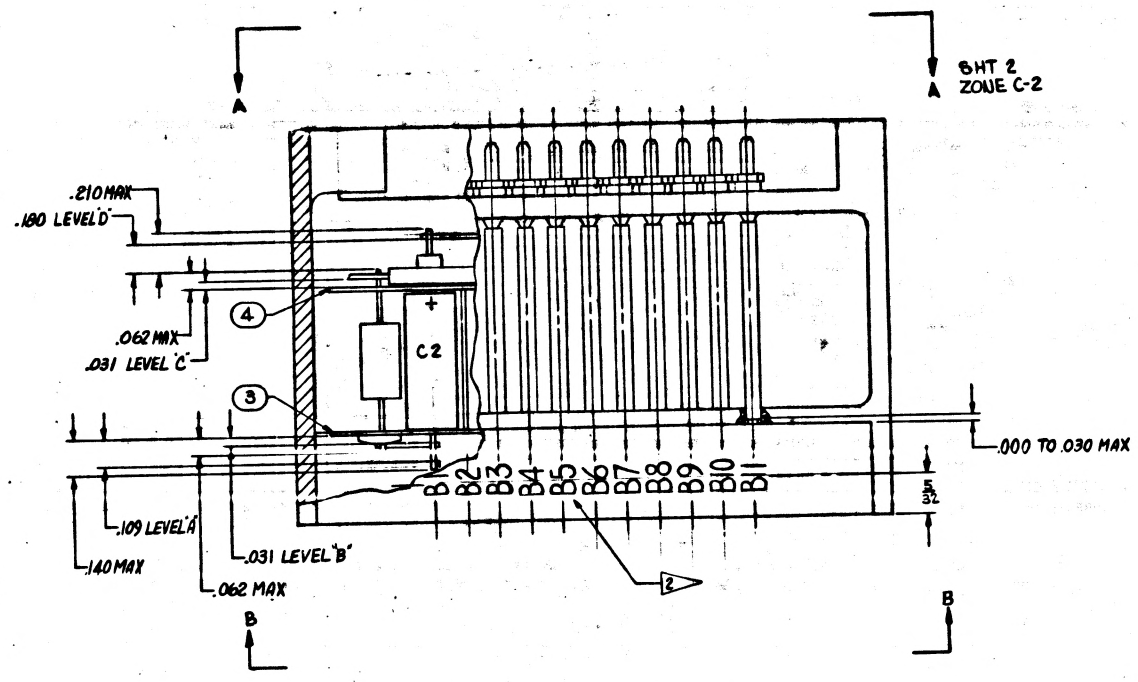
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		REPLACES REV D WITH CHANGE PER TDRR 01204		5 MAY 63	
F		REVISED PER TDRR 02503			
G		REVISED PER TDRR 04473		5 NOV 63	



VIEW B-B
SCALE 2:1





UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003.

2. MARK CHARACTERS .080 HIGH WHITE PER ND 1002019 CENTRALIZED AS SHOWN

3. AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING,
K INDICATES CATHODE SIDE OF DIODE,
FT() INDICATES FEED THRU,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
C-INDICATES COLLECTOR LEAD OF TRANSISTOR,
B-INDICATES BASE LEAD OF TRANSISTOR,
E-INDICATES EMITTER LEAD OF TRANSISTOR.

4. USE AS REQUIRED

DRAWINGS FOR REFERENCE:
1015112 SCHEMATIC DIAGRAM, ELECTRICAL.

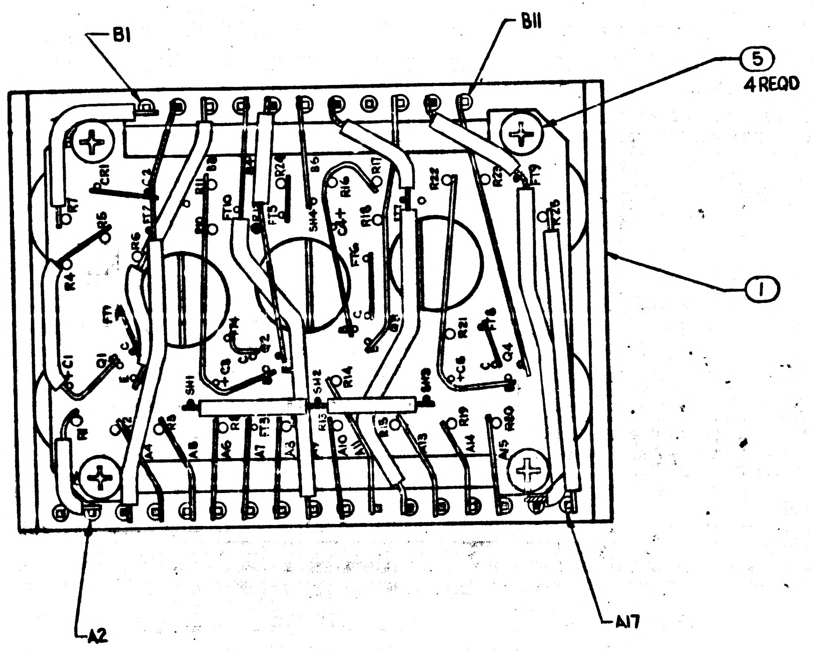
BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

5. ASSEMBLE PER ND 1002136

INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

6. BOND ITEM NO. 13 TO ITEM NO. 3 PER ND 1002004



Ⓔ REPLACES REV D WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
22	2	1010374-20	RESISTOR - FIXED
21	4	1010364-739	RESISTOR - FIXED
20		1006757-1	WIRE, NICKEL RIBBON .010×.020
19		1006776-21	SLEEVING, ELECT. INSULATING
18		1006776-20	SLEEVING, ELECT. INSULATING
17		1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	2	1010364-673	RESISTOR, FIXED
6	4	1010364-687	RESISTOR, FIXED
5	4	MS 35216-3	SCREW 1/4 #2-56 NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE

LIST OF PARTS AND MATERIALS

1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS +.005 -.005
ANGLES + — - —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL
MIT APPROVAL

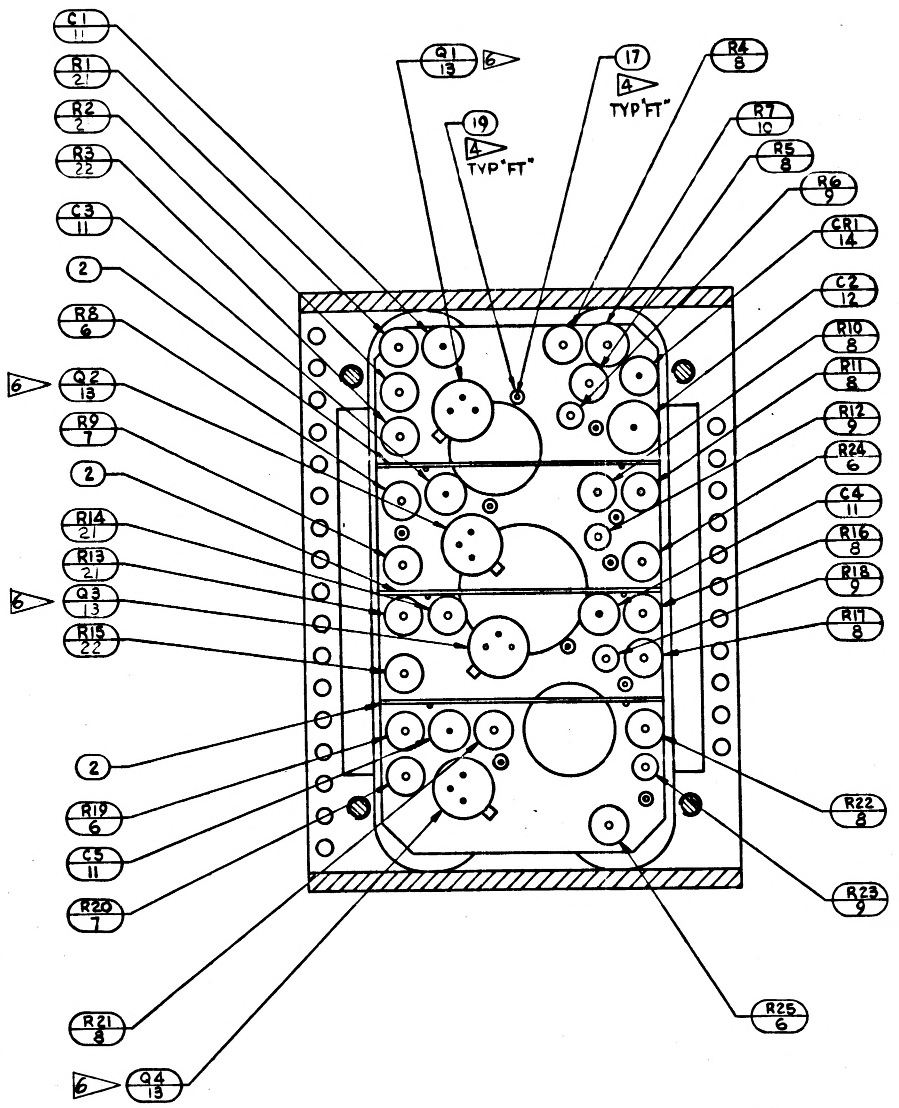
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTEGRATOR
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015113
SCALE 4:1
SHEET 1 OF 2

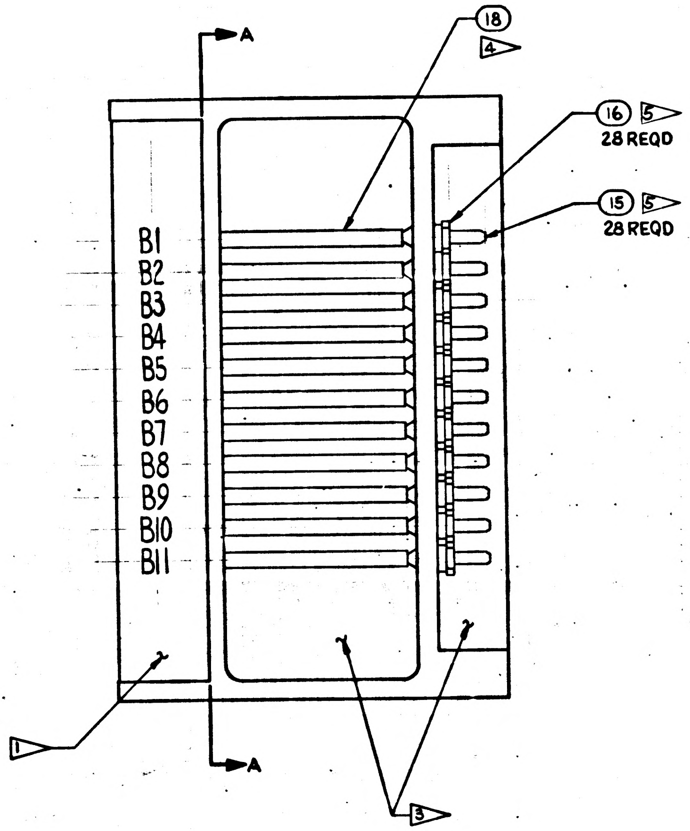
INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		SHT 2 ADDED TDRR 01206 FOR CHANGES, SEE SHEET 1		63	
F		REVISED PER TDRR 02503		63	JJ
G		REVISED PER TDRR 04473		5 Nov 63	



C1 11
R1 21
R2 2
R3 22
C3 11
2
R8 6
6
Q2 13
R9 7
2
R14 21
R13 21
6
Q3 13
R15 22
2
R19 6
C5 11
R20 7
R21 8
6
Q4 13
Q1 13
6
19
4
TYP "FT"
17
4
TYP "FT"
R4 8
R7 10
R5 8
R6 9
CR1 14
C2 12
R10 8
R11 8
R12 9
R24 6
C4 11
R16 8
R18 9
R17 8
R22 8
R23 9
R25 6

SECTION A-A



A
A
18
4
16
5
28 REQD
15
5
28 REQD
B1
B2
B3
B4
B5
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B7
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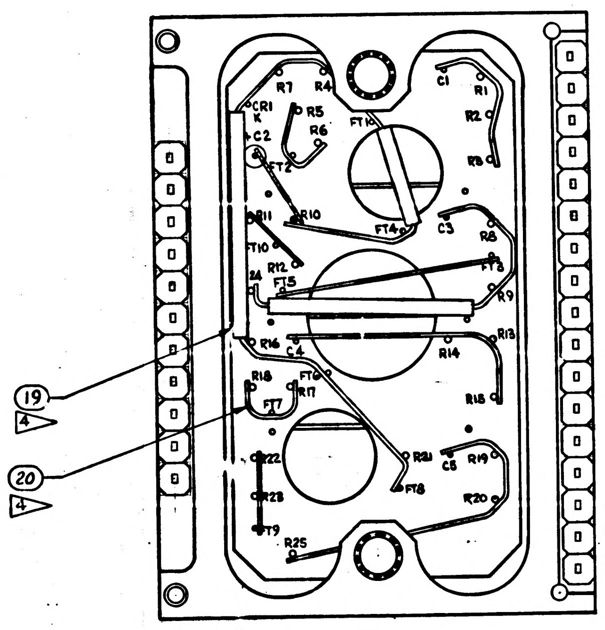
B9
B10
B11
1
3



R7
R4
C1
R1
CR1
R5
R6
R2
C2
FT1
R3
FT2
R11
R10
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C3
R8
FT10
R12
FT3
FT5
R9
R16
C4
R13
R14
R18
FT6
R17
R15
FT7
C22
R21
C5
R19
FT8
R23
R20
FT9
R25
19
4
20
4

VIEW A-A
ROTATED 90° CW
SHEET 1
ZONE H-5

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL 8 May 63

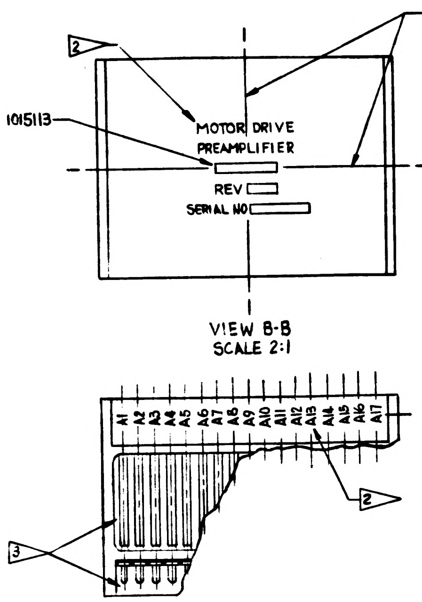
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

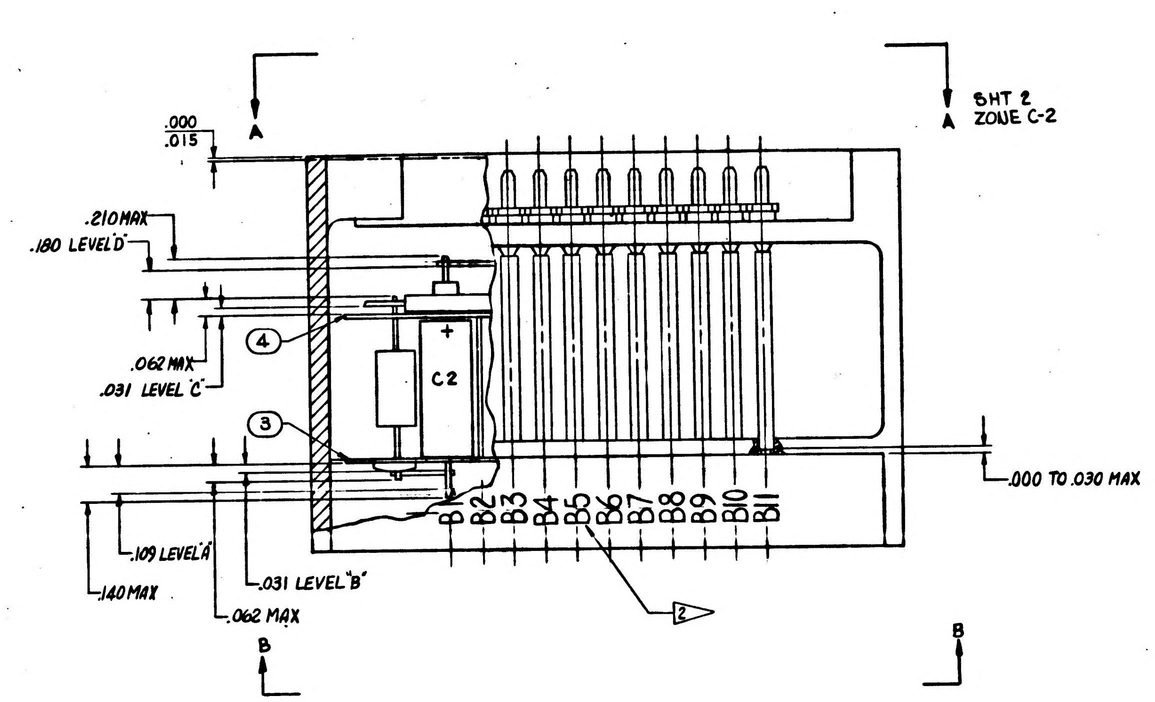
INTEGRATOR
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO. SIZE E 1015113
SCALE 4:1 SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		REPLACES REV D WITH CHANGE PER TDRR			
F		REVISED PER TDRR 025?3			
G		REVISED PER TDRR 04473		5 Nov 63	
H		REVISED PER TDRR 05486		2 DEC 63	





UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND1002003.

2▷ MARK PIN NUMBER .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023 CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING,
K INDICATES CATHODE SIDE OF DIODE,
FT( ) INDICATES FEED THRU,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
C- INDICATES COLLECTOR LEAD OF TRANSISTOR,
B- INDICATES BASE LEAD OF TRANSISTOR,
E- INDICATES EMITTER LEAD OF TRANSISTOR.

4▷ USE AS REQUIRED

DRAWINGS FOR REFERENCE:
1015112 SCHEMATIC DIAGRAM, ELECTRICAL.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

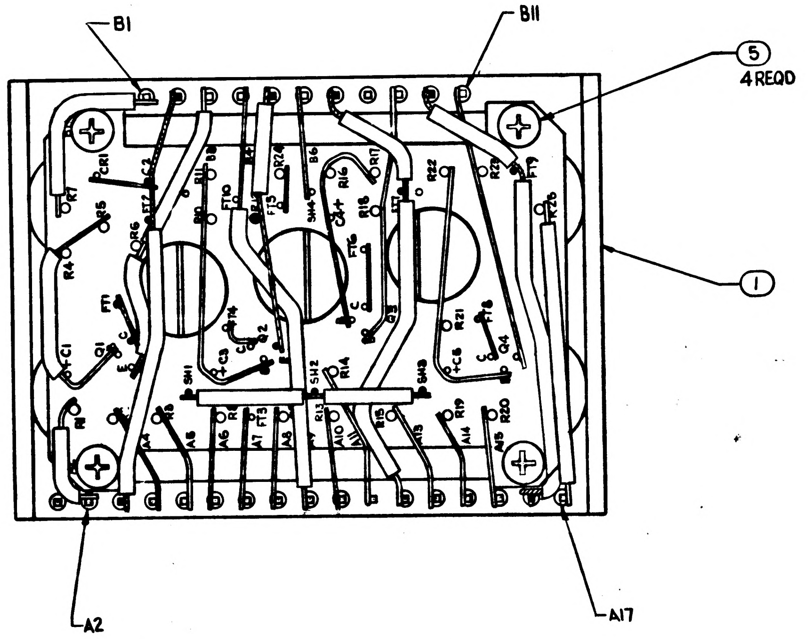
5▷ ASSEMBLE PER ND 1002136

INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

6▷ BOND ITEM NO. 13 TO ITEM NO. 3 PER ND 1002004

7▷ ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.



Ⓔ REPLACES REV D WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
22	2	1010379-20	RESISTOR - FIXED
21	4	1010369-739	RESISTOR - FIXED
20		1006757-1	WIRE, NICKEL RIBBON .010×.020
19		1006776-21	SLEEVING, ELECT. INSULATING
18		1006776-20	SLEEVING, ELECT. INSULATING
17		1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397-1	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	2	1010364-673	RESISTOR, FIXED
6	4	1010364-687	RESISTOR, FIXED
5	4	MS 35216-3	SCREW ¼ #2-56 NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +− DECIMALS XX±.02 XXX±.005 ANGLES +−
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

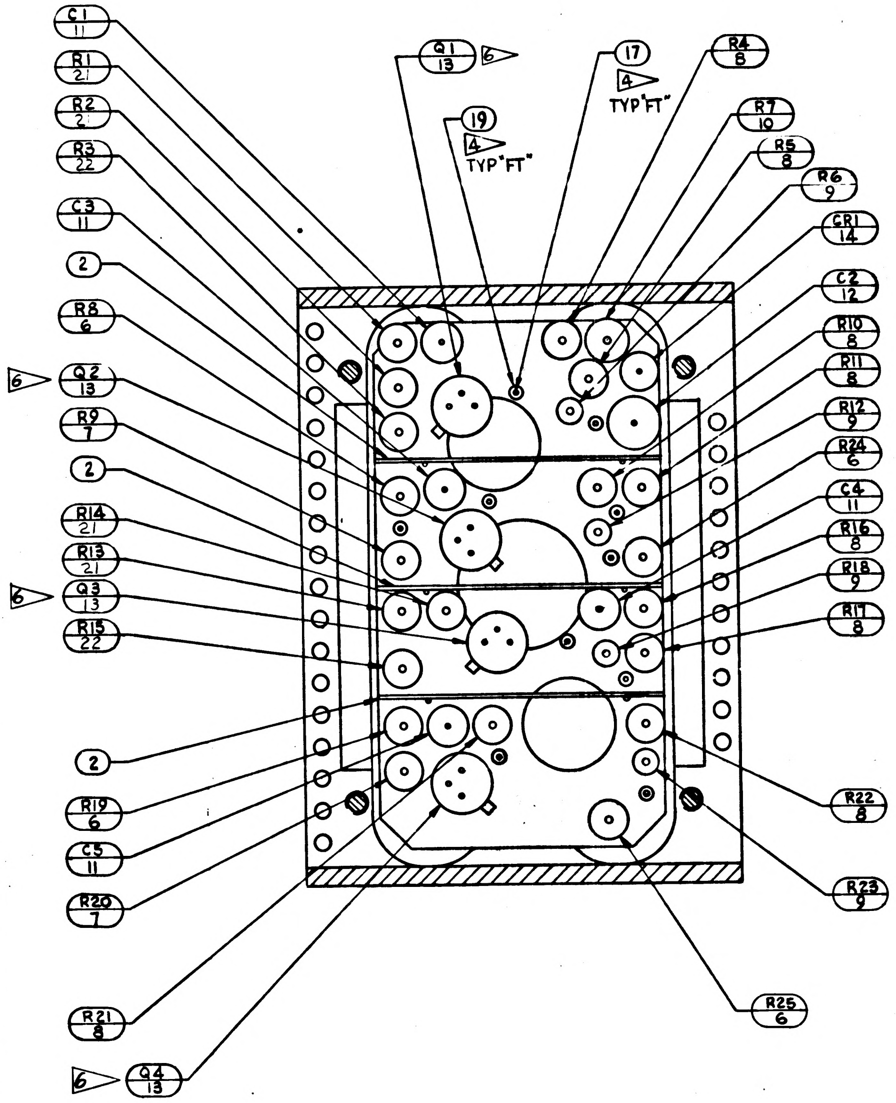
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 26 APR 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/1/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTEGRATOR
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

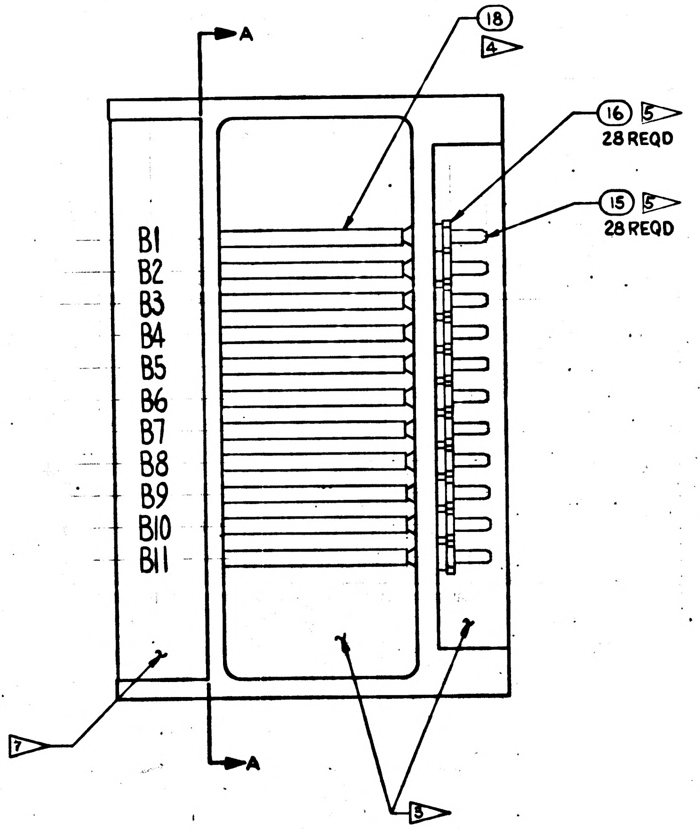
CODE IDENT NO.
SIZE E
1015113
SCALE 4:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		SHT 2 ADDED TDRR01206 FOR CHANGES, SEE SHEET 1		5 Mar 63	
F		REVISED PER TDRR02583		6-21-63	JJ
G		REVISED PER TDRR 04473		5 Nov 63	
H		REVISED PER TDRR 05486		2 DEC 63	

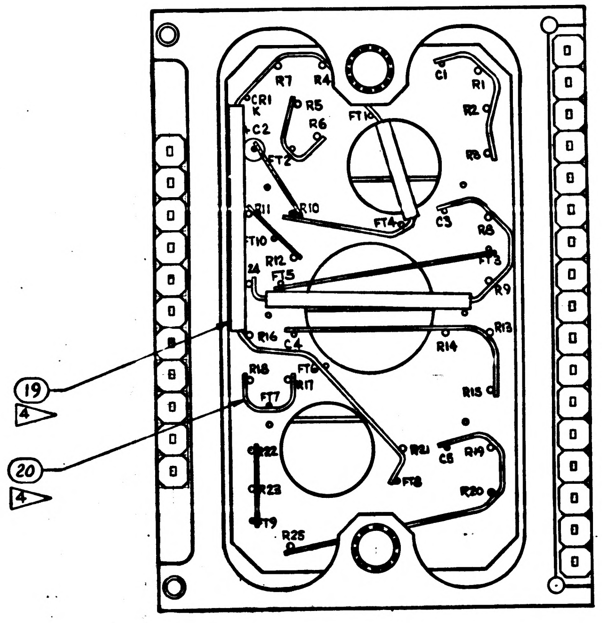


C1 11
R1 21
R2 2
R3 22
C3 11
2
R8 6
6 Q2 13
R9 7
2
R14 21
R13 21
6 Q3 13
R15 22
2
R19 6
C5 11
R20 7
R21 8
6 Q4 13
Q1 13 6
19
4 TYP "FT"
17
4 TYP "FT"
R4 8
R7 10
R5 8
R6 9
CR1 14
C2 12
R10 8
R11 8
R12 9
R24 6
C4 11
R16 8
R18 9
R17 8
R22 8
R23 9
R25 6

SECTION A-A



A
A
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
18
4
16 5 28 REQD
15 5 28 REQD
7
3



R7
R4
C1
R1
CR1
K
R5
R6
C2
R2
FT1
R3
FT2
R11
R10
FT4
C3
R8
FT10
R12
FT3
FT5
R9
R16
C4
R14
R13
R18
FT6
R17
FT7
R15
R21
C5
R19
FT8
R23
R20
FT9
R25
19
4
20
4

VIEW A-A
ROTATED 90° CW
SHEET 1
ZONE H-5

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL 8 May 63

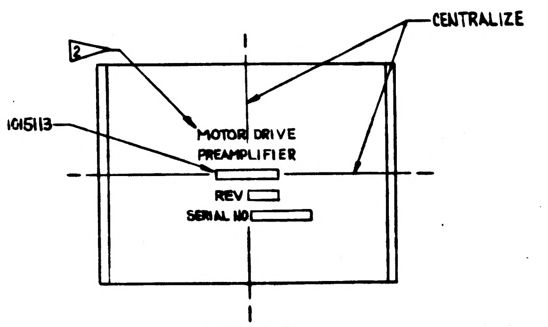
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTEGRATOR
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO. | SIZE E | 1015113
SCALE 4:1 | SHEET 2 OF 2

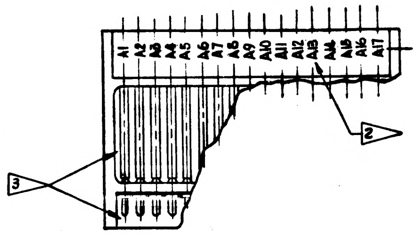
INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		REPLACES REV D WITH CHANGE PER TDRR		MAY	
F		REVISED PER TDRR 02503			
G		REVISED PER TDRR 04473		5 NOV 63	
H		REVISED PER TDRR 05486		3 DEC 63	
J		REVISED PER TDRR 05705			

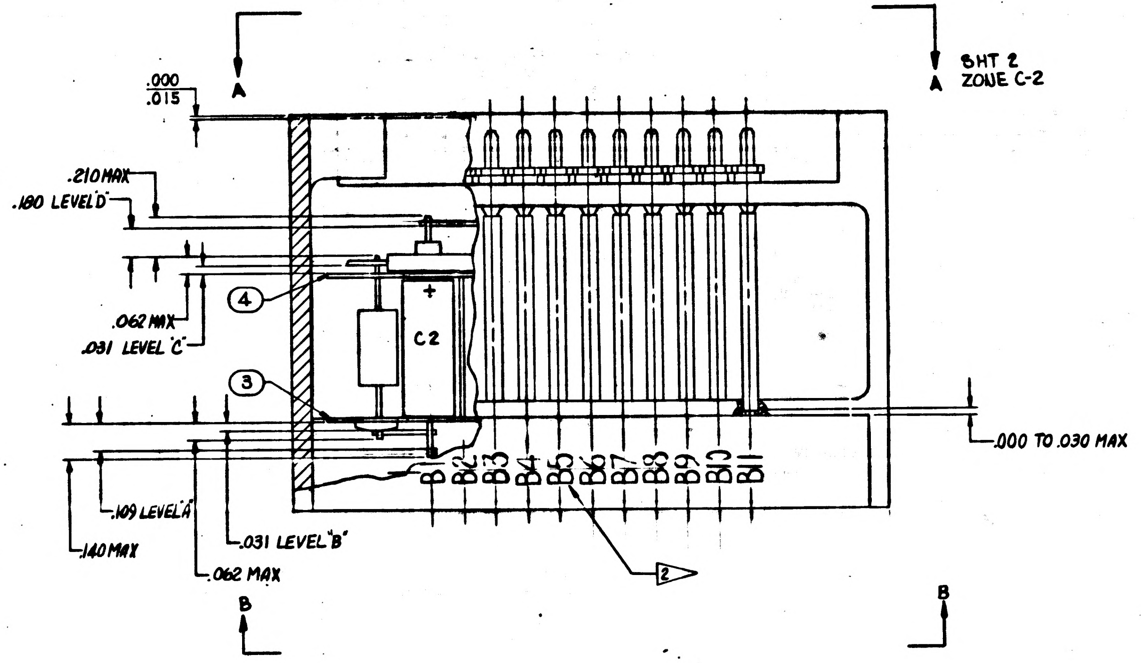


2
CENTRALIZE
1015113
MOTOR DRIVE
PREAMPLIFIER
REV
SERIAL NO

VIEW B-B
SCALE 2:1



A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
2
3



A
.000
.015
.210 MAX
.180 LEVEL "D"
4
.062 MAX
.031 LEVEL "C"
3
C2
+
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
.109 LEVEL "A"
.140 MAX
.031 LEVEL "B"
.062 MAX
2
B
SHT 2
ZONE C-2
.000 TO .030 MAX
B

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND1002003.

2 MARK PIN NUMBER .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023 CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING,
K INDICATES CATHODE SIDE OF DIODE,
FT() INDICATES FEED THRU,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
C-INDICATES COLLECTOR LEAD OF TRANSISTOR,
B-INDICATES BASE LEAD OF TRANSISTOR,
E-INDICATES EMITTER LEAD OF TRANSISTOR.

4 USE AS REQUIRED

DRAWINGS FOR REFERENCE:
1015112 SCHEMATIC DIAGRAM, ELECTRICAL.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

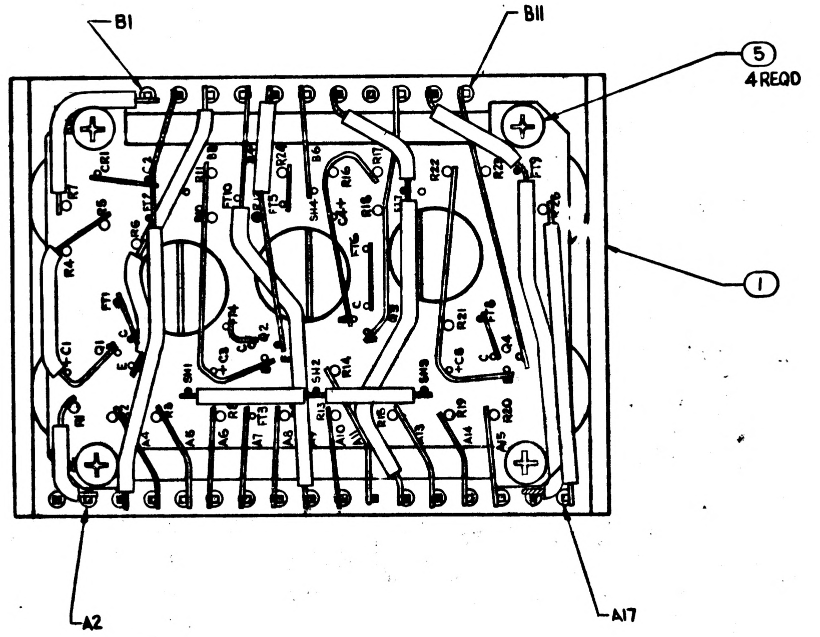
5 ASSEMBLE PER ND 1002136

INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

6 BOND ITEM NO. 13 TO ITEM NO. 3 PER ND 1002004

7 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.



B1
B11
5
4 REQD
1
A2
A17
C2
CR1
R4
R6
FT1
C1
Q1
Q2
Q3
Q4
R10
R16
R21
R22
C8
SH1
SH2
SH3
SH4
A4
A5
A6
A7
A8
A10
A13
A14
A15
A16

Ⓔ REPLACES REV D WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
22	2	1010374-20	RESISTOR - FIXED
21	4	1010364-739	RESISTOR - FIXED
20		1006757-1	WIRE, NICKEL RIBBON .010×.020
19		1006776-21	SLEEVING, ELECT. INSULATING
18		1006776-20	SLEEVING, ELECT. INSULATING
17		1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397-1	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	2	1010364-673	RESISTOR, FIXED
6	4	1010364-687	RESISTOR, FIXED
5	4	MS 35216-3	SCREW 1/4 #2-56 NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +- DECIMALS XX ± .02 XXX ± .005 ANGLES +-
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/18/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

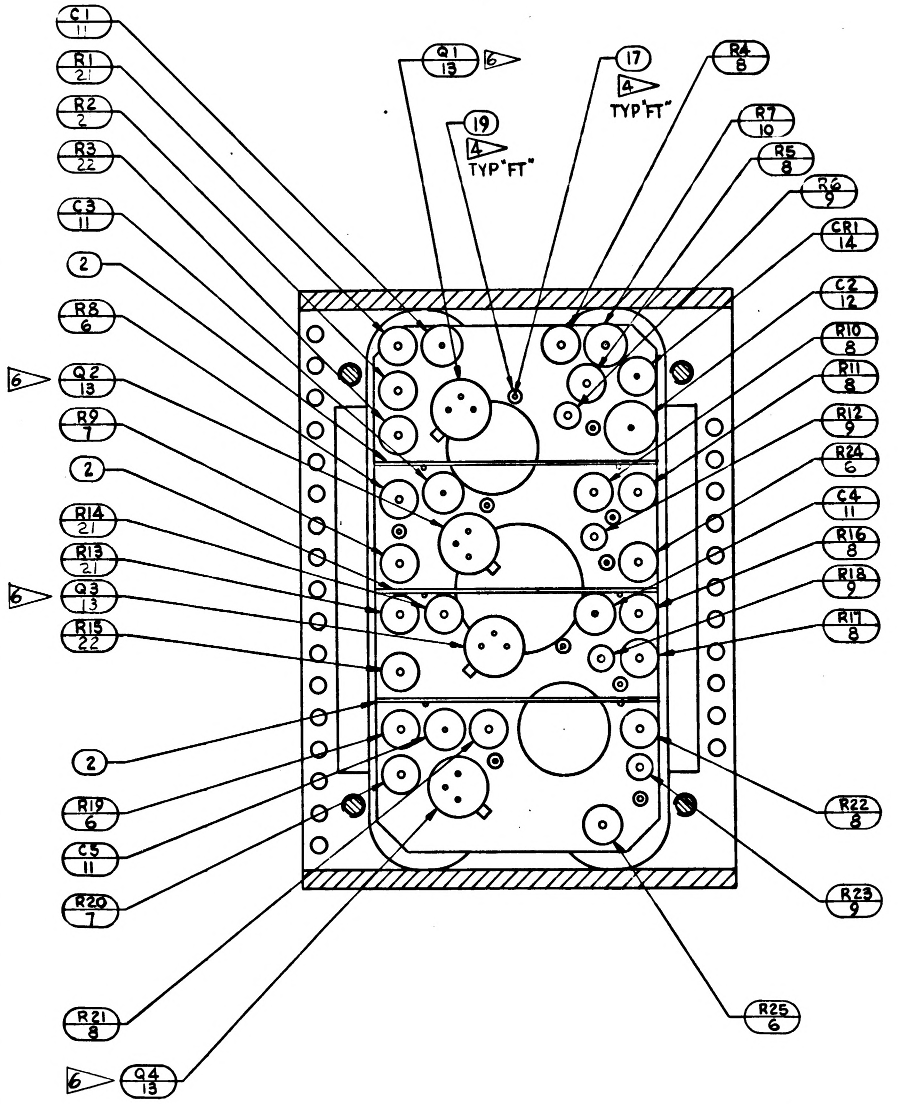
INTEGRATOR
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015113
SCALE 4:1
SHEET 1 OF 2

1015113

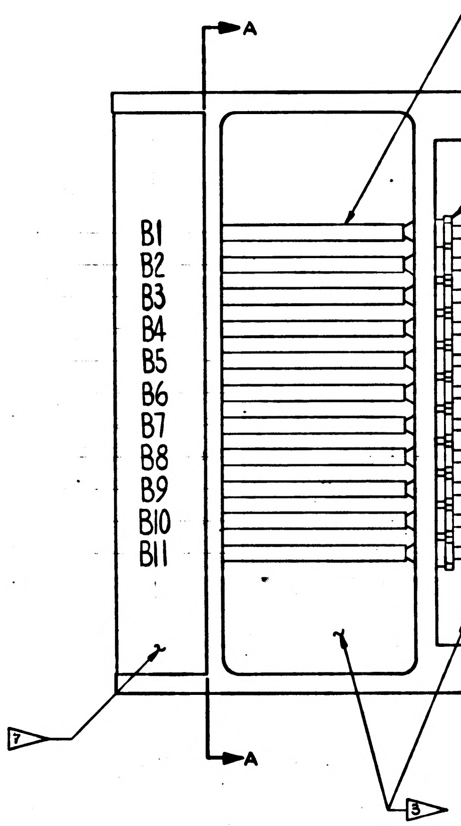
30 APR 63

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		SHT 2 ADDED TDRR 01206 FOR CHANGES, SEE SHEET 1		MAR 63	
F		REVISED PER TDRR 02503		8 21 63	JJM
G		REVISED PER TDRR 04473			
H		REVISED PER TDRR 05486		2 DEC 63	
J		REVISED PER TDRR 05705			

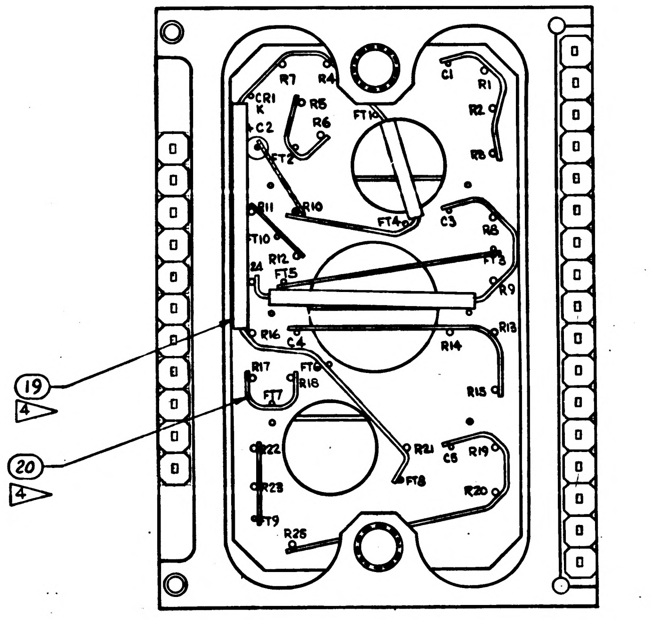


C1 11
R1 21
R2 2
R3 22
C3 11
2
R8 6
6 Q2 13
R9 7
2
R14 21
R13 21
6 Q3 13
R15 22
2
R19 6
C5 11
R20 7
R21 8
6 Q4 13
Q1 13 6
19 4 TYP "FT"
17 4 TYP "FT"
R4 8
R7 10
R5 8
R6 9
CR1 14
C2 12
R10 8
R11 8
R12 9
R24 6
C4 11
R16 8
R18 9
R17 8
R22 8
R23 9
R25 6

SECTION A-A



A
18
4
16 5 28 REQD
15 5 28 REQD
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
7
3
A



R7
R4
C1
R1
CR1
K
R5
C2
R6
FT1
R2
FT2
R8
R11
R10
FT4
C3
R8
FT10
R12
FT3
24
FT5
R9
R16
C4
R13
R14
R17
FT6
R18
FT7
R15
R22
R21
C5
R19
FT8
R23
R20
FT9
R25
19
4
20
4

VIEW A-A
ROTATED 90° CW
SHEET 1
ZONE H-5

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

NEXT ASSY | USED ON
APPLICATION

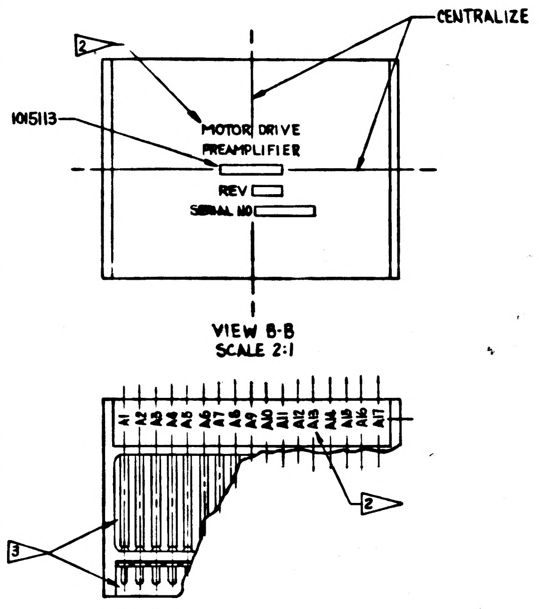
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL
MIT APPROVAL

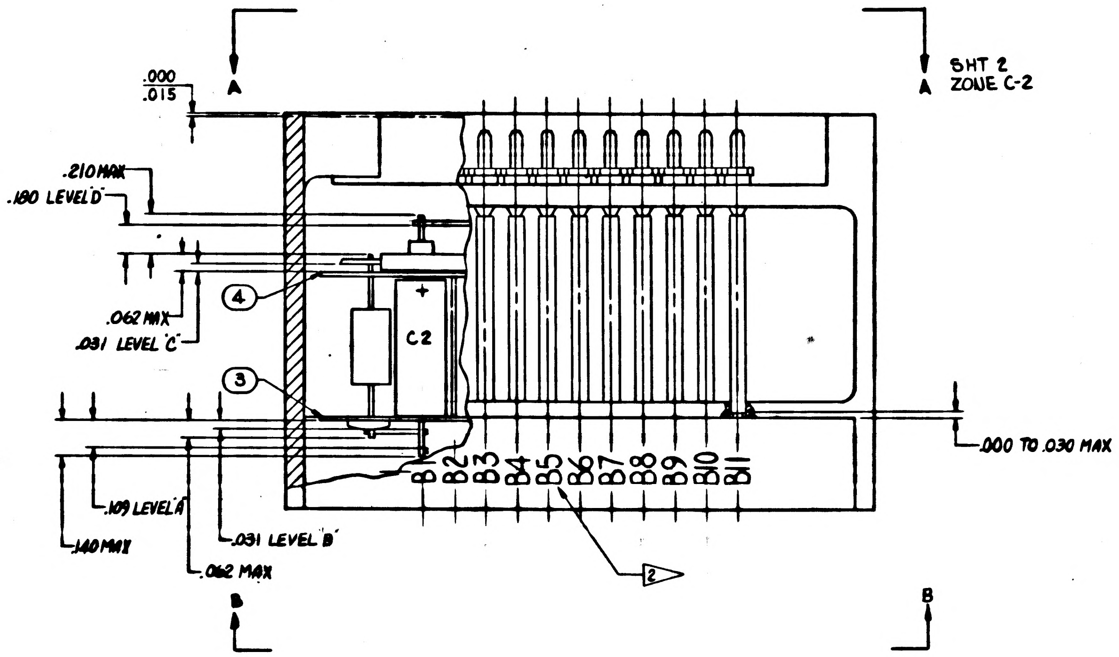
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTEGRATOR
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015113
SCALE 4:1
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		REPLACES REV D WITH CHANGE PER TDRR 01206		MAY 63	
F		REVISED PER TDRR [illegible]		[illegible]	
G		REVISED PER TDRR 04473		5 NOV 63	
H		REVISED PER TDRR 05486		2 DEC 63	
J		REVISED PER TDRR 05705		10 JAN 64	
K		REVISED PER TDRR 07285		3 APR 64	





UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND1002003.

2 MARK PIN NUMBER .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023 CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING,
K INDICATES CATHODE SIDE OF DIODE,
FT( ) INDICATES FEED THRU,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
C-INDICATES COLLECTOR LEAD OF TRANSISTOR,
B-INDICATES BASE LEAD OF TRANSISTOR,
E-INDICATES EMITTER LEAD OF TRANSISTOR.

4 USE AS REQUIRED

DRAWINGS FOR REFERENCE:
1015112 SCHEMATIC DIAGRAM, ELECTRICAL.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

5 ASSEMBLE PER ND 1002136

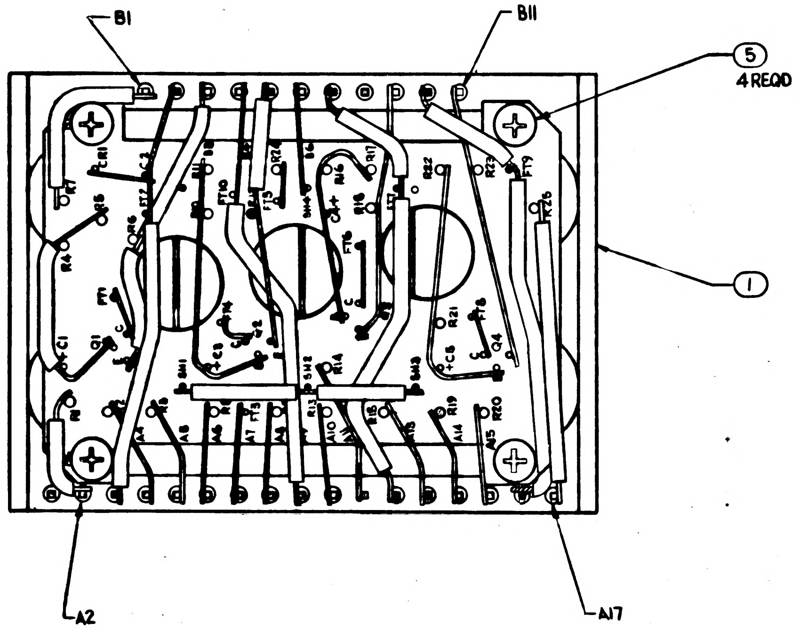
INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

6 BOND ITEM NO. 13 TO ITEM NO. 3 PER ND 1002004

7 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

PROCURE PER PS 1015113



(E) REPLACES REV D WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
22	2	1010374-20	RESISTOR - FIXED
21	4	1010364-739	RESISTOR - FIXED
20		1006757-1	WIRE, NICKEL RIBBON .010×.020
19		1006776-21	SLEEVING, ELECT. INSULATING
18		1006776-20	SLEEVING, ELECT. INSULATING
17		1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397-1	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	2	1010364-673	RESISTOR, FIXED
6	4	1010364-687	RESISTOR, FIXED
5	4	MS 35216-3	SCREW 1/4 #2-56NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE

LIST OF PARTS AND MATERIALS

K	J
SHEET 1	SHEET 2

REVISION STATUS OF SHEETS

NEXT ASSY	USED ON
1007156	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +− DECIMALS XX±.02 XXX±.005 ANGLES +−
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INTEGRATOR
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015113
SCALE 4:1
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

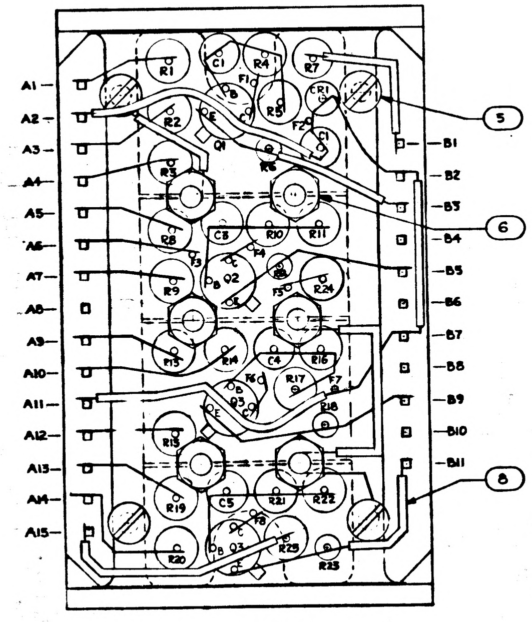
1015113

SYM	DESCRIPTION	DATE	APPROVAL

REVISIONS

FIND NO.	REF. DES.	POLARITY	
		UPPER	LOWER
9	R1		
9	R2		
9	R8		
9	R13		
9	R14		
9	R19		
9	R24		
9	R25		
10	R3		
10	R9		
10	R15		
10	R20		
11	R4		
11	R5		
11	R10		
11	R11		
11	R16		
11	R17		
11	R21		
11	R22		
12	R6		
12	R12		

FIND NO.	REF. DES.	POLARITY	
		UPPER	LOWER
12	R18		
12	R23		
13	R7		
14	C1	POSITIVE	
14	C3	POSITIVE	
14	C4	POSITIVE	
14	C5	POSITIVE	
15	C2		POSITIVE
16	Q1		
16	Q2		
16	Q3		
16	Q4		
17	CR1		CATHODE
18	F1		
18	F2		
18	F3		
18	F4		
18	F5		
18	F6		
18	F7		
18	F8		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B11
5
6
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R1
C1
R4
R7
F1
R5
CR1
R2
F2
Q1
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R11
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Q2
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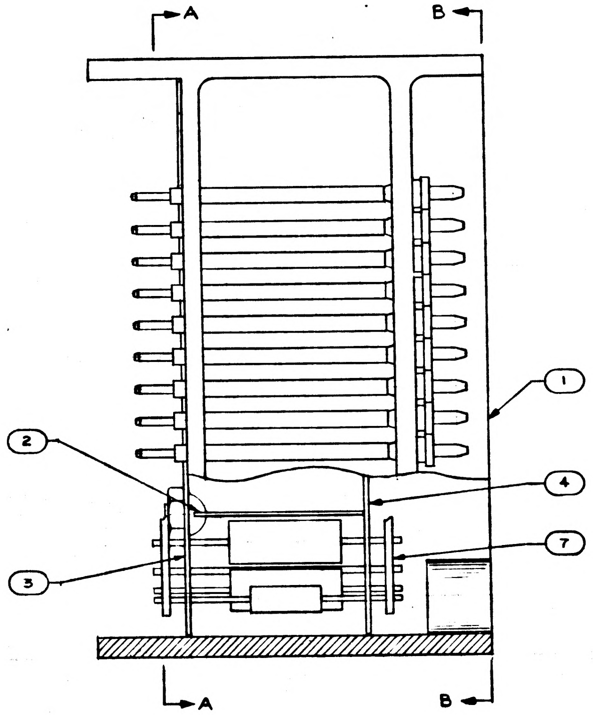
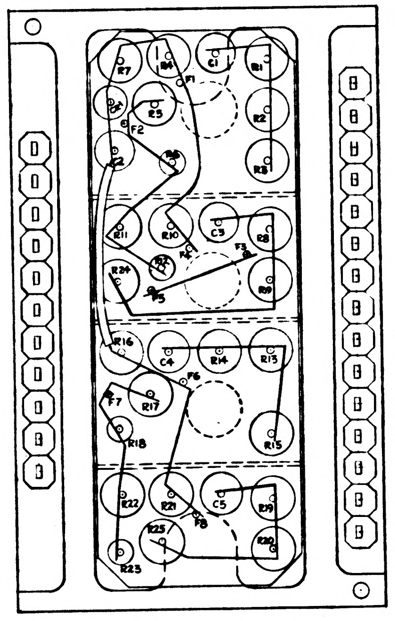
R15
R14
C4
R16
F6
R17
F7
Q3
R18
R13
R19
C5
R21
R22
F8
R20
R25
R23
B
C
E

VIEW A-A (UPPER)




R7
R4
C1
R1
F1
CR1
R5
R2
F2
C2
R6
R3
R11
R10
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F4
F3
R12
R24
R9
F5
R16
C4
R14
R13
F6
F7
R17
R18
R15
R22
R21
C5
R19
F8
R25
R20
R23

VIEW B-B (LOWER)

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBE BY MIL-D-70327
2. DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00453 DATE 27Feb63

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006787-2	WIRE, FEED THROUGH	18
1	1010372	DIODE	17
4	1010397	TRANSISTOR	16
1	1006755-89	CAPACITOR	15
4	1006755-65	CAPACITOR	14
1	1006760-50	RESISTOR	13
4	1006750-67	RESISTOR	12
8	1010364-769	RESISTOR	11
4	1010364-715	RESISTOR	10
8	1010364-729	RESISTOR	9
AR	1006776-22	SLEEVING, ELECT INSULATING	8
AR	1006757-1	WIRE, NICKEL RIBBON	7
6		NUT, HEX 2-56	6
4	MS35216-3	SCREW	5
1	1015114	FILM WIRING (LOWER)	4
1	1015114	FILM, WIRING (UPPER)	3
3	1015118	SHIELD	2
1	1015115	CASE, MODULE	1

LIST OF MATERIALS

1015113

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN R.L. EMERY DATE 2-12-63
CHECKED R. L. Battalfon
APPROVAL R. L. Battalfon
APPROVAL
NASA APPROVAL 2-27-63
MIT APPROVAL 27Feb63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

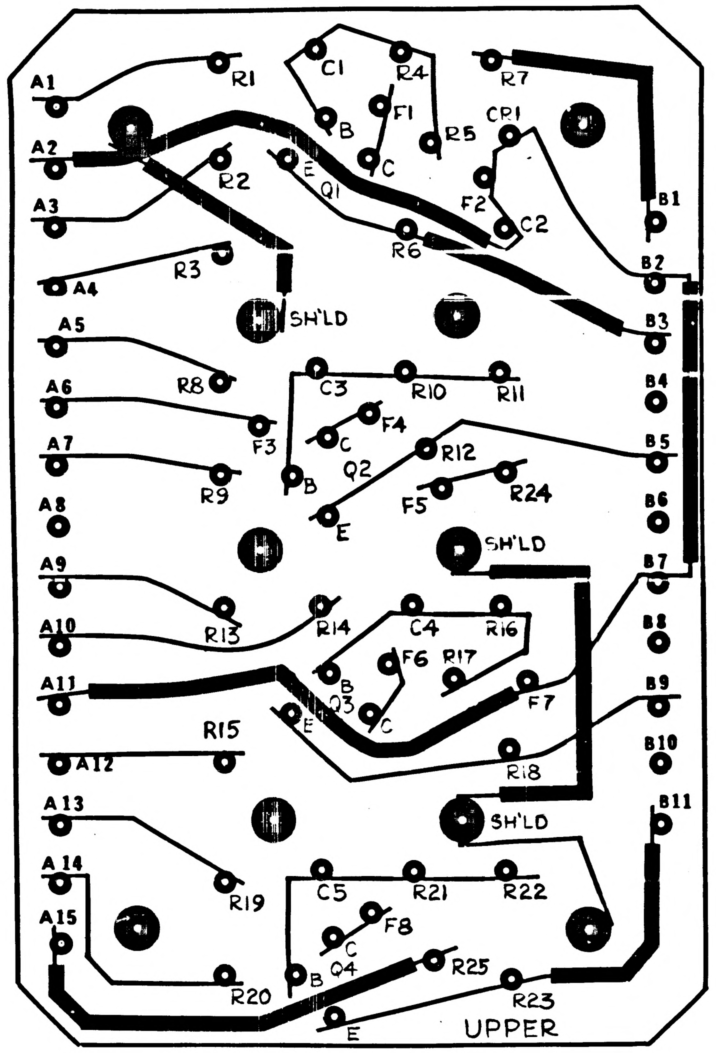
ASSEMBLY
MOTOR DRIVE PREAMPLIFIER

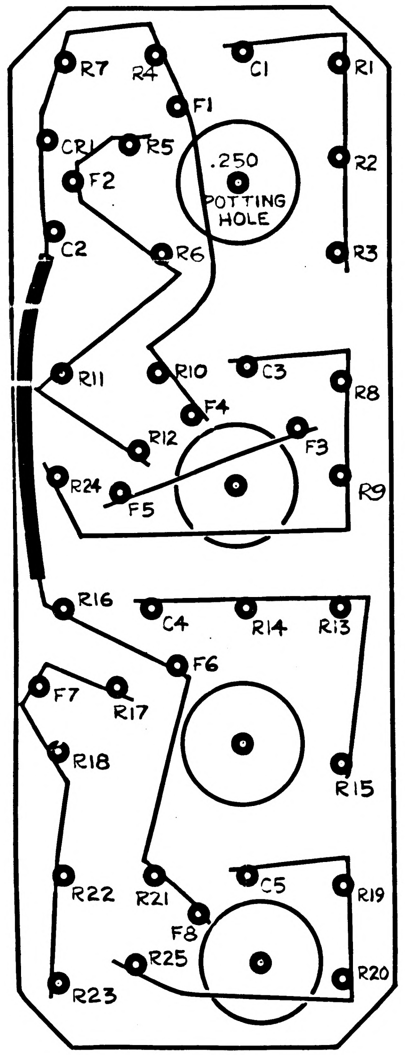
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015113
SCALE 4X
WT
SHEET OF

1015114

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
R1
C1
B
E
C
Q1
R4
F1
R5
R7
CR1
F2
C2
R2
R6
R3
SH'LD
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
R8
C3
R10
R11
F4
C
Q2
F3
B
E
R12
F5
R24
R9
SH'LD
R13
R14
C4
R16
B
F6
R17
Q3
E
C
F7
R15
R18
SH'LD
R19
C5
R21
R22
F8
C
Q4
B
R20
R25
R23
E
UPPER


R7
R4
C1
R1
F1
CR1
R5
.250
POTTING
HOLE
R2
F2
C2
R6
R3
R11
R10
C3
R8
F4
R12
F3
R24
F5
R9
R16
C4
R14
R13
F6
F7
R17
R18
R15
R22
R21
C5
R19
F8
R25
R20
R23

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00453 DATE 27 Feb 63

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

HEAT TREATMENT

FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN R.L.EMERY DATE 2-12-63
CHECKED R.L. Battalion 2/23/63
APPROVAL R.L. Battalion
APPROVAL

NASA APPROVAL W. J. Rhine 2-27-63

MIT APPROVAL 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

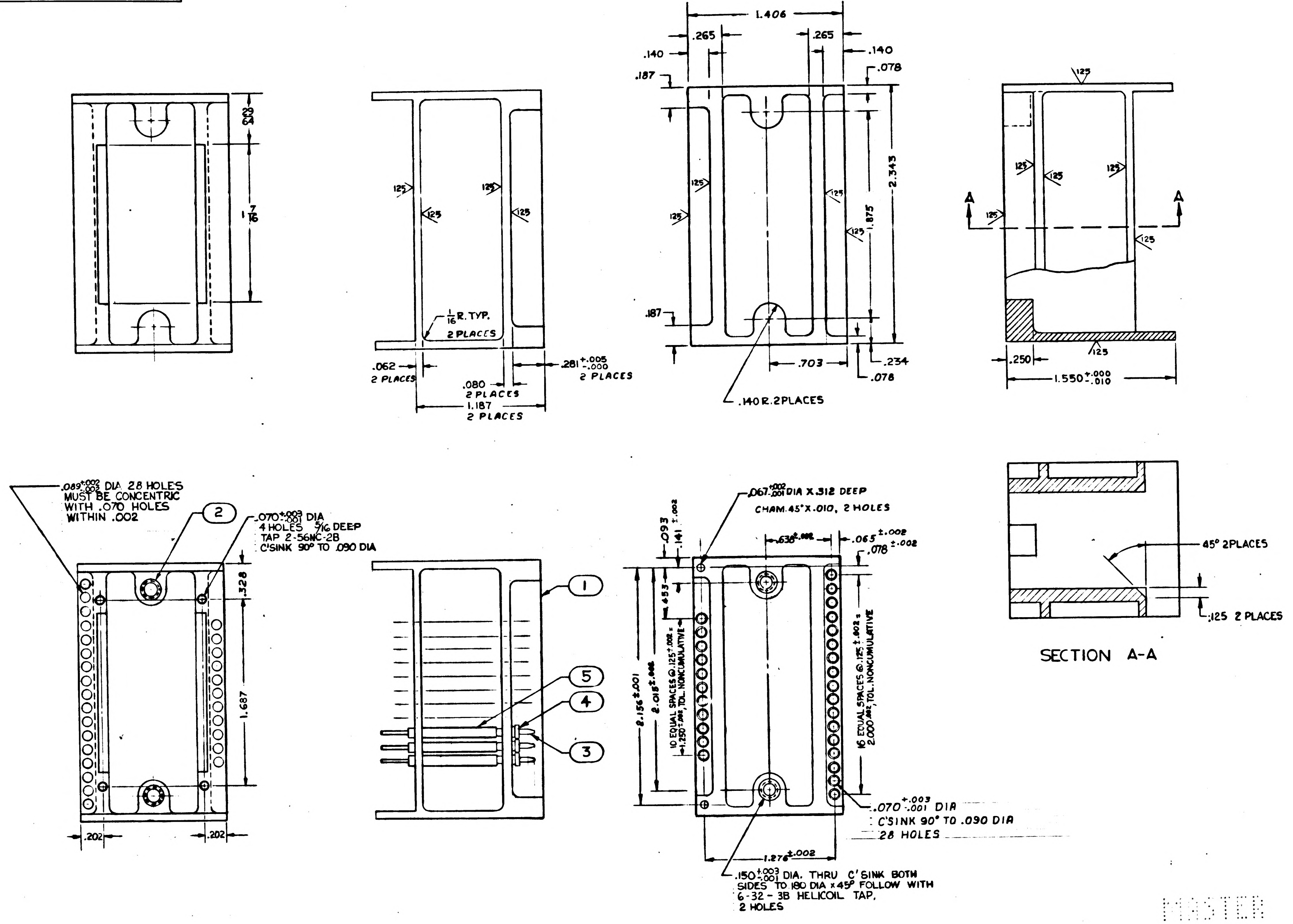
FILM, WIRING
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1015114
SCALE 4X	WT	SHEET OF

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015115

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDR 00597	3-17-63	WK.


1.406
.265
.265
.140
.140
.187
.078
$\frac{29}{64}$
$1\frac{7}{16}$
125
2.343
1.875
$\frac{1}{16}$ R. TYP. 2 PLACES
.187
.062 2 PLACES
.080 2 PLACES
1.187 2 PLACES
.281 +.005 -.000 2 PLACES
.703
.234
.078
.140 R. 2 PLACES
A
A
.250
1.550 +.000 -.010
45° 2 PLACES
.125 2 PLACES
SECTION A-A
.089 +.002 -.003 DIA 28 HOLES MUST BE CONCENTRIC WITH .070 HOLES WITHIN .002
2
.070 +.003 -.001 DIA 4 HOLES 5/16 DEEP TAP 2-56NC-2B C'SINK 90° TO .090 DIA
.328
1.687
.202
.202
1
5
4
3
.067 +.002 -.001 DIA X .312 DEEP CHAM. 45° X .010, 2 HOLES
.093
.141 ±.002
.638 ±.002
.065 ±.002
.078 ±.002
.453
2.156 ±.001
2.015 ±.002
10 EQUAL SPACES @ .125 ±.002 = 1.250 ±.002, TOL. NONCUMULATIVE
16 EQUAL SPACES @ .125 ±.002 = 2.000 ±.002, TOL. NONCUMULATIVE
.070 +.003 -.001 DIA C'SINK 90° TO .090 DIA 28 HOLES
1.276 ±.002
.150 +.003 -.001 DIA. THRU C'SINK BOTH SIDES TO .180 DIA x 45° FOLLOW WITH 6-32-3B HELICOIL TAP, 2 HOLES

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00453 DATE 27 Feb 63

MASTER

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRFSCRIBED BY MIL-D-70327
2. MATERIAL SPECIFICATION
   ALUMINUM CASTING QQA 601 CLASS 3M
   COND T-6

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006776-18	INSULATION SLEEVING, ELECTRICAL	5
28	1006775	INSULATOR, WRAPOST-MALE MINIATURE	4
28	1006782-5	CONTACT, BLADE EDGE CONNECTOR	3
2	MS122118	INSERT, HELICOIL #6-32 × .207	2
1	1015115-1	FRAME CASTING	1

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± $\frac{1}{64}$ DECIMALS ±.005 ANGLES ± ¼
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG NO CONTRACT

DRAWN R. EMERY DATE 2-12-63
CHECKED R. L. Battey 2/21/63
APPROVAL R. L. Battey
APPROVAL
NASA APPROVAL W. J. Rhine 2-27-63
MIT APPROVAL W Kupfer 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME, ASSY
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015115
SCALE 2× WT SHEET 1 OF 1

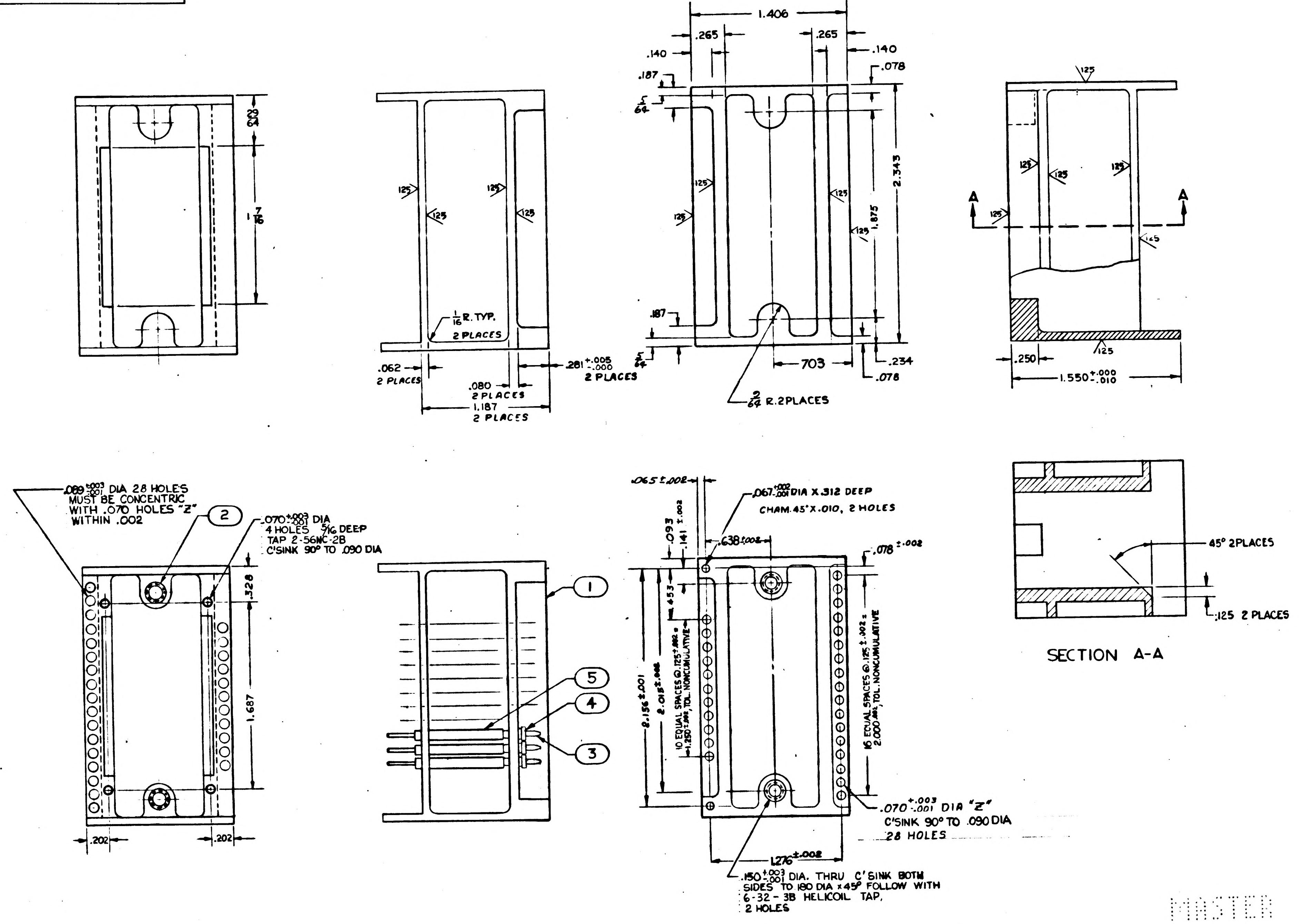
1015115

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015115 B

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDR 00597	3-17-63	WK.
B	REPLACED BY REV C WITH CHANGE PER TDRR 01195	6 MAY 63	WK.


1.406
.265
.265
.140
.140
.187
.078
5/64
29/64
1 7/16
125
2.343
1.875
1/16 R. TYP. 2 PLACES
.062 2 PLACES
.080 2 PLACES
1.187 2 PLACES
.281 +.005 -.000 2 PLACES
.187
5/64
.703
.234
.078
2/64 R.2PLACES
A
A
.250
1.550 +.000 -.010
.089 +.003 -.001 DIA 28 HOLES MUST BE CONCENTRIC WITH .070 HOLES "Z" WITHIN .002
2
.070 +.003 -.001 DIA 4 HOLES 5/16 DEEP TAP 2-56NC-2B C'SINK 90° TO .090 DIA
.328
1.687
.202
.202
1
5
4
3
.065 ±.002
.067 +.002 -.001 DIA X .312 DEEP CHAM. 45° X .010, 2 HOLES
.093
.141 ±.002
.638 ±.002
.078 ±.002
.453
2.156 ±.001
2.015 ±.008
10 EQUAL SPACES @ .125 ±.002 = 1.250 ±.002, TOL. NONCUMULATIVE
16 EQUAL SPACES @ .125 ±.002 = 2.000 ±.002, TOL. NONCUMULATIVE
.070 +.003 -.001 DIA "Z" C'SINK 90° TO .090 DIA 28 HOLES
1.276 ±.002
.150 +.003 -.001 DIA. THRU C'SINK BOTH SIDES TO .180 DIA x 45° FOLLOW WITH 6-32-3B HELICOIL TAP, 2 HOLES
45° 2 PLACES
.125 2 PLACES

SECTION A-A

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00453 DATE 27 Feb 63

Ⓑ REPLACED BY REV C WITH CHANGE

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRFSCRIBED BY MIL-D-70327
2. MATERIAL SPECIFICATION ALUMINUM CASTING QQA 601 CLASS 3M COND T-6

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006776-18	INSULATION SLEEVING, ELECTRICAL	5
28	1006775	INSULATOR, WRAPOST-MALE MINIATURE	4
28	1006782-5	CONTACT, BLADE EDGE CONNECTOR	3
2	MS122118	INSERT, HELICOIL #6-32 × .207	2
1	1015115-1	FRAME CASTING	1

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ± 1/2°
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 2-12-63
CHECKED R. L. Barrett 2/21/63
APPROVAL R. L. Battey
APPROVAL
NASA APPROVAL W. J. Rhine 3-27-63
MIT APPROVAL W. Kupfer 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME, ASSY
MOTOR DRIVE PREAMPLIFIER

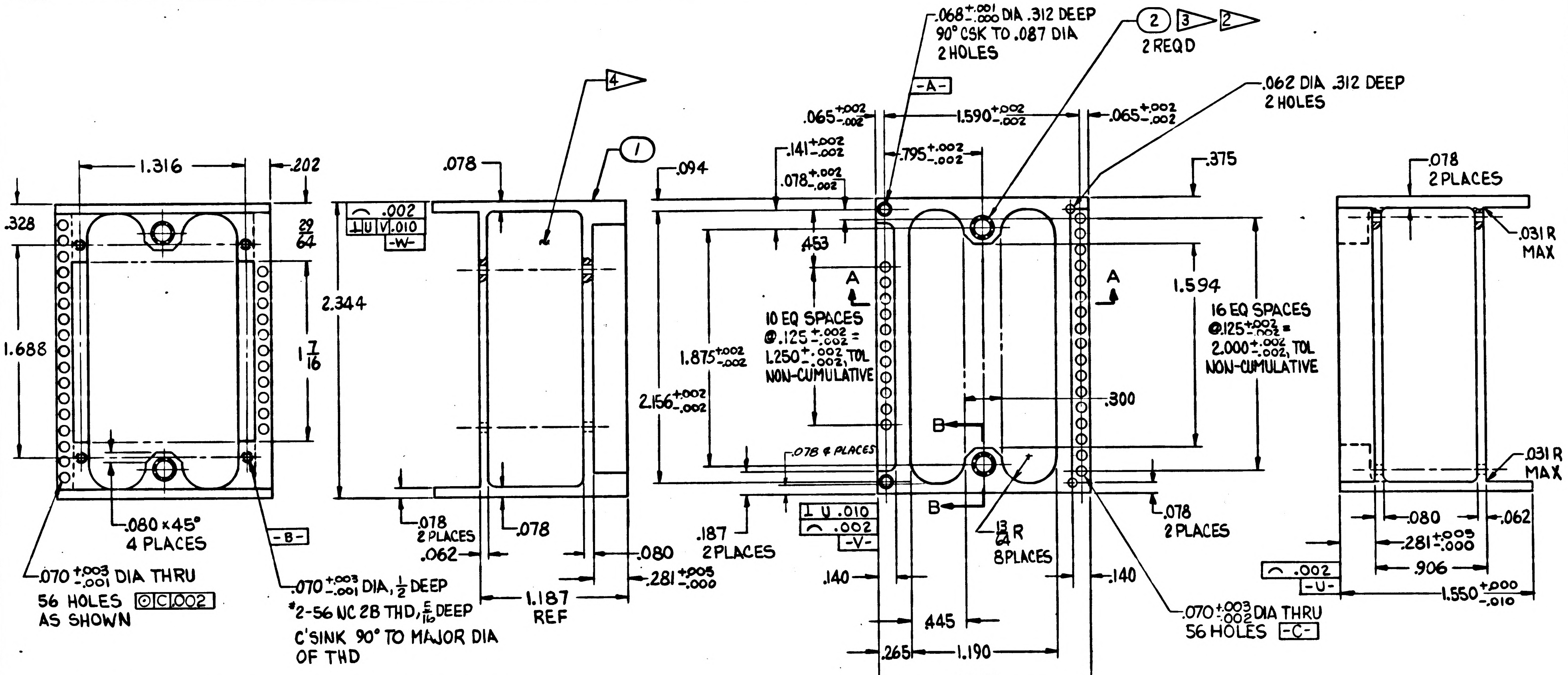
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015115
SCALE 2×
WT
SHEET 1 OF 1

1015115 B

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

B 1015115

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
C		REPLACES REV B WITH CHANGE PER TDRR 01195		8 MAY 63	WK



.068 +.001 -.000 DIA .312 DEEP
90° CSK TO .087 DIA
2 HOLES
② 3 2
2 REQD
.062 DIA .312 DEEP
2 HOLES
-A-
.065 +.002 -.002
1.590 +.002 -.002
.065 +.002 -.002
.141 +.002 -.002
.795 +.002 -.002
.078 +.002 -.002
.375
4
①
1.316
.202
.078
.094
.328
29/64
.002
.010 -W-
.453
A
A
1.594
2.344
16 EQ SPACES
@.125 +.002 -.002 =
2.000 +.002 -.002 TOL
NON-CUMULATIVE
10 EQ SPACES
@.125 +.002 -.002 =
1.250 +.002 -.002 TOL
NON-CUMULATIVE
1.688
1 7/16
1.875 +.002 -.002
2.156 +.002 -.002
.300
B
B
.078 4 PLACES
13/64 R
8 PLACES
.078
2 PLACES
.031 R
MAX
.031 R
MAX
.080 x 45°
4 PLACES
-B-
.078
2 PLACES
.062
.078
.080
.281 +.005 -.000
.187
2 PLACES
.010 -V-
.002
.140
.140
.080
.062
.281 +.005 -.000
.906
.002 -U-
1.550 +.000 -.010
.070 +.003 -.001 DIA THRU
56 HOLES .002
AS SHOWN
.070 +.003 -.001 DIA, 1/2 DEEP
#2-56 NC 2B THD, 5/16 DEEP
C'SINK 90° TO MAJOR DIA
OF THD
1.187
REF
.445
.265
1.190
1.720
REF
.070 +.003 -.002 DIA THRU
56 HOLES -C-

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL: ALUMINUM ALY 6061-T6 PER QQ-A-325 (ES-2106).

FINISH: ANODIZE BLACK PER MIL-A-8625, TYPE II (ES-384), INSERT HOLES, DIA A & DIA B TO BE FREE FROM ANODIZE.

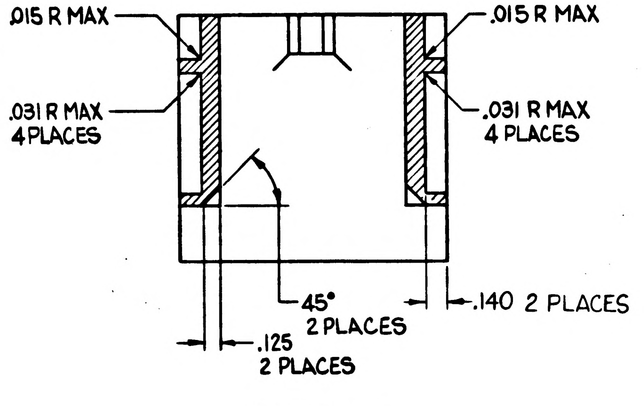
UNLESS OTHERWISE SPECIFIED:
  ALL RADII ARE 1/16 INCH.
  ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
  SURFACES ROUGHNESS MUST NOT EXCEED 125/.

MUST BE FREE FROM BURRS.

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

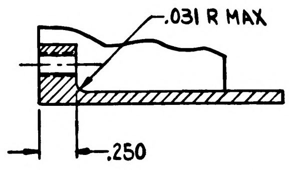
3 INSTALL, 6-32NC-3B INSERT PER MS 33537. BREAK OFF TANG

4 MARK 1015115 AND REVISION LETTER PER MIL-STD-130 (ES-267).



.015 R MAX
.015 R MAX
.031 R MAX
4 PLACES
.031 R MAX
4 PLACES
45°
2 PLACES
.125
2 PLACES
.140 2 PLACES

SECTION A-A



.031 R MAX
.250

PARTIAL SECTION B-B
ITEM 2 REMOVED

Ⓒ REPLACES REV B WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS 122118	INSERT-THREADED, LOCKING
1	1	1015115-1	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015113	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ 1°
- 1/64	-.005	- 1°

DO NOT SCALE THIS DRAWING
MATERIAL 1
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 30 APRIL 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL
MIT APPROVAL 8 May 63

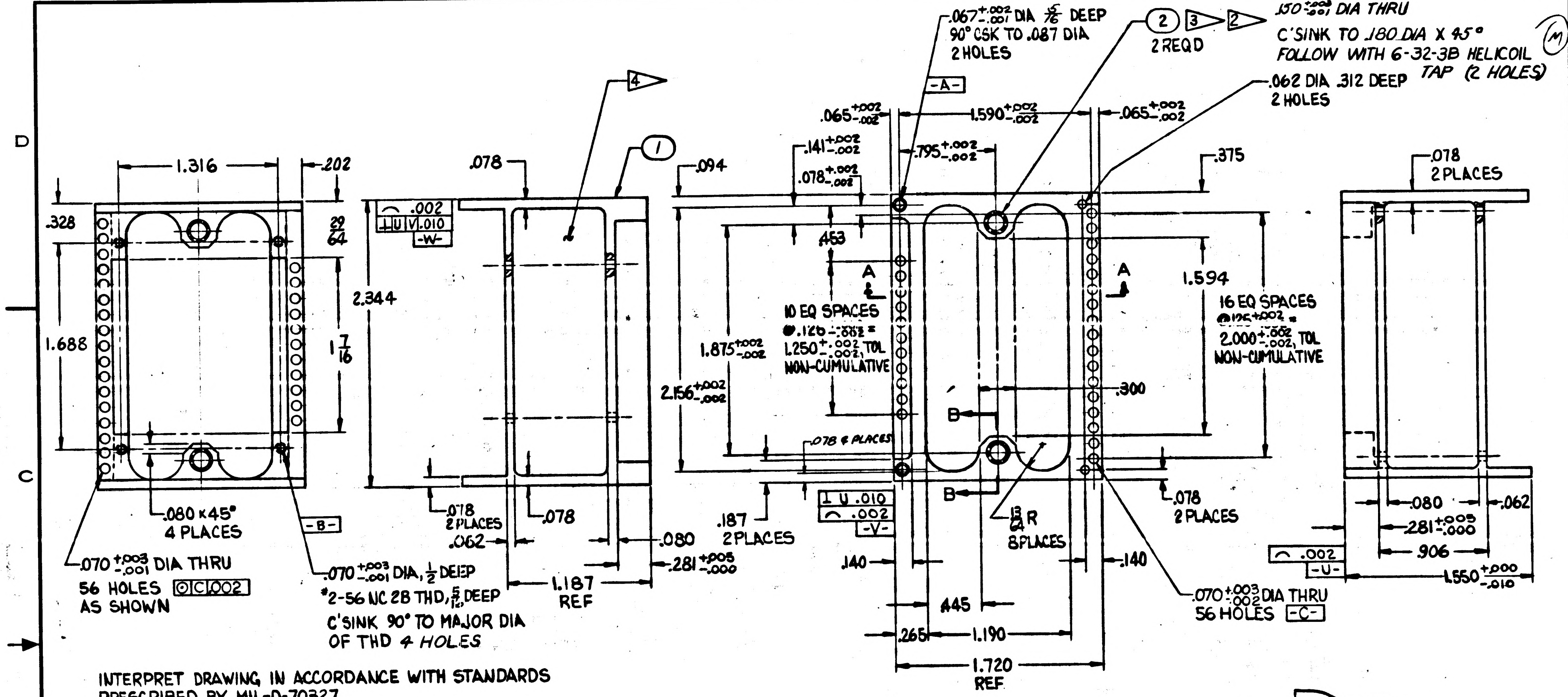
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME
(INSEP ASSY)
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO.
SIZE D
1015115
SCALE 2:1
SHEET —

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REPLACES REV B WITH CHANGE PER TDRR 01195		8 MAY 63	WK
D		REVISED PER TDRR 02504		5-21-63	



1.316
.202
.328
29/64
1.688
1 7/16
.080 x 45° 4 PLACES
-B-
.070 +.003 -.001 DIA THRU 56 HOLES ⊙C.002 AS SHOWN
.070 +.003 -.001 DIA, 1/2 DEEP
#2-56 NC 2B THD, 5/16 DEEP
C'SINK 90° TO MAJOR DIA OF THD 4 HOLES
.078
.002
⊥U V.010
-W-
2.344
4
1
.094
.078 2 PLACES
.062
.078
.080
.281 +.005 -.000
1.187 REF
.187 2 PLACES
.067 +.002 -.001 DIA 5/16 DEEP 90° CSK TO .087 DIA 2 HOLES
-A-
.065 +.002 -.002
1.590 +.002 -.002
.065 +.002 -.002
.141 +.002 -.002
.795 +.002 -.002
.078 +.002 -.002
2 REQD
2
3
.150 +.003 -.001 DIA THRU
C'SINK TO .180 DIA X 45°
FOLLOW WITH 6-32-3B HELICOIL TAP (2 HOLES)
.062 DIA .312 DEEP 2 HOLES
.375
.453
A
10 EQ SPACES @.125 ±.002 = 1.250 +.002 -.002 TOL NON-CUMULATIVE
1.875 +.002 -.002
2.156 +.002 -.002
16 EQ SPACES @.125 +.002 = 2.000 +.002 -.002 TOL NON-CUMULATIVE
1.594
.300
B
.078 4 PLACES
⊥U.010
⌒.002
-V-
.140
13/64 R 8 PLACES
.078 2 PLACES
.140
.445
.265
1.190
1.720 REF
.070 +.003 -.002 DIA THRU 56 HOLES -C-
.078 2 PLACES
.080
.062
.281 +.005 -.000
.906
⌒.002
-U-
1.550 +.000 -.010

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL: ALUMINUM ALY 6061-T6 PER QQ-A-325 (ES-2106).

FINISH: ANODIZE BLACK PER MIL-A-8625, TYPE II (ES-384), INSERT HOLES, DIA A & DIA B TO BE FREE FROM ANODIZE.

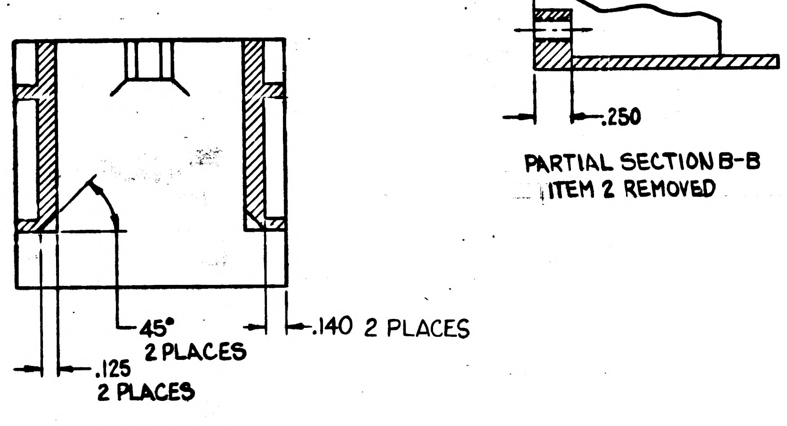
UNLESS OTHERWISE SPECIFIED:
- ALL RADII ARE 3/32 INCH.
- ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
- SURFACES ROUGHNESS MUST NOT EXCEED 125√.

MUST BE FREE FROM BURRS.

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

3 INSTALL, 6-32NC-3B INSERT PER MS33537. BREAK OFF TANG

4 MARK 1015115 AND REVISION LETTER PER MIL-STD-130 (ES-267).



45° 2 PLACES
.125 2 PLACES
.140 2 PLACES
.250

SECTION A-A

PARTIAL SECTION B-B ITEM 2 REMOVED

© REPLACES REV B WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS 122118	INSERT-THREADED, LOCKING
1	1	1015115-1	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015149	
1015113	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+1°
-1/64	-.005	-1°

DO NOT SCALE THIS DRAWING

MATERIAL 1

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 30 APR 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL A.Y. Kodel 30 APR 63
NASA APPROVAL
MIT APPROVAL 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

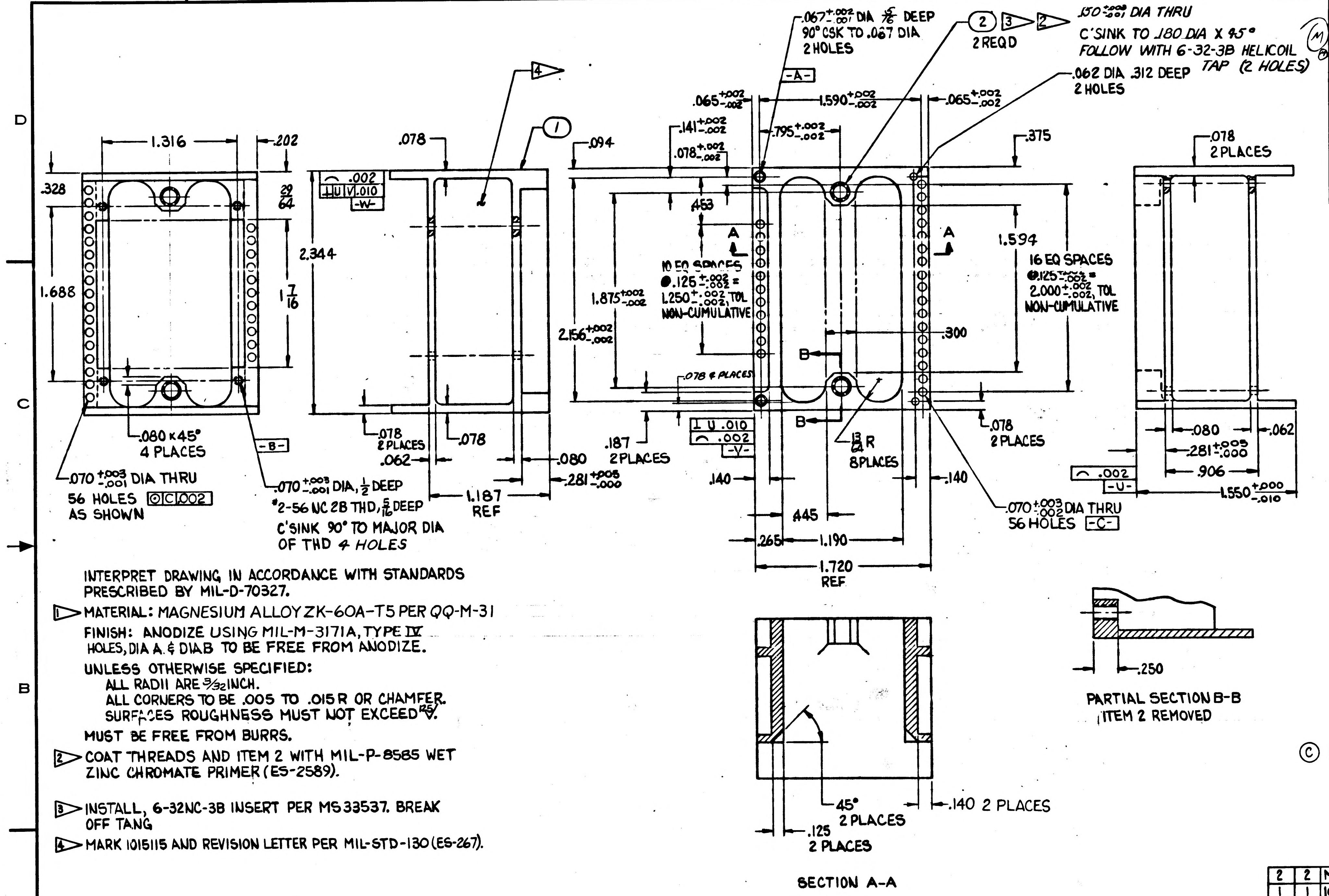
FRAME
(INSEP ASSY)
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO.
SIZE D
1015115
SCALE 2:1
SHEET —

Charleston 30 APR 63

INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REPLACES REV B WITH CHANGE PER TDRR 01195		8 MAY 63	WK
D		REVISED PER TDRR 02504		8-21-63	
E		REVISED PER TDRR 02875		8-28-63	



1.316
.202
.328
29/64
1.688
1 7/16
.080 x 45° 4 PLACES
-B-
.070 +.003 -.001 DIA THRU 56 HOLES AS SHOWN
.070 +.003 -.001 DIA, 1/2 DEEP #2-56 NC 2B THD, 5/16 DEEP C'SINK 90° TO MAJOR DIA OF THD 4 HOLES
.078
2.344
.002
.010
-W-
.078 2 PLACES
.062
.078
1.187 REF
.080
.281 +.005 -.000
.094
.067 +.002 -.001 DIA 5/16 DEEP 90° CSK TO .067 DIA 2 HOLES
-A-
.065 +.002 -.002
.141 +.002 -.002
.078 +.002 -.002
.795 +.002 -.002
1.590 +.002 -.002
.453
A
10 EQ SPACES .125 ±.002 = 1.250 ±.002 TOL NON-CUMULATIVE
1.875 +.002 -.002
2.156 +.002 -.002
.078 4 PLACES
B
.010
.002
-V-
.187 2 PLACES
.140
13/64 R 8 PLACES
.445
.265
1.190
1.720 REF
2 REQD
150 +.002 -.001 DIA THRU C'SINK TO .180 DIA X 45° FOLLOW WITH 6-32-3B HELICOIL TAP (2 HOLES)
.062 DIA .312 DEEP 2 HOLES
.375
1.594
16 EQ SPACES .125 ±.002 = 2.000 ±.002 TOL NON-CUMULATIVE
.300
.078 2 PLACES
.070 +.003 -.002 DIA THRU 56 HOLES -C-
.078 2 PLACES
.080
.062
.281 +.005 -.000
.906
.002
-U-
1.550 +.000 -.010
.250
PARTIAL SECTION B-B ITEM 2 REMOVED
45° 2 PLACES
.125 2 PLACES
.140 2 PLACES
SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
HOLES, DIA A. & DIA B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 3/32 INCH.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACES ROUGHNESS MUST NOT EXCEED 125/√.

MUST BE FREE FROM BURRS.

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

3 INSTALL, 6-32NC-3B INSERT PER MS33537. BREAK OFF TANG

4 MARK 1015115 AND REVISION LETTER PER MIL-STD-130 (ES-267).

Ⓒ REPLACES REV B WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS 122118	INSERT-THREADED, LOCKING
1	1	1015115-1	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015149	
1015113	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±1/64 DECIMALS ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL 1
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 30 APR 63
CHECKER 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL
MIT APPROVAL 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

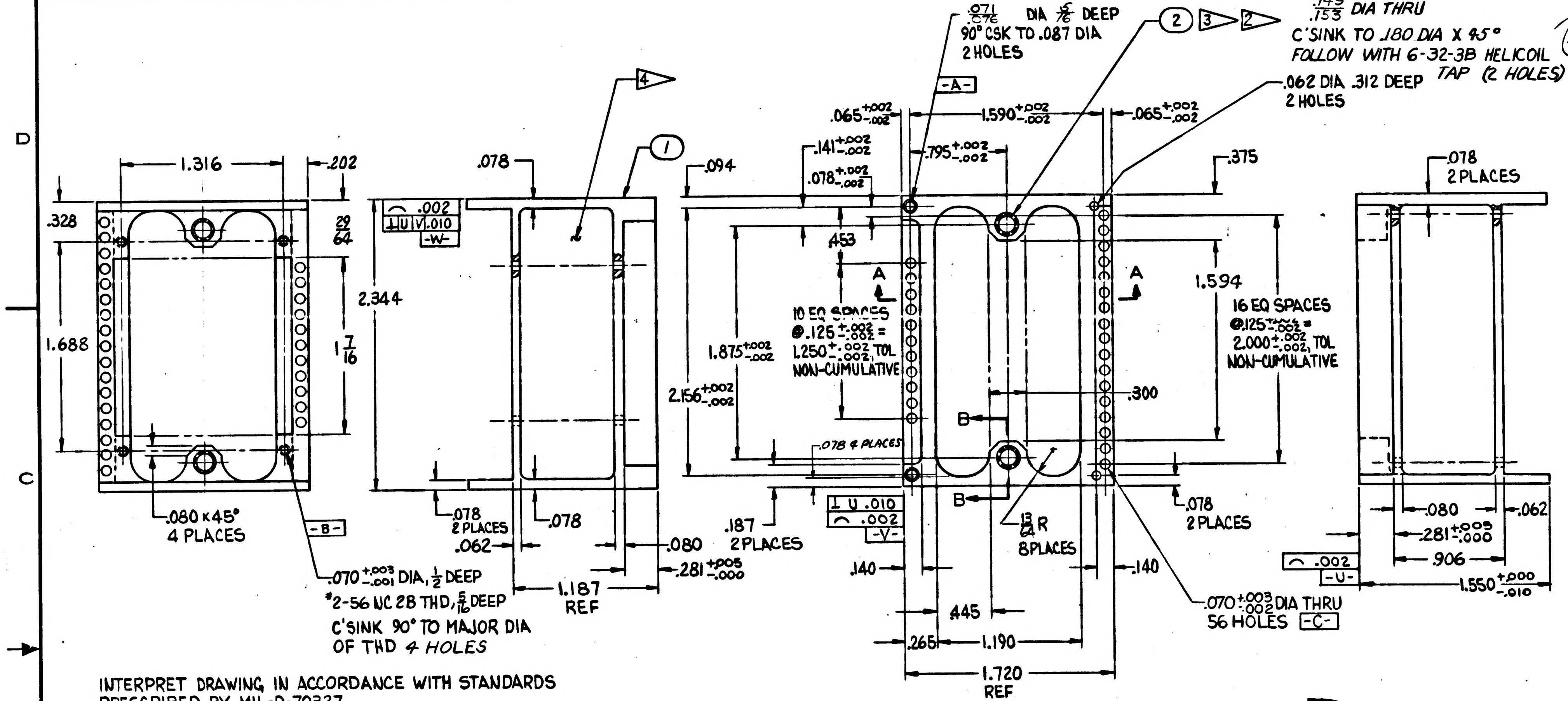
FRAME
(INSEP ASSY)
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO.
SIZE D
1015115
SCALE 2:1
SHEET —

30 APR 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REPLACES REV B WITH CHANGE PER TDRR 01195		8 MAY 63	WK
D		REVISED PER TDRR 02504		5-21-63	
E		REVISED PER TDRR 02875		8-28-63	
F		REVISED PER TDRR 03018		9-5-63	WK
G		REVISED PER TDRR 03019		9-5-63	WK


1.316
.202
.328
29/64
1.688
1 7/16
2.344
.080 x 45° 4 PLACES
-B-
.078
.002
U .010
-W-
4
1
.094
.078 2 PLACES
.062
.078
.080
.281 +.005 -.000
1.187 REF
.070 +.003 -.001 DIA, 1/2 DEEP
#2-56 NC 2B THD, 5/16 DEEP
C'SINK 90° TO MAJOR DIA OF THD 4 HOLES
.071/.076 DIA 5/16 DEEP
90° CSK TO .087 DIA
2 HOLES
-A-
2
3
2
.149/.153 DIA THRU
C'SINK TO .180 DIA X 45°
FOLLOW WITH 6-32-3B HELICOIL TAP (2 HOLES)
.062 DIA .312 DEEP 2 HOLES
.065 +.002 -.002
1.590 +.002 -.002
.065 +.002 -.002
.141 +.002 -.002
.795 +.002 -.002
.078 +.002 -.002
.375
.453
A
A
1.594
10 EQ SPACES @.125 +.002 -.002 = 1.250 +.002 -.002, TOL NON-CUMULATIVE
16 EQ SPACES @.125 +.002 -.002 = 2.000 +.002 -.002, TOL NON-CUMULATIVE
1.875 +.002 -.002
2.156 +.002 -.002
.300
B
B
.078 4 PLACES
U .010
.002
-V-
.187 2 PLACES
13/64 R 8 PLACES
.078 2 PLACES
.140
.140
.445
.265
1.190
1.720 REF
.070 +.003 -.002 DIA THRU 56 HOLES -C-
.078 2 PLACES
.080
.062
.281 +.005 -.000
.906
.002
-U-
1.550 +.000 -.010

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 ▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

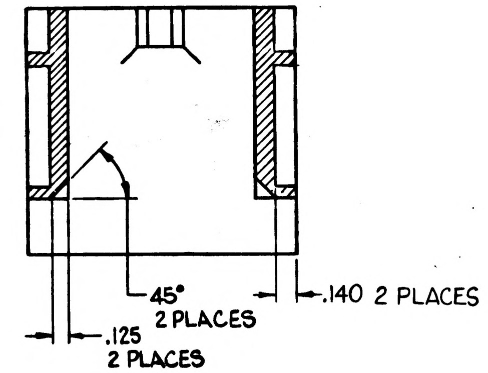
FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
HOLES, DIA A. & DIA B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 3/32 INCH.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACES ROUGHNESS MUST NOT EXCEED 125√.
MUST BE FREE FROM BURRS.

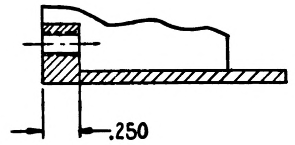
2 ▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

3 ▷ INSTALL, 6-32NC-3B INSERT PER MS33537. BREAK OFF TANG

4 ▷ MARK 1015115 AND REVISION LETTER PER MIL-STD-130 (ES-267).


45° 2 PLACES
.125 2 PLACES
.140 2 PLACES

SECTION A-A



PARTIAL SECTION B-B
ITEM 2 REMOVED

Ⓒ REPLACES REV B WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT-THREADED, LOCKING
1	1	1015115-1	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015149	
1015113	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+1°
-1/64	-.005	-1°

DO NOT SCALE THIS DRAWING

MATERIAL 1 ▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

DRAWN — DATE 29 APR 63
CHECKER 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 8 May 63
MIT APPROVAL 8 May 63

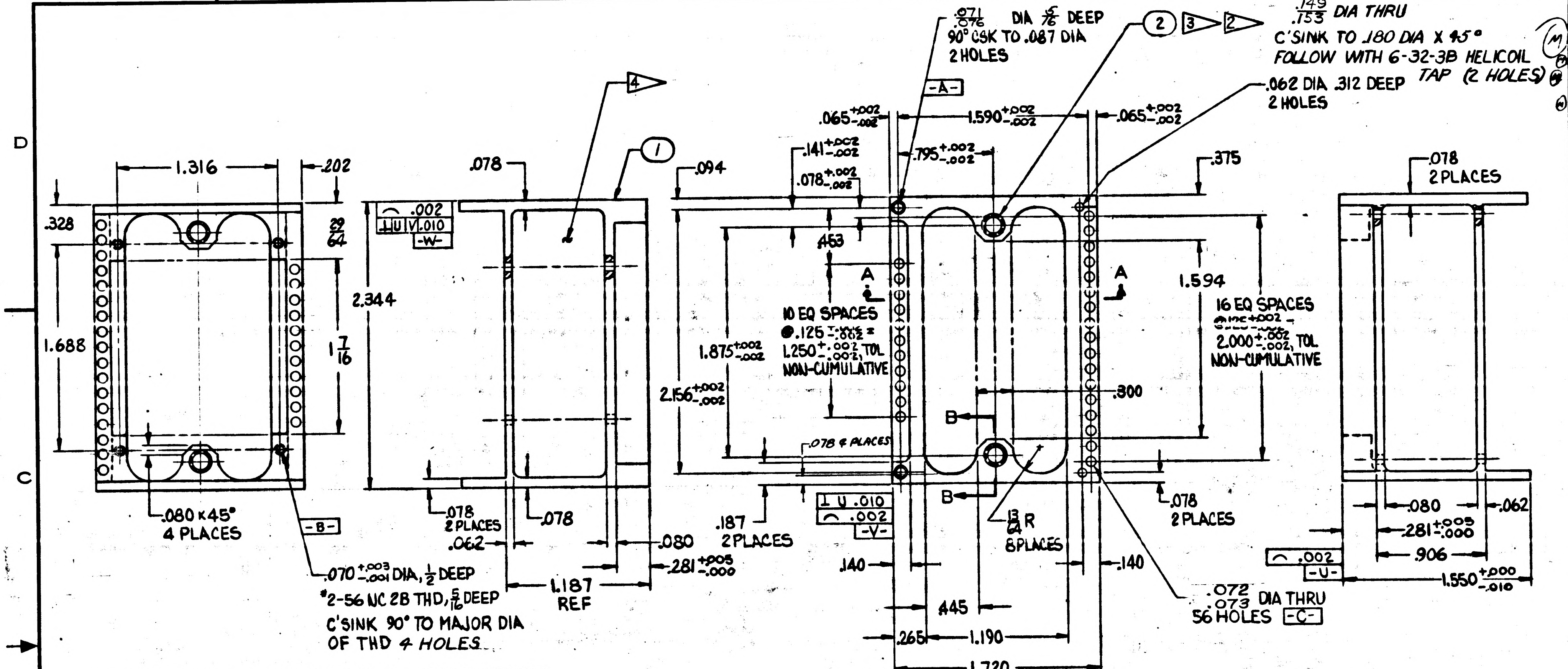
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

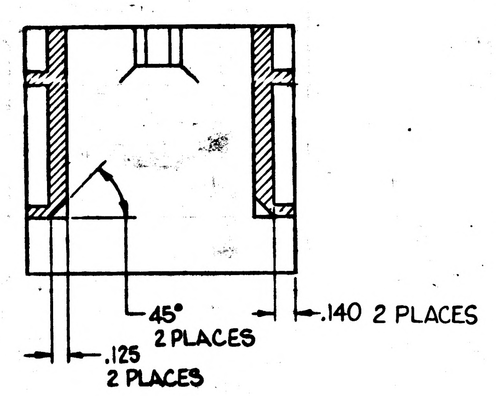
FRAME
(INSEP ASSY)
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO.
SIZE D
1015115
SCALE 2:1
SHEET —

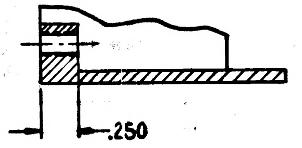
MIL 10770-P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY


.071 .076 DIA 5/16 DEEP
90° CSK TO .087 DIA
2 HOLES
.149 .153 DIA THRU
C'SINK TO .180 DIA X 45°
FOLLOW WITH 6-32-3B HELICOIL TAP (2 HOLES)
.062 DIA .312 DEEP
2 HOLES
-A-
1.316
.202
.328
29/64
2.344
1.688
1 7/16
.078
.094
.065 +.002 -.002
.141 +.002 -.002
.078 +.002 -.002
1.590 +.002 -.002
.795 +.002 -.002
.375
.453
10 EQ SPACES
.125 +.002 -.002
1.250 +.002 -.002 TOL
NON-CUMULATIVE
1.875 +.002 -.002
2.156 +.002 -.002
1.594
16 EQ SPACES
2.000 +.002 -.002 TOL
NON-CUMULATIVE
.300
.078 4 PLACES
.078 2 PLACES
-W-
-V-
-U-
-B-
-C-
.080 x 45° 4 PLACES
.070 +.003 -.001 DIA, 1/2 DEEP
*2-56 NC 2B THD, 5/16 DEEP
C'SINK 90° TO MAJOR DIA
OF THD 4 HOLES
.062
1.187 REF
.080
.281 +.005 -.000
.187 2 PLACES
.140
13/64 R 8 PLACES
.445
.265
1.190
1.720 REF
.072 .073 DIA THRU
56 HOLES
.906
1.550 +.000 -.010


45° 2 PLACES
.125 2 PLACES
.140 2 PLACES

SECTION A-A



PARTIAL SECTION B-B
ITEM 2 REMOVED

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

① MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
HOLES, DIA A & DIA B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 3/32 INCH.
ALL CORNERS TO BE .005 TO .015R OR CHAMFER.
SURFACES ROUGHNESS MUST NOT EXCEED 125√.

MUST BE FREE FROM BURRS.

② COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

③ INSTALL, 6-32NC-3B INSERT PER MS 33537. BREAK OFF TANG

④ MARK 1015115 AND REVISION LETTER PER ND 100 2019

Ⓒ REPLACES REV B WITH CHANGE

S115101

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REPLACES REV B WITH CHANGE PER TDRR 01195		8 MAY 63	WK
D		REVISED PER TDRR 02504		8-21-63	
E		REVISED PER TDRR 02895		8-28-63	RPK
F		REVISED PER TDRR 03018		9-5-63	RPK
G		REVISED PER TDRR 03019		9-5-63	WK
H		REVISED PER TDRR 03851		10-15-63	RPK
J		REVISED PER TDRR 03854		10-15-63	RPK

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT-THREADED, LOCKING
1	1	1015115-1	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015149	
1015113	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+1°
-1/64	-.005	-1°

DO NOT SCALE THIS DRAWING

MATERIAL ①

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN DATE 29 APRIL 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 8 May 63
MIT APPROVAL 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME
(INSEP ASSY)
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO.
SIZE D
1015115

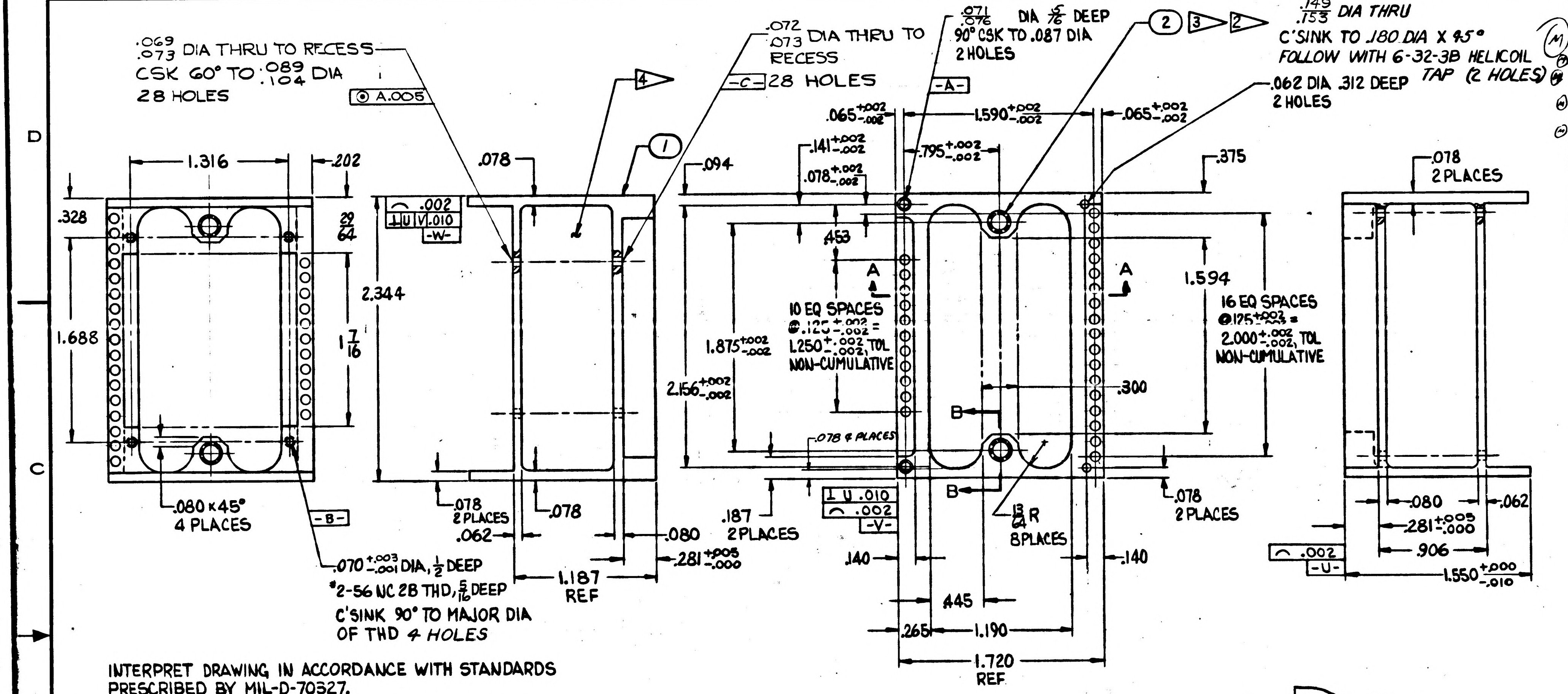
SCALE 2:1
SHEET —

Charleston 30 APR 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

K | 1015115 | 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REPLACES REV B WITH CHANGE PER TDRR 01195		8 MAY 63	WK
D		REVISED PER TDRR 02504		8-21-63	[illegible]
E		REVISED PER TDRR 02875		8-28-63	EPK
F		REVISED PER TDRR 03018		9-5-63	EPK WK
G		REVISED PER TDRR 03019		9-5-63	WK
H		REVISED PER TDRR 03851		10-15-63	EPK
J		REVISED PER TDRR 03854		10-15-63	EPK
K		REVISED PER TDRR 05428		27 DEC 63	EPK WK


8
7
6
5
4
3
D
C
.069 .073 DIA THRU TO RECESS
CSK 60° TO .089 .104 DIA
28 HOLES
⊙ A.005
4
1
.072 .073 DIA THRU TO RECESS
-C- 28 HOLES
.071 .076 DIA 5/16 DEEP
90° CSK TO .087 DIA
2 HOLES
-A-
2
3
2
.149 .153 DIA THRU
C'SINK TO .180 DIA X 45°
FOLLOW WITH 6-32-3B HELICOIL TAP (2 HOLES)
.062 DIA .312 DEEP
2 HOLES
1.316
.202
.328
29/64
1.688
1 7/16
2.344
.080 X 45°
4 PLACES
-B-
.070 +.003 -.001 DIA, 1/2 DEEP
#2-56 NC 2B THD, 5/16 DEEP
C'SINK 90° TO MAJOR DIA
OF THD 4 HOLES
.078
.002
⊥ U V .010
-W-
.078 2 PLACES
.062
.078
.080
.281 +.005 -.000
1.187 REF
.094
.065 +.002 -.002
1.590 +.002 -.002
.065 +.002 -.002
.141 +.002 -.002
.078 +.002 -.002
.795 +.002 -.002
.453
.375
A
A
1.594
10 EQ SPACES @ .125 +.002 -.002 = 1.250 +.002 -.002, TOL NON-CUMULATIVE
16 EQ SPACES @ .125 +.002 -.002 = 2.000 +.002 -.002, TOL NON-CUMULATIVE
1.875 +.002 -.002
2.156 +.002 -.002
.300
B
B
.078 4 PLACES
.187 2 PLACES
⊥ U .010
.002
-V-
13/64 R
8 PLACES
.078 2 PLACES
.140
.140
.445
.265
1.190
1.720 REF
.078 2 PLACES
.080
.062
.281 +.005 -.000
.906
.002
-U-
1.550 +.000 -.010

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
HOLES, DIA A. & DIA B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 3/32 INCH.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
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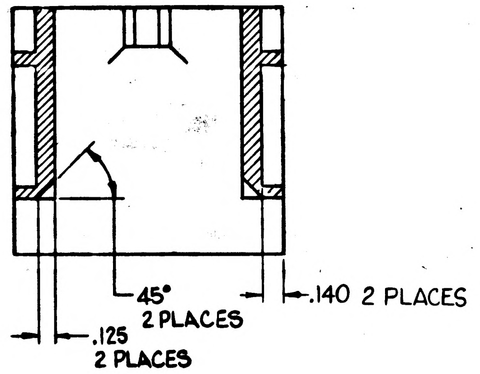
MUST BE FREE FROM BURRS.

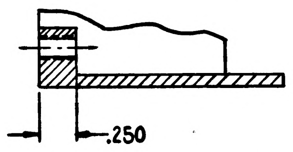
2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

3 INSTALL, 6-32NC-3B INSERT PER MS33646. BREAK OFF TANG

4 MARK 1015115 AND REVISION LETTER PER ND 1002019


45°
2 PLACES
.140 2 PLACES
.125
2 PLACES

SECTION A-A



PARTIAL SECTION B-B
ITEM 2 REMOVED

Ⓒ REPLACES REV B WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT-THREADED, LOCKING
1	1	1015115-1	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015149	
1015113	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±1/64 DECIMALS .XX ±.02 .XXX ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL 1
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 29 APR 63
CHECKER [illegible] 30 APR 63
APPROVAL [illegible] 30 APR 63
APPROVAL [illegible] 30 APR 63
NASA APPROVAL [illegible] 8 May 63
MIT APPROVAL [illegible] 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME
(INSEP ASSY)
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO. | SIZE D | 1015115
SCALE 2:1 | SHEET —

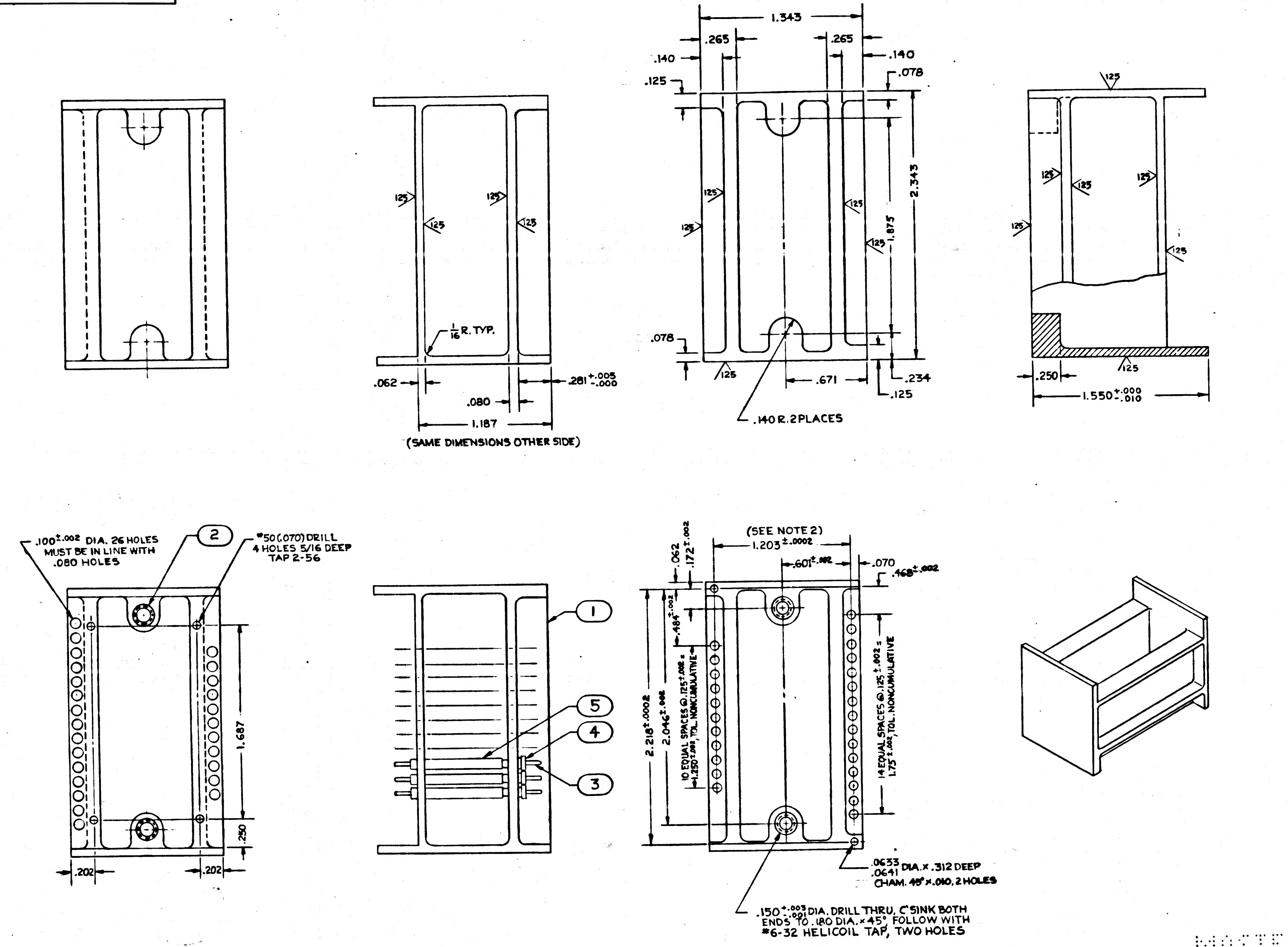
Charleston [illegible]

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015115

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL


1.343
.265
.265
.140
.140
.125
.078
2.343
1.875
.078
.671
.234
.125
.140 R. 2 PLACES
125
1/16 R. TYP.
.062
.080
.281 +.005 -.000
1.187
(SAME DIMENSIONS OTHER SIDE)
.250
1.550 +.000 -.010
.100 ±.002 DIA. 26 HOLES MUST BE IN LINE WITH .080 HOLES
2
#50 (.070) DRILL 4 HOLES 5/16 DEEP TAP 2-56
1.687
.250
.202
.202
1
5
4
3
(SEE NOTE 2)
1.203 ±.0002
.601 ±.002
.070
.468 ±.002
.062
.172 ±.002
.484 ±.002
2.218 ±.0002
2.046 ±.002
10 EQUAL SPACES @ .125 ±.002 = 1.250 ±.002, TOL. NONCUMULATIVE
14 EQUAL SPACES @ .125 ±.002 = 1.75 ±.002, TOL. NONCUMULATIVE
.0633 .0641 DIA. x .312 DEEP CHAM. 45° x .010, 2 HOLES
.150 +.003 -.001 DIA. DRILL THRU, C'SINK BOTH ENDS TO .180 DIA. x 45°, FOLLOW WITH #6-32 HELICOIL TAP, TWO HOLES

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00453 **DATE** 27Feb63

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006776-18	INSULATION SLEEVING, ELECTRICAL	5
26	1006775	INSULATOR, WRAPOST-MALE MINIATURE	4
26	1006782-3	CONTACT, BLADE EDGE CONNECTOR	3
2	MS122118-016	INSERT, HELICOIL #6-32 x 1/4	2
1		MODULE CASTING	1

LIST OF MATERIALS

MASTER

NOTES.
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. TOLERANCE .0002 APPLIES TO .0633 DIA. HOLES ONLY.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 2-12-63
CHECKED R. L. Bat[illegible] 2/20/63
APPROVAL R. L. [illegible]
APPROVAL
NASA APPROVAL W. J. Rhine 2-27-63
MIT APPROVAL W. [illegible] 27Feb63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME, MODULE
MOTOR DRIVE PREAMPLIFIER

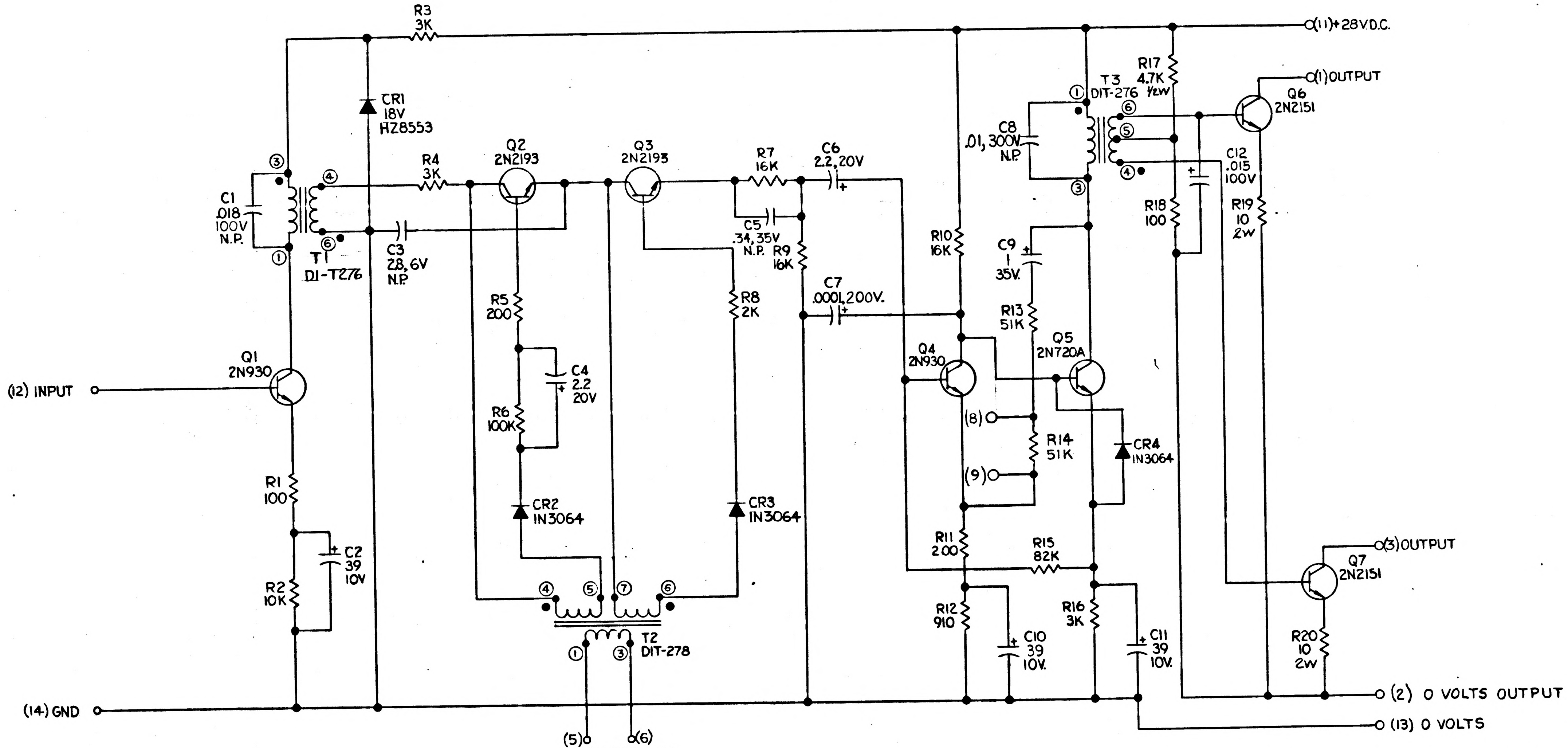
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015115
SCALE 2 x
WT
SHEET OF

1015115

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015116 Ⓜ

TDRR 00452 REVISIONS 27 Feb 63			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00989	24 Jan 63	WK


R3
3K
(11) +28V.D.C.
R17
4.7K
½W
T3
DIT-276
(1) OUTPUT
Q6
2N2151
CR1
18V
HZ8553
C8
.01, 300V
N.P.
①
③
④
⑤
⑥
C12
.015
100V
R18
100
R19
10
2W
Q2
2N2193
Q3
2N2193
R4
3K
R7
16K
C6
2.2, 20V
C1
.018
100V
N.P.
T1
DI-T276
C3
2.8, 6V
N.P.
C5
.34, 35V
N.P.
R9
16K
R10
16K
C9
1
35V.
R5
200
R8
2K
C7
.0001, 200V.
R13
51K
Q5
2N720A
C4
2.2
20V
R6
100K
Q4
2N930
Q1
2N930
(12) INPUT
(8)
(9)
R14
51K
CR4
IN3064
R1
100
CR2
IN3064
CR3
IN3064
C2
39
10V
R2
10K
R11
200
R15
82K
(3) OUTPUT
Q7
2N2151
R12
910
R16
3K
C10
39
10V.
C11
39
10V.
R20
10
2W
T2
DIT-278
(14) GND
(2) 0 VOLTS OUTPUT
(13) 0 VOLTS
(5)
(6)
28V, 800 ~ 1%

REF DWG: MOTOR DRIVE AMPLIFIER ASSY 1015121

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBE BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE PART DESIGNATION WITH THE SUB ASSEMBLY DESIGNATION
5. PARTS LIST TO BE FOR REFERENCE ONLY

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN T.C.P. DATE 1-24-63
CHECKED R. L. Battaglia
APPROVAL R. C. Grunwood
APPROVAL H. Margulies
NASA APPROVAL W. J. Rhine 2-27-63
MIT APPROVAL W Koppen 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015116
SCALE — WT — SHEET 1 OF 2

1015116

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

A 1015116 (M)

TDRR00452 REVISIONS 27Feb63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR00989	24Apr63	WK.

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-8	RESISTOR	100	±2%	¼W
R2	↑ -56	↑	10K	↑	↑
R3	-43		3K		
R4	-43		3K		
R5	-15		200		
R6	-80		100K		
R7	-61		16K		
R8	-39		2K		
R9	-61		16K		
R10	-61		16K		
R11	-15		200		
R12	-31		910		
R13	-73		51 K		
R14	-73		51 K		
R15	↓ -78		82K		↓
R16	1006750-43		3K		¼W
R17	1006760-48		4.7K	↓	½W
R18	1006750-8		100	±2%	¼W
R19	1010312-001	↓	10	±1%	2W
R20	1010312-001	RESISTOR	10	±1%	2W
CR1	1010372-24	DIODE	HZ8553		18V
CR2	1010370	↑	IN3064		
CR3	1010370	↓	IN3064		
CR4	1010370	DIODE	IN3064		

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
C1	1010375-53	CAPACITOR	.018	±10%	100V
C2	1006755-13	↑	39	↑	10V
C3	1010279-018		2.8		6V
C4	1006755-29		2.2		20V
C5	1010279-226		.34	↓	35V
C6	1006755-29		2.2	±10%	20V
C7	1010359-5		.0001	±20%	200V
C8	1010375-124		.01	±10%	300V
C9	1006755-69		1	↑	35V
C10	1006755-13		39		10V
C11	1006755-13	↓	39	↓	10V
C12	1010375-52	CAPACITOR	.015	±10%	100V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010398-1	↑	2N2193		
Q3	1010398-1		2N2193		
Q4	1010397		2N930		
Q5	1010357		2N720A		
Q6	1010269-2	↓	2N2151		
Q7	1010269-2	TRANSISTOR	2N2151		
T1	1010276	TRANSFORMER	DI-T276		
T2	1010365	TRANSFORMER	DI-T278		
T3	1010276	TRANSFORMER	DI-T276		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN T.C.P. DATE 1·24·63
CHECKED K.L. Battalform
APPROVAL R.C. Greenwood
APPROVAL H. Margulies
NASA APPROVAL W.J. Rhine 2-27-63
MIT APPROVAL 27Feb63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015116
SCALE — WT — SHEET 2 OF 2

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

1015116 A

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

B | 1015116 Ⓜ Ⓜ

TDRR00452 REVISIONS 27Feb63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR00989	24Apr63	WK
B	REVISED PER TDRR01204	8May63	WK

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-8	RESISTOR	100	±2%	¼W
R2	-56		10K		
R3	-43		3K		
R4	-43		3K		
R5	-15		200		
R6	-80		100K		
R7	-61		16K		
R8	-39		2K		
R9	-61		16K		
R10	-61		16K		
R11	-15		200		
R12	-31		910		
R13	-73		51 K		
R14	-73		51 K		
R15	-78		82K		
R16	1006750-43		3K		¼W
R17	1006760-48		4.7K		½W
R18	1006750-8		100	±2%	¼W
R19	1010389-8		10	±1%	2W
R20	1010389-8	RESISTOR	10	±1%	2W
CR1	1010372-24	DIODE	HZ8553		18V
CR2	1010370		IN3064		
CR3	1010370		IN3064		
CR4	1010370	DIODE	IN3064		

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
C1	1010375-53	CAPACITOR	.018	±10%	100V
C2	1006755-13		39		10V
C3	1010279-018		2.8		6V
C4	1006755-29		2.2		20V
C5	1010279-226		.34		35V
C6	1006755-29		2.2	±10%	20V
C7	1010359-5		.0001	±20%	200V
C8	1010375-124		.01	±10%	300V
C9	1006755-69		1		35V
C10	1006755-13		39		10V
C11	1006755-13		39		10V
C12	1010375-52	CAPACITOR	.015	±10%	100V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010398-1		2N2193		
Q3	1010398-1		2N2193		
Q4	1010397		2N930		
Q5	1010357		2N720A		
Q6	1010269-2		2N2151		
Q7	1010269-2	TRANSISTOR	2N2151		
T1	1010276	TRANSFORMER	D1-T276		
T2	1010365	TRANSFORMER	D1-T278		
T3	1010276	TRANSFORMER	D1-T276		

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
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FINAL FINISH —

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CAMBRIDGE, MASS
DWG. NO.
CONTRACT

DRAWN T.C.P. DATE 1·24·63
CHECKED K. L. Battaglini
APPROVAL R. C. Greenwood
APPROVAL H. Margulius
NASA APPROVAL W. J. Rhine 2·27·63
MIT APPROVAL 27Feb63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015116
SCALE —
WT —
SHEET 2 OF 2

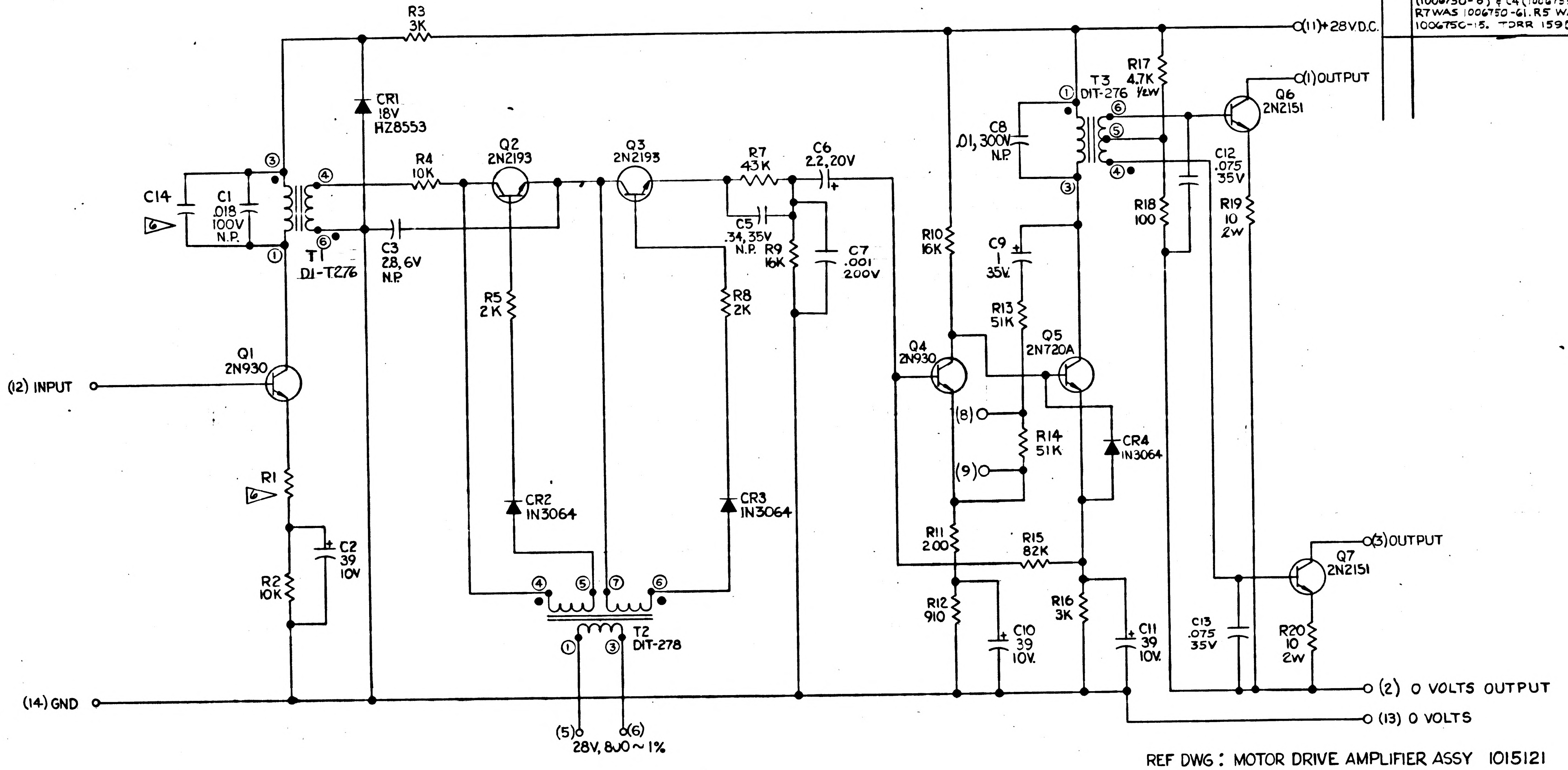
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015116 C

TDRR 00452 REVISIONS 27 Feb 63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00989	24 Jan 63	wll
C	ADDED C3 & C4. C7 WAS 1010359-5. C7 WAS CONNECTED BETWEEN GND & COLLECTOR OF Q4. ADDED NOTE ⑥. REMOVED R6 (1006750-8) & C4 (1006755-29). R7 WAS 1006750-61. R5 WAS 1006750-15. TDRR 1598	19 June 63	WL


R3
3K
(11) +28V.D.C.
CR1
18V
HZ8553
R17
4.7K
½W
T3
DIT-276
①
⑥
⑤
③
④
C8
.01, 300V
N.P.
(1) OUTPUT
Q6
2N2151
C14
C1
.018
100V
N.P.
③
④
⑥
①
T1
DI-T276
R4
10K
C3
28, 6V
N.P.
Q2
2N2193
Q3
2N2193
R7
43K
C6
2.2, 20V
C5
.34, 35V
N.P.
R9
16K
C7
.001
200V
C12
.075
35V
R18
100
R19
10
2W
R10
16K
C9
1
35V
R13
51K
R5
2K
R8
2K
Q4
2N930
Q5
2N720A
Q1
2N930
(12) INPUT
(8)
(9)
R14
51K
CR4
1N3064
R1
CR2
1N3064
CR3
1N3064
C2
39
10V
R2
10K
④
⑤
⑦
⑥
①
③
T2
DIT-278
R11
200
R15
82K
(3) OUTPUT
Q7
2N2151
R12
910
C10
39
10V
R16
3K
C11
39
10V
C13
.075
35V
R20
10
2W
(14) GND
(2) 0 VOLTS OUTPUT
(13) 0 VOLTS
(5)
(6)
28V, 800 ~ 1%

REF DWG: MOTOR DRIVE AMPLIFIER ASSY 1015121

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBE BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE PART DESIGNATION WITH THE SUB ASSEMBLY DESIGNATION
5. PARTS LIST TO BE FOR REFERENCE ONLY
⑥ VALUE TO BE DETERMINED PER ATP . COMPONENT TO BE SUPPLIED FROM TABLE BELOW:

R1		C1	
1006750-4	68 OHMS	1010359-5	100 μμf
-5	75	-9	220
-6	82	-11	330
-7	91	-13	470
-8	100	-14	560
-9	110	-15	680
-10	120	-16	820
-11	130	1010359-17	1000 μμf
-12	150		
1006750-13	160 OHMS		

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN T.C.P. DATE 1-24-63
CHECKED R. L. Battaglia
APPROVAL R.C. Grunwood
APPROVAL H. Margulies
NASA APPROVAL W. J. [illegible] 2-27-63
MIT APPROVAL W Kuffer 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015116
SCALE — WT — SHEET 1 OF 2

95

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1015116 C

TDRR 00452 REVISIONS 27 Feb 63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00989	24 Apr 63	WK.
B	REVISED PER TDRR 01204	8 May 63	WK.
C	SEE SHT 1. TDRR 1590.	19 Jun 63	WK

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1006750	RESISTOR		±2%	¼W
R2	↑ -56	↑	10K	↑	↑
R3	-43		3K		
R4	-56		10K		
R5	-39		2K		
R7	-71		43K		
R8	-39		2K		
R9	-61		16K		
R10	-61		16K		
R11	-15		200		
R12	-31		910		
R13	-73		51 K		
R14	-73		51 K		
R15	↓ -78		82K		↓
R16	1006750-43		3K		¼W
R17	1006760-48		4.7K	↓	½W
R18	1006750-8		100	±2%	¼W
R19	1010389-8	↓	10	±1%	2W
R20	1010389-8	RESISTOR	10	±1%	2W
CR1	1010372-24	DIODE	HZ8553		18V
CR2	1010370	↑	IN3064		
CR3	1010370	↓	IN3064		
CR4	1010370	DIODE	IN3064		

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
C1	1010375-53	CAPACITOR	.018	±10%	100V
C2	1006755-13	↑	39	↑	10V
C3	1010279-018		2.8		6V
C5	1010279-226		.34	↓	35V
C6	1006755-29		2.2	±10%	20V
C7	1010359-17		.001	±10%	200V
C8	1010375-124		.01	±10%	300V
C9	1006755-69		1	↑	35V
C10	1006755-13		39		10V
C11	1006755-13		39	↓	10V
C12	1010279-218		.075	±10%	35V
C13	1010279-218	↓	.075	±10%	35V
C14	1010359	CAPACITOR		±10%	200V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010398-1	↑	2N2193		
Q3	1010398-1		2N2193		
Q4	1010397		2N930		
Q5	1010357		2N720A		
Q6	1010269-2	↓	2N2151		
Q7	1010269-2	TRANSISTOR	2N2151		
T1	1010276	TRANSFORMER	DI-T276		
T2	1010365	TRANSFORMER	DI-T278		
T3	1010276	TRANSFORMER	DI-T276		

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

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INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN T.C.P. DATE 1·24·63
CHECKED K. L. Battaglia
APPROVAL R. C. Greenwood
APPROVAL H. Margulius
NASA APPROVAL W. J. Rhine 2·27·63
MIT APPROVAL W. Kupfer 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015116
SCALE —//— WT —//— SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

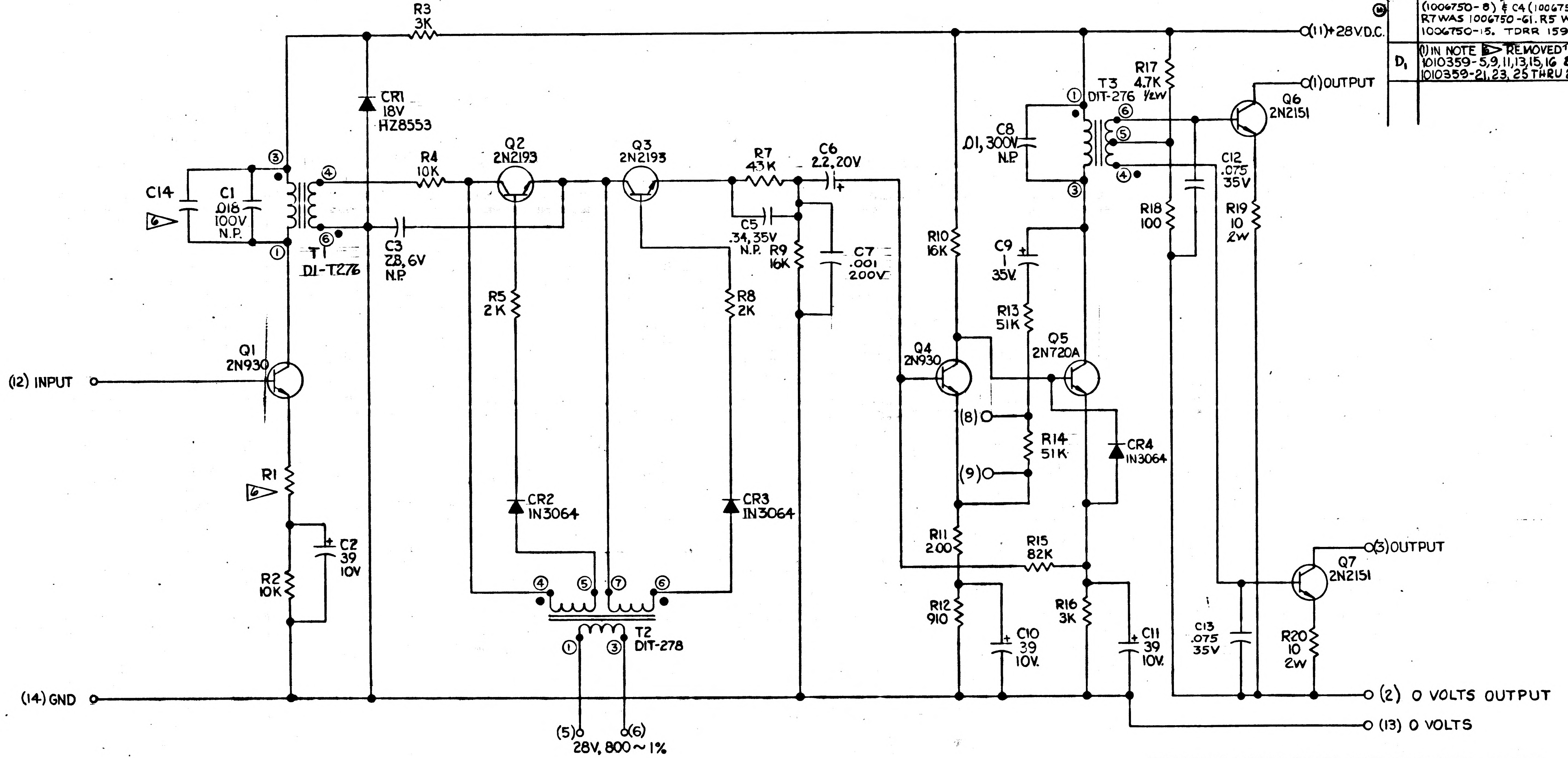
1015116 C

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015116 C

TDRR 00452 REVISIONS 27 Feb 63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00989	24 Jun 63	wk
C	ADDED C13 & C14. C7 WAS 1010359-5. C7 WAS CONNECTED BETWEEN GND & COLLECTOR OF Q4. ADDED NOTE ▷6. REMOVED R6 (1006750-8) & C4 (1006755-29). R7 WAS 1006750-61. R5 WAS 1006750-15. TDRR 1590	19 June 63	WK
D₁	(1) IN NOTE ▷6 REMOVED 1010359-5,9,11,13,15,16 & ADDED 1010359-21,23,25 THRU 29 TDRR 01553	26 June 63	WK


R3
3K
(11)+28V.D.C.
CR1
18V
HZ8553
C14
▷6
C1
.018
100V
N.P.
T1
DI-T276
R4
10K
C3
2.8, 6V
N.P.
Q2
2N2193
Q3
2N2193
R7
43K
C6
2.2, 20V
C5
.34, 35V
N.P.
R9
16K
C7
.001
200V
R5
2K
R8
2K
Q1
2N930
(12) INPUT
R1
▷6
C2
39
10V
R2
10K
CR2
1N3064
CR3
1N3064
T2
DIT-278
(14) GND
(5)
(6)
28V, 800 ~ 1%
T3
DIT-276
C8
.01, 300V
N.P.
R17
4.7K
1/2W
Q6
2N2151
(1) OUTPUT
C12
.075
35V
R18
100
R19
10
2W
R10
16K
C9
1
35V
R13
51K
Q4
2N930
Q5
2N720A
(8)
(9)
R14
51K
CR4
1N3064
R11
200
R15
82K
R12
910
C10
39
10V
R16
3K
C11
39
10V
C13
.075
35V
Q7
2N2151
(3) OUTPUT
R20
10
2W
(2) 0 VOLTS OUTPUT
(13) 0 VOLTS

REF DWG : MOTOR DRIVE AMPLIFIER ASSY 1015121

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBE BY MIL-D-70327
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3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
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5. PARTS LIST TO BE FOR REFERENCE ONLY

▷6 VALUE TO BE DETERMINED PER ATP . COMPONENT TO BE SUPPLIED FROM TABLE BELOW :

R1	
1006750-4	68 OHMS
-5	75
-6	82
-7	91
-8	100
-9	110
-10	120
-11	130
-12	150
1006750-13	160 OHMS

C14	
1010359-17	1000 uuf
-21	2200
-23	3300
-25	4700
-26	5600
-27	6800
-28	8200
1010359-29	10000 uuf

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
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MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

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DWG. NO.
CONTRACT
DRAWN T.C.P. DATE 1-24-63
CHECKED L. L. Battaglia
APPROVAL R. C. Greenwood
APPROVAL H. Margulies
NASA APPROVAL W. J. [illegible] 2-27-63
MIT APPROVAL [illegible] 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015116
SCALE —
WT —
SHEET 1 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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D | 1015116

TDRR00452 REVISIONS 27Feb63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR00989	24Apr63	WK.
B	REVISED PER TDRR01204	9May63	WK
C	SEE SHT 1. TDRR 1590.	19Jun63	WK
D1	1006755-15 WAS 1006755-13 C10 TDRR 01795	1Jul63	WK

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1006750	RESISTOR		±2%	1/4W
R2	-56		10K		
R3	-43		3K		
R4	-56		10K		
R5	-39		2K		
R7	-71		43K		
R8	-39		2K		
R9	-61		16K		
R10	-61		16K		
R11	-15		200		
R12	-31		910		
R13	-73		51K		
R14	-73		51K		
R15	-78		82K		
R16	1006750-43		3K		1/4W
R17	1006760-48		4.7K		1/2W
R18	1006750-8		100	±2%	1/4W
R19	1010389-8		10	±1%	2W
R20	1010389-8	RESISTOR	10	±1%	2W
CR1	1010372-24	DIODE	HZ8553		18V
CR2	1010370		IN3064		
CR3	1010370		IN3064		
CR4	1010370	DIODE	IN3064		

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
C1	1010375-53	CAPACITOR	.018	±10%	100V
C2	1006755-13		39		10V
C3	1010279-018		2.8		6V
C5	1010279-226		.34		35V
C6	1006755-29		2.2	±10%	20V
C7	1010359-17		.001	±10%	200V
C8	1010375-124		.01	±10%	300V
C9	1006755-69		1		35V
C10	1006755-15		120		10V
C11	1006755-13		39		10V
C12	1010279-218		.075	±10%	35V
C13	1010279-218		.075	±10%	35V
C14	1010359	CAPACITOR		±10%	200V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010398-1		2N2193		
Q3	1010398-1		2N2193		
Q4	1010397		2N930		
Q5	1010357		2N720A		
Q6	1010269-2		2N2151		
Q7	1010269-2	TRANSISTOR	2N2151		
T1	1010276	TRANSFORMER	DI-T276		
T2	1010365	TRANSFORMER	DI-T278		
T3	1010276	TRANSFORMER	DI-T276		

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
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CHECKED R.L. Battafarano
APPROVAL R.C. Duckwood
APPROVAL A. Margulies
NASA APPROVAL W.J. Rhine 2-27-63
MIT APPROVAL W Kupfer 27Feb63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015116
SCALE — | WT — | SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015116 D

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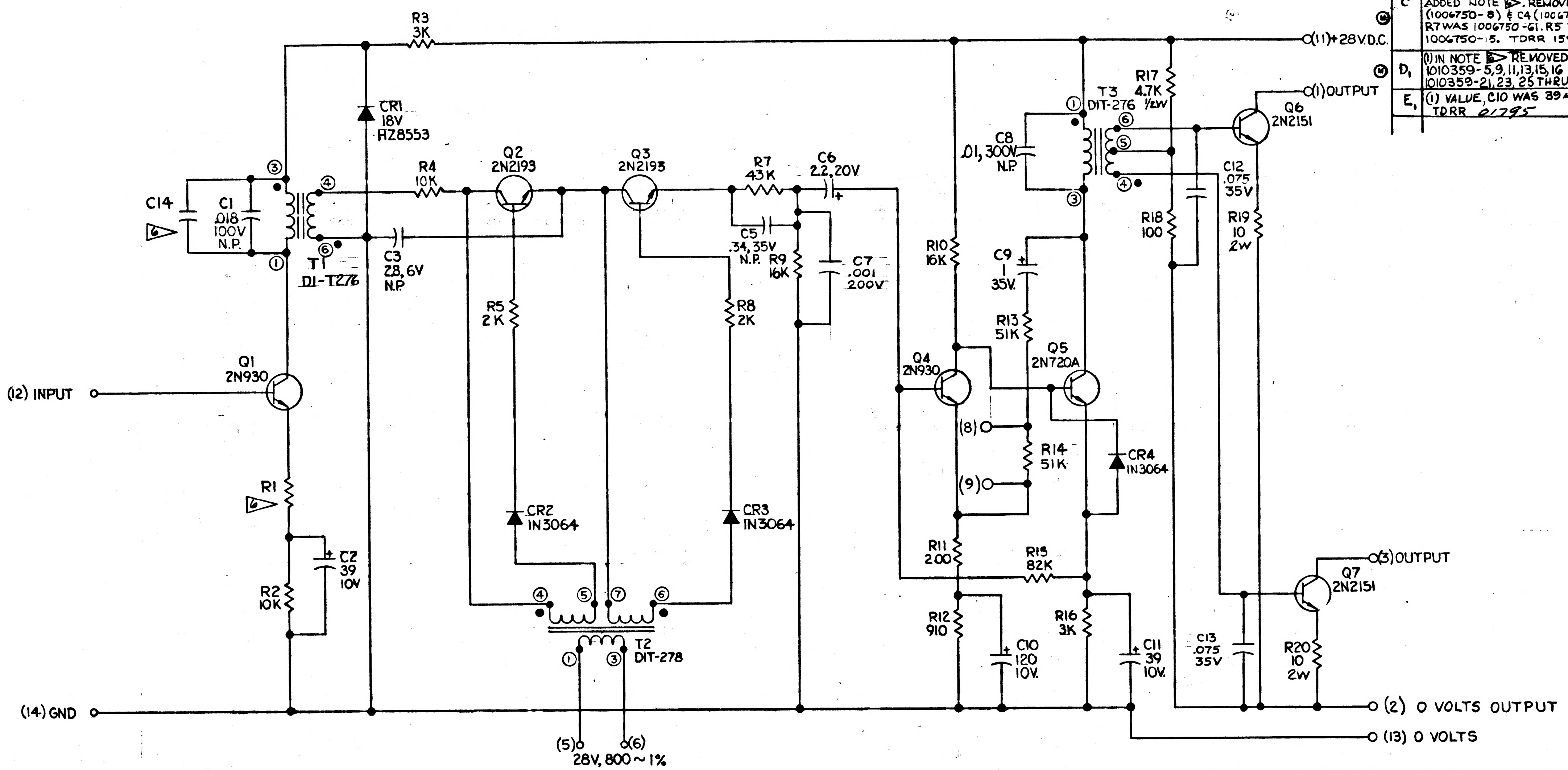
E 1015116

TDRR 00452 REVISIONS 27Feb63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00989	24 Jul 63	WK
C	ADDED C13 & C14. C7 WAS 1010359-5. C7 WAS CONNECTED BETWEEN GND & COLLECTOR OF Q4. ADDED NOTE 6. REMOVED R6 (1006750-8) & C4 (1006755-29). R7 WAS 1006750-61. R5 WAS 1006750-15. TDRR 1598	19 June 63	WK
D1	(1) IN NOTE 6 REMOVED TDRR 01555 1010359-5,9,11,13,15,16 & ADDED 1010359-21,23, 25 THRU 29	24 June 63	WK
E1	(1) VALUE, C10 WAS 39 uf TDRR 01795	7 July 63	WK


R3
3K
(11)+28V.D.C.
CR1
18V
HZ8553
C14
6
C1
.018
100V
N.P.
T1
DI-T276
③
④
①
⑥
R4
10K
C3
2.8, 6V
N.P.
Q2
2N2193
Q3
2N2193
R7
43K
C6
2.2, 20V
C5
.34, 35V
N.P.
R9
16K
C7
.001
200V
R5
2K
R8
2K
CR2
1N3064
CR3
1N3064
④
⑤
⑦
⑥
①
③
T2
DIT-278
(5)
(6)
28V, 800 ~ 1%
(12) INPUT
Q1
2N930
R1
6
C2
39
10V
R2
10K
(14) GND
T3
DIT-276
①
③
④
⑤
⑥
C8
.01, 300V
N.P.
R17
4.7K
1/2W
(1) OUTPUT
Q6
2N2151
C12
.075
35V
R18
100
R19
10
2W
R10
16K
C9
1
35V.
R13
51K
Q4
2N930
Q5
2N720A
(8)
(9)
R14
51K
CR4
1N3064
R11
200
R15
82K
R12
910
C10
120
10V.
R16
3K
C11
39
10V.
C13
.075
35V
Q7
2N2151
(3) OUTPUT
R20
10
2W
(2) 0 VOLTS OUTPUT
(13) 0 VOLTS

REF DWG: MOTOR DRIVE AMPLIFIER ASSY 1015121

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBE BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE PART DESIGNATION WITH THE SUB ASSEMBLY DESIGNATION
5. PARTS LIST TO BE FOR REFERENCE ONLY

6 VALUE TO BE DETERMINED PER ATP . COMPONENT TO BE SUPPLIED FROM TABLE BELOW:

R1	
1006750-4	68 OHMS
-5	75
-6	82
-7	91
-8	100
-9	110
-10	120
-11	130
-12	150
1006750-13	160 OHMS

C14	
1010359-17	1000 uuf
-21	2200
-23	3300
-25	4700
-26	5600
-27	6800
-28	8200
1010359-29	10000 uuf

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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APPROVAL R. C. Grunwood
APPROVAL H. Nargulina
NASA APPROVAL W. J. Rhine 2-27-63
MIT APPROVAL W Kupfer 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM AMPLIFIER, MOTOR DRIVE

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015116
SCALE — WT — SHEET 1 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

E 1015116

TDRR 00452	REVISIONS 27Feb63		
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00989	24Apr63	WK.
B	REVISED PER TDRR 01204	4May63	WK
C	SEE SHT 1. TDRR 1590.	19Jun63	WK
D,	1006755-15 WAS 1006755-13, C10 TDRR 01795	[illegible]	WK
E	REVISED PER TDRR 02502	8-21-63	[illegible]

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REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1006750	RESISTOR		±2%	1/4W
R2	-56		10K		
R3	-43		3K		
R4	-56		10K		
R5	-39		2K		
R7	-71		43K		
R8	-39		2K		
R9	-57		11K		
R10	-61		16K		
R11	-15		200		
R12	-31		910		
R13	-73		51 K		
R14	-73		51 K		
R15	-78		82K		
R16	1006750-43		3K		1/4W
R17	1006760-48		4.7K		1/2W
R18	1006750-8		100	±2%	1/4W
R19	1010389-8		10	±1%	2W
R20	1010389-8	RESISTOR	10	±1%	2W
CR1	1010372-24	DIODE	HZ8553		18V
CR2	1010370		IN3064		
CR3	1010370		IN3064		
CR4	1010370	DIODE	IN3064		

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
C1	1010375-53	CAPACITOR	.018	±5%	100V
C2	1006755-13		39	±10%	10V
C3	1010438-003		2	±10%	6V
C5	1010279-226		.34		35V
C6	1006755-29		2.2	±10%	20V
C7	1010359-17		.001	±10%	200V
C8	1010375-124		.01	±5%	300V
C9	1006755-69		1	10%	35V
C10	1006755-15		120		10V
C11	1006755-13		39		10V
C12	1010279-218		.075	±10%	35V
C13	1010279-218		.075	±10%	35V
C14	1010359	CAPACITOR		±10%	200V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010398-1		2N2193		
Q3	1010398-1		2N2193		
Q4	1010397		2N930		
Q5	1010357		2N720A		
Q6	1010269-2		2N2151		
Q7	1010269-2	TRANSISTOR	2N2151		
T1	1010276	TRANSFORMER	DI-T276		
T2	1010365	TRANSFORMER	DI-T278		
T3	1010276	TRANSFORMER	DI-T276		

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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DO NOT SCALE THIS DRAWING
MATERIAL —
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DWG. NO. CONTRACT
DRAWN T.C.P. DATE 1·24·63
CHECKED K. L. Batt[illegible]
APPROVAL R. C. [illegible]
APPROVAL H. Margulius
NASA APPROVAL W. J. Rhine 2-27-63
MIT APPROVAL [illegible] 27 Feb 63

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SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015116
SCALE — WT — SHEET 2 OF 2

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

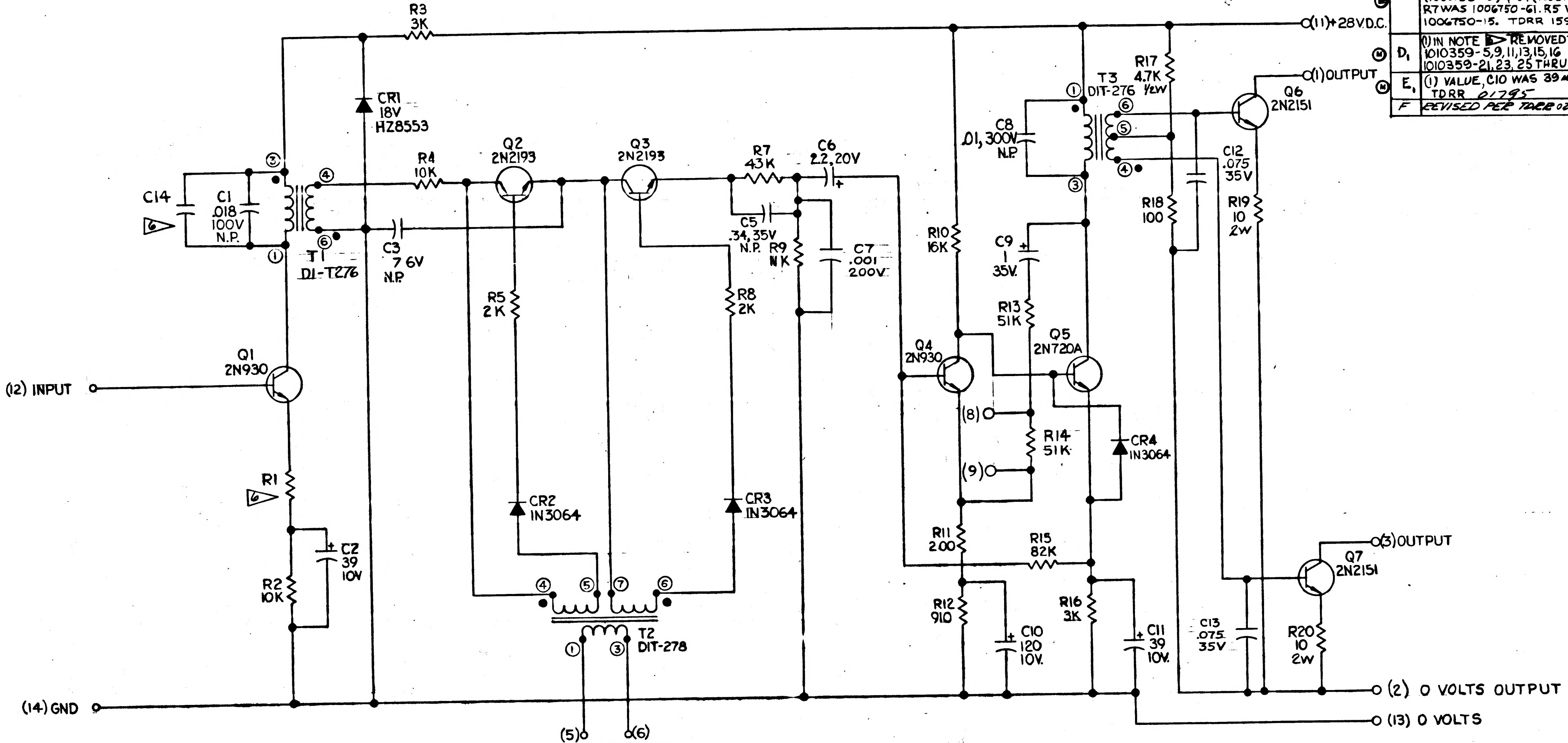
1015116 E

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015116 F

TDRR 00452 REVISIONS 27Feb63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00989	24Jan63	WK
C	ADDED C13 & C14. C7 WAS 1010359-5. C7 WAS CONNECTED BETWEEN GND & COLLECTOR OF Q4 ADDED NOTE 6. REMOVED R6 (1006750-8) & C4 (1006755-29). R7 WAS 1006750-61. R5 WAS 1006750-15. TDRR 1590	19 June 63	WK
D1	(1) IN NOTE 6 REMOVED TDRR 01155 1010359-5,9,11,13,15,16 & ADDED 1010359-21,23, 25 THRU 29	26 June 63	WK
E1	(1) VALUE, C10 WAS 39 uf TDRR 01795	7 July 63	WK
F	REVISED PER TDRR 02512	8-21-63	JJN


R3
3K
CR1
18V
HZ8553
C14
6
C1
.018
100V
N.P.
③
④
⑥
①
T1
DI-T276
R4
10K
C3
7 6V
N.P.
Q2
2N2193
Q3
2N2193
R7
43K
C6
2.2,20V
C5
.34,35V
N.P.
R9
NK
C7
.001
200V
R5
2K
R8
2K
Q1
2N930
(12) INPUT
R1
6
C2
39
10V
R2
10K
CR2
1N3064
CR3
1N3064
④
⑤
⑦
⑥
T2
DIT-278
①
③
(14) GND
(5)
(6)
28V, 800 ~ 1%
(11) +28V.D.C.
R17
4.7K
1/2W
T3
DIT-276
①
⑥
⑤
④
③
C8
.01, 300V
N.P.
(1) OUTPUT
Q6
2N2151
C12
.075
35V
R18
100
R19
10
2W
R10
16K
C9
1
35V
R13
51K
Q4
2N930
Q5
2N720A
(8)
(9)
R14
51K
CR4
1N3064
R11
200
R15
82K
R12
910
C10
120
10V
R16
3K
C11
39
10V
C13
.075
35V
(3) OUTPUT
Q7
2N2151
R20
10
2W
(2) 0 VOLTS OUTPUT
(13) 0 VOLTS

REF DWG: MOTOR DRIVE AMPLIFIER ASSY 1015121

NOTES
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R1	
1006750-4	68 OHMS
-5	75
-6	82
-7	91
-8	100
-9	110
-10	120
-11	130
-12	150
1006750-13	160 OHMS

C14	
1010359-17	1000 uuf
-21	2200
-23	3300
-25	4700
-26	5600
-27	6800
-28	8200
1010359-29	10000 uuf

MASTER

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NEXT ASSY	USED ON

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APPROVAL R. C. Greenwood
APPROVAL H. Margulies
NASA APPROVAL W. J. Rhine 2-27-63
MIT APPROVAL W Keyes 27Feb63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015116
SCALE —
WT —
SHEET 1 OF 2

INCHES
0 1 2
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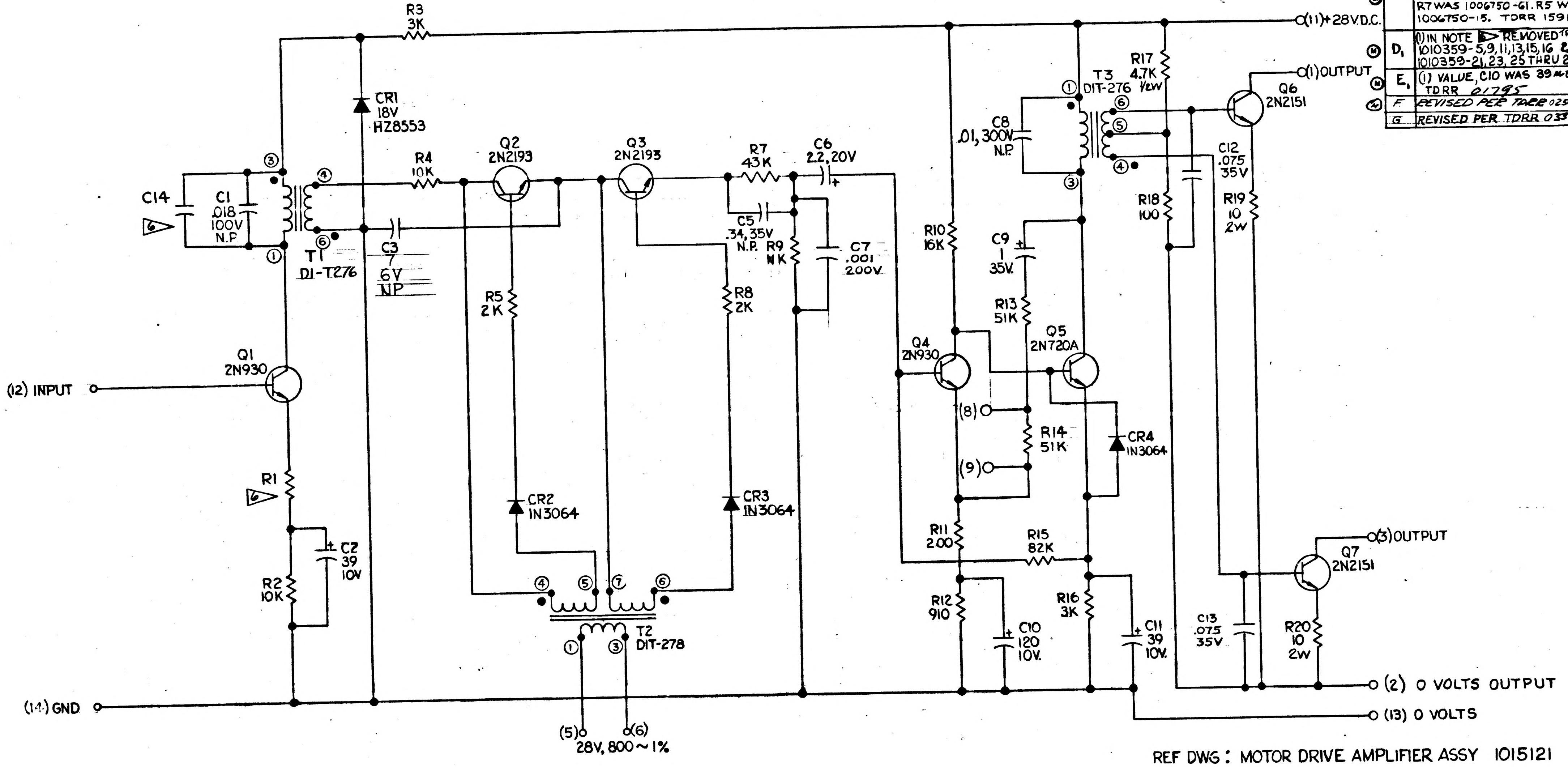
G | 1015116

TDRR 00452 REVISIONS 27 Feb 63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00989	24 Jan 63	WK
C	ADDED C13 & C14. C7 WAS 1010359-5. C7 WAS CONNECTED BETWEEN GND & COLLECTOR OF Q4. ADDED NOTE 6▷. REMOVED R6 (1006750-8) & C4 (1006755-29). R7 WAS 1006750-61. R5 WAS 1006750-15. TDRR 1590	19 June 63	WK
D₁	(1) IN NOTE 6▷ REMOVED TDRR 01755 1010359-5,9,11,13,15,16 & ADDED 1010359-21,23,25 THRU 29	26 June 63	WK
E₁	(1) VALUE, C10 WAS 39 uuf TDRR 01795	7 July 63	WK
F	REVISED PER TDRR 02512	8-21-63	JJN
G	REVISED PER TDRR 03327	9-23-63	JJN


R3 3K
(11) +28V.D.C.
CR1 18V HZ8553
C14
6▷
C1 .018 100V N.P.
T1 DI-T276
③ ④ ⑥ ①
R4 10K
C3 7 6V NP
Q2 2N2193
Q3 2N2193
R5 2K
R8 2K
CR2 IN3064
CR3 IN3064
T2 DIT-278
④ ⑤ ⑦ ⑥ ① ③
(5) (6) 28V, 800 ~ 1%
R7 43K
C6 2.2, 20V
C5 .34, 35V N.P.
R9 N K
C7 .001 200V
C8 .01, 300V N.P.
T3 DIT-276
① ⑥ ⑤ ④ ③
R17 4.7K 1/2W
(1) OUTPUT
Q6 2N2151
C12 .075 35V
R18 100
R19 10 2W
R10 16K
C9 1 35V
R13 51K
Q4 2N930
Q5 2N720A
(8)
(9)
R14 51K
CR4 IN3064
R11 200
R15 82K
R12 910
C10 120 10V.
R16 3K
C11 39 10V.
C13 .075 35V
(3) OUTPUT
Q7 2N2151
R20 10 2W
(2) 0 VOLTS OUTPUT
(13) 0 VOLTS
Q1 2N930
(12) INPUT
R1
6▷
C2 39 10V
R2 10K
(14) GND

REF DWG : MOTOR DRIVE AMPLIFIER ASSY 1015121

NOTES
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-12	150
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1010359-17	1000 uuf
-21	2200
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-25	4700
-26	5600
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-28	8200
1010359-29	10000 uuf

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MIT APPROVAL W Kupfer 27 Feb 63

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SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015116
SCALE — | WT — | SHEET 1 OF 2

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1015116 G

TDRR 00452 REVISIONS 27 Feb 63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00989	24 Apr 63	WK.
B	REVISED PER TDRR 01204	8 May 63	WK.
C	SEE SHT I. TDRR 1590.	19 Jun 63	WK
D₁	1006755-15 WAS 1006755-13 C10 TDRR 01795	9 July 63	WK
E	REVISED PER TDRR 02502	8-21-63	SJM
F	REVISED PER TDRR 03327	9-24-63	9/21
G	REVISED PER TDRR 03327	9-26-63	SJM

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1006750	RESISTOR		±2%	¼W
R2	-56		10K		
R3	-43		3K		
R4	-56		10K		
R5	-39		2K		
R7	-71		43K		
R8	-39		2K		
R9	-57		11K		
R10	-61		16K		
R11	-15		200		
R12	-31		910		
R13	-73		51 K		
R14	-73		51 K		
R15	-78		82K		
R16	1006750-43		3K		¼W
R17	1006760-48		4.7K		½W
R18	1006750-8		100	±2%	¼W
R19	1010389-8		10	±1%	2W
R20	1010389-8	RESISTOR	10	±1%	2W
CR1	1010372-24	DIODE	HZ8553		18V
CR2	1010370		IN3064		
CR3	1010370		IN3064		
CR4	1010370	DIODE	IN3064		

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
C1	1010375-53	CAPACITOR	.018	±5%	100V
C2	1006755-13		39	±10%	10V
C3	1010438-102		7	±10%	6V
C5	1010279-226		.34		35V
C6	1006755-29		2.2	±10%	20V
C7	1010359-17		.001	±10%	200V
C8	1010375-124		.01	±5%	300V
C9	1006755-69		1	10%	35V
C10	1006755-15		120		10V
C11	1006755-13		39		10V
C12	1010279-218		.075	±10%	35V
C13	1010279-218		.075	±10%	35V
C14	1010359	CAPACITOR		±10%	200V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010398-1		2N2193		
Q3	1010398-1		2N2193		
Q4	1010397		2N930		
Q5	1010357		2N720A		
Q6	1010269-2		2N2151		
Q7	1010269-2	TRANSISTOR	2N2151		
T1	1010276	TRANSFORMER	DI-T276		
T2	1010365	TRANSFORMER	DI-T278		
T3	1010276	TRANSFORMER	DI-T276		

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN T.C.P. DATE 1·24·63
CHECKED R.L. Battafoum
APPROVAL R.C. Greenwood
APPROVAL H. Margulius
NASA APPROVAL W.J. Rhine 2-27-63
MIT APPROVAL W Kupfer 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015116
SCALE —//— | WT —//— | SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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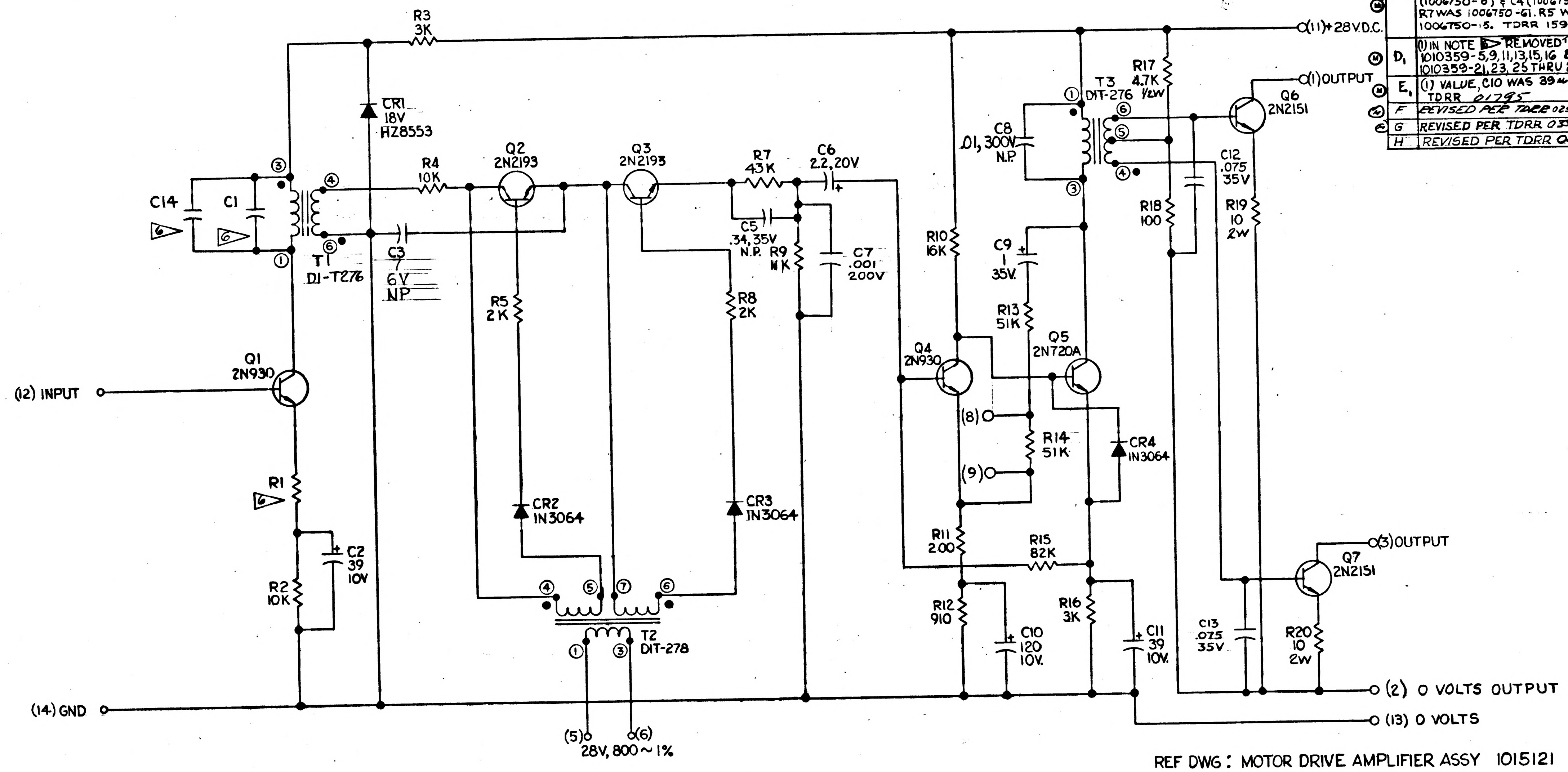
H 9115101

TDRR 00452 REVISIONS 17Feb63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00989	24 Jan 63	WK
C	ADDED C13 & C14. C7 WAS 1010359-5. C7 WAS CONNECTED BETWEEN GND & COLLECTOR OF Q4 ADDED NOTE 6. REMOVED R6 (1006750-8) & C4 (1006755-29) R7 WAS 1006750-61. R5 WAS 1006750-15. TDRR 1590	19 June 63	WK
D₁	(1) IN NOTE 6 REMOVED TDRR 01355 1010359-5,9,11,13,15,16 & ADDED 1010359-21,23,25 THRU 29	26 June 63	WK
E₁	(1) VALUE, C10 WAS 39 uf TDRR 01795	July 63	WK
F	REVISED PER TDRR 02502	8-21-63	JJM
G	REVISED PER TDRR 03327	9-24-63	JJM
H	REVISED PER TDRR 04124	28 Oct 63	ZAL WK


R3
3K
(11)+28V.D.C.
CR1
18V
HZ8553
C14
C1
T1
DJ-T276
C3
7
6V
NP
R4
10K
Q2
2N2193
Q3
2N2193
R7
43K
C6
2.2,20V
C5
.34, 35V
N.P.
R9
1K
C7
.001
200V
R5
2K
R8
2K
Q1
2N930
(12) INPUT
R1
C2
39
10V
R2
10K
CR2
1N3064
CR3
1N3064
T2
DIT-278
(14) GND
(5)
(6)
28V, 800 ~ 1%
C8
.01, 300V
N.P.
T3
DIT-276
R17
4.7K
1/2W
(1) OUTPUT
Q6
2N2151
C12
.075
35V
R18
100
R19
10
2W
R10
16K
C9
1
35V
R13
51K
Q4
2N930
Q5
2N720A
(8)
(9)
R14
51K
CR4
1N3064
R11
200
R15
82K
R12
910
C10
120
10V
R16
3K
C11
39
10V
C13
.075
35V
Q7
2N2151
(3) OUTPUT
R20
10
2W
(2) O VOLTS OUTPUT
(13) O VOLTS

REF DWG: MOTOR DRIVE AMPLIFIER ASSY 1015121

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBE BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE PART DESIGNATION WITH THE SUB ASSEMBLY DESIGNATION
5. PARTS LIST TO BE FOR REFERENCE ONLY

6 VALUE TO BE DETERMINED PER ATP 1015121. COMPONENT TO BE SUPPLIED FROM TABLE BELOW:

R1		C14		C1	
1006750-4	68 OHMS	1010359-17	1000 uuf	1010375-52	.015 µf
-5	75	-21	2200	1010375-53	.018 µf
-6	82	-23	3300		
-7	91	-25	4700		
-8	100	-26	5600		
-9	110	-27	6800		
-10	120	-28	8200		
-11	130	1010359-29	10000 uuf		
-12	150				
1006750-13	160 OHMS				

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT INSTRUMENTATION LAB
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DWG. NO. CONTRACT
DRAWN T.C.P. DATE 1-24-63
CHECKED R. L. Battaglia
APPROVAL R. C. Greenwood
APPROVAL H. Margolina
NASA APPROVAL W. J. Blaine 2-27-63
MIT APPROVAL W Hoffer 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015116
SCALE — | WT — | SHEET 1 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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H	1015116

TDRR 00452 REVISIONS 27 Feb 63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00989	24 Apr 63	WK.
B	REVISED PER TDRR 01204	8 May 63	WK
C	SEE SHT 1. TDRR 1590.	19 Jun 63	WK
D₁	1006755-15 WAS 1006755-13 C10 TDRR 01795	Jul 63	WK
E	REVISED PER TDRR 02502	8·21·63	JJM
F	REVISED PER TDRR 03327	9·24·63	JJM
G	REVISED PER TDRR 03327	9·26·63	JJM
H	REVISED PER TDRR 04124	30 Oct 63	BPK WK

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1006750	RESISTOR		±2%	¼W
R2	-56		10K		
R3	-43		3K		
R4	-56		10K		
R5	-39		2K		
R7	-71		43K		
R8	-39		2K		
R9	-57		11K		
R10	-61		16K		
R11	-15		200		
R12	-31		910		
R13	-73		51 K		
R14	-73		51 K		
R15	-78		82K		
R16	1006750-43		3K		¼W
R17	1006760-48		4.7K		½W
R18	1006750-8		100	±2%	¼W
R19	1010389-8		10	±1%	2W
R20	1010389-8	RESISTOR	10	±1%	2W
CR1	1010372-24	DIODE	HZ8553		18V
CR2	1010370		IN3064		
CR3	1010370		IN3064		
CR4	1010370	DIODE	IN3064		

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
C1	1010375	CAPACITOR		±5%	100V
C2	1006755-13		39	±10%	10V
C3	1010438-102		7	±10%	6V
C5	1010279-226		.34		35V
C6	1006755-29		2.2	± 0%	20V
C7	1010359-17		.001	±10%	200V
C8	1010375-124		.01	5%	300V
C9	1006755-69		1	10%	35V
C10	1006755-15		120		10V
C11	1006755-13		39		10V
C12	1010279-218		.075	±10%	35V
C13	1010279-218		.075	±10%	35V
C14	1010359	CAPACITOR		±10%	200V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010398-1		2N2193		
Q3	1010398-1		2N2193		
Q4	1010397		2N930		
Q5	1010357		2N720A		
Q6	1010269-2		2N2151		
Q7	1010269-2	TRANSISTOR	2N2151		
T1	1010276	TRANSFORMER	D1-T276		
T2	1010365	TRANSFORMER	D1-T278		
T3	1010276	TRANSFORMER	D1-T276		

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

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INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN T.C.P. DATE 1·24·63
CHECKED K. L. Battafano
APPROVAL R. C. Duckwood
APPROVAL H. Margulius
NASA APPROVAL W. J. Rhine 2-27-63
MIT APPROVAL W Kupfer 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015116
SCALE — WT — SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

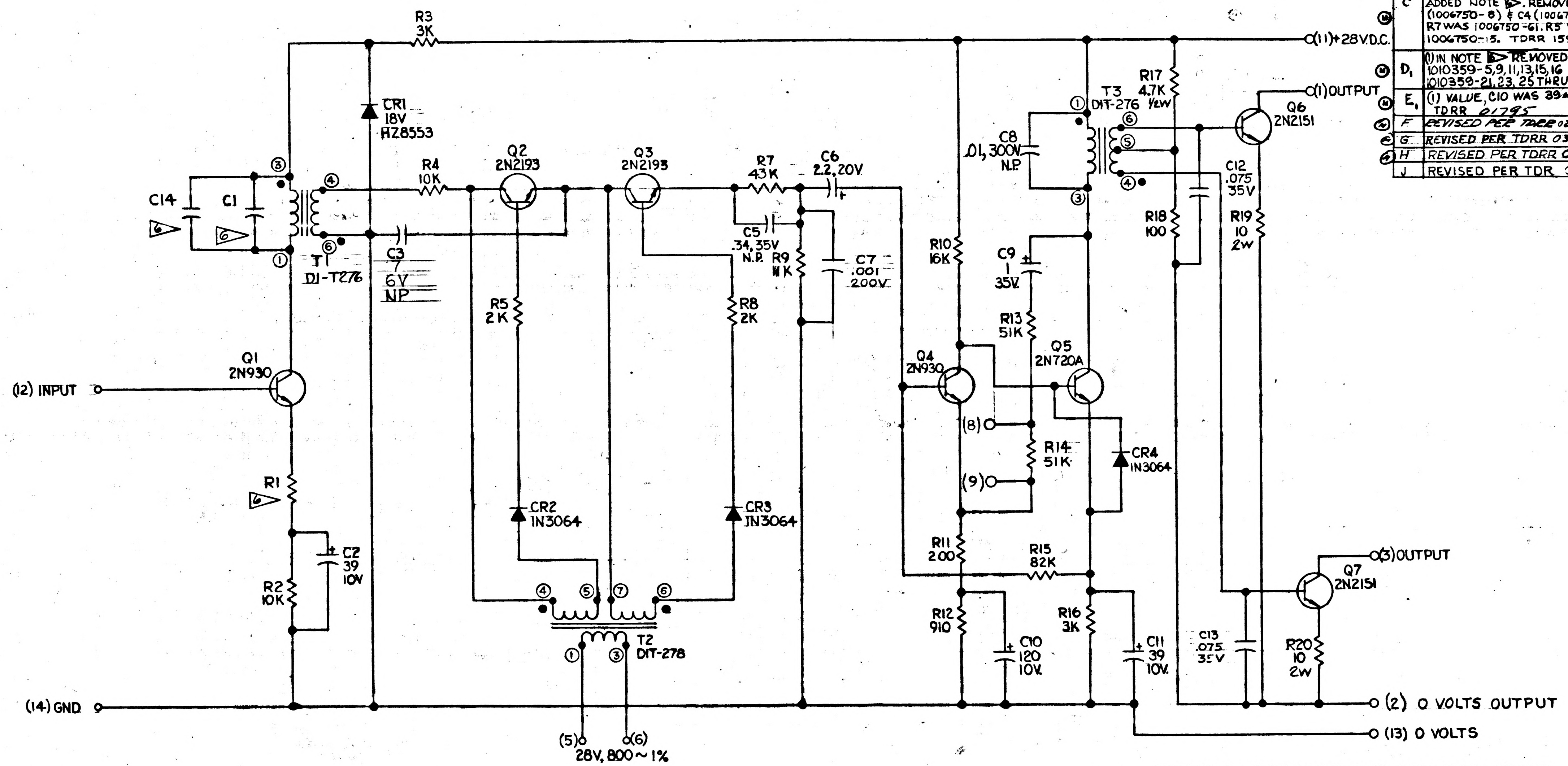
1015116 H

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

J 1015116

TDRR 00452 REVISIONS 27 Feb 63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00989	24 Apr 63	WK
C	ADDED C13 & C14. C7 WAS 1010359-5. C7 WAS CONNECTED BETWEEN GND & COLLECTOR OF Q4. ADDED NOTE 6. REMOVED R6 (1006750-8) & C4 (1006755-29). R7 WAS 1006750-61. R5 WAS 1006750-15. TDRR 1590	19 June 63	WK
D₁	(1) IN NOTE 6 REMOVED TDRR 01555 1010359-5,9,11,13,15,16 & ADDED 1010359-21,23,25 THRU 29	24 June 63	WK
E₁	(1) VALUE, C10 WAS 39 μf TDRR 01795	2 July 63	WK
F	REVISED PER TDRR 02512	8-21-63	JJN
G	REVISED PER TDRR 03327	9-24-63	JJN
H	REVISED PER TDRR 04124	28 Oct 63	ZAL WK
J	REVISED PER TDR 05707	10 JAN 64	BK


R3 3K
(11) +28V.D.C.
CR1 18V HZ8553
R4 10K
Q2 2N2193
Q3 2N2193
R7 43K
C6 2.2, 20V
C14
C1
T1 DI-T276
C3 6V NP
C5 .34, 35V N.P.
R9 1K
C7 .001 200V
R5 2K
R8 2K
Q1 2N930
(12) INPUT
R1
C2 39 10V
R2 10K
CR2 1N3064
CR3 1N3064
T2 DIT-278
(14) GND
(5) (6) 28V, 800 ~ 1%
T3 DIT-276
C8 .01, 300V N.P.
R17 4.7K 1/2W
Q6 2N2151
(1) OUTPUT
C12 .075 35V
R18 100
R19 10 2W
R10 16K
C9 1 35V
R13 51K
Q4 2N930
Q5 2N720A
(8)
(9)
R14 51K
CR4 1N3064
R11 200
R15 82K
R12 910
C10 120 10V
R16 3K
C11 39 10V
C13 .075 35V
Q7 2N2151
(3) OUTPUT
R20 10 2W
(2) 0 VOLTS OUTPUT
(13) 0 VOLTS
6

REF DWG: MOTOR DRIVE AMPLIFIER ASSY 1015121

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBE BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE PART DESIGNATION WITH THE SUB ASSEMBLY DESIGNATION
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6. VALUE TO BE DETERMINED PER ATP 1015121. COMPONENT TO BE SUPPLIED FROM TABLE BELOW:

R1		C14		C1	
1006750-4	68 OHMS	1010359-17	1000 μμf	1010375-52	.015 μf
-5	75	-21	2200	1010375-53	.018 μf
-6	82	-23	3300		
-7	91	-25	4700		
-8	100	-26	5600		
-9	110	-27	6800		
-10	120	-28	8200		
-11	130	1010359-29	10000 μμf		
-12	150				
1006750-13	160 OHMS				

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

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DWG. NO. CONTRACT
DRAWN T.C.P. DATE 1-24-63
CHECKED R. L. Battey
APPROVAL R. C. Greenwood
APPROVAL H. Margulies
NASA APPROVAL W. J. Rhine 2-27-63
MIT APPROVAL W. Kupfer 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015116
SCALE — WT — SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

J 1015116

TDRR 00452 REVISIONS 27Feb63

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00989	2Apr63	WK.
B	REVISED PER TDRR 01204	8May63	WK.
C	SEE SHT 1. TDRR 1590.	19Jun63	WK
D	1006755-15 WAS 1006755-13 C10 TDRR 01795	[illegible]	WK
E	REVISED PER TDRR 02502	6-21-63	[illegible]
F	REVISED PER TDRR -03327	9-29-63	[illegible]
G	REVISED PER TDRR 03327	9-26-63	[illegible]
H	REVISED PER TDRR 04124	[illegible] 63	WK
J	REVISED PER TDRR 05707	10 Jan 64	[illegible]

	REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
6	R1	1006750	RESISTOR		±2%	¼W
	R2	-56		10K		
	R3	-43		3K		
	R4	-56		10K		
	R5	-39		2K		
	R7	-71		43K		
	R8	-39		2K		
	R9	-57		11K		
	R10	-61		16K		
	R11	-15		200		
	R12	-31		910		
	R13	-73		51K		
	R14	-73		51K		
	R15	-78		82K		
	R16	1006750-43		3K		¼W
	R17	1006760-49		47K		½W
	R18	1006750-8		100	±2%	¼W
	R19	1010389-8		10	±1%	2W
	R20	1010389-8	RESISTOR	10	±1%	2W
	CR1	1010372-24	DIODE	HZ8553		18V
	CR2	1010370		IN3064		
	CR3	1010370		IN3064		
	CR4	1010370	DIODE	IN3064		

	REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
6	C1	1010375	CAPACITOR		±5%	100V
	C2	1006755-13		39	±10%	10V
	C3	1010438-102		7	±10%	6V
	C5	1010279-226		.34		35V
	C6	1006755-29		2.2	±10%	20V
	C7	1010359-17		.001	±10%	200V
	C8	1010375-124		.01	±5%	300V
	C9	1006755-69		1	10%	35V
	C10	1006755-15		120		10V
	C11	1006755-13		39		10V
	C12	1010279-218		.075	±10%	35V
	C13	1010279-218		.075	±10%	35V
6	C14	1010359	CAPACITOR		±10%	200V
	Q1	1010397	TRANSISTOR	2N930		
	Q2	1010398-1		2N2193		
	Q3	1010398-1		2N2193		
	Q4	1010397		2N930		
	Q5	1010357		2N720A		
	Q6	1010269-2	MATCHED PAIR	2N2151		
	Q7		TRANSISTOR			
	T1	1010276	TRANSFORMER	DI-T276		
	T2	1010365	TRANSFORMER	DI-T278		
	T3	1010276	TRANSFORMER	DI-T276		

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN T.C.P. DATE 1·24·63
CHECKED K. L. Bottomley
APPROVAL R. C. Duckwood
APPROVAL H. Margulius
NASA APPROVAL W. J. Rhine 2-27-63
MIT APPROVAL 27Feb63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015116
SCALE —
WT —
SHEET 2 OF 2

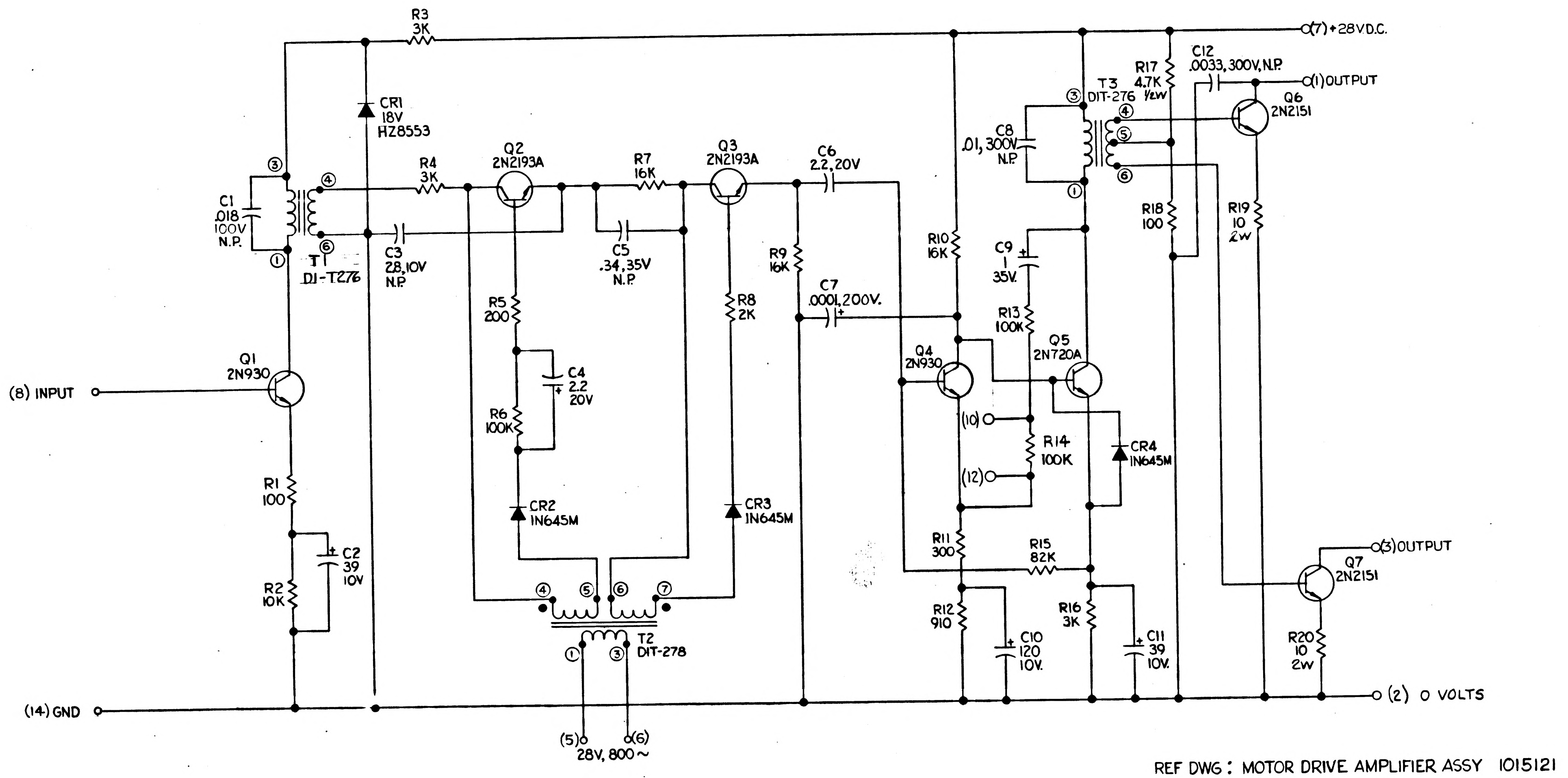
1015116 J

NOTICE — WHEN GOVERNMENT DRAWINGS SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015116

TDRR 00452 REVISIONS 27Feb63

SYM	DESCRIPTION	DATE	APPROVAL


R3
3K
(7) +28V D.C.
CR1
18V
HZ8553
C1
.018
100V
N.P.
T1
DI-T276
③
④
⑥
①
R4
3K
C3
2.8, 10V
N.P.
Q2
2N2193A
R7
16K
C5
.34, 35V
N.P.
Q3
2N2193A
C6
2.2, 20V
R5
200
C4
2.2
20V
R6
100K
CR2
1N645M
R8
2K
CR3
1N645M
R9
16K
C7
.0001, 200V.
Q1
2N930
(8) INPUT
R1
100
R2
10K
C2
39
10V
T2
DIT-278
④
⑤
⑥
⑦
①
③
(5)
(6)
28V, 800~
(14) GND
C8
.01, 300V
N.P.
T3
DIT-276
R17
4.7K
1/2W
C12
.0033, 300V, N.P.
(1) OUTPUT
Q6
2N2151
⑤
R10
16K
C9
1
35V.
R13
100K
R18
100
R19
10
2W
Q4
2N930
Q5
2N720A
(10)
(12)
R14
100K
CR4
1N645M
R11
300
R15
82K
R12
910
C10
120
10V.
R16
3K
C11
39
10V.
(3) OUTPUT
Q7
2N2151
R20
10
2W
(2) 0 VOLTS

REF DWG: MOTOR DRIVE AMPLIFIER ASSY 1015121

1015116

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBE BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE PART DESIGNATION WITH THE SUB ASSEMBLY DESIGNATION
5. PARTS LIST TO BE FOR REFERENCE ONLY

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN T.C.P. DATE 1-24-63
CHECKED R. L. Battaglia
APPROVAL R. C. Greenwood
APPROVAL H. Margulies
NASA APPROVAL W. J. Rhine 2-27-63
MIT APPROVAL 27Feb63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015116
SCALE —
WT —
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015116

TDRR 00452 REVISIONS 27 Feb 63

SYM	DESCRIPTION	DATE	APPROVAL

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-8	RESISTOR	100	±2%	¼W
R2	-56		10K		
R3	-43		3K		
R4	-43		3K		
R5	-15		200		
R6	-80		100K		
R7	-61		16K		
R8	-39		2K		
R9	-61		16K		
R10	-61		16K		
R11	-19		300		
R12	-31		910		
R13	-80		100K		
R14	-80		100K		
R15	-78		82K		
R16	1006750-43		3K		¼W
R17	1006760-48		4.7K		½W
R18	1006750-8		100	±2%	¼W
R19	1010312-		10	±1%	2W
R20	1010312-	RESISTOR	10	±1%	2W
CR1	1010372-24	DIODE	HZ8553		18V
CR2	1010362-1		IN645M		
CR3	1010362-1		IN645M		
CR4	1010362-1	DIODE	IN645M		

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
C1	1010375-53	CAPACITOR	.018	±10%	100V
C2	1006755-13		39		10V
C3	1010279-		2.8		10V
C4	1006755-29		2.2		20V
C5	1010279-		.34		35V
C6	1006755-29		2.2	±10%	20V
C7	1010359-5		.0001	±20%	200V
C8	1010375-124		.01	±10%	300V
C9	1006755-69		1		35V
C10	1006755-15		120		10V
C11	1006755-13		39		10V
C12	1010375-118	CAPACITOR	.0033	±10%	300V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010398		2N2193A		
Q3	1010398		2N2193A		
Q4	1010397		2N930		
Q5	1010357		2N720A		
Q6	1010269		2N2151		
Q7	1010269	TRANSISTOR	2N2151		
T1	1010276	TRANSFORMER	DI-T276		
T2	1010365	TRANSFORMER	DI-T278		
T3	1010276	TRANSFORMER	DI-T276		

1015116

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN T.C.P. DATE 1·24·63
CHECKED K. L. Battaglia
APPROVAL R. C. Greenwood
APPROVAL H. Margulies
NASA APPROVAL W. J. Rhine 2-27-63
MIT APPROVAL 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
AMPLIFIER, MOTOR DRIVE

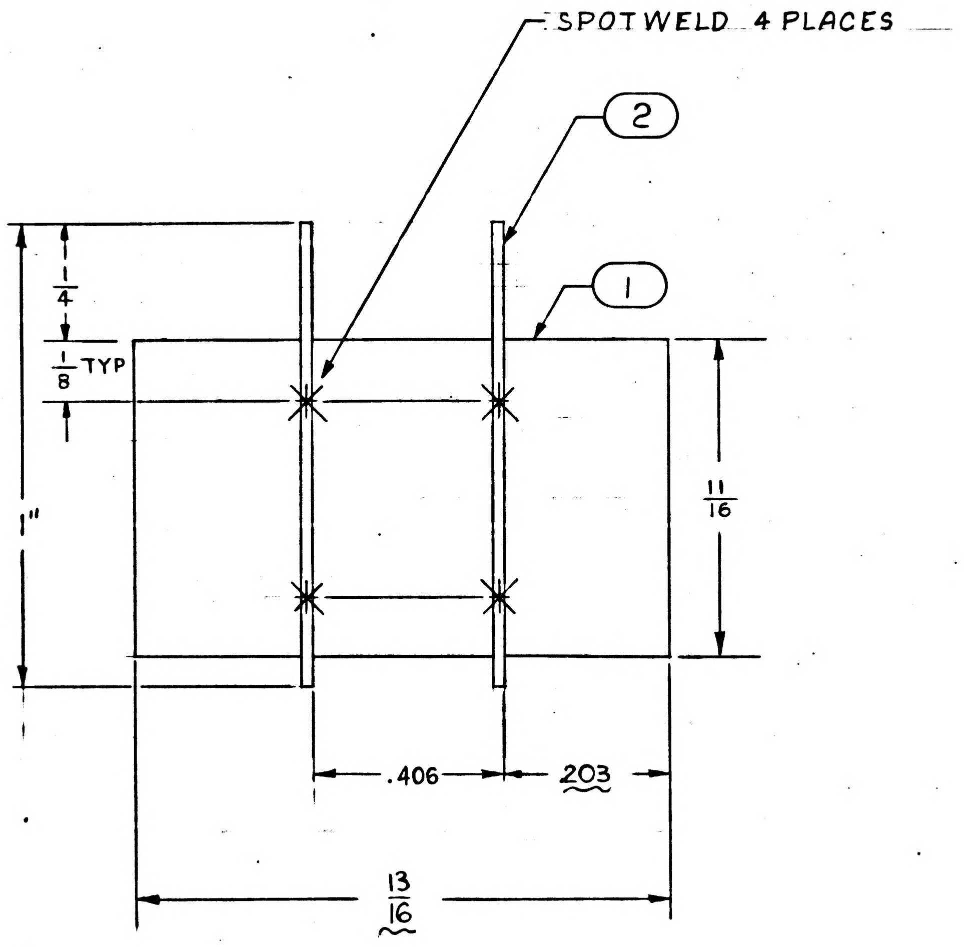
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015116
SCALE —//—
WT —//—
SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015118 A

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY REV. B WITH CHANGE PER TDRR 01203	5-8-63	WR



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00600 **DATE** 20MAR63

OBS

Ⓐ REPLACED BY REV. B WITH CHANGE

NOTE:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL SPECIFICATION SHEET. BERYLLIUM COPPER QQ-C-533 COND ½ HARD .010 THICK
3. WELD PER MIL-W-6858 CLASS A

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006787-2	WIRE, FEED THROUGH	2
1		PLATE-SHIELD	1

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN R.L. EMERY DATE 2-15-63
CHECKED R L Bottolfson
APPROVAL R L Battolfson
APPROVAL
NASA APPROVAL 3/20/63
MIT APPROVAL W Kupfer 20 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

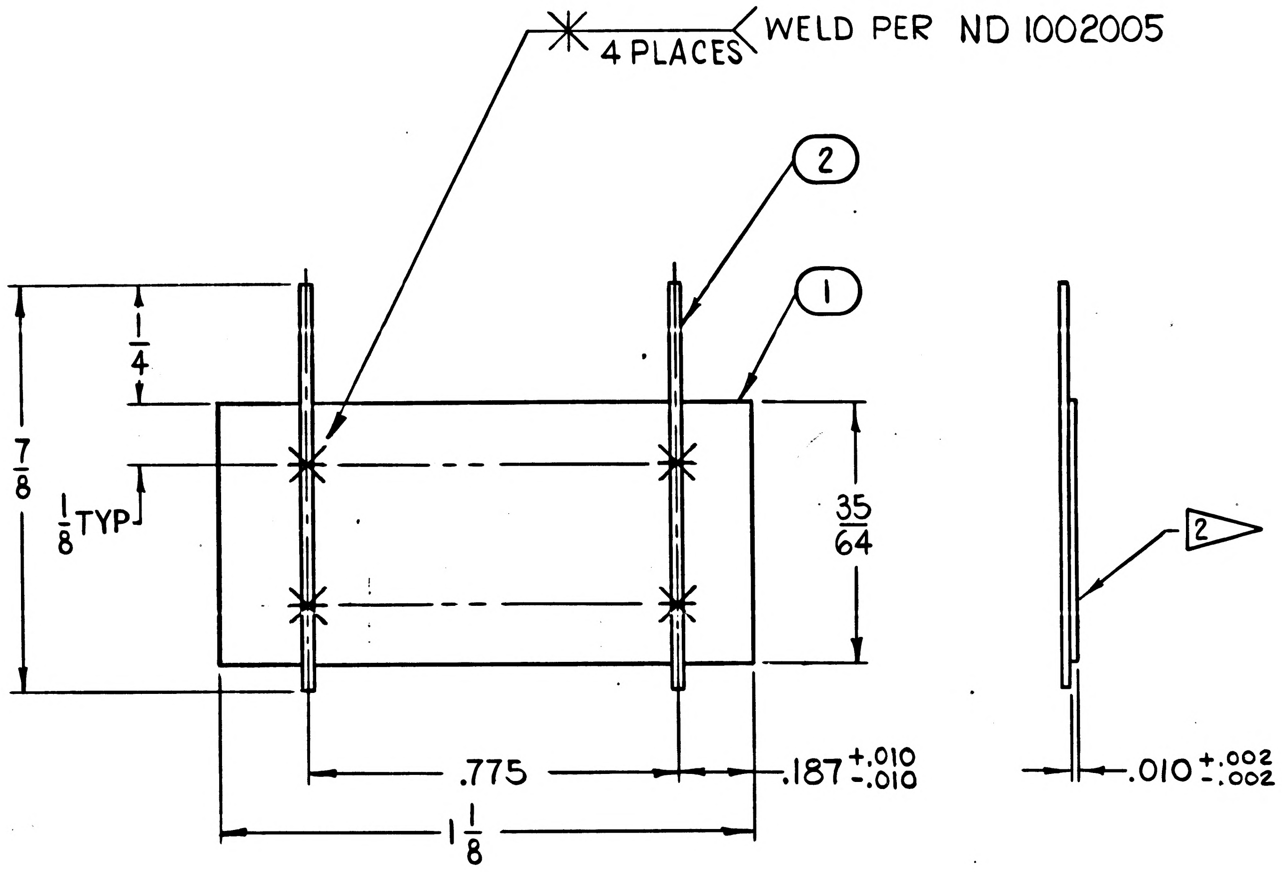
SHIELD
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015118
SCALE 4 X
WT
SHEET OF

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015118 A

REVISIONS TDRR 01203					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDRR 01203		8 MAY 63	WK



INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1▷ SHEET, BERYLLIUM COPPER QQ-C-533 COND 1/2 HARD (ES-2108)

2▷ MARK 1015118 AND REVISION LETTER PER MIL-STD-130 (ES-267)

Ⓑ REPLACES REV A WITH CHANGE

2	AR	1006757-3	WIRE, ELECTRICAL, NICKEL .020 x .020
1	1	1015118-1	PLATE SHIELD
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

1015113	1015113
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ –
– 1/64	–.005	– –

DO NOT SCALE THIS DRAWING

MATERIAL 1▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN 29 APR 63 DATE
CHECKED 29 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SHIELD
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO.
SIZE C
1015118
SCALE 4:1
SHEET

MIL 1077C—P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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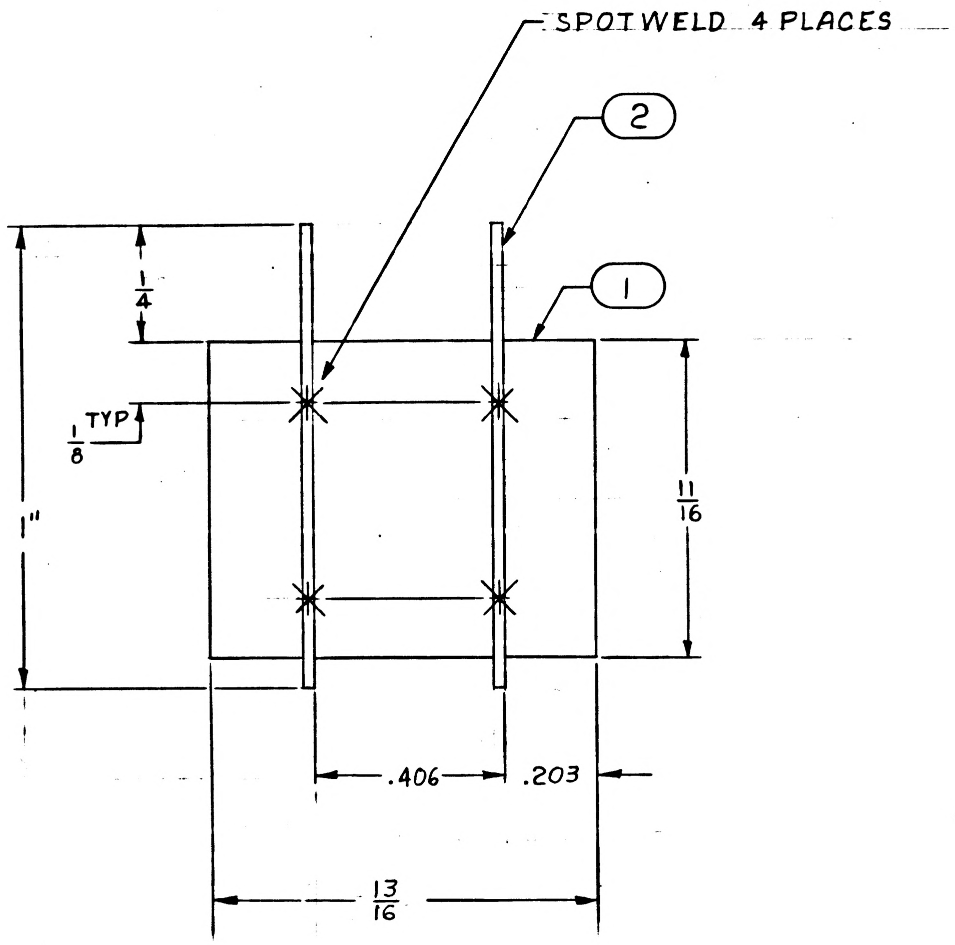
1015118

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00600 **DATE** 20MAR63

1015118

NOTE:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL SPECIFICATION SHEET, BERYLLIUM COPPER QQ-C-533 COND 1/2 HARD .010 THICK
3. WELD PER MIL-W-6858 CLASS A

MASTER

AR	1006787-2	WIRE, FEED THROUGH	2
1		PLATE-SHIELD	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN R.L. EMERY DATE 2-15-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL 3/20/63
MIT APPROVAL 20Mar63

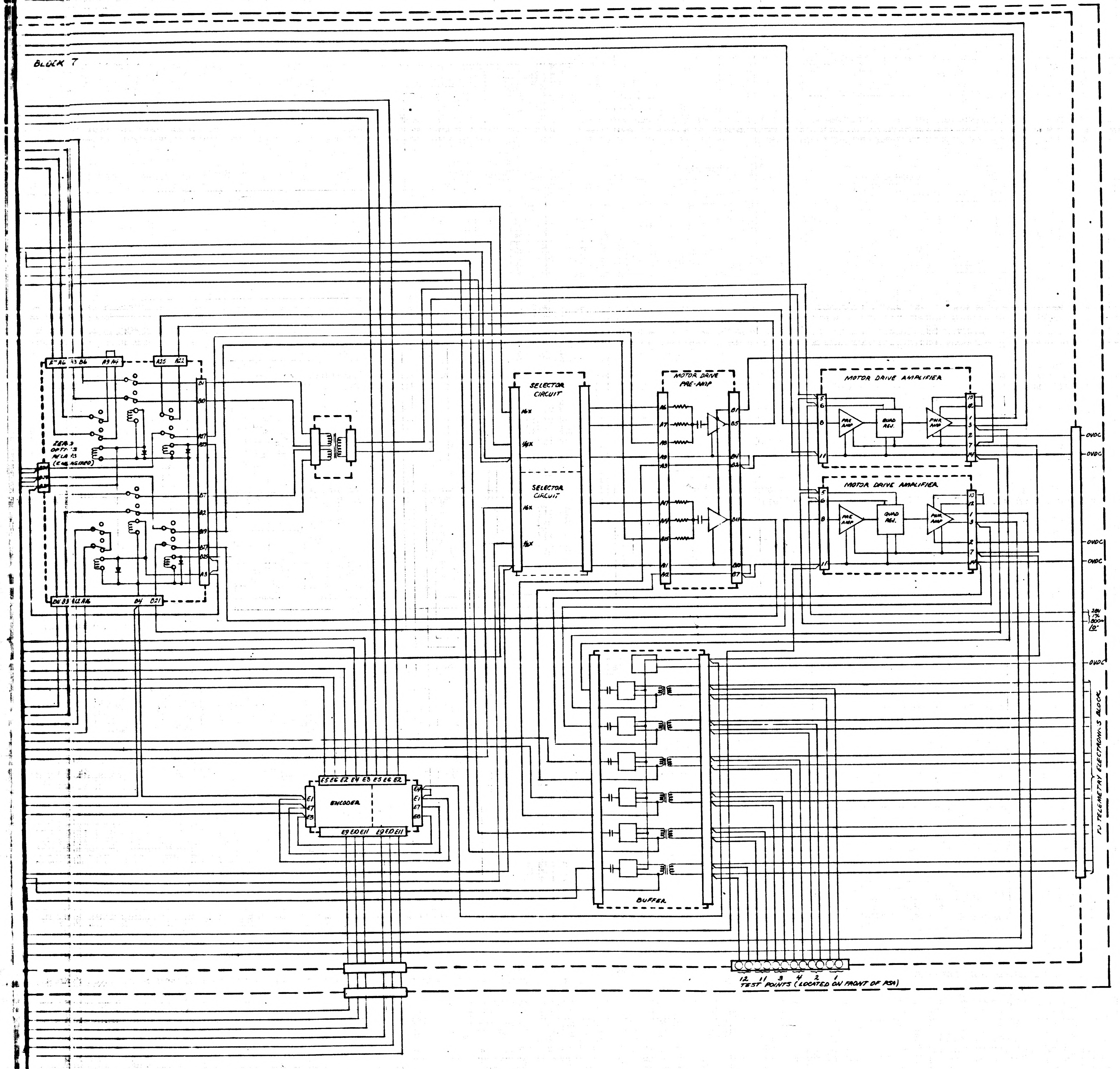
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SHIELD
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO. SIZE C NASA DRAWING NO. 1015118
SCALE 4 X WT SHEET OF

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015119	SYM	REVISIONS DESCRIPTION	DATE	APPROVAL


BLOCK 7
ZERO OPTICS RELAYS (ENERGIZED)
A7 A6 A3 B6 A9 A4
A25 A22
B1
B10
A27
A23
B7
B2
B19
B27
B25
A3
B11 B3 A12 A16 B4 B21
SELECTOR CIRCUIT
16X
1/4X
SELECTOR CIRCUIT
16X
1/2X
MOTOR DRIVE PRE-AMP
A6
A7
A8
A9
A3
A17
A14
A15
A11
A12
B1
B5
B4
B2
B11
B10
B7
MOTOR DRIVE AMPLIFIER
5
6
8
11
PRE AMP
QUAD REJ.
PWR AMP
10
12
1
3
2
7
14
MOTOR DRIVE AMPLIFIER
OVDC
OVDC
OVDC
OVDC
28V 1% 800~ ∠0°
OVDC
TO TELEMETRY ELECTRONICS BLOCK
ENCODER
E5 E6 E2 E4 E3 E5 E6 E2
E1
E7
E3
E4
E1
E8
E9 E10 E11 E9 E10 E11
BUFFER
12 11 3 4 2 1
TEST POINTS (LOCATED ON FRONT OF PSA)

FOR INFORMATION ONLY

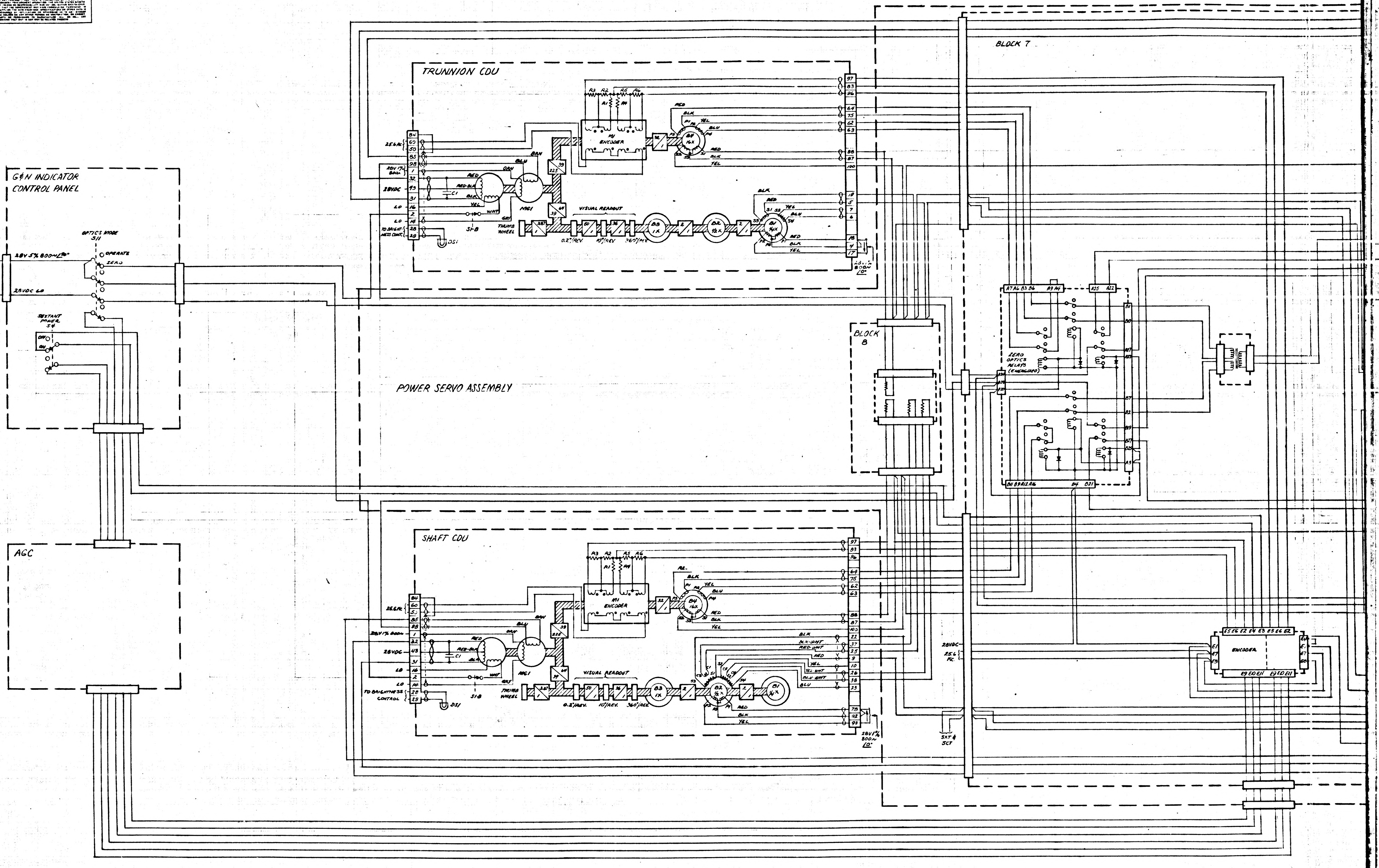
CLASS B RELEASE TDR No. 00986 DATE 24 Apr 63

MASTER

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN XDE-34D-514	
	DRAWN R. WALKER DATE 4-2-63 CHECKED H. Oakes 4-23-63 APPROVAL 4-23-63 APPROVAL	OPTICS SUBSYSTEM MECHANIZATION ZERO OPTICS MODE
DO NOT SCALE THIS DRAWING		
MATERIAL	NASA APPROVAL 4/24/63	CODE IDENT NO. | SIZE H | 1015119
CONTRACT	MIT APPROVAL 24 Apr 63	SCALE — | SHEET 1 OF 1

1015

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


BLOCK 7
TRUNNION CDU
R3 R2 R5 R6 R1 R4
M1 ENCODER
B4 16X
B3 1X
B2 1/2X
B1 1/4X
MG1
C1
S1-B
DS1
THUMB WHEEL
VISUAL READOUT
0.2°/REV.
10°/REV.
360°/REV.
25.6 KC
28V 1% 800~
28VDC
LO
TO BRIGHTNESS CONT.
RED
BLK
YEL
BLU
BRN
ORN
RED-BLK
WHT
GRY
28V 1% 800~ ∠0°
G&N INDICATOR CONTROL PANEL
OPTICS MODE S11
OPERATE
ZERO
28V 5% 800~∠90°
28VDC LO
SEXTANT POWER S4
OFF
ON
POWER SERVO ASSEMBLY
BLOCK 8
ZERO OPTICS RELAYS (ENERGIZED)
A7 A6 B3 B6 A9 A4
A25 A22
B1 B10 A27 A23 B7 B2 B19 A17 B25 A3
A24 B29 A20
B11 B9 A12 A16 B4 B21
AGC
SHAFT CDU
BLK-WHT
RED-WHT
YEL-WHT
BLU-WHT
28VDC
25.6 KC.
SXT & SCT
ENCODER
E5 E6 E2 E4 E3 E5 E6 E2
E1 E7 E3
E4 E1 E7 E8
E9 E10 E11 E9 E10 E11

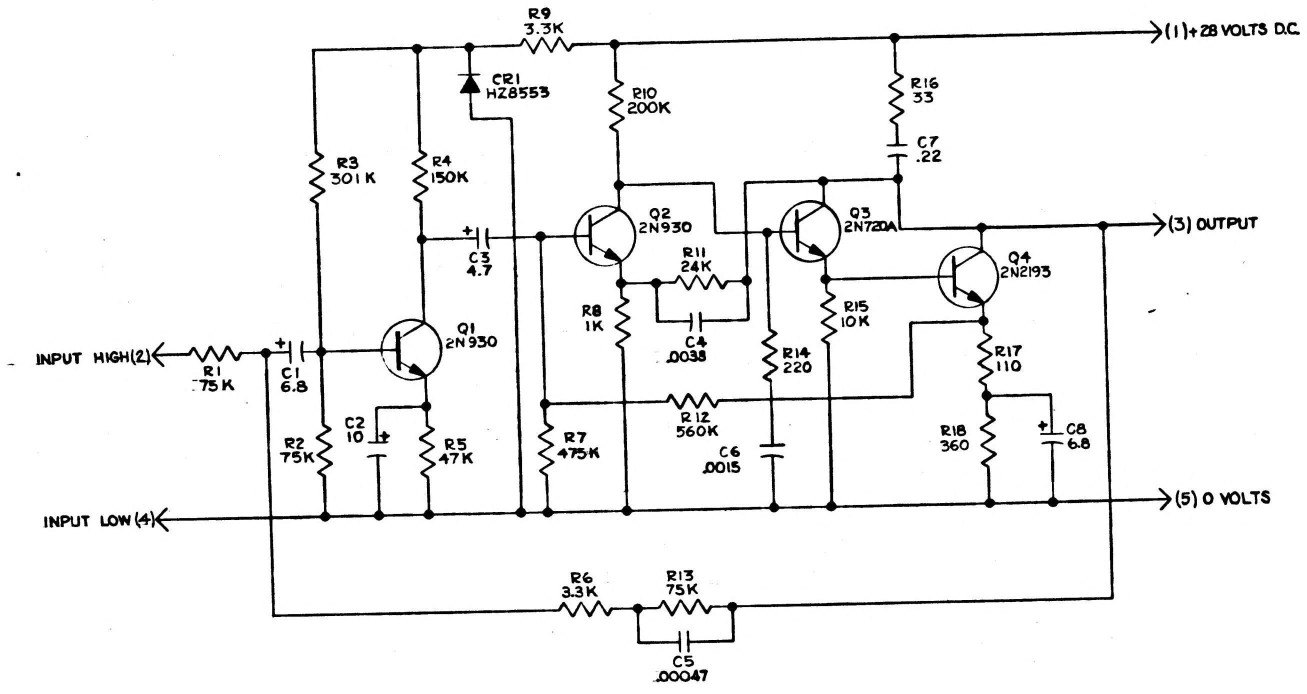
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015120 Ⓐ

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED WITH CHANGE BY REV. B PER TDRR 00 702	3APR63	WK

REF. DESIG.	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-77	RESISTOR	75K	2%	1/4 W
R2	1006750-77	↑	75K	2%	1/4 W
R3	1010364-727		301K	1%	1/8 W
R4	1006750-84		150K	2%	1/4 W
R5	1006750-72		47K	2%	1/4 W
R6	1006750-44		3.3K	2%	1/4 W
R7	1010364-765		475K	1%	1/8 W
R8	1006750-32		1K	2%	1/4 W
R9	1006750-44		3.3K	2%	1/4 W
R10	1010364-693		200K	1%	1/8 W
R11	1006750-65		24K	2%	1/4 W
R12	1010368-115		560K	5%	1/4 W
R13	1006750-77		75K	2%	1/4 W
R14	1006750-16		220	2%	1/4 W
R15	1006750-56		10K	2%	1/4 W
R16	1010368-13		33	5%	1/4 W
R17	1006750-9	↓	110	2%	1/4 W
R18	1006750-21	RESISTOR	360	2%	1/4 W
C1	1006755-79	CAPACITOR	6.8	10%	35V.
C2	1006755-31	↑	10	10%	20V
C3	1006755-77		4.7	10%	35V
C4	1010 359-23		.0033	10%	200V
C5	1010 359-13		.00047	10%	200V
C6	1010 359-19		.0015	10%	200V
C7	1010375-66	↓	.22	10%	100V
C8	1006755-79	CAPACITOR	6.8	10%	35V
CR1	1010 372-24	DIODE	HZ8553		18V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010397	↑	2N930		
Q3	1010357	↓	2N720A		
Q4	1010398-2	TRANSISTOR	2N2193		



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00 599 DATE 20 MAR 63.

Ⓐ REPLACED WITH CHANGE BY REV B

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISTOR VALUES ARE EXPRESSED IN OHMS, K INDICATES THOUSANDS OF OHMS.
3. UNLESS OTHERWISE SPECIFIED, CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS.
4. REF DWG: RESOLVER DRIVE AMPLIFIER ASSY 1015123

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN R. EMERY DATE 2-19-63
CHECKED R. L. Batalfon
APPROVAL M. S. Johnson
APPROVAL H. Mangulis
NASA APPROVAL K. Michael 3/2/63
MIT APPROVAL W. Kupfer 2 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
RESOLVER DRIVE AMPLIFIER

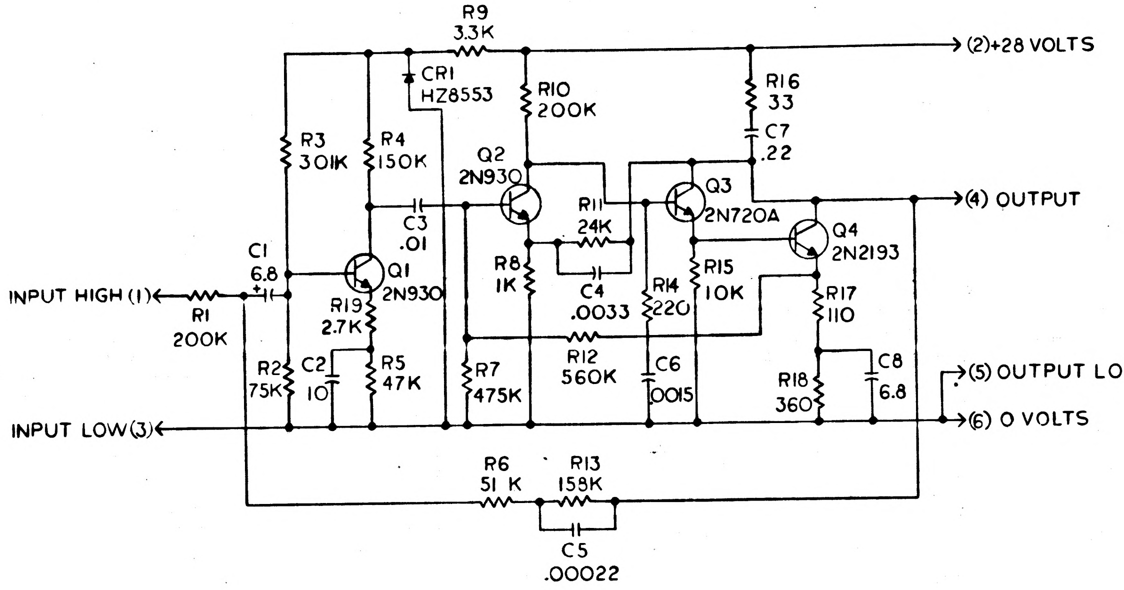
CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015120
SCALE — | WT | SHEET OF

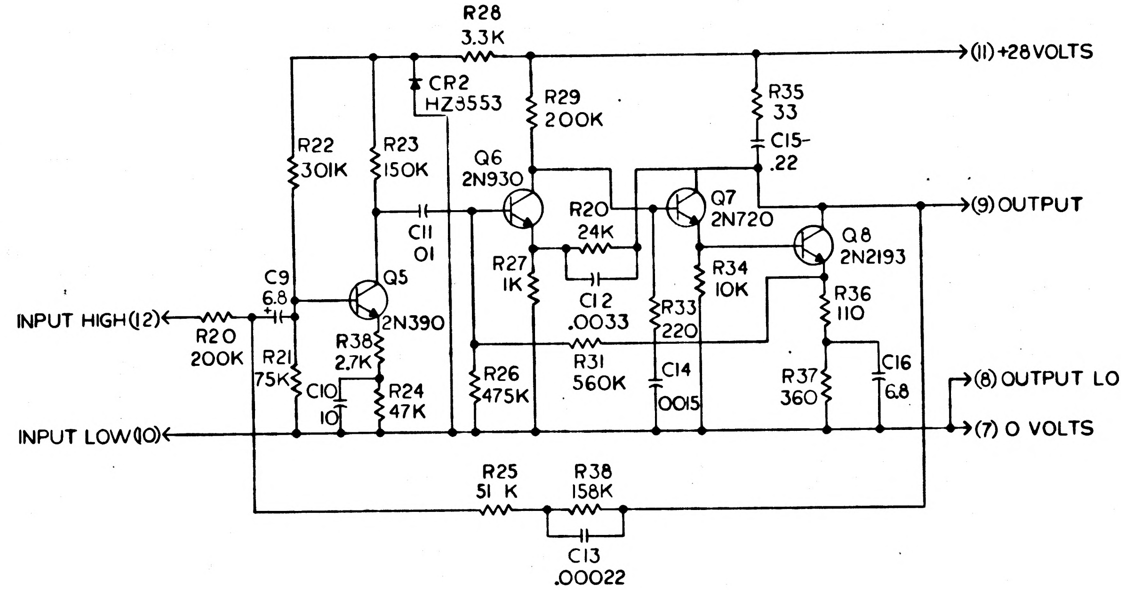
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015120

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGES PER TDRR 00702	4-1-63	Wk.


R9
3.3K
(2)+28 VOLTS
CR1
HZ8553
R10
200K
R16
33
C7
.22
R3
301K
R4
150K
Q2
2N930
R11
24K
Q3
2N720A
(4) OUTPUT
C3
.01
C4
.0033
Q4
2N2193
C1
6.8
Q1
2N930
R8
1K
R14
220
R15
10K
R17
110
INPUT HIGH (1)
R1
200K
R19
2.7K
R12
560K
C6
.0015
R18
360
C8
6.8
(5) OUTPUT LOW
R2
75K
C2
10
R5
47K
R7
475K
INPUT LOW (3)
(6) 0 VOLTS
R6
51 K
R13
158K
C5
.00022


R28
3.3K
(11) +28 VOLTS
CR2
HZ8553
R29
200K
R35
33
C15
.22
R22
301K
R23
150K
Q6
2N930
R20
24K
Q7
2N720
(9) OUTPUT
C11
.01
Q8
2N2193
C9
6.8
Q5
2N390
R27
1K
C12
.0033
R34
10K
R36
110
INPUT HIGH (12)
R20
200K
R38
2.7K
R33
220
R31
560K
C14
.0015
R37
360
C16
6.8
(8) OUTPUT LOW
R21
75K
C10
10
R24
47K
R26
475K
INPUT LOW (10)
(7) 0 VOLTS
R25
51 K
R38
158K
C13
.00022

REF. DESIG.	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1010364-693	RESISTOR	200K	1%	1/8W
R2	1006750-77	↑	75K	2%	1/4W
R3	1010364-727		301K	1%	1/8W
R4	1006750-84		150K	2%	1/4W
R5	1006750-72		47K	2%	1/4W
R6	1006750-73		51 K	2%	1/4W
R7	1010364-765		475K	1%	1/8W
R8	1006750-32		1K	2%	1/4W
R9	1006750-44		3.3K	2%	1/4W
R10	1010364-693		200K	1%	1/8W
R11	1006750-65		24K	2%	1/4W
R12	1010368-115		560K	5%	1/4W
R13	1010364-673		158K	1%	1/8W
R14	1006750-16		220	2%	1/4W
R15	1006750-56		10K	2%	1/4W
R16	1010368-13		33	5%	1/4W
R17	1006750-9		110	2%	1/4W
R18	1006750-21		360	2%	1/4W
R19	1006750-42		2.7K	2%	1/4W
R20	1010364-693		200K	1%	1/8W
R21	1006750-77		75K	2%	1/4W
R22	1010364-727		301K	1%	1/8W
R23	1006750-84		150K	2%	1/4W
R24	1006750-72		47K	2%	1/4W
R25	1006750-73		51 K	2%	1/4W
R26	1010364-765		475K	1%	1/8W
R27	1006750-32		1K	2%	1/4W
R28	1006750-44		3.3K	2%	1/4W
R29	1010364-693		200K	1%	1/8W
R30	1006750-65		24K	2%	1/4W
R31	1010368-115		560K	5%	1/4W
R32	1010364-673		158K	1%	1/8W
R33	1006750-16		220	2%	1/4W
R34	1006750-56		10K	2%	1/4W
R35	1010368-13		33	5%	1/4W
R36	1006750-9		110	2%	1/4W
R37	1006750-21	↓	360	2%	1/4W
R38	1006750-42	RESISTOR	2.7K	2%	1/4W
C1	1006755-79	CAPACITOR	6.8	10%	35V
C2	1006755-31	↑	10	10%	20V
C3	1006755-45		.01	10%	35V
C4	1010359-23		.0033	10%	200V
C5	1010409-33		.00022	2%	200V
C6	1010359-19		.0015	10%	200V
C7	1010375-66		.22	10%	100V
C8	1006755-79		6.8	10%	35V
C9	1006755-79		6.8	10%	35V
C10	1006755-31		10	10%	20V
C11	1006755-45		.01	10%	35V
C12	1010359-23		.0033	10%	200V
C13	1010409-33		.00022	2%	200V
C14	1010359-19		.0015	10%	200V
C15	1010375-66	↓	.22	10%	100V
C16	1006755-79	CAPACITOR	6.8	10%	35
CR1	1010372-24	DIODE	HZ8553		18V
CR2	1010372-24	DIODE	HZ8553		18V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010397	↑	2N930		
Q3	1010357		2N720A		
Q4	1010398-2		2N2193		
Q5	1010397		2N930		
Q6	1010397		2N930		
Q7	1010357	↓	2N720A		
Q8	1010398-2	TRANSISTOR	2N2193		

Ⓑ REPLACES REV. A WITH CHANGES

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISTOR VALUES ARE EXPRESSED IN OHMS, K INDICATES THOUSANDS OF OHMS.
3. UNLESS OTHERWISE SPECIFIED, CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS.
4. REF. DWG: RESOLVER DRIVE AMPLIFIER ASSY 1015123

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN R. EMERY DATE 2-19-63
CHECKED R.L. BOTTOLFSON
APPROVAL M.L. JOHNSON
APPROVAL H. MARGULIUS
NASA APPROVAL Jack Barnard
MIT APPROVAL W. [illegible] 3 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
RESOLVER DRIVE AMPLIFIER

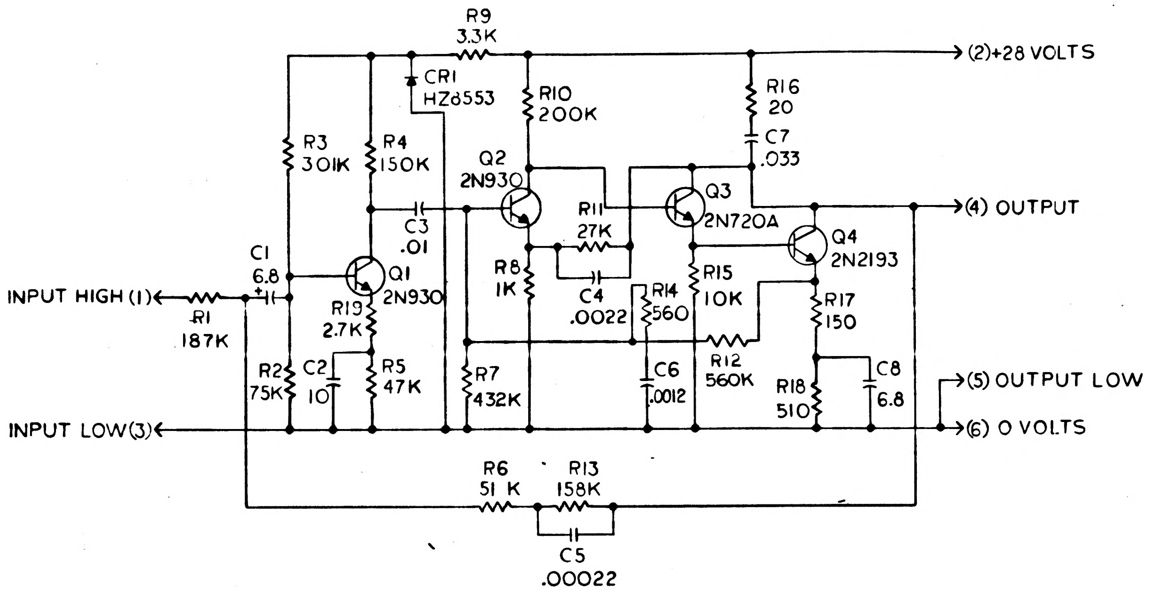
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015120
SCALE
WT
SHEET 1 OF 1

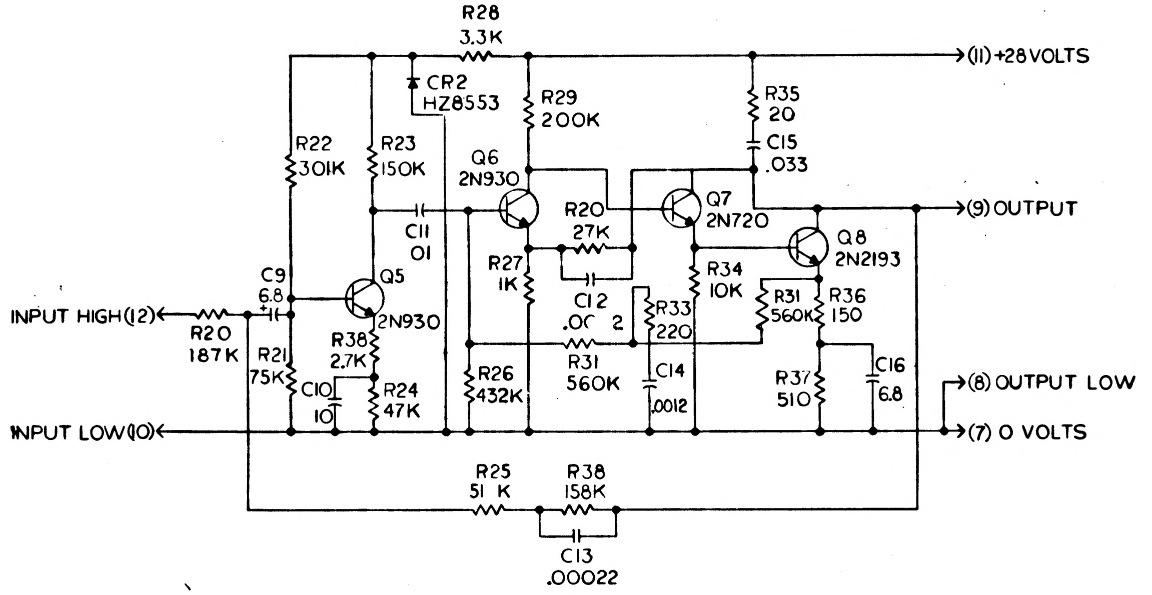
1015120

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGES PER TDRR 00702	4-1-63	WK
C	CHANGED PER TDRR 01374	5/[illegible]	LK


R9
3.3K
CR1
HZ8553
R10
200K
R16
20
C7
.033
(2)+28 VOLTS
R3
301K
R4
150K
Q2
2N930
Q3
2N720A
(4) OUTPUT
C3
.01
R11
27K
Q4
2N2193
C1
6.8
Q1
2N930
R8
1K
C4
.0022
R14
560
R15
10K
R17
150
INPUT HIGH (1)
R1
187K
R19
2.7K
R12
560K
R2
75K
C2
10
R5
47K
R7
432K
C6
.0012
R18
510
C8
6.8
(5) OUTPUT LOW
INPUT LOW (3)
(6) O VOLTS
R6
51 K
R13
158K
C5
.00022


R28
3.3K
CR2
HZ8553
R29
200K
R35
20
C15
.033
(11)+28 VOLTS
R22
301K
R23
150K
Q6
2N930
R20
27K
Q7
2N720
(9) OUTPUT
C11
.01
Q8
2N2193
C9
6.8
Q5
2N930
R27
1K
C12
.0022
R33
220
R34
10K
R31
560K
R36
150
INPUT HIGH (12)
R20
187K
R38
2.7K
R21
75K
C10
10
R24
47K
R26
432K
R31
560K
C14
.0012
R37
510
C16
6.8
(8) OUTPUT LOW
INPUT LOW (10)
(7) O VOLTS
R25
51 K
R38
158K
C13
.00022

REF. DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1010364-687	RESISTOR	187K	1%	1/8W
R2	1006750-77		75K	2%	1/4W
R3	1010364-727		301K	1%	1/8W
R4	1006750-84		150K	2%	1/4W
R5	1006750-72		47K	2%	1/4W
R6	1006750-73		51 K	2%	1/4W
R7	1010364-757		432K	1%	1/8W
R8	1006750-32		1K	2%	1/4W
R9	1006750-44		3.3K	2%	1/4W
R10	1010364-693		200K	1%	1/8W
R11	1006750-66		27K	2%	1/4W
R12	1010368-115		560K	5%	1/4W
R13	1010364-673		158K	1%	1/8W
R14	1006750-26		560	2%	1/4W
R15	1006750-56		10K	2%	1/4W
R16	1010368-8		20	5%	1/4W
R17	1006750-12		150	2%	1/4W
R18	1006750-25		510	2%	1/4W
R19	1006750-42		2.7K	2%	1/4W
R20	1010364-687		187 K	1%	1/8W
R21	1006750-77		75K	2%	1/4W
R22	1010364-727		301K	1%	1/8W
R23	1006750-84		150K	2%	1/4W
R24	1006750-72		47K	2%	1/4W
R25	1006750-73		51 K	2%	1/4W
R26	1010364-757		432K	1%	1/8W
R27	1006750-32		1K	2%	1/4W
R28	1006750-44		3.3K	2%	1/4W
R29	1010364-693		200K	1%	1/8W
R30	1006750-66		27K	2%	1/4W
R31	1010368-115		560K	5%	1/4W
R32	1010364-673		158K	1%	1/8W
R33	1006750-26		560	2%	1/4W
R34	1006750-56		10K	2%	1/4W
R35	1010368-8		20	5%	1/4W
R36	1006750-12		150	2%	1/4W
R37	1006750-25		510	2%	1/4W
R38	1006750-42	RESISTOR	2.7K	2%	1/4W
C1	1006755-79	CAPACITOR	6.8	10%	35V
C2	1006755-31		10	10%	20V
C3	1006755-45		.01	10%	35V
C4	1010359-21		.0022	10%	200V
C5	1010409-33		.00022	2%	200V
C6	1010359-18		.0012	10%	200V
C7	1010375-56		.033	10%	100V
C8	1006755-79		6.8	10%	35V
C9	1006755-79		6.8	10%	35V
C10	1006755-31		10	10%	20V
C11	1006755-45		.01	10%	35V
C12	1010359-21		.0022	10%	200V
C13	1010409-33		.00022	2%	200V
C14	1010359-18		.0012	10%	200V
C15	1010375-56		.033	10%	100V
C16	1006755-79	CAPACITOR	6.8	10%	35
CR1	1010372-24	DIODE	HZ8553		18V
CR2	1010372-24	DIODE	HZ8553		18V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010397		2N930		
Q3	1010357		2N720A		
Q4	1010398-2		2N2193		
Q5	1010397		2N930		
Q6	1010397		2N930		
Q7	1010357		2N720A		
Q8	1010398-2	TRANSISTOR	2N2193		

Ⓑ REPLACES REV. A WITH CHANGES

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISTOR VALUES ARE EXPRESSED IN OHMS, K INDICATES THOUSANDS OF OHMS.
3. UNLESS OTHERWISE SPECIFIED, CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS.
4. REF. DWG: RESOLVER DRIVE AMPLIFIER ASSY 1015123

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN R. EMERY DATE 2-19-63
CHECKED R.L. BOTTOLFSON
APPROVAL M.L. JOHNSON
APPROVAL H. MARGULIUS
NASA APPROVAL
MIT APPROVAL 3 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
RESOLVER DRIVE AMPLIFIER

CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1015120
SCALE | WT | SHEET 1 OF 1

1015120

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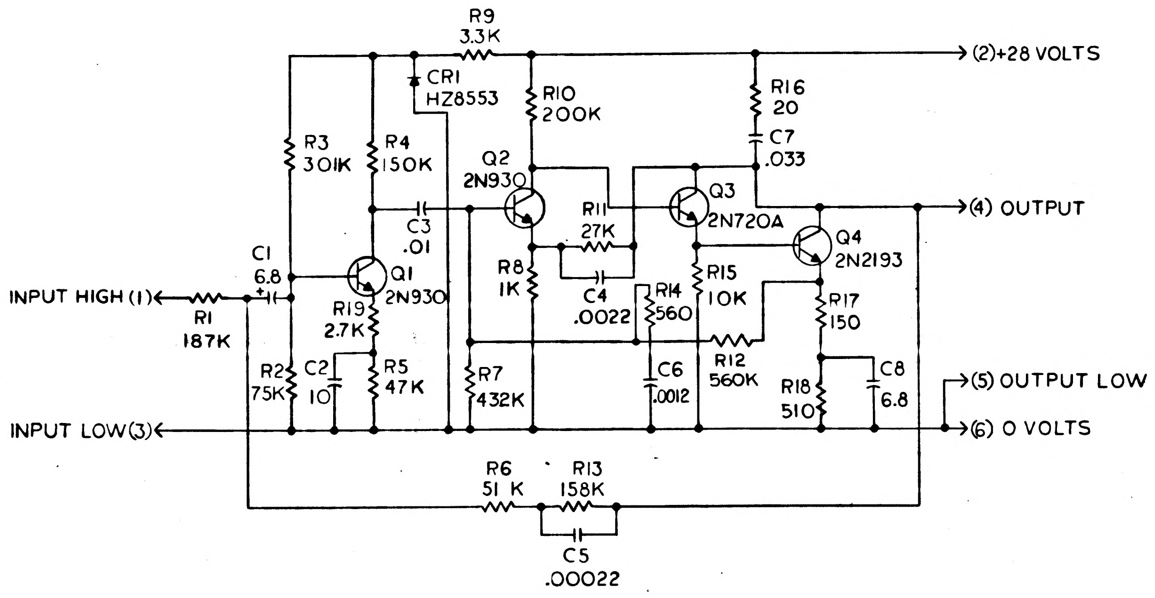
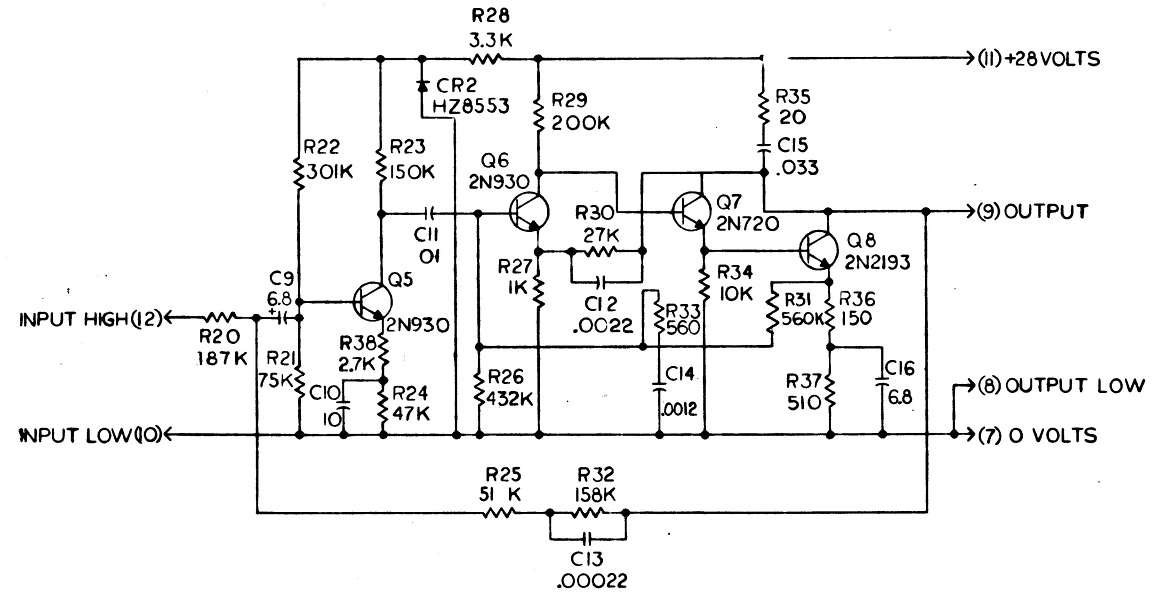
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGES PER TDRR 00702	4-1-63	
C	CHANGED PER TDRR 01374	5/	L.K
D	REVISED PER TDRR 02023	7/24/63	


R9
3.3K
(2)+28 VOLTS
CR1
HZ8553
R10
200K
R16
20
C7
.033
R3
301K
R4
150K
Q2
2N930
R11
27K
Q3
2N720A
(4) OUTPUT
Q4
2N2193
C3
.01
C1
6.8
Q1
2N930
R8
1K
C4
.0022
R14
560
R15
10K
INPUT HIGH (1)
R1
187K
R19
2.7K
R17
150
R2
75K
C2
10
R5
47K
R7
432K
C6
.0012
R12
560K
R18
510
C8
6.8
(5) OUTPUT LOW
INPUT LOW(3)
(6) 0 VOLTS
R6
51 K
R13
158K
C5
.00022


R28
3.3K
(11)+28VOLTS
CR2
HZ8553
R29
200K
R35
20
C15
.033
R22
301K
R23
150K
Q6
2N930
R30
27K
Q7
2N720
(9)OUTPUT
Q8
2N2193
C11
.01
C9
6.8
Q5
R27
1K
C12
.0022
R33
560
R34
10K
R31
560K
R36
150
INPUT HIGH(12)
R20
187K
R21
75K
R38
2.7K
2N930
C10
10
R24
47K
R26
432K
C14
.0012
R37
510
C16
6.8
(8)OUTPUT LOW
INPUT LOW(10)
(7) 0 VOLTS
R25
51 K
R32
158K
C13
.00022

REF. DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL.	RATING
R1	1010364-687	RESISTOR	187K	1%	1/8W
R2	1006750-77		75K	2%	1/4W
R3	1010364-727		301K	1%	1/8W
R4	1006750-84		150K	2%	1/4W
R5	1006750-72		47K	2%	1/4W
R6	1006750-73		51 K	2%	1/4W
R7	1010364-757		432K	1%	1/8W
R8	1006750-32		1K	2%	1/4W
R9	1006750-44		3.3K	2%	1/4W
R10	1010364-693		200K	1%	1/8W
R11	1006750-66		27K	2%	1/4W
R12	1010368-115		560K	5%	1/4W
R13	1010364-673		158K	1%	1/8W
R14	1006750-26		560	2%	1/4W
R15	1006750-56		10K	2%	1/4W
R16	1010368-8		20	5%	1/4W
R17	1006750-12		150	2%	1/4W
R18	1006750-25		510	2%	1/4W
R19	1006750-42		2.7K	2%	1/4W
R20	1010364-687		187 K	1%	1/8W
R21	1006750-77		75K	2%	1/4W
R22	1010364-727		301K	1%	1/8W
R23	1006750-84		150K	2%	1/4W
R24	1006750-72		47K	2%	1/4W
R25	1006750-73		51 K	2%	1/4W
R26	1010364-757		432 K	1%	1/8W
R27	1006750-32		1K	2%	1/4W
R28	1006750-44		3.3K	2%	1/4W
R29	1010364-693		200K	1%	1/8W
R30	1006750-66		27K	2%	1/4W
R31	1010368-115		560K	5%	1/4W
R32	1010364-673		158K	1%	1/8W
R33	1006750-26		560	2%	1/4W
R34	1006750-56		10K	2%	1/4W
R35	1010368-8		20	5%	1/4W
R36	1006750-12		150	2%	1/4W
R37	1006750-25		510	2%	1/4W
R38	1006750-42	RESISTOR	2.7K	2%	1/4W
C1	1006755-79	CAPACITOR	6.8	10%	35V
C2	1006755-31		10	10%	20V
C3	1006755-45		.01	10%	35V
C4	1010359-21		.0022	10%	200V
C5	1010409-33		.00022	2%	200V
C6	1010359-18		.0012	10%	200V
C7	1010375-56		.033	10%	100V
C8	1006755-79		6.8	10%	35V
C9	1006755-79		6.8	10%	35V
C10	1006755-31		10	10%	20V
C11	1006755-45		.01	10%	35V
C12	1010359-21		.0022	10%	200V
C13	1010409-33		.00022	2%	200V
C14	1010359-18		.0012	10%	200V
C15	1010375-56		.033	10%	100V
C16	1006755-79	CAPACITOR	6.8	10%	35
CR1	1010372-24	DIODE	HZ8553		18V
CR2	1010372-24	DIODE	HZ8553		18V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010397		2N930		
Q3	1010357		2N720A		
Q4	1010398-2		2N2193		
Q5	1010397		2N930		
Q6	1010397		2N930		
Q7	1010357		2N720A		
Q8	1010398-2	TRANSISTOR	2N2193		

Ⓑ REPLACES REV. A WITH CHANGES

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISTOR VALUES ARE EXPRESSED IN OHMS, K INDICATES THOUSANDS OF OHMS.
3. UNLESS OTHERWISE SPECIFIED, CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS.
4. REF. DWG: RESOLVER DRIVE AMPLIFIER ASSY 1015123

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO. CONTRACT
DRAWN R. EMERY DATE 2-19-63
CHECKED R.L. BOTTOLFSON
APPROVAL M.L. JOHNSON
APPROVAL H. MARGULIUS
NASA APPROVAL
MIT APPROVAL 3 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
RESOLVER DRIVE AMPLIFIER

CODE IDENT NO. SIZE E NASA DRAWING NO. 101512D
SCALE WT SHEET 1 OF 1

101512D

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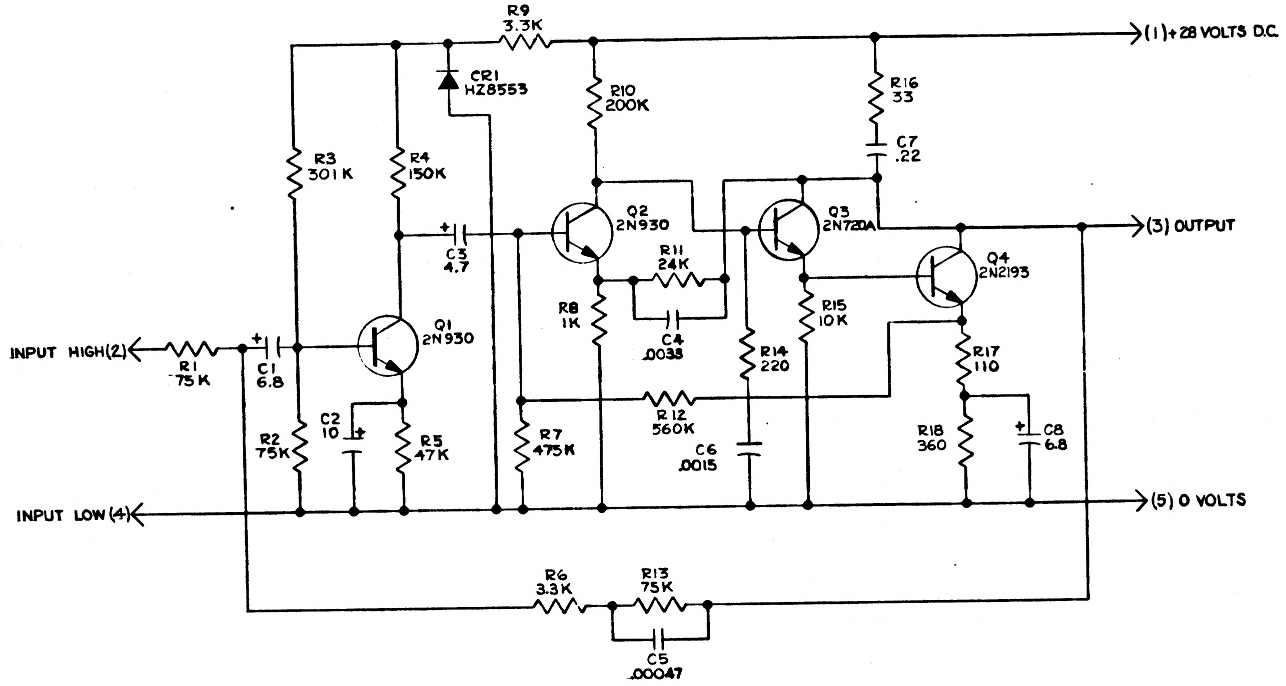
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL

REF. DESIG.	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-77	RESISTOR	75K	2%	1/4 W
R2	1006750-77		75K	2%	1/4 W
R3	1010364-727		301K	1%	1/8 W
R4	1006750-84		150K	2%	1/4 W
R5	1006750-72		47K	2%	1/4 W
R6	1006750-44		3.3K	2%	1/4 W
R7	1010364-765		475K	1%	1/8 W
R8	1006750-32		1K	2%	1/4 W
R9	1006750-44		3.3K	2%	1/4 W
R10	1010364-693		200K	1%	1/8 W
R11	1006750-65		24K	2%	1/4 W
R12	1010368-115		560K	5%	1/4 W
R13	1006750-77		75K	2%	1/4 W
R14	1006750-16		220	2%	1/4 W
R15	1006750-56		10K	2%	1/4 W
R16	1010368-13		33	5%	1/4 W
R17	1006750-9		110	2%	1/4 W
R18	1006750-21	RESISTOR	360	2%	1/4 W
C1	1006755-79	CAPACITOR	6.8	10%	35V.
C2	1006755-31		10	10%	20V
C3	1006755-77		4.7	10%	35V
C4	1010 359-23		.0033	10%	200V
C5	1010 359-13		.00047	10%	200V
C6	1010359-19		.0015	10%	200V
C7	1010375-66		.22	10%	100V
C8	1006755-79	CAPACITOR	6.8	10%	35V
CR1	1010372-24	DIODE	HZ8553		18V
Q1	1010397	TRANSISTOR	2N930		
Q2	1010397		2N930		
Q3	1010357		2N720A		
Q4	1010398-2	TRANSISTOR	2N2193		



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00599 DATE 20 MAR 63.

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISTOR VALUES ARE EXPRESSED IN OHMS, K INDICATES THOUSANDS OF OHMS.
3. UNLESS OTHERWISE SPECIFIED, CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS.
4. REF DWG: RESOLVER DRIVE AMPLIFIER ASSY 1015123

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 2-19-63
CHECKED R. L. Batalgon
APPROVAL M. S. Johnson
APPROVAL H. Mangulus
NASA APPROVAL 3/2/63
MIT APPROVAL 20 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
RESOLVER DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015120
SCALE —
WT
SHEET OF

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015120

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015121 A Ⓜ

REVISIONS TDRR 00701

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY REV. B WITH CHANGE PER TDRR 01205	5-8-63	WK

PART NO	DESCRIPTION	REQD
1015128	FRAME ASSEMBLY, MODULE	1
1015139	WAFER BOARD, LOWER	1
1015140	WAFER BOARD, UPPER	1
1015131	SPACER	1
AN500D-4-8	SCREW PAN HEAD #4-40 x 9/16 LONG	1
AN500D-4-4	SCREW PAN HEAD #4-40 x 1/4 LONG	1
1015135-015	SPACER	1
AN500D-2-4	SCREW	2
1006757-1	WIRE NICKEL RIBBON	AR
1006776-20	SLEEVING, ELECTRICAL INSUL	AR
1006750-8	RESISTOR - FIXED	2
1006750-56	RESISTOR - FIXED	1
1006750-43	RESISTOR - FIXED	3
1006750-15	RESISTOR - FIXED	2
1006750-80	RESISTOR - FIXED	1
1006750-61	RESISTOR - FIXED	3
1006750-39	RESISTOR - FIXED	1
1006750-73	RESISTOR - FIXED	2
1006750-31	RESISTOR - FIXED	1
1006750-78	RESISTOR - FIXED	1
1006760-48	RESISTOR - FIXED	1
1010312-001	RESISTOR - FIXED	2
1010375-53	CAPACITOR	1
1006755-13	↕	3
1010279-018	↕	1
1006755-29	↕	2
1010279-226	↕	1
1010359-5	↕	1
1010375-124	↕	1
1006755-69	↕	1
1010375-52	CAPACITOR	1

PART NO	DESCRIPTION	REQD
1010372-24	DIODE	1
1010370	DIODE	3
1010397	TRANSISTOR	2
1010398	↕	2
1010357	↕	1
1010269	TRANSISTOR	2
1010276	TRANSFORMER	2
1010365	TRANSFORMER	1
1006787-2	WIRE FEED THRU	AR
1006782-5	CONTACT, BLADE EDGE CONN.	14
1006775	INSULATOR. WRAPOST-MALE MIN.	14
1006776-18	INSULATION SLEEVING, ELECT.	AR

Ⓐ REPLACED WITH CHANGE BY REV. B

REFERENCE DRAWING 1015116 SCHEMATIC

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL //
HEAT TREATMENT //
FINAL FINISH //

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 4-1-63
CHECKED F Akell
APPROVAL R L Battalion
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W Hoffer 3 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

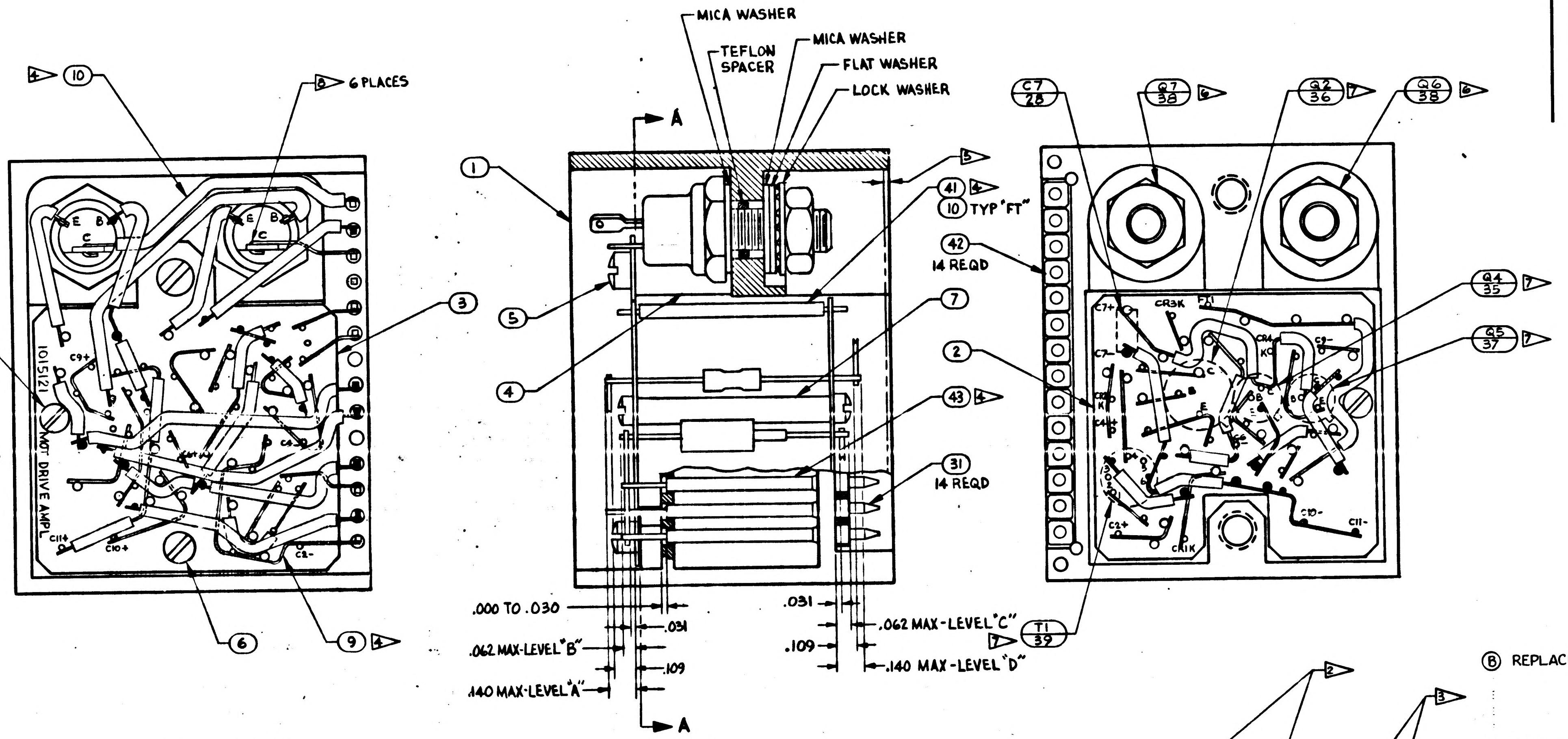
MODULE ASSEMBLY
MOTOR DRIVE AMPLIFIER

CODE IDENT NO. SIZE C NASA DRAWING NO. 1015121
SCALE WT SHEET 1 OF 1

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
B		REPLACES REV A WITH CHANGE PER TDR E 0205			



MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
A
A
4 10
8 6 PLACES
8 2 REQD
1015121 MOT DRIVE AMP.
3
6
9 4
1
5
4
41 4
10 TYP "FT"
42 14 REQD
7
2
43 4
31 14 REQD
5
.000 TO .030
.031
.062 MAX-LEVEL "B"
.109
.140 MAX-LEVEL "A"
.031
.109
.062 MAX-LEVEL "C"
.140 MAX-LEVEL "D"
C7 28
Q7 38 6
Q2 36 7
Q6 38 6
Q4 35 7
Q5 37 7
T1 39 7

Ⓑ REPLACES REV A WITH CHANGE

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

CONNECTIONS TO BE MADE BY WELDING PER G&ND 1002005.

WIRING STDS FOR WELDED UNITS PER G&ND 1002003.

8 SOLDER PER G&ND 1002071 USING G&ND 1002075.

1 ENCAPSULATE MODULE PER G&ND 1002002 (BLACK POLYURETHANE FOAM).

2 MARK CHARACTERS .080 HIGH, WHITE PER G&ND 1002019, CENTRALIZE AS SHOWN

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

5 ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY.

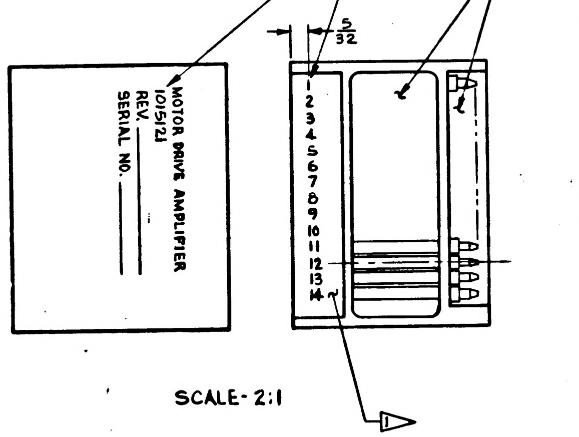
6 MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7 TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER G&ND 1002009

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

ON ITEMS 2&3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS(-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL



MOTOR DRIVE AMPLIFIER
1015121
REV.
SERIAL NO.
5/32
1
2
3
4
5
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10
11
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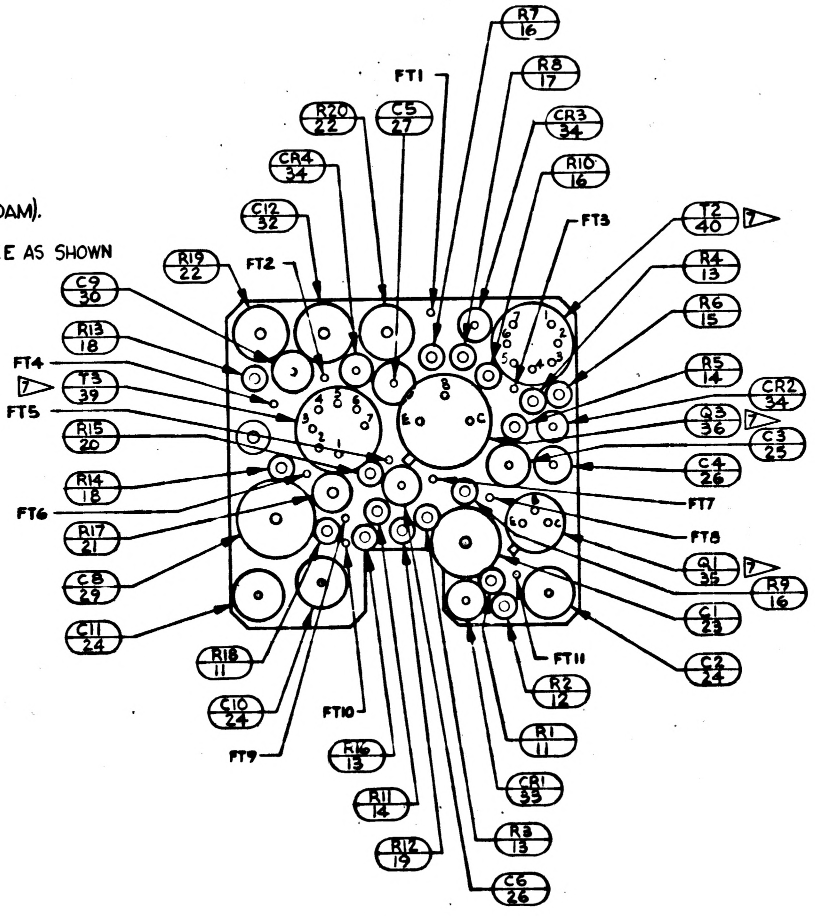
13
14
2
3
1

SCALE-2:1



R7 16
FT1
R8 17
CR3 34
R10 16
R20 22
C5 27
CR4 34
C12 32
FT3
T2 40 7
R19 22
FT2
R4 13
C9 30
R6 15
R13 18
FT4
R5 14
CR2 34
T3 39
FT5
Q3 36 7
C3 25
R15 20
C4 26
R14 18
FT7
FT6
R17 21
FT8
C8 29
Q1 35 7
R9 16
C1 23
C11 24
C2 24
R18 11
FT11
C10 24
FT10
R2 12
R16 13
FT9
R1 11
R11 14
CR1 33
R3 13
R12 19
C6 26

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
43		G&ND 1002074	INSULATION SLEEVING #22
42	14	1006775	INSULATOR, WRAPOST-MALE MIN.
41		1006787-2	WIRE-FEED THRU #24 AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	2	1010269	TRANSISTOR
37	1	1010357	↑
36	2	1010398	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	1	1010375-052	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	↑
28	1	1010359-5	
27	1	1010279-226	
26	2	1006755-29	
25	1	1010279-018	
24	3	1006755-13	
23	1	1010375-53	CAPACITOR
22	2	1010389-8	RESISTOR-FIXED
21	1	1006760-48	↑ ↑
20	1	1006750-78	
19	1	↑ -31	
18	2	-73	
17	1	-39	
16	3	-61	
15	1	-80	
14	2	-15	
13	3	-43	
12	1	-56	
11	2	1006750-8	RESISTOR-FIXED
10		G&ND 1002074	INSULATION SLEEVING #25
9		1006757-1	WIRE, NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-015	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007109	
1007108	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+—	+.005	+—
——	-.005	——

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN SPLANE DATE 29 APR 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

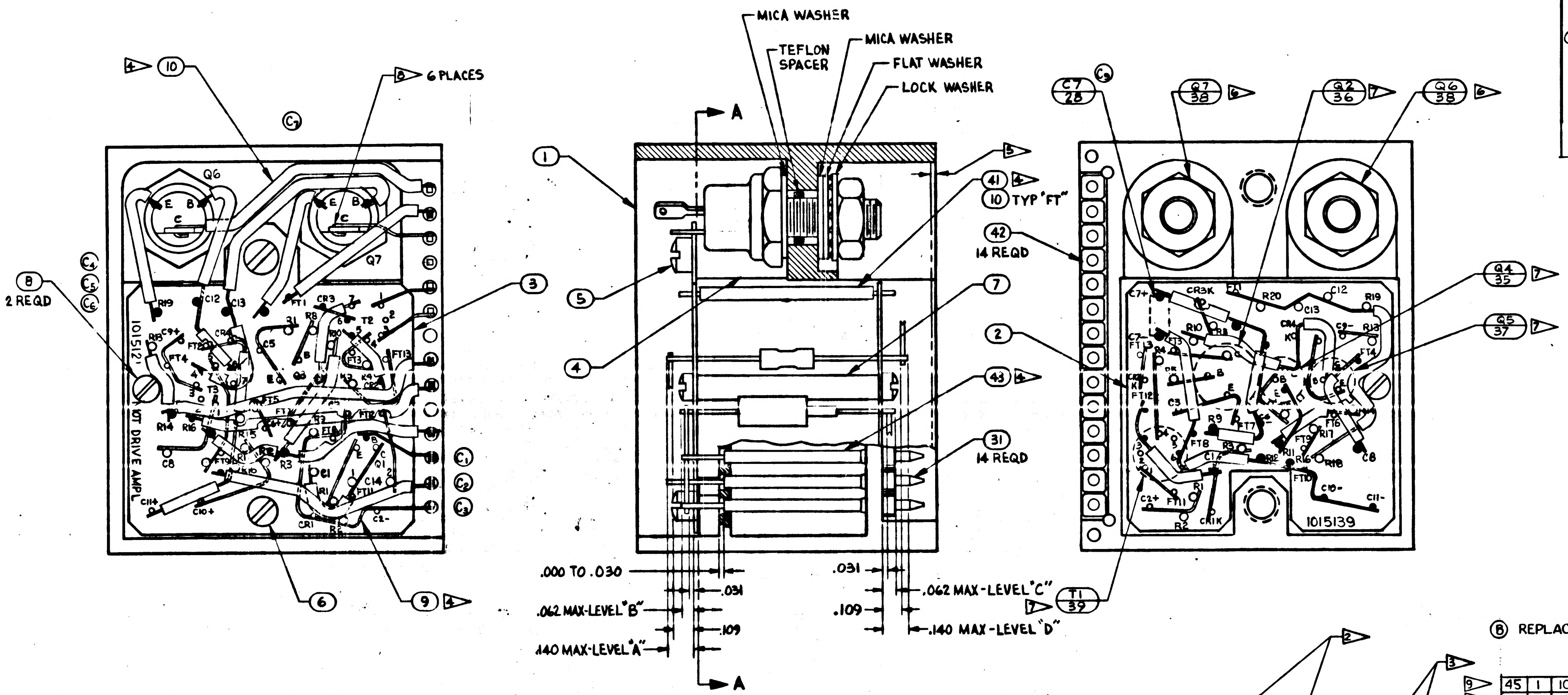
MOTOR DRIVE AMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015121
SCALE 4:1
SHEET 1 OF 1

1015121

INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B		REPLACES REV A WITH CHANGE PER TDR			
C11		(1) ADDED FT 12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6, ITEM 15 AND REPLACE WITH FT 3		6-19-63	


MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
A
A
6 PLACES
2 REQD
Q6
Q7
101512I
MOT DRIVE AMPL
TYP "FT"
14 REQD
14 REQD
.000 TO .030
.062 MAX-LEVEL "B"
.140 MAX-LEVEL "A"
.031
.109
.031
.109
.062 MAX-LEVEL "C"
.140 MAX-LEVEL "D"
C7 28
Q7 38
Q2 36
Q6 38
Q4 35
Q5 37
T1 39
1015139

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

WIRING STDS FOR WELDED UNITS PER ND 1002003.

4 SOLDER PER ND 1002071 USING ND 1002075.

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

2 MARK CHARACTERS .080 HIGH, WHITE PER ND 1002019, CENTRALIZE AS SHOWN

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

5 ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY.

6 MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7 TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND 1002009

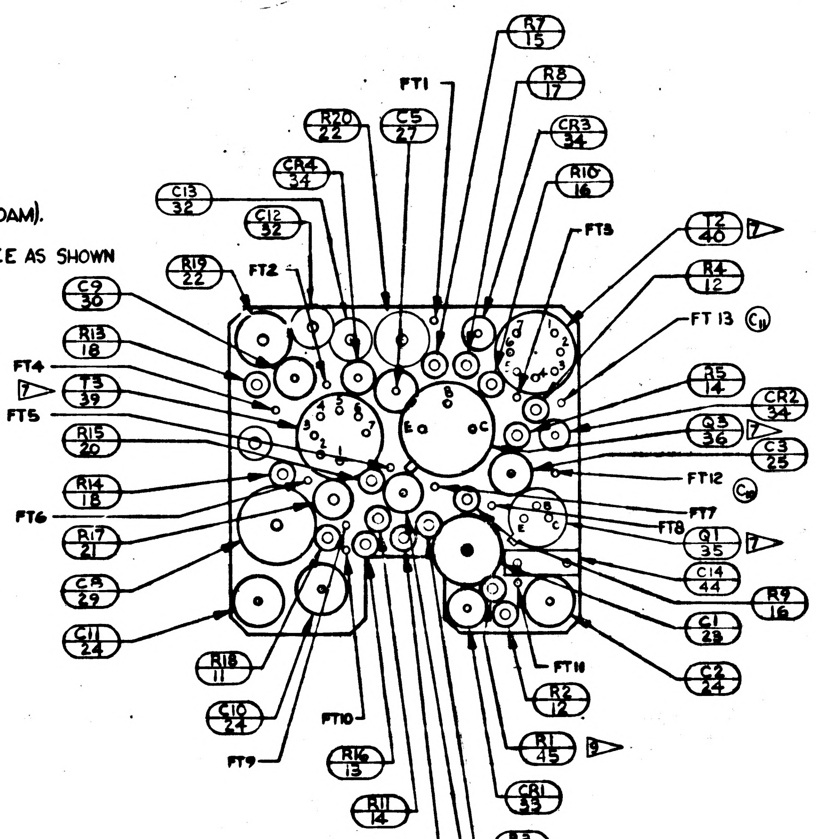
BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

ON ITEMS 2&3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS(-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

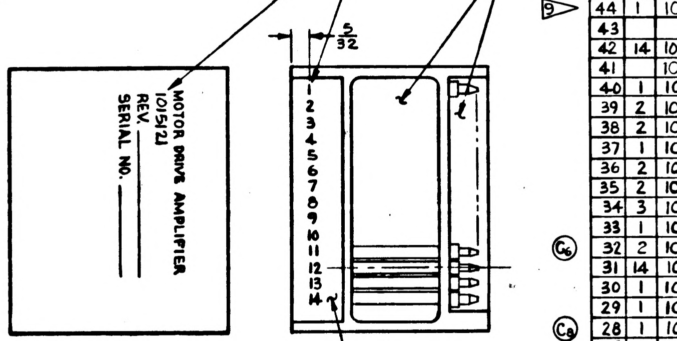
9 SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

R1	C1
1006750-4 THRU -13	1010359-5, 9, 11, 13 THRU 17


R7 15
R8 17
FT1
R20 22
C5 27
CR3 34
R10 16
CR4 34
C12 32
C13 32
FT3
T2 40
R4 12
R19 22
FT2
FT 13
C9 30
R13 18
FT4
T3 39
FT5
R5 14
CR2 34
R15 20
Q3 36
C3 25
R14 18
FT12
FT7
FT6
FT8
Q1 35
R17 21
C14 44
C8 29
R9 16
C1 23
C11 24
C2 24
R18 11
FT11
R2 12
C10 24
FT10
R1 45
FT9
R16 13
CR1 33
R11 14
R3 13
R12 19
C6 26

SECTION A-A
SHOWING ONLY LOWER WAFER AND COMPONENTS

Ⓑ REPLACES REV A WITH CHANGE


MOTOR DRIVE AMPLIFIER
1015121
REV
SERIAL NO.
5/32
1
2
3
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10
11
12
13
14

SCALE- 2:1

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
45	1	1006750	RESISTOR-FIXED-SELECTED
44	1	1010359	CAPACITOR VALUE SELECTED
43		ND 1002074	INSULATION SLEEVING #22
42	14	1006775	INSULATOR, WRAPOST-MALE MIN.
41		1006787-2	WIRE-FEED THRU #24 AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	2	1010269	TRANSISTOR
37	1	1010357	↑
36	2	1010398	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	↑
28	1	1010359-17	
27	1	1010279-226	
26	1	1006755-29	
25	1	1010279-018	
24	3	1006755-13	
23	1	1010375-53	CAPACITOR
22	2	1010389-8	RESISTOR-FIXED
21	1	1006760-48	↑
20	1	1006750-78	
19	1	↑ -31	
18	2	-73	
17	2	-39	
16	2	-61	
15	1	-80	
14	1	-15	
13	2	-43	
12	2	-56	
11	1	1006750-8	RESISTOR-FIXED
10		ND 1002074	INSULATION SLEEVING #23
9		1006757-1	WIRE, NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-015	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

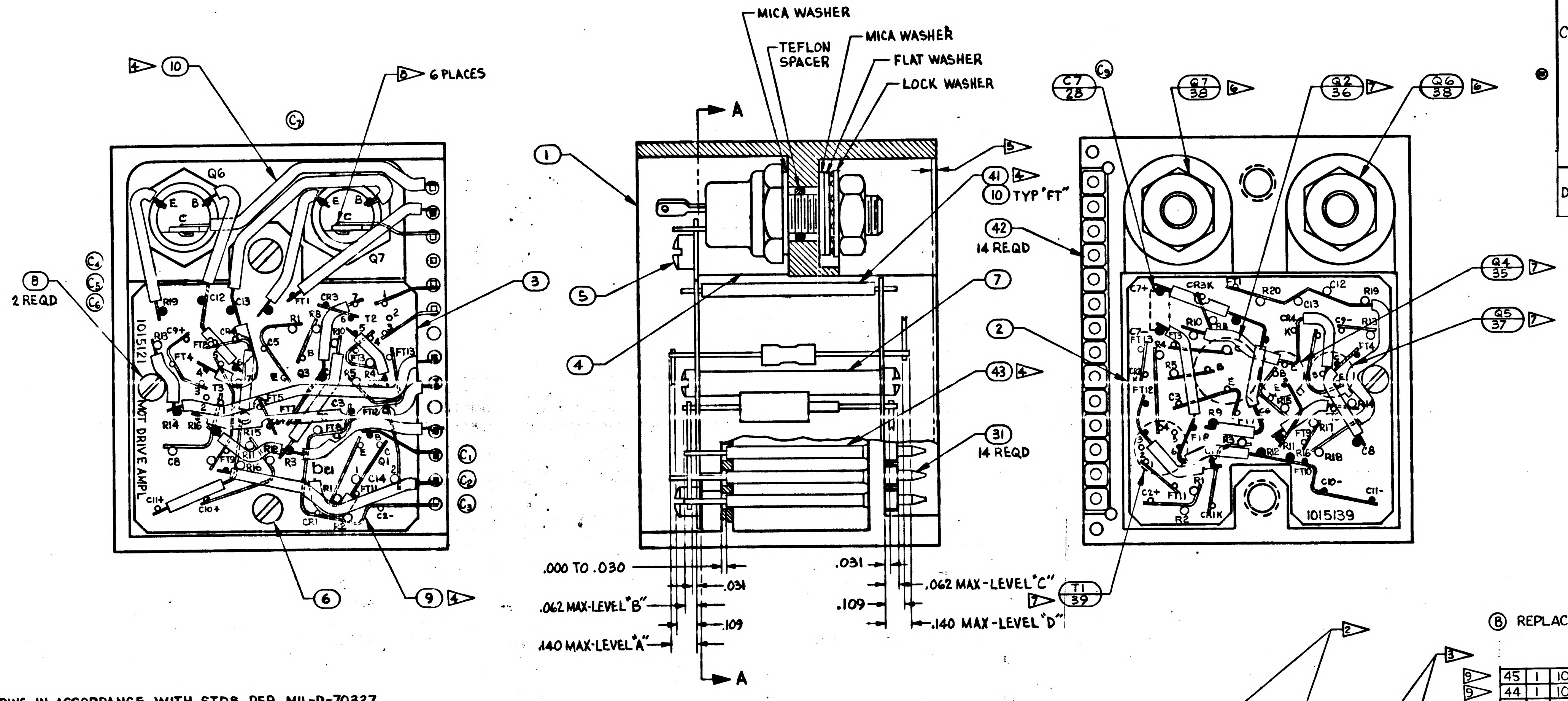
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN SPLANE DATE 29 APR 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

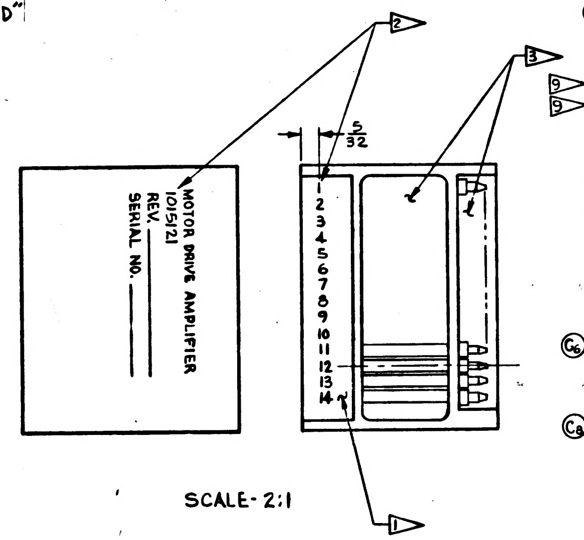
MOTOR DRIVE AMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015121
SCALE 4:1
SHEET 1 OF 1

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDR [illegible]			
C11		(1) ADDED FT 12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6, ITEM 15 AND REPLACE WITH FT 3 TDR [illegible]		6-19-63	
D1		(1) IN NOTE 9 REMOVED 1010359-5,9,[illegible],3,4,15,16 & ADDED 1010359-21,23,25,26 27,28,29 TDR [illegible]		26 June 63	


MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
A
A
10
6 PLACES
8
2 REQD
1015121
MOT DRIVE AMPL
Q6
Q7
3
4
5
6
9
1
2
7
41
10 TYP "FT"
42
14 REQD
43
31
14 REQD
C7 28
Q7 38
Q2 36
Q6 38
Q4 35
Q5 37
T1 39
1015139
.000 TO .030
.062 MAX-LEVEL "B"
.140 MAX-LEVEL "A"
.031
.109
.031
.109
.062 MAX-LEVEL "C"
.140 MAX-LEVEL "D"

B REPLACES REV A WITH CHANGE


MOTOR DRIVE AMPLIFIER
1015121
REV.
SERIAL NO.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
5/32
1
2
3

SCALE- 2:1

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

WIRING STDS FOR WELDED UNITS PER ND 1002003.

8 SOLDER PER ND 1002071 USING ND 1002075.

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

2 MARK CHARACTERS .080 HIGH, WHITE PER ND 1002019, CENTRALIZE AS SHOWN

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

5 ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY.

6 MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7 TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND 1002009

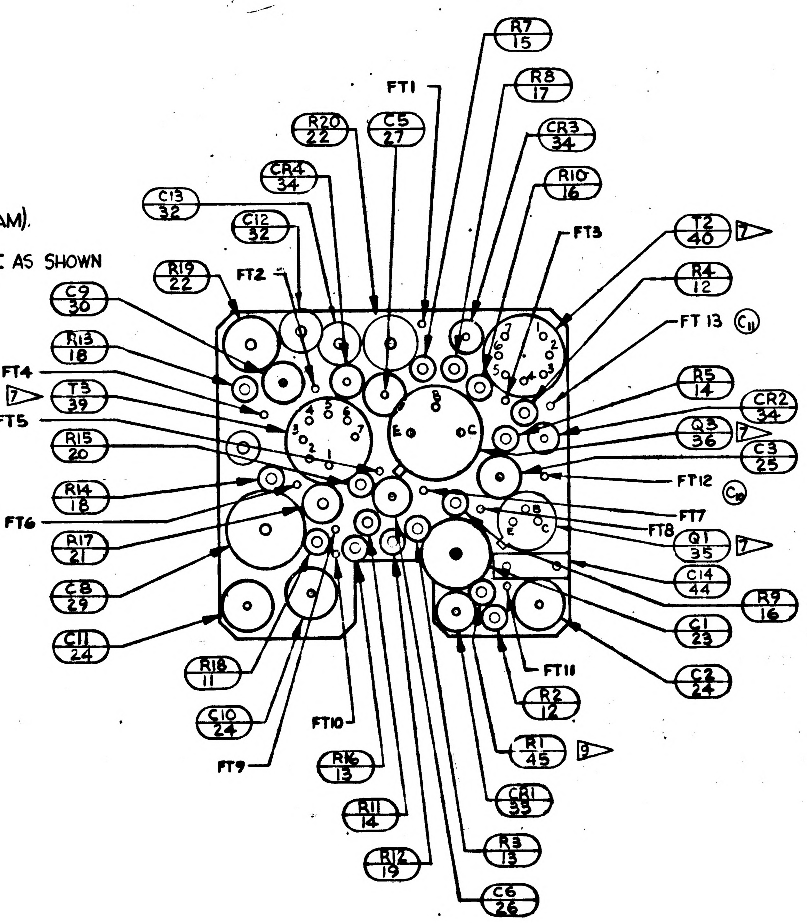
BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

ON ITEMS 2&3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS(-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

9 SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

R1	C14
1006750-4 THRU -13	1010359-17,21,23,25 THRU 29


R7 15
FT1
R8 17
R20 22
C5 27
CR3 34
CR4 34
R10 16
C13 32
C12 32
FT3
T2 40
R19 22
FT2
R4 12
FT 13
C9 30
R13 18
FT4
T3 39
FT5
R5 14
CR2 34
Q3 36
C3 25
R15 20
R14 18
FT12
FT6
FT7
FT8
Q1 35
R17 21
C8 29
C14 44
C1 23
R9 16
C11 24
FT11
C2 24
R18 11
C10 24
FT10
R2 12
R16 13
R1 45
FT9
CR1 33
R11 14
R3 13
R12 19
C6 26

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
45	1	1006750	RESISTOR-FIXED-SELECTED
44	1	1010359	CAPACITOR VALUE SELECTED
43		ND 1002074	INSULATION SLEEVING #22
42	14	1006775	INSULATOR, WRAPOST-MALE MIN.
41		1006787-2	WIRE-FEED THRU #24 AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	2	1010269	TRANSISTOR
37	1	1010357	
36	2	1010398	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	
28	1	1010359-17	
27	1	1010279-226	
26	1	1006755-29	
25	1	1010279-018	
24	3	1006755-13	
23	1	1010375-53	CAPACITOR
22	2	1010389-8	RESISTOR-FIXED
21	1	1006760-48	
20	1	1006750-78	
19	1	-31	
18	2	-73	
17	2	-39	
16	2	-61	
15	1	-80	
14	1	-15	
13	2	-43	
12	2	-56	
11	1	1006750-8	RESISTOR-FIXED
10		ND 1002074	INSULATION SLEEVING #23
9		1006757-1	WIRE, NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-015	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	+.005	+ —
— —	-.005	— —

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN SPLANE DATE 29 APR 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/18/63
MIT APPROVAL

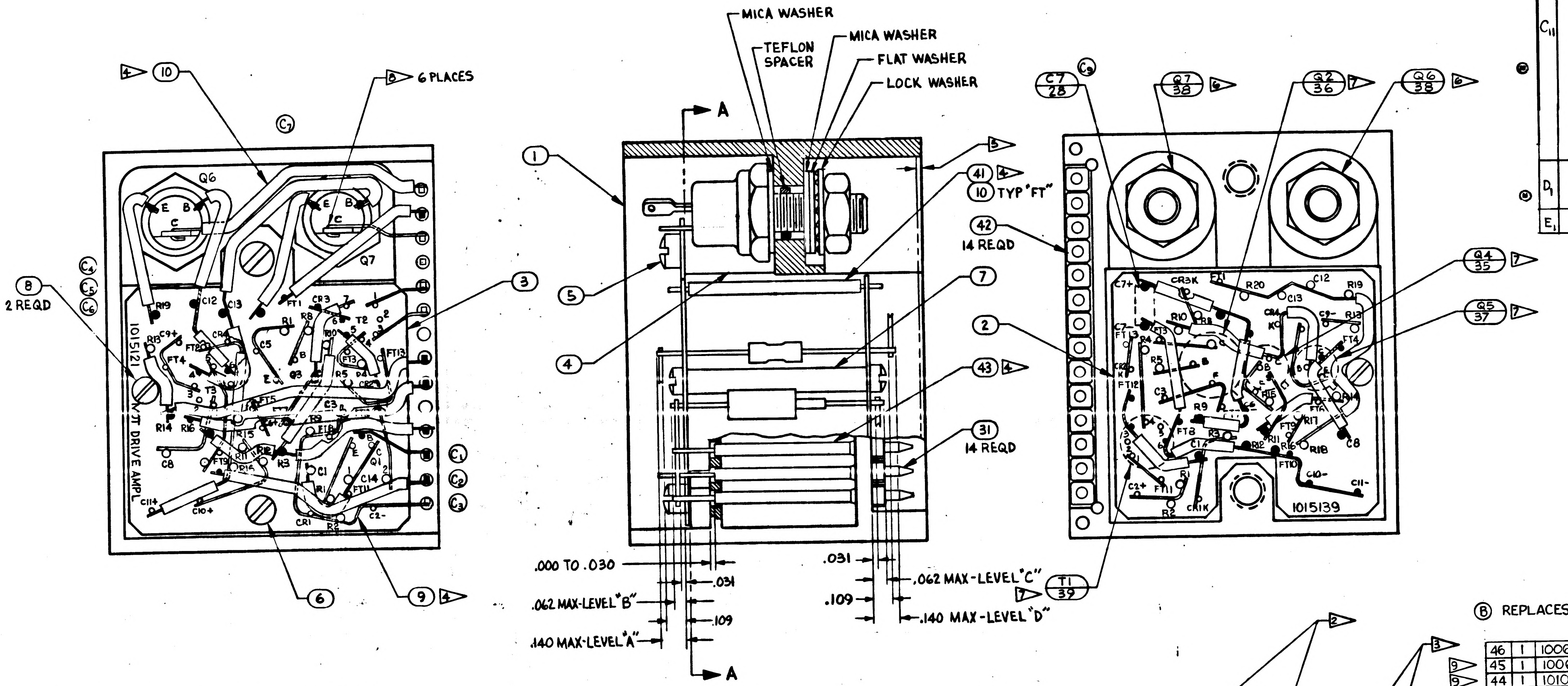
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

MOTOR DRIVE AMPLIFIER
MODULE ASSEMBLY

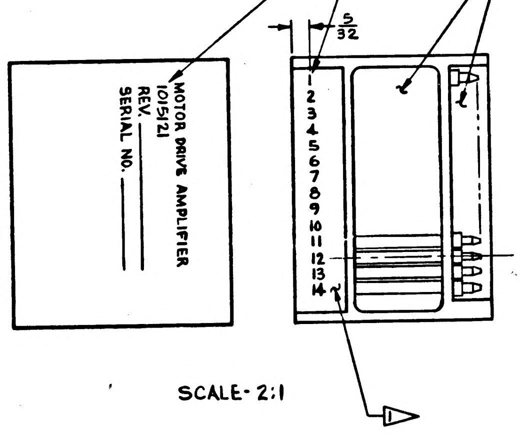
CODE IDENT NO.
SIZE E
1015121
SCALE 4:1
SHEET OF 1

INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
REVISIONS					
B		REPLACES REV A WITH CHANGE PER TDRR 01605			
C₁₁		(1) ADDED FT 12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R 20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6, ITEM 15 AND REPLACE WITH FT13 TDRR 01590		6-19-63	
D₁		(1) IN NOTE 9 REMOVED 1010359-5,9,13,4,15,16 & ADDED 1010359-21,23,25 26 27,28,29 TDRR 01755		24 June 63	
E₁		C10 WAS 1006755-13 TDRR 01795			



MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
A
A
4 10
6 6 PLACES
C7
Q6
Q7
E B C
8 2 REQD
C4 C5 C6
1015121
M.T. DRIVE AMPL
R19 C12 C13 FT1 CR3 R8 T2 FT13 C5 R1 R5 FT4 T3 FT5 C3 R9 R14 R16 R15 C8 R11 FT9 D14 R3 C1 C14 Q1 C11+ C10+ CR1 R2 C2-
C1 C2 C3
3
6
9 4
1
5
4
7
41 4
10 TYP "FT"
5
42 14 REQD
2
43 4
31 14 REQD
.000 TO .030
.031
.062 MAX-LEVEL "B"
.109
.140 MAX-LEVEL "A"
.031
.109
.062 MAX-LEVEL "C"
.140 MAX-LEVEL "D"
T1 39 7
C7 28
C9
Q7 38 6
Q2 36 7
Q6 38 6
Q4 35 7
Q5 37 7
C7+ CR3K FT1 R20 C12 R19 C13 R10 FT4 C7- FT12 R4 R5 C3 R9 FT6 FT8 R17 R11 C8 R18 FT10 C10- C11- C2+ FT11 R2 CR1K
1015139



MOTOR DRIVE AMPLIFIER
1015121
REV
SERIAL NO.
5/32
1 2 3 4 5 6 7 8 9 10 11 12 13 14
2
3
1

SCALE- 2:1

Ⓑ REPLACES REV A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
46	1	1006755-15	CAPACITOR
45	1	1006750	RESISTOR-FIXED-SELECTED
44	1	1010359	CAPACITOR VALUE SELECTED
43		ND 1002074	INSULATION SLEEVING #22
42	14	1006775	INSULATOR, WRAPOST-MALE MIN.
41		1006787-2	WIRE-FEED THRU #24AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	2	1010269	TRANSISTOR
37	1	1010357	
36	2	1010398	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	
28	1	1010359-17	
27	1	1010279-226	
26	1	1006755-29	
25	1	1010279-018	
24	2	1006755-13	
23	1	1010375-53	CAPACITOR
22	2	1010389-8	RESISTOR-FIXED
21	1	1006760-48	
20	1	1006750-78	
19	1	-31	
18	2	-73	
17	2	-39	
16	2	-61	
15	1	-80	
14	1	-15	
13	2	-43	
12	2	-56	
11	1	1006750-8	RESISTOR-FIXED
10		ND 1002074	INSULATION SLEEVING #23
9		1006757-1	WIRE, NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-015	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

WIRING STDS FOR WELDED UNITS PER ND 1002003.

8 SOLDER PER ND 1002071 USING ND 1002075.

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

2 MARK CHARACTERS .080 HIGH, WHITE PER ND 1002019, CENTRALIZE AS SHOWN

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

5 ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY.

6 MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7 TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND 1002009

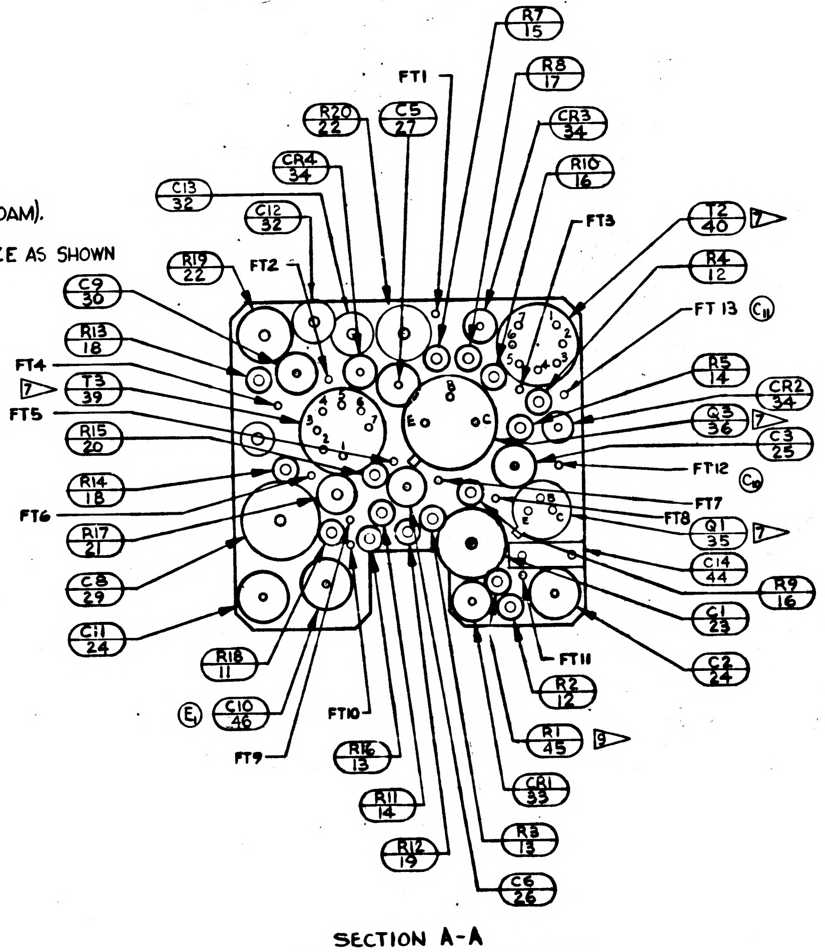
BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

ON ITEMS 2&3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS(-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

9 SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

R1	C14
1006750-4 THRU -13	1010359-17,21,23,25 THRU 29



R7 15
FT1
R8 17
R20 22
C5 27
CR3 34
CR4 34
R10 16
C13 32
C12 32
FT3
T2 40 7
R19 22
FT2
R4 12
C9 30
FT 13 C11
R13 18
R5 14
FT4
CR2 34
T3 39 7
Q3 36 7
FT5
C3 25
R15 20
FT12 C9
R14 18
FT7
FT6
FT8
Q1 35 7
R17 21
C14 44
C8 29
R9 16
C1 23
C11 24
C2 24
FT11
R18 11
R2 12
C10 46 E1
FT10
R1 45 9
R16 13
FT9
CR1 33
R11 14
R3 13
R12 19
C6 26

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS

1007159	
1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+—	+.005	+—
——	-.005	——

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN	SPLANE	29 APR 63
CHECKED	E. Fleming	30 APR 63
APPROVAL		30 APR 63
APPROVAL		30 APR 63
NASA APPROVAL		5/1/63
MIT APPROVAL		63

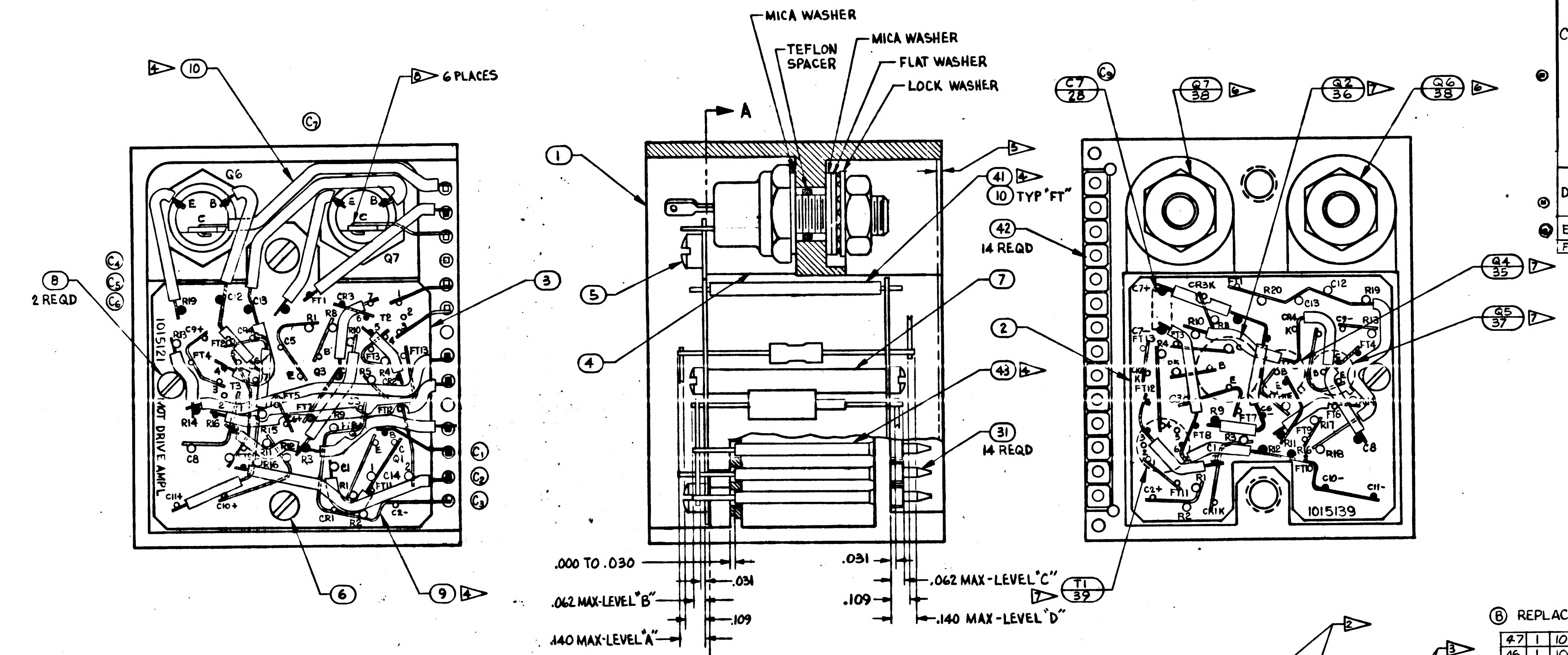
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

MOTOR DRIVE AMPLIFIER
MODULE ASSEMBLY

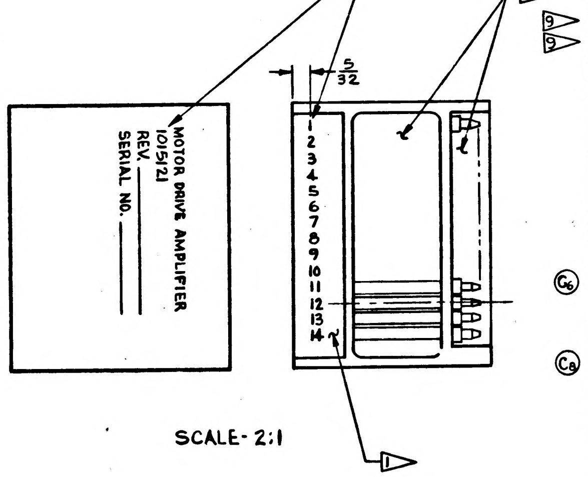
CODE IDENT NO.	SIZE	
	E	1015121
SCALE 4:1		SHEET OF 1

1015121

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDRR 0205			WK
C11		(1)ADDED FT 12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6, ITEM 15 AND REPLACE WITH FT 3 TDRR 01590		6-19-63	WK
D1		(1) IN NOTE 9 REMOVED 1010359-5,9,11,13,14,15,16 & ADDED 1010359-21,23,25 26 27,28,29 TDRR 0755	26 June 63		
E1		C10 WAS 1006755-13 TDRR 01795			
F		REVISED PER TDRR 1350 2			



MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
A
A
6 PLACES
2 REQD
10 TYP "FT"
14 REQD
14 REQD
1015121
MOT DRIVE AMPL
1015139
Q6
Q7
C7 25
Q7 38
Q2 36
Q6 38
Q4 35
Q5 37
T1 39
.000 TO .030
.062 MAX-LEVEL "B"
.140 MAX-LEVEL "A"
.031
.109
.031
.109
.062 MAX-LEVEL "C"
.140 MAX-LEVEL "D"



MOTOR DRIVE AMPLIFIER
1015121
REV
SERIAL NO.
5/32
1
2
3
4
5
6
7
8
9
10
11
12
13
14

SCALE- 2:1

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

WIRING STDS FOR WELDED UNITS PER ND 1002003.

8 SOLDER PER ND 1002071 USING ND 1002075.

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

2 MARK CHARACTERS .080 HIGH, WHITE PER ND 1002019, CENTRALIZE AS SHOWN

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

5 ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY.

6 MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

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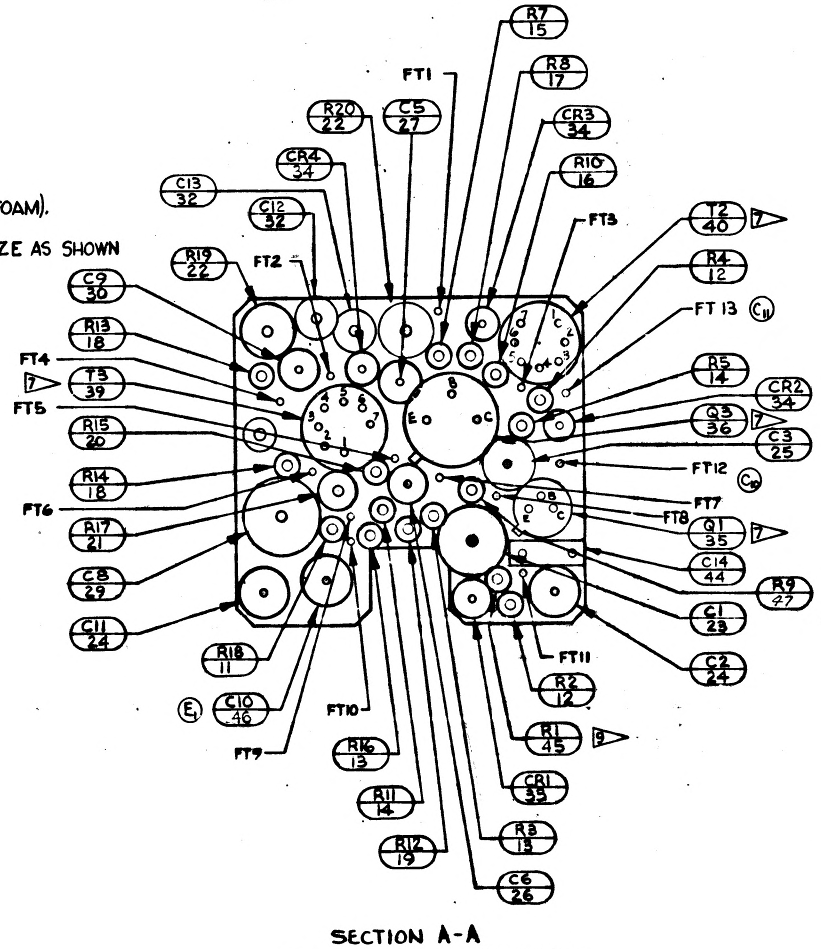
BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

ON ITEMS 2 & 3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS(-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

9 SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

R1	C14
1006750-4 THRU -13	1010359-17,21,23,25 THRU 29



R7 15
R8 17
FT1
CR3 34
R20 22
C5 27
R10 16
CR4 34
FT3
C13 32
C12 32
T2 40
R19 22
FT2
R4 12
C9 30
FT 13
R13 18
R5 14
FT4
CR2 34
T3 39
FT5
Q3 36
R15 20
C3 25
FT12
R14 18
FT7
FT6
FT8
Q1 35
R17 21
C14 44
C8 29
R9 47
C1 23
C11 24
C2 24
FT11
R18 11
R2 12
C10 46
FT10
R1 45
FT9
R16 13
CR1 33
R11 14
R3 13
R12 19
C6 26

SECTION A-A
SHOWING ONLY LOWER WAFER AND COMPONENTS

B REPLACES REV A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
47	1	1006750-57	RESISTOR - FIXED
46	1	1006755-15	CAPACITOR
45	1	1006750	RESISTOR-FIXED-SELECTED
44	1	1010359	CAPACITOR VALUE SELECTED
43		1006776-20	INSULATION SLEEVING
42	14	1006175	INSULATOR, WRAPOST-MALE MIN.
41		1006737-2	WIRE-FEED THRU #24 AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	2	1010269-2	TRANSISTOR
37	1	1010357	
36	2	1010398-1	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	
28	1	1010359-17	
27	1	1010279-226	
26	1	1006755-29	
25	1	1010438-003	
24	2	1006755-13	
23	1	1010375-53	CAPACITOR
22	2	1010389-8	RESISTOR-FIXED
21	1	1006760-48	
20	1	1006750-78	
19	1	-31	
18	2	-73	
17	2	-39	
16	1	-61	
15	1	-80	
14	1	-15	
13	2	-43	
12	2	-56	
11	1	1006750-8	RESISTOR-FIXED
10		1006776-21	INSULATION SLEEVING
9		1006757-1	WIRE, NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-017	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +— —— DECIMALS +.005 -.005 ANGLES +— ——
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

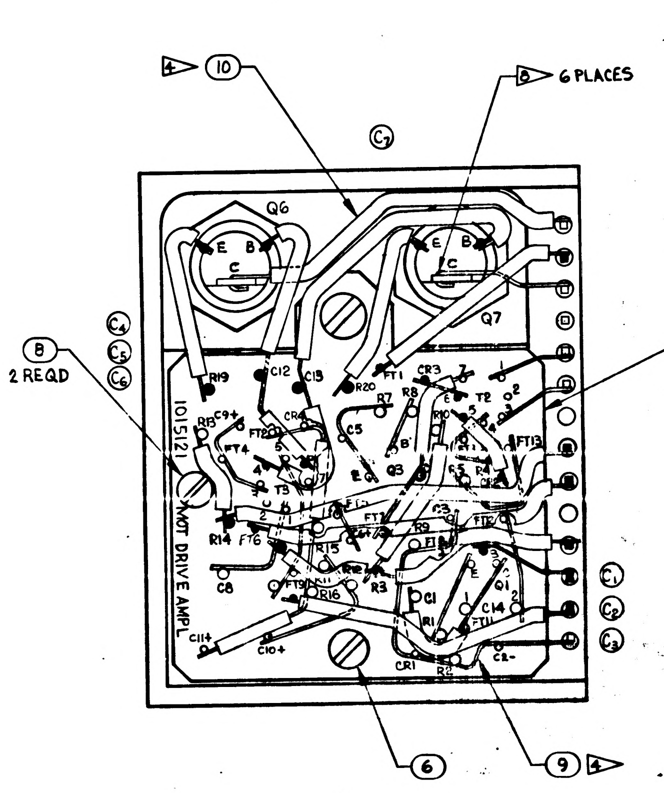
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN SPLANE DATE 29 APR 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL 7 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

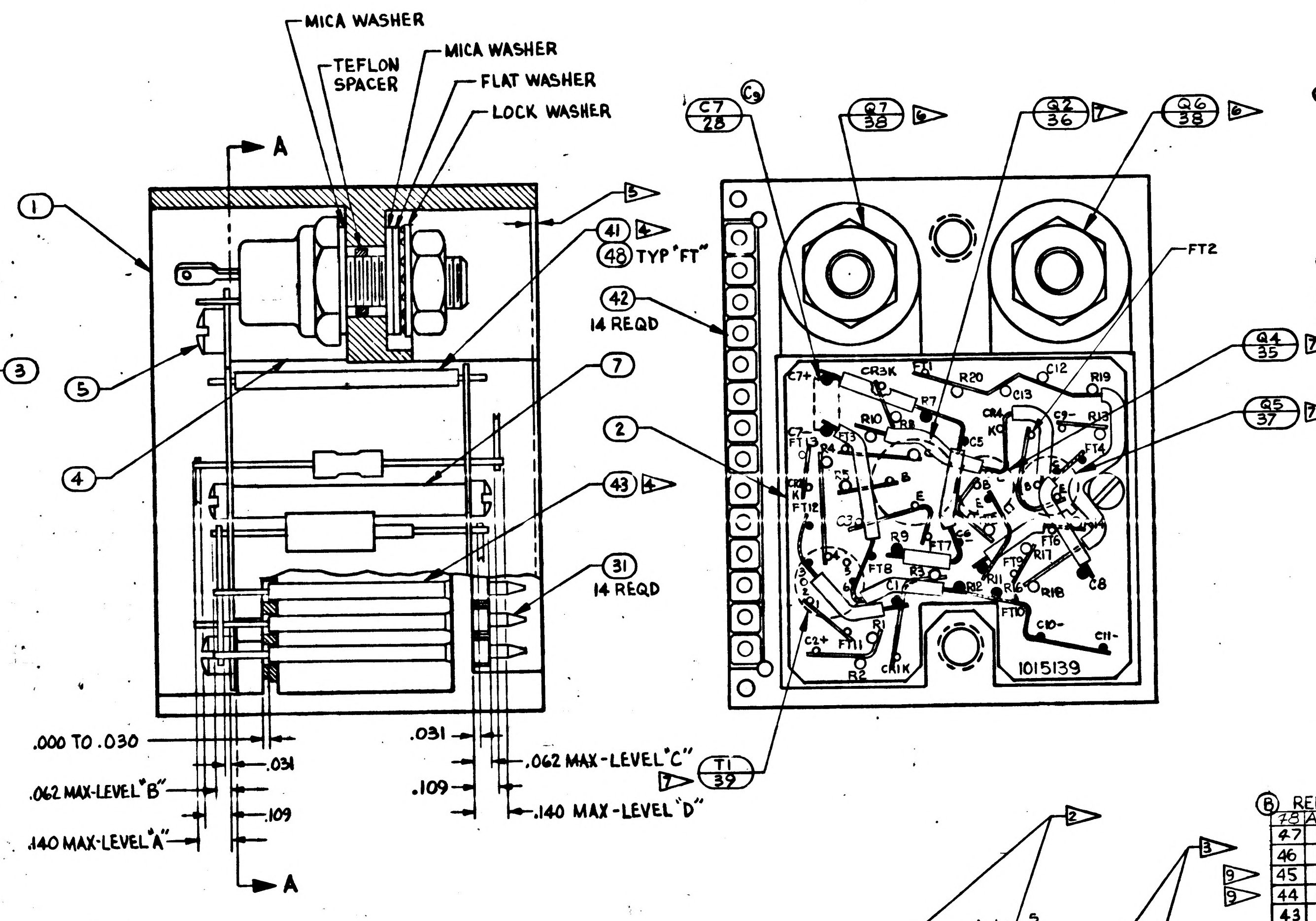
MOTOR DRIVE AMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015121
SCALE 4:1
SHEET 1 OF 1

INCHES
PHOTOGRAPHIC SCALE ONLY



10
6 PLACES
Q6
Q7
8
2 REQD
3
1015121
MOT DRIVE AMPL
6
9



MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
A
A
1
5
4
41
48 TYP "FT"
42
14 REQD
7
2
43
31
14 REQD
.000 TO .030
.062 MAX-LEVEL "B"
.140 MAX-LEVEL "A"
.031
.109
.062 MAX-LEVEL "C"
.140 MAX-LEVEL "D"
C7 28
Q7 38
Q2 36
Q6 38
FT2
Q4 35
Q5 37
T1 39
1015139

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

WIRING STDS FOR WELDED UNITS PER ND 1002003.

8 SOLDER PER ND 1002071 USING ND 1002075.

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

2 MARK CHARACTERS .080 HIGH, WHITE PER ND 1002019, CENTRALIZE AS SHOWN

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

5 ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY.

6 MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7 TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND 1002009

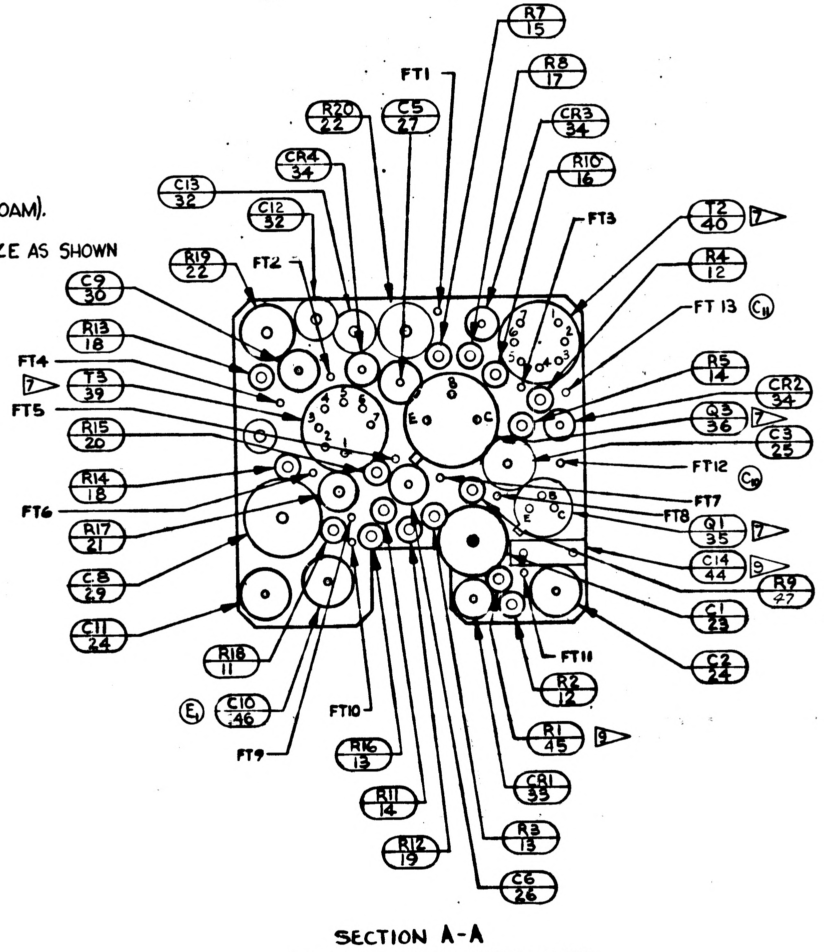
BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

ON ITEMS 2 & 3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

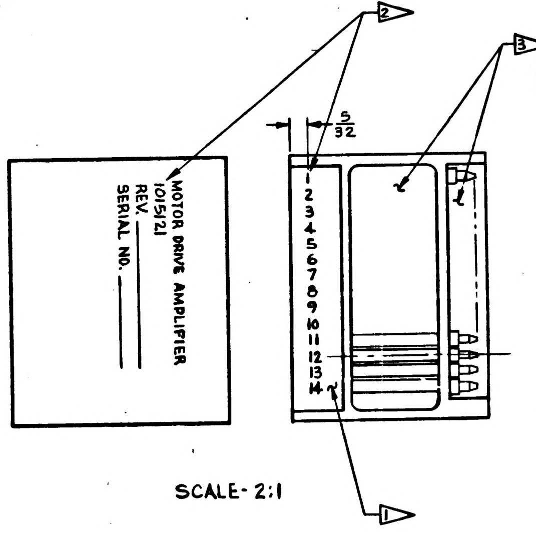
9 SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

R1	C14
1006750-4 THRU -13	1010359-17, 21, 23, 25 THRU 29



FT1
R7 15
R8 17
R20 22
C5 27
CR3 34
CR4 34
R10 16
C13 32
C12 32
FT3
T2 40
R19 22
FT2
R4 12
C9 30
FT 13
R13 18
R5 14
FT4
T3 39
CR2 34
FT5
Q3 36
R15 20
C3 25
FT12
R14 18
FT7
FT6
FT8
R17 21
Q1 35
C8 29
C14 44
R9 47
C11 24
C1 23
R18 11
FT11
C2 24
C10 46
R2 12
FT10
R1 45
R16 13
FT9
CR1 33
R11 14
R3 13
R12 19
C6 26

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS



2
3
5/32
MOTOR DRIVE AMPLIFIER
1015121
REV.
SERIAL NO.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
1

SCALE- 2:1

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDRR C205		[illegible]	[illegible]
C11		(1) ADDED FT 12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R 20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6, ITEM 15 AND REPLACE WITH FT 3 TDRR 01590		6-19-63	WK
D1		(1) IN NOTE 9 REMOVED 1010359-5, 9, 11, 13, 14, 15, 16 & ADDED 1010359-21, 23, 25, 26, 27, 28, 29 TDRR 0755		20 Jun 63	[illegible]
E1		C10 WAS 1006755-13 TDRR 01795		[illegible]	[illegible]
F		REVISED PER TDRR 02502		[illegible]	[illegible]
G		REVISED PER TDRR 03327		[illegible]	[illegible]
H		REVISED PER TDRR 03329		[illegible]	[illegible]
J		REVISED PER TDRR 03761		[illegible]	WK

B REPLACES REV A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
48	AR	1006776-22	INSULATION SLEEVING
47	1	1006750-57	RESISTOR - FIXED
46	1	1006755-15	CAPACITOR
45	1	1006750	RESISTOR-FIXED-SELECTED
44	1	1010359	CAPACITOR VALUE SELECTED
43		1006776-20	INSULATION SLEEVING
42	14	1006775	INSULATOR, WRAPOST-MALE MIN.
41		1006787-2	WIRE-FEED THRU #24 AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	2	1010269-2	TRANSISTOR
37	1	1010357	↑
36	2	1010398-1	↑
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	↑
28	1	1010359-17	↑
27	1	1010279-226	↑
26	1	1006755-29	↑
25	1	1010438-102	↑
24	2	1006755-13	↑
23	1	1010375-53	CAPACITOR
22	2	1010389-8	RESISTOR-FIXED
21	1	1006760-48	↑
20	1	1006750-78	↑
19	1	↑ -31	↑
18	2	↑ -73	↑
17	2	↑ -39	↑
16	1	↑ -61	↑
15	1	↑ -71	↑
14	1	↑ -15	↑
13	2	↑ -43	↑
12	2	↑ -56	↑
11	1	1006750-8	RESISTOR-FIXED
10		1006776-21	INSULATION SLEEVING
9		1006757-1	WIRE, NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-017	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	+.005	+ —
— —	-.005	— —

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

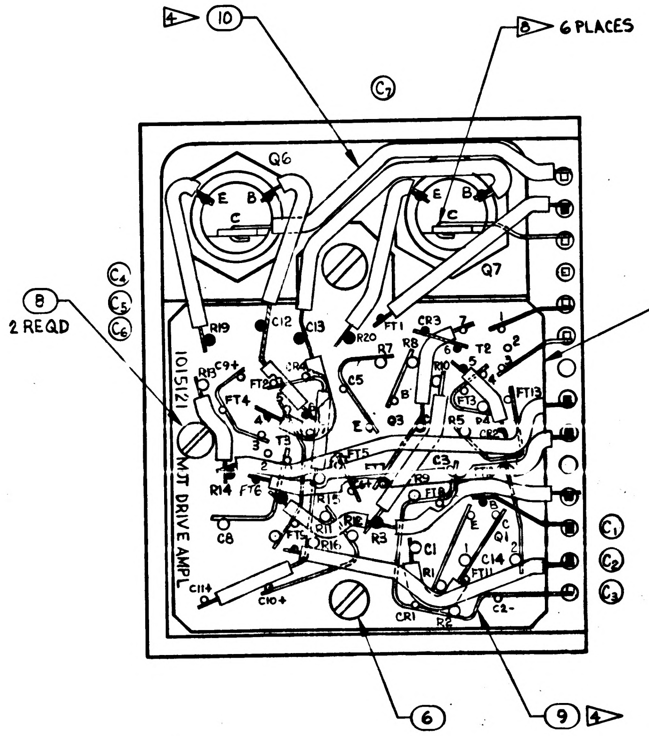
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN SPLANE DATE 29 APR 63
CHECKED E. Fleming 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/1/63
MIT APPROVAL 1 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

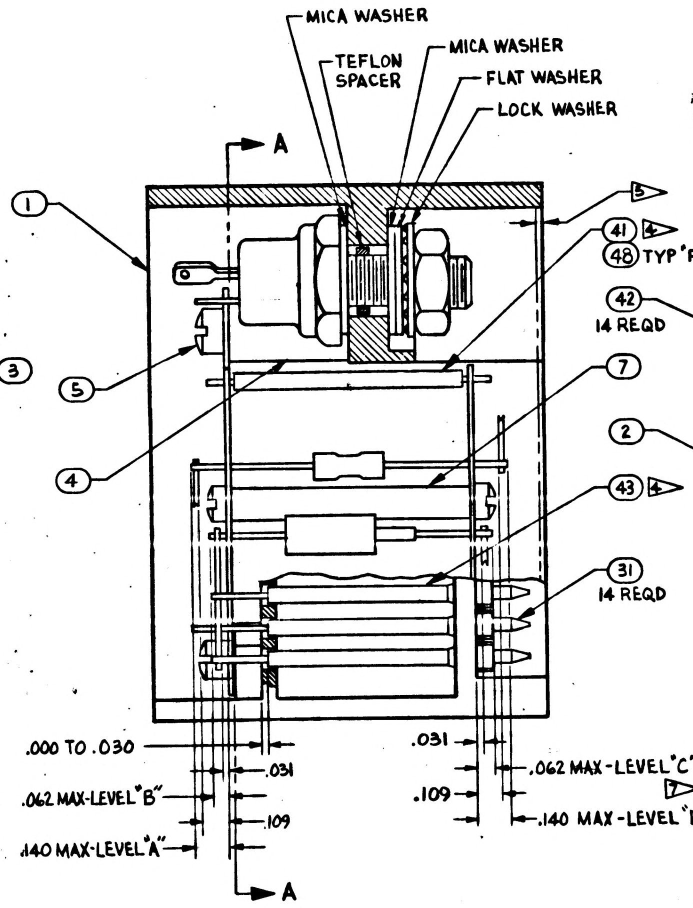
MOTOR DRIVE AMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015121
SCALE 4:1
SHEET 1 OF 1

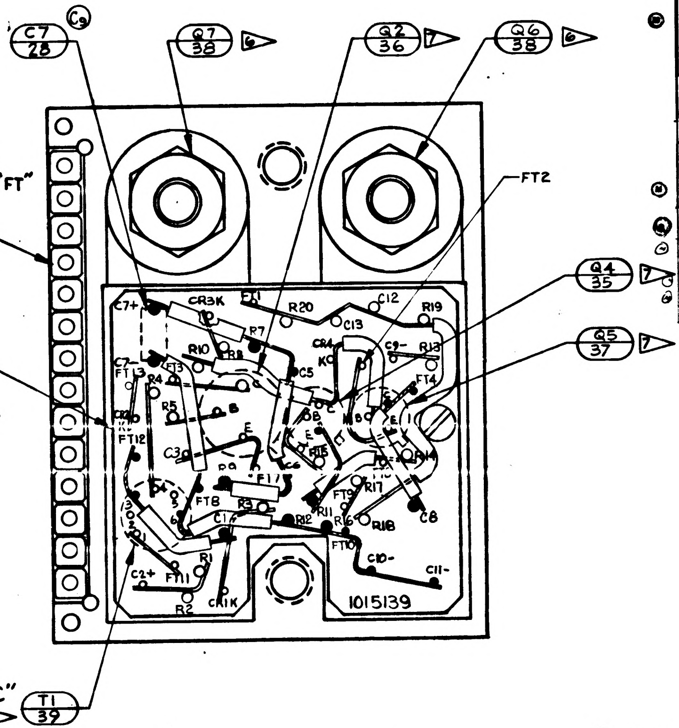
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDR[illegible]			
C11		(1) ADDED FT 12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R 20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6, ITEM 15 AND REPLACE WITH FT 13 TDRR 01590		6-19-63	WK
D1		(1) IN NOTE 9 REMOVED 1010359-5,9,11,13,14,15,16 & ADDED 1010359-21,23,25 26 27,28,29 TDRR 0[illegible]	26 June 63		
E1		C10 WAS 1006755-13 TDRR 01795			
F		REVISED PER TDRR [illegible]			
G		REVISED PER TDRR 03328			
H		REVISED PER TDRR 03329		9/29/63	
J		REVISED PER TDRR 03761		10/23/63	WK
K		REVISED PER TDRR 04124			WK



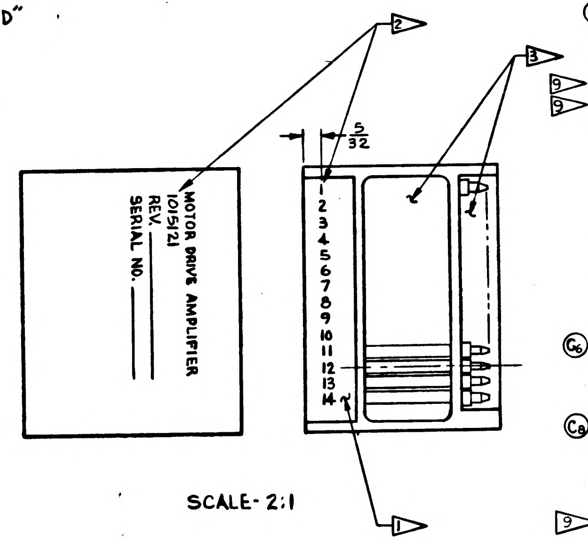
10
4
6 PLACES
6
Q6
Q7
E
B
C
R19
C12
C13
CR3
R20
R8
T2
FT1
1015121
MOT DRIVE AMPL
FT4
FT2
C5
Q3
FT3
R5
FT13
C9+
R13
R14
FT6
T3
C8
C11+
C10+
C1
C14
R3
R2
CR1
C2-
8
2 REQD
3
6
9
4
C7
C1
C2
C3
C4
C5
C6



MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
A
1
5
4
7
41
48
TYP "FT"
43
4
31
14 REQD
5
.000 TO .030
.031
.031
.062 MAX-LEVEL "B"
.109
.109
.062 MAX-LEVEL "C"
.140 MAX-LEVEL "A"
.140 MAX-LEVEL "D"
A



42
14 REQD
2
C7
28
C9
Q7
38
6
Q2
36
7
Q6
38
6
FT2
Q4
35
7
Q5
37
7
C7+
CR3K
R20
C13
C12
R19
R10
R7
C5
C4K
FT14
FT12
C3
C1
FT8
R3
R12
R11
R18
C8
C2+
FT11
R1
CR1K
R2
C10-
C11-
1015139
T1
39
7



2
3
5/32
MOTOR DRIVE AMPLIFIER
1015121
REV.
SERIAL NO.
1
2
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4
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10
11
12
13
14
1

SCALE- 2:1

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

WIRING STDS FOR WELDED UNITS PER ND 1002003.

8 SOLDER PER ND 1002071 USING ND 1002075.

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

2 MARK CHARACTERS .080 HIGH, WHITE PER ND 1002019, CENTRALIZE AS SHOWN

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

5 ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY.

6 MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7 TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND 1002009

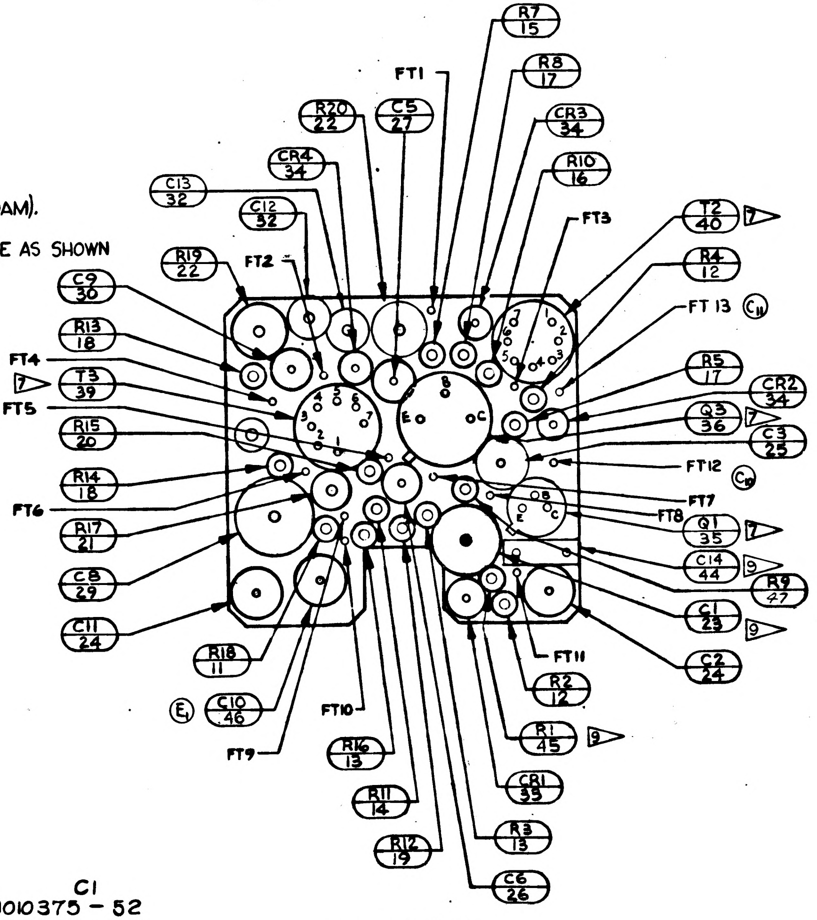
BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

ON ITEMS 2&3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS(-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

9 SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

R1	C14	C1
1006750-4 THRU -13	1010359-17,21,23,25 THRU 29	1010375 - 52 1010375 - 53



R7
15
FT1
R8
17
R20
22
C5
27
CR3
34
CR4
34
R10
16
C13
32
C12
32
FT3
T2
40
7
R19
22
FT2
R4
12
C9
30
FT 13
C11
R13
18
FT4
R5
17
7
T3
39
CR2
34
FT5
Q3
36
7
R15
20
C3
25
FT12
C9
R14
18
FT7
FT8
FT6
Q1
35
7
R17
21
C14
44
9
R9
47
C8
29
C1
23
9
C11
24
C2
24
R18
11
FT11
E1
C10
46
R2
12
FT10
R1
45
FT9
R16
13
CR1
33
R11
14
R3
13
R12
19
C6
26

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS

B REPLACES REV A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
~~48~~	~~AR~~	~~1006776-22~~	~~INSULATION SLEEVING~~
47	1	1006750-57	RESISTOR - FIXED
46	1	1006755-15	CAPACITOR
45	1	1006750	RESISTOR-FIXED-SELECTED
44	1	1010359	CAPACITOR VALUE SELECTED
43		1006776-20	INSULATION SLEEVING
42	14	1006775	INSULATOR, WRAPOST-MALE MIN.
41		1006787-2	WIRE-FEED THRU #24 AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	2	1010269-2	TRANSISTOR
37	1	1010357	
36	2	1010398-1	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	
28	1	1010359-17	
27	1	1010279-226	
26	1	1006755-29	
25	1	1010438-102	
24	2	1006755-13	
23	1	1010375	CAPACITOR
22	2	1010389-8	RESISTOR-FIXED
21	1	1006760-48	
20	1	1006750-78	
19	1	-31	
18	2	-73	
17	2	-39	
16	1	-61	
15	1	-71	
14	1	-15	
13	2	-43	
12	2	-56	
11	1	1006750-8	RESISTOR-FIXED
10		1006776-21	INSULATION SLEEVING
9		1006757-1	WIRE NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-017	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	+.005	+ —
— —	-.005	— —

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

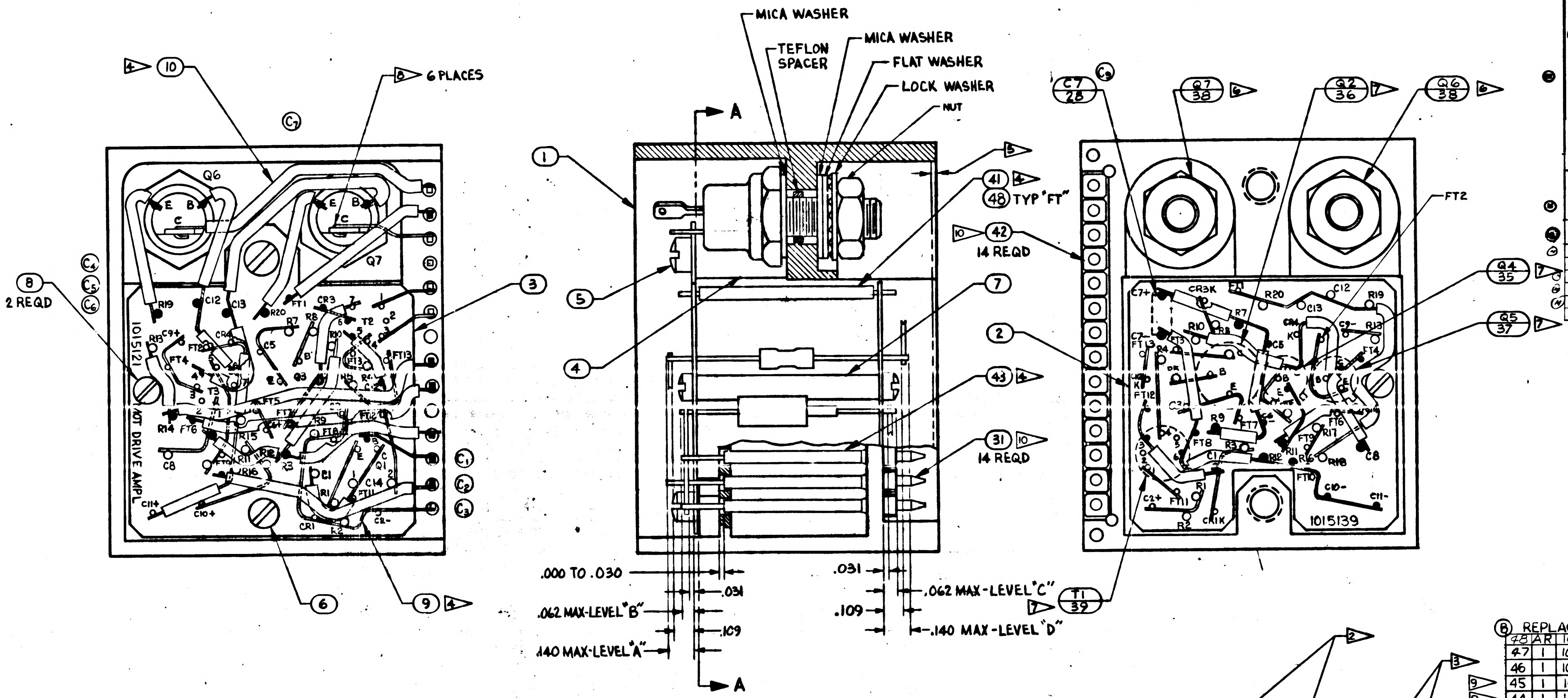
DRAWN SPLANE DATE 29 APR 63
CHECKED E. Fleming 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/1/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

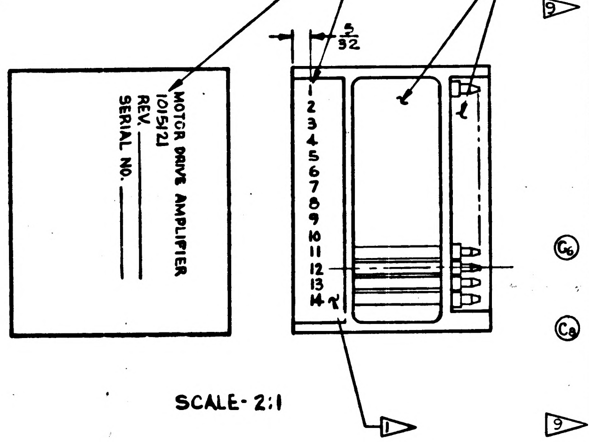
MOTOR DRIVE AMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015121
SCALE 4:1
SHEET 1 OF 1

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
REVISIONS					
B		REPLACES REV A WITH CHANGE PER TDRR 01205		May 63	WK
C11		(1) ADDED FT 12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R 20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6, ITEM 15 AND REPLACE WITH FT13 TDRR 01590		6-19-63	WK
D1		(1) IN NOTE 9 REMOVED 1010359-5,9,11,13,14,15,16 & ADDED 1010359-21,23,25,26,27,28,29 TDRR 01755	26 June 63		
E1		C1C WAS 1006755-13 TDRR 01795			
F		REVISED PER TDRR 02602		63	
G		REVISED PER TDRR 03328		7.29.63	
H		REVISED PER TDRR 03329		7/29/63	
J		REVISED PER TDRR 03961		10.23.63	WK
K		REVISED PER TDRR 04124			
L		REVISED PER TDRR 04455		11-19-63	



MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
A
A
6 PLACES
2 REQD
14 REQD
48 TYP "FT"
42 14 REQD
31 14 REQD
Q6
Q7
1015121
MOT DRIVE AMPL
1015139
FT2
Q7 38
Q2 36
Q6 38
Q4 35
Q5 37
C7 28
T1 39
.000 TO .030
.062 MAX-LEVEL "B"
.140 MAX-LEVEL "A"
.031
.109
.031
.109
.062 MAX-LEVEL "C"
.140 MAX-LEVEL "D"



MOTOR DRIVE AMPLIFIER
1015121
REV.
SERIAL NO.
5/32
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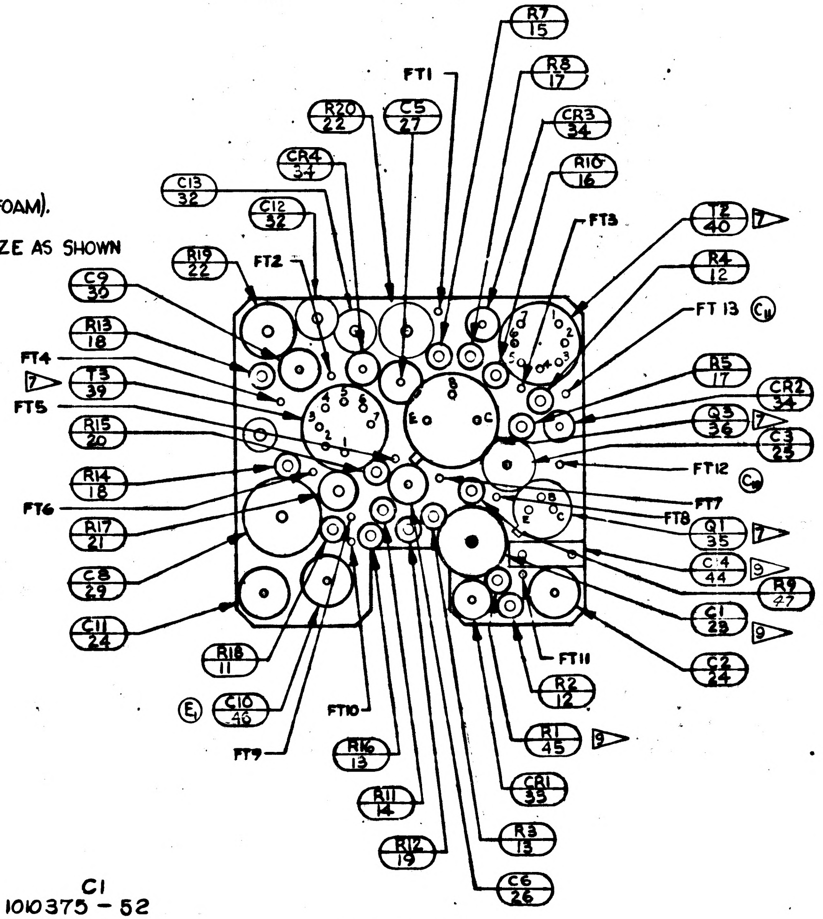
12
13
14

SCALE- 2:1



FT1
R7 15
R8 17
CR3 34
R10 16
FT3
T2 40
R4 12
FT 13
R5 17
CR2 34
Q3 36
C3 23
FT12
FT7
FT8
Q1 35
C4 44
R9 47
C1 23
C2 23
FT11
R2 12
R1 45
CR1 33
R3 13
C6 26
R12 19
R11 14
R16 13
FT10
FT9
C10 46
R18 11
C11 24
C8 29
R17 21
FT6
R14 18
R15 20
FT5
T3 39
FT4
R13 18
C9 30
R19 22
FT2
C12 32
CR4 34
R20 22
C5 27
C13 32

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE ND 1002005

8 SOLDER PER ND 1002071 USING ND 1002075.

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

2 MARK CHARACTERS .060-.100 HIGH WHITE PER ND1002019, CENTRALIZE AS SHOWN

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

5 ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY.

6 MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7 TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND 1002004

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

ON ITEMS 2&3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS(-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

9 SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

R1	C14	C1
1006750-4 THRU -13	1010359-17,21,23,25 THRU 29	1010375 - 52 1010375 - 53

10 ASSEMBLE PER ND 1002136

(B) REPLACES REV A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
48	AR	1006776-22	INSULATION SLEEVING
47	1	1006750-57	RESISTOR - FIXED
46	1	1006755-15	CAPACITOR
45	1	1006750	RESISTOR-FIXED-SELECTED
44	1	1010359	CAPACITOR VALUE SELECTED
43		1006776-20	INSULATION SLEEVING
42	14	1006775	INSULATOR, WRAPOST-MALE MIN.
41		1006787-2	WIRE-FEED THRU #24 AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	2	1010269-2	TRANSISTOR
37	1	1010357	↑
36	2	1010398-1	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	↑
28	1	1010359-17	
27	1	1010279-226	
26	1	1006755-29	
25	1	1010438-102	
24	2	1006755-13	
23	1	1010375	CAPACITOR
22	2	1010389-8	RESISTOR-FIXED
21	1	1006760-48	↑ ↑
20	1	1006750-78	
19	1	↑ -31	
18	2	-73	
17	2	-39	
16	1	-61	
15	1	-71	
14	1	-15	
13	2	-43	
12	2	-56	
11	1	1006750-8	RESISTOR-FIXED
10		1006776-21	INSULATION SLEEVING
9		1006757-1	WIRE NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-017	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +— −— DECIMALS +.005 −.005 ANGLES +— −—
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN SPLANE DATE 29 APR 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/16/63
MIT APPROVAL May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

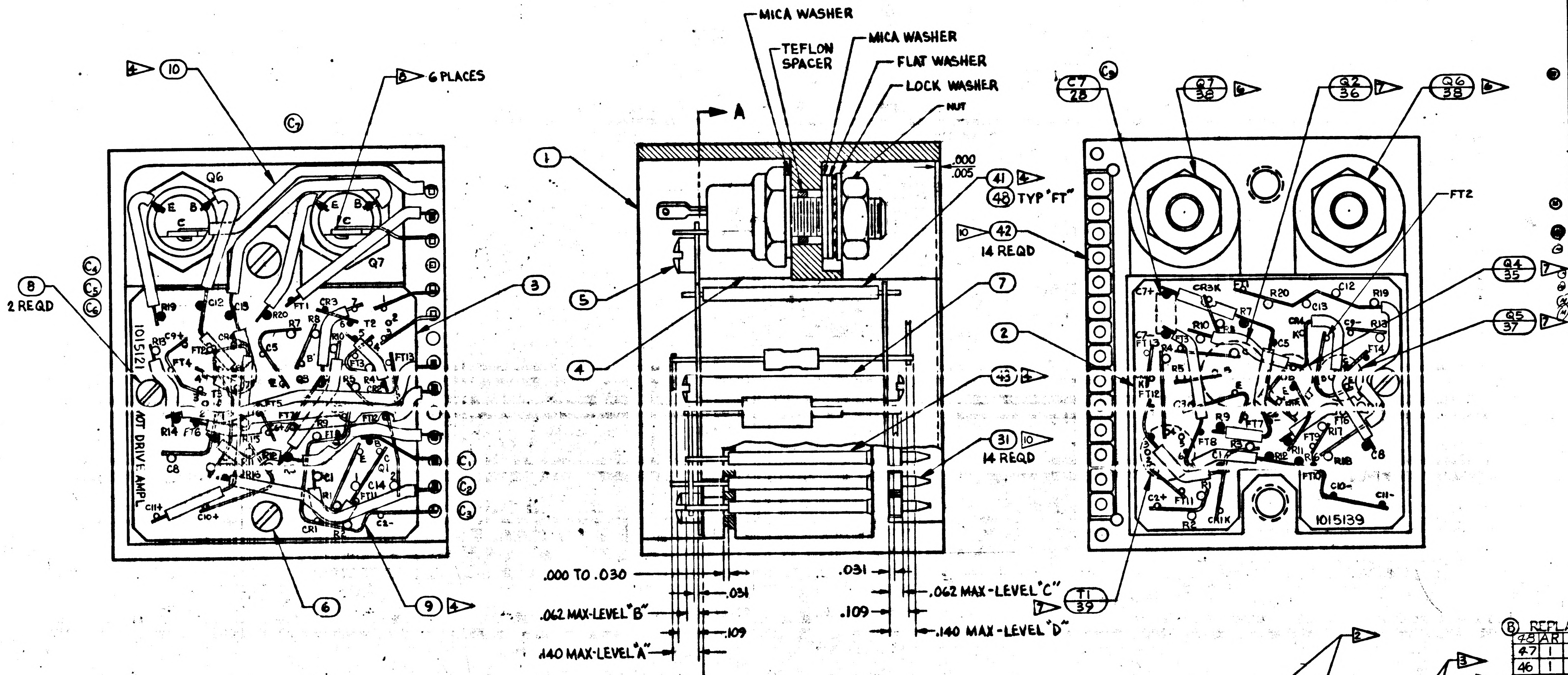
MOTOR DRIVE AMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015121
SCALE 4:1
SHEET 1 OF 1

1015121

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
REVISIONS					
B		REPLACES REV A WITH CHANGE PER TDRR 0205		MAY 63	
C11		(1) ADDED FT 12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R 20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6, ITEM 15 AND REPLACE WITH FT 13 TDRR 01550		6-19-63	WK
D1		(1) IN NOTE 9 REMOVED 1010359-5,9,11,13,14,15,16 & ADDED 1010359-21,23,25,26 27,28,29 TDRR 01755	26 June 63		
E1		C1C WAS 1006755-13 TDRR 01795			
F		REVISED PER TDRR 02602			
G		REVISED PER TDRR 03328		9-24-63	
H		REVISED PER TDRR 03329		9/24/63	
J		REVISED PER TDRR 03961		10-23-63	WK
K		REVISED PER TDRR 04124		23 OCT 63	
L		REVISED PER TDRR 04455		11-19-63	
M		REVISED PER TDRR 05407		27 DEC 63	



MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
6 PLACES
2 REQD
14 REQD
14 REQD
48 TYP "FT"
.000 .005
.000 TO .030
.062 MAX-LEVEL "B"
.140 MAX-LEVEL "A"
.031
.109
.031
.109
.062 MAX-LEVEL "C"
.140 MAX-LEVEL "D"
A
A
1015121 MOT DRIVE AMPL
1015139
Q6
Q7
FT2

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE ND1002005

8 SOLDER PER ND1002071 USING ND1002075.

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

6 MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7 TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND 1002004

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

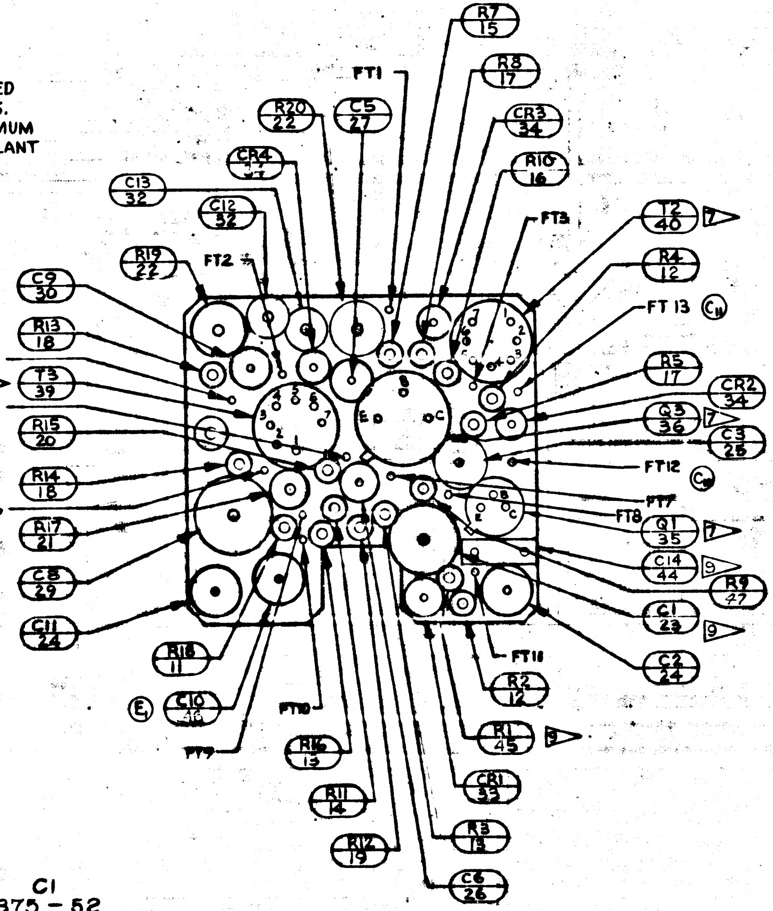
ON ITEMS 2&3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS(-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

9 SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

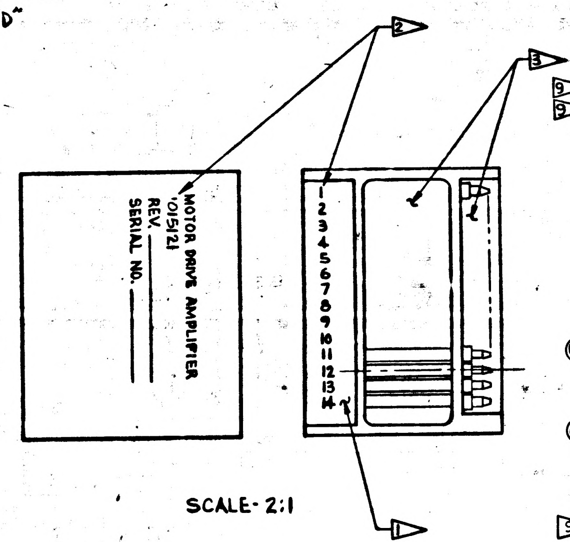
R1	C14	C1
1006750-4 THRU -13	1010359-17,21,23,25 THRU 29	1010375 - 52 1010375 - 53

10 ASSEMBLE PER ND 002136



R7 15
R8 17
FT1
C5 27
R20 22
CR3 34
CR4
R16 16
C13 32
C12 32
FT3
T2 40
R19 22
FT2
R4 12
FT 13
C9 30
R13 18
FT4
T3 39
FT5
R5 17
CR2 34
Q3 36
C3 25
R15 20
FT12
R14 18
FT7
FT8
FT6
Q1 35
R17 21
C14 44
R9 27
C8 29
C1 23
C11 24
C2 24
R18 11
FT11
C10
R2 12
FT10
R1 45
FT9
R16 13
CR1 33
R11 14
R3 13
R12 19
C6 26

SECTION A-A
SHOWING ONLY LOWER WAFER AND COMPONENTS



MOTOR DRIVE AMPLIFIER
1015121
REV
SERIAL NO.
1
2
3
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11
12
13
14

SCALE- 2:1

B REPLACES REV A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
48	AR	1006776-22	INSULATION SLEEVING
47	1	1006750-57	RESISTOR - FIXED
46	1	1006755-15	CAPACITOR
45	1	1006750	RESISTOR-FIXED-SELECTED
44	1	1010359	CAPACITOR VALUE SELECTED
43		1006776-20	INSULATION SLEEVING
42	14	1006775	INSULATOR, WRAPOST-MALE MIN.
41		1006787-2	WIRE-FEED THRU #24AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	2	1010269-2	TRANSISTOR
37	1	1010357	↑
36	2	1010398-1	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	↑
28	1	1010359-17	
27	1	1010279-226	
26	1	1006755-29	
25	1	1010438-102	
24	2	1006755-13	
23	1	1010375	CAPACITOR
22	2	1010389-8	RESISTOR-FIXED
21	1	1006760-48	↑
20	1	1006750-78	
19	1	↑ -31	
18	2	-73	
17	2	-39	
16	1	-61	
15	1	-71	
14	1	-15	
13	2	-43	
12	2	-56	
11	1	1006750-8	RESISTOR-FIXED
10		1006776-21	INSULATION SLEEVING
9		1006757-1	WIRE NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-017	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159 1007158	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +— DECIMALS XX±.02 XXX±.005 ANGLES +—
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN SPLANE DATE 29 APR 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/18/63
MIT APPROVAL 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

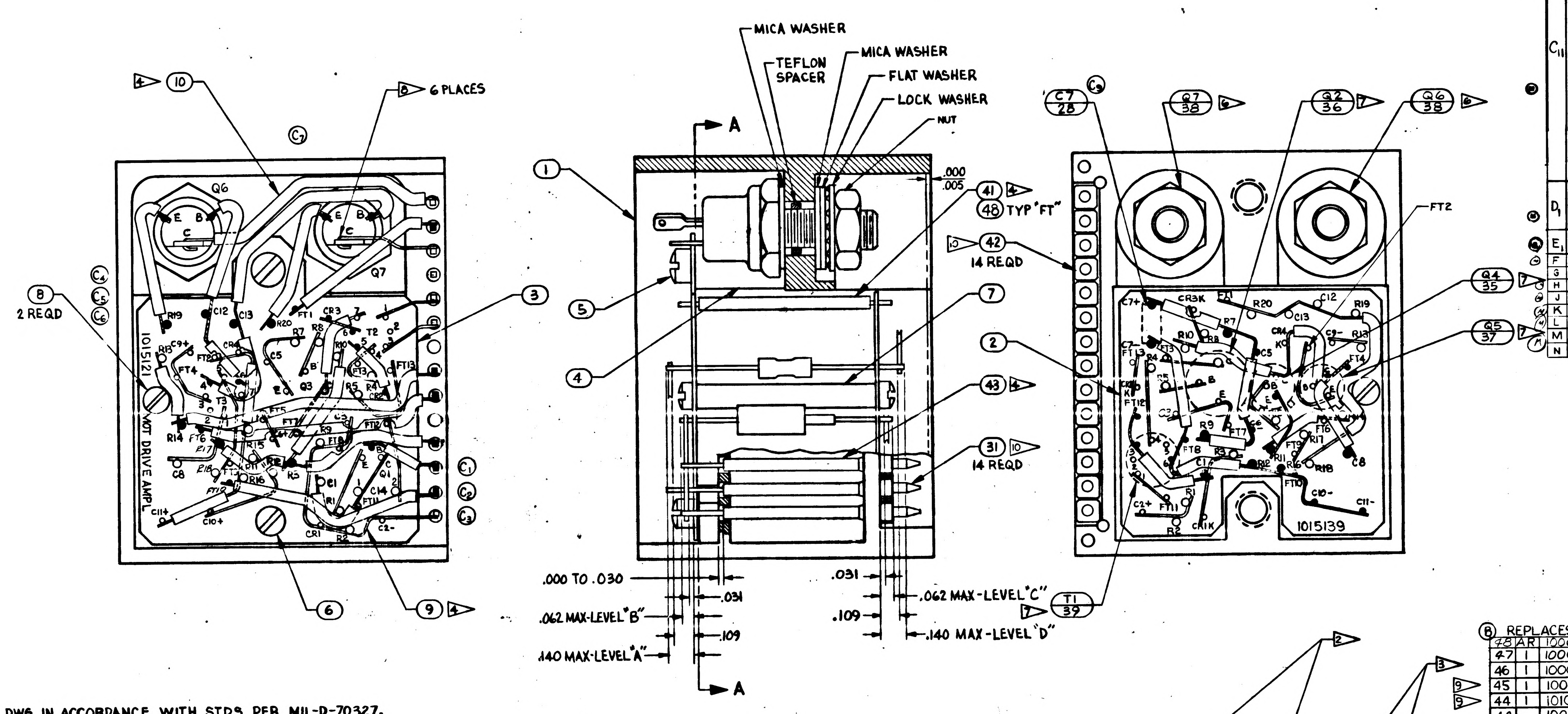
MOTOR DRIVE AMPLIFIER MODULE ASSEMBLY

CODE IDENT NO. SIZE E 1015121
SCALE 4:1 SHEET 1 OF 1

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDRR 0205		[illegible] 63	[illegible]
C11		(1) ADDED FT 12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R 20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6, ITEM 15 AND REPLACE WITH FT 3 TDRR 01590		6-19-63	WK
D1		(1) IN NOTE 9▷ REMOVED 1010359-5,9,11,13,14,15,16 & ADDED 1010359-21,23,25 26 27,28,29 TDRR 01755	26 June 63		[illegible]
E1		C1C WAS 1006755-13 TDRR 01795		[illegible]	[illegible]
F		REVISED PER TDRR 02602		[illegible]	[illegible]
G		REVISED PER TDRR 03328		[illegible]	[illegible]
H		REVISED PER TDRR 03329		[illegible]	[illegible]
J		REVISED PER TDRR 03761		[illegible]	WK
K		REVISED PER TDRR 04124		[illegible]	[illegible]
L		REVISED PER TDRR 04455		11-19-63	[illegible]
M		REVISED PER TDRR 05407		27 DEC 63	[illegible]
N		REVISED PER TDRR 05707		[illegible]	[illegible]



MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
A
A
6 PLACES
2 REQD
14 REQD
14 REQD
TYP "FT"
.000
.005
.000 TO .030
.031
.062 MAX-LEVEL "B"
.109
.140 MAX-LEVEL "A"
.031
.109
.062 MAX-LEVEL "C"
.140 MAX-LEVEL "D"
Q6
Q7
MOT DRIVE AMPL
1015121
1015139
FT2
Q7 38
Q2 36
Q6 38
C7 28
Q4 35
Q5 37
T1 39

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE ND1002005

8▷ SOLDER PER ND1002071 USING ND1002075.

1▷ ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2▷ MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4▷ USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

6▷ MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7▷ TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND 1002004

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

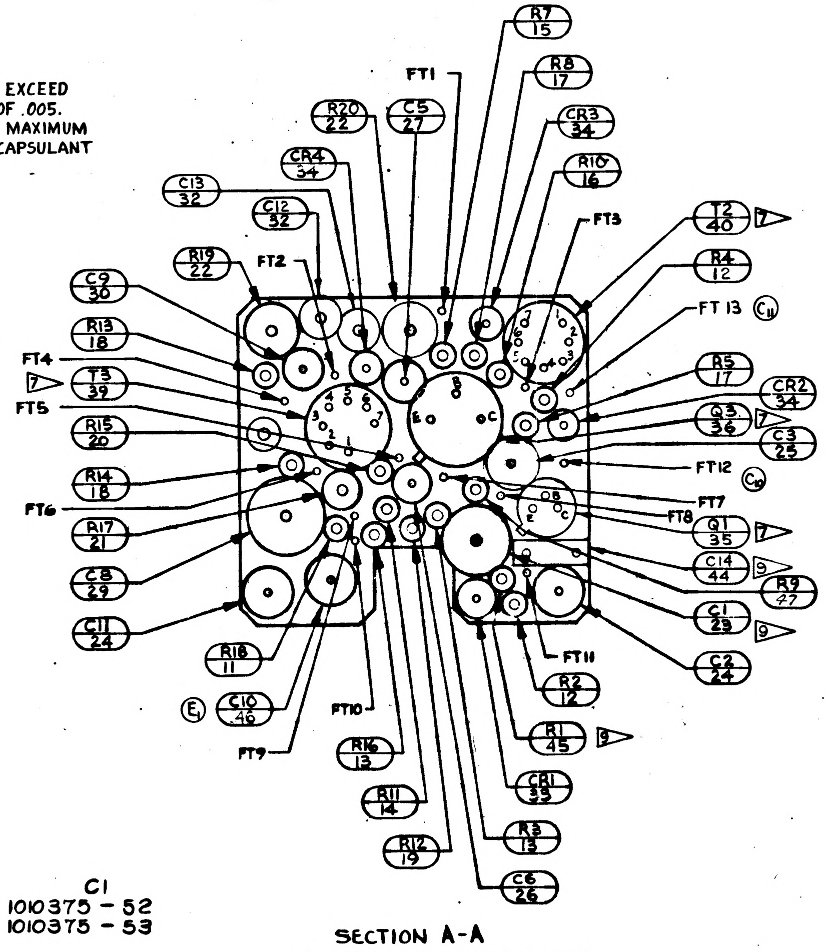
ON ITEMS 2&3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS(-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

9▷ SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

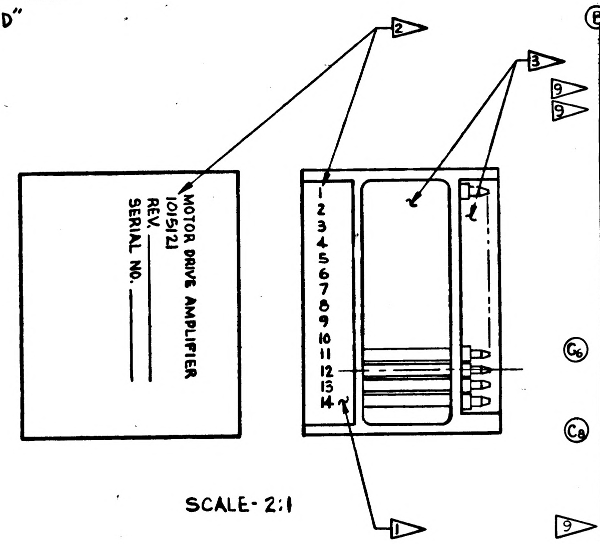
R1	C14	C1
1006750-4 THRU -13	1010359-17,21,23,25 THRU 29	1010375 - 52 1010375 - 53

10▷ ASSEMBLE PER ND 1002136



R7 15
R8 17
CR3 34
R10 16
FT1
C5 27
R20 22
CR4 34
C12 32
C13 32
FT2
FT3
T2 40
R4 12
FT 13
R19 22
C9 30
R13 18
FT4
T3 39
FT5
R15 20
R14 18
FT6
R17 21
C8 29
C11 24
R18 11
C10 46
FT10
FT9
R16 13
R11 14
R12 19
C6 26
R3 13
CR1 33
R1 45
FT11
R2 12
C2 24
C1 23
R9 47
C14 44
Q1 35
FT8
FT7
FT12
C3 25
Q3 36
CR2 34
R5 17

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS



MOTOR DRIVE AMPLIFIER
1015121
REV
SERIAL NO.
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11
12
13
14

SCALE- 2:1

Ⓑ REPLACES REV A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
48	AR	1006776-22	INSULATION SLEEVING
47	1	1006750-57	RESISTOR - FIXED
46	1	1006755-15	CAPACITOR
45	1	1006750	RESISTOR-FIXED-SELECTED
44	1	1010359	CAPACITOR VALUE SELECTED
43		1006776-20	INSULATION SLEEVING
42	14	1006775	INSULATOR, WRAPOST-MALE MIN.
41		1006787-2	WIRE-FEED THRU #24AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	1	1010269-2	TRANSISTOR (MATCHED PAIR)
37	1	1010357	↑
36	2	1010398-1	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	↑
28	1	1010359-17	
27	1	1010279-226	
26	1	1006755-29	
25	1	1010438-102	
24	2	10[illegible]755-13	
23	1	1010375	CAPACITOR
22	2	1010389-8	RESISTOR-FIXED
21	1	1006760-48	↑
20	1	1006750-78	
19	1	↑ -31	
18	2	-73	
17	2	-39	
16	1	-61	
15	1	-71	
14	1	-15	
13	2	-43	
12	2	-56	
11	1	1006750-8	RESISTOR-FIXED
10		1006776-21	INSULATION SLEEVING
9		1006757-1	WIRE NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-017	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — DECIMALS XX±.02 XXX±.005 ANGLES + —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

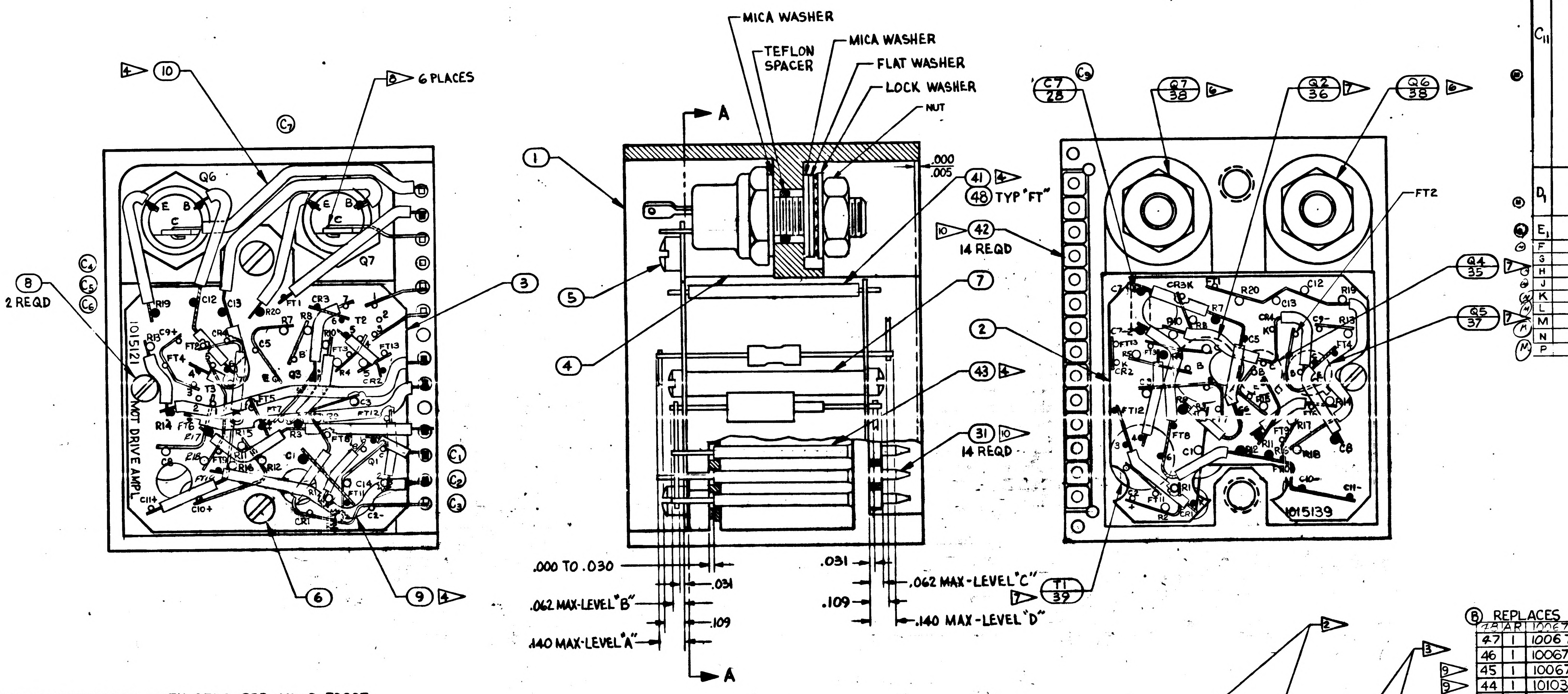
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN SPLANE DATE 29 APR 63
CHECKED E. Fleming 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

MOTOR DRIVE AMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015121
SCALE 4:1
SHEET 1 OF 1

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDRR 01205			
C11		(1) ADDED FT 12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R 20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6 ITEM 15 AND REPLACE WITH FT 13 TDRR 01590		6-19-63	WK
D1		(1) IN NOTE 9 REMOVED 1010359-5, 9, 11, 13, 14, 15, 16 & ADDED 1010359-21, 23, 25, 26, 27, 28, 29 TDRR 01755	26 June 63		
E1		C1C WAS 1006755-13 TDRR 01795			
F		REVISED PER TDRR 02502			
G		REVISED PER TDRR 03328			
H		REVISED PER TDRR 03329			
J		REVISED PER TDRR 03761			WK
K		REVISED PER TDRR 04124			
L		REVISED PER TDRR 04455			
M		REVISED PER TDRR 05407		27 DEC 63	
N		REVISED PER TDRR 05707			
P		REVISED PER TDRR 06394			



INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE ND1002005

8 SOLDER PER ND1002071 USING ND1002075.

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

6 MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7 TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND1002004

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

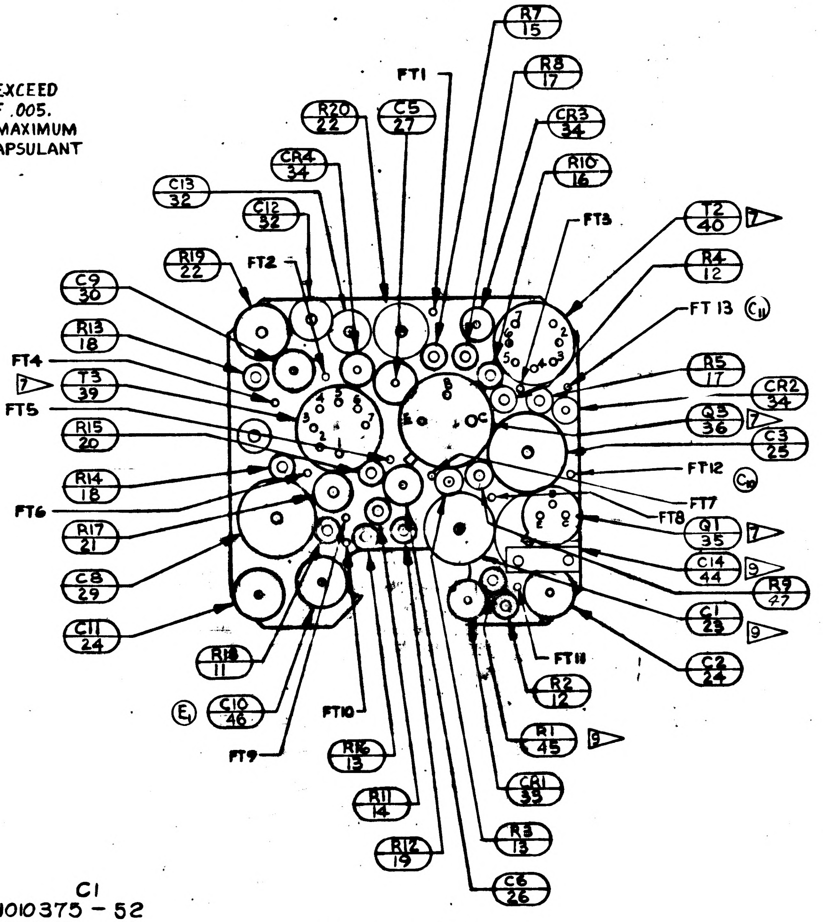
ON ITEMS 2 & 3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

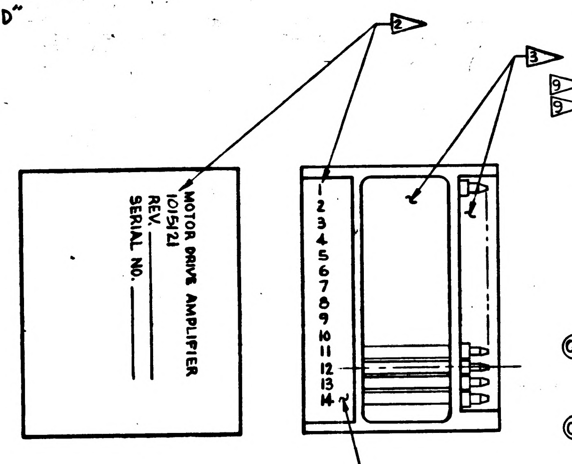
9 SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

R1	C14	C1
1006750-4 THRU -13	1010359-17, 21, 23, 25 THRU 29	1010375 - 52 1010375 - 53

10 ASSEMBLE PER ND 1002136



SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS



SCALE-2:1

B REPLACES REV A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
48	AR	1006776-22	INSULATION SLEEVING
47	1	1006750-57	RESISTOR - FIXED
46	1	1006755-15	CAPACITOR
45	1	1006750	RESISTOR - FIXED - SELECTED
44	1	1010359	CAPACITOR VALUE SELECTED
43		1006776-20	INSULATION SLEEVING
42	14	1006775	INSULATOR, WRAPOST - MALE MIN.
41		1006787-2	WIRE - FEED THRU #24 AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	1	1010269-2	TRANSISTOR (MATCHED PAIR)
37	1	1010357	
36	2	1010398-1	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	
28	1	1010359-17	
27	1	1010279-226	
26	1	1006755-29	
25	1	1010438-102	
24	2	1006755-13	
23	1	1010375	CAPACITOR
22	2	1010389-8	RESISTOR - FIXED
21	1	1006760-48	
20	1	1006750-78	
19	1	-31	
18	2	-73	
17	2	-39	
16	1	-61	
15	1	-71	
14	1	-15	
13	2	-43	
12	2	-56	
11	1	1006750-8	RESISTOR - FIXED
10		1006776-21	INSULATION SLEEVING
9		1006757-1	WIRE NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-017	SPACER
6	1	AN500D 4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +− DECIMALS XX±.02 XXX±.005 ANGLES +−
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN SPLANE DATE 29 APR 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL 7 May 63

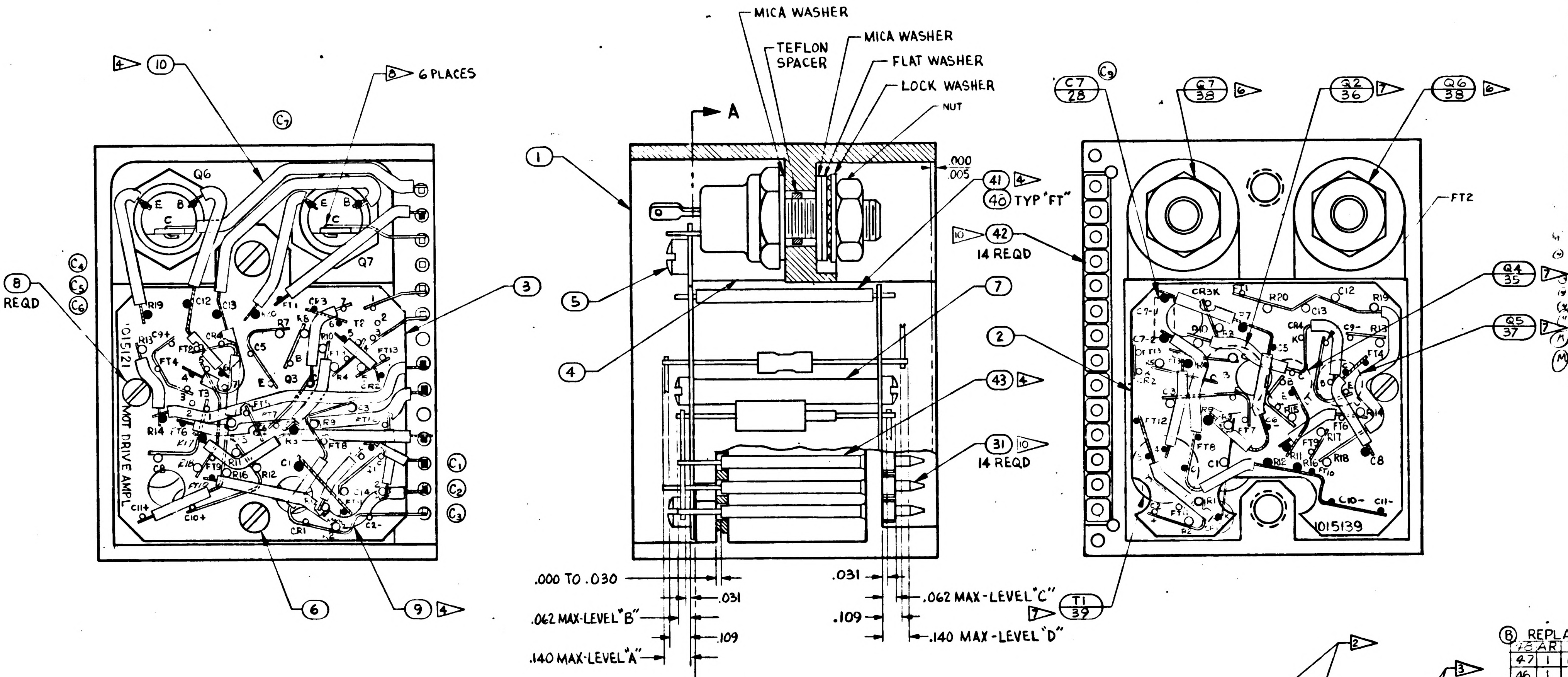
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

MOTOR DRIVE AMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015121
SCALE 4:1
SHEET 1 OF 1

INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B		REPLACES REV A WITH CHANGE PER TDR			
C11		(1) ADDED FT 12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R 20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6, ITEM 15 AND REPLACE WITH FT13 TDRR 01590		6-19-63	WK
D1		(1) IN NOTE 9 REMOVED 1010359-5,9,11 13,14,15,16 & ADDED 1010359-21,23,25 26 27,28,29 TDRR 01155	20 Jun 63		[illegible]
E1		C1C WAS 1006755-13 TDRR 01795		[illegible]	[illegible]
F		[illegible] PER TDRR 507		[illegible]	[illegible]
G		REVISED PER TDRR [illegible]		9/29/63	[illegible]
H		REVISED PER TDRR 13569		9/29/63	[illegible]
J		REVISED PER TDRR [illegible]		[illegible]	WK
K		REVISED PER TDRR 04124		[illegible]	WK
L		REVISED PER TDRR 04435		[illegible]	W
M		REVISED PER TDRR 05407		27 [illegible] 63	WK
N		REVISED PER TDRR 05707		[illegible] JAN 64	[illegible]
P		REVISED PER TDRR 06894			WK
R		REVISED PER TDDR 07002		22 APR 64	[illegible]


10
6 PLACES
8
2 REQD
Q6
Q7
E
B
C
1015121 MOT DRIVE AMPL
3
6
9
4
MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
A
1
5
4
7
2
.000
.005
41
40 TYP "FT"
42
14 REQD
43
31
14 REQD
.000 TO .030
.031
.062 MAX-LEVEL "B"
.109
.140 MAX-LEVEL "A"
.031
.062 MAX-LEVEL "C"
.109
.140 MAX-LEVEL "D"
C7/28
Q7/38
Q2/36
Q6/38
FT2
Q4/35
Q5/37
T1/39
1015139

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE ND1002005

8 ▷ SOLDER PER ND1002071 USING ND1002075.

1 ▷ ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2 ▷ MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 ▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 ▷ USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

6 ▷ MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7 ▷ TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND 1002004

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

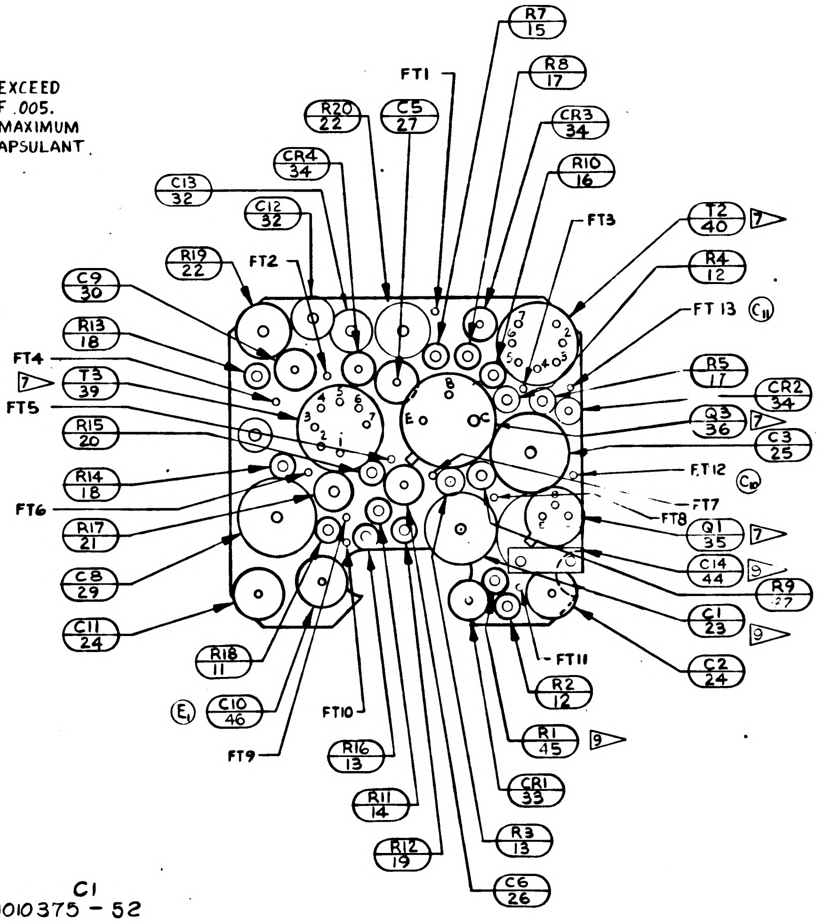
ON ITEMS 2&3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS(-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

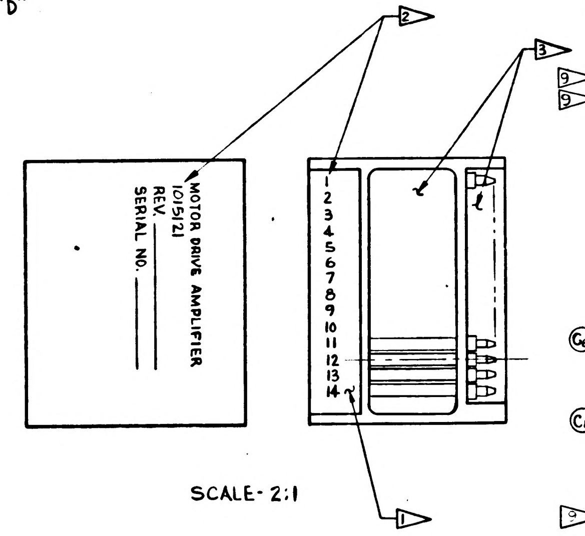
9 ▷ SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

R1	C14	C1
1006750-4 THRU -13	1010359-17,21,23,25 THRU 29	1010375 - 52 1010375 - 53

10 ▷ ASSEMBLE PER ND 1002136


R7/15
R8/17
FT1
CR3/34
R20/22
C5/27
R10/16
CR4/34
C13/32
C12/32
FT3
T2/40
R19/22
FT2
R4/12
FT 13
C9/30
R13/18
FT4
T3/39
FT5
R15/20
R5/17
CR2/34
Q3/36
C3/25
FT12
FT7
FT8
R14/18
FT6
R17/21
Q1/35
C14/44
R9/27
C8/29
C11/24
C1/23
C2/24
FT11
R18/11
C10/46
R2/12
FT10
R1/45
FT9
R16/13
CR1/33
R11/14
R3/13
R12/19
C6/26

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS


MOTOR DRIVE AMPLIFIER
1015121
REV.
SERIAL NO.
1
2
3
4
5
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11
12
13
14
2
3
1

SCALE- 2:1

Ⓑ REPLACES REV A WITH CHANGE

ITEM NO	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
48	AR	1006776-22	INSULATION SLEEVING
47	1	1006750-57	RESISTOR - FIXED
46	1	1006755-15	CAPACITOR
45	1	1006750	RESISTOR - FIXED - SELECTED
44	1	1010359	CAPACITOR VALUE SELECTED
43		1006776-20	INSULATION SLEEVING
42	14	1006775	INSULATOR, WRAPOST - MALE MIN.
41		1006787-2	WIRE - FEED THRU * 24 AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	1	1010269-2	TRANSISTOR (MATCHED PAIR)
37	1	1010357	↑
36	2	1010398-1	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	↑
28	1	1010359-17	
27	1	1010279-226	
26	1	1006755-29	
25	1	1010438-102	
24	2	1006755-13	
23	1	1010375	CAPACITOR
22	2	1010389-8	RESISTOR - FIXED
21	1	1006760-48	↑
20	1	1006750-78	
19	1	↑ -31	
18	2	-73	
17	2	-39	
16	1	-61	
15	1	-71	
14	1	-15	
13	2	-43	
12	2	-56	
11	1	1006750-8	RESISTOR - FIXED
10		1006776-21	INSULATION SLEEVING
9		1006757-1	WIRE, NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-017	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX ±.02 XXX ±.005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN SPLANE DATE 29 APR 63
CHECKED E. Fleming 30 APR 63
APPROVAL [illegible] 30 APR 63
APPROVAL [illegible] 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL

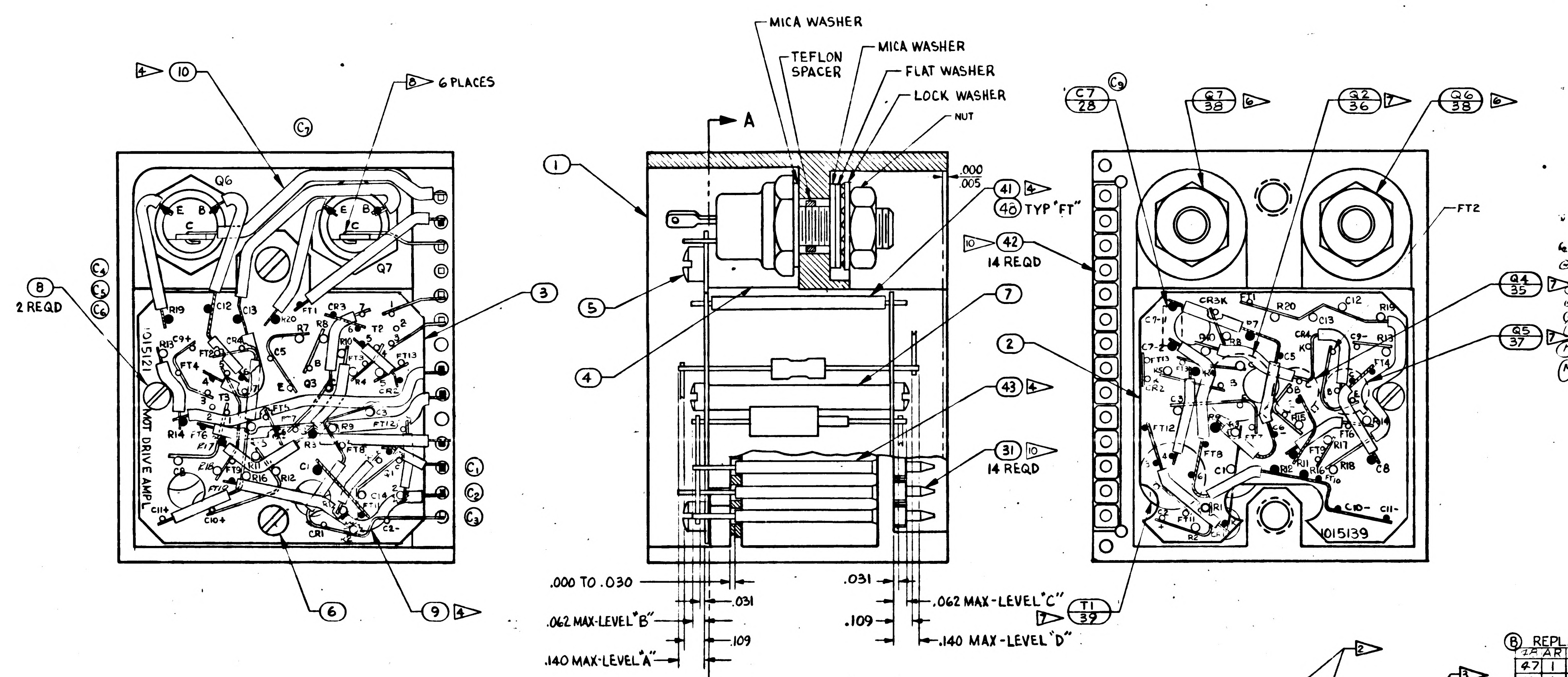
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

MOTOR DRIVE AMPLIFIER MODULE ASSEMBLY

CODE IDENT NO
SIZE E
1015121
SCALE 4:1
SHEET 1 OF 1

1015121 R

SYM	ZONE	REVISIONS DESCRIPTION	CHG NO	DATE	APPD
B		REPLACES REV A WITH CHANGE PER TDR [illegible]		[illegible]	
C11		(1) ADDED FT12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6 ITEM 15 AND REPLACE WITH FT13 TDRR 01590		6-19-63	WK
D1		(1) IN NOTE 9 REMOVED 1010359-5,9,11,13,14,15,16 & ADDED 1010359-21,23,25,26,27,28,29 TDRR 01155	26 June 63		WK
E1		C1C WAS 1006755-13 TDRR 01795			WK
F		[illegible] PER TDRR [illegible]		[illegible]	
G		REVISED PER TDRR 03328		9-24-63	
H		REVISED PER TDRR 03329		9/29/63	
J		REVISED PER TDRR [illegible]		10-23-63	WK
K		REVISED PER TDRR 04124		[illegible] 63	WK
L		REVISED PER TDRR 04455		11 19 63	
M		REVISED PER TDRR 05407		27 DEC 63	WK
N		REVISED PER TDRR 05707		10 JAN 64	
P		REVISED PER TDRR 06894			WK
R		REVISED PER TDRR 07002		22 APR 64	
S		REVISED PER TDRR 07284		1 MAY 64	



MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
A
A
4 10
8 6 PLACES
8 2 REQD
41 4
40 TYP "FT"
10 42 14 REQD
31 10 14 REQD
43 4
1
2
3
4
5
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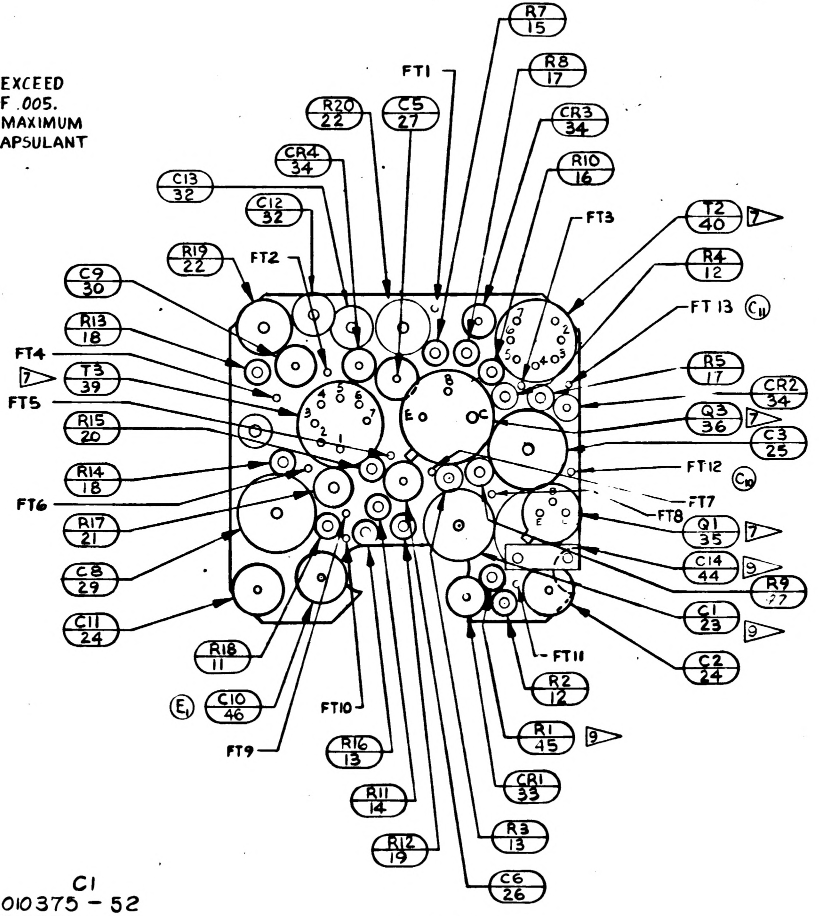
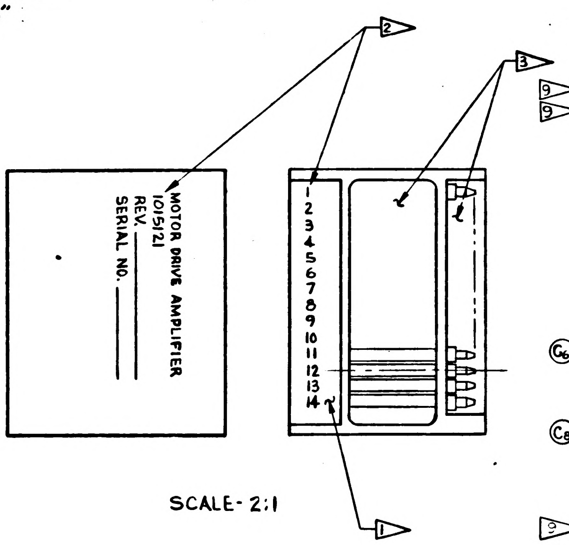
7
9 4
Q6
Q7
Q6 38 6
Q7 38 6
Q2 36 7
C7 28
Q4 35 7
Q5 37 7
T1 39 7
FT2
1015121 MOT DRIVE AMPL
1015139
.000 .005
.000 TO .030
.031
.031
.109
.109
.062 MAX-LEVEL "B"
.140 MAX-LEVEL "A"
.062 MAX-LEVEL "C"
.140 MAX-LEVEL "D"



R7 15
R8 17
CR3 34
R10 16
FT1
FT3
FT13
R20 22
C5 27
CR4 34
C12 32
C13 32
R19 22
FT2
T2 40
R4 12
C9 30
R13 18
FT4
T3 39
FT5
R15 20
R14 18
FT6
R17 21
C8 29
C11 24
R18 11
C10 46
FT10
FT9
R16 13
R11 14
R12 19
R5 17
CR2 34
Q3 36
C3 25
FT12
FT7
FT8
Q1 35
C14 44
R9 27
C1 23
C2 24
FT11
R2 12
R1 45
CR1 33
R3 13
C6 26

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS



MOTOR DRIVE AMPLIFIER
1015121
REV.
SERIAL NO.
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1

SCALE- 2:1

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE ND1002005

8 SOLDER PER ND1002071 USING ND1002075.

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

6 MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7 TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND1002004

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

ON ITEMS 2&3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS(-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
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DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

9 SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

R1	C14	C1
1006750-4 THRU -13	1010359-17,21,23,25 THRU 29	1010375 - 52 1010375 - 53

10 ASSEMBLE PER ND 1002136

Ⓢ ASSEMBLE AND TEST PER ATP 1015121

Ⓢ PROCURE PER PS 1015121

Ⓑ REPLACES REV A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
48	AR	1006776-22	INSULATION SLEEVING
47	1	1006750-57	RESISTOR - FIXED
46	1	1006755-15	CAPACITOR
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44	1	1010359	CAPACITOR VALUE SELECTED
43		1006776-20	INSULATION SLEEVING
42	14	1006775	INSULATOR, WRAPOST - MALE MIN.
41		1006787-2	WIRE-FEED THRU #24 AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	1	1010269-2	TRANSISTOR (MATCHED PAIR)
37	1	1010357	
36	2	1010398-1	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	
28	1	1010359-17	
27	1	1010279-226	
26	1	1006755-29	
25	1	1010438-102	
24	2	1006755-13	
23	1	1010375	CAPACITOR
22	2	1010389-8	RESISTOR - FIXED
21	1	1006760-48	
20	1	1006750-78	
19	1	-31	
18	2	-73	
17	2	-39	
16	1	-61	
15	1	-71	
14	1	-15	
13	2	-43	
12	2	-56	
11	1	1006750-8	RESISTOR - FIXED
10		1006776-21	INSULATION SLEEVING
9		1006757-1	WIRE, NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-017	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
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2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — XX±.02 + —
— — XXX±.005 — —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

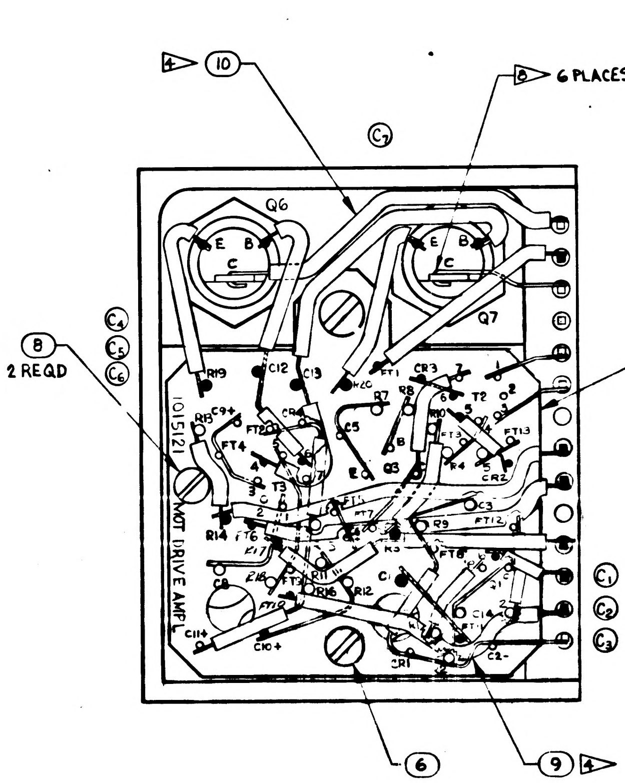
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN SPLANE DATE 29 APR 63
CHECKED E. Fleming 30 APR 63
APPROVAL [illegible] APR 63
APPROVAL [illegible] 30 APR 63
NASA APPROVAL [illegible] 5/18/63
MIT APPROVAL [illegible]

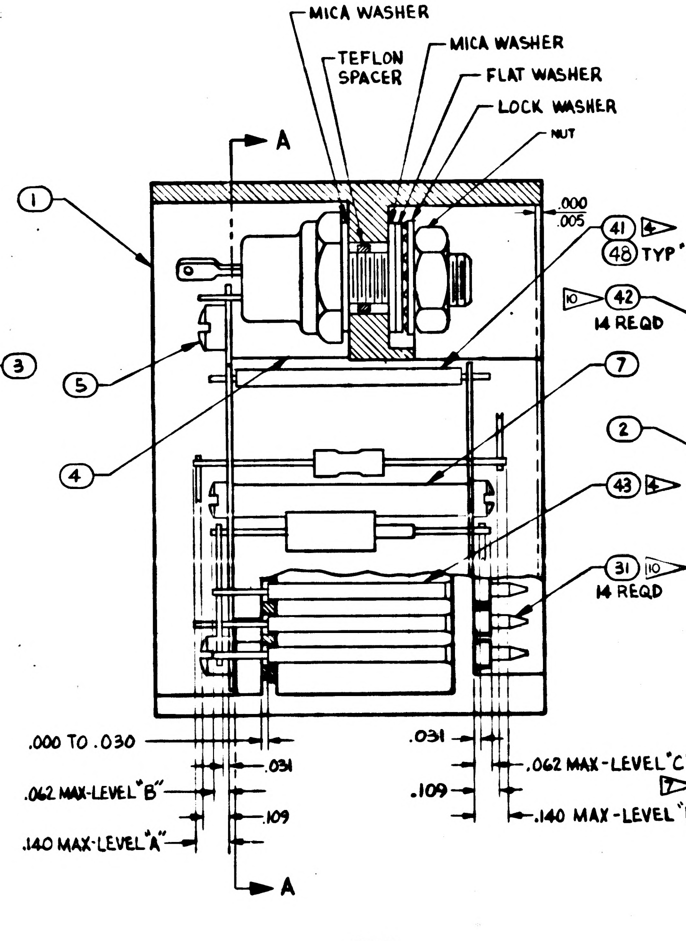
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

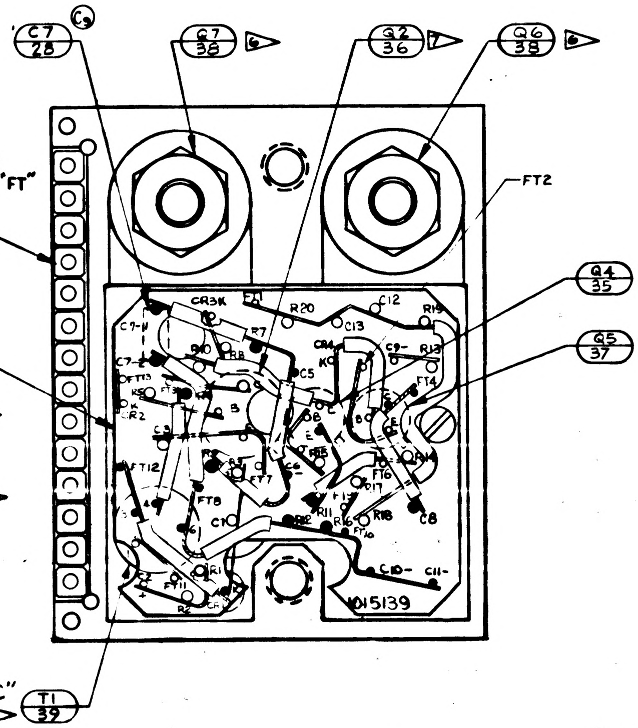
MOTOR DRIVE AMPLIFIER
MODULE ASSEMBLY

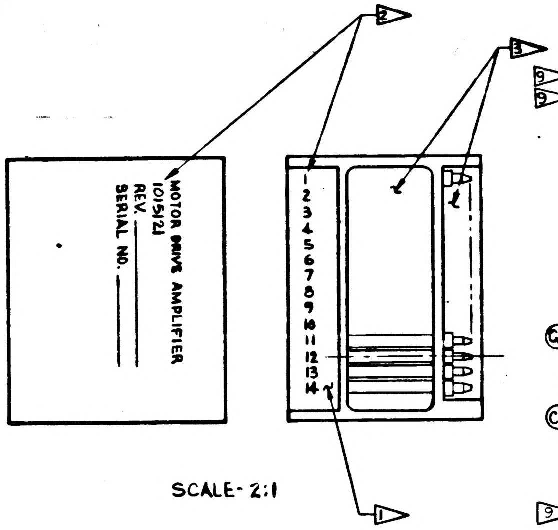
CODE IDENT NO. SIZE E 1015121
SCALE 4:1 SHEET 1 OF 1

1015121 S


10
6 PLACES
Q6
Q7
8
2 REQD
3
6
9
1015121
MOT DRIVE AMPL
R19
C12
C13
FT1
FT4
FT12
FT13
Q3
C5
R14
C8
C11+
C10+
R16
CR1
C14
C2-


MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
A
A
1
5
4
.000
.005
41
48 TYP "FT"
42
14 REQD
7
2
43
31
14 REQD
.000 TO .030
.062 MAX-LEVEL "B"
.140 MAX-LEVEL "A"
.031
.109
.031
.109
.062 MAX-LEVEL "C"
.140 MAX-LEVEL "D"


C7
28
G7
38
Q2
36
Q6
38
FT2
Q4
35
Q5
37
T1
39
CR3K
R20
C12
R19
R7
C13
C5
FT12
FT8
CK
R11
R18
C8
C10-
C11-
1015139


2
3
MOTOR DRIVE AMPLIFIER
1015121
REV.
SERIAL NO.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
1

SCALE- 2:1

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE ND1002005

8▷ SOLDER PER ND1002071 USING ND1002075.

1▷ ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2▷ MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4▷ USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

6▷ MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7▷ TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND1002004

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

ON ITEMS 2&3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS(-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

9▷ SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

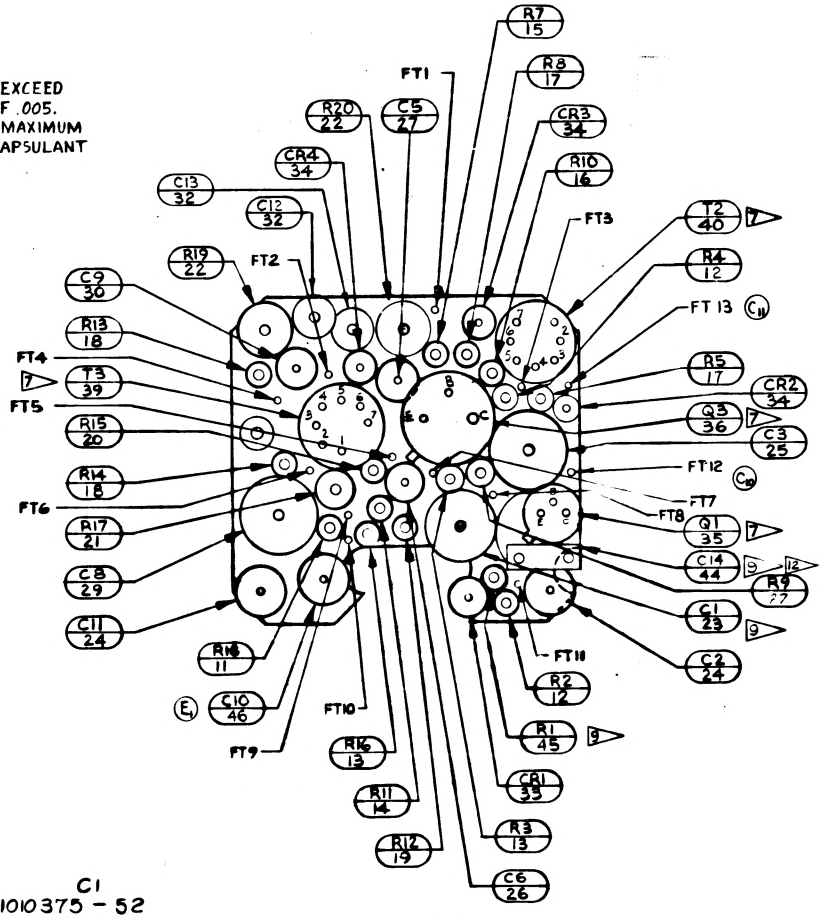
R1	C14	C1
1006750-4 THRU -13	1010359-17, 21, 23, 25 THRU 29	1010375 - 52 1010375 - 53

10▷ ASSEMBLE PER ND 1002136

Ⓢ ASSEMBLE AND TEST PER ATP 1015121

Ⓢ PROCURE PER PS 1015121

12▷ C14 MAY BE OMITTED PER ATP 1015121. WHEN C14 IS OMITTED, FT12 SHOULD BE OMITTED.


R7
15
FT1
C5
27
R8
17
R20
22
CR3
34
CR4
34
R10
16
C13
32
C12
32
FT3
R19
22
FT2
T2
40
R4
12
C9
30
FT13
R13
18
R5
17
FT4
T3
39
CR2
34
FT5
Q3
36
R15
20
C3
25
FT12
R14
18
FT7
FT6
FT8
R17
21
Q1
35
C8
29
C14
44
R9
27
C11
24
C1
23
C2
24
R18
11
FT11
R2
12
C10
46
FT10
FT9
R1
45
R16
13
CR1
33
R11
14
R3
13
R12
19
C6
26

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B		REPLACES REV A WITH CHANGE PER TDRR 00265			
C11		(1) ADDED FT12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6, ITEM 15 AND REPLACE WITH FT13 TDRR 01590		6-19-63	WK
D1		(1) IN NOTE 9▷ REMOVED 1010359-5, 9, 11, 13, 14, 15, 16 & ADDED 1010359-21, 23, 25, 26, 27, 28, 29 TDRR 01755			
E1		C1C WAS 1006755-13 TDRR 01795			
F		REVISED PER TDRR 02602			
G		REVISED PER TDRR 03328			
H		REVISED PER TDRR 03329			
J		REVISED PER TDRR 03761			WK
K		REVISED PER TDRR 04124			
L		REVISED PER TDRR 04455			
M		REVISED PER TDRR 05407		DEC 63	
N		REVISED PER TDRR 05707			
P		REVISED PER TDRR 06894			
R		REVISED PER TDRR 07002			
S		REVISED PER TDRR 07284		1 MAY 64	
T		REVISED PER TDRR 13931			

Ⓑ REPLACES REV A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
48	AR	1006776-22	INSULATION SLEEVING
47	1	1006750-57	RESISTOR - FIXED
46	1	1006755-15	CAPACITOR
45	1	1006750	RESISTOR-FIXED-SELECTED
44	1	1010359	CAPACITOR VALUE SELECTED
43		1006776-20	INSULATION SLEEVING
42	14	1006775	INSULATOR, WRAPOST-MALE MIN.
41		1006787-2	WIRE-FEED THRU #24 AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	1	1010269-2	TRANSISTOR (MATCHED PAIR)
37	1	1010357	↑
36	2	1010398-1	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	↑
28	1	1010359-17	
27	1	1010279-226	
26	1	1006755-29	
25	1	1010438-102	
24	2	1006755-13	
23	1	1010375	CAPACITOR
22	2	1010389-8	RESISTOR-FIXED
21	1	1006760-48	↑
20	1	1006750-78	
19	1	↑ -31	
18	2	-73	
17	2	-39	
16	1	-61	
15	1	-71	
14	1	-15	
13	2	-43	
12	2	-56	
11	1	1006750-8	RESISTOR-FIXED
10		1006776-21	INSULATION SLEEVING
9		1006757-1	WIRE, NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-017	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX ±.02, XXX ±.005 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

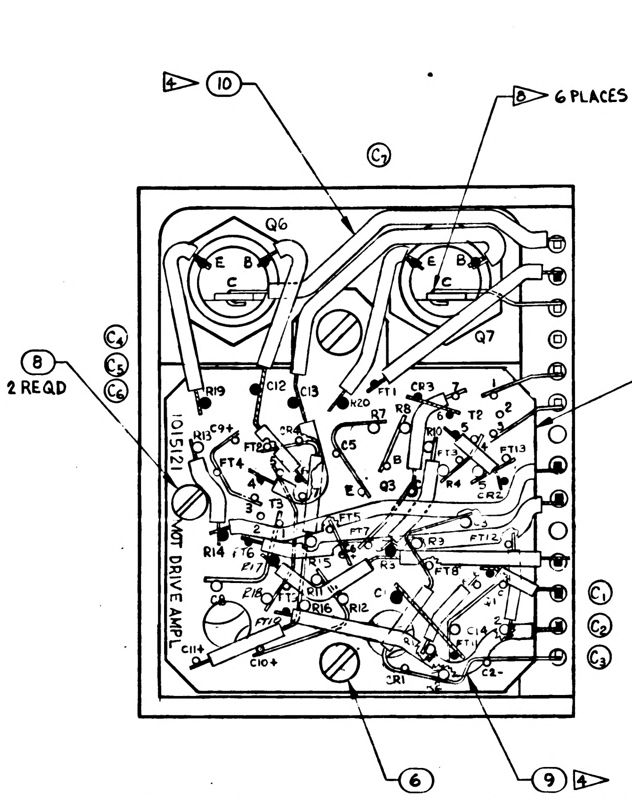
CONTRACT

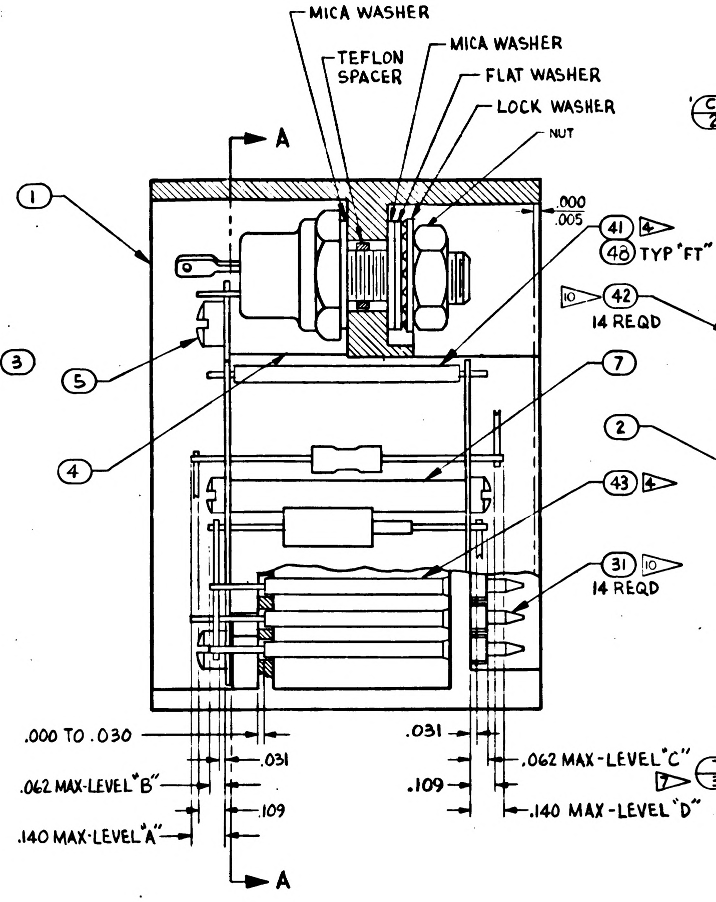
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN SPLANE DATE 29 APR 63
CHECKED 30 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/1/63
MIT APPROVAL

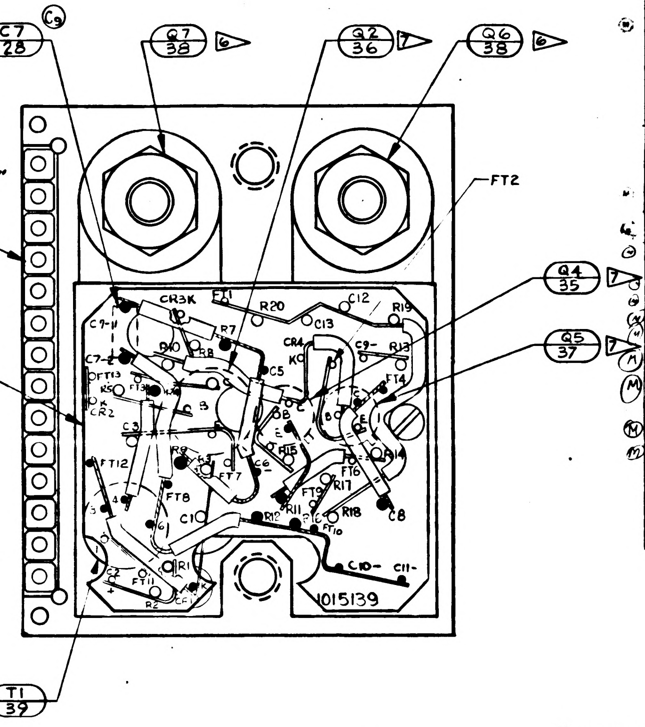
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

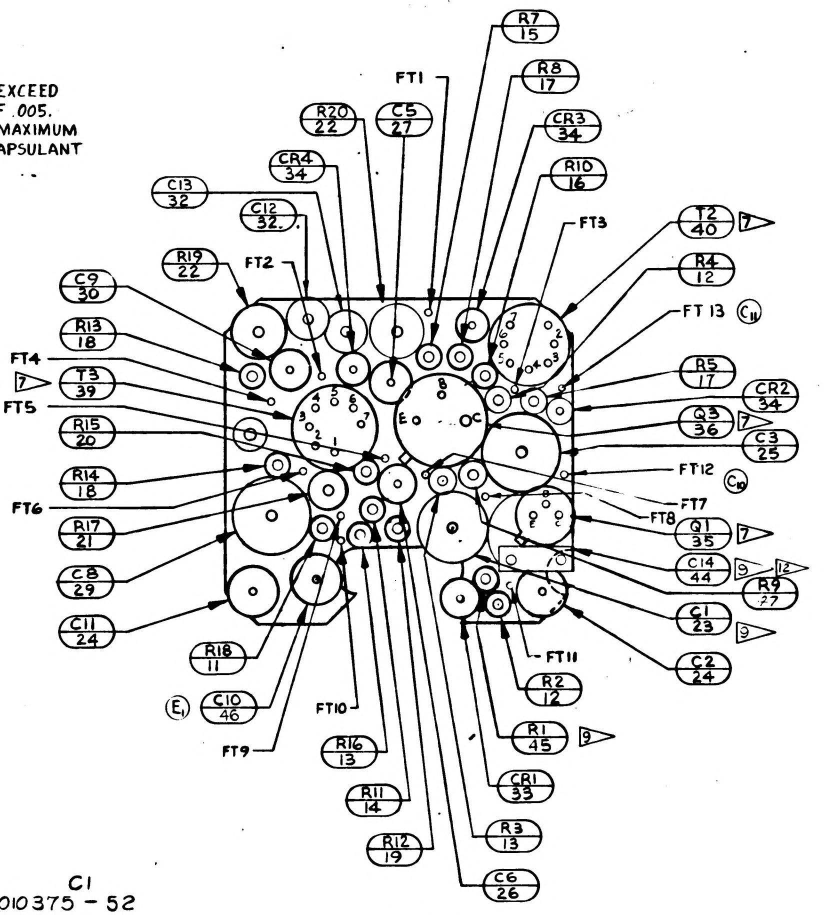
MOTOR DRIVE AMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015121
SCALE 4:1
SHEET 1 OF 1

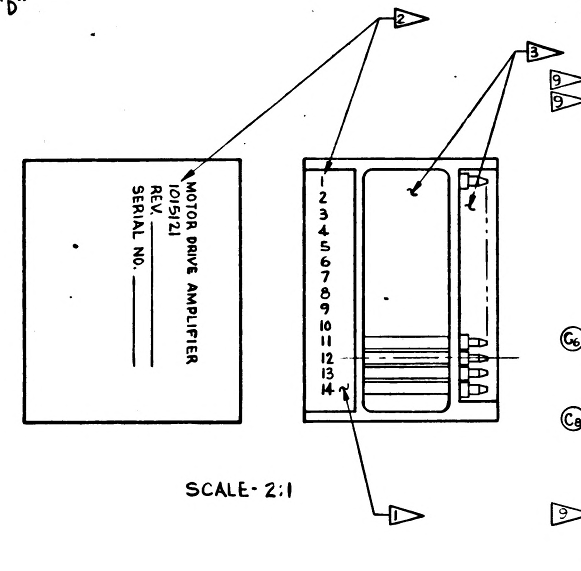

Q6
Q7
10
8
6 PLACES
8
2 REQD
3
1015121
MDT DRIVE AMPL
6
9
4


MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
A
A
1
5
4
7
2
.000
.005
41
48 TYP "FT"
42
14 REQD
43
31
14 REQD
.000 TO .030
.031
.031
.062 MAX-LEVEL "B"
.109
.109
.140 MAX-LEVEL "A"
.062 MAX-LEVEL "C"
.140 MAX-LEVEL "D"
T1
39


C7
28
Q7
38
Q2
36
Q6
38
FT2
Q4
35
Q5
37
1015139


FT1
R7
15
R8
17
CR3
34
R10
16
FT3
T2
40
R4
12
FT 13
R5
17
CR2
34
Q3
36
C3
25
FT12
FT7
FT8
Q1
35
C14
44
R9
27
C1
23
C2
24
FT11
R2
12
R1
45
CR1
33
R3
13
C6
26
R12
19
R11
14
R16
13
FT9
FT10
C10
46
R18
11
C11
24
C8
29
R17
21
FT6
R14
18
R15
20
FT5
T3
39
FT4
R13
18
C9
30
R19
22
FT2
C12
32
C13
32
CR4
34
R20
22
C5
27

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS


MOTOR DRIVE AMPLIFIER
1015121
REV
SERIAL NO.
2
3
1
1 2 3 4 5 6 7 8 9 10 11 12 13 14

SCALE 2:1

NOTE 13. CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN. IN FROM EDGES. USE ADHESIVE PER ND 1002187 TYPE II.

INTERPRET DWG IN ACCORDANCE WITH STDS PER MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE ND1002005

8 SOLDER PER ND1002071 USING ND1002075.

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSION MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

6 MOUNTING TORQUE FOR ITEM 38, 12^{+2}_{-2} INCH POUNDS

7 TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND 1002004

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

ON ITEMS 2&3 BROKEN PATH INDICATE INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS(-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

DRAWINGS FOR REFERENCE:
1015116 SCHEMATIC DIAGRAM, ELECTRICAL

9 SELECT PART PER ATP COMPONENTS TO BE SELECTED FROM TABLE BELOW:

R1	C14	C1
1006750-4 THRU -13	1010359-17,21,23,25 THRU 29	1010375 - 52 1010375 - 53

10 ASSEMBLE PER ND 1002136

Ⓢ ASSEMBLE AND TEST PER ATP 1015121

Ⓢ PROCURE PER PS 1015121

12 *C14 MAY BE OMITTED PER ATP 1015121. WHEN C14 IS OMITTED, FT12 SHOULD BE OMITTED.*

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B		REPLACES REV A WITH CHANGE PER TDRR 01205		MAY 63	WK
C11		(1) ADDED FT 12 AND REROUTED RIBBONS (2) MOVED Q1 AND ASSOC WIRING (3) ADDED C14 AND ASSOC WIRING (4) MOVED R 20 OVER (5) ADDED C13 AND CHANGED RIBBON PATHS. (6) CHANGED PART NO AND MOVED ITEM 32, PART NO WAS 1010375-052 (7) MOVED RIBBONS FROM Q6-E & Q7-E & B TO UPPER LEVEL (8) ITEM 28 WAS 1010359-5 (9) C7+ WAS CONNECTED TO R10 (10) REMOVED C4, ITEM 26 (11) REMOVED R6, ITEM 15 AND REPLACE WITH FT13 TDRR 01590		6-19-63	WK
D1		(1) IN NOTE 8 REMOVED 1010359-5,9,11,13,14,15,16 & ADDED 1010359-21,23,25 26 27,28,29 TDRR 01155	26 Jun 63		WK
E1		C1C WAS 1006755-13 TDRR 01795			WK
F		REVISED PER TDRR 02602		[illegible] 63	
G		REVISED PER TDRR 03328		7/29/63	
H		REVISED PER TDRR 03329		7/29/63	
J		REVISED PER TDRR [illegible]		10-23-63	WK
K		REVISED PER TDRR 04124		11-7-63	WK
L		REVISED PER TDRR 04455		11 19 63	
M		REVISED PER TDRR 05407		27 DEC 63	WK
N		REVISED PER TDRR 05707		10 JAN 64	
P		REVISED PER TDRR 06894			
R		REVISED PER TDRR 07002		22 APR 64	
S		REVISED PER TDRR 07284		1 MAY 64	
T		REVISED PER TDRR 13931		11 NOV 64	AU
U		REVISED PER TDRR 19426		2 JUN 65	

Ⓑ REPLACES REV A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
~~48~~	~~AR~~	~~1006776-22~~	~~INSULATION SLEEVING~~
47	1	1006750-57	RESISTOR - FIXED
46	1	1006755-15	CAPACITOR
45	1	1006750	RESISTOR - FIXED - SELECTED
44	1	1010359	CAPACITOR VALUE SELECTED
43		1006776-20	INSULATION SLEEVING
42	14	1006775	INSULATOR, WRAPOST - MALE MIN.
41		1006787-2	WIRE - FEED THRU #24 AWG
40	1	1010365	TRANSFORMER
39	2	1010276	TRANSFORMER
38	1	1010269-2	TRANSISTOR (MATCHED PAIR)
37	1	1010357	
36	2	1010398-1	
35	2	1010397	TRANSISTOR
34	3	1010370	DIODE
33	1	1010372-24	DIODE
32	2	1010279-218	CAPACITOR
31	14	1006782-5	CONTACT, BLADE EDGE CONNECTOR
30	1	1006755-69	CAPACITOR
29	1	1010375-124	
28	1	1010359-17	
27	1	1010279-226	
26	1	1006755-29	
25	1	1010438-102	
24	2	1006755-13	
23	1	1010375	CAPACITOR
22	2	1010389-8	RESISTOR - FIXED
21	1	1006760-48	
20	1	1006750-78	
19	1	-31	
18	2	-73	
17	2	-39	
16	1	-61	
15	1	-71	
14	1	-15	
13	2	-43	
12	2	-56	
11	1	1006750-8	RESISTOR - FIXED
10		1006776-21	INSULATION SLEEVING
9		1006757-1	WIRE, NICKEL RIBBON
8	2	AN500D-2-4	SCREW
7	1	1015135-017	SPACER
6	1	AN500D-4-4	SCREW, PAN HEAD
5	1	AN500D-4-12	SCREW, PAN HEAD
4	1	1015131	SPACER
3	1	1015140	WAFER BOARD, UPPER
2	1	1015139	WAFER BOARD, LOWER
1	1	1015128	FRAME ASSEMBLY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +— DECIMALS XX±.02 XXX±.005 ANGLES +—
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN SPLANE DATE 29 APR 63
CHECKED S. Fleming 30 APR 63
APPROVAL [illegible] APR 63
APPROVAL [illegible] 30 APR 63
NASA APPROVAL [illegible] 5/18/63
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

MOTOR DRIVE AMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO 80230
SIZE E
1015121
SCALE 4:1
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015121

REVISIONS TDRR 00701

SYM	DESCRIPTION	DATE	APPROVAL

PART NO	DESCRIPTION	REQD
1015128	FRAME ASSEMBLY, MODULE	1
1015139	WAFER BOARD, LOWER	1
1015140	WAFER BOARD, UPPER	1
1015131	SPACER	1
AN500D-4-8	SCREW PAN HEAD #4-40×9/16 LONG	1
AN500D-4-4	SCREW PAN HEAD #4-40×1/4 LONG	1
1015135-015	SPACER	1
AN500D-2-4	SCREW	2
1006757-1	WIRE NICKEL RIBBON	AR
1006776-20	SLEEVING, ELECTRICAL INSUL	AR
1006750-8	RESISTOR-FIXED	2
1006750-56	RESISTOR-FIXED	1
1006750-43	RESISTOR-FIXED	3
1006750-15	RESISTOR-FIXED	2
1006750-80	RESISTOR-FIXED	1
1006750-61	RESISTOR-FIXED	3
1006750-39	RESISTOR-FIXED	1
1006750-73	RESISTOR-FIXED	2
1006750-31	RESISTOR-FIXED	1
1006750-78	RESISTOR-FIXED	1
1006760-48	RESISTOR-FIXED	1
1010312-001	RESISTOR-FIXED	2
1010375-53	CAPACITOR	1
1006755-13		3
1010279-018		1
1006755-29		2
1010279-226		1
1010359-5		1
1010375-124		1
1006755-69		1
1010375-52	CAPACITOR	1

PART NO	DESCRIPTION	REQD
1010372-24	DIODE	1
1010370	DIODE	3
1010397	TRANSISTOR	2
1010398		2
1010357		1
1010269	TRANSISTOR	2
1010276	TRANSFORMER	2
1010365	TRANSFORMER	1
1006787-2	WIRE FEED THRU	AR
1006782-5	CONTACT, BLADE EDGE CONN.	14
1006775	INSULATOR, WRAPOST-MALE MIN.	14
1006776-18	INSULATION SLEEVING, ELECT.	AR

REFERENCE DRAWING 1015116 SCHEMATIC

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL //
HEAT TREATMENT //
FINAL FINISH //

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 4-1-63
CHECKED F. Akell
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL 3 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015121
SCALE
WT
SHEET 1 OF 1

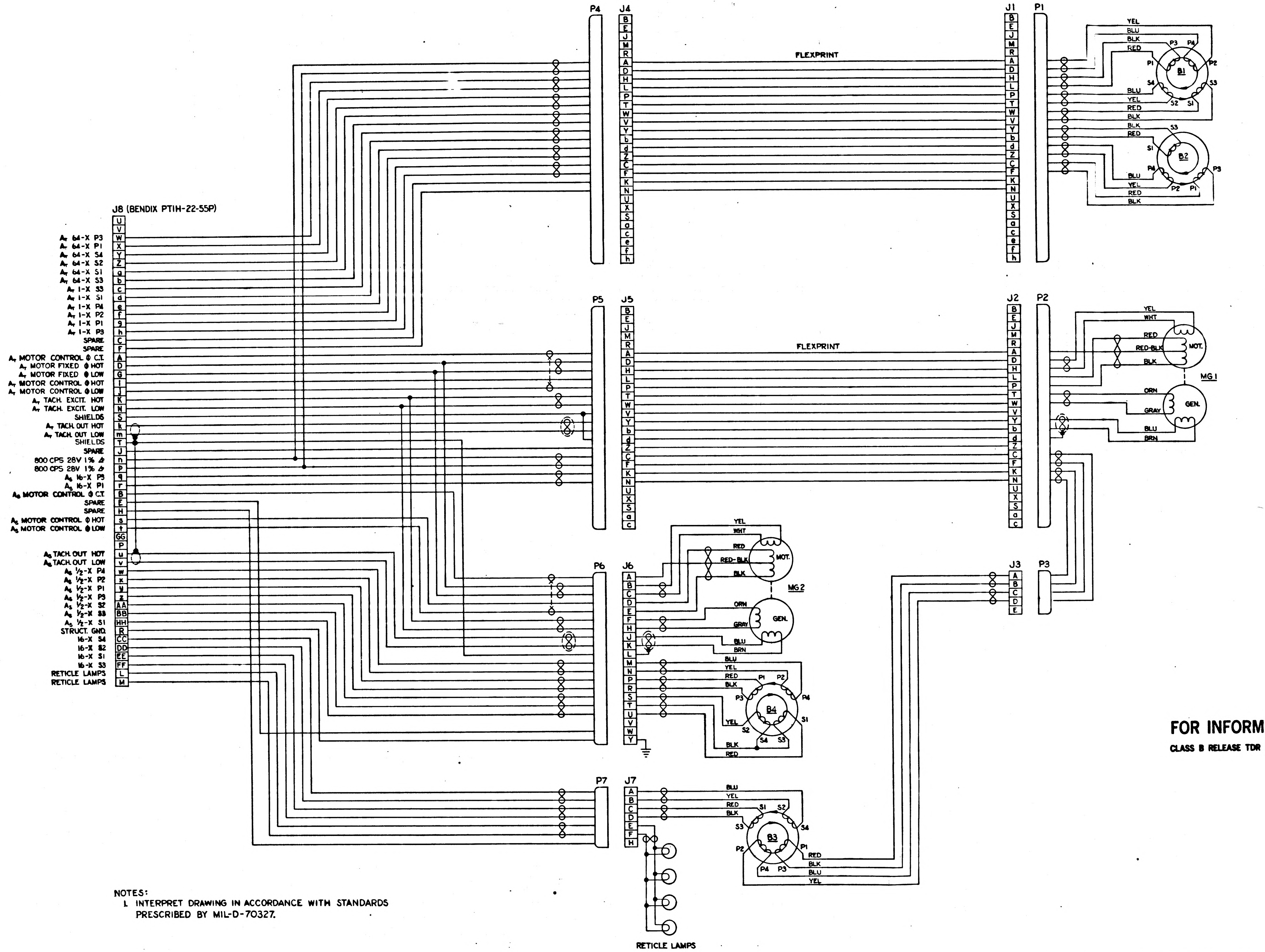
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

1015122 Ⓐ

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00704	3APR63	WK



P4
J4
FLEXPRINT
J1
P1
YEL
BLU
BLK
RED
P3
P4
P1
B1
P2
S4
S3
S2
S1
BLU
YEL
RED
BLK
BLK
RED
S3
S1
B2
P4
P3
P2
P1
BLU
YEL
RED
BLK
J8 (BENDIX PTIH-22-55P)
A_T 64-X P3
A_T 64-X P1
A_T 64-X S4
A_T 64-X S2
A_T 64-X S1
A_T 64-X S3
A_T 1-X S3
A_T 1-X S1
A_T 1-X P4
A_T 1-X P2
A_T 1-X P1
A_T 1-X P3
SPARE
SPARE
A_T MOTOR CONTROL ϕ C.T.
A_T MOTOR FIXED ϕ HOT
A_T MOTOR FIXED ϕ LOW
A_T MOTOR CONTROL ϕ HOT
A_T MOTOR CONTROL ϕ LOW
A_T TACH. EXCIT. HOT
A_T TACH. EXCIT. LOW
SHIELDS
A_T TACH. OUT HOT
A_T TACH. OUT LOW
SHIELDS
SPARE
800 CPS 28V 1% ∅
800 CPS 28V 1% ∅
A_S 16-X P3
A_S 16-X P1
A_S MOTOR CONTROL ϕ C.T.
SPARE
SPARE
A_S MOTOR CONTROL ϕ HOT
A_S MOTOR CONTROL ϕ LOW
A_S TACH. OUT HOT
A_S TACH. OUT LOW
A_S ½-X P4
A_S ½-X P2
A_S ½-X P1
A_S ½-X P3
A_S ½-X S2
A_S ½-X S3
A_S ½-X S1
STRUCT. GND.
16-X S4
16-X S2
16-X S1
16-X S3
RETICLE LAMPS
RETICLE LAMPS
P5
J5
FLEXPRINT
J2
P2
YEL
WHT
RED
RED-BLK
BLK
MOT.
MG 1
ORN
GRAY
GEN.
BLU
BRN
P6
J6
YEL
WHT
RED
RED-BLK
BLK
MOT.
MG 2
ORN
GRAY
GEN.
BLU
BRN
BLU
YEL
RED
BLK
P1
P2
P3
P4
B4
S1
YEL
S2
S4
S3
BLK
RED
J3
P3
P7
J7
BLU
YEL
RED
BLK
S1
S2
S3
S4
B3
P2
P1
P4
P3
RED
BLK
BLU
YEL
RETICLE LAMPS

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00474 DATE 27 FEB 63

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± // DECIMALS ± // ANGLES ± //
DO NOT SCALE THIS DRAWING
MATERIAL //
HEAT TREATMENT //
FINAL FINISH //

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT

DRAWN T.C.P. DATE 2-26-63
CHECKED Harry V. Maher
APPROVAL Terry J. Vargulim
APPROVAL
NASA APPROVAL W.J. Rhine 2-27-63
MIT APPROVAL W Hoyle 27Feb63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING DIAGRAM
SEXTANT

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015122
SCALE NONE
WT
SHEET 1 OF 1

1015122

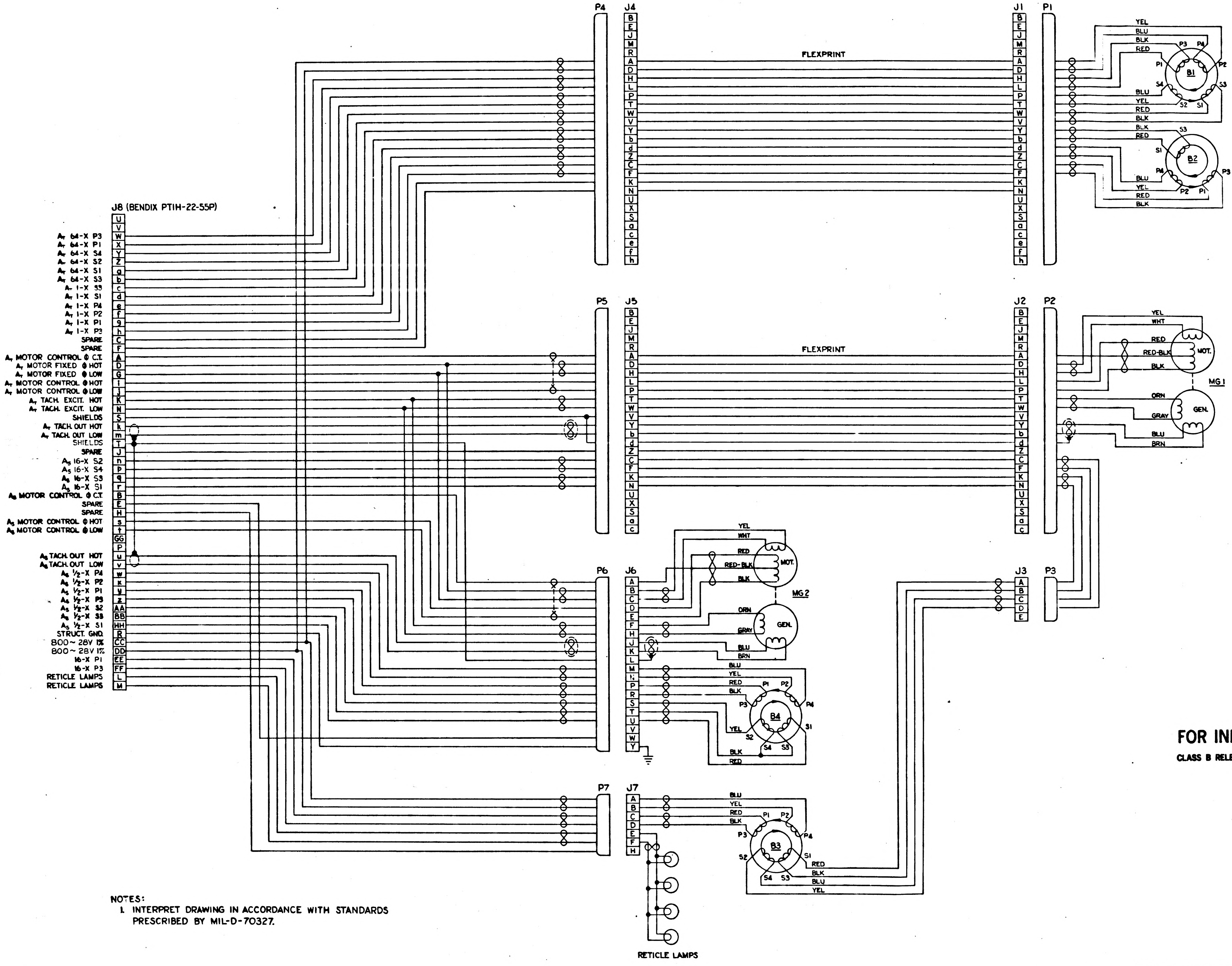
MASTER

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

1015122

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00704	3AP63	WX
B	REVISED PER TDRR 00856	17Apr63	


P4
J4
J1
P1
FLEXPRINT
YEL
BLU
BLK
RED
P3
P4
P1
B1
P2
S4
S3
S2
S1
B2
J8 (BENDIX PT1H-22-55P)
A7 64-X P3
A7 64-X P1
A7 64-X S4
A7 64-X S2
A7 64-X S1
A7 64-X S3
A7 1-X S3
A7 1-X S1
A7 1-X P4
A7 1-X P2
A7 1-X P1
A7 1-X P3
SPARE
SPARE
A7 MOTOR CONTROL Φ C.T.
A7 MOTOR FIXED Φ HOT
A7 MOTOR FIXED Φ LOW
A7 MOTOR CONTROL Φ HOT
A7 MOTOR CONTROL Φ LOW
A7 TACH. EXCIT. HOT
A7 TACH. EXCIT. LOW
SHIELDS
A7 TACH. OUT HOT
A7 TACH. OUT LOW
SHIELDS
SPARE
A5 16-X S2
A5 16-X S4
A5 16-X S3
A5 16-X S1
A5 MOTOR CONTROL Φ C.T.
SPARE
SPARE
A5 MOTOR CONTROL Φ HOT
A5 MOTOR CONTROL Φ LOW
A5 TACH. OUT HOT
A5 TACH. OUT LOW
A5 ½-X P4
A5 ½-X P2
A5 ½-X P1
A5 ½-X P3
A5 ½-X S2
A5 ½-X S3
A5 ½-X S1
STRUCT. GND.
800~ 28V 1%
800~ 28V 1%
16-X P1
16-X P3
RETICLE LAMPS
RETICLE LAMPS
P5
J5
J2
P2
WHT
RED-BLK
MOT.
MG 1
ORN
GRAY
GEN.
BRN
P6
J6
MG 2
B4
J3
P3
P7
J7
B3
RETICLE LAMPS

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00474 DATE 27Feb63

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± // DECIMALS ± // ANGLES ± // DO NOT SCALE THIS DRAWING MATERIAL // HEAT TREATMENT // FINAL FINISH //	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DWG NO CONTRACT DRAWN T.C.P. DATE 2·26·63 CHECKED Harry V. Maher APPROVAL Harry Margulies APPROVAL NASA APPROVAL W. G. Rhine 2-27-63 MIT APPROVAL 27Feb63
APPLICATION			

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING DIAGRAM
SEXTANT

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	E	1015122
SCALE NONE	WT	SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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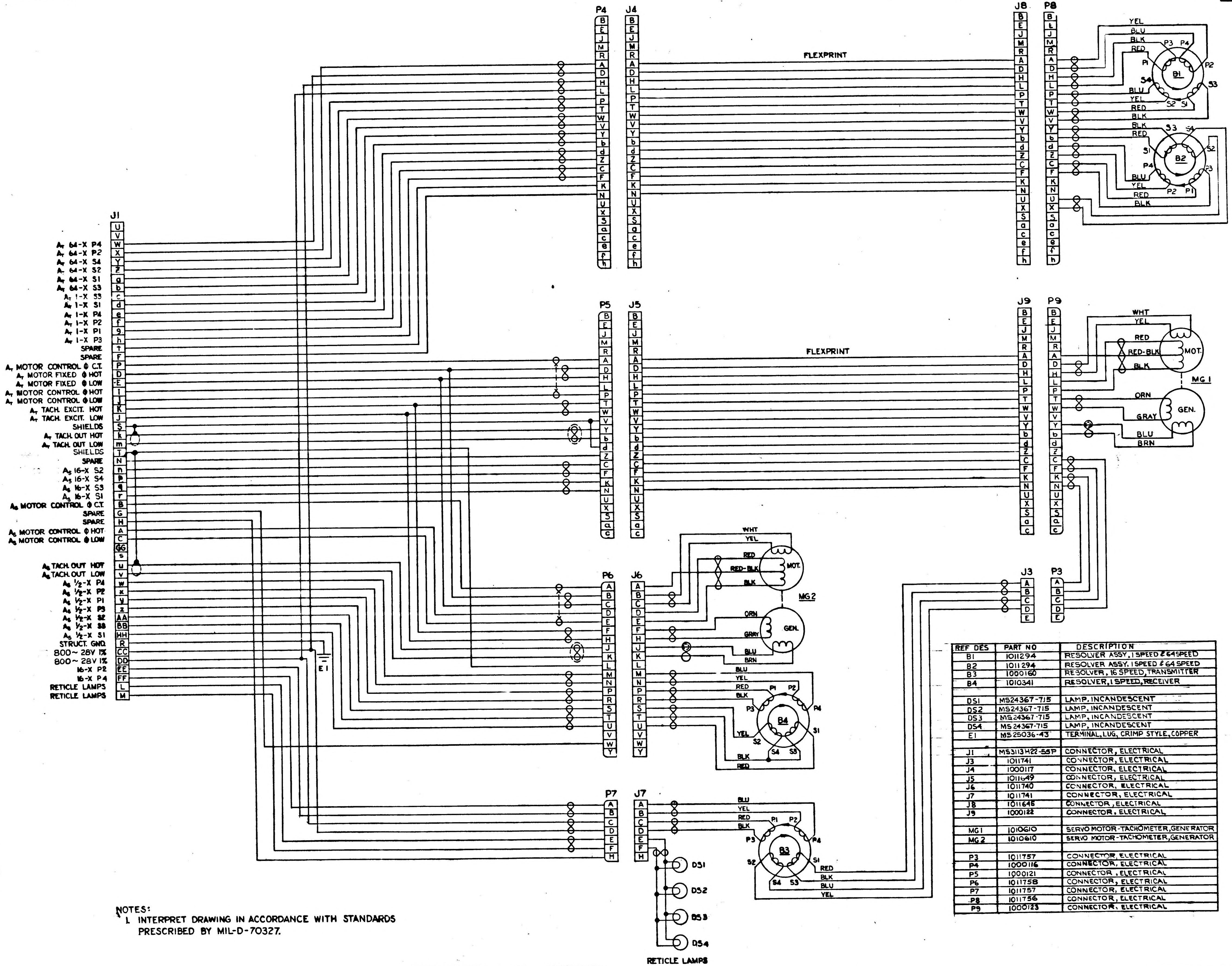
1015122C

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00704	3Apr63	WK
B	REVISED PER TDRR 00856	17May63	WK
C	REVISED AND UPGRADED TO CLASS A - TDRR 04377	5Nov63	WK


FLEXPRINT
FLEXPRINT
P4
J4
J8
P8
P5
J5
J9
P9
P6
J6
P7
J7
J3
P3
J1
AT 64-X P4
AT 64-X P2
AT 64-X S4
AT 64-X S2
AT 64-X S1
AT 64-X S3
AT 1-X S3
AT 1-X S1
AT 1-X P4
AT 1-X P2
AT 1-X P1
AT 1-X P3
SPARE
SPARE
AT MOTOR CONTROL Φ C.T.
AT MOTOR FIXED Φ HOT
AT MOTOR FIXED Φ LOW
AT MOTOR CONTROL Φ HOT
AT MOTOR CONTROL Φ LOW
AT TACH. EXCIT. HOT
AT TACH. EXCIT. LOW
SHIELDS
AT TACH. OUT HOT
AT TACH. OUT LOW
SHIELDS
SPARE
AS 16-X S2
AS 16-X S4
AS 16-X S3
AS 16-X S1
AS MOTOR CONTROL Φ C.T.
SPARE
SPARE
AS MOTOR CONTROL Φ HOT
AS MOTOR CONTROL Φ LOW
AS TACH. OUT HOT
AS TACH. OUT LOW
AS ½-X P4
AS ½-X P2
AS ½-X P1
AS ½-X P3
AS ½-X S2
AS ½-X S3
AS ½-X S1
STRUCT. GND.
800~ 28V 1%
800~ 28V 1%
16-X P2
16-X P4
RETICLE LAMPS
RETICLE LAMPS
E1
B1
B2
B3
B4
MG1
MG2
MOT.
GEN.
YEL
BLU
BLK
RED
WHT
RED-BLK
ORN
GRAY
BRN
DS1
DS2
DS3
DS4
RETICLE LAMPS

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

REFERENCE:
SXT BASE HARNESS ASSEMBLY ____ 1011896
RESOLVER & CONNECTOR, ASSY OF ____ 1011909
SERVO MOTOR & CONNECTOR, ASSY OF ____ 1011892
TELESCOPE TUBE ASSY ____ 1011797
HOUSING, STATOR & LAMP, ASSY OF ____ 1011906
SXT SHAFT DRIVE HARNESS, ASSY OF ____ 1011983
FLEXPRINT & CONNECTOR, ASSY OF ____ 1011907
FLEXPRINT & CONNECTOR, ASSY OF ____ 1011908

REF DES	PART NO	DESCRIPTION
B1	1011294	RESOLVER ASSY, 1 SPEED & 64 SPEED
B2	1011294	RESOLVER ASSY, 1 SPEED & 64 SPEED
B3	1000160	RESOLVER, 16 SPEED, TRANSMITTER
B4	1010341	RESOLVER, 1 SPEED, RECEIVER
DS1	MS24367-715	LAMP, INCANDESCENT
DS2	MS24367-715	LAMP, INCANDESCENT
DS3	MS24367-715	LAMP, INCANDESCENT
DS4	MS24367-715	LAMP, INCANDESCENT
E1	MS25036-43	TERMINAL, LUG, CRIMP STYLE, COPPER
J1	MS3113H22-55P	CONNECTOR, ELECTRICAL
J3	1011741	CONNECTOR, ELECTRICAL
J4	1000117	CONNECTOR, ELECTRICAL
J5	1011649	CONNECTOR, ELECTRICAL
J6	1011740	CONNECTOR, ELECTRICAL
J7	1011741	CONNECTOR, ELECTRICAL
J8	1011645	CONNECTOR, ELECTRICAL
J9	1000122	CONNECTOR, ELECTRICAL
MG1	1010610	SERVO MOTOR-TACHOMETER, GENERATOR
MG2	1010610	SERVO MOTOR-TACHOMETER, GENERATOR
P3	1011757	CONNECTOR, ELECTRICAL
P4	1000116	CONNECTOR, ELECTRICAL
P5	1000121	CONNECTOR, ELECTRICAL
P6	1011758	CONNECTOR, ELECTRICAL
P7	1011757	CONNECTOR, ELECTRICAL
P8	1011756	CONNECTOR, ELECTRICAL
P9	1000123	CONNECTOR, ELECTRICAL

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO.
CONTRACT
DRAWN T.C.P. DATE 2-26-63
CHECKED Harry V. Maher
APPROVAL Harry Margulius
APPROVAL George Cooley
NASA APPROVAL W.J. Rhine 2-27-63
MIT APPROVAL W. [illegible] 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

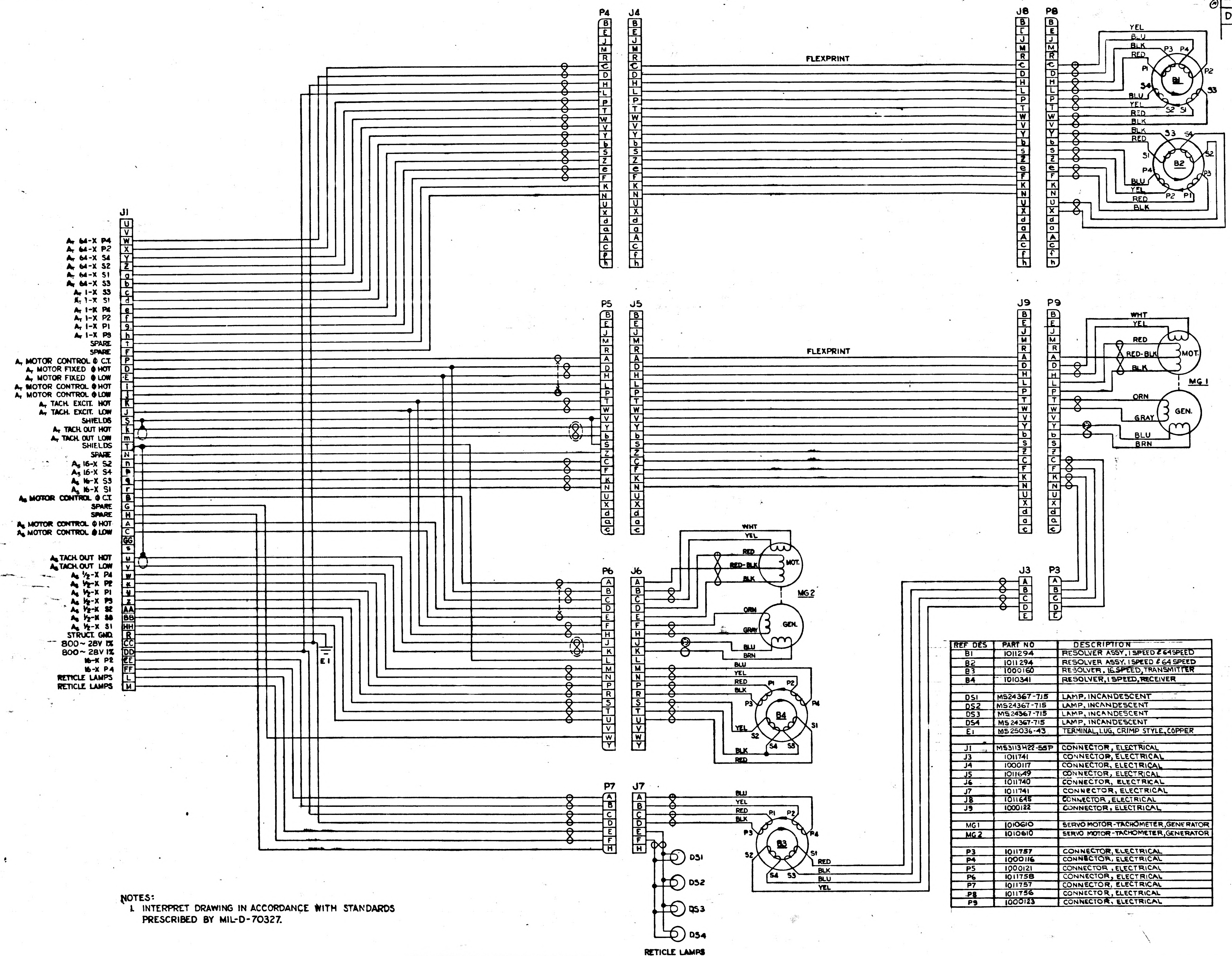
SCHEMATIC DIAGRAM
SEXTANT

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015122
SCALE NONE
WT
SHEET 1 OF 1

MASTER

1015122 D

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00704	3APR63	WK
B	REVISED PER TDRR 00856	17Aug63	WK
C	REVISED AND UPGRADED TO CLASS A - TDRR C1377	5Nov63	W.K.
D	REVISED PER TDRR NO. 05921	21 JAN 64	W K



P4
J4
J8
P8
FLEXPRINT
YEL
BLU
BLK
RED
P1
P2
P3
P4
S1
S2
S3
S4
B1
B2
J1
A_T 64-X P4
A_T 64-X P2
A_T 64-X S4
A_T 64-X S2
A_T 64-X S1
A_T 64-X S3
A_T 1-X S3
A_T 1-X S1
A_T 1-X P4
A_T 1-X P2
A_T 1-X P1
A_T 1-X P3
SPARE
SPARE
A_T MOTOR CONTROL Φ C.T.
A_T MOTOR FIXED Φ HOT
A_T MOTOR FIXED Φ LOW
A_T MOTOR CONTROL Φ HOT
A_T MOTOR CONTROL Φ LOW
A_T TACH. EXCIT. HOT
A_T TACH. EXCIT. LOW
SHIELDS
A_T TACH. OUT HOT
A_T TACH. OUT LOW
SHIELDS
SPARE
A_S 16-X S2
A_S 16-X S4
A_S 16-X S3
A_S 16-X S1
A_S MOTOR CONTROL Φ C.T.
SPARE
SPARE
A_S MOTOR CONTROL Φ HOT
A_S MOTOR CONTROL Φ LOW
A_S TACH. OUT HOT
A_S TACH. OUT LOW
A_S ½-X P4
A_S ½-X P2
A_S ½-X P1
A_S ½-X P3
A_S ½-X S2
A_S ½-X S3
A_S ½-X S1
STRUCT. GND.
800~ 28V 1%
800~ 28V 1%
16-X P2
16-X P4
RETICLE LAMPS
RETICLE LAMPS
P5
J5
J9
P9
WHT
RED-BLK
MOT.
MG 1
ORN
GRAY
GEN.
BRN
P6
J6
MG 2
E1
J3
P3
B4
P7
J7
B3
DS1
DS2
DS3
DS4
RETICLE LAMPS

REF DES	PART NO	DESCRIPTION
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NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

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HOUSING, STATOR & LAMP, ASSY OF	1011906
SXT SHAFT DRIVE HARNESS, ASSY OF	1011933
FLEXPRINT & CONNECTOR, ASSY OF	1011907
FLEXPRINT & CONNECTOR, ASSY OF	1011908

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1011000	1011000

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± // DECIMALS ± // ANGLES ± //
DO NOT SCALE THIS DRAWING
MATERIAL //
HEAT TREATMENT //
FINAL FINISH //

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN T.C.P. DATE 2-26-63
CHECKED Gary V. Maher
APPROVAL Harry Yasgulian
APPROVAL George Cassey
NASA APPROVAL W J Rhine 2-27-64
MIT APPROVAL W Kupfer 27Feb63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
SEXTANT

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015122
SCALE NONE
WT
SHEET 1 OF 1

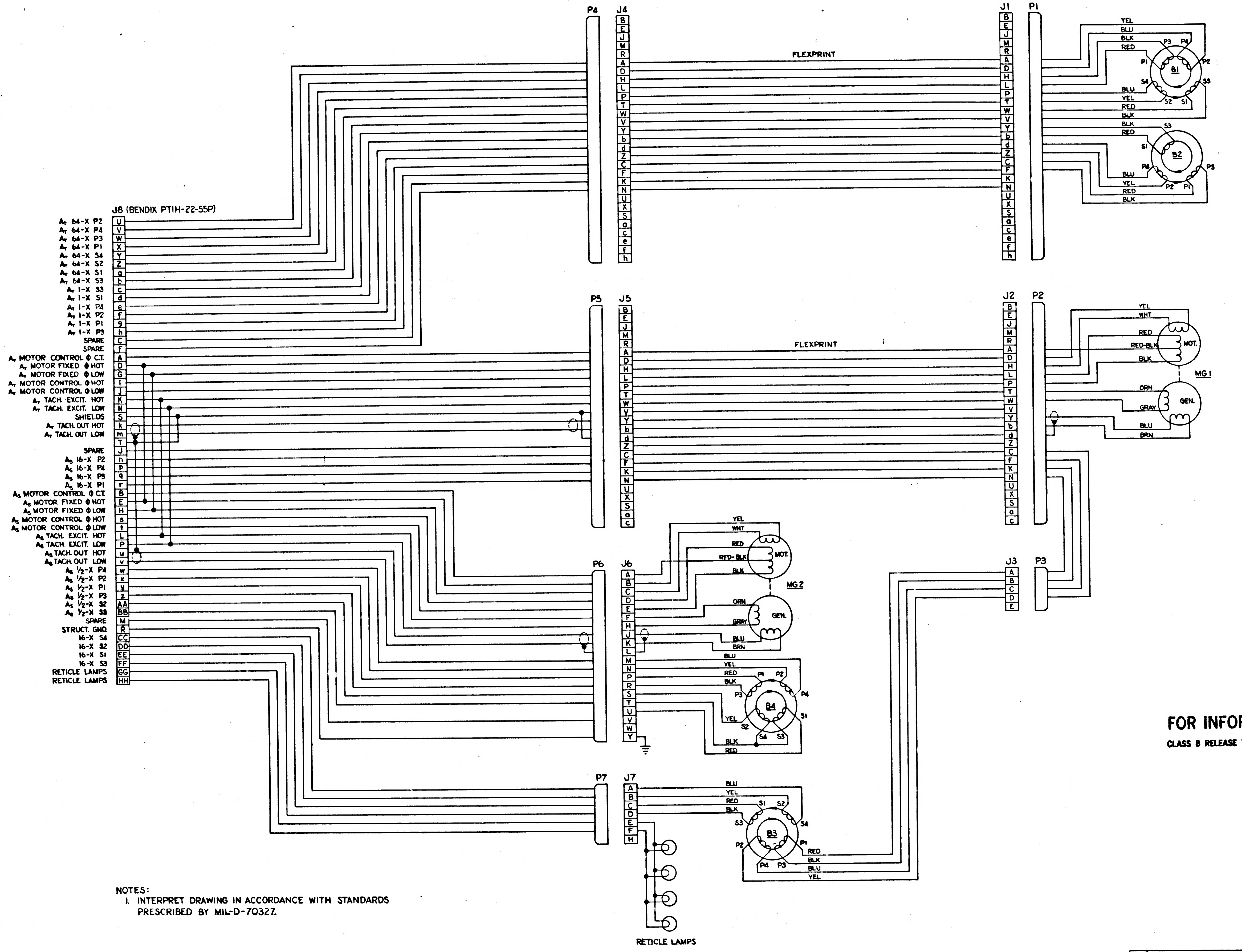
MASTER

1015122 D

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

1015122

SYM	REVISIONS DESCRIPTION	DATE	APPROVAL



P4
J4
FLEXPRINT
J1
P1
YEL
BLU
BLK
RED
P3
P4
P1
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P2
S4
S3
S2
S1
B2
J8 (BENDIX PTIH-22-55P)
A_T 64-X P2
A_T 64-X P4
A_T 64-X P3
A_T 64-X P1
A_T 64-X S4
A_T 64-X S2
A_T 64-X S1
A_T 64-X S3
A_T 1-X S3
A_T 1-X S1
A_T 1-X P4
A_T 1-X P2
A_T 1-X P1
A_T 1-X P3
SPARE
SPARE
A_T MOTOR CONTROL Φ C.T.
A_T MOTOR FIXED Φ HOT
A_T MOTOR FIXED Φ LOW
A_T MOTOR CONTROL Φ HOT
A_T MOTOR CONTROL Φ LOW
A_T TACH. EXCIT. HOT
A_T TACH. EXCIT. LOW
SHIELDS
A_T TACH. OUT HOT
A_T TACH. OUT LOW
SPARE
A_S 16-X P2
A_S 16-X P4
A_S 16-X P3
A_S 16-X P1
A_S MOTOR CONTROL Φ C.T.
A_S MOTOR FIXED Φ HOT
A_S MOTOR FIXED Φ LOW
A_S MOTOR CONTROL Φ HOT
A_S MOTOR CONTROL Φ LOW
A_S TACH. EXCIT. HOT
A_S TACH. EXCIT. LOW
A_S TACH. OUT HOT
A_S TACH. OUT LOW
A_S 1/2-X P4
A_S 1/2-X P2
A_S 1/2-X P1
A_S 1/2-X P3
A_S 1/2-X S2
A_S 1/2-X S3
SPARE
STRUCT. GND.
16-X S4
16-X S2
16-X S1
16-X S3
RETICLE LAMPS
RETICLE LAMPS
U V W X Y Z a b c d e f g h C F A D G i j K N S k m T J n p q r B E H s t L P u v w x y z AA BB M R CC DD EE FF GG HH
P5
J5
FLEXPRINT
J2
P2
YEL
WHT
RED
RED-BLK
BLK
MOT.
MG 1
ORN
GRAY
GEN.
BLU
BRN
P6
J6
MOT.
MG 2
GEN.
B4
J3
P3
P7
J7
B3
RETICLE LAMPS

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00474 DATE 27 Feb 63

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN T.C.P. DATE 2-26-63
CHECKED Harry V. Maher
APPROVAL Harry Vasquelina
APPROVAL
NASA APPROVAL W J Rhine 2-27-68
MIT APPROVAL W Kupfer 27 Feb 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING DIAGRAM
SEXTANT

CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1015122
SCALE NONE | WT | SHEET 1 OF 1

1015122

4 3 2 1

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1015123

REVISIONS TDRR 00701

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY REV B WITH CHANGES PER TDRR 1223	15 Apr 63	WK

PART NO	DESCRIPTION	REQD
1006750-77	RESISTOR	2
1010364-693		4
1010364-727		2
1006750-84		2
1006750-72		2
1010364-579		2
1010364-765		2
1006750-32		2
1006750-44		2
1006750-65		2
1010368-115		2
1010364-673		2
1006750-16		2
1006750-56		2
1010368-13		2
1006750-9		2
1006750-21		2
1006750-42	RESISTOR	2
1006755-79	CAPACITOR	2
1006755-31		2
1006755-45		2
1010359-23		2
1010409-33		2
1010359-19		2
1010375-66		2
1006755-79	CAPACITOR	2
1010372-24	DIODE	2
1010397	TRANSISTOR	4
1010357		2
1010398-2	TRANSISTOR	2

Ⓐ REPLACED BY REV B WITH CHANGES

REFERENCE DRAWING 1015120 SCHEMATIC DIAGRAM

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL //
HEAT TREATMENT //
FINAL FINISH //

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 4-2-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL WKupfer 3 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
RESOLVER DRIVE AMPLIFIER

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015123
SCALE
WT
SHEET OF

4 3 2 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015123

Apollo G&N Specification
PS-1015123 A
28 January 1964
Class A Release
TDRR 05988

PROCUREMENT SPECIFICATION
FOR
RESOLVER DRIVE AMPLIFIER MODULE ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
1-13-65	A	15438	1, 3	WK	WJR

This specification consists of page i to iii and 1 to 4 inclusive.

APOLLO G&N Specification
PS-1015123 A
28 January 1964

PROCUREMENT SPECIFICATION

FOR

RESOLVER DRIVE AMPLIFIER MODULE ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Resolver Drive Amplifier Module Assembly, hereafter called the assembly. ed the assembly.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

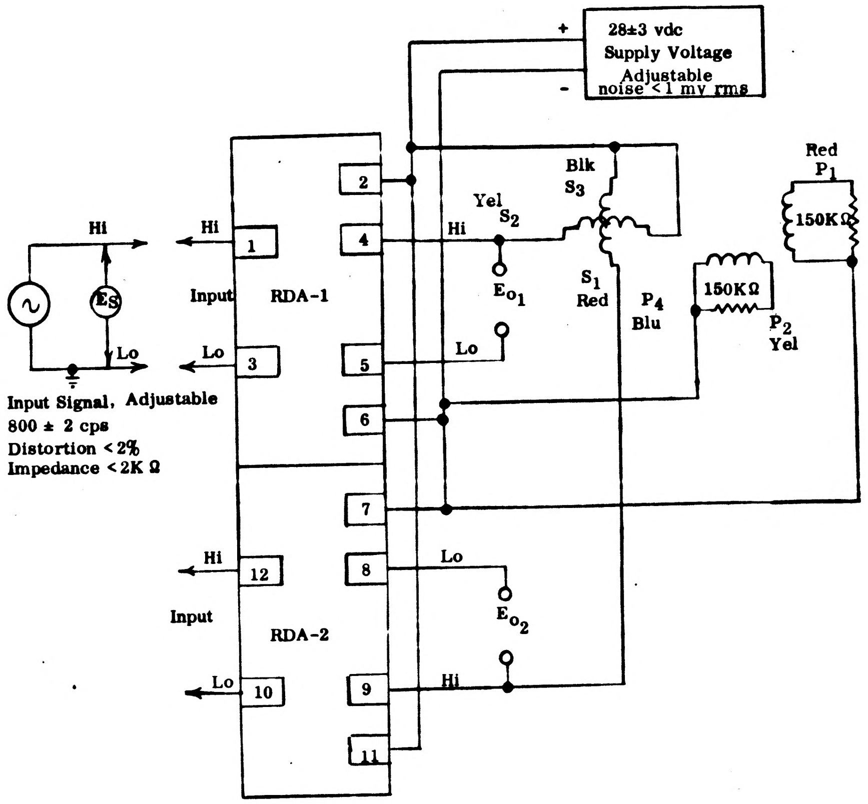
APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM-1015123	Final Test Method for Resolver Drive Amplifier Module Assembly

DRAWINGS

APOLLO G&N

1015123	Resolver Drive Amplifier Module Assembly


+
28±3 vdc
Supply Voltage
Adjustable
noise < 1 mv rms
-
2
Blk
S_3
Yel
S_2
Red
P_1
150KΩ
Hi
Hi
Hi
1
4
Input
RDA-1
E_{o_1}
S_1
Red
P_4
Blu
150KΩ
P_2
Yel
Lo
Lo
3
Lo
5
Input Signal, Adjustable
800 ± 2 cps
Distortion < 2%
Impedance < 2K Ω
6
7
Hi
12
8
Lo
Input
E_{o_2}
RDA-2
Lo
10
9
Hi
11

NOTES: Resolver - NASA P/N 1010341

$E_{S1}-3 = KE_{pl-3} \text{ Cos } \theta + E_{p2-4} \text{ Sin } \theta$

$ES2-3 = KE_{pl-3} \text{ Cos } \theta - KE_{pe-4} \text{ Sin } \theta$

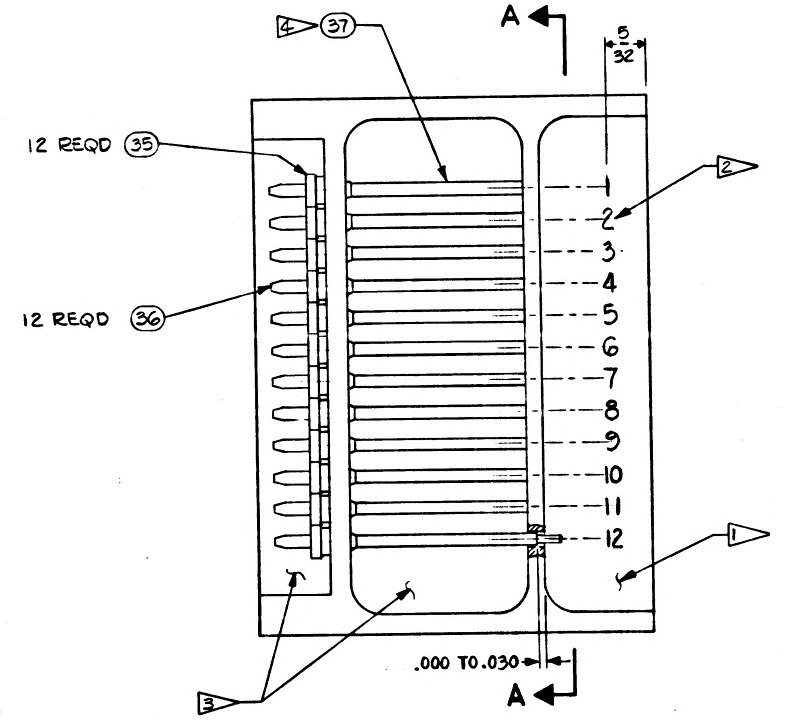
θ = Positive shaft angle for ccw rotation facing shaft.

RESOLVER DRIVE AMPLIFIER MODULE

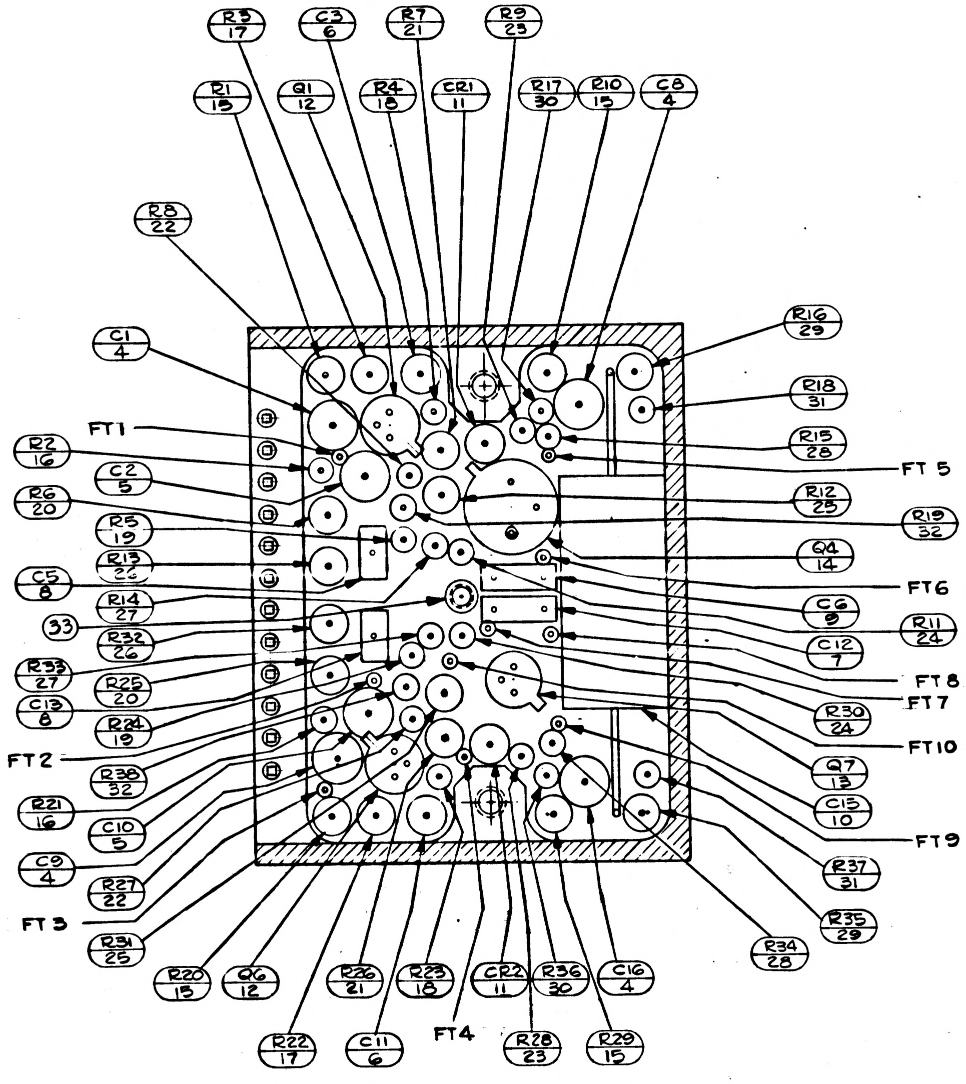
FUNCTIONAL SETUP

FIGURE 1

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B		REPLACES REV. A WITH CHANGES PER TDRR 223		5-13-63	wK



4 37
A
5/32
12 REQD 35
12 REQD 36
2
1
2
3
4
5
6
7
8
9
10
11
12
1
3
.000 TO .030
A



R3 17
C3 6
R7 21
R9 23
R1 15
Q1 12
R4 18
CR1 11
R17 30
R10 15
C8 4
R8 22
R16 29
C1 4
R18 31
FT1
R15 28
FT5
R2 16
C2 5
R12 25
R6 20
R19 32
R5 19
R13 22
Q4 14
C5 8
FT6
R14 27
C6 9
33
R32 26
R11 24
R33 27
C12 7
FT8
R25 20
FT7
C13 8
R30 24
R24 19
FT10
FT2
R38 32
Q7 13
R21 16
C15 10
C10 5
FT9
C9 4
R37 31
R27 22
FT3
R35 29
R31 25
R34 28
R20 15
Q6 12
R26 21
R23 18
CR2 11
R36 30
C16 4
R22 17
C11 6
FT4
R28 23
R29 15

SECTION A-A

B	B
SHEET 2	SHEET 1

REVISION STATUS

(B) REPLACES REVISION A WITH CHANGE

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.

WIRING STDS FOR WELDED UNITS PER ND1002003.

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM)

2 MARK CHARACTERS .080 HIGH, WHITE PER ND1002019. CENTRALIZE AS SHOWN.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

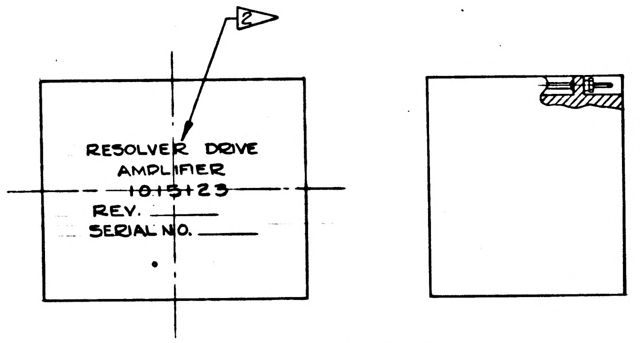
4 USE AS REQUIRED

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

ON ITEMS 2 & 3:
  BROKEN PATHS INDICATE SLEEVING
  "K" INDICATES CATHODE SIDE OF DIODE
  FT( ) INDICATES FEED THRU
  PLUS(+) INDICATES POSITIVE END OF CAPACITOR.
  "B" INDICATES BASE LEAD OF TRANSISTOR
  "C" " COLLECTOR " " "
  "E" " EMITTER " " "
  MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.

DRAWINGS FOR REFERENCE:
  1015120 SCHEMATIC DIAGRAM, ELEC



2
RESOLVER DRIVE
AMPLIFIER
1015123
REV.
SERIAL NO.

SCALE 2:1

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
41	2	AN500D-2-4	SCREW, FIL HD
40	AR	G&ND1002074	INSULATION SLEEVING #23
39	AR	1006787-2	WIRE ELEC -.020 DIA.
38	AR	1006757-1	WIRE ELEC -.010 × .020
37	AR	G&ND1002074	INSULATION SLEEVING #22
36	12	1006782-5	CONTACT, WRAPOST MALE MIN.
35	12	1006775	INSULATOR, WRAPOST MALE MIN
34	2	AN500D-4-12	SCREW, FIL HD
33	1	1015135-015	SPACER
32	2	1006750-42	
31	2	1006750-25	
30	2	1006750-12	
29	2	1010368-8	
28	2	1006750-56	
27	2	1006750-26	
26	2	1010364-673	
25	2	1010368-115	
24	2	1006750-66	
23	2	1006750-44	
22	2	1006750-32	
21	2	1010364-757	
20	2	1006750-73	
19	2	1006750-72	
18	2	1006750-84	
17	2	1010364-727	
16	2	1006750-77	
15	4	1010364-687	RESISTOR, FIXED
14	2	1010398-2	
13	2	1010357	
12	4	1010397	TRANSISTOR
11	2	1010372-24	SEMICONDUCTOR DEVICE-DIODE
10	2	1010375-56	
9	2	1010359-18	
8	2	1010409-33	
7	2	1010359-21	
6	2	1006755-45	
5	2	1006755-31	
4	4	1006755-79	CAPACITOR
3	1	1015719	WAFER-UPPER
2	1	1015718	WAFER-LOWER
1	1	1015717	FRAME (INSED ASSY)

LIST OF PARTS AND MATERIALS

1015123 B

1007 58	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + 1/64 − 1/64
DECIMALS +.005 −.005
ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Dusel DATE 3 MAY 63
CHECKED J. Sayler 7 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 5/7/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET OF 2

Carleton 7-MAY-63

Bottolfson

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
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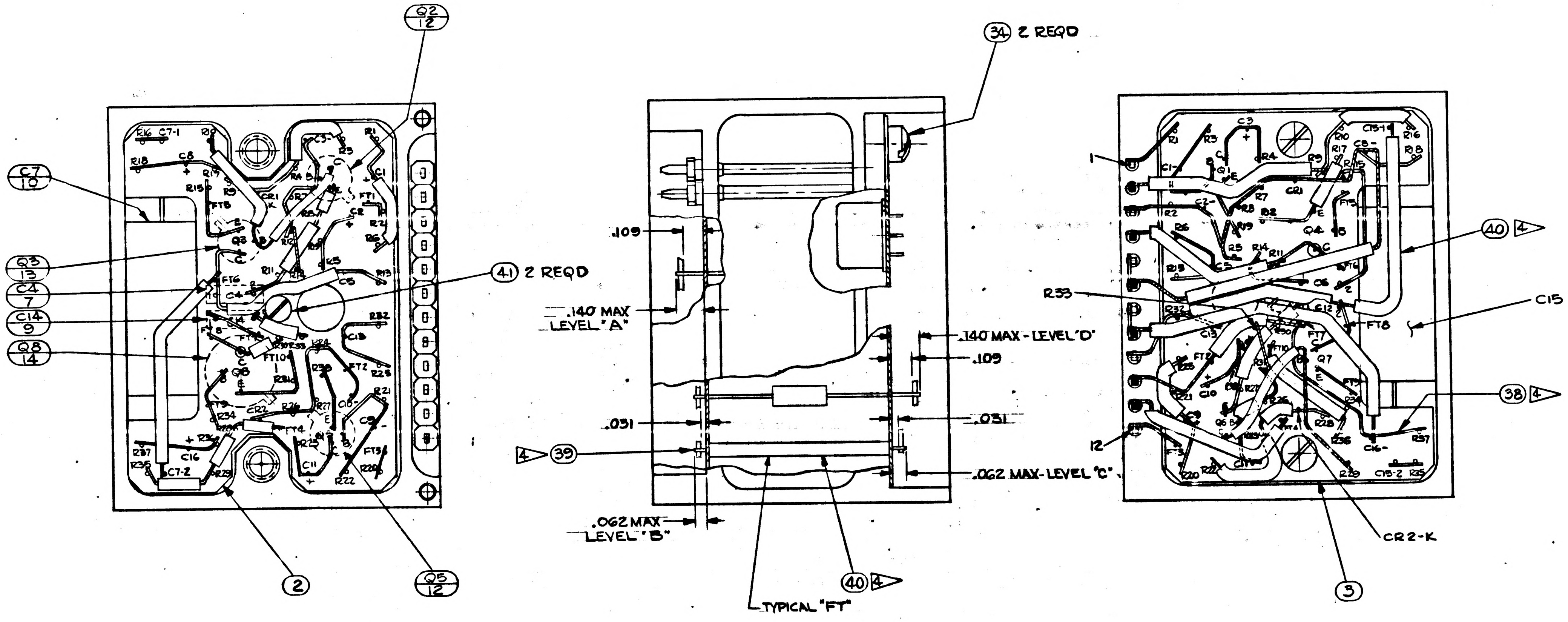

Q2 12
C7 10
Q3 13
C4 7
C14 9
Q8 14
41 2 REQD
2
Q5 12
34 2 REQD
.109
.140 MAX LEVEL "A"
.140 MAX - LEVEL "D"
.109
.031
.031
39 4
.062 MAX - LEVEL "C"
.062 MAX LEVEL "B"
40 4
TYPICAL "FT"
1
R53
40 4
C15
38 4
12
CR2-K
3

Ⓑ REPLACES REVISION A WITH CHANGE

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+
- 1/64	-.005	-

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orgel DATE 7 MAY 63
CHECKED 7 May 63
APPROVAL 7 May 63
APPROVAL 7 May 63
NASA APPROVAL 15 May 63
MIT APPROVAL W. Cooper 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET 2 OF 2

1015123 B

INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
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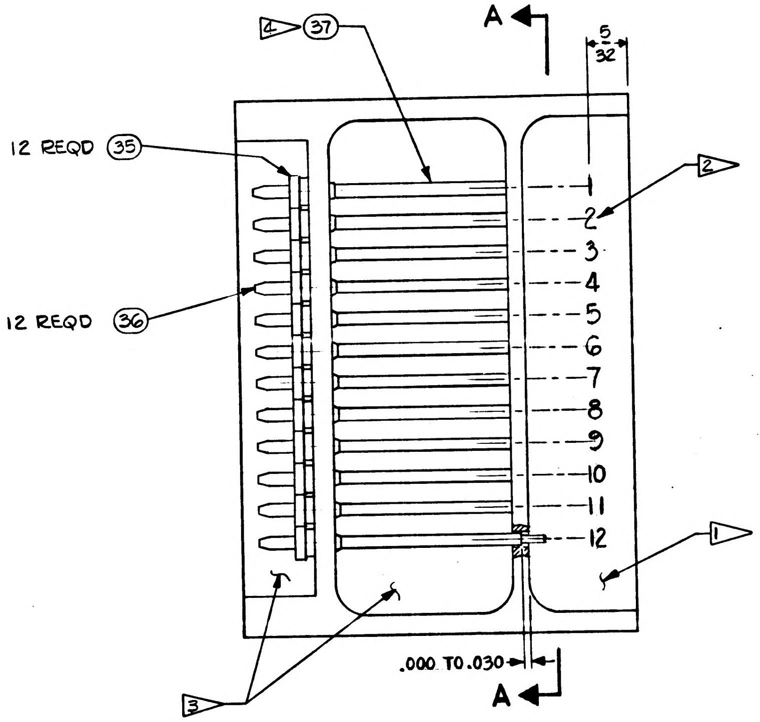
C		REVISED PER TDRR 03095			


A
5/32
4 37
12 REQD 35
12 REQD 36
2
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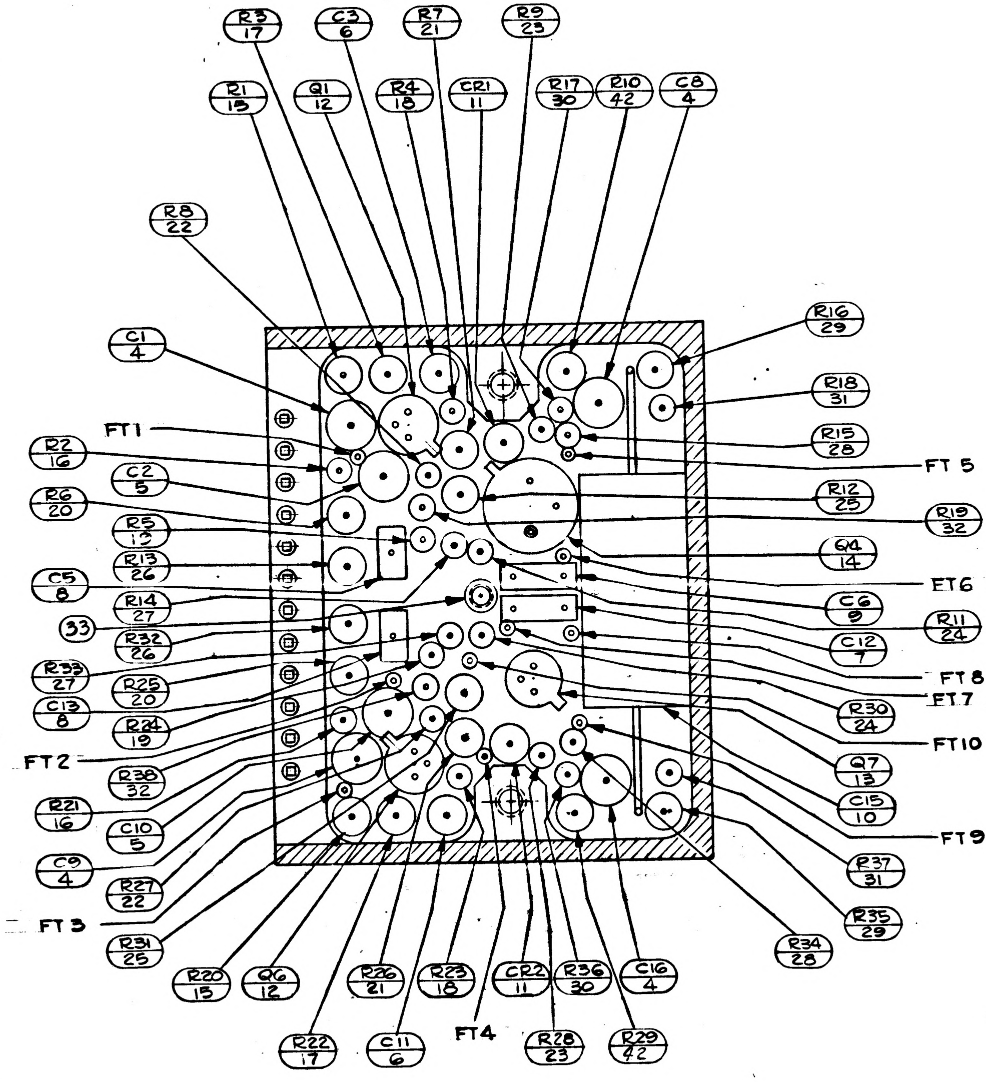
10
11
12
1
3
.000 TO .030
A


R3 17
C3 6
R7 21
R9 23
R1 15
Q1 12
R4 18
CR1 11
R17 30
R10 42
C8 4
R8 22
R16 29
C1 4
R18 31
FT1
R15 28
R2 16
FT 5
C2 5
R12 25
R6 20
R19 32
R5 19
R13 26
Q4 14
C5 8
FT6
R14 27
C6 9
33
R11 24
R32 26
C12 7
R33 27
FT8
R25 20
FT7
C13 8
R30 24
R24 19
FT10
FT2
Q7 13
R38 32
C15 10
R21 16
C10 5
FT9
C9 4
R37 31
R27 22
R35 29
FT 3
R34 28
R31 25
R20 15
Q6 12
R26 21
R23 18
CR2 11
R36 30
C16 4
R22 17
C11 6
FT4
R28 23
R29 42

SECTION A-A

Ⓑ REPLACES REVISION A WITH CHANGE

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009.

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BLACK DOT & CROSS-HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

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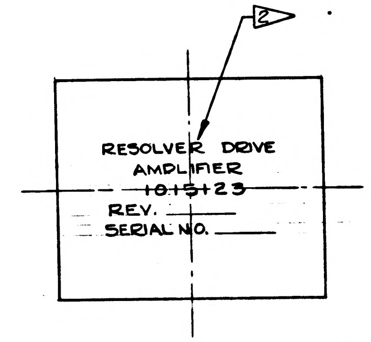
- "K" INDICATES CATHODE SIDE OF DIODE
- FT( ) INDICATES FEED THRU
- PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
- "B" INDICATES BASE LEAD OF TRANSISTOR
- "C" " COLLECTOR " " "
- "E" " EMITTER " " "
- MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.

DRAWINGS FOR REFERENCE:
1015120 SCHEMATIC DIAGRAM, ELEC


2
RESOLVER DRIVE
AMPLIFIER
1015123
REV.
SERIAL NO.

SCALE 2:1

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
42	2	1010364-693	RESISTOR, FIXED
41	2	AN500D-2-4	SCREW, FIL HD
40	AR	G&ND 1002074	INSULATION SLEEVING #23
39	AR	1006787-2	WIRE, ELEC -.020 DIA.
38	AR	1006757-1	WIRE, ELEC -.010 × .020
37	AR	G&ND 1002074	INSULATION SLEEVING #22
36	12	1006782-5	CONTACT, WRAPOST MALE MIN.
35	12	1006775	INSULATOR, WRAPOST MALE MIN.
34	2	AN500D-4-12	SCREW, FIL HD
33	1	1015135-015	SPACER
32	2	1006750-42	
31	2	1006750-25	
30	2	1006750-12	
29	2	1010368-8	
28	2	1006750-56	
27	2	1006750-26	
26	2	1010364-673	
25	2	1010368-115	
24	2	1006750-66	
23	2	1006750-44	
22	2	1006750-32	
21	2	1010364-757	
20	2	1006750-73	
19	2	1006750-72	
18	2	1006750-84	
17	2	1010364-727	
16	2	1006750-77	
15	2	1010364-687	RESISTOR, FIXED
14	2	1010398-2	
13	2	1010357	
12	4	1010397	TRANSISTOR
11	2	1010372-24	SEMICONDUCTOR DEVICE-DIODE
10	2	1010375-56	
9	2	1010359-18	
8	2	1010409-33	
7	2	1010359-21	
6	2	1006755-45	
5	2	1006755-31	
4	4	1006755-79	CAPACITOR
3	1	1015719	WAFER-UPPER
2	1	1015718	WAFER-LOWER
1	1	1015717	FRAME (INSED ASSY)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Ousel DATE 3 MAY 63
CHECKED J. Bayley 7 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFER
MODULE ASSY

CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET 1 OF 2

Charleston 7-MAY-63

BOTTOLFSON

1015123

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGES SEE SHEET 1 TDRR 1223		5-13-63	WK
C		REVISED PER TDRR 03095		9-?-63	[illegible]

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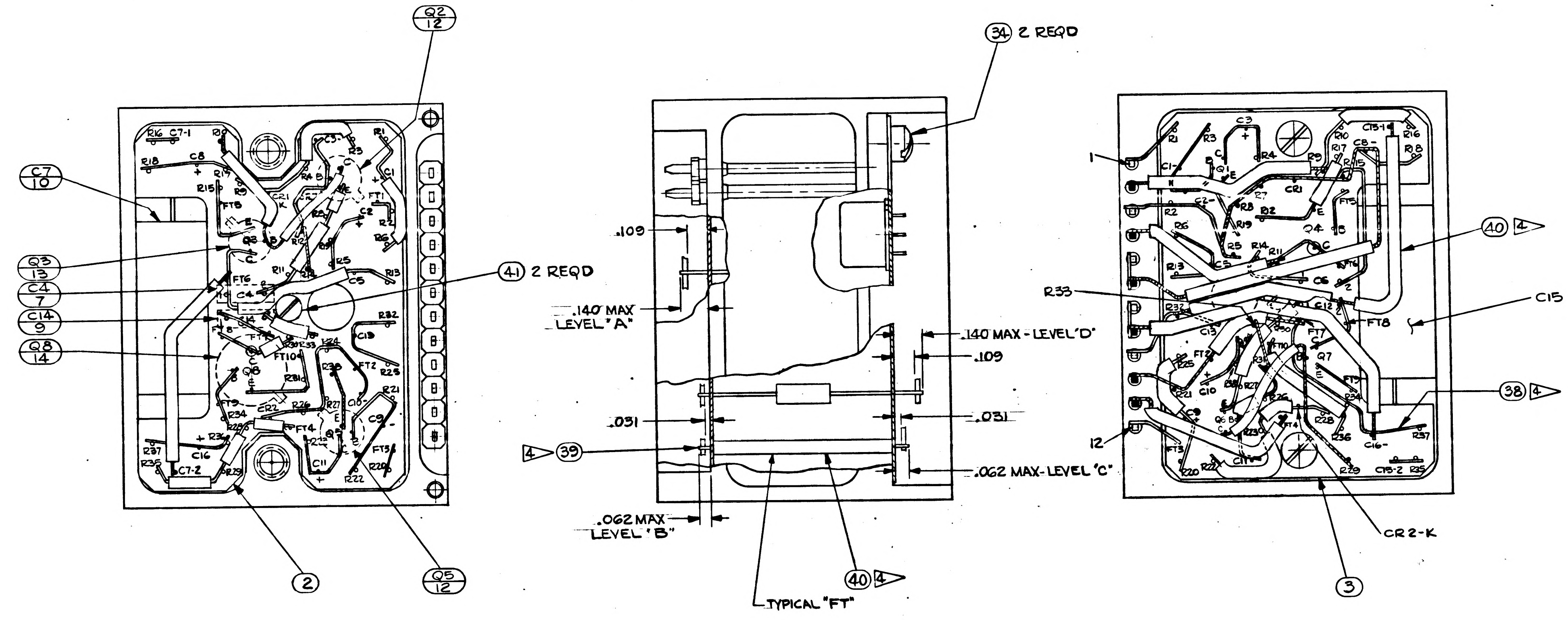


Q2 12
C7 10
Q3 13
C4 7
C14 9
Q8 14
41 2 REQD
2
Q5 12
R16
C7-1
R18
C8
R15
FT6
FT10
FT4
R37
R35
C7-2
C16
R23
R34
R32
R13
C13
C5
C1
C2
C9
C11
R22
FT2
R21
R28
R33
34 2 REQD
.109
.140 MAX LEVEL "A"
.031
4 39
.062 MAX LEVEL "B"
TYPICAL "FT"
40 4
.140 MAX - LEVEL "D"
.109
.031
.062 MAX - LEVEL "C"
1
R33
12
40 4
C15
38 4
FT8
CR1
CR2-K
C3
C15-1
C15-2
R16
R18
R6
R2
R13
R21
R24
Q7
FT7
FT3
R37
R35
R29
R20
3

Ⓑ REPLACES REVISION A WITH CHANGE

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+
- 1/64	-.005	-

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

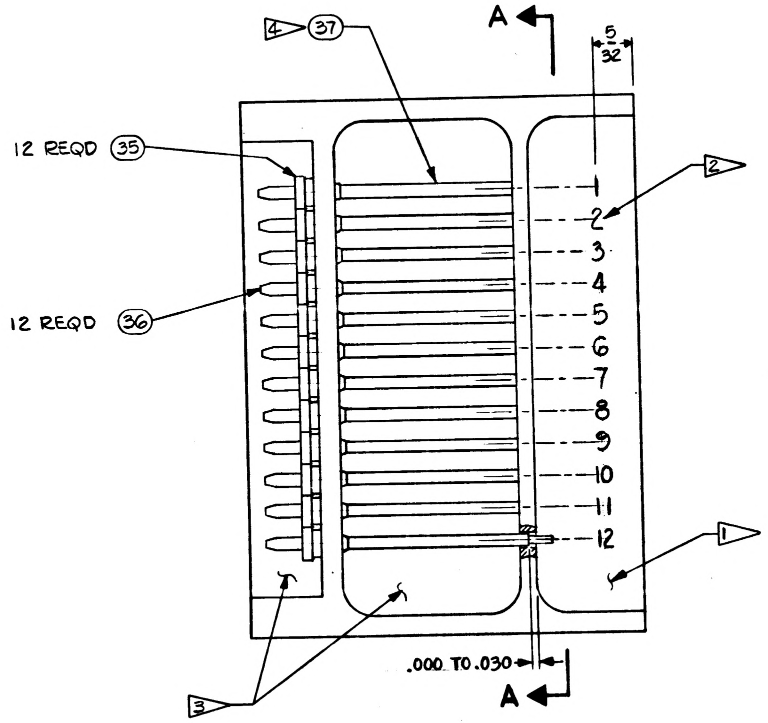
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orgel DATE 7 MAY 63
CHECKED J. Taylor 7 May 63
APPROVAL [illegible] 7 May 63
APPROVAL A. Riedel 7 May 63
NASA APPROVAL [illegible] 15 May 63
MIT APPROVAL W. Cooper 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY


4
37
A
5/32
12 REQD 35
12 REQD 36
2
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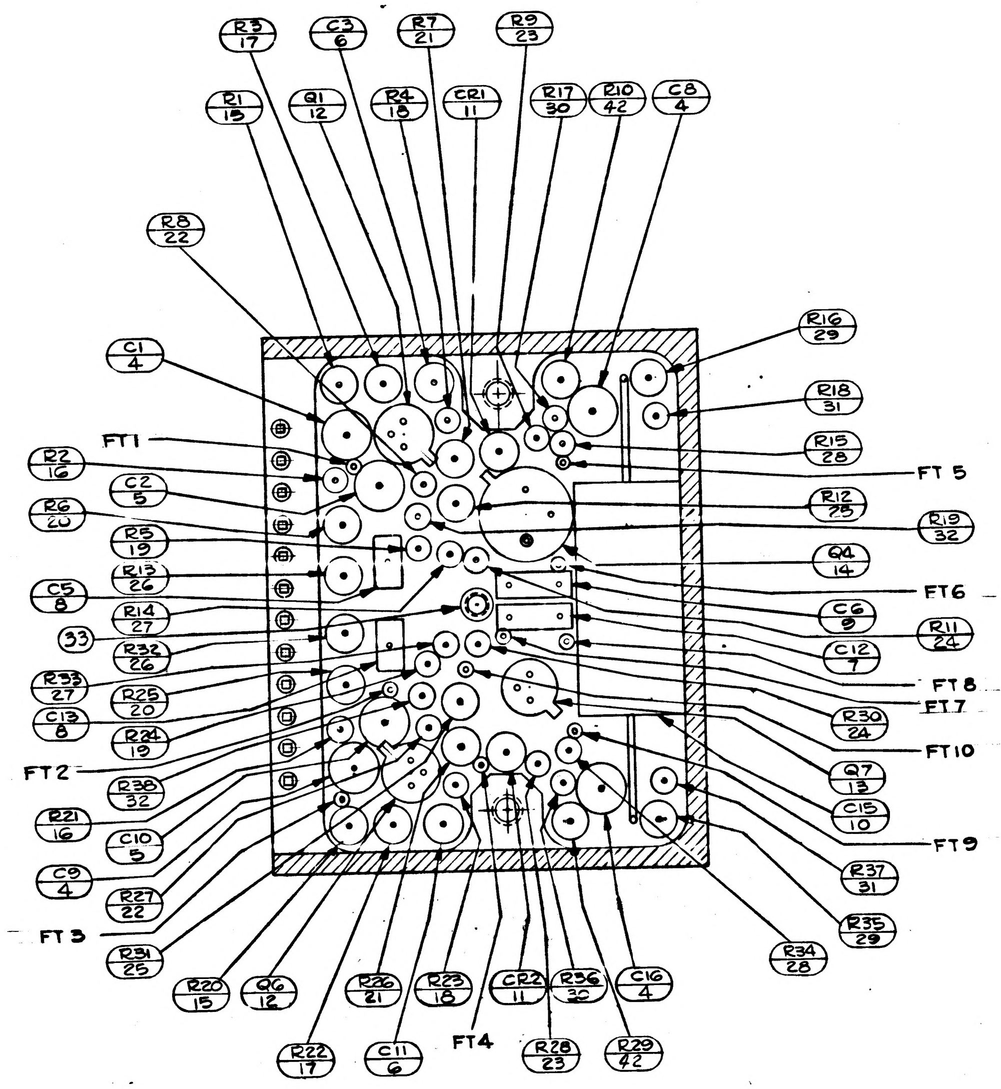
12
1
3
.000 TO .030
A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R7 21
R9 23
R1 15
Q1 12
R4 18
CR1 11
R17 30
R10 42
C8 4
R8 22
C1 4
FT1
R2 16
C2 5
R6 20
R5 19
R13 26
C5 8
R14 27
33
R32 26
R33 27
R25 20
C13 8
R24 19
FT2
R38 32
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C10 5
C9 4
R27 22
FT3
R31 25
R20 15
Q6 12
R22 17
R26 21
C11 6
R23 18
FT4
CR2 11
R28 23
R36 32
R29 42
C16 4
R16 29
R18 31
R15 28
FT5
R12 25
R19 32
Q4 14
FT6
C6 9
R11 24
C12 7
FT8
FT7
R30 24
FT10
Q7 13
C15 10
FT9
R37 31
R35 29
R34 28

SECTION A-A

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.

WIRING STDS FOR WELDED UNITS PER ND1002003.

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM)

2 MARK CHARACTERS .080 HIGH, WHITE PER ND1002.019. CENTRALIZE AS SHOWN.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

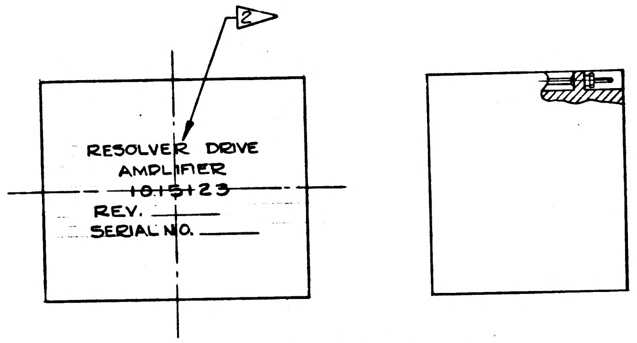
4 USE AS REQUIRED

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

ON ITEMS 2 & 3:
  BROKEN PATHS INDICATE SLEEVING
  "K" INDICATES CATHODE SIDE OF DIODE
  FT( ) INDICATES FEED THRU
  PLUS(+) INDICATES POSITIVE END OF CAPACITOR.
  "B" INDICATES BASE LEAD OF TRANSISTOR
  "C" " COLLECTOR " " "
  "E" " EMITTER " " "
  MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.

DRAWINGS FOR REFERENCE:
  1015120 SCHEMATIC DIAGRAM, ELEC


2
RESOLVER DRIVE
AMPLIFIER
1015123
REV.
SERIAL NO.

SCALE 2:1

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV. A WITH CHANGES PER TDRR 1223		5-13-63	WK
C		REVISED PER TDRR 03095		9/12/63	
D		REVISED PER TDRR [illegible]			

(B) REPLACES REVISION A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
42	2	1010364-693	RESISTOR, FIXED
41	2	AN500D-2-4	SCREW, FIL HD
40	AR	G&ND1002074	INSULATION SLEEVING #23
39	AR	1006787-2	WIRE ELEC -.020 DIA.
38	AR	1006757-1	WIRE ELEC -.010 × .020
37	AR	G&ND1002074	INSULATION SLEEVING #22
36	12	1006782-5	CONTACT, WRAPOST MALE MIN.
35	12	1006775	INSULATOR, WRAPOST MALE MIN.
34	2	AN500D-4-12	SCREW, FIL HD
33	1	1015135-015	SPACER
32	2	1006750-42	
31	2	1006750-25	
30	2	1006750-12	
29	2	1010368-8	
28	2	1006750-56	
27	2	1006750-26	
26	2	1010364-673	
25	2	1010368-115	
24	2	1006750-66	
23	2	1006750-44	
22	2	1006750-32	
21	2	1010364-757	
20	2	1006750-73	
19	2	1006750-72	
18	2	1006750-84	
17	2	1010364-727	
16	2	1006750-77	
15	2	1010364-687	RESISTOR, FIXED
14	2	1010398-2	
13	2	1010357-1	
12	4	1010397-1	TRANSISTOR
11	2	1010372-24	SEMICONDUCTOR DEVICE-DIODE
10	2	1010375-56	
9	2	1010359-18	
8	2	1010409-33	
7	2	1010359-21	
6	2	1006755-45	
5	2	1006755-31	
4	4	1006755-79	CAPACITOR
3	1	1015719	WAFER-UPPER
2	1	1015718	WAFER-LOWER
1	1	1015717	FRAME (INSEP ASSY)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+
- 1/64	-.005	-

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Ousel DATE 3 MAY 63
CHECKED J. Bayley 7 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MA 63
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

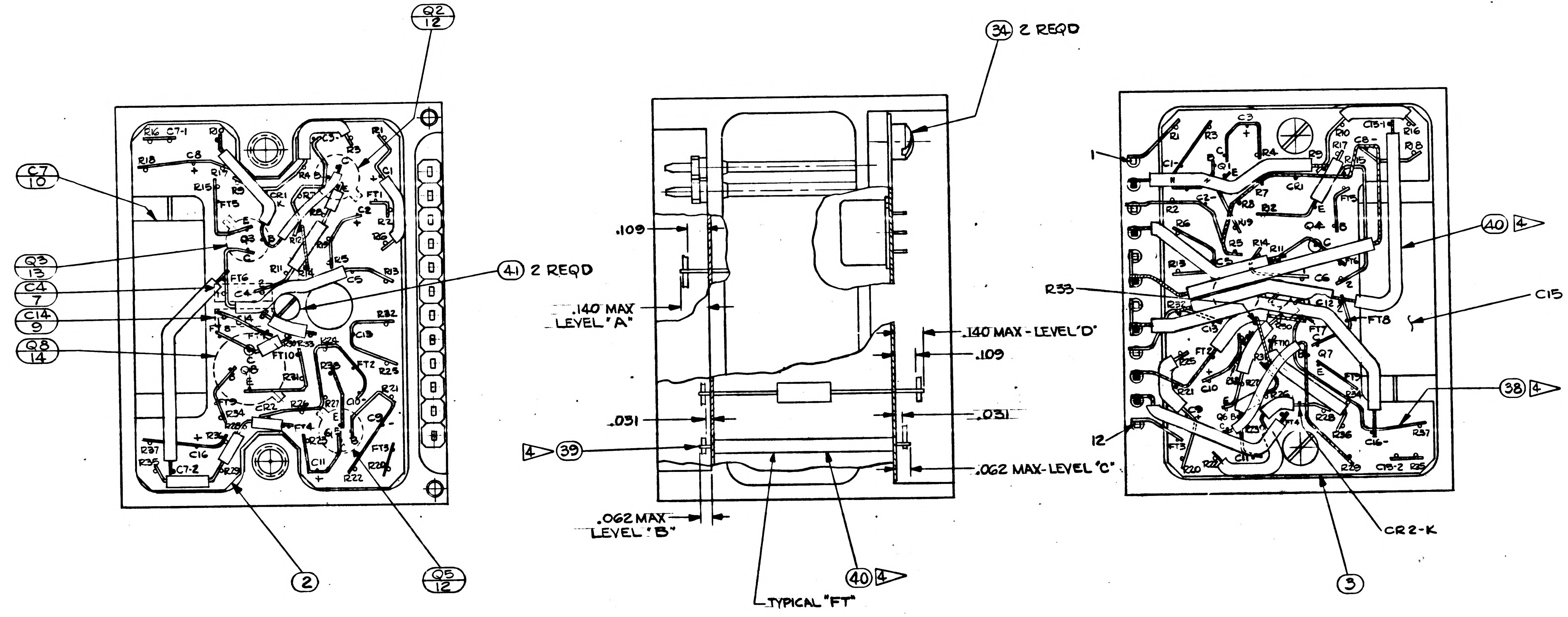
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFER
MODULE ASSY

CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET 1 OF 2

7 MAY 63
BOTTOLFSON

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGES SEE SHEET 1 TDRR 1223		5-13-63	wK
C		REVISED PER TDRR 03095		7-2-63	
D		REVISED PER TDRR 03709			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C7 10
Q3 13
C4 7
C14 9
Q8 14
41 2 REQD
2
Q5 12
34 2 REQD
.109
.140 MAX LEVEL 'A'
.140 MAX - LEVEL 'D'
.109
.031
.031
4 39
.062 MAX - LEVEL 'C'
.062 MAX LEVEL 'B'
TYPICAL "FT"
40 4
1
R33
40 4
C15
38 4
12
CR2-K
3

Ⓑ REPLACES REVISION A WITH CHANGE

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

NEXT ASSY | USED ON
APPLICATION

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orzel DATE 7 MAY 63
CHECKED 7 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 15 May 63
MIT APPROVAL W Caffer 15 May 63

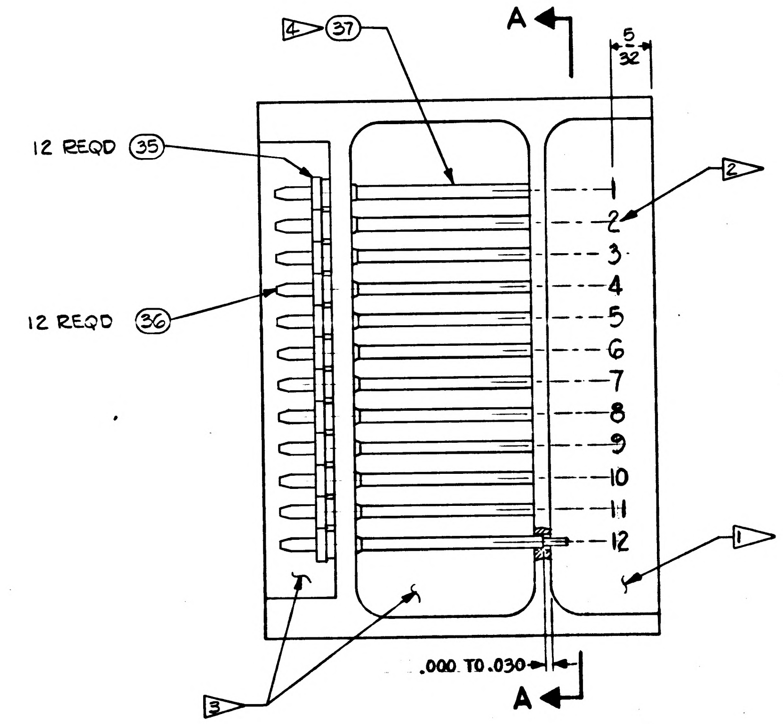
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

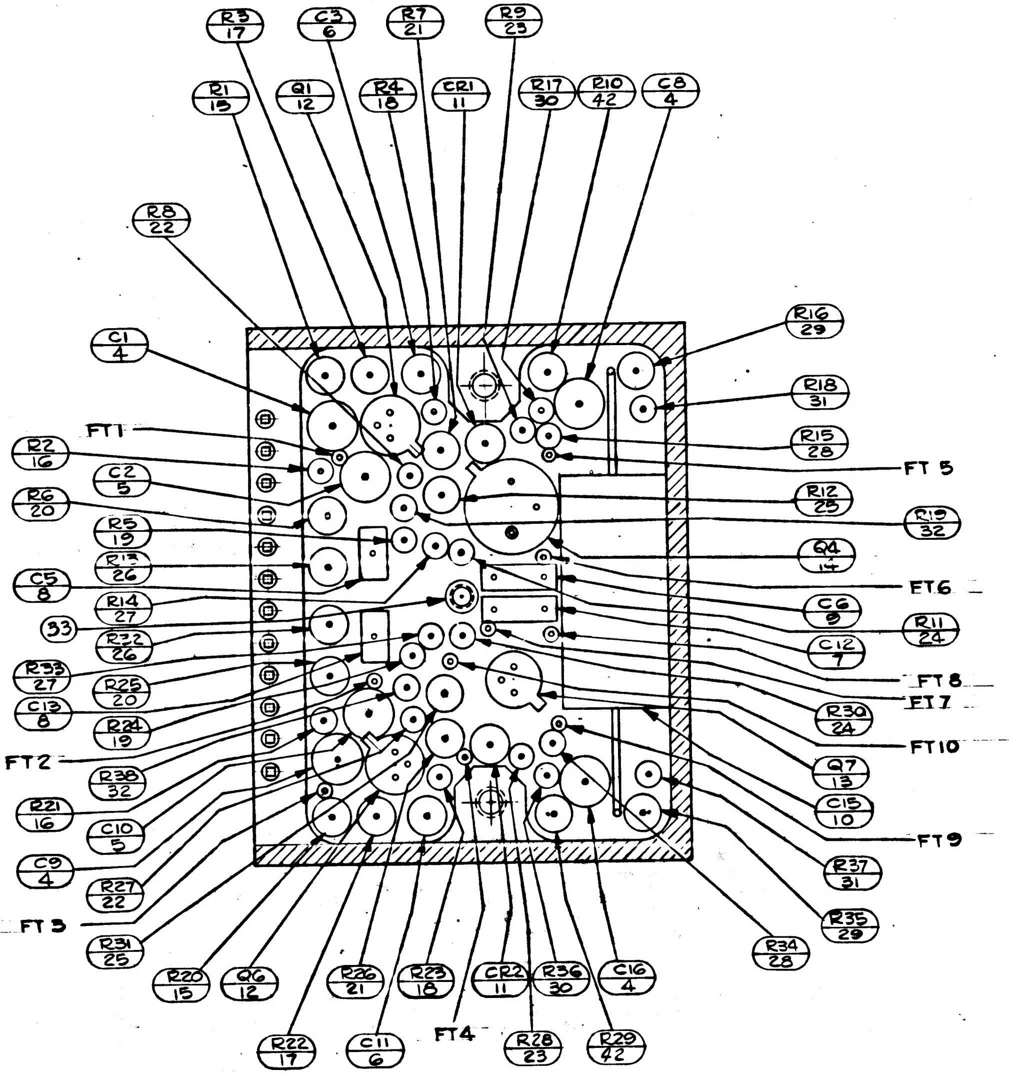
CODE IDENT NO
SIZE E
1015123
SCALE 4:1
SHEET 2 OF 2

INCHES
0 1
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV. A WITH CHANGES PER TDRR 1223		5-13-63	wk
C		REVISED PER TDRR 03095		9-12-63	W
D		REVISED PER TDRR [illegible]9			W
E		REVISED PER TDRR 04125			W



A
5/32
4 37
12 REQD 35
12 REQD 36
2
1
2
3
4
5
6
7
8
9
10
11
12
1
3
.000 TO .030
A



R3 17
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R9 23
R1 15
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R4 18
CR1 11
R17 30
R10 42
C8 4
R8 22
C1 4
R16 29
R18 31
R15 28
FT1
R2 16
C2 5
FT 5
R12 25
R6 20
R19 32
R5 19
Q4 14
R13 26
FT6
C5 8
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C12 7
R33 27
FT 8
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C13 8
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FT2
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Q7 13
R21 16
C15 10
C10 5
FT9
C9 4
R37 31
R27 22
R35 29
FT 5
R34 28
R31 25
R20 15
Q6 12
R26 21
R23 18
CR2 11
R36 30
C16 4
FT4
C11 6
R28 23
R29 42
R22 17

SECTION A-A

Ⓑ REPLACES REVISION A WITH CHANGE

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.

WIRING STDS FOR WELDED UNITS PER ND1002003.

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM)

2 MARK CHARACTERS .080 HIGH, WHITE PER ND1002019.
CENTRALIZE AS SHOWN.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

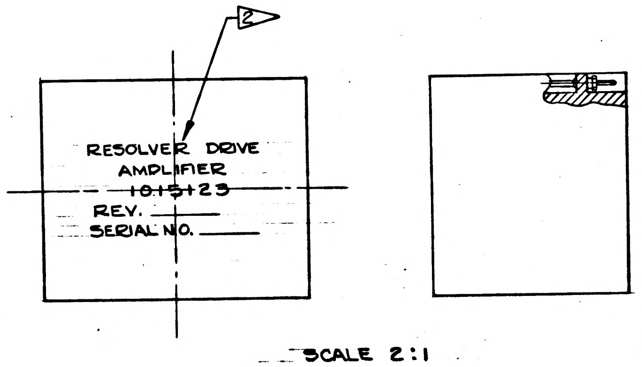
4 USE AS REQUIRED

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

ON ITEMS 2 & 3:
BROKEN PATHS INDICATE SLEEVING
"K" INDICATES CATHODE SIDE OF DIODE
FT( ) INDICATES FEED THRU
PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
"B" INDICATES BASE LEAD OF TRANSISTOR
"C" " COLLECTOR " " "
"E" " EMITTER " " "
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.

DRAWINGS FOR REFERENCE:
1015120 SCHEMATIC DIAGRAM, ELEC



2
RESOLVER DRIVE AMPLIFIER
1015123
REV.
SERIAL NO.

SCALE 2:1

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
43	AR	1006776-22	INSULATION SLEEVING #24
42	2	1010364-693	RESISTOR, FIXED
41	2	AN500D-2-4	SCREW, FIL HD
40	AR	1006776-21	INSULATION SLEEVING #22
39	AR	1006787-2	WIRE, ELEC -.020 DIA.
38	AR	1006757-1	WIRE, ELEC -.010 × .020
37	AR	1006776-20	INSULATION SLEEVING #20
36	12	1006782-5	CONTACT, WRAPOST MALE MIN.
35	12	1006775	INSULATOR, WRAPOST MALE MIN.
34	2	AN500D-4-12	SCREW, FIL HD
33	1	1015135-015	SPACER
32	2	1006750-42	↑
31	2	1006750-25	
30	2	1006750-12	
29	2	1010368-8	
28	2	1006750-56	
27	2	1006750-26	
26	2	1010364-673	
25	2	1010368-115	
24	2	1006750-66	
23	2	1006750-44	
22	2	1006750-32	
21	2	1010364-757	
20	2	1006750-73	
19	2	1006750-72	
18	2	1006750-84	
17	2	1010364-727	
16	2	1006750-77	
15	2	1010364-687	RESISTOR, FIXED
14	2	1010398-2	↑
13	2	1010357-1	
12	4	1010397-1	TRANSISTOR
11	2	1010372-24	SEMICONDUCTOR DEVICE-DIODE
10	2	1010375-56	↑
9	2	1010359-18	
8	2	1010409-33	
7	2	1010359-21	
6	2	1006755-45	
5	2	1006755-31	
4	4	1006755-79	CAPACITOR
3	1	1015719	WAFER-UPPER
2	1	1015718	WAFER-LOWER
1	1	1015717	FRAME (INSEP ASSY)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Ousel DATE 3 MAY 63
CHECKED J. Sayler 7 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 5/15/63
MIT APPROVAL W. Cooper 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

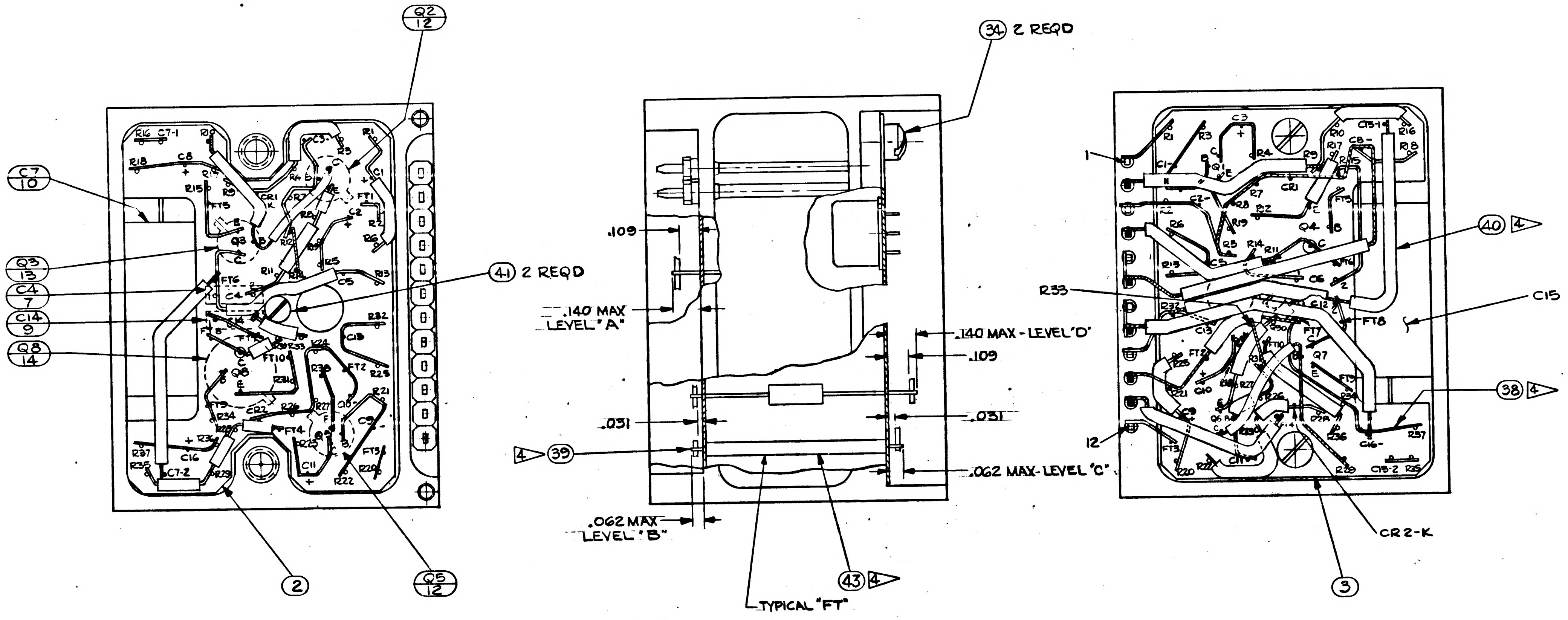
CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET 1 OF 2

Charleston 7 MAY 63

Bottolfson

INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGES SEE SHEET 1 TDRR 1223		5-13-63	WK
C		REVISED PER TDRR 03095			WK
D		REVISED PER TDRR [illegible]			
E		REVISED PER TDRR 04125			



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C7 10
Q3 13
C4 7
C14 9
Q8 14
41 2 REQD
2
Q5 12
34 2 REQD
.109
.140 MAX LEVEL "A"
.140 MAX - LEVEL "D"
.109
.031
.031
4 39
.062 MAX - LEVEL "C"
.062 MAX LEVEL "B"
TYPICAL "FT"
43 4
1
R33
12
40 4
C15
38 4
CR2-K
3

Ⓑ REPLACES REVISION A WITH CHANGE

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

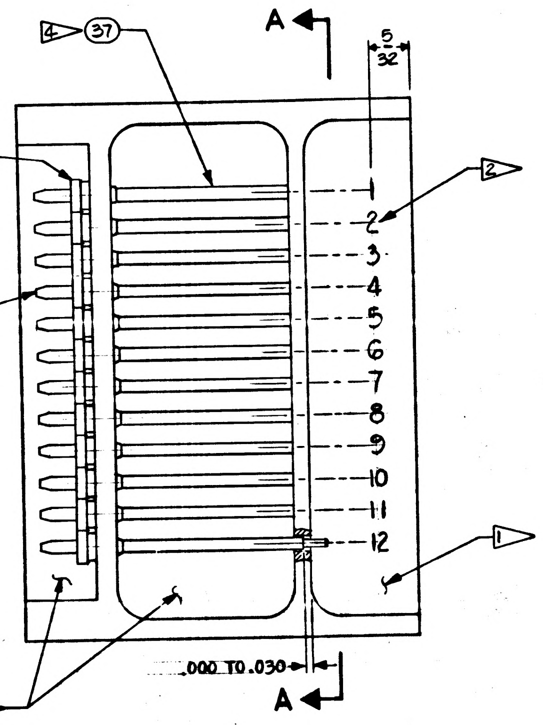
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orgel DATE 7 MAY 63
CHECKED 7 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 15 May 63
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV. A WITH CHANGES PER TDRR 1223		5-13-63	WK
C		REVISED PER TDRR 03095		9 18 63	WK
D		REVISED PER TDRR 03709			W.C.
E		REVISED PER TDRR 04125			WK
F		REVISED PER TDRR 04458		6 NOV 63	


A
5/32
4 37
5 12 REQD 35
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.000 TO .030
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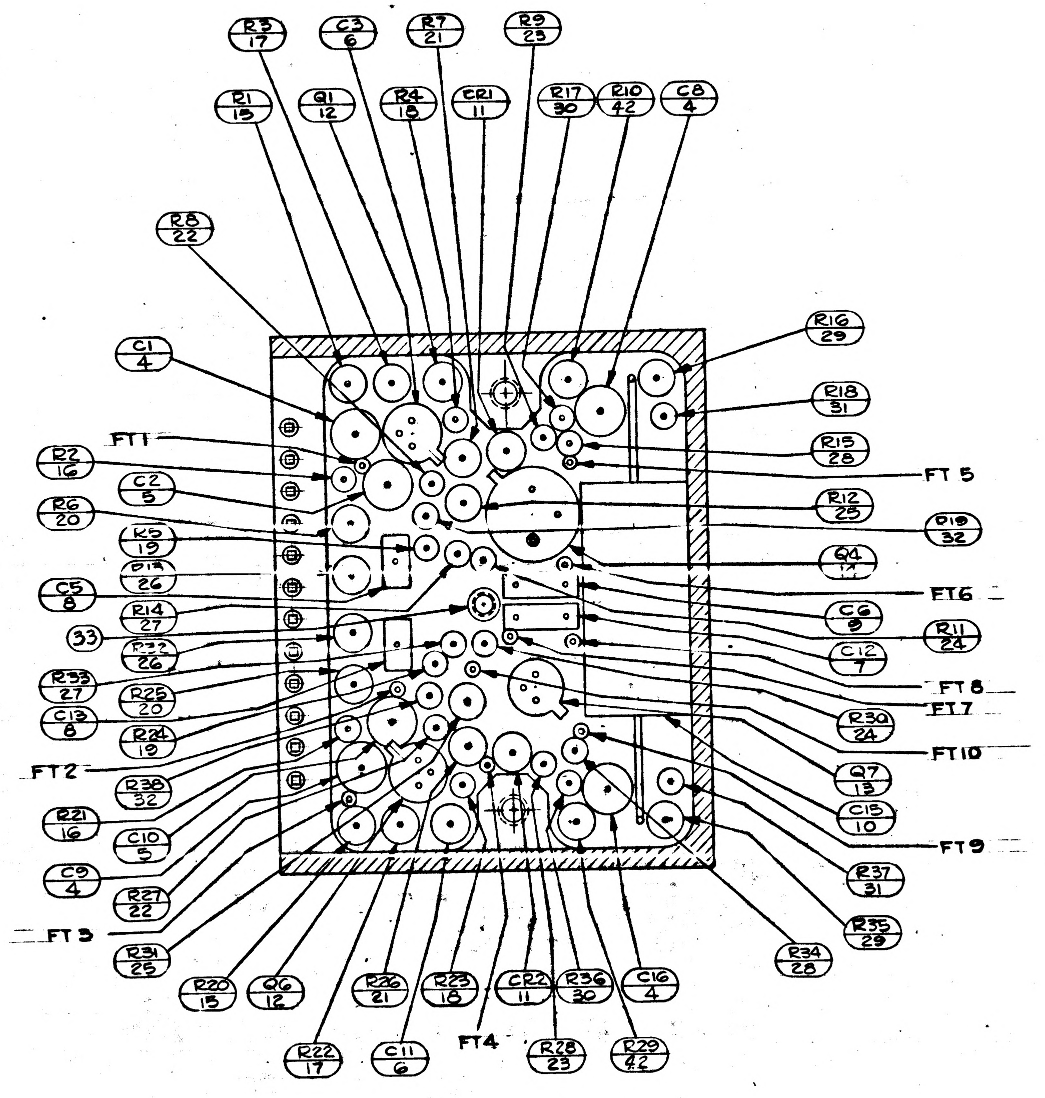
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R9 25
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Q1 12
R4 18
CR1 11
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R10 42
C8 4
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C1 4
R16 29
R18 31
R15 28
FT 5
FT1
R2 16
C2 5
R6 20
R12 25
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C5 8
FT6
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C6 9
R11 24
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C9 4
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R35 29
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R34 28
R20 15
Q6 12
R26 21
R23 18
CR2 11
R36 30
C16 4
FT4
R22 17
C11 6
R28 23
R29 42

SECTION A-A

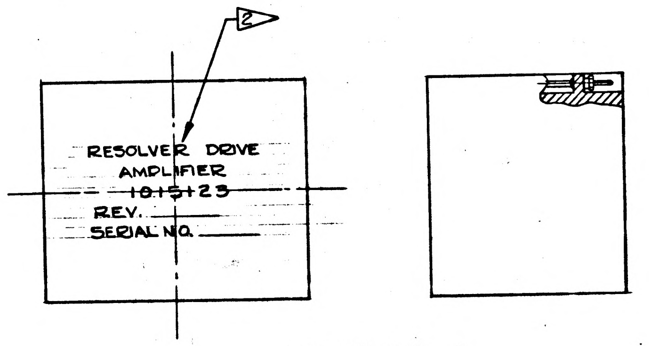
B REPLACES REVISION A WITH CHANGE

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002004.

ALL WELDED CONNECTIONS TO BE MADE PER ND1002005


2
RESOLVER DRIVE
AMPLIFIER
1015123
REV.
SERIAL NO.

SCALE 2:1

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM)

2 MARK CHARACTERS .060-.100 HIGH, WHITE PER ND1002019. CENTRALIZE AS SHOWN.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

ON ITEMS 2 & 3:
- BROKEN PATHS INDICATE SLEEVING
- "K" INDICATES CATHODE SIDE OF DIODE
- FT( ) INDICATES FEED THRU
- PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
- "B" INDICATES BASE LEAD OF TRANSISTOR
- "C" " COLLECTOR " "
- "E" " EMITTER " "
- MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.

DRAWINGS FOR REFERENCE:
- 1015120 SCHEMATIC DIAGRAM, ELEC

5 ASSEMBLE PER ND1002136

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
43	AR	1006776-22	INSULATION SLEEVING #24
42	2	1010364-693	RESISTOR, FIXED
41	2	AN500D-2-4	SCREW, FIL HD
40	AR	1006776-21	INSULATION SLEEVING #22
39	AR	1006787-2	WIRE ELEC -.020 DIA.
38	AR	1006757-1	WIRE, ELEC -.010 × .020
37	AR	1006776-20	INSULATION SLEEVING #20
36	12	1006782-5	CONTACT, WRAPOST MALE MIN.
35	12	1006775	INSULATOR, WRAPOST MALE MIN.
34	2	AN500D-4-12	SCREW, FIL HD
33	1	1015135-015	SPACER
32	2	1006750-42	
31	2	1006750-25	
30	2	1006750-12	
29	2	1010368-8	
28	2	1006750-56	
27	2	1006750-26	
26	2	1010364-673	
25	2	1010368-115	
24	2	1006750-66	
23	2	1006750-44	
22	2	1006750-32	
21	2	1010364-757	
20	2	1006750-73	
19	2	1006750-72	
18	2	1006750-84	
17	2	1010364-727	
16	2	1006750-77	
15	2	1010364-687	RESISTOR, FIXED
14	2	1010398-2	
13	2	1010357-1	
12	4	1010397-1	TRANSISTOR
11	2	1010372-24	SEMICONDUCTOR DEVICE-DIODE
10	2	1010375-56	
9	2	1010359-18	
8	2	1010409-33	
7	2	1010359-21	
6	2	1006755-45	
5	2	1006755-31	
4	4	1006755-79	CAPACITOR
3	1	1015719	WAFER-UPPER
2	1	1015718	WAFER-LOWER
1	1	1015717	FRAME (INSEP ASSY)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + 1/64 - 1/64
DECIMALS +.005 -.005
ANGLES + -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Dusel DATE 3 MAY 63
CHECKED J. Bayley 7 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 5/15/63
MIT APPROVAL W. Copper 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

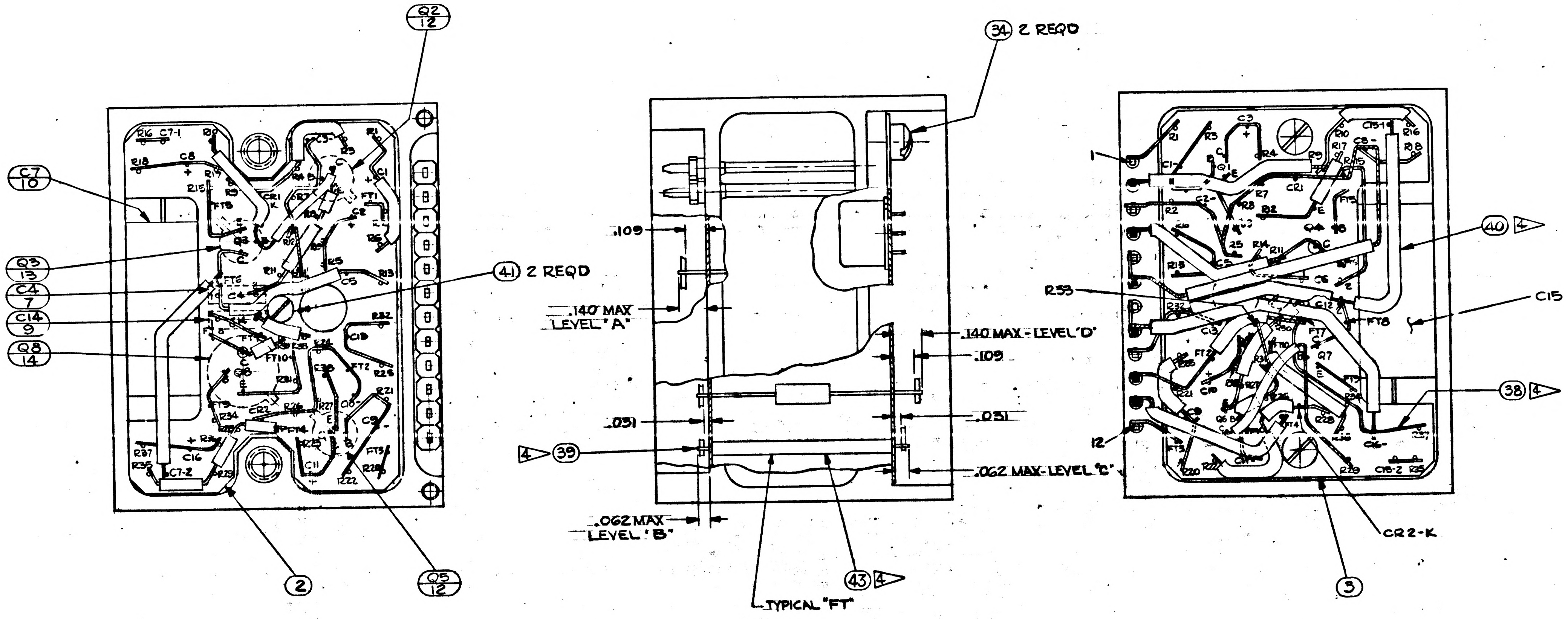
RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET 1 OF 2

Charleston 7-MAY-63
BOTTOLFSON

1015123

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGES SEE SHEET 1 TDRR 1223		5-13-63	WK
C		REVISED PER TDRR 03095		9-12-63	WK
D		REVISED PER TDRR 03709			
E		REVISED PER TDRR 04125			
F		REVISED PER TDRR 04468		3 Nov 63	



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C4 7
C14 9
Q8 14
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Q5 12
34 2 REQD
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.140 MAX - LEVEL "D"
.109
.051
.051
4 39
.062 MAX - LEVEL "C"
.062 MAX LEVEL "B"
43 4
TYPICAL "FT"
1
40 4
R53
C15
38 4
12
CR2-K
3

Ⓑ REPLACES REVISION A WITH CHANGE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	
FRACTIONS +1/64 -1/64	DECIMALS +.005 -.005
DO NOT SCALE THIS DRAWING	
MATERIAL	
CONTRACT	

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orzal DATE 7 MAY 63
CHECKED 7 May 63
APPROVAL 7 May 63
APPROVAL 7 MAY 63
NASA APPROVAL 15 May 63
MIT APPROVAL W Kupfer 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

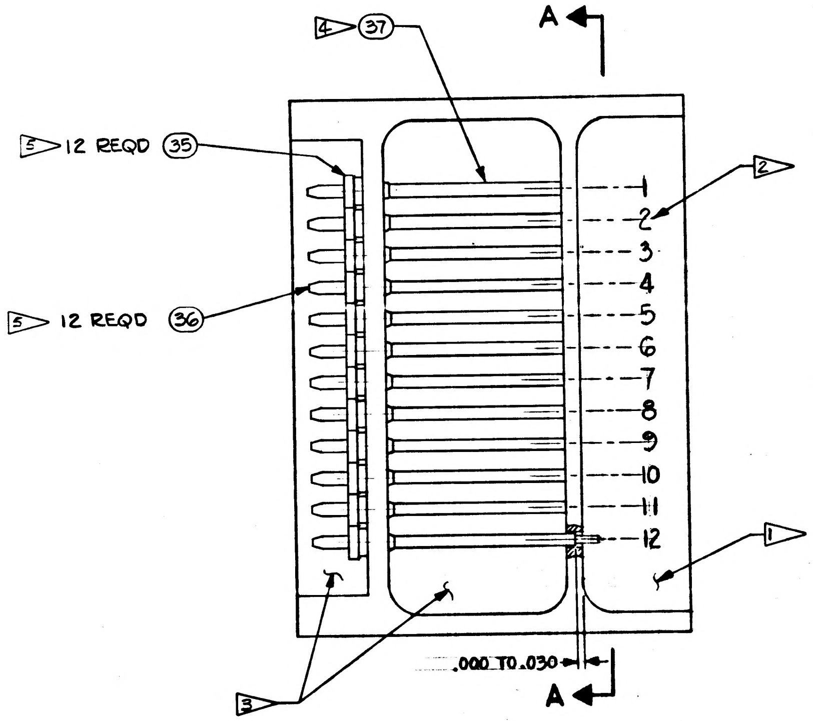
RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO.	SIZE	
	E	1015123
SCALE 4:1		SHEET 2 OF 2

NEXT ASSY | USED ON
APPLICATION

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
B		REPLACES REV. A WITH CHANGES PER TDRR 1223		5-13-63	WK
C		REVISED PER TDRR 03095			W
D		REVISED PER TDRR 03709			
E		REVISED PER TDRR 04125			
F		REVISED PER TDRR 04458			
G		REVISED PER TDRR 05402		DEC	



A
A
4 37
5 12 REQD 35
5 12 REQD 36
2
1
2
3
4
5
6
7
8
9
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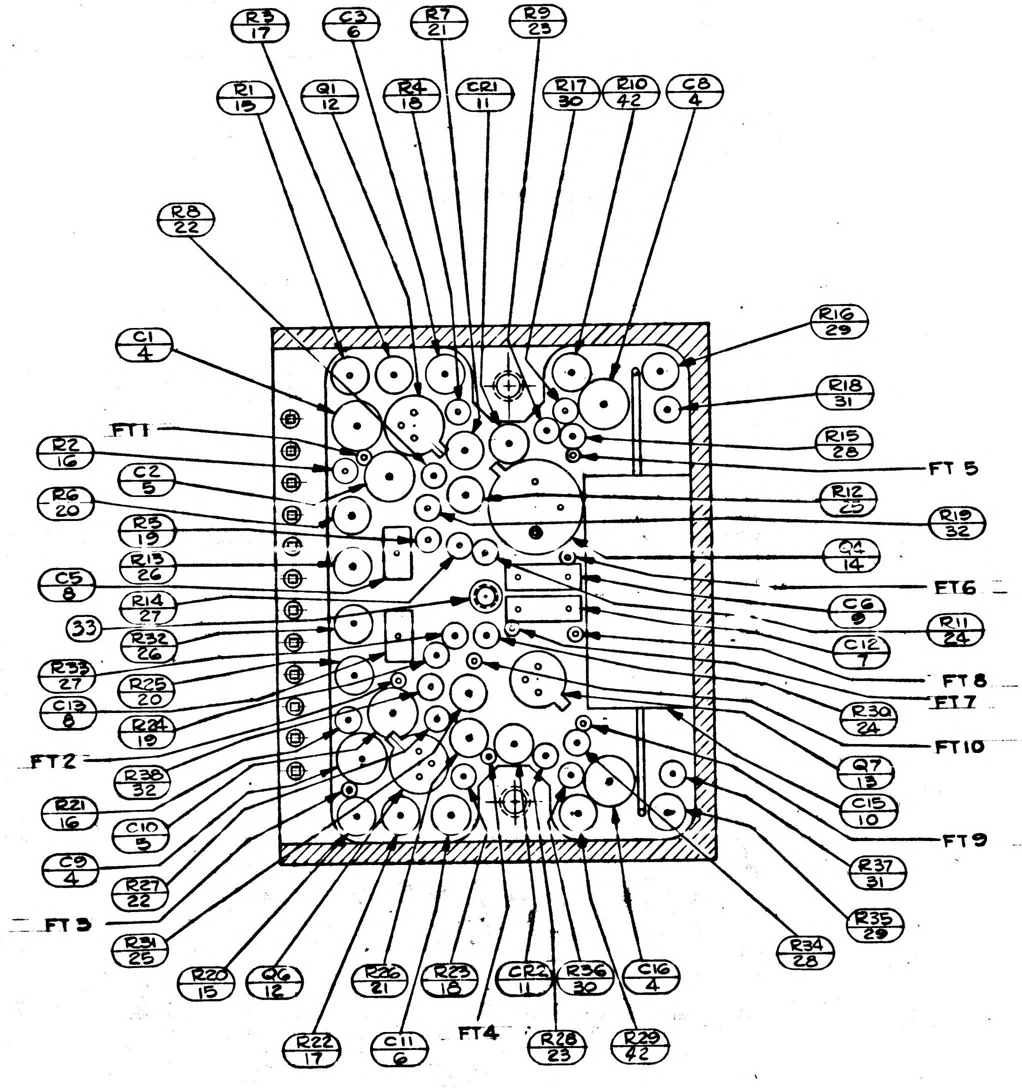
11
12
1
3
.000 TO .030



R3 17
C3 6
R7 21
R9 23
R1 15
Q1 12
R4 18
CR1 11
R17 30
R10 42
C8 4
R8 22
C1 4
R16 29
R18 31
R15 28
FT1
R2 16
C2 5
R6 20
R5 19
R13 26
C5 8
R14 27
33
R32 26
R33 27
R25 20
C13 8
R24 19
FT2
R38 32
R21 16
C10 5
C9 4
R27 22
FT3
R31 25
R20 15
Q6 12
R26 21
R23 18
CR2 11
R36 30
C16 4
R22 17
C11 6
FT4
R28 23
R29 42
FT5
R12 25
R19 32
Q4 14
FT6
C6 8
C12 7
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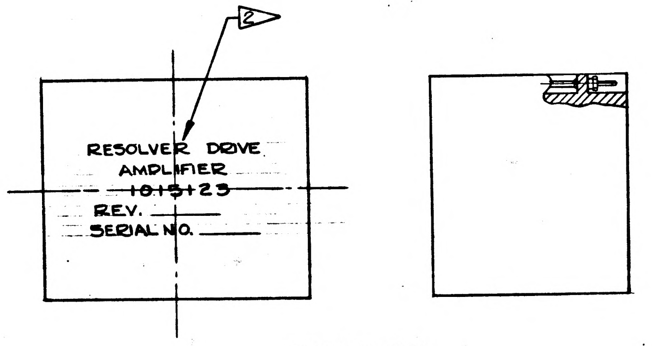
FT10
Q7 13
C15 10
FT9
R37 31
R35 29
R34 28

SECTION A-A



2
RESOLVER DRIVE
AMPLIFIER
1015123
REV.
SERIAL NO.

SCALE 2:1

Ⓑ REPLACES REVISION A WITH CHANGE

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002004.

ALL WELDED CONNECTIONS TO BE MADE PER ND1002005

1▷ ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2▷ MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND

4▷ USE AS REQUIRED

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

ON ITEMS 2 & 3:
  BROKEN PATHS INDICATE SLEEVING
  "K" INDICATES CATHODE SIDE OF DIODE,
  FT( ) INDICATES FEED THRU
  PLUS(+) INDICATES POSITIVE END OF CAPACITOR.
  "B" INDICATES BASE LEAD OF TRANSISTOR
  "C" " COLLECTOR " "
  "E" " EMITTER " "
  MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.

DRAWINGS FOR REFERENCE:
  1015120 SCHEMATIC DIAGRAM, ELEC

5▷ ASSEMBLE PER ND 1002136

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
43	AR	1006776-22	INSULATION SLEEVING #24
42	2	1010364-693	RESISTOR, FIXED
41	2	AN500D-2-4	SCREW, FIL HD
40	AR	1006776-21	INSULATION SLEEVING #22
39	AR	1006787-2	WIRE, ELEC -.020 DIA.
38	AR	1006757-1	WIRE, ELEC -.010 × .020
37	AR	1006776-20	INSULATION SLEEVING #20
36	12	1006782-5	CONTACT, WRAPOST MALE MIN.
35	12	1006775	INSULATOR, WRAPOST MALE MIN.
34	2	AN500D-4-12	SCREW, FIL HD
33	1	1015135-015	SPACER
32	2	1006750-42	↑
31	2	1006750-25	
30	2	1006750-12	
29	2	1010368-8	
28	2	1006750-56	
27	2	1006750-26	
26	2	1010364-673	
25	2	1010368-115	
24	2	1006750-66	
23	2	1006750-44	
22	2	1006750-32	
21	2	1010364-757	
20	2	1006750-73	
19	2	1006750-72	
18	2	1006750-84	
17	2	1010364-727	
16	2	1006750-77	
15	2	1010364-687	RESISTOR, FIXED
14	2	1010398-2	↑
13	2	1010357-1	
12	4	1010397-1	TRANSISTOR
11	2	1010372-24	SEMICONDUCTOR DEVICE-DIODE
10	2	1010375-56	↑
9	2	1010359-18	
8	2	1010409-33	
7	2	1010359-21	
6	2	1006755-45	
5	2	1006755-31	
4	4	1006755-79	CAPACITOR
3	1	1015719	WAFER-UPPER
2	1	1015718	WAFER-LOWER
1	1	1015717	FRAME (INSEP ASSY)

LIST OF PARTS AND MATERIALS

1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +- DECIMALS XX±.02 XXX±.005 ANGLES +-
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Ousel DATE 3 MAY 63
CHECKED J Saylor 7 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 5/15/63
MIT APPROVAL W Copper 15 May 63

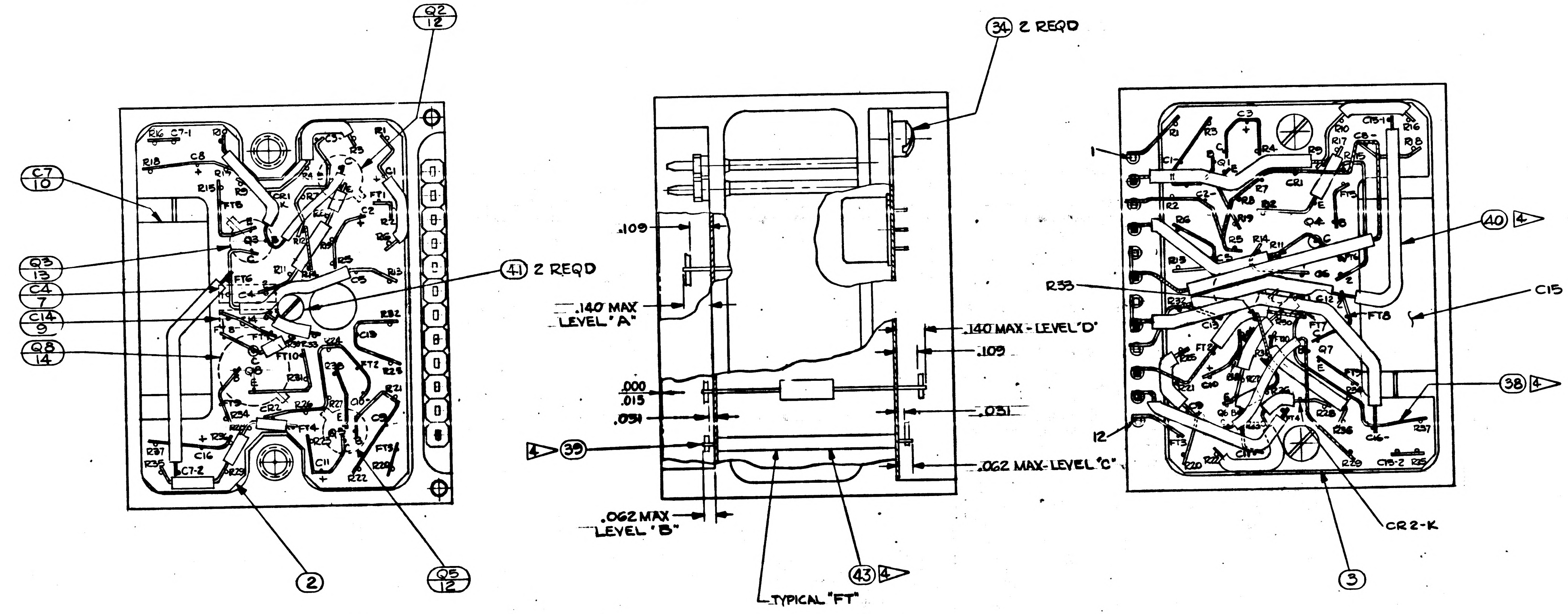
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET OF 2

Charleston 7-MAY-63
Bottolfson

			REVISIONS			
	SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
M	B		REPLACES REV A WITH CHANGES SEE SHEET 1 TDRR 1223		5-13-63	WK
	C		REVISED PER TDRR 03095		9-18-63	WK
	D		REVISED PER TDRR 03709			
	E		REVISED PER TDRR 04128			WK
M	F		REVISED PER TDRR 04468			WK
M	G		REVISED PER TDRR 05402		2 DEC 63	



Q2 12
C7 10
Q3 13
C4 7
C14 9
Q8 14
41 2 REQD
2
Q5 12
34 2 REQD
.109
.140 MAX LEVEL "A"
.000
.015
.031
4 39
.062 MAX LEVEL "B"
TYPICAL "FT"
43 4
.140 MAX - LEVEL 'D'
.109
.031
.062 MAX - LEVEL "C"
1
R33
12
40 4
C15
38 4
CR2-K
3

Ⓑ REPLACES REVISION A WITH CHANGE

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± XX±.02 ±
XXX±.005
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orzel 7 MAY 63 DATE
CHECKED 7 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 15 May 63
MIT APPROVAL 15 May 63

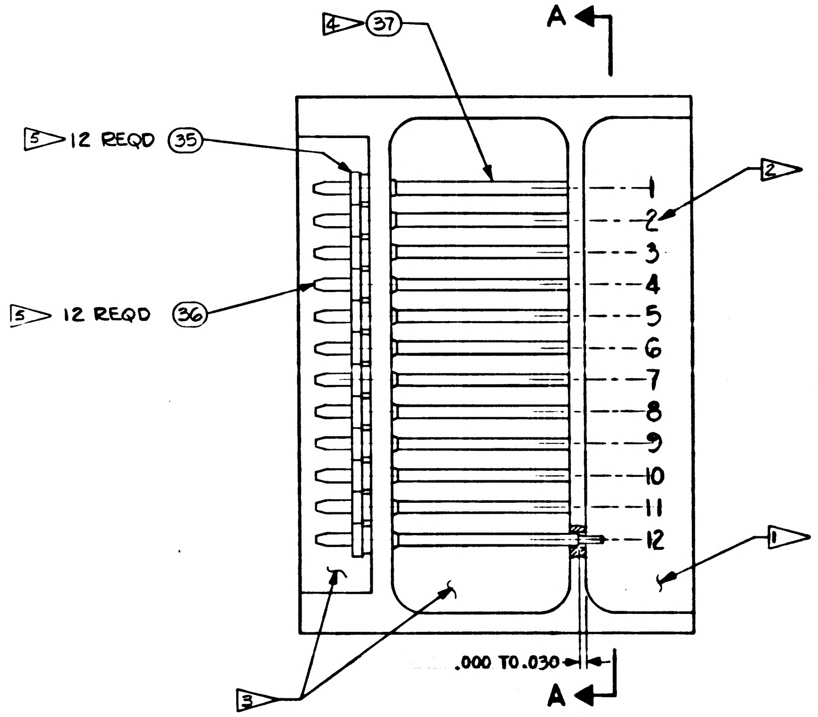
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET 2 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

		REVISIONS			
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B		REPLACES REV. A WITH CHANGES PER TDRR 1223		5-13-63	WK
C		REVISED PER TDRR 03045			WK
D		REVISED PER TDRR			WK
E		REVISED PER TDRR 04125			WK
F		REVISED PER TDRR 04458		5 NOV 63	
G		REVISED PER TDRR 05402		DEC 63	
H		REVISED PER TDRR 07285		8 APR 64	



4 37
A
5 12 REQD 35
5 12 REQD 36
2
1
2
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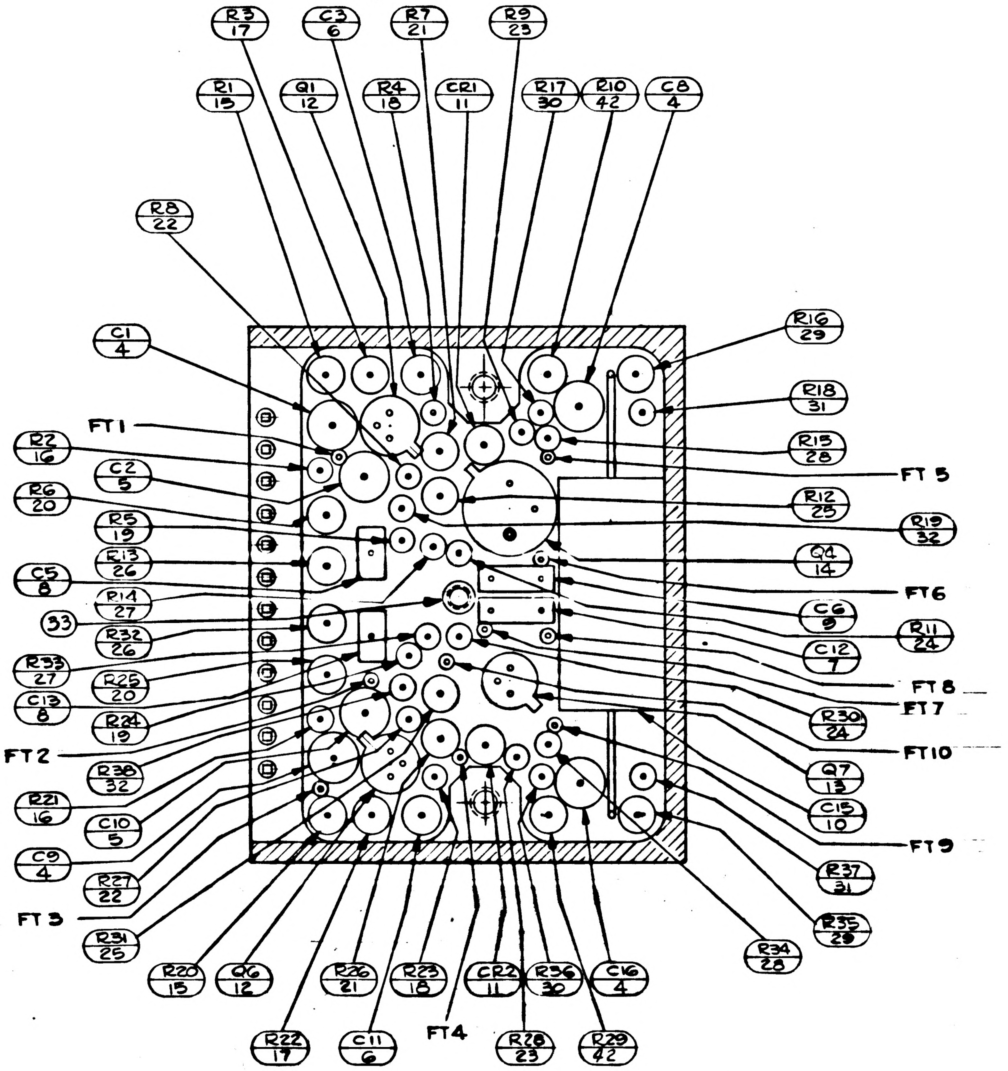
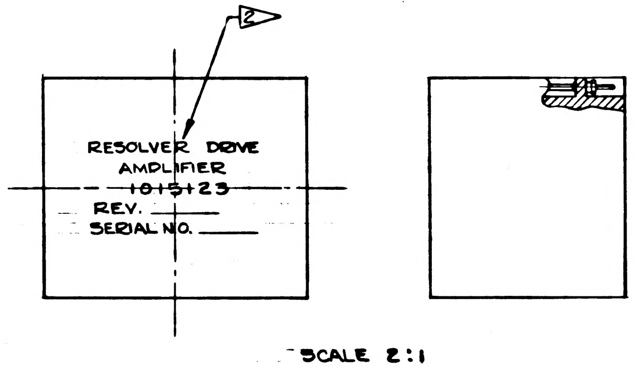
12
1
3
.000 TO .030
A



R3 17
C3 6
R7 21
R9 23
R1 15
Q1 12
R4 18
CR1 11
R17 30
R10 42
C8 4
R8 22
C1 4
R16 29
R18 31
R15 28
FT 5
R12 25
R19 32
Q4 14
FT6
C6 9
R11 24
C12 7
FT 8
FT7
R30 24
FT10
Q7 13
C15 10
FT 9
R37 31
R35 29
R34 28
FT1
R2 16
C2 5
R6 20
R5 19
R13 26
C5 8
R14 27
33
R32 26
R33 27
R25 20
C13 8
R24 19
FT 2
R38 32
R21 16
C10 5
C9 4
R27 22
FT 3
R31 25
R20 15
Q6 12
R26 21
R23 18
CR2 11
R36 30
C16 4
R22 17
C11 6
FT4
R28 23
R29 42

SECTION A-A



2
RESOLVER DRIVE AMPLIFIER
1015123
REV.
SERIAL NO.

SCALE 2:1

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

UNLESS OTHERWISE SPECIFIED : COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002004.

ALL WELDED CONNECTIONS TO BE MADE PER ND1002005

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND

4 USE AS REQUIRED

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

ON ITEMS 2 & 3 :
  BROKEN PATHS INDICATE SLEEVING
  "K" INDICATES CATHODE SIDE OF DIODE
  FT( ) INDICATES FEED THRU
  PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
  "B" INDICATES BASE LEAD OF TRANSISTOR
  "C" " COLLECTOR " " "
  "E" " EMITTER " " "
  MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.

DRAWINGS FOR REFERENCE :
  1015120 SCHEMATIC DIAGRAM, ELEC

5 ASSEMBLE PER ND 1002136
PROCURE PER PS 1015123.

Ⓑ REPLACES REVISION A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
43	AR	1006776-22	INSULATION SLEEVING #24
42	2	1010364-693	RESISTOR, FIXED
41	2	AN500D-2-4	SCREW, FIL HD
40	AR	1006776-21	INSULATION SLEEVING #22
39	AR	1006787-2	WIRE ELEC -.020 DIA.
38	AR	1006757-1	WIRE ELEC -.010 × .020
37	AR	1006776-20	INSULATION SLEEVING #20
36	12	1006782-5	CONTACT, WRAPOST MALE MIN.
35	12	1006775	INSULATOR, WRAPOST MALE MIN.
34	2	AN500D-4-12	SCREW, FIL HD
33	1	1015135-015	SPACER
32	2	1006750-42	
31	2	1006750-25	
30	2	1006750-12	
29	2	1010368-8	
28	2	1006750-56	
27	2	1006750-26	
26	2	1010364-673	
25	2	1010368-115	
24	2	1006750-66	
23	2	1006750-44	
22	2	1006750-32	
21	2	1010364-757	
20	2	1006750-73	
19	2	1006750-72	
18	2	1006750-84	
17	2	1010364-727	
16	2	1006750-77	
15	2	1010364-687	RESISTOR, FIXED
14	2	1010398-2	
13	2	1010357-1	
12	4	1010397-1	TRANSISTOR
11	2	1010372-24	SEMICONDUCTOR DEVICE-DIODE
10	2	1010375-56	
9	2	1010359-18	
8	2	1010409-33	
7	2	1010359-21	
6	2	1006755-45	
5	2	1006755-31	
4	4	1006755-79	CAPACITOR
3	1	1015719	WAFER-UPPER
2	1	1015718	WAFER-LOWER
1	1	1015717	FRAME (INSEP ASSY)

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007158	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+- XX±.02 +-
-- XXX±.005 --
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Ousel DATE 3 MAY 63
CHECKED Bayley 7 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

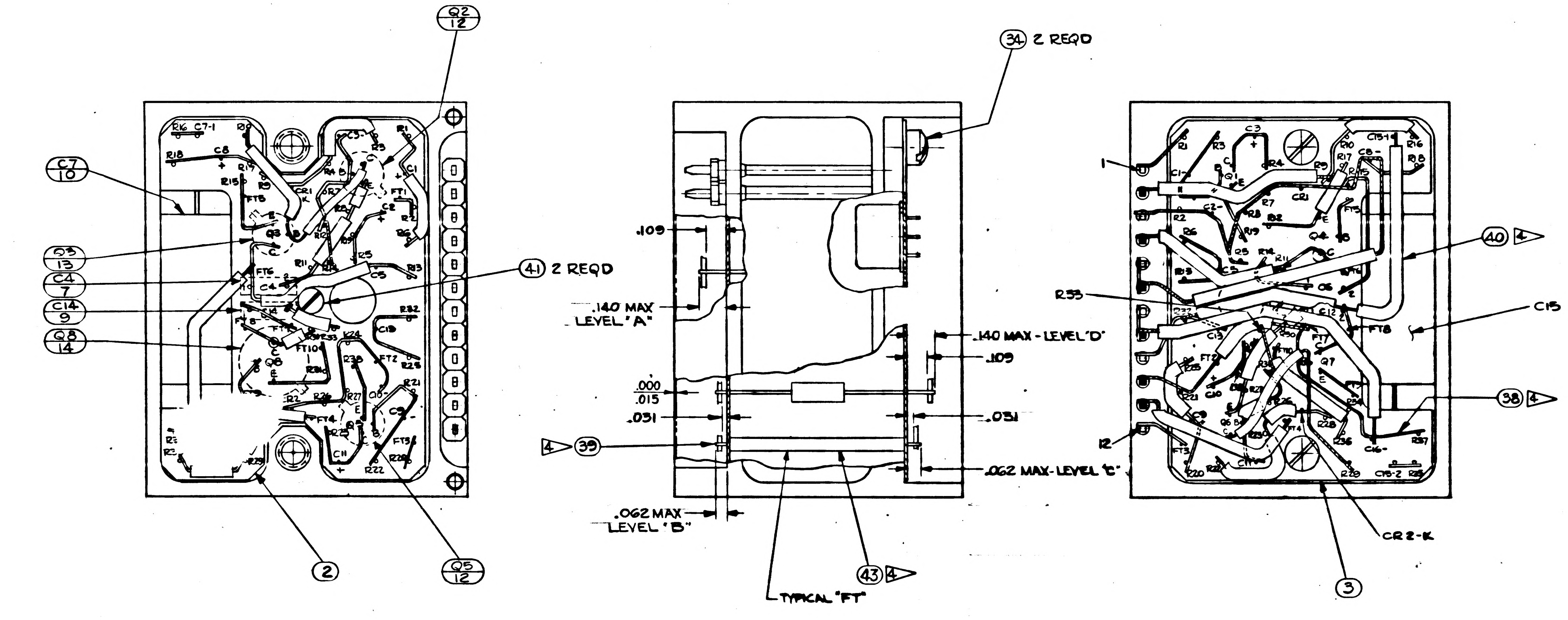
CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET 1 OF 2

Checked 7 MAY 63

BOTTOLFSON

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ B		REPLACES REV A WITH CHANGES SEE SHEET 1 TDRR 1223		5-13-63	WK
Ⓜ C		REVISED PER TDRR 03095		9-12-63	WK
Ⓜ D		REVISED PER TDRR 03769			WK
Ⓜ E		REVISED PER TDRR 04125			WK
Ⓜ F		REVISED PER TDRR 04468		3 NOV 63	WK
Ⓜ G		REVISED PER TDRR 05402		27 DEC 63	
H		REVISED PER TDRR 07285		3 APR 64	



Q2 12
C7 10
Q3 13
C4 7
C14 9
Q8 14
41 2 REQD
2
Q5 12
34 2 REQD
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.140 MAX LEVEL "A"
.140 MAX - LEVEL "D"
.109
.000 .015
.031
.031
4 39
.062 MAX - LEVEL "C"
.062 MAX LEVEL "B"
TYPICAL "FT"
43 4
1
R53
40 4
C15
38 4
12
CR2-K
3

Ⓑ REPLACES REVISION A WITH CHANGE

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+— XX±.02 +
-— XXX±.005 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 7 MAY 63 DATE
CHECKED 7 May 63
APPROVAL 7 May 63
APPROVAL 7 May 63
NASA APPROVAL 15 May 63
MIT APPROVAL 15 May 63

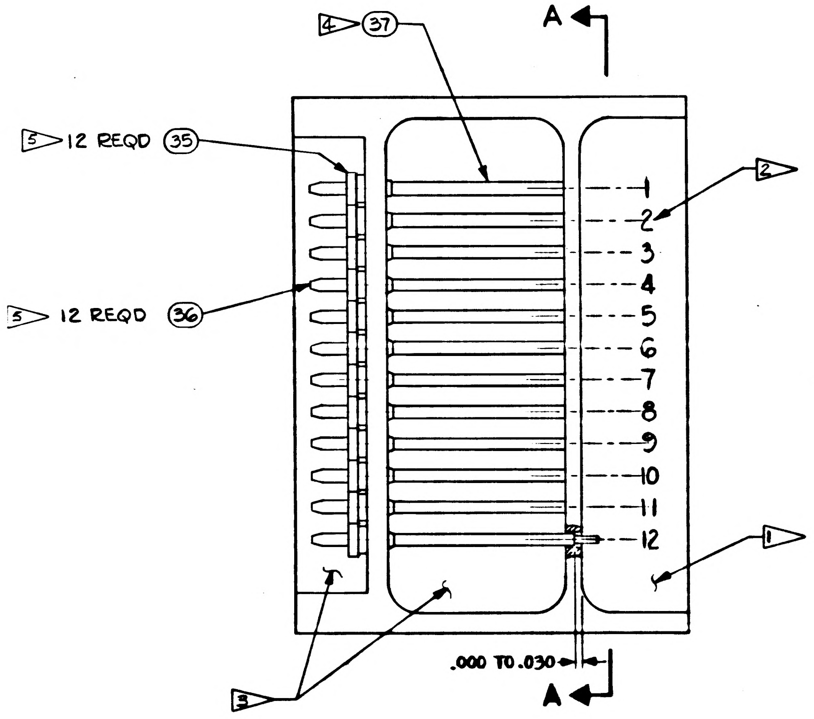
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO. SIZE E 1015123
SCALE 4:1 SHEET 2 OF 2

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
Ⓜ B		REPLACES REV. A WITH CHANGES PER TDRR 1223		5-13-63	WK
Ⓜ C		REVISED PER TDRR 03095		9-7-63	W
Ⓜ D		REVISED PER TDRR [illegible]9			
Ⓜ E		REVISED PER TDRR 04125			WK
Ⓜ F		REVISED PER TDRR 04458		5 NOV 63	
Ⓜ G		REVISED PER TDRR 05402		27 DEC 63	
Ⓜ H		REVISED PER TDRR 07285		3 APR 64	
J		REVISED PER TDRR 07295		23 APR 64	JWP



4 37
A
5 12 REQD 35
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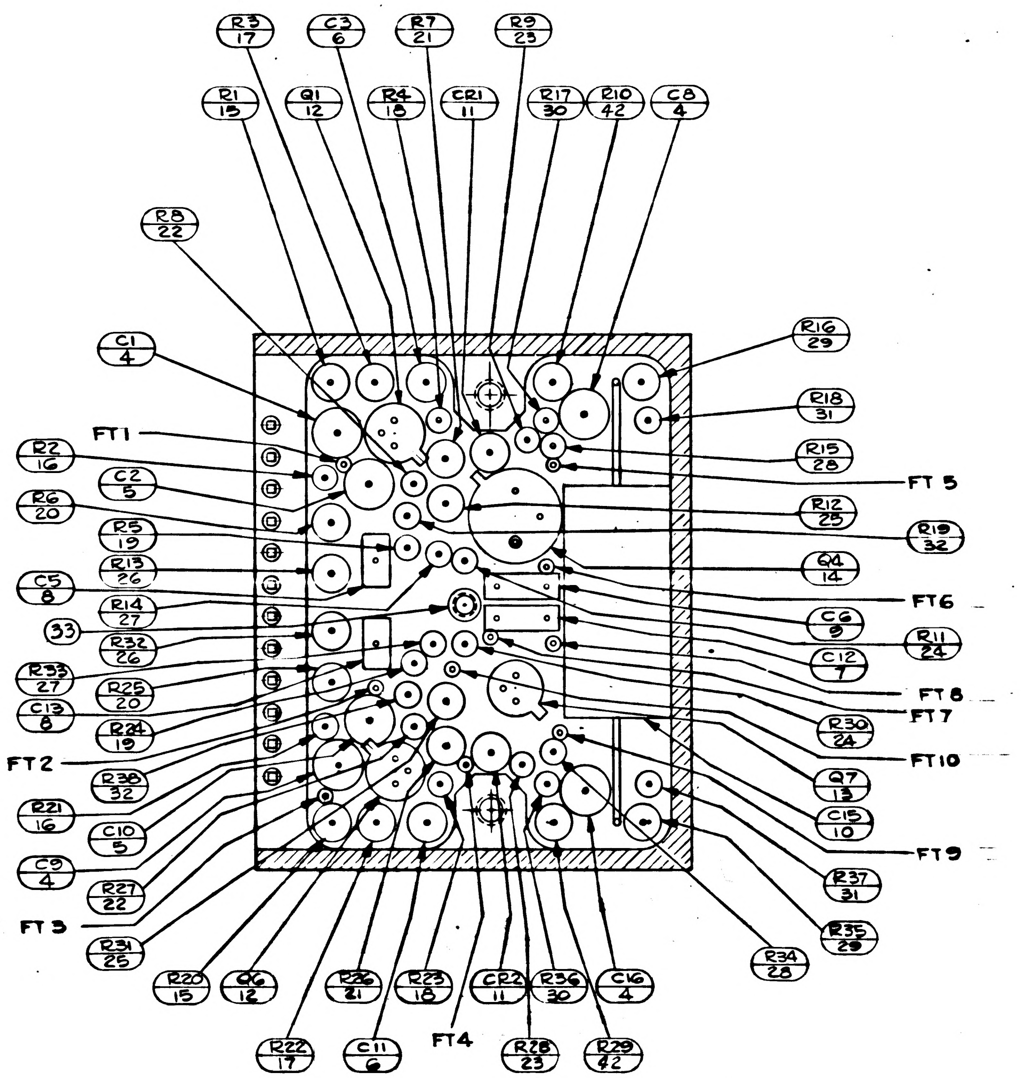
.000 TO .030
A



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C3 6
R7 21
R9 23
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Q1 12
R4 18
CR1 11
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R8 22
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C1 4
R18 31
FT1
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FT5
C2 5
R6 20
R12 25
R5 19
R19 32
R13 26
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C5 8
FT6
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C6 9
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C12 7
R33 27
FT8
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FT7
C13 8
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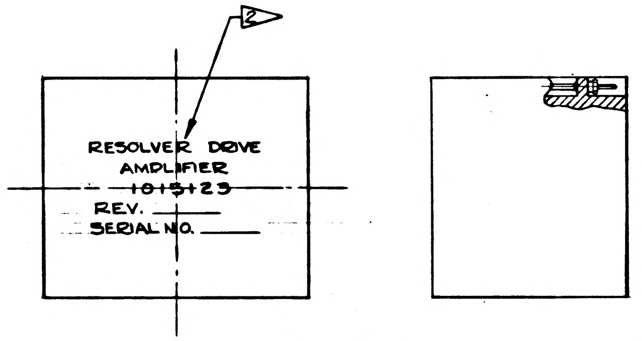
FT10
FT2
Q7 13
R38 32
C15 10
R21 16
FT9
C10 5
R37 31
C9 4
R35 28
R27 22
R34 28
FT3
R31 25
R20 15
Q6 12
R26 21
R23 18
CR2 11
R36 30
C16 4
FT4
R22 17
C11 6
R28 23
R29 42

SECTION A-A



2
RESOLVER DRIVE
AMPLIFIER
1015123
REV.
SERIAL NO.

SCALE 2:1

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED
BETWEEN ITEMS 2 & 3.

TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002004.

ALL WELDED CONNECTIONS TO BE MADE PER ND1002005

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM).
UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND

4 USE AS REQUIRED

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE LEVEL
A & D WIRING.

ON ITEMS 2 & 3:
- BROKEN PATHS INDICATE SLEEVING
- "K" INDICATES CATHODE SIDE OF DIODE
- FT( ) INDICATES FEED THRU
- PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
- "B" INDICATES BASE LEAD OF TRANSISTOR
- "C" " COLLECTOR " " "
- "E" " EMITTER " " "
- MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.

DRAWINGS FOR REFERENCE:
- 1015120 SCHEMATIC DIAGRAM, ELEC

5 ASSEMBLE PER ND 1002136
PROCURE PER PS 1015123.

Ⓑ REPLACES REVISION A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
43	AR	1006776-22	INSULATION SLEEVING #24
42	2	1010364-693	RESISTOR, FIXED
41	2	AN500D-2-4	SCREW, FIL HD
40	AR	1006776-21	INSULATION SLEEVING #22
39	AR	1006787-2	WIRE ELEC -.020 DIA.
38	AR	1006757-1	WIRE ELEC -.010 × .020
37	AR	1006776-20	INSULATION SLEEVING #20
36	12	1006782-5	CONTACT, WRAPOST MALE MIN.
35	12	1006775	INSULATOR, WRAPOST MALE MIN.
34	2	AN500D-4-4	SCREW, FIL HD
33	1	1015135-015	SPACER
32	2	1006750-42	↑
31	2	1006750-25	
30	2	1006750-12	
29	2	1010368-8	
28	2	1006750-56	
27	2	1006750-26	
26	2	1010364-673	
25	2	1010368-115	
24	2	1006750-66	
23	2	1006750-44	
22	2	1006750-32	
21	2	1010364-757	
20	2	1006750-73	
19	2	1006750-72	
18	2	1006750-84	
17	2	1010364-727	
16	2	1006750-77	
15	2	1010364-687	RESISTOR, FIXED
14	2	1010398-2	↑
13	2	1010357-1	
12	4	1010397-1	TRANSISTOR
11	2	1010372-24	SEMICONDUCTOR DEVICE-DIODE
10	2	1010375-56	↑
9	2	1010359-18	
8	2	1010409-33	
7	2	1010359-21	
6	2	1006755-45	
5	2	1006755-31	
4	4	1006755-79	CAPACITOR
3	1	1015719	WAFER-UPPER
2	1	1015718	WAFER-LOWER
1	1	1015717	FRAME (INSEP ASSY)

LIST OF PARTS AND MATERIALS

SHEET 1	SHEET 2
J	H
H	H
G	G
F	F
E	E
D	D
C	C
B	B

REVISION STATUS OF SHEETS

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +- DECIMALS XX ± .02 XXX ± .005 ANGLES +-
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 3 MAY 63 DATE
CHECKED 7 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 5/17/63
MIT APPROVAL 15 May 63

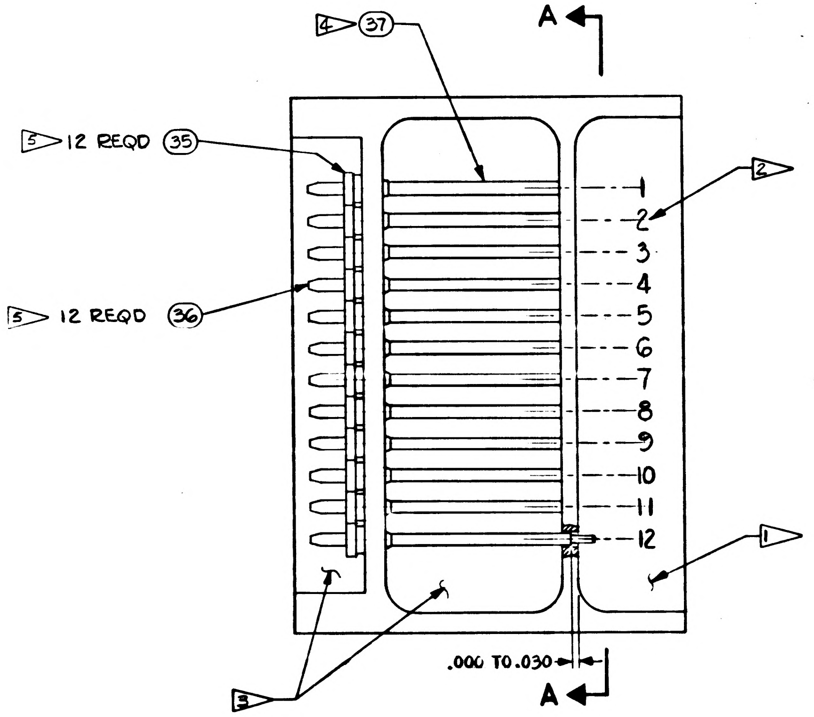
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER DRIVE AMPLIFIER
MODULE ASSY

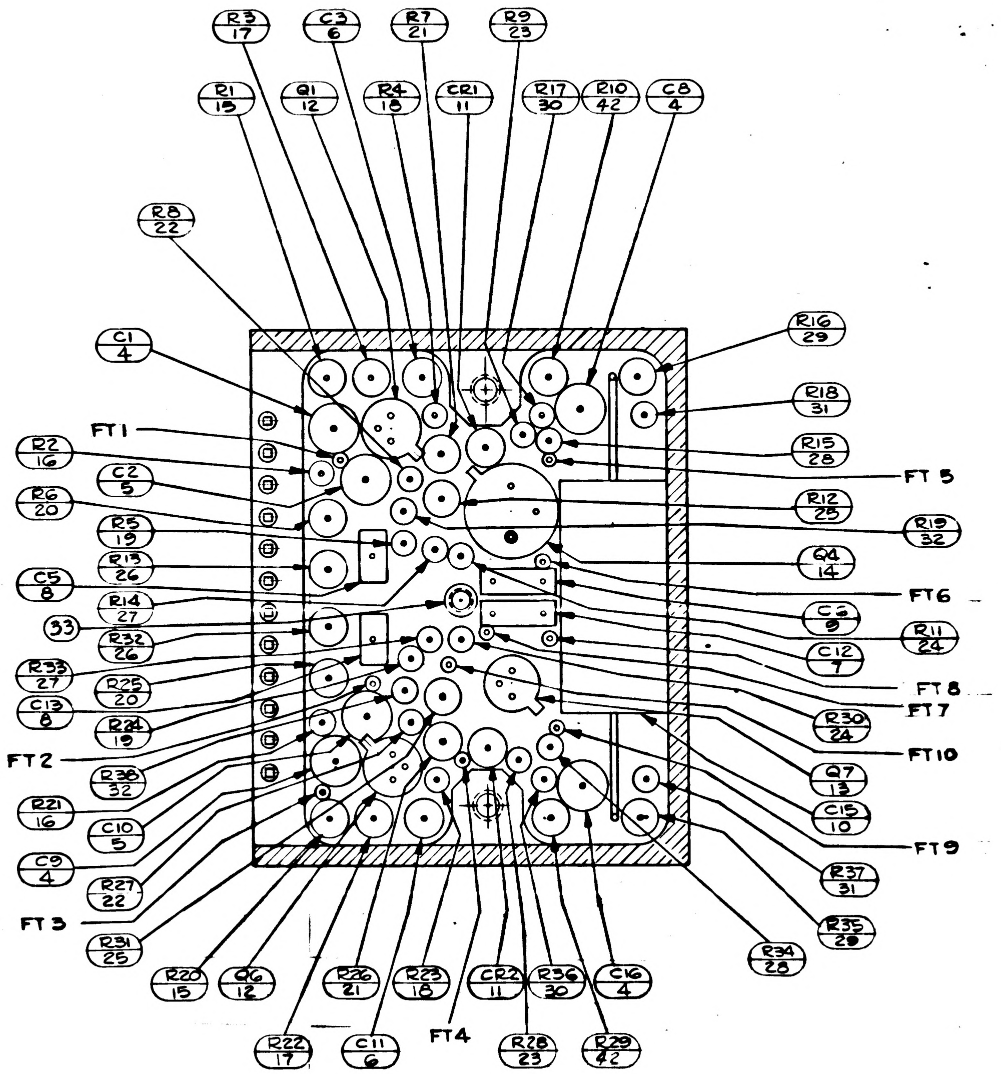
CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET 1 OF 2

BOTTOLFSON

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
B		REPLACES REV. A WITH CHANGES PER TDRR 1223		5-13-63	WK
C		REVISED PER TDRR 03095			WK
D		REVISED PER TDRR 03769			WK
E		REVISED PER TDRR 04125			WK
F		REVISED PER TDRR 04458		6 NOV 63	
G		REVISED PER TDRR 05402		DEC 63	
H		REVISED PER TDRR 07285		3 APR 64	
J		REVISED PER TDRR 07295		13 APR 64	
K		REVISED PER TDRR 5921		64	

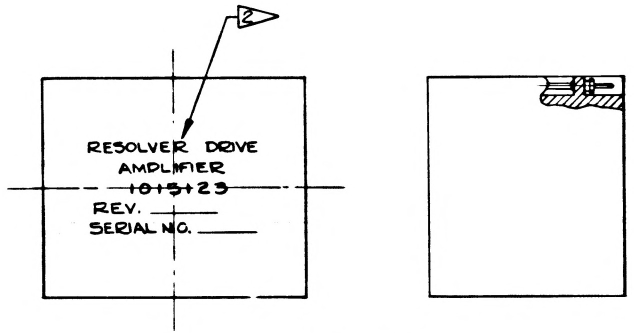


4 37
A
5 12 REQD 35
5 12 REQD 36
2
1
2
3
4
5
6
7
8
9
10
11
12
1
3
.000 TO .030
A



R3 17
C3 6
R7 21
R9 23
R1 15
Q1 12
R4 18
CR1 11
R17 30
R10 42
C8 4
R8 22
C1 4
R16 29
R18 31
FT1
R2 16
R15 28
C2 5
FT5
R6 20
R12 25
R19 32
R5 19
R13 26
Q4 14
C5 8
FT6
R14 27
C6 9
33
R11 24
R32 26
C12 7
R33 27
R25 20
FT8
FT7
C13 8
R24 19
R30 24
FT2
FT10
R36 32
Q7 13
R21 16
C15 10
C10 5
FT9
C9 4
R27 22
R37 31
FT3
R35 28
R31 25
R34 28
R20 15
Q6 12
R26 21
R23 18
CR2 11
R36 30
C16 4
R22 17
C11 6
FT4
R28 23
R29 42

SECTION A-A



2
RESOLVER DRIVE
AMPLIFIER
1015123
REV.
SERIAL NO.

SCALE 2:1

Ⓑ REPLACES REVISION A WITH CHANGE

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002004.

ALL WELDED CONNECTIONS TO BE MADE PER ND1002005

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND

4 USE AS REQUIRED

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE LEVEL A & D WIRING:

ON ITEMS 2 & 3:
    BROKEN PATHS INDICATE SLEEVING
    "K" INDICATES CATHODE SIDE OF DIODE
    FT( ) INDICATES FEED THRU
    PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
    "B" INDICATES BASE LEAD OF TRANSISTOR
    "C" " COLLECTOR " " "
    "E" " EMITTER " " "
    MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.

DRAWINGS FOR REFERENCE:
    1015120 SCHEMATIC DIAGRAM, ELEC

5 ASSEMBLE PER ND1002136
PROCURE PER PS 1015123.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
43	AR	1006776-22	INSULATION SLEEVING #24
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41	2	AN500D-2-4	SCREW, FIL HD
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38	AR	1006757-1	WIRE ELEC -.010 × .020
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33	1	1015135-015	SPACER
32	2	1006750-42	
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30	2	1006750-12	
29	2	1010368-8	
28	2	1006750-56	
27	2	1006750-26	
26	2	1010364-673	
25	2	1010368-115	
24	2	1006750-66	
23	2	1006750-44	
22	2	1006750-32	
21	2	1010364-757	
20	2	1006750-73	
19	2	1006750-72	
18	2	1006750-84	
17	2	1010364-727	
16	2	1006750-77	
15	2	1010364-687	RESISTOR, FIXED
14	2	1010398-2	
13	2	1010357-1	
12	4	1010397-1	TRANSISTOR
11	2	1010372-24	SEMICONDUCTOR DEVICE-DIODE
10	2	1010375-56	
9	2	1010359-18	
8	2	1010409-33	
7	2	1010359-21	
6	2	1006755-45	
5	2	1006755-31	
4	4	1006755-79	CAPACITOR
3	1	1015719	WAFER-UPPER
2	1	1015718	WAFER-LOWER
1	1	1015717	FRAME (INSEP ASSY)

LIST OF PARTS AND MATERIALS

SHEET 1	SHEET 2
K	K
J	H
H	H
G	G
F	F
E	E
D	D
C	C
B	B

REVISION STATUS OF SHEETS

NEXT ASSY	USED ON
1007 58	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+- XX ±.02 +-
-- XXX ±.005 --
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Ousel DATE 3 MAY 63
CHECKED J. Bayles 7 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

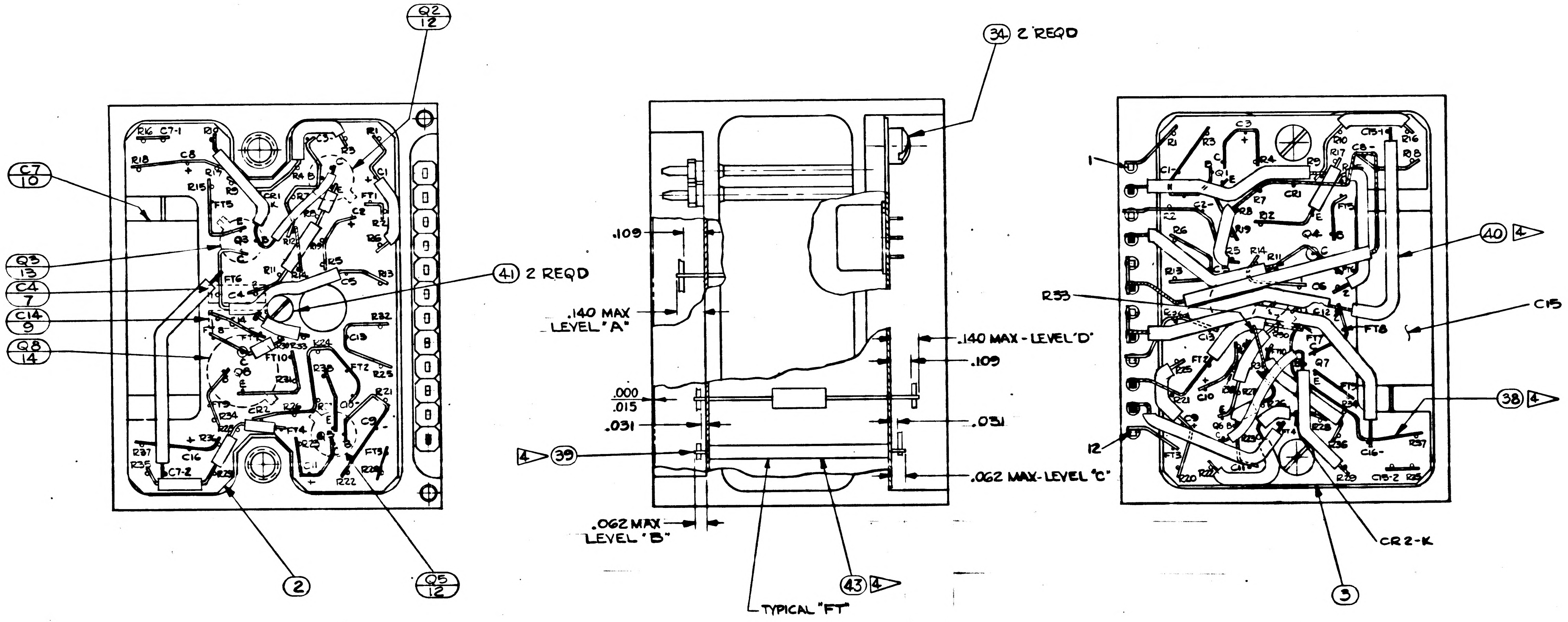
RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET 1 OF 2

7 MAY 63

Bottolfson

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
Ⓜ B		REPLACES REV A WITH CHANGES SEE SHEET 1 TDRR 1223		5-13-63	WK
Ⓜ C		REVISED PER TDRR 03095		9-12-63	WK
Ⓜ D		REVISED PER TDRR 03709			WK
Ⓜ E		REVISED PER TDRR 04125			WK
Ⓜ F		REVISED PER TDRR 04468			WK
Ⓜ G		REVISED PER TDRR 05402		27 DEC 63	
Ⓜ H		REVISED PER TDRR 05285			
K		REVISED PER TDRR 13921			



Q2 12
C7 10
Q3 13
C4 7
C14 9
Q8 14
2
Q5 12
34 2 REQD
41 2 REQD
.109
.140 MAX LEVEL "A"
.000
.015
.031
4 39
.062 MAX LEVEL "B"
TYPICAL "FT"
43 4
.140 MAX - LEVEL "D"
.109
.031
.062 MAX - LEVEL "C"
1
R53
12
40 4
C15
38 4
CR2-K
3

Ⓑ REPLACES REVISION A WITH CHANGE

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± XX±.02 ±
XXX±.005
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 7 MAY 63 DATE
CHECKED 7 May 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 15 May
MIT APPROVAL W.I. Capen 15 May 63

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RESOLVER DRIVE AMPLIFIER
MODULE ASSY

CODE IDENT NO.
SIZE E
1015123
SCALE 4:1
SHEET 2 OF 2

1015123 K

1015123

REVISIONS TDRR 00701

SYM	DESCRIPTION	DATE	APPROVAL

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PART NO	DESCRIPTION	REQD
1006750-77	RESISTOR	2
1010364-693	↓	4
1010364-727		2
1006750-84		2
1006750-72		2
1010364-579		2
1010364-765		2
1006750-32		2
1006750-44		2
1006750-65		2
1010368-115		2
1010364-673		2
1006750-16		2
1006750-56		2
1010368-13		2
1006750-9		2
1006750-21		2
1006750-42	RESISTOR	2
1006755-79	CAPACITOR	2
1006755-31	↓	2
1006755-45		2
1010359-23		2
1010409-33		2
1010359-19		2
1010375-66		2
1006755-79	CAPACITOR	2
1010372-24	DIODE	2
1010397	TRANSISTOR	4
1010357	↓	2
1010398-2	TRANSISTOR	2

REFERENCE DRAWING 1015120 SCHEMATIC DIAGRAM

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL //
HEAT TREATMENT //
FINAL FINISH //

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 4-2-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL WKupfer 3 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
RESOLVER DRIVE AMPLIFIER

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015123
SCALE
WT
SHEET OF

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

Apollo G&N Specification
PS-1015123
28 January 1964
Class A Release
TDRR 05988

PROCUREMENT SPECIFICATION

FOR

RESOLVER DRIVE AMPLIFIER MODULE ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page i to iii and 1 to 4 inclusive.

PROCUREMENT SPECIFICATION

FOR

RESOLVER DRIVE AMPLIFIER MODULE ASSEMBLY

The purpose of this document is to establish the requirements for the procurement of the Resolver Drive Amplifier Module Assembly for use in APOLLO Guidance and Navigation Equipment.

W. S. Kupfer 28 Jan 64
MIT/IL DATE

William S. [illegible] 1/28/64
NASA/MSC DATE

PROCUREMENT SPECIFICATION

FOR

RESOLVER DRIVE AMPLIFIER MODULE ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Resolver Drive Amplifier Module Assembly, Drawing 1015123, hereafter called the assembly.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM-1015123	Final Test Method for Resolver Drive Amplifier Module Assembly

DRAWINGS

APOLLO G&N

1015123	Resolver Drive Amplifier Module Assembly

Apollo G&N Specification
PS-1015123
28 January 1964
Class A Release
TDRR 05988

PROCUREMENT SPECIFICATION

FOR

RESOLVER DRIVE AMPLIFIER MODULE ASSEMBLY

Record of Revisions

Ⓜ

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page i
to iii and 1 to 4 inclusive.

APOLLO G&N Specification
PS-1015123
28 January 1964

PROCUREMENT SPECIFICATION

FOR

RESOLVER DRIVE AMPLIFIER MODULE ASSEMBLY

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SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM-1015123	Final Test Method for Resolver Drive Amplifier Module Assembly

DRAWINGS

APOLLO G&N

1015123	Resolver Drive Amplifier Module Assembly

3. REQUIREMENTS.

3.1 GENERAL SPECIFICATION. Unless otherwise specified herein, all of the requirements of Specification ND-1002210 shall apply as requirements of this specification.

3.2 DESCRIPTION. The assembly shall be used in the Power and Servo Assembly as an impedance isolating and phase correction device between the hand controller transmitter and the one-speed resolver.

3.3 FUNCTIONAL REQUIREMENTS

3.3.1 Electrical Inputs. The assembly shall perform as specified herein under the simulated operating conditions specified by Figure 1 and as follows:

a. DC Supply Voltage: 25 to 31 vdc, noise <1 mv rms.
b. Input Signal: 800±2 cps, variable voltage, distortion < 2%, impedance <2K Ω.

3.3.2 Insulation Resistance. The resistance between the assembly pins and the assembly mounting screws shall be equal to or greater than 100 megohms.

3.3.3 Current Drain. **The dc current drain of the module shall be a maximum of 36 ma.**

3.3.4 Noise. The output noise of each amplifier shall not exceed 5 mv rms.

3.3.5 Gain. The gain of each amplifier with the adjacent amplifier input terminals grounded shall be 1.1±10 percent

3.3.6 Distortion. The load voltage distortion of each amplifier with the adjacent amplifier input terminals grounded shall be less than 5 percent at supply voltages of 25.0±0.3 vdc, 28.0±0.3 vdc and 31.0±0.3 vdc.

3.3.7 Phase Shift. The phase shift between input and output of each amplifier, with the adjacent amplifier input terminals grounded, shall be 172.5° ±3.0°.

3.3.8 Input Impedance. The input impedance shall be >185KΩ.

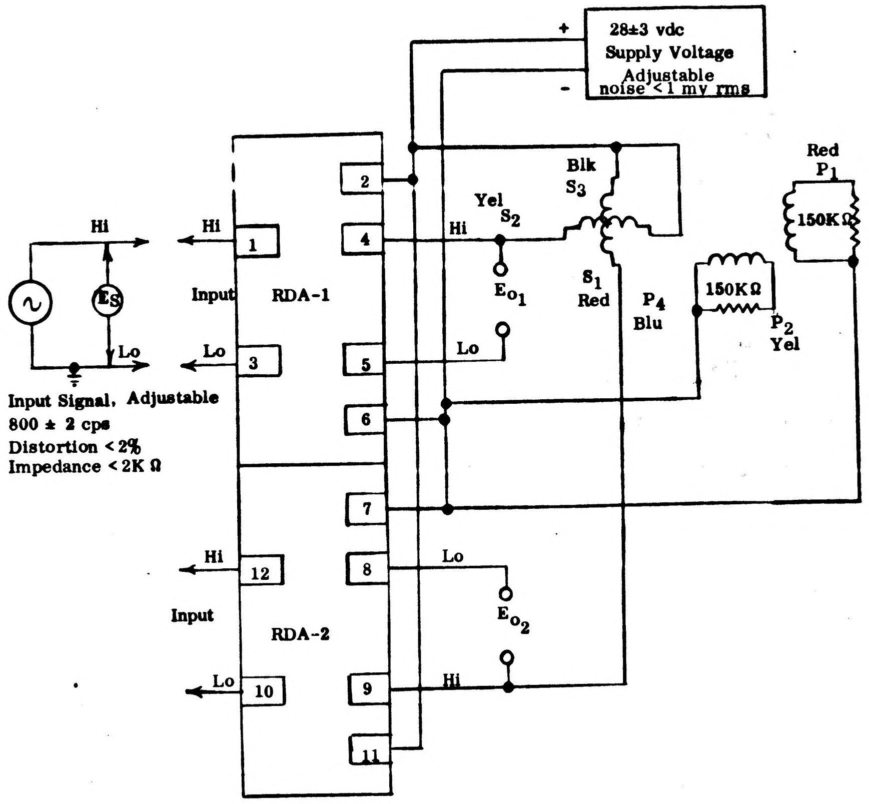
3.4 PERFORMANCE AND PRODUCT CHARACTERISTICS

3.4.1 Service Life

3.4.1.1 Operating Life. The assembly shall meet performance specifications for at least 2000 hours of operation, excluding the supplier's test time of the completed unit.

3.4.1.2 Shelf Life. The assembly shall have a shelf life of at least 5 years, without operation at ambient room temperature after final acceptance at the supplier's facility.

3.4.2 Reliability. Design objectives require maximum reliability of the assembly during its period of useful life. Every effort shall be made to design and produce units capable of **meeting a maximum failure rate of 2.2 failures per million hours.**


+
-
28±3 vdc
Supply Voltage
Adjustable
noise <1 mv rms
Hi
Hi
1
Input
RDA-1
Lo
Lo
3
2
4
5
6
7
8
9
11
Hi
Lo
Yel
S_2
Blk
S_3
E_{o_1}
S_1
Red
P_4
Blu
150KΩ
P_2
Yel
Red
P_1
150KΩ
E_S
Hi
12
Input
RDA-2
Lo
10
Lo
E_{o_2}
Hi

Input Signal, Adjustable
800 ± 2 cps
Distortion < 2%
Impedance < 2K Ω

NOTES: Resolver - NASA P/N 101341

$E_{S1}-3 = KE_{pl-3} \text{Cos } \theta + E_{p2-4} \text{Sin } \theta$

$ES2-3 = KE_{pl-3} \text{Cos } \theta - KE_{pe-4} \text{Sin } \theta$

θ = Positive shaft angle for ccw rotation facing shaft.

RESOLVER DRIVE AMPLIFIER MODULE

FUNCTIONAL SETUP

FIGURE 1

4. QUALITY ASSURANCE PROVISIONS

4.1 GENERAL SPECIFICATION. Unless otherwise specified herein, all of the quality assurance provisions of Specification ND-1002210 shall form part of this specification.

4.2 NASA ACCEPTANCE INSPECTION. The NASA acceptance inspection shall be in accordance with Specification FTM-1015123.

5. PREPARATION FOR DELIVERY. Preparation for delivery shall be as specified in Specification ND-1002210.

6. NOTES. None.

Notice: When APOLLO G&N drawings, specifications, or other data are used for any purpose other than in connection with a definitely related NASA procurement operation, the National Aeronautics and Space Administration thereby incurs no responsibility nor any obligation whatsoever; and the fact that NASA may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture use, or sell any patented invention that may in any way be related thereto.

JSP:mav

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1015124 Ⓜ

TDRR 00987

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY REV. B WITH CHANGES TDRR 01428	5 Jun 63	WR

PART NO.		DESCRIPTION	REQD
1006750	-7	RESISTOR	1
	-17		1
	-18		1
	-20		1
	-34		1
	-44		1
	-56		1
	-64		1
	-69		1
	-70		1
	-72		1
1006750	-84		1
1010364	-521		1
	-609		1
	-727		1
	-749		1
1010364	-757		1
1010368	-11	RESISTOR	1
1006755	-20	CAPACITOR	1
	-65		1
	-69		2
1006755	-77		1
1010359	-27		2
1010375	-52		1
	-66		1
1010375	-124	CAPACITOR	1
1010372	-24	DIODE	1
1010397	-001	TRANSISTOR	3
1010269		TRANSISTOR	1

Ⓐ REPLACED BY REV. B WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007108	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN R.L.B. DATE 4/23/63
CHECKED LAPlummer
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL [illegible] 4/24/63
MIT APPROVAL W Kupfer 24 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
COSECANT GENERATOR

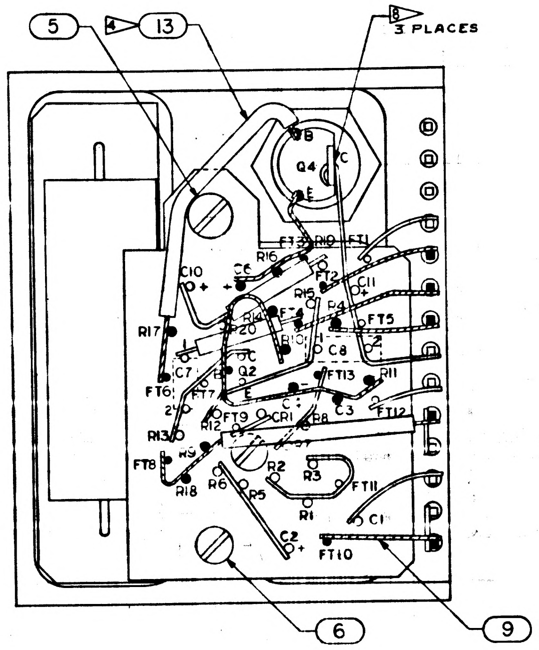
CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015124
SCALE —
WT —
SHEET 1 OF 1

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015124

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 04428	5 June 63	



5
4
13
8
3 PLACES
Q4
C10
R17
C7
FT6
R13
FT8
R18
R9
R12
R2
R3
R1
R5
R6
C2
C1
FT10
FT11
FT9
FT7
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FT1
FT5
R11
C8
C3
C11
Q2
R16
R15
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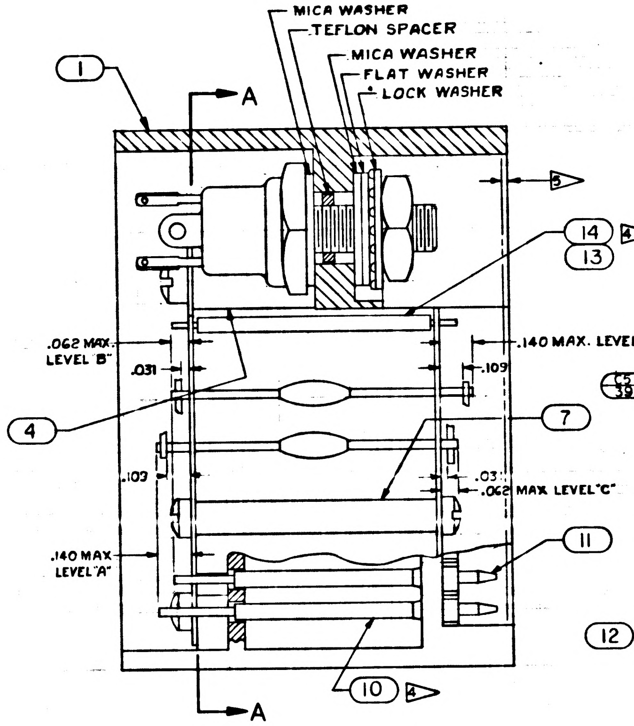
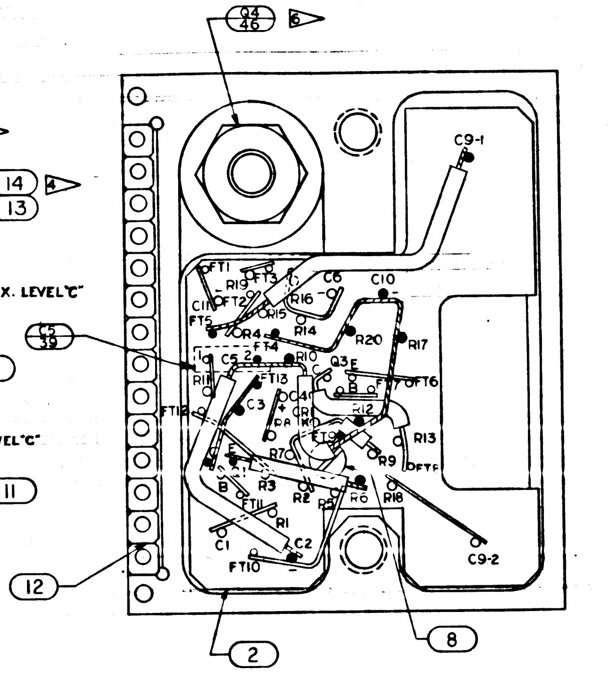
9
4



MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
1
A
5
14
4
13
.062 MAX. LEVEL "B"
.031
.140 MAX. LEVEL "C"
.109
4
7
.103
.03
.062 MAX LEVEL "C"
11
.140 MAX LEVEL "A"
10
4
A



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FT1
R19
FT3
C6
C10
C11
FT2
R15
R16
FT5
R4
R14
R20
R17
C5 39
C5
R10
Q3
FT4
FT6
FT13
C3
C4
R13
FT12
R7
R12
R8
R9
FT9
R3
R2
R6
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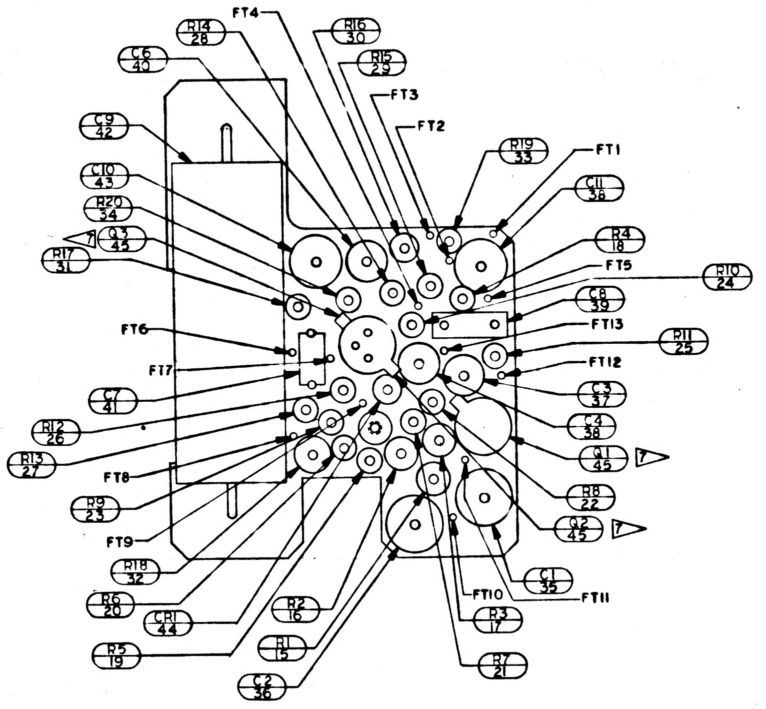
R1
C1
C2
C9-2
FT10
12
2
8

(B) REPLACES REV A WITH CHANGE



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R15 29
FT3
FT2
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R19 33
FT1
C11 38
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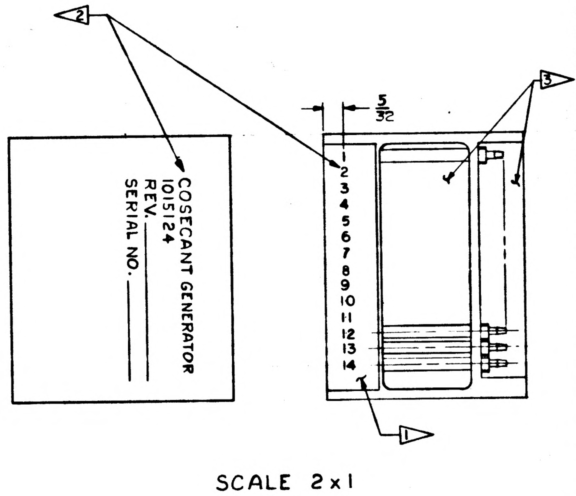
R20 34
Q3 45
R17 31
R4 18
FT5
R10 24
C8 39
FT13
FT6
R11 25
FT7
FT12
C7 41
C4 37
C3 38
R12 26
R13 27
Q1 45
7
FT8
R8 22
R9 23
Q2 45
7
FT9
R18 32
C1 35
R6 20
CR1 44
R2 16
FT10
FT11
R3 17
R5 19
R1 15
R7 21
C2 36

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS



2
COSECANT GENERATOR
1015124
REV.
SERIAL NO.
5/32
1
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13
14
3
1

SCALE 2x1

1 ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM

2 MARK CHARACTERS .080 HIGH, WHITE PER ND1002019, CENTRALIZE, AS SHOWN

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND

4 USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

5 ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY.

6 MOUNTING TORQUE FOR ITEM 46, 12^{+2}_{-2} INCH POUNDS

7 TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002009.

8 SOLDER PER ND 1002071 USING ND1002075.

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

ON ITEMS 2 & 3, BROKEN PATH INDICATES INSULATION SLEEVING.
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

WIRING STDS FOR WELDED UNITS PER ND 1002003

DRAWINGS FOR REFERENCE
1015148 SCHEMATIC DIAGRAM, ELECTRICAL.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
1	1010269	TRANSISTOR	46
3	1010397-001	TRANSISTOR	45
1	1010372-24	DIODE	44
1	1006755-77	CAPACITOR	43
1	1010375-66		42
1	1010359-11		41
1	1006755-65		40
2	1010359-27		39
2	1006755-69		38
1	1010375-124		37
1	1006755-20		36
1	1010375-52	CAPACITOR	35
1	1006750-18	RESISTOR-FIXED	34
1	1006750-7		33
1	1010368-11		32
1	1006750-56		31
1	1010364-749		30
1	1006750-64		29
1	1006750-70		28
1	1006750-84		27
1	1006750-34		26
1	1006750-19		25
1	1010364-757		24
1	1006750-44		23
1	1006750-69		22
1	1006750-84		21
1	1006750-20		20
1	1006750-72		19
1	1006750-77		18
1	1010364-521		17
1	1010364-727		16
1	1010364-609	RESISTOR FIXED	15
	1006787-2	WIRE-FEED THRU #22 AWG	14
	ND1002074	INSULATION SLEEVING #23	13
14	1006775	INSULATOR, WRAPOST-MALE MIN	12
14	1006782-5	CONTACT, BLADE EDGE CONN.	11
	ND1002074	INSULATION SLEEVING #22	10
	1006757-1	WIRE, NICKEL RIBBON	9
1	AN500D-2-4	SCREW	8
1	1015135-015	SPACER	7
1	AN500D-4-4	SCREW, PAN HEAD	6
1	AN500D-4-12	SCREW, PAN HEAD	5
1	1015131	SPACER	4
1	1015157	WAFER BOARD, UPPER	3
1	1015156	WAFER BOARD, LOWER	2
1	1015152	FRAME ASSY	1

LIST OF MATERIALS

1015124 B

1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT
DRAWN F Apell DATE 5-29-63
CHECKED I A Plummer
APPROVAL K S Battaglia
APPROVAL
NASA APPROVAL W S Swingle 6/5/63
MIT APPROVAL W Wiggin 5 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

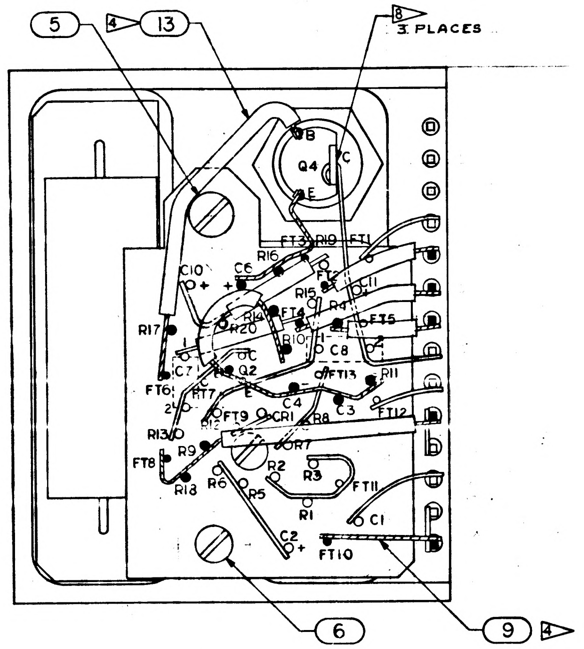
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015124
SCALE 4 X
WT
SHEET OF 1

MASTER

INCHES
PHOTOGRAPHIC SCALE ONLY

1015124

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 01428	5 June 63	WL
C	REVISED PER TDRR 03002	9-5-63	EPL WK



5
4
13
8 3 PLACES
Q4
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C
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C10
C6
R16
FT3
R10
FT1
R15
FT4
R4
FT5
R17
R20
C7
FT6
R7
Q2
C8
FT13
R11
FT12
R13
R9
CR1
C3
C4
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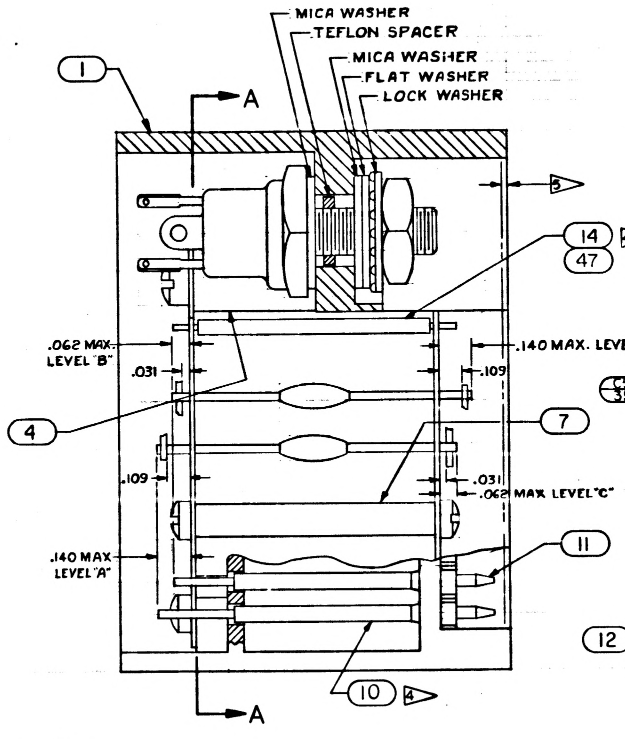
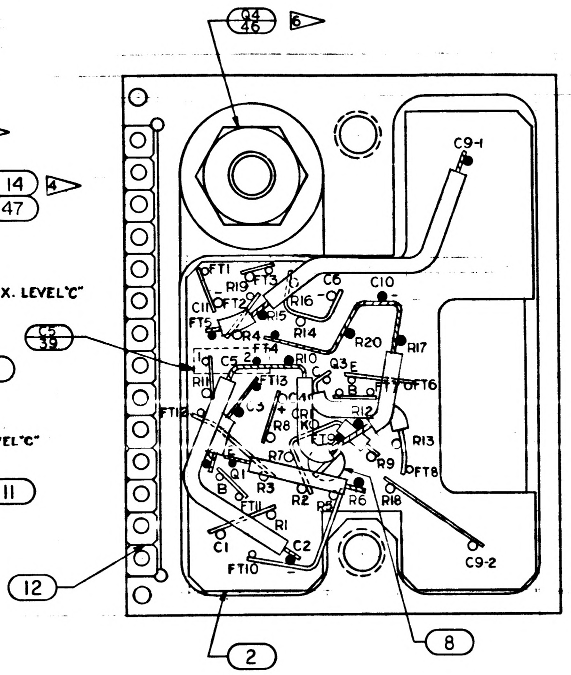
C2
FT10
FT11
6
9



MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
1
A
5
14
47
4
.062 MAX. LEVEL "B"
.031
.140 MAX. LEVEL "C"
.109
7
.109
.031
.062 MAX LEVEL "C"
.140 MAX LEVEL "A"
11
10
4
A



Q4
46
6
C9-1
C5
39
FT1
R19
FT2
R16
C6
C10
FT5
C11
CR4
R14
R20
R17
FT4
Q3
FT6
R11
C5
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R10
R8
R12
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R9
FT8
Q1
R3
R2
R5
R6
R18
R1
C1
C2
FT10
C9-2
12
2
8

Ⓑ REPLACES REV A WITH CHANGE

1. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM
2. MARK CHARACTERS .060/.100 HIGH WHITE PER ND1002019, CENTRALIZE AS SHOWN
3. AREAS TO BE FREE OF ENCAPSULATING COMPOUND
4. USE AS REQUIRED

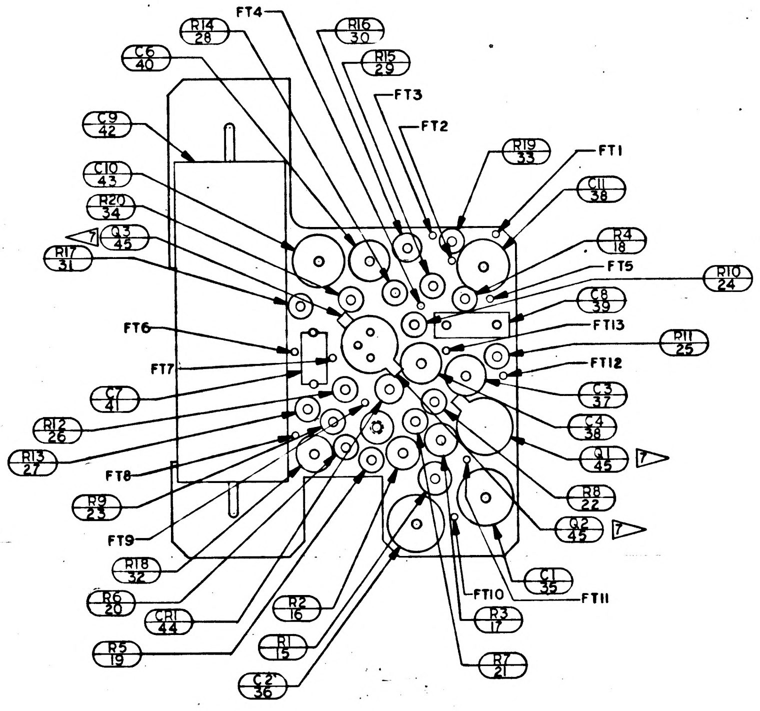
UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

5. ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY.
6. MOUNTING TORQUE FOR ITEM 46, 12^{+2}_{-2} INCH POUNDS
7. TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002009.
8. SOLDER PER ND 1002071 USING ND 1002075.

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

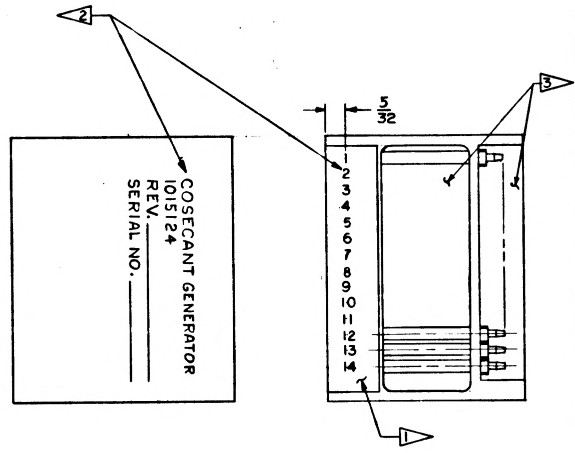
ON ITEMS 2 & 3, BROKEN PATH INDICATES INSULATION SLEEVING.
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.
WIRING STDS FOR WELDED UNITS PER ND 1002003

DRAWINGS FOR REFERENCE
1015148 SCHEMATIC DIAGRAM, ELECTRICAL



FT4
R14 28
R16 30
C6 40
R15 29
FT3
FT2
C9 42
R19 33
FT1
C10 43
C11 38
R20 34
R4 18
Q3 45
FT5
R17 31
R10 24
C8 39
FT6
FT13
R11 25
FT7
FT12
C7 41
C3 37
R12 26
C4 38
R13 27
Q1 45
FT8
R8 22
R9 23
Q2 45
FT9
R18 32
C1 35
R6 20
CR1 44
R2 16
FT10
FT11
R5 19
R1 15
R3 17
C2 36
R7 21

SECTION A-A
SHOWING ONLY LOWER WAFER AND COMPONENTS



2
COSECANT GENERATOR
1015124
REV.
SERIAL NO.
3
5/32
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1

SCALE 2x1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006776-22	INSULATION, SLEEVING	47
1	1010269	TRANSISTOR	46
3	1010397-001	TRANSISTOR	45
1	1010372-24	DIODE	44
1	1006755-77	CAPACITOR	43
1	1010375-66		42
1	1010359-11		41
1	1006755-65		40
2	1010359-27		39
2	1006755-69		38
1	1010375-124		37
1	1006755-20		36
1	1010375-52	CAPACITOR	35
1	1006750-18	RESISTOR-FIXED	34
1	1006750-7		33
1	1010368-11		32
1	1006750-56		31
1	1010364-749		30
1	1006750-64		29
1	1006750-70		28
1	1006750-84		27
1	1006750-34		26
1	1006750-19		25
1	1010364-757		24
1	1006750-44		23
1	1006750-69		22
1	1006750-84		21
1	1006750-20		20
1	1006750-72		19
1	1006750-77		18
1	1010364-521		17
1	1010364-727		16
1	1010364-609	RESISTOR FIXED	15
	1006787-2	WIRE-FEED THRU #22 AWG	14
AR	[illegible]776-21	INSULATION SLEEVING	13
14	1006775	INSULATOR, WRAPOST-MALE MIN	12
14	1006782-5	CONTACT, BLADE EDGE CONN.	11
AR	10[illegible]-20	INSULATION SLEEVING	10
	1006757-1	WIRE, NICKEL RIBBON	9
1	AN500D-2-4	SCREW	8
1	1015135-015	SPACER	7
1	AN500D-4-4	SCREW, PAN HEAD	6
1	AN500D-4-12	SCREW, PAN HEAD	5
1	1015131	SPACER	4
1	1015157	WAFER BOARD, UPPER	3
1	1015156	WAFER BOARD, LOWER	2
1	1015152	FRAME ASSY	1

LIST OF MATERIALS

1015124 C

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT
DRAWN F. Q. Abell DATE 5-29-63
CHECKED L.A. Plummer
APPROVAL K. G. Battaglia
APPROVAL
NASA APPROVAL W. S. Swingle 6/5/63
MIT APPROVAL W. Wolfe 5 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015124
SCALE 4 X
WT
SHEET 1 OF 1

MASTER

INCHES
PHOTOGRAPHIC SCALE ONLY

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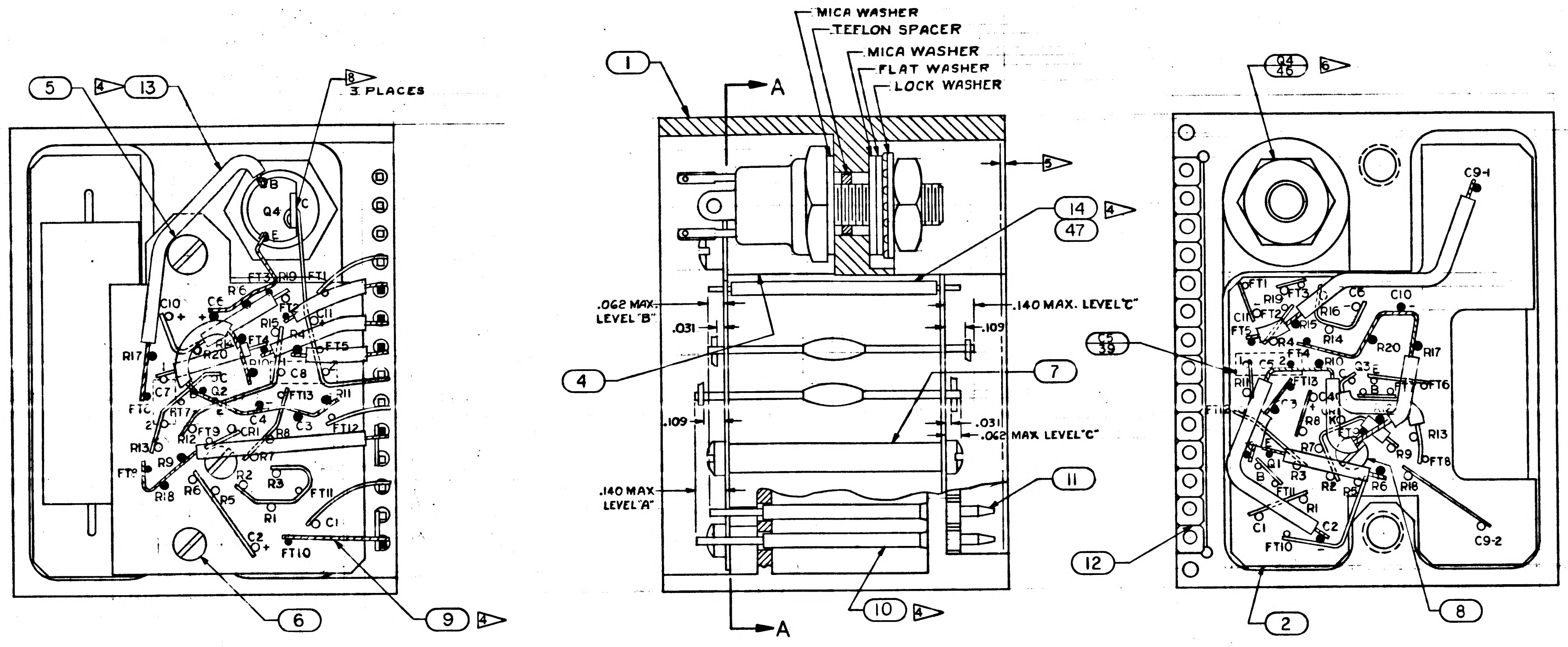
1015124

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 04128	5 Jun 63	WR
C	REVISED PER TDRR 03002	9-5-63	RK WR
D	REVISED PER TDRR 03263	9-9-63	RK WR



5
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3 PLACES
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FT9
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R5
R1
R3
C2
C1
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FT12
FT13
FT5
R11
C3
C4
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A
MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
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4
.062 MAX. LEVEL "B"
.031
.140 MAX. LEVEL "C"
.109
7
.109
.031
.062 MAX LEVEL "C"
.140 MAX LEVEL "A"
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Q4
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C9-1
C9-2
C5
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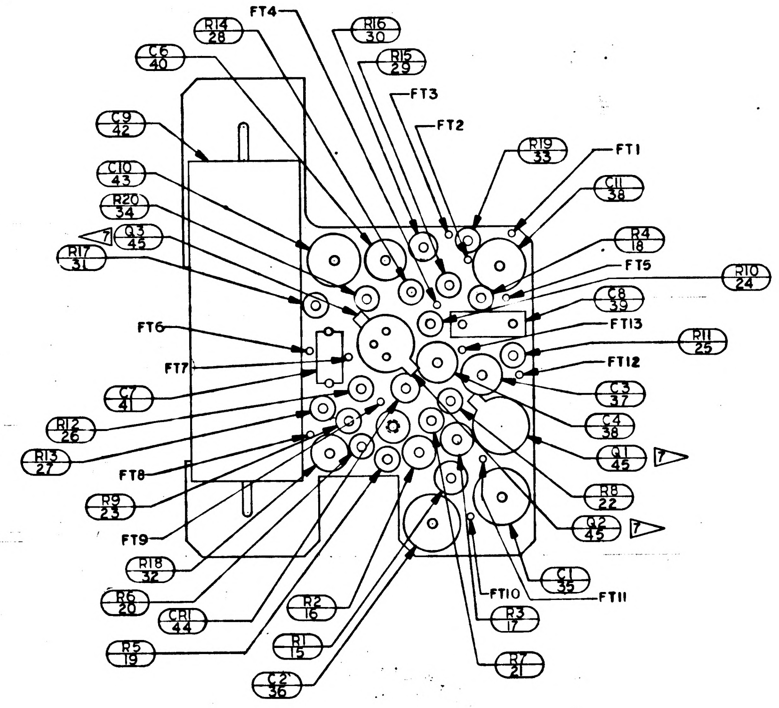
Ⓑ REPLACES REV A WITH CHANGE



FT4
R14 28
C6 40
R16 30
R15 29
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FT2
C9 42
R19 33
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C10 43
C11 38
R20 34
Q3 45
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R4 18
R17 31
FT5
R10 24
C8 39
FT6
FT13
R11 25
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FT12
C7 41
C5 37
C4 38
R12 26
R13 27
Q1 45
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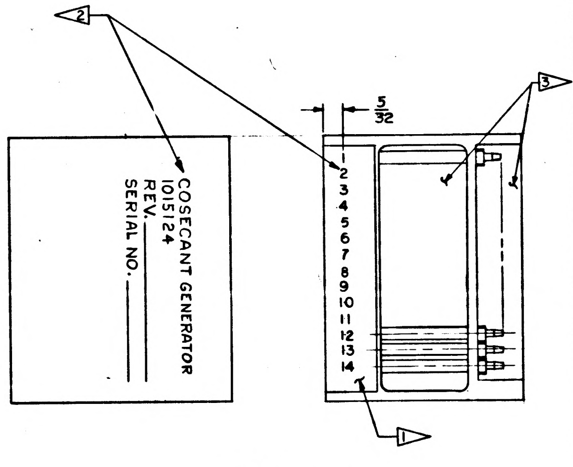
FT8
R9 23
R8 22
Q2 45
7
FT9
R18 32
R6 20
CR1 44
R2 16
FT10
C1 35
FT11
R3 17
R1 15
R5 19
R7 21
C2 36

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS



2
3
5/32
COSECANT GENERATOR
1015124
REV.
SERIAL NO.
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1

SCALE 2x1

1. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM
2. MARK CHARACTERS .060/.100 HIGH WHITE PER ND 1002019, CENTRALIZE AS SHOWN
3. AREAS TO BE FREE OF ENCAPSULATING COMPOUND
4. USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

5. ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY.
6. MOUNTING TORQUE FOR ITEM 46, 12^{+2}_{-2} INCH POUNDS
7. TRANSISTORS TO BE CEMENTED IN PLACE PER ND 1002009.
8. SOLDER PER ND 1002071 USING ND 1002075.

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

ON ITEMS 2 & 3, BROKEN PATH INDICATES INSULATION SLEEVING,
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR,
PLUS (+) INDICATES POSITIVE END OF CAPACITOR,
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR,
WIRING STDS FOR WELDED UNITS PER ND 1002003

DRAWINGS FOR REFERENCE
1015148 SCHEMATIC DIAGRAM, ELECTRICAL

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006776-22	INSULATION, SLEEVING	47
1	1010269-1	TRANSISTOR	46
3	1010397-1	TRANSISTOR	45
1	1010372-24	DIODE	44
1	1006755-77	CAPACITOR	43
1	1010375-66		42
1	1010359-11		41
1	1006755-65		40
2	1010359-27		39
2	1006755-69		38
1	1010375-124		37
1	1006755-20		36
1	1010375-52	CAPACITOR	35
1	1006750-18	RESISTOR-FIXED	34
1	1006750-7		33
1	1010368-11		32
1	1006750-56		31
1	1010364-749		30
1	1006750-64		29
1	1006750-70		28
1	1006750-84		27
1	1006750-34		26
1	1006750-19		25
1	1010364-757		24
1	1006750-44		23
1	1006750-69		22
1	1006750-84		21
1	1006750-20		20
1	1006750-72		19
1	1006750-77		18
1	1010364-521		17
1	1010364-727		16
1	1010364-609	RESISTOR FIXED	15
	1006787-2	WIRE-FEED THRU #22 AWG	14
AR	[illegible]776-21	INSULATION SLEEVING	13
14	1006775	INSULATOR, WRAPOST-MALE MIN	12
14	1006782-5	CONTACT, BLADE EDGE CONN.	11
AR	10[illegible]-20	INSULATION SLEEVING	10
	1006757-1	WIRE, NICKEL RIBBON	9
1	AN500D-2-4	SCREW	8
1	1015135-015	SPACER	7
1	AN500D-4-4	SCREW, PAN HEAD	6
1	AN500D-4-12	SCREW, PAN HEAD	5
1	1015131	SPACER	4
1	1015157	WAFER BOARD, UPPER	3
1	1015156	WAFER BOARD, LOWER	2
1	1015152	FRAME ASSY	1

LIST OF MATERIALS

1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN F Apell DATE 5-29-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

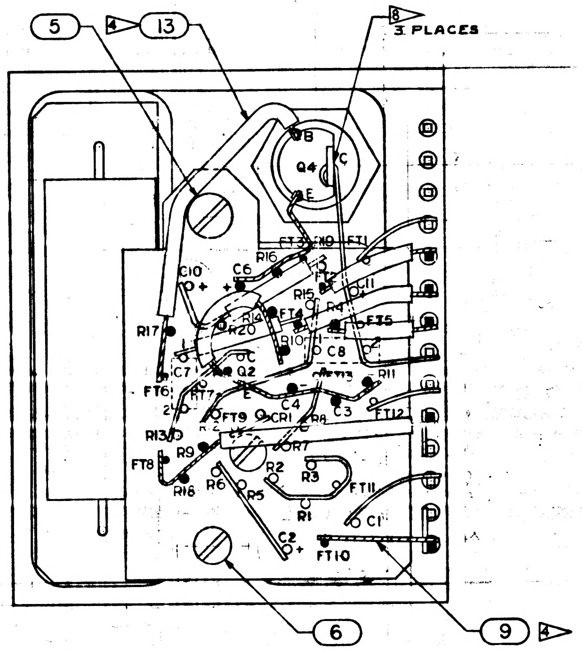
COSECANT GENERATOR
MODULE ASSY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015124
SCALE 4 X
WT
SHEET 1 OF 1

MASTER

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 01428	5 June 63	WK
C	REVISED PER TDRR 03002	9-5-63	PR WK
D	REVISED PER TDRR 03263	7-9-63	RK WK
E	REVISED PER TDRR 04457	5 Nov 63	RK WK

1015124



5
4
13
8
3 PLACES
Q4
B
C
E
C10
C6
R16
FT3
FT2
FT1
R15
R4
R14
R20
R17
FT5
C8
FT6
C7
Q2
R11
FT13
C3
FT12
R13
FT9
CR1
R8
CR7
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FT10
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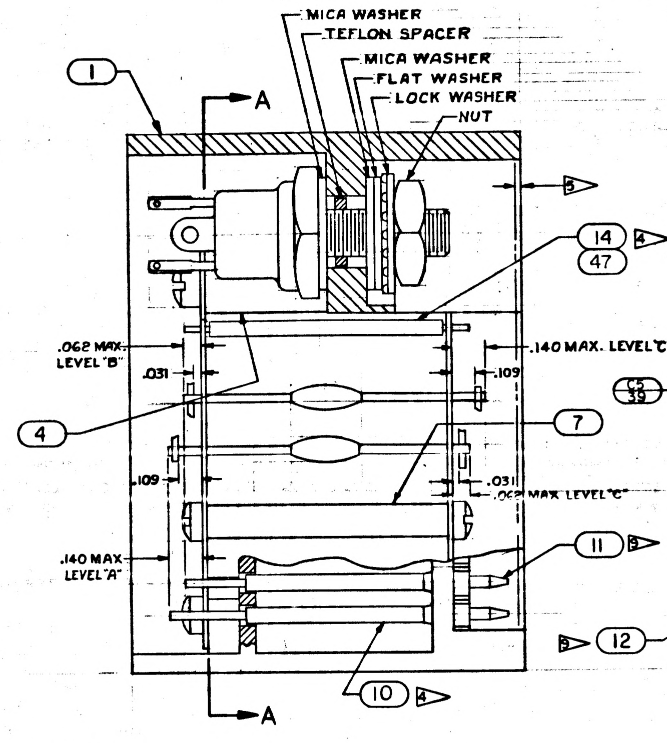

MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
1
A
A
3
14
47
4
.062 MAX.
LEVEL "B"
.031
.140 MAX. LEVEL "C"
.109
4
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.109
.031
.062 MAX LEVEL "C"
.140 MAX
LEVEL "A"
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3
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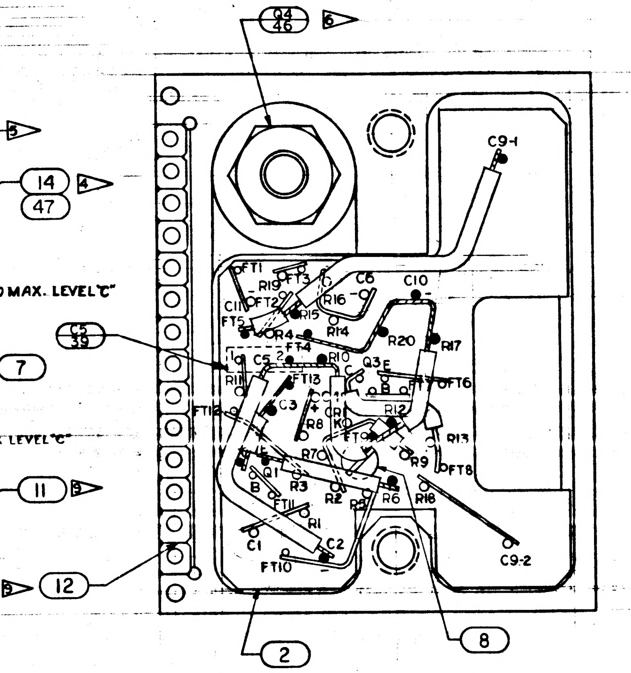

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C5
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C11
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C6
C10
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CR4
R14
R20
R17
C5
FT13
R10
Q3
FT6
R18
C3
R8
R12
FT7
R7
R9
R13
Q1
R3
FT8
R6
R18
FT11
R1
C1
C2
FT10
C9-2
2
8

Ⓑ REPLACES REV A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1. ENCAPSULATE MODULE PER ND 1002002 BLACK POLYURETHANE FOAM
2. MARK CHARACTERS .060/.100 HIGH WHITE PER ND1002019, CENTRALIZE AS SHOWN
3. AREAS TO BE FREE OF ENCAPSULATING COMPOUND
4. USE AS REQUIRED

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

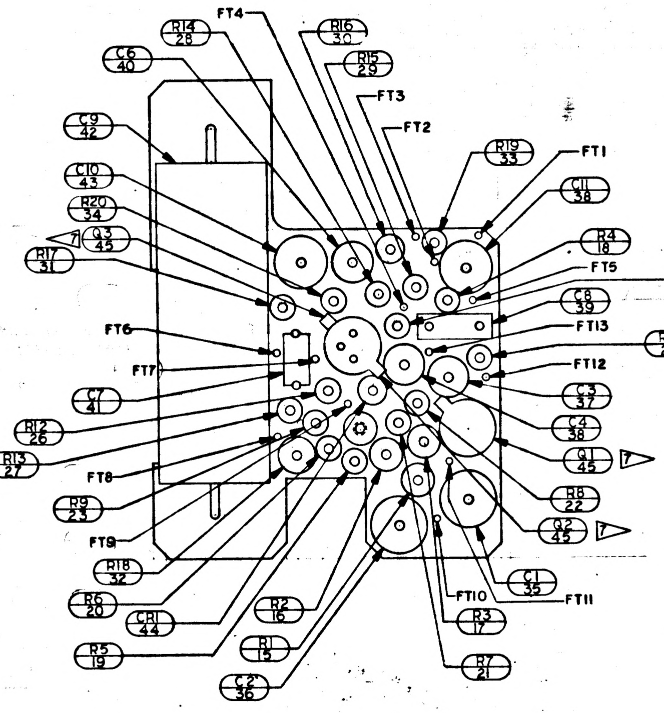
5. ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY.
6. MOUNTING TORQUE FOR ITEM 46, 12^{+2}_{-2} INCH POUNDS
7. TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002009.
8. SOLDER PER ND 1002071 USING ND 1002075.

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

9. ASSEMBLE PER ND 1002136

ON ITEMS 2 & 3, BROKEN PATH INDICATES INSULATION SLEEVING.
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.
ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

DRAWINGS FOR REFERENCE
1015148 SCHEMATIC DIAGRAM, ELECTRICAL



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FT4
R16
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C6
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R15
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FT3
FT2
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R19
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FT1
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R4
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R20
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FT5
Q3
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R17
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R10
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C8
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FT13
FT6
R11
25
FT7
FT12
C3
37
C7
41
C4
38
R12
26
Q1
45
R13
27
FT8
R8
22
R9
23
Q2
45
FT9
R18
32
C1
35
R6
20
CR1
44
FT10
FT11
R2
16
R3
17
R1
15
R7
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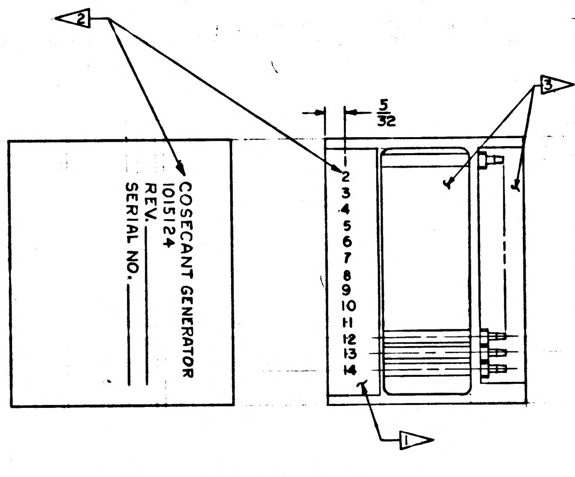
R5
19
C2
36

SECTION A-A
SHOWING ONLY LOWER WAFER AND COMPONENTS



2
COSECANT GENERATOR
1015124
REV.
SERIAL NO.
5/32
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1

SCALE 2x1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006776-22	INSULATION, SLEEVING	47
1	1010269-1	TRANSISTOR	46
3	1010397-1	TRANSISTOR	45
1	1010372-24	DIODE	44
1	1006755-77	CAPACITOR	43
1	1010375-66		42
1	1010359-11		41
1	1006755-65		40
2	1010359-27		39
2	1006755-69		38
1	1010375-124		37
1	1006755-20		36
1	1010375-52	CAPACITOR	35
1	1006750-18	RESISTOR-FIXED	34
1	1006750-7		33
1	1010368-11		32
1	1006750-56		31
1	1010364-749		30
1	1006750-64		29
1	1006750-70		28
1	1006750-84		27
1	1006750-34		26
1	1006750-19		25
1	1010364-757		24
1	1006750-44		23
1	1006750-69		22
1	1006750-84		21
1	1006750-20		20
1	1006750-72		19
1	1006750-77		18
1	1010364-521		17
1	1010364-727		16
1	1010364-609	RESISTOR FIXED	15
	1006787-2	WIRE-FEED THRU #22 AWG	14
AR	1006776-21	INSULATION SLEEVING	13
14	1006775	INSULATOR, WRAPOST-MALE MIN	12
14	1006782-5	CONTACT, BLADE EDGE CONN.	11
AR	1006776-20	INSULATION SLEEVING	10
	1006757-1	WIRE, NICKEL RIBBON	9
1	AN500D-2-4	SCREW	8
1	1015135-015	SPACER	7
1	AN500D-4-4	SCREW, PAN HEAD	6
1	AN500D-4-12	SCREW, PAN HEAD	5
1	1015131	SPACER	4
1	1015157	WAFER BOARD, UPPER	3
1	1015156	WAFER BOARD, LOWER	2
1	1015152	FRAME ASSY	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN F. Q. Sell DATE 5-29-63
CHECKED L. A. Plummer
APPROVAL R. E. Battaglia
APPROVAL
NASA APPROVAL W. J. Swigh 6/5/63
MIT APPROVAL W. Wagner 5 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015124
SCALE 4 X
WT
SHEET 1 OF 1

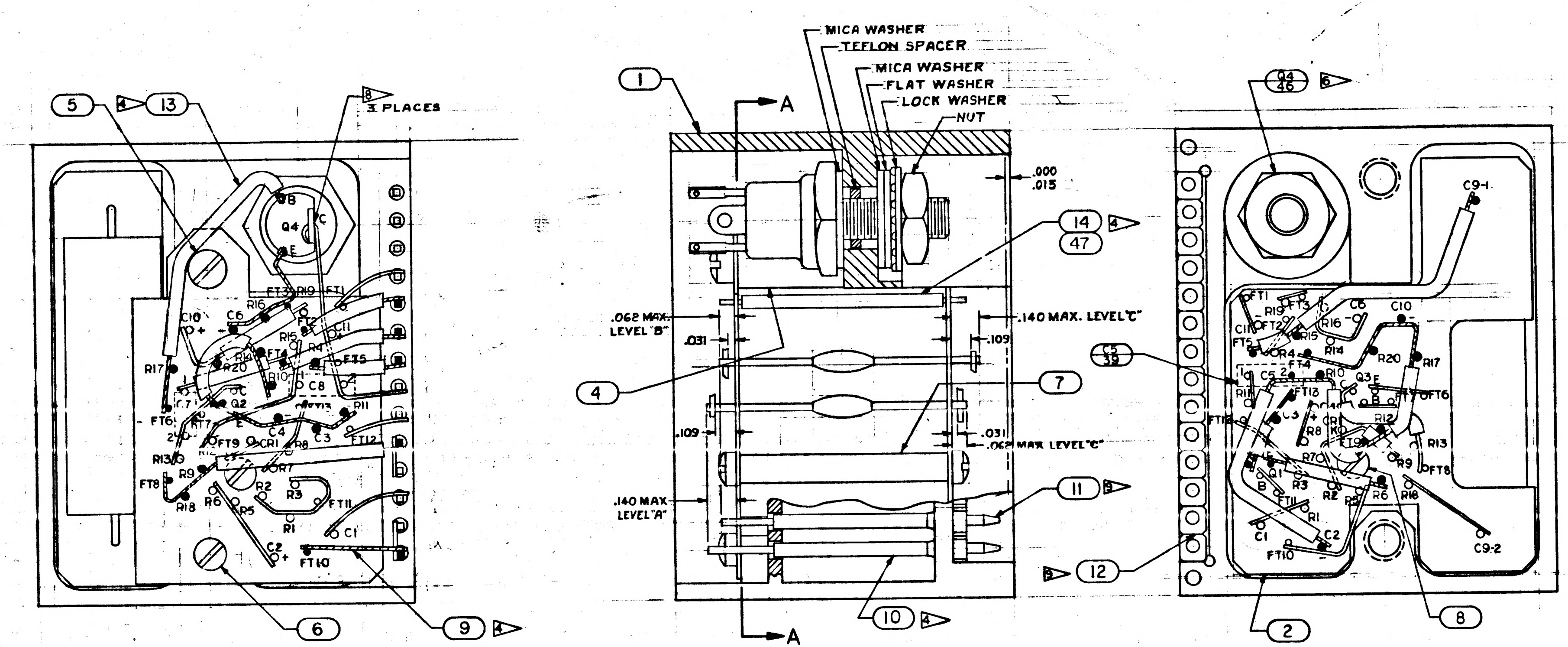
MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

[illegible]

1015124 F

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 01428	5 Jun 63	WL
C	REVISED PER TDRR 03002	9-5-63	WR
D	REVISED PER TDRR 03263	9-9-63	WR
E	REVISED PER TDRR 04457	5 Nov 63	WR
F	REVISED PER TDRR 05487	27 Dec 63	WR



5
4
13
8
3 PLACES
Q4
1
A
MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
.000
.015
14
47
4
.062 MAX. LEVEL "B"
.031
.140 MAX. LEVEL "C"
.109
C5 39
7
.109
.031
.062 MAX LEVEL "C"
.140 MAX LEVEL "A"
11
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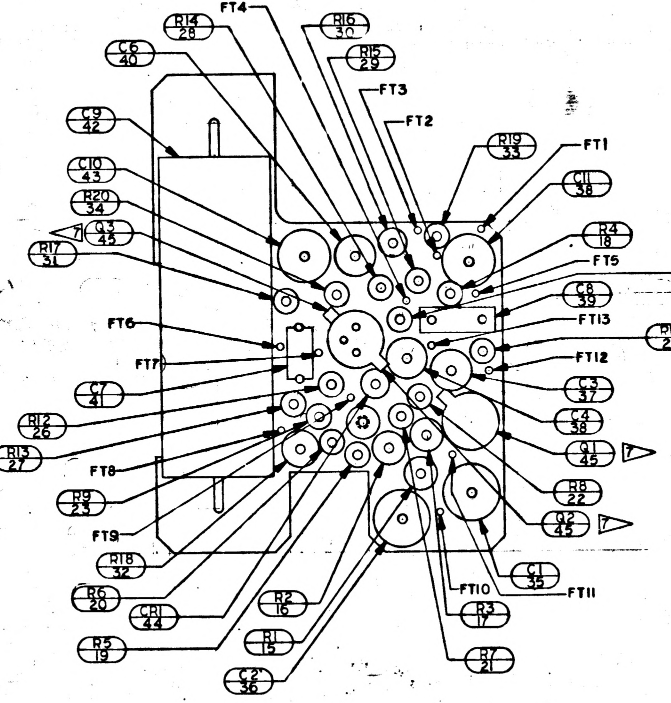
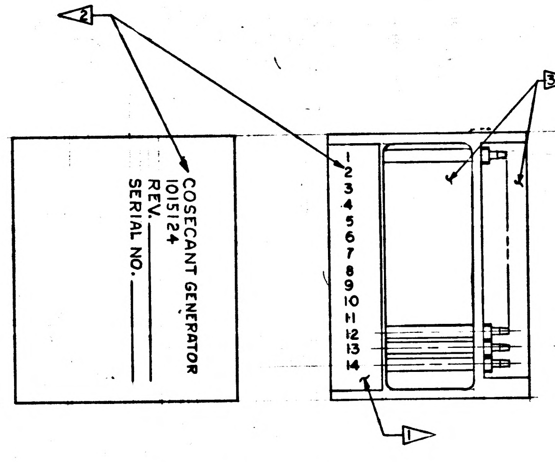
Q4 46
C9-1
C9-2

(B) REPLACES REV A WITH CHANGE



R14 28
R16 30
R15 29
C6 40
FT4
FT3
FT2
R19 33
FT1
C9 42
C10 43
C11 38
R20 34
R4 18
Q3 45
FT5
R17 31
R10 24
C8 39
FT6
FT13
R11 25
FT7
FT12
C7 41
C3 37
R12 26
C4 38
R13 27
Q1 45
FT8
R8 22
R9 23
Q2 45
FT9
R18 32
C1 35
FT10
FT11
R6 20
R2 16
CR1 44
R3 17
R1 15
R5 19
R7 21
C2 36

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS



2
3
COSECANT GENERATOR
1015124
REV.
SERIAL NO.
1
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13
14
1

SCALE 2 x 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED

6 MOUNTING TORQUE FOR ITEM 46, 12^{+2}_{-2} INCH POUNDS

7 TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002009.

8 SOLDER PER ND 1002071 USING ND 1002075.

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

9 ASSEMBLE PER ND 1002136

ON ITEMS 2 & 3, BROKEN PATH INDICATES INSULATION SLEEVING.
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR.

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

DRAWINGS FOR REFERENCE
1015148 SCHEMATIC DIAGRAM, ELECTRICAL.

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006776-22	INSULATION, SLEEVING	47
1	1010269-1	TRANSISTOR	46
3	1010397-1	TRANSISTOR	45
1	1010372-24	DIODE	44
1	1006755-77	CAPACITOR	43
1	1010375-66		42
1	1010359-11		41
1	1006755-65		40
2	1010359-27		39
2	1006755-69		38
1	1010375-124		37
1	1006755-20		36
1	1010375-52	CAPACITOR	35
1	1006750-18	RESISTOR-FIXED	34
1	1006750-7		33
1	1010368-11		32
1	1006750-56		31
1	1010364-749		30
1	1006750-64		29
1	1006750-70		28
1	1006750-84		27
1	1006750-34		26
1	1006750-19		25
1	1010364-757		24
1	1006750-44		23
1	1006750-69		22
1	1006750-84		21
1	1006750-20		20
1	1006750-72		19
1	1006750-77		18
1	1010364-521		17
1	1010364-727		16
1	1010364-609	RESISTOR FIXED	15
	1006787-2	WIRE-FEED THRU #22 AWG	14
AR	1006776-21	INSULATION SLEEVING	13
14	1006775	INSULATOR, WRAPOST-MALE MIN	12
14	1006782-5	CONTACT, BLADE EDGE CONN.	11
AR	1006776-20	INSULATION SLEEVING	10
	1006757-1	WIRE, NICKEL RIBBON	9
1	AN500D-2-4	SCREW	8
1	1015135-015	SPACER	7
1	AN500D-4-4	SCREW, PAN HEAD	6
1	AN500D-4-12	SCREW, PAN HEAD	5
1	1015131	SPACER	4
1	1015157	WAFER BOARD, UPPER	3
1	1015156	WAFER BOARD, LOWER	2
1	1015152	FRAME ASSY	1

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX ±.02 XXX ±.005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN F Q [illegible] DATE 5-29-63
CHECKED L A Plummer
APPROVAL R S Battey
APPROVAL
NASA APPROVAL [illegible] 6/5/63
MIT APPROVAL [illegible] 5 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

CODE IDENT NO. SIZE E NASA DRAWING NO. 1015124
SCALE 4 X WT SHEET 1 OF 1

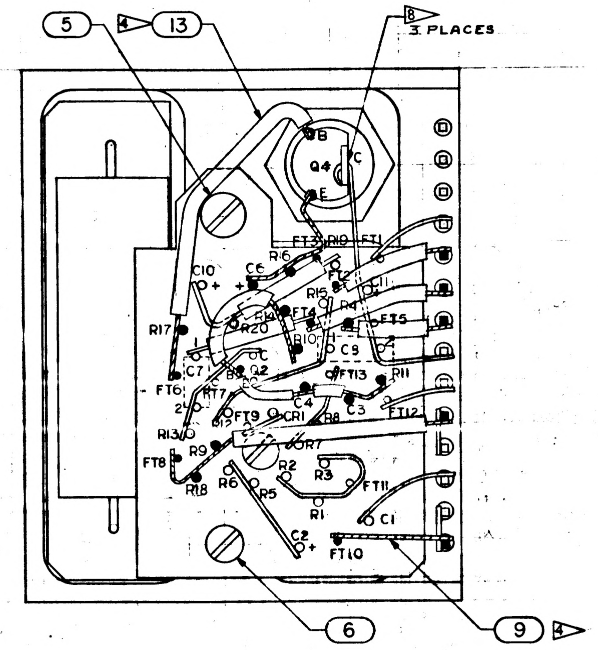
INCHES
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015124 G

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 01428	5 June 63	WK
C	REVISED PER TDRR 03002	9-5-63	WK
D	REVISED PER TDRR 03263		WK
E	REVISED PER TDRR 04457		WK
F	REVISED PER TDRR 05487	27 DEC 63	WK
G	REVISED PER TDRR 05699	JAN	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C10
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C11
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FT5
R17
R10
C9
C7
B
Q2
FT13
R11
FT6
R12
R13
C4
C3
FT12
R9
FT9
CR1
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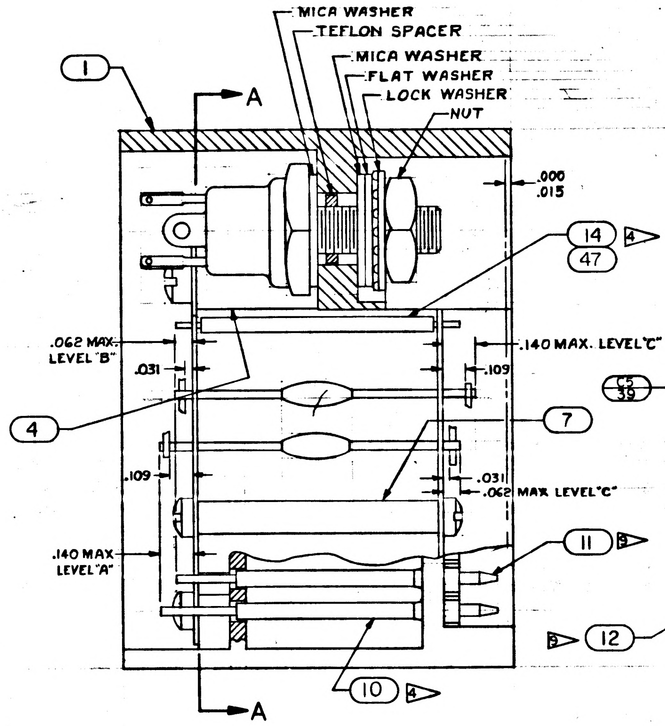
1
A
MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
.000
.015
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47
.062 MAX. LEVEL "B"
.031
.140 MAX. LEVEL "C"
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.062 MAX LEVEL "C"
.140 MAX LEVEL "A"
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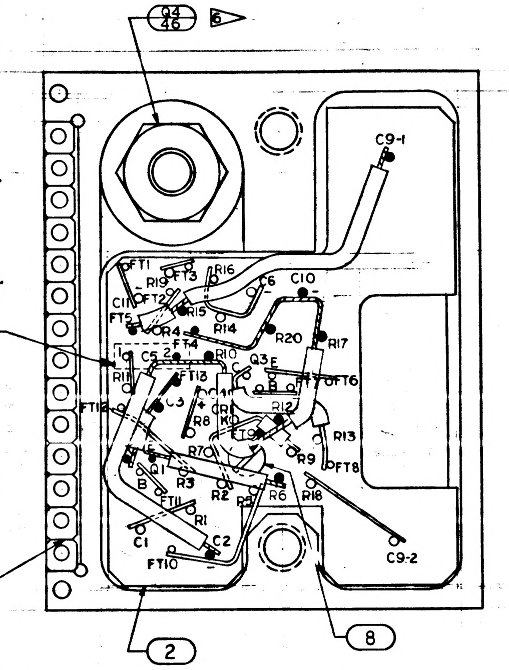
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R16
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FT5
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R14
R4
R20
R17
R11
C5
FT4
Q3
E
FT12
FT13
R10
FT6
C8
R8
CR1
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R7
FT9
R9
R13
Q1
C7
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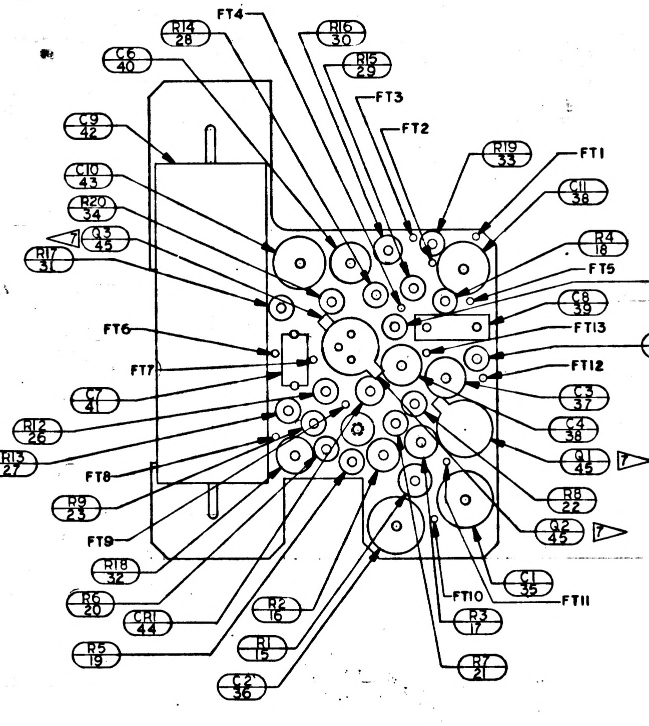
Ⓑ REPLACES REV A WITH CHANGE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R4 18
Q3 45
FT5
R17 31
R10 24
C8 39
FT13
FT6
R11 25
FT7
FT12
C7 41
C3 37
R12 26
C4 38
R13 27
Q1 45
FT8
R8 22
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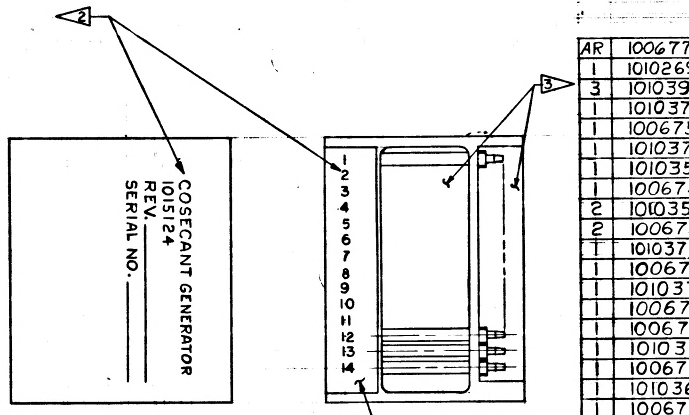
Q2 45
FT9
R18 32
C1 35
R6 20
FT10
FT11
CR1 44
R2 16
R3 17
R5 19
R1 15
R7 21
C2 36

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS


2
COSECANT GENERATOR
1015124
REV.
SERIAL NO.
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SCALE 2 x 1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1▷ ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2▷ MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4▷ USE AS REQUIRED

6▷ MOUNTING TORQUE FOR ITEM 46, 12^{+2}_{-2} INCH POUNDS

7▷ TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002004.

8▷ SOLDER PER ND 1002071 USING ND 1002075.

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

9▷ ASSEMBLE PER ND 1002136

ON ITEMS 2 & 3, BROKEN PATH INDICATES INSULATION SLEEVING.
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS (–) INDICATES NEGATIVE END OF CAPACITOR.
PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR,

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

DRAWINGS FOR REFERENCE
1015148 SCHEMATIC DIAGRAM, ELECTRICAL

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006776-22	INSULATION, SLEEVING	47
1	1010269-1	TRANSISTOR	46
3	1010397-1	TRANSISTOR	45
1	1010372-24	DIODE	44
1	1006755-77	CAPACITOR	43
1	1010375-66		42
1	1010359-11		41
1	1006755-65		40
2	1010359-27		39
2	1006755-69		38
1	1010375-124		37
1	1006755-20		36
1	1010375-52	CAPACITOR	35
1	1006750-18	RESISTOR-FIXED	34
1	1006750-7		33
1	1010368-11		32
1	1006750-56		31
1	1010364-749		30
1	1006750-64		29
1	1006750-70		28
1	1006750-84		27
1	1006750-34		26
1	1006750-19		25
1	1010364-757		24
1	1006750-44		23
1	1006750-69		22
1	1006750-84		21
1	1006750-20		20
1	1006750-72		19
1	1006750-77		18
1	1010364-521		17
1	1010364-727		16
1	1010364-609	RESISTOR FIXED	15
	1006787-2	WIRE-FEED THRU #22 AWG	14
AR	1006776-21	INSULATION SLEEVING	13
14	1006775	INSULATOR, WRAPOST-MALE MIN	12
14	1006782-5	CONTACT, BLADE EDGE CONN.	11
AR	1006776-20	INSULATION SLEEVING	10
	1006757-1	WIRE, NICKEL RIBBON	9
2	AN500D-2-4	SCREW	8
1	1015135-015	SPACER	7
1	AN500D-4-4	SCREW, PAN HEAD	6
1	AN500D-4-12	SCREW, PAN HEAD	5
1	1015131	SPACER	4
1	1015157	WAFER BOARD, UPPER	3
1	1015156	WAFER BOARD, LOWER	2
1	1015152	FRAME ASSY	1

LIST OF MATERIALS

1015124 G

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX ± .02 XXX ± .005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN F Q. Bell DATE 5-29-63
CHECKED L.A. Plummer
APPROVAL K. Battaglia
APPROVAL
NASA APPROVAL W.S. 6/3/63
MIT APPROVAL 5 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

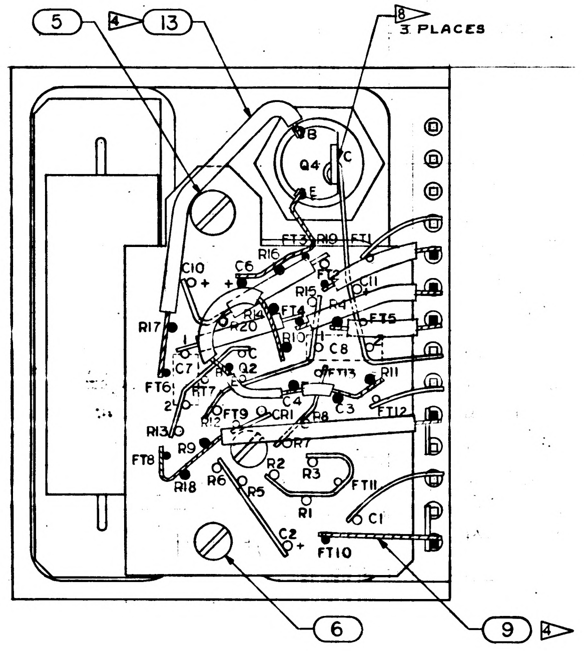
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015124
SCALE 4 X
WT
SHEET 1 OF 1

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015124 H

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 01428	5 Jun 63	WK
C	REVISED PER TDRR 03002	9-5-63	WK
D	REVISED PER TDRR 03263	9-9-63	WK
E	REVISED PER TDRR 04457	5 Nov 63	WK
F	REVISED PER TDRR 05487	27 Dec 63	WK
G	REVISED PER TDRR 05699	Jan 64	
H	REVISED PER TDRR 06783	3/10/64	WK



5
4
13
8
3 PLACES
Q4
C
B
E
FT3
R10
FT1
R16
C10
C6
C11
R15
FT4
R14
R17
R20
R13
FT5
C8
C7
FT6
R7
Q2
FT13
R11
C3
R13
FT9
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C1
C2
FT10
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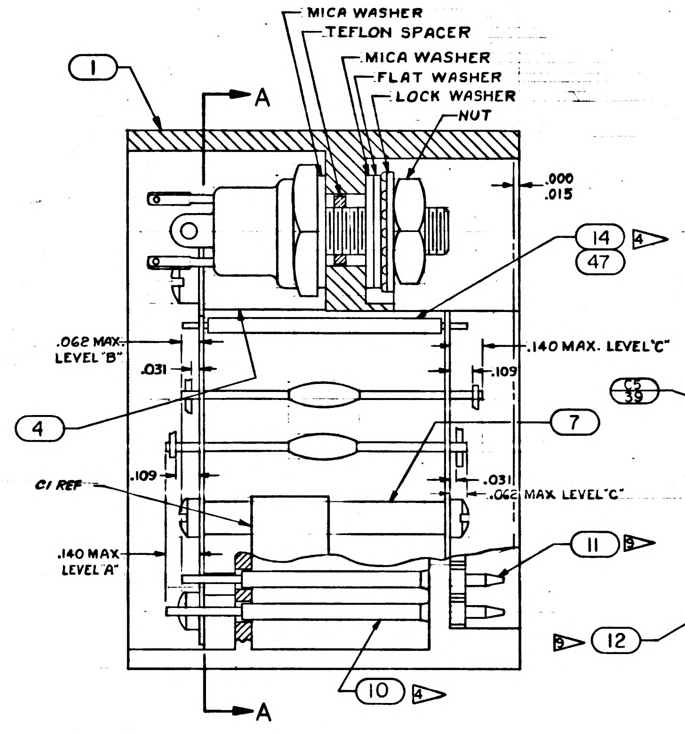
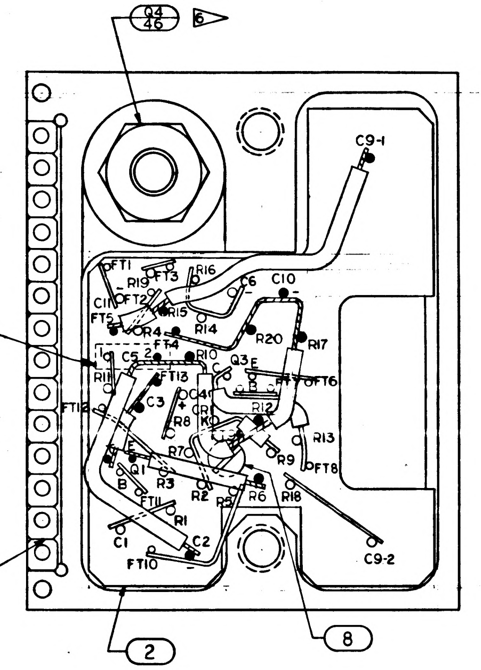
4



1
A
MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
.000
.015
14
47
4
.062 MAX. LEVEL "B"
.031
.140 MAX. LEVEL "C"
.109
4
7
C1 REF
.109
.031
.062 MAX LEVEL "C"
.140 MAX LEVEL "A"
11
8
12
3
10
4
A



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FT1
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FT3
R16
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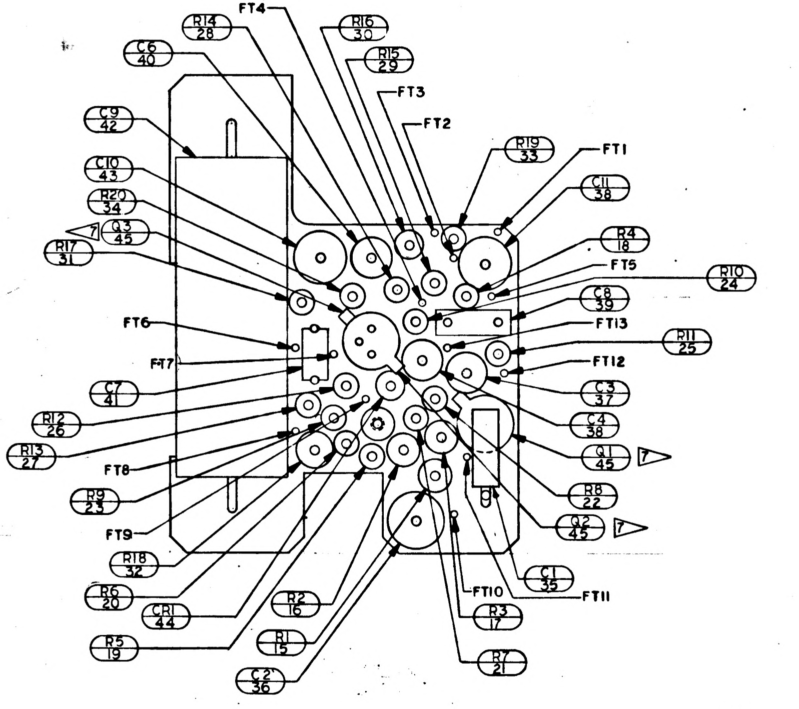
C5
39
C4
FT4
C2
R10
Q3
R20
R17
FT13
FT6
FT12
Q4
CR1
R8
R12
R7
R13
Q1
R3
R9
FT8
FT11
R1
R5
R6
R18
C1
C2
C9-2
FT10
2
8

Ⓑ REPLACES REV A WITH CHANGE



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R16
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R15
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C6
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FT3
FT2
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R19
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FT1
C10
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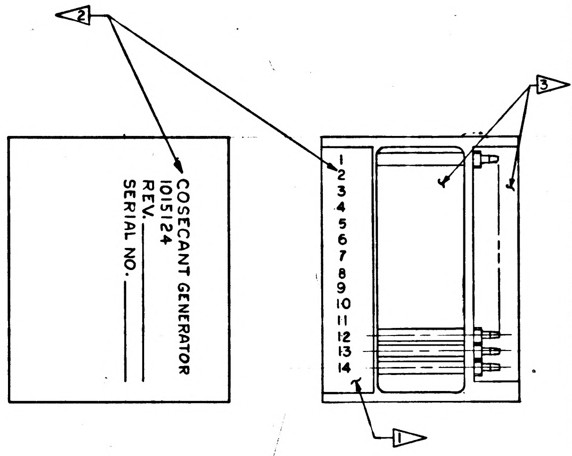
C11
38
R20
34
Q3
45
R4
18
R17
31
FT5
R10
24
C8
39
FT13
FT6
R11
25
FT7
FT12
C7
41
C5
37
R12
26
C4
38
R13
27
Q1
45
FT8
R8
22
R9
23
Q2
45
FT9
R18
32
C1
35
R6
20
FT10
FT11
CR1
44
R2
16
R3
17
R1
15
R5
19
R7
21
C2
36

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS



2
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14

COSECANT GENERATOR
1015124
REV.
SERIAL NO.

SCALE 2x1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1▷ ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2▷ MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4▷ USE AS REQUIRED

6▷ MOUNTING TORQUE FOR ITEM 46, 12^{+2}_{-2} INCH POUNDS

7▷ TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002009.

8▷ SOLDER PER ND 1002071 USING ND 1002075.

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

9▷ ASSEMBLE PER ND 1002136

ON ITEMS 2 & 3, BROKEN PATH INDICATES INSULATION SLEEVING.
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS (–) INDICATES NEGATIVE END OF CAPACITOR.
PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR,
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR,

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

DRAWINGS FOR REFERENCE
1015148 SCHEMATIC DIAGRAM, ELECTRICAL

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006776-22	INSULATION, SLEEVING	47
1	1010269-1	TRANSISTOR	46
3	1010397-1	TRANSISTOR	45
1	1010372-24	DIODE	44
1	1006755-77	CAPACITOR	43
1	1010375-66		42
1	1010359-11		41
1	1006755-65		40
2	1010359-27		39
2	1006755-69		38
1	1010375-124		37
1	1006755-20		36
1	1010359-27	CAPACITOR	35
1	1006750-18	RESISTOR-FIXED	34
1	1006750-7		33
1	1010368-11		32
1	1006750-56		31
1	1010364-749		30
1	1006750-64		29
1	1006750-70		28
1	1006750-84		27
1	1006750-34		26
1	1006750-19		25
1	1010364-757		24
1	1006750-44		23
1	1006750-69		22
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1	1006750-20		20
1	1006750-72		19
1	1006750-77		18
1	1010364-521		17
1	1010364-727		16
1	1006750-84	RESISTOR FIXED	15
	1006787-2	WIRE-FEED THRU #22 AWG	14
AR	1006776-21	INSULATION SLEEVING	13
14	1006775	INSULATOR, WRAPOST-MALE MIN	12
14	1006782-5	CONTACT, BLADE EDGE CONN.	11
AR	1006776-20	INSULATION SLEEVING	10
	1006757-1	WIRE, NICKEL RIBBON	9
2	AN500D-2-4	SCREW	8
1	1015135-015	SPACER	7
1	AN500D-4-4	SCREW, PAN HEAD	6
1	AN500D-4-12	SCREW, PAN HEAD	5
1	1015131	SPACER	4
1	1015157	WAFER BOARD, UPPER	3
1	1015156	WAFER BOARD, LOWER	2
1	1015152	FRAME ASSY	1

LIST OF MATERIALS

1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —   DECIMALS XX ±.02 XXX ±.005   ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO.   CONTRACT
DRAWN F Q. Bell   DATE 5-29-63
CHECKED L.A. Plummer
APPROVAL K. Battaglia
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

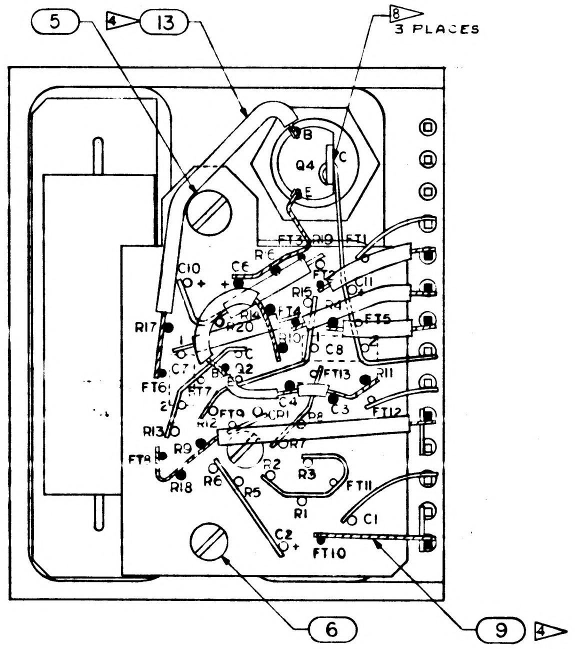
CODE IDENT NO.   SIZE E   NASA DRAWING NO. 1015124
SCALE 4 X   WT   SHEET 1 OF 1

MASTER

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

1015124 J

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGE PER TDRR 01428	5 Jun 63	WR
C	REVISED PER TDRR 03002	9-5-63	WR
D	REVISED PER TDRR 03263	7-1963	WR
E	REVISED PER TDRR 04457	5 Nov 63	WR
F	REVISED PER TDRR 05487	27 DEC 63	WR
G	REVISED PER TDRR 05699		
H	REVISED PER TDRR 06783	3/ 64	WR
J	REVISED PER TDRR 07285	6 APR 64	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3 PLACES
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FT6
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R18
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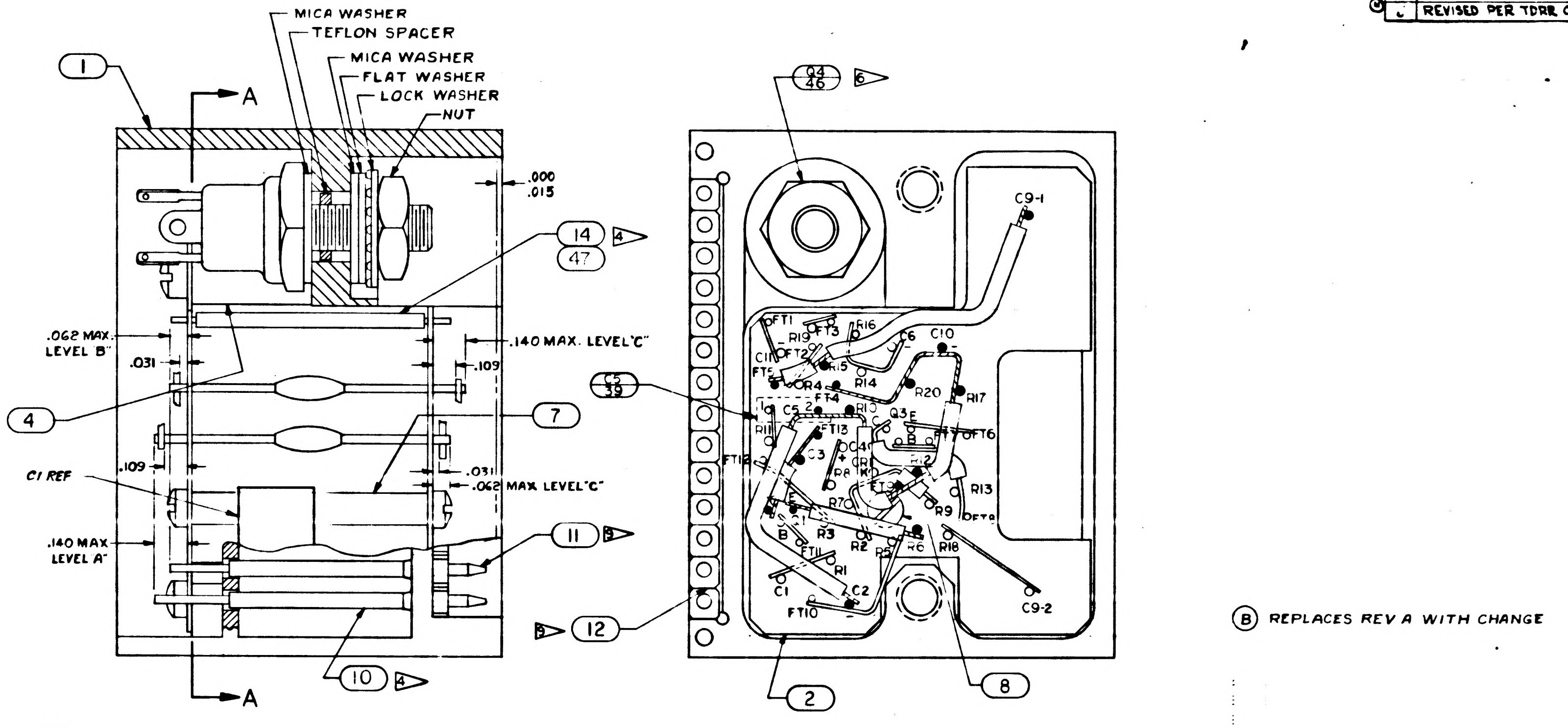
MICA WASHER
TEFLON SPACER
MICA WASHER
FLAT WASHER
LOCK WASHER
NUT
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.015
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47
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.062 MAX. LEVEL "B"
.031
.140 MAX. LEVEL "C"
.109
4
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.109
C1 REF
.031
.062 MAX LEVEL "C"
.140 MAX LEVEL "A"
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Q4
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C9-1
C5
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FT1
R19
FT3
R16
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R14
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FT4
C3
C4
FT6
R13
R9
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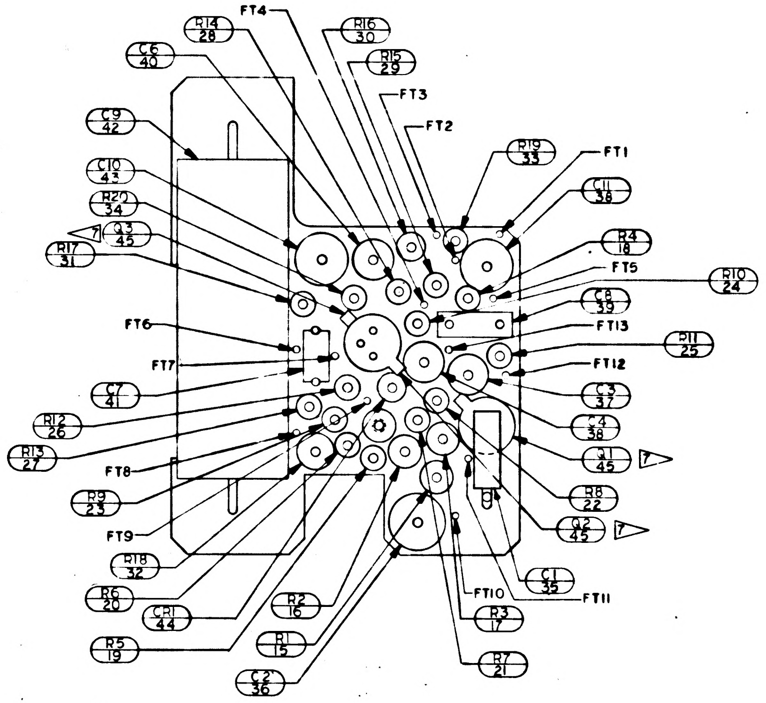
8

Ⓑ REPLACES REV A WITH CHANGE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FT2
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FT1
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C11 38
C10 43
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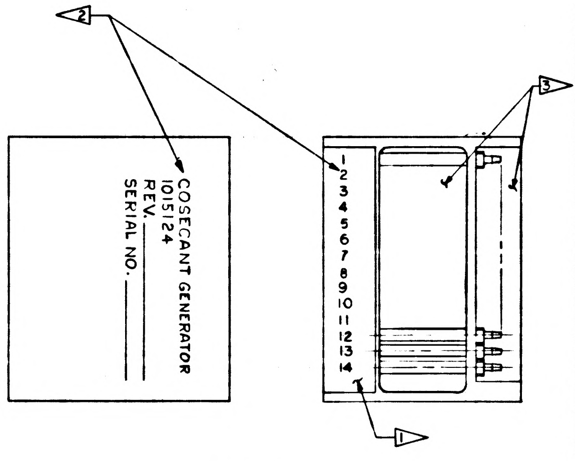
R4 18
R17 31
FT5
R10 24
C8 39
FT13
R11 25
FT6
FT7
FT12
C3 37
C7 41
C4 38
R12 26
Q1 45
7
R13 27
FT8
R8 22
R9 23
Q2 45
7
FT9
R18 32
R6 20
CR1 44
R2 16
C1 35
FT11
FT10
R3 17
R1 15
R5 19
C2 36
R7 21

SECTION A-A
SHOWING ONLY LOWER WAFER
AND COMPONENTS


2
3
COSECANT GENERATOR
1015124
REV.
SERIAL NO.
1
2
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10
11
12
13
14
1

SCALE 2x1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1▷ ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM) UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2▷ MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4▷ USE AS REQUIRED

6▷ MOUNTING TORQUE FOR ITEM 46, 12^{+2}_{-2} INCH POUNDS

7▷ TRANSISTORS TO BE CEMENTED IN PLACE PER ND1002004.

8▷ SOLDER PER ND1002071 USING ND1002075.

BLACK DOT & CROSS-HATCHED RIBBONS INDICATE WIRING LEVEL "A" OR "D".

9▷ ASSEMBLE PER ND 1002136

ON ITEMS 2 & 3, BROKEN PATH INDICATES INSULATION SLEEVING.
"K" INDICATES CATHODE SIDE OF DIODE,
FT INDICATES FEED THRU,
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
"C" INDICATES COLLECTOR LEAD OF TRANSISTOR.
"B" INDICATES BASE LEAD OF TRANSISTOR,
"E" INDICATES EMITTER LEAD OF TRANSISTOR,

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

DRAWINGS FOR REFERENCE
1015148 SCHEMATIC DIAGRAM, ELECTRICAL.

UNLESS OTHERWISE SPECIFIED: COMPONENTS TO BE CENTRALIZED BETWEEN ITEMS 2 & 3.

PROCURE PER PS 1015124.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
AR	1006776-22	INSULATION, SLEEVING	47
1	1010269-1	TRANSISTOR	46
3	1010397-1	TRANSISTOR	45
1	1010372-24	DIODE	44
1	1006755-77	CAPACITOR	43
1	1010375-66		42
1	1010359-11		41
1	1006755-65		40
2	1010359-27		39
2	1006755-69		38
1	1010375-124		37
1	1006755-20		36
1	1010359-27	CAPACITOR	35
1	1006750-18	RESISTOR-FIXED	34
1	1006750-7		33
1	1010368-11		32
1	1006750-56		31
1	1010364-749		30
1	1006750-64		29
1	1006750-70		28
1	1006750-84		27
1	1006750-34		26
1	1006750-19		25
1	1010364-757		24
1	1006750-44		23
1	1006750-69		22
1	1006750-84		21
1	1006750-20		20
1	1006750-72		19
1	1006750-77		18
1	1010364-521		17
1	1010364-727		16
1	1006750-84	RESISTOR FIXED	15
	1006787-2	WIRE-FEED THRU #22 AWG	14
AR	1006776-21	INSULATION SLEEVING	13
14	1006775	INSULATOR, WRAPOST-MALE MIN	12
14	1006782-5	CONTACT, BLADE EDGE CONN.	11
AR	1006776-20	INSULATION SLEEVING	10
	1006757-1	WIRE, NICKEL RIBBON	9
2	AN500D-2-4	SCREW	8
1	1015135-015	SPACER	7
1	AN500D-4-4	SCREW, PAN HEAD	6
1	AN500D-4-12	SCREW, PAN HEAD	5
1	1015131	SPACER	4
1	1015157	WAFER BOARD, UPPER	3
1	1015156	WAFER BOARD, LOWER	2
1	1015152	FRAME ASSY	1

LIST OF MATERIALS

1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS XX ± .02 XXX ± .005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT NAS-9-497

DRAWN F Appell DATE 5-29-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COSECANT GENERATOR
MODULE ASSY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015124
SCALE 4 X
WT
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015124

SYM	DESCRIPTION	DATE	APPROVAL
REVISIONS	TORR 00987		

PART NO.		DESCRIPTION	REQD
1006750	-7	RESISTOR	1
	-17		1
	-18		1
	-20		1
	-34		1
	-44		1
	-56		1
	-64		1
	-69		1
	-70		1
	-72		1
1006750	-84		1
1010364	-521		1
	-609		1
	-727		1
	-749		1
1010364	-757		1
1010368	-11	RESISTOR	1
1006755	-20	CAPACITOR	1
	-65		1
	-69		2
1006755	-77		1
1010359	-27		2
1010375	-52		1
	-66		1
1010375	-124	CAPACITOR	1
1010372	-24	DIODE	1
1010397	-001	TRANSISTOR	3
1010269		TRANSISTOR	1

1015124

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

MASTER

1007108	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
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MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

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DWG. NO. CONTRACT
DRAWN R.L.B. DATE 4/23/63
CHECKED L.A.Plummer
APPROVAL R.L. Buttolf
APPROVAL
NASA APPROVAL 4/24/63
MIT APPROVAL 24 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
COSECANT GENERATOR

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015124
SCALE —
WT —
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

PROCUREMENT SPECIFICATION

FOR

COSECANT GENERATOR MODULE ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page i to iii and 1 to 4 inclusive.

PROCUREMENT SPECIFICATION

FOR

COSECANT GENERATOR MODULE ASSEMBLY

The purpose of this document is to establish the requirements for the procurement of the Cosecant Generator Module Assembly for use in APOLLO Guidance and Navigation equipment.

W. A. Kupfer 28 Jan 64
MIT/IL DATE

William S. [illegible] 1/28/64
NASA/MSC APPROVAL DATE

PROCUREMENT SPECIFICATION

FOR

COSECANT GENERATOR MODULE ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Cosecant Generator Module Assembly, Drawing 1015124, hereafter called the generator.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM-1015124	Final Test Method for Cosecant Generator Module Assembly

DRAWINGS

APOLLO G&N

1015124	Cosecant Generator Module Assembly
1015148	Cosecant Generator, Schematic Diagram (For Reference Only)

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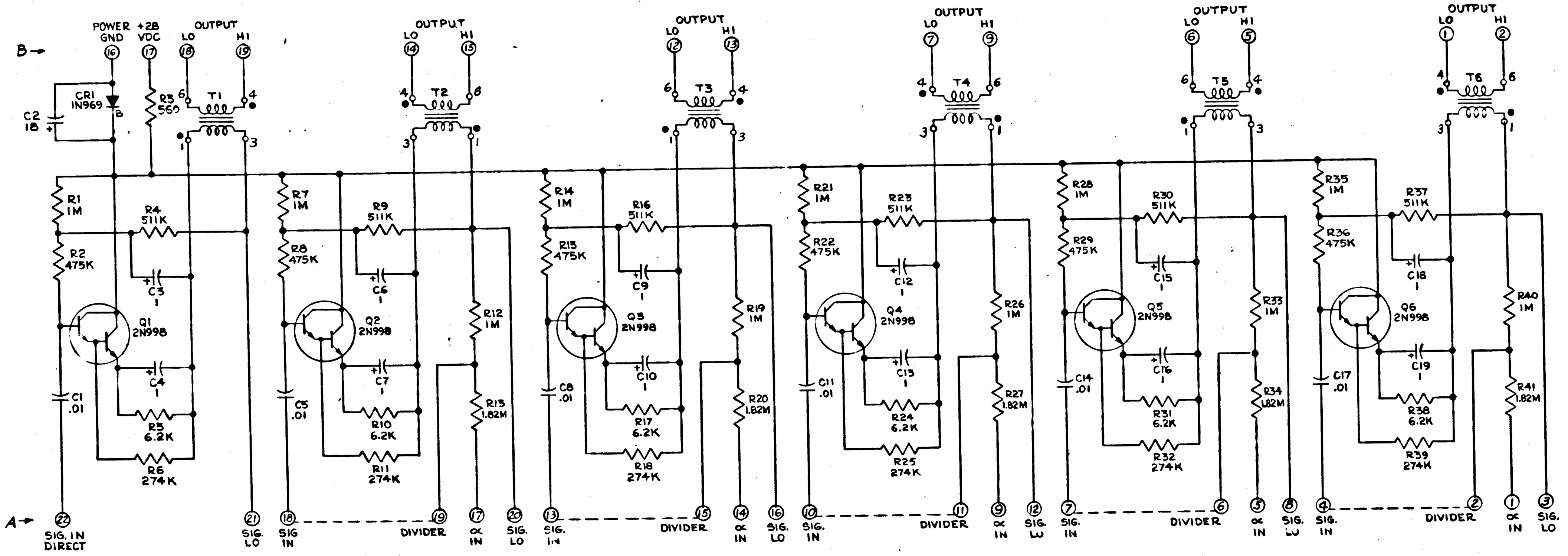
1015126 Ⓐ

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A_3	(1) R-35 WAS CONNECTED TO T6-2 (2) REVISED X FRMR TERM NOS. (3) ADDED MODULE PIN NOS. TORR	9-29-63 00791	wk



B →
POWER GND ⑯
+28 VDC ⑰
OUTPUT LO ⑱ HI ⑲
CR1 1N969
C2 18
R3 560
T1
R1 1M
R2 475K
R4 511K
C3 1
Q1 2N998
C4 1
C1 .01
R5 6.2K
R6 274K
A →
㉒ SIG. IN DIRECT
㉑ SIG. LO
OUTPUT LO ⑭ HI ⑮
T2
R7 1M
R8 475K
R9 511K
C6 1
Q2 2N998
C7 1
C5 .01
R10 6.2K
R11 274K
R12 1M
R13 1.82M
⑱ SIG IN
⑲ DIVIDER
⑰ ∝ IN
⑳ SIG. LO
OUTPUT LO ⑫ HI ⑬
T3
R14 1M
R15 475K
R16 511K
C9 1
Q3 2N998
C10 1
C8 .01
R17 6.2K
R18 274K
R19 1M
R20 1.82M
⑬ SIG. IN
⑮ DIVIDER
⑭ ∝ IN
⑯ SIG. LO
OUTPUT LO ⑦ HI ⑨
T4
R21 1M
R22 475K
R23 511K
C12 1
Q4 2N998
C13 1
C11 .01
R24 6.2K
R25 274K
R26 1M
R27 1.82M
⑩ SIG. IN
⑪ DIVIDER
⑨ ∝ IN
⑫ SIG. LO
OUTPUT LO ⑥ HI ⑤
T5
R28 1M
R29 475K
R30 511K
C15 1
Q5 2N998
C16 1
C14 .01
R31 6.2K
R32 274K
R33 1M
R34 1.82M
⑦ SIG. IN
⑥ DIVIDER
⑤ ∝ IN
⑧ SIG. LO
OUTPUT LO ① HI ②
T6
R35 1M
R36 475K
R37 511K
C18 1
Q6 2N998
C19 1
C17 .01
R38 6.2K
R39 274K
R40 1M
R41 1.82M
④ SIG. IN
② DIVIDER
① ∝ IN
③ SIG. LO

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00855 DATE 17Sep63

1015126

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISTOR VALUES ARE EXPRESSED IN OHMS, K INDICATES THOUSANDS OF OHMS, M INDICATES MILLIONS OF OHMS.
3. CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS.

REV- A	REV-
SHEET 1	SHEET 2

REVISION STATUS OF SHTS

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
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DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

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APPROVAL M.S. Johnson
APPROVAL K. L. Battelgon
NASA APPROVAL
MIT APPROVAL 17Sep63

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HOUSTON, TEXAS

SCHEMATIC DIAGRAM
BUFFER CIRCUIT

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015126
SCALE —
WT
SHEET 1 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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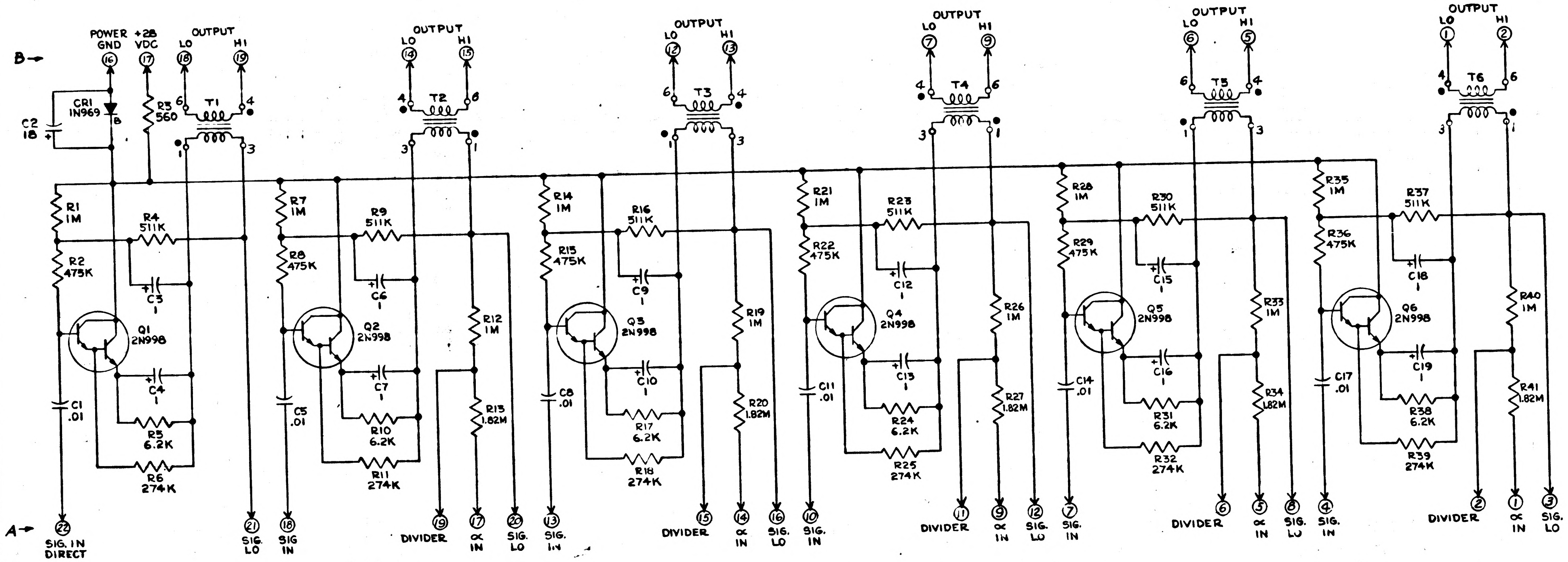
1015126 B

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A_3	(1) R-35 WAS CONNECTED TO T6-2 (2) REVISED X FRMR TERM NOS. (3) ADDED MODULE PIN NOS. TDRR 00091	9-24-63	WK
B	UPGRADE TO CLASS A PER TDRR 01373	5/24/63	WK


B→
A→
POWER GND ⑯
+28 VDC ⑰
OUTPUT LO ⑱ HI ⑲
CR1 1N969
C2 18
R3 560
T1
R1 1M
R2 475K
R4 511K
C3 1
Q1 2N998
C4 1
R5 6.2K
R6 274K
C1 .01
㉒ SIG. IN DIRECT
㉑ SIG LO
⑱ SIG IN
OUTPUT LO ⑭ HI ⑮
T2
R7 1M
R8 475K
R9 511K
C6 1
Q2 2N998
C7 1
R10 6.2K
R11 274K
C5 .01
R12 1M
R13 1.82M
⑲ DIVIDER
⑰ ∝ IN
⑳ SIG. LO
⑬ SIG. IN
OUTPUT LO ⑫ HI ⑬
T3
R14 1M
R15 475K
R16 511K
C9 1
Q3 2N998
C10 1
R17 6.2K
R18 274K
C8 .01
R19 1M
R20 1.82M
⑮ DIVIDER
⑭ ∝ IN
⑯ SIG. LO
⑩ SIG. IN
OUTPUT LO ⑦ HI ⑨
T4
R21 1M
R22 475K
R23 511K
C12 1
Q4 2N998
C13 1
R24 6.2K
R25 274K
C11 .01
R26 1M
R27 1.82M
⑪ DIVIDER
⑨ ∝ IN
⑫ SIG. LO
⑦ SIG. IN
OUTPUT LO ⑥ HI ⑤
T5
R28 1M
R29 475K
R30 511K
C15 1
Q5 2N998
C16 1
R31 6.2K
R32 274K
C14 .01
R33 1M
R34 1.82M
⑥ DIVIDER
⑤ ∝ IN
⑧ SIG. LO
④ SIG. IN
OUTPUT LO ① HI ②
T6
R35 1M
R36 475K
R37 511K
C18 1
Q6 2N998
C19 1
R38 6.2K
R39 274K
C17 .01
R40 1M
R41 1.82M
② DIVIDER
① ∝ IN
③ SIG. LO

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISTOR VALUES ARE EXPRESSED IN OHMS, K INDICATES THOUSANDS OF OHMS, M INDICATES MILLIONS OF OHMS.
3. CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS.
4. REFERENCE DWG: MODULE ASSEMBLY-BUFFER CIRCUIT, 1015136.

REV- B	REV- B
SHEET 1	SHEET 2
REVISION STATUS OF SHTS	

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
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APPROVAL R. L. Battaglia
NASA APPROVAL
MIT APPROVAL 17 Apr 63

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SCHEMATIC DIAGRAM
BUFFER CIRCUIT

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015126
SCALE —
WT
SHEET 1 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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1015126 B

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	UPGRADE TO CLASS A PER TDRR 01373	5/29/63	WK

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
C1	1010359 - 29	CAPACITOR	.01	±20%	200V
C2	1006755 - 84		18	±10%	35V
C3	1006755 - 69		1	±10%	35V
C4	1006755 - 69		1	±10%	35V
C5	1010359 - 29		.01	±20%	200V
C6	1006755 - 69		1	±10%	35V
C7	1006755 - 69		1	±10%	35V
C8	1010359 - 29		.01	±20%	200V
C9	1006755 - 69		1	±10%	35V
C10	1006755 - 69		1	±10%	35V
C11	1010359 - 29		.01	±20%	200V
C12	1006755 - 69		1	±10%	35V
C13	1006755 - 69		1	±10%	35V
C14	1010359 - 29		.01	±20%	200V
C15	1006755 - 69		1	±10%	35V
C16	1006755 - 69		1	±10%	35V
C17	1010359 - 29		.01	±20%	200V
C18	1006755 - 69		1	±10%	35V
C19	1006755 - 69	CAPACITOR	1	±10%	35V
CR1	1010286 - 13	DIODE	IN969		
R1	1010374 - 29	RESISTOR	1M	1%	1/8W
R2	1010364 - 765		475K	1%	1/8W
R3	1006750 - 26		560	2%	1/4W
R4	1010374 - 1		511K	1%	1/8W
R5	1006750 - 51		6.2K	2%	1/4W
R6	1010364 - 719		274K	1%	1/8W
R7	1010374 - 29		1M	1%	1/8W
R8	1010364 - 765		475K	1%	1/8W
R9	1010374 - 1		511K	1%	1/8W
R10	1006750 - 51		6.2K	2%	1/4W
R11	1010364 - 719		274K	1%	1/8W
R12	1010374 - 29		1M	1%	1/8W
R13	1010374 - 54		1.82M	1%	1/8W
R14	1010374 - 29		1M	1%	1/8W
R15	1010364 - 765		475K	1%	1/8W
R16	1010374 - 1		511K	1%	1/8W
R17	1006750 - 51		6.2K	2%	1/4W
R18	1010364 - 719	RESISTOR	274K	1%	1/8W

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R19	1010374 - 29	RESISTOR	1M	1%	1/8W
R20	1010374 - 54		1.82M	1%	1/8W
R21	1010374 - 29		1M	1%	1/8W
R22	1010364 - 765		475K	1%	1/8W
R23	1010374 - 1		511K	1%	1/8W
R24	1006750 - 51		6.2K	2%	1/4W
R25	1010364 - 719		274K	1%	1/8W
R26	1010374 - 29		1M	1%	1/8W
R27	1010374 - 54		1.82M	1%	1/8W
R28	1010374 - 29		1M	1%	1/8W
R29	1010364 - 765		475K	1%	1/8W
R30	1010374 - 1		511K	1%	1/8W
R31	1006750 - 51		6.2K	2%	1/4W
R32	1010364 - 719		274K	1%	1/8W
R33	1010374 - 29		1M	1%	1/8W
R34	1010374 - 54		1.82M	1%	1/8W
R35	1010374 - 29		1M	1%	1/8W
R36	1010364 - 765		475K	1%	1/8W
R37	1010374 - 1		511K	1%	1/8W
R38	1006750 - 51		6.2K	2%	1/4W
R39	1010364 - 719		274K	1%	1/8W
R40	1010374 - 29		1M	1%	1/8W
R41	1010374 - 54	RESISTOR	1.82M	1%	1/8W
Q1	1010342	TRANSISTOR	2N998		
Q2					
Q3					
Q4					
Q5					
Q6	1010342	TRANSISTOR	2N998		
T1	1010329 - 1	TRANSFORMER	SP-66		
T2					
T3					
T4					
T5					
T6	1010329 - 1	TRANSFORMER	SP-66		

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

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DRAWN R. EMERY DATE 4-16-63
CHECKED L.A. Plummer
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 17 Jul 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
BUFFER CIRCUIT

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015126
SCALE —
WT
SHEET 2 OF 2

1015126

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015126 B

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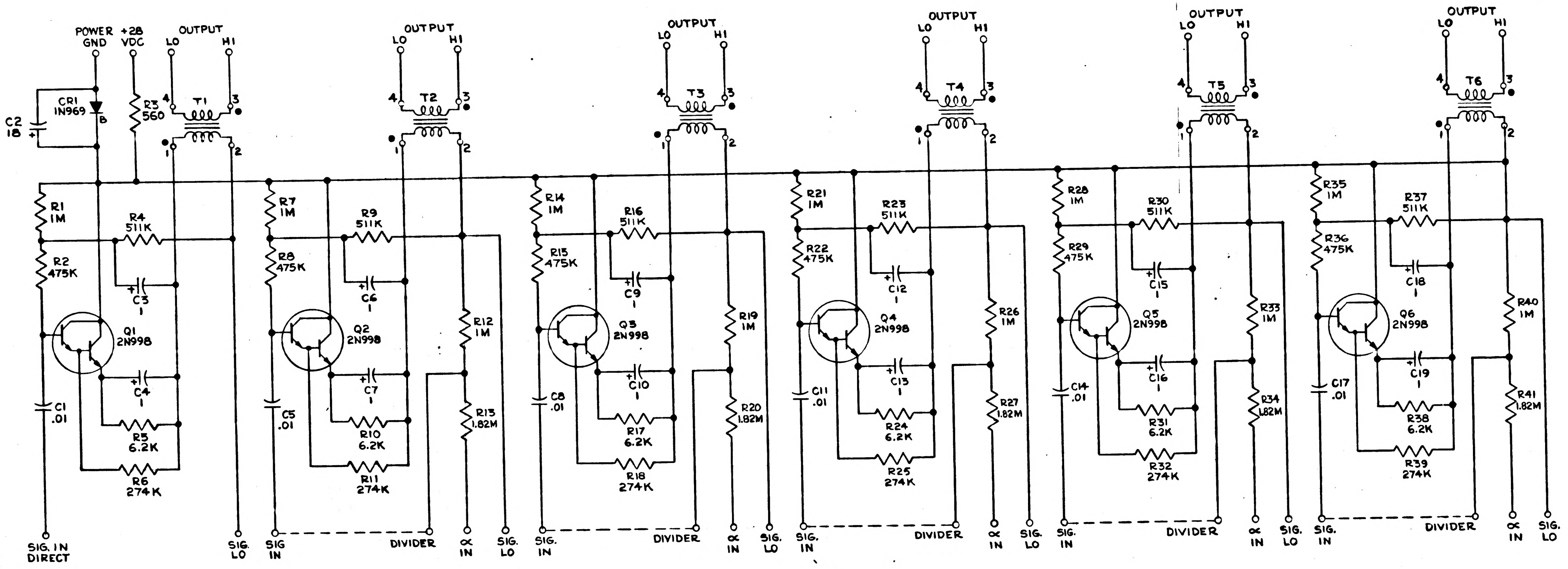
1015126

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL


POWER GND
+28 VDC
OUTPUT LO HI
C2 18
CR1 1N969
B
R3 560
T1
4
3
1
2
R1 1M
R2 475K
R4 511K
C3 1
Q1 2N998
C4 1
C1 .01
R5 6.2K
R6 274K
SIG. IN DIRECT
SIG. LO
SIG IN
T2
R7 1M
R8 475K
R9 511K
C6 1
Q2 2N998
C7 1
C5 .01
R10 6.2K
R11 274K
R12 1M
R13 1.82M
DIVIDER
∝ IN
T3
R14 1M
R15 475K
R16 511K
C9 1
Q3 2N998
C10 1
C8 .01
R17 6.2K
R18 274K
R19 1M
R20 1.82M
T4
R21 1M
R22 475K
R23 511K
C12 1
Q4 2N998
C13 1
C11 .01
R24 6.2K
R25 274K
R26 1M
R27 1.82M
T5
R28 1M
R29 475K
R30 511K
C15 1
Q5 2N998
C16 1
C14 .01
R31 6.2K
R32 274K
R33 1M
R34 1.82M
T6
R35 1M
R36 475K
R37 511K
C18 1
Q6 2N998
C19 1
C17 .01
R38 6.2K
R39 274K
R40 1M
R41 1.82M

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00855 DATE 17Apr63

1015126

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APPROVAL R. L. Battelfson
NASA APPROVAL
MIT APPROVAL 17Apr63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
BUFFER CIRCUIT

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015126
SCALE —
WT
SHEET 1 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015126

SYM	DESCRIPTION	DATE	APPROVAL

REVISIONS

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REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
C1	1010359 - 29	CAPACITOR	.01	±20%	200V
C2	1006755 - 84		18	±10%	35V
C3	1006755 - 69		1	±10%	35V
C4	1006755 - 69		1	±10%	35V
C5	1010359 - 29		.01	±20%	200V
C6	1006755 - 69		1	±10%	35V
C7	1006755 - 69		1	±10%	35V
C8	1010359 - 29		.01	±20%	200V
C9	1006755 - 69		1	±10%	35V
C10	1006755 - 69		1	±10%	35V
C11	1010359 - 29		.01	±20%	200V
C12	1006755 - 69		1	±10%	35V
C13	1006755 - 69		1	±10%	35V
C14	1010359 - 29		.01	±20%	200V
C15	1006755 - 69		1	±10%	35V
C16	1006755 - 69		1	±10%	35V
C17	1010359 - 29		.01	±20%	200V
C18	1006755 - 69		1	±10%	35V
C19	1006755 - 69	CAPACITOR	1	±10%	35V
CR1	1010286 - 13	DIODE	1N969		
R1	1010374 - 29	RESISTOR	1M	1%	1/8W
R2	1010364 - 765		475K	1%	1/8W
R3	1006750 - 26		560	2%	1/4W
R4	1010374 - 1		511K	1%	1/8W
R5	1006750 - 51		6.2K	2%	1/4W
R6	1010364 - 719		274K	1%	1/8W
R7	1010374 - 29		1M	1%	1/8W
R8	1010364 - 765		475K	1%	1/8W
R9	1010374 - 1		511K	1%	1/8W
R10	1006750 - 51		6.2K	2%	1/4W
R11	1010364 - 719		274K	1%	1/8W
R12	1010374 - 29		1M	1%	1/8W
R13	1010374 - 54		1.82M	1%	1/8W
R14	1010374 - 29		1M	1%	1/8W
R15	1010364 - 765		475K	1%	1/8W
R16	1010374 - 1		511K	1%	1/8W
R17	1006750 - 51		6.2K	2%	1/4W
R18	1010364 - 719	RESISTOR	274K	1%	1/8W

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R19	1010374 - 29	RESISTOR	1M	1%	1/8W
R20	1010374 - 54		1.82M	1%	1/8W
R21	1010374 - 29		1M	1%	1/8W
R22	1010364 - 765		475K	1%	1/8W
R23	1010374 - 1		511K	1%	1/8W
R24	1006750 - 51		6.2K	2%	1/4W
R25	1010364 - 719		274K	1%	1/8W
R26	1010374 - 29		1M	1%	1/8W
R27	1010374 - 54		1.82M	1%	1/8W
R28	1010374 - 29		1M	1%	1/8W
R29	1010364 - 765		475K	1%	1/8W
R30	1010374 - 1		511K	1%	1/8W
R31	1006750 - 51		6.2K	2%	1/4W
R32	1010364 - 719		274K	1%	1/8W
R33	1010374 - 29		1M	1%	1/8W
R34	1010374 - 54		1.82M	1%	1/8W
R35	1010374 - 29		1M	1%	1/8W
R36	1010364 - 765		475K	1%	1/8W
R37	1010374 - 1		511K	1%	1/8W
R38	1006750 - 51		6.2K	2%	1/4W
R39	1010364 - 719		274K	1%	1/8W
R40	1010374 - 29		1M	1%	1/8W
R41	1010374 - 54	RESISTOR	1.82M	1%	1/8W
Q1	1010342	TRANSISTOR	2N998		
Q2					
Q3					
Q4					
Q5					
Q6	1010342	TRANSISTOR	2N998		
T1	1010329 -1	TRANSFORMER	SP-66		
T2					
T3					
T4					
T5					
T6	1010329 -1	TRANSFORMER	SP-66		

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00855 **DATE** 17 Apr 63

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN R EMERY DATE 4-16-63
CHECKED L A Plummer
APPROVAL R L Battey
APPROVAL
NASA APPROVAL
MIT APPROVAL 17 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
BUFFER CIRCUIT

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015126
SCALE — WT SHEET 2 OF 2

1015126

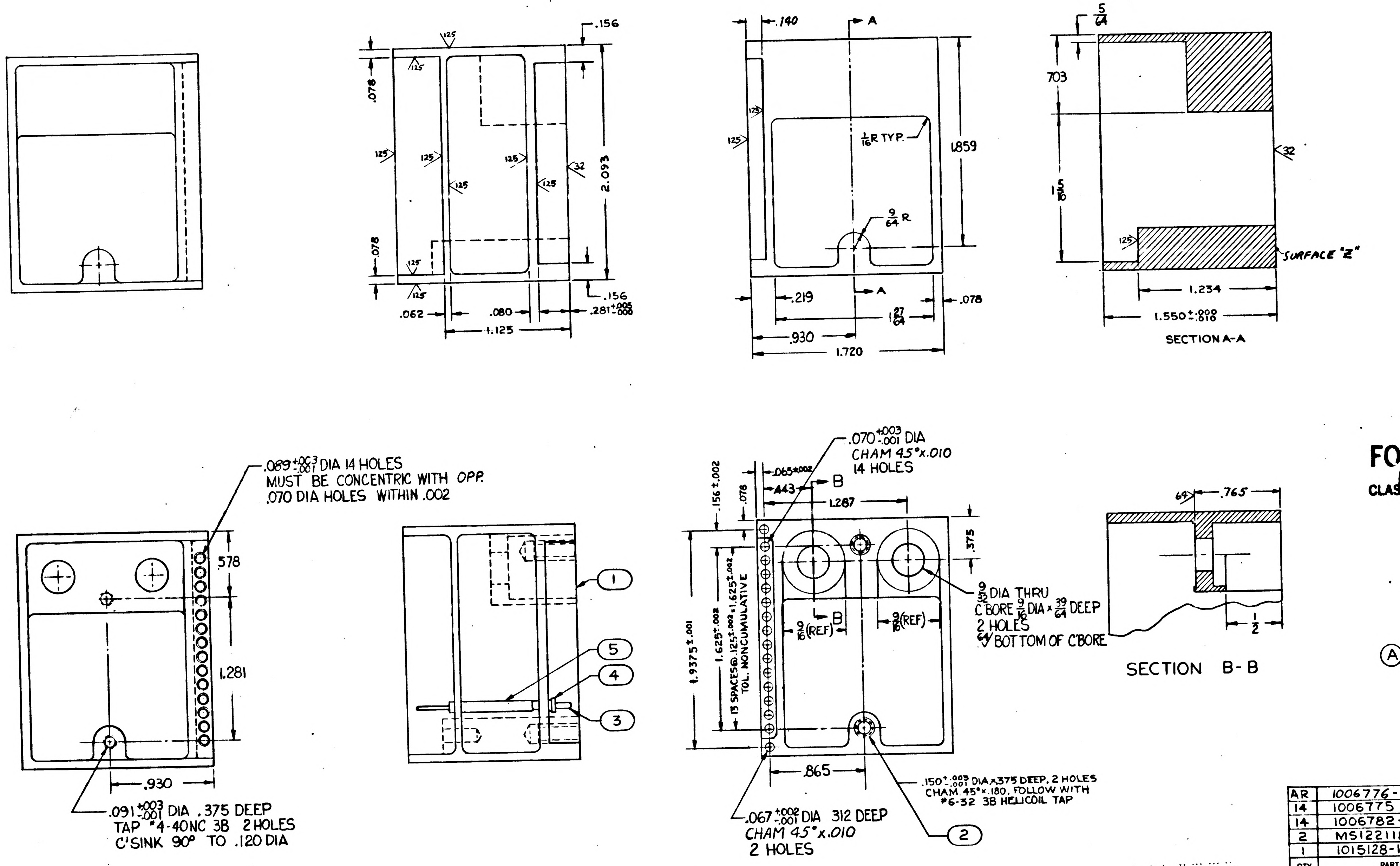
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015128 Ⓐ

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY REV. B WITH CHANGE PER TDRR 01201	5-8-63	WK.


.156
.078
.125
.32
2.093
.062
.080
.281 +.005 -.000
1.125
.140
A
$\frac{1}{16}$R TYP.
1.859
$\frac{9}{64}$R
.219
1 $\frac{27}{64}$
.078
.930
1.720
$\frac{5}{64}$
.703
1 $\frac{5}{16}$
SURFACE "Z"
1.234
1.550 +.000 -.010
SECTION A-A
.089 +.003 -.001 DIA 14 HOLES
MUST BE CONCENTRIC WITH OPP.
.070 DIA HOLES WITHIN .002
.578
1.281
.930
.091 +.003 -.001 DIA .375 DEEP
TAP #4-40NC 3B 2 HOLES
C'SINK 90° TO .120 DIA
1
5
4
3
.070 +.003 -.001 DIA
CHAM 45°x.010
14 HOLES
.156 ±.002
.078
.065±.002
.443
B
1.287
.375
1.9375 ±.001
1.625 ±.002
13 SPACES @ .125 ±.002 = 1.625 ±.002
TOL. NONCUMULATIVE
$\frac{9}{16}$(REF)
$\frac{9}{32}$ DIA THRU
C'BORE $\frac{9}{16}$ DIA x $\frac{39}{64}$ DEEP
2 HOLES
$\frac{63}{64}$ BOTTOM OF C'BORE
.865
.150 +.003 -.001 DIA x .375 DEEP, 2 HOLES
CHAM. 45° x .180, FOLLOW WITH
#6-32 3B HELICOIL TAP
.067 +.002 -.001 DIA .312 DEEP
CHAM 45°x.010
2 HOLES
2
69°
.765
$\frac{1}{2}$
SECTION B-B

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00659 DATE 27 Apr 63

OBS

Ⓐ REPLACED BY REV. B WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006776-18	INSULATION SLEEVING, ELECTRICAL	5
14	1006775	INSULATOR, WRAPOST-MALE MIN.	4
14	1006782-5	CONTACT, BLADE EDGE CONNECTOR	3
2	MS122118-016	INSERT, HELICOIL #6-32 x .207	2
1	1015128-1	FRAME CASTING	1

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± $\frac{1}{64}$ DECIMALS ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 3-4-63
CHECKED
APPROVAL R. L. [illegible]
APPROVAL
NASA APPROVAL W. J. Rhine 3-22-63
MIT APPROVAL 27 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY.
MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015128
SCALE 2X
WT
SHEET 1 OF 1

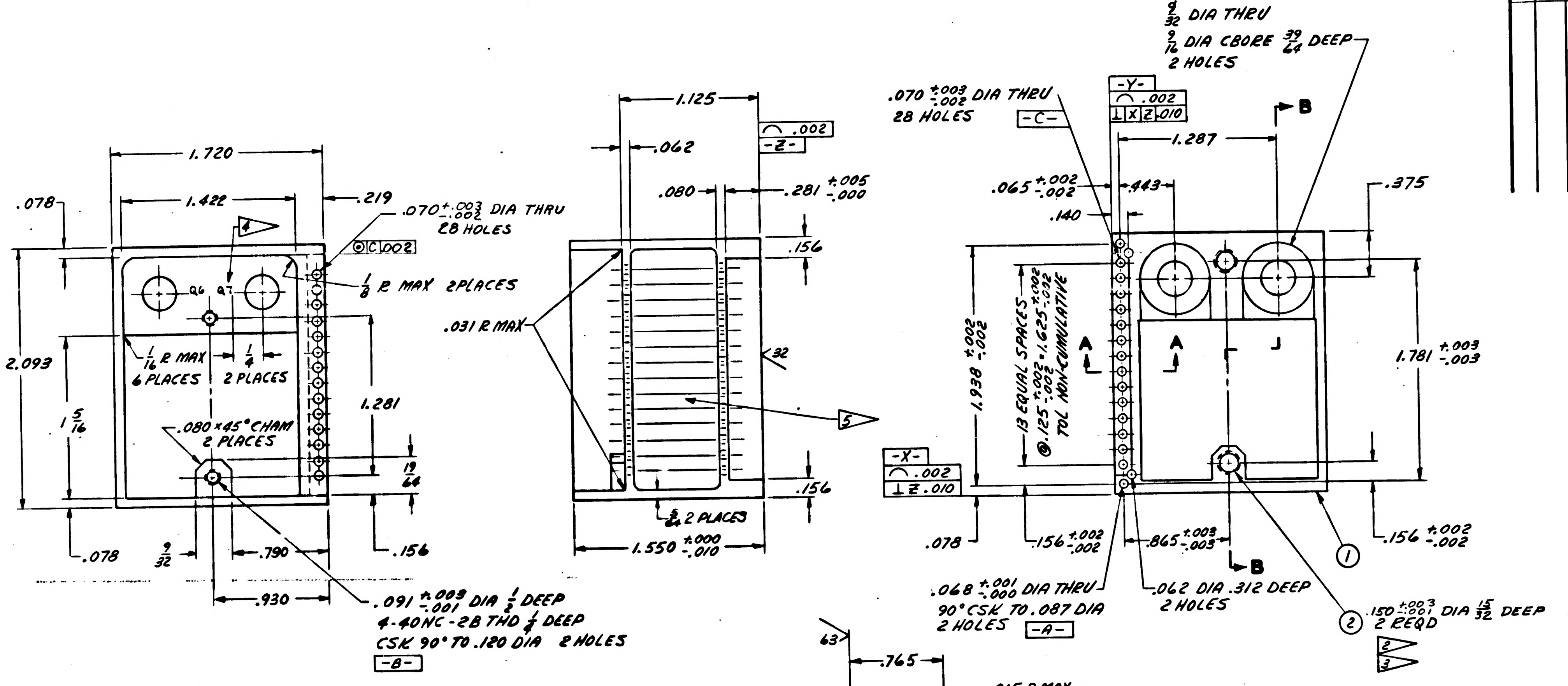
INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

1015128

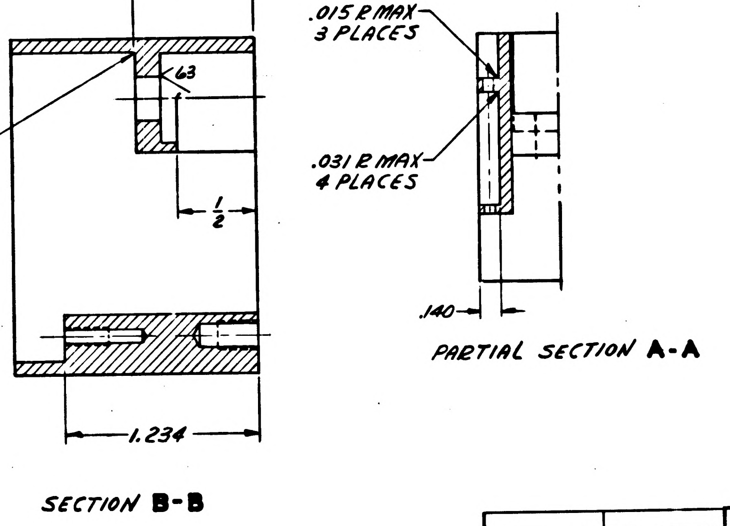
1015128 | 2

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV. A WITH CHANGE PER TDRR 01201		3 MAY 63	W.K.



1.720
1.422
.078
.219
.070 +.003 -.002 DIA THRU 28 HOLES
C .002
4
1/8 R MAX 2 PLACES
Q6
Q7
1/16 R MAX 6 PLACES
1/4 2 PLACES
2.093
1 5/16
1.281
.080 × 45° CHAM 2 PLACES
19/64
.078
9/32
.790
.156
.930
.091 +.003 -.001 DIA 1/2 DEEP
4-40NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA 2 HOLES
-B-
1.125
.062
.080
.281 +.005 -.000
.002
-Z-
.156
.031 R MAX
32
5
.156
5/64 2 PLACES
1.550 +.000 -.010
9/32 DIA THRU
9/16 DIA CBORE 39/64 DEEP
2 HOLES
.070 +.003 -.002 DIA THRU 28 HOLES
-C-
-Y-
.002
⊥ X Z .010
B
1.287
.065 +.002 -.002
.443
.140
.375
1.938 +.002 -.002
13 EQUAL SPACES +.002 -.002 @ .125 +.002 -.002 = 1.625 TOL NON-CUMULATIVE
A
A
1.781 +.003 -.003
-X-
.002
⊥ Z .010
.078
.156 +.002 -.002
.865 +.003 -.003
B
1
.156 +.002 -.002
.068 +.001 -.000 DIA THRU
90° CSK TO .087 DIA
2 HOLES
-A-
.062 DIA .312 DEEP
2 HOLES
2
.150 +.003 -.001 DIA 15/32 DEEP
2 REQD
2
3



63
.765
63
.031 R MAX 2 PLACES
1/2
1.234
.015 R MAX 3 PLACES
.031 R MAX 4 PLACES
.140

SECTION **B-B**

PARTIAL SECTION **A-A**

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-A-8625, TYPE II, DYED BLACK. (ES-384)
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

1▷ MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325 (ES-2106)

2▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER. (ES-2589).

3▷ INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.

4▷ CHARACTERS TO BE 1/32 HIGH SANS-SERIF GOTHIC, MARKED AS SHOWN PER G&ND 1002019

5▷ MARK 1015128 AND REVISION LETTER PER MIL-STD-130 (ES-867) LOCATE APPROX. AS SHOWN.

Ⓑ REPLACES REV. A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS122118	INSERT-CRES HELICAL COIL
1	1	1015128-1	FRAME 1▷

LIST OF PARTS AND MATERIALS

1015121	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ 2°
− 1/64	−.005	− 2°

DO NOT SCALE THIS DRAWING
MATERIAL 1▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LIERMANN DATE 19 APR 63
CHECKED E. Fleming 28 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL
MIT APPROVAL W. Kupfer 8 May 63

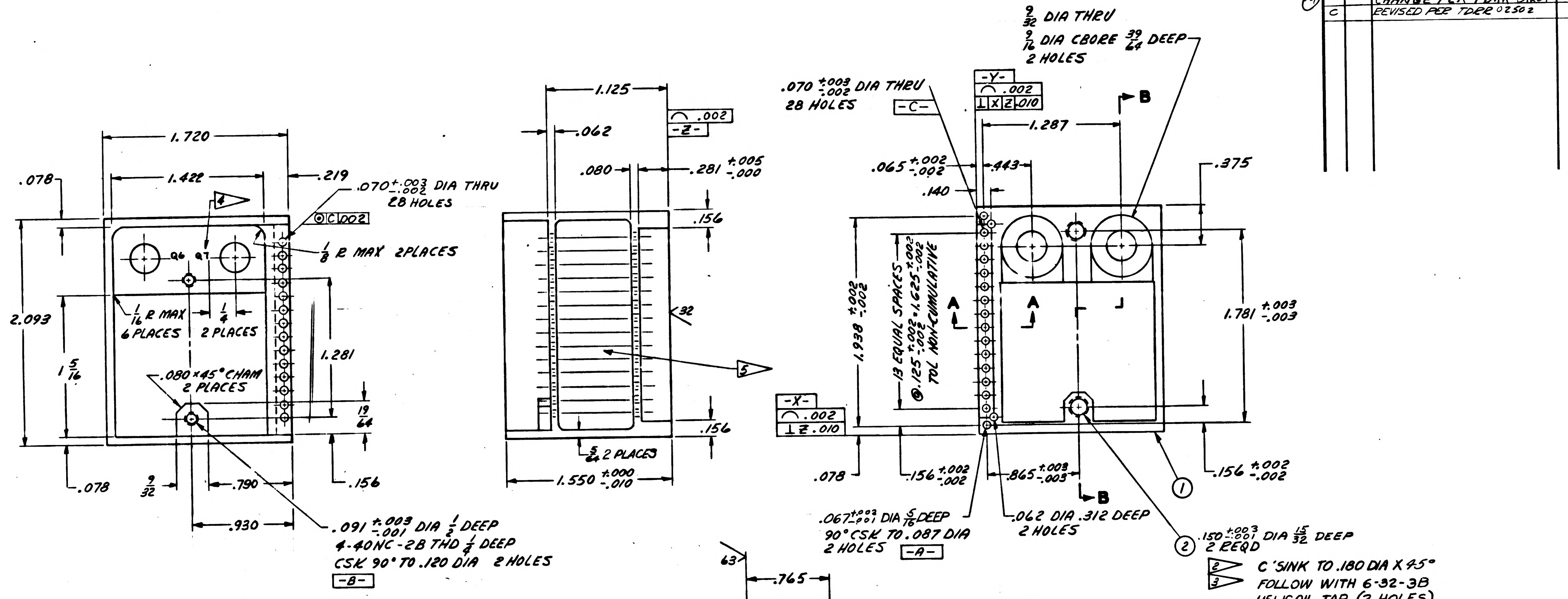
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY,
MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015128
SCALE 2:1
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

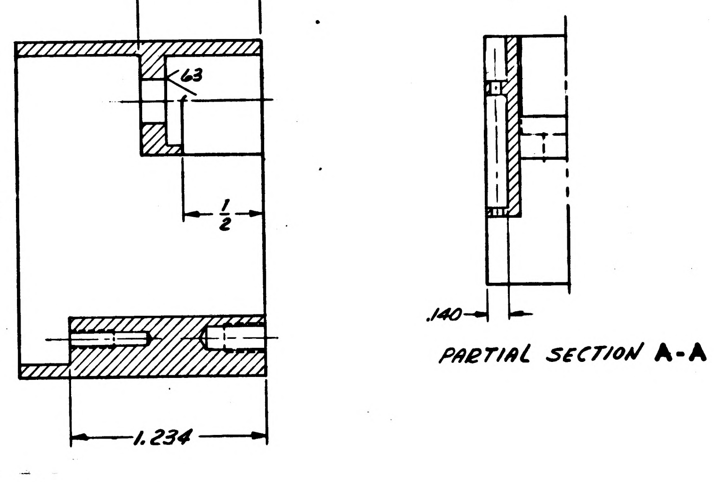
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV. A WITH CHANGE PER TDRR 01201		7 MAY 63	G.K.
C		REVISED PER TDRR 02502		8-21-63	



1.720
1.422
.078
.219
.070 +.003 -.002 DIA THRU 28 HOLES
4
⊚ C .002
1/8 R MAX 2PLACES
2.093
1/16 R MAX 6 PLACES
1/4 2 PLACES
1 5/16
.080 × 45° CHAM 2 PLACES
1.281
19/64
.078
9/32
.790
.156
.930
.091 +.003 -.001 DIA 1/2 DEEP
4-40NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA 2 HOLES
-B-
1.125
.062
⌒ .002
-Z-
.080
.281 +.005 -.000
.156
32
5
5/64 2 PLACES
.156
1.550 +.000 -.010
9/32 DIA THRU
9/16 DIA CBORE 39/64 DEEP
2 HOLES
.070 +.003 -.002 DIA THRU
28 HOLES
-C-
-Y-
⌒ .002
⊥ X Z .010
B
1.287
.375
.065 +.002 -.002
.443
.140
1.938 +.002 -.002
13 EQUAL SPACES
Ⓣ .125 ±.002 = 1.625 ±.002
TOL NON-CUMULATIVE
A
A
1.781 +.003 -.003
-X-
⌒ .002
⊥ Z .010
.078
.156 +.002 -.002
.865 +.003 -.003
B
1
.156 +.002 -.002
.067 +.003 -.001 DIA 5/16 DEEP
90° CSK TO .087 DIA
2 HOLES
-A-
.062 DIA .312 DEEP
2 HOLES
2
.150 +.003 -.001 DIA 15/32 DEEP
2 REQD

2 C'SINK TO .180 DIA X 45°

3 FOLLOW WITH 6-32-3B HELICOIL TAP (2 HOLES)



63
.765
63
1/2
1.234
.140

SECTION B-B

PARTIAL SECTION A-A

Ⓑ REPLACES REV. A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH
STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-A-8625, TYPE II, DYED BLACK. (ES-384)
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

1 MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325 (ES-2106)

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER. (ES-2589).

3 INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.

4 CHARACTERS TO BE 3/32 HIGH SANS-SERIF GOTHIC, MARKED AS SHOWN PER ND 1002019

5 MARK 1015128 AND REVISION LETTER PER MIL-STD-130 (ES-867)
LOCATE APPROX. AS SHOWN.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS 122118	INSERT-CRES HELICAL COIL
1	1	1015128-1	FRAME 1

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015121	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ 2°
- 1/64	-.005	- 2°

DO NOT SCALE THIS DRAWING

MATERIAL 1

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN LIERMANN DATE 19 APR 63
CHECKED E. Fleming 28 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL
MIT APPROVAL W Kupfer 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

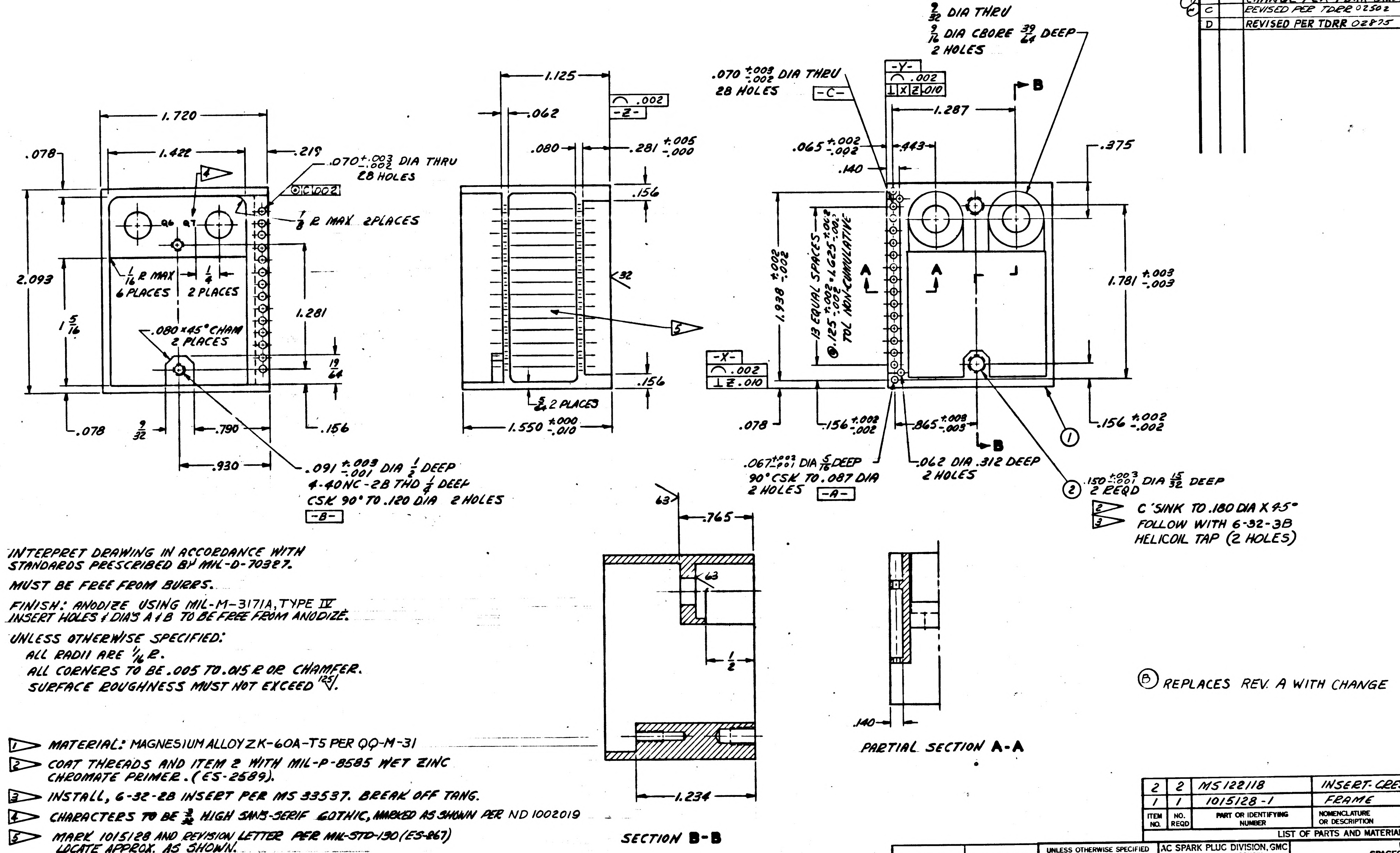
FRAME ASSY,
MOTOR DRIVE AMPLIFIER

CODE IDENT NO. | SIZE D | 1015128

SCALE 2:1 | SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV. A WITH CHANGE PER TDRR 01201		6 MAY 63	W.K.
C		REVISED PER TDRR 02502		8-21-63	JJm
D		REVISED PER TDRR 02875		8-28-63	RPK



1.720
1.422
.078
.219
.070 +.003 -.002 DIA THRU 28 HOLES
4
7/8 R MAX 2 PLACES
2.093
1/16 R MAX 6 PLACES
1/4 2 PLACES
1 5/16
1.281
.080 × 45° CHAM 2 PLACES
19/64
.078
9/32
.790
.930
.156
.091 +.003 -.001 DIA 1/2 DEEP
4-40NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA 2 HOLES
-B-
1.125
.062
.002
-Z-
.080
.281 +.005 -.000
.156
.32
5
5/64 2 PLACES
1.550 +.000 -.010
.156
2/32 DIA THRU
9/16 DIA CBORE 39/64 DEEP
2 HOLES
.070 +.003 -.002 DIA THRU
28 HOLES
-Y-
.002
⊥ X Z .010
-C-
1.287
B
.065 +.002 -.002
.443
.140
.375
1.938 +.002 -.002
13 EQUAL SPACES .125 +.002 -.002 LG .625 +.002 -.002 TOL NON-CUMULATIVE
A
-X-
.002
⊥ Z .010
1.781 +.003 -.003
.078
.156 +.002 -.002
.865 +.003 -.003
.156 +.002 -.002
1
2
.067 +.003 -.001 DIA 5/16 DEEP
90° CSK TO .087 DIA
2 HOLES
-A-
.062 DIA .312 DEEP
2 HOLES
.150 +.003 -.001 DIA 15/32 DEEP
2 REQD
2 C'SINK TO .180 DIA X 45°
3 FOLLOW WITH 6-32-3B HELICOIL TAP (2 HOLES)
63
.765
63
1/2
1.234
.140

SECTION B-B

PARTIAL SECTION A-A

Ⓑ REPLACES REV. A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

1. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31
2. COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER. (ES-2589).
3. INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.
4. CHARACTERS TO BE 3/32 HIGH SANS-SERIF GOTHIC, MARKED AS SHOWN PER ND 1002019
5. MARK 1015128 AND REVISION LETTER PER MIL-STD-130 (ES-867)
LOCATE APPROX. AS SHOWN.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS122118	INSERT-CRES HELICAL COIL
1	1	1015128-1	FRAME 1

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015121	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ 2°
− 1/64	−.005	− 2°

DO NOT SCALE THIS DRAWING

MATERIAL 1

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LIERMANN DATE 17 APR 63
CHECKED E. Fleming 28 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5-1-63
MIT APPROVAL W Kupfer 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY,
MOTOR DRIVE AMPLIFIER

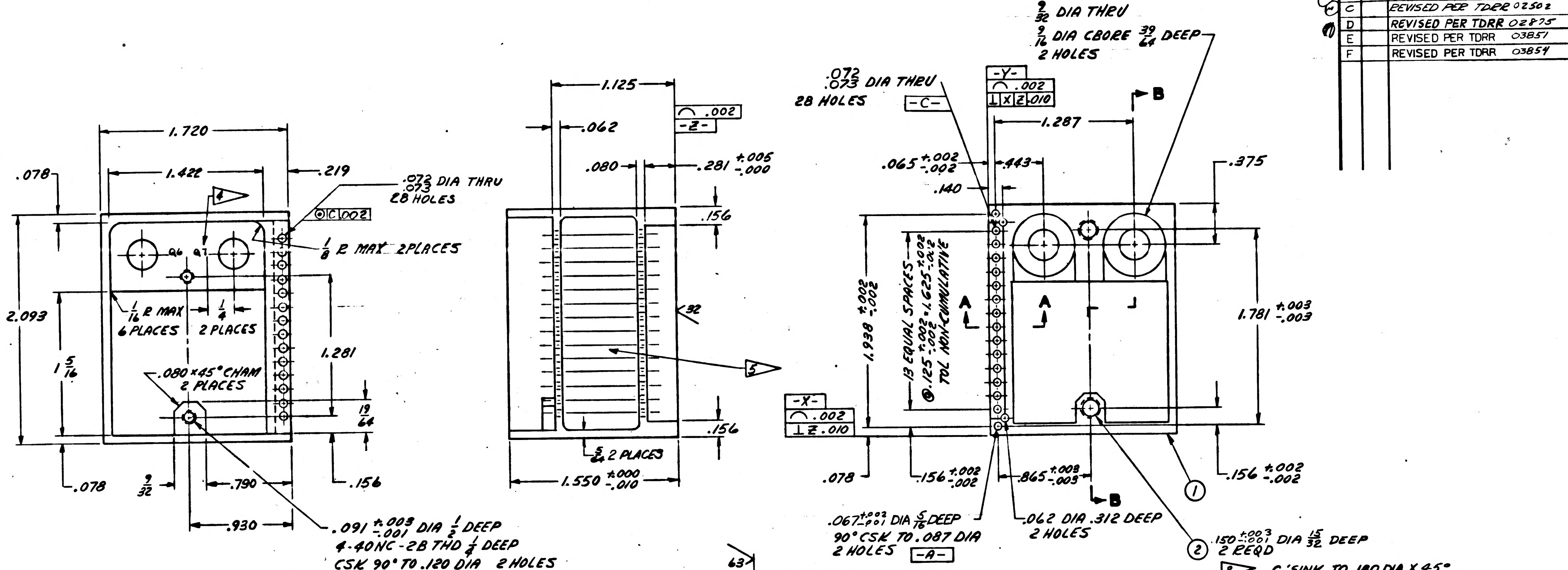
CODE IDENT NO.
SIZE D
1015128
SCALE 2:1
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

MIL 1077B-F

F	1015128	2

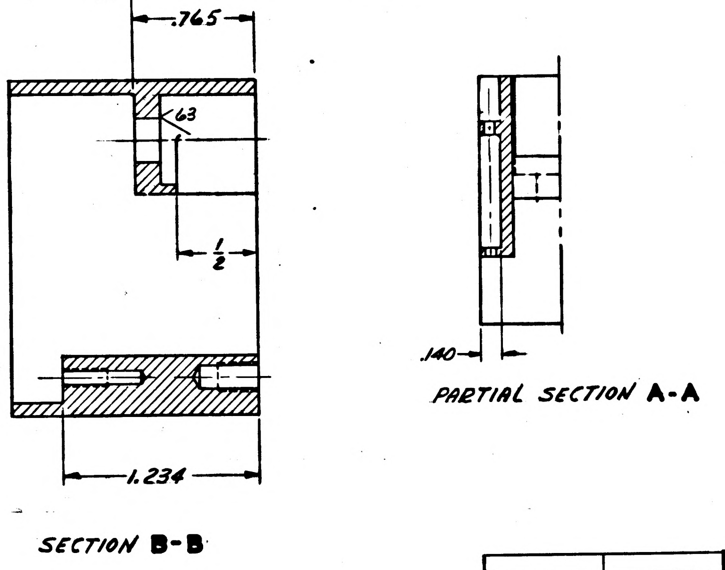
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV. A WITH CHANGE PER TDRR 01201		8 MAY 63	W.K.
C		REVISED PER TDRR 02502		6-21-63	JJ
D		REVISED PER TDRR 02875		6-28-63	RPK
E		REVISED PER TDRR 03851		10-15-63	RPK
F		REVISED PER TDRR 03854		10-15-63	RPK



1.720
1.422
.219
.078
2.093
1 5/16
1.281
19/64
.078
9/32
.790
.930
.156
.072/.073 DIA THRU 28 HOLES
1/8 R MAX 2PLACES
1/16 R MAX 6 PLACES
1/4 2 PLACES
.080 × 45° CHAM 2 PLACES
.091 +.003/-.001 DIA 1/2 DEEP
4-40NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA 2 HOLES
-B-
1.125
.062
.080
.281 +.005/-.000
.002
-Z-
.156
.156
.32
5
5/64 2 PLACES
1.550 +.000/-.010
.072/.073 DIA THRU 28 HOLES
-C-
-Y-
.002
.010
3/32 DIA THRU
9/16 DIA CBORE 39/64 DEEP
2 HOLES
1.287
B
.375
.065 +.002/-.002
.443
.140
1.938 +.002/-.002
13 EQUAL SPACES @ .125 +.002/-.002 = 1.625 +.002/-.002 TOL NON-CUMULATIVE
A
A
1.781 +.003/-.003
-X-
.002
.010
.078
.156 +.002/-.002
.865 +.003/-.003
B
.156 +.002/-.002
1
.067 +.003/-.001 DIA 5/16 DEEP
90° CSK TO .087 DIA
2 HOLES
-A-
.062 DIA .312 DEEP
2 HOLES
2
.150 +.003/-.001 DIA 15/32 DEEP
2 REQD

2 C'SINK TO .180 DIA X 45°

3 FOLLOW WITH 6-32-3B HELICOIL TAP (2 HOLES)



63
.765
63
1/2
1.234
SECTION B-B
.140
PARTIAL SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

Ⓑ REPLACES REV. A WITH CHANGE

1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER. (ES-2589).

3 INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.

4 CHARACTERS TO BE 3/32 HIGH SANS-SERIF GOTHIC, MARKED AS SHOWN PER ND 1002019

5 MARK 1015128 AND REVISION LETTER PER ND1002019
LOCATE APPROX. AS SHOWN.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT-CRES HELICAL COIL
1	1	1015128-1	FRAME 1

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015121	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ 2°
− 1/64	−.005	− 2°

DO NOT SCALE THIS DRAWING

MATERIAL 1

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN LIERMANN DATE 17 APR 63
CHECKED E. Fleming 28 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL
MIT APPROVAL W Kupfer 8 May 63

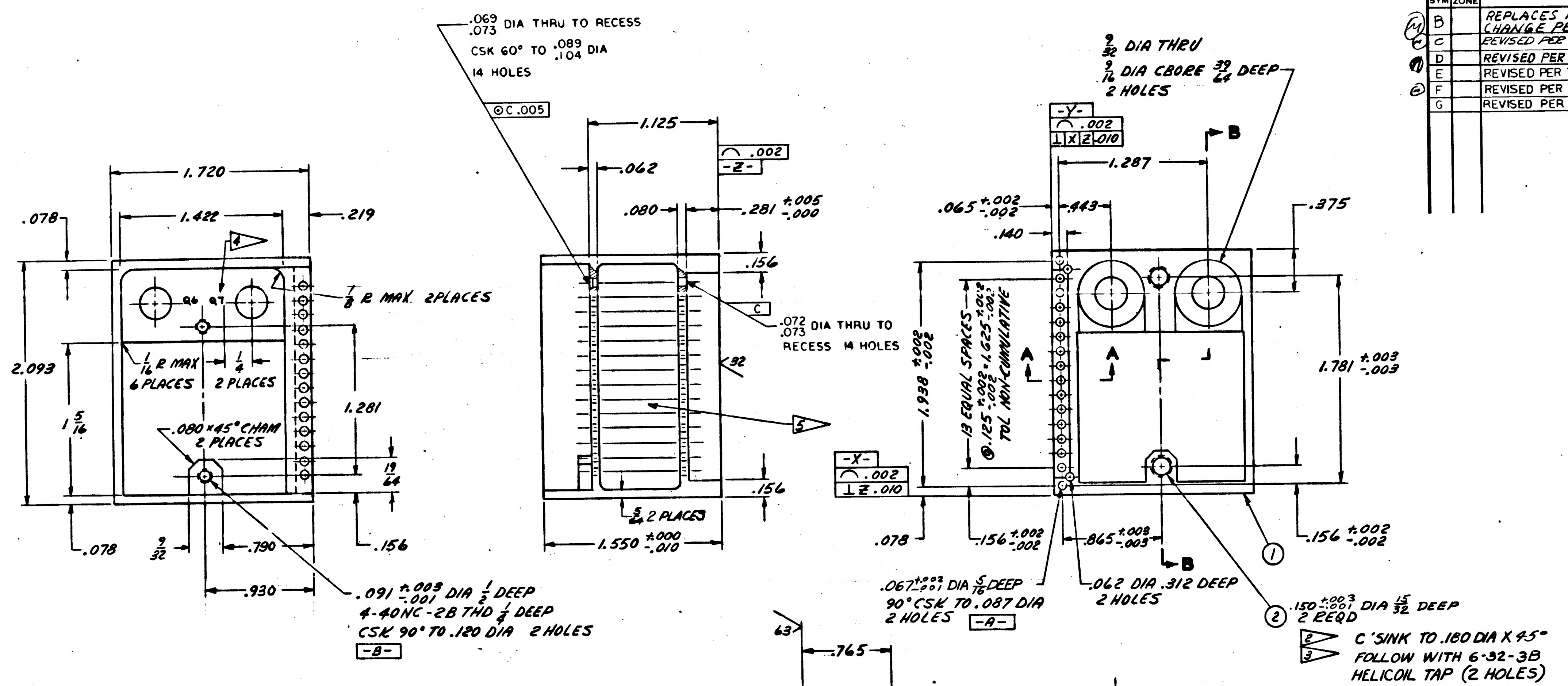
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY,
MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015128
SCALE 2:1
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV. A WITH CHANGE PER TDRR 01201		3 MAY 63	WK.
C		REVISED PER TDRR 02502		8-21-63	JJ
D		REVISED PER TDRR 02875		6-28-63	RPK
E		REVISED PER TDRR 03851		10-16-63	RPK
F		REVISED PER TDRR 03854		10-15-63	RPK
G		REVISED PER TDRR 05411		27 DEC 63	RPK WK



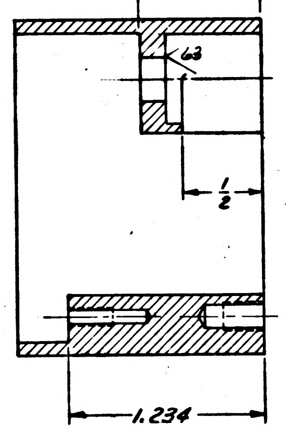
G
1015128
2
.069 .073 DIA THRU TO RECESS
CSK 60° TO .089 .104 DIA
14 HOLES
⊙C.005
1.720
1.422
.078
.219
4
7/8 R MAX 2PLACES
Q6
Q7
2.093
1/16 R MAX 6 PLACES
1/4 2 PLACES
1 5/16
1.281
.080×45° CHAM 2 PLACES
19/64
.078
9/32
.790
.156
.930
.091 +.003 -.001 DIA 1/2 DEEP
4-40NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA 2 HOLES
-B-
1.125
.062
⌒ .002
-Z-
.080
.281 +.005 -.000
.156
C
.072 .073 DIA THRU TO RECESS 14 HOLES
32
5
.156
5/64 2 PLACES
1.550 +.000 -.010
9/32 DIA THRU
9/16 DIA CBORE 39/64 DEEP
2 HOLES
-Y-
⌒ .002
⊥ X Z .010
B
1.287
.065 +.002 -.002
.443
.140
.375
1.938 +.002 -.002
13 EQUAL SPACES
.125 +.002 -.002 = 1.625 +.002 -.002
TOL NON-CUMULATIVE
A
A
1.781 +.003 -.003
-X-
⌒ .002
⊥ Z .010
.078
.156 +.002 -.002
.865 +.003 -.003
B
.156 +.002 -.002
1
.067 +.002 -.001 DIA 5/16 DEEP
90° CSK TO .087 DIA
2 HOLES
-A-
.062 DIA .312 DEEP
2 HOLES
2
.150 +.003 -.001 DIA 15/32 DEEP
2 REQD
2 C'SINK TO .180 DIA X 45°
3 FOLLOW WITH 6-32-3B HELICOIL TAP (2 HOLES)
63
.765

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

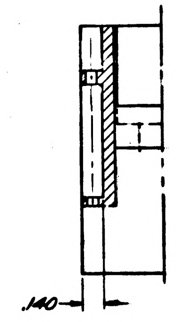
MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.



SECTION B-B



PARTIAL SECTION A-A

Ⓑ REPLACES REV. A WITH CHANGE

1. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31
2. COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
3. INSTALL, 6-32-2B INSERT PER MS 33646. BREAK OFF TANG.
4. CHARACTERS TO BE 3/32 HIGH SANS-SERIF GOTHIC, MARKED AS SHOWN PER ND 1002019
5. MARK 1015128 AND REVISION LETTER PER ND1002019 LOCATE APPROX. AS SHOWN.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT-CRES HELICAL COIL
1	1	1015128-1	FRAME 1

LIST OF PARTS AND MATERIALS

NEXT ASSY	1015121
USED ON	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+2°
-1/64	-.005	-2°

DO NOT SCALE THIS DRAWING
MATERIAL 1
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LIERMANN DATE 17 APR 63
CHECKED E. Fleming 28 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL
MIT APPROVAL W Kupfer 8 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY,
MOTOR DRIVE AMPLIFIER

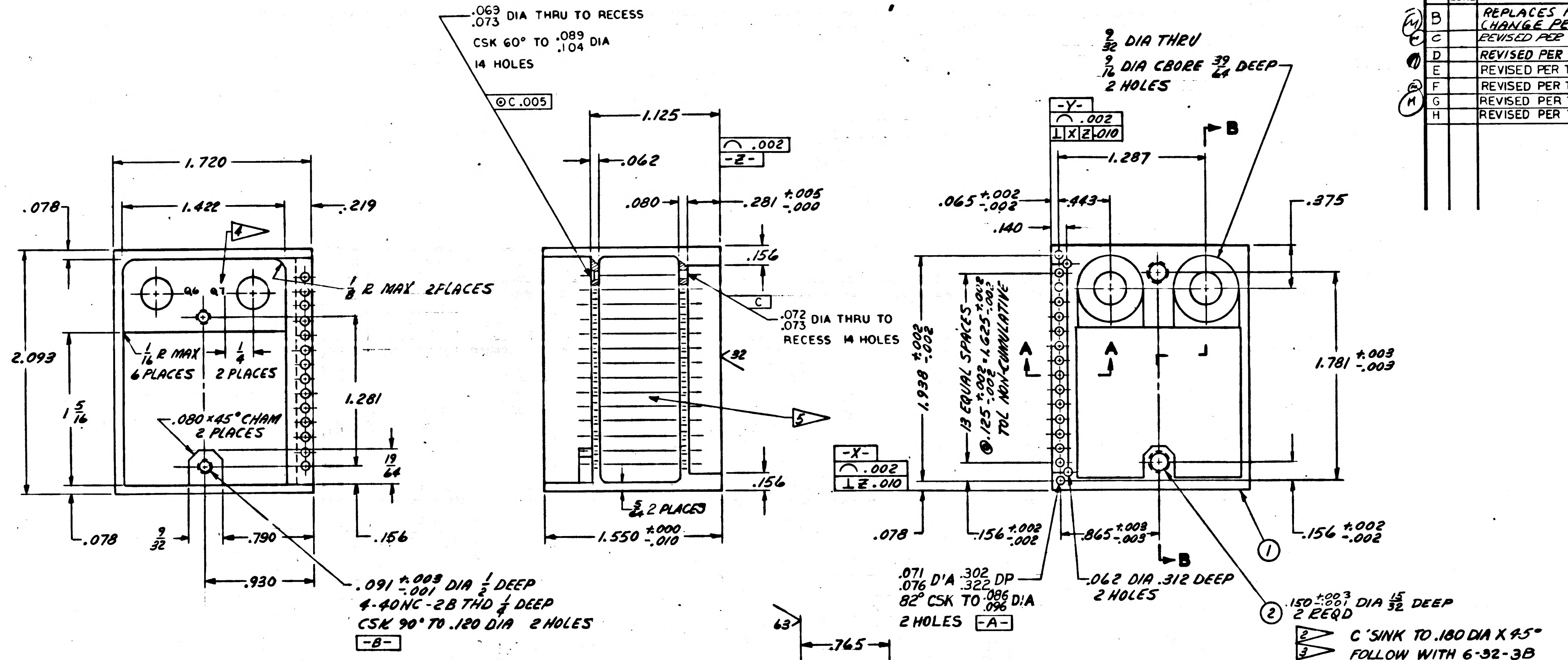
CODE IDENT NO.
SIZE D
1015128
SCALE 2:1
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

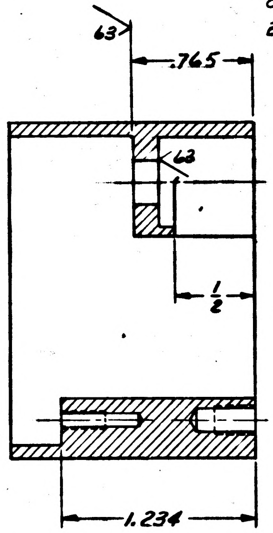
H	1015128	2

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV. A WITH CHANGE PER TDRR 01201		6 MAY 63	W.K.
C		REVISED PER TDRR 02502		8-21-63	JJ
D		REVISED PER TDRR 02875		6-28-63	RPK
E		REVISED PER TDRR 03851		10-16-63	RPK
F		REVISED PER TDRR 03854		10-15-63	RPK
G		REVISED PER TDRR 05411		27 DEC 63	RPK WK
H		REVISED PER TDRR 05870		21 JAN 64	LK RPK WK

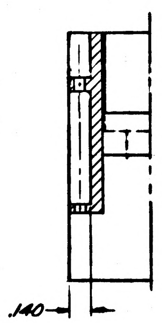


.063/.073 DIA THRU TO RECESS
CSK 60° TO .089/.104 DIA
14 HOLES
⊙ C .005
1.720
1.422
.078
.219
4
1/8 R MAX 2 PLACES
1/16 R MAX 6 PLACES
1/4 2 PLACES
2.093
1 5/16
1.281
.080 × 45° CHAM 2 PLACES
19/64
.078
9/32
.790
.156
.930
.091 +.003/-.001 DIA 1/2 DEEP
4-40NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA 2 HOLES
-B-
1.125
.062
⌒ .002
-Z-
.080
.281 +.005/-.000
.156
C
.072/.073 DIA THRU TO RECESS 14 HOLES
32
5
.156
5/64 2 PLACES
1.550 +.000/-.010
9/32 DIA THRU
9/16 DIA CBORE 39/64 DEEP
2 HOLES
-Y-
⌒ .002
⊥ X Z .010
B
1.287
.065 +.002/-.002
.443
.140
.375
1.938 +.002/-.002
13 EQUAL SPACES ⊕ .125 +.002/-.002 = 1.625 +.002/-.002 TOL NON-CUMULATIVE
A
A
1.781 +.003/-.003
-X-
⌒ .002
⊥ Z .010
.078
.156 +.002/-.002
.865 +.008/-.008
B
.156 +.002/-.002
1
.071/.076 DIA .302/.322 DP
82° CSK TO .086/.096 DIA
2 HOLES
-A-
.062 DIA .312 DEEP
2 HOLES
2
.150 +.003/-.001 DIA 15/32 DEEP
2 REQD
C'SINK TO .180 DIA X 45°
2 3 FOLLOW WITH 6-32-3B
HELICOIL TAP (2 HOLES)



63
.765
63
1/2
1.234

SECTION B-B



PARTIAL SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3▷ INSTALL, 6-32-2B INSERT PER MS 33646. BREAK OFF TANG.

4▷ CHARACTERS TO BE 3/32 HIGH SANS-SERIF GOTHIC, MARKED AS SHOWN PER ND 1002019

5▷ MARK 1015128 AND REVISION LETTER PER ND 1002019 LOCATE APPROX. AS SHOWN.

Ⓑ REPLACES REV. A WITH CHANGE

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT-CRES HELICAL COIL
1	1	1015128-1	FRAME 1▷

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015121	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64 −1/64	+.005 −.005	+2° −2°

DO NOT SCALE THIS DRAWING

MATERIAL 1▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LIERMANN DATE 17 APR 63
CHECKED E. Fleming 28 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5-1-63
MIT APPROVAL W Kupfer 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

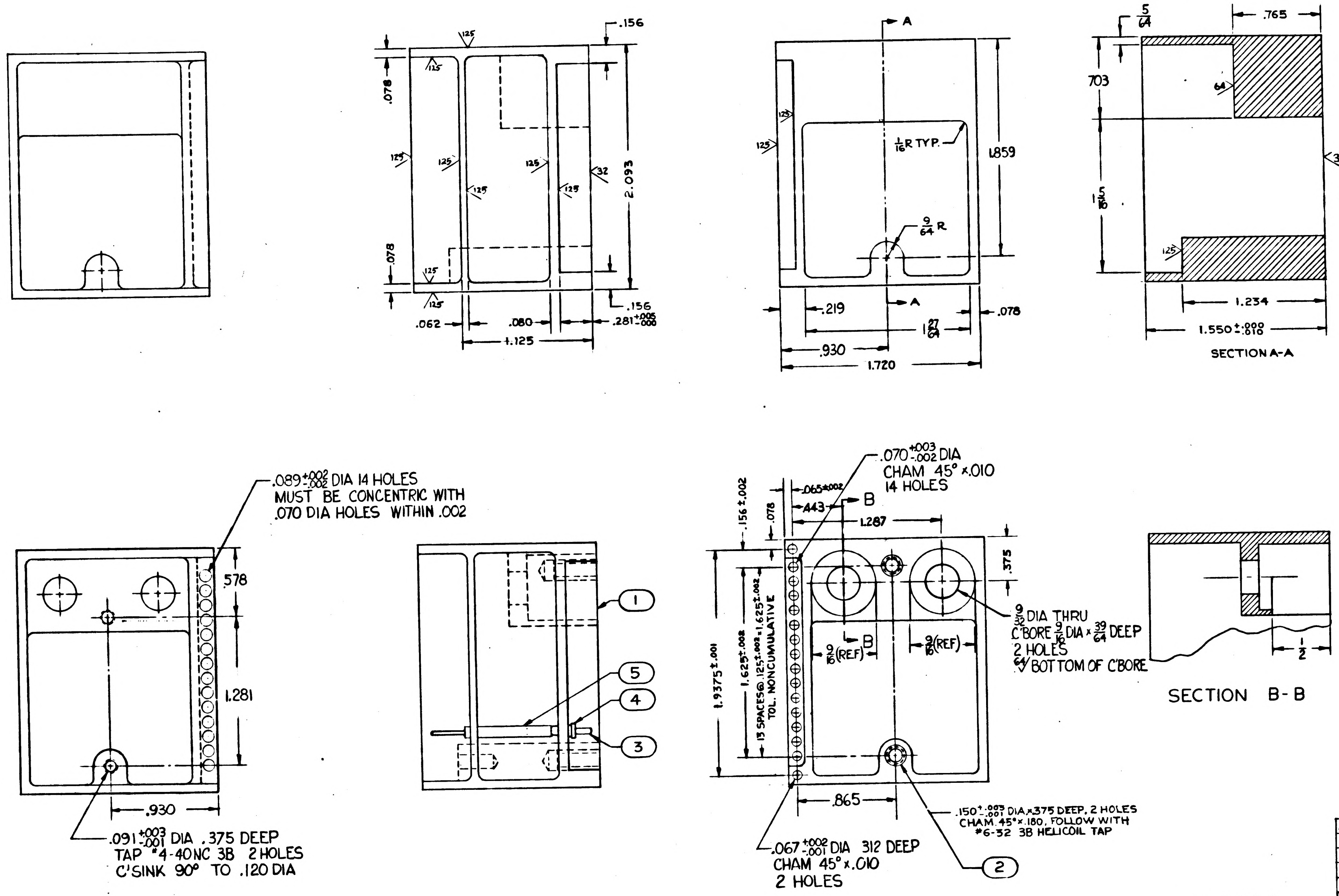
FRAME ASSY,
MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015128
SCALE 2:1
SHEET

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015128

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL


.156
.078
2.093
.078
.156
.062
.080
.281 +.005 -.000
1.125
125
32
A
1/16 R TYP.
9/64 R
1.859
.219
1 27/64
.078
.930
1.720
5/64
.765
.703
64
1 5/16
32
125
1.234
1.550 +.000 -.010
SECTION A-A
.089 +.002 -.002 DIA 14 HOLES
MUST BE CONCENTRIC WITH
.070 DIA HOLES WITHIN .002
.578
1.281
.930
.091 +.003 -.001 DIA .375 DEEP
TAP #4-40NC 3B 2 HOLES
C'SINK 90° TO .120 DIA
1
5
4
3
.070 +.003 -.002 DIA
CHAM 45° x .010
14 HOLES
.156 ± .002
.078
.065 ± .002
.443
B
1.287
.375
1.9375 ± .001
1.625 ± .002
13 SPACES @ .125 ± .002 = 1.625 ± .002
TOL. NONCUMULATIVE
9/16 (REF)
9/16 (REF)
9/32 DIA THRU
C'BORE 9/16 DIA x 39/64 DEEP
2 HOLES
64 BOTTOM OF C'BORE
.865
.150 +.003 -.001 DIA x .375 DEEP, 2 HOLES
CHAM. 45° x .180, FOLLOW WITH
#6-32 3B HELICOIL TAP
.067 +.002 -.001 DIA .312 DEEP
CHAM 45° x .010
2 HOLES
2
1/2
SECTION B-B

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00659 DATE 27 May 63

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1006776-18	INSULATION SLEEVING, ELECTRICAL	5
14	1006775	INSULATOR, WRAPOST-MALE MIN.	4
14	1006782-5	CONTACT, BLADE EDGE CONNECTOR	3
2	MS122118-016	INSERT, HELICOIL #6-32 x .207	2
1	1015128-1	FRAME CASTING	1

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 3-4-63
CHECKED
APPROVAL R. L. Battoglia
APPROVAL
NASA APPROVAL W. J. Rhine 3-22-63
MIT APPROVAL 27 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY.
MOTOR DRIVE AMPLIFIER

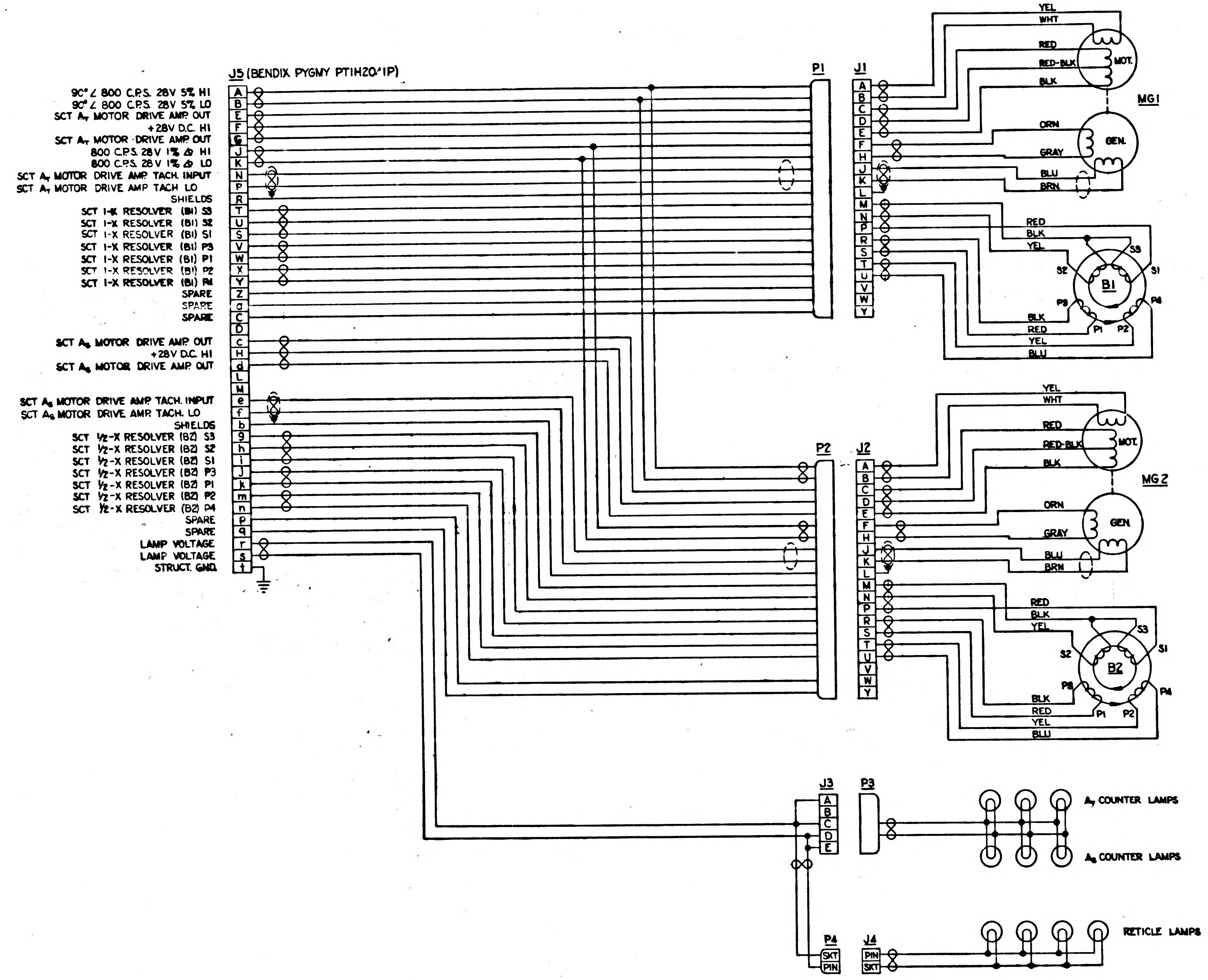
CODE IDENT NO. SIZE D NASA DRAWING NO. 1015128
SCALE 2X WT SHEET 1 OF 1

1015128

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015129

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00703	3 APR 63	WL


J5 (BENDIX PYGMY PT1H20-41P)
90° ∠ 800 C.P.S. 28V 5% HI
90° ∠ 800 C.P.S. 28V 5% LO
SCT A_T MOTOR DRIVE AMP. OUT
+28V D.C. HI
SCT A_T MOTOR DRIVE AMP. OUT
800 C.P.S. 28 V 1% ∆ HI
800 C.P.S. 28 V 1% ∆ LO
SCT A_T MOTOR DRIVE AMP. TACH. INPUT
SCT A_T MOTOR DRIVE AMP TACH LO
SHIELDS
SCT 1-X RESOLVER (B1) S3
SCT 1-X RESOLVER (B1) S2
SCT 1-X RESOLVER (B1) S1
SCT 1-X RESOLVER (B1) P3
SCT 1-X RESOLVER (B1) P1
SCT 1-X RESOLVER (B1) P2
SCT 1-X RESOLVER (B1) P4
SPARE
SPARE
SPARE
SCT A_S MOTOR DRIVE AMP. OUT
+28V D.C. HI
SCT A_S MOTOR DRIVE AMP. OUT
SCT A_S MOTOR DRIVE AMP. TACH. INPUT
SCT A_S MOTOR DRIVE AMP. TACH. LO
SHIELDS
SCT 1/2-X RESOLVER (B2) S3
SCT 1/2-X RESOLVER (B2) S2
SCT 1/2-X RESOLVER (B2) S1
SCT 1/2-X RESOLVER (B2) P3
SCT 1/2-X RESOLVER (B2) P1
SCT 1/2-X RESOLVER (B2) P2
SCT 1/2-X RESOLVER (B2) P4
SPARE
SPARE
LAMP VOLTAGE
LAMP VOLTAGE
STRUCT. GND.
A B E F G J K N P R T U S V W X Y Z a C D c H d L M e f b g h i j k m n p q r s t
P1
J1
P2
J2
A B C D E F H J K L M N P R S T U V W Y
YEL
WHT
RED
RED-BLK
BLK
MOT.
MG1
ORN
GEN.
GRAY
BLU
BRN
RED
BLK
YEL
S3
S2
S1
B1
P3
P4
P1
P2
BLK
RED
YEL
BLU
MG2
B2
J3
P3
A B C D E
A_T COUNTER LAMPS
A_S COUNTER LAMPS
P4
J4
SKT
PIN
PIN
SKT
RETICLE LAMPS

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00509 DATE 6 MARCH 1963

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± // DECIMALS ± // ANGLES ± //
DO NOT SCALE THIS DRAWING
MATERIAL //
HEAT TREATMENT //
FINAL FINISH //

M I T
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN T.C.R. DATE 3-5-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL 6 Mar 1963

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING DIAGRAM
TELESCOPE

CODE IDENT NO.
SIZE E
NASA DRAWING NO 1015129
SCALE NONE
WT //
SHEET 1 OF 1

1015129

INCHES
PHOTOGRAPHIC SCALE ONLY

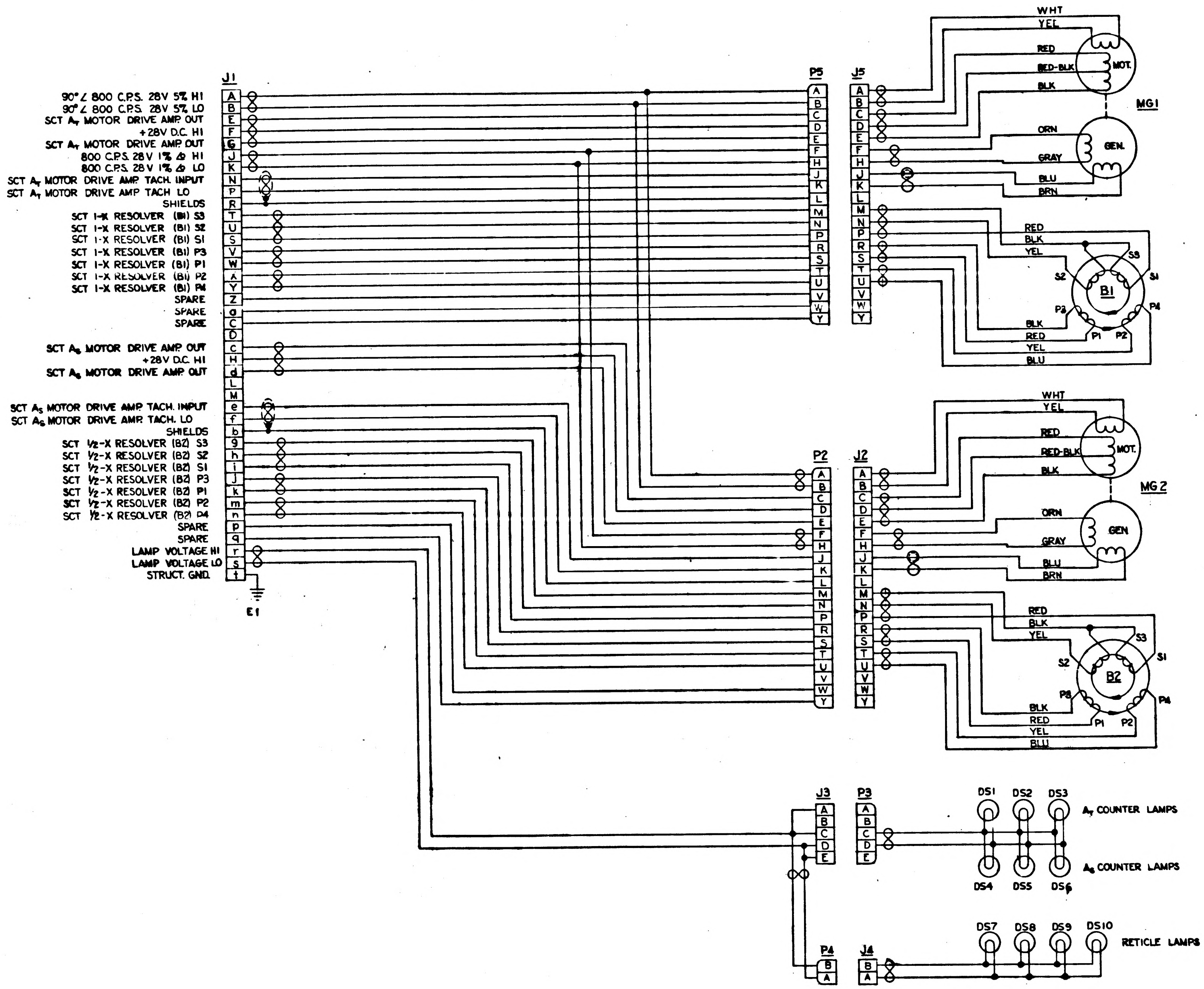
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015129 B

n/27/6

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00703	3 APR 63	WN
B	REVISED AND UPGRADED TO CLASS A - TDRR 04376	5 Nov 63	WN


J1
90° ∠ 800 C.P.S. 28V 5% HI
90° ∠ 800 C.P.S. 28V 5% LO
SCT A_T MOTOR DRIVE AMP. OUT
+28V D.C. HI
SCT A_T MOTOR DRIVE AMP. OUT
800 C.P.S. 28V 1% Δ HI
800 C.P.S. 28V 1% Δ LO
SCT A_T MOTOR DRIVE AMP. TACH. INPUT
SCT A_T MOTOR DRIVE AMP TACH LO
SHIELDS
SCT 1-X RESOLVER (B1) S3
SCT 1-X RESOLVER (B1) S2
SCT 1-X RESOLVER (B1) S1
SCT 1-X RESOLVER (B1) P3
SCT 1-X RESOLVER (B1) P1
SCT 1-X RESOLVER (B1) P2
SCT 1-X RESOLVER (B1) P4
SPARE
SPARE
SPARE
SCT A_S MOTOR DRIVE AMP. OUT
+28V D.C. HI
SCT A_S MOTOR DRIVE AMP. OUT
SCT A_S MOTOR DRIVE AMP. TACH. INPUT
SCT A_S MOTOR DRIVE AMP. TACH. LO
SHIELDS
SCT 1/2-X RESOLVER (B2) S3
SCT 1/2-X RESOLVER (B2) S2
SCT 1/2-X RESOLVER (B2) S1
SCT 1/2-X RESOLVER (B2) P3
SCT 1/2-X RESOLVER (B2) P1
SCT 1/2-X RESOLVER (B2) P2
SCT 1/2-X RESOLVER (B2) P4
SPARE
SPARE
LAMP VOLTAGE HI
LAMP VOLTAGE LO
STRUCT. GND.
E1
A B E F G J K N P R T U S V W X Y Z a C D c H d L M e f b g h i j k m n p q r s t
P5
J5
P2
J2
A B C D E F H J K L M N P R S T U V W Y
WHT
YEL
RED
RED-BLK
BLK
MOT.
MG1
ORN
GEN.
GRAY
BLU
BRN
RED
BLK
YEL
S3
S2
S1
B1
P3
P4
BLK
RED
YEL
BLU
P1
P2
MG2
B2
J3
P3
A B C D E
DS1
DS2
DS3
A_T COUNTER LAMPS
A_S COUNTER LAMPS
DS4
DS5
DS6
DS7
DS8
DS9
DS10
RETICLE LAMPS
P4
J4
B A

REF. DES.	PART NO.	DESCRIPTION
B1	1010341	RESOLVER, RECEIVER, ONE SPEED
B2	1010341	RESOLVER, RECEIVER, ONE SPEED
DS1	1010493	LAMP, MINIATURE
DS2	↕	↕
DS3		
DS4		
DS5		
DS6	1010493	LAMP, MINIATURE
DS7	MS24367-715	LAMP, INCANDESCENT
DS8	↕	↕
DS9		
DS10	MS24367-715	LAMP, INCANDESCENT
E1	MS25036-1	TERMINAL, LUG, CRIMP STYLE, INSULATED
J1	MS3113H20-41P	CONNECTOR, ELECTRICAL
J2	1011740	CONNECTOR, ELECTRICAL
J3	1011646	CONNECTOR, ELECTRICAL
J4	1011748-2	CONNECTOR, ELECTRICAL
J5	1011740	CONNECTOR, ELECTRICAL
MG1	1010610	SERVO MOTOR-TACHOMETER, GENERATOR
MG2	1010610	SERVO MOTOR-TACHOMETER, GENERATOR
P2	1011758	CONNECTOR, ELECTRICAL
P3	1011647	CONNECTOR, ELECTRICAL
P4	1011748-1	CONNECTOR, ELECTRICAL
P5	1011758	CONNECTOR, ELECTRICAL

REFERENCE:
SCT BASE HARNESS ASSEMBLY — 1011713
SCT SHAFT DRIVE HARNESS, ASSY OF — 1011934
SCT TRUNNION DRIVE HARNESS, ASSY OF — 1011935
LAMP AND HARNESS, ASSY OF — 1011913
HOUSING AND LAMP, ASSY OF — 1011731

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± // DECIMALS ± // ANGLES ± //
DO NOT SCALE THIS DRAWING
MATERIAL //
HEAT TREATMENT //
FINAL FINISH //

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN T.C.P. DATE 3-5-63
CHECKED N. V. Maher
APPROVAL R. L. Buttolfson
APPROVAL George F. Cosley
NASA APPROVAL
MIT APPROVAL W. Gay Jr. 6 Nov 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
TELESCOPE

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015129
SCALE NONE
WT //
SHEET 1 OF 1

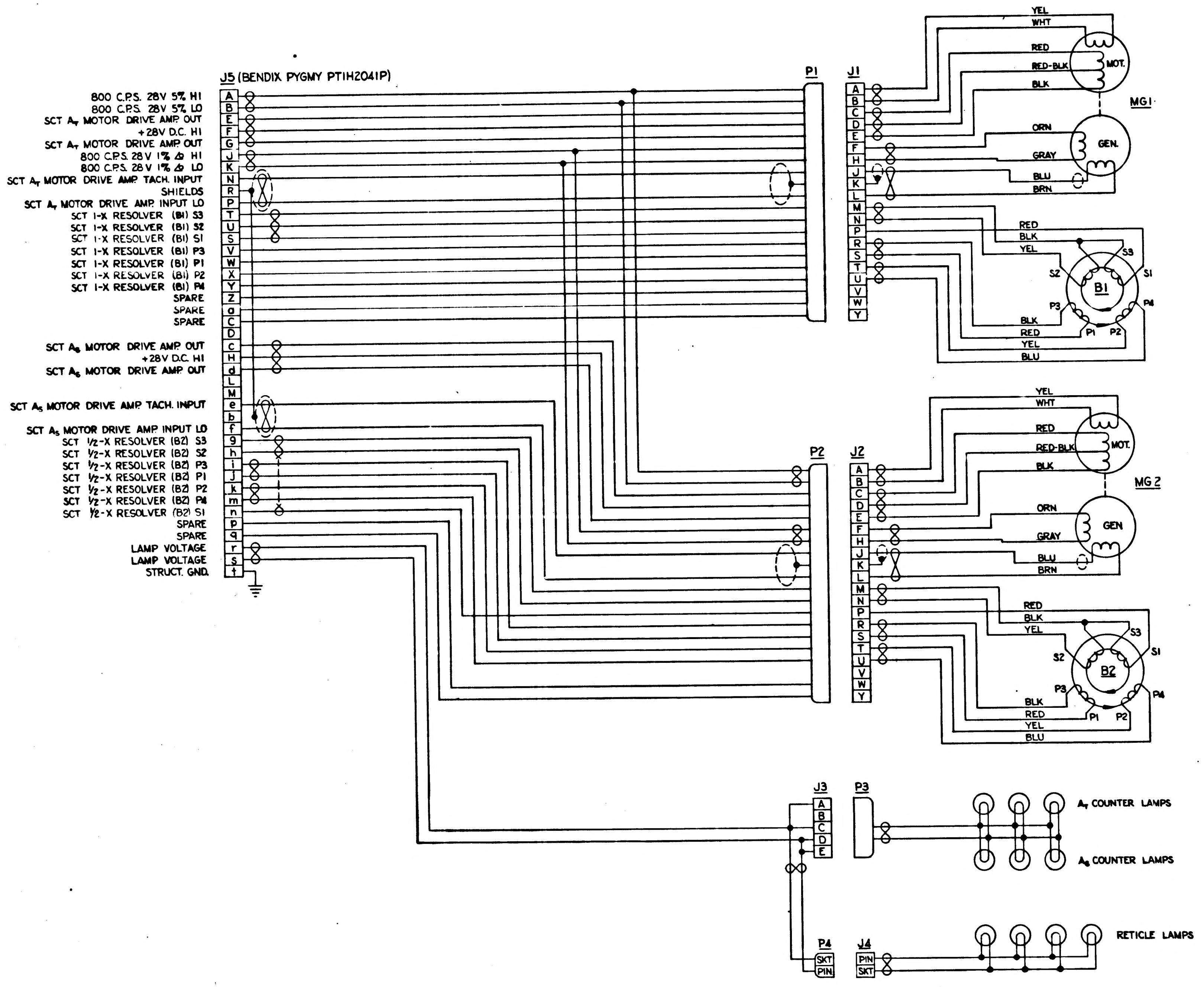
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015129

SYM	DESCRIPTION	DATE	APPROVAL

REVISIONS



J5 (BENDIX PYGMY PT1H2041P)
800 C.P.S. 28V 5% HI
800 C.P.S. 28V 5% LO
SCT A_T MOTOR DRIVE AMP. OUT
+28V D.C. HI
SCT A_T MOTOR DRIVE AMP. OUT
800 C.P.S. 28V 1% ∆ HI
800 C.P.S. 28V 1% ∆ LO
SCT A_T MOTOR DRIVE AMP. TACH. INPUT
SHIELDS
SCT A_T MOTOR DRIVE AMP. INPUT LO
SCT 1-X RESOLVER (B1) S3
SCT 1-X RESOLVER (B1) S2
SCT 1-X RESOLVER (B1) S1
SCT 1-X RESOLVER (B1) P3
SCT 1-X RESOLVER (B1) P1
SCT 1-X RESOLVER (B1) P2
SCT 1-X RESOLVER (B1) P4
SPARE
SPARE
SPARE
SCT A_S MOTOR DRIVE AMP. OUT
+28V D.C. HI
SCT A_S MOTOR DRIVE AMP. OUT
SCT A_S MOTOR DRIVE AMP. TACH. INPUT
SCT A_S MOTOR DRIVE AMP. INPUT LO
SCT 1/2-X RESOLVER (B2) S3
SCT 1/2-X RESOLVER (B2) S2
SCT 1/2-X RESOLVER (B2) P3
SCT 1/2-X RESOLVER (B2) P1
SCT 1/2-X RESOLVER (B2) P2
SCT 1/2-X RESOLVER (B2) P4
SCT 1/2-X RESOLVER (B2) S1
SPARE
SPARE
LAMP VOLTAGE
LAMP VOLTAGE
STRUCT. GND.
A B E F G J K N R P T U S V W X Y Z a C D c H d L M e b f g h i j k m n p q r s t
P1
J1
A B C D E F H J K L M N P R S T U V W Y
YEL
WHT
RED
RED-BLK
BLK
MOT.
ORN
GRAY
BLU
BRN
GEN.
MG1
RED
BLK
YEL
S3
S2
S1
B1
P3
P4
P1
P2
BLK
RED
YEL
BLU
P2
J2
A B C D E F H J K L M N P R S T U V W Y
YEL
WHT
RED
RED-BLK
BLK
MOT.
ORN
GRAY
BLU
BRN
GEN
MG 2
RED
BLK
YEL
S3
S2
S1
B2
P3
P4
P1
P2
BLK
RED
YEL
BLU
J3
P3
A B C D E
A_T COUNTER LAMPS
A_S COUNTER LAMPS
P4
J4
SKT
PIN
PIN
SKT
RETICLE LAMPS

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00509 DATE 6 MARCH 1963

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY | USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN T.C.P. DATE 3-5-63
CHECKED N. V. Maher
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 6 Mar '63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING DIAGRAM
TELESCOPE

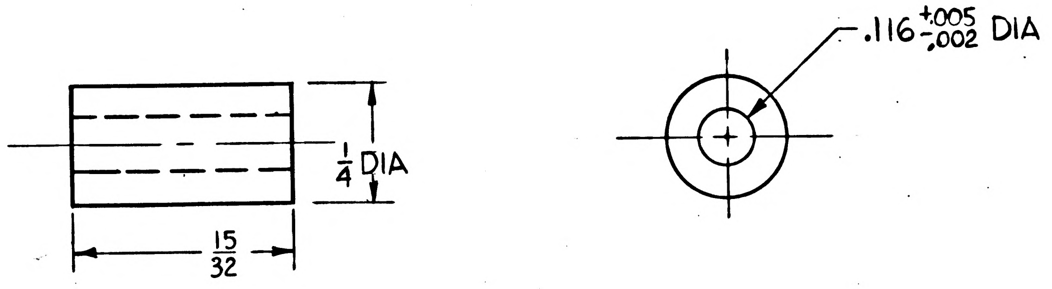
CODE IDENT NO. | SIZE E | NASA DRAWING NO 1015129
SCALE NONE | WT — | SHEET 1 OF 1

1015129

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015131

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00659 **DATE** 27 Mar 63

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL MIL-P-17091,(TYPE I NYLON)
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 3-14-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL 7-22-63
MIT APPROVAL 27 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SPACER

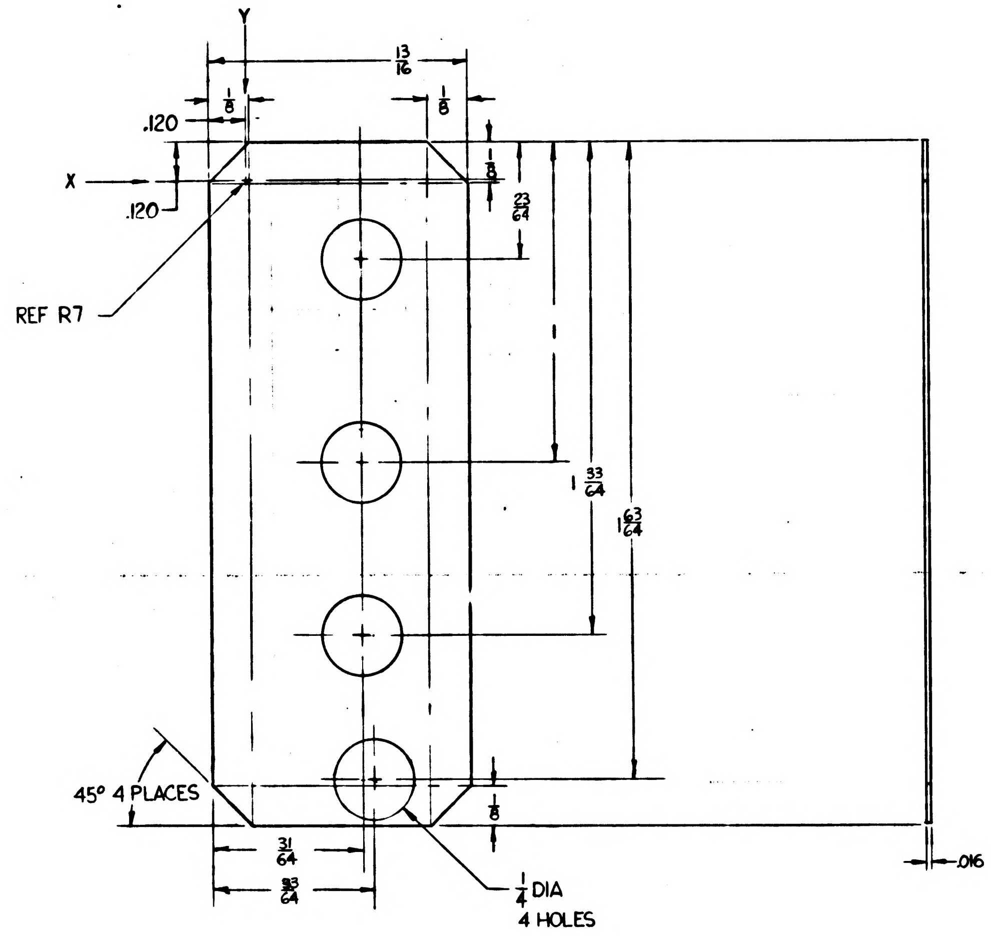
CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015131
SCALE 4X
WT
SHEET 1 OF 1

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

Ⓜ1015132 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY REV B WITH CHANGE PER TDRR 01202	8 MAY 1963	WK.



FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 00600 DATE 20 MAR 63

OBS

Ⓐ REPLACED BY REV B WITH CHANGE

1015132 A

NOTES:
1. FOR TAPE MASTER SEE; 1015114
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARD PRESCRIBED BY MIL-D-70327

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± $\frac{1}{64}$ DECIMALS ±.005 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL GLASS EPOXY
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 3-20-63
CHECKED R. X. Battaya
APPROVAL R. X. Battaya
APPROVAL
NASA APPROVAL 3/20/63
MIT APPROVAL W Kupfer 20 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD LOWER
MOTOR DRIVE. PREAMPLIFIER

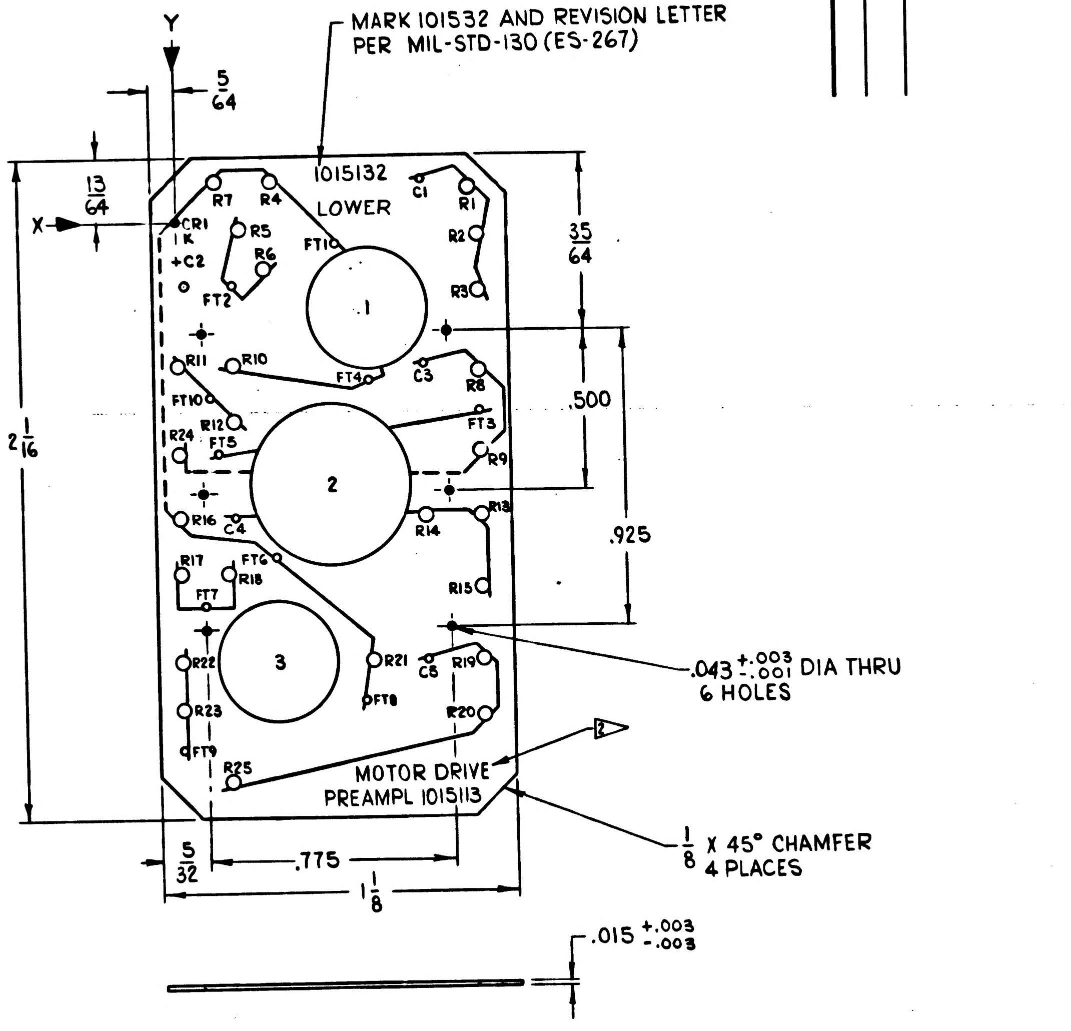
CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015132
SCALE 4X | WT | SHEET 1 OF 1

INCHES
0 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 01202					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
B		REPLACES REV A WITH CHANGE PER TDRR 01202		8 MAY 63	WH

COORDINATE DIMENSIONS			
HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE +.010 -.000 DESCRIPTION
C1	.775	-.125	.024 DIA THRU
C2	.025	.200	.024
C3	.775	.450	.024
C4	.175	.925	
C5	.775	1.375	
CR1	.000	.000	.024 DIA THRU
FT1	.500	.075	.024 DIA THRU
FT2	.175	.200	
FT3	.950	.600	
FT4	.600	.500	
FT5	.125	.725	
FT6	.300	1.050	
FT7	.075	1.200	
FT8	.575	1.500	
FT9	.000	1.650	
FT10	.100	.550	
R1	.925	-.100	.043 DIA THRU
R2	.950	.050	
R3	.950	.225	
R4	.300	-.125	
R5	.200	.025	
R6	.275	.150	
R7	.125	-.125	
R8	.950	.475	
R9	.950	.725	
R10	.175	.450	

COORDINATE DIMENSIONS			
HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE +.010 -.000 DESCRIPTION
R11	.000	.450	.043 DIA THRU
R12	.175	.625	
R13	.950	.925	
R14	.775	.925	
R15	.950	1.150	
R16	.000	.925	
R17	.000	1.100	
R18	.150	1.100	
R19	.950	1.375	
R20	.950	1.550	
R21	.600	1.375	
R22	.000	1.375	
R23	.000	1.525	
R24	.000	.725	
R25	.150	1.750	
1	.600	.275	.375 DIA THRU
2	.475	.825	.500
3	.300	1.375	.375


MARK 101532 AND REVISION LETTER PER MIL-STD-130 (ES-267)
Y
X
5/64
13/64
35/64
1015132 LOWER
C1 R1 R2 R3 R4 R5 R6 R7 CR1 K +C2 FT1 FT2
1
R11 R10 FT4 C3 R8 FT10 R12 R24 FT5 FT3 R9
2
.500
R16 C4 R14 R13
.925
R17 FT6 R18 FT7 R15
3
R22 R21 C5 R19 R23 FT8 R20 FT9 R25
2 1/16
MOTOR DRIVE PREAMPL 1015113
.043 +.003 -.001 DIA THRU 6 HOLES
1/8 X 45° CHAMFER 4 PLACES
5/32
.775
1 1/8
.015 +.003 -.003

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.

MARK PATHS AS SHOWN 1/64 WIDE.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

UNLESS OTHERWISE SPECIFIED:

CHARACTERS TO BE 1/32 HIGH SANS-SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.

1 MATERIAL: GLASS EPOXY MIL-P-18177 TYPE GEE (ES-2744).

2 3/64 SANS-SERIF GOTHIC CHARACTERS, LOCATE APPROX AS SHOWN.

Ⓑ REPLACES REV A WITH CHANGE

1015113		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS $+\frac{1}{64}$ $-\frac{1}{64}$ DECIMALS +.005 -.005 ANGLES +2° -2°	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
NEXT ASSY	USED ON	DO NOT SCALE THIS DRAWING	ACSP PN	WAFER, LOWER MOTOR DRIVE PREAMPLIFIER
APPLICATION		MATERIAL 1	DRAWN J Wolski DATE 26 APR 63	CODE IDENT NO.
		CONTRACT	CHECKED 26 APR 63	SIZE D
			APPROVAL 30 APR 63	1015132
			APPROVAL 30 APR 63	SCALE 4:1
			NASA APPROVAL 5/8/63	SHEET
			MIT APPROVAL	

B 1015132 2

3 30 APR 63

MIL 10770-P

INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 01202

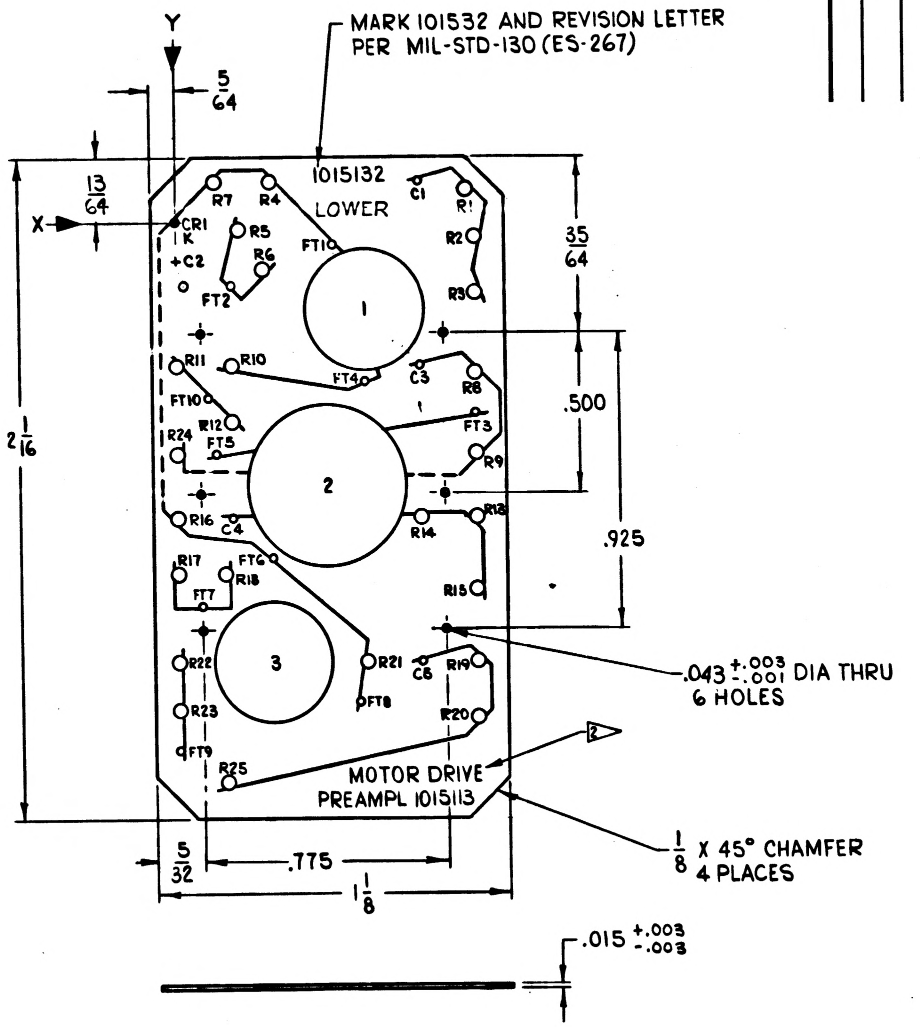
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
B		REPLACES REV A WITH CHANGE PER TDRR 01202		3 MAY 63	W.K.
C		REVISED PER TDRR 02504		8/21/63	

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE +.010 -.000 DESCRIPTION
C1	.775	-.125	.024 DIA THRU
C2	.025	.200	.024
C3	.775	.450	.024
C4	.175	.925	
C5	.775	1.375	
CR1	.000	.000	.024 DIA THRU
FT1	.500	.075	.024 DIA THRU
FT2	.175	.200	
FT3	.950	.600	
FT4	.600	.500	
FT5	.125	.725	
FT6	.300	1.050	
FT7	.075	1.200	
FT8	.575	1.500	
FT9	.000	1.650	
FT10	.100	.550	
R1	.925	-.100	.043 DIA THRU
R2	.950	.050	
R3	.950	.225	
R4	.300	-.125	
R5	.200	.025	
R6	.275	.150	
R7	.125	-.125	
R8	.950	.475	
R9	.950	.725	
R10	.175	.450	

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE +.010 -.000 DESCRIPTION
R11	.000	.450	.043 DIA THRU
R12	.175	.625	
R13	.950	.925	
R14	.775	.925	
R15	.950	1.150	
R16	.000	.925	
R17	.000	1.100	
R18	.150	1.100	
R19	.950	1.375	
R20	.950	1.550	
R21	.600	1.375	
R22	.000	1.375	
R23	.000	1.525	
R24	.000	.725	
R25	.150	1.750	
1	.600	.275	.375 DIA THRU
2	.475	.825	.500
3	.300	1.375	.375


MARK 101532 AND REVISION LETTER
PER MIL-STD-130 (ES-267)
Y
X
5/64
13/64
35/64
.500
.925
2 1/16
5/32
.775
1 1/8
1015132
LOWER
CR1
K
+C2
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
R22
R23
R24
R25
C1
C3
C4
C5
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
FT10
1
2
3
.043 +.003 -.001 DIA THRU
6 HOLES
2
MOTOR DRIVE
PREAMPL 1015113
1/8 X 45° CHAMFER
4 PLACES
.015 +.003 -.003

Ⓑ REPLACES REV A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.

MARK PATHS AS SHOWN 1/64 WIDE.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

UNLESS OTHERWISE SPECIFIED:

CHARACTERS TO BE 1/16 HIGH SANS-SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.

1▷ MATERIAL: GLASS EPOXY MIL-P-18177 TYPE GEE (ES-2744).

2▷ 1/16 SANS-SERIF GOTHIC CHARACTERS, LOCATE APPROX AS SHOWN.

NEXT ASSY	USED ON
1015149	
1015113	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ 2°
- 1/64	-.005	- 2°

DO NOT SCALE THIS DRAWING

MATERIAL 1▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN J Wolski DATE 26 APR 63
CHECKED Saylor 26 APR 63
APPROVAL [illegible] 30 APR 63
APPROVAL [illegible] 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER
MOTOR DRIVE PREAMPLIFIER

CODE IDENT NO.
SIZE D
1015132
SCALE 4:1
SHEET

Charleston 30 APR 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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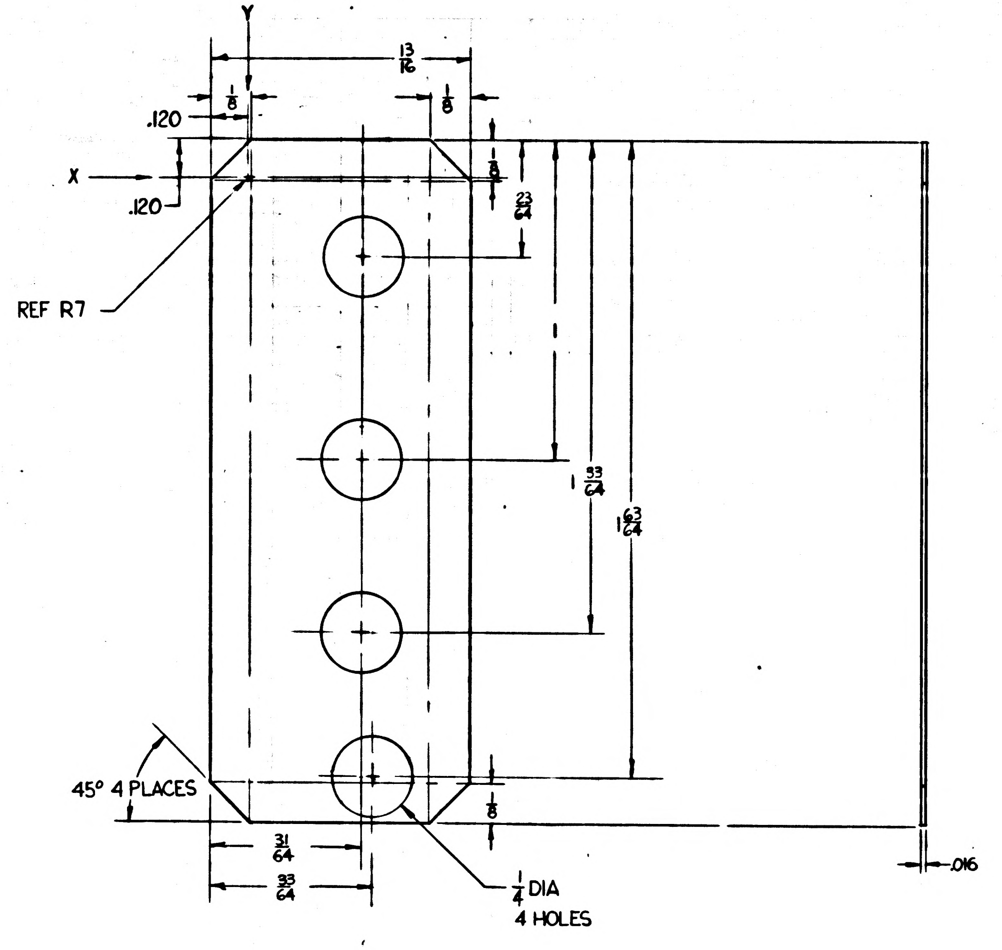
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL



NOTES:

1. FOR TAPE MASTER SEE; 1015114
2. INTERPERT DRAWING IN ACCORDANCE WITH STANDARD PRESCRIBED BY MIL-D-70327

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00600 DATE 20 MAR 63

1015132

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL GLASS EPOXY
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 3-20-63
CHECKED R. L. Battey
APPROVAL R. L. Battey
APPROVAL
NASA APPROVAL 3/20/63
MIT APPROVAL W Kupfer 20 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD LOWER
MOTOR DRIVE. PREAMPLIFIER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015132
SCALE 4X
WT
SHEET 1 OF 1

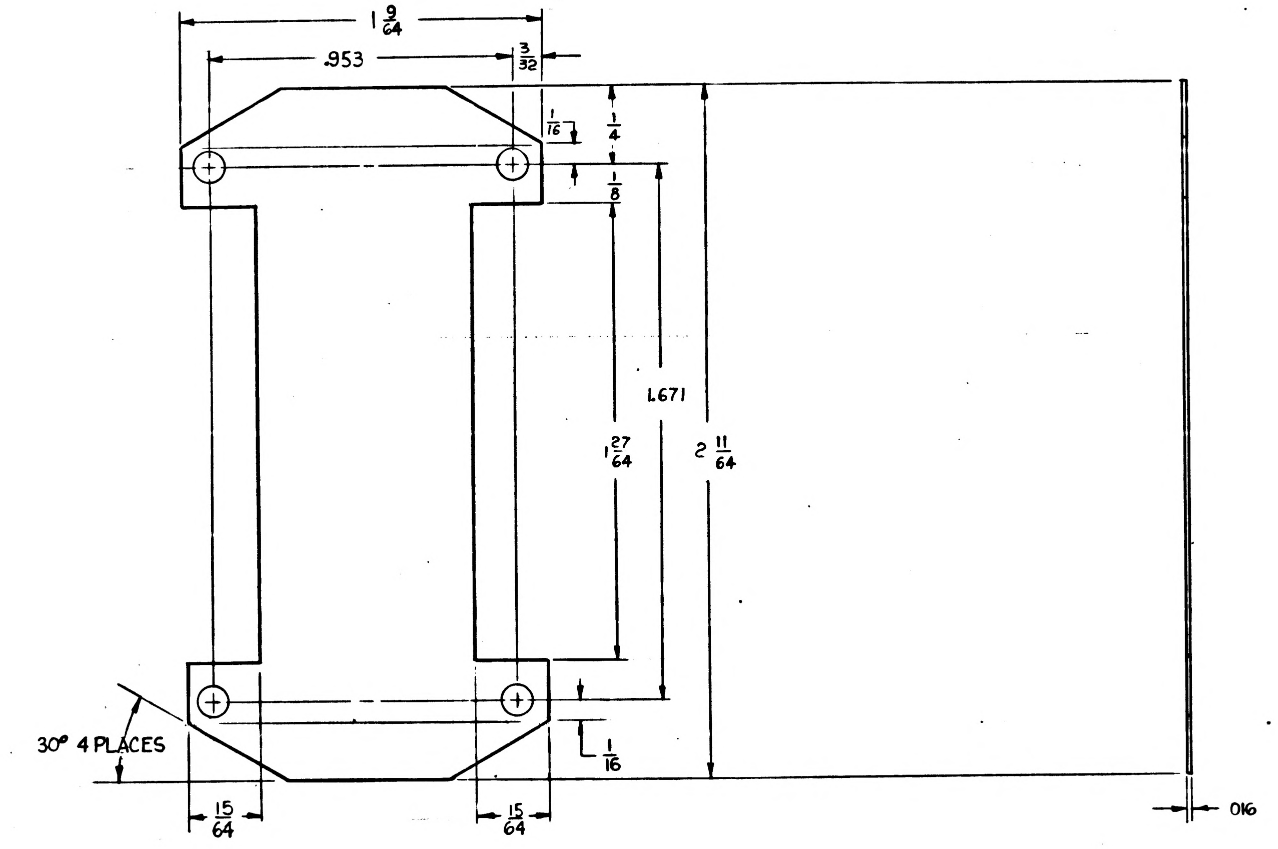
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015133 A

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY REV. B WITH CHANGE PER TDRR 0 1200	5-8-63	WK.



FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 00600 DATE 20 Apr 63

OBS.

Ⓐ REPLACED BY REV. B WITH CHANGE

NOTES
1. FOR TAPE MASTER SEE; 1015114.
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ± 2°
DO NOT SCALE THIS DRAWING

MATERIAL GLASS EPOXY
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 3-20-63
CHECKED R. L. Battey
APPROVAL R. L. Battey
APPROVAL
NASA APPROVAL 2/20/63
MIT APPROVAL WK 20 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD UPPER
MOTOR DRIVE . PREAMPLIFIER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015133
SCALE 4 X
WT
SHEET 1 OF 1

1015133

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

B 1015133 (printed upside down)

REVISIONS TDRR 01200

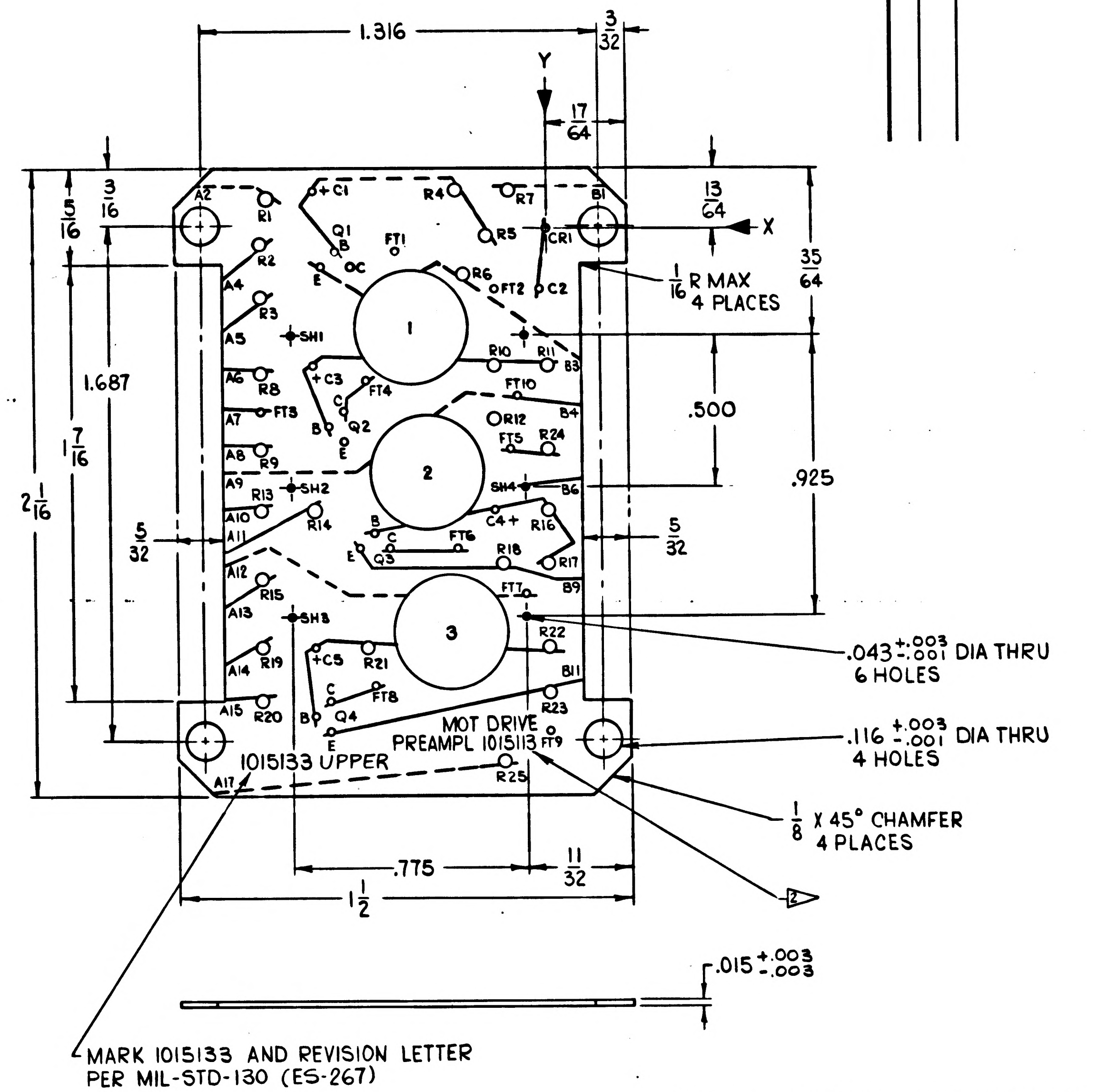
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDRR 01200		8/14/63	

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE +.010 -.000 DESCRIPTION
C1	.775	-.125	.024 DIA THRU
C2	.025	.200	
C3	.775	.450	
C4	.175	.925	
C5	.775	1.375	
CR1	.000	.000	.024 DIA THRU
FT1	.500	.075	.024 DIA THRU
FT2	.175	.200	
FT3	.950	.600	
FT4	.600	.500	
FT5	.125	.725	
FT6	.300	1.050	
FT7	.075	1.200	
FT8	.575	1.500	
FT9	.000	1.650	
FT10	.100	.550	
Q1B	.700	.075	.024 DIA THRU
Q1C	.650	.125	
Q1E	.750	.125	
Q2B	.725	.650	
Q2C	.675	.600	
Q2E	.675	.700	
Q3B	.575	1.000	
Q3C	.525	1.050	
Q3E	.625	1.050	
Q4B	.775	1.600	
Q4C	.725	1.550	
Q4E	.725	1.650	

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE +.010 -.000 DESCRIPTION
R1	.925	-.100	.043 DIA THRU
R2	.950	.050	
R3	.950	.225	
R4	.300	-.125	
R5	.200	.025	
R6	.275	.150	
R7	.125	-.125	
R8	.950	.475	
R9	.950	.725	
R10	.175	.450	
R11	.000	.450	
R12	.175	.625	
R13	.950	.925	
R14	.775	.925	
R15	.950	1.150	
R16	.000	.925	
R17	.000	1.100	
R18	.150	1.100	
R19	.950	1.375	
R20	.950	1.550	
R21	.600	1.375	
R22	.000	1.375	
R23	.000	1.525	
R24	.000	.725	
R25	.150	1.750	
1	.450	.325	.375 DIA THRU
2	.400	.800	
3	.325	1.325	


1.316
$\frac{3}{32}$
Y
$\frac{17}{64}$
$\frac{13}{64}$
X
$\frac{35}{64}$
$\frac{1}{16}$ R MAX
4 PLACES
.500
.925
$\frac{3}{16}$
$\frac{5}{16}$
1.687
$1\frac{7}{16}$
$2\frac{1}{16}$
$\frac{5}{32}$
$\frac{5}{32}$
A2
B1
R1
+C1
R4
R7
Q1
FT1
R5
CR1
R6
FT2
C2
A4
R3
A5
SH1
1
R10
R11
B3
A6
R8
+C3
FT4
FT10
A7
FT3
Q2
B4
R12
FT5
R24
A8
R9
2
A9
R13
SH2
SH4
B6
A10
A11
R14
C4+
R16
Q3
FT6
R18
R17
A12
R15
FT7
B9
A13
SH3
3
R22
A14
R19
+C5
R21
FT8
B11
A15
R20
Q4
R23
MOT DRIVE
PREAMPL 1015113
FT9
1015133 UPPER
R25
A17
.043 $^{+.003}_{-.001}$ DIA THRU
6 HOLES
.116 $^{+.003}_{-.001}$ DIA THRU
4 HOLES
$\frac{1}{8}$ X 45° CHAMFER
4 PLACES
.775
$\frac{11}{32}$
$1\frac{1}{2}$
2
.015 $^{+.003}_{-.003}$
MARK 1015133 AND REVISION LETTER
PER MIL-STD-130 (ES-267)

Ⓑ REPLACES REV A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.

MARK PATHS AS SHOWN $\frac{1}{64}$ WIDE.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

UNLESS OTHERWISE SPECIFIED:

CHARACTERS TO BE $\frac{1}{32}$ HIGH SANS-SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.

1 MATERIAL: GLASS EPOXY MIL-P-18177 TYPE GEE (ES-2744).

2 $\frac{3}{64}$ SANS-SERIF GOTHIC CHARACTERS, LOCATE APPROX. AS SHOWN.

1015113	1015113
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ $\frac{1}{64}$	+.005	+2°
- $\frac{1}{64}$	-.005	-2°

DO NOT SCALE THIS DRAWING

MATERIAL 1

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

		DATE
DRAWN	Wylski	25 APR 63
CHECKED	Sayles	25 APR 63
APPROVAL		30 APR 63
APPROVAL		30 APR 63
NASA APPROVAL		5/8/63
MIT APPROVAL		8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, UPPER
MOTOR DRIVE PREAMPLIFIER

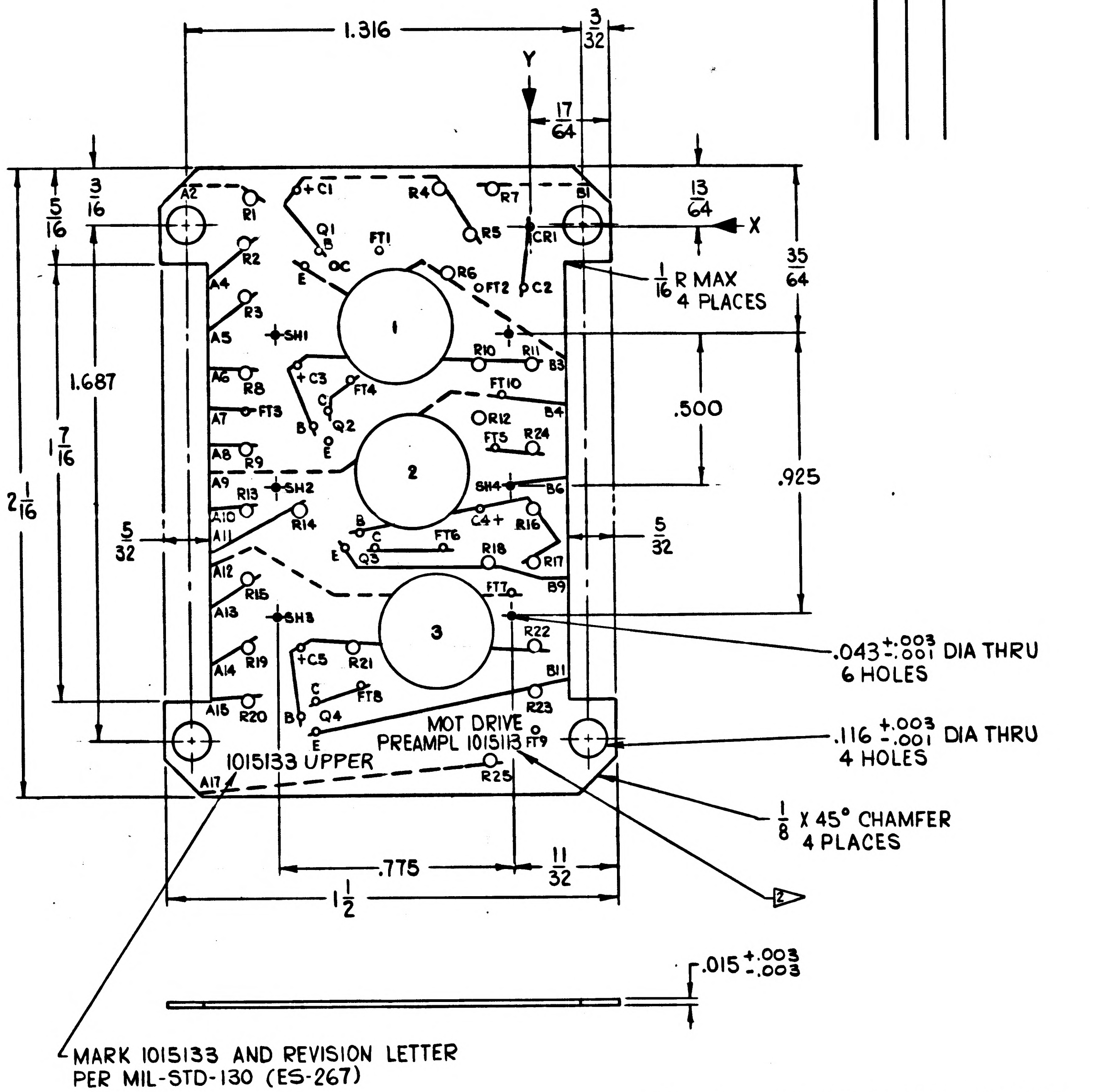
CODE IDENT NO.
SIZE D
1015133
SCALE 4:1
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS ~~TDRR~~ 01200					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDRR 01200		8 MAY 63	
C		REVISED PER TDRR 02504		5 21 63	

COORDINATE DIMENSIONS			
HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE +.010 -.000 DESCRIPTION
C1	.775	-.125	.024 DIA THRU
C2	.025	.200	
C3	.775	.450	
C4	.175	.925	
C5	.775	1.375	
CR1	.000	.000	.024 DIA THRU
FT1	.500	.075	.024 DIA THRU
FT2	.175	.200	
FT3	.950	.600	
FT4	.600	.500	
FT5	.125	.725	
FT6	.300	1.050	
FT7	.075	1.200	
FT8	.575	1.500	
FT9	.000	1.650	
FT10	.100	.550	
Q1B	.700	.075	.024 DIA THRU
Q1C	.650	.125	
Q1E	.750	.125	
Q2B	.725	.650	
Q2C	.675	.600	
Q2E	.675	.700	
Q3B	.575	1.000	
Q3C	.525	1.050	
Q3E	.625	1.050	
Q4B	.775	1.600	
Q4C	.725	1.550	
Q4E	.725	1.650	

COORDINATE DIMENSIONS			
HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE +.010 -.000 DESCRIPTION
R1	.925	-.100	.043 DIA THRU
R2	.950	.050	
R3	.950	.225	
R4	.300	-.125	
R5	.200	.025	
R6	.275	.150	
R7	.125	-.125	
R8	.950	.475	
R9	.950	.725	
R10	.175	.450	
R11	.000	.450	
R12	.175	.625	
R13	.950	.925	
R14	.775	.925	
R15	.950	1.150	
R16	.000	.925	
R17	.000	1.100	
R18	.150	1.100	
R19	.950	1.375	
R20	.950	1.550	
R21	.600	1.375	
R22	.000	1.375	
R23	.000	1.525	
R24	.000	.725	
R25	.150	1.750	
1	.450	.325	.375 DIA THRU
2	.400	.800	
3	.325	1.325	


1.316
3/32
Y
17/64
13/64
X
35/64
1/16 R MAX 4 PLACES
.500
.925
5/16
3/16
1.687
1 7/16
2 1/16
5/32
5/32
.043 +.003 -.001 DIA THRU 6 HOLES
.116 +.003 -.001 DIA THRU 4 HOLES
1/8 X 45° CHAMFER 4 PLACES
.775
11/32
1 1/2
.015 +.003 -.003
A2
B1
R1
R2
R3
R4
R5
R6
R7
CR1
C1
C2
Q1
FT1
FT2
1
2
3
SH1
SH2
SH3
SH4
MOT DRIVE PREAMPL 1015113
1015133 UPPER
A17
R25
MARK 1015133 AND REVISION LETTER PER MIL-STD-130 (ES-267)

Ⓑ REPLACES REV A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.

MARK PATHS AS SHOWN 1/64 WIDE.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

UNLESS OTHERWISE SPECIFIED:

CHARACTERS TO BE 1/16 HIGH SANS-SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.

▷1 MATERIAL: GLASS EPOXY MIL-P-18177 TYPE GEE (ES-2744).

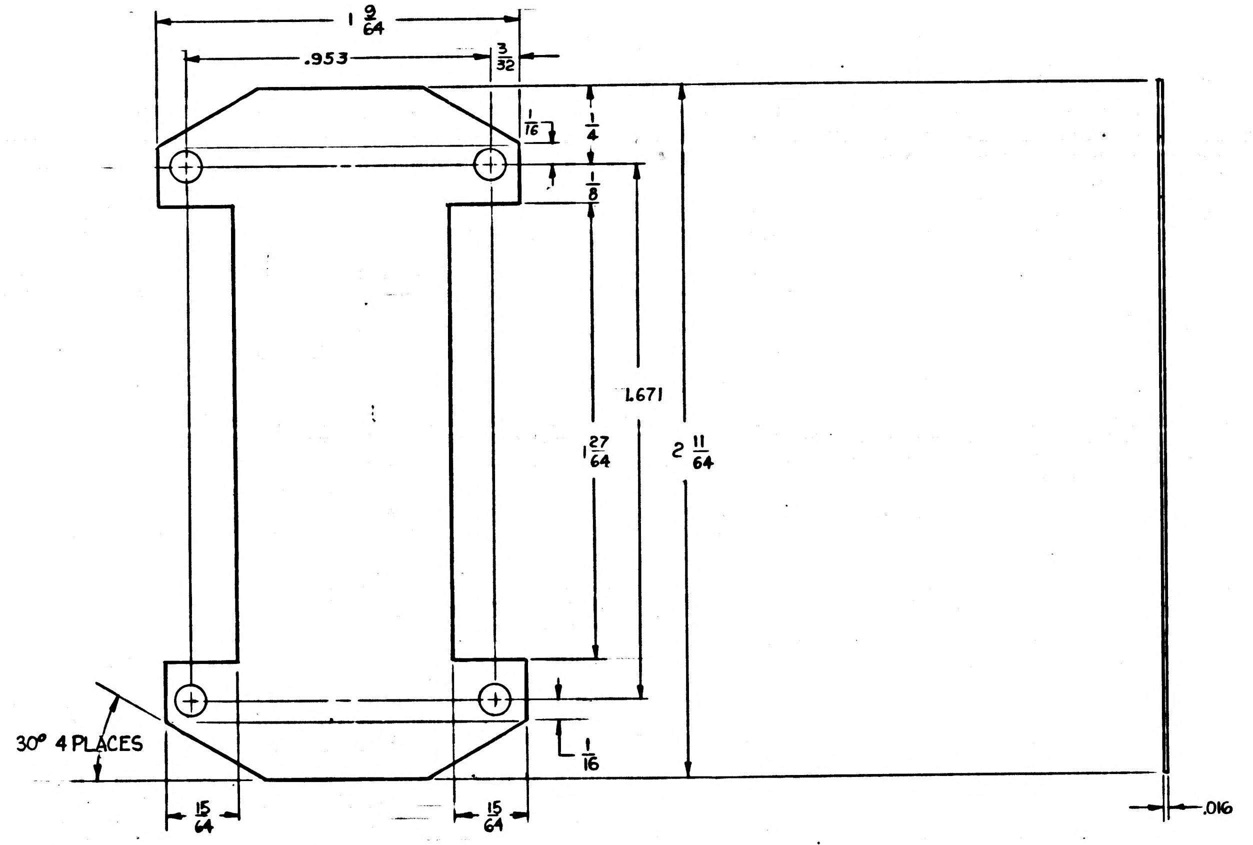
▷2 1/16 SANS-SERIF GOTHIC CHARACTERS, LOCATE APPROX. AS SHOWN.

1015149		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 2° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN DATE 25 APR 63 CHECKED 25 APR 63 APPROVAL 30 APR 63 APPROVAL 30 APR 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS WAFER, UPPER MOTOR DRIVE PREAMPLIFIER
1015113		MATERIAL ▷1	NASA APPROVAL 5/10/63	CODE IDENT NO.
NEXT ASSY	USED ON			SIZE D
APPLICATION		CONTRACT	MIT APPROVAL 8 May 63	1015133
				SCALE 4:1
				SHEET

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00600 DATE 20Mar63

NOTES
1. FOR TAPE MASTER SEE; 1015114.
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL GLASS EPOXY
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 3-20-63
CHECKED R. L. Bottaglia
APPROVAL R. L. Bottaglia
APPROVAL
NASA APPROVAL 2/20/63
MIT APPROVAL 20Mar63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD UPPER
MOTOR DRIVE . PREAMPLIFIER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015133
SCALE 4 X
WT
SHEET 1 OF 1

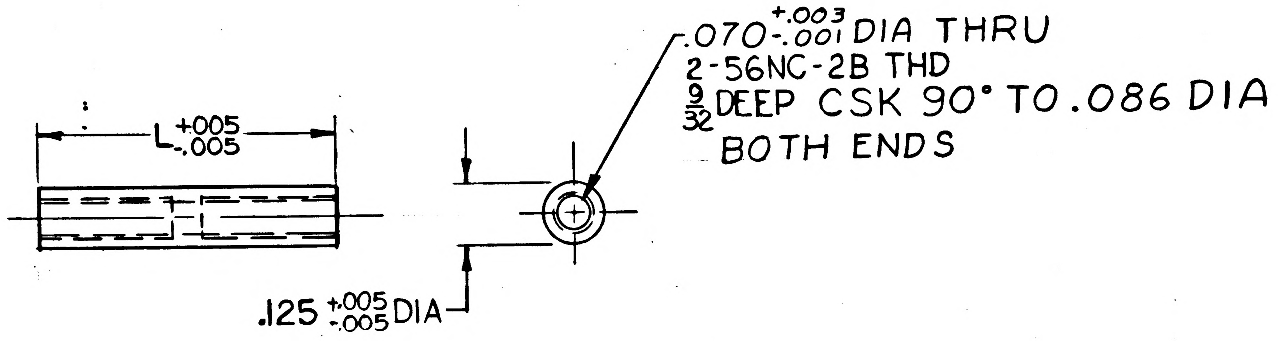
1015133

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

A 1015135

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 01194 UPGRADED TO CLASS A	8 MAY 63	WK


$.070^{+.003}_{-.001}$ DIA THRU
2-56NC-2B THD
$\frac{9}{32}$ DEEP CSK 90° TO .086 DIA
BOTH ENDS
$L^{+.005}_{-.005}$
$.125^{+.005}_{-.005}$ DIA

NASA PART NO	LENGTH "L"
1015135-001	.500
-002	.531
-003	.562
-004	.594
-005	.625
-006	.656
-007	.688
-008	.719
-009	.750
-010	.781
-011	.812
-012	.844
-013	.875
-014	.906
-015	.938
-016	.969
-017	1.000
-018	1.031

NOTES:

FINISH ALL OVER $\sqrt[125]{}$ AA
MATERIAL SPECIFICATION
NYLON MIL-P-17091
TYPE I
INTERPRET DRAWING IN ACCORDANCE WITH
STANDARDS PRESCRIBED BY MIL-D-70327
UNLESS OTHERWISE SPECIFIED
REMOVE SHARP EDGES

MASTER

1015121	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE
HEAT TREATMENT —
FINAL FINISH —

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 3-26-63
CHECKED R. L. Battalfom
APPROVAL R. L. Battalfom
APPROVAL
NASA APPROVAL W. J. Rhine 3-27-63
MIT APPROVAL 27 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SPACER
NYLON

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015135
SCALE 4 X
WT
SHEET 1 OF 1

1015135

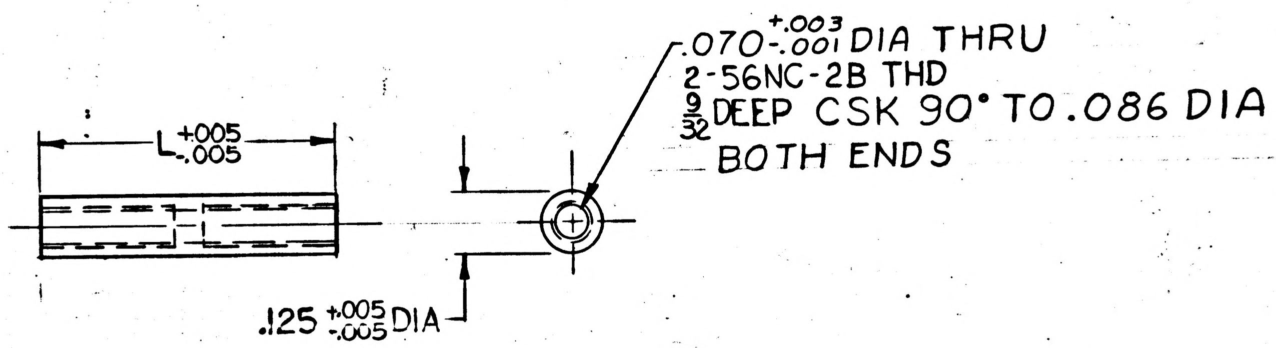
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015135 B

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 01194 UPGRADED TO CLASS A	8 MAY 63	WK
B	REVISED PER TDRR 04492	5 NOV 63	RPK WK



L $^{+.005}_{-.005}$
.070 $^{+.003}_{-.001}$ DIA THRU
2-56NC-2B THD
$\frac{9}{32}$ DEEP CSK 90° TO .086 DIA
BOTH ENDS
.125 $^{+.005}_{-.005}$ DIA

NASA PART NO	LENGTH "L"
1015135-001	.500
-002	.531
-003	.562
-004	.594
-005	.625
-006	.656
-007	.688
-008	.719
-009	.750
-010	.781
-011	.812
-012	.844
-013	.875
-014	.906
-015	.938
-016	.969
-017	1.000
-018	1.031

NASA PART NO	LENGTH "L"
1515135-019	1.062
-020	1.093
-021	1.156
-022	1.125

NOTES:

FINISH ALL OVER $\overset{125}{\surd}$ AA

MATERIAL SPECIFICATION - NYLON MIL-P-17091 TYPE I

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327 UNLESS OTHERWISE SPECIFIED

REMOVE SHARP EDGES

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES ON

FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL SEE NOTE

HEAT TREATMENT —//—

FINAL FINISH —//—

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 3-26-63
CHECKED R. L. Battalfom
APPROVAL R. L. Battalfom
APPROVAL
NASA APPROVAL W. J. Rhine 3-27-63
MIT APPROVAL W. Kupfer 27 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SPACER
NYLON

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015135
SCALE 4 X
WT
SHEET 1 OF 1

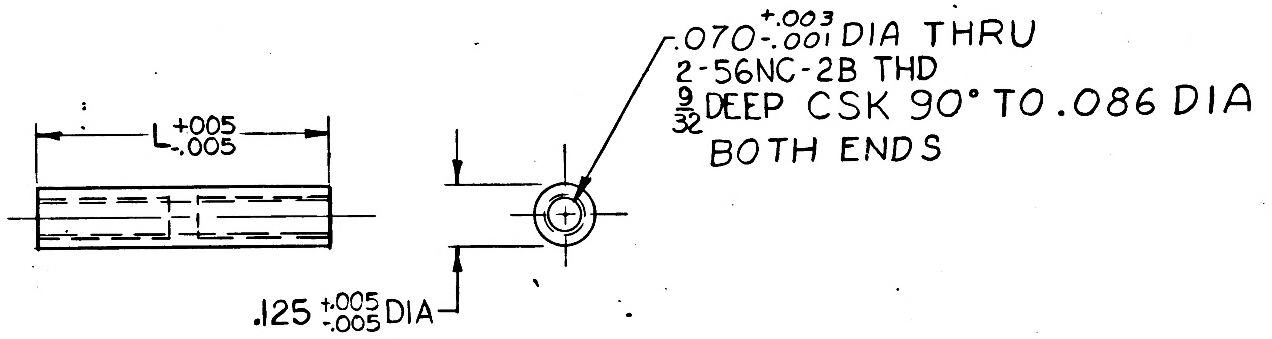
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015135 C

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 01194 UPGRADED TO CLASS A	8 MAY 63	WK
B	REVISED PER TDRR 04492	5 NOV 63	RPK WK
C	REVISED PER TDRR 11354	12 AUG 64	JWP



L $^{+.005}_{-.005}$
.070 $^{+.003}_{-.001}$ DIA THRU
2-56NC-2B THD
$\frac{9}{32}$ DEEP CSK 90° TO .086 DIA
BOTH ENDS
.125 $^{+.005}_{-.005}$ DIA

NASA PART NO	LENGTH "L"
1015135-001	.500
-002	.531
-003	.562
-004	.594
-005	.625
-006	.656
-007	.688
-008	.719
-009	.750
-010	.781
-011	.812
-012	.844
-013	.875
-014	.906
-015	.938
-016	.969
-017	1.000
-018	1.031

NASA PART NO	LENGTH "L"
1015135-019	1.062
-020	1.093
-021	1.156
-022	1.125
-023	1.170

NOTES:

FINISH ALL OVER $\sqrt{}^{125}$ AA
MATERIAL SPECIFICATION
NYLON MIL-P-17091
TYPE I
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
UNLESS OTHERWISE SPECIFIED
REMOVE SHARP EDGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL SEE NOTE

HEAT TREATMENT —//—

FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 3-26-63
CHECKED R. L. Battalfom
APPROVAL R. L. Battalfom
APPROVAL

NASA APPROVAL W. J. Rhine 3-27-63
MIT APPROVAL 27 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SPACER
NYLON

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015135
SCALE 4X
WT
SHEET 1 OF 1

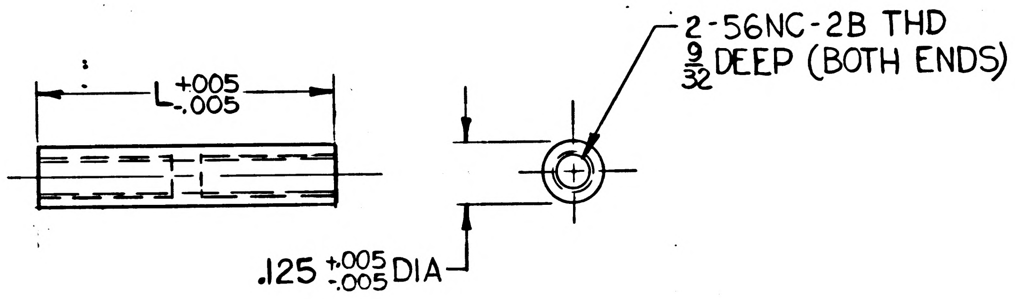
1015135

4 3 2 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015135

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL



NASA PART NO	LENGTH "L"
1015135-001	.500
-002	.531
-003	.562
-004	.594
-005	.625
-006	.656
-007	.688
-008	.719
-009	.750
-010	.781
-011	.812
-012	.844
-013	.875
-014	.906
-015	.938
-016	.969
-017	1.000
-018	1.031

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00659 **DATE** 27 Mar 63

NOTES:
1. FINISH ALL OVER $\sqrt{}^{125}$ AA
2. MATERIAL SPECIFICATION NYLON MIL-M-20693 TYPE I
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 3-26-63
CHECKED R. L. Battalfom
APPROVAL R. L. Battalfom
APPROVAL
NASA APPROVAL W. J. Rhine 3-27-63
MIT APPROVAL 27 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SPACER
NYLON

CODE IDENT NO. SIZE C NASA DRAWING NO. 1015135
SCALE 4X WT SHEET 1 OF 1

D C B A

1015135

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

A 1015136

REVISIONS TDRR 00853

SYM	DESCRIPTION	DATE	APPROVAL
A	ADDED 1010342 & 1010461 PER TDRR00988	24APR63	WK

PART NO	DESCRIPTION	REQD
1010374-29	RESISTOR	11
1010364-765		6
1010374-1		6
1010374-54		5
1010364-719		6
1006750-26		1
1006750-51	RESISTOR	6
1006755-84	CAPACITOR	1
1006755-69	CAPACITOR	12
1010359-29	CAPACITOR	6
1010286-13	DIODE	1
1010329-1	TRANSFORMER	6
1010342	TRANSISTOR	6
1010461	SHIELD	6

1015136 A

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007108	
1007107	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL #
HEAT TREATMENT #
FINAL FINISH #

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 4-16-63
CHECKED R. L. Battaglia
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL WK 17Apr63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
BUFFER CIRCUIT

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015136
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015136 A

REVISIONS TDRR 00853

SYM	DESCRIPTION	DATE	APPROVAL
A	ADDED 1010342 & 1010461 PER TDRR00988	24APR63	WK
B	REPLACED BY REV. C WITH CHANGE PER TDRR 1372	19May63	WK

PART NO	DESCRIPTION	REQD
1010374-29	RESISTOR	11
1010364-765		6
1010374-1		6
1010374-54		5
1010364-719		6
1006750-26		1
1006750-51	RESISTOR	6
1006755-84	CAPACITOR	1
1006755-69	CAPACITOR	12
1010359-29	CAPACITOR	6
1010286-13	DIODE	1
1010329-1	TRANSFORMER	6
1010342	TRANSISTOR	6
1010461	SHIELD	6

Ⓑ REPLACED BY REVISION C WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007108	
1007107	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL #
HEAT TREATMENT #
FINAL FINISH #

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 4-16-63
CHECKED R. L. Battaglia
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL 17Apr63

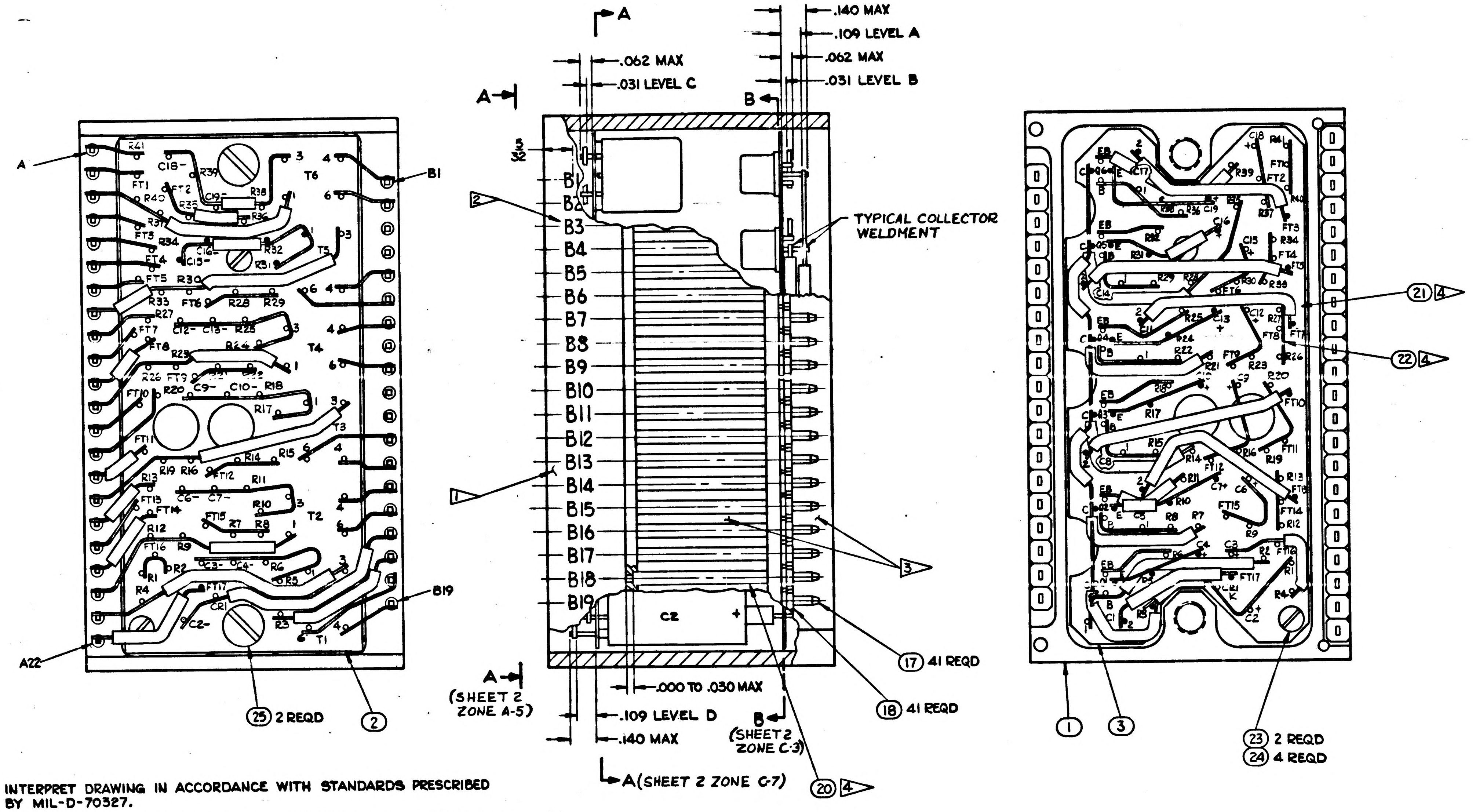
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
BUFFER CIRCUIT

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015136
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
C		REPLACES REV. B WITH CHANGES PER TDRR 9372			



A
B1
B19
A22
25 2 REQD
2
A
A
.062 MAX
.031 LEVEL C
.140 MAX
.109 LEVEL A
.062 MAX
.031 LEVEL B
B
TYPICAL COLLECTOR WELDMENT
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19
C2
A (SHEET 2 ZONE A-5)
.000 TO .030 MAX
.109 LEVEL D
.140 MAX
B (SHEET 2 ZONE C-3)
A (SHEET 2 ZONE C-7)
20 4
17 41 REQD
18 41 REQD
3
2
1
21 4
22 4
1
3
23 2 REQD
24 4 REQD

Ⓒ REPLACES REV. B WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND1002003.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009.

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 2 & 3.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATES LEVELS A & D WIRING.

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

ON ITEM NO. 2 & 3.

BROKEN PATHS INDICATE INSULATION SLEEVING.
K INDICATES CATHODE SIDE OF DIODE.
FT ( ) INDICATES FEED THRU.
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
C INDICATES COLLECTOR LEAD OF TRANSISTOR.
B INDICATES BASE LEAD OF TRANSISTOR.
E INDICATES EMITTER LEAD OF TRANSISTOR.
EB INDICATES EMITTER BASE LEAD OF TRANSISTOR.

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

2 MARK CHARACTERS .080 HIGH WHITE PER ND 1002019 CENTRALIZED AS SHOWN.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED.

DRAWINGS FOR REFERENCE
1015126 SCHEMATIC DIAGRAM ELECTRICAL

C	C
SHEET 2	SHEET 1

REVISION STATUS

ITEM NO	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
26	6	1010461	SHIELD, MAGNETIC
25	2	AN500D-4-4	SCREW
24	4	AN500D-2-4	SCREW
23	2	1015135-016	SPACER
22	AR	1006757-1	WIRE, NICKEL RIBBON .010 × .020
21	AR	ND1002074	SLEEVING, ELECT. INSULATING #23
20	AR	ND1002074	SLEEVING, ELECT. INSULATING #22
19	AR	1006787-2	WIRE, FEED THROUGH #24 AWG
18	41	1006775	INSULATOR, WRAPOST-MALE MIN.
17	41	1006782-5	CONTACT, BLADE EDGE CONN.
16	6	1010342	TRANSISTOR
15	6	1010329-1	TRANSFORMER
14	1	1010286-13	SEMICONDUCTOR DEVICE DIODE
13	6	1010359-29	CAPACITOR, FIXED
12	1	1006755-84	CAPACITOR, FIXED
11	12	1006755-69	CAPACITOR, FIXED
10	6	1006750-51	RESISTOR, FIXED
9	1	1006750-26	RESISTOR, FIXED
8	5	1010374-54	RESISTOR, FIXED
7	11	1010374-29	RESISTOR, FIXED
6	6	1010374-1	RESISTOR, FIXED
5	6	1010364-765	RESISTOR, FIXED
4	6	1010364-719	RESISTOR, FIXED
3	1	1015732	WAFER BOARD, LOWER
2	1	1015733	WAFER BOARD, UPPER
1	1	1015734	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − —
DECIMALS +.005 −.005
ANGLES + — − —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Wunderlich DATE 9 MAY 63
CHECKED Pizyda 17 MAY 63
APPROVAL R Osberg 17 May 63
APPROVAL Model 17 May 63
NASA APPROVAL
MIT APPROVAL 29 May 63

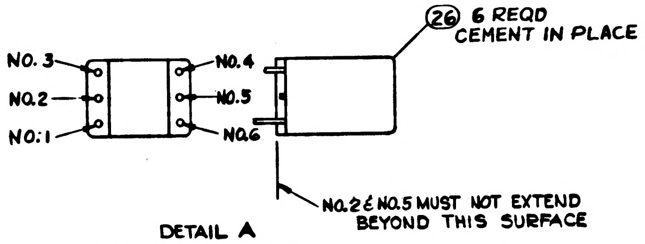
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

BUFFER CIRCUIT
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015136
SCALE 4:1
SHEET 1

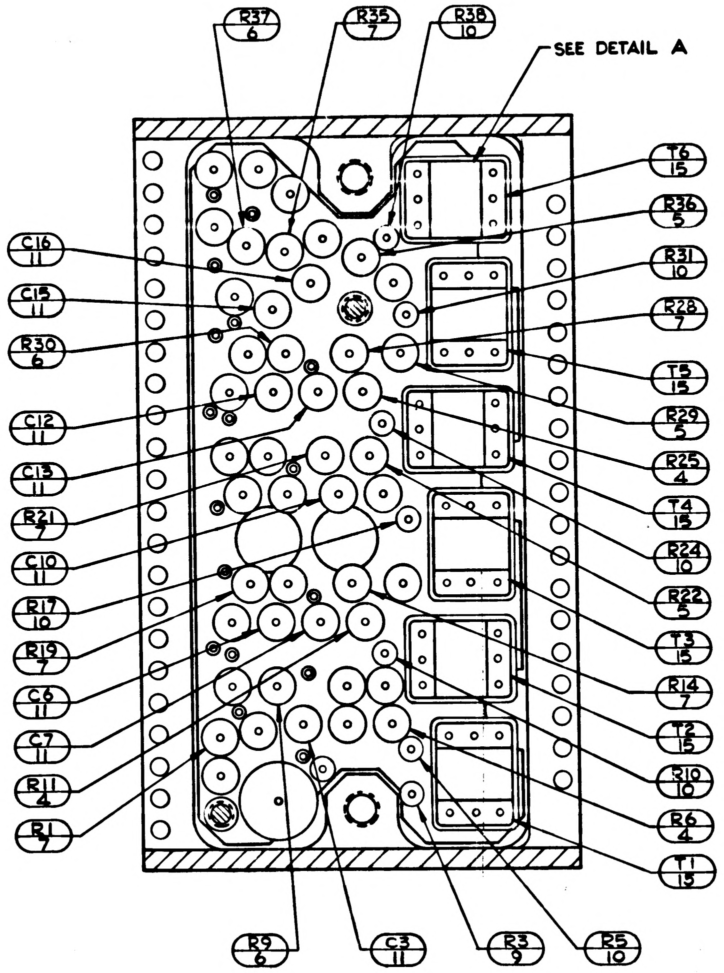
1015136

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
C		SHEET 2 ADDED-TDRR 2,3 SEE SHEET 1			



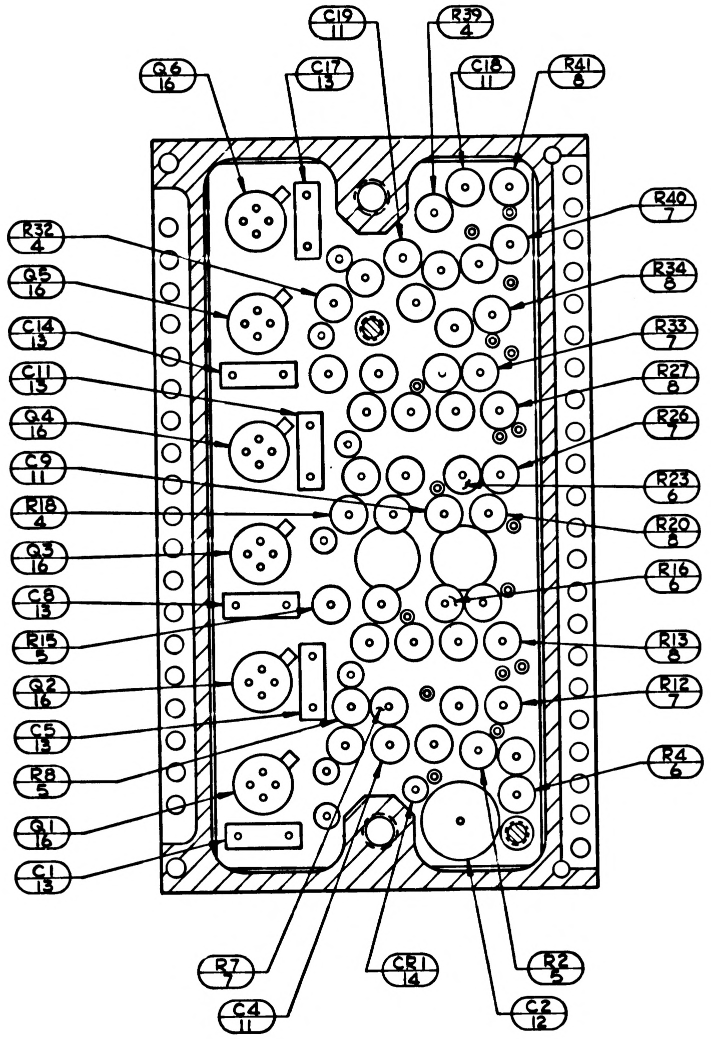
NO. 3
NO. 2
NO. 1
NO. 4
NO. 5
NO. 6
(26) 6 REQD
CEMENT IN PLACE
NO. 2 & NO. 5 MUST NOT EXTEND BEYOND THIS SURFACE

DETAIL A
TYPICAL DETAIL FOR T6, T5, T4, T3, T2, & T1



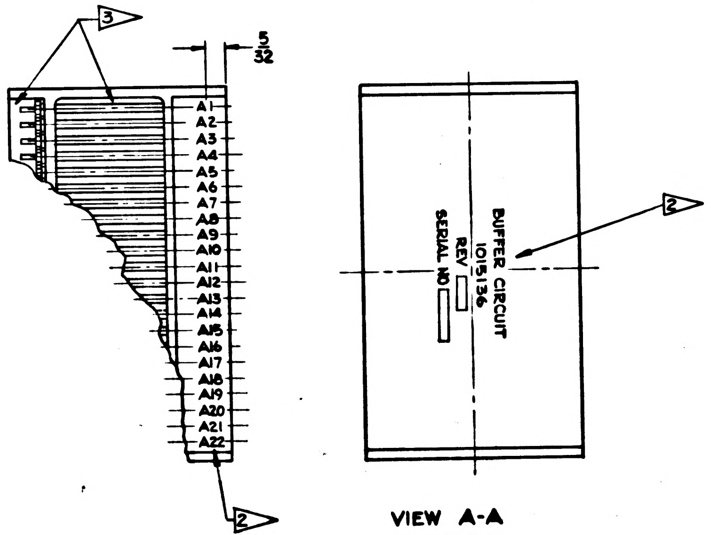
R37 6
R35 7
R38 10
SEE DETAIL A
T6 15
R36 5
R31 10
R28 7
T5 15
R29 5
R25 4
T4 15
R24 10
R22 5
T3 15
R14 7
T2 15
R10 10
R6 4
T1 15
C16 11
C15 11
R30 6
C12 11
C13 11
R21 7
C10 11
R17 10
R19 7
C6 11
C7 11
R11 4
R1 7
R9 6
C3 11
R3 9
R5 10

SECTION A-A
(SHEET 1 ZONE D-5)



C19 11
R39 4
Q6 16
C17 13
C18 11
R41 8
R40 7
R32 4
R34 8
Q5 16
R33 7
C14 13
R27 8
C11 13
R26 7
Q4 16
R23 6
C9 11
R20 8
R18 4
R16 6
Q3 16
C8 13
R13 8
R15 5
R12 7
Q2 16
C5 13
R4 6
R8 5
Q1 16
C1 13
R7 7
C4 11
CR1 14
C2 12
R2 5

SECTION B-B
(SHEET 1 ZONE D-5)



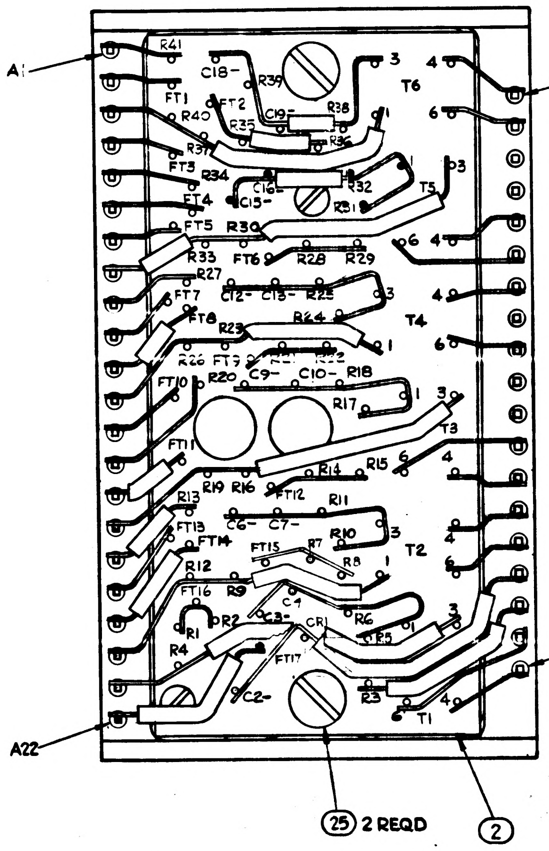
3
5/32
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
A18
A19
A20
A21
A22
2
BUFFER CIRCUIT
1015136
REV
SERIAL NO
2

VIEW A-A
SCALE 2:1
(SHEET 1 ZONE D-6)

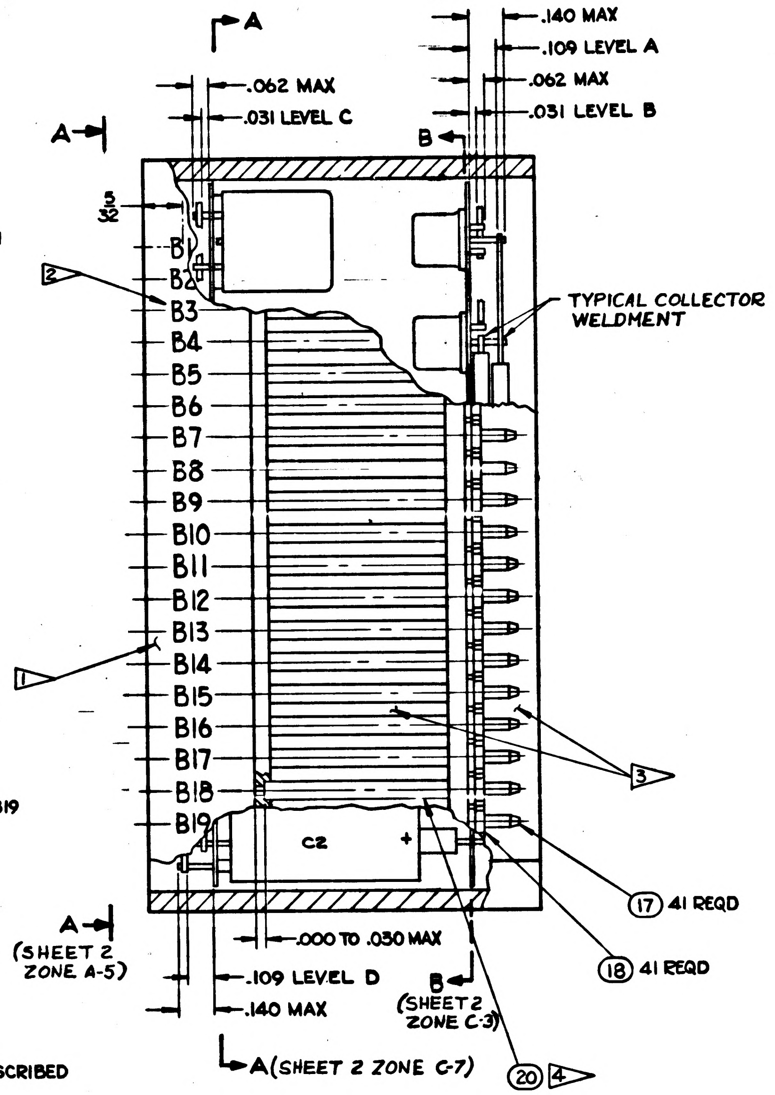
1007159		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± — ANGLES ± —	AC SPARK PLUG DIVISION. GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
1007158		DO NOT SCALE THIS DRAWING	ACSP PN	BUFFER CIRCUIT MODULE ASSEMBLY
NEXT ASSY	USED ON	MATERIAL —	DRAWN Wunderlich DATE 9 MAY 63 CHECKED C. Pisjda 17 MAY 63 APPROVAL 17 MAY 63 APPROVAL 19 MAY 63	CODE IDENT NO SIZE E 1015136
APPLICATION		CONTRACT	NASA APPROVAL MIT APPROVAL	SCALE 4:1 SHEET 2 OF 2

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

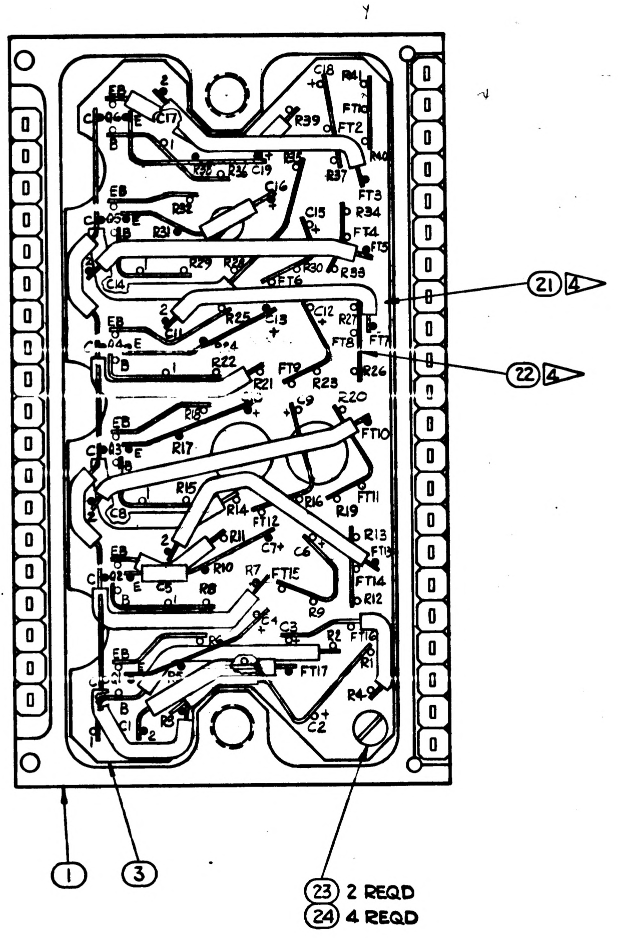
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REPLACES REV. B WITH CHANGES PER TDRR 02372			
D		REVISED PER TDRR 02160		7/23/63	



A1
B1
B19
A22
R41
C18
R39
T6
FT1
R40
FT2
R38
C19
R37
R35
R36
FT3
R34
R32
C16
C15
FT4
R31
T5
FT5
R30
R33
FT6
R28
R29
R27
C12
C13
R25
FT7
FT8
R23
R24
T4
R26
FT9
R22
C10
R18
FT10
R20
C9
R17
FT11
R14
R15
T3
R13
R19
R16
FT12
R11
FT13
C6
C7
R10
T2
FT14
FT15
R7
R8
R12
R9
FT16
C4
CR1
R6
R2
R1
R4
FT17
R5
C2
R3
T1
(25) 2 REQD
(2)



A
.140 MAX
.109 LEVEL A
.062 MAX
.062 MAX
.031 LEVEL C
.031 LEVEL B
A
B
5/32
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14
B15
B16
B17
B18
B19
2
1
3
TYPICAL COLLECTOR WELDMENT
C2
A (SHEET 2 ZONE A-5)
.000 TO .030 MAX
.109 LEVEL D
.140 MAX
B (SHEET 2 ZONE C-3)
A (SHEET 2 ZONE C-7)
(20) 4
(17) 41 REQD
(18) 41 REQD



(21) 4
(22) 4
(1)
(3)
(23) 2 REQD
(24) 4 REQD
C18
R41
C17
R39
FT10
FT2
R40
R37
C19
FT3
C16
R34
R32
FT4
C15
R31
R30
R33
R29
R28
FT6
C14
R25
C13
C12
R27
FT8
FT7
R22
R26
FT9
R21
R23
C9
R20
R17
FT10
R15
R14
R16
FT11
C8
R11
FT12
R13
R19
C7
C6
R10
R7
FT15
FT13
R8
FT14
R12
R9
FT16
R6
FT17
R5
R4
C2
C1
R3
R2
R1
EB
E
B
C

Ⓒ REPLACES REV. B WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND1002003.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009.

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 2 & 3.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATES LEVELS A & D WIRING.

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

ON ITEM NO. 2 & 3.
  BROKEN PATHS INDICATE INSULATION SLEEVING.
  K INDICATES CATHODE SIDE OF DIODE.
  FT ( ) INDICATES FEED THRU.
  MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
  PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
  C INDICATES COLLECTOR LEAD OF TRANSISTOR.
  B INDICATES BASE LEAD OF TRANSISTOR.
  E INDICATES EMITTER LEAD OF TRANSISTOR.
  EB INDICATES EMITTER BASE LEAD OF TRANSISTOR.

1▷ ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

2▷ MARK CHARACTERS .080 HIGH WHITE PER ND 1002019 CENTRALIZED AS SHOWN.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4▷ USE AS REQUIRED.

DRAWINGS FOR REFERENCE
  1015126 SCHEMATIC DIAGRAM ELECTRICAL

B	D
SHEET 2	SHEET 1
REVISION STATUS	

26	6	1010461	SHIELD, MAGNETIC
25	2	AN500D-4-4	SCREW
24	4	AN500D-2-4	SCREW
23	2	1015135-016	SPACER
22	AR	1006757-1	WIRE, NICKEL RIBBON .010 × .020
21	AR	ND1002074	SLEEVING, ELECT. INSULATING #23
20	AR	ND1002074	SLEEVING, ELECT. INSULATING #22
19	AR	1006787-2	WIRE, FEED THROUGH #24 AWG
18	41	1006775	INSULATOR, WRAPOST-MALE MIN.
17	41	1006782-5	CONTACT, BLADE EDGE CONN.
16	6	1010342	TRANSISTOR
15	6	1010329-1	TRANSFORMER
14	1	1010265-13	SEMICONDUCTOR DEVICE DIODE
13	6	1010359-29	CAPACITOR, FIXED
12	1	1006755-84	CAPACITOR, FIXED
11	12	1006755-69	CAPACITOR, FIXED
10	6	1006750-51	RESISTOR, FIXED
9	1	1006750-26	RESISTOR, FIXED
8	5	1010374-54	RESISTOR, FIXED
7	11	1010374-29	RESISTOR, FIXED
6	6	1010374-1	RESISTOR, FIXED
5	6	1010364-765	RESISTOR, FIXED
4	6	1010364-719	RESISTOR, FIXED
3	1	1015732	WAFER BOARD, LOWER
2	1	1015733	WAFER BOARD, UPPER
1	1	1015734	FRAME, MODULE
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	+.005	+ —
- —	-.005	- —

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Wunderlich DATE 9 MAY 63
CHECKED C. Pigda 17 MAY 63
APPROVAL R. Cabing 17 MAY 63
APPROVAL 19 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BUFFER CIRCUIT
MODULE ASSEMBLY

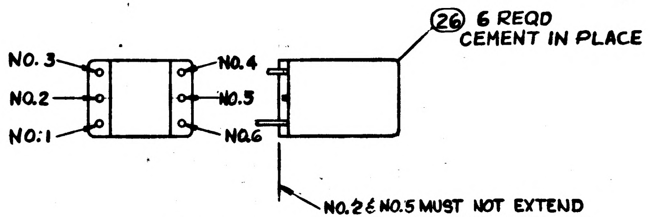
CODE IDENT NO.
SIZE E
1015136
SCALE 4:1
SHEET 1 OF 2

Charleston · 17 · May · 63

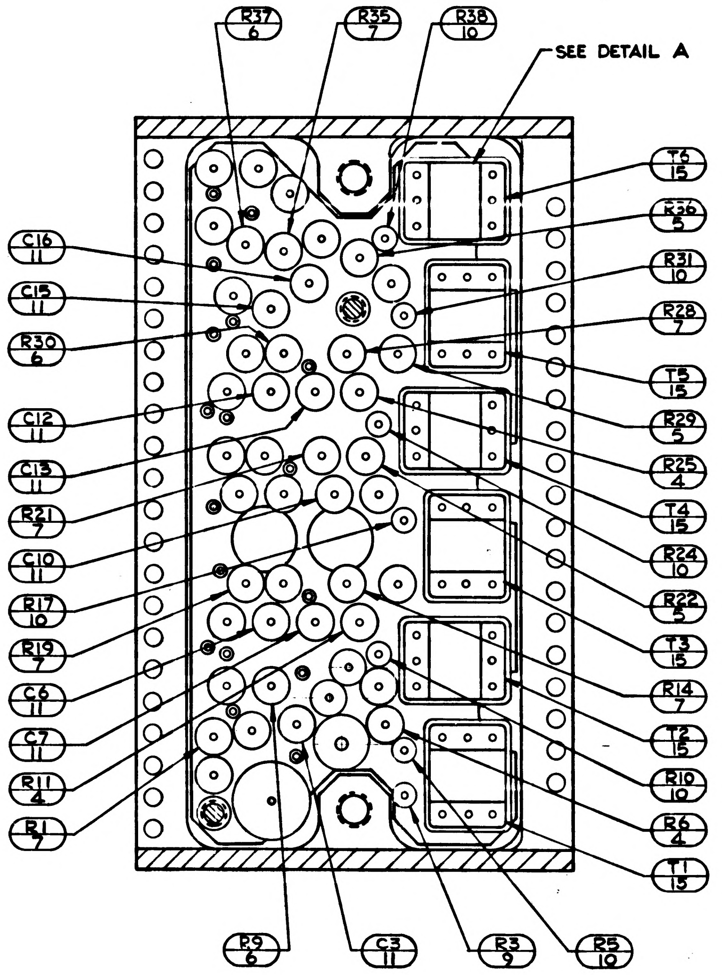
1015136

1015136

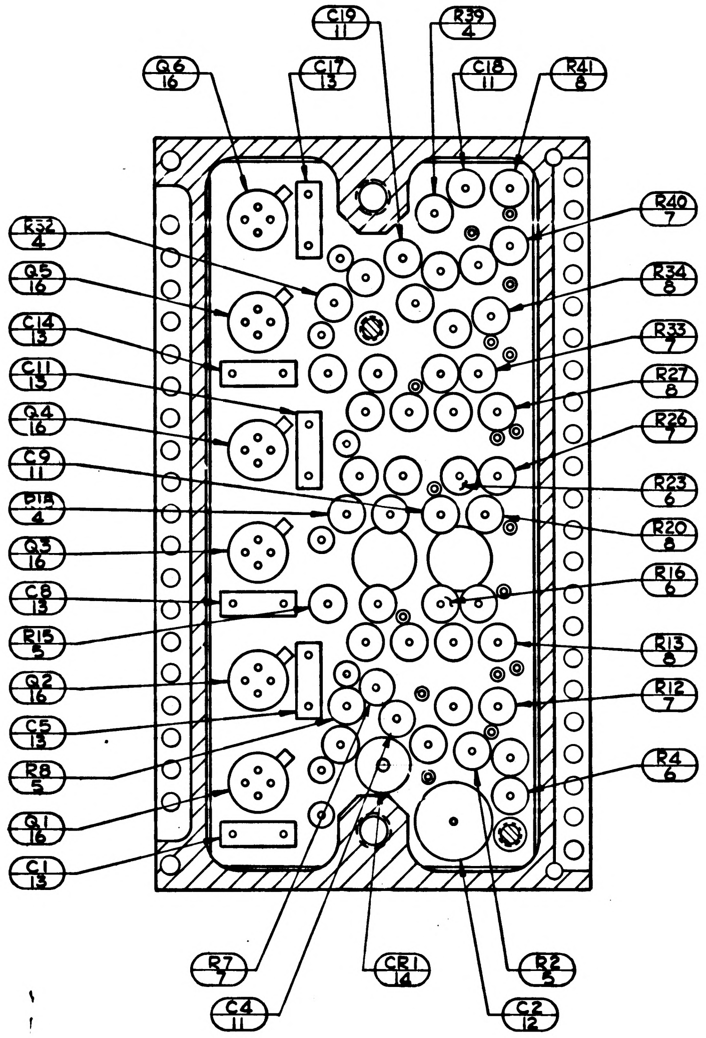
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
C		SHEET 2 ADDED-TDRR#1372 SEE SHEET 1		24 Jun 63	WK
D		REVISED PER TDRR 02160		7/2/63	


NO. 3
NO. 2
NO. 1
NO. 4
NO. 5
NO. 6
26 6 REQD CEMENT IN PLACE
NO. 2 & NO. 5 MUST NOT EXTEND BEYOND THIS SURFACE

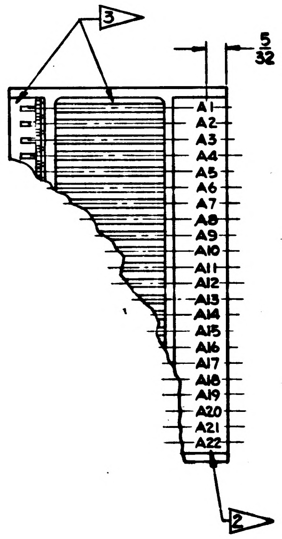
DETAIL A
TYPICAL DETAIL FOR T6, T5, T4, T3, T2, & T1

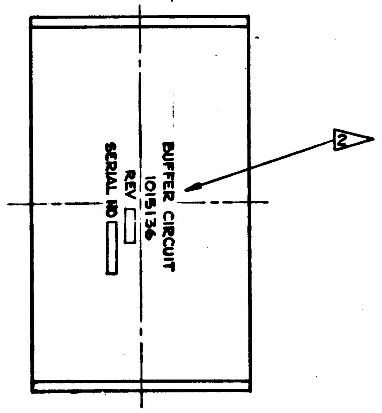

R37 6
R35 7
R38 10
SEE DETAIL A
T6 15
R36 5
R31 10
R28 7
T5 15
R29 5
R25 4
T4 15
R24 10
R22 5
T3 15
R14 7
T2 15
R10 10
R6 4
T1 15
C16 11
C15 11
R30 6
C12 11
C13 11
R21 7
C10 11
R17 10
R19 7
C6 11
C7 11
R11 4
R1 7
R9 6
C3 11
R3 9
R5 10

SECTION A-A
(SHEET 1 ZONE D-5)


C19 11
R39 4
Q6 16
C17 13
C18 11
R41 8
R40 7
R32 4
Q5 16
C14 13
C11 13
Q4 16
C9 11
R18 4
Q3 16
C8 13
R15 5
Q2 16
C5 13
R8 5
Q1 16
C1 13
R34 8
R33 7
R27 8
R26 7
R23 6
R20 8
R16 6
R13 8
R12 7
R4 6
R7 7
C4 11
CR1 14
R2 5
C2 12

SECTION B-B
(SHEET 1 ZONE D-5)


3
5/32
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
A18
A19
A20
A21
A22
2


BUFFER CIRCUIT
1015136
REV
SERIAL NO
2

VIEW A-A
SCALE 2:1
(SHEET 1 ZONE D-6)

1007159	
1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Kunderlich DATE 9 MAY 63
CHECKED C. Piojda 17 MAY 63
APPROVAL R. Ostling 17 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

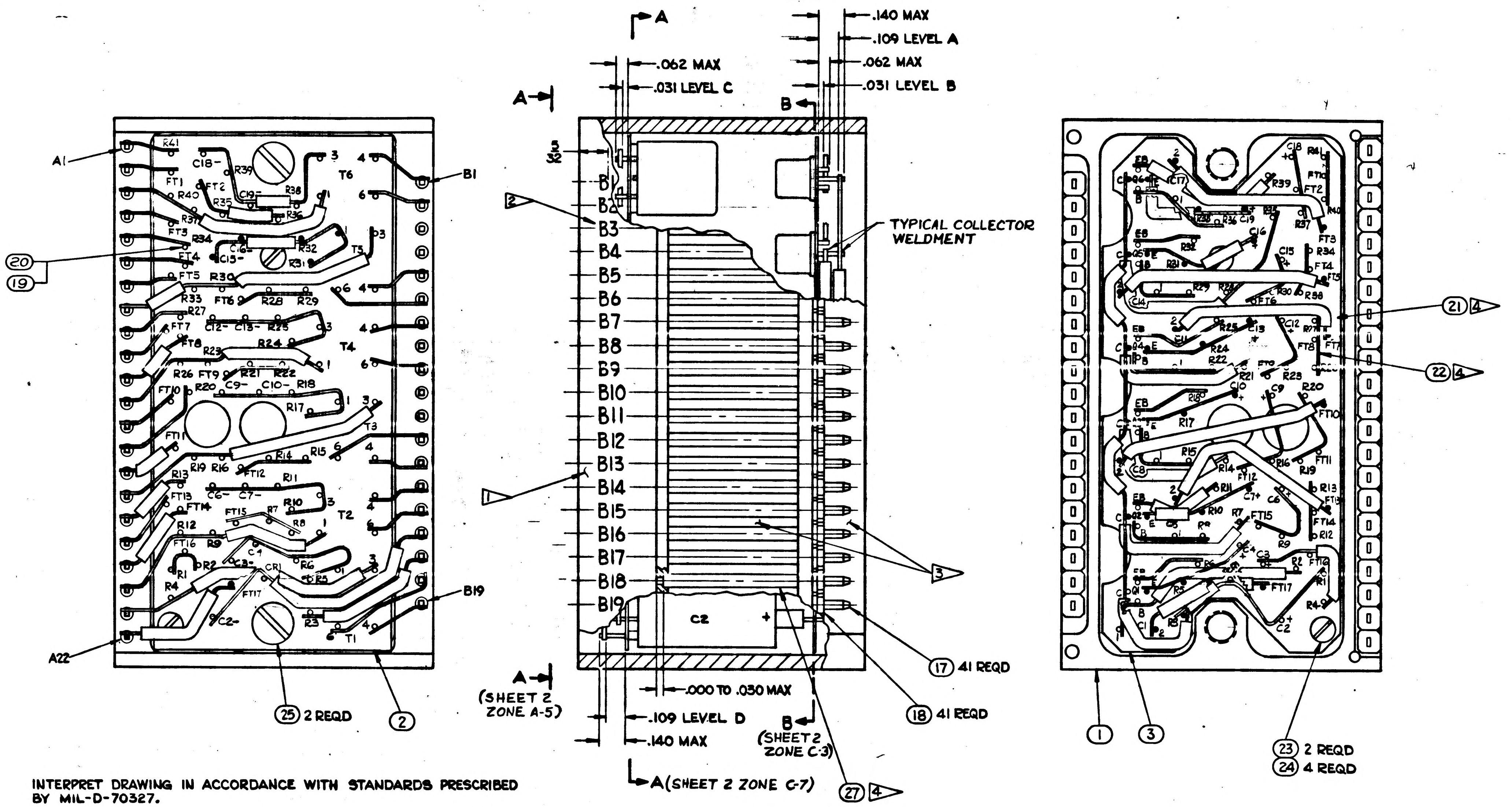
BUFFER CIRCUIT
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015136
SCALE 4:1
SHEET 2 OF 2

1015136 D

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
C		REPLACES REV. B WITH CHANGES PER TDRR 01372			
D		REVISED PER TDRR 02160		7/23/63	
E		REVISED PER TDRR			
F		REVISED PER TDRR			



A1
R41
C18-
R39
3
4
T6
B1
FT1
FT2
R40
C19-
R38
R35
R36
R37
FT3
R34
FT4
C16-
C15
R32
R31
T5
20
19
FT5
R30
FT6
R28
R29
R33
R27
FT7
C12-
C13-
R25
FT8
R23
R24
T4
R26
FT9
R21
R22
FT10
R20
C9-
C10-
R18
R17
FT11
T3
R19
R16
R14
R15
FT12
R13
R11
FT13
C6-
C7-
R10
FT14
FT15
R7
R8
T2
R12
R9
FT16
C4
R2
R3
R1
C3-
CR1
R6
R4
FT17
C2-
R5
T1
A22
B19
25 2 REQD
2
A
.062 MAX
.031 LEVEL C
.140 MAX
.109 LEVEL A
.062 MAX
.031 LEVEL B
5/32
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14
B15
B16
B17
B18
B19
TYPICAL COLLECTOR WELDMENT
C2
3
17 41 REQD
18 41 REQD
.000 TO .030 MAX
.109 LEVEL D
.140 MAX
(SHEET 2 ZONE A-5)
(SHEET 2 ZONE C-3)
A (SHEET 2 ZONE C-7)
27 4
21 4
22 4
1
3
23 2 REQD
24 4 REQD

Ⓒ REPLACES REV. B WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND1002003.

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009.

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 2 & 3.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATES LEVELS A & D WIRING.

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

ON ITEM NO. 2 & 3.

- BROKEN PATHS INDICATE INSULATION SLEEVING.
- K INDICATES CATHODE SIDE OF DIODE.
- FT ( ) INDICATES FEED THRU.
- MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
- PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
- C INDICATES COLLECTOR LEAD OF TRANSISTOR.
- B INDICATES BASE LEAD OF TRANSISTOR.
- E INDICATES EMITTER LEAD OF TRANSISTOR.
- EB INDICATES EMITTER BASE LEAD OF TRANSISTOR.

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

2 MARK CHARACTERS .060/.100 HIGH WHITE PER ND 1002019 CENTRALIZED AS SHOWN.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED.

DRAWINGS FOR REFERENCE

1015126 SCHEMATIC DIAGRAM ELECTRICAL

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
27	AR	1006776-20	SLEEVING, ELECT. INSULATING
26	6	1010461	SHIELD, MAGNETIC
25	2	AN500D-4-4	SCREW
24	4	AN500D-2-4	SCREW
23	2	1015135-016	SPACER
22	AR	1006757-1	WIRE, NICKEL RIBBON .010×.020
21	AR	1006776-21	SLEEVING, ELECT. INSULATING
20	AR	1006776-22	SLEEVING, ELECT. INSULATING
19	AR	1006787-2	WIRE, FEED THROUGH # 24 AWG
18	41	1006775	INSULATOR, WRAPOST-MALE MIN.
17	41	1006782-5	CONTACT, BLADE EDGE CONN.
16	6	1010342	TRANSISTOR
15	6	1010329-1	TRANSFORMER
14	1	1010265-13	SEMICONDUCTOR DEVICE DIODE
13	6	1010359-29	CAPACITOR, FIXED
12	1	1006755-84	CAPACITOR, FIXED
11	12	1006755-69	CAPACITOR, FIXED
10	6	1006750-51	RESISTOR, FIXED
9	1	1006750-26	RESISTOR, FIXED
8	5	1010374-54	RESISTOR, FIXED
7	11	1010374-29	RESISTOR, FIXED
6	6	1010374-1	RESISTOR, FIXED
5	6	1010364-765	RESISTOR, FIXED
4	6	1010364-719	RESISTOR, FIXED
3	1	1015732	WAFER BOARD, LOWER
2	1	1015733	WAFER BOARD, UPPER
1	1	1015734	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS +.005 -.005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Wunderlich DATE 9 MAY 63
CHECKED C. Fiyda 17 MAY 63
APPROVAL 17 MAY 63
APPROVAL 19 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

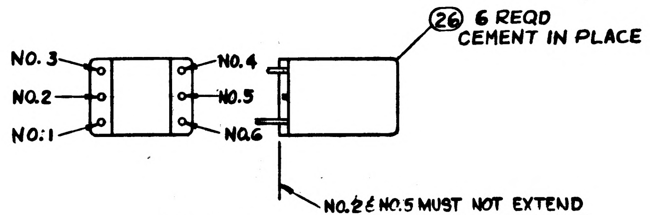
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BUFFER CIRCUIT
MODULE ASSEMBLY

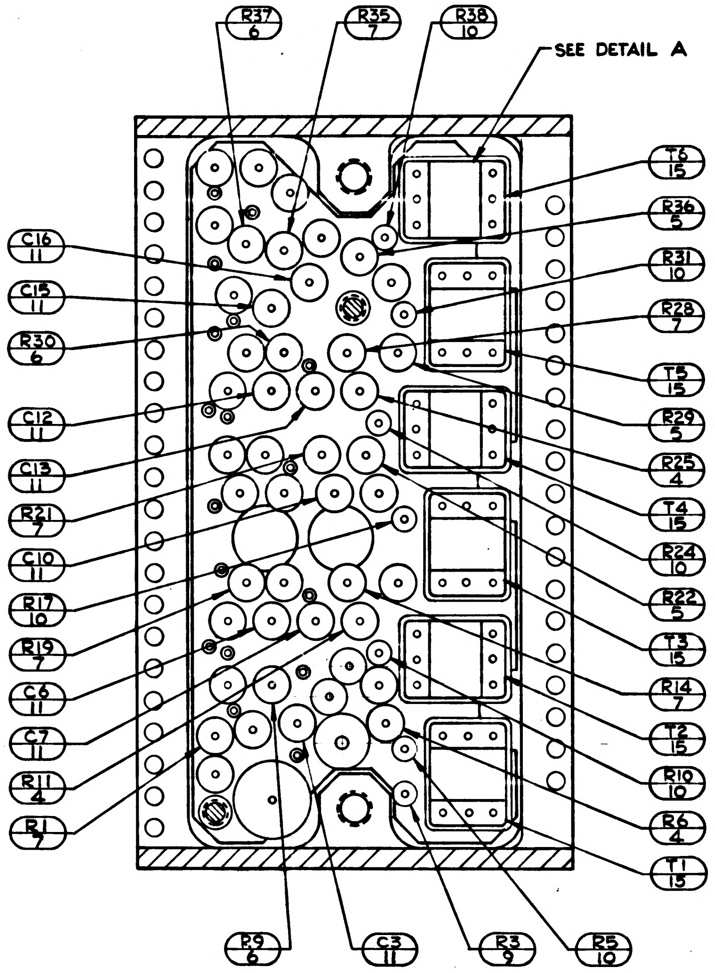
CODE IDENT NO.
SIZE E
1015136
SCALE 4:1
SHEET

1015136 E

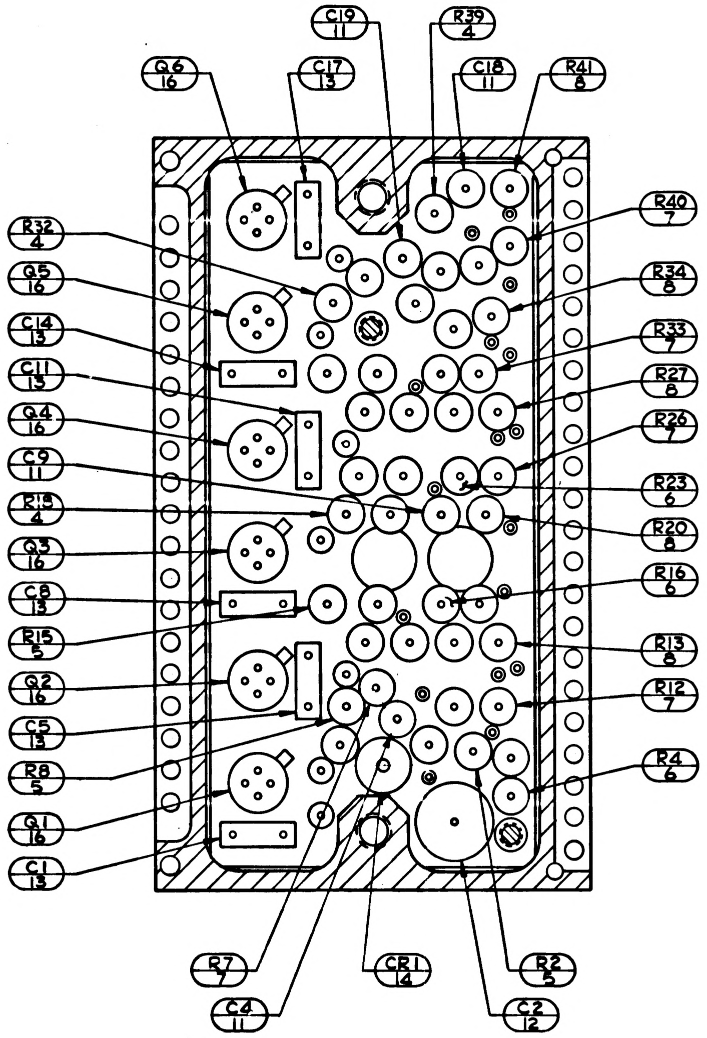
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
C		SHEET 2 ADDED-TDRR#1372 SEE SHEET 1		20 Jun 63	[illegible]
D		REVISED PER TDRR 02160		7/27/63	[illegible]
E		REVISED PER TDRR	[illegible]	[illegible]	[illegible]
F		REVISED PER TDRR	[illegible]	[illegible]	[illegible]


26 6 REQD
CEMENT IN PLACE
NO. 3
NO. 2
NO. 1
NO. 4
NO. 5
NO. 6
NO. 2 & NO. 5 MUST NOT EXTEND BEYOND THIS SURFACE

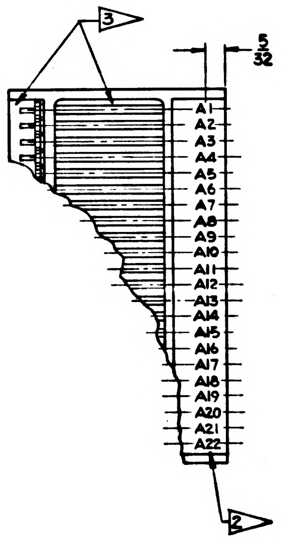
DETAIL A
TYPICAL DETAIL FOR T6, T5, T4, T3, T2, & T1

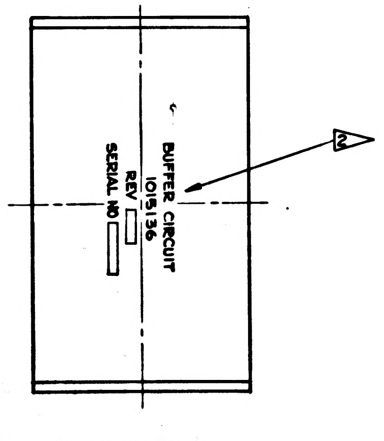

R37 6
R35 7
R38 10
SEE DETAIL A
T6 15
R36 5
R31 10
R28 7
T5 15
R29 5
R25 4
T4 15
R24 10
R22 5
T3 15
R14 7
T2 15
R10 10
R6 4
T1 15
R5 10
R3 9
C3 11
R9 6
C16 11
C15 11
R30 6
C12 11
C13 11
R21 7
C10 11
R17 10
R19 7
C6 11
C7 11
R11 4
R1 7

SECTION A-A
(SHEET 1 ZONE D-5)


C19 11
R39 4
Q6 16
C17 13
C18 11
R41 8
R40 7
R34 8
R33 7
R27 8
R26 7
R23 6
R20 8
R16 6
R13 8
R12 7
R4 6
R32 4
Q5 16
C14 13
C11 13
Q4 16
C9 11
R18 4
Q3 16
C8 13
R15 5
Q2 16
C5 13
R8 5
Q1 16
C1 13
R7 7
C4 11
CR1 14
C2 12
R2 5

SECTION B-B
(SHEET 1 ZONE D-5)


3
5/32
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
A18
A19
A20
A21
A22
2


BUFFER CIRCUIT
1015136
REV
SERIAL NO
2

VIEW A-A
SCALE 2:1
(SHEET 1 ZONE D-6)

1007159	
1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Wunderlich DATE 9 MAY 63
CHECKED C. Piojda 17 MAY 63
APPROVAL R. [illegible] 17 MAY 63
APPROVAL [illegible] 19 MAY 63
NASA APPROVAL [illegible]
MIT APPROVAL W. K[illegible] 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

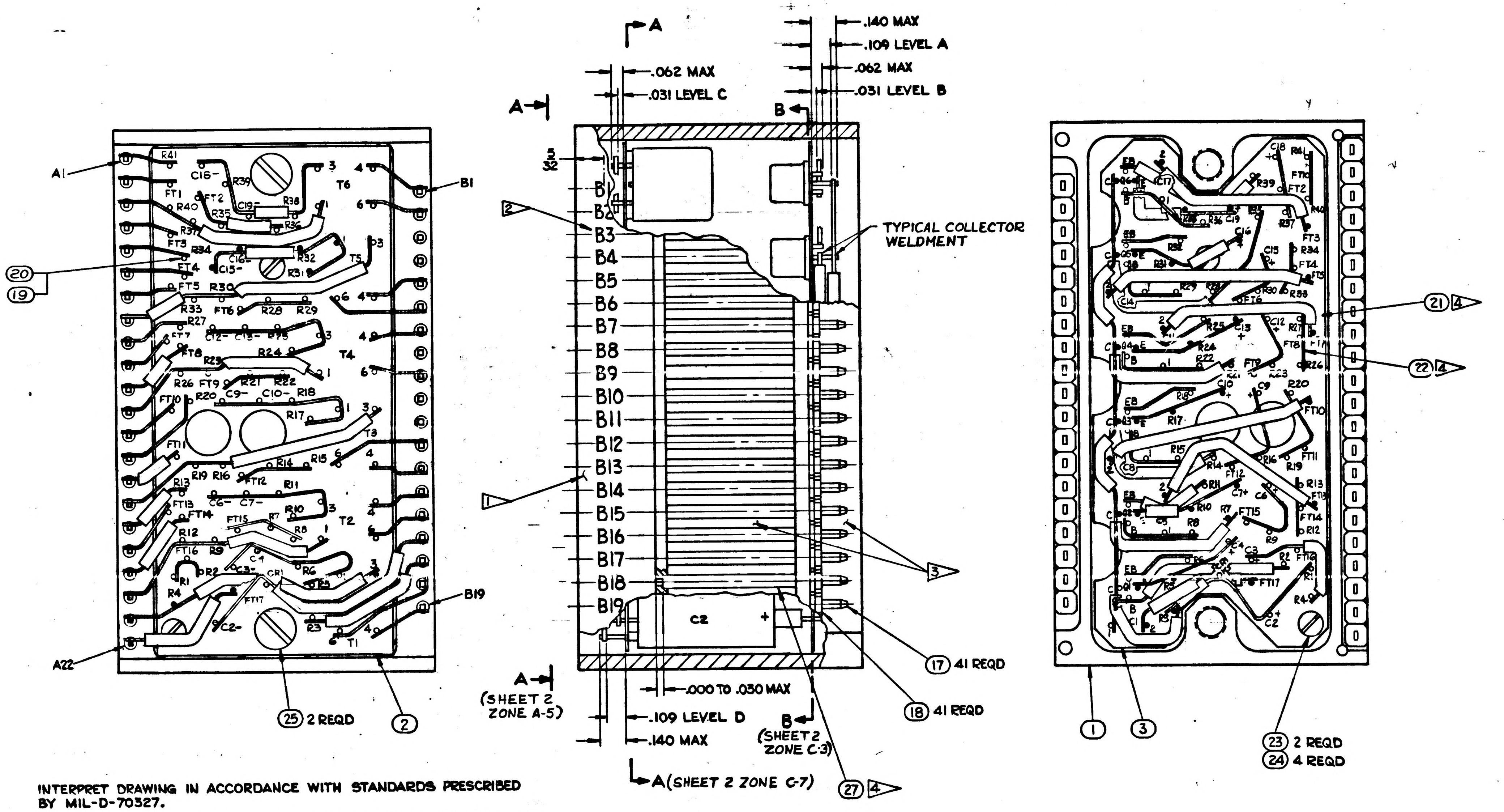
BUFFER CIRCUIT
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015136
SCALE 4:1
SHEET 2 OF 2

1015136 E

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REPLACES REV. B WITH CHANGES PER TDRR 01372		[illegible]	[illegible]
D		REVISED PER TDRR 02160		7/23/63	[illegible]
E		REVISED PER TDRR	[illegible]	[illegible]	[illegible]
F		REVISED PER TDRR	[illegible]	[illegible]	[illegible]
G		REVISED PER TDRR	03959	[illegible]	[illegible]



Ⓒ REPLACES REV. B WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND1002003.

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009.

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 2 & 3.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATES LEVELS A & D WIRING.

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

ON ITEM NO. 2 & 3.
  BROKEN PATHS INDICATE INSULATION SLEEVING.
  K INDICATES CATHODE SIDE OF DIODE.
  FT ( ) INDICATES FEED THRU.
  MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
  PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
  C INDICATES COLLECTOR LEAD OF TRANSISTOR.
  B INDICATES BASE LEAD OF TRANSISTOR.
  E INDICATES EMITTER LEAD OF TRANSISTOR.
  EB INDICATES EMITTER BASE LEAD OF TRANSISTOR.

1▷ ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

2▷ MARK CHARACTERS .060/.100 HIGH WHITE PER ND 1002019 CENTRALIZED AS SHOWN.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4▷ USE AS REQUIRED.

DRAWINGS FOR REFERENCE
  1015126 SCHEMATIC DIAGRAM ELECTRICAL

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
27	AR	1006776-20	SLEEVING, ELECT. INSULATING
26	6	1010461	SHIELD, MAGNETIC
25	2	AN500D-4-4	SCREW
24	4	AN500D-2-4	SCREW
23	2	1015135-016	SPACER
22	AR	1006757-1	WIRE, NICKEL RIBBON .010 × .020
21	AR	1006776-21	SLEEVING, ELECT. INSULATING
20	AR	1006776-22	SLEEVING, ELECT. INSULATING
19	AR	1006787-2	WIRE, FEED THROUGH # 24 AWG
18	41	1006775	INSULATOR, WRAPOST-MALE MIN.
17	41	1006782-5	CONTACT, BLADE EDGE CONN.
16	6	1010342	TRANSISTOR
15	6	1010329-1	TRANSFORMER
14	1	1010265-13	SEMICONDUCTOR DEVICE DIODE
13	6	1010359-29	CAPACITOR, FIXED
12	1	1006755-84	CAPACITOR, FIXED
11	12	1006755-69	CAPACITOR, FIXED
10	6	1006750-51	RESISTOR, FIXED
9	1	1006750-26	RESISTOR, FIXED
8	5	1010374-54	RESISTOR, FIXED
7	11	1010374-29	RESISTOR, FIXED
6	6	1010374-1	RESISTOR, FIXED
5	6	1010364-765	RESISTOR, FIXED
4	6	1010364-719	RESISTOR, FIXED
3	1	1015732	WAFER BOARD, LOWER
2	1	1015733	WAFER BOARD, UPPER
1	1	1015734	FRAME, MODULE

LIST OF PARTS AND MATERIALS

1015136 G

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	+.005	+ —
- —	-.005	- —

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Wunderlich DATE 9 MAY 63
CHECKED C. Pizzda 17 MAY 63
APPROVAL K. Osberg 17 May 63
APPROVAL R. Model 19 MAY 63

NASA APPROVAL [illegible]

MIT APPROVAL W. Cuffe 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

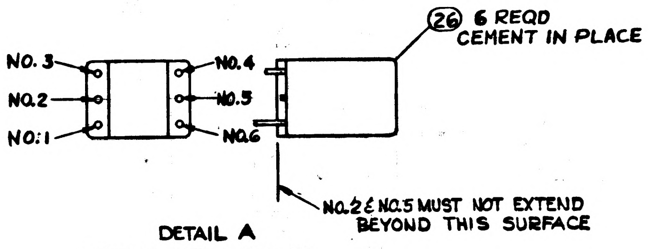
BUFFER CIRCUIT
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015136

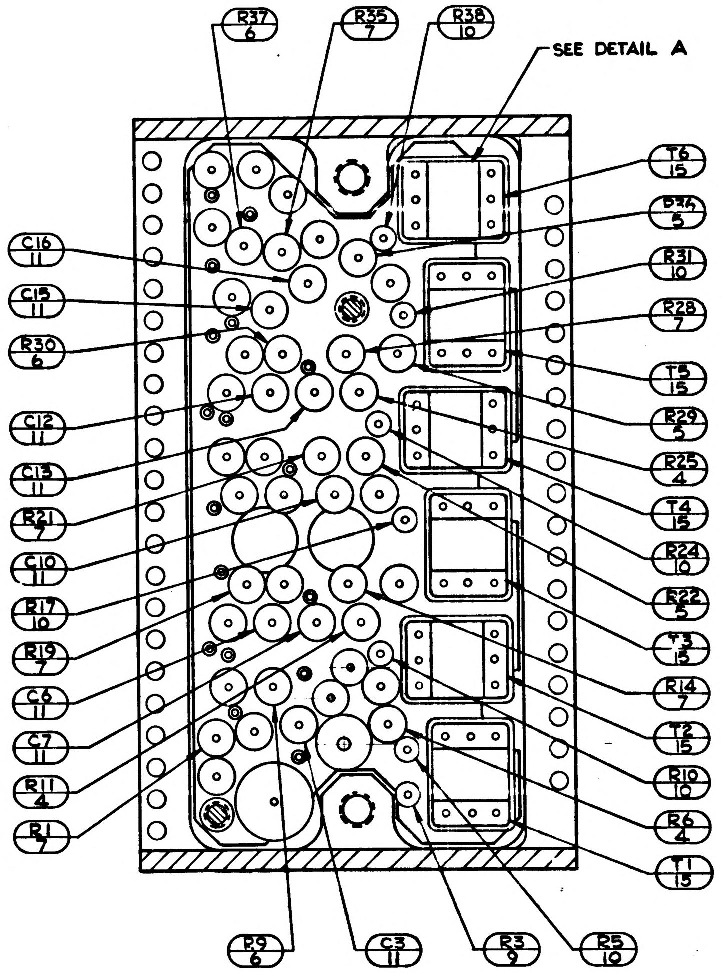
SCALE 4:1
SHEET 1 OF 2

Chamberton 17 May 63

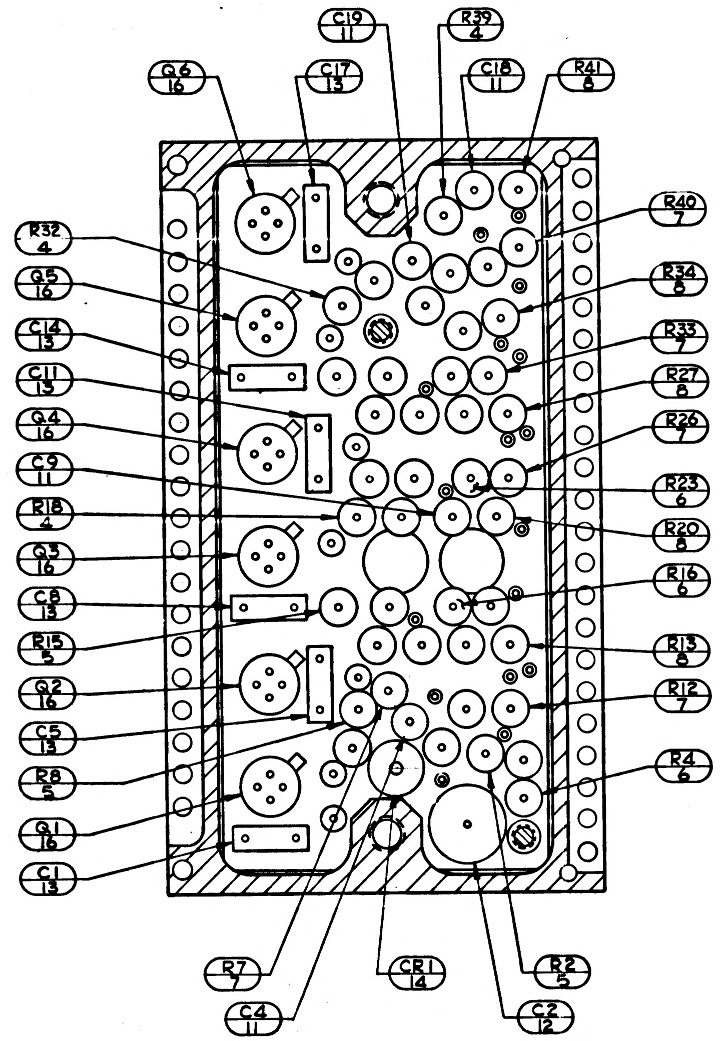
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		SHEET 2 ADDED-TDRRA372 SEE SHEET 1		[illegible]	[illegible]
D		REVISED PER TDRR 02160		7/2/63	[illegible]
E		REVISED PER TDRR	[illegible]	[illegible]	[illegible]
F		REVISED PER TDRR	[illegible]	[illegible]	[illegible]
G		REVISED PER TDRR	03959	[illegible]	[illegible]


NO. 3
NO.2
NO.1
NO.4
NO.5
NO.6
26 6 REQD
CEMENT IN PLACE
NO.2 & NO.5 MUST NOT EXTEND
BEYOND THIS SURFACE

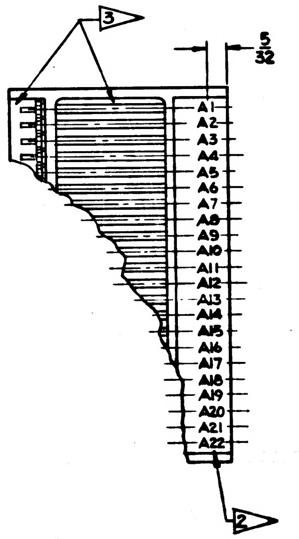
DETAIL A
TYPICAL DETAIL FOR T6,
T5, T4, T3, T2, & T1


R37 6
R35 7
R38 10
SEE DETAIL A
T6 15
R36 5
R31 10
R28 7
T5 15
R29 5
R25 4
T4 15
R24 10
R22 5
T3 15
R14 7
T2 15
R10 10
R6 4
T1 15
C16 11
C15 11
R30 6
C12 11
C13 11
R21 7
C10 11
R17 10
R19 7
C6 11
C7 11
R11 4
R1 7
R9 6
C3 11
R3 9
R5 10

SECTION A-A
(SHEET 1 ZONE D-5)


C19 11
R39 4
Q6 16
C17 13
C18 11
R41 8
R40 7
R32 4
Q5 16
C14 13
C11 13
Q4 16
C9 11
R18 4
Q3 16
C8 13
R15 5
Q2 16
C5 13
R8 5
Q1 16
C1 13
R34 8
R33 7
R27 8
R26 7
R23 6
R20 8
R16 6
R13 8
R12 7
R4 6
R7 7
C4 11
CR1 14
R2 5
C2 12

SECTION B-B
(SHEET 1 ZONE D-5)


3
5/32
A1
A2
A3
A4
A5
A6
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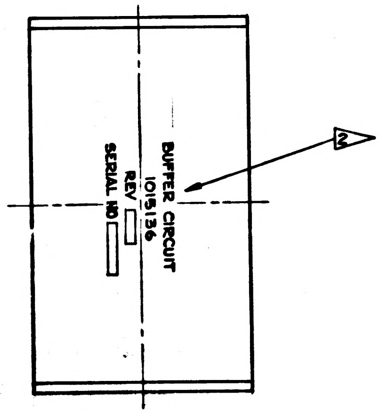
A22
2


BUFFER CIRCUIT
1015136
REV
SERIAL NO
2

VIEW A-A
SCALE 2:1
(SHEET 1 ZONE D-6)

1007159	
1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Wunderlich DATE 9 MAY 63
CHECKED C. Piojda 17 MAY 63
APPROVAL R C [illegible] 17 MAY 63
APPROVAL [illegible] 17 MAY 63
NASA APPROVAL [illegible]
MIT APPROVAL W K [illegible] 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

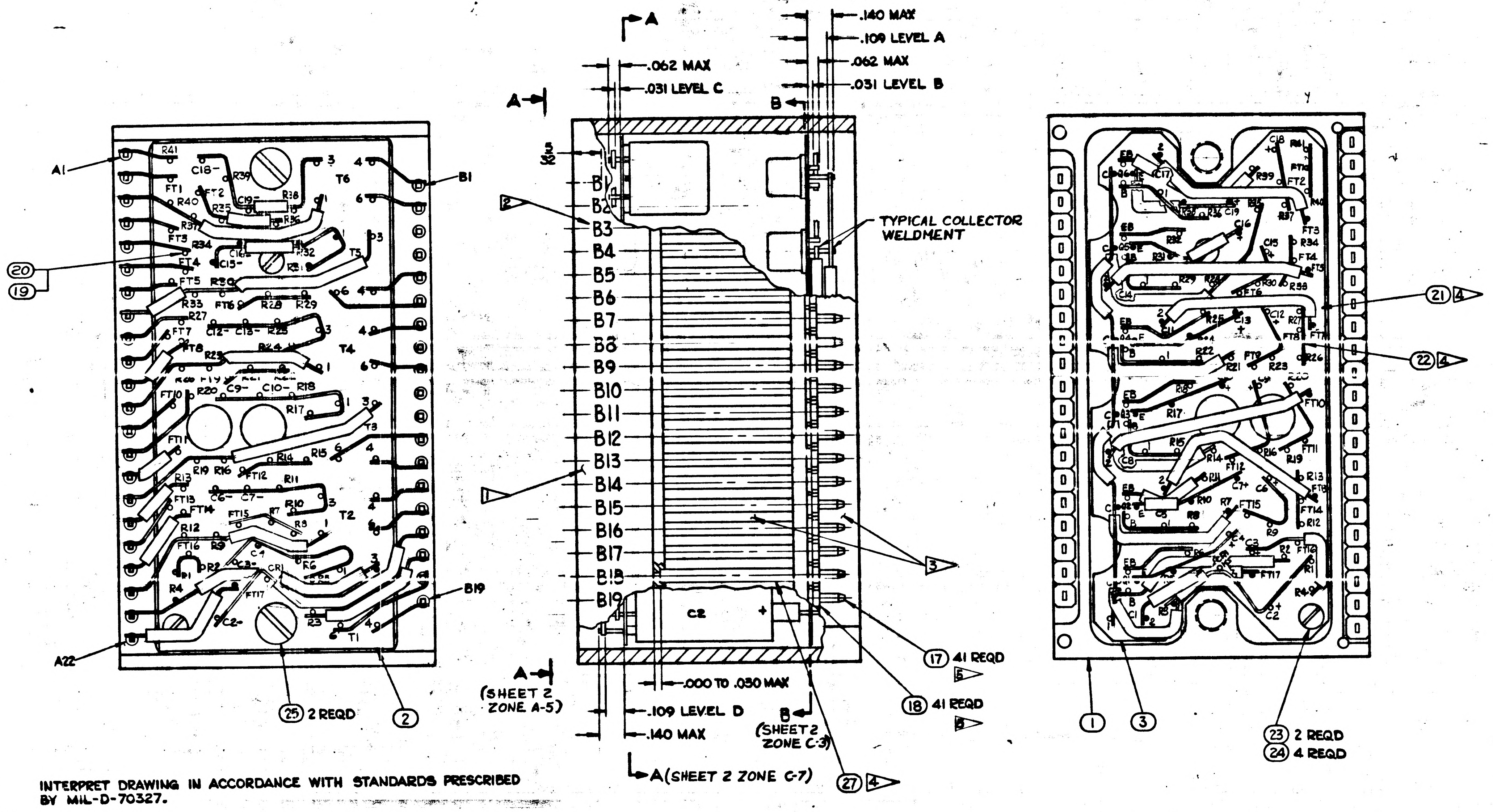
BUFFER CIRCUIT
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015136
SCALE 4:1
SHEET 2 OF 2

1015136 G

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REPLACES REV. B WITH CHANGES PER TDRR 01372		29 [illegible]	[illegible]
D		REVISED PER TDRR 02160		7/23/63	[illegible]
E		REVISED PER TDRR	02084	[illegible]	[illegible]
F		REVISED PER TDRR	02013	[illegible]	[illegible]
G		REVISED PER TDRR	03959	[illegible]	[illegible]
H		REVISED PER TDRR	04452	[illegible]	[illegible]



A1
B1
A22
B19
20
19
25 2 REQD
2
A
A
B
.062 MAX
.031 LEVEL C
.140 MAX
.109 LEVEL A
.062 MAX
.031 LEVEL B
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19
2
1
3
C2
TYPICAL COLLECTOR WELDMENT
17 41 REQD
5
18 41 REQD
5
.000 TO .050 MAX
.109 LEVEL D
.140 MAX
A (SHEET 2 ZONE A-5)
B (SHEET 2 ZONE C-3)
A (SHEET 2 ZONE C-7)
27 4
21 4
22 4
1
3
23 2 REQD
24 4 REQD

ⓒ REPLACES REV. B WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND 1002004

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 2 & 3.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATES LEVELS A & D WIRING.

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

ON ITEM NO. 2 & 3.
BROKEN PATHS INDICATE INSULATION SLEEVING.
K INDICATES CATHODE SIDE OF DIODE.
FT( ) INDICATES FEED THRU.
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
C INDICATES COLLECTOR LEAD OF TRANSISTOR.
B INDICATES BASE LEAD OF TRANSISTOR.
E INDICATES EMITTER LEAD OF TRANSISTOR.
EB INDICATES EMITTER BASE LEAD OF TRANSISTOR.

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).
2 MARK CHARACTERS .060/.100 HIGH WHITE PER ND 1002019 CENTRALIZED AS SHOWN.
3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.
4 USE AS REQUIRED.
5 ASSEMBLE PER ND 1002136

DRAWINGS FOR REFERANCE
1015126 SCHEMATIC DIAGRAM ELECTRICAL

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
27	AR	1006776-20	SLEEVING, ELECT. INSULATING
26	6	1010461	SHIELD, MAGNETIC
25	2	AN500D-4-4	SCREW
24	4	AN500D-2-4	SCREW
23	2	1015135-016	SPACER
22	AR	1006757-1	WIRE, NICKEL RIBBON .010×.020
21	AR	1006776-21	SLEEVING, ELECT. INSULATING
20	AR	1006776-22	SLEEVING, ELECT. INSULATING
19	AR	1006787-2	WIRE, FEED THROUGH #24 AWG
18	41	1006775	INSULATOR, WRAPOST-MALE MIN.
17	41	1006782-5	CONTACT, BLADE EDGE CONN.
16	6	1010342	TRANSISTOR
15	6	1010329-1	TRANSFORMER
14	1	1010265-13	SEMICONDUCTOR DEVICE DIODE
13	6	1010359-29	CAPACITOR, FIXED
12	1	1006755-84	CAPACITOR, FIXED
11	12	1006755-69	CAPACITOR, FIXED
10	6	1006750-51	RESISTOR, FIXED
9	1	1006750-26	RESISTOR, FIXED
8	5	1010374-54	RESISTOR, FIXED
7	11	1010374-29	RESISTOR, FIXED
6	6	1010374-1	RESISTOR, FIXED
5	6	1010364-765	RESISTOR, FIXED
4	6	1010364-719	RESISTOR, FIXED
3	1	1015732	WAFER BOARD, LOWER
2	1	1015733	WAFER BOARD, UPPER
1	1	1015734	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —, DECIMALS +.005 −.005, ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

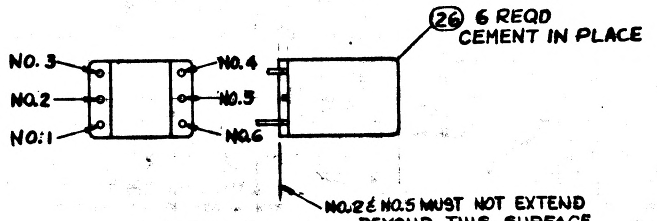
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Hendrlich DATE 9 MAY 63
CHECKED C. Pijda 17 MAY 63
APPROVAL [illegible] 17 MAY 63
APPROVAL [illegible] 19 MAY 63
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

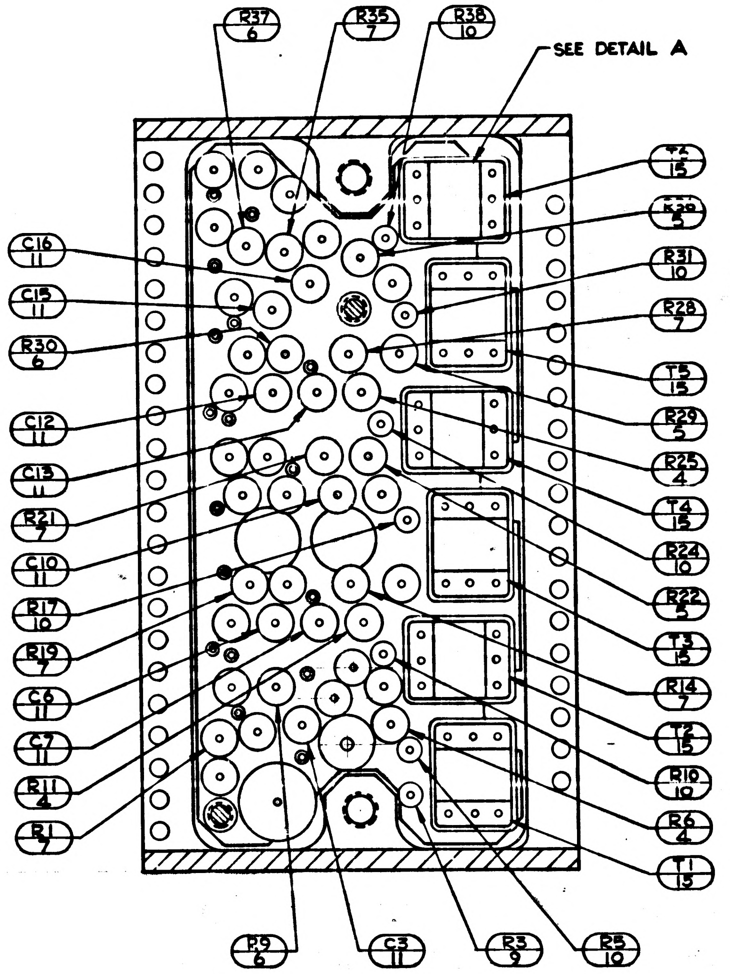
BUFFER CIRCUIT
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015136
SCALE 4:1
SHEET OF 2

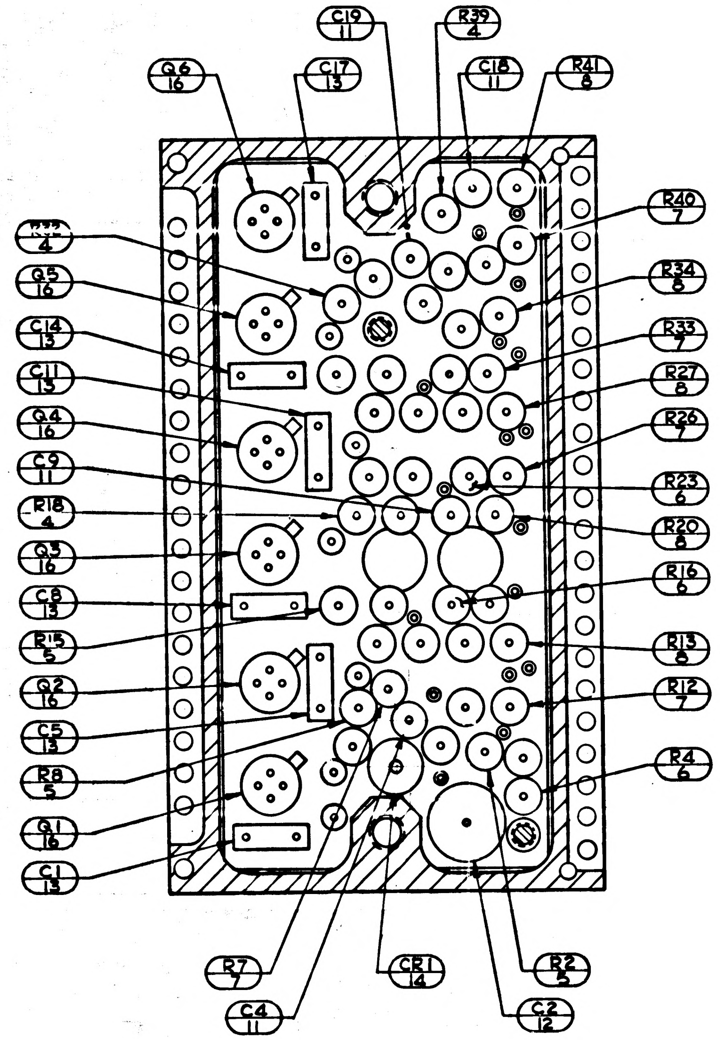
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		SHEET 2 ADDED - TDRR 01372 SEE SHEET 1		24 Jun 63	wk
D		REVISED PER TDRR 02160		7/2/63	wk
E		REVISED PER TDRR	02984		wk
F		REVISED PER TDRR	02983		wk
G		REVISED PER TDRR	03959		wk
H		REVISED PER TDRR	04452		wk


NO. 3
NO. 2
NO. 1
NO. 4
NO. 5
NO. 6
26 6 REQD CEMENT IN PLACE
NO. 2 & NO. 5 MUST NOT EXTEND BEYOND THIS SURFACE

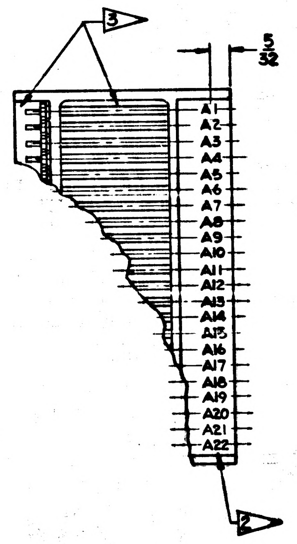
DETAIL A
TYPICAL DETAIL FOR T6, T5, T4, T3, T2, & T1

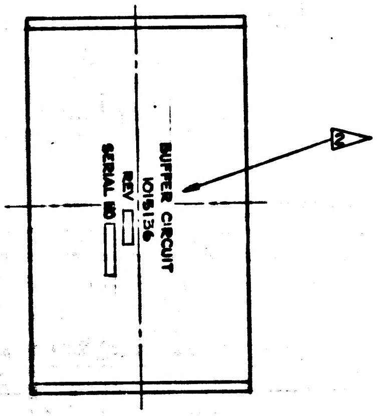

R37 6
R35 7
R38 10
SEE DETAIL A
T6 15
5
R31 10
R28 7
T5 15
R29 5
R25 4
T4 15
R24 10
R22 5
T3 15
R14 7
T2 15
R10 10
R6 4
T1 15
R5 10
R3 9
C3 11
R9 6
C16 11
C15 11
R30 6
C12 11
C13 11
R21 7
C10 11
R17 10
R19 7
C6 11
C7 11
R11 4
R1 7

SECTION A-A
(SHEET 1 ZONE D-5)


Q6 16
C19 11
C17 13
R39 4
C18 11
R41 8
4
Q5 16
C14 13
C11 13
Q4 16
C9 11
R18 4
Q3 16
C8 13
R15 5
Q2 16
C5 13
R8 5
Q1 16
C1 13
R40 7
R34 8
R33 7
R27 8
R26 7
R23 6
R20 8
R16 6
R13 8
R12 7
R4 6
R7 7
C4 11
CR1 14
R2 5
C2 12

SECTION B-B
(SHEET 1 ZONE D-5)


3
5/32
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
A18
A19
A20
A21
A22
2


BUFFER CIRCUIT
1015136
REV
SERIAL NO.
2

VIEW A-A
SCALE 2:1
(SHEET 1 ZONE B-6)

1007159	
1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Hendricks DATE 9 MAY 63
CHECKED C. Pisjda 17 MAY 63
APPROVAL R. Ohring 17 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

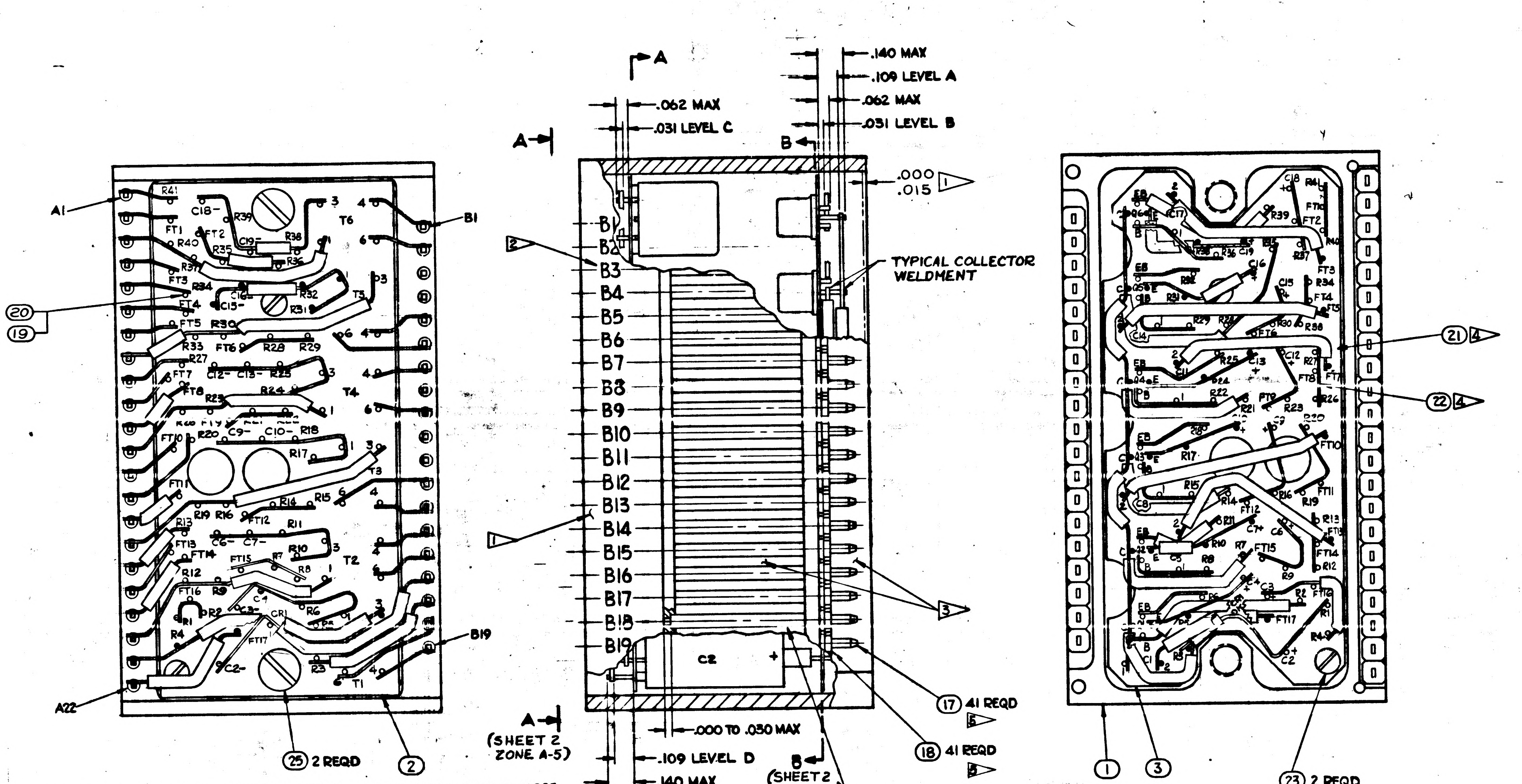
BUFFER CIRCUIT
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015136
SCALE 4:1
SHEET 2 OF 2

1015136 H

INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
C		REPLACES REV. B WITH CHANGES PER TDRR 01372		24 May 63	[illegible]
D		REVISED PER TDRR 02160		7/23/63	[illegible]
E		REVISED PER TDRR	[illegible]	[illegible]	[illegible]
F		REVISED PER TDRR	[illegible]	[illegible]	[illegible]
G		REVISED PER TDRR	03959	[illegible]	[illegible]
H		REVISED PER TDRR	04452	[illegible]	[illegible]
J		REVISED PER TDRR	05401	[illegible]	[illegible]



Ⓒ REPLACES REV. B WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM)
UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015.
REMOVE ALL FLASHING

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN ABBREVIATIONS PERMISSIBLE.

ALL WELDED CONNECTIONS TO BE MADE PER ND1002005

TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND1002004

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 2 & 3

BLACK DOT AND CROSS HATCHED RIBBONS INDICATES LEVELS A&D WIRING

ON ITEM NO. 2 & 3.
BROKEN PATHS INDICATE INSULATION SLEEVING.
K INDICATES CATHODE SIDE OF DIODE.
FT ( ) INDICATES FEED THRU.
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
C INDICATES COLLECTOR LEAD OF TRANSISTOR.
B INDICATES BASE LEAD OF TRANSISTOR.
E INDICATES EMITTER LEAD OF TRANSISTOR.
EB INDICATES EMITTER BASE LEAD OF TRANSISTOR.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4 USE AS REQUIRED.

5 ASSEMBLE PER ND1002136

DRAWINGS FOR REFERANCE
1015126 SCHEMATIC DIAGRAM ELECTRICAL

LIST OF PARTS AND MATERIALS

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
27	AR	1006776-20	SLEEVING, ELECT. INSULATING
26	6	1010461	SHIELD, MAGNETIC
25	2	AN500D-4-4	SCREW
24	4	AN500D-2-4	SCREW
23	2	1015135-016	SPACER
22	AR	1006757-1	WIRE, NICKEL RIBBON .010 × .020
21	AR	1006776-21	SLEEVING, ELECT. INSULATING
20	AR	1006776-22	SLEEVING, ELECT. INSULATING
19	AR	1006787-2	WIRE, FEED THROUGH # 24 AWG
18	41	1006775	INSULATOR, WRAPOST - MALE MIN.
17	41	1006782-5	CONTACT, BLADE EDGE CONN.
16	6	1010342	TRANSISTOR
15	6	1010329-1	TRANSFORMER
14	1	1010265-13	SEMICONDUCTOR DEVICE DIODE
13	6	1010359-29	CAPACITOR, FIXED
12	1	1006755-84	CAPACITOR, FIXED
11	12	1006755-69	CAPACITOR, FIXED
10	6	1006750-51	RESISTOR, FIXED
9	1	1006750-26	RESISTOR, FIXED
8	5	1010374-54	RESISTOR, FIXED
7	11	1010374-29	RESISTOR, FIXED
6	6	1010374-1	RESISTOR, FIXED
5	6	1010364-705	RESISTOR, FIXED
4	6	1010364-719	RESISTOR, FIXED
3	1	1015732	WAFER BOARD, LOWER
2	1	1015733	WAFER BOARD, UPPER
1	1	1015734	FRAME, MODULE

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — XXX ± .005 ± —
— — XX ± .02 — —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

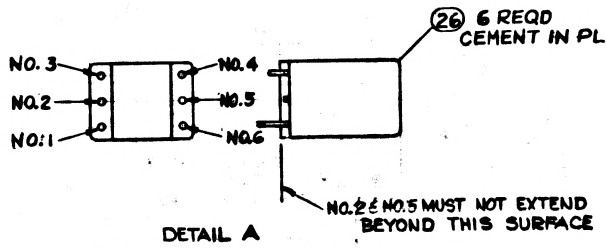
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Kunderlich DATE 9 MAY 63
CHECKED C. Pizyda 17 MAY 63
APPROVAL R. Osberg 17 May 63
APPROVAL Model 19 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

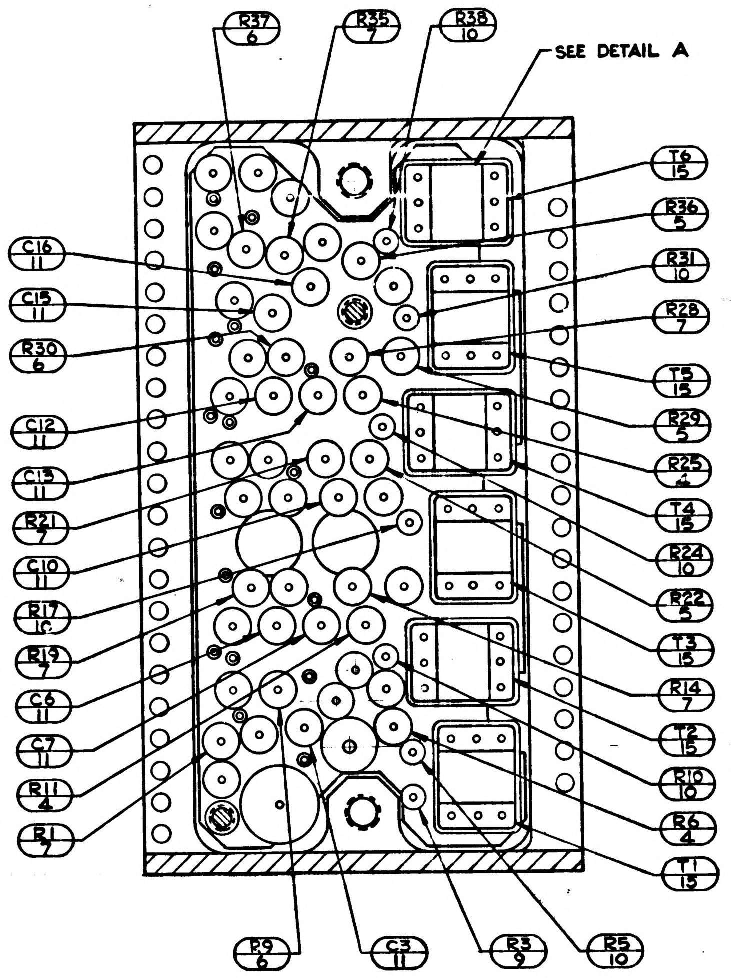
BUFFER CIRCUIT
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015136
SCALE 4:1
SHEET 1 OF 2

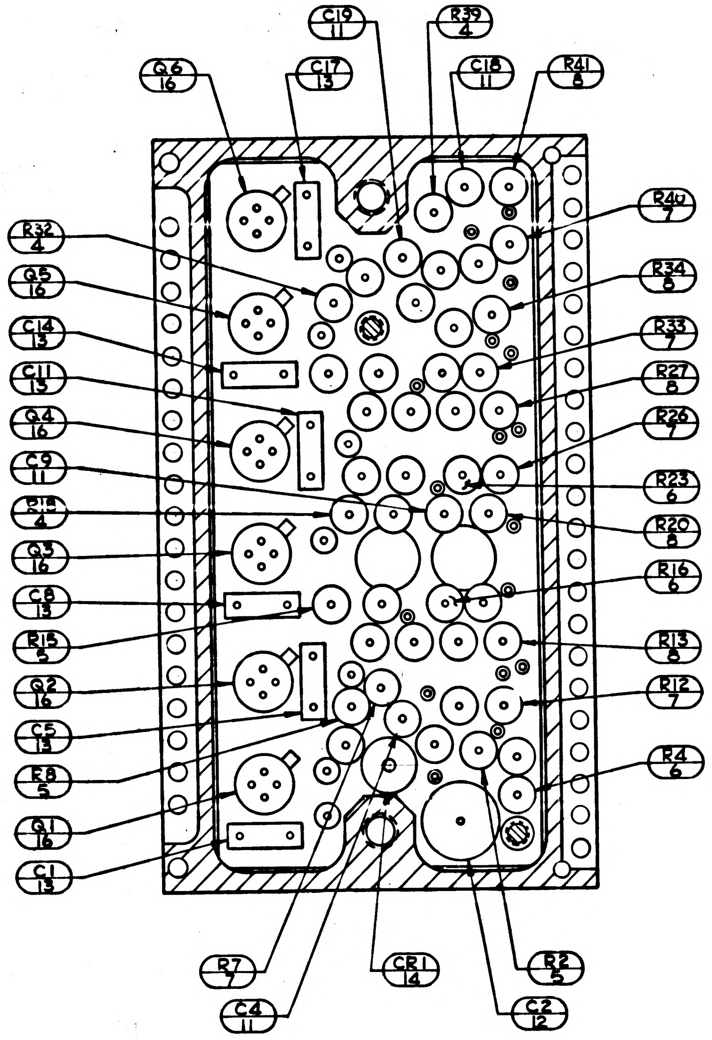
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		SHEET 2 ADDED-TDRR 1372 SEE SHEET 1		24 [illegible] 63	WK
D		REVISED PER TDRR 02160		7/2/63	[illegible]
E		REVISED PER TDRR	02984	[illegible]	[illegible]
F		REVISED PER TDRR	02983	[illegible]	WK
G		REVISED PER TDRR	03959	[illegible]	[illegible]
H		REVISED PER TDRR	04452	[illegible]	[illegible]
J		REVISED PER TDRR	05401	[illegible]	[illegible]


NO. 3
NO. 2
NO. 1
NO. 4
NO. 5
NO. 6
26 6 REQD
CEMENT IN PLACE
NO. 2 & NO. 5 MUST NOT EXTEND BEYOND THIS SURFACE

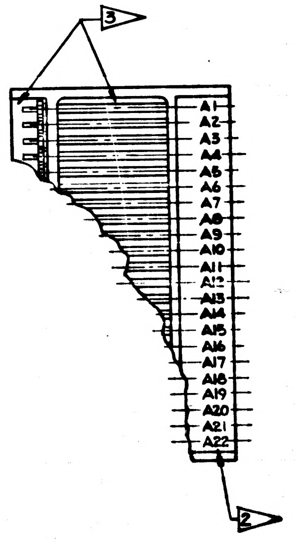
DETAIL A
TYPICAL DETAIL FOR T6, T5, T4, T3, T2, & T1

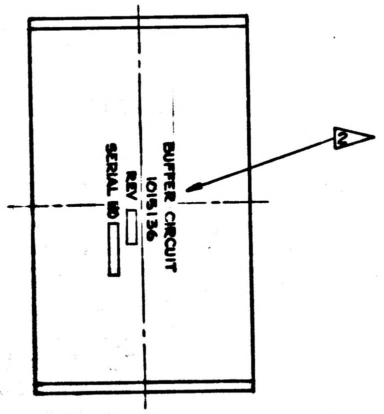

R37 6
R35 7
R38 10
SEE DETAIL A
T6 15
R36 5
R31 10
R28 7
T5 15
R29 5
R25 4
T4 15
R24 10
R22 5
T3 15
R14 7
T2 15
R10 10
R6 4
T1 15
C16 11
C15 11
R30 6
C12 11
C13 11
R21 7
C10 11
R17 10
R19 7
C6 11
C7 11
R11 4
R1 7
R9 6
C3 11
R3 9
R5 10

SECTION A-A
(SHEET 1 ZONE D-5)


C19 11
R39 4
Q6 16
C17 13
C18 11
R41 8
R40 7
R34 8
R33 7
R27 8
R26 7
R23 6
R20 8
R16 6
R13 8
R12 7
R4 6
R32 4
Q5 16
C14 13
C11 13
Q4 16
C9 11
R18 4
Q3 16
C8 13
R15 5
Q2 16
C5 13
R8 5
Q1 16
C1 13
R7 7
C4 11
CR1 14
R2 5
C2 12

SECTION B-B
(SHEET 1 ZONE D-5)


3
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
A18
A19
A20
A21
A22
2

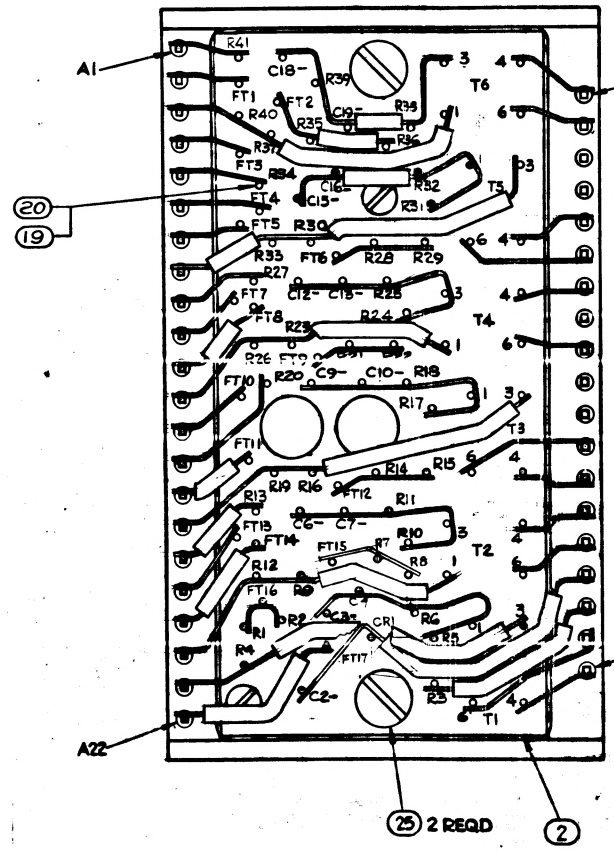

BUFFER CIRCUIT
1015136
REV
SERIAL NO
2

VIEW A-A
SCALE 2:1
(SHEET 1 ZONE B-6)

1007159		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± — ANGLES ± — DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
1007158		MATERIAL —	ACSP PN DRAWN Kunderlich DATE 9 MAY 63 CHECKED C. Piojda 17 MAY 63 APPROVAL [illegible] 17 MAY 63 APPROVAL [illegible] 19 MAY 63	BUFFER CIRCUIT MODULE ASSEMBLY
NEXT ASSY	USED ON		NASA APPROVAL [illegible]	CODE IDENT NO. SIZE E 1015136
APPLICATION		CONTRACT	MIT APPROVAL W Kupfer 29 May 63	SCALE 4:1 SHEET 2 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REPLACES REV. B WITH CHANGES PER TDRR 01372			
D		REVISED PER TDRR 02160		7/23/63	
E		REVISED PER TDPR			
F		REVISED PER TDRR			
G		REVISED PER TDRR	03959		
H		REVISED PER TDRR	04452		
J		REVISED PER TDRR	05401		
K		REVISED PER TDRR 070[illegible]			


A1
R41
C18
R39
3
4
T6
B1
FT1
FT2
R40
R35
C10
R38
R36
R37
FT3
R34
C16
R32
R31
D3
T5
20
19
FT4
C15
FT5
R30
6
R33
R27
FT6
R28
R29
FT7
C12
C13
R25
T4
FT8
R23
R24
R26
FT9
R20
C9
C10
R18
FT10
R17
T3
FT11
R14
R15
R13
R19
R16
FT12
R11
FT13
FT14
C6
C7
FT15
R10
T2
R12
R9
R8
FT16
CR1
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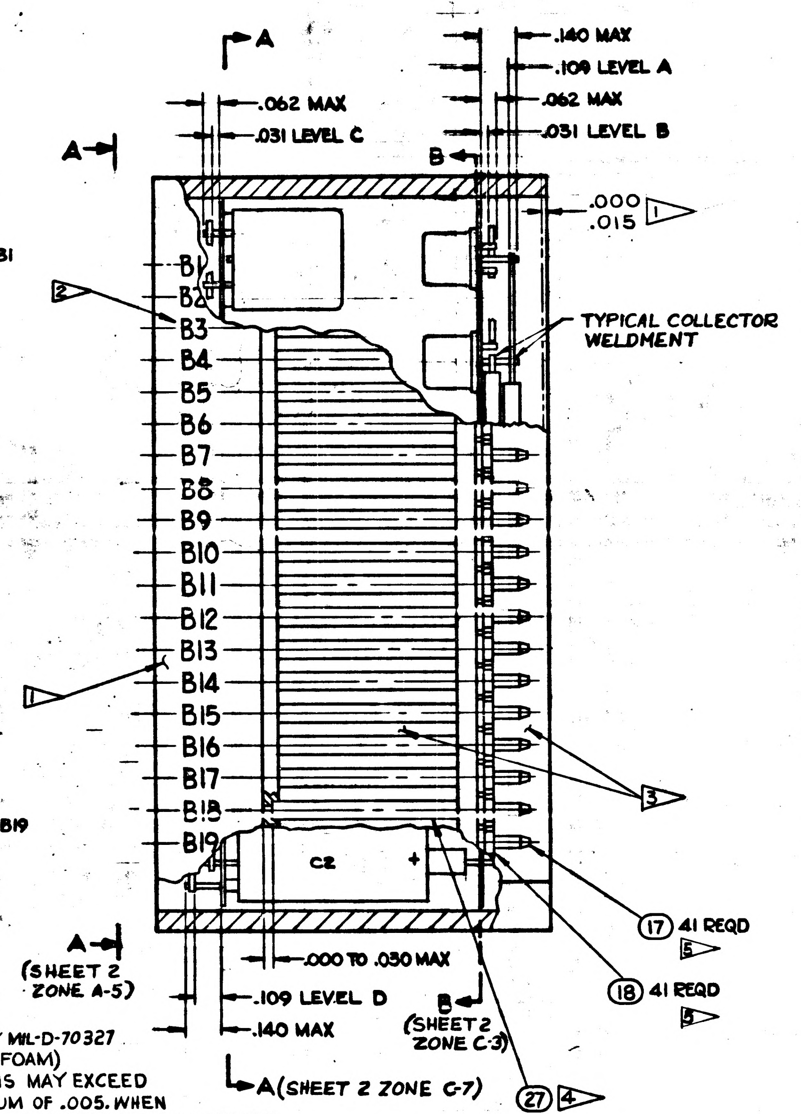
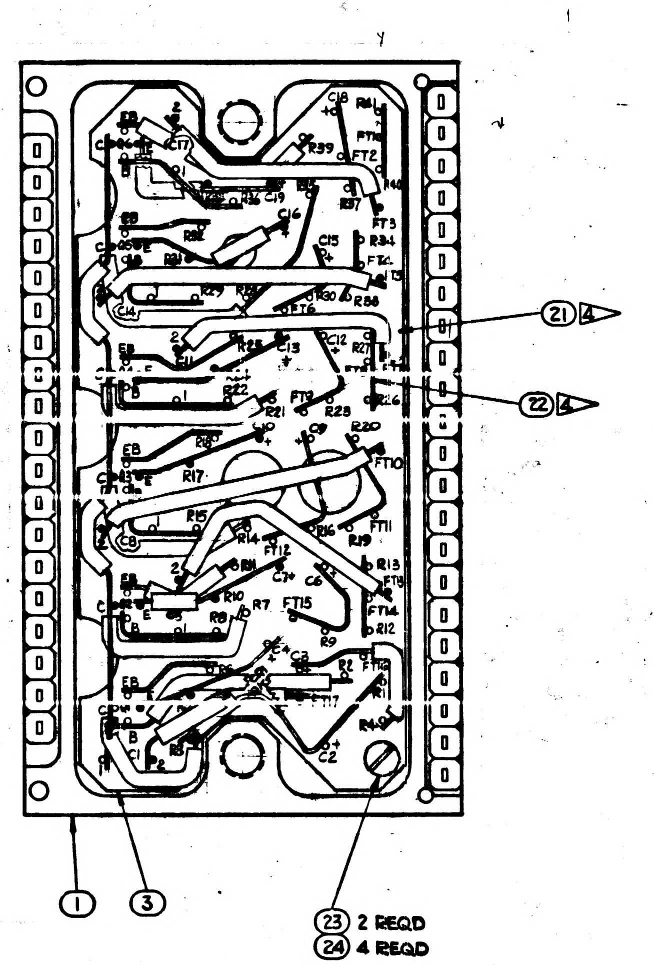
R2
R5
R1
R4
FT17
R3
C2
T1
B19
A22
25 2 REQD
2


A
.062 MAX
.031 LEVEL C
.140 MAX
.109 LEVEL A
.062 MAX
.031 LEVEL B
A
B
.000
.015
1
2
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14
B15
B16
B17
B18
B19
TYPICAL COLLECTOR WELDMENT
1
3
C2
17 41 REQD
5
18 41 REQD
5
A
(SHEET 2 ZONE A-5)
.000 TO .030 MAX
.109 LEVEL D
.140 MAX
B
(SHEET 2 ZONE C-3)
A (SHEET 2 ZONE C-7)
27 4


C18
C17
R39
FT1
FT2
R40
R35
R34
FT3
FT4
C16
C15
C14
C13
C12
R33
FT6
R27
R28
R29
R30
R31
R32
R36
R37
R38
FT5
R25
R24
R23
R22
R21
R26
FT9
FT10
C9
R20
R17
R16
R15
R14
R13
R19
R18
FT11
FT12
R11
R10
R9
R8
R7
C7
C6
FT15
FT14
FT13
R12
R6
R5
R4
R3
R2
R1
C3
C4
C2
C1
E
B
C
EB
CR1
21 4
22 4
1
3
23 2 REQD
24 4 REQD

Ⓒ REPLACES REV. B WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1▷ ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM)
UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015.
REMOVE ALL FLASHING

2▷ MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN ABBREVIATIONS PERMISSIBLE.

ALL WELDED CONNECTIONS TO BE MADE PER ND1002005

TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND1002004

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 2 & 3

BLACK DOT AND CROSS HATCHED RIBBONS INDICATES LEVELS A&D WIRING

ON ITEM NO. 2 & 3.
BROKEN PATHS INDICATE INSULATION SLEEVING.
K INDICATES CATHODE SIDE OF DIODE.
FT ( ) INDICATES FEED THRU.
MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
C INDICATES COLLECTOR LEAD OF TRANSISTOR.
B INDICATES BASE LEAD OF TRANSISTOR.
E INDICATES EMITTER LEAD OF TRANSISTOR.
EB INDICATES EMITTER BASE LEAD OF TRANSISTOR.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4▷ USE AS REQUIRED.

5▷ ASSEMBLE PER ND1002136

DRAWINGS FOR REFERANCE
1015126 SCHEMATIC DIAGRAM ELECTRICAL

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
27	AR	1006776-20	SLEEVING, ELECT. INSULATING
26	6	1010461	SHIELD, MAGNETIC
25	2	AN500D-4-4	SCREW
24	4	AN500D-2-4	SCREW
23	2	1015135-016	SPACER
22	AR	1006757-1	WIRE, NICKEL RIBBON .010×.020
21	AR	1006776-21	SLEEVING, ELECT. INSULATING
20	AR	1006776-22	SLEEVING, ELECT. INSULATING
19	AR	1006787-2	WIRE, FEED THROUGH #24 AWG
18	41	1006775	INSULATOR, WRAPOST-MALE MIN.
17	41	1006782-5	CONTACT, BLADE EDGE CONN.
16	6	1010342	TRANSISTOR
15	6	1010329-1	TRANSFORMER
14	1	1010265-13	SEMICONDUCTOR DEVICE DIODE
13	6	1010359-29	CAPACITOR, FIXED
12	1	1006755-84	CAPACITOR, FIXED
11	12	[illegible]	CAPACITOR, FIXED
10	6	1006750-51	RESISTOR, FIXED
9	1	1006750-26	RESISTOR, FIXED
8	5	1010374-54	RESISTOR, FIXED
7	11	1010374-29	RESISTOR, FIXED
6	6	1010374-1	RESISTOR, FIXED
5	6	1010364-765	RESISTOR, FIXED
4	6	1010364-719	RESISTOR, FIXED
3	1	1015732	WAFER BOARD, LOWER
2	1	1015733	WAFER BOARD, UPPER
1	1	1015734	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — XXX ± .005 ± —
— — XX ± .02 — —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Kondorlich DATE 9 MAY 63
CHECKED C. Pijda 17 MAY 63
APPROVAL 17 May 63
APPROVAL 19 May 63
NASA APPROVAL
MIT APPROVAL 29 May 63

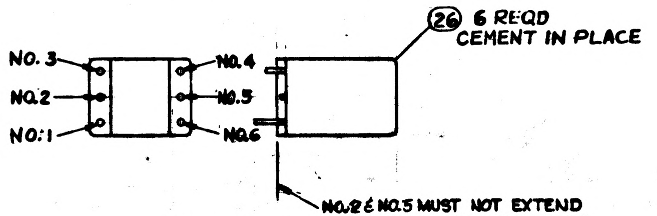
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BUFFER CIRCUIT
MODULE ASSEMBLY

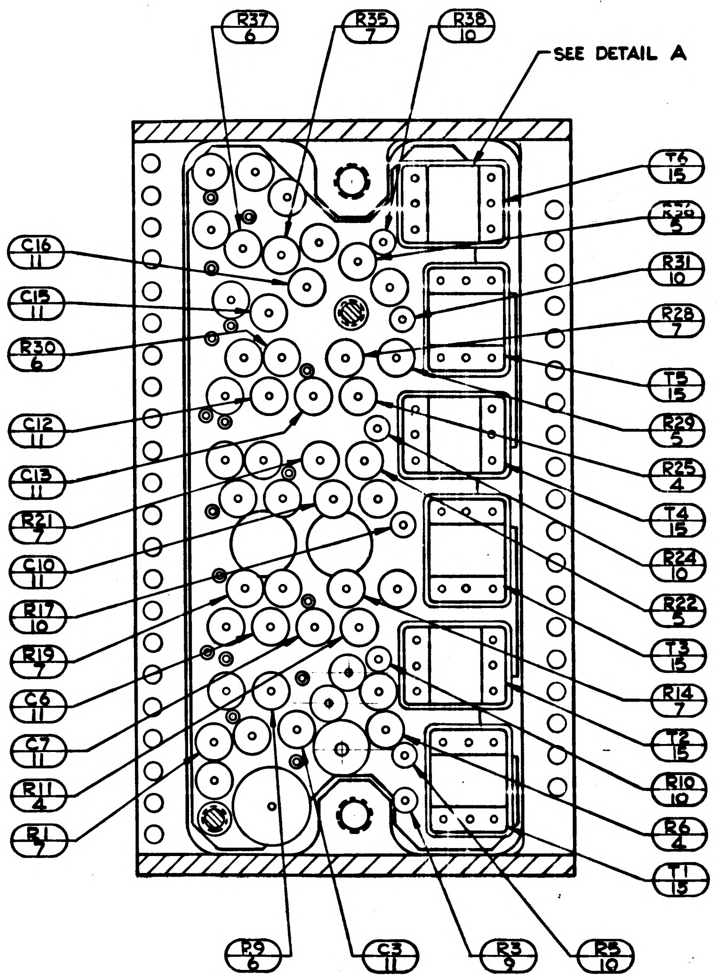
CODE IDENT NO.
SIZE E
1015136
SCALE 4:1
SHEET 1 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

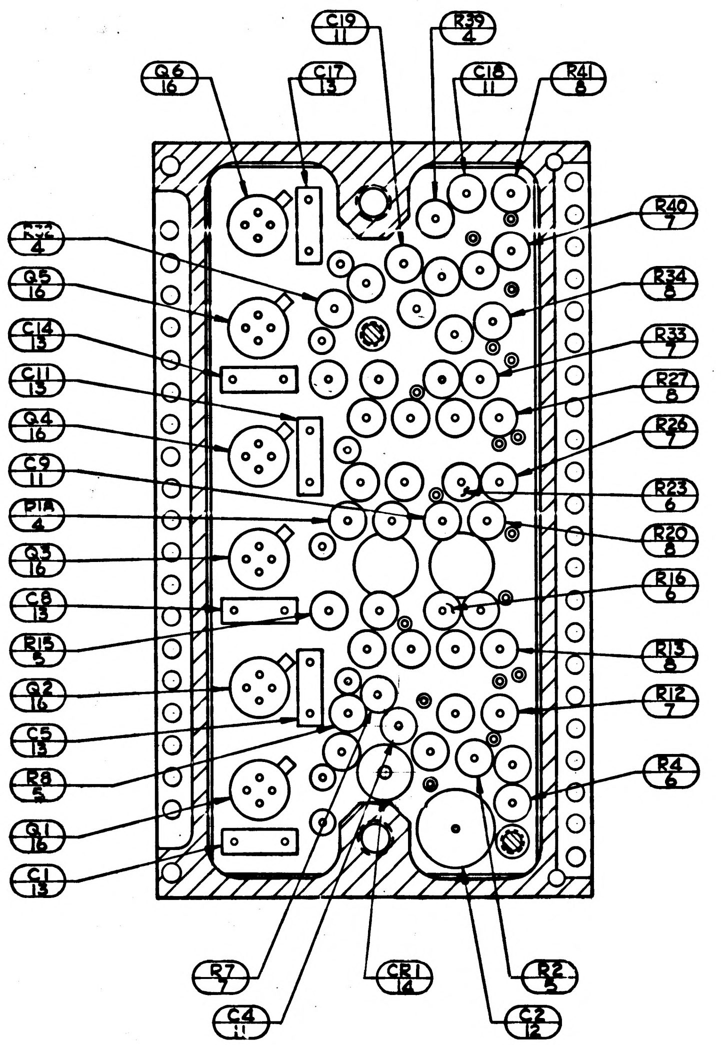
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		SHEET 2 ADDED-TDRR#1372 SEE SHEET 1		29 [illegible] 63	WK
D		REVISED PER TDRR 02160		7/2/63	[illegible] WK
E		REVISED PER TDRR	02984	[illegible]	[illegible] WK
F		REVISED PER TDRR	02983	5-5-63	WK
G		REVISED PER TDRR	03959	[illegible]	[illegible] WK
H		REVISED PER TDRR	04452	[illegible]	[illegible] WK
J		REVISED PER TDRR	05401	27 Dec 63	KPK WK
K		REVISED PER TDRR 070[illegible]		[illegible]	[illegible]


NO. 3
NO. 2
NO. 1
NO. 4
NO. 5
NO. 6
26 6 REQD
CEMENT IN PLACE
NO. 2 & NO. 5 MUST NOT EXTEND BEYOND THIS SURFACE

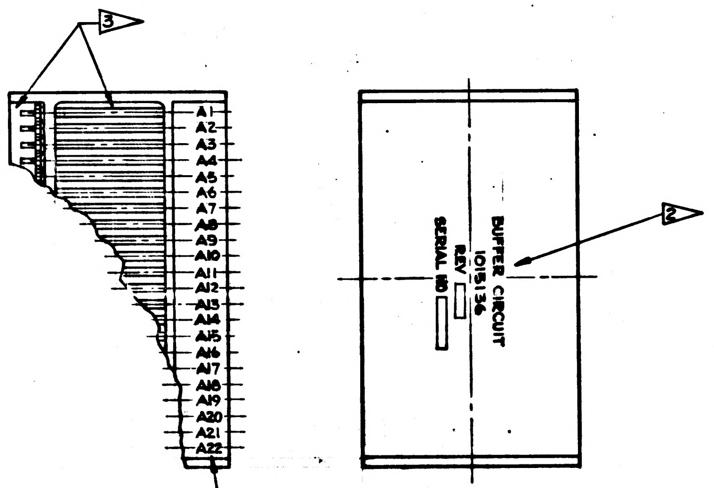
DETAIL A
TYPICAL DETAIL FOR T6, T5, T4, T3, T2, & T1


R37 6
R35 7
R38 10
SEE DETAIL A
T6 15
R36 5
R31 10
R28 7
T5 15
R29 5
R25 4
T4 15
R24 10
R22 5
T3 15
R14 7
T2 15
R10 10
R6 4
T1 15
C16 11
C15 11
R30 6
C12 11
C13 11
R21 7
C10 11
R17 10
R19 7
C6 11
C7 11
R11 4
R1 7
R9 6
C3 11
R3 9
R5 10

SECTION A-A
(SHEET 1 ZONE D-5)


C19 11
R39 4
Q6 16
C17 13
C18 11
R41 8
R40 7
R32 4
Q5 16
C14 13
C11 13
Q4 16
C9 11
P1A 4
Q3 16
C8 13
R15 5
Q2 16
C5 13
R8 5
Q1 16
C1 13
R34 8
R33 7
R27 8
R26 7
R23 6
R20 8
R16 6
R13 8
R12 7
R4 6
R7 7
C4 11
CR1 14
R2 5
C2 12

SECTION B-B
(SHEET 1 ZONE D-5)


3
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
A18
A19
A20
A21
A22
2
BUFFER CIRCUIT
1015136
REV
SERIAL NO
2

VIEW A-A
SCALE 2:1
(SHEET 1 ZONE D-6)

1007159	
1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE
CHECKED C. Pizjda 17 MAY 63
APPROVAL R. [illegible] 17 May 63
APPROVAL [illegible] 19 MAY 63
NASA APPROVAL [illegible]
MIT APPROVAL W Kupfer 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

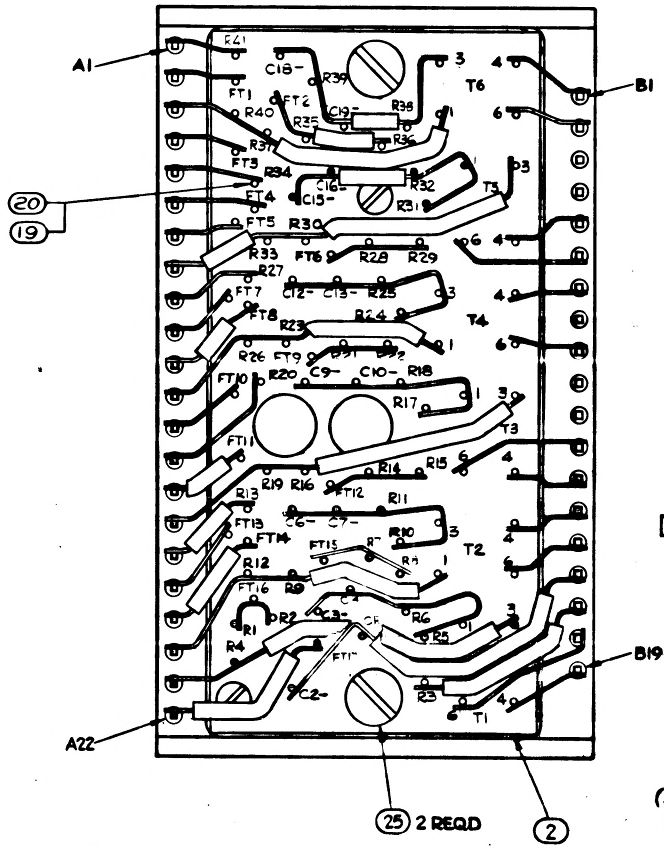
BUFFER CIRCUIT
MODULE ASSEMBLY

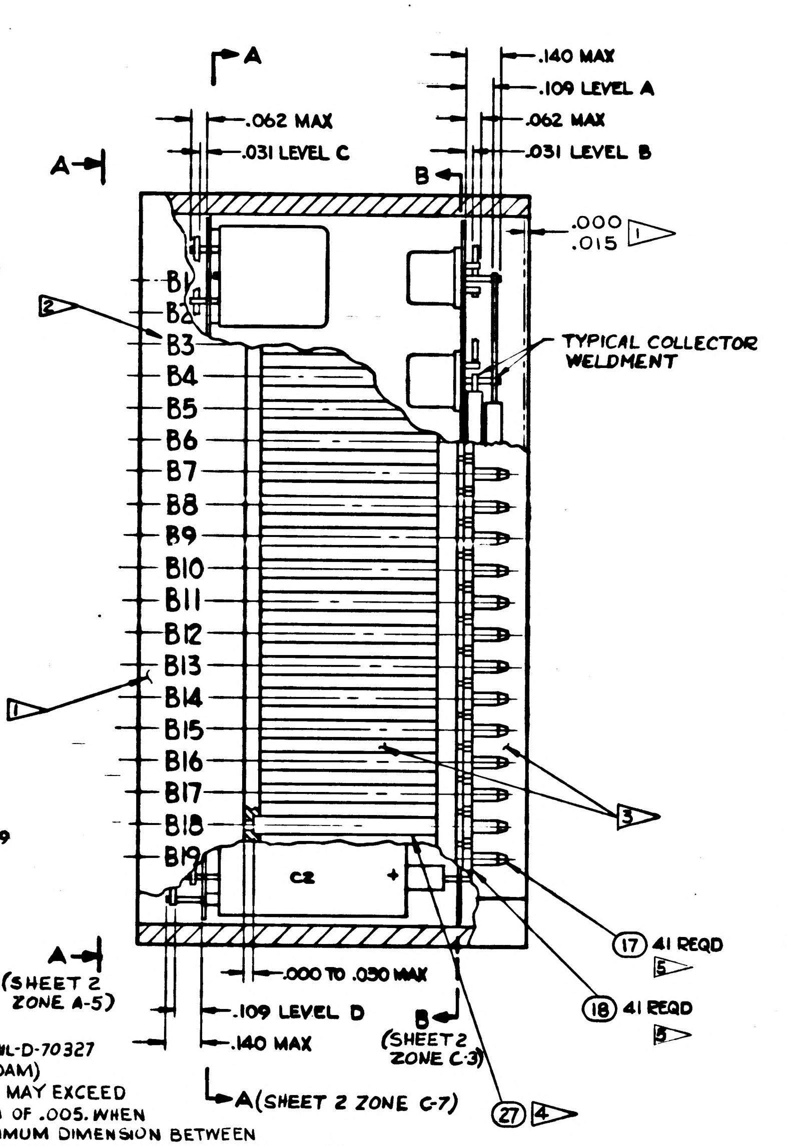
CODE IDENT NO.
SIZE E
1015136
SCALE 4:1
SHEET 2 OF 2

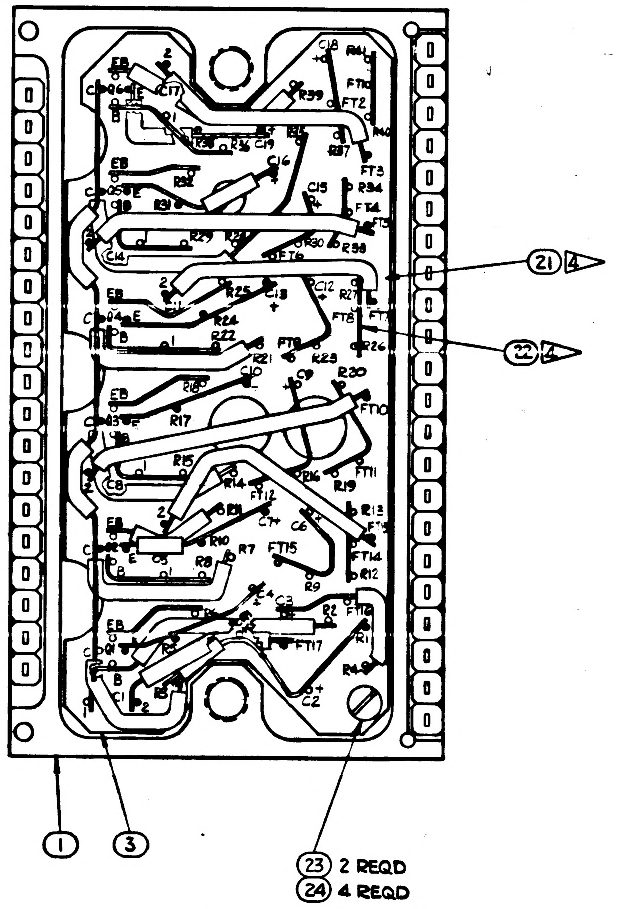
1015136 K

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
C		REPLACES REV. B WITH CHANGES PER TDRR 0372		24 May 63	WK
D		REVISED PER TDRR 02160		7/23/63	WK
E		REVISED PER TDRR	[illegible]	[illegible]	EFL WK
F		REVISED PER TDRR	029[illegible]	[illegible]	WK
G		REVISED PER TDRR	03959	[illegible]/23/63	EPK WK
H		REVISED PER TDRR	04452	[illegible]	EPK W
J		REVISED PER TDRR	05401	[illegible]	EPK
K		REVISED PER TDRR [illegible]		[illegible]	WK
L		REVISED PER TDRR 07285		64	JWD







Ⓒ REPLACES REV. B WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1▷ ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM)
UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015.
REMOVE ALL FLASHING

2▷ MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN ABBREVIATIONS PERMISSIBLE.

ALL WELDED CONNECTIONS TO BE MADE PER ND1002005

TRANSISTORS AND TRANSFORMERS TO BE CEMENTED IN PLACE PER ND1002004

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 2 & 3

BLACK DOT AND CROSS HATCHED RIBBONS INDICATES LEVELS A & D WIRING

ON ITEM NO. 2 & 3.
- BROKEN PATHS INDICATE INSULATION SLEEVING.
- K INDICATES CATHODE SIDE OF DIODE.
- FT ( ) INDICATES FEED THRU.
- MINUS (-) INDICATES NEGATIVE END OF CAPACITOR.
- PLUS (+) INDICATES POSITIVE END OF CAPACITOR.
- C INDICATES COLLECTOR LEAD OF TRANSISTOR.
- B INDICATES BASE LEAD OF TRANSISTOR.
- E INDICATES EMITTER LEAD OF TRANSISTOR.
- EB INDICATES EMITTER BASE LEAD OF TRANSISTOR.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

4▷ USE AS REQUIRED.

5▷ ASSEMBLE PER ND1002136

DRAWINGS FOR REFERANCE
1015126 SCHEMATIC DIAGRAM ELECTRICAL
PROCURE PER PS 1015136

L	K
SHEET 1	SHEET 2
REVISION STATUS OF SHEETS	

ITEM NO	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
27	AR	1006776-20	SLEEVING, ELECT. INSULATING
26	6	1010461	SHIELD, MAGNETIC
25	2	AN500D-4-4	SCREW
24	4	AN500D-2-4	SCREW
23	2	1015135-016	SPACER
22	AR	1006757-1	WIRE, NICKEL RIBBON .010×.020
21	AR	1006776-21	SLEEVING, ELECT. INSULATING
20	AR	1006776-22	SLEEVING, ELECT. INSULATING
19	AR	1006787-2	WIRE, FEED THROUGH #24 AWG
18	41	1006775	INSULATOR, WRAPOST-MALE MIN.
17	41	1006782-5	CONTACT, BLADE EDGE CONN.
16	6	1010342	TRANSISTOR
15	6	1010329-1	TRANSFORMER
14	1	1010265-13	SEMICONDUCTOR DEVICE DIODE
13	6	1010359-29	CAPACITOR, FIXED
12	1	1006755-84	CAPACITOR, FIXED
11	12	1006755-69	CAPACITOR, FIXED
10	6	1006750-51	RESISTOR, FIXED
9	1	1006750-26	RESISTOR, FIXED
8	5	1010374-54	RESISTOR, FIXED
7	11	1010374-29	RESISTOR, FIXED
6	6	1010374-1	RESISTOR, FIXED
5	6	1010364-765	RESISTOR, FIXED
4	6	1010364-719	RESISTOR, FIXED
3	1	1015732	WAFER BOARD, LOWER
2	1	1015733	WAFER BOARD, UPPER
1	1	1015734	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — XXX ± .005 + —
— — XX ± .02 — —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Wunderlich DATE 9 MAY 63
CHECKED C Pizda 17 MAY 63
APPROVAL R Cabing 17 MAY 63
APPROVAL R Model 19 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BUFFER CIRCUIT
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015136
SCALE 4:1
SHEET 1 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015136

REVISIONS TDRR 00853			
SYM	DESCRIPTION	DATE	APPROVAL

PART NO	DESCRIPTION	REQD
1010374-29	RESISTOR	11
1010364-765	↕	6
1010374-1		6
1010374-54		5
1010364-719		6
1006750-26		1
1006750-51	RESISTOR	6
1006755-84	CAPACITOR	1
1006755-69	CAPACITOR	12
1010359-29	CAPACITOR	6
1010286-13	DIODE	1
1010329-1	TRANSFORMER	6

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL #
HEAT TREATMENT #
FINAL FINISH #

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 4-16-63
CHECKED R. L. Battafom
APPROVAL R. L. Battafom
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL 17 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
BUFFER CIRCUIT

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015136
SCALE
WT
SHEET 1 OF 1

MASTER

1015136

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015137 (M)

REVISIONS TDRR 00853

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY REV. B WITH CHANGES PER TDRR 01225	5-10-63	wR

PART NO.	DESCRIPTION	REQD
1010353-4	RELAY	6
1010362-3	DIODE	4
1006782-4	CONTACT	24
1006782-5	CONTACT	30
1006775	INSULATOR	54

(A) REPLACED BY REV. B WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES ON

FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL //

HEAT TREATMENT //

FINAL FINISH //

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DWG. NO. CONTRACT

DRAWN R.L.B. DATE 4/16/63

CHECKED LeRoy J. Lewandowski

APPROVAL R L Battey

APPROVAL

NASA APPROVAL

MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
RELAY

CODE IDENT NO.

SIZE C

NASA DRAWING NO. 1015137

SCALE

WT

SHEET 1 OF 1

MASTER

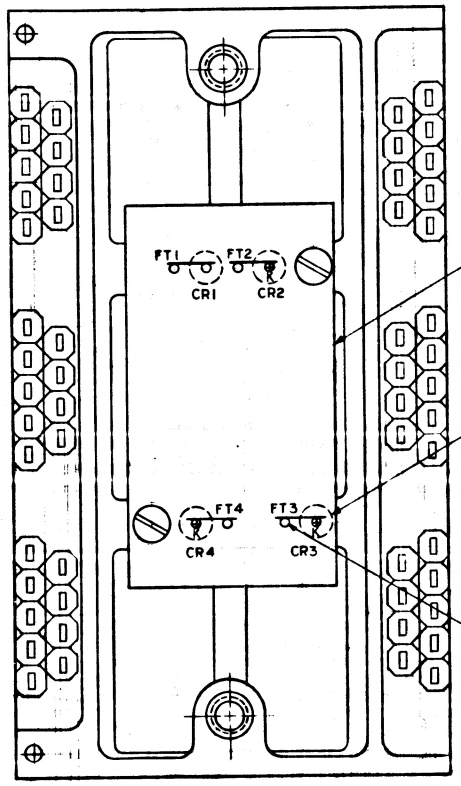
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

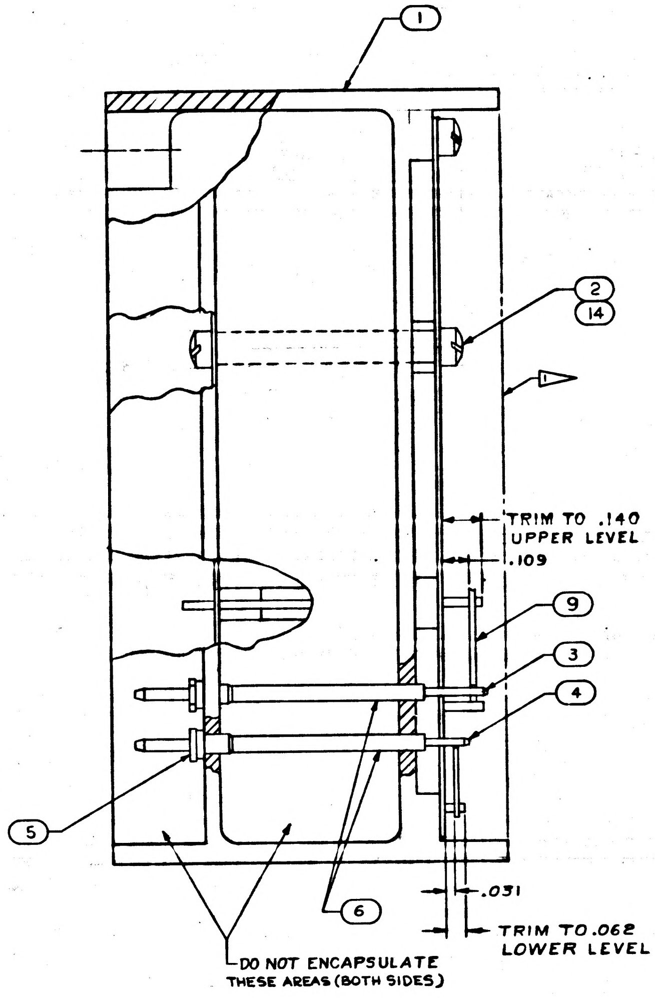
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

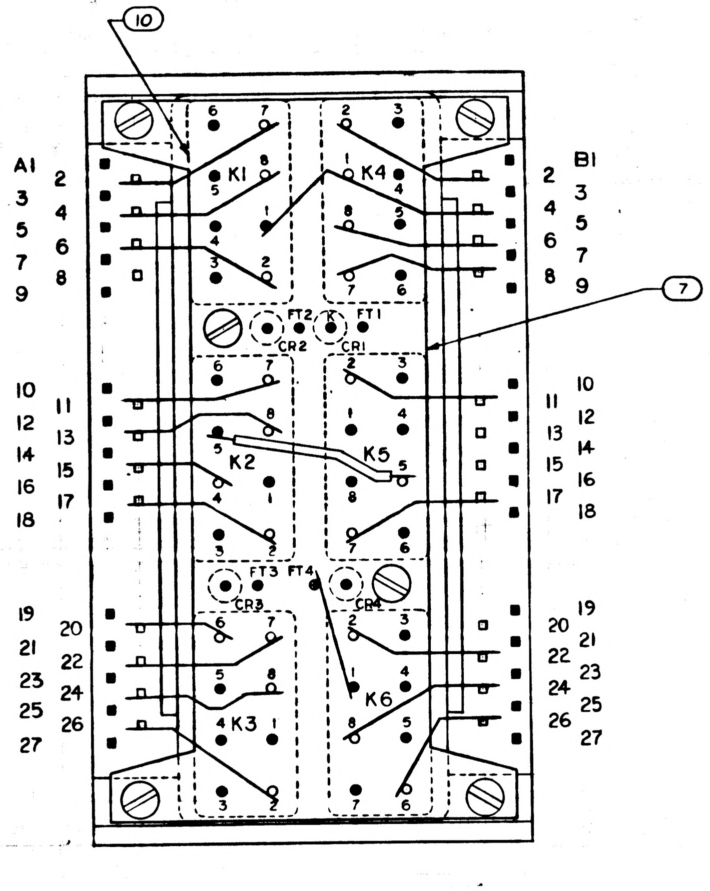
1015137 B

REVISIONS

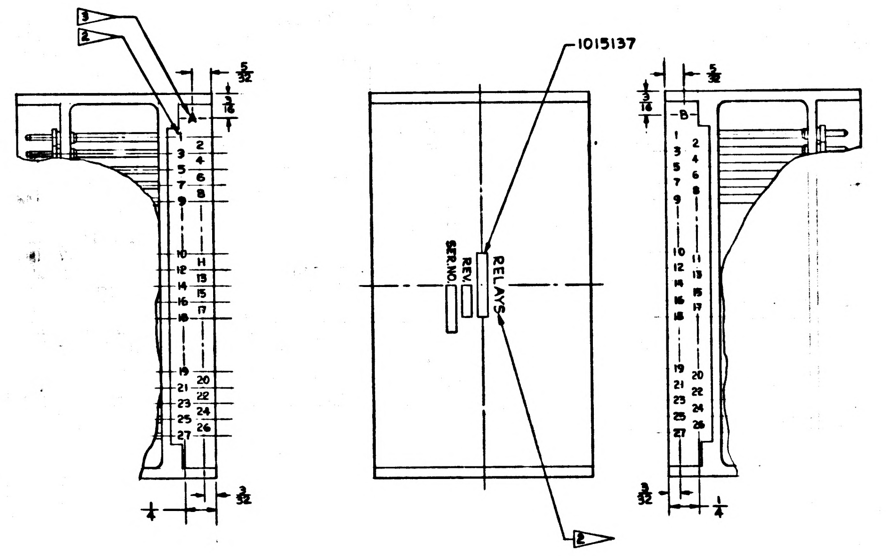
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGES PER TDRR 01225	15 May 63	wll

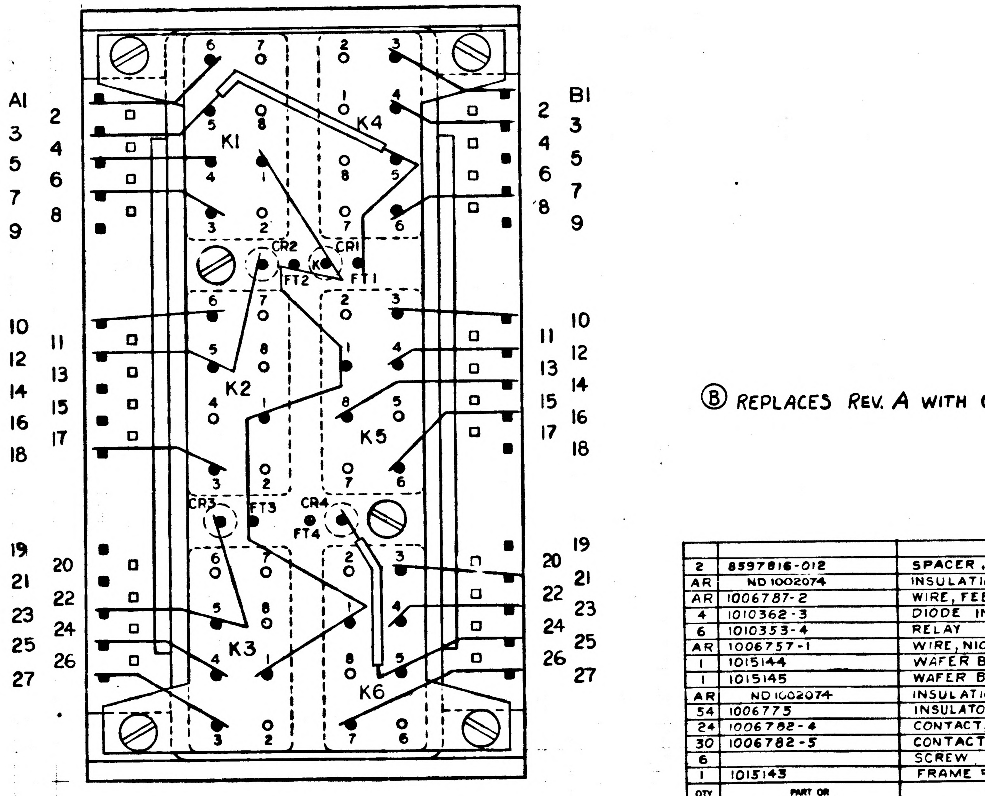

FT1
FT2
CR1
CR2
FT4
FT3
CR4
CR3
8
11
12
13


1
2
14
1
TRIM TO .140 UPPER LEVEL
.109
9
3
4
5
6
.031
TRIM TO .062 LOWER LEVEL
DO NOT ENCAPSULATE THESE AREAS (BOTH SIDES)


10
A1
B1
K1
K4
K2
K5
K3
K6
FT2
FT1
CR2
CR1
FT3
FT4
CR3
CR4
7
2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18
19 20 21 22 23 24 25 26 27

LOWER LEVEL WIRING


3
2
5/32
-A-
-B-
1015137
RELAY
REV
SER. NO
2
1/4
3/32


A1
B1
K1
K4
K2
K5
K3
K6
CR2
CR1
FT2
FT1
CR3
FT3
CR4
FT4
2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18
19 20 21 22 23 24 25 26 27

UPPER LEVEL WIRING

Ⓑ REPLACES REV. A WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
WELD PER ND 1002003 AND ND 1002005
BLACK DOT (●) INDICATES LEAD TO BE CUT FOR UPPER LEVEL WIRING.
BLACK SQUARE (■) INDICATES ITEM 3
1▷ ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM)
COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002004.
DIODES SHOWN WITH "K" DENOTES CATHODE END.
FT INDICATES FEED THRU WIRE.
2▷ MARK CHARACTERS .080 HIGH, WHITE PER ND 1002019, CENTER AS SHOWN.
3▷ MARK -A- & -B- .125 HIGH, WHITE
DRAWINGS FOR REFERENCE:
1015108 SCHEMATIC DIAGRAM, ELECTRICAL.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
2	8597816-012	SPACER, NYLON	14
AR	ND 1002074	INSULATION SLEEVING, #22	13
AR	1006787-2	WIRE, FEED THROUGH	12
4	1010362-3	DIODE 1N649	11
6	1010353-4	RELAY	10
AR	1006757-1	WIRE, NICKEL RIBBON	9
1	1015144	WAFER BOARD, LOWER	8
1	1015145	WAFER BOARD, UPPER	7
AR	ND 1002074	INSULATION SLEEVING #23	6
54	1006775	INSULATOR, WRAPOST-MALE MIN.	5
24	1006782-4	CONTACT, BLADE EDGE CONNECTOR	4
30	1006782-5	CONTACT, BLADE EDGE CONNECTOR	3
6		SCREW #2-56	2
1	1015143	FRAME RELAY MODULE	

LIST OF MATERIALS

1015137 B

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT
DRAWN F Akell DATE 4-10-63
CHECKED
APPROVAL R.L.
APPROVAL
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
RELAY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015137
SCALE
WT
SHEET OF

MASTER

INCHES
PHOTOGRAPHIC SCALE ONLY

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1015137 C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
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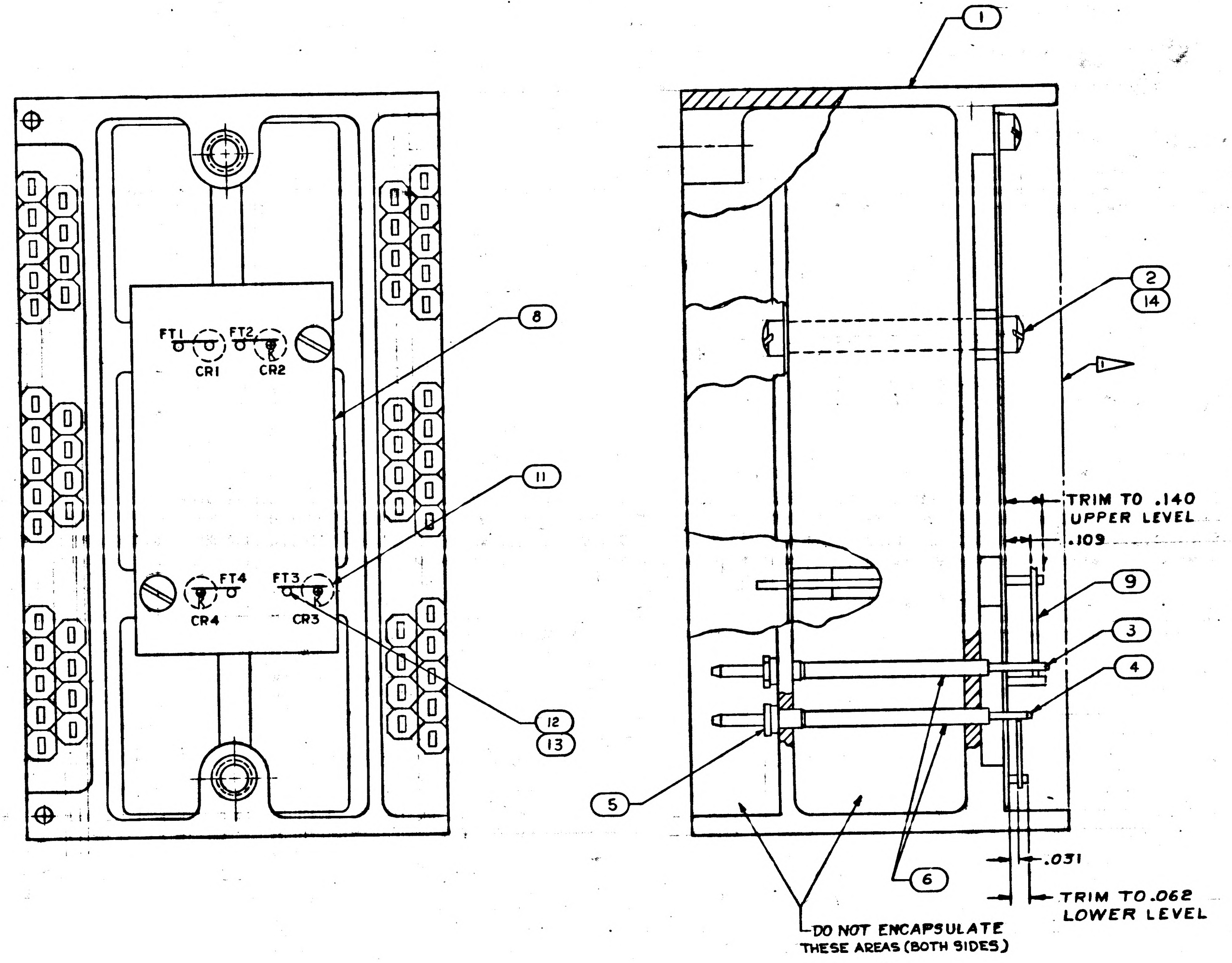
C	REVISED PER TDRR 03784	[illegible]	[illegible]



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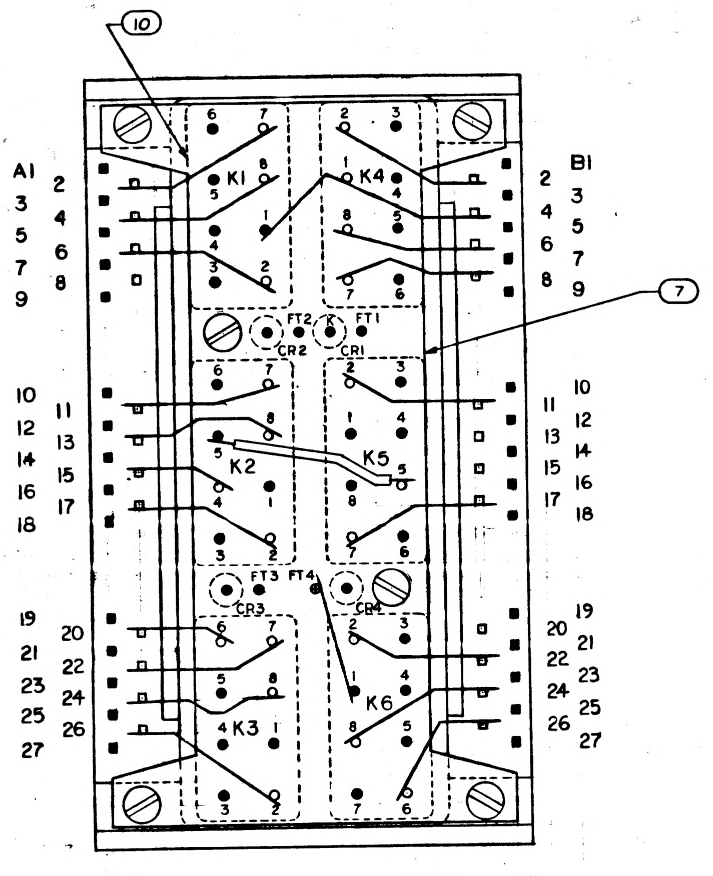
FT1
FT2
CR1
CR2
FT3
FT4
CR3
CR4
TRIM TO .140 UPPER LEVEL
.109
.031
TRIM TO .062 LOWER LEVEL
DO NOT ENCAPSULATE THESE AREAS (BOTH SIDES)



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K6
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FT2
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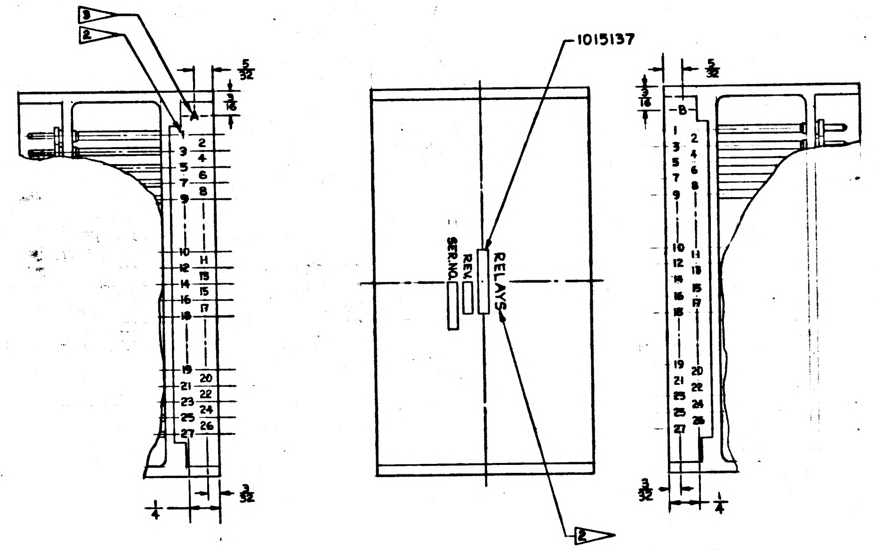
CR2
CR3
CR4

LOWER LEVEL WIRING



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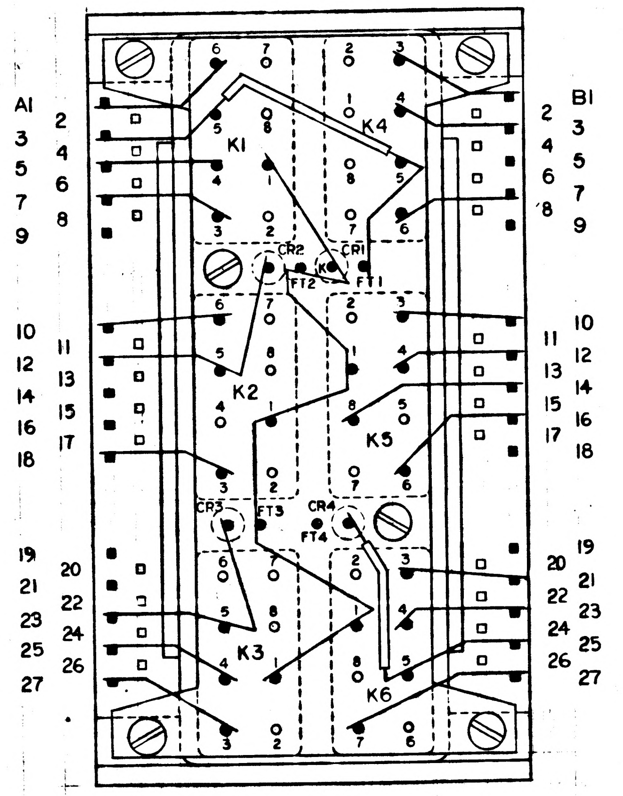
5/32
1/4
3/32



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UPPER LEVEL WIRING

Ⓑ REPLACES REV. A WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
WELD PER ND1002003 AND ND1002005
BLACK DOT (●) INDICATES LEAD TO BE CUT FOR UPPER LEVEL WIRING.
BLACK SQUARE (■) INDICATES ITEM 3
1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM)
COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002004.
DIODES SHOWN WITH "K" DENOTES CATHODE END.
FT INDICATES FEED THRU WIRE.
2 MARK CHARACTERS .080 HIGH, WHITE PER ND 1002019, CENTER AS SHOWN.
3 MARK -A- & -B- .125 HIGH, WHITE
DRAWINGS FOR REFERENCE:
1015108 SCHEMATIC DIAGRAM, ELECTRICAL.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
2	8597816-012	SPACER, NYLON	14
AR	ND 1002074	INSULATION SLEEVING, #22	13
AR	1006787-2	WIRE, FEED THROUGH	12
4	1010362-3	DIODE 1N649	11
6	1010353-4	RELAY	10
AR	1006757-1	WIRE, NICKEL RIBBON	9
1	1015144	WAFER BOARD, LOWER	8
1	1015145	WAFER BOARD, UPPER	7
AR	ND 1002074	INSULATION SLEEVING #23	6
54	1006775	INSULATOR, WRAPOST-MALE MIN.	5
24	1006782-4	CONTACT, BLADE EDGE CONNECTOR	4
30	1006782-5	CONTACT, BLADE EDGE CONNECTOR	3
6	AN 500D-2-4	SCREW #2-56X [illegible]	2
1	1015143	FRAME RELAY MODULE	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO.
CONTRACT
DRAWN F Akell DATE 4-10-63
CHECKED M Plummer
APPROVAL R.L. Boyce
APPROVAL
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
RELAY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015137
SCALE
WT
SHEET OF

MASTER

1015137 C

INCHES
PHOTOGRAPHIC SCALE ONLY

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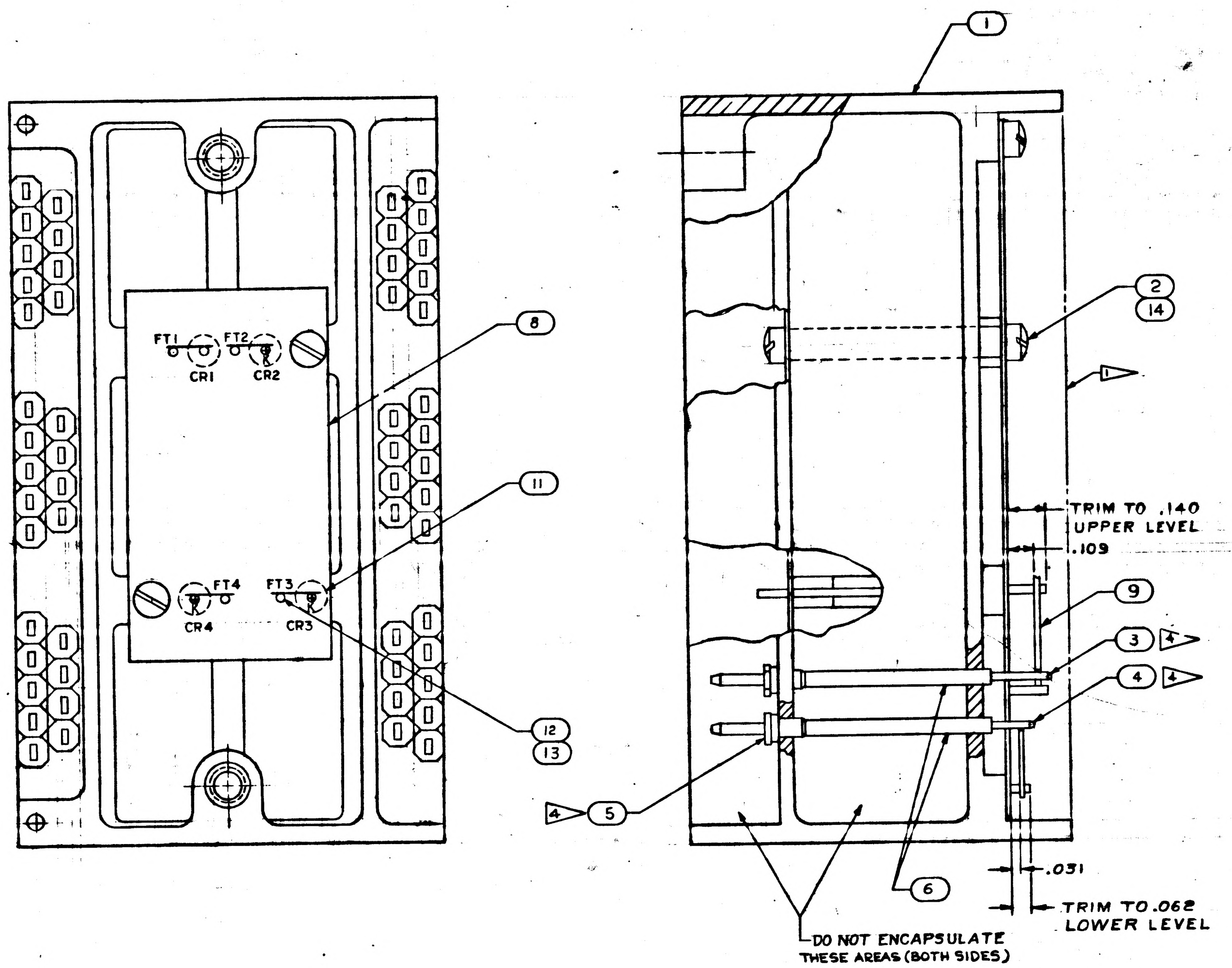
1015137 D

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGES PER TDRR 01225	15 May 63	WK
C	REVISED PER TDRR 03784		
D	REVISED PER TDRR 04453		WK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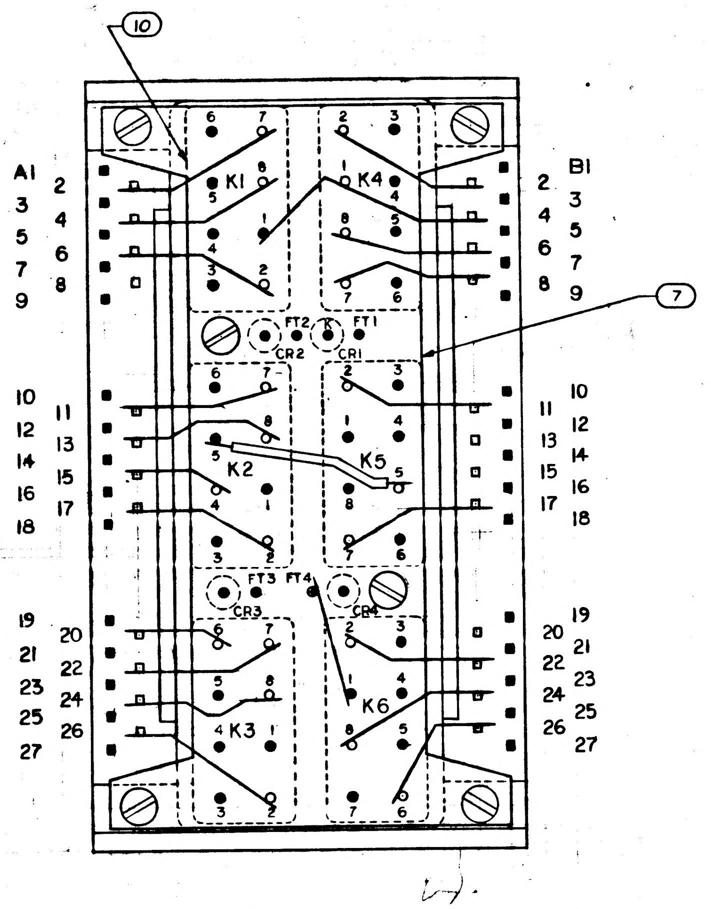
TRIM TO .062
LOWER LEVEL
DO NOT ENCAPSULATE
THESE AREAS (BOTH SIDES)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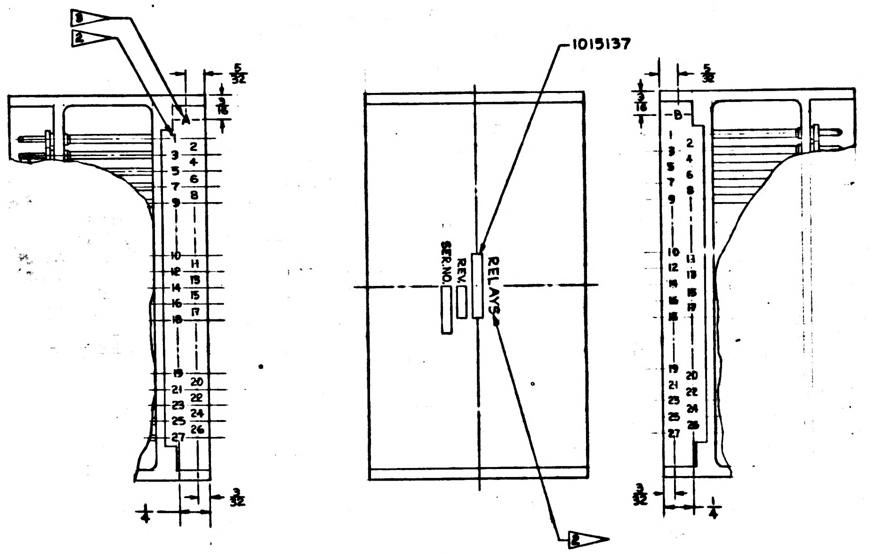
LOWER LEVEL WIRING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5/32
1015137
RELAYS
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SER. NO.
-B-
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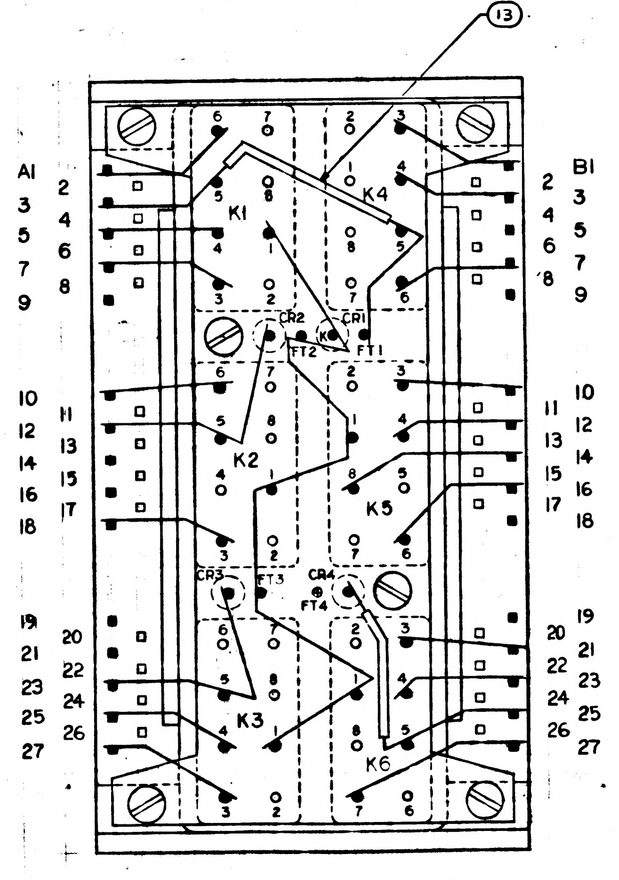
1/16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UPPER LEVEL WIRING

Ⓑ REPLACES REV. A WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

BLACK DOT (●) INDICATES LEAD TO BE CUT FOR UPPER LEVEL WIRING.

BLACK SQUARE (■) INDICATES ITEM 3

1 ▷ ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM) TO BE CEMENTED IN PLACE PER ND 1002004.

DIODES SHOWN WITH "K" DENOTES CATHODE END.

FT INDICATES FEED THRU WIRE.

2 ▷ MARK CHARACTERS. ND 1002019. CENTER AS SHOWN. ~~.050-.100 HIGH WHITE PER ND 1002019~~

3 ▷ MARK -A- & -B- .125 HIGH, WHITE

DRAWINGS FOR REFERENCE:

1015108 SCHEMATIC DIAGRAM, ELECTRICAL.

4 ▷ ASSEMBLE PER ND 1002136

AR DENOTES AS REQUIRED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	1015135-015	SPACER, NYLON	14
AR	1006776-21	INSULATION SLEEVING	13
AR	1006787-2	WIRE, FEED THROUGH	12
4	1010362-3	DIODE IN649	11
6	1010353-4	RELAY	10
AR	1006757-1	WIRE, NICKEL RIBBON	9
1	1015144	WAFER BOARD, LOWER	8
1	1015145	WAFER BOARD, UPPER	7
AR	1006776-20	INSULATION SLEEVING	6
54	1006775	INSULATOR, WRAPOST-MALE MIN.	5
24	1006782-4	CONTACT, BLADE EDGE CONNECTOR	4
30	1006782-5	CONTACT, BLADE EDGE CONNECTOR	3
6	AN 5000-2-4	SCREW #2-56 X FL. -D	2
1	1015143	FRAME RELAY MODULE	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN F Apell DATE 4-10-63
CHECKED
APPROVAL R.L. Boy
APPROVAL
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
RELAY

CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1015137
SCALE | WT | SHEET OF

MASTER

INCHES
PHOTOGRAPHIC SCALE ONLY

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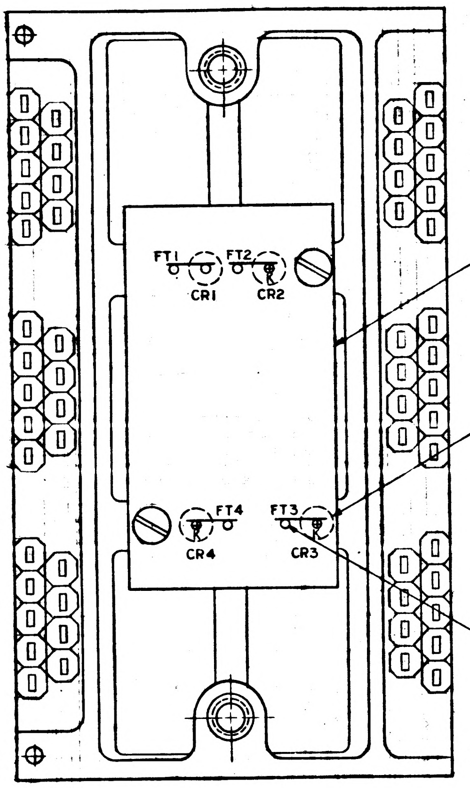
1015137 E

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGES PER TDRR 01225	15 May 63	WK
C	REVISED PER TDRR 03784		WK
D	REVISED PER TDRR 04453	5 Aug 63	WK
E	REVISED PER TDRR 05442	27 Dec 63	WK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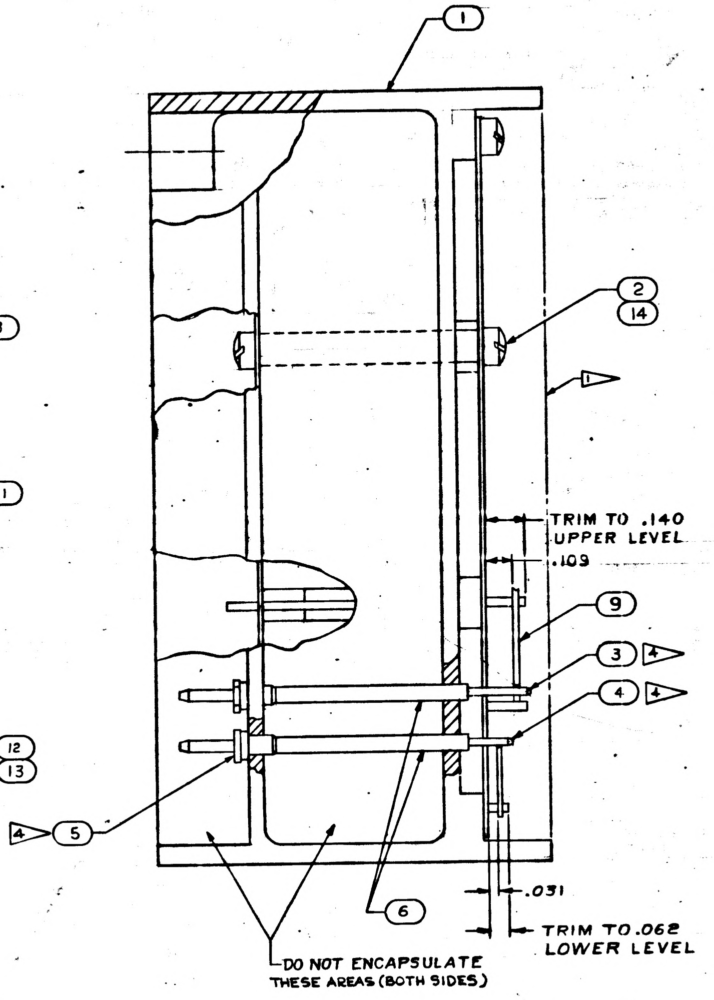
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TRIM TO .140
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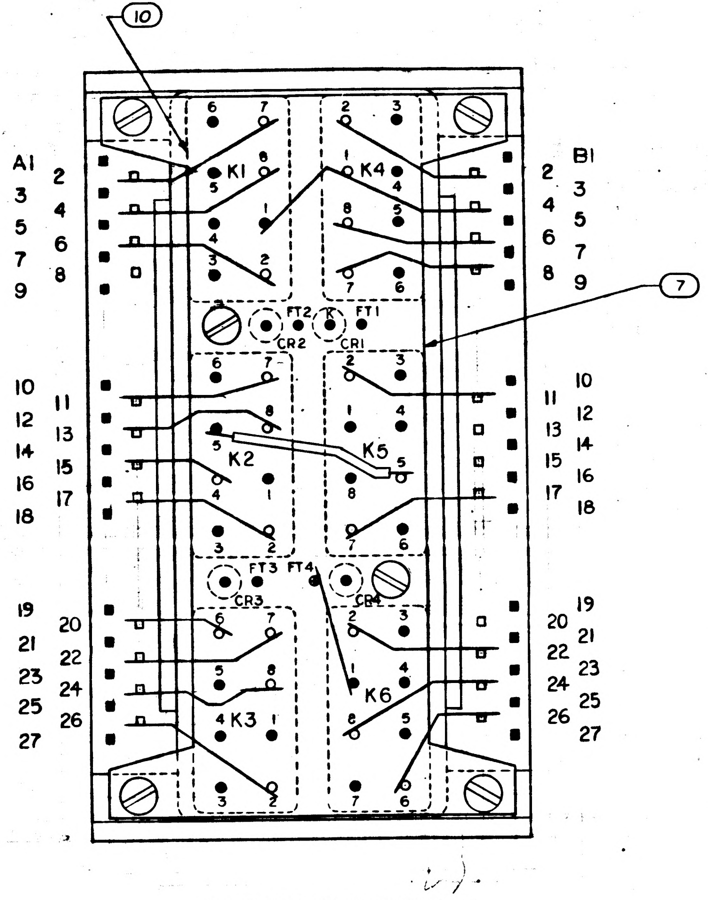
.031
TRIM TO .062
LOWER LEVEL
DO NOT ENCAPSULATE
THESE AREAS (BOTH SIDES)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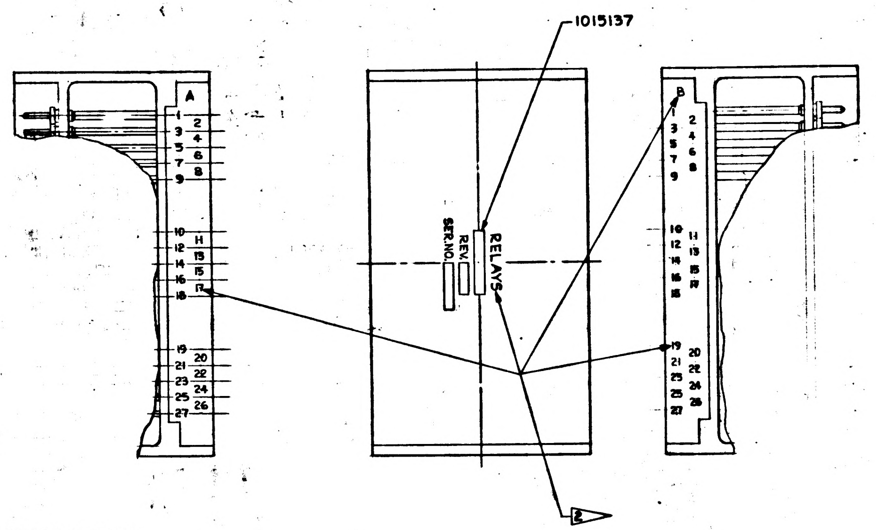
LOWER LEVEL WIRING


1015137
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SER.NO.
RELAYS
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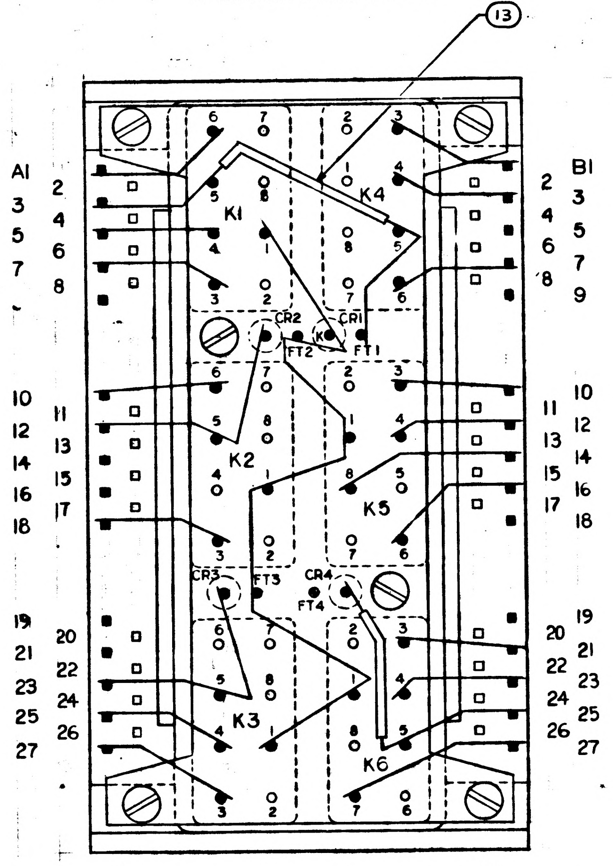
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FT3
CR4
FT4
2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18
19 20 21 22 23 24 25 26 27

UPPER LEVEL WIRING

Ⓑ REPLACES REV. A WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005
BLACK DOT (●) INDICATES LEADS TO BE CUT FOR UPPER LEVEL WIRING
BLACK SQUARES (■) INDICATES ITEM 3
1▷ ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING. TO BE CEMENTED IN PLACE PER ND 1002004.
DIODES SHOWN WITH "K" DENOTES CATHODE END
FT INDICATES FEED THRU WIRE
2▷ MARK PIN NUMBERS A AND B .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE
~~3▷ MARK A AND B .125 HIGH, WHITE~~
DRAWINGS FOR REFERENCE: 1015108 SCHEMATIC DIAGRAM, ELECTRICAL
4▷ ASSEMBLE PER ND 1002136
AR DENOTES AS REQUIRED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	1015135-015	SPACER, NYLON	14
AR	1006776-21	INSULATION SLEEVING	13
AR	1006787-2	WIRE, FEED THROUGH	12
4	1010362-3	DIODE 1N649	11
6	1010353-4	RELAY	10
AR	1006757-1	WIRE, NICKEL RIBBON	9
1	1015144	WAFER BOARD, LOWER	8
1	1015145	WAFER BOARD, UPPER	7
AR	1006776-20	INSULATION SLEEVING,	6
54	1006775	INSULATOR, WRAPOST-MALE MIN.	5
24	1006782-4	CONTACT, BLADE EDGE CONNECTOR	4
30	1006782-5	CONTACT, BLADE EDGE CONNECTOR	3
6	AN 500D-2-4	SCREW, #2-56 X 1/4 FIL. HD	2
1	1015143	FRAME RELAY MODULE	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±
DECIMALS .XX ±.02 .XXX ±.005
ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO.
CONTRACT
DRAWN F Akell DATE 4-10-63
CHECKED
APPROVAL R.L. Boyd
APPROVAL
NASA APPROVAL
MIT APPROVAL W Kupfer 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
RELAY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015137
SCALE
WT
SHEET 1 OF 1

MASTER

INCHES
PHOTOGRAPHIC SCALE ONLY

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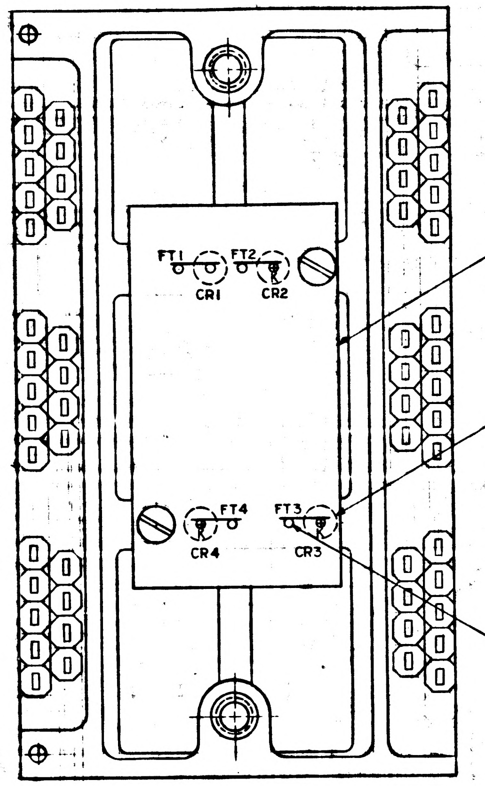
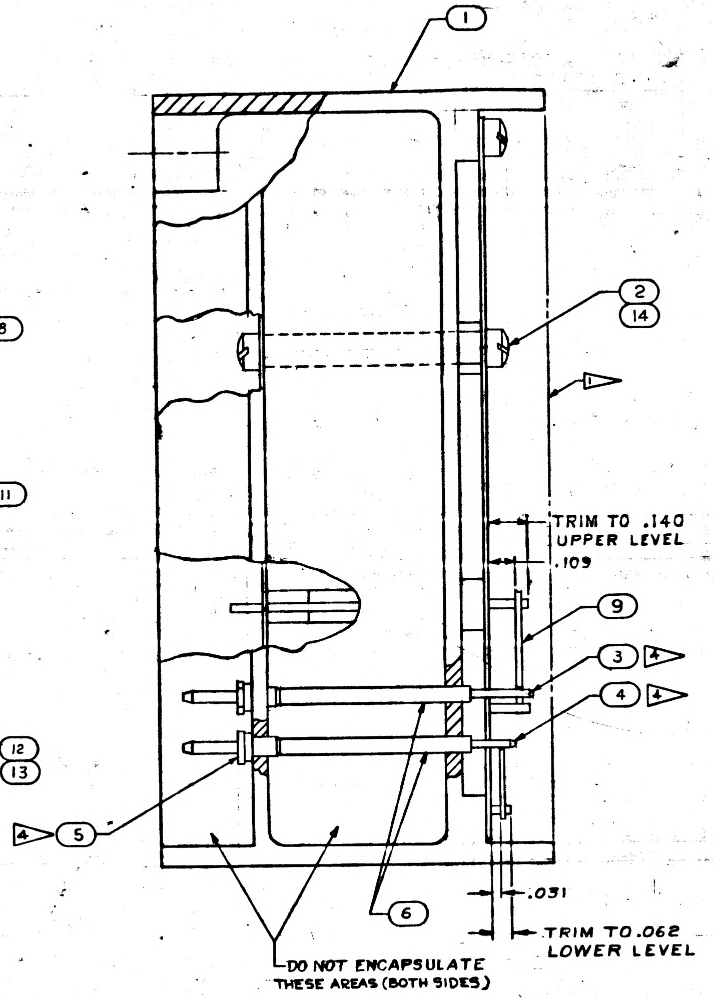
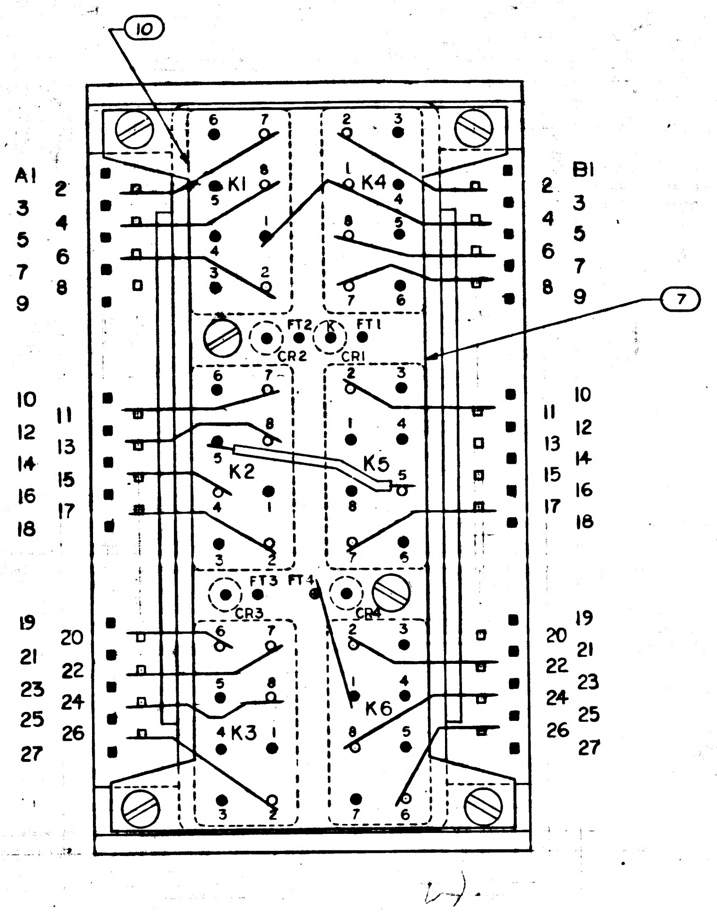
1015137 F

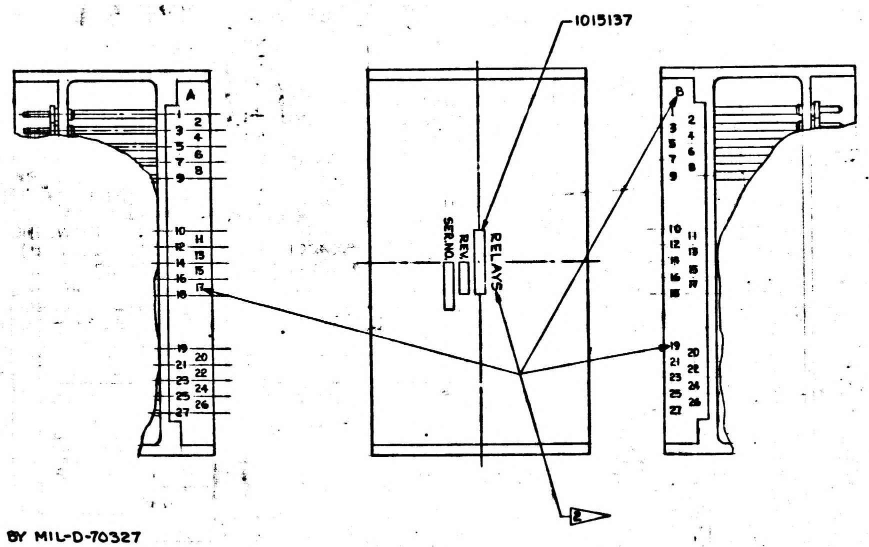
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGES PER TDRR 01225	15 May 63	
C	REVISED PER TDRR 03784		
D	REVISED PER TDRR 04453	5 Nov 63	WK
E	REVISED PER TDRR 05442	27 Dec 63	WK
F	REVISED PER TDRR 05696	10 Jan 64	

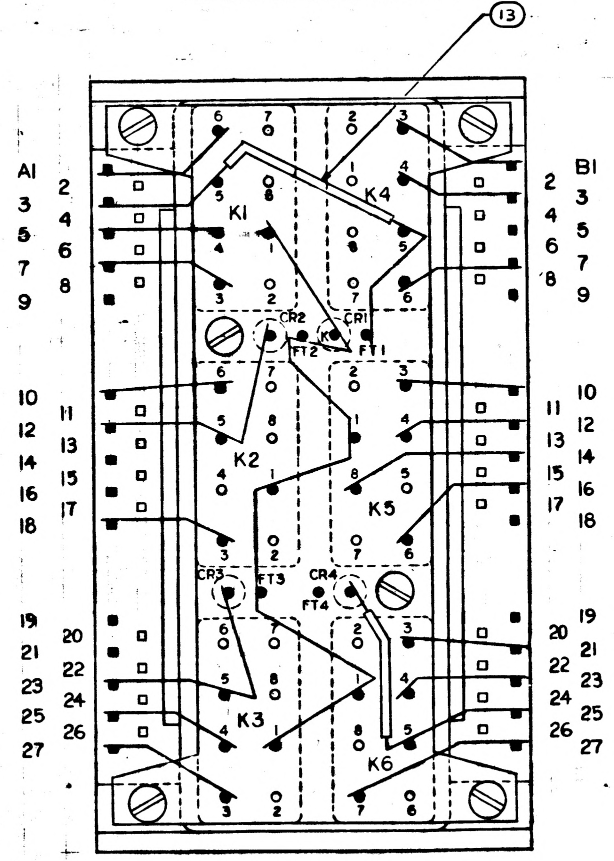






LOWER LEVEL WIRING





UPPER LEVEL WIRING

Ⓑ REPLACES REV. A WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005
BLACK DOT (●) INDICATES LEADS TO BE CUT FOR UPPER LEVEL WIRING
BLACK SQUARES (■) INDICATES ITEM 3
1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING. TO BE CEMENTED IN PLACE PER ND 1002004
DIODES SHOWN WITH "K" DENOTES CATHODE END
FT INDICATES FEED THRU WIRE
2 MARK PIN NUMBERS A AND B .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE
~~3 MARK A AND B .125 HIGH, WHITE~~
DRAWINGS FOR REFERENCE: 1015108 SCHEMATIC DIAGRAM, ELECTRICAL
4 ASSEMBLE PER ND 1002136
AR DENOTES AS REQUIRED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	1015135-015	SPACER, NYLON	14
AR	1006776-21	INSULATION SLEEVING	13
AR	1006787-2	WIRE, FEED THROUGH	12
4	1010362-3	DIODE IN649	11
6	1010353-4	RELAY	10
AR	1006757-1	WIRE, NICKEL RIBBON	9
1	1015144	WAFER BOARD, LOWER	8
1	1015145	WAFER BOARD, UPPER	7
AR	1006776-20	INSULATION SLEEVING	6
54	1006775	INSULATOR, WRAPOST-MALE MIN.	5
24	1006782-4	CONTACT, BLADE EDGE CONNECTOR	4
30	1006782-5	CONTACT, BLADE EDGE CONNECTOR	3
8	AN 500D-2-4	SCREW #2-56X 4FL.	2
1	1015143	FRAME RELAY MODULE	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN F Akell DATE 4-10-63
CHECKED
APPROVAL R.L. B
APPROVAL
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
RELAY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015137
SCALE
WT
SHEET 1 OF 1

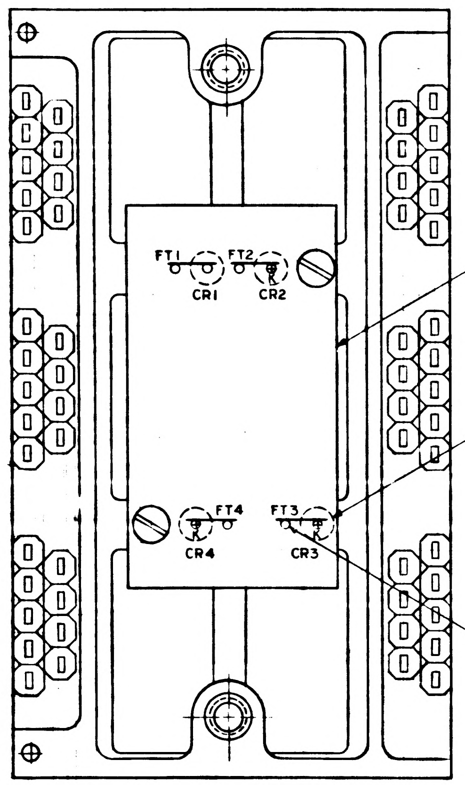
MASTER

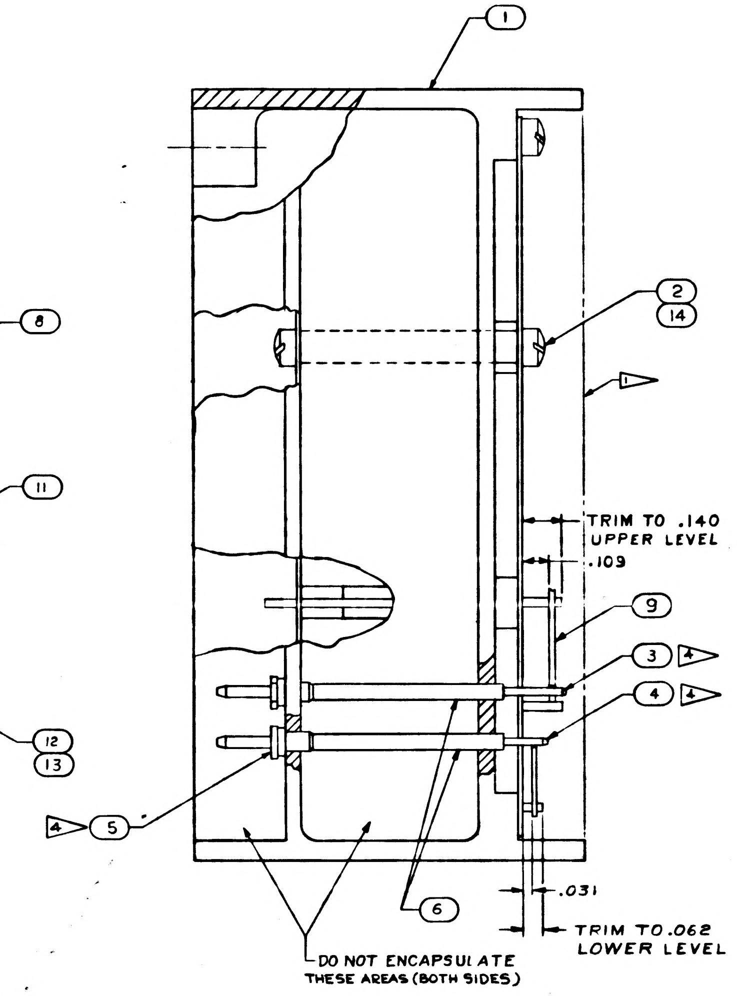
1015137 F

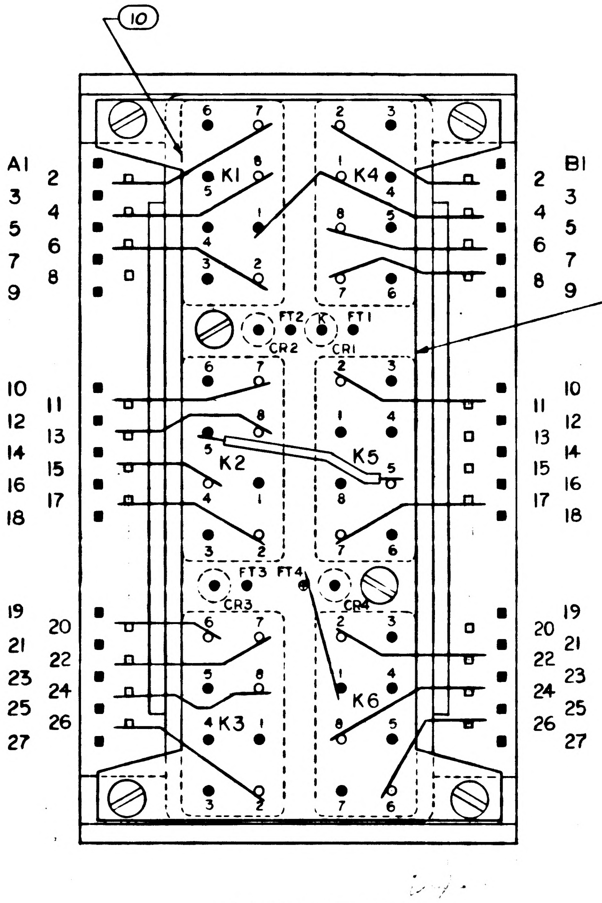
NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

1015137 G

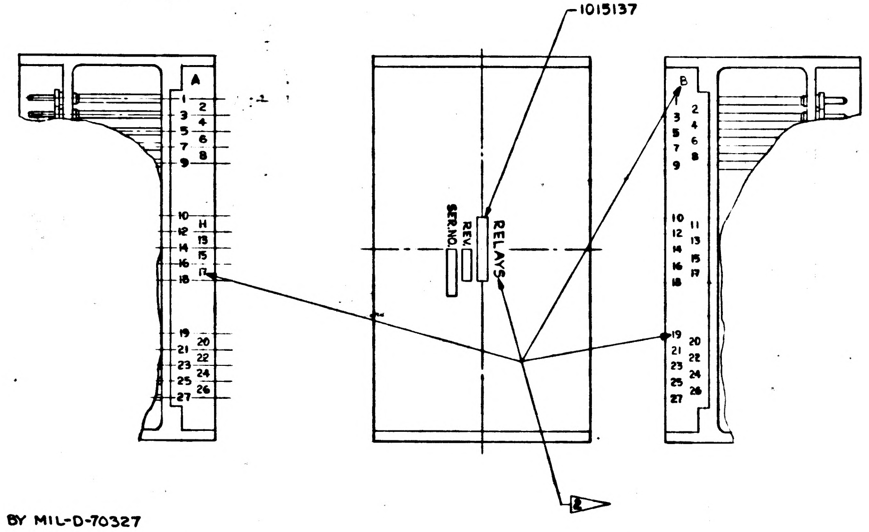
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGES PER TDRR 01225	15 May 63	
C	REVISED PER TDRR 03784		
D	REVISED PER TDRR 04453	5 Aug 63	
E	REVISED PER TDRR 05442	27 Dec 63	
F	REVISED PER TDRR 05696		
G	REVISED PER TDRR 07008	2 APR 64	

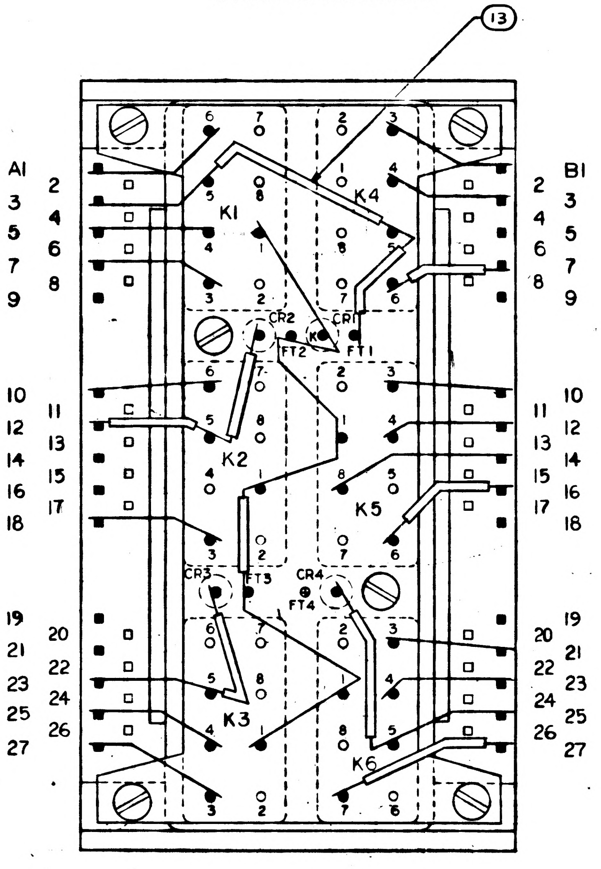






LOWER LEVEL WIRING





UPPER LEVEL WIRING

Ⓑ REPLACES REV. A WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
ALL WELDED CONNECTIONS TO BE MADE PER ND1002005
BLACK DOT (●) INDICATES LEADS TO BE CUT FOR UPPER LEVEL WIRING
BLACK SQUARES (■) INDICATES ITEM 3
1▷ ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING. TO BE CEMENTED IN PLACE PER ND1002004
DIODES SHOWN WITH "K" DENOTES CATHODE END
FT INDICATES FEED THRU WIRE
2▷ MARK PIN NUMBERS A AND B .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE
~~3▷ MARK A AND B .125 HIGH, WHITE~~
DRAWINGS FOR REFERENCE: 1015108 SCHEMATIC DIAGRAM, ELECTRICAL
4▷ ASSEMBLE PER ND 1002136
AR DENOTES AS REQUIRED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
2	1015135-015	SPACER, NYLON	14
AR	1006776-21	INSULATION SLEEVING	13
AR	1006787-2	WIRE, FEED THROUGH	12
4	1010362-3	DIODE IN649	11
6	1010353-4	RELAY	10
AR	1006757-1	WIRE, NICKEL RIBBON	9
1	1015144	WAFER BOARD, LOWER	8
1	1015145	WAFER BOARD, UPPER	7
AR	1006776-20	INSULATION SLEEVING	6
54	1006775	INSULATOR, WRAPOST-MALE MIN.	5
24	1006782-4	CONTACT, BLADE EDGE CONNECTOR	4
30	1006782-5	CONTACT, BLADE EDGE CONNECTOR	3
8	AN 5000-2-4	SCREW #2-56X ¼ FL. HD	2
1	1015143	FRAME RELAY MODULE	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±XX±.02 XXX±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN F Akell DATE 4-10-63
CHECKED
APPROVAL R. L. B
APPROVAL
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

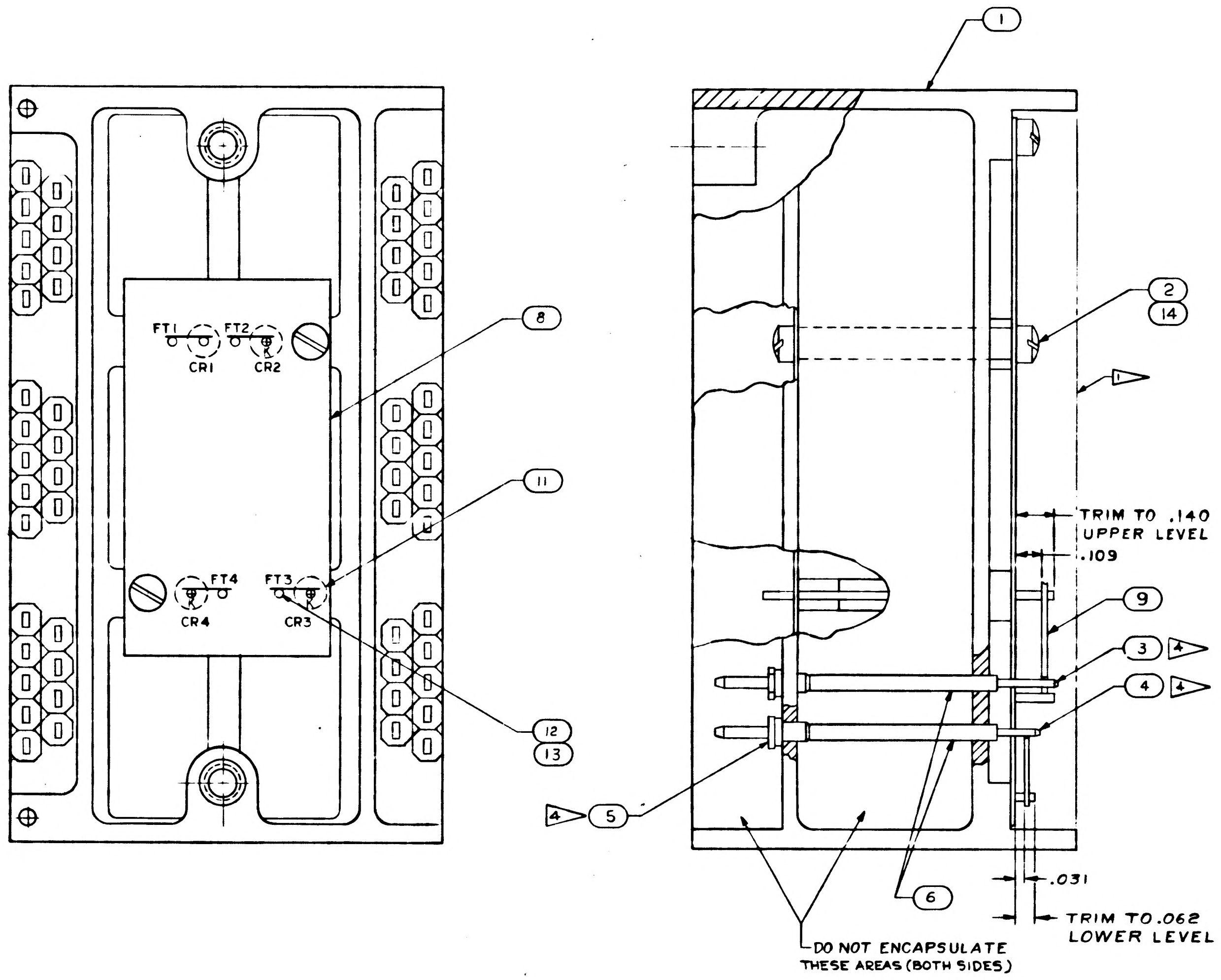
MODULE ASSEMBLY
RELAY

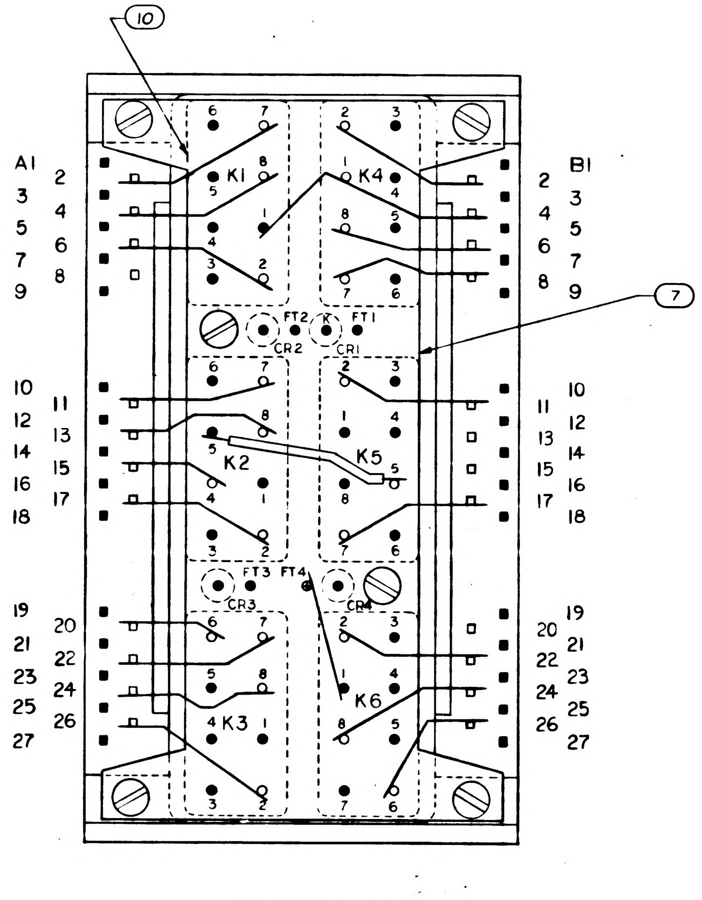
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015137
SCALE
WT
SHEET 1 OF 1

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

1015137 H

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGES PER TDRR 01225	1 May 63	
C	REVISED PER TDRR 03784		
D	REVISED PER TDRR 04453	5 Nov 63	WF
E	REVISED PER TDRR 05442	27 Dec 63	WF
F	REVISED PER TDRR 05696	10 Jan 64	
G	REVISED PER TDRR 07008	2 APR 64	
H	REVISED PER TDRR 07285		


1
2
14
8
11
12
13
FT1
FT2
CR1
CR2
FT4
FT3
CR4
CR3
9
3
4
5
6
1
4
4
TRIM TO .140
UPPER LEVEL
.109
.031
TRIM TO .062
LOWER LEVEL
DO NOT ENCAPSULATE
THESE AREAS (BOTH SIDES)


10
7
A1
B1
K1
K2
K3
K4
K5
K6
FT1
FT2
FT3
FT4
CR1
CR2
CR3
CR4
2
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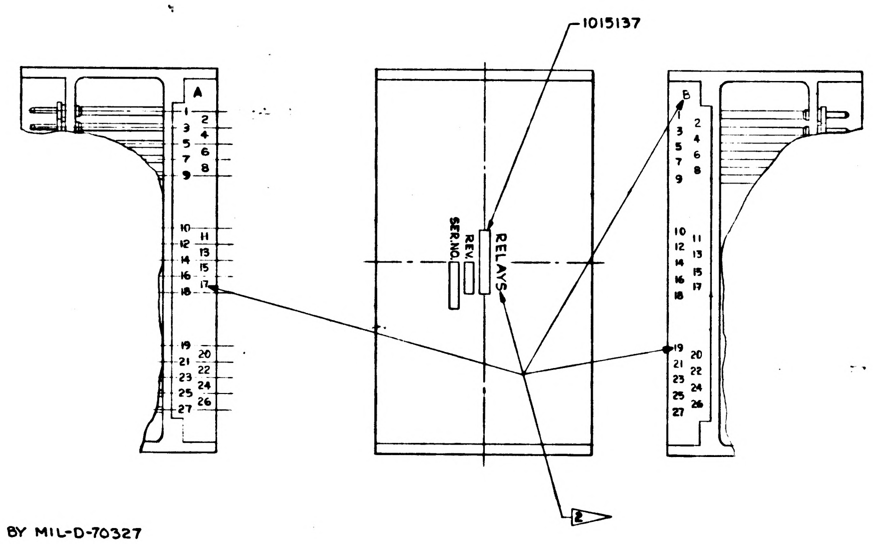
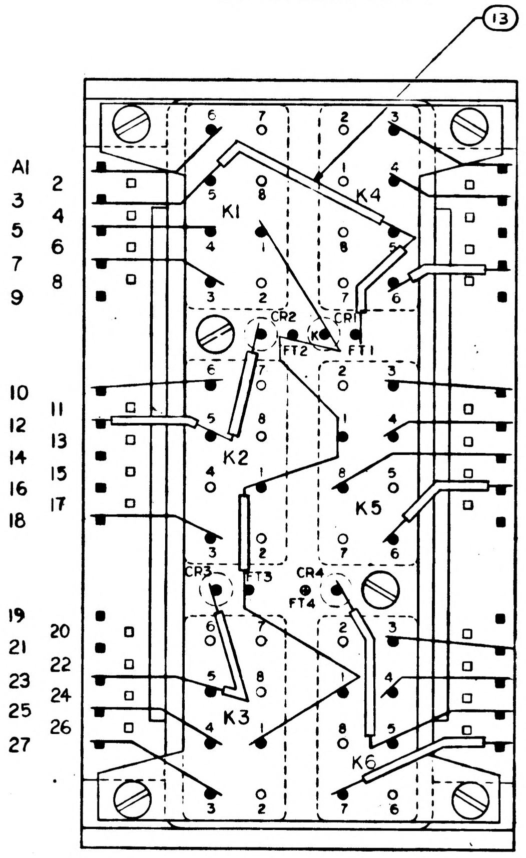
LOWER LEVEL WIRING


1015137
A
B
RELAYS
REV
SER.NO.
2


13
A1
B1
K1
K2
K3
K4
K5
K6
CR1
CR2
CR3
CR4
FT1
FT2
FT3
FT4
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UPPER LEVEL WIRING

Ⓑ REPLACES REV. A WITH CHANGES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005
BLACK DOT (●) INDICATES LEADS TO BE CUT FOR UPPER LEVEL WIRING
BLACK SQUARES (■) INDICATES ITEM 3
1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING. TO BE CEMENTED IN PLACE PER ND 1002004
DIODES SHOWN WITH "K" DENOTES CATHODE END
FT INDICATES FEED THRU WIRE
2 MARK PIN NUMBERS A AND B .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE
~~3 MARK A AND B .125 HIGH, WHITE~~
DRAWINGS FOR REFERENCE: 1015108 SCHEMATIC DIAGRAM, ELECTRICAL
4 ASSEMBLE PER ND 1002136
A R DENOTES AS REQUIRED
PROCURE PER PS 1015137

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
2	1015135-015	SPACER, NYLON	14
AR	1006776-21	INSULATION SLEEVING	13
AR	1006787-2	WIRE, FEED THROUGH	12
4	1010362-3	DIODE IN649	11
6	1010353-4	RELAY	10
AR	1006757-1	WIRE, NICKEL RIBBON	9
1	1015144	WAFER BOARD, LOWER	8
1	1015145	WAFER BOARD, UPPER	7
AR	1006776-20	INSULATION SLEEVING	6
54	1006775	INSULATOR, WRAPOST-MALE MIN.	5
24	1006782-4	CONTACT, BLADE EDGE CONNECTOR	4
30	1006782-5	CONTACT, BLADE EDGE CONNECTOR	3
8	AN 500D-2-4	SCREW #2-56X1/4 FIL. HD	2
1	1015143	FRAME RELAY MODULE	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007159	
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XX ±.02 .XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN F Akell DATE 4-10-63
CHECKED
APPROVAL R.L. Baroy
APPROVAL
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
RELAY

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015137
SCALE
WT
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015137

REVISIONS TDRR 00853

SYM	DESCRIPTION	DATE	APPROVAL

PART NO.	DESCRIPTION	REQD
1010353-4	RELAY	6
1010362-3	DIODE	4
1006782-4	CONTACT	24
1006782-5	CONTACT	30
1006775	INSULATOR	54

1015137

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL #
HEAT TREATMENT #
FINAL FINISH #

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN R.L.B DATE 4/16/63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
RELAY

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015137
SCALE
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015138 A

REVISIONS TDRR 01375

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED WITH CHANGE BY REV. B PER TDRR 01759	6/26/63	WK

PART NO	DESCRIPTION	REQD
1010605	TRANSFORMER, 25° OFFSET	1
1010474	TRANSFORMER, RESOLVER ZERO	1

Ⓐ REPLACED WITH CHANGE BY REV. B

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007159	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 5-27-63
CHECKED R. L. Battaglia
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL WK 29 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ISOLATION TRANSFORMER MODULE ASSY

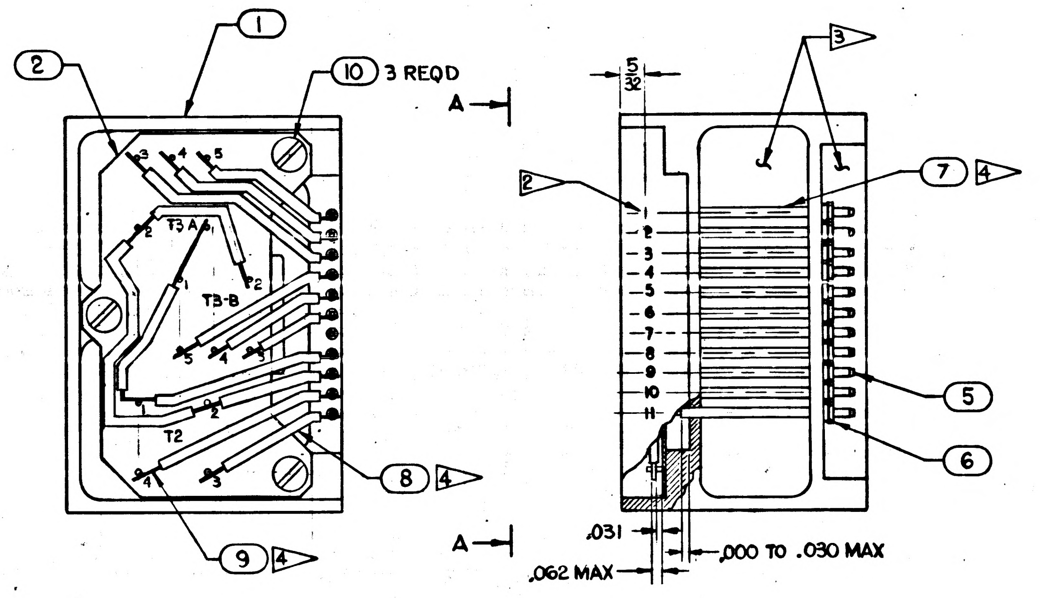
CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015138
SCALE
WT
SHEET OF

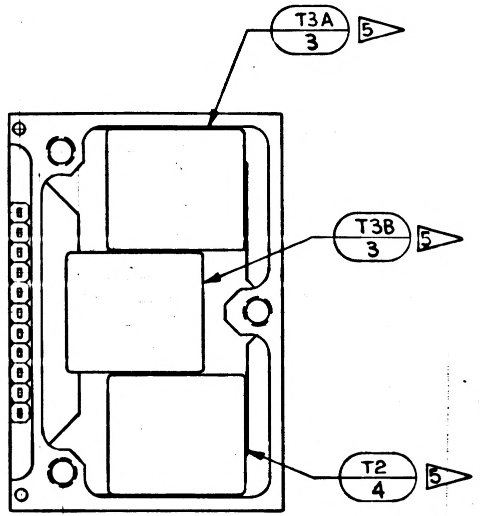
MASTER

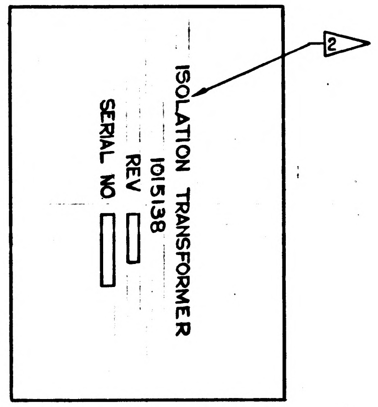
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE PER TDRR. 01759	6-24-65	WK







VIEW A-A

Ⓑ REPLACES REV.A WITH CHANGE

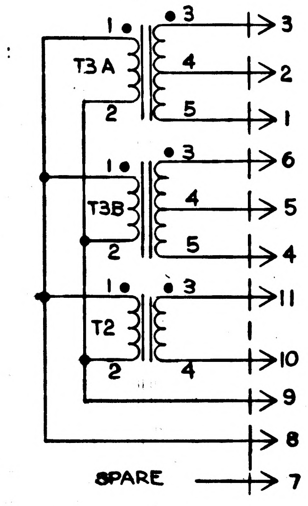
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005

ON FIND NO 2 BROKEN PATHS INDICATE INSULATION SLEEVING

1. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.
2. MARK CHARACTERS .080 HIGH WHITE PER ND 1002019 CENTRALIZED AS SHOWN
3. AREAS TO BE FREE OF ENCAPSULATING COMPOUND
4. USE AS REQUIRED
5. TRANSFORMER TO BE CEMENTED IN PLACE PER ND 1002009



SCHEMATIC

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	AN 500 D-4-4	SCREW	10
AR	1006757-1	WIRE NICKEL RIBBON .010 x .020	9
AR	1006776-21	SLEEVING, ELECT INSULATION	8
AR	1006776-20	SLEEVING, ELECT INSULATION	7
11	1006775	INSULATOR WRAP-POST MALE MIN	6
11	1006782-5	CONTACT BLADE EDGE CONN	5
1	1010605	TRANSFORMER	4
2	1010474	TRANSFORMER	3
1	1015167	WAFER BOARD	2
1	1015159	FRAME ASSY	1

LIST OF MATERIALS

1015138 B

NEXT ASSY	USED ON
1007159	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± # ; DECIMALS .000 ±.005, .00 ±.020 ; ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN LEWANDOWSKI DATE 6-21-63
CHECKED LAPlummer
APPROVAL R L Battey
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ISOLATION TRANSFORMER
MODULE ASSEMBLY

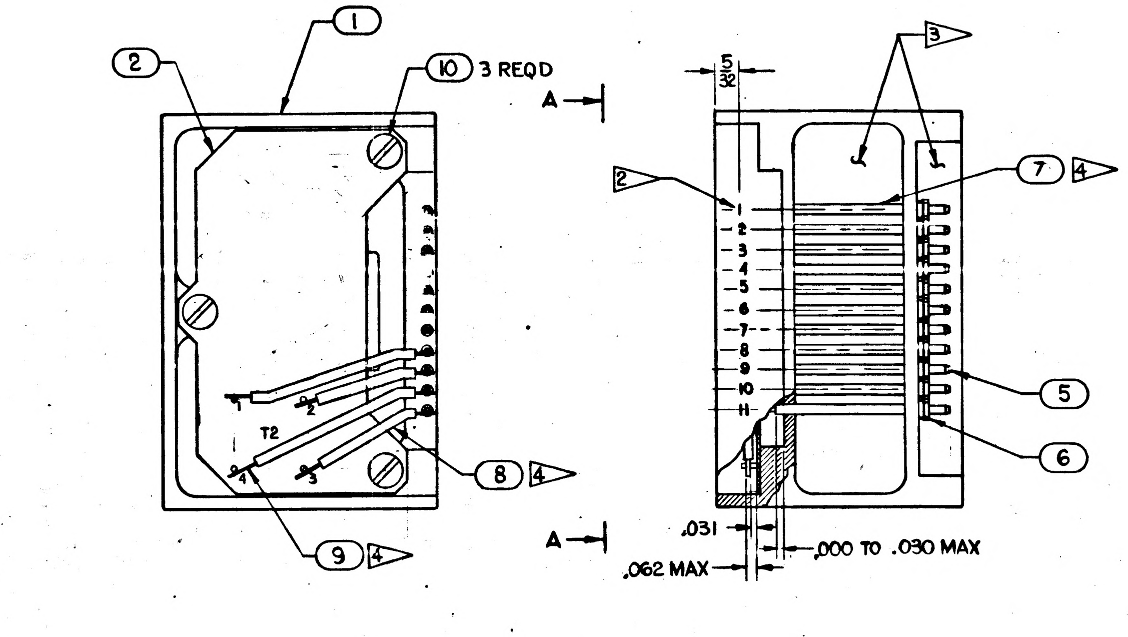
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015138
SCALE 2X1
WT
SHEET OF

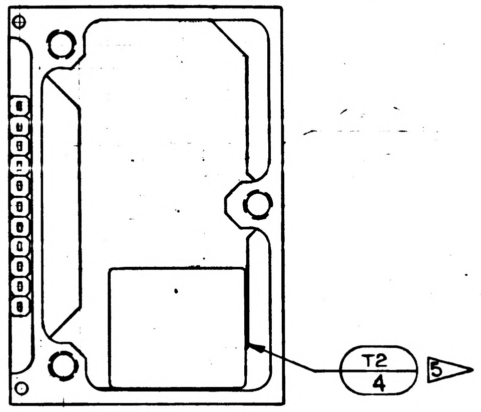
INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

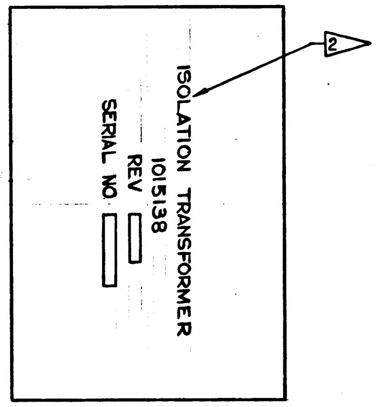
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015138 C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
Ⓜ B	REPLACES REV. A WITH CHANGE PER TDRR. 01759	6-24-63	WK
C	REVISED PER TDRR 02877	8-26-63	RRK







VIEW A-A

Ⓑ REPLACES REV. A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005

ON FIND NO 2 BROKEN PATHS INDICATE INSULATION SLEEVING

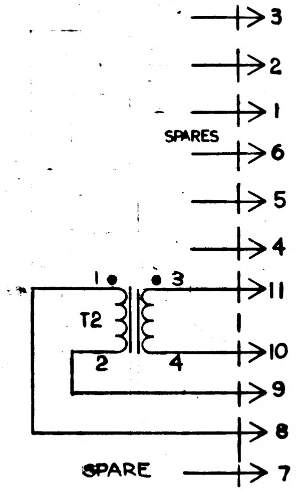
1▷ ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

2▷ MARK CHARACTERS .080 HIGH WHITE PER ND 1002019 CENTRALIZED AS SHOWN

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND

4▷ USE AS REQUIRED

5▷ TRANSFORMER TO BE CEMENTED IN PLACE PER ND 1002009



SCHEMATIC

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	AN 500 D-4-4	SCREW	10
AR	1006757-1	WIRE NICKEL RIBBON .010 x .020	9
AR	1006776-21	SLEEVING, ELECT INSULATION	8
AR	1006776-20	SLEEVING, ELECT INSULATION	7
11	1006775	INSULATOR WRAP-POST MALE MIN	6
11	1006782-5	CONTACT BLADE EDGE CONN	5
1	1010605	TRANSFORMER	4
			3
1	1015167	WAFER BOARD	2
1	1015159	FRAME ASSY	1

LIST OF MATERIALS

1015138 C

1007159	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS .000 ±.005, .00 ±.020 — ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 6-21-63
CHECKED
APPROVAL R L Battey
APPROVAL
NASA APPROVAL 8/4/63
MIT APPROVAL 8/28/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ISOLATION TRANSFORMER MODULE ASSEMBLY

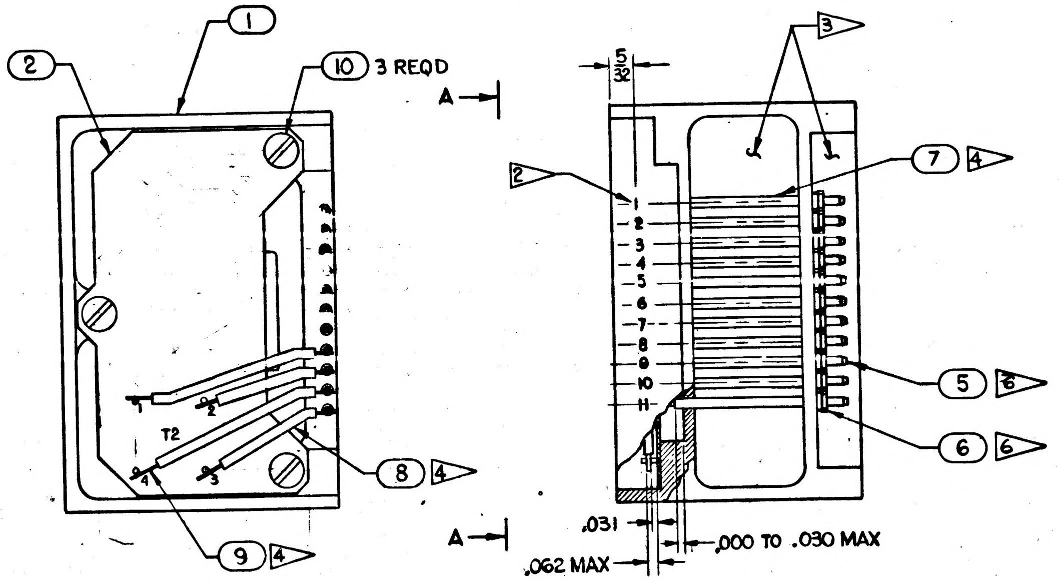
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015138
SCALE 2X1
WT
SHEET OF

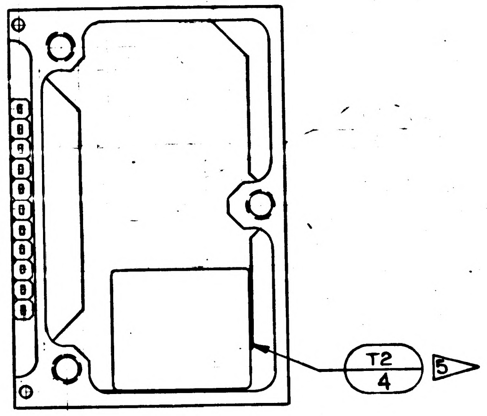
INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

1015138 D

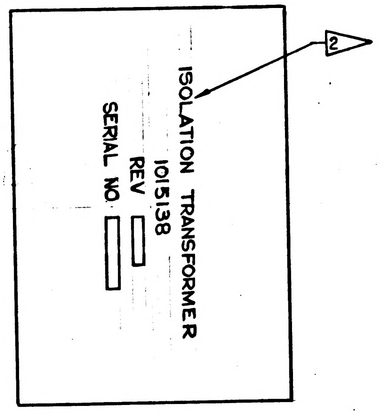
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE PER TDRR 01759		WK
C	REVISED PER TDRR 02877	6-26-63	RRK
D	REVISED PER TDRR 04456	5/31/63	WK

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.





Ⓑ REPLACES REV. A WITH CHANGE



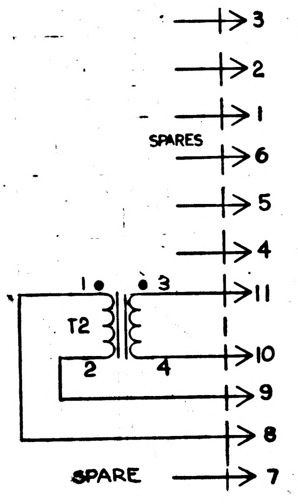
VIEW A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

ON FIND NO 2 BROKEN PATHS INDICATE INSULATION SLEEVING

1. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.
2. MARK CHARACTERS .060-.100 HIGH WHITE PER ND 1002019 CENTRALIZED AS SHOWN
3. AREAS TO BE FREE OF ENCAPSULATING COMPOUND
4. USE AS REQUIRED
5. TRANSFORMER TO BE CEMENTED IN PLACE PER ND 1002004
6. ASSEMBLE PER ND 1002136



SCHEMATIC

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	AN 500 D-4-4	SCREW	10
AR	1006757-1	WIRE NICKEL RIBBON .010 x .020	9
AR	1006776-21	SLEEVING, ELECT INSULATION	8
AR	1006776-20	SLEEVING, ELECT INSULATION	7
11	1006775	INSULATOR WRAP-POST MALE MIN	6
11	1006782-5	CONTACT BLADE EDGE CONN	5
1	1010605	TRANSFORMER	4
			3
1	1015167	WAFER BOARD	2
1	1015159	FRAME ASSY	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007159	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± .000 .00 DECIMALS ±.005 .020 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 6-21-63
CHECKED L.A. Plummer
APPROVAL R. L. Battey
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ISOLATION TRANSFORMER
MODULE ASSEMBLY

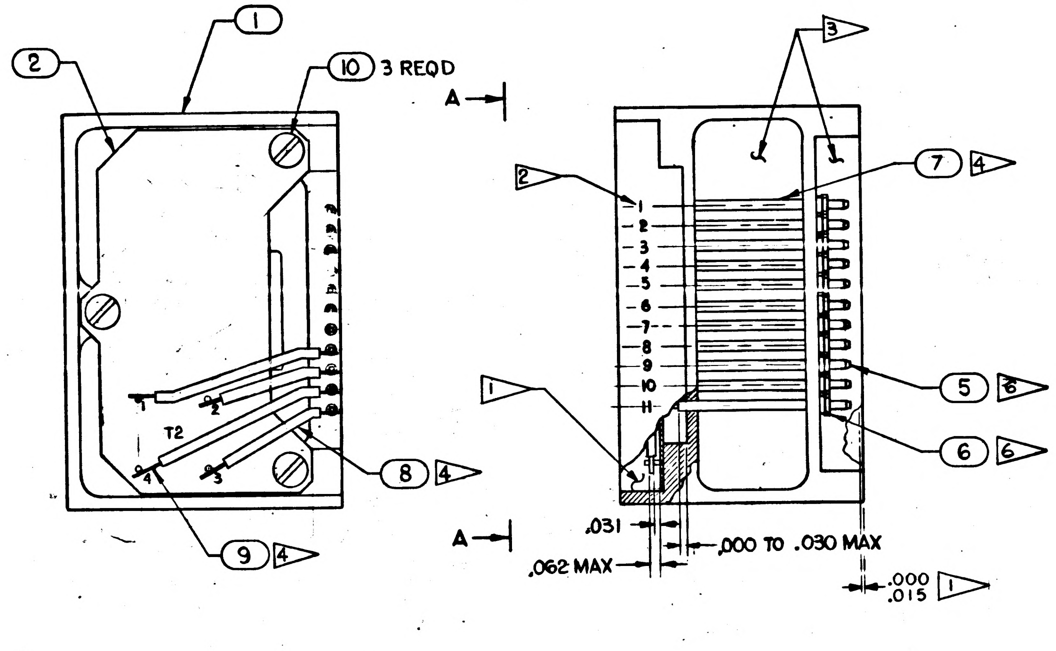
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015138
SCALE 2X1
WT
SHEET OF

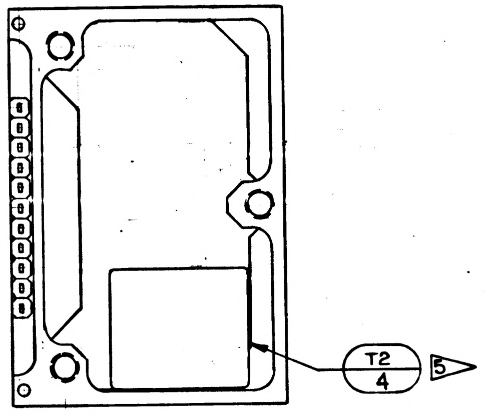
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015138 E

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE PER TDRR. 01759		WK
C	REVISED PER TDRR 02877	6-25-63	RRK
D	REVISED PER TDRR 04456	5 NOV 63	WK
E	REVISED PER TDRR 05466	22 DEC 63	WK



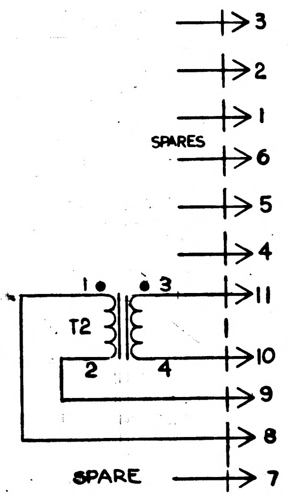


Ⓑ REPLACES REV. A WITH CHANGE

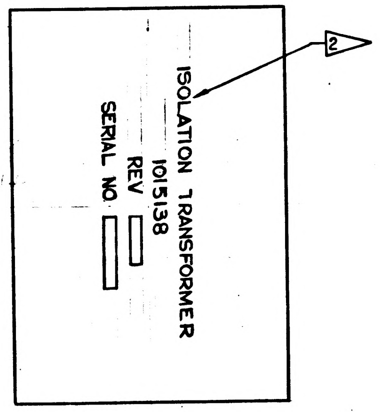
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005 ON FIND NO 2 BROKEN PATHS INDICATE INSULATION SLEEVING

1. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE; THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
2. MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE
3. AREAS TO BE FREE OF ENCAPSULATING COMPOUND
4. USE AS REQUIRED
5. TRANSFORMER TO BE CEMENTED IN PLACE PER ND1002004
6. ASSEMBLE PER ND1002136



SCHEMATIC



VIEW A-A

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	AN 500 D-4-4	SCREW	10
AR	1006757-1	WIRE NICKEL RIBBON .010 x .020	9
AR	1006776-21	SLEEVING, ELECT INSULATION	8
AR	1006776-20	SLEEVING, ELECT INSULATION	7
11	1006775	INSULATOR WRAP-POST MALE MIN	6
11	1006782-5	CONTACT BLADE EDGE CONN	5
1	1010605	TRANSFORMER	4
			3
1	1015167	WAFER BOARD	2
1	1015159	FRAME ASSY	1

LIST OF MATERIALS

1007159	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX±.005 XX±.020 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 6-21-63
CHECKED LA Plummer
APPROVAL R L Battaglia
APPROVAL
NASA APPROVAL 8/28/63
MIT APPROVAL 8/28/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ISOLATION TRANSFORMER
MODULE ASSEMBLY

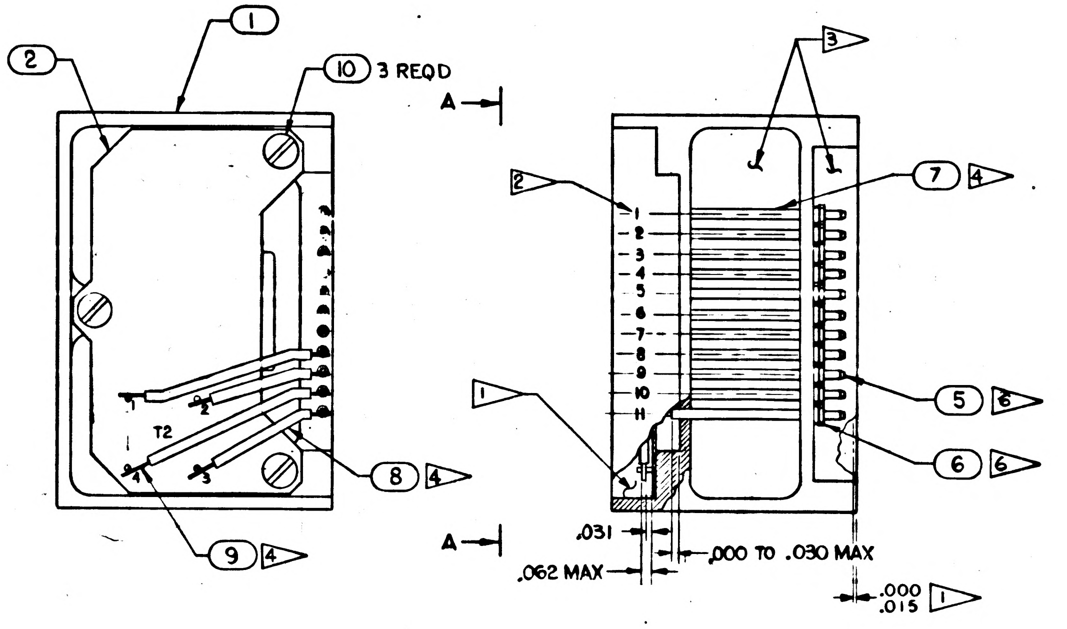
CODE IDENT NO. SIZE D NASA DRAWING NO. 1015138
SCALE 2X1 WT . SHEET 1 OF 1

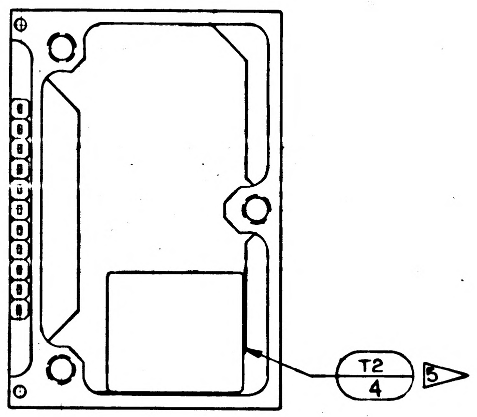
INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

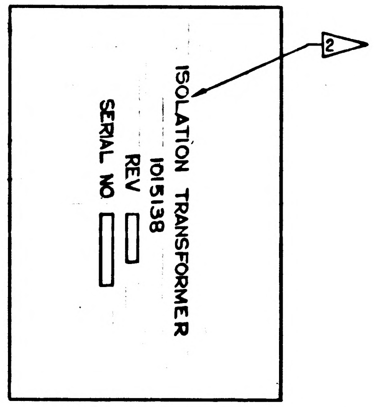
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

1015138 F

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE PER TDRR 01759	6-24-63	WK
C	REVISED PER TDRR 02877	6-26-63	ERK
D	REVISED PER TDRR ~~0445~~6	5 MAY 63	WK
E	REVISED PER TDRR 05466	22 NOV 63	WK
F	REVISED PER TDRR 07285	6 APR 64	







VIEW A-A

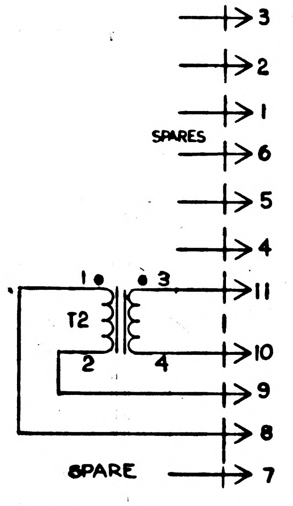
Ⓑ REPLACES REV. A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005 ON FIND NO 2. BROKEN PATHS INDICATE INSULATION SLEEVING

1. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING
2. MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE
3. AREAS TO BE FREE OF ENCAPSULATING COMPOUND
4. USE AS REQUIRED
5. TRANSFORMER TO BE CEMENTED IN PLACE PER ND1002004
6. ASSEMBLE PER ND1002136

PROCURE PER PS1015138.



SCHEMATIC

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	AN 500 D-4-4	SCREW	10
AR	1006757-1	WIRE NICKEL RIBBON .010 x .020	9
AR	1006776-21	SLEEVING, ELECT INSULATION	8
AR	1006776-20	SLEEVING, ELECT INSULATION	7
11	1006775	INSULATOR WRAP-POST MALE MIN	6
11	1006782-5	CONTACT BLADE EDGE CONN	5
1	1010605	TRANSFORMER	4
			3
1	1015167	WAFER BOARD	2
1	1015159	FRAME ASSY	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007159	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX±.005 XX±.020 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
CONTRACT NAS-9-4??
DRAWN LEWANDOWSKI DATE 6-21-63
CHECKED
APPROVAL R L Bettay
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ISOLATION TRANSFORMER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015138
SCALE 2X1
WT.
SHEET 1 OF 1

4 3 2 1

1015138

REVISIONS PAA 01375

SYM	DESCRIPTION	DATE	APPROVAL

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

PART NO	DESCRIPTION	REQD
1010605	TRANSFORMER, 25° OFFSET	1
1010474	TRANSFORMER, RESOLVER ZERO	1

D C B A

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007159	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 5-27-63
CHECKED R. L. Battafson
APPROVAL R. L. Battafson
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL WKupfer 29 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ISOLATION TRANSFORMER
MODULE ASSY

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1015138

SCALE
WT
SHEET OF

MASTER

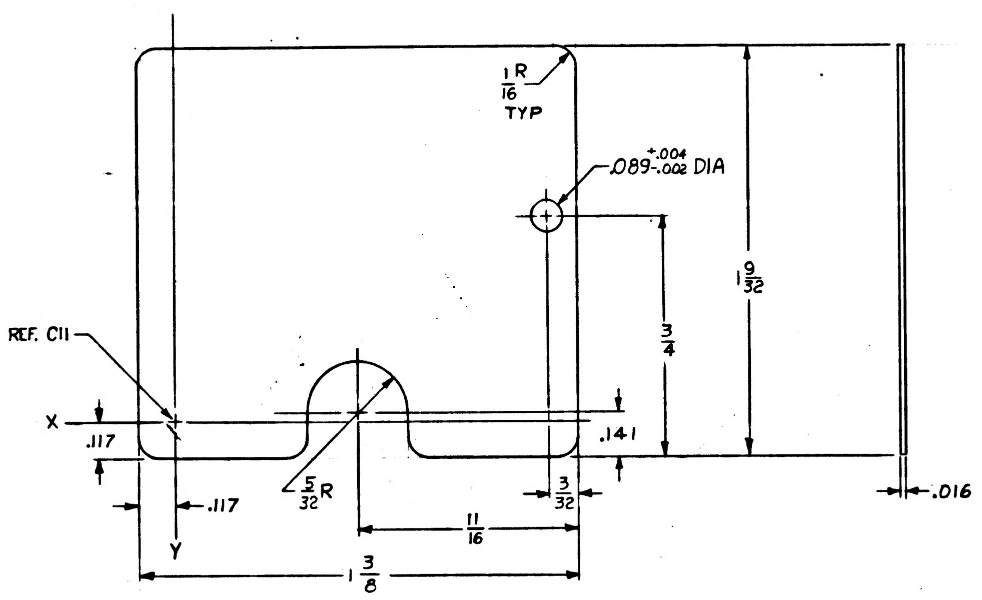
4 3 2 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

Ⓜ

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY REV B WITH CHANGE PER TDRR 01197	8 MAY 63	WK.



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00659 **DATE** 27 Mar 63

1015139 A

Ⓐ REPLACED BY REV B WITH CHANGE

OBSOLETE

NOTES
1. FOR TAPE MASTER SEE: 1015130
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARD PRESCRIBED BY MIL-D-70327.
3. MATERIAL SPECIFICATION: GLASS EPOXY MIL-P-18177 TYPE GEE.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
	LIST OF MATERIALS		

NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN F. AKELL DATE 3-26-63
CHECKED
APPROVAL R. L.
APPROVAL
NASA APPROVAL W. J. 3-27-63
MIT APPROVAL 27 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD LOWER
MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015139
SCALE 4 X
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

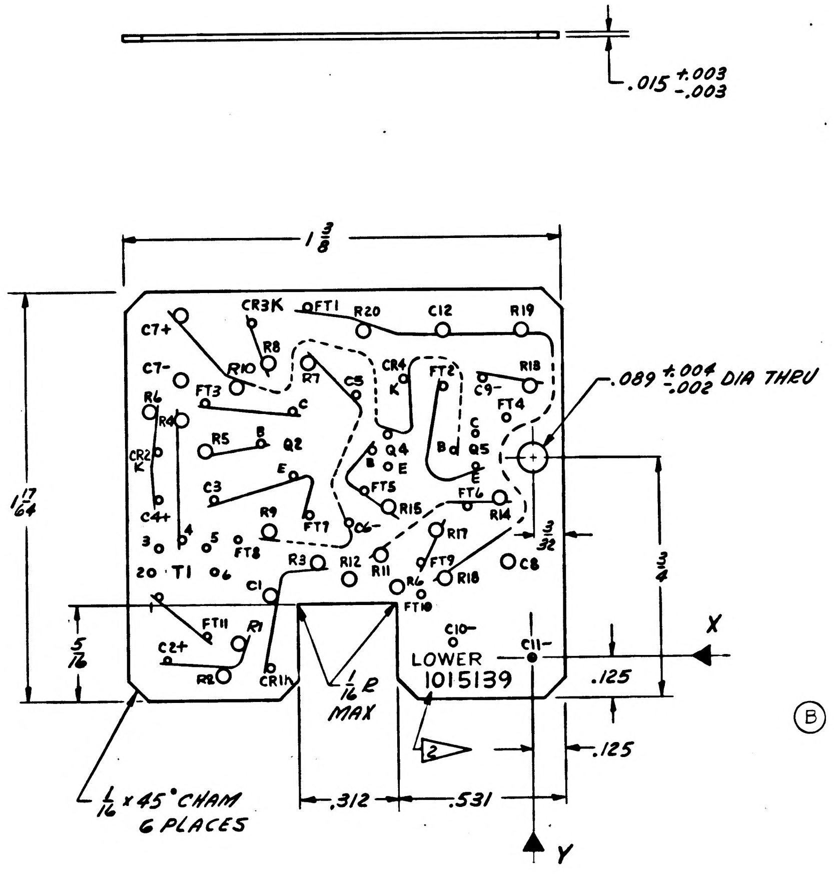
COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION
C1	.825	.200	.043 DIA THRU
C2+	1.150	.000	.024
C3	1.000	.500	
C4+	1.175	.500	
C5	.550	.825	
C6-	.575	.425	.024
C7+	1.100	1.075	.043
C7-	1.100	.875	.043
C8	.075	.300	.043
C9-	.150	.875	.024
C10	.250	.050	.043
C11	.000	.000	.024
C12	.275	1.025	.043
CR1K	.825	-.025	.024
CR2K	1.175	.650	
CR3K	.875	1.050	
CR4K	.400	.875	
FT1	.700	1.100	
FT2	.275	.850	
FT3	1.025	.800	
FT4	.075	.750	
FT5	.525	.525	
FT6	.200	.475	
FT7	.700	.450	
FT8	.925	.375	
FT9	.350	.300	
FT10	.350	.200	
FT11	1.025	.075	
Q2-B	.850	.675	
Q2-E	.750	.575	.024
Q2-C	.750	.775	.052
Q4-B	.500	.650	.024
Q4-C	.450	.700	
Q4-E	.450	.600	
Q5-B	.245	.650	
Q5-C	.175	.700	
Q5-E	.175	.600	.024
R1	.925	.050	.043
R2	.975	-.050	.043
R3	.675	.300	.043 DIA THRU

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION
R4	1.100	.750	.043 DIA THRU
R5	1.025	.650	
R6	1.200	.775	
R7	.700	.925	
R8	.825	.925	
R9	.825	.400	
R10	.925	.850	
R11	.475	.325	
R12	.575	.250	
R13	.000	.850	
R14	.100	.500	
R15	.450	.475	
R16	.425	.225	
R17	.300	.400	
R18	.275	.250	
R19	.025	1.025	
R20	.525	1.025	.043
T1-1	1.175	.200	.024
T1-2	1.200	.275	
T1-3	1.175	.350	
T1-4	1.100	.375	
T1-5	1.025	.350	
T1-6	1.000	.275	.024 DIA THRU

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
B		REPLACES REV A WITH CHANGE PER TDRR 0097		63	


.015 +.003 -.003
1 3/8
1 17/64
C7+
CR3K
FT1
R20
C12
R19
R8
R10
R7
C5
CR4
K
FT2
R18
C7-
FT3
C
C9-
FT4
R6
R4
R5
B
Q2
C
Q4
B
Q5
CR2
K
E
B
E
E
C3
FT5
FT6
R15
R14
C4+
R9
FT7
C6-
R17
3
4
5
FT8
R3
R12
R11
FT9
R18
C8
20
T1
6
C1
R6
FT10
1
FT11
R1
C10-
C2+
C11-
R2
CR1K
LOWER
1015139
.089 +.004 -.002 DIA THRU
3/32
3/4
5/16
1/16 R MAX
.125
.125
X
2
1/16 x 45° CHAM 6 PLACES
.312
.531
Y

Ⓑ REPLACES REV A WITH CHANGE

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
  CHARACTERS TO BE 1/32 HIGH SANS-SERIF GOTHIC,
  LOCATE APPROX AS SHOWN.

▷1 MATERIAL: GLASS EPOXY MIL-P-18177, TYPE GEE (ES-2744).

▷2 MARK 1015139 AND REVISION LETTER 3/64 PER MIL-STD-130(ES-267) LOCATE APPROX AS SHOWN.

NEXT ASSY	USED ON
1015121	1015121

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+2°
-1/64	-.005	-2°

DO NOT SCALE THIS DRAWING

MATERIAL ▷1

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LIERMANN DATE 15 APR 63
CHECKED E. Fleming 24 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/3/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER -
MOTOR DRIVE AMPLIFIER

CODE IDENT NO. | SIZE D | 1015139
SCALE 4:1 | SHEET

MIL 10770-F

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

B 1015139 2

COORDINATE DIMENSIONS

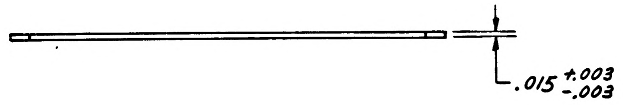
HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000	
C1	.825	.200	.043 DIA THRU	
C2+	1.150	.000	.024	
C3	1.000	.500		
				Ⓒ5
C5	.550	.825		
C6-	.575	.425	.024	
C7+	1.100	1.075	.043	
C7-	1.100	.875	.043	
C8	.075	.300	.043	
C9-	.150	.875	.024	
C10	.250	.050	.043	
C11	.000	.000	.024	
C12	.225	1.075	.043	Ⓒ1
CR1K	.825	-.025	.024	
CR2K	1.175	.650		
CR3K	.875	1.050		
CR4K	.400	.875		
FT1	.700	1.100		
FT2	.275	.850		
FT3	1.025	.800		
FT4	.075	.750		
FT5	.525	.525		
FT6	.200	.475		
FT7	.700	.450		
FT8	.925	.375		
FT9	.350	.300		
FT10	.350	.200		
FT11	1.025	.075		
Q2-B	.850	.675		
Q2-E	.750	.575	.024	
Q2-C	.750	.775	.052	
Q4-B	.500	.650	.024	
Q4-C	.450	.700		
Q4-E	.450	.600		
Q5-B	.245	.650		
Q5-C	.175	.700		
Q5-E	.175	.600	.024	
R1	.925	.050	.043	
R2	.975	-.050	.043	
R3	.675	.300	.043 DIA THRU	

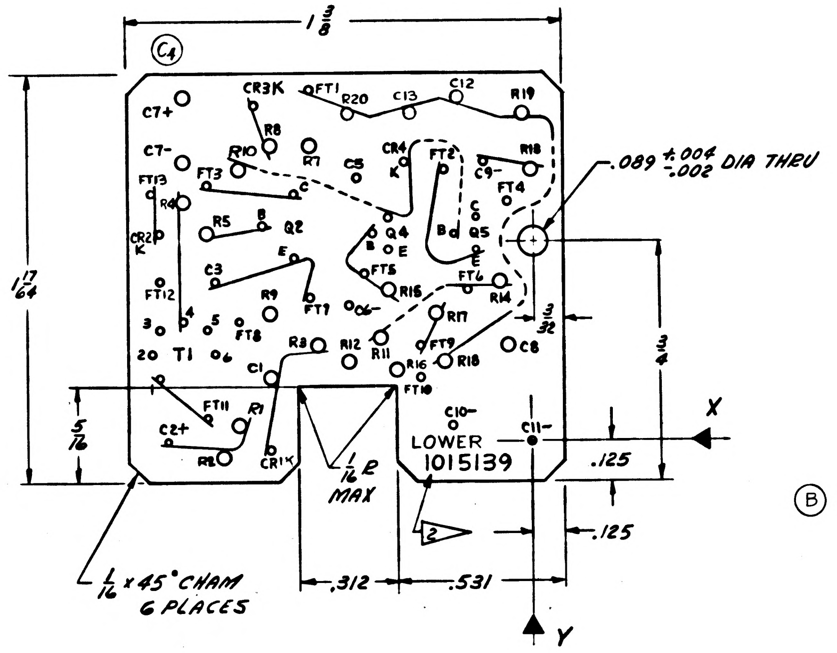
COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000	
R4	1.100	.750	.043 DIA THRU	
R5	1.025	.650		
R7	.700	.925		
R8	.825	.925		
R9	.825	.400		
R10	.925	.850		
R11	.475	.325		
R12	.575	.250		
R13	.000	.850		
R14	.100	.500		
R15	.450	.475		
R16	.425	.225		
R17	.300	.400		
R18	.275	.250		
R19	.025	1.025		
R20	.575	1.025	.043	Ⓒ2
T1-1	1.175	.200	.024	
T1-2	1.200	.275		
T1-3	1.175	.350		
T1-4	1.100	.375		
T1-5	1.025	.350		
T1-6	1.000	.275	.024	
C-13	.375	1.025	.043	Ⓒ3
FT12	1.175	.500	.024	
FT13	1.200	.775	.024 DIA. THRU	Ⓒ6

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ B		REPLACES REV A WITH CHANGE PER TDRR 0[illegible]07		MAY 63	JK
C6		(1) C12X WAS .275, Y WAS 1.025 (2) R20X WAS .525. (3) ADDED C-13 & FT12. (4) CHANGED RIBBON ROUTING TO C7+. (5) REMOVED C4 & R6. (6) ADDED FT13.			
		TDRR 01590			WK.





Ⓒ4
1 3/8
1 17/64
5/16
C7+
CR3K
FT1
R20
C13
C12
R19
R8
R10
R7
C5
CR4 K
FT2
R18
C7-
FT3
C9-
FT4
FT13
R4
C
R5
B
Q2
Q4
B
E
C
Q5
B
E
CR2 K
E
C3
FT5
R15
FT6
R14
FT12
R9
FT7
C6-
R17
3
4
5
FT8
R3
R12
R11
FT9
R18
C8
20
T1
6
C1
R16
FT10
1
FT11
R1
C2+
R2
CR1K
C10-
C11-
LOWER 1015139
.089 +.004 -.002 DIA THRU
3/32
3/4
X
Y
.125
.125
1/16 R MAX
2
.312
.531
1/16 x 45° CHAM 6 PLACES

Ⓑ REPLACES REV A WITH CHANGE

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/32 HIGH SANS-SERIF GOTHIC,
LOCATE APPROX AS SHOWN.

1▷ MATERIAL: GLASS EPOXY MIL-P-18177, TYPE GEE (ES-2744).

2▷ MARK 1015139 AND REVISION LETTER 3/64 PER MIL-STD-130 (ES-267) LOCATE APPROX AS SHOWN.

1015121	1015121
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+2°
-1/64	-.005	-2°

DO NOT SCALE THIS DRAWING

MATERIAL 1▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN LIERMANN DATE 15 APR 63
CHECKED E. Fleming 24 APR 63
APPROVAL 3 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL W. [illegible] 8 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER - MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015139
SCALE 4:1
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

COORDINATE DIMENSIONS

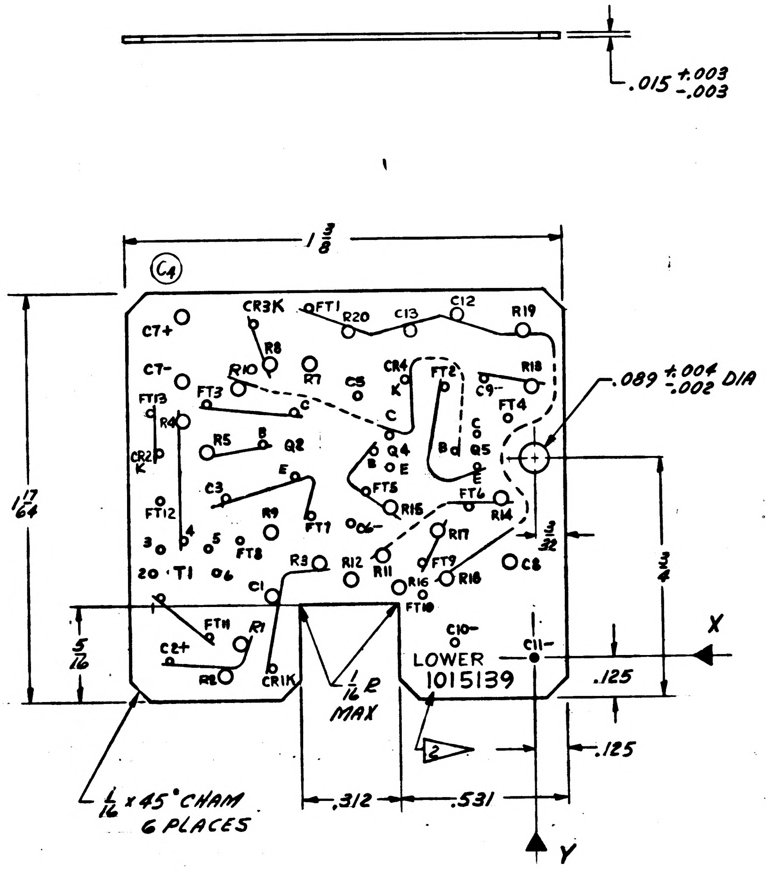
HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010-.000
C1	.825	.200	.043 DIA THRU
C2+	1.150	.000	.024
C3	.925	.500	
			Ⓒ5
C5	.550	.825	
C6-	.575	.425	.024
C7+	1.100	1.075	.043
C7-	1.100	.875	.043
C8	.075	.300	.043
C9-	.150	.875	.024
C10	.250	.050	.043
C11	.000	.000	.024
C12	.225	1.075	.043 Ⓒ1
CR1K	.825	-.025	.024
CR2K	1.175	.650	
CR3K	.875	1.050	
CR4K	.400	.875	
FT1	.700	1.100	
FT2	.275	.850	
FT3	1.025	.800	
FT4	.075	.750	
FT5	.525	.525	
FT6	.200	.475	
FT7	.700	.450	
FT8	.925	.375	
FT9	.350	.300	
FT10	.350	.200	
FT11	1.025	.075	
Q2-B	.850	.675	
Q2-E	.750	.575	.024
Q2-C	.750	.775	.052
Q4-B	.500	.650	.024
Q4-C	.450	.700	
Q4-E	.450	.600	
Q5-B	.245	.650	
Q5-C	.175	.700	
Q5-E	.175	.600	.024
R1	.925	.050	.043
R2	.975	-.050	.043
R3	.675	.300	.043 DIA THRU

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010-.000
R4	1.100	.750	.043 DIA THRU
R5	1.025	.650	
R7	.700	.925	
R8	.825	.925	
R9	.825	.400	
R10	.925	.850	
R11	.475	.325	
R12	.575	.250	
R13	.000	.850	
R14	.100	.500	
R15	.450	.475	
R16	.425	.225	
R17	.300	.400	
R18	.275	.250	
R19	.025	1.025	
R20	.575	1.025	.043 Ⓒ2
T1-1	1.175	.200	.024
T1-2	1.200	.275	
T1-3	1.175	.350	
T1-4	1.100	.375	
T1-5	1.025	.350	
T1-6	1.000	.275	.024
C-13	.375	1.025	.043 Ⓒ3
FT12	1.175	.500	.024
FT13	1.200	.775	.024 DIA. THRU Ⓒ6

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ B		REPLACES REV A WITH CHANGE PER TDRR 01197		5 MAY 63	WK
C6		(1) C12X WAS .275, Y WAS 1.025 (2) R20X WAS .525. (3) ADDED C-13 & FT12. (4) CHANGED RIBBON ROUTING TO C7+. (5) REMOVED C4 & R6. (6) ADDED FT13.			
		TDRR 01590			WK.
D		REVISED PER TDRR 02502		5-21-63	JJM


.015 +.003 -.003
1 3/8
Ⓒ4
C7+
CR3K
FT1
R20
C13
C12
R19
C7-
R8
R10
R7
C5
CR4
K
FT2
R18
C9-
FT13
FT3
C
FT4
R4
C
R5
B
Q2
C
Q4
B
Q5
CR2
K
B
E
E
C3
E
FT5
FT6
R15
R14
FT12
R9
FT7
6
R17
3
4
5
FT8
3/32
3/4
20
T1
6
R3
R12
R11
FT9
R16
R18
C8
C1
FT10
1
FT11
R1
C10-
C2+
C11-
R2
CR1K
LOWER
1015139
1 17/64
5/16
1/16 R MAX
.089 +.004 -.002 DIA THRU
X
.125
2
.125
1/16 x 45° CHAM 6 PLACES
.312
.531
Y

Ⓑ REPLACES REV A WITH CHANGE

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/16 HIGH SANS-SERIF GOTHIC,
LOCATE APPROX AS SHOWN.

▷1 MATERIAL: GLASS EPOXY MIL-P-18177, TYPE GEE (ES-2744).

▷2 MARK 1015139 AND REVISION LETTER 3/16 PER MIL-STD-130(ES-267) LOCATE APPROX AS SHOWN.

1015121	1015121
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+2°
-1/64	-.005	-2°

DO NOT SCALE THIS DRAWING
MATERIAL ▷1
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LIERMANN DATE 15 APR 63
CHECKED E. Fleming 24 APR 63
APPROVAL M. B... 30 APR 63
APPROVAL ... 30 APR 63
NASA APPROVAL ... 5/8/63
MIT APPROVAL ... 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER -
MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015139
SCALE 4:1
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

E 1015139

FOR REF ONLY

COORDINATE DIMENSIONS			
HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
C1	.825	.200	.043 DIA THRU
C2+	1.150	.000	.024
C3	.925	.500	
C5	.550	.825	
C6-	.575	.425	.024
C7+	1.100	1.075	.043
C7-	1.100	.875	.043
C8	.075	.300	.043
C9-	.150	.875	.024
C10	.250	.050	.043
C11	.000	.000	.024
C12	.225	1.075	.043
CR1K	.825	-.025	.024
CR2K	1.175	.650	
CR3K	.875	1.050	
CR4K	.400	.875	
FT1	.700	1.100	
FT2	.275	.850	
FT3	1.025	.800	
FT4	075	.750	
FT5	.525	.525	
FT6	.200	.475	
FT7	.700	.450	
FT8	.925	.375	
FT9	.350	.300	
FT10	.350	.200	
FT11	1.025	.075	
Q2-B	.850	.675	
Q2-E	.750	.575	.024
Q2-C	.750	.775	.052
Q4-B	.500	.650	.024
Q4-C	.450	.700	
Q4-E	.450	.600	
Q5-B	.245	.650	
Q5-C	.175	.700	
Q5-E	.175	.600	.024
R1	.925	.050	.043
R2	.975	-.050	.043
R3	.675	.300	.043 DIA THRU

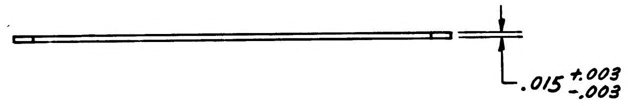
Ⓒ5 Ⓒ1

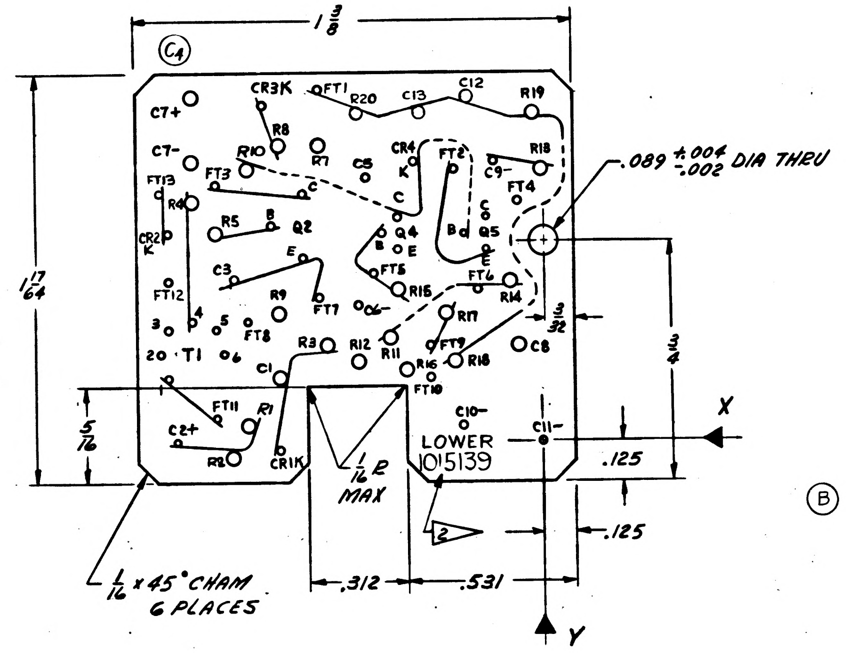
FOR REF ONLY

COORDINATE DIMENSIONS			
HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
R4	1.100	.750	.043 DIA THRU
R5	1.025	.650	
R7	.700	.925	
R8	.825	.925	
R9	.825	.400	
R10	.925	.850	
R11	.475	.325	
R12	.575	.250	
R13	.000	.850	
R14	.100	.500	
R15	.450	.475	
R16	.425	.225	
R17	.300	.400	
R18	.275	.250	
R19	.025	1.025	
R20	.575	1.025	.043
T1-1	1.175	.200	.024
T1-2	1.200	.275	
T1-3	1.175	.350	
T1-4	1.100	.375	
T1-5	1.025	.350	
T1-6	1.000	.275	.024
C-13	.375	1.025	.043
FT12	1.175	.500	.024
FT13	1.200	.775	.024 DIA. THRU

Ⓒ2 Ⓒ3 Ⓒ6

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ B		REPLACES REV A WITH CHANGE PER TDRR 01197		MAY 63	WK
C6		(1) C12X WAS .275, Y WAS 1.025 (2) R20X WAS .525. (3) ADDED C-13 & FT12. (4) CHANGED RIBBON ROUTING TO C7+. (5) REMOVED C4 & R6. (6) ADDED FT13. TDRR 01590			WK.
D		REVISED PER TDRR 02502		8-21-63	JJ
E		REVISED PER TDRR 03024		9-5-63	WK




1 3/8
Ⓒ4
1 17/64
5/16
C7+
CR3K
FT1
R20
C13
C12
R19
R8
C7-
R10
R7
C5
CR4 K
FT2
C9-
R18
FT13
FT3
C
FT4
R4
C
R5
B
Q2
B
Q4
B
Q5
CR2 K
E
C3
E
FT5
E
FT12
R9
FT7
R15
FT6
R14
3
4
5
FT8
C6-
R17
20
T1
6
R3
R12
R11
FT9
R16
R18
C8
C1
FT10
FT11
R1
C10-
C2+
LOWER 1015139
C11-
R2
CR1K
1/16 R MAX
2
.089 +.004 -.002 DIA THRU
3/32
3/4
X
.125
.125
.312
.531
Y
1/16 x 45° CHAM 6 PLACES

Ⓑ REPLACES REV A WITH CHANGE

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/16 HIGH SANS-SERIF GOTHIC,
LOCATE APPROX AS SHOWN.

1▷ MATERIAL: GLASS EPOXY MIL-P-18177, TYPE GEE (ES-2744).

2▷ MARK 1015139 AND REVISION LETTER 3/16 PER MIL-STD-130 (ES-267) LOCATE APPROX AS SHOWN.

SEE 1015139 SHEET 2 FOR PHOTOGRAPHIC MASTER

1015121	1015121
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+2°
-1/64	-.005	-2°

DO NOT SCALE THIS DRAWING

MATERIAL 1▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN LIERMANN DATE 15 APR 63
CHECKED E. Fleming 24 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL W. Kupfer 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER -
MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015139

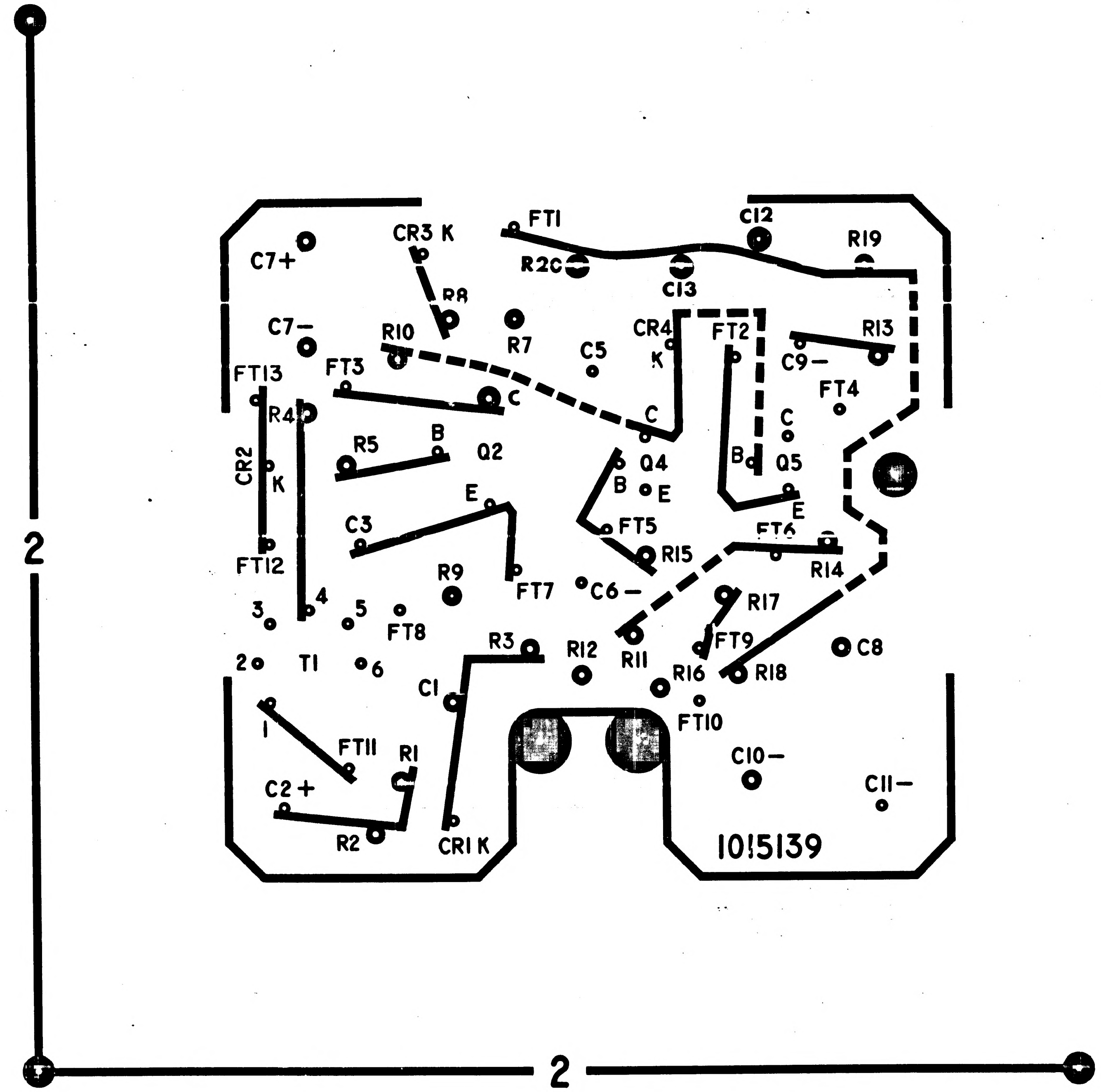
SCALE 4:1
SHEET 1 OF 2

MIL 10770-P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

E 1015139 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		THIS SHEET ADDED C3024		9-5-63	epr WK



2
2
C7+
CR3 K
FT1
C12
R19
R20
C13
R8
C7−
R10
R7
C5
CR4
K
FT2
R13
C9−
FT13
FT3
C
FT4
R4
C
R5
B
Q2
C
CR2
K
B
Q4
E
B
Q5
E
C3
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FT5
R15
FT6
R14
FT12
R9
FT7
C6−
R17
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FT8
R3
R12
R11
FT9
C8
2
T1
6
C1
R16
R18
FT10
1
FT11
R1
C10−
C11−
C2+
R2
CR1 K
1015139

REV E THIS SHEET ADDED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN DATE 26 APR 63
CHECKED E. Fleming 29 APR 63
APPROVAL J. M. Blyskal 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL W. S. 9/5/63
MIT APPROVAL 5 Sep 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

WAFER, LOWER -
MOTOR DRIVE AMPLIFIER

CODE IDENT NO
SIZE D
1015139
SCALE 8:1
SHEET 2 OF 2

INCHES
0 2
PHOTOGRAPHIC SCALE ONLY

1015139 E

FOR REF ONLY

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010-.000
C1	.795	.250	.043 DIA THRU
C2+	1.150	.000	.024
C3	1.065	.545	
C5	.550	.825	
C6-	.575	.425	.024
C7+	1.100	1.075	.043
C7-	1.100	.875	.043
C8	.075	.300	.043
C9-	.150	.875	.024
C10	.250	.050	.043
C11	.000	.000	.024
C12	.275	1.075	.043
CR1K	.825	-.025	.024
CR2K	1.220	.710	
CR3K	.875	1.050	
CR4K	.400	.875	
FT1	.700	1.100	
FT2	.275	.850	
FT3	1.040	.795	
FT4	.075	.750	
FT5	.525	.525	
FT6	.200	.475	
FT7	.685	.460	
FT8	.925	.375	
FT9	.350	.300	
FT10	.350	.200	
FT11	1.025	.025	
Q2-B	.850	.675	
Q2-E	.750	.575	.024
Q2-C	.750	.775	.052
Q4-B	.500	.650	.024
Q4-C	.450	.700	
Q4-E	.450	.600	
Q5-B	.245	.650	
Q5-C	.175	.700	
Q5-E	.175	.600	.024
R1	.925	.050	.043
R2	.975	-.050	.043
R3	.770	.435	.043 DIA THRU

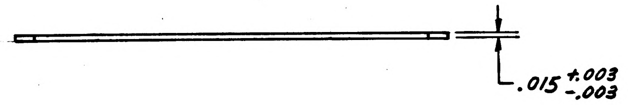
FOR REF ONLY

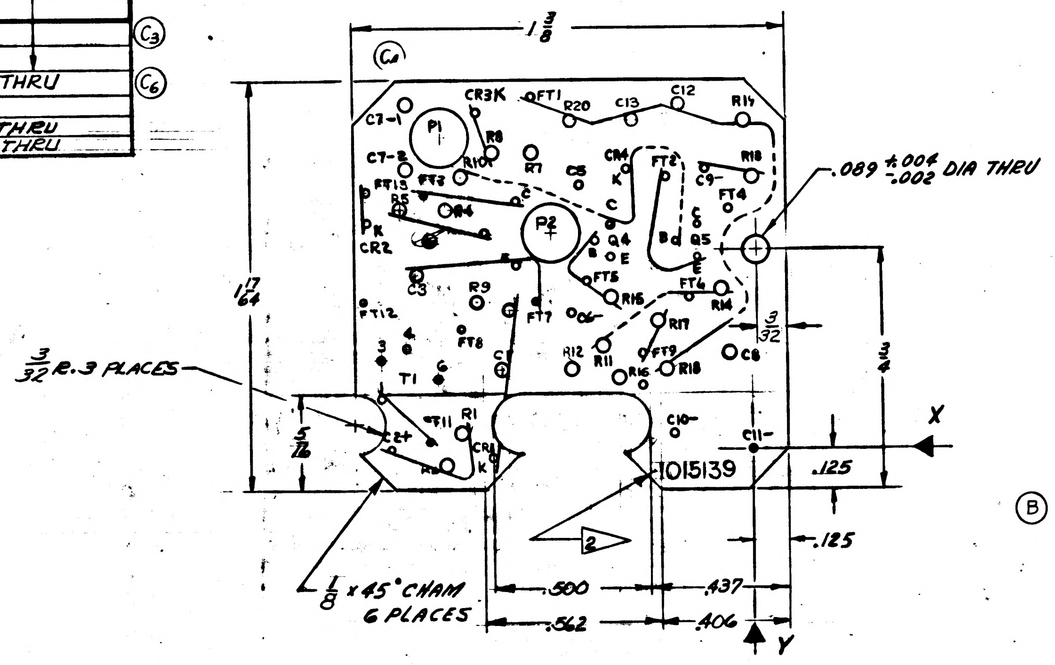
COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010-.000
R4	.975	.750	.043 DIA THRU
R5	1.115	.750	
R7	.700	.925	
R8	.825	.925	
R9	.875	.460	
R10	.925	.850	
R11	.475	.325	
R12	.575	.250	
R13	.000	.850	
R14	.100	.500	
R15	.450	.475	
R16	.425	.225	
R17	.300	.400	
R18	.275	.250	
R19	.025	1.025	
R20	.575	1.025	.043
T1-1	1.180	.160	.024
T1-3	1.180	.280	
T1-4	1.100	.320	
T1-6	1.000	.220	.024
C-13	.375	1.025	.043
FT12	1.235	.460	.024
FT13	1.225	.710	.024 DIA. THRU
P1	.990	.375	.187 DIA THRU
P2	.635	.675	.187 DIA THRU

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDRR 01197		8 MAY 63	WK
C6		(1) C12X WAS .275, Y WAS 1.025 (2) R20X WAS .525. (3) ADDED C-13 & FT12. (4) CHANGED RIBBON ROUTING TO C7+. (5) REMOVED C4 & R6. (6) ADDED FT13. TDRR 01590			WK.
D		REVISED PER TDRR 02502		8-21-63	JJm
E		REVISED PER TDRR 03024		9-5-63	EPR W.
F		REVISED PER TDRR 06894			EPK WK




1 3/8
C7-1
C7-2
CR3K
FT1
R20
C13
C12
R14
P1
R8
R10
R7
C5
CR4
K
FT2
C9-
R18
FT4
FT13
FT3
R5
Q4
C
PK
CR2
P2
Q4
B
E
Q5
C3
R9
FT5
R16
FT6
R14
FT12
FT7
FT8
R17
3
4
6
T1
C1
R12
R11
FT9
R16
R18
C8
FT11
R1
C2+
CR1
K
C10-
C11-
1015139
2
.089 +.004 -.002 DIA THRU
1 17/64
3/32 R. 3 PLACES
5/16
3/4
3/32
X
Y
.125
.125
1/8 x 45° CHAM 6 PLACES
.500
.437
.562
.406

Ⓑ REPLACES REV A WITH CHANGE

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/16 HIGH SANS-SERIF GOTHIC,
LOCATE APPROX AS SHOWN.

1 MATERIAL: GLASS EPOXY MIL-P-18177, TYPE GEE (ES-2744).

2 MARK 1015139 AND REVISION LETTER 3/16 PER MIL-STD-130 (ES-267) LOCATE APPROX AS SHOWN.
SEE 1015139 SHEET 2 FOR PHOTOGRAPHIC MASTER

NEXT ASSY	USED ON
1015121	1015121
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+2°
-1/64	-.005	-2°

DO NOT SCALE THIS DRAWING

MATERIAL 1

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Liermann DATE 15 APR 63
CHECKED E. J. 24 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER -
MOTOR DRIVE AMPLIFIER

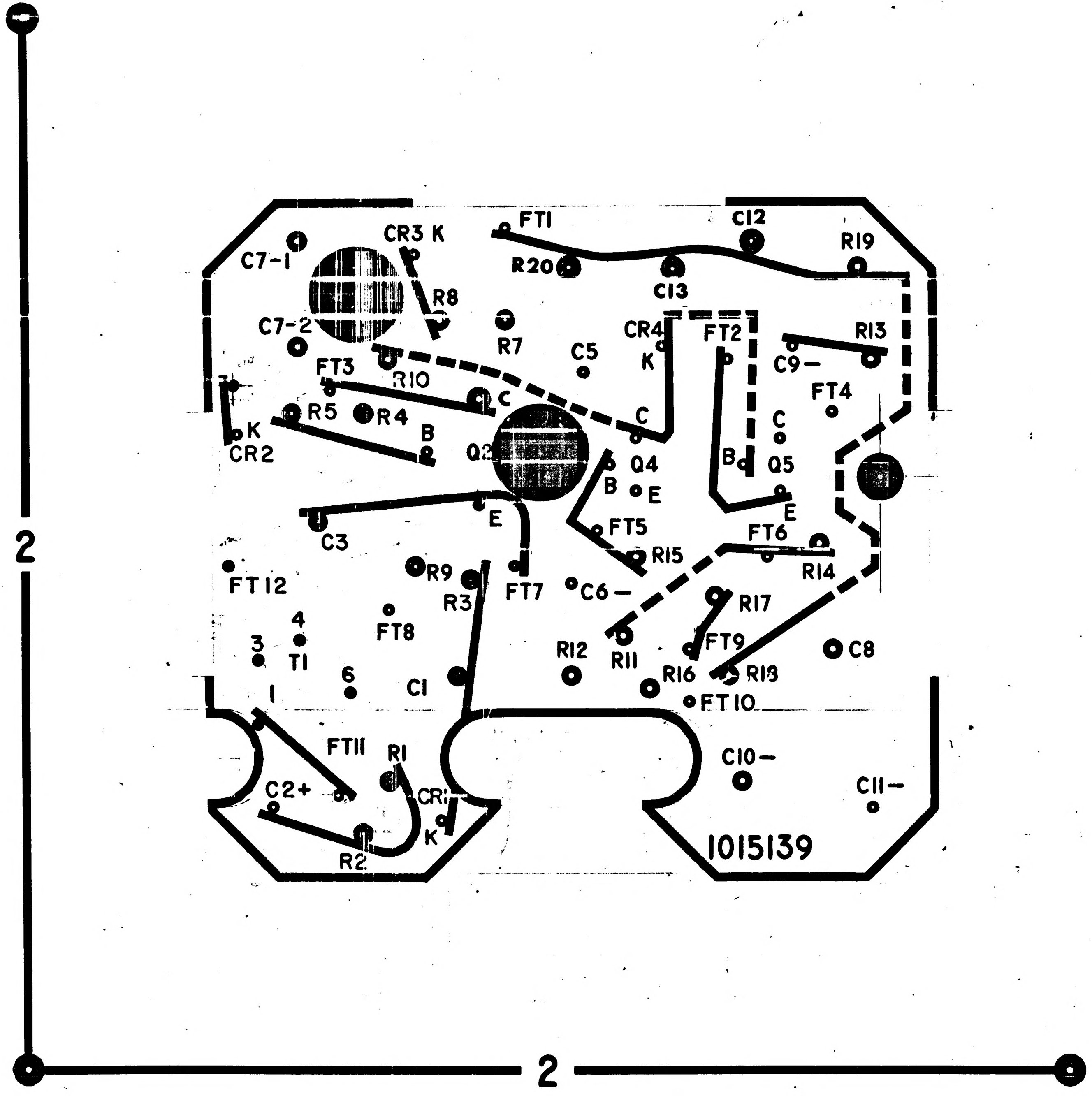
CODE IDENT NO.
SIZE D
1015139
SCALE 4:1
SHEET 1 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

MIL 1077D-P

1015139 F

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		THIS SHEET ADDED 03024		9-5-63	
F		REVISED PER TDRR 06894			


FT1
C12
R19
C7-1
CR3 K
R20
C13
R8
C7-2
R7
CR4
K
FT2
R13
C5
C9-
FT3
R10
C
FT4
R5
R4
C
K
CR2
B
Q2
C
B
Q4
B
Q5
E
E
C3
E
FT5
FT6
R15
R14
FT12
R9
R3
FT7
C6-
R17
4
FT8
3
T1
R12
R11
FT9
C8
6
C1
R16
R18
FT10
1
FT11
R1
C10-
C2+
CR1
C11-
R2
K
1015139
2
2

REV E THIS SHEET ADDED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION. GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN 26 APR 63 DATE
CHECKED E. Fleming 29 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 9/5/63
MIT APPROVAL 9/5/63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

WAFER, LOWER -
MOTOR DRIVE AMPLIFIER

CODE IDENT NO
SIZE D
1015139
SCALE 8:1
SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015139 F

FOR REF ONLY

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL +.010 -.000
C1	.795	.250	.043 DIA THRU
C2+	1.150	.000	.024
C3	1.065	.545	.043
C5	.550	.825	.024
C6-	.575	.425	.024
C7-1	1.100	1.075	.043
C7-2	1.100	.875	.043
C8	.075	.300	.043
C9-	.150	.875	.024
C10	.250	.050	.043
C11	.000	.000	.024
C12	.225	1.075	.043
CR1K	.825	-.025	.024
CR2K	1.220	.710	
CR3K	.875	1.050	
CR4K	.400	.875	
FT1	.700	1.100	
FT2	.275	.850	
FT3	1.040	.795	
FT4	.075	.750	
FT5	.525	.525	
FT6	.200	.475	
FT7	.685	.460	
FT8	.925	.375	
FT9	.350	.300	
FT10	.350	.200	
FT11	1.025	.025	
Q2-B	.850	.675	
Q2-E	.750	.575	.024
Q2-C	.750	.775	.052
Q4-B	.500	.650	.024
Q4-C	.450	.700	
Q4-E	.450	.600	
Q5-B	.225	.650	
Q5-C	.175	.700	
Q5-E	.175	.600	.024
R1	.925	.050	.043
R2	.975	-.050	.043
R3	.770	.435	.043 DIA THRU

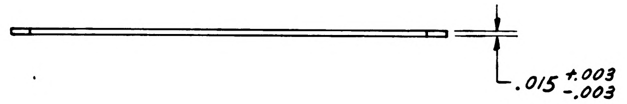
FOR REF ONLY

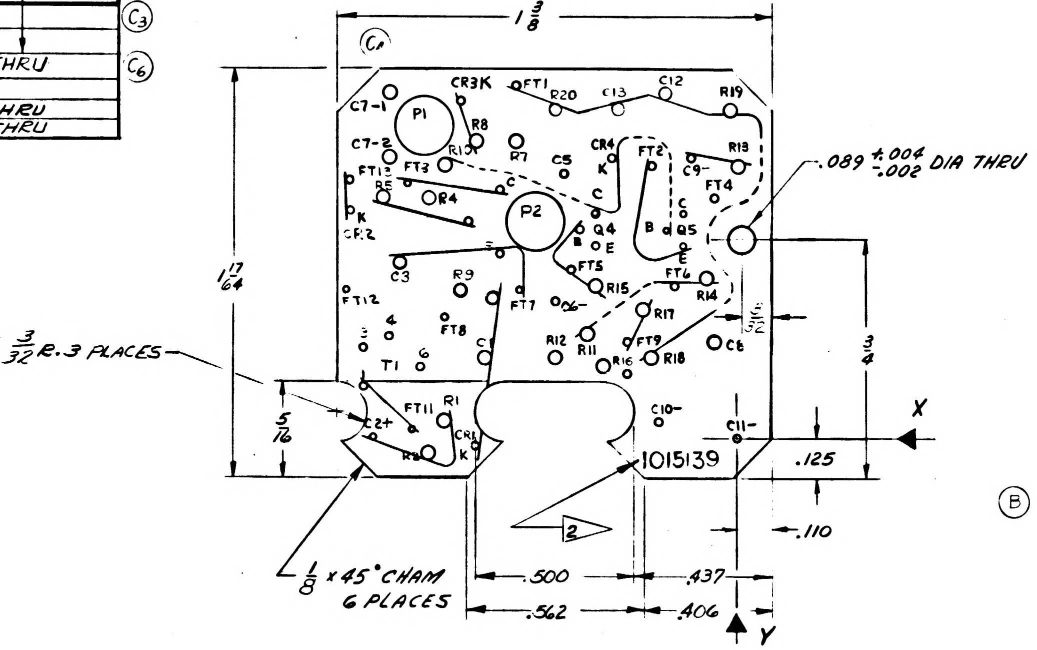
COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
R4	.975	.750	.043 DIA THRU
R5	1.115	.750	
R7	.700	.925	
R8	.825	.925	
R9	.875	.460	
R10	.925	.850	
R11	.475	.325	
R12	.575	.250	
R13	.000	.850	
R14	.100	.500	
R15	.450	.475	
R16	.425	.225	
R17	.300	.400	
R18	.275	.250	
R19	.025	1.025	
R20	.575	1.025	.043
T1-1	1.180	.160	.024
T1-3	1.180	.280	
T1-4	1.100	.320	
T1-6	1.000	.220	.024
C-13	.375	1.025	.043
FT12	1.235	.460	.024
FT13	1.225	.800	.024 DIA. THRU
P1	.990	.975	.187 DIA THRU
P2	.635	.675	.187 DIA THRU

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDRR [illegible]		[illegible] 63	WR
C		(1) C1 X WAS .275, Y WAS 1.025 (2) R20 X WAS .525 (3) ADDED C13 & FT12. (4) CHANGED RIBBON ROUTING TO C7+ (5) REMOVED C4 & R6. (6) ADDED FT13. TDRR 01590			WR.
D		REVISED PER TDRR [illegible]		[illegible] 63	[illegible]
E		REVISED PER TDRR [illegible]		9-5-63	WR
F		REVISED PER TDRR C6E94			WR
G		REVISED PER TDRR 07003		14 APR 64	MTY




1 3/8
1 17/64
3/32 R.3 PLACES
5/16
1/8 x 45° CHAM 6 PLACES
.089 +.004 -.002 DIA THRU
3/4
3/32
.125
.110
.500
.437
.562
.406
X
Y
1015139
2
C7-1
P1
CR3K
FT1
R20
C13
C12
R19
C7-2
R10
R8
R7
C5
CR4
K
FT2
C9-
R13
FT13
FT3
R5
R4
C
FT4
K
CR2
P2
Q4
B
E
Q5
C3
R9
FT5
R15
FT6
R14
FT12
FT7
C6-
R17
4
3
FT8
R12
R11
FT9
R18
C8
T1
6
R16
FT11
R1
C2+
CR1
K
R2
C10-
C11-

Ⓑ REPLACES REV A WITH CHANGE

G	G
SHEET 1	SHEET 2

REVISION STATUS OF SHEETS

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/16 HIGH SANS-SERIF GOTHIC,
LOCATE APPROX AS SHOWN.

1 MATERIAL: GLASS EPOXY MIL-P-18177, TYPE GEE (ES-2744).

2 MARK 1015139 AND REVISION LETTER 3/16 PER MIL-STD-130(ES-267) LOCATE APPROX AS SHOWN.

SEE 1015139 SHEET 2 FOR PHOTOGRAPHIC MASTER

NEXT ASSY	USED ON
1015121	1015121

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+2°
-1/64	-.005	-2°

DO NOT SCALE THIS DRAWING

MATERIAL 1

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

DRAWN LIERMANN DATE 15 APR 63
CHECKED E. Fleming 24 APR 63
APPROVAL R. L. [illegible] 3 APR 63
APPROVAL [illegible] 30 APR 63
NASA APPROVAL [illegible] 5/8/63
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER -
MOTOR DRIVE AMPLIFIER

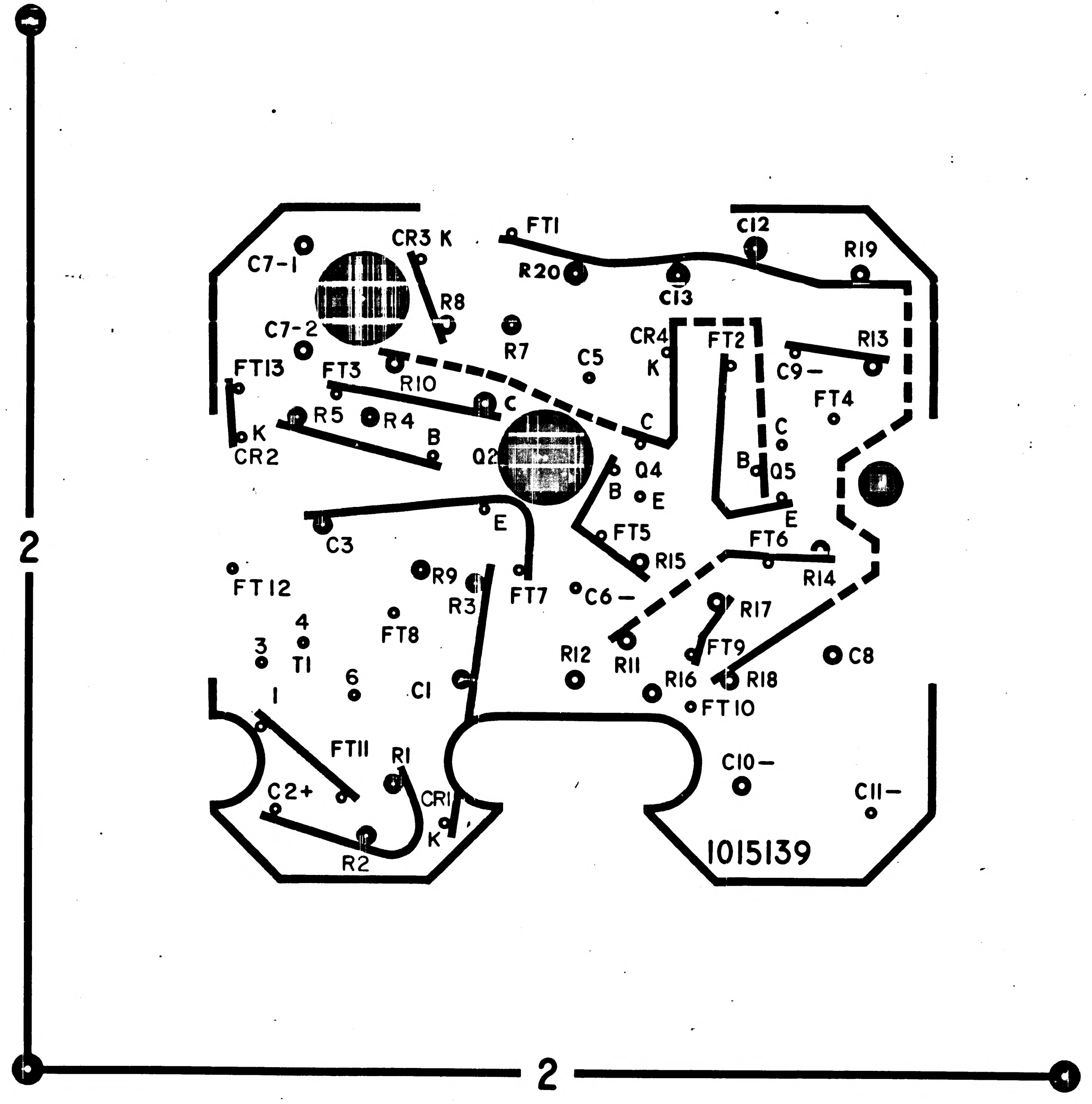
CODE IDENT NO
SIZE D
1015139
SCALE 4:1
SHEET 1 OF 2

MIL 10770 F

G	1015139	2		

REVISIONS

	DESCRIPTION	CHG NO	DATE	APPD
E	THIS SHEET ADDED 03024		9-5-63	RPC WK
F	REVISED PER TDRR 06894			RPK WK
G	REVISED PER TDRR 07003		14 APR 64	



C7-1
CR3 K
FT1
C12
R19
R20
C13
R8
C7-2
R7
CR4
K
FT2
R13
C5
C9 –
FT13
FT3
R10
C
FT4
R5
R4
B
C
K
CR2
Q2
C
B
Q4
Q5
B
E
E
C3
E
FT5
FT6
R15
R14
FT12
R9
R3
FT7
C6 –
R17
4
FT8
3
T1
R12
R11
FT9
C8
6
R16
R18
1
C1
FT10
FT11
R1
C10 –
C2+
CR1
C11 –
K
R2
1015139
2
2

REV E THIS SHEET ADDED

NEXT ASSY	USED ON
APPLICATION	

26 APR 63
29 APR 63
30 APR 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER -
MOTOR DRIVE AMPLIFIER

D 1015139

8:1

SHEET 2 OF 2

1015139 G

FOR REF ONLY

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL +.010-.000
C1	.795	.250	.043 DIA THRU
C2+	1.150	.000	.024
C3	1.065	.545	.043
			(C5)
C5	.550	.825	.024
C6-	.575	.425	.024
C7-1	1.100	1.075	.043
C7-2	1.100	.875	.043
C8	.075	.300	.043
C9-	.150	.875	.024
C10	.250	.050	.043
C11	.000	.000	.024
C12	.225	1.075	.043 (C1)
CR1K	.825	-.025	.024
CR2K	1.220	.710	
CR3K	.875	1.050	
CR4K	.400	.875	
FT1	.700	1.100	
FT2	.275	.850	
FT3	1.040	.795	
FT4	.075	.750	
FT5	.525	.525	
FT6	.200	.475	
FT7	.685	.460	
FT8	.925	.375	
FT9	.350	.300	
FT10	.350	.200	
FT11	1.025	.025	
Q2-B	.850	.675	
Q2-E	.750	.575	.024
Q2-C	.750	.775	.052
Q4-B	.500	.650	.024
Q4-C	.450	.700	
Q4-E	.450	.600	
Q5-B	.225	.650	
Q5-C	.175	.700	
Q5-E	.175	.600	.024
R1	.925	.050	.043
R2	.975	-.050	.043
R3	.770	.435	.043 DIA THRU

FOR REF ONLY

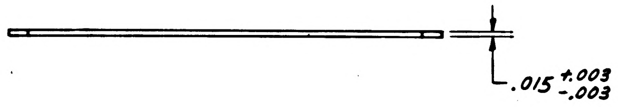
COORDINATE DIMENSIONS

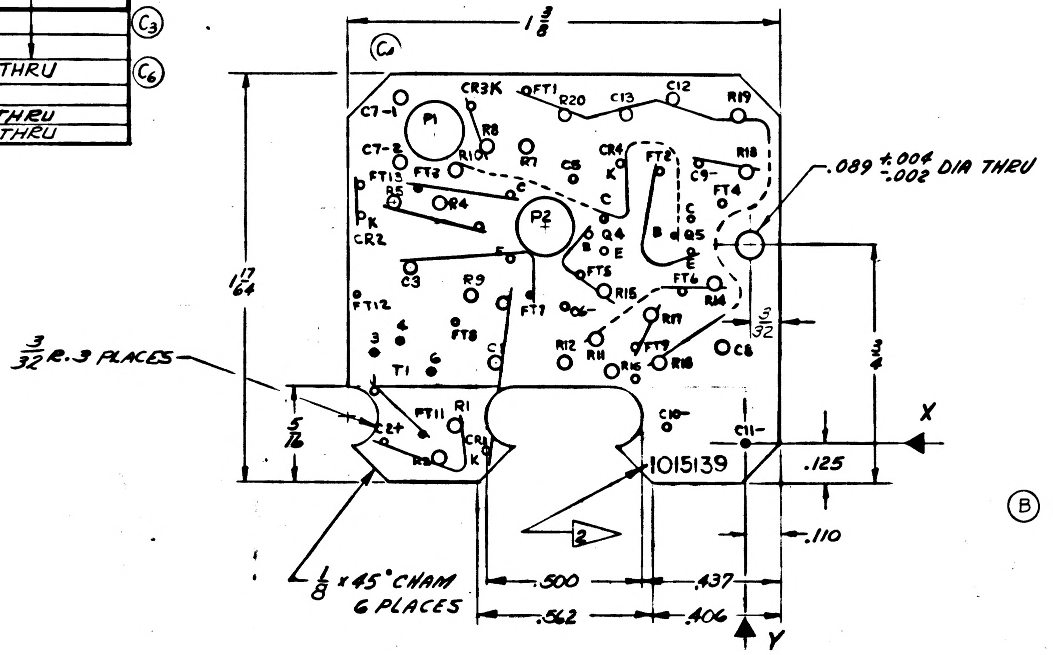
HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010-.000
R4	.975	.750	.043 DIA THRU
R5	1.115	.750	
R7	.700	.925	
R8	.825	.925	
R9	.875	.460	
R10	.925	.850	
R11	.475	.325	
R12	.575	.250	
R13	.000	.850	
R14	.100	.500	
R15	.450	.475	
R16	.425	.225	
R17	.300	.400	
R18	.275	.250	
R19	.025	1.025	
R20	.575	1.025	.043 (C2)
T1-1	1.180	.160	.024
T1-3	1.180	.280	
T1-4	1.100	.320	
T1-6	1.000	.220	.024
C-13	.375	1.025	.043 (C3)
FT12	1.235	.460	.024
FT13	1.225	.800	.024 DIA. THRU (C6)
P1	.990	.975	.187 DIA THRU
P2	.635	.675	.187 DIA THRU

H | 1015139 | 2

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B		REPLACES REV A WITH CHANGE PER TDRR 01197		7 MAY 63	WK
C6		(1) C12X WAS .275, Y WAS 1.025 (2) R20X WAS .525 (3) ADDED C-13 & FT12. (4) CHANGED RIBBON ROUTING TO C7+. (5) REMOVED C4 & R6. (6) ADDED FT13.			
		TDRR 01590			WK.
D		REVISED PER TDRR 02562		8-21-63	JJm
E		REVISED PER TDRR 03024		9-5-63	EPK WK
F		REVISED PER TDRR 06894			EPK WK
G		REVISED PER TDRR 07005		14 APR 64	MTY
H		REVISED PER TDRR 07302		22 APR 64	MTY




1 3/8
C6
CR3K
FT1
R20
C13
C12
R19
C7-1
P1
R8
C7-2
R10
R7
C5
CR4
K
FT2
R18
C9-
FT13
FT3
R5
R4
C
FT4
K
CR2
P2
C
Q4
B
E
Q5
E
FT5
FT6
C3
R9
R15
R14
FT12
FT7
C6-
R17
3/32
3
4
FT8
C1
R12
R11
FT9
C8
T1
6
R16
R13
3/32 R. 3 PLACES
FT11
R1
5/16
C2+
CR1
K
R3
C10-
C11-
X
1 17/64
3/4
.089 +.004 -.002 DIA THRU
1015139
.125
.110
2
1/8 x 45° CHAM 6 PLACES
.500
.437
.562
.406
Y

(B) REPLACES REV A WITH CHANGE

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

INTERPRET DRAWING IN ACCORDANCE WITH
STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/16 HIGH SANS-SERIF GOTHIC,
LOCATE APPROX AS SHOWN.

1 MATERIAL: GLASS EPOXY MIL-P-18177, TYPE GEE (ES-2744).

2 MARK 1015139 AND REVISION LETTER 3/16 PER MIL-STD-130(ES-267)
LOCATE APPROX AS SHOWN.

SEE 1015139 SHEET 2 FOR PHOTOGRAPHIC MASTER

H	H
SHEET 1	SHEET 2
REVISION STATUS OF SHEETS	

NEXT ASSY	USED ON
1015121	1015121
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+2°
- 1/64	-.005	-2°

DO NOT SCALE THIS DRAWING

MATERIAL 1

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LIERMANN DATE 15 APR 63
CHECKED E. Fleming 24 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER -
MOTOR DRIVE AMPLIFIER

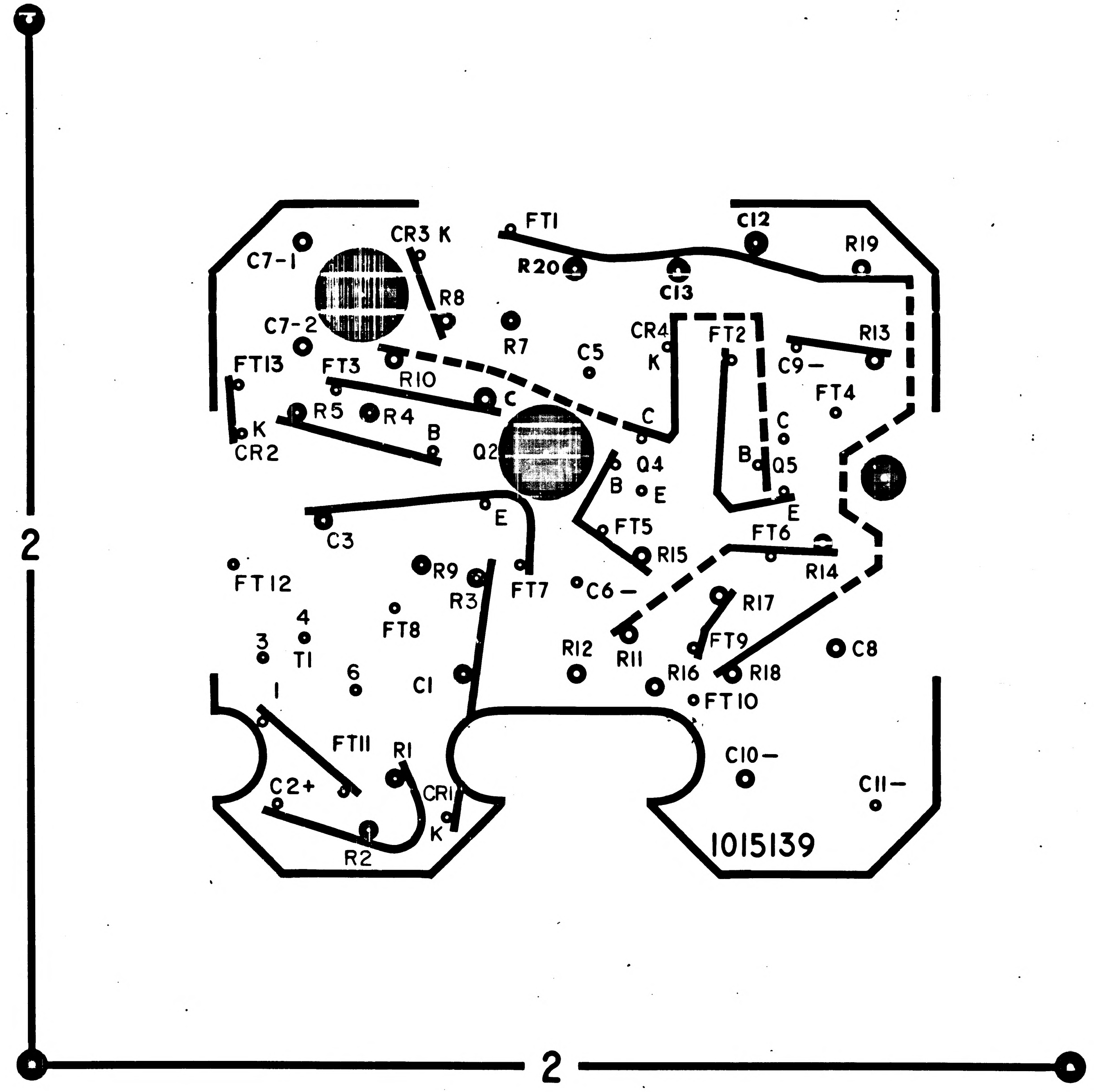
CODE IDENT NO.
SIZE D
1015139
SCALE 4:1
SHEET 1 OF 2

MIL 1077D-P

H 1015139 2

REVISIONS			
		DATE	APPD
E	THIS SHEET ADDED 3024	9-5-6	
F	REVISED PER TDRR 06894		
G	REVISED PER TDRR 07003	14 APR 64	
H	REVISED PER TDRR 07502	22 APR 64	

4-20-4 DC



FT1
C12
R19
CR3 K
C7-1
R20
C13
R8
R7
C7-2
CR4
FT2
R13
C5
K
C9-
FT13
FT3
R10
FT4
C
C
R5
R4
K
B
C
CR2
Q2
Q4
B
Q5
B
E
E
C3
E
FT5
FT6
R15
R14
R9
FT12
R3
FT7
C6-
R17
4
FT8
3
FT9
C8
T1
R12
R11
R16
R18
6
C1
1
FT10
FT11
R1
C10-
C2+
C11-
CR1
K
R2
1015139
2
2

REV E THIS SHEET ADDED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 26 APR 63
CHECKED 29 APR 63
APPROVAL M Blyth 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL W. S. 5/4/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER -
MOTOR DRIVE AMPLIFIER

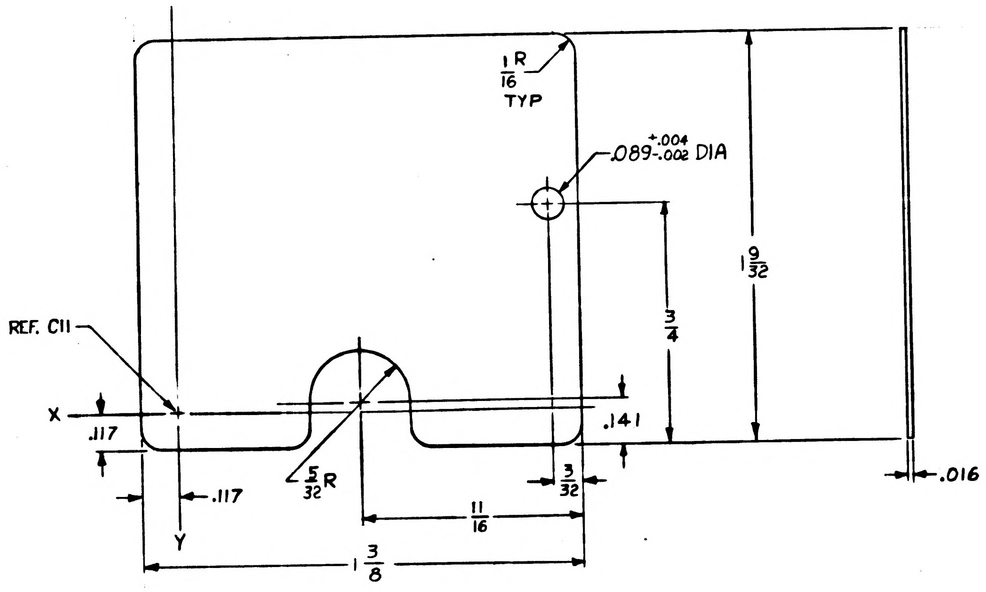
CODE IDENT NO.
SIZE D
1015139
SCALE 8:1
SHEET 2 OF 2

1015139 H

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00659 **DATE** 27 Jun 63

NOTES
1. FOR TAPE MASTER SEE: 1015130
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARD PRESCRIBED BY MIL-D-70327.
3. MATERIAL SPECIFICATION: GLASS EPOXY MIL-P-18177 TYPE GEE.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO.
CONTRACT
DRAWN F. AKELL DATE 3-26-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL 3-27-63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD LOWER
MOTOR DRIVE AMPLIFIER

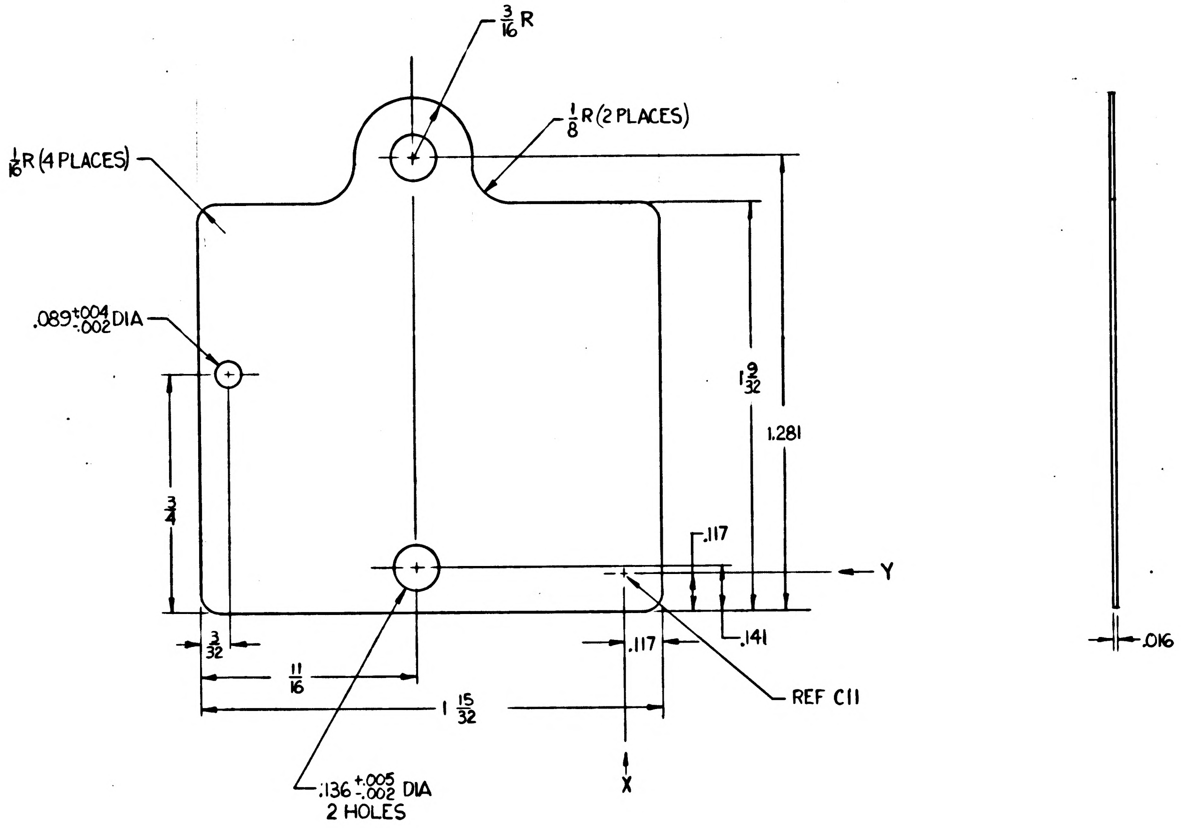
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015139
SCALE 4 X
WT
SHEET 1 OF 1

1015139

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015140 Ⓐ

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED BY REV B WITH CHANGE PER TDRR 01193	8 MAY 63	WK.



NOTES:
1. FOR TAPE MASTER SEE: 1015130
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. MATERIAL SPECIFICATION: GLASS EPOXY MIL-P-18177 TYPE GEE

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00659 DATE 27 Mar 63

Ⓐ REPLACED BY REV B WITH CHANGE

OBSOLETE

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± $\frac{1}{64}$ DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN LEWANDOWSKI DATE 3-27-63
CHECKED L.A. Plummer
APPROVAL R.L. Battey
APPROVAL
NASA APPROVAL W.J. Rhine 3-27-63
MIT APPROVAL 27 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD UPPER MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015140
SCALE 4X
WT
SHEET 1 OF 1

1015140 A

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

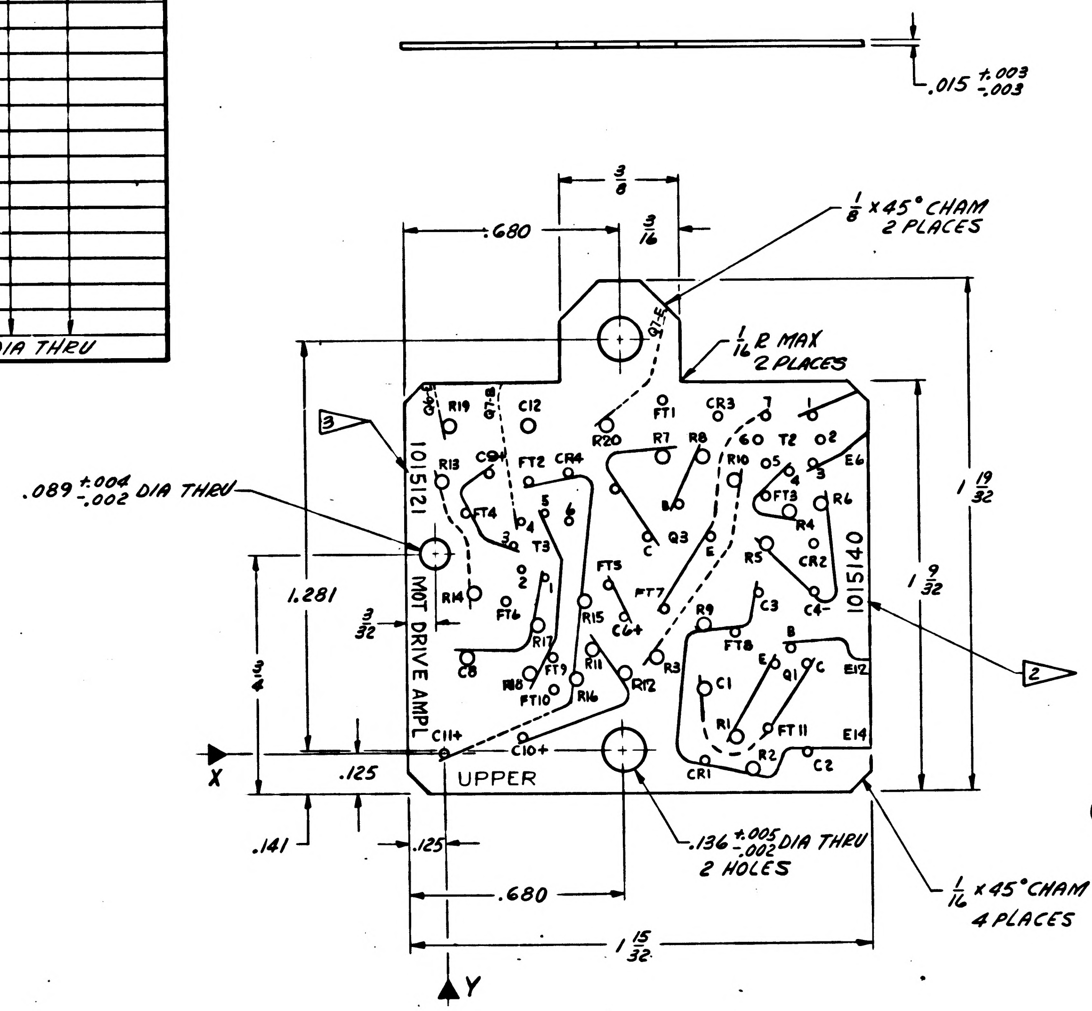
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDRR 01123		4 MAY 63	

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION
C1	.825	.200	.043 DIA THRU
C2	1.150	.000	.024
C3	1.000	.500	
C4-	1.175	.500	
C5	.550	.825	
C6+	.575	.425	.024 DIA THRU
C8	.075	.300	.043 DIA THRU
C9+	.150	.875	.024
C10+	.250	.050	.043
C11+	.000	.000	.024
C12	.275	1.025	.043
CR1	.825	-.025	.024
CR2	1.175	.650	
CR3	.875	1.050	
CR4	.400	.875	
FT1	.700	1.100	
FT2	.275	.850	
FT3	1.025	.800	
FT4	.075	.750	
FT5	.525	.525	
FT6	.200	.475	
FT7	.700	.450	
FT8	.925	.375	
FT9	.350	.300	
FT10	.350	.200	
FT11	1.025	.075	
Q1-B	1.100	.325	
Q1-C	1.150	.275	
Q1-E	1.050	.275	
Q3-B	.750	.775	.024
Q3-C	.650	.675	.052
Q3-E	.850	.675	.024
R1	.925	.050	.043
R2	.975	-.050	
R3	.675	.300	
R4	1.100	.750	
R5	1.025	.650	
R6	1.200	.775	
R7	.700	.925	.043 DIA THRU

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION
R8	.825	.925	.043 DIA THRU
R9	.825	.400	
R10	.925	.850	
R11	.475	.325	
R12	.575	.250	
R13	.000	.850	
R14	.100	.500	
R15	.450	.475	
R16	.425	.225	
R17	.300	.400	
R18	.275	.250	
R19	.025	1.025	
R20	.525	1.025	.043
T2-1	1.175	1.050	.024
T2-2	1.200	.975	
T2-3	1.175	.900	
T2-4	1.100	.875	
T2-5	1.025	.900	
T2-6	1.000	.975	
T2-7	1.025	1.050	
T3-1	.325	.550	
T3-2	.250	.575	
T3-3	.225	.650	
T3-4	.250	.725	
T3-5	.325	.750	
T3-6	.400	.725	.024 DIA THRU


.015 +.003 -.003
3/8
.680
3/16
1/8 x 45° CHAM 2 PLACES
1/16 R MAX 2 PLACES
.089 +.004 -.002 DIA THRU
1 19/32
1 9/32
1.281
3/32
4 1/3
.125
.141
.125
.136 +.005 -.002 DIA THRU 2 HOLES
.680
1 15/32
1/16 x 45° CHAM 4 PLACES
X
Y
1015121
MOT DRIVE AMPL
UPPER
1015140
3
2
Q7-E
Q7-B
Q7-C
R19
C12
FT1
CR3
R20
R7
R8
R10
T2
R13
C9+
FT2
CR4
FT4
T3
Q3
FT3
R4
R6
E6
R5
CR2
C4-
R14
FT6
FT5
FT7
R15
C6+
R9
C3
FT8
Q1
E12
C8
R17
R18
FT9
FT10
R11
R16
R12
R3
C1
R1
FT11
E14
C11+
C10+
CR1
R2
C2

Ⓑ REPLACES REV A WITH CHANGE

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.

INTERPRET DRAWING IN ACCORDANCE WITH
STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC,
LOCATE APPROX AS SHOWN.

1. MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE (ES-2744)
2. MARK 1015140 AND REVISION LETTER 3/64 PER MIL-STD-130(ES-267)
3. MARK 3/64 SANS SERIF GOTHIC CHARACTERS. LOCATE APPROX AS SHOWN.

NEXT ASSY	USED ON
1015121	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+2°
-1/64	-.005	-2°

DO NOT SCALE THIS DRAWING
MATERIAL 1
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LIERMANN DATE 12 APR 63
CHECKED E. Fleming 24 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, UPPER -
MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015140
SCALE 4:1
SHEET

MIL 1077D-P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 0[illegible]3					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDRR 01193		4 MAY 63	
C8		(1) C12 'X' DIM WAS .275, 'Y' WAS 1.025 (2) Q1-'Y' WAS .325, .275, .275 (3) R20 'X' WAS .525 (4) C-13, C14-1&2, FT12 ADDED. (5) REMOVED RIBBON ROUTES TO Q6-E, Q7-B & Q7-E. (6) ADDED FT13 (7) ADDED T3-7 HOLE (8) REMOVED R6 & C4			
		TDRR 01590			WK

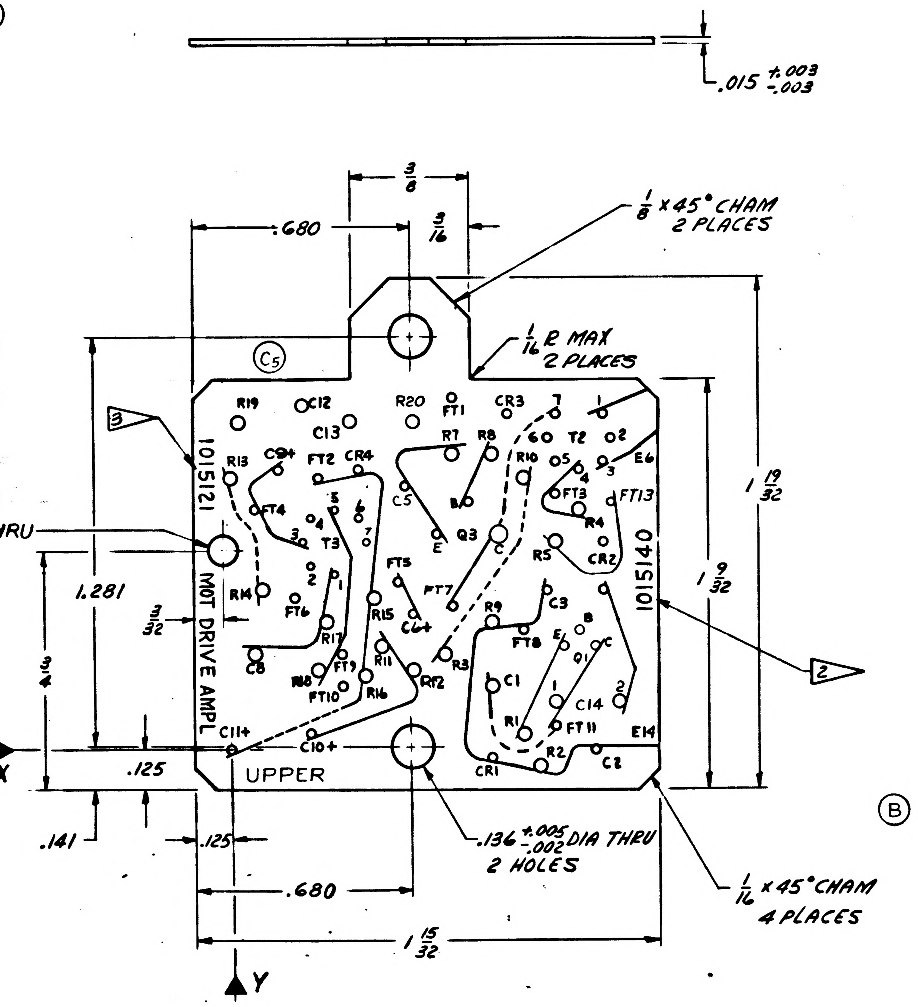
M

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
C1	.825	.200	.043 DIA THRU
C2	1.150	.000	.024
C3	1.000	.500	
			(C8)
C5	.550	.825	
C6+	.575	.425	.024 DIA THRU
C8	.075	.300	.043 DIA THRU
C9+	.150	.875	.024
C10+	.250	.050	.043
C11+	.000	.000	.024
C12	.225	1.075	.043 (C1)
CR1	.825	-.025	.024
CR2	1.175	.650	
CR3	.875	1.050	
CR4	.400	.875	
FT1	.700	1.100	
FT2	.275	.850	
FT3	1.025	.800	
FT4	.075	.750	
FT5	.525	.525	
FT6	.200	.475	
FT7	.700	.450	
FT8	.925	.375	
FT9	.350	.300	
FT10	.350	.200	
FT11	1.025	.075	
Q1-B	1.100	.375	(C2)
Q1-C	1.150	.325	
Q1-E	1.050	.325	
Q3-B	.750	.775	.024
Q3-C	.850	.675	.052
Q3-E	.650	.675	.024
R1	.925	.050	.043
R2	.975	-.050	
R3	.675	.300	
R4	1.100	.750	
R5	1.025	.650	
R7	.700	.925	.043 DIA THRU

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
R8	.825	.925	.043 DIA THRU
R9	.825	.400	
R10	.925	.850	
R11	.475	.325	
R12	.575	.250	
R13	.000	.850	
R14	.100	.500	
R15	.450	.475	
R16	.425	.225	
R17	.300	.400	
R18	.275	.250	
R19	.025	1.025	
R20	.575	1.025	.043 (C3)
T2-1	1.175	1.050	.024
T2-2	1.200	.975	
T2-3	1.175	.900	
T2-4	1.100	.875	
T2-5	1.025	.900	
T2-6	1.000	.975	
T2-7	1.025	1.050	
T3-1	.325	.550	
T3-2	.250	.575	
T3-3	.225	.650	
T3-4	.250	.725	
T3-5	.325	.750	
T3-6	.400	.725	.024 DIA THRU (C7)
T3-7	.425	.650	.024 DIA THRU
C13	.375	1.025	.043 DIA THRU (C4)
C14-1	1.025	.150	.043 DIA THRU
C14-2	1.225	.150	.043 DIA THRU
FT12	1.175	.500	.024 DIA THRU
FT13	1.200	.775	.024 DIA THRU (C6)


.015 +.003 -.003
3/8
.680
3/16
1/8 x 45° CHAM 2 PLACES
1/16 R MAX 2 PLACES
C5
.089 +.004 -.002 DIA THRU
1.281
3/32
3/4
X
.125
.141
.125
.680
1 15/32
Y
1 19/32
1 9/32
.136 +.005 -.002 DIA THRU 2 HOLES
1/16 x 45° CHAM 4 PLACES
3
2
1015121
MOT DRIVE AMPL
1015140
UPPER
R19 C12 C13 R20 FT1 CR3 T2 E6 R13 C9+ FT2 CR4 R7 R8 R10 FT3 FT13 FT4 T3 C5 B Q3 E C R4 R5 CR2 R14 FT6 FT5 FT7 C6+ R15 R9 C3 FT8 Q1 B E C R17 C8 FT9 R11 R3 R18 FT10 R16 R12 C1 C14 R1 FT11 E14 C11+ C10+ CR1 R2 C2

Ⓑ REPLACES REV A WITH CHANGE

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.

INTERPRET DRAWING IN ACCORDANCE WITH
STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC,
LOCATE APPROX AS SHOWN.

1 MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE (ES-2744)

2 MARK 1015140 AND REVISION LETTER 3/64 PER MIL-STD-130 (ES-267)

3 MARK 3/64 SANS SERIF GOTHIC CHARACTERS. LOCATE APPROX AS SHOWN.

1015121		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + 1/64 - 1/64 DECIMALS +.005 -.005 ANGLES +2° -2° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN LIERMANN DATE 12 APR 63 CHECKED E. Flemming 24 APR 63 APPROVAL 30 APR 63 APPROVAL 30 APR 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
NEXT ASSY	USED ON	MATERIAL 1	NASA APPROVAL 5/1/63	WAFER, UPPER - MOTOR DRIVE AMPLIFIER	
APPLICATION		CONTRACT	MIT APPROVAL 8 May 63	CODE IDENT NO.	SIZE D · 1015140
				SCALE 4:1	SHEET

MIL 10770-F

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

D 1015140 2

COORDINATE DIMENSIONS

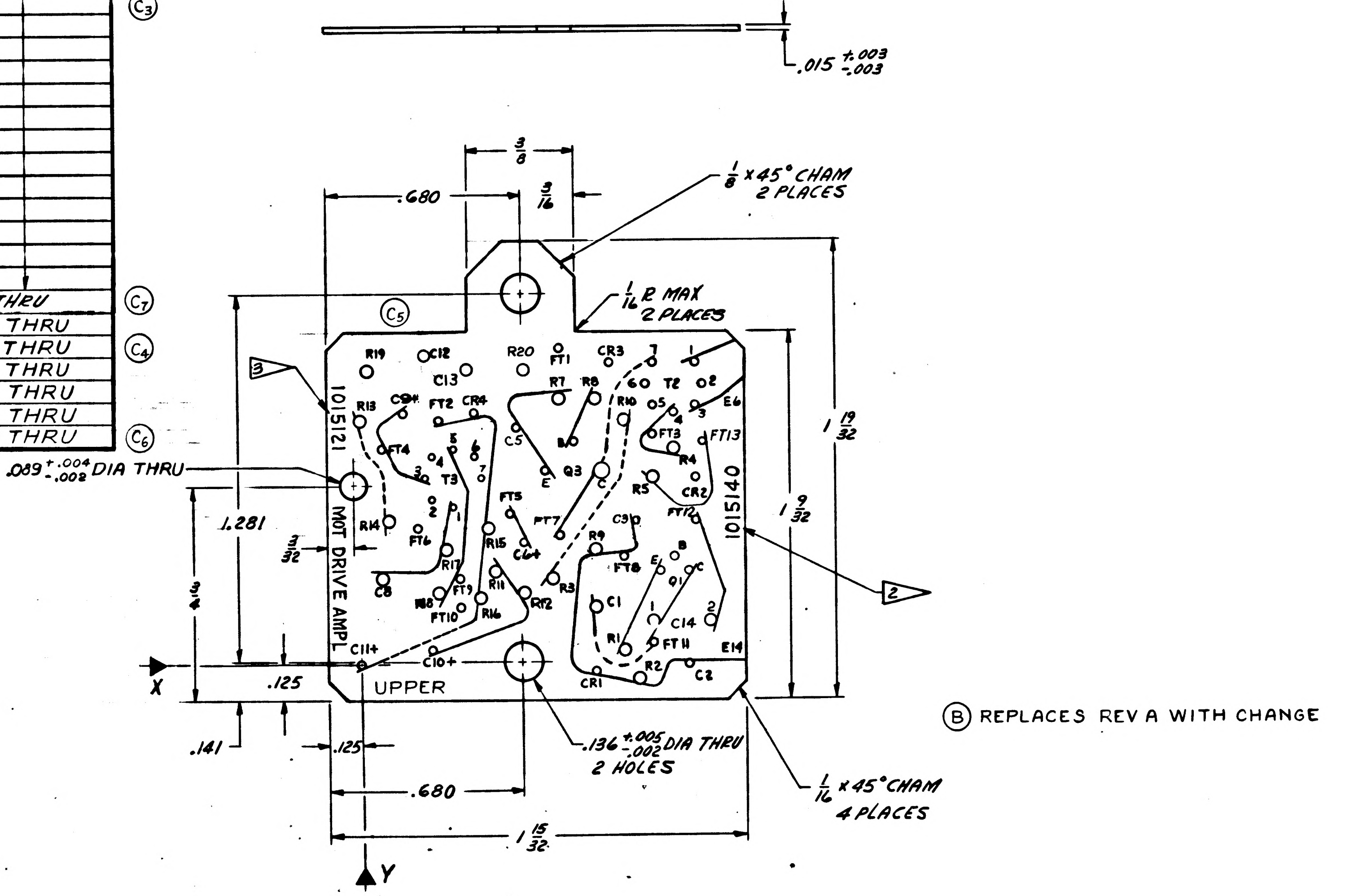
HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
C1	.825	.200	.043 DIA THRU
C2	1.150	.000	.024
C3	.975	.500	
			(C8)
C5	.550	.825	
C6+	.575	.425	.024 DIA THRU
C8	.075	.300	.043 DIA THRU
C9+	.150	.875	.024
C10+	.250	.050	.043
C11+	.000	.000	.024
C12	.225	1.075	.043 (C1)
CR1	.825	-.025	.024
CR2	1.175	.650	
CR3	.875	1.050	
CR4	.400	.875	
FT1	.700	1.100	
FT2	.275	.850	
FT3	1.025	.800	
FT4	.075	.750	
FT5	.525	.525	
FT6	.200	.475	
FT7	.700	.450	
FT8	.925	.375	
FT9	.350	.300	
FT10	.350	.200	
FT11	1.025	.075	
Q1-B	1.100	.375	(C2)
Q1-C	1.150	.325	
Q1-E	1.050	.325	
Q3-B	.750	.775	.024
Q3-C	.850	.675	.052
Q3-E	.650	.675	.024
R1	.925	.050	.043
R2	.975	-.050	
R3	.675	.300	
R4	1.100	.750	
R5	1.025	.650	
R7	.700	.925	.043 DIA THRU

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
R8	.825	.925	.043 DIA THRU
R9	.825	.400	
R10	.925	.850	
R11	.475	.325	
R12	.575	.250	
R13	.000	.850	
R14	.100	.500	
R15	.450	.475	
R16	.425	.225	
R17	.300	.400	
R18	.275	.250	
R19	.025	1.025	
R20	.515	1.025	.043 (C3)
T2-1	1.175	1.050	.024
T2-2	1.200	.975	
T2-3	1.175	.900	
T2-4	1.100	.875	
T2-5	1.025	.900	
T2-6	1.000	.975	
T2-7	1.025	1.050	
T3-1	.325	.550	
T3-2	.250	.575	
T3-3	.225	.650	
T3-4	.250	.725	
T3-5	.325	.750	
T3-6	.400	.725	.024 DIA THRU (C7)
T3-7	.425	.650	.024 DIA THRU
C13	.375	1.025	.043 DIA THRU (C4)
C14-1	1.025	.150	.043 DIA THRU
C14-2	1.225	.150	.043 DIA THRU
FT12	1.175	.500	.024 DIA THRU
FT13	1.200	.775	.024 DIA THRU (C6)

REVISIONS -DRR 0193

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
(M) B		REPLACES REV A WITH CHANGE PER TDRR 01193		4 MAY 63	WK
C8		(1) C12 'X' DIM WAS .275, 'Y' WAS 1.025 (2) Q1-'Y' WAS .325, .275, .275 (3) R20 'X' WAS .525 (4) C-13, C14-1&2, FT12 ADDED. (5) REMOVED RIBBON ROUTES TO Q6-E, Q7-B & Q7-E. (6) ADDED FT13 (7) ADDED T3-7 HOLE (8) REMOVED R6 & C4			
		TDRR 01590			WK
D		REVISED PER TDRR 02502		8-21-63	JJM JW



.015 +.003 -.003
3/8
.680
3/16
1/8 x 45° CHAM 2 PLACES
1/16 R MAX 2 PLACES
C5
3
1015121
MOT DRIVE AMPL
1015140
2
.089 +.004 -.002 DIA THRU
1 19/32
1 9/32
1.281
3/32
3/4
X
.125
UPPER
.141
.125
.136 +.005 -.002 DIA THRU 2 HOLES
1/16 x 45° CHAM 4 PLACES
.680
1 15/32
Y
R19
C12
R20
FT1
CR3
R7
R8
C13
R13
C9+
FT2
CR4
R10
Q5
T2
Q2
E6
FT3
FT13
FT4
C5
B
Q3
E
R4
T3
R5
CR2
FT5
FT12
R14
FT6
FT7
C3
R9
R15
C6+
FT8
R17
Q1
C8
R18
FT9
R11
R16
R12
R3
C1
FT10
C14
R1
FT11
C11+
C10+
R2
E14
CR1
C2

Ⓑ REPLACES REV A WITH CHANGE

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/16 HIGH SANS SERIF GOTHIC,
LOCATE APPROX AS SHOWN.

1▷ MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE (ES-2744)

2▷ MARK 1015140 AND REVISION LETTER 1/8 PER MIL-STD-130 (ES-267)

3▷ MARK 1/16 SANS SERIF GOTHIC CHARACTERS. LOCATE APPROX AS SHOWN.

1015121	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+2°
-1/64	-.005	-2°

DO NOT SCALE THIS DRAWING
MATERIAL 1▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Liermann DATE 12 APR 63
CHECKED E. Fleming 24 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/1/63
MIT APPROVAL W. Kupfer 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, UPPER -
MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015140
SCALE 4:1
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

E | 1015140 | 2

REVISIONS ~~-TDRR 01193~~

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
(M) B		REPLACES REV A WITH CHANGE PER TDRR 01193		4 MAY 63	WK
C8		(1) C12 'X' DIM WAS .275, 'Y' WAS 1.025 (2) Q1 'Y' WAS .325, .275, .275 (3) R20 'X' WAS .525 (4) C-13, C14-1&2, FT12 ADDED. (5) REMOVED RIBBON ROUTES TO Q6-E, Q7-B & Q7-E. (6) ADDED FT13 (7) ADDED T3-7 HOLE (8) REMOVED R6 & C4			
		TDRR 01590			WK
(M) D		REVISED PER TDRR 02502		8-21-63	JJm AW
E		REVISED PER TDRR 03023		9-5-63	EPL WK

FOR REF ONLY

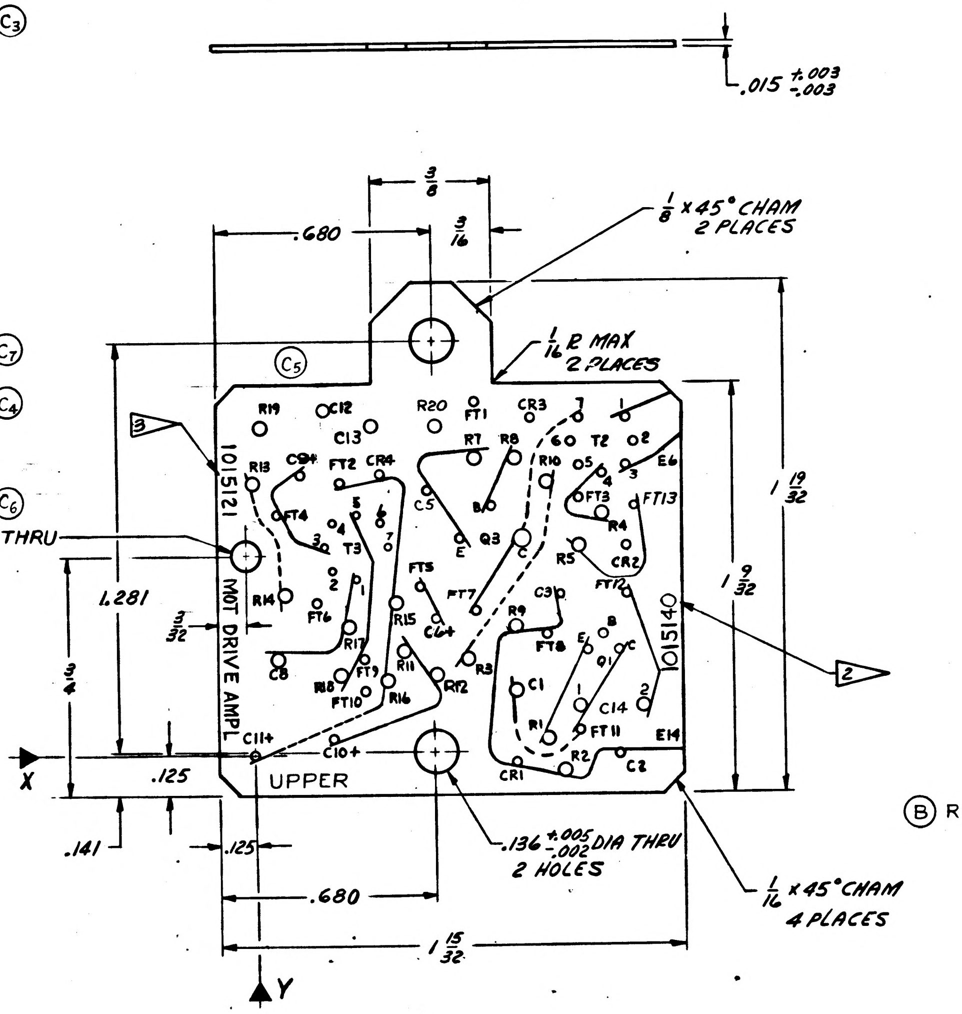
COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
C1	.825	.200	.043 DIA THRU
C2	1.150	.000	.024
C3	.975	.500	
			(C8)
C5	.550	.825	
C6+	.575	.425	.024 DIA THRU
C8	.075	.300	.043 DIA THRU
C9+	.150	.875	.024
C10+	.250	.050	.043
C11+	.000	.000	.024
C12	.225	1.075	.043 (C1)
CR1	.825	-.025	.024
CR2	1.175	.650	
CR3	.875	1.050	
CR4	.400	.875	
FT1	.700	1.100	
FT2	.275	.850	
FT3	1.025	.800	
FT4	.075	.750	
FT5	.525	.525	
FT6	.200	.475	
FT7	.700	.450	
FT8	.925	.375	
FT9	.350	.300	
FT10	.350	.200	
FT11	1.025	.075	
Q1-B	1.100	.375	(C2)
Q1-C	1.150	.325	
Q1-E	1.050	.325	
Q3-B	.750	.775	.024
Q3-C	.850	.675	.052
Q3-E	.650	.675	.024
R1	.925	.050	.043
R2	.975	-.050	
R3	.675	.300	
R4	1.100	.750	
R5	1.025	.650	
R7	.700	.925	.043 DIA THRU

FOR REF ONLY

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
R8	.825	.925	.043 DIA THRU
R9	.825	.400	
R10	.925	.850	
R11	.475	.325	
R12	.575	.250	
R13	.000	.850	
R14	.100	.500	
R15	.450	.475	
R16	.425	.225	
R17	.300	.400	
R18	.275	.250	
R19	.025	1.025	
R20	.575	1.025	.043 (C3)
T2-1	1.175	1.050	.024
T2-2	1.200	.975	
T2-3	1.175	.900	
T2-4	1.100	.875	
T2-5	1.025	.900	
T2-6	1.000	.975	
T2-7	1.025	1.050	
T3-1	.325	.550	
T3-2	.250	.575	
T3-3	.225	.650	
T3-4	.250	.725	
T3-5	.325	.750	
T3-6	.400	.725	.024 DIA THRU (C7)
T3-7	.425	.650	.024 DIA THRU
C13	.375	1.025	.043 DIA THRU (C4)
C14-1	1.025	.150	.043 DIA THRU
C14-2	1.225	.150	.043 DIA THRU
FT12	1.175	.500	.024 DIA THRU
FT13	1.200	.775	.024 DIA THRU (C6)


.015 +.003 -.003
3/8
3/16
.680
1/8 x 45° CHAM 2 PLACES
1/16 R MAX 2 PLACES
(C5)
3
1015121
MOT DRIVE AMPL
UPPER
1015140
2
.089 +.004 -.002 DIA THRU
1.281
3/32
3/4
1 19/32
1 9/32
X
Y
.125
.141
.125
.680
1 15/32
.136 +.005 -.002 DIA THRU 2 HOLES
1/16 x 45° CHAM 4 PLACES
R19 C12 C13 R20 FT1 CR3 R13 C9+ FT2 CR4 R7 R8 R10 T2 E6 FT3 FT13 C5 Q3 R4 FT4 T3 R5 CR2 FT5 FT7 R9 C3 FT12 R14 FT6 R15 C6+ FT8 Q1 R17 R11 R3 R18 FT9 FT10 R16 R12 C1 C14 C8 R1 FT11 E14 C11+ C10+ R2 CR1 C2

(B) REPLACES REV A WITH CHANGE

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.

INTERPRET DRAWING IN ACCORDANCE WITH
STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/16 HIGH SANS SERIF GOTHIC,
LOCATE APPROX AS SHOWN.

1▷ MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE (ES-2744)

2▷ MARK 1015140 AND REVISION LETTER 1/16 PER MIL-STD-130 (ES-267)

3▷ MARK 1/16 SANS SERIF GOTHIC CHARACTERS. LOCATE APPROX AS SHOWN.

SEE 1015140 SHEET 2 FOR PHOTOGRAPHIC MASTER

NEXT ASSY	USED ON
1015121	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+2°
- 1/64	-.005	-2°

DO NOT SCALE THIS DRAWING

MATERIAL 1▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN LIERMANN DATE 12 APR 63
CHECKED E. Fleming 24 APR 63
APPROVAL M. Blyholder 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/16/63
MIT APPROVAL 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, UPPER -
MOTOR DRIVE AMPLIFIER

CODE IDENT NO. | SIZE D | 1015140

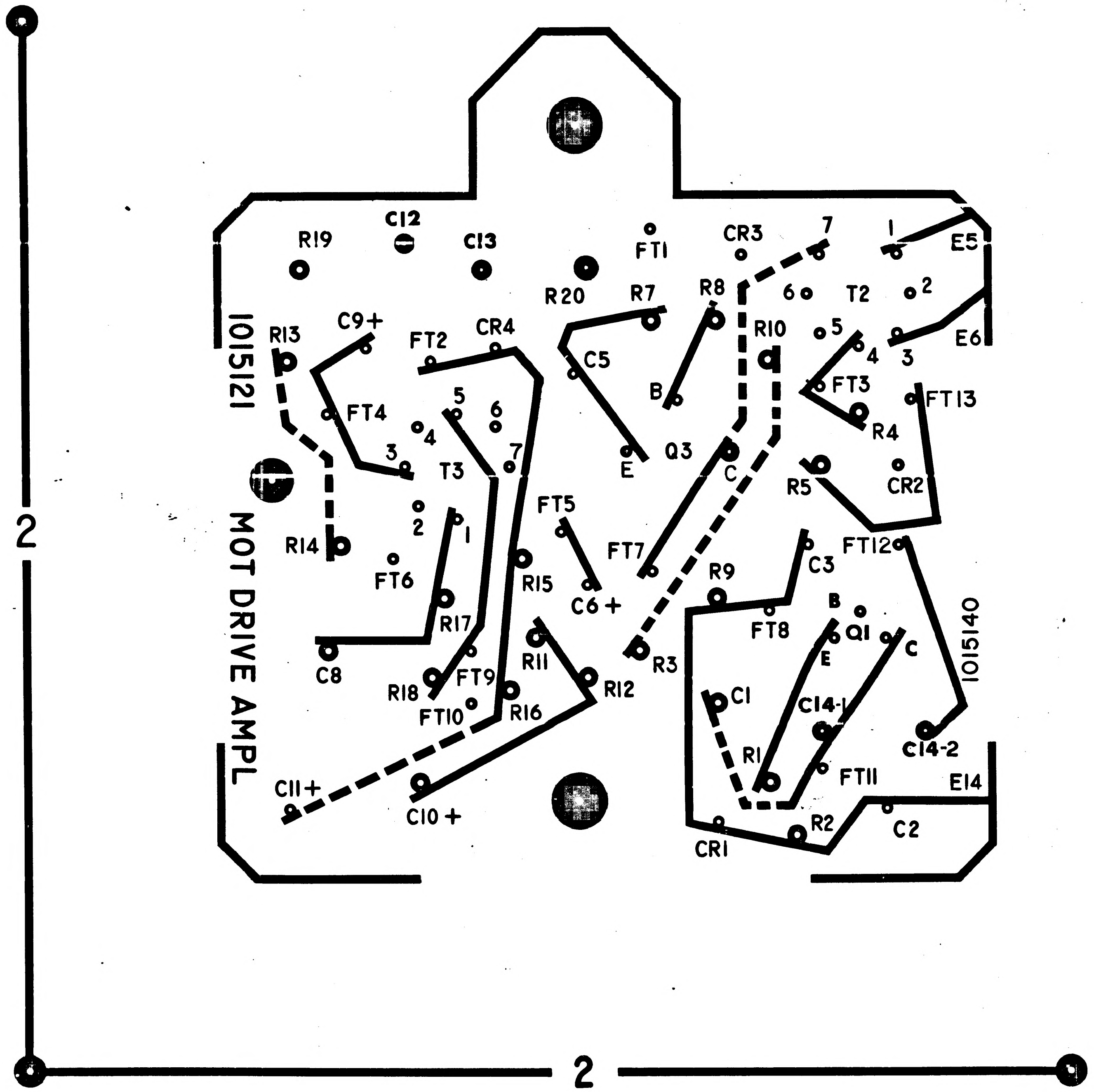
SCALE 4:1 | SHEET 1 OF 2

MIL 1077D-P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

E 1015140 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		THIS SHEET ADDED 0 30 2 3		9-5-63	EPK WK



R19
C12
C13
FT1
CR3
7
1
E5
R20
R7
R8
6
T2
2
E6
1015121
R13
C9+
FT2
CR4
C5
R10
5
4
3
FT3
FT13
FT4
5
6
B
R4
4
3
7
E
Q3
C
R5
CR2
T3
2
1
FT5
MOT DRIVE AMPL
R14
FT6
R15
FT7
C3
FT12
C6 +
R9
B
R17
FT8
Q1
1015140
C
E
C8
R3
R18
FT9
R11
R12
C1
C14-1
FT10
R16
C14-2
R1
FT11
E14
C11+
C10 +
R2
C2
CR1
2
2

REV E THIS SHEET ADDED

1015121	1015121
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
AC SE PN
DRAWN R. Becker DATE 26 APR63
CHECKED E. Fleming 29 APR63
APPROVAL J. M. Blyschak 30 APR 63
APPROVAL A. Model 30 APR63
NASA APPROVAL W. Swingle 5-15-63
MIT APPROVAL W Kupfer 5 Apr63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, UPPER
MOTOR DRIVE AMPLIFIER

CODE IDENT NO
SIZE D
1015140
SCALE 8:1
SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

FOR REF ONLY

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
C1	.795	.250	.043 DIA THRU
C2	1.150	.000	.024
C3	1.065	.545	
			(C8)
C5	.550	.825	
C6+	.575	.425	.024 DIA THRU
C8	.075	.300	.043 DIA THRU
C9+	.150	.875	.024
C10+	.250	.050	.043
C11+	.000	.000	.024
C12	.225	1.075	.043 (C1)
CR1	.825	-.025	.024
CR2	1.220	.710	
CR3	.875	1.050	
CR4	.400	.875	
FT1	.700	1.100	
FT2	.275	.850	
FT3	1.040	.795	
FT4	.075	.750	
FT5	.525	.525	
FT6	.200	.475	
FT7	.685	.460	
FT8	.925	.375	
FT9	.350	.300	
FT10	.350	.200	
FT11	1.025	.025	
Q1-B	1.165	.345	(C2)
Q1-C	1.215	.300	
Q1-E	1.115	.300	
Q3-B	.750	.775	.024
Q3-C	.850	.675	.052
Q3-E	.650	.675	.024
R1	.925	.050	.043
R2	.975	-.050	
R3	.770	.435	
R4	.975	.750	
R5	1.115	.750	
R7	.700	.925	.043 DIA THRU

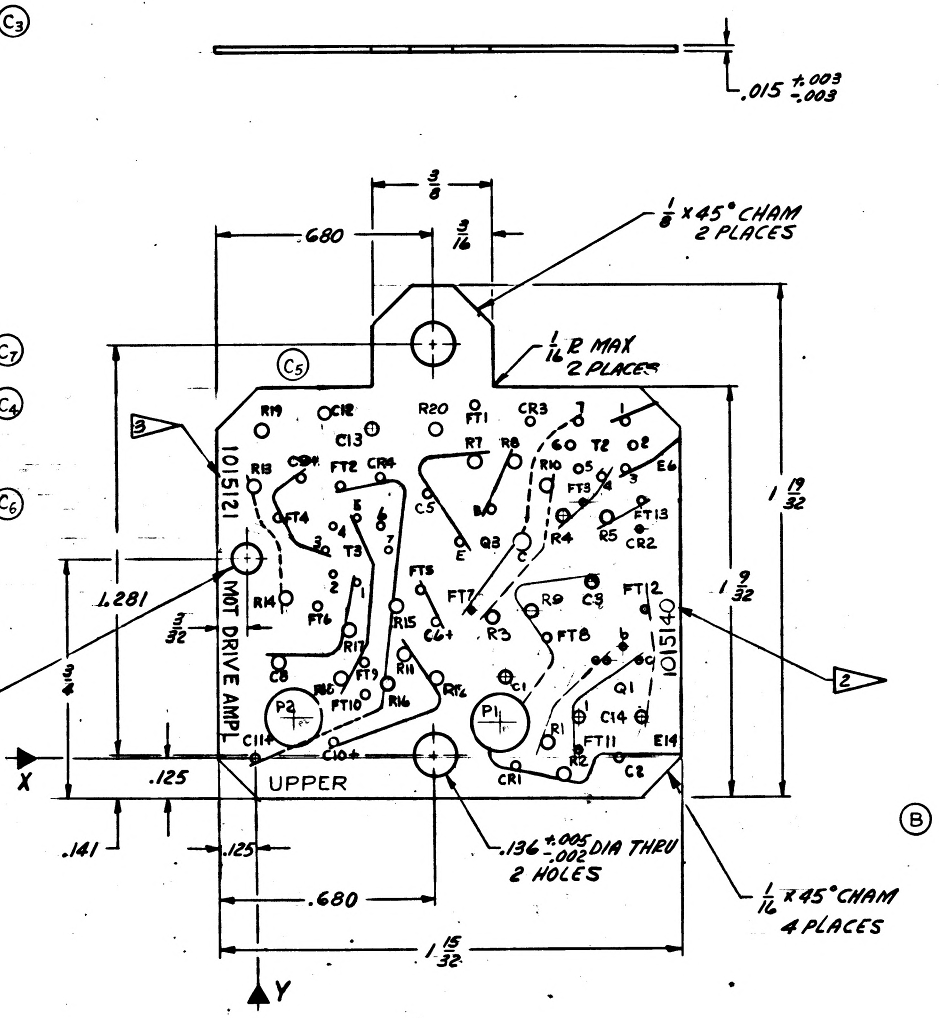
FOR REF ONLY

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
R8	.825	.925	.043 DIA THRU
R9	.875	.460	
R10	.925	.850	
R11	.475	.325	
R12	.575	.250	
R13	.000	.850	
R14	.100	.500	
R15	.450	.475	
R16	.425	.225	
R17	.300	.400	
R18	.275	.250	
R19	.025	1.025	
R20	.575	1.025	.043 (C3)
T2-1	1.175	1.050	.024
T2-2	1.200	.975	
T2-3	1.175	.900	
T2-4	1.100	.875	
T2-5	1.025	.900	
T2-6	1.000	.975	
T2-7	1.025	1.050	
T3-1	.325	.550	
T3-2	.250	.575	
T3-3	.225	.650	
T3-4	.250	.725	
T3-5	.325	.750	
T3-6	.400	.725	.024 DIA THRU (C7)
T3-7	.425	.650	.024 DIA THRU
C13	.375	1.025	.043 DIA THRU (C4)
C14-1	1.025	.125	.043 DIA THRU
C14-2	1.225	.125	.043 DIA THRU
FT12	1.235	.460	.024 DIA THRU
FT13	1.225	.710	.024 DIA THRU (C6)
P1	.775	.110	.187 DIA THRU
P2	.125	.125	.187 DIA THRU

REVISIONS TDRR 01193

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REPLACES REV A WITH CHANGE PER TDRR 01193		4 MAY 63	WK
C8		(1) C12 'X' DIM WAS .275, 'Y' WAS 1.025 (2) Q1 'Y' WAS .325, .275, .275 (3) R20 'X' WAS .525 (4) C-13, C14-1&2, FT12 ADDED. (5) REMOVED RIBBON ROUTES TO Q6-E, Q7-B & Q7-E. (6) ADDED FT13 (7) ADDED T3-7 HOLE (8) REMOVED R6 & C4			
		TDRR 01590			WK
D		REVISED PER TDRR 02502		8-21-63	JJ
E		REVISED PER TDRR 03023		9-5-63	EPL WK
F		REVISED PER TDRR 06894			EPK WK


.015 +.003 -.003
3/8
.680
3/16
1/8 x 45° CHAM 2 PLACES
1/16 R MAX 2 PLACES
(C5)
3
1015121
MOT DRIVE AMPL
1015140
2
UPPER
R19
C12
C13
R20
FT1
CR3
R7
R8
T2
R10
E6
R13
C9+
FT2
CR4
FT4
T3
C5
Q3
FT3
FT13
R4
R5
CR2
R14
FT6
FT5
FT7
R9
C9
FT12
R15
C6+
R3
FT8
R17
C8
FT9
R11
R16
R12
C1
Q1
C14
P2
FT10
P1
R1
FT11
E14
C11+
C10+
CR1
R2
C2
1.281
3/32
3/4
1 19/32
1 9/32
.089 +.004 -.002 DIA THRU
.125
.141
.136 +.005 -.002 DIA THRU 2 HOLES
1/16 x 45° CHAM 4 PLACES
1 15/32
X
Y

(B) REPLACES REV A WITH CHANGE

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/16 HIGH SANS SERIF GOTHIC,
LOCATE APPROX AS SHOWN.

1 ▷ MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE (ES-2744)

2 ▷ MARK 1015140 AND REVISION LETTER 1/16 PER MIL-STD-130 (ES-267)

3 ▷ MARK 1/16 SANS SERIF GOTHIC CHARACTERS. LOCATE APPROX AS SHOWN.

SEE 1015140 SHEET 2 FOR PHOTOGRAPHIC MASTER

1015121	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+2°
- 1/64	-.005	-2°

DO NOT SCALE THIS DRAWING

MATERIAL 1 ▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Liermann DATE 12 APR 63
CHECKED E. Fleming 24 APR 63
APPROVAL 30 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/10/63
MIT APPROVAL 8 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, UPPER -
MOTOR DRIVE AMPLIFIER

CODE IDENT NO. | SIZE D | 1015140

SCALE 4:1 | SHEET 1 OF 2

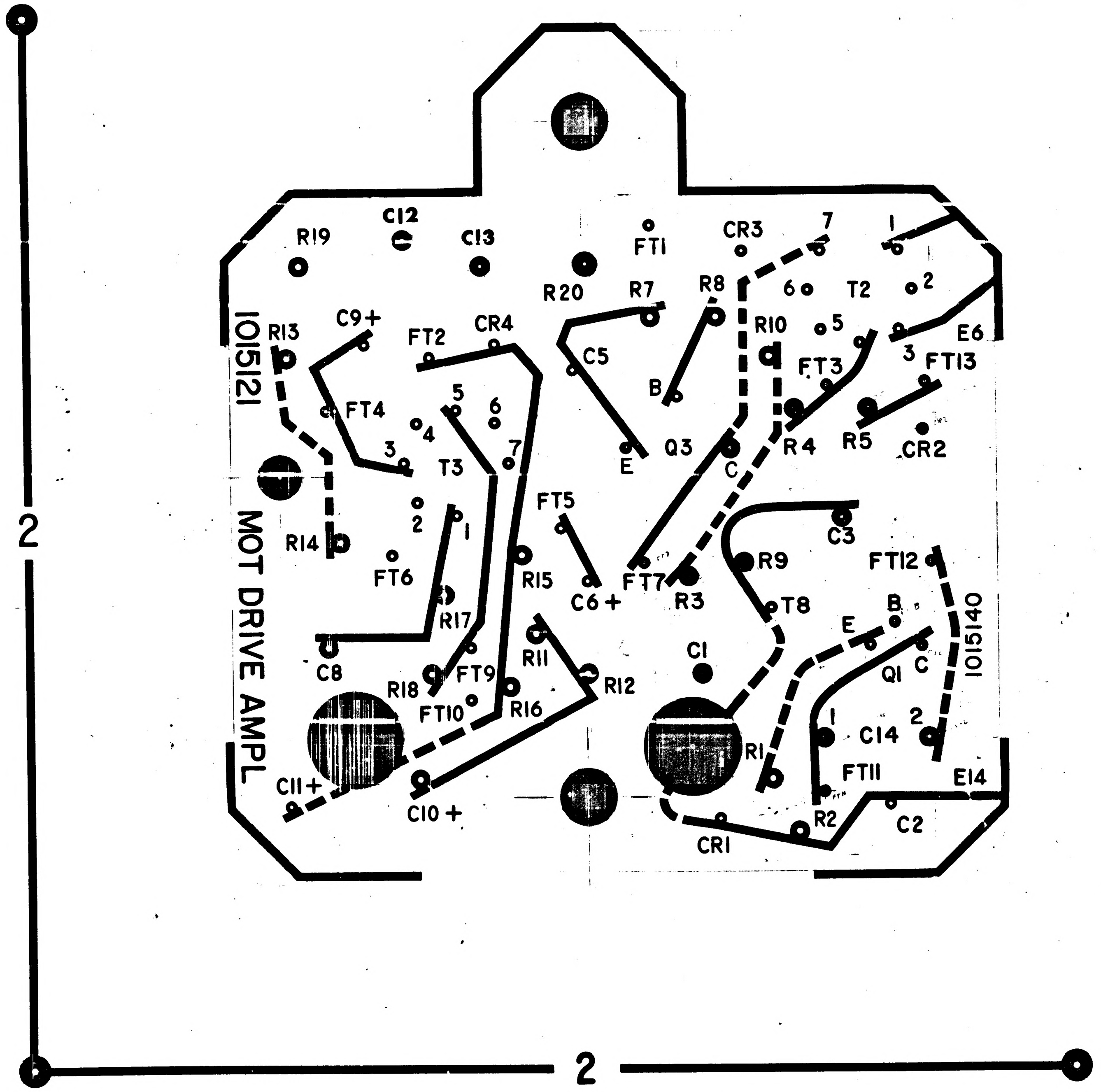
MIL 1077D-P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

F	1015140	2

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		THIS SHEET ADDED 03023		9-56 3	RPK WK
F		REVISED PER TDRR 06894			RPK WK



R19
C12
C13
R20
FT1
R7
R8
CR3
7
1
6
T2
2
R10
5
E6
3
FT13
1015121
R13
C9+
FT2
CR4
C5
FT3
FT4
5
6
4
3
T3
7
B
Q3
E
C
R4
R5
CR2
2
1
FT5
C3
R14
FT6
R15
C6+
FT7
R3
R9
FT12
T8
B
E
1015140
R17
C8
C1
C
Q1
R18
FT9
R11
R12
FT10
R16
1
C14
2
R1
FT11
E14
C11+
C10+
R2
C2
CR1
MOT DRIVE AMPL
2
2

REVE THIS SHEET ADDED

1015121	1015121
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
AC SP PN
DRAWN R. Baker DATE 26 APR 63
CHECKED E. Fleming 29 APR 63
APPROVAL J. M. Blegeland 30 APR 63
APPROVAL W. Model 30 APR 63
NASA APPROVAL W. Smith 5/5/63
MIT APPROVAL W. Kupfer 5/4/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, UPPER
MOTOR DRIVE AMPLIFIER

CODE IDENT NO
SIZE D
1015140
SCALE 8:1
SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015140

COORDINATE DIMENSIONS

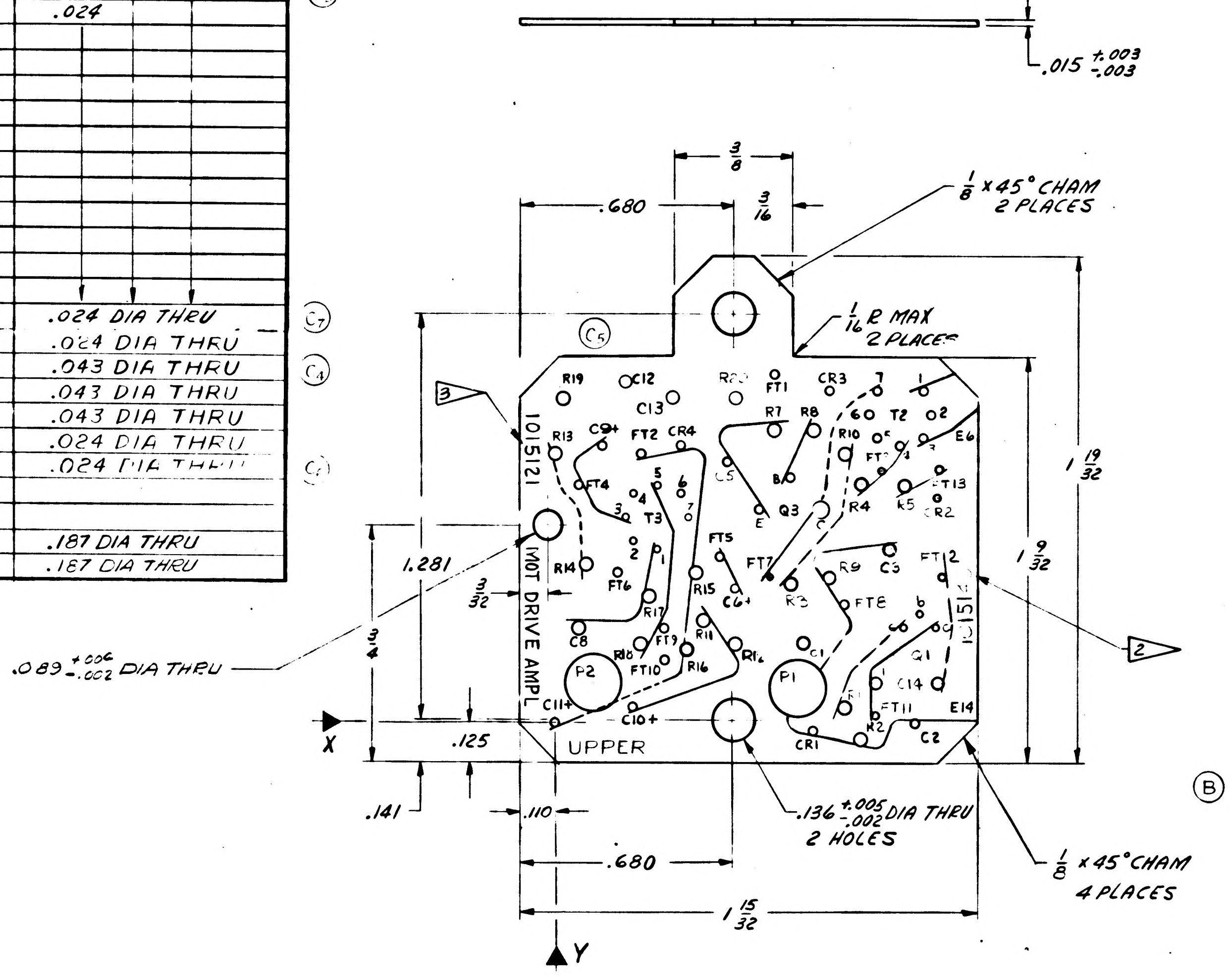
HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL +.010 -.000
C1	[illegible]	.250	.043 DIA THRU
C2	1.150	.000	.024
C3	1.[illegible]	.5[illegible]	.043
C5	.550	.825	.024
C6+	.575	.425	.024 DIA THRU
C8	.075	.300	.043 DIA THRU
C9+	.150	.875	.024
C10+	.250	.050	.043
C11+	.000	.000	.024
C12	.225	1.075	.043
CR1	.825	-.025	.024
CR2	1.220	.710	
CR3	.875	1.050	
CR4	.400	.875	
FT1	.700	1.100	
FT2	.275	.850	
FT3	1.040	.725	
FT4	.075	.750	
FT5	.525	.525	
FT6	.200	.475	
FT7	.635	.460	
FT8	.925	.375	
FT9	.350	.300	
FT10	.350	.200	
FT11	1.025	.025	
Q1-B	1.165	.345	
Q1-C	1.215	300	
Q1-E	1.115	.300	
Q3-B	.750	.775	.024
Q3-C	.850	.675	.052
Q3-E	.650	.675	.024
R1	.925	.050	.043
R2	.975	-.050	
R3	.770	.435	
R4	.975	.750	
R5	1.[illegible]	.750	
R7	.700	.925	.043 DIA THRU

COORDINATE DIMENSIONS

HOLE DES	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL +.010 -.000
R8	.825	.925	.043 DIA THRU
R9	.875	.460	
R10	.925	.850	
R11	.475	.325	
R12	.575	.250	
R13	.000	.850	
R14	.100	.500	
R15	.450	.475	
R16	.425	.225	
R17	.300	.400	
R18	.275	.250	
R19	.025	1.025	
R20	.575	1.025	.043
T2-1	1.175	1.050	.024
T2-2	1.200	.975	
T2-3	1.175	.900	
T2-4	1.100	.875	
T2-5	1.025	.900	
T2-6	1.000	.975	
T2-7	1.025	1.050	
T3-1	.325	.550	
T3-2	.250	.575	
T3-3	.225	.650	
T3-4	.250	.725	
T3-5	.325	.750	
T3-6	.400	.725	.024 DIA THRU
T3-7	.425	.650	.024 DIA THRU
C13	.375	1.025	.043 DIA THRU
C14-1	1.025	.125	.043 DIA THRU
C14-2	1.225	.125	.043 DIA THRU
FT12	1.235	.460	.024 DIA THRU
FT13	1.225	.800	.024 DIA THRU
P1	.775	.110	.187 DIA THRU
P2	.125	.125	.187 DIA THRU

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B		REPLACES REV A WITH CHANGE PER TDRR 01193		MAY 63	WK
C		(1) FT12 X DIM WAS .275, Y WAS 1.025 (2) Q1-Y WAS .325, .275, .275 (3) R20 'X' WAS .525 (4) C-13, C14-1 & 2, FT12 ADDED. (5) REMOVED RIBBON ROUTES TO Q6-E, Q7-B & Q7-E. (6) ADDED FT13 (7) ADDED T3-7 HOLE (8) REMOVED R6 & C4			
		TDRR 01590			WK
D		REVISED PER TDRR 03502		21 63	
E		REVISED PER TDRR 03023		9-5-63	WK
F		REVISED PER TDRR 06834			
G		REVISED PER TDRR 07004		14 APR 64	


.015 +.003 -.003
3/8
.680
3/16
1/8 x 45° CHAM 2 PLACES
1/16 R MAX 2 PLACES
1 19/32
1 9/32
1.281
3/32
3/4
.089 +.006 -.002 DIA THRU
.125
.141
.110
.680
1 15/32
.136 +.005 -.002 DIA THRU 2 HOLES
1/8 x 45° CHAM 4 PLACES
X
Y
3
2
1015121
MOT DRIVE AMPL
UPPER
1015140
R19
C12
C13
R20
FT1
CR3
R7
R8
R10
T2
E6
R13
C9+
FT2
CR4
C5
B
Q3
E
C
FT4
T3
FT13
R4
R5
CR2
FT5
FT7
R9
C3
FT12
R14
FT6
R15
C6+
R3
FT8
R17
C8
R11
R12
C1
R18
FT9
FT10
R16
Q1
C14
P2
P1
R1
FT11
E14
C11+
C10+
R2
CR1
C2

Ⓑ REPLACES REV A WITH CHANGE

G	G
SHEET 1	SHEET 2
REVISION STATUS OF SHEETS	

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/16 HIGH SANS SERIF GOTHIC, LOCATE APPROX AS SHOWN.

1. MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE (ES-2744)
2. MARK 1015140 AND REVISION LETTER 1/16 PER MIL-STD-130 (ES 267)
3. MARK 1/16 SANS SERIF GOTHIC CHARACTERS. LOCATE APPROX AS SHOWN.

SEE 1015140 SHEET 2 FOR PHOTOGRAPHIC MASTER

NEXT ASSY	USED ON
1015121	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+2°
-1/64	-.005	-2°

DO NOT SCALE THIS DRAWING
MATERIAL 1
CONTRACT

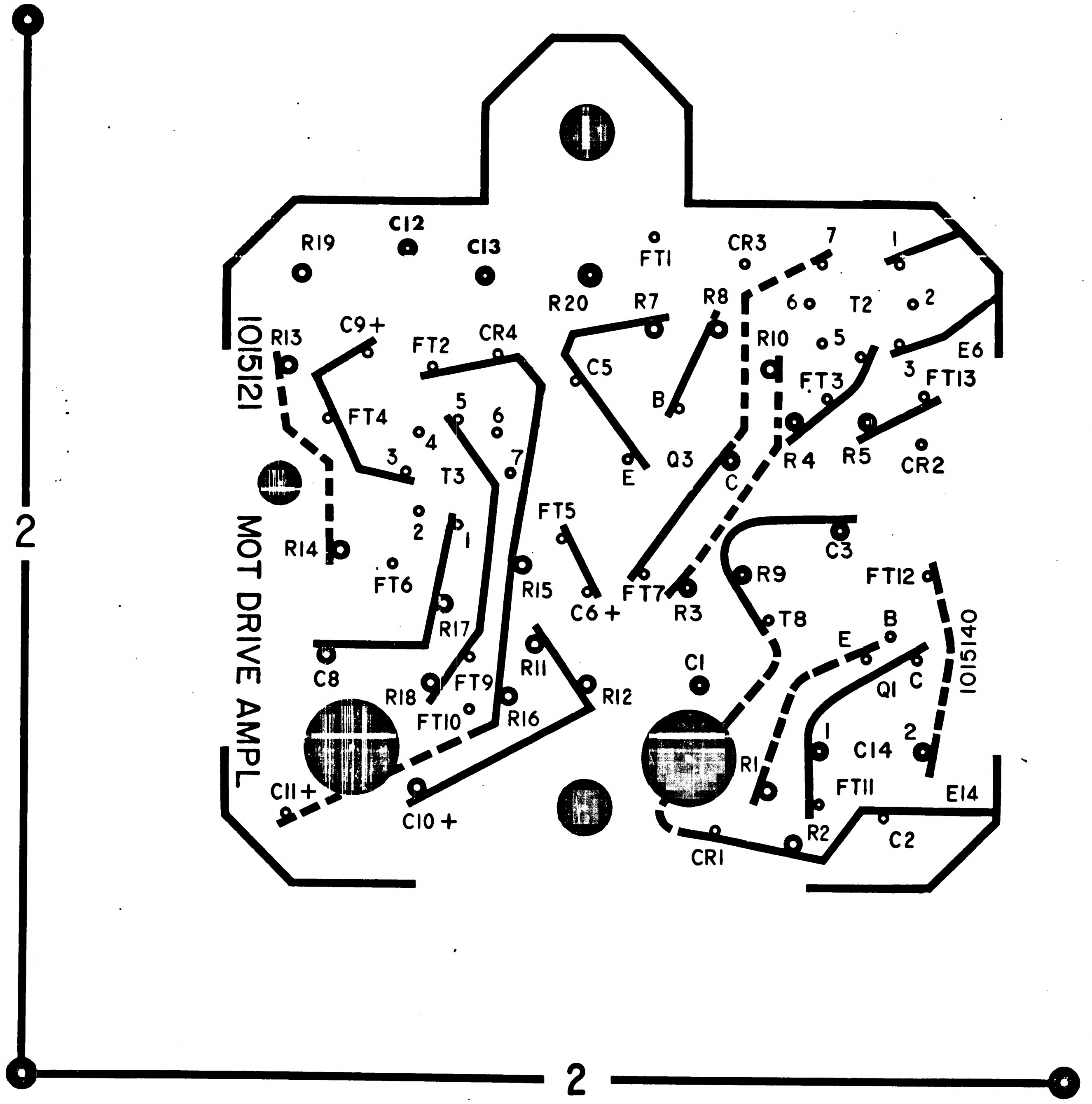
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LIERMANN DATE 12 APR 63
CHECKED 24 APR 63
APPROVAL 31 APR 63
APPROVAL 30 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, UPPER -
MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015140
SCALE 4:1
SHEET 1 OF 2

REVISIONS				
E	THIS SHEET ADDED 2 30 2 3		9-56 3	EPK WR
F	REVISED PER TDRR 06894			EPK WR
G	REVISED PER TDRR 07004		14 APR 64	MIY



R19
C12
C13
FT1
CR3
7
1
R20
R7
R8
6
T2
2
1015121
R13
C9+
FT2
CR4
C5
R10
5
E6
3
FT13
FT3
FT4
5
4
6
B
Q3
R4
R5
CR2
3
T3
7
E
C
FT5
2
1
C3
R14
R9
FT12
FT6
R15
C6+
FT7
R3
T8
B
MOT DRIVE AMPL
R17
E
1015140
C8
C1
C
R11
Q1
R18
FT9
R12
FT10
R16
1
C14
2
R1
FT11
E14
C11+
C10+
R2
C2
CR1
2
2

REVE THIS SHEET ADDED

1015121	1015121
NEXT ASSY	USED ON
APPLICATION	

MATERIAL

AC SPARK PLUG DIVISION GMC

R. Baker 26 APR 63

E. Fleming 29 APR 63

APPROVAL A Pradel 30 APR 63

NASA APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

WAFER , UPPER
MOTOR DRIVE AMPLIFIER

D 1015140

SCALE 8:1

SHEET 2 OF 2

G 1015140

1015140

SYM	DESCRIPTION	DATE	APPROVAL

REVISIONS

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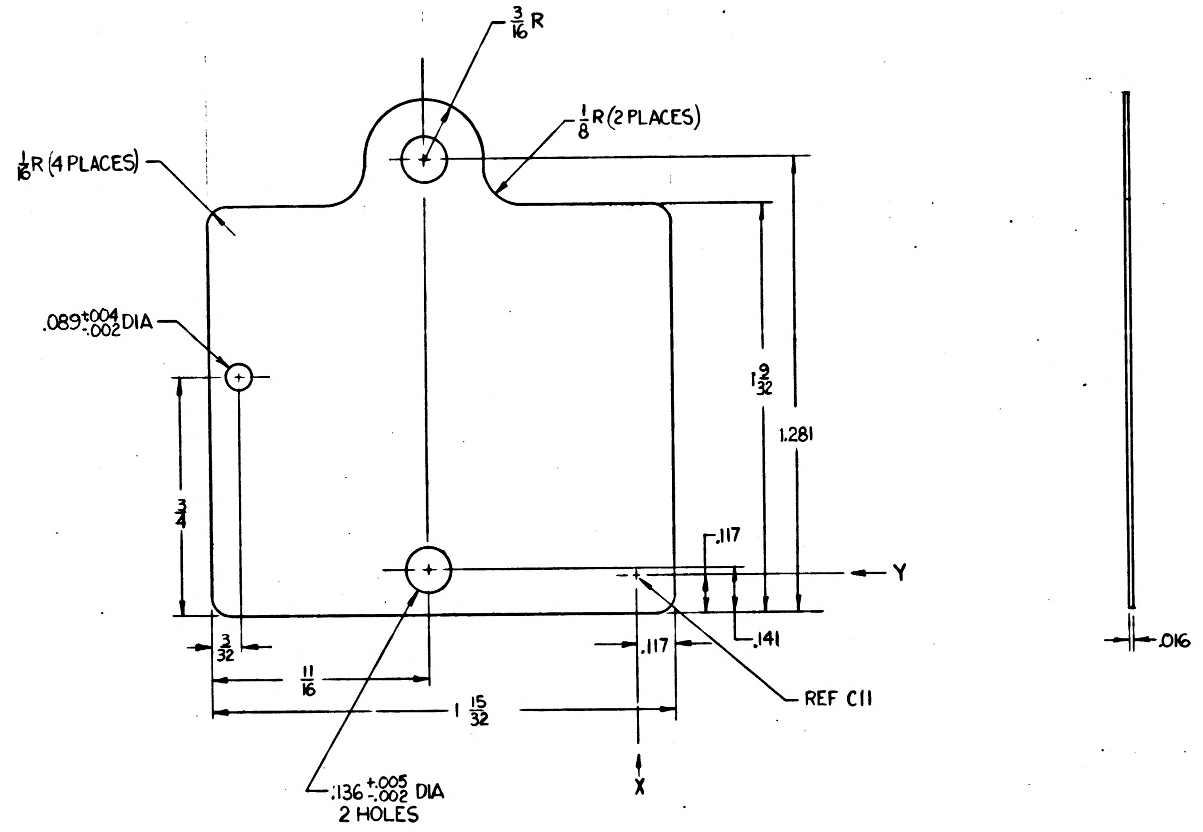


NOTES:
1. FOR TAPE MASTER SEE: 1015130
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
3. MATERIAL SPECIFICATION: GLASS EPOXY MIL-P-18177 TYPE GEE

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00659 DATE 27 Mar 63

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± $\frac{1}{64}$ DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 3-27-63
CHECKED L.A. Plummer
APPROVAL R.L. Battafarano
APPROVAL
NASA APPROVAL W.J. Rhine 3-27-63
MIT APPROVAL 27 Mar 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

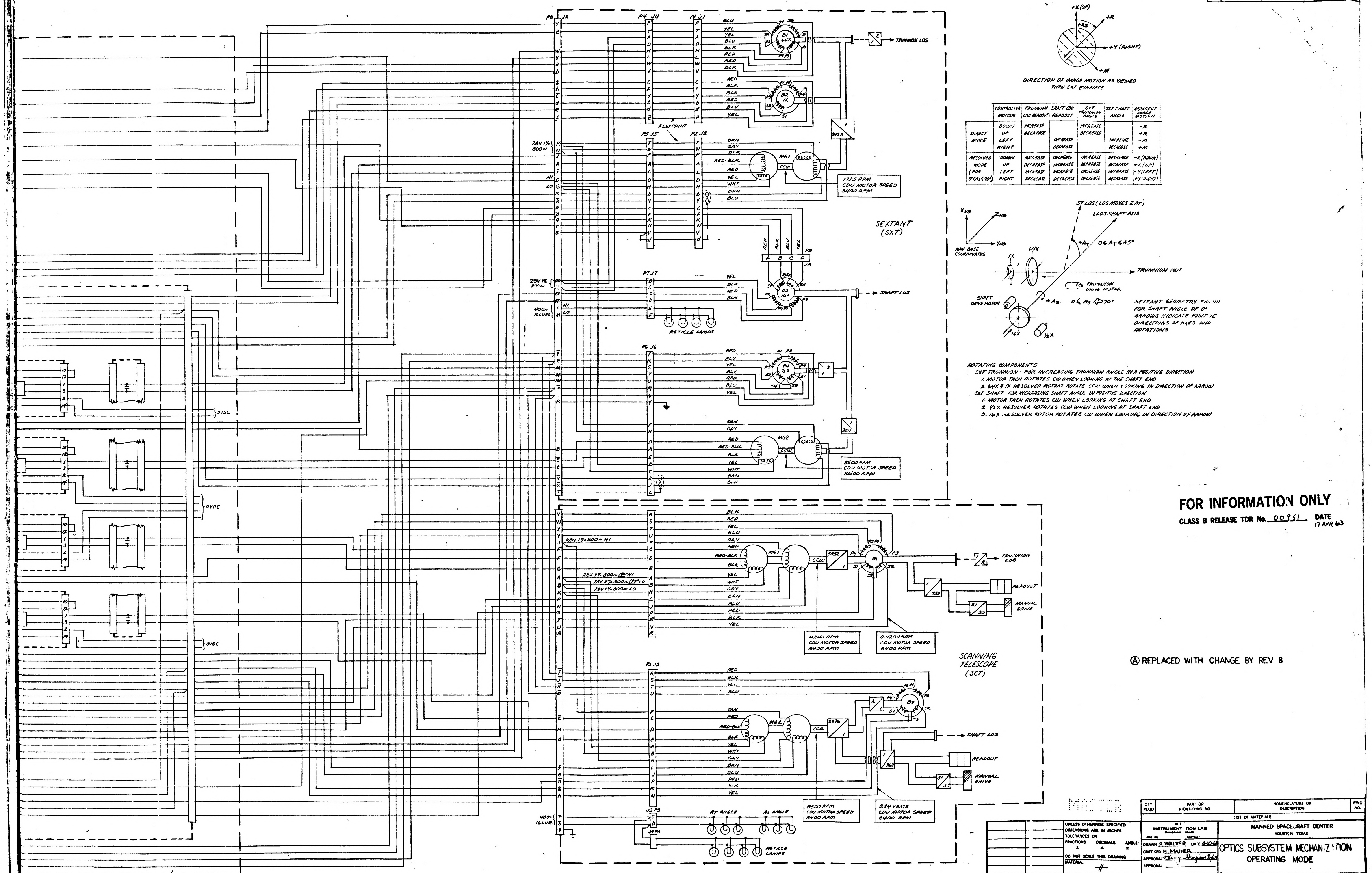
WAFER BOARD UPPER
MOTOR DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015140
SCALE 4X
WT
SHEET 1 OF 1

1015140

	1015142	Ⓐ			

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED WITH CHANGE. PER TDRR 04662	4/9/63	


+X (UP)
+R
+As
+Y (RIGHT)
+M
TRUNNION LOS
SHAFT LOS
SEXTANT (SXT)
SCANNING TELESCOPE (SCT)
FLEXPRINT
RETICLE LAMPS
1725 RPM CDU MOTOR SPEED 8400 RPM
8600 RPM CDU MOTOR SPEED 8400 RPM
4200 RPM CDU MOTOR SPEED 8400 RPM
0.420 VRMS CDU MOTOR SPEED 8400 RPM
8500 RPM CDU MOTOR SPEED 8400 RPM
0.84 VRMS CDU MOTOR SPEED 8400 RPM
READOUT
MANUAL DRIVE
AT ANGLE
AS ANGLE
28V 1% 800~
400~ ILLUM.
31 DC
0V DC
ST LOS (LOS MOVES 2AT)
LLOS SHAFT AXIS
XNB
ZNB
YNB
NAV BASE COORDINATES
+AT 0 ≤ AT ≤ 45°
TRUNNION AXIS
TRUNNION DRIVE MOTOR
SHAFT DRIVE MOTOR
+AS 0 ≤ AS ≤ 270°
1X
64X
16X
1/2X
SEXTANT GEOMETRY SHOWN FOR SHAFT ANGLE OF 0° ARROWS INDICATE POSITIVE DIRECTIONS OF AXES AND ROTATIONS

DIRECTION OF IMAGE MOTION AS VIEWED THRU SXT EYEPIECE

	CONTROLLER MOTION	TRUNNION CDU READOUT	SHAFT CDU READOUT	SXT TRUNNION ANGLE	SXT SHAFT ANGLE	APPARENT IMAGE MOTION
DIRECT MODE	DOWN	INCREASE		INCREASE		-R
	UP	DECREASE		DECREASE		+R
	LEFT		INCREASE		INCREASE	-M
	RIGHT		DECREASE		DECREASE	+M
RESOLVED MODE (FOR 0°<As<90°)	DOWN	INCREASE	DECREASE	INCREASE	DECREASE	-X (DOWN)
	UP	DECREASE	INCREASE	DECREASE	INCREASE	+X (UP)
	LEFT	INCREASE	INCREASE	INCREASE	INCREASE	-Y (LEFT)
	RIGHT	DECREASE	DECREASE	DECREASE	DECREASE	+Y (RIGHT)

ROTATING COMPONENTS

SXT TRUNNION - FOR INCREASING TRUNNION ANGLE IN A POSITIVE DIRECTION
1. MOTOR TACH ROTATES CW WHEN LOOKING AT THE SHAFT END
2. 64X & 1X RESOLVER ROTORS ROTATE CCW WHEN LOOKING IN DIRECTION OF ARROW

SXT SHAFT - FOR INCREASING SHAFT ANGLE IN POSITIVE DIRECTION
1. MOTOR TACH ROTATES CW WHEN LOOKING AT SHAFT END
2. 1/2X RESOLVER ROTATES CCW WHEN LOOKING AT SHAFT END
3. 16X RESOLVER ROTOR ROTATES CW WHEN LOOKING IN DIRECTION OF ARROW

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00951 DATE 17 APR 63

Ⓐ REPLACED WITH CHANGE BY REV B

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLE ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO. CONTRACT
DRAWN R WALKER DATE 4-10-63
CHECKED H. MAHER
APPROVAL Harvey 4/12/63
APPROVAL
NASA APPROVAL
MIT APPROVAL W 11 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

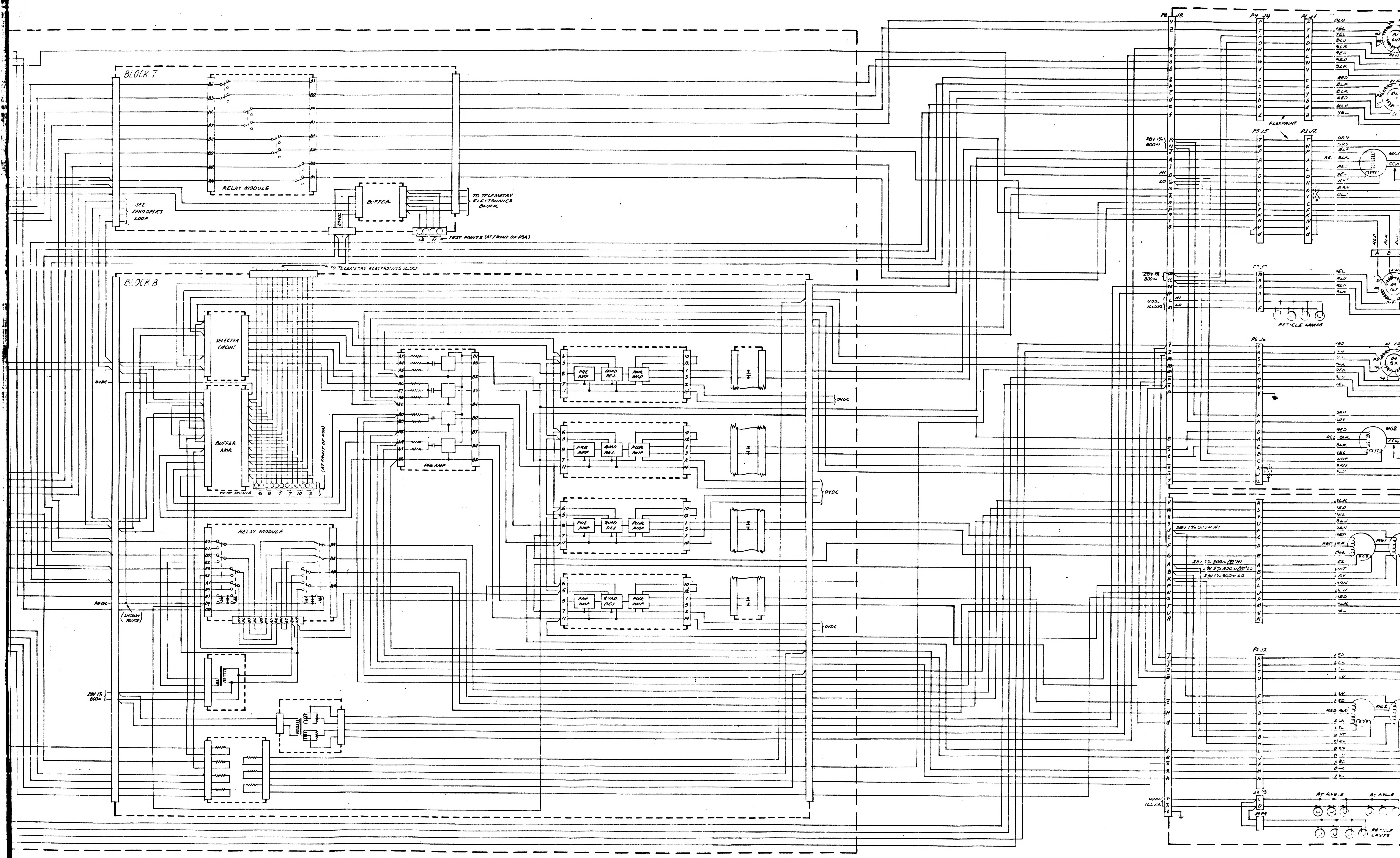
OPTICS SUBSYSTEM MECHANIZATION
OPERATING MODE

CODE IDENT NO. SIZE NASA DRAWING NO. 1015142
SCALE ~ WT SHEET OF

PHOTOGRAPHIC SCALE ONLY

1:4

1015142

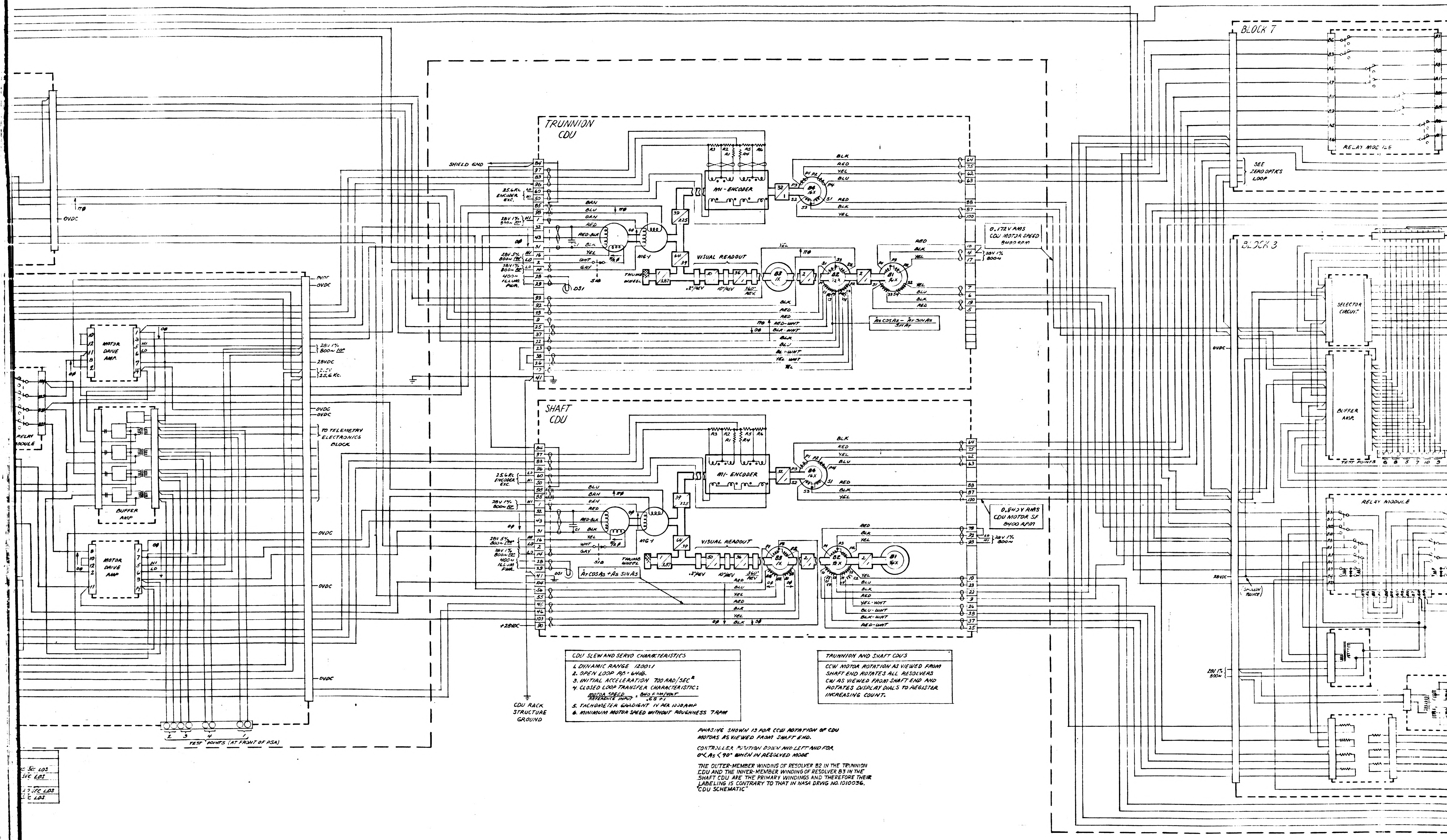

BLOCK 7
RELAY MODULE
BUFFER
TO TELEMETRY ELECTRONICS BLOCK
SEE ZERO OPTICS LOOP
28VDC
12 11 TEST POINTS (AT FRONT OF PSA)
TO TELEMETRY ELECTRONICS BLOCK
BLOCK 8
SELECTOR CIRCUIT
BUFFER AMP.
TEST POINTS 6 8 5 7 10 9
(AT FRONT OF PSA)
PREAMP
PRE AMP
QUAD REJ.
PWR AMP
RELAY MODULE
OVDC
28VDC
(SHOWN TWICE)
28V 1% 800~
P8 J8
P4 J4
P1 J1
P5 J5
P2 J2
P6 J6
P3 J3
FLEXPRINT
28V 1% 800~
HI
LO
400~ ILLUM.
RETICLE LAMPS
MG1
MG2
CCW
28V 1% 800~ HI
28V 5% 800~ 90° HI
28V 5% 800~ 90° LO
28V 1% 800~ LO
BLU
YEL
BLK
RED
ORN
GRY
WHT
BRN
RETICLE LAMPS

INCHES

PHOTOGRAPHIC SCALE ONLY

E3

1015142


BLOCK 7
RELAY MODULE
SEE ZERO OPTICS LOOP
BLOCK 3
SELECTOR CIRCUIT
BUFFER AMP.
TEST POINTS
RELAY MODULE
TRUNNION CDU
SHAFT CDU
SHIELD END
25.6 KC ENCODER EXC.
28V 1% 800~ 10°
28V 5% 800~ 190°
28V 1% 800~ 0°
400~ ILLUM. PWR.
M1-ENCODER
MG4
VISUAL READOUT
THUMB WHEEL
.2°/REV
10°/REV
360°/REV
B3 1X
B2 16X
B1 64X
B4 16X
DS1
S1B
0.172V RMS CDU MOTOR SPEED 8400 RPM
0.843V RMS CDU MOTOR SP 8400 RPM
AT COS AS - AT SIN AS SIN AT
AT COS AS + AS SIN AS
MOTOR DRIVE AMP.
BUFFER AMP
0VDC
28VDC
25.6 KC.
TO TELEMETRY ELECTRONICS BLOCK
RELAY MODULE
CDU RACK STRUCTURE GROUND
+28VDC
TEST POINTS (AT FRONT OF PSA)
BLK
RED
YEL
BLU
BRN
ORN
WHT
GRY
RED-WHT
BLK-WHT
BLU-WHT
YEL-WHT

CDU SLEW AND SERVO CHARACTERISTICS

1. DYNAMIC RANGE 1200:1
2. OPEN LOOP Aβ = 64db.
3. INITIAL ACCELERATION 700 RAD/SEC^2
4. CLOSED LOOP TRANSFER CHARACTERISTIC:

$$\frac{\text{MOTOR SPEED}}{\text{REFERENCE INPUT}} = \frac{840 \text{ RPM/VOLT}}{.6S+1}$$

5. TACHOMETER GRADIENT 1V PER 1000 AMP
6. MINIMUM MOTOR SPEED WITHOUT ROUGHNESS 7RPM

TRUNNION AND SHAFT CDU'S

CCW MOTOR ROTATION AS VIEWED FROM SHAFT END ROTATES ALL RESOLVERS CW AS VIEWED FROM SHAFT END AND ROTATES DISPLAY DIALS TO REGISTER INCREASING COUNT.

PHASING SHOWN IS FOR CCW ROTATION OF CDU MOTORS AS VIEWED FROM SHAFT END.

CONTROLLER POSITION DOWN AND LEFT AND FOR $0° < A_S < 90°$ WHEN IN RESOLVED MODE

THE OUTER-MEMBER WINDING OF RESOLVER B2 IN THE TRUNNION CDU AND THE INNER-MEMBER WINDING OF RESOLVER B3 IN THE SHAFT CDU ARE THE PRIMARY WINDINGS AND THEREFORE THEIR LABELING IS CONTRARY TO THAT IN NASA DRWG NO. 1010036. "CDU SCHEMATIC"

PHOTOGRAPHIC SCALE ONLY

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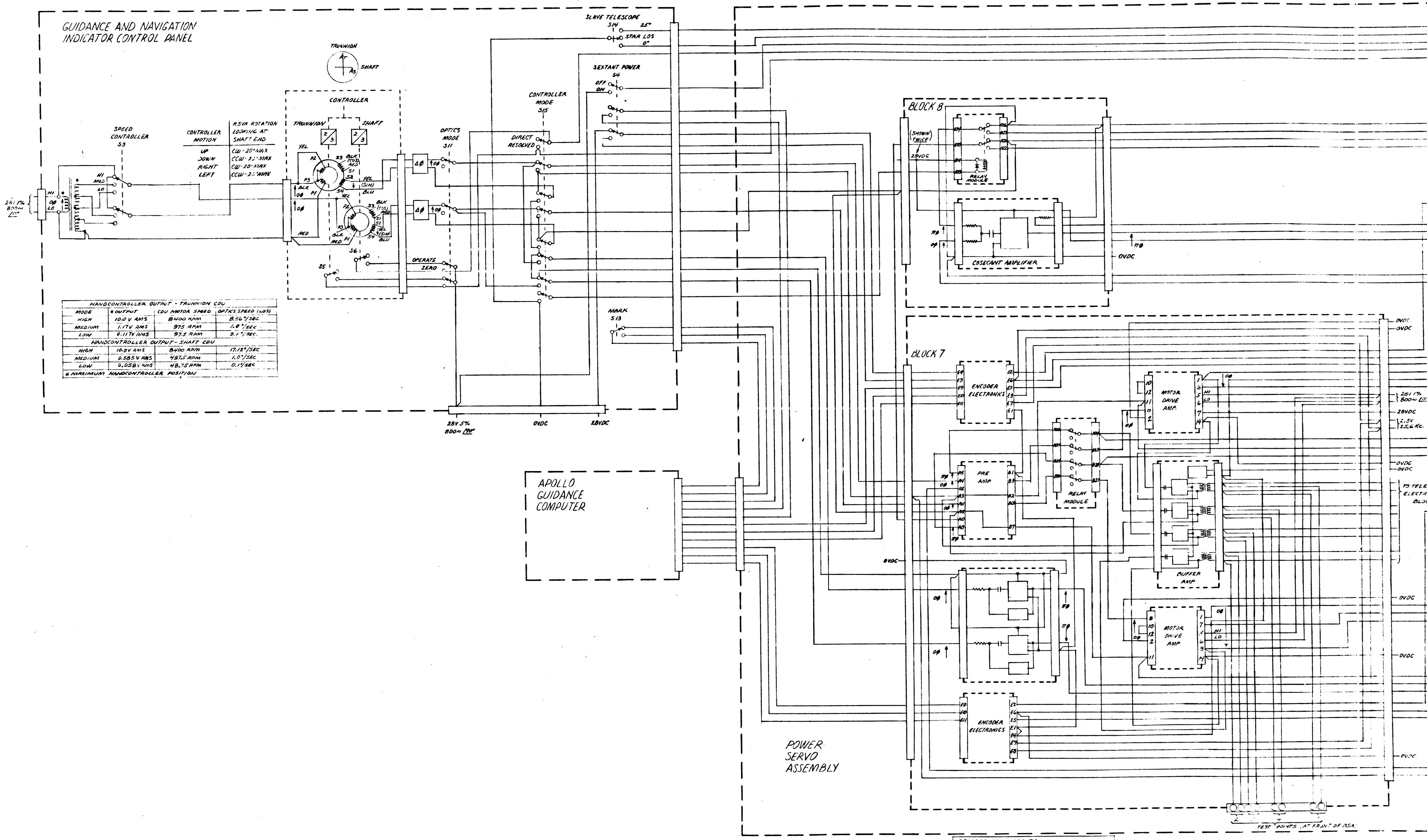

GUIDANCE AND NAVIGATION INDICATOR CONTROL PANEL
28V 1% 800~ ∠0°
HI
0Ø
LO
SPEED CONTROLLER S3
HI
MED
LO
TRUNNION
A_T
A_S
SHAFT
CONTROLLER
TRUNNION
SHAFT
YEL
P2
P3
P1
S3
BLK (COS)
RED
S1
S2
S4
YEL (SIN)
BLU
BLK
0Ø
RED
S5
S6
ΔØ
0Ø
OPTICS MODE S11
OPERATE
ZERO
CONTROLLER MODE S15
DIRECT
RESOLVED
SLAVE TELESCOPE S14
25°
STAR LOS
0°
SEXTANT POWER S4
OFF
ON
MARK S13
28V 5% 800~ ∠90°
0VDC
28VDC
APOLLO GUIDANCE COMPUTER
BLOCK 8
(SHOWN TWICE)
28VDC
RELAY MODULE
πØ
0Ø
COSECANT AMPLIFIER
0VDC
BLOCK 7
ENCODER ELECTRONICS
PRE AMP
RELAY MODULE
MOTOR DRIVE AMP.
HI
LO
BUFFER AMP
MOTOR DRIVE AMP
ENCODER ELECTRONICS
0VDC
28V 1% 800~ ∠0°
28VDC
2.5V 25.6 Kc.
TO TELE ELECTR BLO
POWER SERVO ASSEMBLY
TEST POINTS (AT FRONT OF PSA)

CONTROLLER MOTION	RSVR ROTATION LOOKING AT SHAFT END
UP	CW-20° MAX
DOWN	CCW-20° MAX
RIGHT	CW-20° MAX
LEFT	CCW-20° MAX

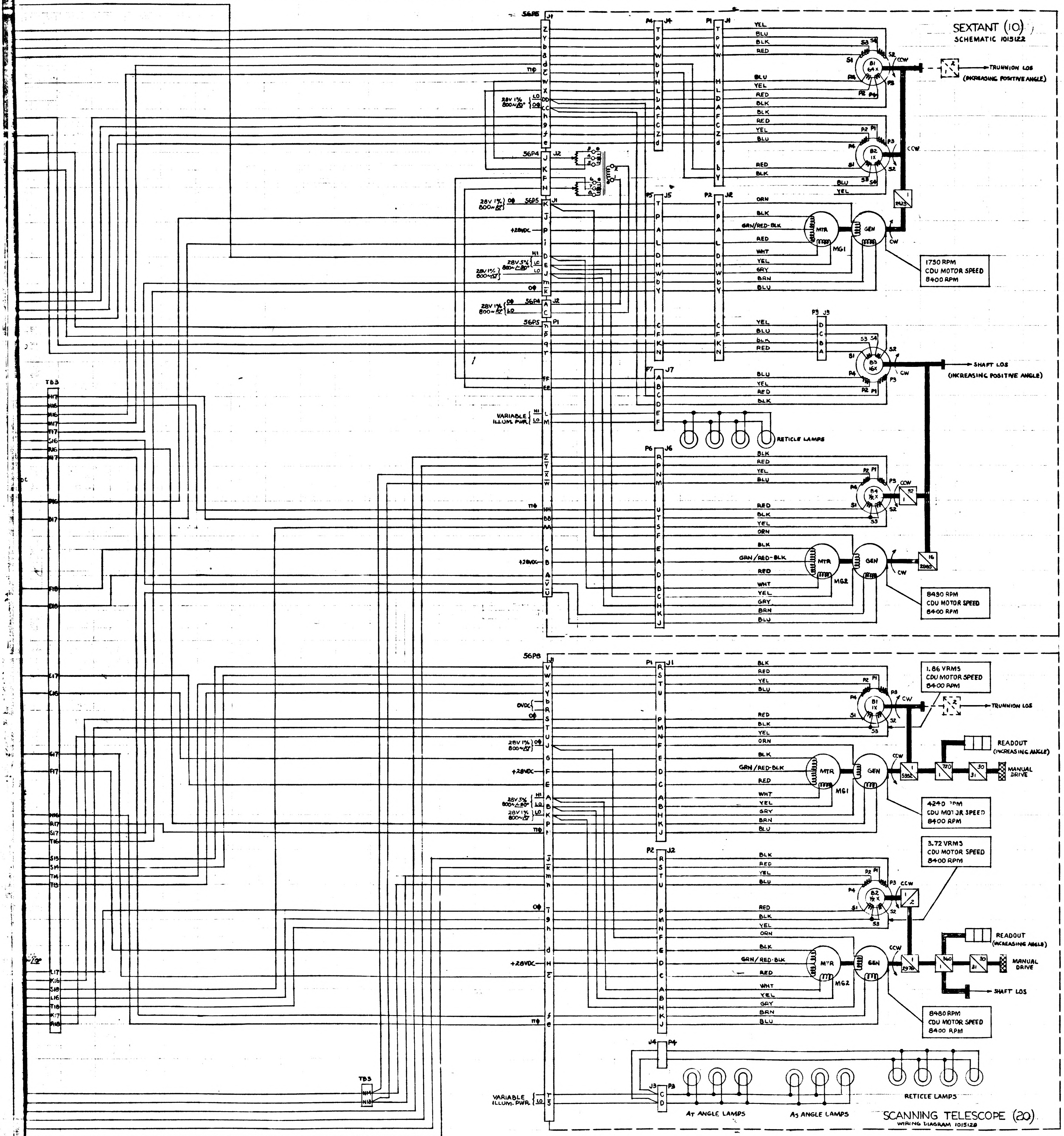
HANDCONTROLLER OUTPUT - TRUNNION CDU			
MODE	* OUTPUT	CDU MOTOR SPEED	OPTICS SPEED (LOS)
HIGH	10.0 V RMS	8400 RPM	8.56°/SEC
MEDIUM	1.17V RMS	975 RPM	1.0°/SEC
LOW	0.117V RMS	97.5 RPM	0.1°/SEC.
HANDCONTROLLER OUTPUT - SHAFT CDU			
HIGH	10.0V RMS	8400 RPM	17.12°/SEC
MEDIUM	0.585V RMS	487.5 RPM	1.0°/SEC
LOW	0.058V RMS	48.75 RPM	0.1°/SEC
* MAXIMUM HANDCONTROLLER POSITION			

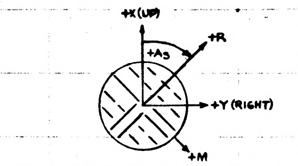
DECODER GRANULARITY
SEXTANT POWER ON
EACH BIT FROM TRUNNION CDU ≈ 10 SEC LOS
EACH BIT FROM SHAFT CDU ≈ 40 SEC LOS
SEXTANT POWER OFF
EACH BIT FROM TRUNNION CDU ≈ 20 SEC LOS
EACH BIT FROM SHAFT CDU ≈ 40 SEC LOS

(4H)

PHOTOGRAPHIC SCALE ONLY

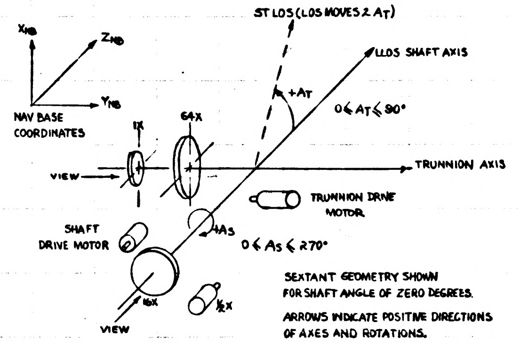
REVISIONS					
SYM	ZONE	DESCRIPTION		DATE	APP'D
B		REVISED PER TDRR 04662	CHG NO.	11-7-63	DAK


SEXTANT (10)
SCHEMATIC 1015122
TRUNNION LOS (INCREASING POSITIVE ANGLE)
SHAFT LOS (INCREASING POSITIVE ANGLE)
MTR
GEN
MG1
MG2
1750 RPM CDU MOTOR SPEED 8400 RPM
8430 RPM CDU MOTOR SPEED 8400 RPM
RETICLE LAMPS
VARIABLE ILLUM. PWR.
+28VDC
TB3
1.86 VRMS CDU MOTOR SPEED 8400 RPM
TRUNNION LOS
READOUT (INCREASING ANGLE)
MANUAL DRIVE
4240 RPM CDU MOTOR SPEED 8400 RPM
3.72 VRMS CDU MOTOR SPEED 8400 RPM
SHAFT LOS
8480 RPM CDU MOTOR SPEED 8400 RPM
AT ANGLE LAMPS
AS ANGLE LAMPS
RETICLE LAMPS
SCANNING TELESCOPE (20)
WIRING DIAGRAM 1015128


+X (UP)
+R
+AS
+Y (RIGHT)
+M

DIRECTION OF IMAGE MOTION AS VIEWED THRU SEXTANT EYEPIECE

CONTROLLER MOTION	TRUNNION CDU READOUT	SHAFT CDU READOUT	SXT TRUNNION ANGLE	SXT SHAFT ANGLE	DIRECT MODE APPARENT IMAGE MOTION	RESOLVED MODE APPARENT IMAGE MOTION
UP	INCREASE		INCREASE		-R	+X
DOWN	DECREASE		DECREASE		+R	-X
RIGHT		INCREASE		INCREASE	-M	+Y
LEFT		DECREASE		DECREASE	+M	-Y


ST LOS (LOS MOVES 2 AT)
LOS SHAFT AXIS
XNB
ZNB
YNB
NAV BASE COORDINATES
+AT
0 ≤ AT ≤ 90°
1X
64X
TRUNNION AXIS
VIEW
TRUNNION DRIVE MOTOR
SHAFT DRIVE MOTOR
+AS
0 ≤ AS ≤ 270°
16X
½X
VIEW

SEXTANT GEOMETRY SHOWN FOR SHAFT ANGLE OF ZERO DEGREES.

ARROWS INDICATE POSITIVE DIRECTIONS OF AXES AND ROTATIONS.

ROTATING COMPONENTS

SXT TRUNNION - FOR INCREASING TRUNNION ANGLE IN A POSITIVE DIRECTION.
1. MOTOR-TACH ROTATES CW WHEN LOOKING AT THE SHAFT END.
2. 64X AND 1X RESOLVER ROTORS ROTATE CW WHEN LOOKING IN DIRECTION OF ARROW.

SXT SHAFT - FOR INCREASING SHAFT ANGLE IN POSITIVE DIRECTION.
1. MOTOR-TACH ROTATES CW WHEN LOOKING AT SHAFT END.
2. ½X RESOLVER ROTATES CCW WHEN LOOKING AT SHAFT END.
3. 16X RESOLVER ROTATES CW WHEN LOOKING IN DIRECTION OF ARROW.

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00851 DATE 4-17-63

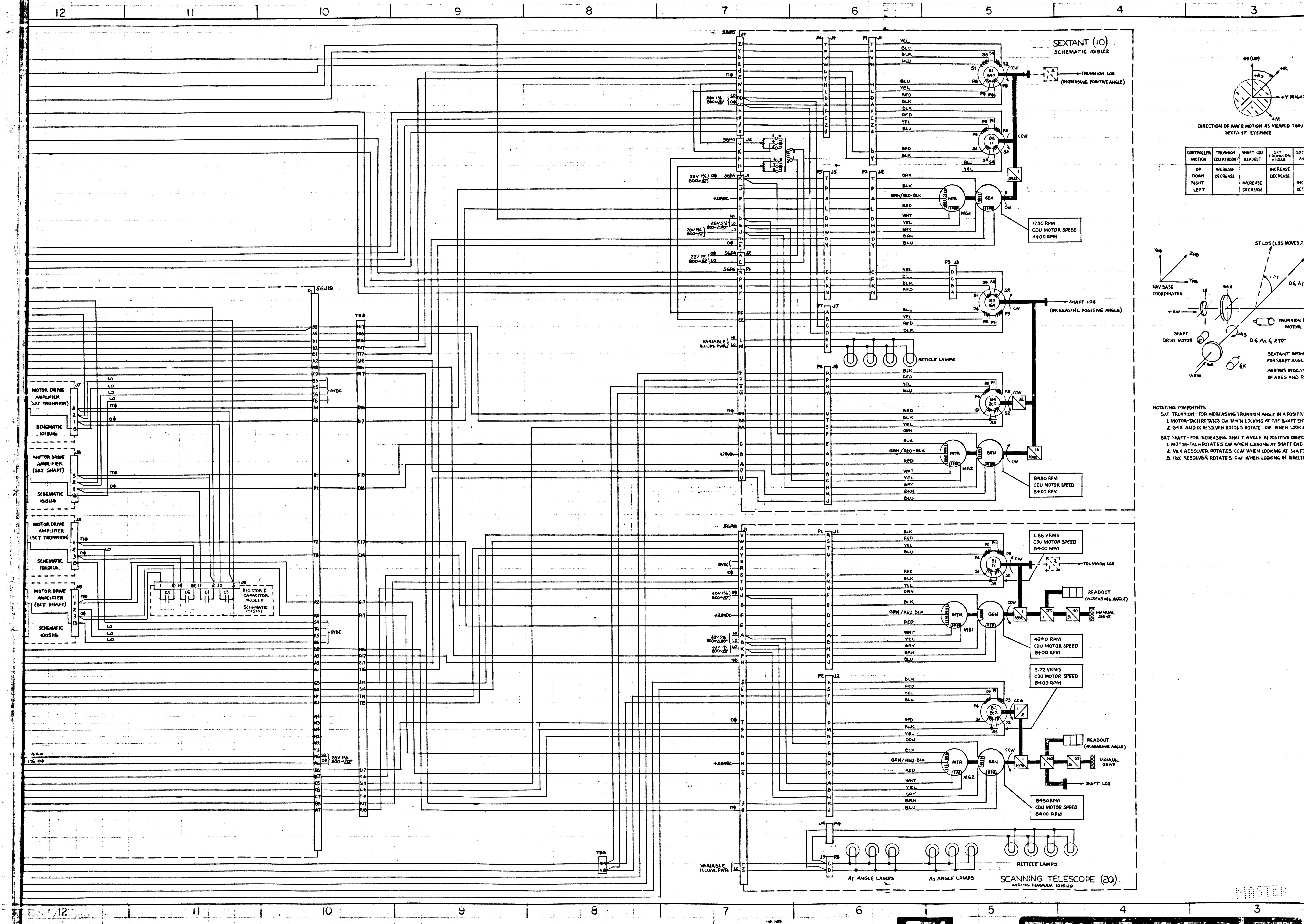
Ⓑ REPLACES REV A WITH CHANGE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS + − ANGLES + −	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
	DRAWN R. WALKER DATE 10/30/63 CHECKED APPROVAL D.A. Koso 11/19/63 APPROVAL	APOLLO OPTICS SUBSYSTEM TWO WIRE MECHANIZATION
DO NOT SCALE THIS DRAWING		
MATERIAL	NASA APPROVAL	CODE IDENT NO. / SIZE J / 1015142
CONTRACT	MIT APPROVAL	SCALE / SHEET

MASTER

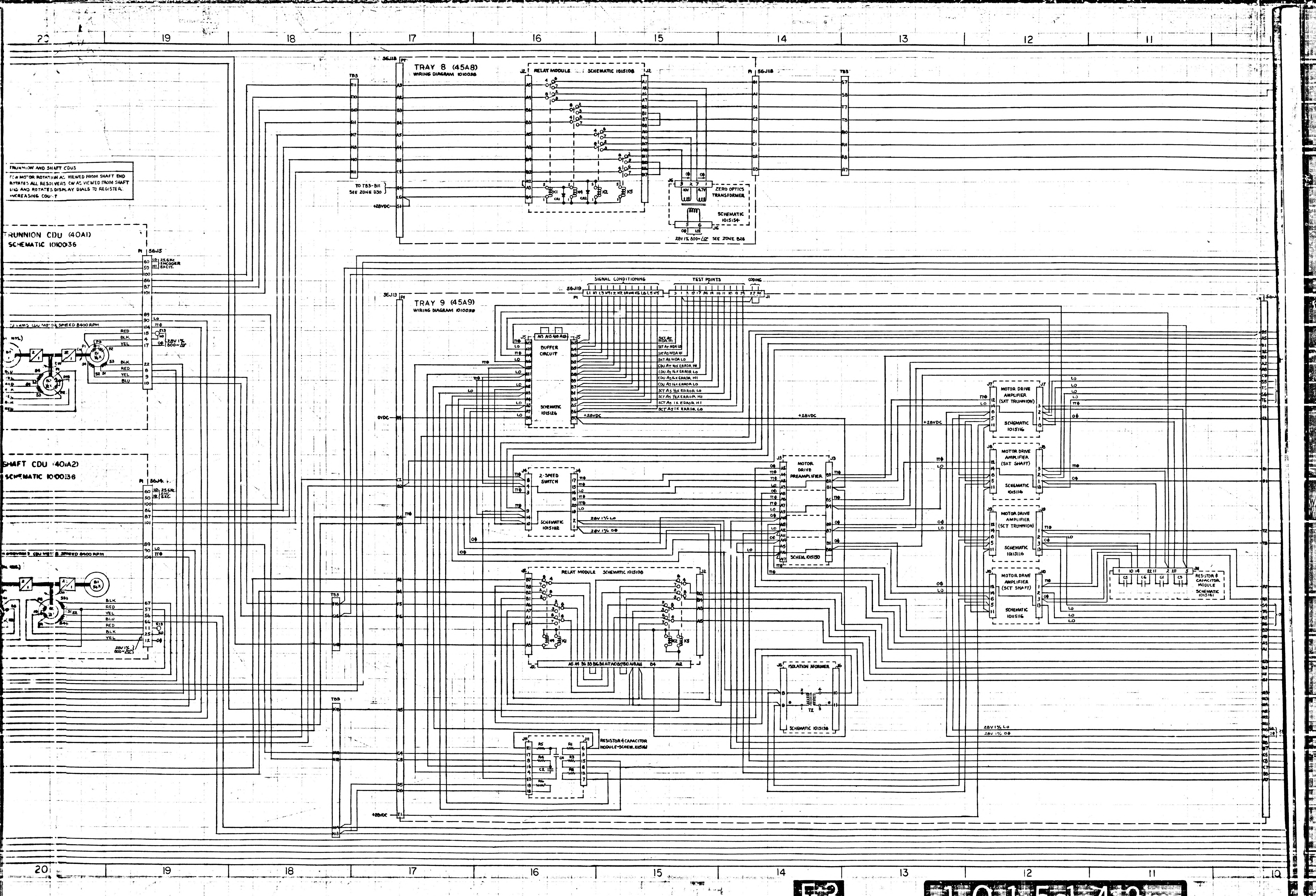
15

1015142


12
11
10
9
8
7
6
5
4
3
SEXTANT (10)
SCHEMATIC 1015122
TRUNNION LOS
(INCREASING POSITIVE ANGLE)
SHAFT LOS
(INCREASING POSITIVE ANGLE)
1730 RPM
CDU MOTOR SPEED
8400 RPM
8430 RPM
CDU MOTOR SPEED
8400 RPM
RETICLE LAMPS
MTR
GEN
MG1
MG2
CW
CCW
B1 64X
B2 1X
B3 16X
B4 ½X
SCANNING TELESCOPE (20)
WIRING DIAGRAM 1015128
1.86 VRMS
CDU MOTOR SPEED
8400 RPM
4240 RPM
CDU MOTOR SPEED
8400 RPM
3.72 VRMS
CDU MOTOR SPEED
8400 RPM
8480 RPM
CDU MOTOR SPEED
8400 RPM
READOUT
(INCREASING ANGLE)
MANUAL DRIVE
SHAFT LOS
AT ANGLE LAMPS
AS ANGLE LAMPS
VARIABLE ILLUM. PWR.
56P6
56P4
56P5
56P8
56J19
TB3
MOTOR DRIVE AMPLIFIER (SXT TRUNNION)
MOTOR DRIVE AMPLIFIER (SXT SHAFT)
MOTOR DRIVE AMPLIFIER (SCT TRUNNION)
MOTOR DRIVE AMPLIFIER (SCT SHAFT)
SCHEMATIC 1015116
RESISTOR & CAPACITOR MODULE
SCHEMATIC 1015161
0VDC
+28VDC
28V 1% 800~/0°
+X (UP)
+R
+AS
+Y (RIGHT
+M
DIRECTION OF IMAGE MOTION AS VIEWED THRU SEXTANT EYEPIECE
ST LOS (LOS MOVES 2
XNB
ZNB
YNB
NAV BASE COORDINATES
1X
64X
VIEW
+AT
0 ≤ AT
TRUNNION
MOTOR
SHAFT DRIVE MOTOR
AS
0 ≤ AS ≤ 270°
16X
½X
SEXTANT GEOM
FOR SHAFT ANGL
ARROWS INDICAT
OF AXES AND R

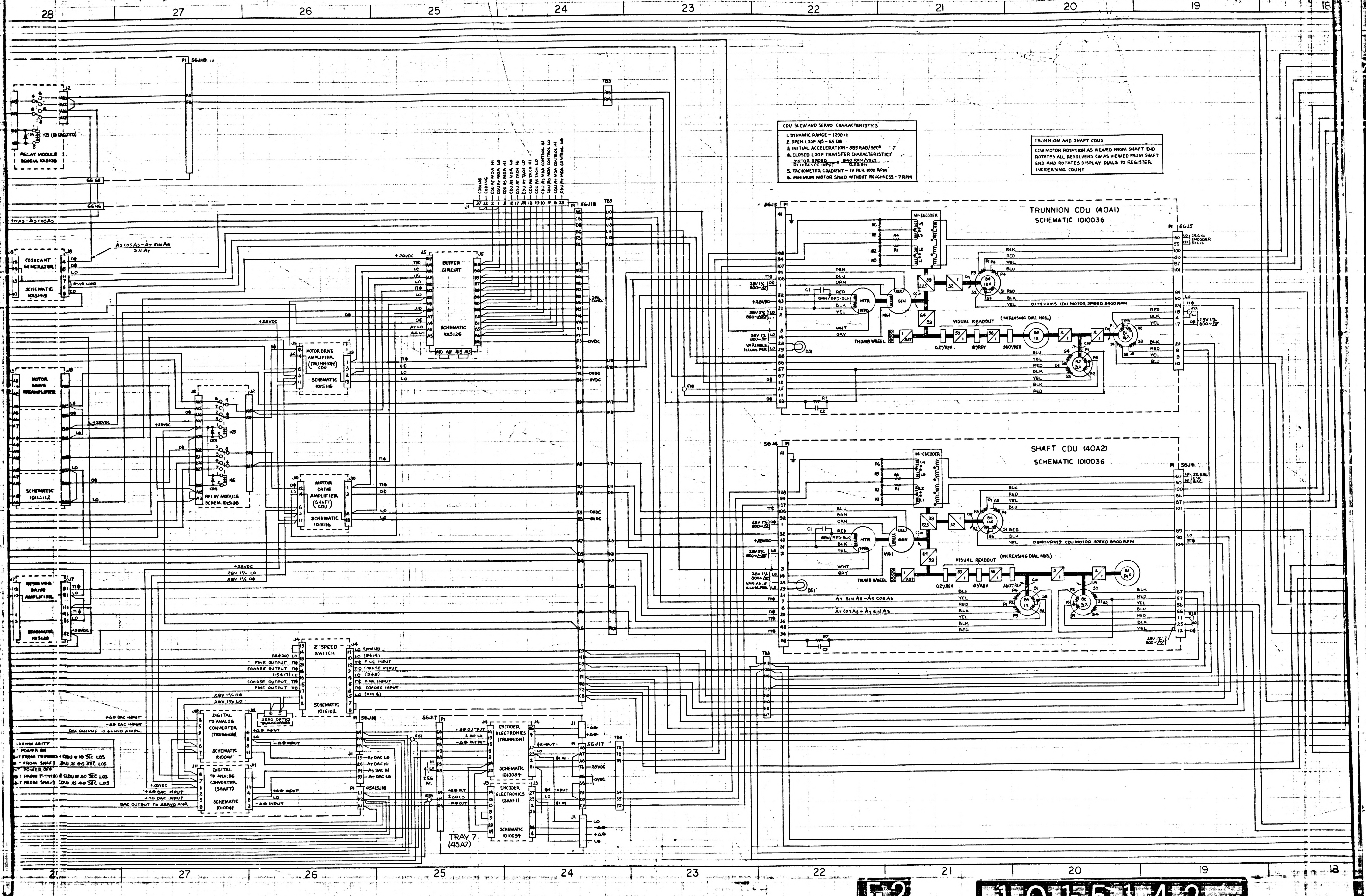
CONTROLLER MOTION	TRUNNION CDU READOUT	SHAFT CDU READOUT	SXT TRUNNION ANGLE	SXT AN
UP	INCREASE		INCREASE	
DOWN	DECREASE		DECREASE	
RIGHT		INCREASE		INC
LEFT		DECREASE		DEC

ROTATING COMPONENTS
SXT TRUNNION - FOR INCREASING TRUNNION ANGLE IN A POSITIV
1. MOTOR-TACH ROTATES CW WHEN LOOKING AT THE SHAFT EN
2. 64X AND 1X RESOLVER ROTORS ROTATE CW WHEN LOOKI
SXT SHAFT - FOR INCREASING SHAFT ANGLE IN POSITIVE DIREC
1. MOTOR-TACH ROTATES CW WHEN LOOKING AT SHAFT END.
2. ½X RESOLVER ROTATES CCW WHEN LOOKING AT SHAF
3. 16X RESOLVER ROTATES CW WHEN LOOKING IN DIRECT


20
19
18
17
16
15
14
13
12
11
10
TRAY 8 (45A8)
WIRING DIAGRAM 1010038
RELAY MODULE SCHEMATIC 1015108
56J18
TB3
TO TB3-B11
SEE ZONE D30
+28VDC
ZERO OPTICS TRANSFORMER
SCHEMATIC 1015154
28V 1% 800~/0°
SEE ZONE B26
TRUNNION AND SHAFT CDUS
CCW MOTOR ROTATION AS VIEWED FROM SHAFT END ROTATES ALL RESOLVERS CW AS VIEWED FROM SHAFT END AND ROTATES DISPLAY DIALS TO REGISTER INCREASING COUNT
TRUNNION CDU (40A1)
SCHEMATIC 1010036
56J5
25.6Kc ENCODER EXCIT.
SHAFT CDU (40A2)
SCHEMATIC 1010036
56J4
CDU MOTOR 8 SPEED 8400 RPM
RED
BLK
YEL
BLU
28V 1% 800~/0°
SIGNAL CONDITIONING
TEST POINTS
CODING
56J19
TRAY 9 (45A9)
WIRING DIAGRAM 1010039
BUFFER CIRCUIT
SCHEMATIC 1015126
SXT A9 MDA HI
SXT A9 MDA LO
CDU A9 1/16X ERROR HI
CDU A9 1/16X ERROR LO
CDU A9 1X ERROR HI
CDU A9 1X ERROR LO
SCT A9 1/16X ERROR HI
SCT A9 1/16X ERROR LO
SCT A9 1X ERROR HI
SCT A9 1X ERROR LO
+28VDC
0VDC
2-SPEED SWITCH
SCHEMATIC 1015102
28V 1% LO
28V 1% 0Φ
MOTOR DRIVE PREAMPLIFIER
SCHEM. 1015150
MOTOR DRIVE AMPLIFIER (SXT TRUNNION)
SCHEMATIC 1015116
MOTOR DRIVE AMPLIFIER (SXT SHAFT)
SCHEMATIC 1015116
MOTOR DRIVE AMPLIFIER (SCT TRUNNION)
SCHEMATIC 1015116
MOTOR DRIVE AMPLIFIER (SCT SHAFT)
SCHEMATIC 1015116
RESISTOR & CAPACITOR MODULE
SCHEMATIC 1015161
RELAY MODULE SCHEMATIC 1015108
ISOLATION XFORMER
SCHEMATIC 1015138
RESISTOR & CAPACITOR MODULE-SCHEM. 1015161
TΦ
LO
0Φ
+28VDC
28V 1% LO
28V 1% 0Φ

F3

1015142


28
27
26
25
24
23
22
21
20
19
18
TRUNNION CDU (40A1)
SCHEMATIC 1010036
SHAFT CDU (40A2)
SCHEMATIC 1010036
MI-ENCODER
MTR
GEN
MG1
THUMB WHEEL
VISUAL READOUT
(INCREASING DIAL NOS.)
0.2°/REV.
10°/REV
360°/REV
0.172 VRMS CDU MOTOR SPEED 8400 RPM
0.840 VRMS CDU MOTOR SPEED 8400 RPM
25.6KC ENCODER EXCIT.
VARIABLE ILLUM. PWR
DS1
56J5
56J4
56J18
56J17
TB3
TB9
RELAY MODULE SCHEM. 1015108
K5 (IS ENGAGED)
COSECANT GENERATOR SCHEMATIC 1015148
MOTOR DRIVE PREAMPLIFIER SCHEMATIC 1015112
RESOLVER DRIVE AMPLIFIER SCHEMATIC 1015128
BUFFER CIRCUIT SCHEMATIC 1015126
MOTOR DRIVE AMPLIFIER (TRUNNION CDU) SCHEMATIC 1015116
MOTOR DRIVE AMPLIFIER (SHAFT CDU) SCHEMATIC 1015116
RELAY MODULE SCHEM. 1015108
2 SPEED SWITCH SCHEMATIC 1015102
FINE OUTPUT
COARSE OUTPUT
FINE INPUT
COARSE INPUT
DIGITAL TO ANALOG CONVERTER (TRUNNION) SCHEMATIC 1010041
DIGITAL TO ANALOG CONVERTER (SHAFT) SCHEMATIC 1010041
ZERO OPTICS TRANSFORMER
+Δθ DAC INPUT
−Δθ DAC INPUT
DAC OUTPUT TO SERVO AMPL.
ENCODER ELECTRONICS (TRUNNION) SCHEMATIC 1010034
ENCODER ELECTRONICS (SHAFT) SCHEMATIC 1010034
TRAY 7 (45A7)
45A15J18
25.6 KC.
+28VDC
0VDC
A_S COS A_S − A_T SIN A_S
A_T SIN A_S − A_S COS A_S
A_T COS A_S + A_S SIN A_S
...RANN ABILITY
POWER ON
...IT FROM TRUNNION CDU ≈ 10 SEC LOS
... FROM SHAFT CDU ≈ 40 SEC LOS
... POWER OFF
...UT FROM TRUNNION CDU ≈ 20 SEC LOS
...T FROM SHAFT CDU ≈ 40 SEC LOS

CDU SLEW AND SERVO CHARACTERISTICS

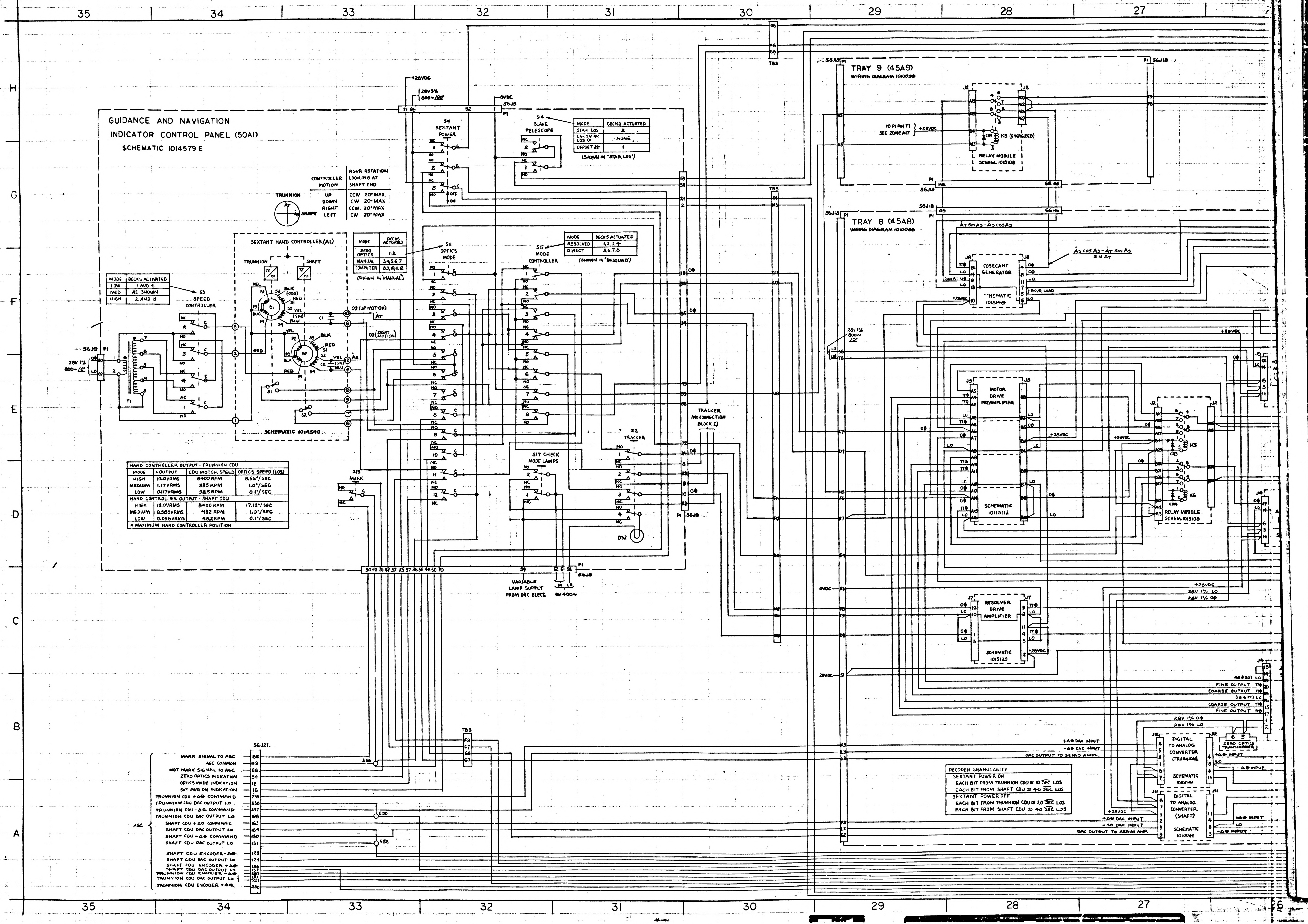
1. DYNAMIC RANGE - 1200:1
2. OPEN LOOP AB - 65 DB
3. INITIAL ACCELERATION - 585 RAD/SEC^2
4. CLOSED LOOP TRANSFER CHARACTERISTIC $\frac{\text{MOTOR SPEED}}{\text{REFERENCE INPUT}} = \frac{840 \text{ RPM/VOLT}}{0.23S+1}$
5. TACHOMETER GRADIENT - 1V PER 1000 RPM
6. MINIMUM MOTOR SPEED WITHOUT ROUGHNESS - 7RPM

TRUNNION AND SHAFT CDUS

CCW MOTOR ROTATION AS VIEWED FROM SHAFT END ROTATES ALL RESOLVERS CW AS VIEWED FROM SHAFT END AND ROTATES DISPLAY DIALS TO REGISTER INCREASING COUNT

F2

1015142


35
34
33
32
31
30
29
28
27
H
G
F
E
D
C
B
A
GUIDANCE AND NAVIGATION
INDICATOR CONTROL PANEL (50A1)
SCHEMATIC 1014579 E
SEXTANT HAND CONTROLLER (A1)
SCHEMATIC 1014540
TRUNNION
SHAFT
S3 SPEED CONTROLLER
S4 SEXTANT POWER
S11 OPTICS MODE
S12 TRACKER
S13 MARK
S14 SLAVE TELESCOPE
S15 MODE CONTROLLER
S17 CHECK MODE LAMPS
DS2
TRACKER (NO CONNECTION BLOCK 2)
VARIABLE LAMP SUPPLY FROM D&C ELECT.
6V 400~
+28VDC
0VDC
28V 5% 800~/90°
28V 1% 800~/0°
56J9
56J18
56J19
56J21
TB3
TB5
TRAY 9 (45A9)
WIRING DIAGRAM 1010039
TRAY 8 (45A8)
WIRING DIAGRAM 1010038
TO P1 PIN T1 SEE ZONE A17
K3 (ENERGIZED)
RELAY MODULE SCHEM. 1015108
COSECANT GENERATOR
SCHEMATIC 1015148
RSVR LOAD
$A_T \sin A_S - A_S \cos A_S$
$A_S \cos A_S - A_T \sin A_S$
$\sin A_T$
MOTOR DRIVE PREAMPLIFIER
SCHEMATIC 1011112
RELAY MODULE SCHEM. 1015108
RESOLVER DRIVE AMPLIFIER
SCHEMATIC 1015120
DIGITAL TO ANALOG CONVERTER (TRUNNION)
SCHEMATIC 1010041
DIGITAL TO ANALOG CONVERTER (SHAFT)
SCHEMATIC 1010041
ZERO OPTICS TRANSFORMER
FINE OUTPUT
COARSE OUTPUT
+Δθ DAC INPUT
−Δθ DAC INPUT
DAC OUTPUT TO SERVO AMPL.
0Φ (UP MOTION)
0Φ (RIGHT MOTION)
E56
E50
E52

GUIDANCE AND NAVIGATION
INDICATOR CONTROL PANEL (50A1)
SCHEMATIC 1014579 E

CONTROLLER MOTION	RSVR ROTATION LOOKING AT SHAFT END
UP	CCW 20° MAX.
DOWN	CW 20° MAX
RIGHT	CCW 20° MAX
LEFT	CW 20° MAX

MODE	DECKS ACTIVATED
LOW	1 AND 4
MED	AS SHOWN
HIGH	2 AND 3

MODE	DECKS ACTUATED
ZERO OPTICS	1.2
MANUAL	3,4,5,6,7
COMPUTER	8,9,10,11,12

(SHOWN IN "MANUAL")

MODE	DECKS ACTUATED
STAR LOS	2
LANDM'RK LOS 0°	NONE
OFFSET 25°	1

(SHOWN IN "STAR LOS")

MODE	DECKS ACTUATED
RESOLVED	1,2,3,4
DIRECT	5,6,7,8

(SHOWN IN "RESOLVED")

MODE	* OUTPUT	CDU MOTOR SPEED	OPTICS SPEED (LOS)
HAND CONTROLLER OUTPUT - TRUNNION CDU			
HIGH	10.0VRMS	8400 RPM	8.56°/SEC
MEDIUM	1.17VRMS	985 RPM	1.0°/SEC
LOW	0.117VRMS	98.5 RPM	0.1°/SEC
HAND CONTROLLER OUTPUT - SHAFT CDU			
HIGH	10.0VRMS	8400 RPM	17.12°/SEC
MEDIUM	0.585VRMS	482 RPM	1.0°/SEC
LOW	0.058VRMS	48.2RPM	0.1°/SEC

* MAXIMUM HAND CONTROLLER POSITION

DECODER GRANULARITY
SEXTANT POWER ON
EACH BIT FROM TRUNNION CDU ≈ 10 $\overline{\text{SEC}}$ LOS
EACH BIT FROM SHAFT CDU ≈ 40 $\overline{\text{SEC}}$ LOS
SEXTANT POWER OFF
EACH BIT FROM TRUNNION CDU ≈ 20 $\overline{\text{SEC}}$ LOS
EACH BIT FROM SHAFT CDU ≈ 40 $\overline{\text{SEC}}$ LOS

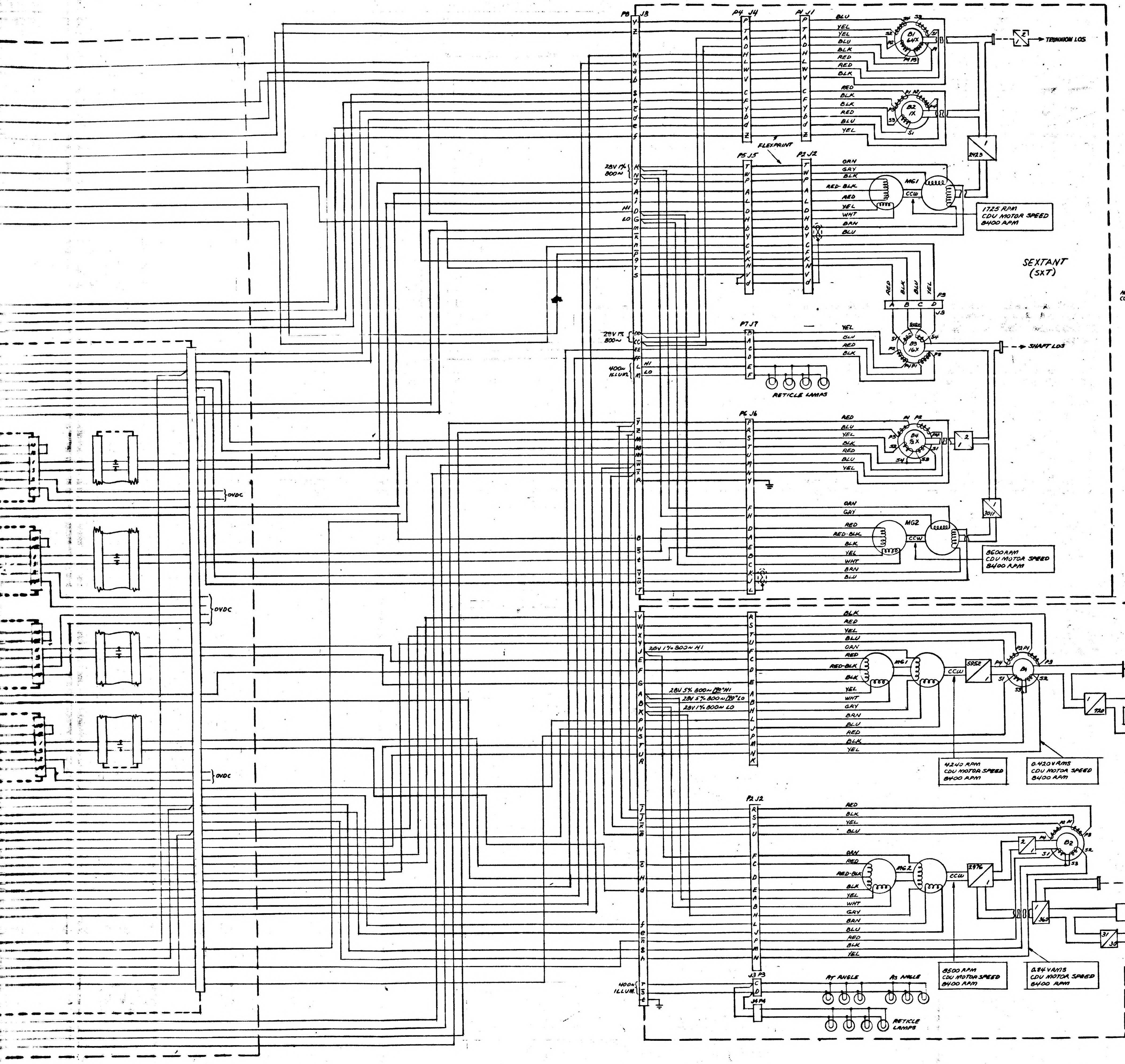
AGC — 56J21

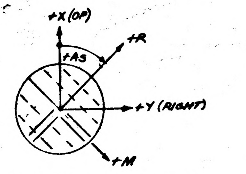
Signal	Pin
MARK SIGNAL TO AGC	86
AGC COMMON	119
NOT MARK SIGNAL TO AGC	88
ZERO OPTICS INDICATION	54
OPTICS MODE INDICATION	18
SXT PWR ON INDICATION	16
TRUNNION CDU +Δθ COMMAND	235
TRUNNION CDU DAC OUTPUT LO	236
TRUNNION CDU −Δθ COMMAND	197
TRUNNION CDU DAC OUTPUT LO	198
SHAFT CDU +Δθ COMMAND	163
SHAFT CDU DAC OUTPUT LO	164
SHAFT CDU −Δθ COMMAND	130
SHAFT CDU DAC OUTPUT LO	131
SHAFT CDU ENCODER −Δθ	123
SHAFT CDU DAC OUTPUT LO	124
SHAFT CDU ENCODER +Δθ	156
SHAFT CDU DAC OUTPUT LO	157
TRUNNION CDU ENCODER −Δθ	190
TRUNNION CDU DAC OUTPUT LO	191 231
TRUNNION CDU ENCODER +Δθ	230

E1 1015142

1015142 Ⓐ

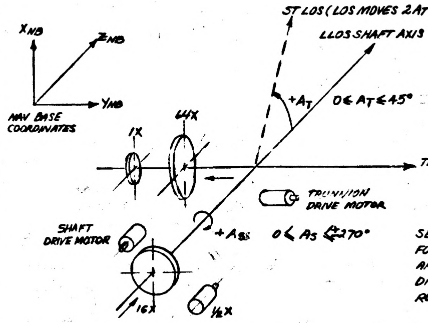
	REVISIONS		
SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED WITH CHANGE PER TDRR 04662	4/9/63	DAK
B	OBSOLETE PER TDRR 07575	4/11/64	WK


P8 J8
P4 J4
P1 J1
P5 J5
P2 J2
FLEXPRINT
P7 J7
P6 J6
P3 J3
P2 J2
J3 P3
J4 P4
28V 1% 800~
HI
LO
28V 1% 800~
400~ ILLUM.
HI
LO
0VDC
B1 64X
B2 1X
TRUNNION LOS
2423
MG1
CCW
1725 RPM
CDU MOTOR SPEED
8400 RPM
SEXTANT
(SXT)
B3 16X
SHAFT LOS
RETICLE LAMPS
B4 ½X
3011
MG2
8600 RPM
CDU MOTOR SPEED
8400 RPM
28V 1% 800~ HI
28V 5% 800~ 0° HI
28V 5% 800~ 0° LO
28V 1% 800~ LO
5952
B1
TRUNNION LOS
720
READOUT
MANUAL DRIVE
31
30
4240 RPM
CDU MOTOR SPEED
8400 RPM
0.420 V RMS
CDU MOTOR SPEED
8400 RPM
SCANNING
TELESCOPE
(SCT)
2976
B2
SHAFT LOS
360
READOUT
MANUAL DRIVE
8500 RPM
CDU MOTOR SPEED
8400 RPM
0.84 V RMS
CDU MOTOR SPEED
8400 RPM
AT ANGLE
AS ANGLE
RETICLE LAMPS
400~ ILLUM.
BLU
YEL
BLK
RED
ORN
GRY
WHT
BRN


+X (UP)
+R
FAS
+Y (RIGHT)
+M

DIRECTION OF IMAGE MOTION AS VIEWED
THRU SXT EYEPIECE

	CONTROLLER MOTION	TRUNNION CDU READOUT	SHAFT CDU READOUT	SXT TRUNNION ANGLE	SXT SHAFT ANGLE	APPARENT IMAGE MOTION
DIRECT MODE	DOWN	INCREASE		INCREASE		-R
	UP	DECREASE		DECREASE		+R
	LEFT		INCREASE		INCREASE	-M
	RIGHT		DECREASE		DECREASE	+M
RESOLVED MODE (FOR 0°<As<90°)	DOWN	INCREASE	DECREASE	INCREASE	DECREASE	-X (DOWN)
	UP	DECREASE	INCREASE	DECREASE	INCREASE	+X (UP)
	LEFT	INCREASE	INCREASE	INCREASE	INCREASE	-Y (LEFT)
	RIGHT	DECREASE	DECREASE	DECREASE	DECREASE	+Y (RIGHT)


ST LOS (LOS MOVES 2AT)
LLOS SHAFT AXIS
XNB
ZNB
YNB
NAV BASE COORDINATES
+AT
0 ≤ AT ≤ 45°
1X
64X
TRUNNION AXIS
TRUNNION DRIVE MOTOR
SHAFT DRIVE MOTOR
+As
0 ≤ As ≤ 270°
16X
½X

SEXTANT GEOMETRY SHOWN
FOR SHAFT ANGLE OF 0°
ARROWS INDICATE POSITIVE
DIRECTIONS OF AXES AND
ROTATIONS

ROTATING COMPONENTS
- SXT TRUNNION - FOR INCREASING TRUNNION ANGLE IN A POSITIVE DIRECTION
  1. MOTOR TACH ROTATES CW WHEN LOOKING AT THE SHAFT END
  2. 64X & 1X RESOLVER ROTORS ROTATE CCW WHEN LOOKING IN DIRECTION OF ARROW.
- SXT SHAFT - FOR INCREASING SHAFT ANGLE IN POSITIVE DIRECTION
  1. MOTOR TACH ROTATES CW WHEN LOOKING AT SHAFT END
  2. ½X RESOLVER ROTATES CCW WHEN LOOKING AT SHAFT END
  3. 16X RESOLVER ROTOR ROTATES CW WHEN LOOKING IN DIRECTION OF ARROW

FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 00951 DATE 17 APR 63

Ⓐ REPLACED WITH CHANGE BY REV B

THIS DRAWING
OBSOLETE
DO NOT USE
SUPERSEDED BY ____

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

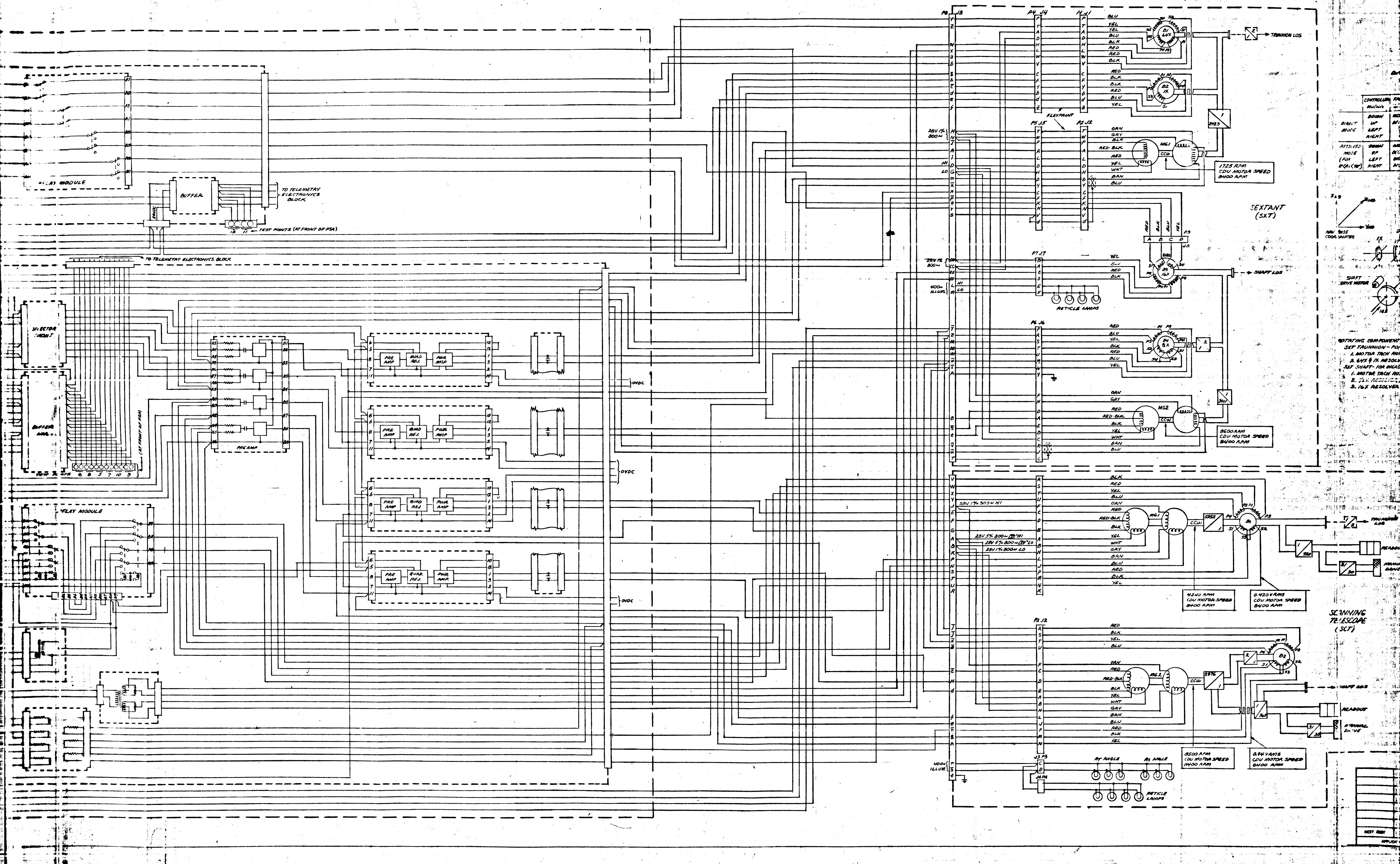
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLE ±
DO NOT SCALE THIS DRAWING
MATERIAL #
HEAT TREATMENT #
FINAL FINISH #

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS.
DWG. NO. CONTRACT
DRAWN R WALKER DATE 4-10-63
CHECKED H. MAHER
APPROVAL Harry Mangelsdorf
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W Kupfer 4/10/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

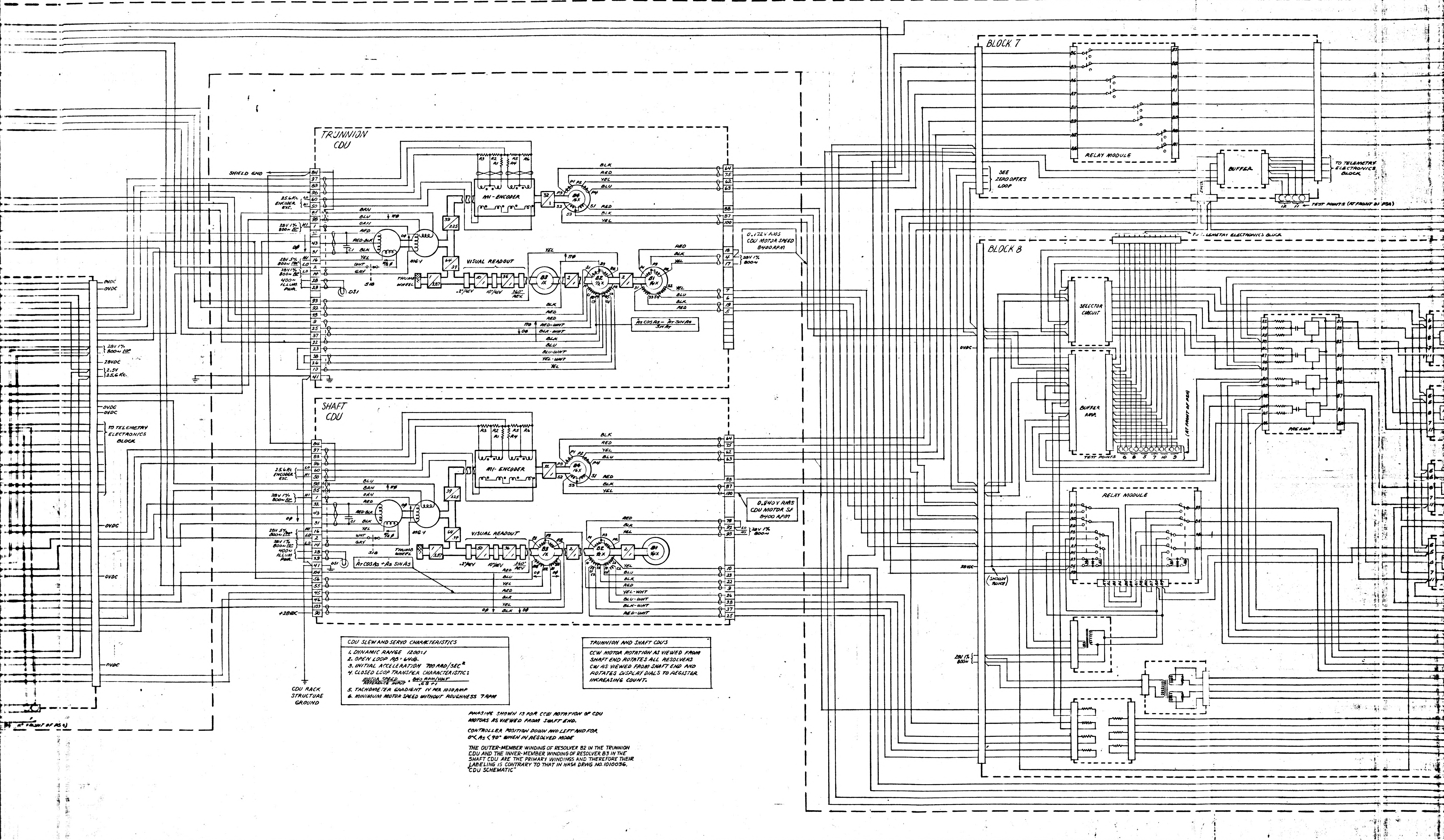
OPTICS SUBSYSTEM MECHANIZATION
OPERATING MODE

CODE IDENT NO. SIZE NASA DRAWING NO. 1015142
SCALE ~ WT SHEET 1 OF 2


RELAY MODULE
BUFFER
TO TELEMETRY ELECTRONICS BLOCK
12 11 ← TEST POINTS (AT FRONT OF PSA)
TO TELEMETRY ELECTRONICS BLOCK
SELECTOR SWITCH
BUFFER AMP.
(AT FRONT OF PSA)
6 8 5 7 10 3
RELAY MODULE
PREAMP
PRE AMP
QUAD REJ.
PWR AMP
0VDC
P8 J8
P4 J4
P1 J1
BLU
YEL
BLK
RED
B1 64X
B2 1X
S1 S2 S3 S4 P1 P2 P3 P4
TRUNNION LOS
FLEXPRINT
P5 J5
P2 J2
28V 1% 800~
HI
LO
ORN
GRY
RED-BLK
WHT
BRN
MG1
CCW
2423
1725 RPM
CDU MOTOR SPEED
8400 RPM
SEXTANT
(SXT)
RED BLK BLU YEL
P3
A B C D
J3
P7 J7
28V 1% 800~
400~ ILLUM.
B3 16X
SHAFT LOS
RETICLE LAMPS
P6 J6
B4 ½X
3011
MG2
8600 RPM
CDU MOTOR SPEED
8400 RPM
CONTROLLER MOTION
DIRECT MODE
DOWN
UP
LEFT
RIGHT
RESOLVED MODE (FOR 0°<A5<90°)
X NB
Z NB
Y NB
NAV BASE COORDINATES
1X
SHAFT DRIVE MOTOR
16X
ROTATING COMPONENTS
SXT TRUNNION - FOR
1. MOTOR TACH ROT
2. 64X & 1X RESOLV
SXT SHAFT - FOR INCRE
1. MOTOR TACH RO
2. ½X RESOLVER
3. 16X RESOLVER
28V 1% 800~ HI
28V 5% 800~ 180° HI
28V 5% 800~ 180° LO
28V 1% 800~ LO
5952
B1
TRUNNION LOS
720
READOUT
31/30
MANUAL DRIVE
4240 RPM
CDU MOTOR SPEED
8400 RPM
0.420 V RMS
CDU MOTOR SPEED
8400 RPM
SCANNING
TELESCOPE
(SCT)
2976
B2
SHAFT LOS
360
READOUT
MANUAL DRIVE
8500 RPM
CDU MOTOR SPEED
8400 RPM
0.84 V RMS
CDU MOTOR SPEED
8400 RPM
400~ ILLUM.
J3 P3
J4 P4
A7 ANGLE
A3 ANGLE
RETICLE LAMPS
NEXT ASSY
APPLICATION

0 1 2
PHOTOGRAPHIC SCALE ONLY

3 10 5 1 4 2


TRUNNION CDU
SHAFT CDU
SHIELD GND
25.6KC ENCODER EXC.
28V 1% 800~
28V 5% 800~
400~ ILLUM PWR.
M1-ENCODER
MG-4
VISUAL READOUT
THUMB WHEEL
.2°/REV
10°/REV
360°/REV
B1 16X
B2 1/2X
B3 1X
B4 16X
AT COS AS - AT SIN AS
AT COS AS + AS SIN AS
0.172V RMS CDU MOTOR SPEED 8400 RPM
0.840V RMS CDU MOTOR SF 8400 RPM
CDU RACK STRUCTURE GROUND
+28VDC
0VDC
28VDC
2.5V 25.6Kc.
TO TELEMETRY ELECTRONICS BLOCK
BLOCK 7
RELAY MODULE
SEE ZERO OPTICS LOOP
BUFFER
TO TELEMETRY ELECTRONICS BLOCK
TEST POINTS (AT FRONT OF PSA)
BLOCK 8
SELECTOR CIRCUIT
BUFFER AMP.
TEST POINTS
(AT FRONT OF PSA)
PREAMP
RELAY MODULE
(SHOWN PULSE)
28V 1% 800~
BLK
RED
YEL
BLU
BRN
GRN
GRY
WHT

CDU SLEW AND SERVO CHARACTERISTICS

1. DYNAMIC RANGE 1200:1
2. OPEN LOOP Aβ = 64db.
3. INITIAL ACCELERATION 700 RAD/SEC^2
4. CLOSED LOOP TRANSFER CHARACTERISTIC:

$$\frac{\text{MOTOR SPEED}}{\text{REFERENCE INPUT}} = \frac{840\ \text{RPM/VOLT}}{.6S+1}$$

5. TACHOMETER GRADIENT 1V PER 1000 RPM
6. MINIMUM MOTOR SPEED WITHOUT ROUGHNESS 7 RPM

TRUNNION AND SHAFT CDU'S

CCW MOTOR ROTATION AS VIEWED FROM SHAFT END ROTATES ALL RESOLVERS CW AS VIEWED FROM SHAFT END AND ROTATES DISPLAY DIALS TO REGISTER INCREASING COUNT.

PHASING SHOWN IS FOR CCW ROTATION OF CDU MOTORS AS VIEWED FROM SHAFT END.

CONTROLLER POSITION DOWN AND LEFT AND FOR 0° < As < 90° WHEN IN RESOLVED MODE

THE OUTER-MEMBER WINDING OF RESOLVER B2 IN THE TRUNNION CDU AND THE INNER-MEMBER WINDING OF RESOLVER B3 IN THE SHAFT CDU ARE THE PRIMARY WINDINGS AND THEREFORE THEIR LABELING IS CONTRARY TO THAT IN NASA DRWG NO. 1010036, "CDU SCHEMATIC"

INCHES
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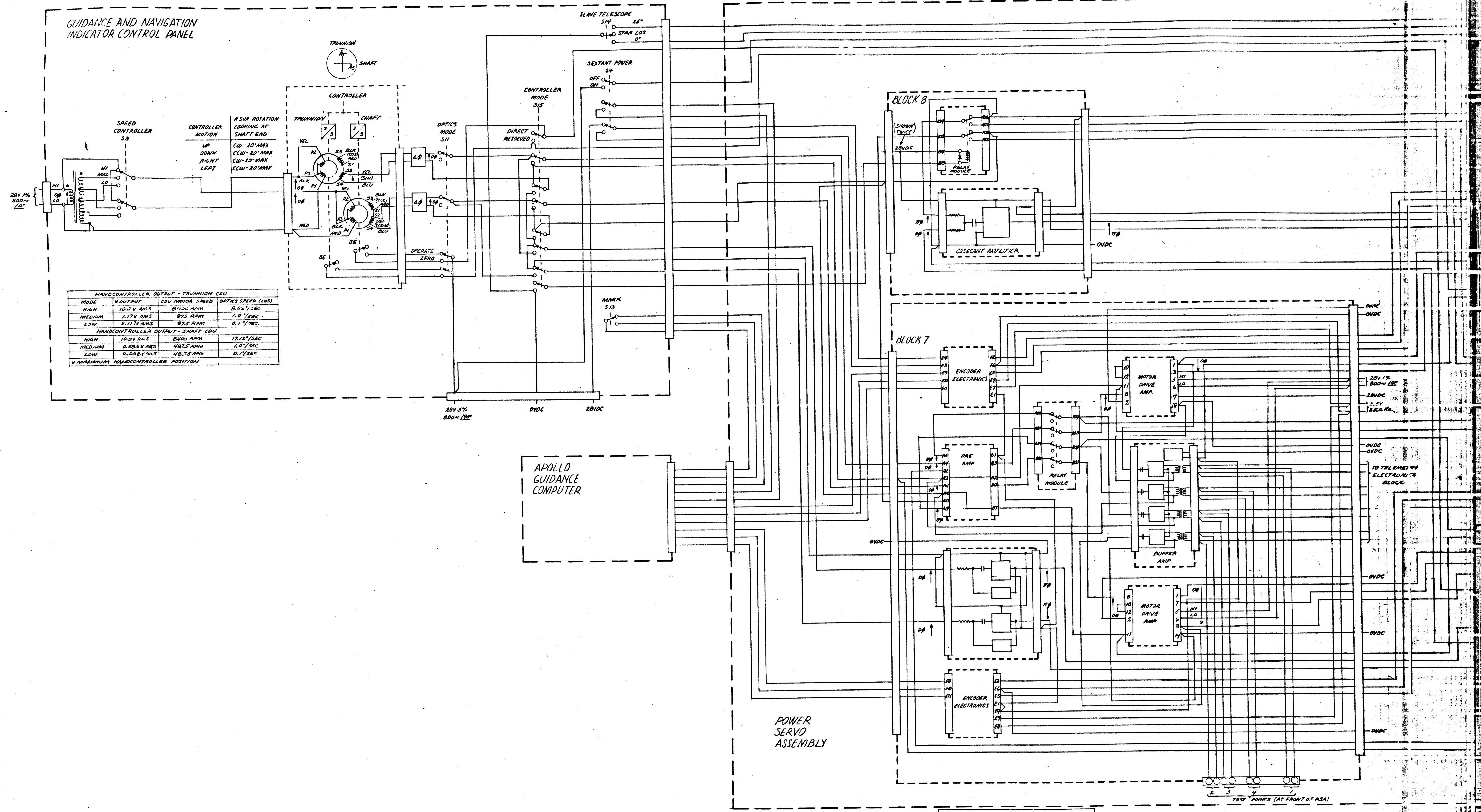
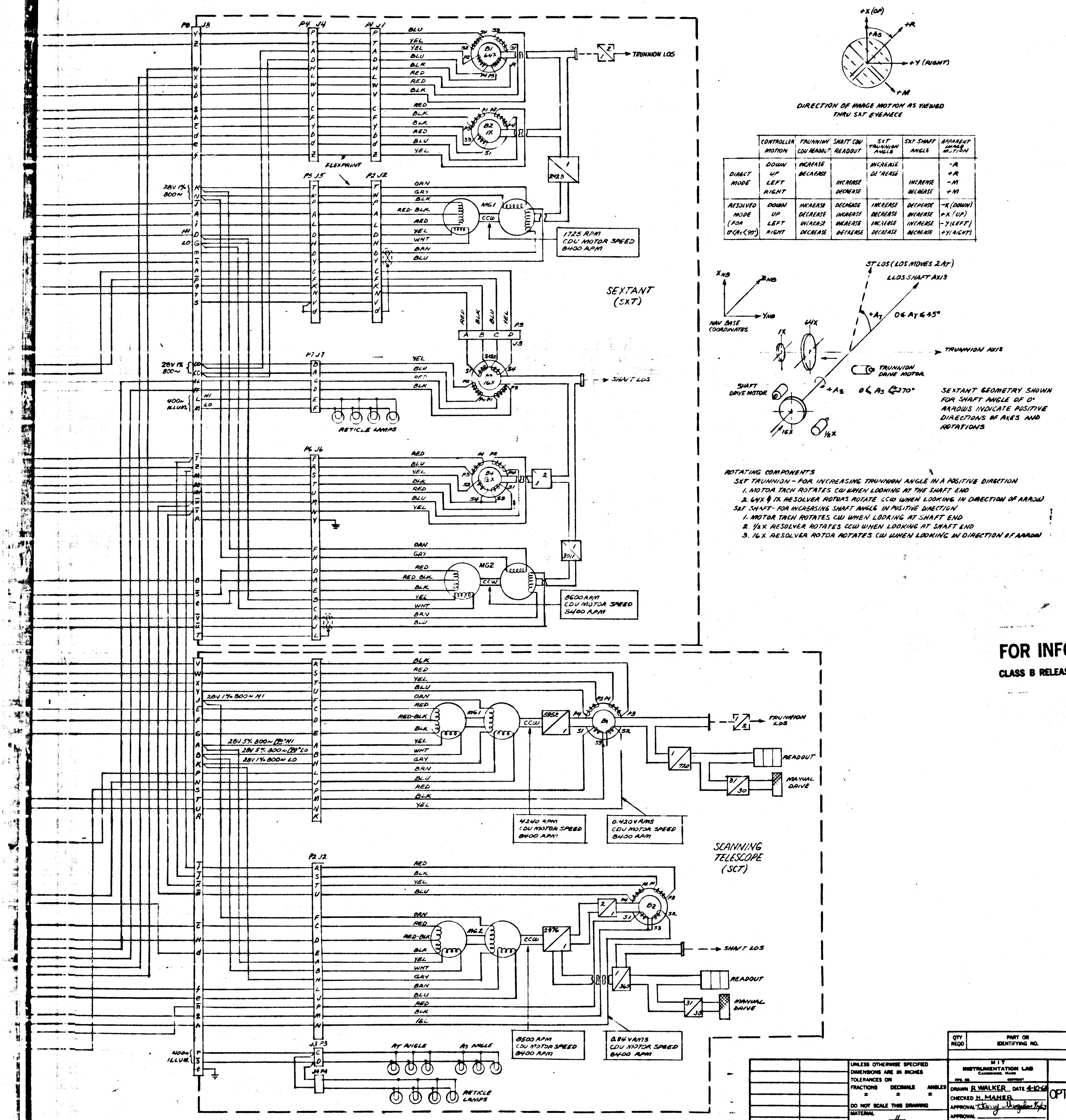

GUIDANCE AND NAVIGATION
INDICATOR CONTROL PANEL
TRUNNION
AT
AS
SHAFT
CONTROLLER
TRUNNION
SHAFT
2/3
2/3
SPEED CONTROLLER S3
HI
MED
LO
28V 1% 800~ ∠0°
HI
0φ
LO
CONTROLLER MOTION
UP
DOWN
RIGHT
LEFT
RSVR ROTATION LOOKING AT SHAFT END
CW - 20° MAX
CCW - 20° MAX
CW - 20° MAX
CCW - 20° MAX
YEL
P2
P3
P1
S3
BLK (COS)
RED
S1
S2
YEL (SIN)
BLU
S4
BLK
0φ
RED
S5
S6
OPTICS MODE S11
Δφ
0φ
OPERATE
ZERO
CONTROLLER MODE S15
DIRECT
RESOLVED
SLAVE TELESCOPE S14
25°
STAR LOS 0°
SEXTANT POWER S4
OFF
ON
MARK S13
28V 5% 800~ ∠90°
0VDC
28VDC
APOLLO GUIDANCE COMPUTER
BLOCK 8
(SHOWN TWICE)
28VDC
RELAY MODULE
COSECANT AMPLIFIER
πφ
0φ
0VDC
BLOCK 7
ENCODER ELECTRONICS
E4
E3
E9
E10
E11
E2
E6
E5
E8
E7
E1
PRE AMP
A5
A4
A2
A3
A11
A12
A10
A13
B1
B3
B2
B0
B7
RELAY MODULE
MOTOR DRIVE AMP
10
12
11
8
2
1
3
5
6
7
14
HI
LO
BUFFER AMP
0VDC
0VDC
28V 1% 800~ ∠0°
28VDC
2.5V 25.6 Kc.
0VDC
0VDC
TO TELEMETRY ELECTRONICS BLOCK
0VDC
MOTOR DRIVE AMP
8
10
12
2
11
1
7
5
6
3
14
HI
LO
0VDC
0VDC
ENCODER ELECTRONICS
E9
E10
E11
E2
E6
E5
E1
E4
E7
E8
POWER SERVO ASSEMBLY
2
3
4
1
TEST POINTS (AT FRONT OF PSA)

HANDCONTROLLER OUTPUT - TRUNNION CDU			
MODE	* OUTPUT	CDU MOTOR SPEED	OPTICS SPEED (LOS)
HIGH	10.0 V RMS	8400 RPM	8.56°/SEC
MEDIUM	1.17V RMS	975 RPM	1.0°/SEC.
LOW	0.117V RMS	97.5 RPM	0.1°/SEC.
HANDCONTROLLER OUTPUT - SHAFT CDU			
HIGH	10.0V RMS	8400 RPM	17.12°/SEC
MEDIUM	0.585V RMS	487.5 RPM	1.0°/SEC
LOW	0.058V RMS	48.75 RPM	0.1°/SEC
* MAXIMUM HANDCONTROLLER POSITION			

DECODER GRANULARITY
SEXTANT POWER ON
EACH BIT FROM TRUNNION CDU ≈ 10 SEC LOS
EACH BIT FROM SHAFT CDU ≈ 40 SEC LOS
SEXTANT POWER OFF
EACH BIT FROM TRUNNION CDU ≈ 20 SEC LOS
EACH BIT FROM SHAFT CDU ≈ 40 SEC LOS.

4N

1015142				
	REVISIONS			
	SYM	DESCRIPTION	DATE	APPROVAL



P8 J8
P4 J4
P1 J1
FLEXPRINT
P5 J5
P2 J2
28V 1% 800~
HI
LO
B1 64X
B2 1X
TRUNNION LOS
MG1
CCW
1725 RPM
CDU MOTOR SPEED
8400 RPM
SEXTANT (SXT)
P3 J3
16X
SHAFT LOS
400~ ILLUM
RETICLE LAMPS
P6 J6
B4 1/2X
MG2
8600 RPM
CDU MOTOR SPEED
8400 RPM
28V 1% 800~ HI
28V 5% 800~ HI
28V 5% 800~ LO
28V 1% 800~ LO
READOUT
MANUAL DRIVE
4240 RPM
CDU MOTOR SPEED
8400 RPM
0.430 V RMS
CDU MOTOR SPEED
8400 RPM
SCANNING TELESCOPE (SCT)
8500 RPM
CDU MOTOR SPEED
8400 RPM
0.84 V RMS
CDU MOTOR SPEED
8400 RPM
AT ANGLE
AS ANGLE
RETICLE LAMPS
400~ ILLUM

+X (UP)
+R
+Y (RIGHT)
+M

DIRECTION OF IMAGE MOTION AS VIEWED THRU SXT EYEPIECE

	CONTROLLER MOTION	TRUNNION CDU READOUT	SHAFT CDU READOUT	SXT TRUNNION ANGLE	SXT SHAFT ANGLE	APPARENT IMAGE MOTION
DIRECT MODE	DOWN	INCREASE		INCREASE		-R
	UP	DECREASE		DECREASE		+R
	LEFT		INCREASE		INCREASE	-M
	RIGHT		DECREASE		DECREASE	+M
RESOLVED MODE (FOR 0°<As<90°)	DOWN	INCREASE	DECREASE	INCREASE	DECREASE	-X (DOWN)
	UP	DECREASE	INCREASE	DECREASE	INCREASE	+X (UP)
	LEFT	INCREASE	INCREASE	INCREASE	INCREASE	-Y (LEFT)
	RIGHT	DECREASE	DECREASE	DECREASE	DECREASE	+Y (RIGHT)

ST LOS (LOS MOVES 2AT)
LLOS SHAFT AXIS
X NB
Z NB
Y NB
NAV BASE COORDINATES
1X
64X
+AT
0 ≤ AT ≤ 45°
TRUNNION AXIS
TRUNNION DRIVE MOTOR
SHAFT DRIVE MOTOR
+AS
0 ≤ AS ≤ 270°
16X
1/2X

SEXTANT GEOMETRY SHOWN FOR SHAFT ANGLE OF 0° ARROWS INDICATE POSITIVE DIRECTIONS OF AXES AND ROTATIONS

ROTATING COMPONENTS

SXT TRUNNION - FOR INCREASING TRUNNION ANGLE IN A POSITIVE DIRECTION
1. MOTOR TACH ROTATES CW WHEN LOOKING AT THE SHAFT END
2. 64X & 1X RESOLVER ROTORS ROTATE CCW WHEN LOOKING IN DIRECTION OF ARROW

SXT SHAFT - FOR INCREASING SHAFT ANGLE IN POSITIVE DIRECTION
1. MOTOR TACH ROTATES CW WHEN LOOKING AT SHAFT END
2. 1/2X RESOLVER ROTATES CCW WHEN LOOKING AT SHAFT END
3. 16X RESOLVER ROTOR ROTATES CW WHEN LOOKING IN DIRECTION OF ARROW

FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 00951 DATE 17 APR 63

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
HEAT TREATMENT —
FINAL FINISH —

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN R WALKER DATE 4-10-63
CHECKED H. MAHER
APPROVAL Henry Wanglin 4/4/63
APPROVAL
NASA APPROVAL
MIT APPROVAL W. Kupfer 11Apr63

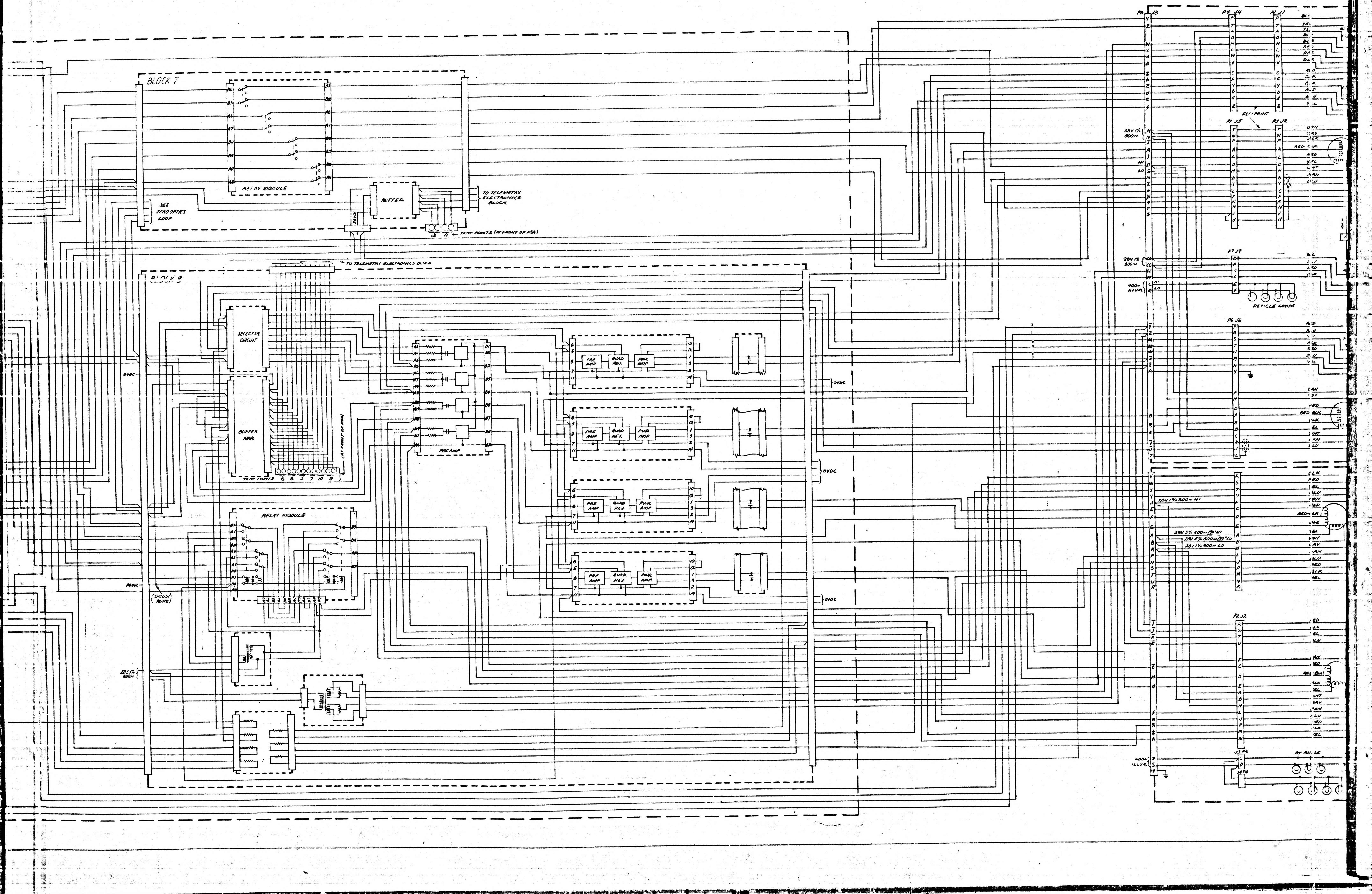
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

OPTICS SUBSYSTEM MECHANIZATION · OPERATING MODE

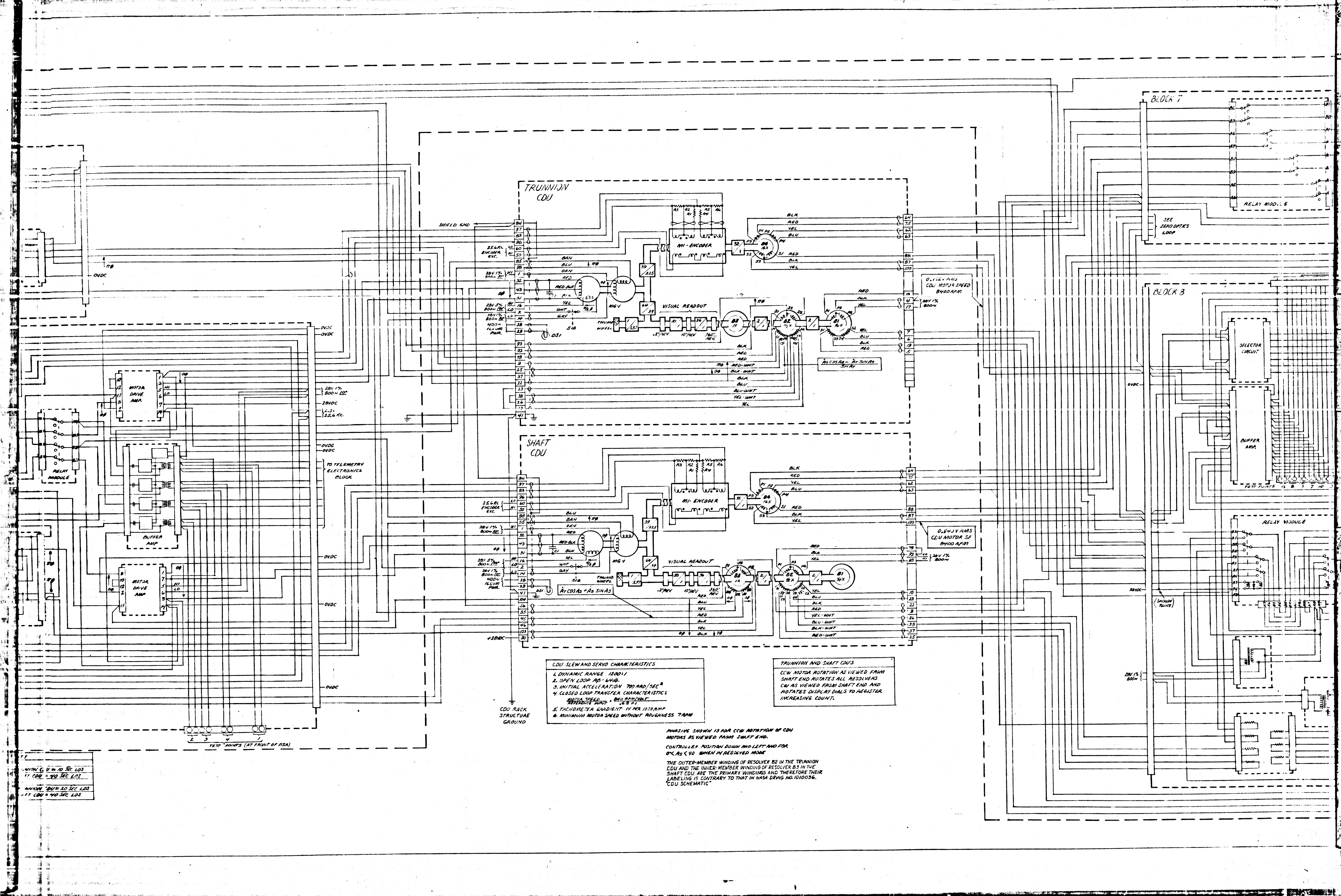
CODE IDENT NO. | SIZE | NASA DRAWING NO. 1015142
SCALE ~ | WT | SHEET OF

1015142

INCHES
PHOTOGRAPHIC SCALE ONLY


BLOCK 7
RELAY MODULE
B6
B3
A6
A7
B11
B9
A2
A6
B2
B12
A8
A1
B13
B15
A8
A11
SEE ZERO OPTICS LOOP
BUFFER
28VDC
TO TELEMETAY ELECTRONICS BLOCK
12
11
TEST POINTS (AT FRONT OF PSA)
TO TELEMETAY ELECTHONICS BLOCK
BLOCK 9
SELECTOR CIRCUIT
BUFFER AMP.
TEST POINTS
6 8 5 7 10 9
(AT FRONT OF PSA)
PREAMP
PRE AMP
QUAD REJ.
PWR AMP
0VDC
RELAY MODULE
28VDC
(SHOWN TWICE)
28V 1% 800~
P8 J8
P4 J4
P1 J1
FLEXPRINT
P5 J5
P2 J2
28V 1% 800~
HI
LO
P7 J7
28V 1% 800~
400~ ILLUM.
HI
LO
RETICLE LAMPS
P6 J6
28V 1% 800~ HI
28V 5% 800~ 0° HI
28V 5% 800~ 0° LO
28V 1% 800~ LO
P2 J2
J3 P3
J4 P4
AT ANGLE
400~ ILLUM.
BLK
YEL
BLU
RED
ORN
GRY
WHT
RED-BLK

PHOTOGRAPHIC SCALE ONLY


TRUNNION CDU
SHAFT CDU
SHIELD GND
25.6 KC ENCODER EXC.
MI - ENCODER
VISUAL READOUT
THUMB WHEEL
MG-1
.2°/REV
10°/REV
360°/REV
$A_T \cos A_S - A_T \sin A_S$
$A_T \cos A_S + A_S \sin A_S$
28V 1% 800~
400~ ILLUM PWR.
MOTOR DRIVE AMP
BUFFER AMP
RELAY MODULE
TO TELEMETRY ELECTRONICS BLOCK
0VDC
28VDC
TEST POINTS (AT FRONT OF PSA)
CDU RACK STRUCTURE GROUND
+28VDC
BLOCK 7
BLOCK 8
SEE ZERO OPTICS LOOP
CDU MOTOR SPEED 8400 RPM
SELECTOR CIRCUIT
TEST POINTS
PHOTOGRAPHIC SCALE ONLY
BLK
RED
YEL
BLU
BRN
ORN
WHT
GRY
RED-WHT
BLK-WHT
BLU-WHT
YEL-WHT

CDU SLEW AND SERVO CHARACTERISTICS

1. DYNAMIC RANGE 1200:1
2. OPEN LOOP $A\beta$ = 64db.
3. INITIAL ACCELERATION 700 RAD/SEC^2
4. CLOSED LOOP TRANSFER CHARACTERISTIC:
$$\frac{\text{MOTOR SPEED}}{\text{REFERENCE INPUT}} = \frac{840\ \text{RPM/VOLT}}{.6S+1}$$
5. TACHOMETER GRADIENT 1V PER 1000 RPM
6. MINIMUM MOTOR SPEED WITHOUT ROUGHNESS 7 RPM

TRUNNION AND SHAFT CDU'S

CCW MOTOR ROTATION AS VIEWED FROM SHAFT END ROTATES ALL RESOLVERS CW AS VIEWED FROM SHAFT END AND ROTATES DISPLAY DIALS TO REGISTER INCREASING COUNT.

PHASING SHOWN IS FOR CCW ROTATION OF CDU MOTORS AS VIEWED FROM SHAFT END.

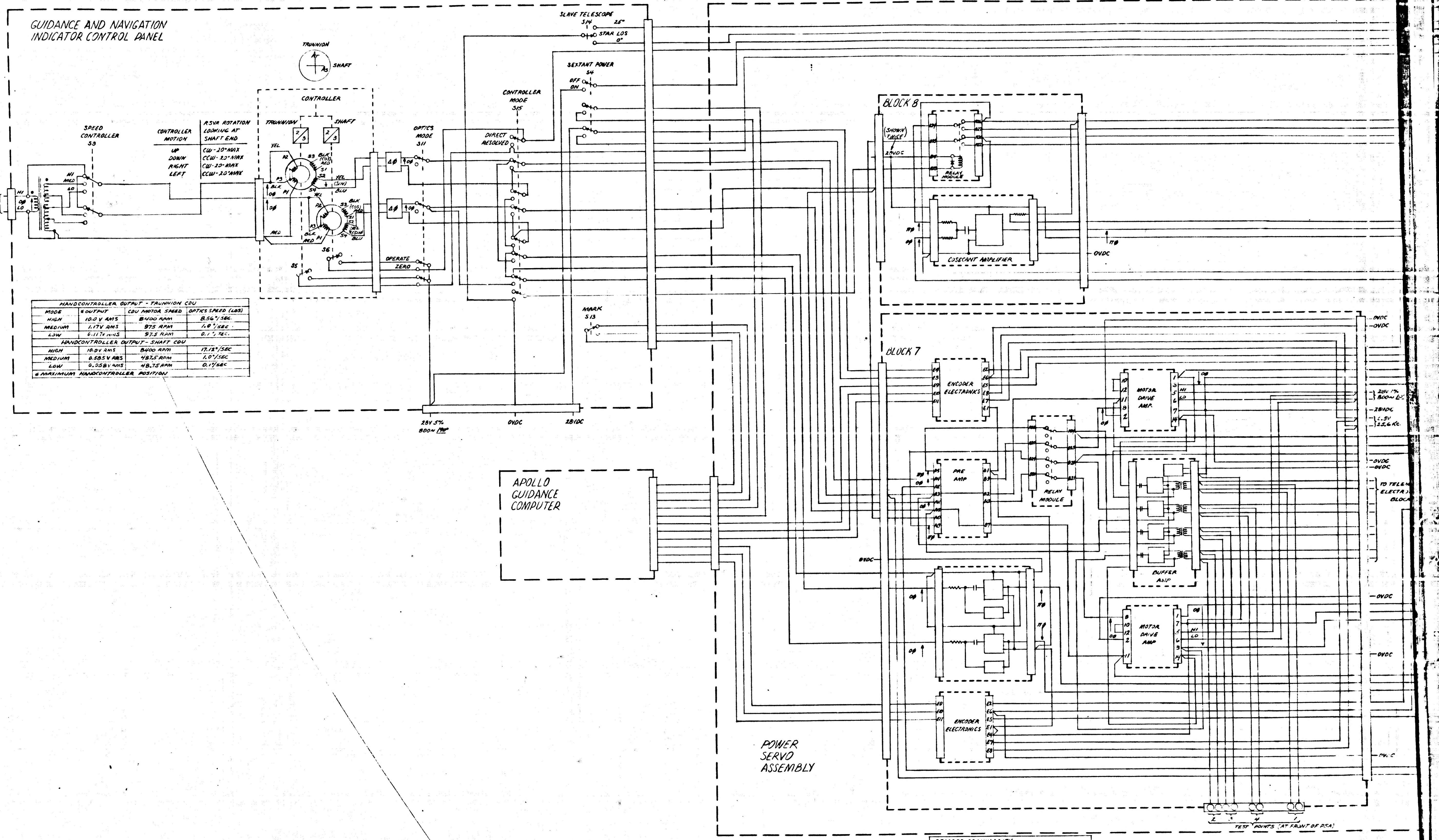
CONTROLLER POSITION DOWN AND LEFT AND FOR 0°< As < 90 WHEN IN RESOLVED MODE

THE OUTER-MEMBER WINDING OF RESOLVER B2 IN THE TRUNNION CDU AND THE INNER-MEMBER WINDING OF RESOLVER B3 IN THE SHAFT CDU ARE THE PRIMARY WINDINGS AND THEREFORE THEIR LABELING IS CONTRARY TO THAT IN NASA DRWG NO. 1010036, "CDU SCHEMATIC"

TY

NION CDU = 10 SEC LOS
FT CDU = 40 SEC LOS

NNION CDU = 20 SEC LOS
FT CDU = 40 SEC LOS.


GUIDANCE AND NAVIGATION
INDICATOR CONTROL PANEL
TRUNNION
AT
AS
SHAFT
CONTROLLER
TRUNNION
SHAFT
2/3
2/3
SPEED
CONTROLLER
S3
HI
MED
LO
28V 1%
800~
/0°
HI
0Ø
LO
CONTROLLER
MOTION
UP
DOWN
RIGHT
LEFT
RSVR ROTATION
LOOKING AT
SHAFT END
CW-20°MAX
CCW-20°MAX
CW-20°MAX
CCW-20°MAX
YEL
P2
P3
P1
BLK
0Ø
S3
BLK
(COS)
RED
S1
S2
S4
YEL
(SIN)
BLU
RED
S5
S6
ΔØ
ΔØ
OPTICS
MODE
S11
OPERATE
ZERO
CONTROLLER
MODE
S15
DIRECT
RESOLVED
SLAVE TELESCOPE
S14
25°
STAR LOS
0°
SEXTANT POWER
S4
OFF
ON
MARK
S13
28V 5%
800~ /90°
0VDC
28VDC
APOLLO
GUIDANCE
COMPUTER
BLOCK 8
(SHOWN TWICE)
28VDC
RELAY
MODULE
COSECANT AMPLIFIER
π Ø
0Ø
0VDC
BLOCK 7
ENCODER
ELECTRONICS
E4
E3
E9
E10
E11
E2
E6
E5
E8
E7
E1
MOTOR
DRIVE
AMP.
10
12
11
8
2
1
3
5
6
7
14
HI
LO
PRE
AMP
RELAY
MODULE
BUFFER
AMP
0VDC
0VDC
28V 1%
800~ /0°
28VDC
2.5V
25.6 Kc.
0VDC
0VDC
TO TELEM
ELECTR
BLOCK
0VDC
0VDC
0VDC
POWER
SERVO
ASSEMBLY
2
3
4
1
TEST POINTS (AT FRONT OF PSA)

HANDCONTROLLER OUTPUT - TRUNNION CDU			
MODE	* OUTPUT	CDU MOTOR SPEED	OPTICS SPEED (LOS)
HIGH	10.0 V RMS	8400 RPM	8.56°/SEC.
MEDIUM	1.17V RMS	975 RPM	1.0°/SEC.
LOW	0.117V RMS	97.5 RPM	0.1°/SEC.
HANDCONTROLLER OUTPUT - SHAFT CDU			
HIGH	10.0V RMS	8400 RPM	17.12°/SEC
MEDIUM	0.585V RMS	487.5 RPM	1.0°/SEC
LOW	0.058V RMS	48.75 RPM	0.1°/SEC
* MAXIMUM HANDCONTROLLER POSITION			

DECODER GRANULARITY
SEXTANT POWER ON
EACH BIT FROM TRUNNION CDU ≈ 10 SEC LOS
EACH BIT FROM SHAFT CDU ≈ 40 SEC LOS
SEXTANT POWER OFF
EACH BIT FROM TRUNNION CDU ≈ 20 SEC LOS
EACH BIT FROM SHAFT CDU ≈ 40 SEC LOS

4H

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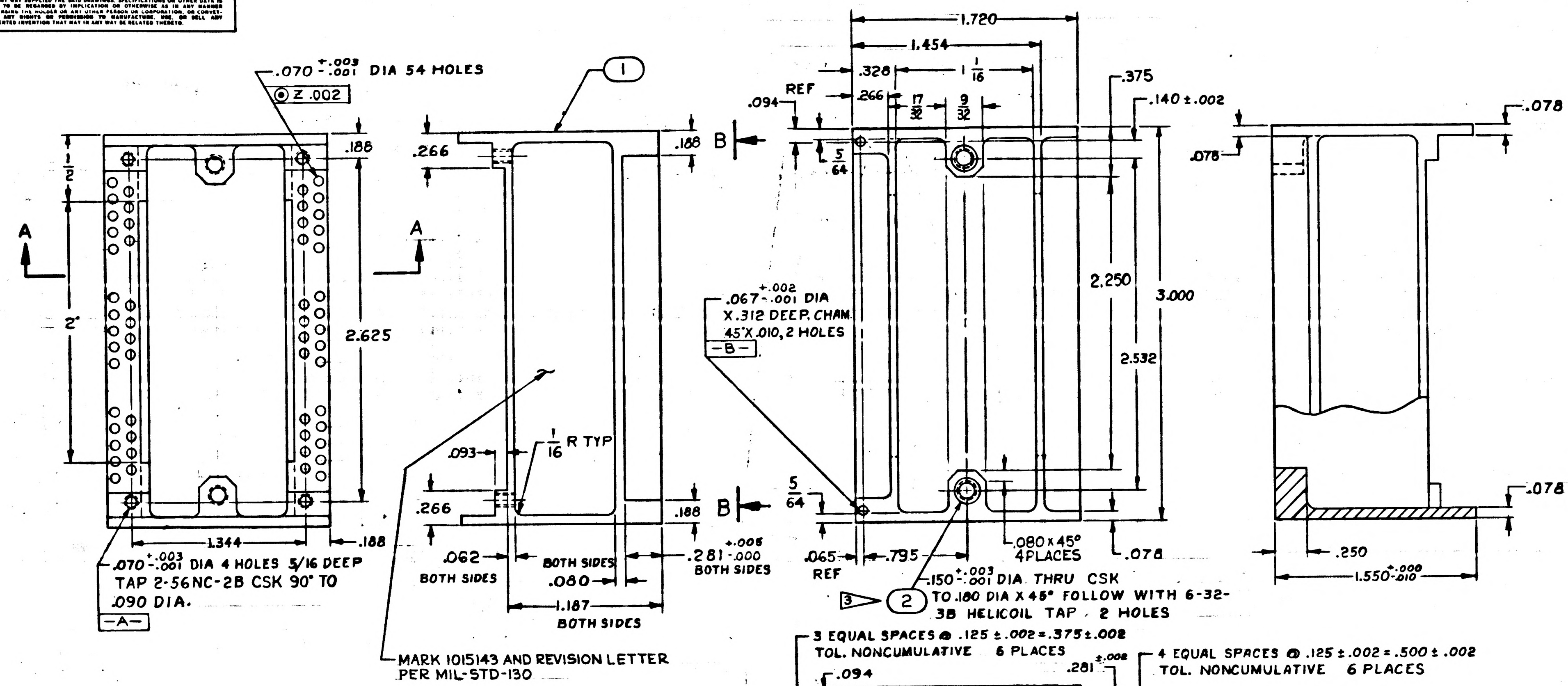
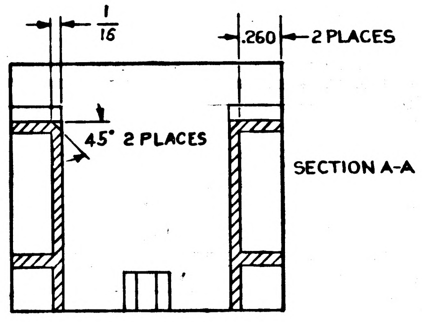
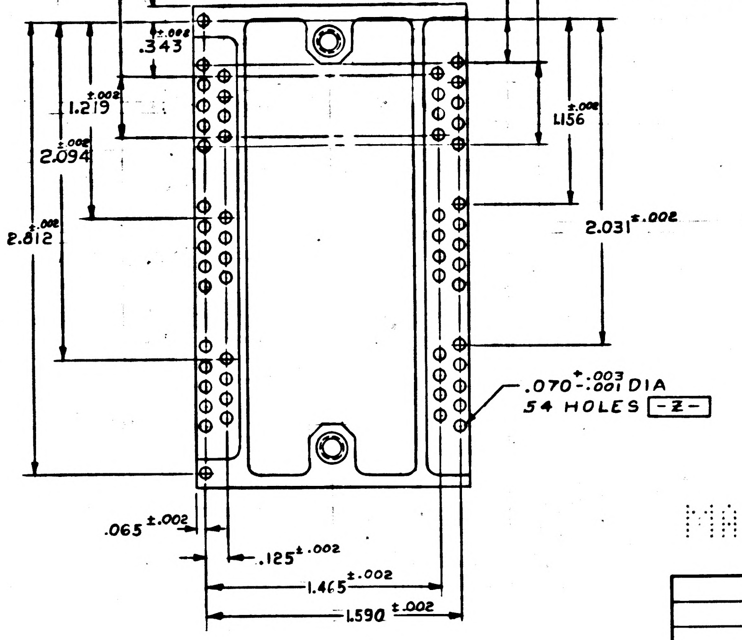
1015143 A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	ADDED NOTES AND OTHER MFG. INFORMATION PER TDRR 0 1226	5-9-63	wK.


.070 +.003 -.001 DIA 54 HOLES
Z .002
1
A
A
1/2
2"
2.625
.188
.188
1.344
.070 +.003 -.001 DIA 4 HOLES 5/16 DEEP TAP 2-56NC-2B CSK 90° TO .090 DIA.
-A-
.266
.266
.188
.188
B
B
.093
1/16 R TYP
.062 BOTH SIDES
BOTH SIDES .080
.281 +.005 -.000 BOTH SIDES
1.187 BOTH SIDES
MARK 1015143 AND REVISION LETTER PER MIL-STD-130
1.720
1.454
.328
1 1/16
.266
17/32
9/32
.094 REF
5/64
.375
.140 ±.002
2.250
3.000
2.532
.067 +.002 -.001 DIA X.312 DEEP, CHAM 45°X.010, 2 HOLES
-B-
5/64
.065 REF
.795
.080 X 45° 4PLACES
.078
.150 +.003 -.001 DIA THRU CSK TO .180 DIA X 45° FOLLOW WITH 6-32-3B HELICOIL TAP, 2 HOLES
3
2
.078
.078
.078
.250
1.550 +.000 -.010


1/16
.260
2 PLACES
45° 2 PLACES

SECTION A-A


3 EQUAL SPACES @ .125 ±.002 = .375 ±.002 TOL. NONCUMULATIVE 6 PLACES
4 EQUAL SPACES @ .125 ±.002 = .500 ± .002 TOL. NONCUMULATIVE 6 PLACES
.094
.281 ±.002
.343 ±.002
1.219 ±.002
2.094 ±.002
2.812 ±.002
1.156 ±.002
2.031 ±.002
.070 +.003 -.001 DIA 54 HOLES -Z-
.065 ±.002
.125 ±.002
1.465 ±.002
1.590 ±.002

VIEW B-B

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1▷ MATERIAL: ALUMINUM AL'Y 6061-T6 PER QQ-A-325
FINISH: ANODIZE BLACK PER MIL-A-8625, TYPE II
INSERT HOLES, DIA. A & DIA. B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
- ALL RADII ARE 1/16 INCH.
- ALL CORNERS TO BE .005R. TO .015R OR CHAMF.
- SURFACE ROUGHNESS MUST NOT EXCEED 125✓.

MUST BE FREE FROM BURRS.

2▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3▷ INSTALL 6-32NC-3B INSERT PER MS 33537, BREAK OFF TANG.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS122118	INSERT, CRES HELICAL COIL	2
1	1015143-1	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015137	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN F. Akell DATE 4-23-63
CHECKED L.A. Plummer
APPROVAL K. L. Battaglia
APPROVAL
NASA APPROVAL [illegible] 4/26/
MIT APPROVAL W Kupfer 24 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME
RELAY MODULE

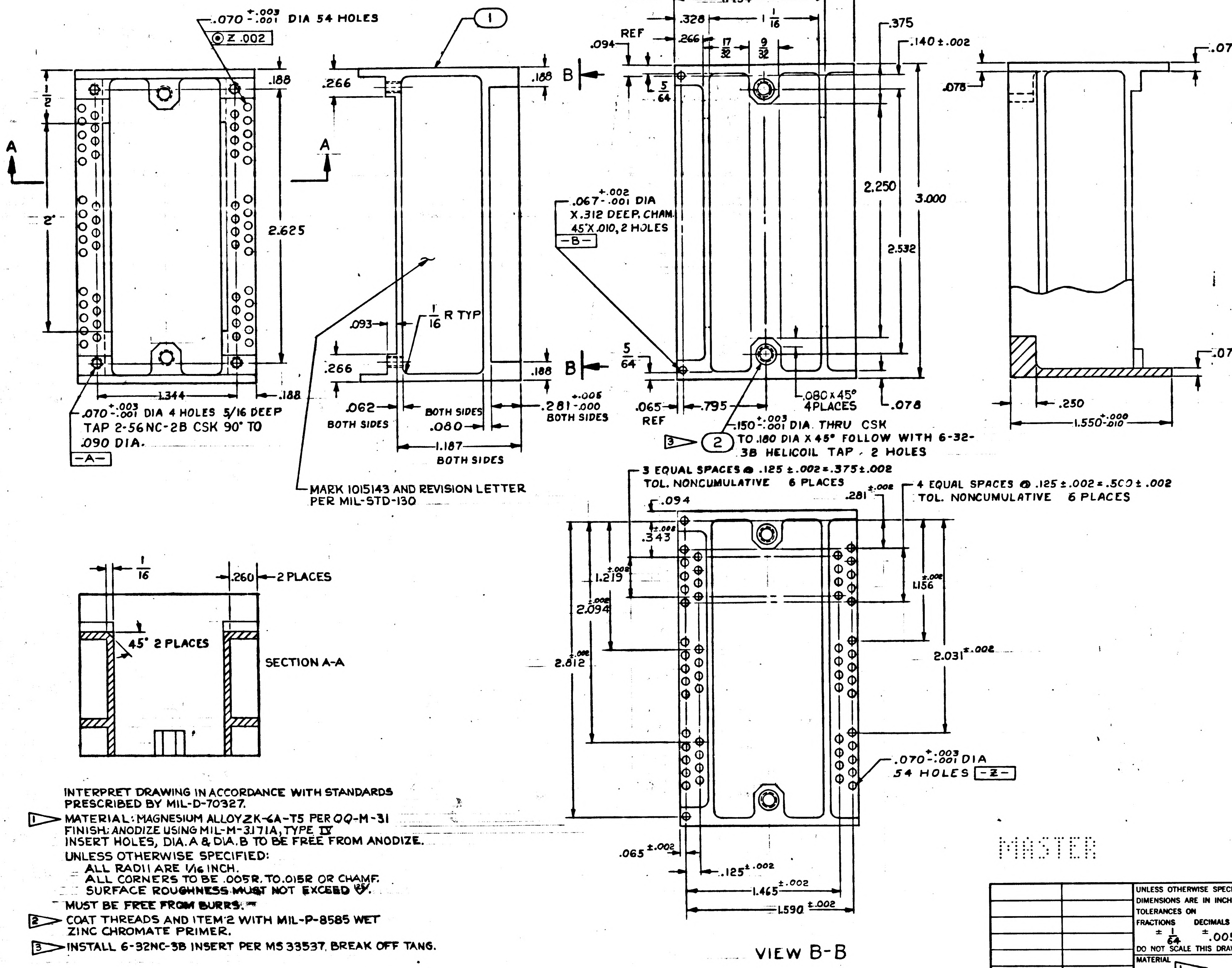
CODE IDENT NO. SIZE D NASA DRAWING NO. 1015143
SCALE 2 X WT SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

B | 1015143

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	ADDED NOTES AND OTHER MFG. INFORMATION PER TDRR 01226	5-9-63	WK.
B	REVISED PER TDRR 02875	6-28-63	


.070 +.003 -.001 DIA 54 HOLES
Z .002
1
A
A
1/2
2"
2.625
.188
.188
1.344
.070 +.003 -.001 DIA 4 HOLES 5/16 DEEP
TAP 2-56NC-2B CSK 90° TO
.090 DIA.
-A-
.266
.266
.188
.188
B
B
.093
1/16 R TYP
.062 BOTH SIDES
.080 BOTH SIDES
.281 +.005 -.000 BOTH SIDES
1.187 BOTH SIDES
MARK 1015143 AND REVISION LETTER
PER MIL-STD-130
1.720
1.454
.328
1 1/16
.266
17/32
9/32
.094
REF
5/64
5/64
.375
.140 ±.002
.067 +.002 -.001 DIA
X.312 DEEP, CHAM.
45° X .010, 2 HOLES
-B-
2.250
3.000
2.532
.065 REF
.795
.080 X 45° 4 PLACES
.078
.150 +.003 -.001 DIA. THRU CSK
TO .180 DIA X 45° FOLLOW WITH 6-32-
3B HELICOIL TAP, 2 HOLES
2
3
.078
.078
.078
.250
1.550 +.000 -.010
1/16
.260
2 PLACES
45° 2 PLACES
SECTION A-A
3 EQUAL SPACES @ .125 ±.002 = .375 ±.002
TOL. NONCUMULATIVE 6 PLACES
4 EQUAL SPACES @ .125 ±.002 = .500 ±.002
TOL. NONCUMULATIVE 6 PLACES
.094
.281 ±.002
.343 ±.002
1.219 ±.002
2.094 ±.002
2.812 ±.002
1.156 ±.002
2.031 ±.002
.070 +.003 -.001 DIA
54 HOLES -Z-
.065 ±.002
.125 ±.002
1.465 ±.002
1.590 ±.002
VIEW B-B

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL: MAGNESIUM ALLOY ZK-6A-T5 PER QQ-M-31
FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES, DIA. A & DIA. B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
- ALL RADII ARE 1/16 INCH.
- ALL CORNERS TO BE .005R. TO .015R OR CHAMF.
- SURFACE ROUGHNESS MUST NOT EXCEED 125.

MUST BE FREE FROM BURRS.

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3 INSTALL 6-32NC-3B INSERT PER MS 33537, BREAK OFF TANG.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS122118	INSERT, CRES HELICAL COIL	2
1	1015143-1	FRAME	1

LIST OF MATERIALS

1015137	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN F. Akell DATE 4-23-63
CHECKED L.A. Plummer
APPROVAL K. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 24 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME
RELAY MODULE

CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015143
SCALE 2 X | WT | SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015143 B

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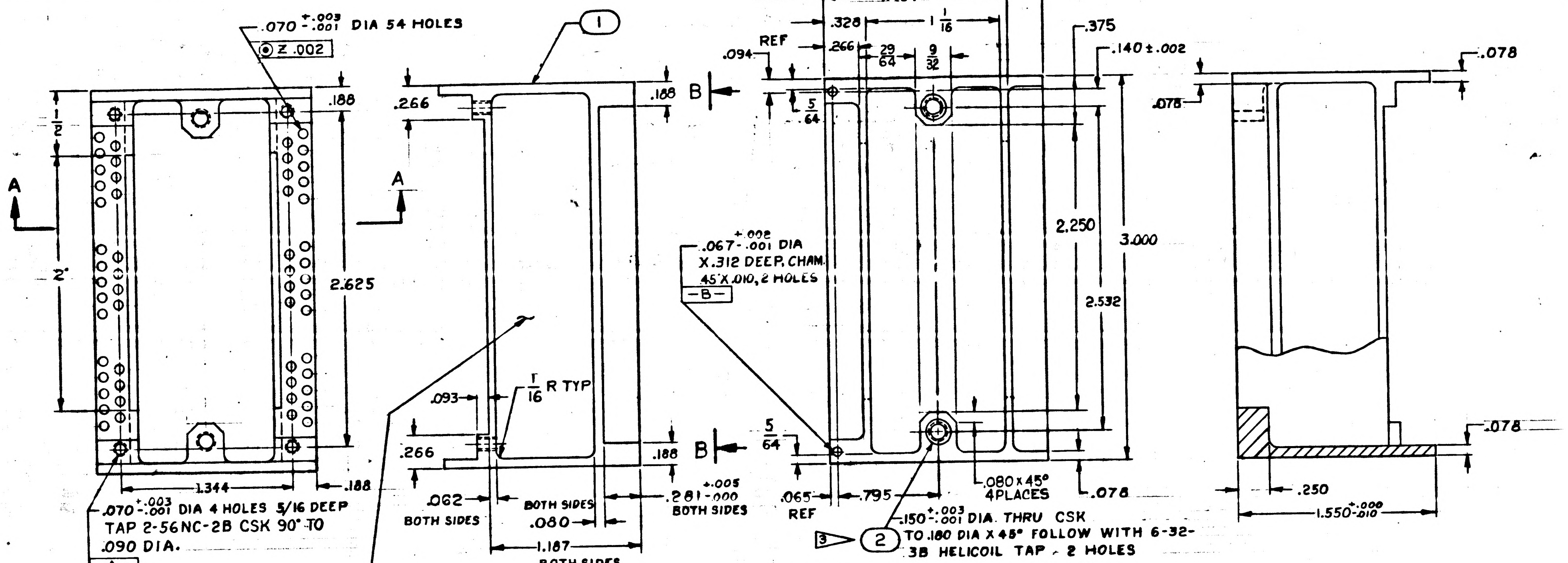
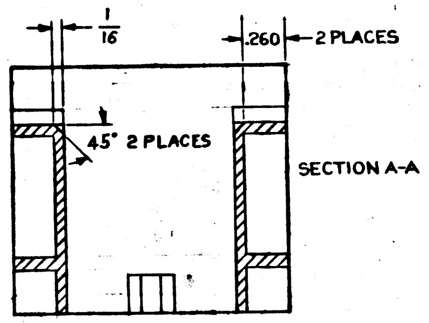
1015143 C

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	ADDED NOTES AND OTHER MFG. INFORMATION PER TDRR 01226	5-9-63	WK.
B	REVISED PER TDRR 02875	8-20-63	
C	REVISED PER TDRR 05277	9-19-63	WK



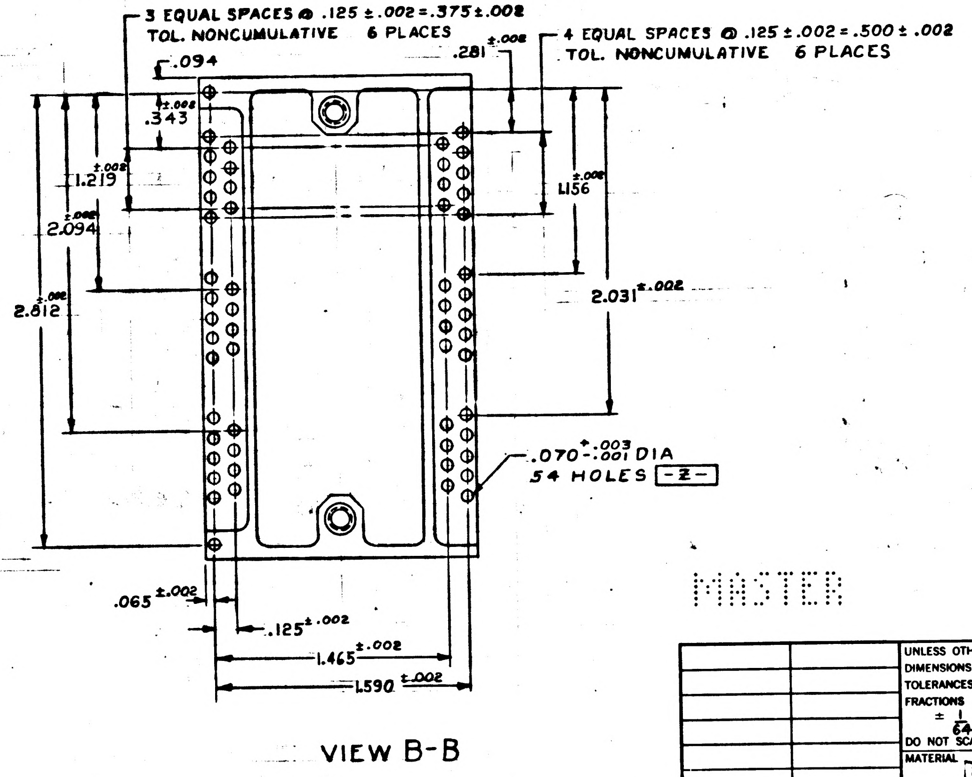
.070 +.003 -.001 DIA 54 HOLES
Z .002
1
.188
.266
.188
B
A
1/2
2"
2.625
1.344
.188
.093
1/16 R TYP
.266
.188
B
.062 BOTH SIDES
BOTH SIDES
.080
1.187 BOTH SIDES
.281 +.005 -.000 BOTH SIDES
.070 +.003 -.001 DIA 4 HOLES 5/16 DEEP
TAP 2-56NC-2B CSK 90° TO
.090 DIA.
-A-
1.720
1.454
.328
1 1/16
.375
.094 REF
.266
29/64
9/32
.140 ±.002
5/64
.078
.067 +.002 -.001 DIA
X.312 DEEP, CHAM.
45° X.010, 2 HOLES
-B-
2.250
3.000
2.532
5/64
.065 REF
.795
.080 X 45° 4 PLACES
.078
.150 +.003 -.001 DIA. THRU CSK
TO .180 DIA X 45° FOLLOW WITH 6-32-
3B HELICOIL TAP - 2 HOLES
3
2
.078
.078
.250
1.550 +.000 -.010

MARK 1015143 AND REVISION LETTER PER MIL-STD-130



1/16
.260
2 PLACES
45° 2 PLACES

SECTION A-A



3 EQUAL SPACES @ .125 ±.002 = .375 ±.002
TOL. NONCUMULATIVE 6 PLACES
.094
.281 ±.002
4 EQUAL SPACES @ .125 ±.002 = .500 ±.002
TOL. NONCUMULATIVE 6 PLACES
.343 ±.002
1.219 ±.002
2.094 ±.002
2.812 ±.002
1.156 ±.002
2.031 ±.002
.070 +.003 -.001 DIA
54 HOLES -Z-
.065 ±.002
.125 ±.002
1.465 ±.002
1.590 ±.002

VIEW B-B

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1▷ MATERIAL: MAGNESIUM ALLOY ZK-6A-T5 PER QQ-M-31
FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES, DIA. A & DIA. B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 INCH.
ALL CORNERS TO BE .005R. TO .015R OR CHAMF.
SURFACE ROUGHNESS MUST NOT EXCEED 125.

MUST BE FREE FROM BURRS.

2▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3▷ INSTALL 6-32NC-3B INSERT PER MS 33537, BREAK OFF TANG.

MASTER

2	MS122118	INSERT, CRES HELICAL COIL	2
1	1015143-1	FRAME	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

1015137	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN F Ackell DATE 4-23-63
CHECKED LABlummer
APPROVAL K. L. Buttolfson
APPROVAL
NASA APPROVAL
MIT APPROVAL 24 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME
RELAY MODULE

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015143
SCALE 2 X
WT
SHEET 1 OF 1

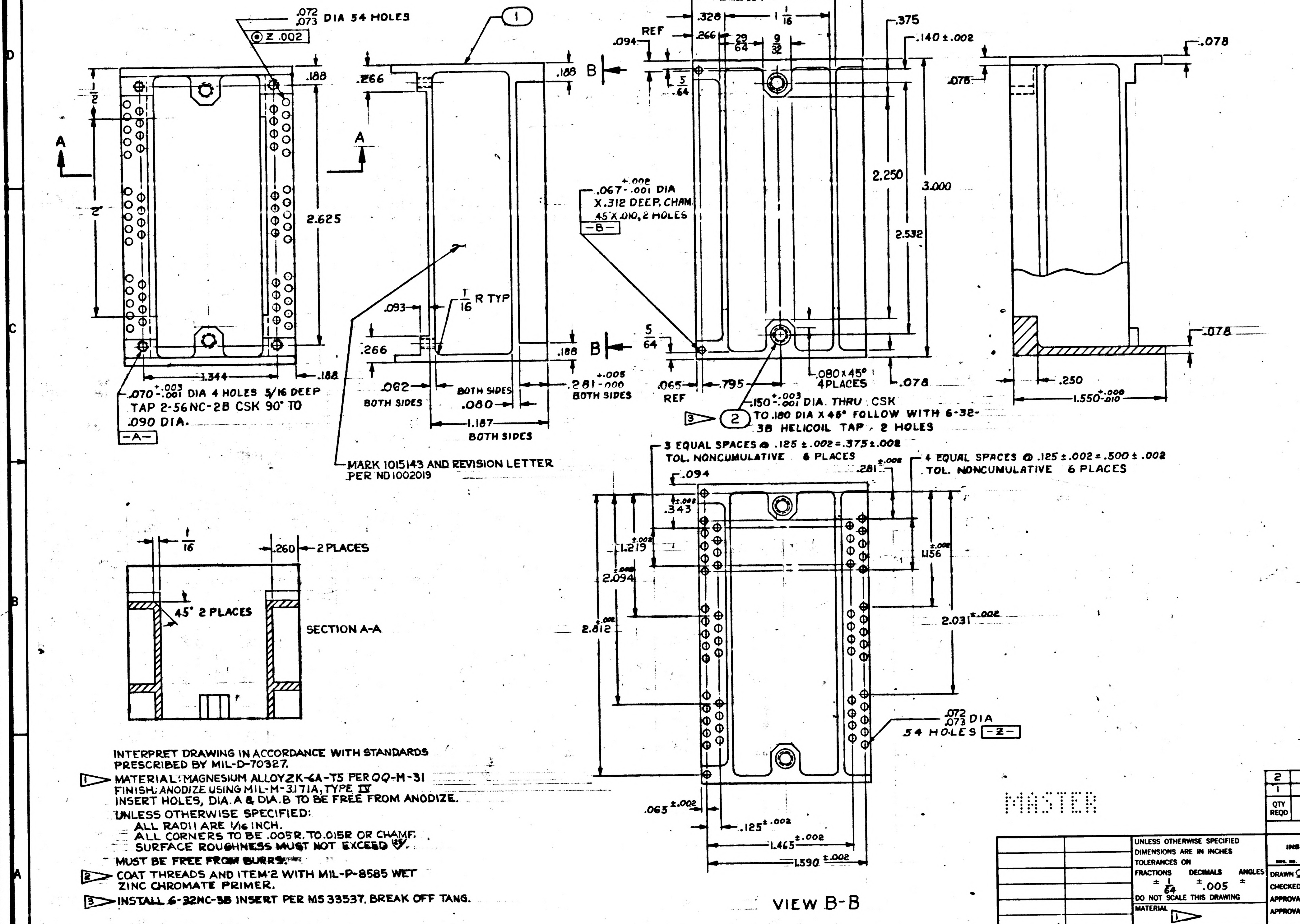
INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

1015143 C

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015143 E

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	ADDED NOTES AND OTHER MFG. INFORMATION PER TDRR 01226	5-9-63	WK.
B	REVISED PER TDRR 02875	8-28-63	RPK SW
C	REVISED PER TDRR 03277	9-19-63	EJB WK.
D	REVISED PER TDRR 03851	10-15-63	RPK SW
E	REVISED PER TDRR 03854	10-15-63	RPK SW


.072
.073 DIA 54 HOLES
⊙ Z .002
1
.188
A
A
1/2
2
2.625
1.344
.188
.070 +.003 -.001 DIA 4 HOLES 5/16 DEEP
TAP 2-56NC-2B CSK 90° TO
.090 DIA.
-A-
.266
.188
B
.093
1/16 R TYP
.266
.188
B
.062 BOTH SIDES
BOTH SIDES
.080
.281 +.005 -.000 BOTH SIDES
1.187
BOTH SIDES
MARK 1015143 AND REVISION LETTER
PER ND1002019
.067 +.002 -.001 DIA
X.312 DEEP, CHAM.
45°X.010, 2 HOLES
-B-
1.720
1.454
.328
1 1/16
.094 REF
.266
29/64
9/32
.375
.140 ±.002
5/64
2.250
3.000
2.532
5/64
.065 REF
.795
.080 X 45° 4 PLACES
.078
.150 +.003 -.001 DIA. THRU CSK
TO .180 DIA X 45° FOLLOW WITH 6-32-3B HELICOIL TAP, 2 HOLES
3
2
.078
.078
.078
.250
1.550 +.000 -.010
3 EQUAL SPACES @ .125 ±.002 = .375 ±.002
TOL. NONCUMULATIVE 6 PLACES
.094
.281 ±.002
4 EQUAL SPACES @ .125 ±.002 = .500 ±.002
TOL. NONCUMULATIVE 6 PLACES
.343 ±.002
1.219 ±.002
2.094
2.812 ±.002
1.156 ±.002
2.031 ±.002
.072
.073 DIA
54 HOLES -Z-
.065 ±.002
.125 ±.002
1.465 ±.002
1.590 ±.002
VIEW B-B
1/16
.260
2 PLACES
45° 2 PLACES
SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL: MAGNESIUM ALLOY ZK-6A-T5 PER QQ-M-31
FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES, DIA. A & DIA. B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
- ALL RADII ARE 1/16 INCH.
- ALL CORNERS TO BE .005R. TO .015R OR CHAMF.
- SURFACE ROUGHNESS MUST NOT EXCEED 125.

MUST BE FREE FROM BURRS.

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3 INSTALL 6-32NC-3B INSERT PER MS 33537, BREAK OFF TANG.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS21209-C0620	INSERT, CRES HELICAL COIL	2
1	1015143-1	FRAME	1

LIST OF MATERIALS

1015137	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN F. Ackell DATE 4-23-63
CHECKED L.A. Blummer
APPROVAL K.L. Battafarano
APPROVAL
NASA APPROVAL 4/4/63
MIT APPROVAL 24 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME
RELAY MODULE

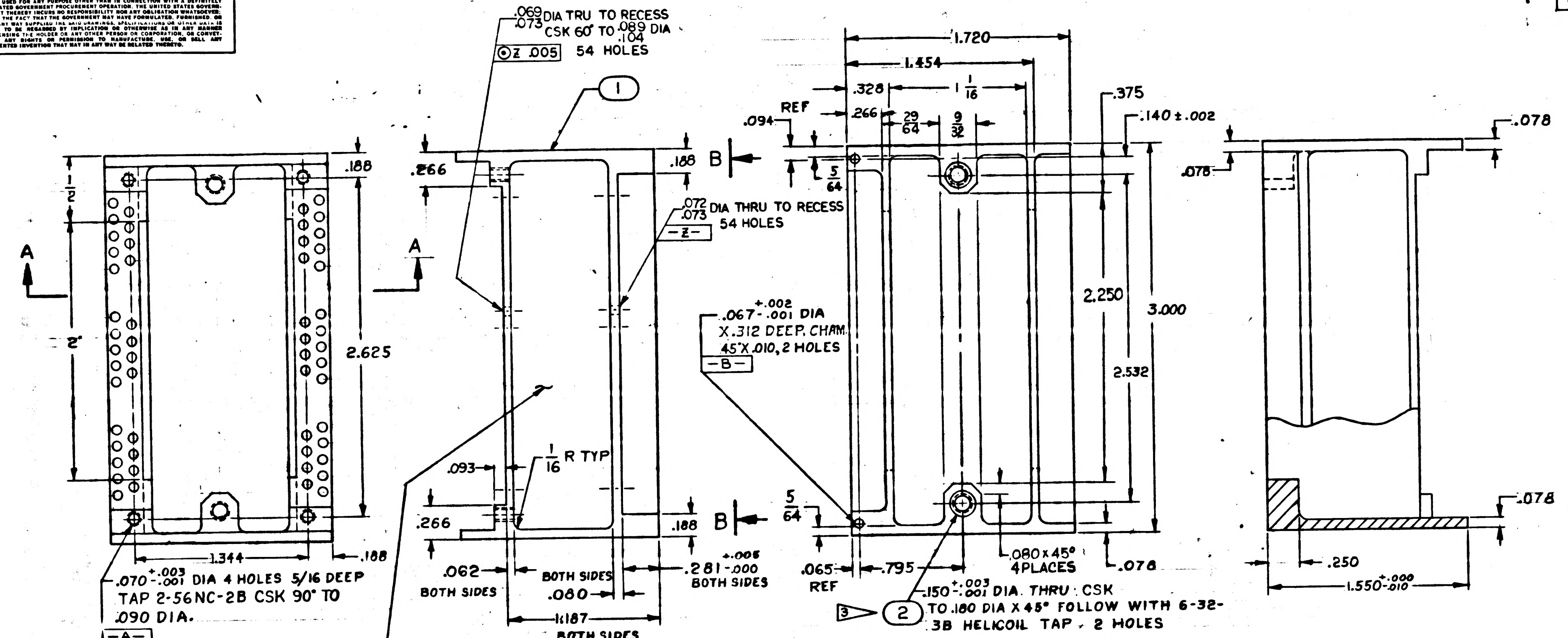
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015143
SCALE 2X
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

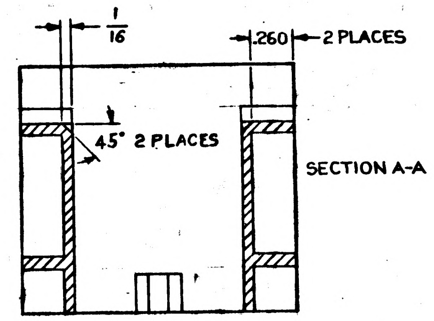
1015143 F

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	ADDED NOTES AND OTHER MFG. INFORMATION PER TDRR 01226	5-9-63	WK.
B	REVISED PER TDRR 02875	9-20-63	RPK
C	REVISED PER TDRR 03277	9-19-63	WK
D	REVISED PER TDRR 03851	10-15-63	RPK
E	REVISED PER TDRR 03854	10-15-63	RPK
F	REVISED PER TDRR 05467	2 Dec 63	RPK WK

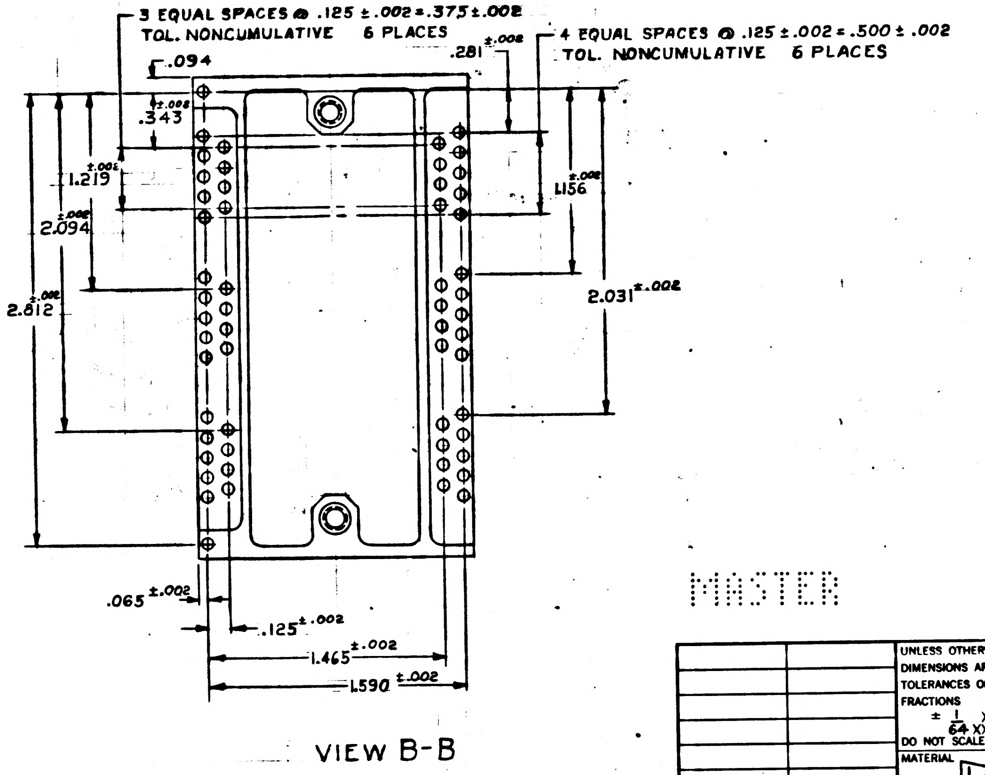


1/2
A
2"
2.625
.188
1.344
.188
.070 +.003 -.001 DIA 4 HOLES 5/16 DEEP TAP 2-56NC-2B CSK 90° TO .090 DIA.
-A-
.069 .073 DIA TRU TO RECESS CSK 60° TO .089 .104 DIA
⊙Z .005
54 HOLES
1
.266
.188
A
.072 .073 DIA THRU TO RECESS 54 HOLES
-Z-
.093
1/16 R TYP
.266
.188
.062 BOTH SIDES
BOTH SIDES .080
1.187 BOTH SIDES
.281 +.005 -.000 BOTH SIDES
MARK 1015143 AND REVISION LETTER PER ND1002019
B
1.720
1.454
.328
1 1/16
REF
.094
.266
29/64
9/32
.375
.140 ±.002
5/64
.067 +.002 -.001 DIA X.312 DEEP, CHAM. 45° X.010, 2 HOLES
-B-
2.250
3.000
2.532
B
5/64
.065 REF
.795
.080 X 45° 4PLACES
.078
.150 +.003 -.001 DIA. THRU CSK TO .180 DIA X 45° FOLLOW WITH 6-32-3B HELICOIL TAP, 2 HOLES
3
2
.078
.078
.078
.250
1.550 +.000 -.010



1/16
.260
2 PLACES
45° 2 PLACES

SECTION A-A



3 EQUAL SPACES @ .125 ±.002 = .375 ±.002 TOL. NONCUMULATIVE 6 PLACES
4 EQUAL SPACES @ .125 ±.002 = .500 ±.002 TOL. NONCUMULATIVE 6 PLACES
.094
.281 ±.002
.343 ±.002
1.219 ±.002
2.094 ±.002
2.812 ±.002
1.156 ±.002
2.031 ±.002
.065 ±.002
.125 ±.002
1.465 ±.002
1.590 ±.002

VIEW B-B

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL: MAGNESIUM ALLOY ZK-6A-T5 PER QQ-M-31
FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES, DIA. A & DIA. B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
- ALL RADII ARE 1/16 INCH.
- ALL CORNERS TO BE .005R. TO .015R OR CHAMF.
- SURFACE ROUGHNESS ~~MUST~~ NOT EXCEED 125√.

MUST BE FREE FROM BURRS.

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3 INSTALL 6-32NC-3B INSERT PER MS 33646 BREAK OFF TANG.

MASTER

2	MS21209-C0620	INSERT, CRES HELICAL COIL	2
1	1015143-1	FRAME	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1015137	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64
DECIMALS XX ± .02 XXX ± .005
ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN F. Askell DATE 4-3-63
CHECKED L.A. Plummer
APPROVAL K.L. Battaglino
APPROVAL
NASA APPROVAL 4/14/63
MIT APPROVAL 24 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME
RELAY MODULE

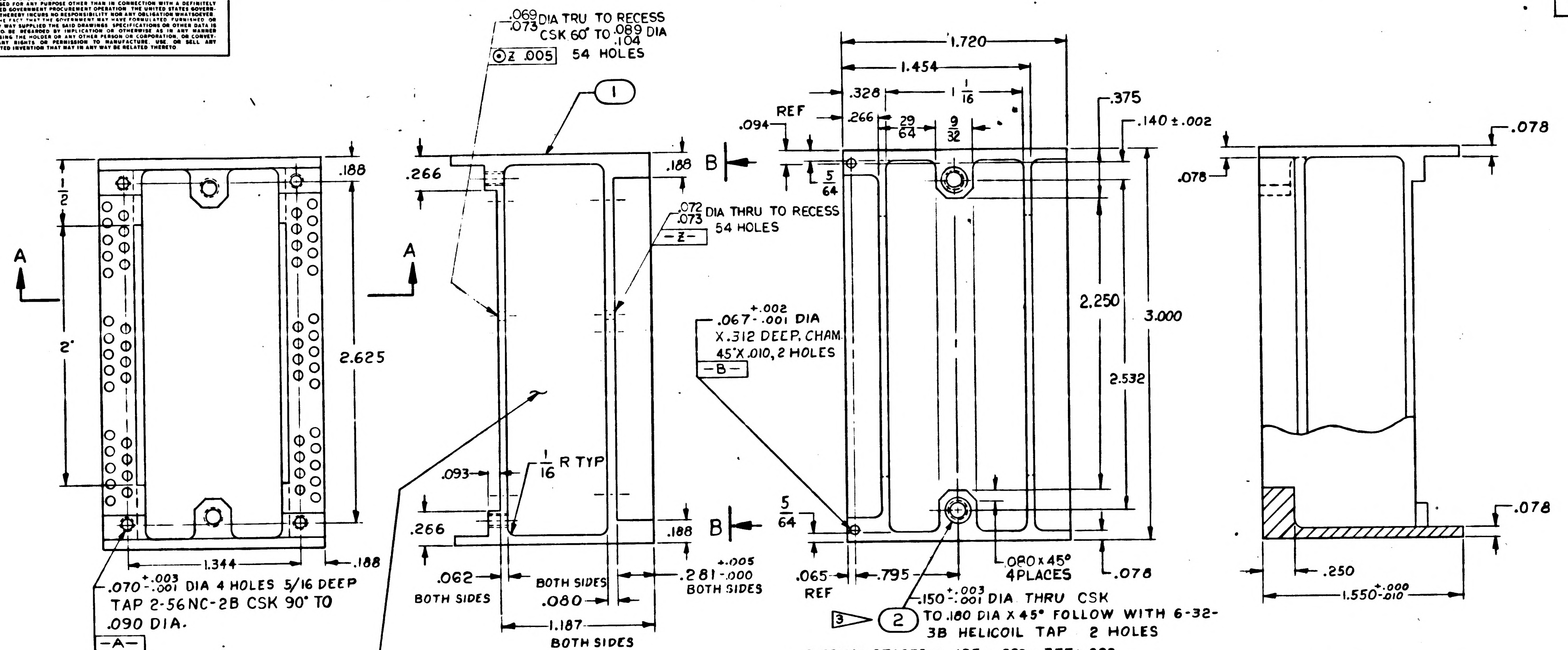
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015143
SCALE 2 X
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

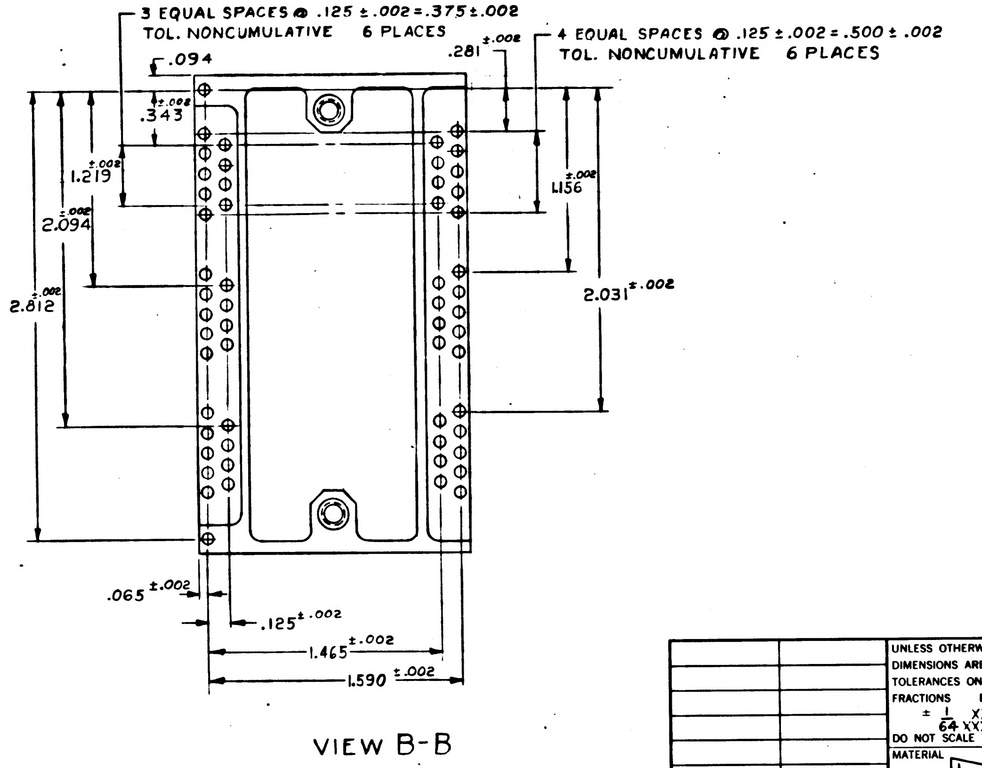
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015143 G

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	ADDED NOTES AND OTHER MFG. INFORMATION PER TDRR, 01226	5-9-63	WK.
B	REVISED PER TDRR 02875	6-20-63	RPK [illegible]
C	REVISED PER TDRR 03277	9-19-63	[illegible] WK
D	REVISED PER TDRR 03851	10-15-63	RPK [illegible]
E	REVISED PER TDRR 03854	10-15-63	RPK [illegible]
F	REVISED PER TDRR 05467	2 Dec 63	RPK WK
G	REVISED PER TDRR 10526	6 JUL 64	FL J.E.G

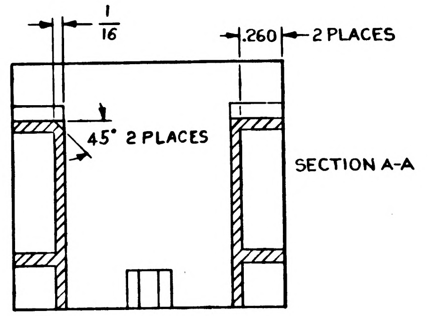


.069/.073 DIA TRU TO RECESS CSK 60° TO .089/.104 DIA
⊙ Z .005 54 HOLES
①
.072/.073 DIA THRU TO RECESS 54 HOLES
-Z-
A
A
1/2
2"
2.625
.188
.188
1.344
.070 +.003/-.001 DIA 4 HOLES 5/16 DEEP TAP 2-56NC-2B CSK 90° TO .090 DIA.
-A-
.266
.266
.188
.188
B
B
.093
1/16 R TYP
.062 BOTH SIDES
BOTH SIDES .080
.281 +.005/-.000 BOTH SIDES
1.187 BOTH SIDES
MARK 1015143 AND REVISION LETTER PER ND1002019
.067 +.002/-.001 DIA X.312 DEEP, CHAM. 45° X .010, 2 HOLES
-B-
1.720
1.454
.328
1 1/16
.266
29/64
9/32
REF
.094
5/64
5/64
.375
.140 ± .002
2.250
3.000
2.532
.065 REF
.795
.150 +.003/-.001 DIA THRU CSK TO .180 DIA X 45° FOLLOW WITH 6-32-3B HELICOIL TAP 2 HOLES
3 ②
.080 X 45° 4 PLACES
.078
.078
.078
.078
.078
.250
1.550 +.000/-.010



3 EQUAL SPACES @ .125 ± .002 = .375 ± .002 TOL. NONCUMULATIVE 6 PLACES
4 EQUAL SPACES @ .125 ± .002 = .500 ± .002 TOL. NONCUMULATIVE 6 PLACES
.094
.281 ±.002
.343 ±.002
1.219 ±.002
2.094 ±.002
2.812 ±.002
1.156 ±.002
2.031 ±.002
.065 ±.002
.125 ±.002
1.465 ±.002
1.590 ±.002

VIEW B-B



1/16
.260
2 PLACES
45° 2 PLACES

SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL: MAGNESIUM ALLOY ZK-6A-T5 PER QQ-M-31
FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES, DIA. A & DIA. B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 INCH.
ALL CORNERS TO BE .005R. TO .015R OR CHAMF.
SURFACE ROUGHNESS MUST NOT EXCEED 125.

MUST BE FREE FROM BURRS.

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3 INSTALL 6-32NC-3B INSERT PER MS 33646 BREAK OFF TANG.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS21209-C0615	INSERT, CRES HELICAL COIL	2
1	1015143-1	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015137	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS XX ± .02 XXX ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT
DRAWN F Akell DATE 4-23-63
CHECKED L.A. Plummer
APPROVAL K. L. Battalfam
APPROVAL
NASA APPROVAL [illegible] 4/24/63
MIT APPROVAL W. Kupfer 24 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

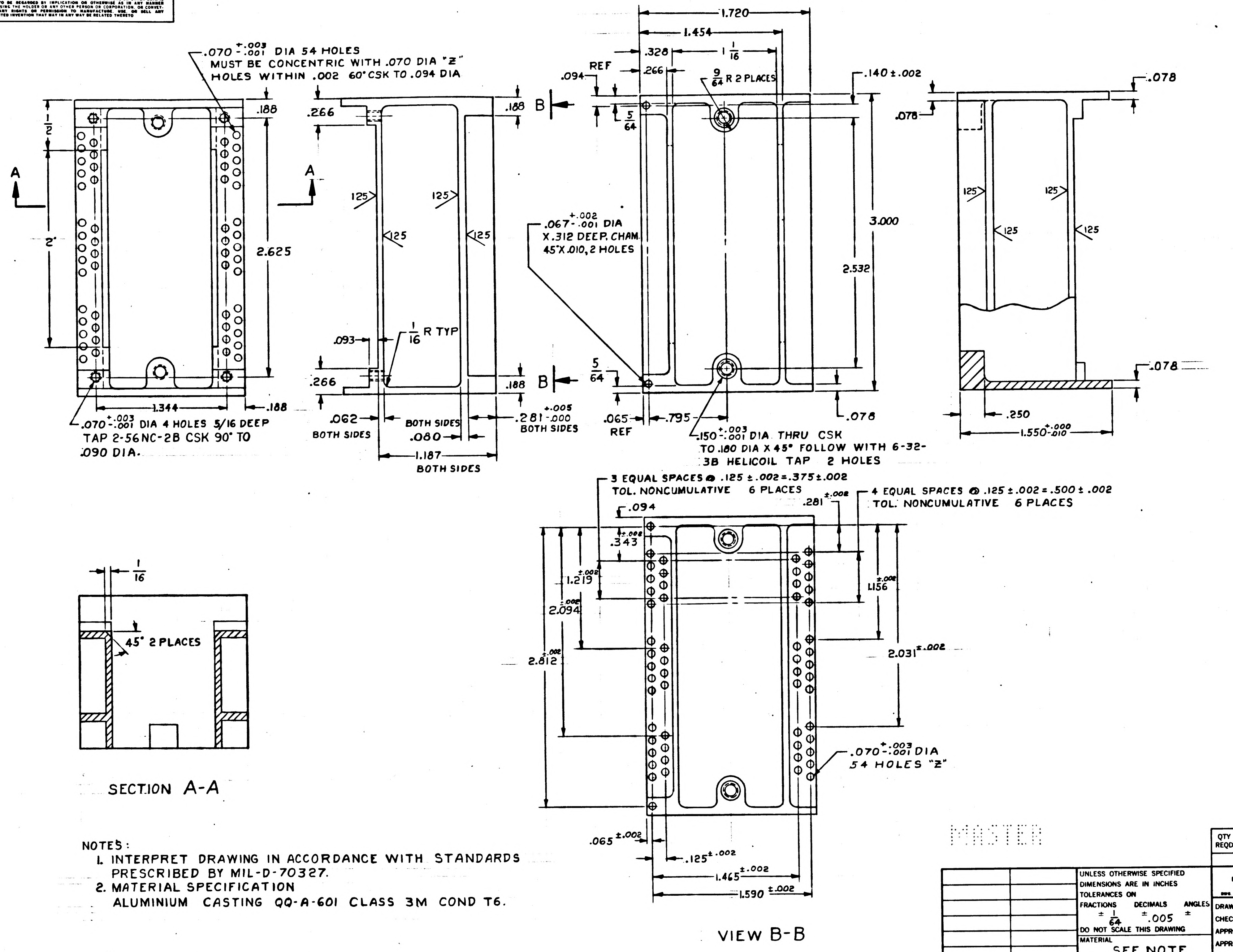
FRAME
RELAY MODULE

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015143
SCALE 2 X
WT
SHEET 1 OF 1

1015143 G

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL


.070 +.003 -.001 DIA 54 HOLES
MUST BE CONCENTRIC WITH .070 DIA "Z" HOLES WITHIN .002 60° CSK TO .094 DIA
1/2
2"
2.625
.188
A
A
1.344
.188
.070 +.003 -.001 DIA 4 HOLES 5/16 DEEP
TAP 2-56NC-2B CSK 90° TO .090 DIA.
.266
.188
125
1/16 R TYP
.093
.266
.188
.062 BOTH SIDES
BOTH SIDES .080
1.187 BOTH SIDES
.281 +.005 -.000 BOTH SIDES
B
B
1.720
1.454
.328
1 1/16
.266
.094
REF
9/64 R 2 PLACES
5/64
.140 ± .002
.067 +.002 -.001 DIA
X .312 DEEP. CHAM. 45° X .010, 2 HOLES
3.000
2.532
5/64
.065 REF
.795
.078
.150 +.003 -.001 DIA THRU CSK TO .180 DIA X 45° FOLLOW WITH 6-32-3B HELICOIL TAP 2 HOLES
.078
.078
.078
.250
1.550 +.000 -.010
1/16
45° 2 PLACES
SECTION A-A
3 EQUAL SPACES @ .125 ± .002 = .375 ± .002
TOL. NONCUMULATIVE 6 PLACES
.094
.281 ±.002
4 EQUAL SPACES @ .125 ± .002 = .500 ± .002
TOL. NONCUMULATIVE 6 PLACES
.343 ±.002
1.219 ±.002
2.094 ±.002
2.812 ±.002
1.156 ±.002
2.031 ±.002
.070 +.003 -.001 DIA 54 HOLES "Z"
.065 ±.002
.125 ±.002
1.465 ±.002
1.590 ±.002
VIEW B-B

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL SPECIFICATION ALUMINIUM CASTING QQ-A-601 CLASS 3M COND T6.

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00992 DATE 24 Apr 63

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO.
CONTRACT
DRAWN F Ackell DATE 4-23-63
CHECKED L A Plummer
APPROVAL R. L. Battalfman
APPROVAL
NASA APPROVAL 4/29/63
MIT APPROVAL 24 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME
RELAY MODULE

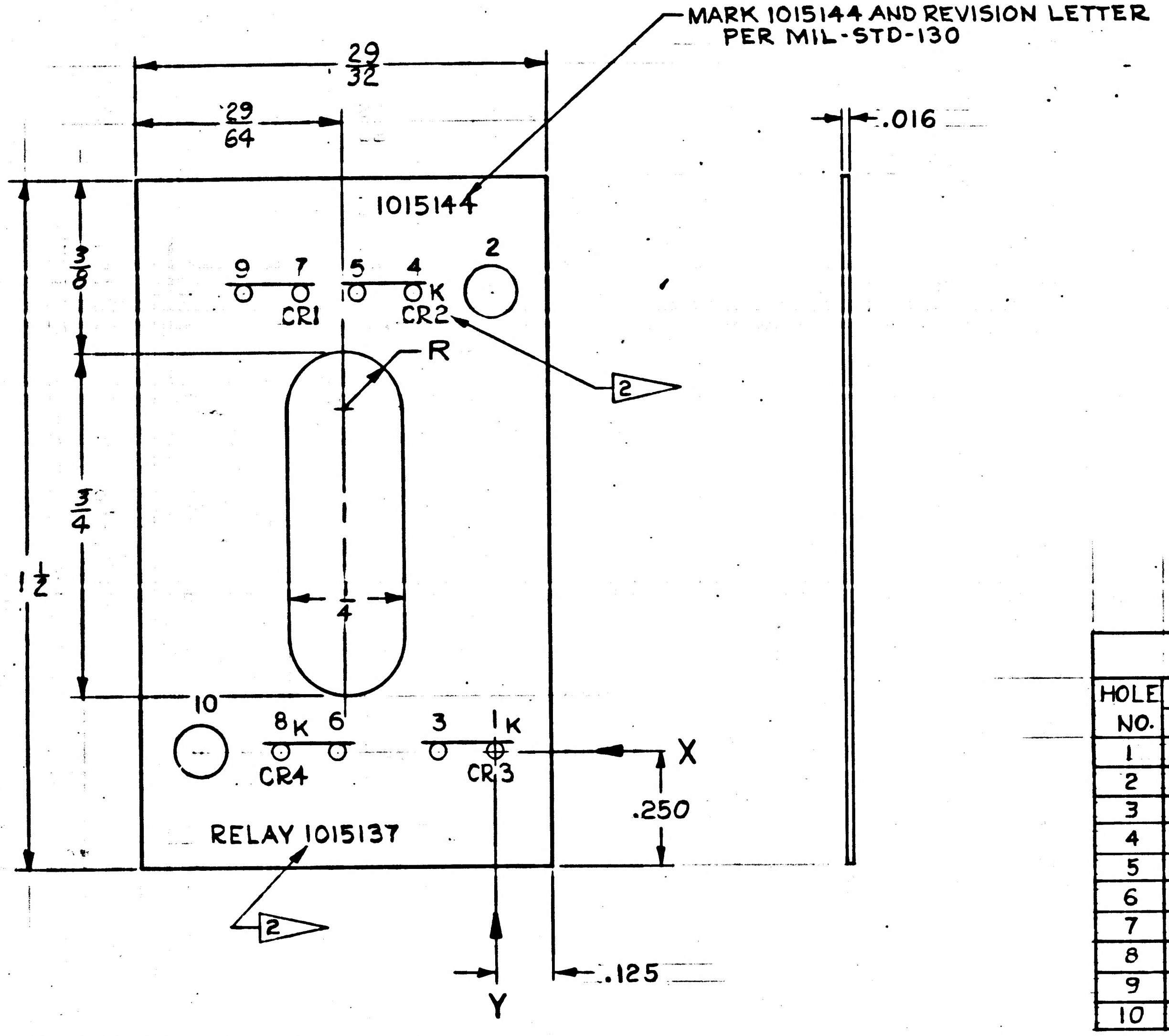
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015143
SCALE 2 X
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01227

SYM	DESCRIPTION	DATE	APPROVAL



COORDINATE DIMENSIONS

HOLE NO.	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION
1	.000	.000	.043 DIA.
2	1.000	.000	.104
3	.000	.125	.043
4	1.000	.175	.043
5	1.000	.300	.043
6	.000	.350	.043
7	1.000	.425	.043
8	.000	.475	.043
9	1.000	.550	.043
10	.000	.650	.104

NOTES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL SPECIFICATION: GLASS EPOXY MIL-P-18177 TYPE GEE

ARROW INDICATES DIRECTION OF POSITIVE (+) DIMENSION.

HOLE NUMBERS ARE FOR MANUFACTURING REFERENCE ONLY AND NOT TO BE MARKED.

2 3/64 SANS-SERIF GOTHIC CHARACTERS, LOCATE APPROX. AS SHOWN.

ALL CORNERS TO BE .005 TO .015R OR CHAMFER

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1015137	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN F Akell DATE 4-24-63
CHECKED LAPlummer
APPROVAL K.L. Battaifer
APPROVAL
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

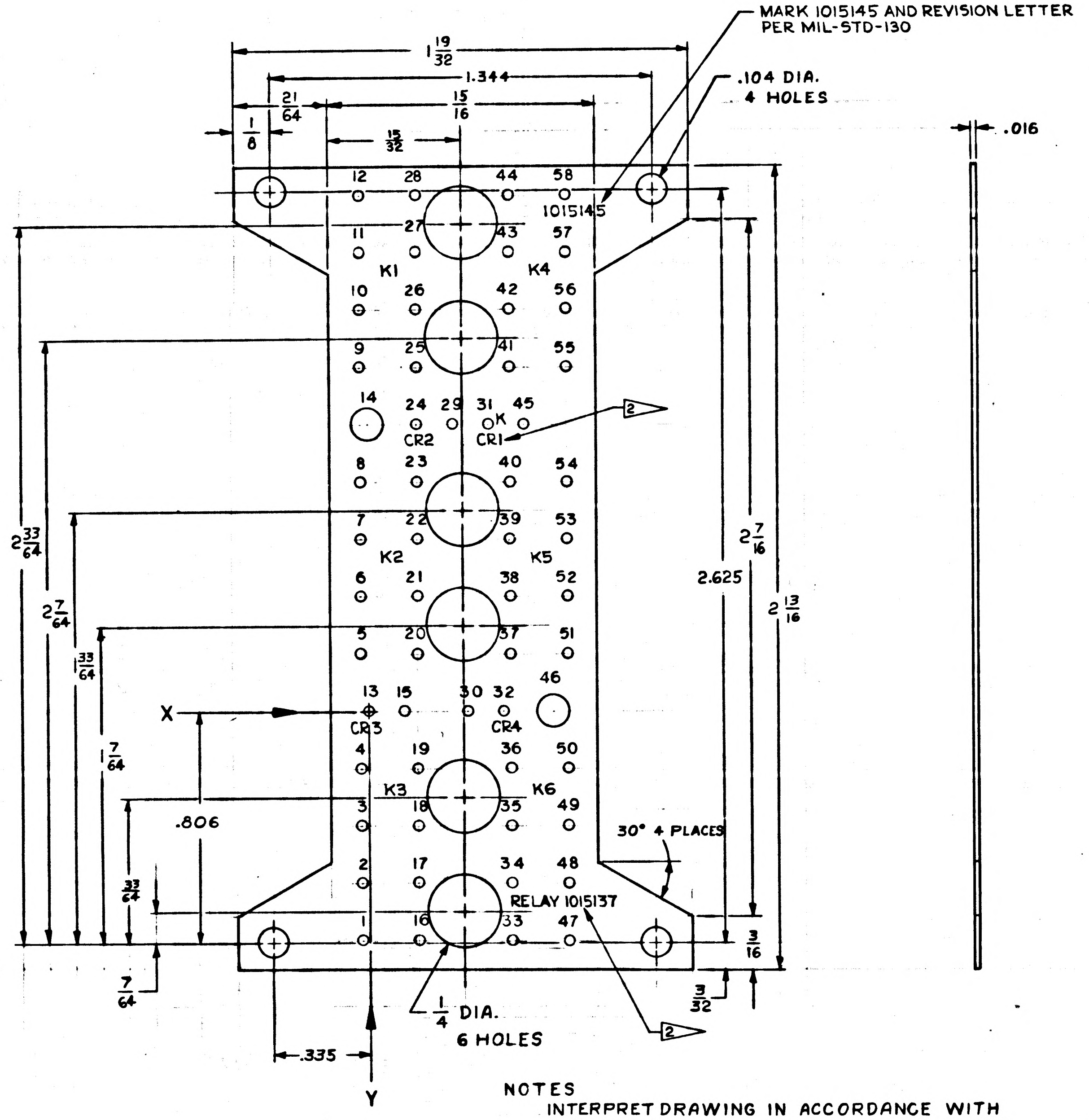
WAFER BOARD LOWER
RELAY MODULE

CODE IDENT NO.
SIZE C
NASA DRAWING NO. 1015144
SCALE 4X
WT
SHEET OF

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

SYM	REVISIONS DESCRIPTION	DATE	APPROVAL
	T DRR 01227		



MARK 1015145 AND REVISION LETTER PER MIL-STD-130
.104 DIA. 4 HOLES
$1\frac{19}{32}$
1.344
$\frac{21}{64}$
$\frac{15}{16}$
$\frac{1}{8}$
$\frac{15}{32}$
.016
12 28 44 58
1015145
11 27 43 57
K1 K4
10 26 42 56
9 25 41 55
14 24 29 31 45
CR2 K CR1
8 23 40 54
7 22 39 53
K2 K5
6 21 38 52
5 20 37 51
46
13 15 30 32
X
CR3 CR4
4 19 36 50
K3 K6
3 18 35 49
2 17 34 48
1 16 33 47
RELAY 1015137
30° 4 PLACES
$2\frac{33}{64}$
$2\frac{7}{64}$
$1\frac{33}{64}$
$1\frac{7}{64}$
.806
$\frac{33}{64}$
$\frac{7}{64}$
$2\frac{7}{16}$
2.625
$2\frac{13}{16}$
$\frac{3}{16}$
$\frac{3}{32}$
.335
Y
$\frac{1}{4}$ DIA. 6 HOLES
2

COORDINATE DIMENSIONS			
HOLE NO.	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION
1	-.025	- .800	.043 DIA.
2	-.025	- .600	
3	-.025	- .400	
4	-.025	- .200	
5	-.025	.200	
6	-.025	.400	
7	-.025	.600	
8	-.025	.800	
9	-.025	1.200	
10	-.025	1.400	
11	-.025	1.600	
12	-.025	1.800	
13	.000	.000	.043
14	.000	1.000	.104
15	.125	.000	.043
16	.175	-.800	
17	.175	-.600	
18	.175	-.400	
19	.175	-.200	
20	.175	.200	
21	.175	.400	
22	.175	.600	
23	.175	.800	
24	.175	1.000	
25	.175	1.200	
26	.175	1.400	
27	.175	1.600	
28	.175	1.800	
29	.300	1.000	
30	.350	.000	
31	.425	1.000	
32	.475	.000	
33	.500	-.800	
34	.500	-.600	
35	.500	-.400	
36	.500	-.200	
37	.500	.200	
38	.500	.400	
39	.500	.600	
40	.500	.800	
41	.500	1.200	
42	.500	1.400	
43	.500	1.600	
44	.500	1.800	
45	.550	1.000	.043
46	.650	.000	.104
47	.700	-.800	.043
48	.700	-.600	
49	.700	-.400	
50	.700	-.200	
51	.700	.200	
52	.700	.400	
53	.700	.600	
54	.700	.800	
55	.700	1.200	
56	.700	1.400	
57	.700	1.600	
58	.700	1.800	.043 DIA

NOTES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1. MATERIAL SPECIFICATION: GLASS EPOXY MIL-P-18177 TYPE GEE.

ARROW INDICATES DIRECTION OF POSITIVE (+) DIMENSION.

HOLE NUMBERS ARE FOR MANUFACTURING REFERENCE ONLY AND NOT TO BE MARKED.

2. 3/64 SANS-SERIF GOTHIC CHARACTERS, LOCATE APPROX. AS SHOWN.

ALL CORNERS TO BE .005 TO .015R OR CHAMFER.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
1015137	
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN F Akell DATE 4-26-63
CHECKED LAPlummer
APPROVAL R L Battey
APPROVAL
NASA APPROVAL [illegible] 5/15/63
MIT APPROVAL [illegible] 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD, UPPER
RELAY MODULE

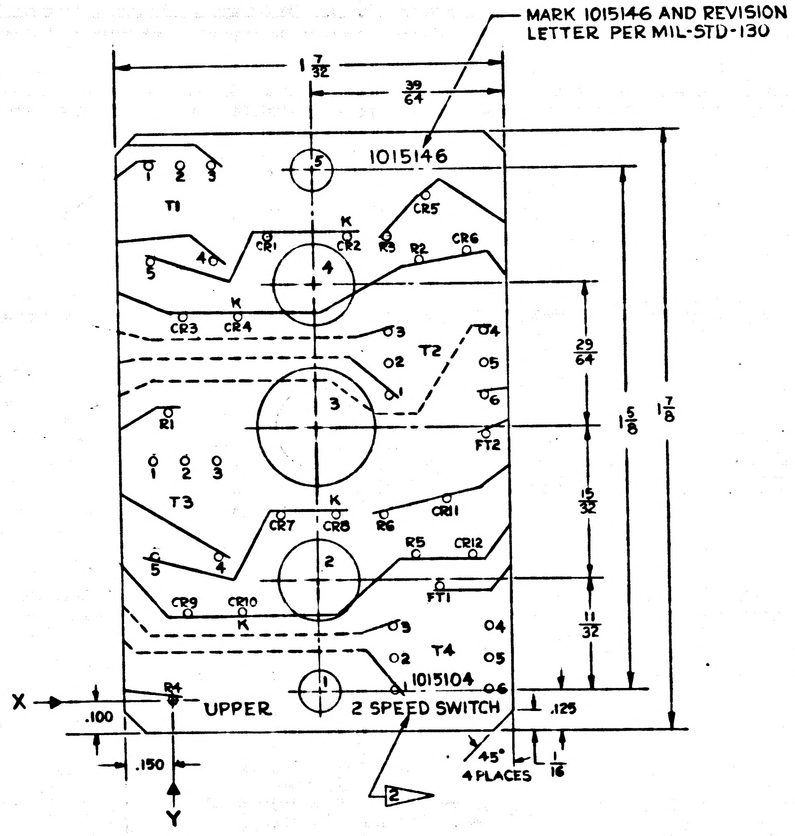
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015145
SCALE 4 x
WT
SHEET 1 OF 1

1015145

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01230			
SYM	DESCRIPTION	DATE	APPROVAL



HOLE NO.	COORDINATE X (HORIZ.)	COORDINATE Y (VERT.)	HOLE DESCRIPTION
R4	.000	.000	.043 DIA. THRU
T3-5	-.050	.450	
T3-1	-.050	.750	
T1-5	-.050	1.375	
T1-1	-.050	1.675	
R1	.000	.900	
CR9	.050	.275	
T3-2	.050	.750	
CR3	.050	1.200	
T1-2	.050	1.675	
T3-4	.150	.450	
T3-3	.150	.750	
T1-4	.150	1.375	
T1-3	.150	1.675	
CR10	.225	.275	
CR4	.225	1.200	
CR7	.350	.575	
CR1	.325	1.450	.043
1	—	—	.136
2	—	—	.250
3	—	—	.375
4	—	—	.250
5	—	—	.136
CR8	.525	.575	.043
CR2	.575	1.450	
R6	.675	.575	
T4-1	.700	.025	
T4-2	.700	.125	
T4-3	.700	.225	
T2-1	.700	.950	
T2-2	.700	1.050	
T2-3	.700	1.150	
R3	.700	1.450	
R5	.775	.450	
R2	.800	1.375	
CR5	.825	1.575	
FT1	.850	.350	
CR11	.875	.625	
CR12	.950	.450	
CR6	.950	1.400	
T4-6	1.000	.025	
T4-5	1.000	.125	
T4-4	1.000	.225	
FT2	1.000	.825	
T2-6	1.000	.950	
T2-5	1.000	1.050	
T2-4	1.000	1.150	.043

. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 ▷ MATERIAL, EPOXY GLASS .015 TH'K MIL-P-18177 TYPE GEE.

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

2 ▷ 3/64 SANS SERIF GOTHIC CHARACTERS LOCATE APPROX. AS SHOWN.

OTHER CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

MARK PATHS AS SHOWN 1/64 WIDE.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1015104	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±1/64 DECIMALS ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL 1 ▷
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 5-1-63
CHECKED L.A. Plummer
APPROVAL R. L. Battey
APPROVAL
NASA APPROVAL 5/15/63
MIT APPROVAL 5/14/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD, UPPER
TWO-SPEED SWITCH

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015146
SCALE 4X
WT
SHEET 1 OF 1

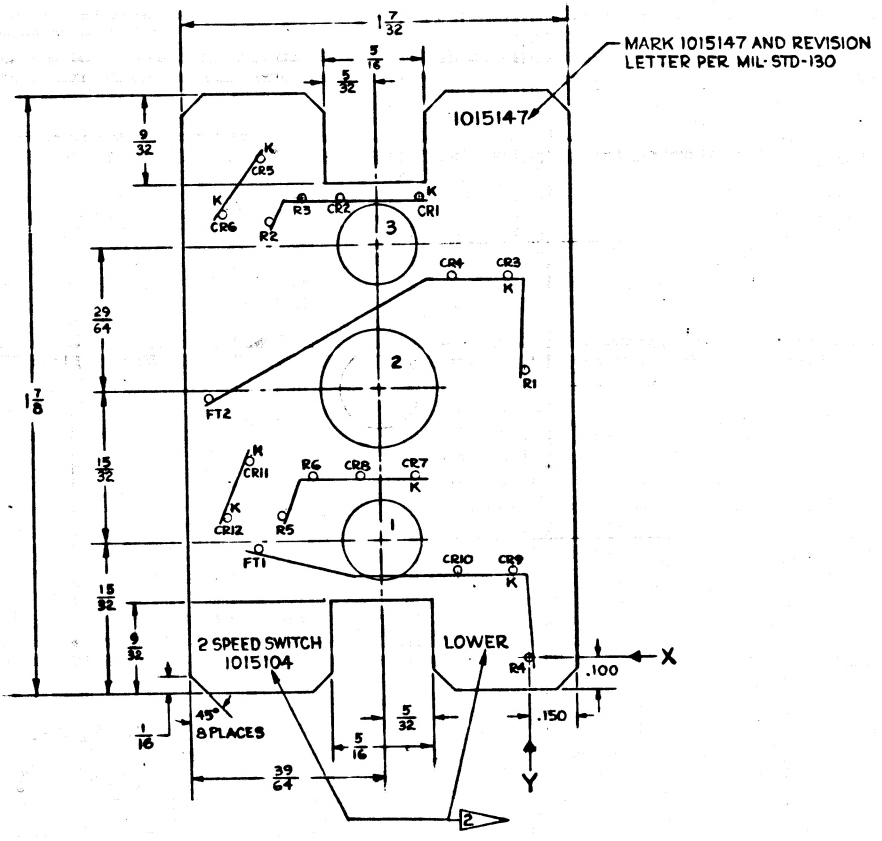
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015147

REVISIONS TDAR 01230

SYM	DESCRIPTION	DATE	APPROVAL



1 7/32
5/16
5/32
MARK 1015147 AND REVISION LETTER PER MIL-STD-130
1015147
9/32
K
CR5
K
CR6
R3
CR2
K
CR1
R2
3
CR4
CR3
K
29/64
2
R1
1 7/8
FT2
K
CR11
R6
CR8
CR7
K
15/32
K
CR12
R5
1
FT1
CR10
CR9
K
15/32
9/32
2 SPEED SWITCH 1015104
LOWER
R4
.100
X
45°
8 PLACES
1/16
5/32
5/16
.150
Y
39/64
2

HOLE NO.	COORDINATE		HOLE DESCRIPTION
	X (HORIZ.)	Y (VERT)	
R4	.000	.000	.043 DIA. THRU
CR9	.050	.275	↑
R1	.000	.900	
CR3	.050	1.200	
CR10	.225	.275	
CR4	.225	1.200	
CR7	.350	.575	↓
CR1	.325	1.450	.043
1	—	—	.250
2	—	—	.375
3	—	—	.250
CR8	.525	.575	.043
CR2	.575	1.450	↑
R6	.675	.575	
R3	.700	1.450	
R5	.775	.450	
R2	.800	1.375	
FT1	.850	.350	
CR5	.825	1.575	
CR11	.875	.625	
CR12	.950	.450	
CR6	.950	1.400	↓
FT2	1.000	.825	.043

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 ▷ MATERIAL: EPOXY GLASS, .015 TH'K. MIL-P-18177 TYPE GEE.

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

2 ▷ 3/64 SANS SERIF GOTHIC CHARACTERS LOCATE APPROX. AS SHOWN.

OTHER CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC LOCATE APPROX. AS SHOWN.

MARK PATHS AS SHOWN 1/64 WIDE.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1015104	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL 1 ▷
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 5-2-63
CHECKED
APPROVAL R. L. Battey
APPROVAL
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD, LOWER
TWO-SPEED SWITCH

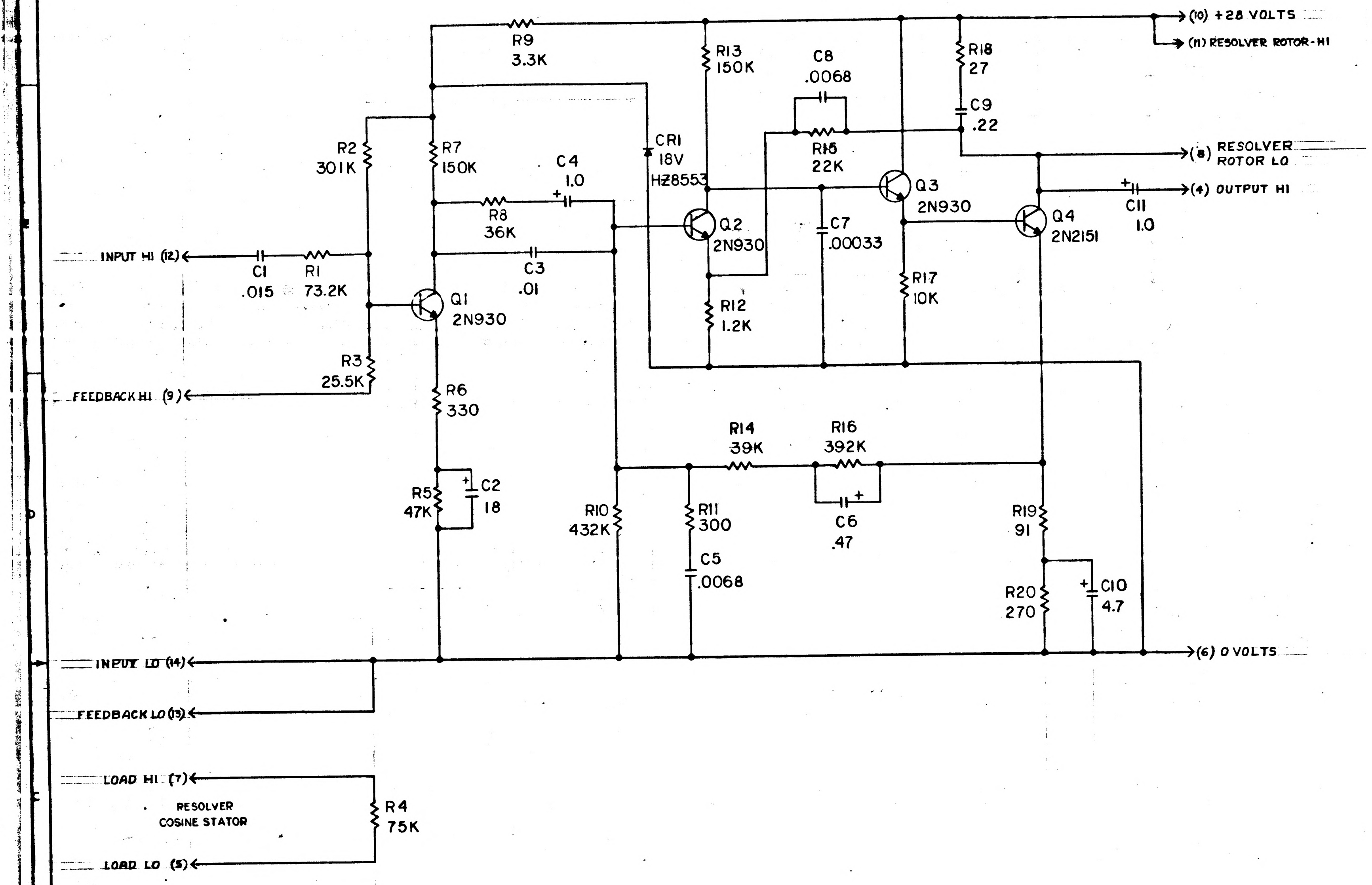
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015147
SCALE 4X
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01376

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 03E63	9-19-63	RK


(10) +28 VOLTS
(11) RESOLVER ROTOR-HI
(8) RESOLVER ROTOR LO
(4) OUTPUT HI
(6) 0 VOLTS
INPUT HI (12)
FEEDBACK HI (9)
INPUT LO (14)
FEEDBACK LO (13)
LOAD HI (7)
LOAD LO (5)
RESOLVER COSINE STATOR
R9 3.3K
R13 150K
C8 .0068
R18 27
C9 .22
CR1 18V HZ8553
R2 301K
R7 150K
C4 1.0
R15 22K
Q3 2N930
R8 36K
Q2 2N930
C7 .00033
Q4 2N2151
C11 1.0
C1 .015
R1 73.2K
C3 .01
Q1 2N930
R12 1.2K
R17 10K
R3 25.5K
R6 330
R14 39K
R16 392K
C6 .47
R5 47K
C2 18
R10 432K
R11 300
C5 .0068
R19 91
R20 270
C10 4.7
R4 75K

REF. DESIG.	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1010364-609	RESISTOR	73.2K	1%	1/8W
R2	1010364-727		301K	1%	1/8W
R3	1010364-521		25.5K	1%	1/8W
R4	1006750-77		75K	2%	1/4W
R5	006750-72		47K	2%	1/4W
R6	1006750-20		330	2%	1/4W
R7	006750-84		150K	2%	1/4W
R8	1006750-69		36K	2%	1/4W
R9	1006750-44		3.3K	2%	1/4W
R10	1010364-757		432K	1%	1/8W
R11	1006750-19		300	2%	1/4W
R12	1006750-34		1.2K	2%	1/4W
R13	1006750-84		150K	2%	1/4W
R14	1006750-70		39K	2%	1/4W
R15	1006750-64		22K	2%	1/4W
R16	1010364-719		392K	1%	1/8W
R17	1006750-56		10K	2%	1/4W
R18	1010368-11		27	5%	1/4W
R19	1006750-7		91	2%	1/4W
R20	1006750-18	RESISTOR	270	2%	1/4W
C1	1010375-52	CAPACITOR	.015	10%	100V
C2	1006755-20		18	10%	15V
C3	1010375-124		.01	10%	300V
C4	1006755-69		1.0	10%	35V
C5	1010359-27		.0068	10%	200V
C6	1006755-65		.47	10%	35V
C7	1010359-11		.00033	10%	200V
C8	1010359-27		.0068	10%	200V
C9	1010375-66		.22	10%	100V
C10	1006755-77		4.7	10%	35V
C11	1006755-69	CAPACITOR	1.0	10%	35V
CR1	1010372-24	DIODE	HZ8553		18V
Q1	1010397-1	TRANSISTOR	2N930		
Q2	1010397-1	TRANSISTOR	2N930		
Q3	1010397-1	TRANSISTOR	2N930		
Q4	1010269-1	TRANSISTOR	2N2151		

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISISTOR VALUES ARE EXPRESSED IN OHMS, K INDICATES THOUSANDS OF OHMS.
3. UNLESS OTHERWISE SPECIFIED, CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS.
4. REFERENCE DWG.: COSECANT GENERATOR MODULE ASSEMBLY 1015124

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN F Ahell DATE 5-1-63
CHECKED R L Bottcher
APPROVAL R L Bottcher
APPROVAL M. E. Johnson
NASA APPROVAL Jack Barnard
MIT APPROVAL W Kupfer 29 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
COSECANT GENERATOR

CODE IDENT NO. SIZE E NASA DRAWING NO. 1015148
SCALE WT SHEET 1 OF 1

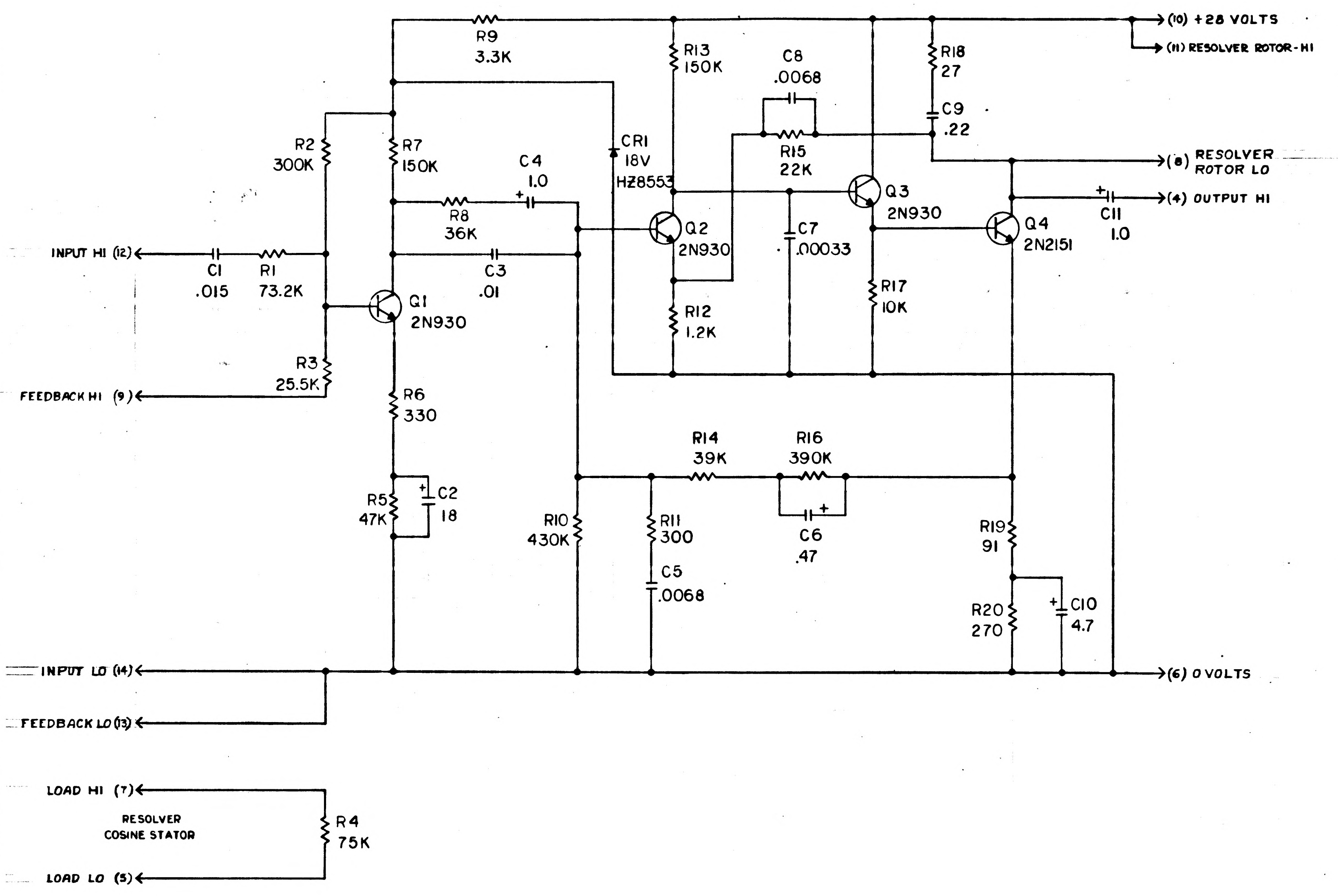
1015148

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

SYM	DESCRIPTION	DATE	APPROVAL

REVISIONS TDRR C1376



(10) +28 VOLTS
(11) RESOLVER ROTOR-HI
(8) RESOLVER ROTOR LO
(4) OUTPUT HI
(6) 0 VOLTS
INPUT HI (12)
FEEDBACK HI (9)
INPUT LO (14)
FEEDBACK LO (13)
LOAD HI (7)
LOAD LO (5)
RESOLVER COSINE STATOR
R1 73.2K
R2 300K
R3 25.5K
R4 75K
R5 47K
R6 330
R7 150K
R8 36K
R9 3.3K
R10 430K
R11 300
R12 1.2K
R13 150K
R14 39K
R15 22K
R16 390K
R17 10K
R18 27
R19 91
R20 270
C1 .015
C2 18
C3 .01
C4 1.0
C5 .0068
C6 .47
C7 .00033
C8 .0068
C9 .22
C10 4.7
C11 1.0
CR1 18V HZ8553
Q1 2N930
Q2 2N930
Q3 2N930
Q4 2N2151

REF. DESIG.	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1010364-609	RESISTOR	73.2K	1%	1/8W
R2	1010364-727		301K	1%	1/8W
R3	1010364-521		25.5K	1%	1/8W
R4	1006750-77		75K	2%	1/4W
R5	1006750-72		47K	2%	1/4W
R6	1006750-20		330	2%	1/4W
R7	1006750-84		150K	2%	1/4W
R8	1006750-69		36K	2%	1/4W
R9	1006750-44		3.3K	2%	1/4W
R10	1010364-757		432K	1%	1/8W
R11	1006750-19		300	2%	1/4W
R12	1006750-34		1.2K	2%	1/4W
R13	1006750-84		150K	2%	1/4W
R14	1006750-70		39K	2%	1/4W
R15	1006750-64		22K	2%	1/4W
R16	1010364-749		392K	1%	1/8W
R17	1006750-56		10K	2%	1/4W
R18	1010366-11		27	5%	1/4W
R19	1006750-7		91	2%	1/4W
R20	1006750-18	RESISTOR	270	2%	1/4W
C1	1010375-52	CAPACITOR	.015	10%	100V
C2	1006755-20		18	10%	15V
C3	1010375-124		.01	10%	300V
C4	1006755-69		1.0	10%	35V
C5	1010359-27		.0068	10%	200V
C6	1006755-65		.47	10%	35V
C7	1010359-11		.00033	10%	200V
C8	1010359-27		.0068	10%	200V
C9	1010375-66		.22	10%	100V
C10	1006755-77		4.7	10%	35V
C11	1006755-69	CAPACITOR	1.0	10%	35V
CR1	1010372-24	DIODE	HZ8553		18V
Q1	1010397-001	TRANSISTOR	2N930		
Q2	1010397-001	TRANSISTOR	2N930		
Q3	1010397-001	TRANSISTOR	2N930		
Q4	1010269	TRANSISTOR	2N2151		

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISISTOR VALUES ARE EXPRESSED IN OHMS, K INDICATES THOUSANDS OF OHMS.
3. UNLESS OTHERWISE SPECIFIED, CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS.
4. REFERENCE DWG.: COSECANT GENERATOR MODULE ASSEMBLY 1015124

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN F. Abell DATE 5-1-63
CHECKED R. L. Bettcher
APPROVAL R. L. Bettcher
APPROVAL
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
COSECANT GENERATOR

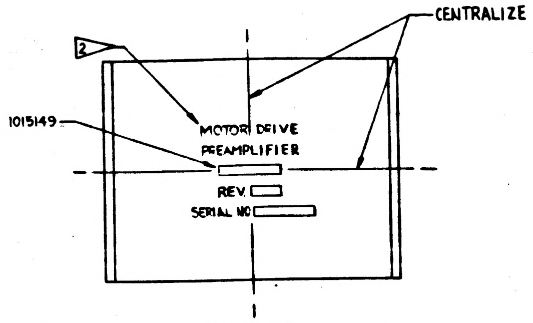
CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1015148
SCALE | WT | SHEET 1 OF 1

1015148

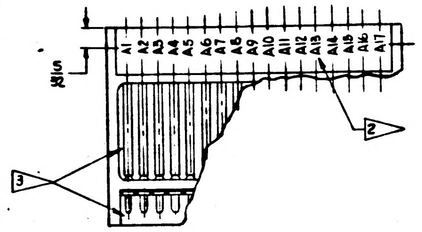
INCHES
PHOTOGRAPHIC SCALE ONLY

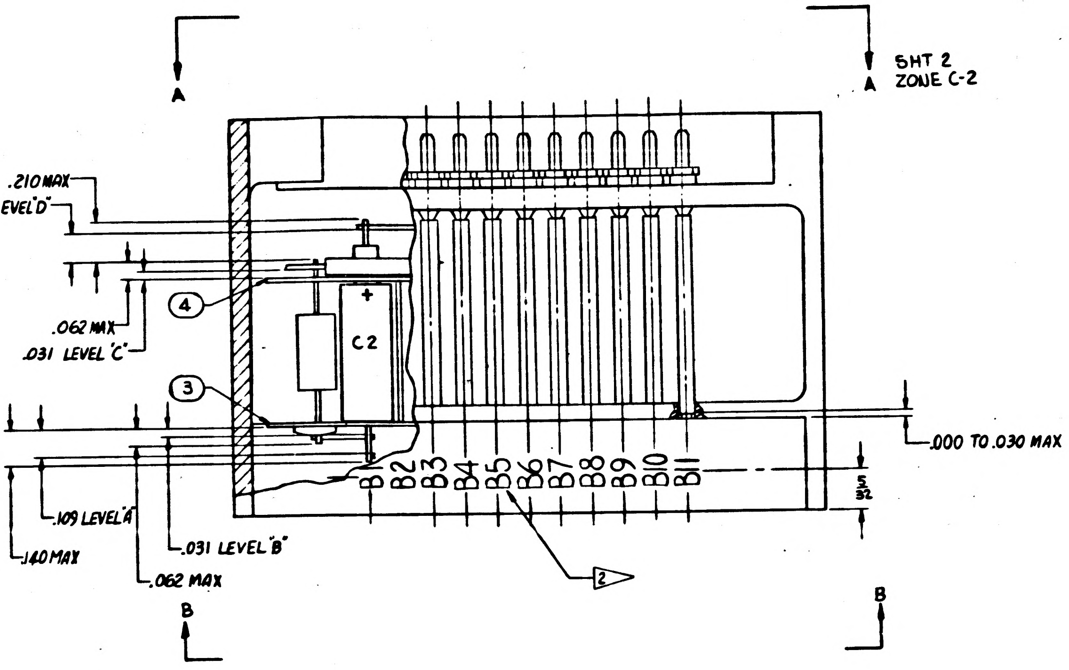
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
REVISIONS TDRR 01430					
A		REVISED PER TDRR 02504		5-21-63	JJM.

1015149 A


CENTRALIZE
2
1015149
MOTOR DRIVE
PREAMPLIFIER
REV.
SERIAL NO

VIEW B-B
SCALE 2:1


A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17
2
3


A
A
SHT 2
ZONE C-2
.210 MAX
.180 LEVEL'D'
4
.062 MAX
.031 LEVEL 'C'
C2
3
.000 TO .030 MAX
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11
.109 LEVEL 'A'
.140 MAX
.031 LEVEL 'B'
.062 MAX
2
B
B

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003.

2 MARK CHARACTERS .080 HIGH WHITE PER ND 1002009 CENTRALIZED AS SHOWN.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING.
K INDICATES CATHODE SIDE OF DIODE,
FT( ) INDICATES FEED THRU,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR.
C-INDICATES COLLECTOR LEAD OF TRANSISTOR.
B-INDICATES BASE LEAD OF TRANSISTOR,
E-INDICATES EMITTER LEAD OF TRANSISTOR.

4 USE AS REQUIRED

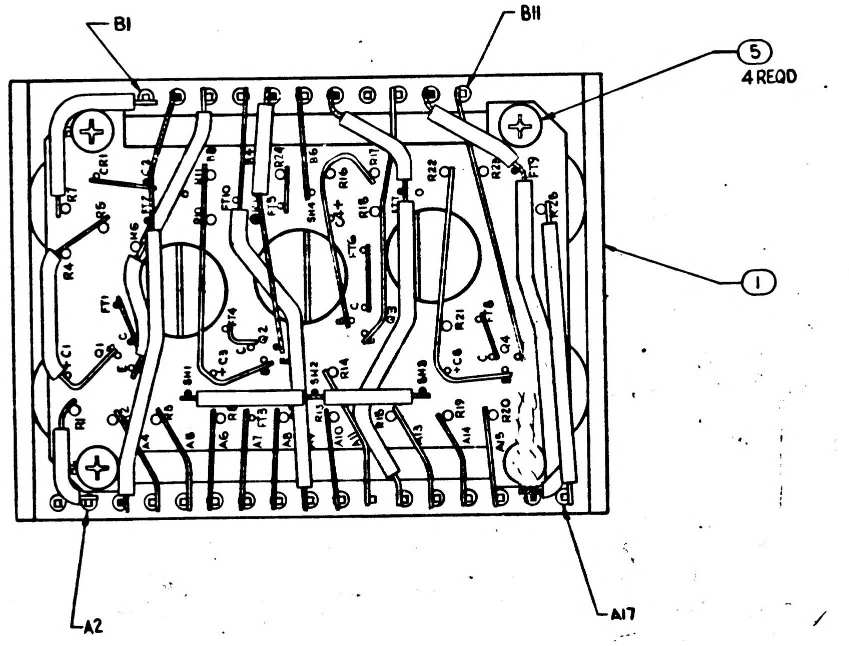
DRAWINGS FOR REFERENCE:
1015150 SCHEMATIC DIAGRAM, ELECTRICAL.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

ASSEMBLE PER ND 1002136

INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.


B1
B11
5
4 REQD
1
A2
A17

MASTER

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
20		1006757-1	WIRE, NICKEL RIBBON .010 x .020
19		1006776-21	SLEEVING, ELECT. INSULATING
18		1006776-20	SLEEVING, ELECT. INSULATING
17		1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	4	1010379-20	RESISTOR, FIXED
6	8	1010364-739	RESISTOR, FIXED
5	4	MS 35216-3	SCREW 1/4 #2-56 NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION. GMC
MILWAUKEE. WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Battaglia
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON. TEXAS

SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO. SIZE E 1015149
SCALE 4:1 SHEET 1 OF 2

1015149 A

REVISIONS TDRR 01430

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
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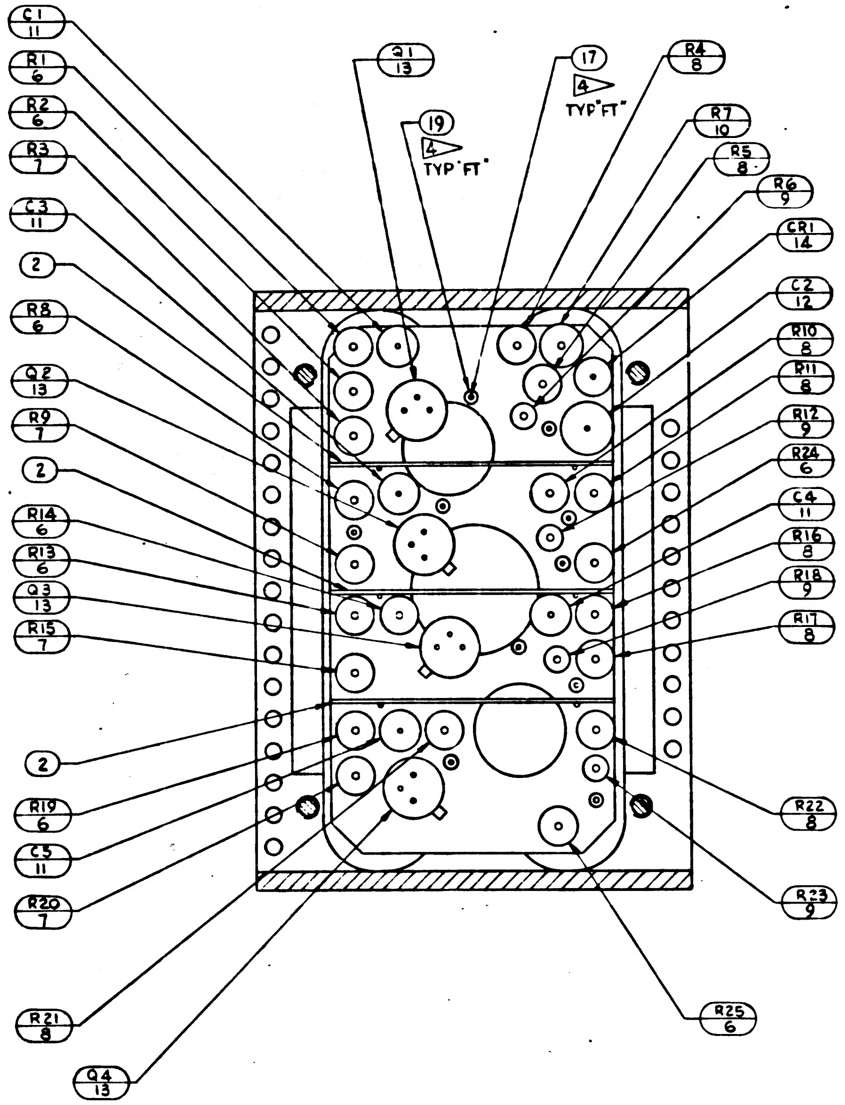
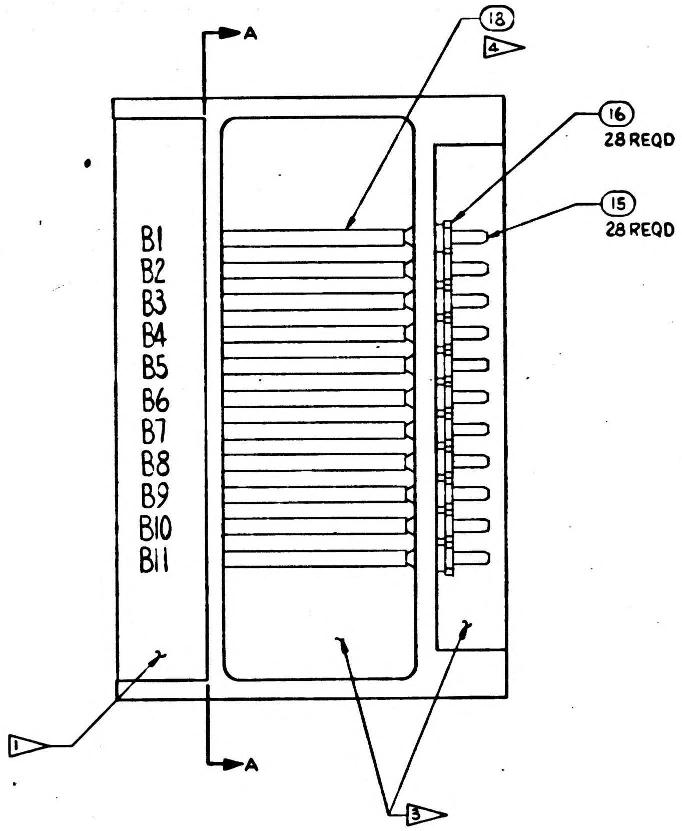
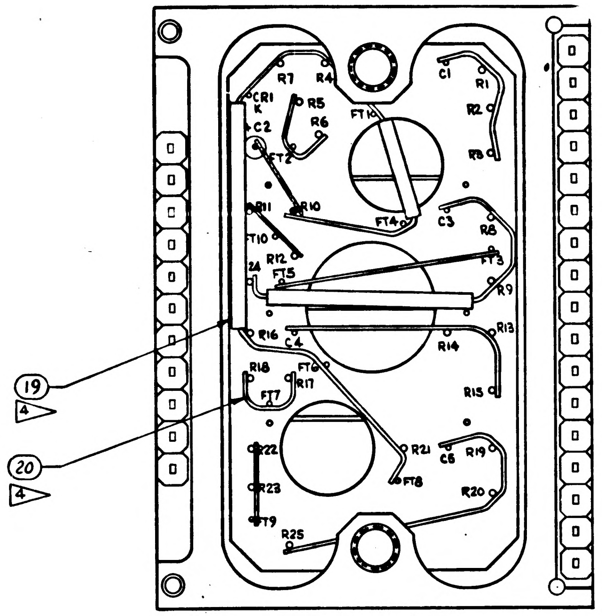

C1 11
R1 6
R2 6
R3 7
C3 11
2
R8 6
Q2 13
R9 7
2
R14 6
R13 6
Q3 13
R15 7
2
R19 6
C5 11
R20 7
R21 8
Q4 13
Q1 13
19
4 TYP "FT"
17
4 TYP "FT"
R4 8
R7 10
R5 8
R6 9
CR1 14
C2 12
R10 8
R11 8
R12 9
R24 6
C4 11
R16 8
R18 9
R17 8
R22 8
R23 9
R25 6

SECTION A-A


A
A
18
4
16
28 REQD
15
28 REQD
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
1
3


R7
R4
C1
R1
CR1
K
R5
R6
R2
C2
FT1
FT2
R3
R11
R10
FT4
C3
R8
FT10
R12
FT3
24
FT5
R9
R16
C4
R14
R13
R18
FT6
R17
FT7
R15
19
4
20
4
R22
R21
C5
R19
FT8
R23
R20
FT9
R25

VIEW A-A
ROTATED 90° CW
SHEET 1
ZONE H-5

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION. GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Bottolfson
APPROVAL R. L. Bottolfson
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO
SIZE E
1015149
SCALE 4:1
SHEET 2 OF 2

BOTTOLFSON

1015149 B

REVISIONS		TDRR 01430			
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
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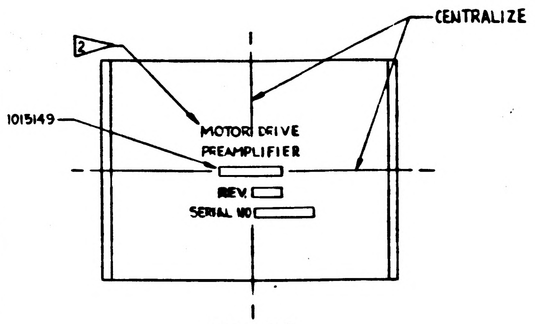
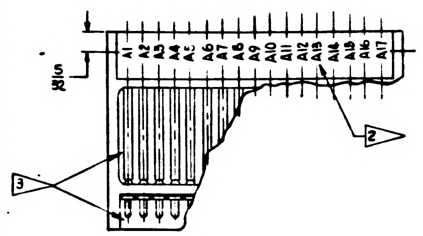
B		REVISED PER TDRR 03019		9-5-63	

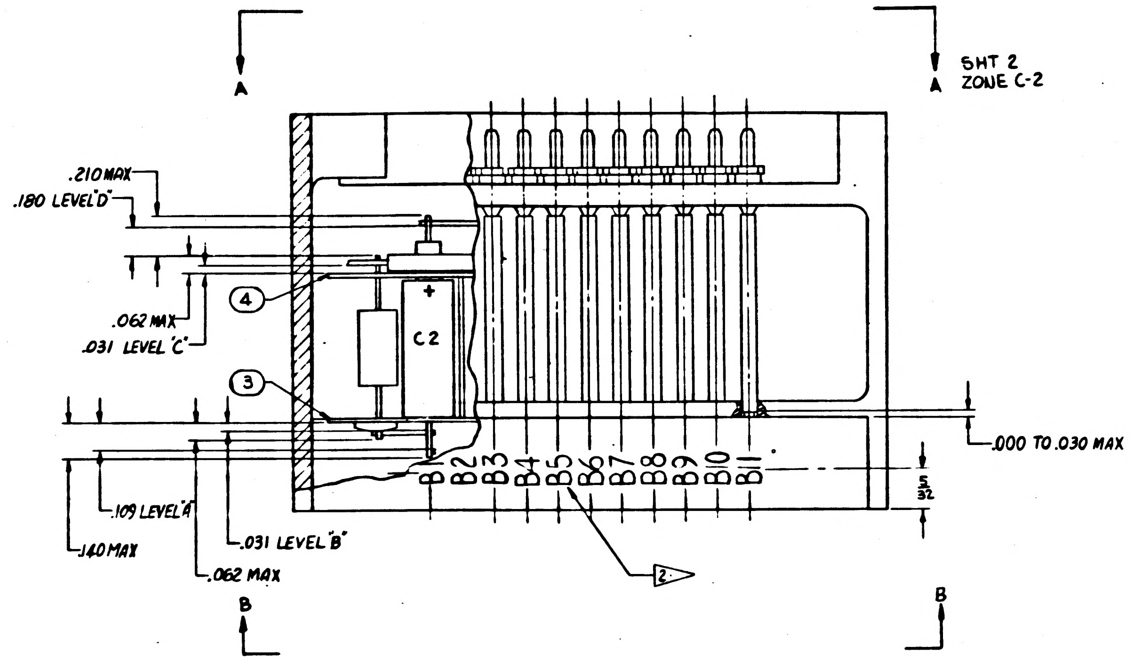


CENTRALIZE
1015149
MOTOR DRIVE
PREAMPLIFIER
REV
SERIAL NO
2

VIEW B-B
SCALE 2:1



A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17
5/16
2
3



A
A
SHT 2
ZONE C-2
.210 MAX
.180 LEVEL "D"
4
.062 MAX
.031 LEVEL "C"
C2
+
3
.000 TO .030 MAX
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11
5/32
2
.109 LEVEL "A"
.031 LEVEL "B"
.140 MAX
.062 MAX
B
B

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003.

2 MARK CHARACTERS .060-.100 HIGH WHITE PER ND 1002009 CENTRALIZED AS SHOWN.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING.

K INDICATES CATHODE SIDE OF DIODE.

FT() INDICATES FEED THRU.

PLUS(+) INDICATES POSITIVE END OF CAPACITOR.

C-INDICATES COLLECTOR LEAD OF TRANSISTOR.

B-INDICATES BASE LEAD OF TRANSISTOR.

E-INDICATES EMITTER LEAD OF TRANSISTOR.

4 USE AS REQUIRED

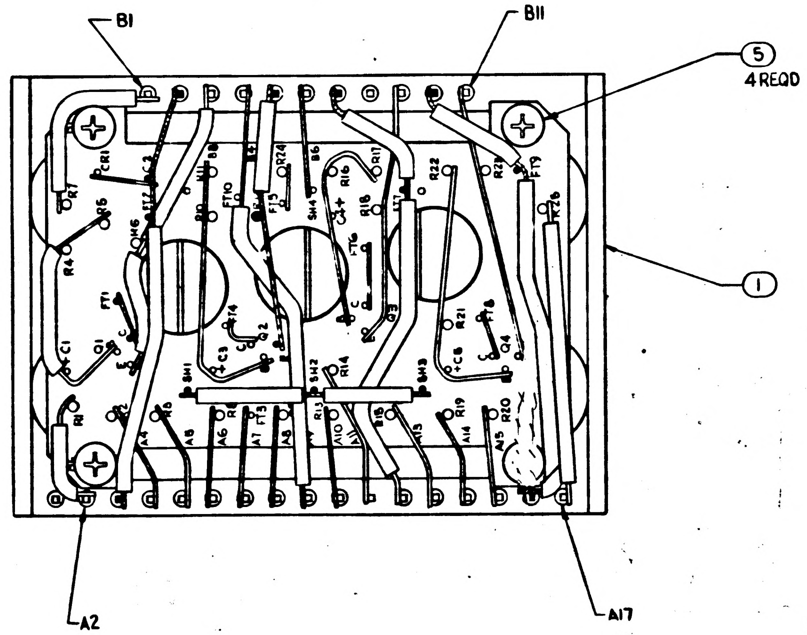
DRAWINGS FOR REFERENCE:
1015150 SCHEMATIC DIAGRAM, ELECTRICAL.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

ASSEMBLE PER ND 1002136

INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.



B1
B11
5
4 REQD
1
A2
A17
CR1
R7
R6
R4
C1
Q1
FT1
C2
R2
R8
R24
R16
R17
R22
R23
FT9
R21
R18
Q2
Q3
Q4
C3
C4
C6
R14
R19
R20
SH1
SH2
SH3
SH4
A4
A5
A6
A7
A8
A9
A10
A14
A15

21	AR	1006776-20	SLEEVING, ELECT. INSULATING
20	AR	1006757-1	WIRE, NICKEL RIBBON .010×.020
19	AR	1006776-21	SLEEVING, ELECT. INSULATING
18	AR	1006776-20	SLEEVING, ELECT. INSULATING
17	AR	1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	4	1010379-20	RESISTOR, FIXED
6	8	1010364-739	RESISTOR, FIXED
5	4	MS 35216-3	SCREW 1/4 #2-56NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

1015149 B

1007159	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN EWANDOWSKI DATE 5-31-63
CHECKED R. L. Battafarano
APPROVAL R. L. Battafarano
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015149
SCALE 4:1
SHEET 1 OF 2

MASTER

1015149 B

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
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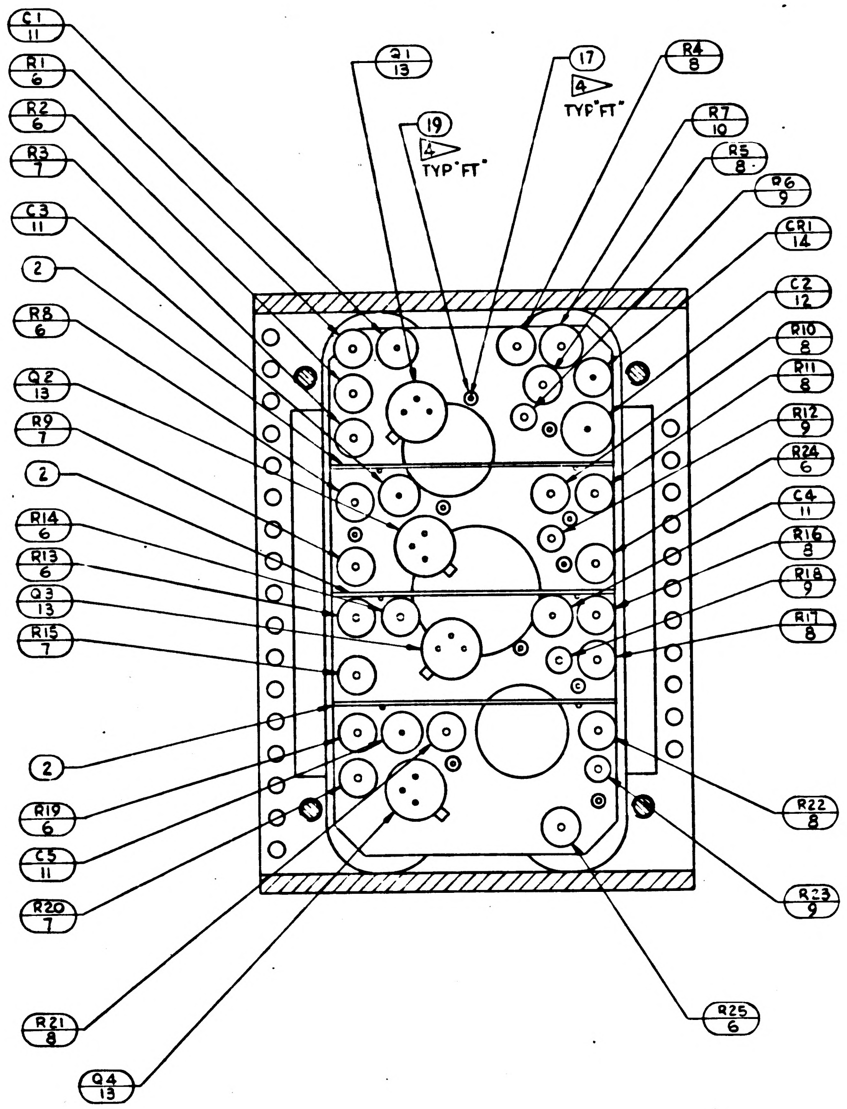
B		REVISED PER TDRR 03019		9-5-63	WK

REVISIONS TDRR 01430


C1 11
R1 6
R2 6
R3 7
C3 11
2
R8 6
Q2 13
R9 7
2
R14 6
R13 6
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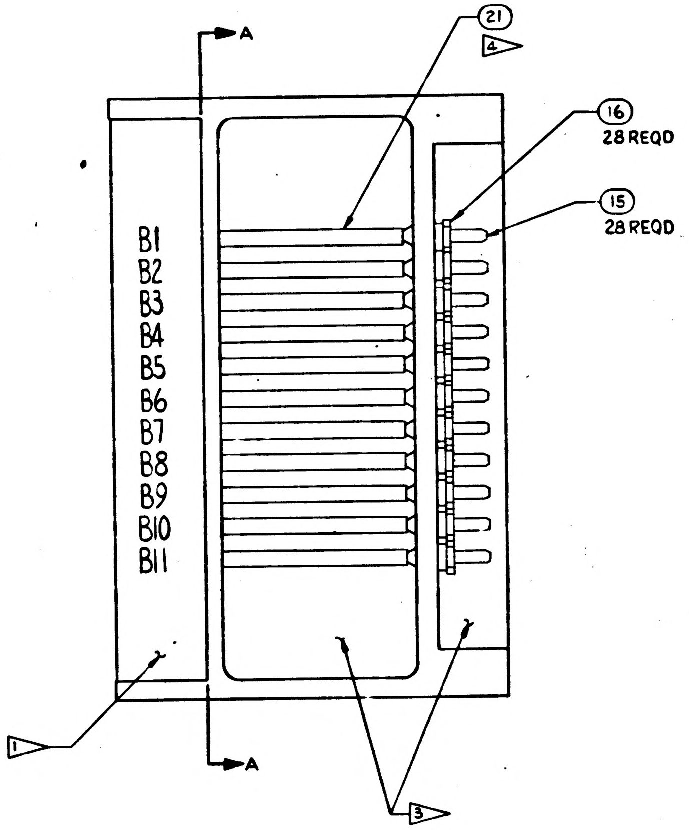
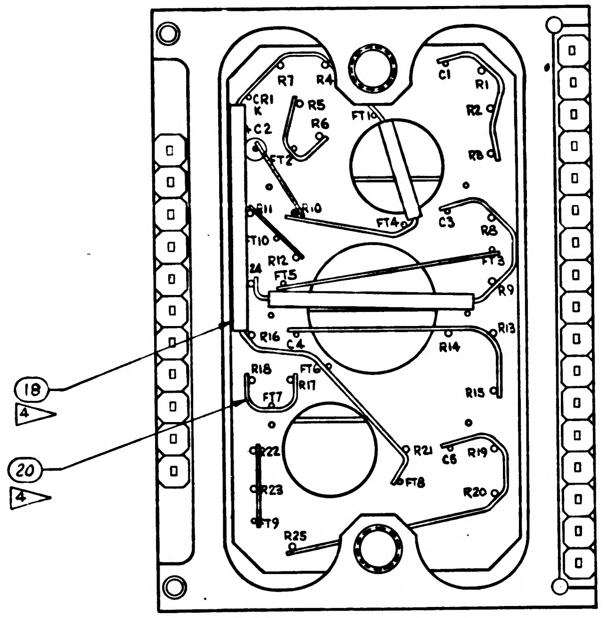
R15 7
2
R19 6
C5 11
R20 7
R21 8
Q4 13
Q1 13
19
4
TYP "FT"
17
4
TYP "FT"
R4 8
R7 10
R5 8
R6 9
CR1 14
C2 12
R10 8
R11 8
R12 9
R24 6
C4 11
R16 8
R18 9
R17 8
R22 8
R23 9
R25 6

SECTION A-A


A
A
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
21
4
16
28 REQD
15
28 REQD
1
3


C1
R1
R2
R8
R7
R4
CR1
K
R5
R6
C2
FT1
FT2
R11
R10
FT4
C3
R8
FT10
R12
FT3
24
FT5
R9
R16
C4
R13
R14
R18
FT6
R17
FT7
R15
R22
R21
C6
R19
FT8
R23
R20
FT9
R25
18
4
20
4

VIEW A-A
ROTATED 90° CW
SHEET 1
ZONE H-5

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Bottolfson
APPROVAL R. L. Bottolfson
APPROVAL
NASA APPROVAL
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO
SIZE E
1015149
SCALE 4:1
SHEET 2 OF 2

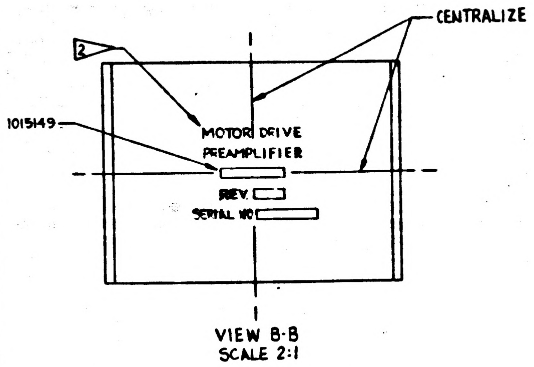
1015149 B

BOTTOLFSON

INCHES
PHOTOGRAPHIC SCALE ONLY

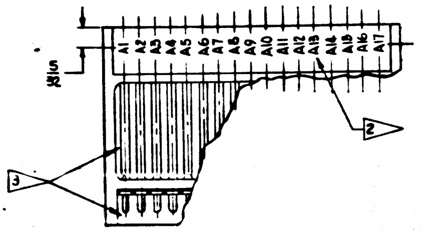
1015149 C

REVISIONS		TDRR 01430			
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 02504		21 63	JJ M
B		REVISED PER TDRR 03019		9-8-63	CR WK
C		REVISED PER TDRR 03281		9/19	WK

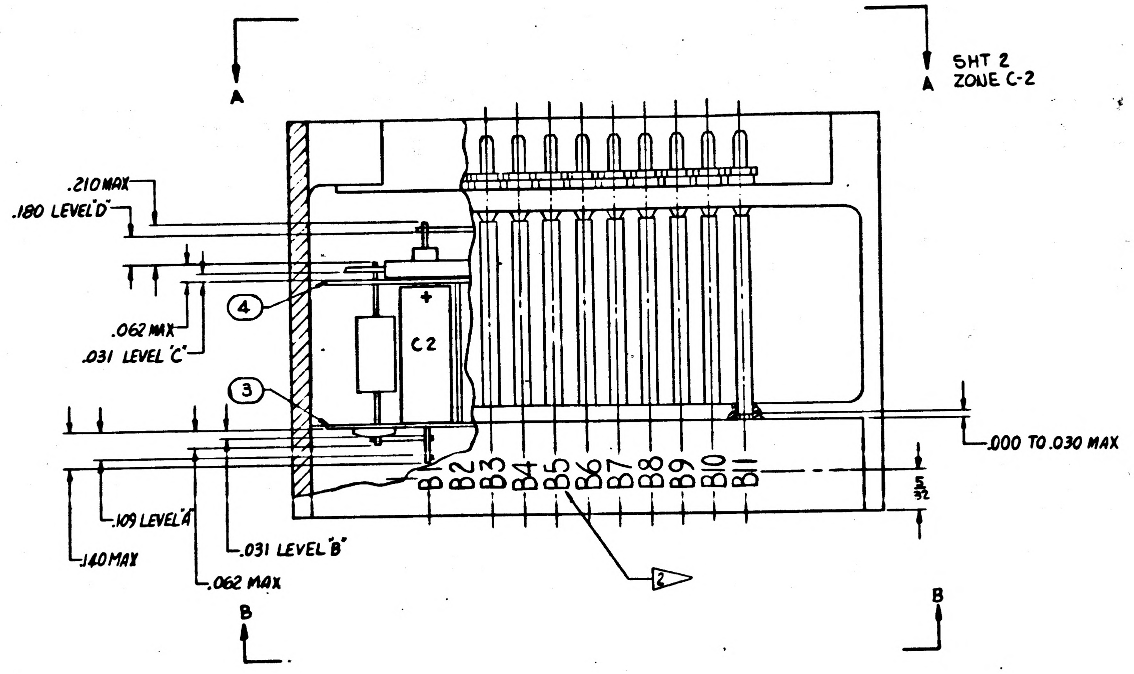


CENTRALIZE
1015149
MOTOR DRIVE PREAMPLIFIER
REV.
SERIAL NO.

VIEW B-B
SCALE 2:1



A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17
.815



A
SHT 2
ZONE C-2
.210 MAX
.180 LEVEL 'D'
.062 MAX
.031 LEVEL 'C'
C2
+
.109 LEVEL 'A'
.140 MAX
.031 LEVEL 'B'
.062 MAX
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11
.000 TO .030 MAX
B
B

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009

1. ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

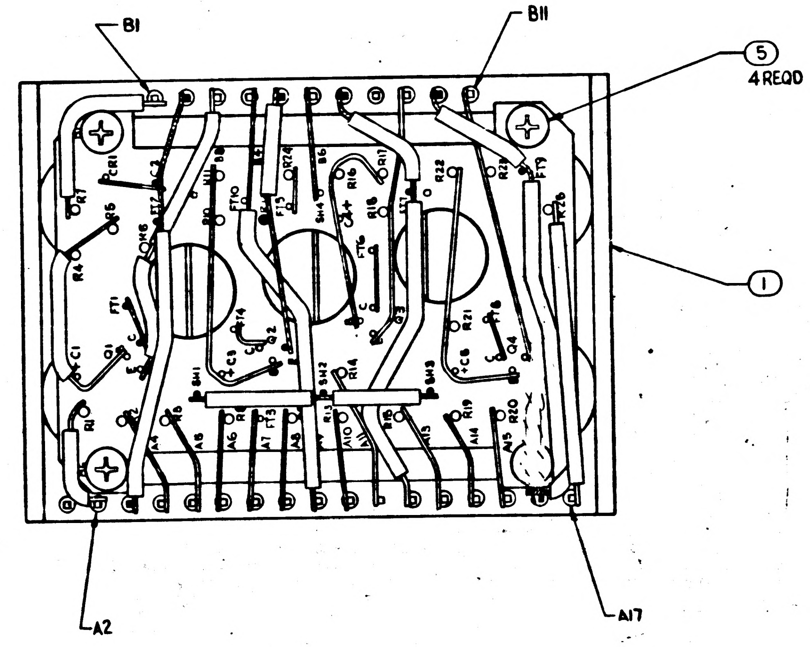
ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003.

2. MARK CHARACTERS .060-.100 HIGH WHITE PER ND 1002009 CENTRALIZED AS SHOWN.

3. AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING.
K INDICATES CATHODE SIDE OF DIODE.
FT( ) INDICATES FEED THRU.
PLUS(+) INDICATES POSITIVE END OF CAPACITOR.
C-INDICATES COLLECTOR LEAD OF TRANSISTOR.
B-INDICATES BASE LEAD OF TRANSISTOR.
E-INDICATES EMITTER LEAD OF TRANSISTOR.



B1
B11
5
4 REQD
1
A2
A17
CR1
R7
R3
R4
C1
R1
FT1
Q1
Q2
Q3
Q4
R21
C8
R20
R19
R22
R16
R17
R26

4. USE AS REQUIRED

DRAWINGS FOR REFERENCE:
1015150 SCHEMATIC DIAGRAM, ELECTRICAL.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

ASSEMBLE PER ND 1002136

INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
21	AR	1006776-20	SLEEVING, ELECT. INSULATING
20	AR	1006757-1	WIRE, NICKEL RIBBON .010 × .020
19	AR	1006776-22	SLEEVING, ELECT. INSULATING
18	AR	1006776-21	SLEEVING, ELECT. INSULATING
17	AR	1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	4	1010379-20	RESISTOR, FIXED
6	8	1010364-739	RESISTOR, FIXED
5	4	MS 35216-3	SCREW 1/4 #2-56NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Batterson
APPROVAL R. L. Batterson
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

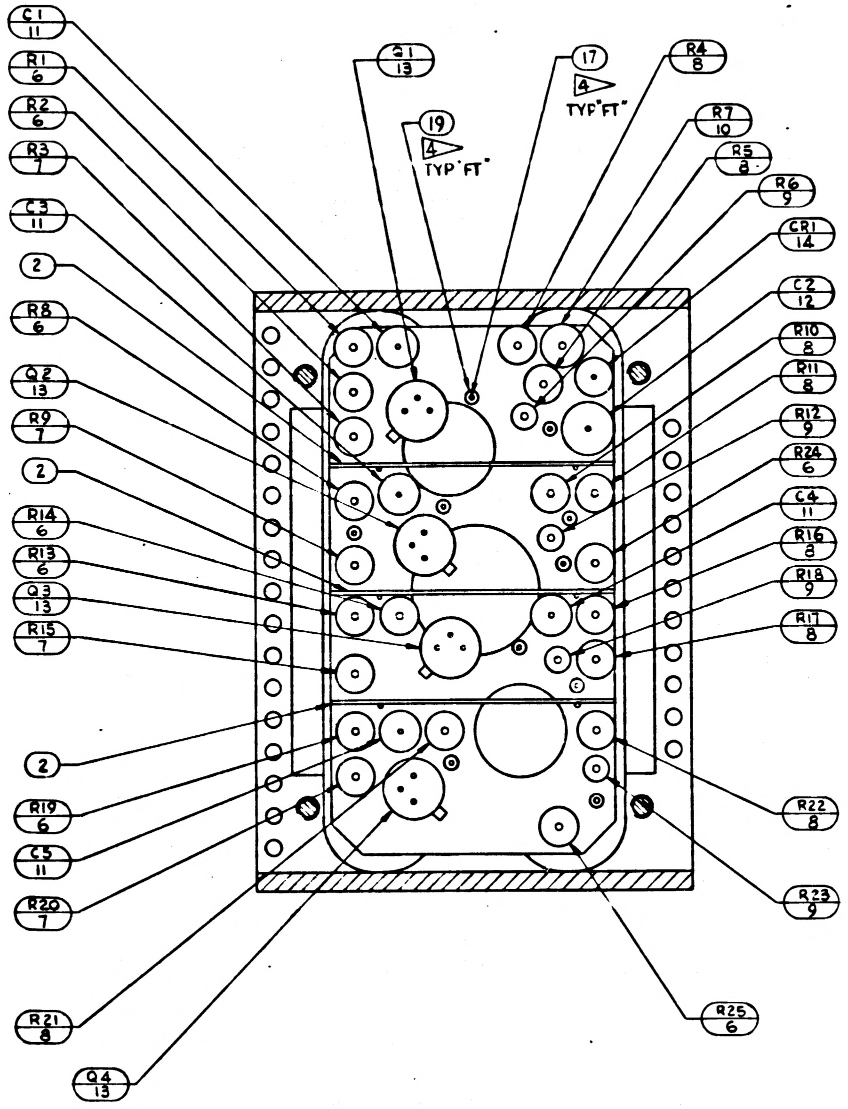
SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015149
SCALE 4:1
SHEET 1 OF 2

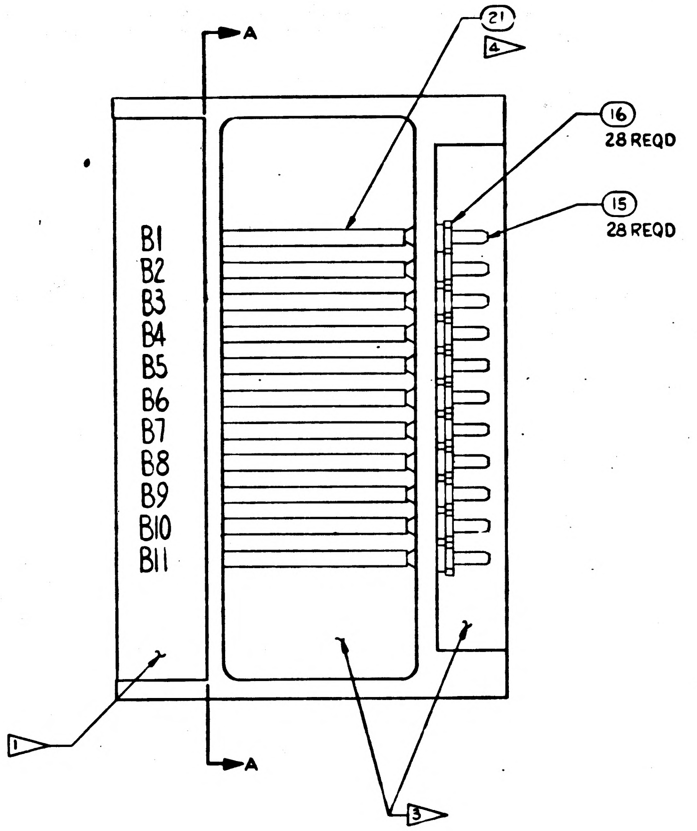
MASTER

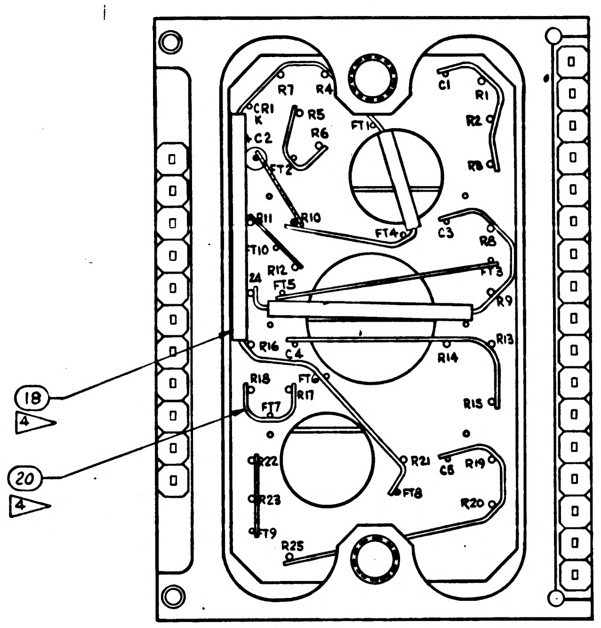
1015149 C

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
		REVISIONS TDRR 01430			
A		REVISED PER TDRR 02504		6-21-63	JJ
B		REVISED PER TDRR 03019		7-5-63	
C		REVISED PER TDRR 03281		9-19-63	


C1 11
R1 6
R2 6
R3 7
C3 11
2
R8 6
Q2 13
R9 7
2
R14 6
R13 6
Q3 13
R15 7
2
R19 6
C5 11
R20 7
R21 8
Q4 13
Q1 13
19
4
TYP "FT"
17
4
TYP "FT"
R4 8
R7 10
R5 8
R6 9
CR1 14
C2 12
R10 8
R11 8
R12 9
R24 6
C4 11
R16 8
R18 9
R17 8
R22 8
R23 9
R25 6

SECTION A-A


A
A
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
21
4
16
28 REQD
15
28 REQD
1
3


R7
R4
C1
R1
CR1
K
R5
R6
C2
FT11
R2
FT12
R8
R10
R11
FT10
FT14
C3
R8
R12
FT5
FT3
R9
R16
R13
R14
R18
C4
FT6
R17
FT7
R15
R22
R21
C5
R19
FT8
R23
R20
FT9
R25
18
20
4

VIEW A-A
ROTATED 90° CW
SHEET 1
ZONE H-5

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ − + − + −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION. GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Bottolfson
APPROVAL R. L. Bottolfson
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL W Kupfer 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

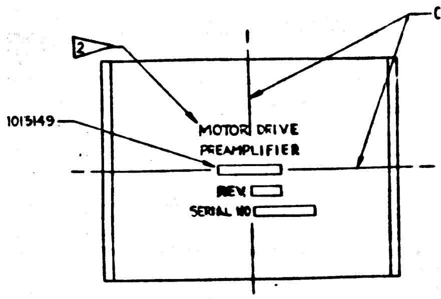
SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015149
SCALE 4:1
SHEET 2 OF 2

1015149 C

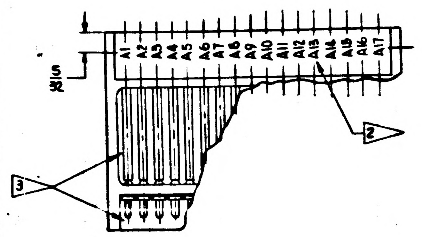
BOTTOLFSON

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
		REVISIONS TDRR 01430			
A		REVISED PER TDRR 02504		6-21-63	
B		REVISED PER TDRR 03019		9-5-63	WK
C		REVISED PER TDRR 03261			WK
D		REVISED PER TDRR 04471			WK

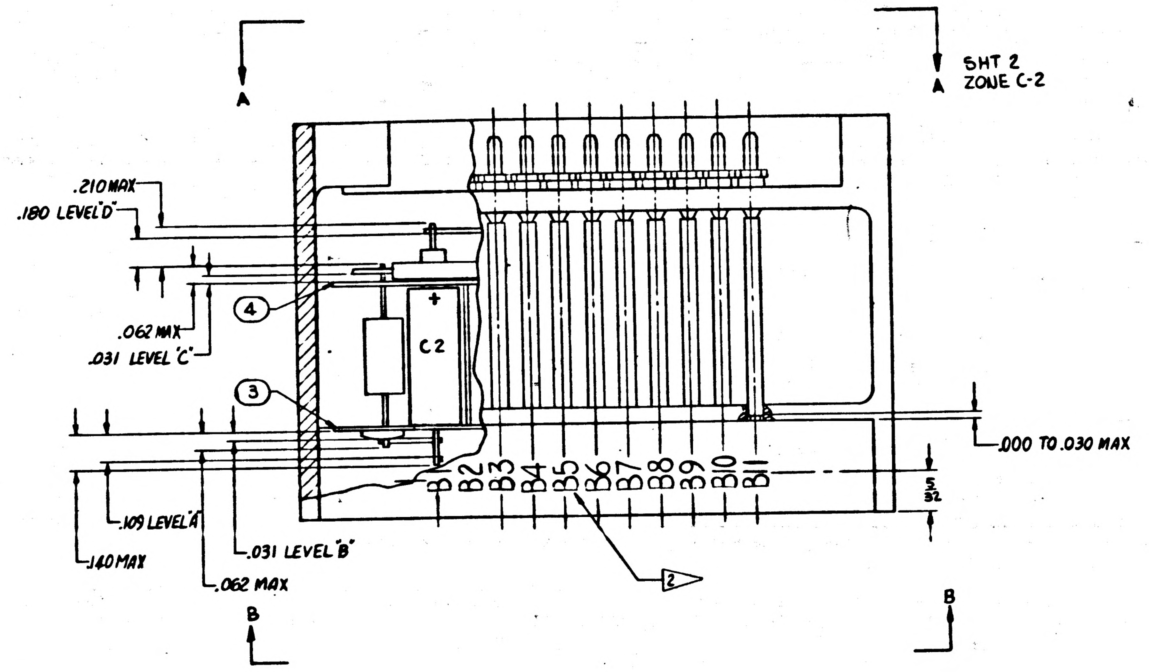


CENTRALIZE
1015149
MOTOR DRIVE
PREAMPLIFIER
REV.
SERIAL NO

VIEW B-B
SCALE 2:1



A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17
5/32



A
A
SHT 2
ZONE C-2
.210 MAX
.180 LEVEL 'D'
.062 MAX
.031 LEVEL 'C'
C2
.109 LEVEL 'A'
.140 MAX
.031 LEVEL 'B'
.062 MAX
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11
.000 TO .030 MAX
5/32
B
B

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1▷ ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003.

2▷ MARK CHARACTERS .060-.100 HIGH WHITE PER ND 1002019 CENTRALIZED AS SHOWN.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING.
K INDICATES CATHODE SIDE OF DIODE,
FT( ) INDICATES FEED THRU,
PLUS(+) INDICATES POSITIVE END OF CAPACITOR.
C-INDICATES COLLECTOR LEAD OF TRANSISTOR.
B-INDICATES BASE LEAD OF TRANSISTOR.
E-INDICATES EMITTER LEAD OF TRANSISTOR.

4▷ USE AS REQUIRED

DRAWINGS FOR REFERENCE:
1015150 SCHEMATIC DIAGRAM, ELECTRICAL.

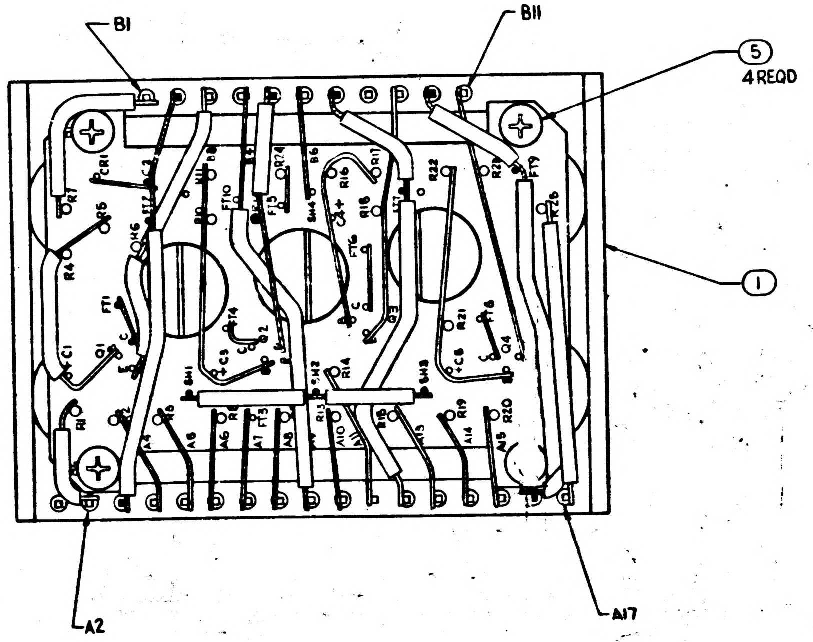
BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

5▷ ASSEMBLE PER ND 1002136

INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

6▷ BOND ITEM NO 13 TO ITEM NO 3 PER ND 1002004



B1
B11
5
4 REQD
1
A2
A17
CR1
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
R22
R23
R24
R25
R26
Q1
Q2
Q3
Q4
C1
C3
C4
C5
C6
C7
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
FT10
FT11
FT12
FT13
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
21	AR	1006776-20	SLEEVING, ELECT. INSULATING
20	AR	1006757-1	WIRE, NICKEL RIBBON .010×.020
19	AR	1006776-22	SLEEVING, ELECT. INSULATING
18	AR	1006776-21	SLEEVING, ELECT. INSULATING
17	AR	1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	4	1010379-20	RESISTOR, FIXED
6	8	1010364-739	RESISTOR, FIXED
5	4	MS 35216-3	SCREW 1/4 #2-56NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE

LIST OF PARTS AND MATERIALS

MASTER

NEXT ASSY	USED ON
1007159	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + 1/64 − 1/64
DECIMALS +.005 −.005
ANGLES + − − −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Battaglia
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

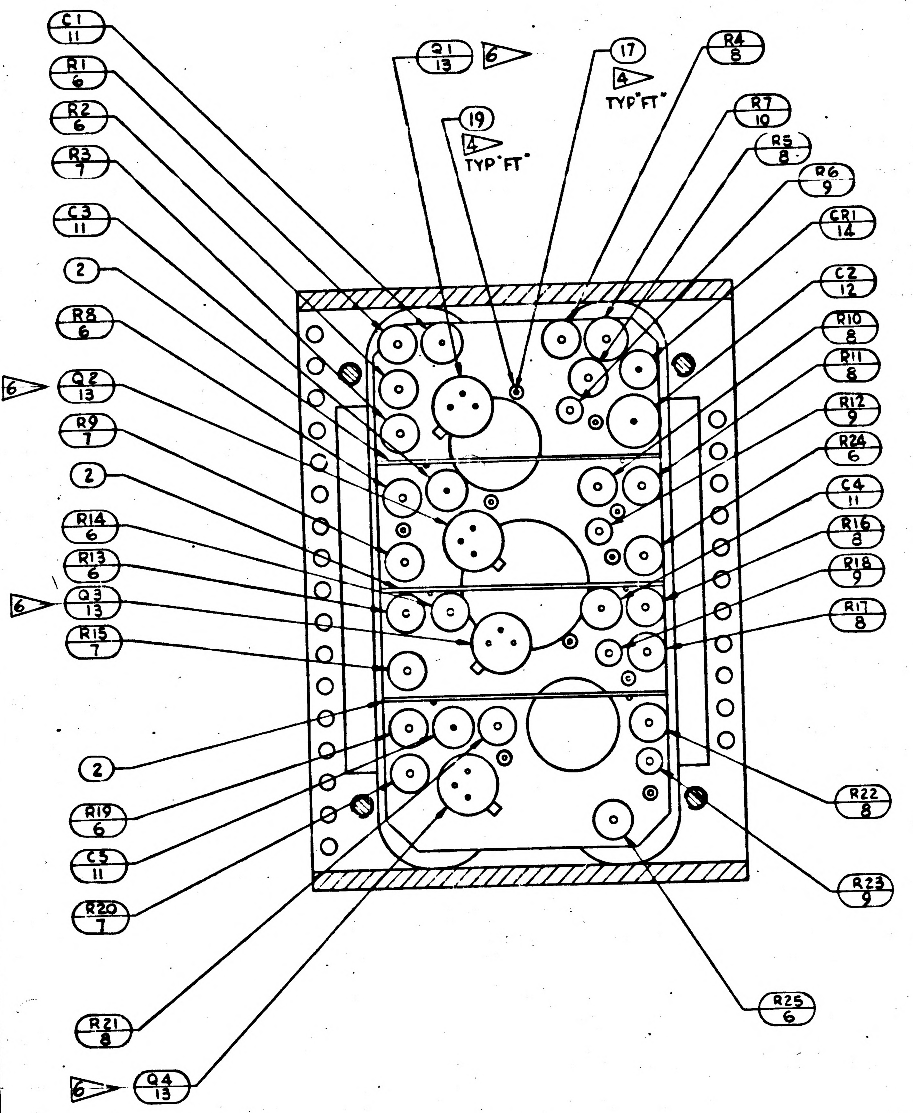
SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015149
SCALE 4:1
SHEET 1 OF 2

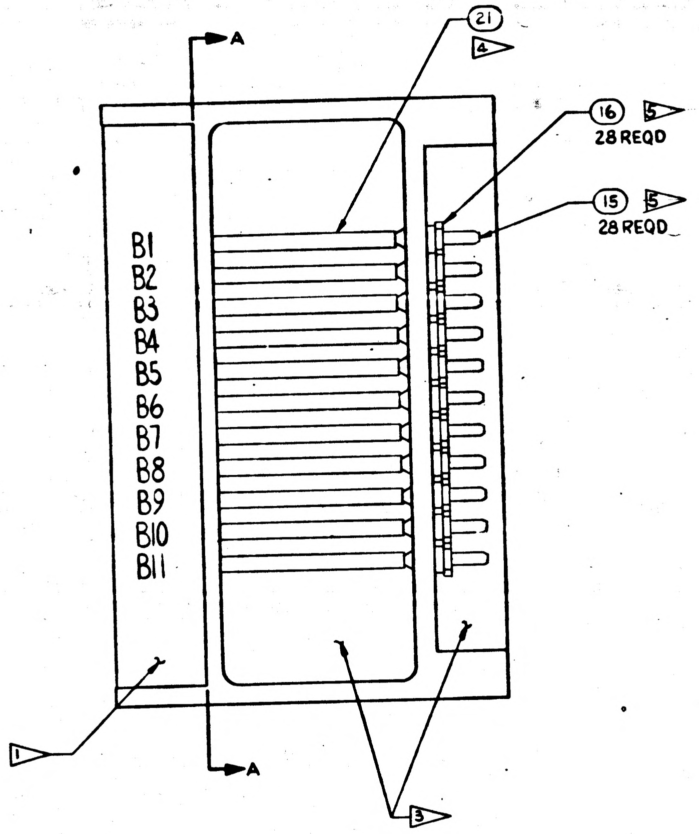
1015149 D

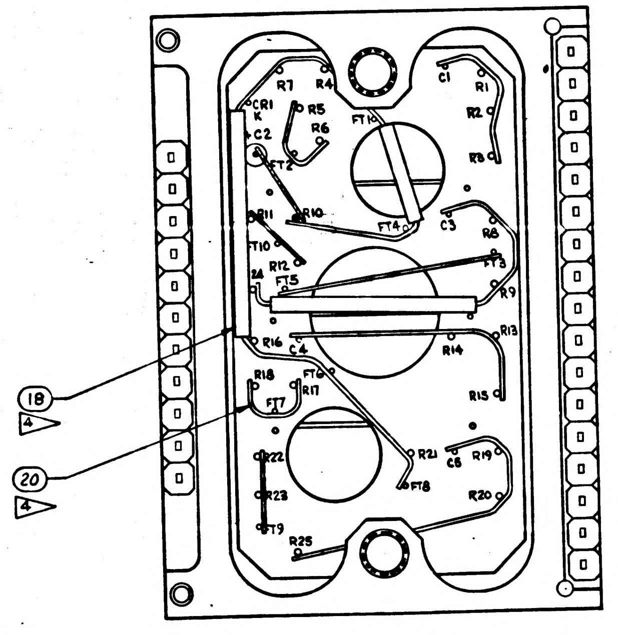
1015149 D

SYM	ZONE	DESCRIPTION REVISIONS TDRR 01430	CHG NO	DATE	APPD
A		REVISED PER TDRR 02504		8-21-63	WK
B		REVISED PER TDRR 03019		9-5-63	WK
C		REVISED PER TDRR 03281		9-19-63	WK
D		REVISED PER TDRR 04471		6 Nov 63	WK


C1 11
R1 6
R2 6
R3 7
C3 11
2
R8 6
6 Q2 13
R9 7
2
R14 6
R13 6
6 Q3 13
R15 7
2
R19 6
C5 11
R20 7
R21 8
6 Q4 13
Q1 13 6
19 4 TYP "FT"
17 4 TYP "FT"
R4 8
R7 10
R5 8
R6 9
CR1 14
C2 12
R10 8
R11 8
R12 9
R24 6
C4 11
R16 8
R18 9
R17 8
R22 8
R23 9
R25 6

SECTION A-A


A
A
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
21 4
16 5 28 REQD
15 5 28 REQD
1
3


R7 R4 C1 R1
CR1 K R5 R6 FT1 R2
C2 FT2 R3
R11 R10 FT4 C3 R8
FT10 R12 FT3
24 FT5 R9
R13
R16 C4 R14
R18 FT6 R17
FT7 R15
R22 R21 R19
C6 FT8 R20
R23
FT9 R25
18 4
20 4

VIEW A-A
ROTATED 90° CW
SHEET 1
ZONE H-5

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION. GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Battolfson
APPROVAL R. L. Battolfson
APPROVAL
NASA APPROVAL
MIT APPROVAL W 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

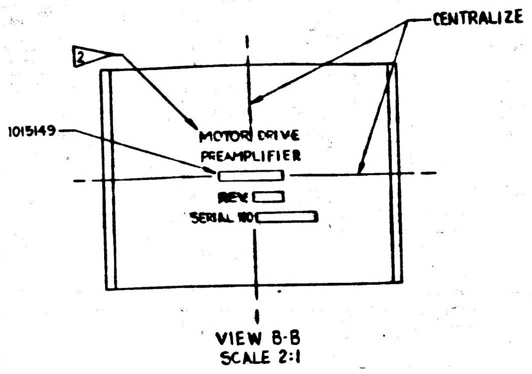
SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO. SIZE E 1015149
SCALE 4:1 SHEET 2 OF 2

Battolfson

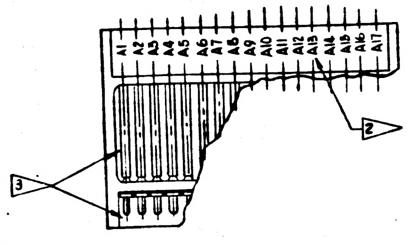
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
		REVISIONS TDRA 01438			
A		REVISED PER TDRR 02504		5-21-63	WK
B		REVISED PER TDRR 03019		9-5-63	WK
C		REVISED PER TDRR 03281		9-10	WK
D		REVISED PER TDRR 04471		5 MAY 63	WK
E		REVISED PER TDRR 05416		12-27-63	WK

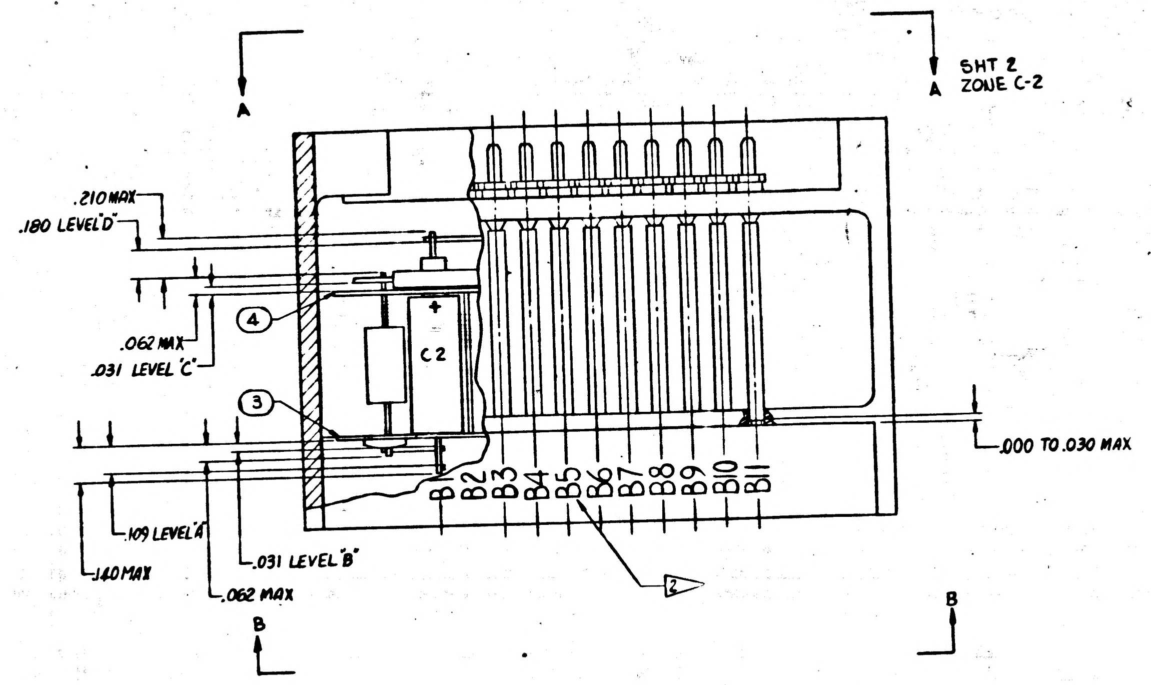


CENTRALIZE
2
1015149
MOTOR DRIVE
PREAMPLIFIER
REV
SERIAL NO

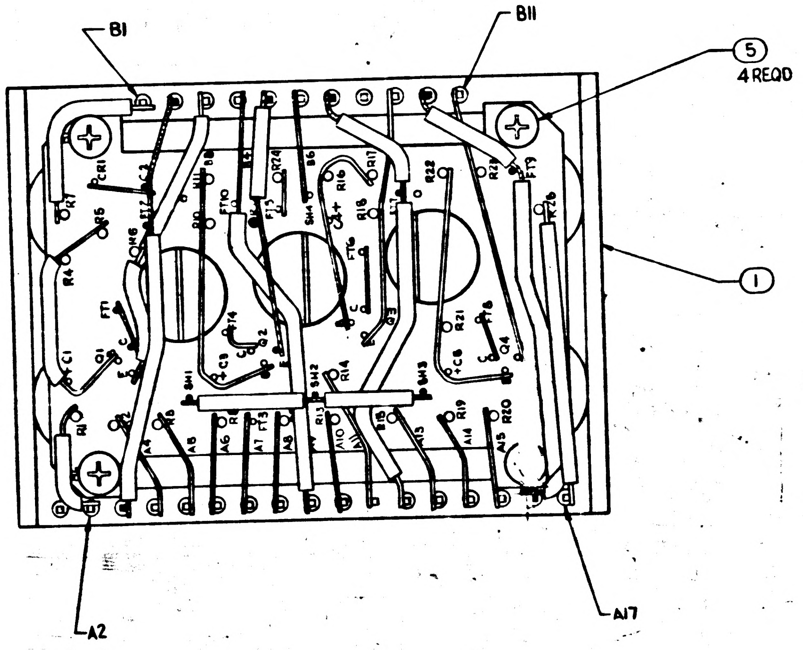
VIEW B-B
SCALE 2:1



A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17
2
3



A
SHT 2
A ZONE C-2
.210 MAX
.180 LEVEL 'D'
4
C2
.062 MAX
.031 LEVEL 'C'
3
.000 TO .030 MAX
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11
.109 LEVEL 'A'
.140 MAX
.031 LEVEL 'B'
.062 MAX
2
B
B



B1
B11
5
4 REQD
1
A2
A17
CR1
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
R22
R23
R24
R25
R26
C1
C2
C3
C4
C5
C6
C7
C8
Q1
Q2
Q3
Q4
FT1
FT3
FT9
FT10
SH1
SH2
SH3
SH4
A4
A6
A7
A8
A10
A15
A16

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:

BROKEN PATHS INDICATE INSULATION SLEEVING.

K INDICATES CATHODE SIDE OF DIODE.

FT( ) INDICATES FEED THRU.

PLUS(+) INDICATES POSITIVE END OF CAPACITOR.

C-INDICATES COLLECTOR LEAD OF TRANSISTOR.

B-INDICATES BASE LEAD OF TRANSISTOR.

E-INDICATES EMITTER LEAD OF TRANSISTOR.

4 USE AS REQUIRED

DRAWINGS FOR REFERENCE:

1015150 SCHEMATIC DIAGRAM, ELECTRICAL.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

5 ASSEMBLE PER ND 1002136

INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

6 BOND ITEM NO 13 TO ITEM NO 3 PER ND 1002004

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE

ITEM NO	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
21	AR	1006776-20	SLEEVING, ELECT. INSULATING
20	AR	1006757-1	WIRE, NICKEL RIBBON .010 × .020
19	AR	1006776-22	SLEEVING, ELECT. INSULATING
18	AR	1006776-21	SLEEVING, ELECT. INSULATING
17	AR	1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397-1	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	4	1010379-20	RESISTOR, FIXED
6	8	1010364-739	RESISTOR, FIXED
5	4	MS 35216-3	SCREW 1/4 #2-56NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XX ±.02 +—
— XXX ±.005 ——
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Batterson
APPROVAL R. L. Batterson
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

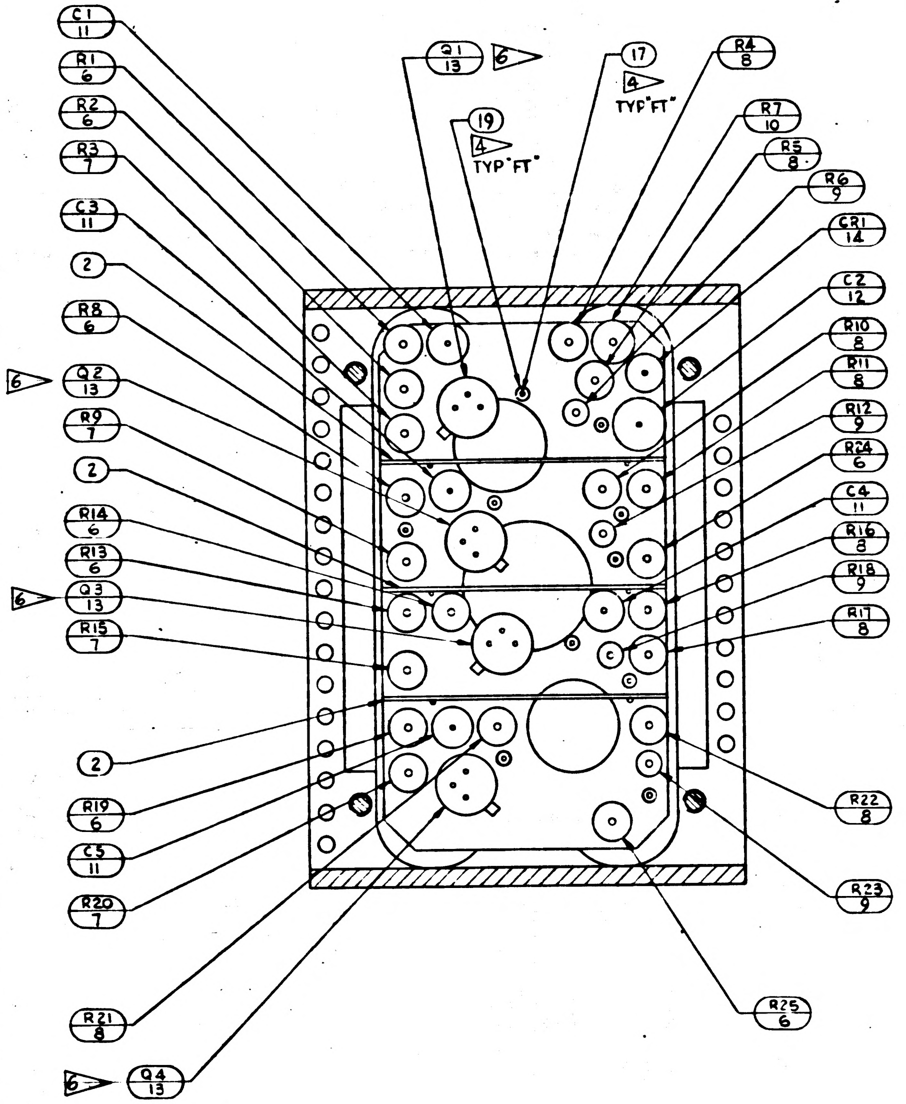
CODE IDENT NO.
SIZE E
1015149
SCALE 4:1
SHEET 1 OF 2

MASTER

1015149 E

SYM	ZONE	DESCRIPTION	C-G NO	DATE	APPD
A		REVISED PER TDRR 02504		8-21-63	JJ
B		REVISED PER TDRR 03619		9-5-63	WK
C		REVISED PER TDRR 03281		9 M 63	WK
D		REVISED PER TDRR 04471		8 Nov 63	WK.
E		REVISED PER TDRR 05416		12-27-63	WK

REVISIONS TDRR 01430



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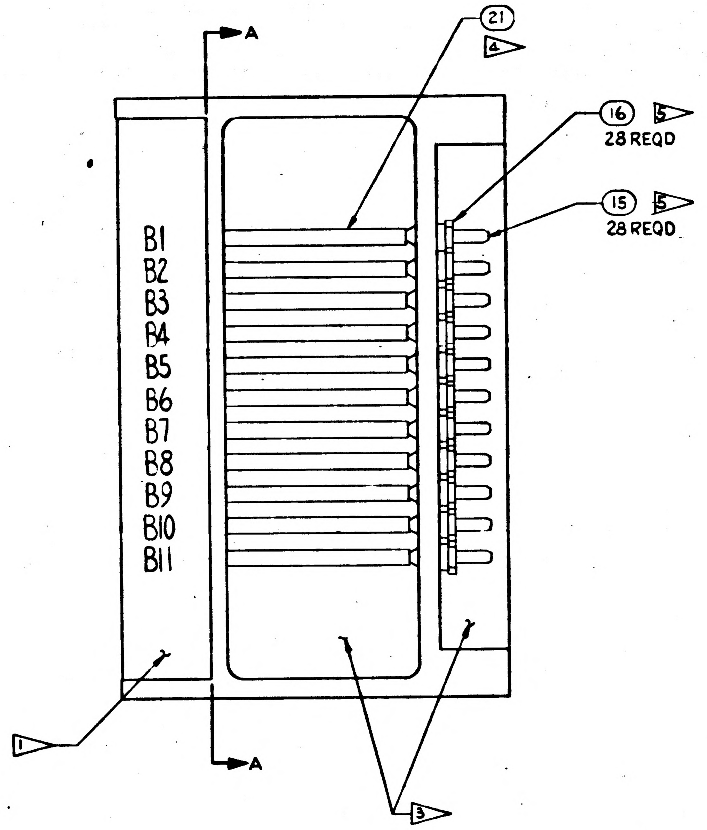
R1 6
R2 6
R3 7
C3 11
2
R8 6
Q2 13
6
R9 7
2
R14 6
R13 6
Q3 13
6
R15 7
2
R19 6
C5 11
R20 7
R21 8
Q4 13
6
Q1 13
6
19
4
TYP "FT"
17
4
TYP "FT"
R4 8
R7 10
R5 8
R6 9
CR1 14
C2 12
R10 8
R11 8
R12 9
R24 6
C4 11
R16 8
R18 9
R17 8
R22 8
R23 9
R25 6

SECTION A-A



A
A
21
4
16
5
28 REQD
15
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28 REQD
B1
B2
B3
B4
B5
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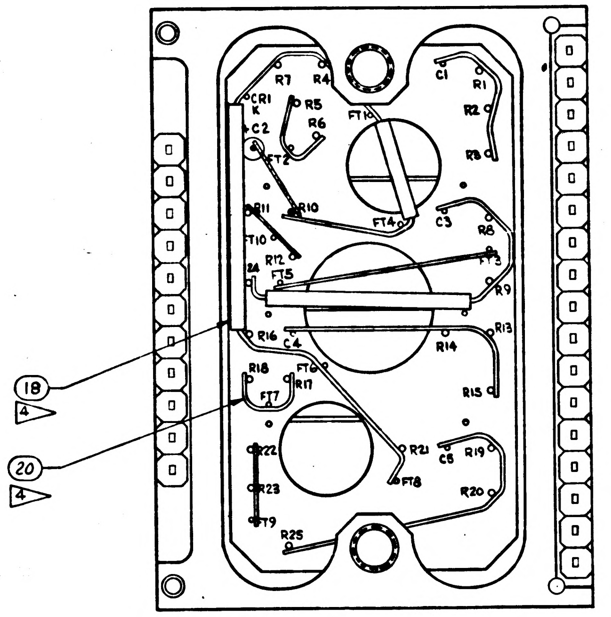
B8
B9
B10
B11
1
3



R7
R4
C1
R1
CR1
K
R5
R6
FT1
R2
C2
FT2
R8
R11
R10
FT4
C3
FT10
R12
24
FT5
FT3
R9
R16
C4
R13
R14
R18
FT6
R17
FT7
R15
R22
R21
C5
R19
FT8
R23
R20
FT9
R25
18
4
20
4

VIEW A-A
ROTATED 90° CW
SHEET 1
ZONE H-5

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Bottolfson
APPROVAL R. L. Bottolfson
APPROVAL
NASA APPROVAL
MIT APPROVAL W Kupfer 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

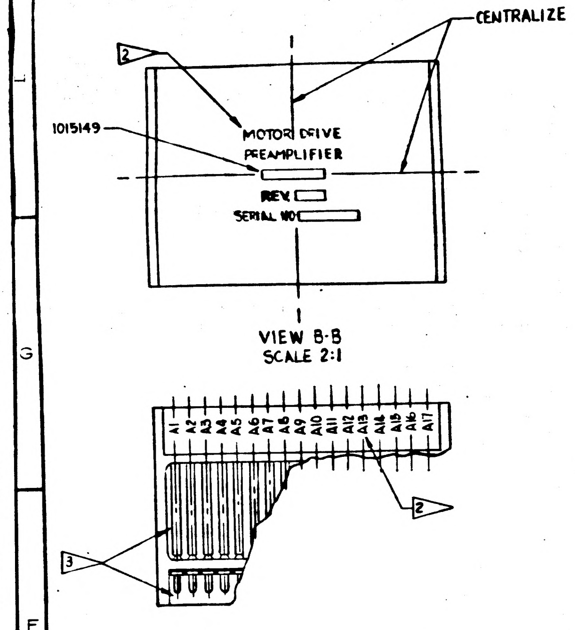
SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

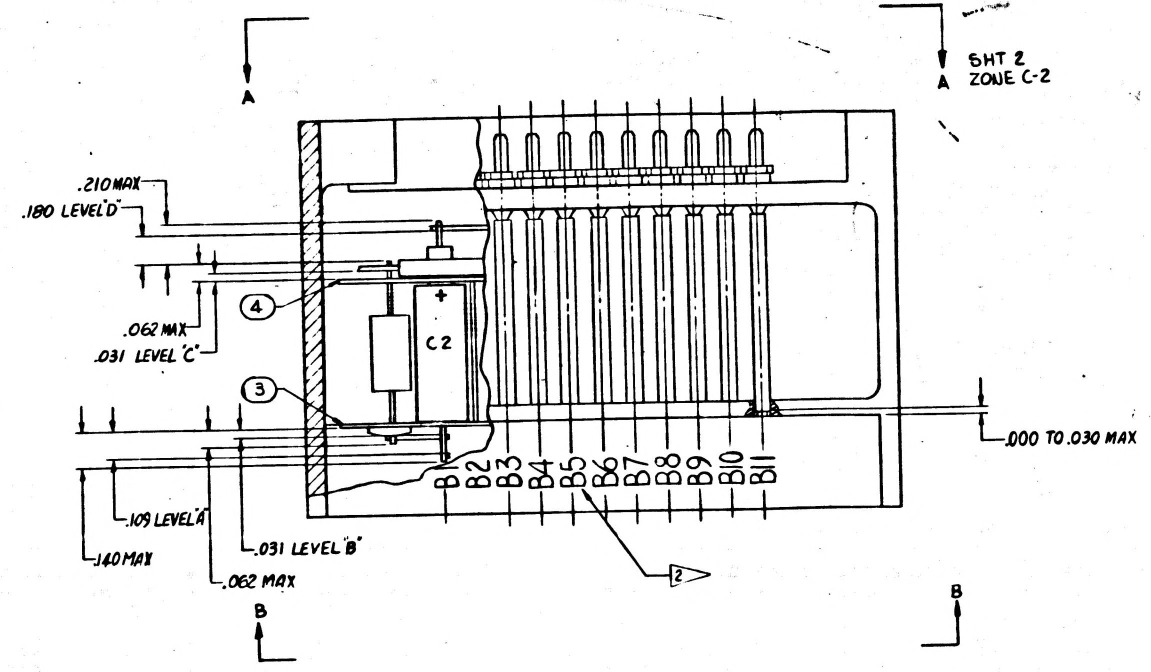
CODE IDENT NO
SIZE E
1015149
SCALE 4:1
SHEET 2 OF 2

1015149 E

BOTTOLFSON

REVISIONS					TDRR 01430
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 02504		8-21-63	
B		REVISED PER TDRR 03019		9-5-63	WK
C		REVISED PER TDRR 03281		9-19-63	WK
D		REVISED PER TDRR 04471		63	WK
E		REVISED PER TDRR 05416		12-27-63	WK
F		REVISED PER TDRR 06000		28	WK


CENTRALIZE
2
1015149
MOTOR DRIVE PREAMPLIFIER
REV.
SERIAL NO.
VIEW B-B
SCALE 2:1
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17
2
3

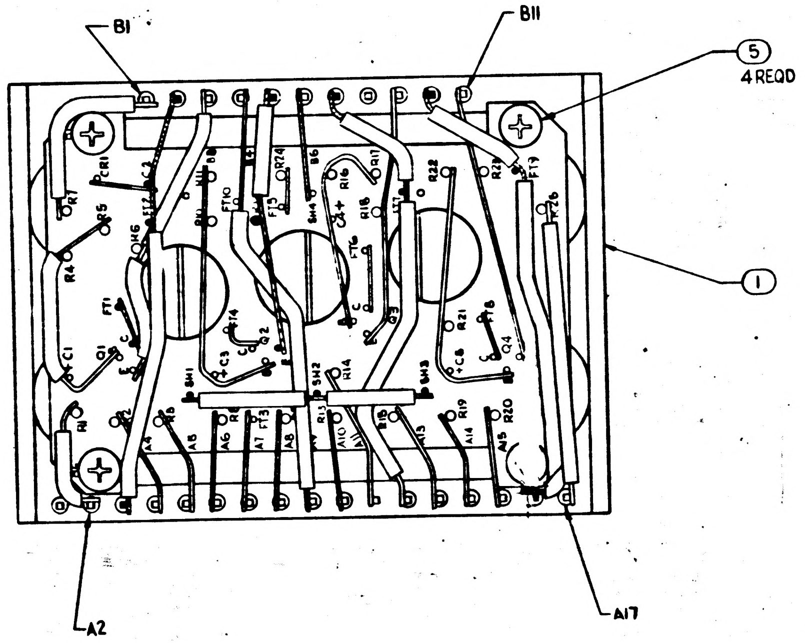

A
A
SHT 2
ZONE C-2
.210 MAX
.180 LEVEL 'D'
4
.062 MAX
.031 LEVEL 'C'
C2
3
.000 TO .030 MAX
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11
2
.109 LEVEL 'A'
.140 MAX
.031 LEVEL 'B'
.062 MAX
B
B

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.
WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.
ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING.
K INDICATES CATHODE SIDE OF DIODE.
FT() INDICATES FEED THRU.
PLUS(+) INDICATES POSITIVE END OF CAPACITOR.
C-INDICATES COLLECTOR LEAD OF TRANSISTOR.
B-INDICATES BASE LEAD OF TRANSISTOR.
E-INDICATES EMITTER LEAD OF TRANSISTOR.


B1
B11
5
4 REQD
1
A2
A17
CR1
R5
R7
R4
C1
R1
R6
FT1
Q1
C3
R3
R2
FT2
FT3
Q2
R9
R10
R11
R12
R14
C4
R16
R17
R18
R19
R20
R21
R22
R23
C5
C6
Q3
Q4
SH1
SH2
SH3
SH4
FT4
FT5
FT6
FT9
A3
A4
A5
A6
A7
A8
A9
A10
A14
A15
A16

4 USE AS REQUIRED
DRAWINGS FOR REFERENCE:
1015150 SCHEMATIC DIAGRAM, ELECTRICAL.
BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

5 ASSEMBLE PER ND 1002136
INSPECT PER
ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

6 BOND ITEM NO 13 TO ITEM NO 3 PER ND 1002004

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE

ITEM NO	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
21	AR	1006776-20	SLEEVING, ELECT. INSULATING
20	AR	1006757-1	WIRE, NICKEL RIBBON .010 x .020
19	AR	1006776-22	SLEEVING, ELECT. INSULATING
18	AR	1006776-21	SLEEVING, ELECT. INSULATING
17	AR	1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397-1	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	4	1010379-20	RESISTOR, FIXED
6	8	1010364-739	RESISTOR, FIXED
5	4	MS 35216-3	SCREW 1/4 #2-56NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XX ±.02 + —
− XXX ±.005 − —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Battaglino
APPROVAL R. L. Battaglino
APPROVAL
NASA APPROVAL
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

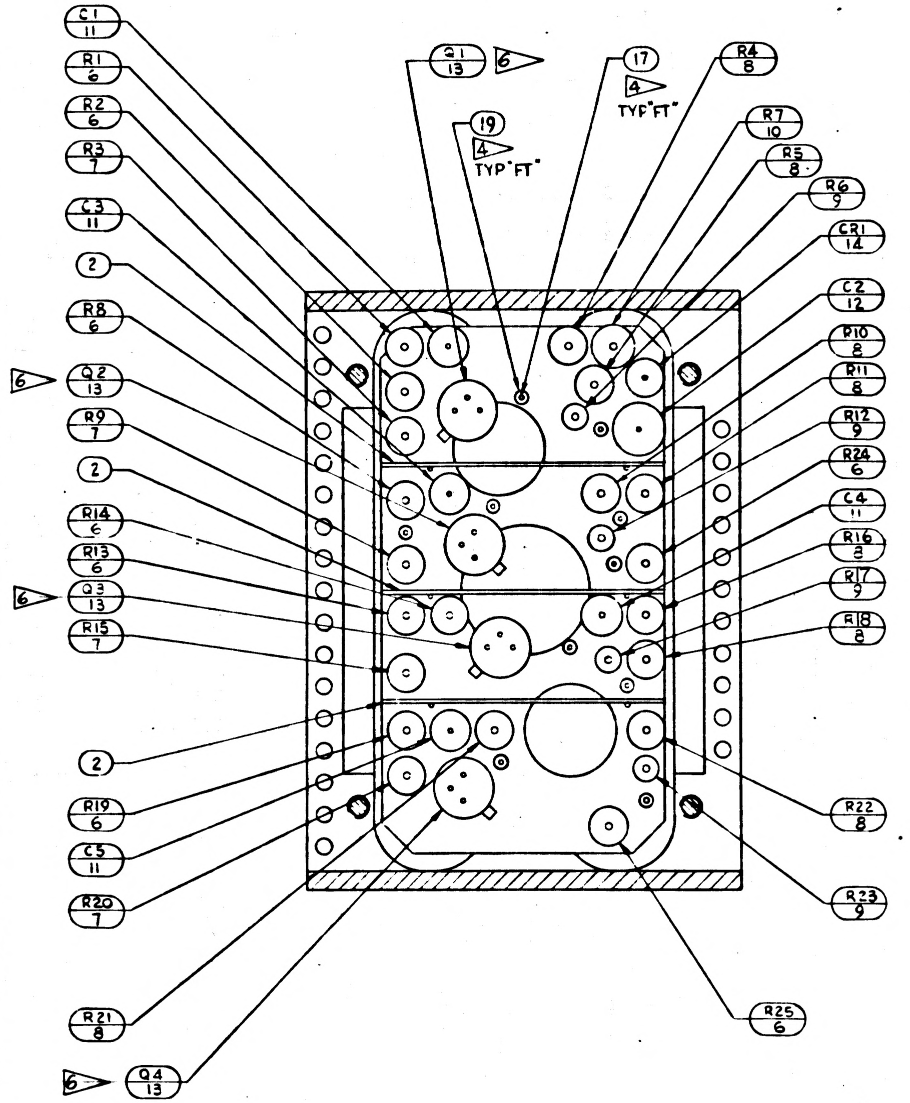
SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO. | SIZE E | 1015149
SCALE 4:1 | SHEET 1 OF 2

MASTER

1015149 F

SYM	ZONE	REVISIONS TDRR 01430 DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 02504		5-21-63	
B		REVISED PER TDRR 03019		7-5-63	WK
C		REVISED PER TDRR 03251		9-19-63	WK
D		REVISED PER TDRR 04471		8 Nov 63	WK
E		REVISED PER TDRR 05416		12-27-63	WK
F		REVISED PER TDRR 06000			WK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R1 6
R2 6
R3 7
C3 11
2
R8 6
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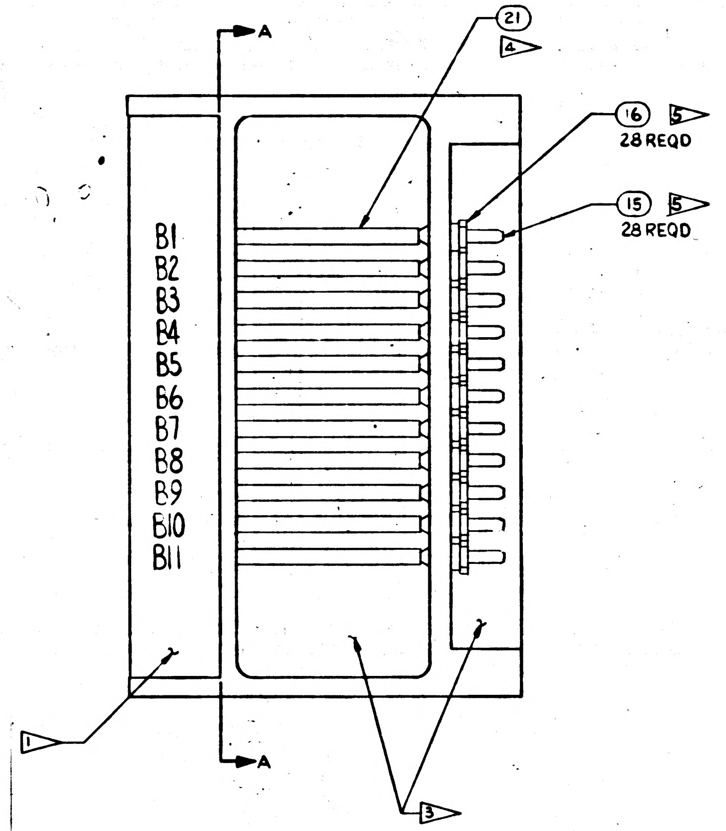
Q2 13
R9 7
2
R14 6
R13 6
6
Q3 13
R15 7
2
R19 6
C5 11
R20 7
R21 8
6
Q4 13
Q1 13 6
19 4 TYP "FT"
17 4 TYP "FT"
R4 8
R7 10
R5 8
R6 9
CR1 14
C2 12
R10 8
R11 8
R12 9
R24 6
C4 11
R16 8
R17 9
R18 8
R22 8
R23 9
R25 6

SECTION A-A


A
A
21 4
16 5 28 REQD
15 5 28 REQD
B1
B2
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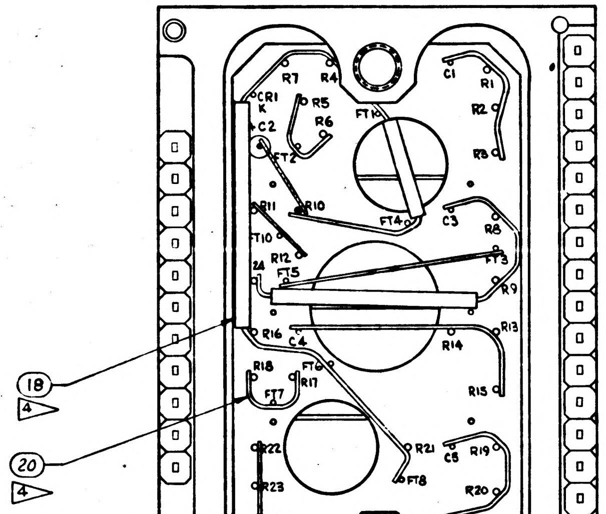
B4
B5
B6
B7
B8
B9
B10
B11
1
3


R7
R4
C1
R1
R2
CR1 K
R5
R6
C2
FT1
FT2
R3
R11
R10
FT4
C3
R8
FT10
FT5
R12
24
FT3
R9
R16
C4
R14
R13
R18
FT6
R17
FT7
R15
C22
R21
C5
R19
R23
FT8
R20
FT9
R25
18 4
20 4

VIEW A-A
ROTATED 90° CW
SHEET 1
ZONE H-5

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Bottolfson
APPROVAL R. L. Bottolfson
APPROVAL
NASA APPROVAL
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

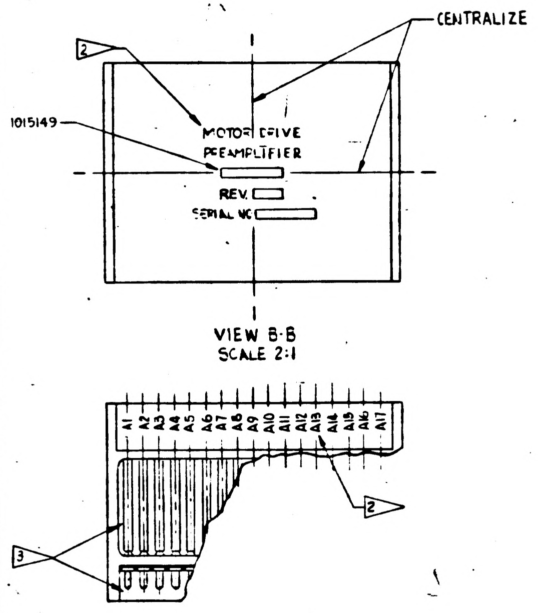
SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

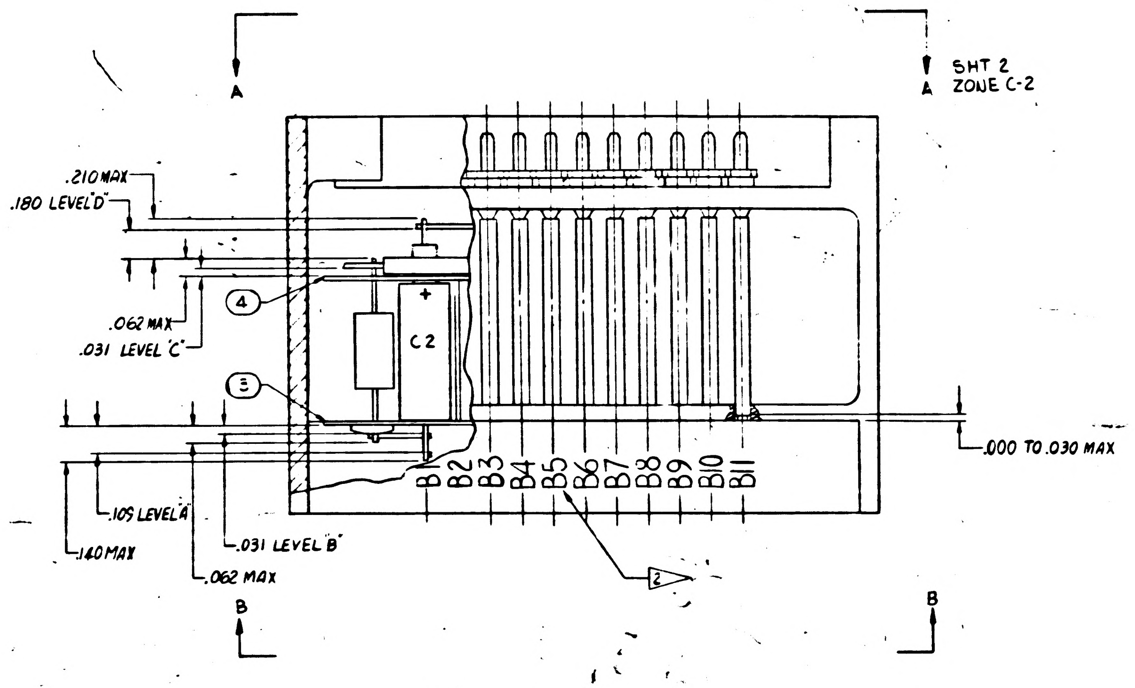
CODE IDENT NO SIZE E 1015149
SCALE 4:1 SHEET 2 OF 2

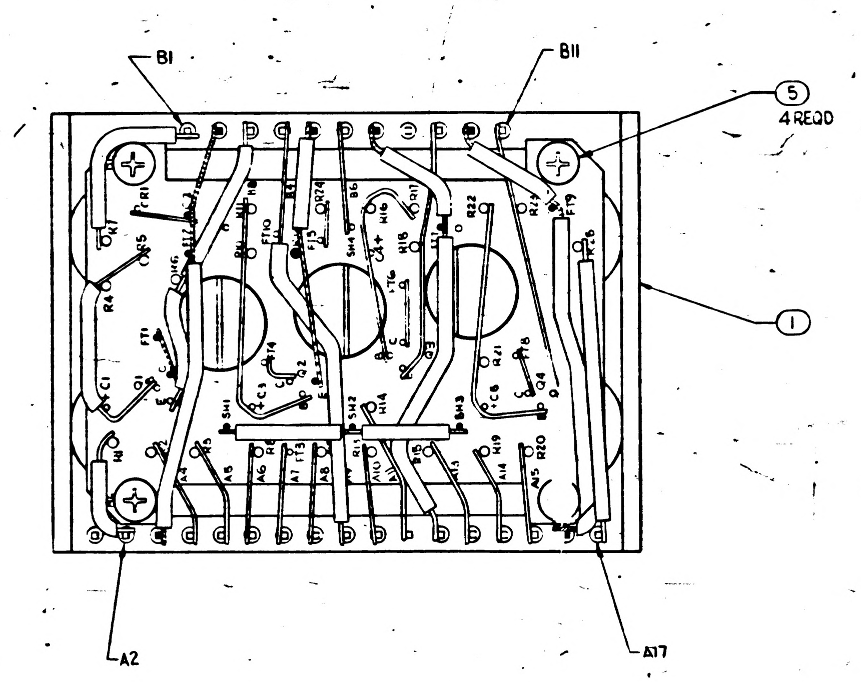
1015149 F

BOTTOLFSON

REVISIONS		TDRR 01430			
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 02504		8-21-63	WK
B		REVISED PER TDRR 03019		9-5-63	WK
C		REVISED PER TDRR 03251		9-19-63	WK
D		REVISED PER TDRR 04471		6 NOV 63	WK
E		REVISED PER TDRR 05416		12-27-63	WK
F		REVISED PER TDRR 06000		28 Jan 64	WK
G		REVISED PER TDRR 07285		6 APR 64	







UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

PROCURE PER PS 1015149.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.
WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING.
K INDICATES CATHODE SIDE OF DIODE.
FT( ) INDICATES FEED THRU.
PLUS(+) INDICATES POSITIVE END OF CAPACITOR.
C-INDICATES COLLECTOR LEAD OF TRANSISTOR.
B-INDICATES BASE LEAD OF TRANSISTOR.
E-INDICATES EMITTER LEAD OF TRANSISTOR.

4 USE AS REQUIRED

DRAWINGS FOR REFERENCE:
1015150 SCHEMATIC DIAGRAM, ELECTRICAL

BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

5 ASSEMBLE PER ND 1002136

INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

6 BOND ITEM NO 13 TO ITEM NO 3 PER ND 1002004

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE

G	F
SHEET 1	SHEET 2
REVISION STATUS OF SHEETS	

ITEM NO	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
21	AR	1006776-20	SLEEVING, ELECT. INSULATING
20	AR	1006757-1	WIRE, NICKEL RIBBON .010×.020
19	AR	1006776-22	SLEEVING, ELECT. INSULATING
18	AR	1006776-21	SLEEVING, ELECT. INSULATING
17	AR	1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397-1	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	4	1010379-20	RESISTOR, FIXED
6	8	1010364-739	RESISTOR, FIXED
5	4	MS 35216-3	SCREW 1/4 #2-56NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007159	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	XX±.02	+−
−	XXX±.005	−−

DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION. GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Battaglini
APPROVAL R. L. Battaglini
APPROVAL
NASA APPROVAL W. J. Swift 6-13-63
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

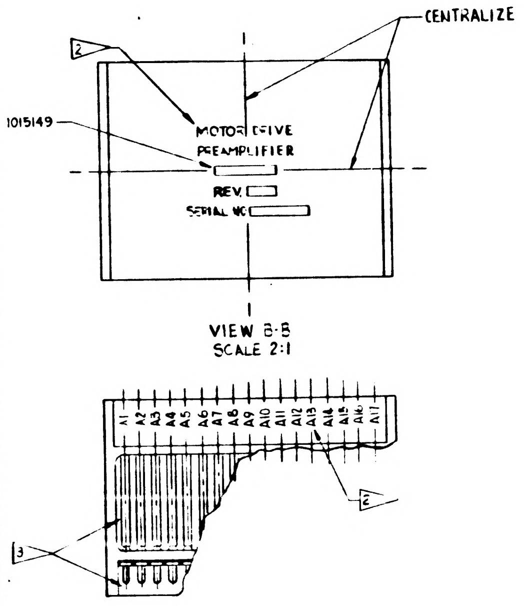
SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

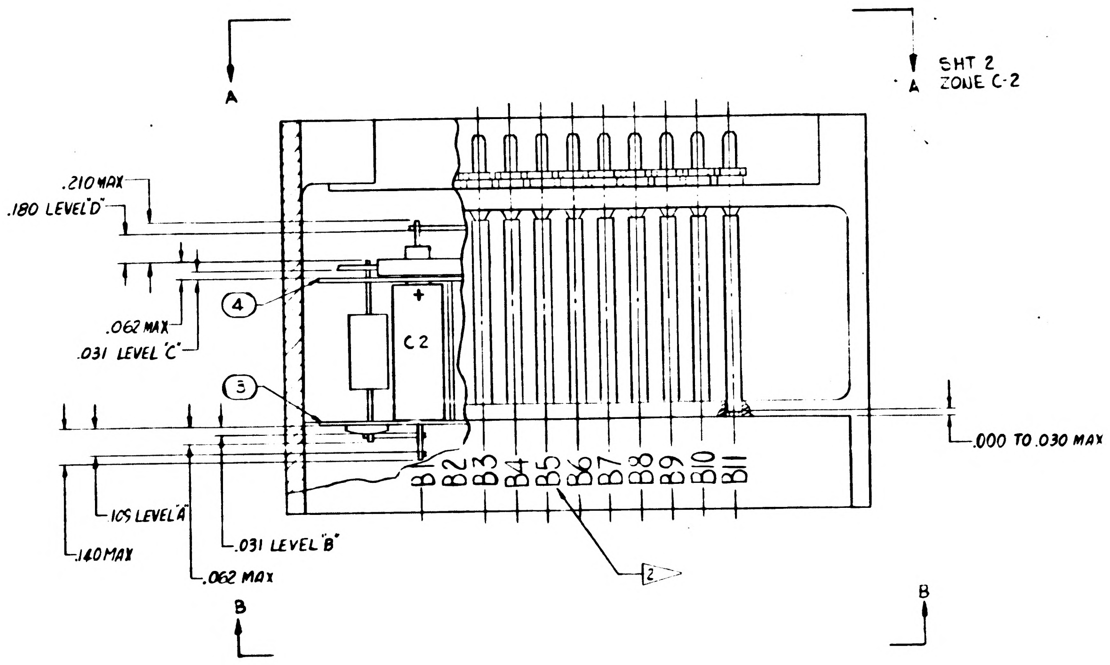
CODE IDENT NO
SIZE E
1015149
SCALE 4:1
SHEET 1 OF 2

1015149 G

1015149

		REVISIONS		TDRR 01430	
		DESCRIPTION		DATE	APPD
A		REVISED PER TDRR 02504		5-21-63	
B		REVISED PER TDRR 03019		9-5-63	WK
C		REVISED PER TDRR 03251		9-17-63	WK
D		REVISED PER TDRR 04471		5 NOV 63	WK
E		REVISED PER TDRR 05416		12-27-63	
F		REVISED PER TDRR 06000		28-63	
G		REVISED PER TDRR 07285		6 APR 64	
H	—	REVISED PER TDRR-16855	—	6-13-3-65	





UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

PROCURE PER PS 1015149.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.
WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING.
K INDICATES CATHODE SIDE OF DIODE,
FT( ) INDICATES FEED THRU.
PLUS(+) INDICATES POSITIVE END OF CAPACITOR.
C- INDICATES COLLECTOR LEAD OF TRANSISTOR.
B- INDICATES BASE LEAD OF TRANSISTOR.
E- INDICATES EMITTER LEAD OF TRANSISTOR.

4 USE AS REQUIRED

DRAWINGS FOR REFERENCE:
1015150 SCHEMATIC DIAGRAM, ELECTRICAL

BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

5 ASSEMBLE PER ND 1002136

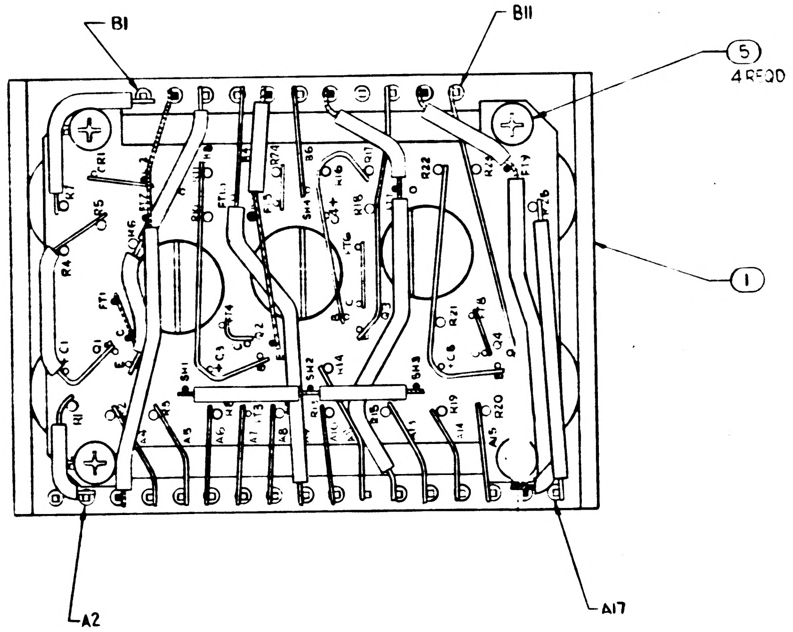
INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

6 BOND ITEM NO 13 TO ITEM NO 3 PER ND 1002004

ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE



H	H
G	F
SHEET 1	SHEET 2
REVISION STATUS OF SHEETS	

ITEM NO	NO REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
21	AR	1006776-20	SLEEVING, ELECT. INSULATING
20	AR	1006757-1	WIRE, NICKEL RIBBON .010 x .020
19	AR	1006776-22	SLEEVING, ELECT. INSULATING
18	AR	1006776-21	SLEEVING, ELECT. INSULATING
17	AR	1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397-1	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-30	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	4	1010374-20	RESISTOR, FIXED
6	8	1010364-739	RESISTOR, FIXED
5	4	MS 35216-3	SCREW 1/4 #2-56NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME MODULE

LIST OF PARTS AND MATERIALS

1007159	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	XX ±.02	+ —
−	XXX ±.005	− —

DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Battaglia
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

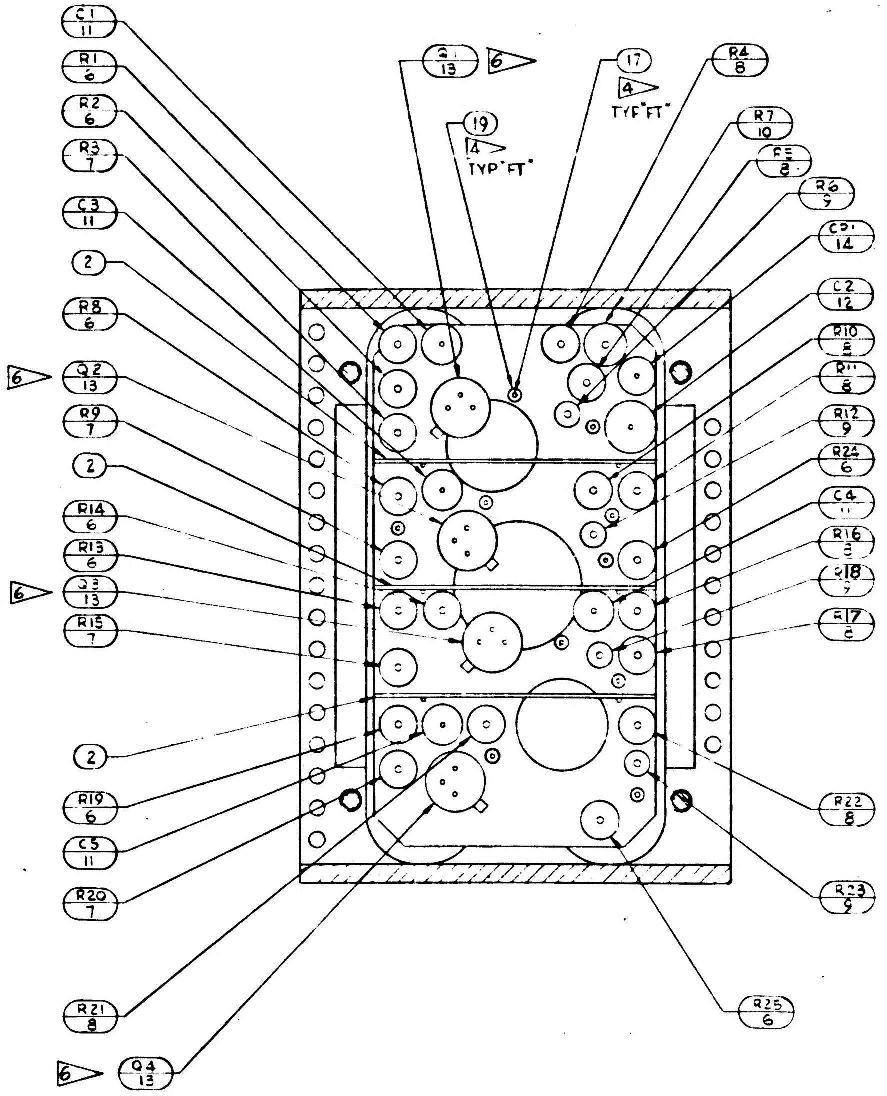
SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

E 1015149
SCALE 4:1
SHEET 1 OF 2

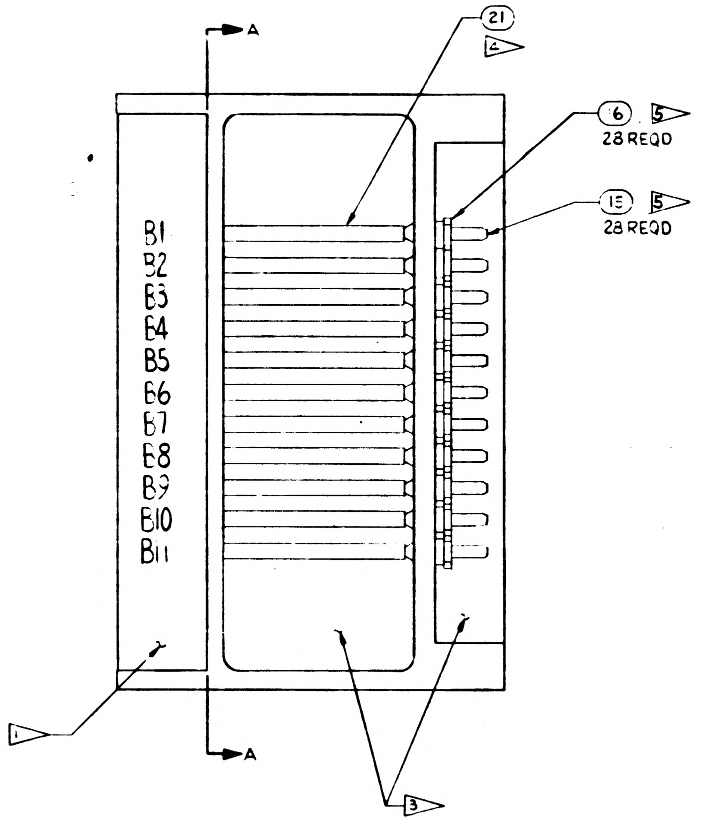
1015149 H

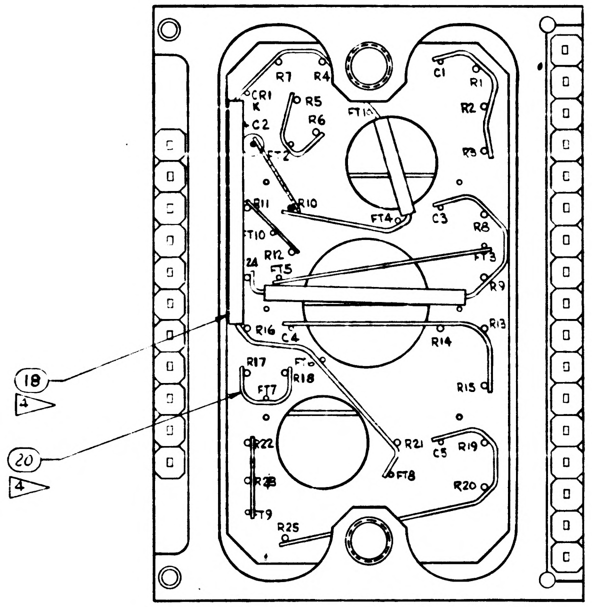
1015149 H

LTR	ZONE	REVISIONS TDRR 01430 DESCRIPTION		DATE	APPD
A		REVISED PER TDRR 02504		6-21-63	
B		REVISED PER TDRR 03619		9-5-63	WK
C		REVISED PER TDRR 03281		9-9-63	WK
D		REVISED PER TDRR 04471		6 Nov 63	WK
E		REVISED PER TDRR 05416		12-27-63	WK
F		REVISED PER TDRR 06000			WK
H	—	REVISED PER TDRR 6855	—	4 MAR 65	


C1 11
R1 6
R2 6
R3 7
C3 11
2
R8 6
6 Q2 13
R9 7
2
R14 6
R13 6
6 Q3 13
R15 7
2
R19 6
C5 11
R20 7
R21 8
6 Q4 13
Q1 13 6
19 4 TYP "FT"
17 4 TYP "FT"
R4 8
R7 10
R5 8
R6 9
CR1 14
C2 12
R10 8
R11 8
R12 9
R24 6
C4 11
R16 8
R18 9
R17 6
R22 8
R23 9
R25 6

SECTION A-A


A
A
21 2
6 5 28 REQD
13 5 28 REQD
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
1
3


R7
R4
C1
R1
CR1 K
R5
C2
R6
FT1
R2
FT2
R3
R11
R10
FT4
C3
R8
FT10
R12
FT3
24
FT5
R9
R16
C4
R14
R13
R17
FT6
R18
FT7
R15
R22
R21
C5
R19
FT8
R23
R20
FT9
R25
18 4
20 4

VIEW A-A
ROTATED 90° CW
SHEET 1
ZONE H-5

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION GMC
MILWAUKEE WISCONSIN
AC SP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Battafarano
APPROVAL R. L. Battafarano
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 June 63

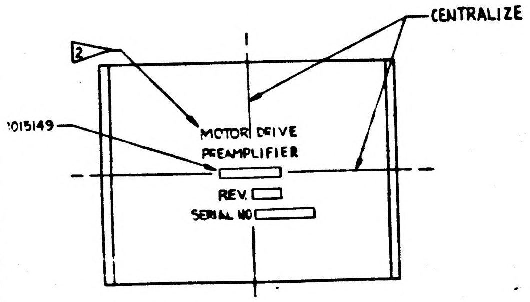
MANNED
SPACECRAFT CENTER

SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO
SIZE E 1015149
SCALE 4:1
SHEET 2 OF 2

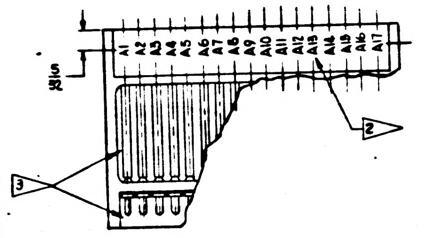
1015149

SYM	ZONE	REVISIONS TDRR 01430 DESCRIPTION	CHG NO	DATE	APPD

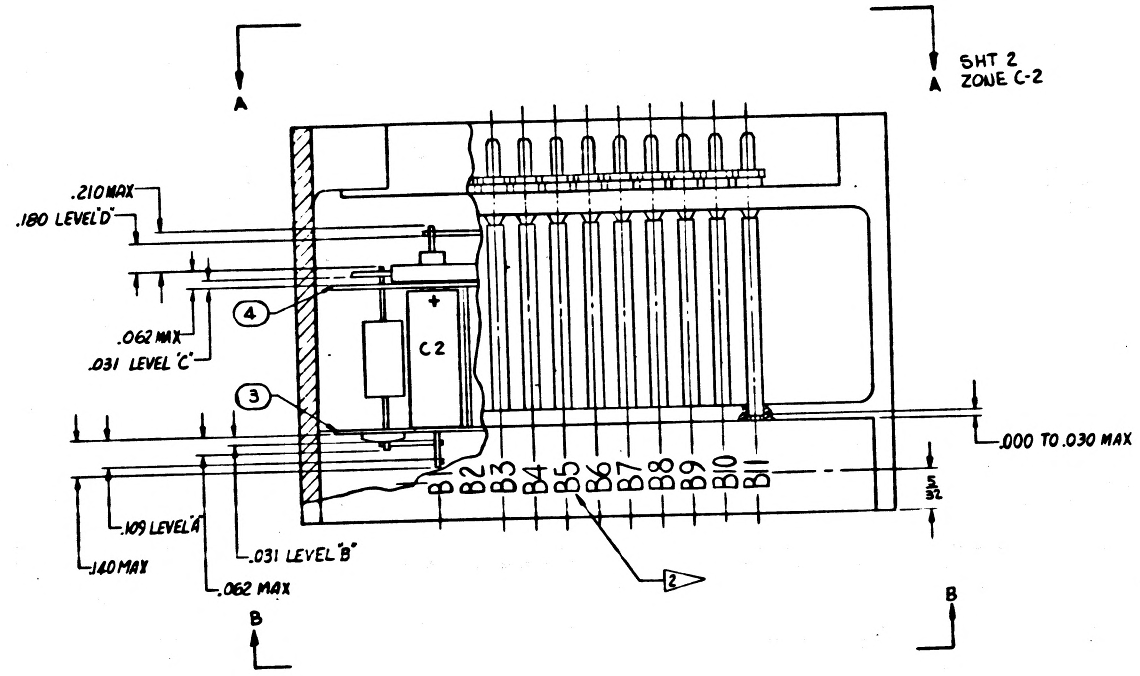


CENTRALIZE
2
1015149
MOTOR DRIVE
PREAMPLIFIER
REV.
SERIAL NO

VIEW B-B
SCALE 2:1



A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17
5/16
3
2



A
SHT 2
ZONE C-2
.210 MAX
.180 LEVEL 'D'
4
.062 MAX
.031 LEVEL 'C'
C2
+
3
.000 TO .030 MAX
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11
5/32
.109 LEVEL 'A'
.140 MAX
.031 LEVEL 'B'
.062 MAX
2
B
B

UNLESS OTHERWISE SPECIFIED COMPONENTS TO BE CENTRALIZED BETWEEN ITEM 4 & 3.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

COMPONENTS TO BE CEMENTED IN PLACE PER ND 1002009

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

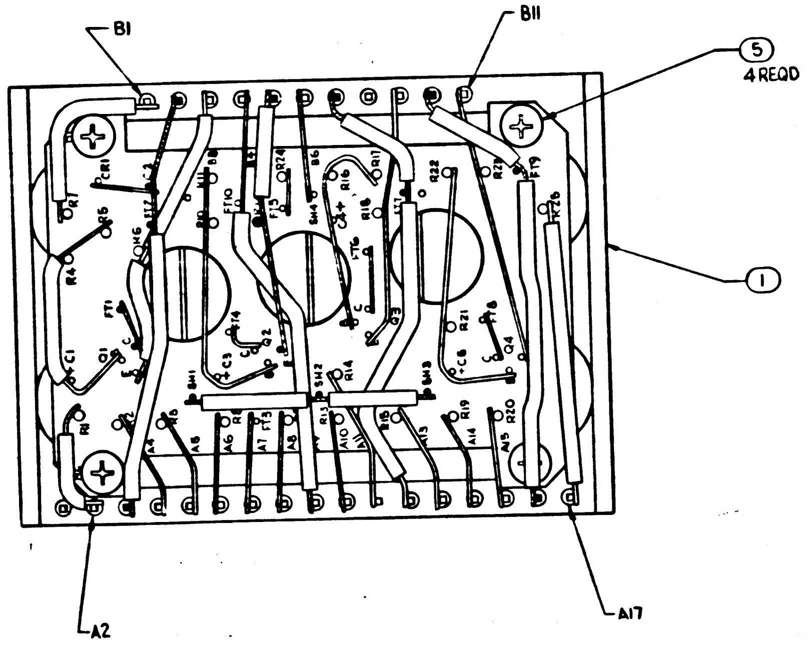
ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.

WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003.

2 MARK CHARACTERS .080 HIGH WHITE PER ND 1002009 CENTRALIZED AS SHOWN.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

ON ITEM NOS 3 AND 4:
BROKEN PATHS INDICATE INSULATION SLEEVING.
K INDICATES CATHODE SIDE OF DIODE.
FT( ) INDICATES FEED THRU.
PLUS(+) INDICATES POSITIVE END OF CAPACITOR.
C-INDICATES COLLECTOR LEAD OF TRANSISTOR.
B-INDICATES BASE LEAD OF TRANSISTOR.
E-INDICATES EMITTER LEAD OF TRANSISTOR.



B1
B11
5
4 REQD
1
A2
A17
C2
R1
CR1
R5
R4
FT1
Q1
C1
R6
Q2
R14
C3
R24
R16
R18
Q3
R21
C4
Q4
R22
R23
FT5

4 USE AS REQUIRED

DRAWINGS FOR REFERENCE:
1015150 SCHEMATIC DIAGRAM, ELECTRICAL.

BLACK DOT AND CROSS HATCHED RIBBONS INDICATE LEVEL A & D WIRING.

ASSEMBLE PER

INSPECT PER

ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
20		1006757-1	WIRE, NICKEL RIBBON .010×.020
19		ND 1002074	SLEEVING, ELECT. INSULATING #23
18		ND 1002074	SLEEVING, ELECT. INSULATING #22
17		1006787-2	WIRE, FEED THROUGH #24 AWG
16	28	1006775	INSULATOR, WRAPOST-MALE MIN.
15	28	1006782-5	CONTACT, BLADE EDGE CONNECTOR
14	1	1010372-18	SEMICONDUCTOR DEVICE, DIODE
13	4	1010397	TRANSISTOR
12	1	1006755-79	CAPACITOR, FIXED
11	4	1006755-65	CAPACITOR, FIXED
10	1	1006760-50	RESISTOR, FIXED
9	4	1006750-67	RESISTOR, FIXED
8	8	1010364-769	RESISTOR, FIXED
7	4	1010364-755	RESISTOR, FIXED
6	8	1010364-731	RESISTOR, FIXED
5	4	MS 35216-3	SCREW 1/4 #2-56NC
4	1	1015132	WAFER BOARD, LOWER
3	1	1015133	WAFER BOARD, UPPER
2	3	1015118	SHIELD
1	1	1015115	FRAME, MODULE

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007109	
1007108	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Battafarano
APPROVAL R. L. Battafarano
APPROVAL
NASA APPROVAL W. J. Smith 6/5/63
MIT APPROVAL W. Kupfer 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

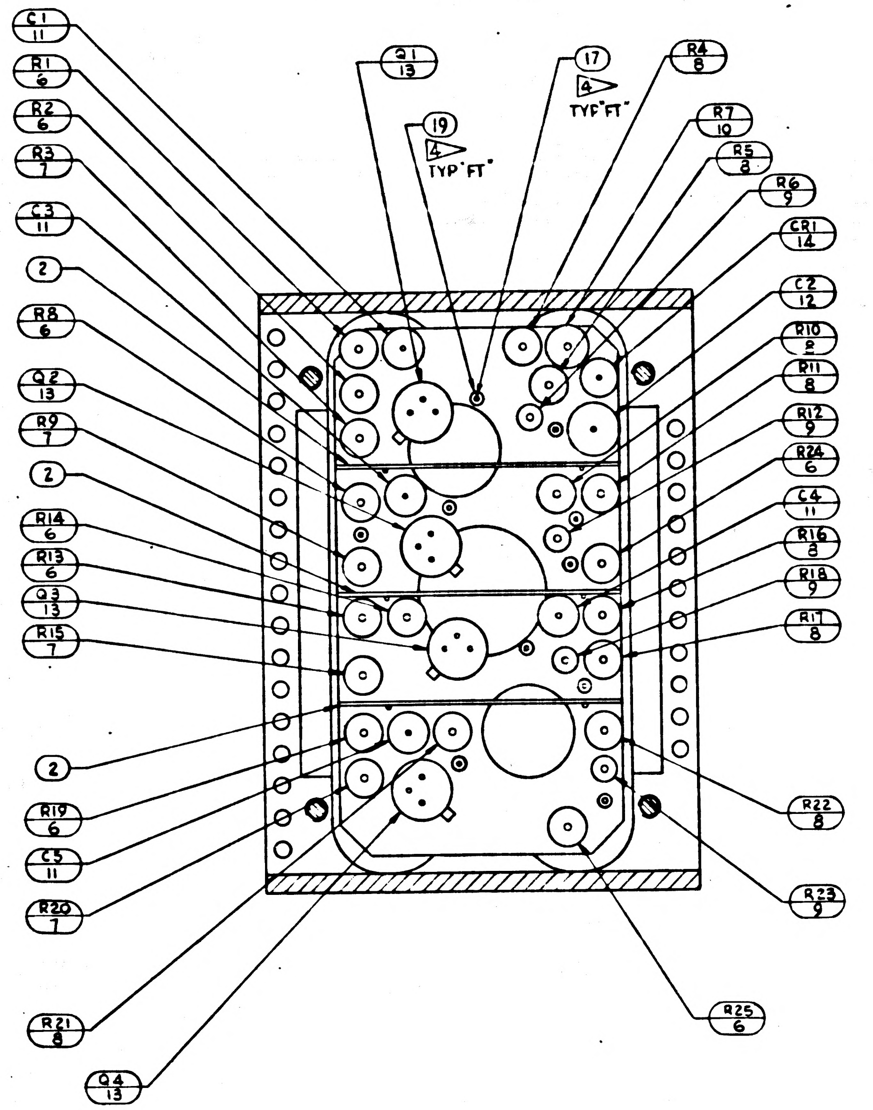
SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO.
SIZE E
1015149
SCALE 4:1
SHEET 1 OF 2

MASTER

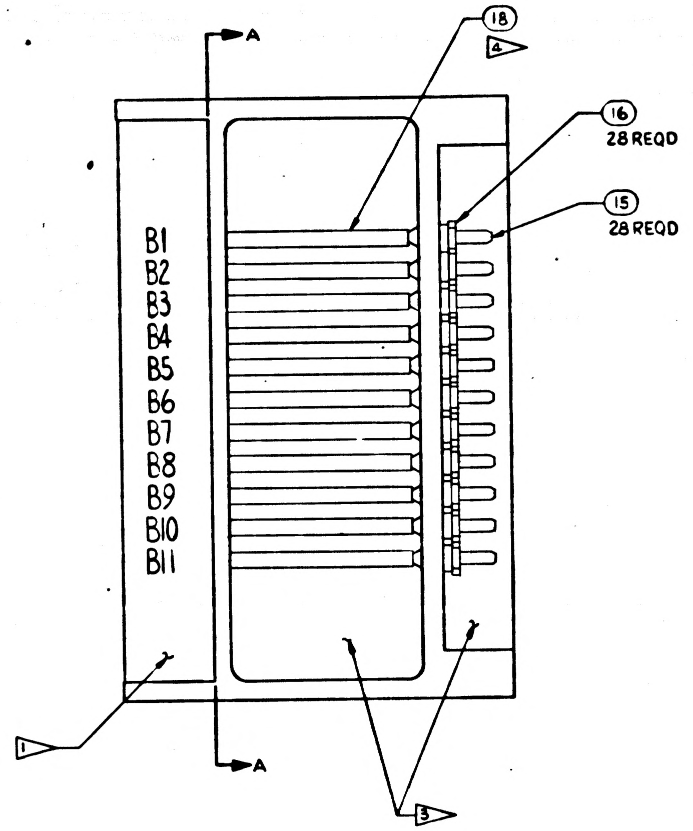
1015149

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
REVISIONS TDRR 01430					

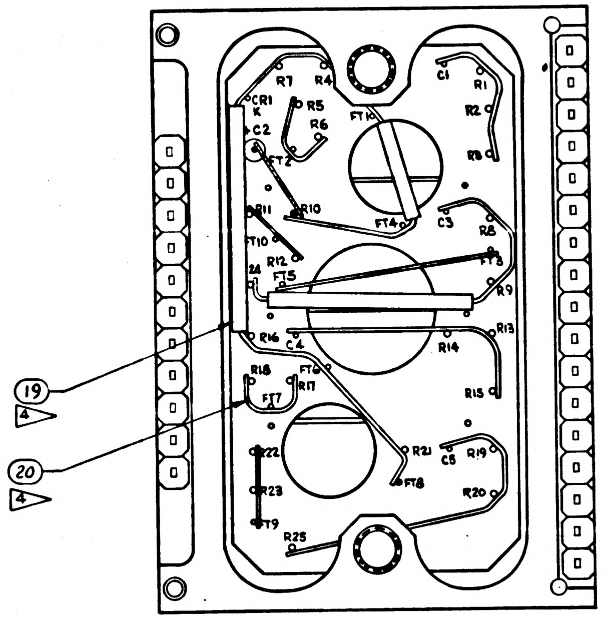


C1 11
R1 6
R2 6
R3 7
C3 11
2
R8 6
Q2 13
R9 7
2
R14 6
R13 6
Q3 13
R15 7
2
R19 6
C5 11
R20 7
R21 8
Q4 13
Q1 13
19 4 TYP "FT"
17 4 TYP "FT"
R4 8
R7 10
R5 8
R6 9
CR1 14
C2 12
R10 8
R11 8
R12 9
R24 6
C4 11
R16 8
R18 9
R17 8
R22 8
R23 9
R25 6

SECTION A-A



A
A
18 4
16 28 REQD
15 28 REQD
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
1
3



R7
R4
C1
R1
CR1
K
R5
R6
C2
R2
FT1
FT2
R8
R11
R10
T10
FT4
C3
R12
FT3
FT5
R9
R16
C4
R13
R14
R18
FT6
R17
FT7
R15
R22
R21
C5
R19
FT8
R23
R20
T9
R25
19 4
20 4

VIEW A-A
ROTATED 90° CW
SHEET 1
ZONE H-5

MASTER

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN LEWANDOWSKI DATE 5-31-63
CHECKED R. L. Bottolfson
APPROVAL R. L. Bottolfson
APPROVAL
NASA APPROVAL
MIT APPROVAL 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

SERVO
MOTOR DRIVE PREAMPLIFIER
MODULE ASSEMBLY

CODE IDENT NO
SIZE E
1015149
SCALE 4:1
SHEET 2 OF 2

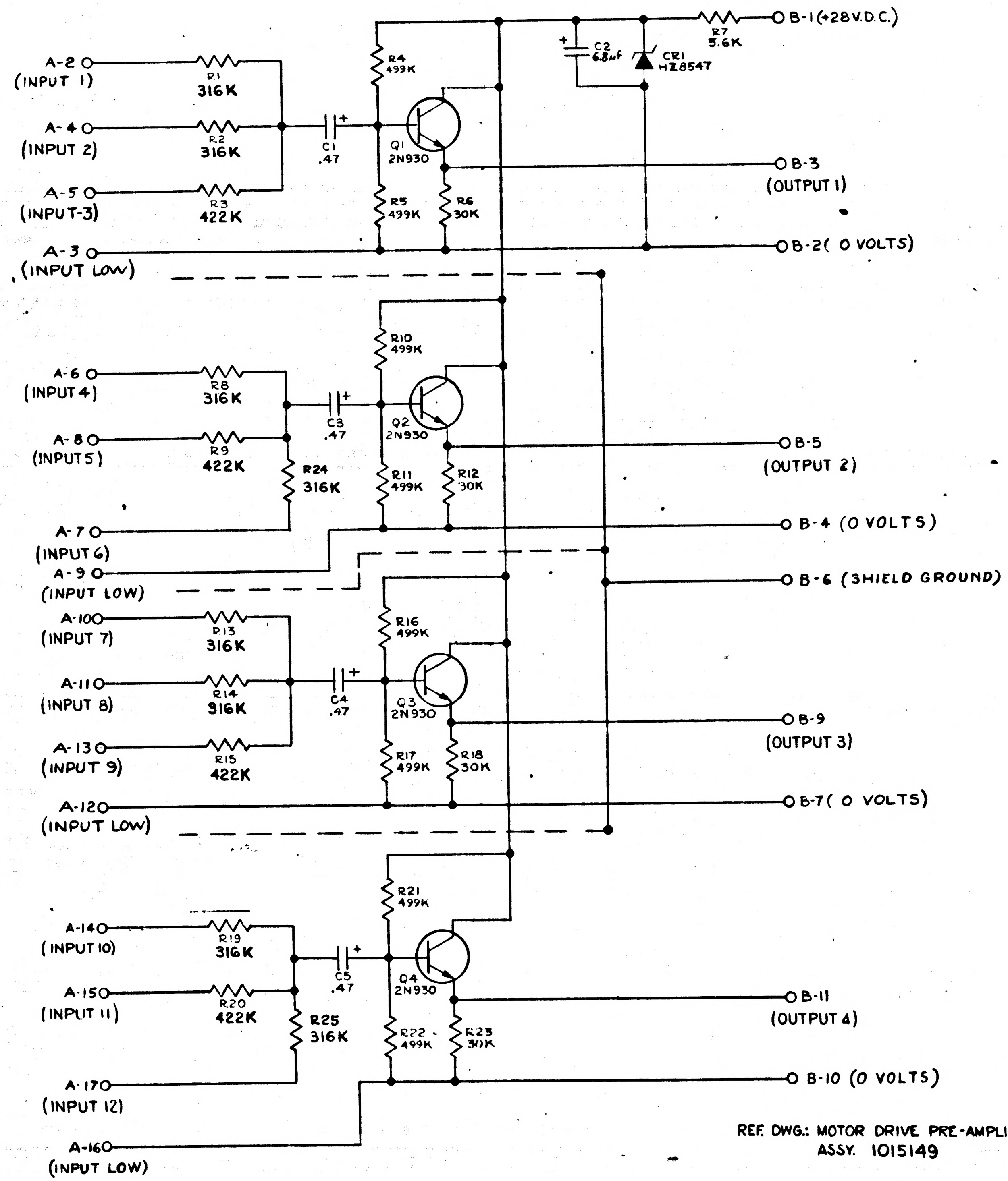
BOTTOLFSON

1015149

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015150

REVISIONS TDRR 01430			
SYM	DESCRIPTION	DATE	APPROVAL



B-1 (+28 V.D.C.)
R7 5.6K
C2 6.8 µf
CR1 HZ8547
A-2 (INPUT 1)
R1 316K
A-4 (INPUT 2)
R2 316K
A-5 (INPUT-3)
R3 422K
A-3 (INPUT LOW)
C1 .47
R4 499K
Q1 2N930
R5 499K
R6 30K
B-3 (OUTPUT 1)
B-2 (0 VOLTS)
A-6 (INPUT 4)
R8 316K
A-8 (INPUT 5)
R9 422K
R24 316K
C3 .47
R10 499K
Q2 2N930
R11 499K
R12 30K
B-5 (OUTPUT 2)
A-7 (INPUT 6)
B-4 (0 VOLTS)
A-9 (INPUT LOW)
B-6 (SHIELD GROUND)
A-10 (INPUT 7)
R13 316K
A-11 (INPUT 8)
R14 316K
A-13 (INPUT 9)
R15 422K
C4 .47
R16 499K
Q3 2N930
R17 499K
R18 30K
B-9 (OUTPUT 3)
A-12 (INPUT LOW)
B-7 (0 VOLTS)
A-14 (INPUT 10)
R19 316K
A-15 (INPUT 11)
R20 422K
R25 316K
C5 .47
R21 499K
Q4 2N930
R22 499K
R23 30K
B-11 (OUTPUT 4)
A-17 (INPUT 12)
B-10 (0 VOLTS)
A-16 (INPUT LOW)

REF DESIG	PART NUMBER	DESCRIPTION	VALUE	TOL	RATING
R1	1010364-731	RESISTOR	316K	1%	1/8W
R2	-731		316K	1%	1/8W
R3	-755		422K	1%	1/8W
R4	-769		499K	1%	1/8W
R5	1010364-769		499K	1%	1/8W
R6	1006750-67		30K	2%	1/4W
R7	1006760-50		5.6K	2%	1/2W
R8	1010364-731		316K	1%	1/8W
R9	-755		422K	1%	1/8W
R10	-769		499K	1%	1/8W
R11	1010364-769		499K	1%	1/8W
R12	1006750-67		30K	2%	1/4W
R13	1010364-731		316K	1%	1/8W
R14	-731		316K	1%	1/8W
R15	-755		422K	1%	1/8W
R16	-769		499K	1%	1/8W
R17	1010364-769		499K	1%	1/8W
R18	1006750-67		30K	2%	1/4W
R19	1010364-731		316K	1%	1/8W
R20	-755		422K	1%	1/8W
R21	-769		499K	1%	1/8W
R22	1010364-769		499K	1%	1/8W
R23	1006750-67		30K	2%	1/4W
R24	1010364-731		316K	1%	1/8W
R25	1010364-731	RESISTOR	316K	1%	1/8W
C1	1006755-65	CAPACITOR	.47	10%	35V.
C2	-79		6.8	10%	35V.
C3	-65		.47	10%	35V
C4	-65		.47	10%	35V.
C5	1006755-65	CAPACITOR	.47	10%	35V.
Q1	1010397	TRANSISTOR			
Q2					
Q3					
Q4	1010397	TRANSISTOR			
CR1	1010372-18	DIODE		5%	10V

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. RESISTOR VALUES ARE IN OHMS. K INDICATES THOUSANDS OF OHMS, M INDICATES MILLIONS OF OHMS.
3. CAPACITOR VALUES ARE IN MICROFARADS.
4. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE PARTS DESIGNATION WITH THE SUBASSEMBLY DESIGNATION.
5. PARTS LIST TO BE FOR REFERENCE ONLY.

REF. DWG.: MOTOR DRIVE PRE-AMPLIFIER - SERVO
ASSY. 1015149

MASTER

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± // DECIMALS ± // ANGLES ± //
DO NOT SCALE THIS DRAWING
MATERIAL —//—
HEAT TREATMENT —//—
FINAL FINISH —//—

M I T
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

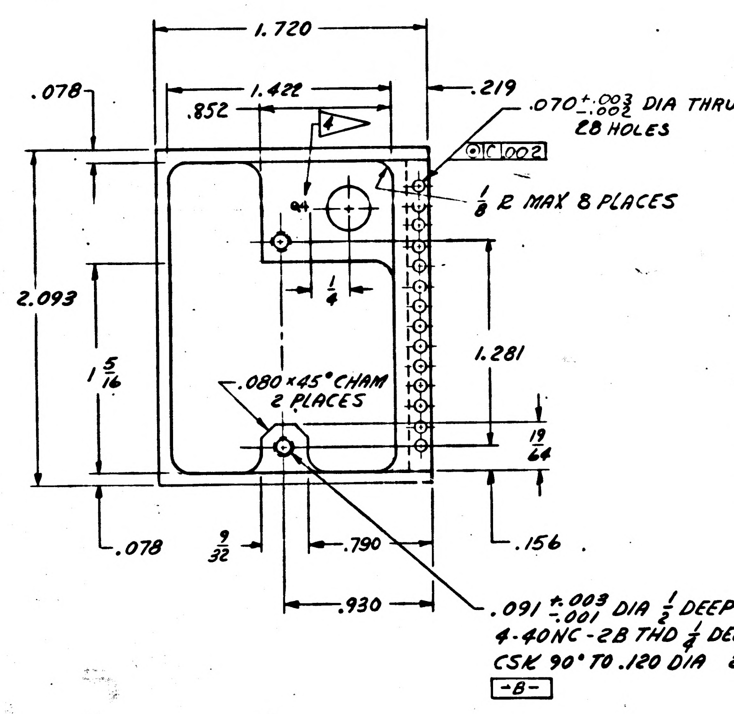
DRAWN R. EMERY DATE
CHECKED R. L. Battaglia
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

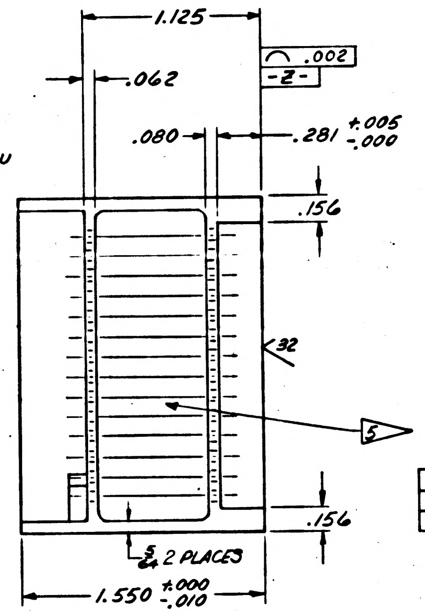
SCHEMATIC DIAGRAM
MOTOR DRIVE PREAMPLIFIER
(SERVO)

CODE IDENT NO | SIZE D | NASA DRAWING NO. 1015150
SCALE —//— | WT | SHEET 1 OF 1

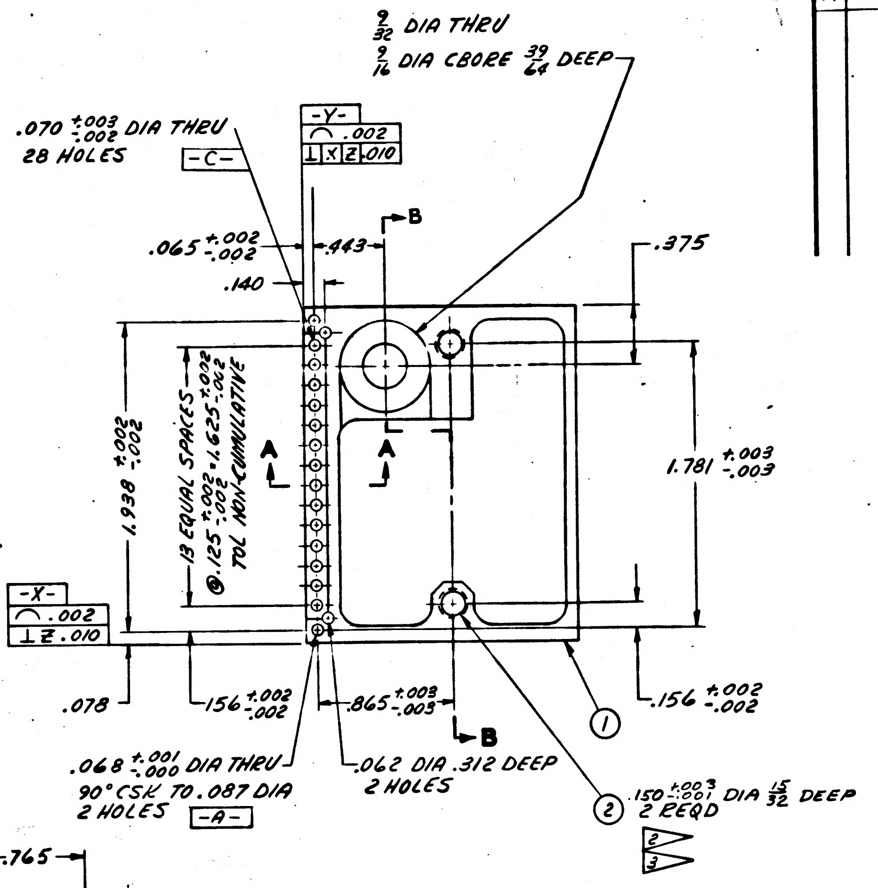
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY



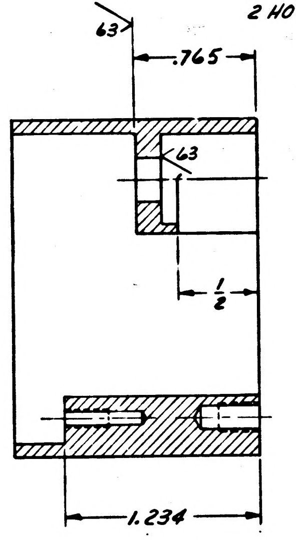
1.720
1.422
.852
.078
.219
.070 +.003 -.002 DIA THRU
28 HOLES
.002
1/8 R MAX 8 PLACES
2.093
1 5/16
1/4
1.281
.080 × 45° CHAM
2 PLACES
19/64
.078
9/32
.790
.156
.930
4
.091 +.003 -.001 DIA 1/2 DEEP
4-40NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA 2 HOLES
-B-



1.125
.062
.002
-Z-
.080
.281 +.005 -.000
.156
32
5
.156
5/64 2 PLACES
1.550 +.000 -.010

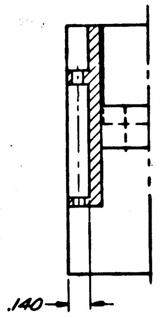


9/32 DIA THRU
9/16 DIA CBORE 39/64 DEEP
.070 +.003 -.002 DIA THRU
28 HOLES
-C-
-Y-
.002
⊥ X Z .010
.065 +.002 -.002
.443
B
.140
.375
1.938 +.002 -.002
13 EQUAL SPACES
@ .125 +.002 -.002 = 1.625 +.002 -.002
TOL NON-CUMULATIVE
A
A
1.781 +.003 -.003
-X-
.002
⊥ Z .010
.078
.156 +.002 -.002
.865 +.003 -.003
B
.156 +.002 -.002
1
.068 +.001 -.000 DIA THRU
90° CSK TO .087 DIA
2 HOLES
-A-
.062 DIA .312 DEEP
2 HOLES
2
.150 +.003 -.001 DIA 15/32 DEEP
2 REQD
2
3



63
.765
63
1/2
1.234

SECTION **B-B**



PARTIAL SECTION **A-A**

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171A-TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER. (ES-2589).

3▷ INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.

4▷ CHARACTERS TO BE 1/32 HIGH SANS-SERIF GOTHIC, MARKED AS SHOWN PER G&ND 1002019

5▷ MARK 1015128 AND REVISION LETTER PER MIL-STD-130 (ES-267) LOCATE APPROX. AS SHOWN.

A	1015152	2

REVISIONS TDRR 01429

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02875		8 28 63	

LIST OF PARTS AND MATERIALS

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS122118	INSERT-CRES HELICAL COIL
1	1	1015152-1	FRAME 1▷

NEXT ASSY	USED ON
1015124	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ 2°
- 1/64	-.005	- 2°

DO NOT SCALE THIS DRAWING

MATERIAL 1▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R. EMERY DATE 5-21-63
CHECKED E.A. Plummer
APPROVAL R L Battafarm
APPROVAL
NASA APPROVAL W S Smith 6/5/63
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

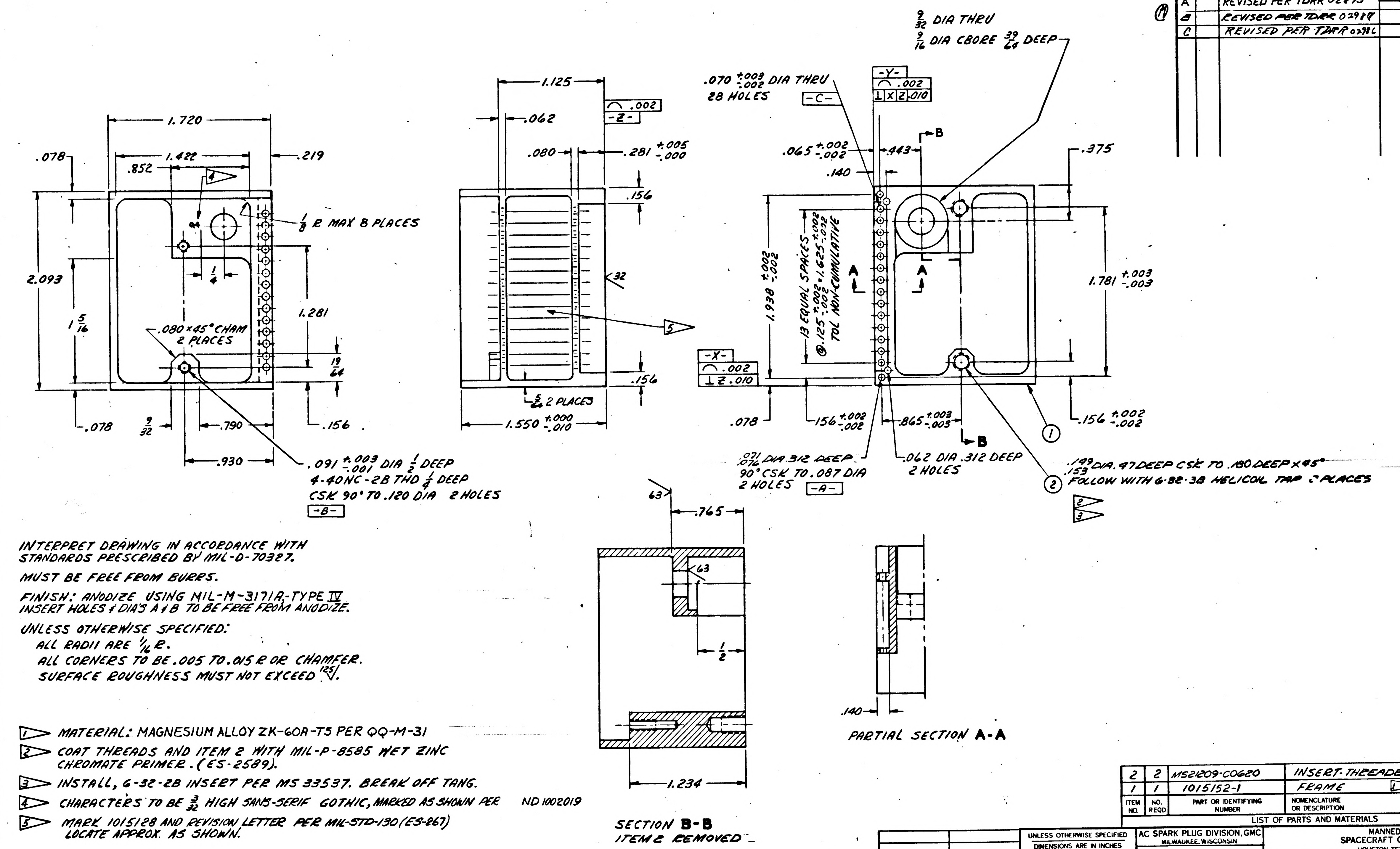
FRAME ASSY,
COSECANT GENERATOR

CODE IDENT NO.
SIZE D
1015152
SCALE 2:1
SHEET

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 01429					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02875		6 28 63	RPK
B		REVISED PER TDRR 02987		9-5-63	RPK
C		REVISED PER TDRR 02986		9-5-63	



1.720
1.422
.852
.078
.219
1/8 R MAX 8 PLACES
2.093
1 5/16
1.281
.080 × 45° CHAM 2 PLACES
1/4
19/64
.078
9/32
.790
.930
.156
.091 +.003 -.001 DIA 1/2 DEEP
4-40NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA 2 HOLES
-B-
1.125
.062
.080
.281 +.005 -.000
.002
-Z-
.156
32
5
.156
5/64 2 PLACES
1.550 +.000 -.010
9/32 DIA THRU
9/16 DIA CBORE 39/64 DEEP
.070 +.003 -.002 DIA THRU
28 HOLES
-C-
-Y-
.002
⊥ X Z .010
.065 +.002 -.002
.443
.140
B
.375
1.938 +.002 -.002
13 EQUAL SPACES @ .125 +.002 -.002 = 1.625 +.002 -.002
TOL NON-CUMULATIVE
A
A
1.781 +.003 -.003
-X-
.002
⊥ Z .010
.078
.156 +.002 -.002
.865 +.003 -.003
B
.156 +.002 -.002
1
.071 .076 DIA .312 DEEP
90° CSK TO .087 DIA
2 HOLES
-A-
.062 DIA .312 DEEP
2 HOLES
2
.149 .153 DIA .47 DEEP CSK TO .180 DEEP × 95°
FOLLOW WITH 6-32-3B HELICOIL TAP 2 PLACES
2
3
63
.765
63
1/2
1.234
SECTION B-B
ITEM 2 REMOVED
.140
PARTIAL SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171A-TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31
2▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER. (ES-2589).
3▷ INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.
4▷ CHARACTERS TO BE 3/32 HIGH SANS-SERIF GOTHIC, MARKED AS SHOWN PER ND 1002019
5▷ MARK 1015128 AND REVISION LETTER PER MIL-STD-130 (ES-267) LOCATE APPROX. AS SHOWN.

MASTER

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT-THREADED LOCKING
1	1	1015152-1	FRAME 1▷

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015124	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ 2°
- 1/64	-.005	- 2°

DO NOT SCALE THIS DRAWING
MATERIAL 1▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. EMERY DATE 5-21-63
CHECKED E A Plummer
APPROVAL R L Bottoms
APPROVAL
NASA APPROVAL W J Smith 6/5/63
MIT APPROVAL W Kupfer 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

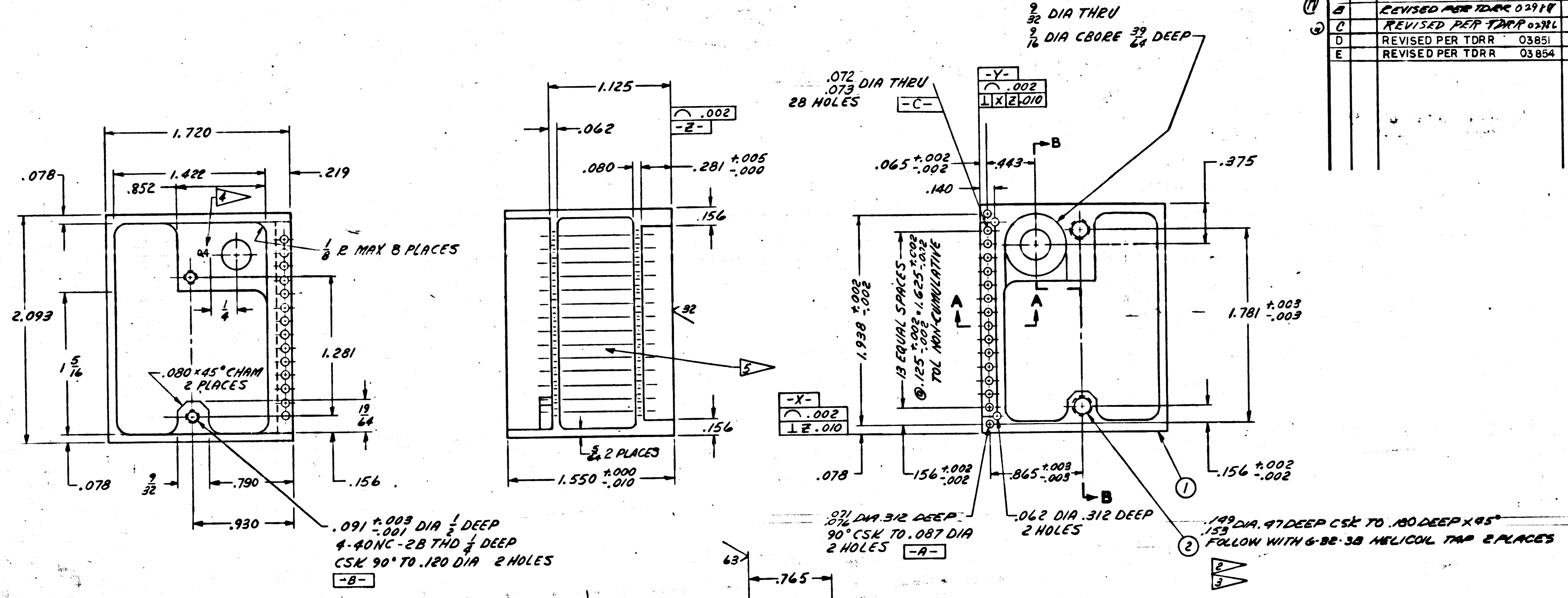
FRAME ASSY,
COSECANT GENERATOR

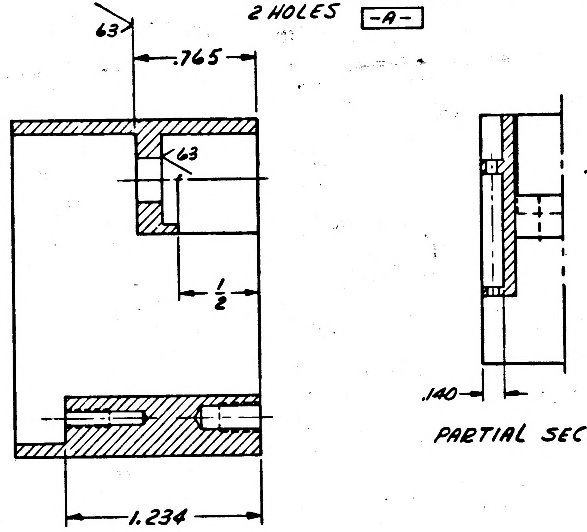
CODE IDENT NO.
SIZE D
1015152
SCALE 2:1
SHEET 1

C 1015152

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02875		8-28-63	
B		REVISED PER TDRR 02988		9-5-63	RPK
C		REVISED PER TDRR 02986		9-5-63	
D		REVISED PER TDRR 03851		10-15-63	RPK
E		REVISED PER TDRR 03854		10-15-63	RPK

REVISIONS TDRR 01429


1.720
1.422
.852
.219
.078
2.093
1 5/16
1.281
.080 × 45° CHAM 2 PLACES
1/8 R MAX 8 PLACES
19/64
.078
9/32
.790
.930
.156
.091 +.003 -.001 DIA 1/2 DEEP
4-40NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA 2 HOLES
-B-
1.125
.062
.080
.281 +.005 -.000
.002 -Z-
.156
.156
5/64 2 PLACES
1.550 +.000 -.010
.072 .073 DIA THRU 28 HOLES
-C-
-Y-
.002
.010
9/32 DIA THRU
9/16 DIA CBORE 39/64 DEEP
.065 +.002 -.002
.443
.140
.375
13 EQUAL SPACES @ .125 +.002 -.002 = 1.625 +.002 -.002 TOL NON-CUMULATIVE
1.938 +.002 -.002
1.781 +.003 -.003
-X-
.002
.010
.078
.156 +.002 -.002
.865 +.003 -.003
.156 +.002 -.002
.071 .076 DIA .312 DEEP
90° CSK TO .087 DIA 2 HOLES
-A-
.062 DIA .312 DEEP 2 HOLES
.149 .153 DIA .47 DEEP CSK TO .180 DEEP × 82°
FOLLOW WITH 6-32-3B HELICOIL TAP 2 PLACES
A
B
1
2


63
.765
63
1/2
1.234
.140

SECTION B-B
ITEM 2 REMOVED

PARTIAL SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171A-TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

1. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31
2. COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER. (ES-2589).
3. INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.
4. CHARACTERS TO BE 3/32 HIGH SANS-SERIF GOTHIC, MARKED AS SHOWN PER ND 1002019
5. MARK 1015128 AND REVISION ~~LETTER PER~~ ND100219 LOCATE APPROX. AS SHOWN.

MASTER

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT-THREADED LOCKING
1	1	1015152-1	FRAME 1

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015124	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +1/64 −1/64 DECIMALS +.005 −.005 ANGLES +2° −2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. EMERY DATE 5-21-63
CHECKED E A Plummer
APPROVAL R L Bottolfson
APPROVAL
NASA APPROVAL
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY,
COSECANT GENERATOR

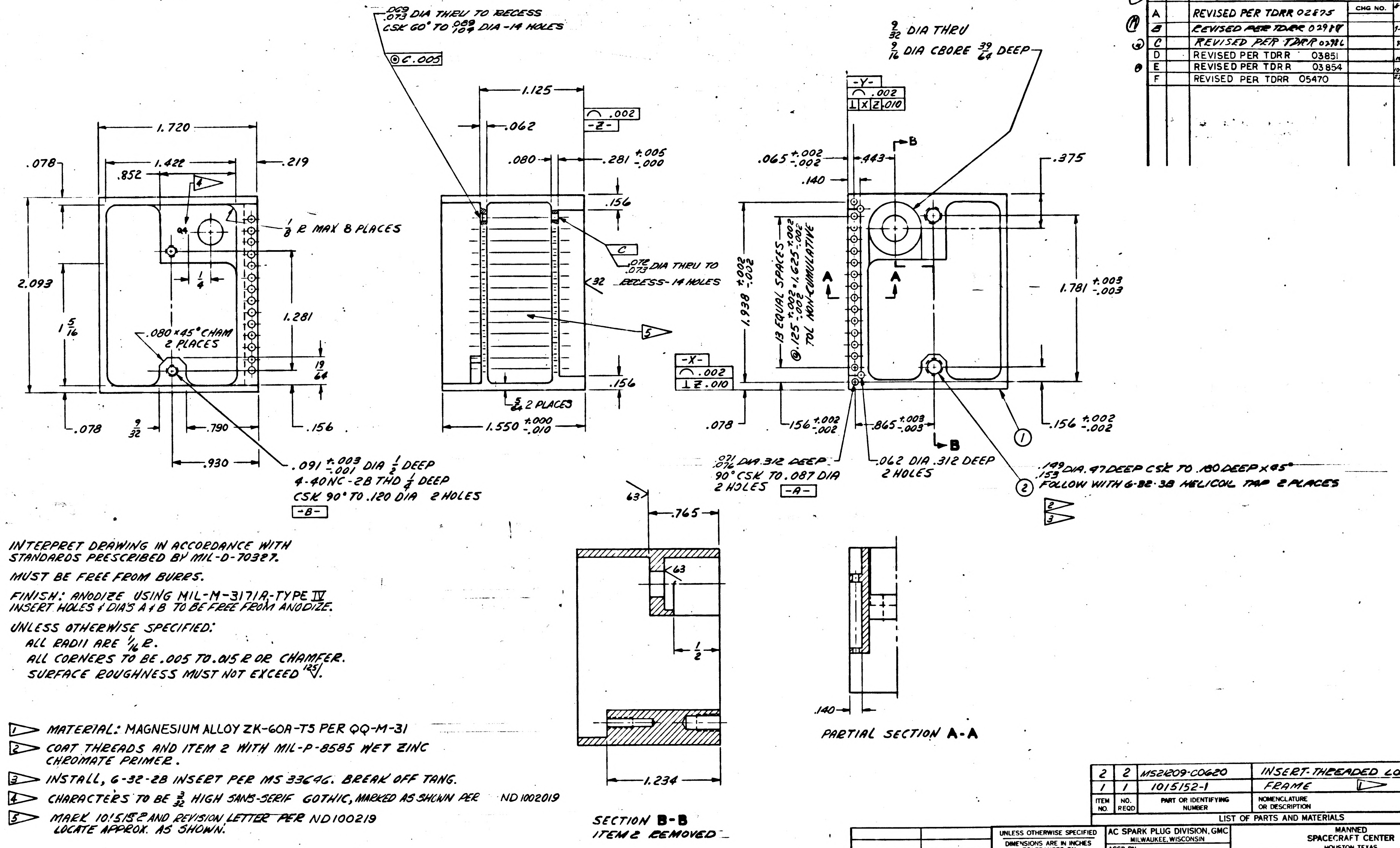
CODE IDENT NO. SIZE D 1015152
SCALE 2:1 SHEET

INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

F	1015152	2

REVISIONS TDRR 0142

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02875		6-26-63	
B		REVISED PER TDRR 02988		9-5-63	RPK
C		REVISED PER TDRR 02986		9-5-63	
D		REVISED PER TDRR 03851		10-15-63	RPK
E		REVISED PER TDRR 03854		10-15-63	RPK
F		REVISED PER TDRR 05470		27 DEC 63	EPK



.069/.073 DIA THRU TO RECESS
CSK 60° TO .099/.104 DIA -14 HOLES
◎ C .005
1.720
1.422
.852
.078
.219
4
1/8 R MAX 8 PLACES
2.093
1 5/16
1/4
1.281
.080 × 45° CHAM 2 PLACES
19/64
.078
9/32
.790
.156
.930
.091 +.003 -.001 DIA 1/2 DEEP
4-40NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA 2 HOLES
-B-
1.125
.062
.080
.281 +.005 -.000
⌒ .002
-Z-
.156
C
.070/.073 DIA THRU TO RECESS-14 HOLES
32
5
-X-
⌒ .002
⊥ Z .010
5/64 2 PLACES
.156
1.550 +.000 -.010
9/32 DIA THRU
9/16 DIA CBORE 39/64 DEEP
-Y-
⌒ .002
⊥ X Z .010
.065 +.002 -.002
.443
.140
B
.375
1.938 +.002 -.002
13 EQUAL SPACES ◎ .125 +.002 -.002 = 1.625 +.002 -.002 TOL NON-CUMULATIVE
A
1.781 +.003 -.003
.078
.156 +.002 -.002
.865 +.003 -.003
B
.156 +.002 -.002
1
2
.071/.076 DIA .312 DEEP 90° CSK TO .087 DIA 2 HOLES
-A-
.062 DIA .312 DEEP 2 HOLES
.149/.153 DIA .47 DEEP CSK TO .180 DEEP × 45°
FOLLOW WITH 6-32-.38 HELICOIL TAP 2 PLACES
2
3
63
.765
63
1/2
1.234
.140

SECTION **B-B**
ITEM 2 REMOVED

PARTIAL SECTION **A-A**

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171A-TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3▷ INSTALL, 6-32-2B INSERT PER MS 33646. BREAK OFF TANG.

4▷ CHARACTERS TO BE 3/32 HIGH SANS-SERIF GOTHIC, MARKED AS SHOWN PER ND 1002019

5▷ MARK 1015152 AND REVISION ~~LETTER PER~~ ND100219
LOCATE APPROX. AS SHOWN.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT-THREADED LOCKING
1	1	1015152-1	FRAME 1▷

LIST OF PARTS AND MATERIALS

MASTER

NEXT ASSY	USED ON
1015124	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS XXX ±.005 XX ±.02 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. EMERY DATE 5-21-63
CHECKED E A Plummer
APPROVAL K L Battenfeld
APPROVAL
NASA APPROVAL W J Smith 6-13-63
MIT APPROVAL W Kupfer 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY,
COSECANT GENERATOR

CODE IDENT NO. | SIZE D | 1015152
SCALE 2:1 | SHEET

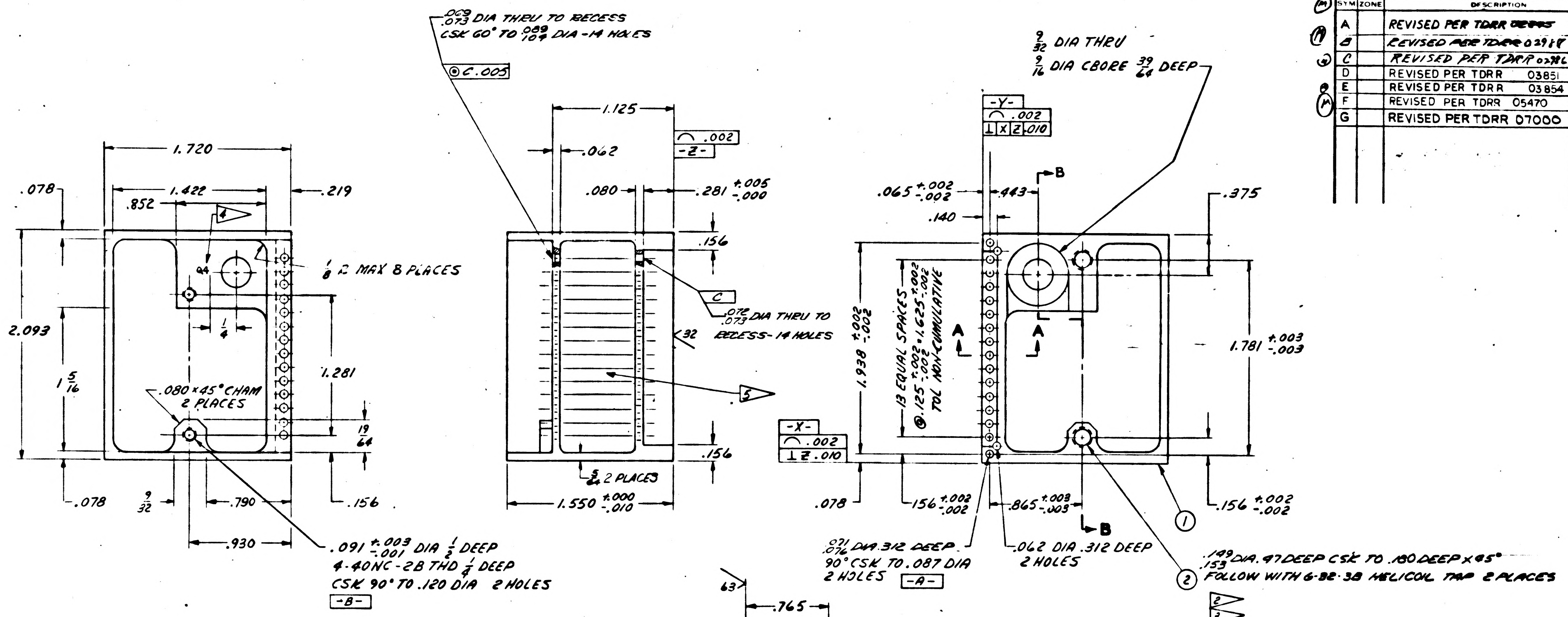
MIL 10770-P

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

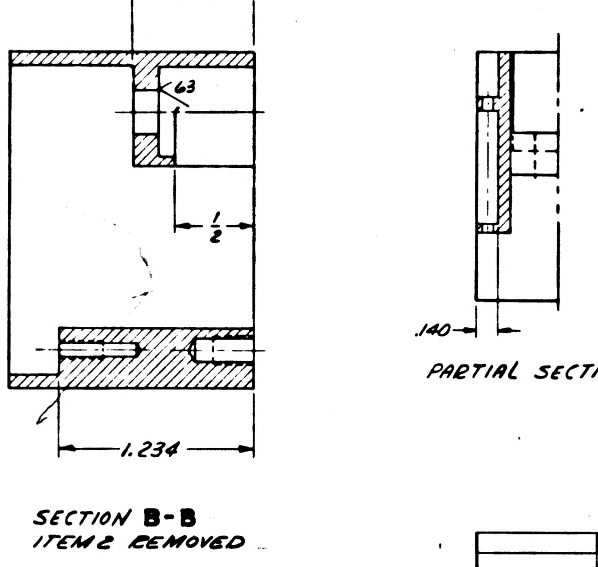
F	1015152	2		1

REVISIONS TDRR 01429

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR ~~[illegible]~~		8 28 63	[illegible]
B		REVISED PER TDRR 02988		9-5-63	RPK
C		REVISED PER TDRR 02986		[illegible]-63	
D		REVISED PER TDRR 03851		10-15-63	[illegible]
E		REVISED PER TDRR 03854		10-15-63	[illegible]
F		REVISED PER TDRR 05470		22 DEC 63	[illegible]
G		REVISED PER TDRR 07000		7 APR 64	JJJ CAP



.069/.073 DIA THRU TO RECESS
CSK 60° TO .089/.109 DIA - 14 HOLES
⊚ C .005
1.720
.078
1.422
.219
.852
4
1/8 R MAX 8 PLACES
2.093
1 5/16
1/4
1.281
.080 × 45° CHAM 2 PLACES
19/64
.078
9/32
.790
.156
.930
.091 +.003/-.001 DIA 1/2 DEEP
4-40NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA 2 HOLES
-B-
1.125
⌒ .002
-Z-
.062
.080
.281 +.005/-.000
.156
C
.072/.076 DIA THRU TO RECESS - 14 HOLES
32
5
-X-
⌒ .002
⊥ Z .010
.156
5/64 2 PLACES
1.550 +.000/-.010
9/32 DIA THRU
9/16 DIA CBORE 39/64 DEEP
-Y-
⌒ .002
⊥ X Z .010
B
.065 +.002/-.002
.443
.140
.375
1.938 +.002/-.002
13 EQUAL SPACES ⊚ .125 ±.002 = 1.625 ±.002 TOL NON-CUMULATIVE
A
A
1.781 +.003/-.003
.078
.156 +.002/-.002
.865 +.003/-.003
B
.156 +.002/-.002
1
.071/.076 DIA .312 DEEP
90° CSK TO .087 DIA
2 HOLES
-A-
.062 DIA .312 DEEP
2 HOLES
.149/.153 DIA .47 DEEP CSK TO .180 DEEP × 45°
FOLLOW WITH 6-32-3B HELICOIL TAP 2 PLACES
2
2
3



63
.765
63
1/2
.140
1.234

PARTIAL SECTION A-A

SECTION B-B
ITEM 2 REMOVED

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171A-TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3▷ INSTALL, 6-32-2B INSERT PER MS 33646. BREAK OFF TANG.

4▷ CHARACTERS TO BE 3/32 HIGH SANS-SERIF GOTHIC, MARKED AS SHOWN PER ND 1002019

5▷ MARK 1015152 AND REVISION LETTER PER ND10002019. LOCATE APPROX. AS SHOWN.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT-THREADED LOCKING
1	1	1015152-1	FRAME 1▷

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015124	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + 1/64 − 1/64
DECIMALS XXX ±.005 XX ±.02
ANGLES + 2° − 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. EMERY DATE 5-21-63
CHECKED E A Plummer
APPROVAL R L Battaglia
APPROVAL
NASA APPROVAL [illegible] 6-5-63
MIT APPROVAL [illegible] 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY,
COSECANT GENERATOR

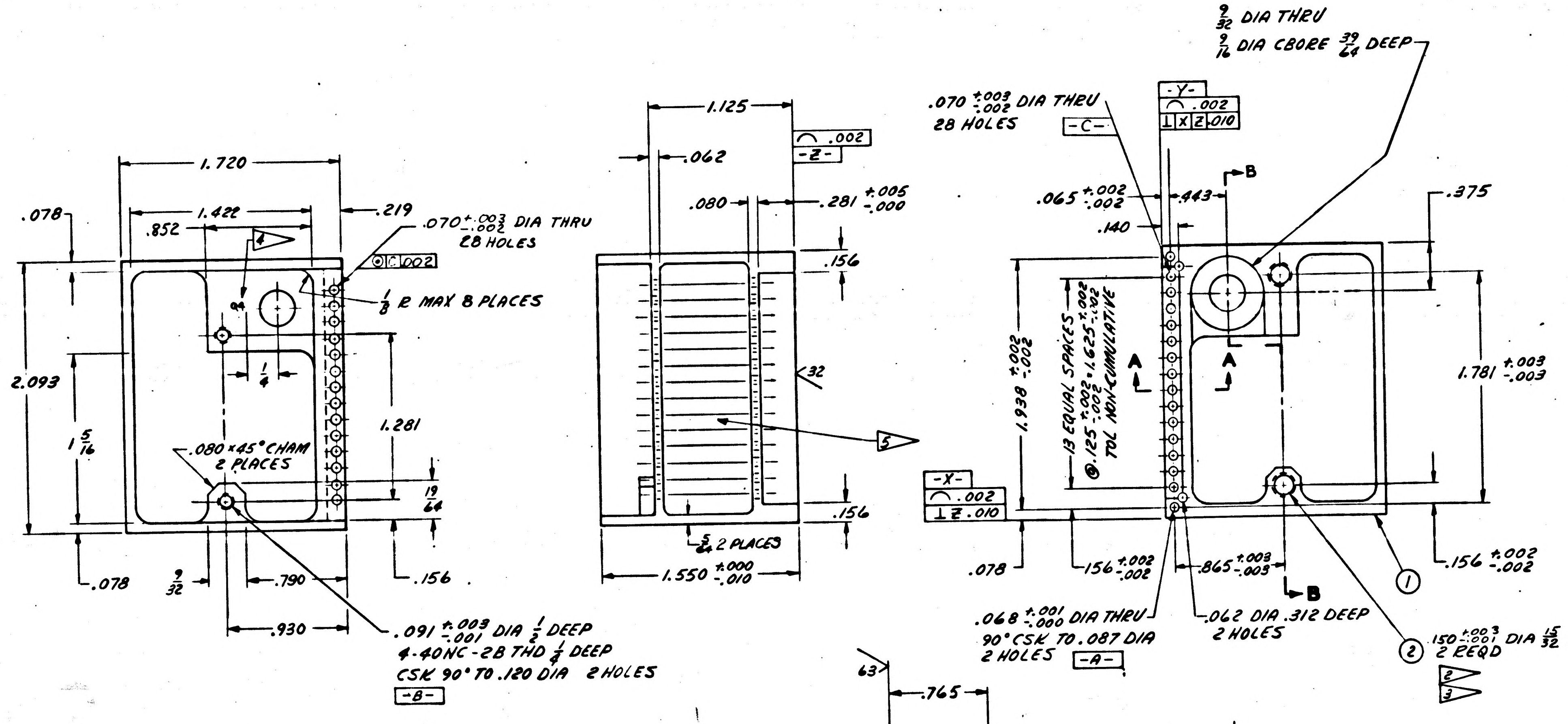
CODE IDENT NO
SIZE D
1015152
SCALE 2:1
SHEET

1015152 G

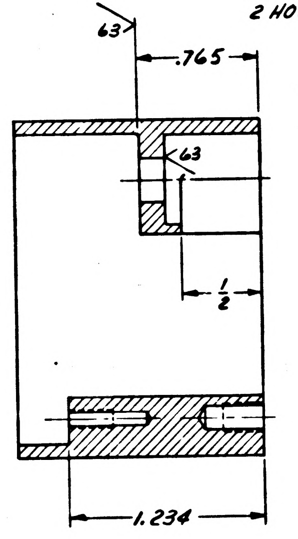
1015152

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD

REVISIONS TDRR 01429

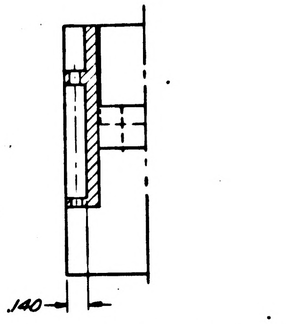


1.720
1.422
.852
.078
.219
.070 +.003 -.002 DIA THRU 28 HOLES
1/8 R MAX 8 PLACES
2.093
1 5/16
1/4
1.281
19/64
.080 × 45° CHAM 2 PLACES
.078
9/32
.790
.156
.930
.091 +.003 -.001 DIA 1/2 DEEP
4-40NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA 2 HOLES
-B-
1.125
.062
.080
.281 +.005 -.000
-Z-
.002
.156
32
5
.156
5/64 2 PLACES
1.550 +.000 -.010
9/32 DIA THRU
9/16 DIA CBORE 39/64 DEEP
.070 +.003 -.002 DIA THRU 28 HOLES
-C-
-Y-
.002
⊥ X Z .010
.065 +.002 -.002
.443
B
.140
.375
1.938 +.002 -.002
13 EQUAL SPACES .125 +.002 -.002 = 1.625 +.02 -.02 TOL NON-CUMULATIVE
A
A
1.781 +.003 -.003
-X-
.002
⊥ Z .010
.078
.156 +.002 -.002
.865 +.003 -.003
B
.156 +.002 -.002
1
.068 +.001 -.000 DIA THRU
90° CSK TO .087 DIA 2 HOLES
-A-
.062 DIA .312 DEEP 2 HOLES
2
.150 +.003 -.001 DIA 15/32 DEEP 2 REQD
2
3



63
.765
63
1/2
1.234

SECTION B-B



PARTIAL SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-A-8625, TYPE II, DYED BLACK. (ES-384)
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 R.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

1 ▷ MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325 (ES-2106)

2 ▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER. (ES-2589).

3 ▷ INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.

4 ▷ CHARACTERS TO BE 1/32 HIGH SANS-SERIF GOTHIC, MARKED AS SHOWN PER G&ND 1002019

5 ▷ MARK 1015128 AND REVISION LETTER PER MIL-STD-130 (ES-867) LOCATE APPROX. AS SHOWN.

MASTER

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS 122118	INSERT-CRES HELICAL COIL
1	1	1015152-1	FRAME 1 ▷

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015124	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ 2°
- 1/64	-.005	- 2°

DO NOT SCALE THIS DRAWING
MATERIAL 1 ▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. EMERY DATE 5-21-63
CHECKED E A Plummer
APPROVAL R L Battoyson
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY,
COSECANT GENERATOR

CODE IDENT NO.
SIZE D
1015152
SCALE 2:1
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

4 3 2 1

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A 1015154

Ⓜ

REVISIONS TDRR 01375

SYM	DESCRIPTION	DATE	APPROVAL
A	REPLACED WITH CHANGE BY REV. B PER TDRR 01760	6/26/63	WK.

PART NO	DESCRIPTION	REQD
1010473	TRANSFORMER	1

Ⓐ REPLACED WITH CHANGE BY REV. B

1015154 A

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 5-27-63
CHECKED R. L. Battelfson
APPROVAL R. L. Battelfson
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W. Gyfor 29/4/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TRANSFORMER ASSY
0° OPTICS

CODE IDENT NO.	SIZE	NASA DRAWING NO.
	C	1015154
SCALE	WT	SHEET OF

4 3 2 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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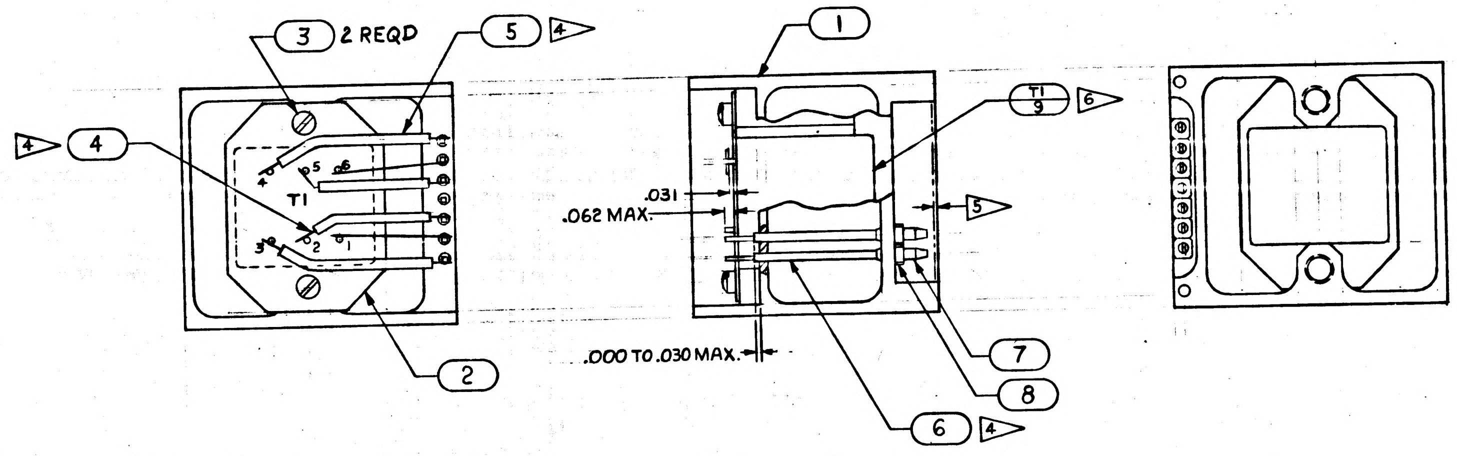
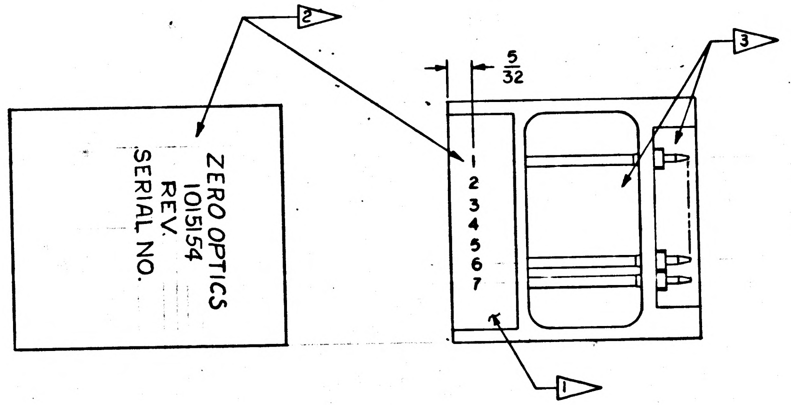
1015154 | B

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE PER TDRR. 01760	26 Jul 63	WK.





Ⓑ REPLACES REV. A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1▷ ENCAPSULATE MODULE PER ND1002002 BLACK POLYURETHANE FOAM

2▷ MARK CHARACTERS .080 HIGH, WHITE PER ND1002019, CENTRALIZE AS SHOWN

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND

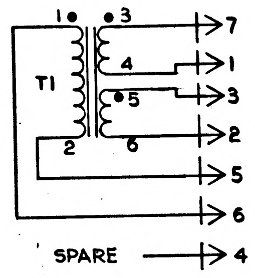
4▷ USE AS REQUIRED

5▷ ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY

6▷ TRANSFORMER TO BE CEMENTED IN PLACE PER ND1002009

WIRING STDS FOR WELDED UNITS PER ND1002003

ON ITEM 2, BROKEN PATHS INDICATE INSULATION SLEEVING



SCHEMATIC

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1010473	TRANSFORMER	9
7	1006775	INSULATOR, WRAPOST MALE MIN.	8
7	1006782-5	CONTACT, BLADE EDGE CONN.	7
AR	1006776-20	INSULATION SLEEVING	6
AR	1006776-21	INSULATION SLEEVING	5
AR	1006757-1	WIRE NICKEL RIBBON	4
2	AN500D-4-4	SCREW, PAN HEAD	3
1	1015166	WAFER BOARD	2
1	1015158	FRAME ASSY	1

LIST OF MATERIALS

NEXT ASSY	1007158
USED ON	
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.000 .005 / ±.00 .020 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN F. Akell DATE 6-21-63
CHECKED L.A. Plummer
APPROVAL R.L. Battalfor
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ZERO OPTICS
MODULE ASSEMBLY

CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015154
SCALE 2X | WT | SHEET 1 OF 1

1015154

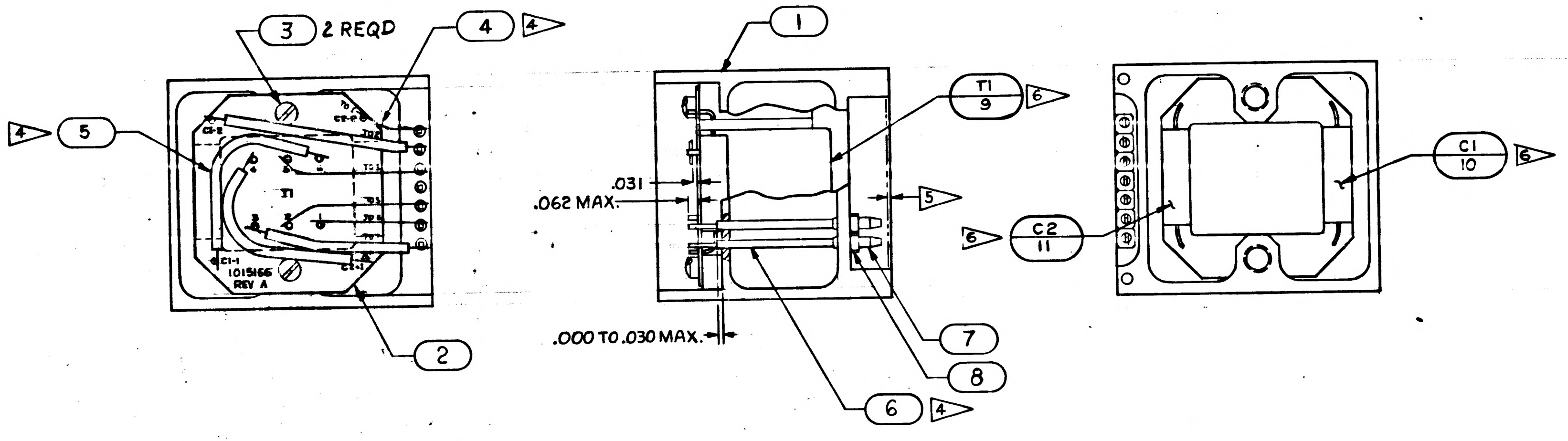
MASTER

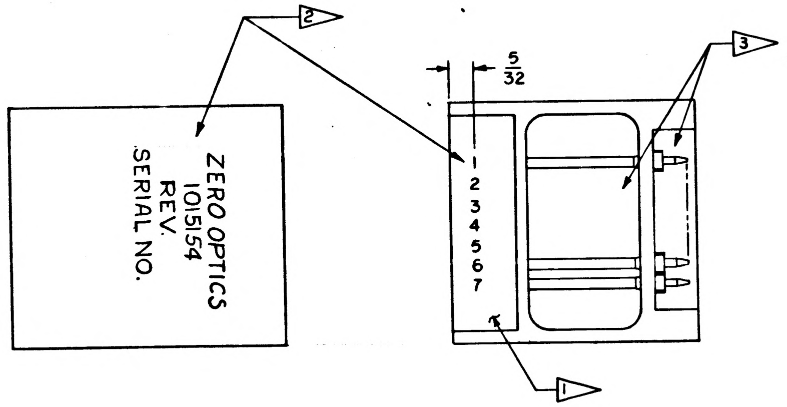
INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015154 D

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE PER TDRR 01760		WR.
C	REVISED PER TDRR 03004	9-5-63	WR.
D	REVISED PER TDRR 03005	9-5-63	WR



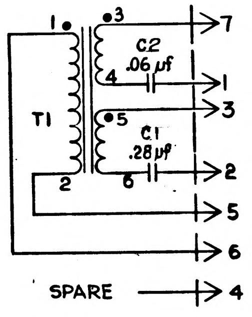


Ⓑ REPLACES REV. A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

- ▷1 ENCAPSULATE MODULE PER ND1002002 BLACK POLYURETHANE FOAM
- ▷2 MARK CHARACTERS .060-.100 HIGH WHITE PER ND1002019, CENTRALIZE AS SHOWN
- ▷3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND
- ▷4 USE AS REQUIRED
- ▷5 ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY
- ▷6 COMPONENTS TO BE CEMENTED IN PLACE PER ND1002009

ON ITEM 2, BROKEN PATHS INDICATE INSULATION SLEEVING



SCHEMATIC

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1010279-217	CAPACITOR	11
1	1010279-225	CAPACITOR	10
1	1010473	TRANSFORMER	9
7	1006775	INSULATOR, WRAPOST MALE MIN.	8
7	1006782-5	CONTACT, BLADE EDGE CONN.	7
AR	1006776-20	INSULATION SLEEVING	6
AR	1006776-21	INSULATION SLEEVING	5
AR	1006757-1	WIRE NICKEL RIBBON	4
2	AN500D-4-4	SCREW, PAN HEAD	3
1	1015166	WAFER BOARD	2
1	1015158	FRAME ASSY	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS — DECIMALS ± .000 ± .005, .00 ± .020 — ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN F. Akell DATE 6-21-63
CHECKED L.A. Plummer
APPROVAL R. L. Battalion
APPROVAL
NASA APPROVAL 9/5/63
MIT APPROVAL W. Kupfer 5 Sep 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ZERO OPTICS
MODULE ASSEMBLY

CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015154
SCALE 2X | WT | SHEET 1 OF 1

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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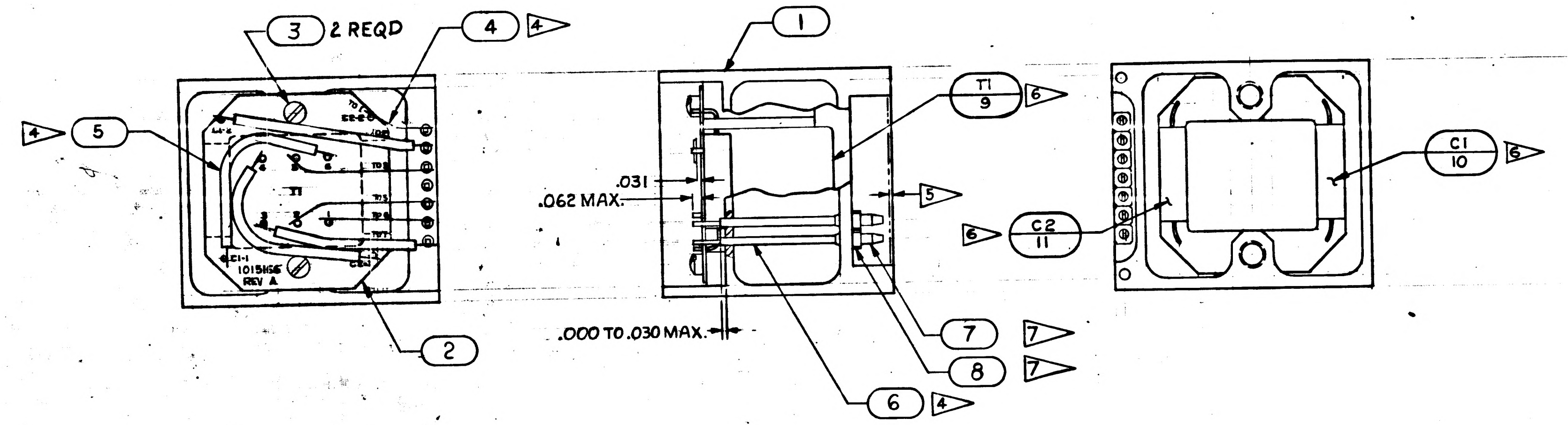
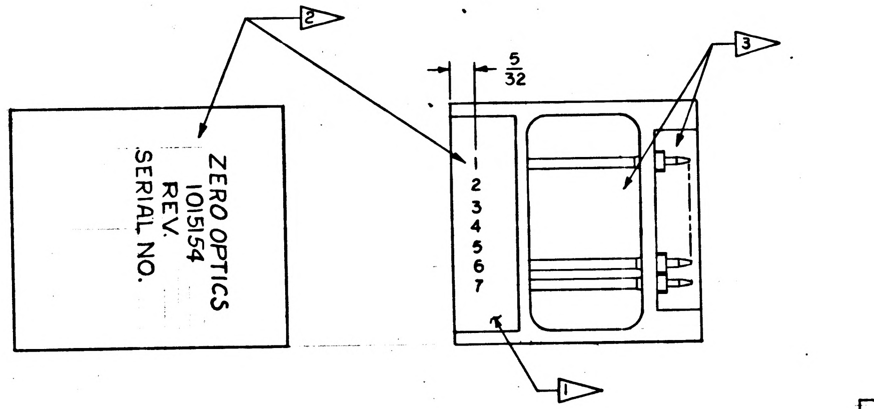
1015154 E

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE PER TDRR. 01760	[illegible] 63	WK.
C	REVISED PER TDRR 03004	9-5-63	WK.
D	REVISED PER TDRR 03005	9-5-63	WK
E	REVISED PER TDRR 04451	5 Nov 63	WK





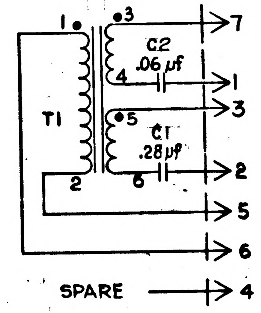
Ⓑ REPLACES REV. A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1. ENCAPSULATE MODULE PER ND1002002 BLACK POLYURETHANE FOAM
2. MARK CHARACTERS .060-.100 HIGH WHITE PER ND1002019, CENTRALIZE AS SHOWN
3. AREAS TO BE FREE OF ENCAPSULATING COMPOUND
4. USE AS REQUIRED
5. ENCAPSULATING COMPOUND TO BE .000 TO .015 BELOW FRAME PERIPHERY
6. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002004
7. ASSEMBLE PER ND 1002136

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

ON ITEM 2, BROKEN PATHS INDICATE INSULATION SLEEVING



SCHEMATIC

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1010279-217	CAPACITOR	11
1	1010279-225	CAPACITOR	10
1	1010473	TRANSFORMER	9
7	1006775	INSULATOR, WRAPOST MALE MIN.	8
7	1006782-5	CONTACT, BLADE EDGE CONN.	7
AR	1006776-20	INSULATION SLEEVING	6
AR	1006776-21	INSULATION SLEEVING	5
AR	1006757-1	WIRE NICKEL RIBBON	4
2	AN500D-4-4	SCREW, PAN HEAD	3
1	1015166	WAFER BOARD	2
1	1015158	FRAME ASSY	1

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .000 ±.005 ± 2°
.00 .020
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN G. Akell DATE 6-21-63
CHECKED L.A. Plummer
APPROVAL R.L. Battalion
APPROVAL
NASA APPROVAL 9/5/63
MIT APPROVAL W Kupfer 5 Sep 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ZERO OPTICS
MODULE ASSEMBLY

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015154
SCALE 2X
WT
SHEET 1 OF 1

1015154

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015154 F

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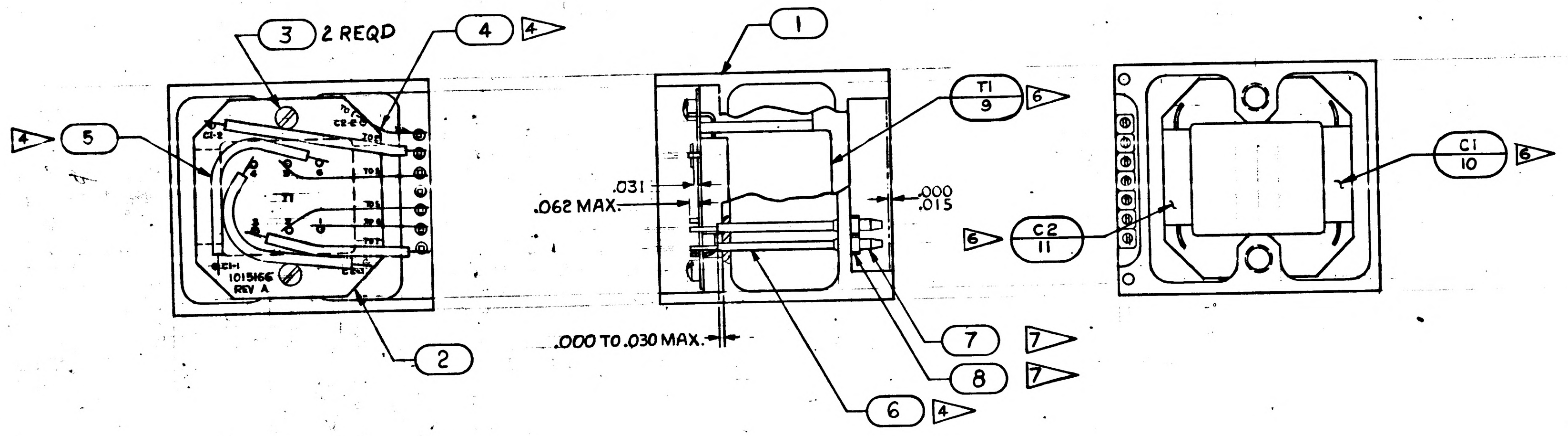
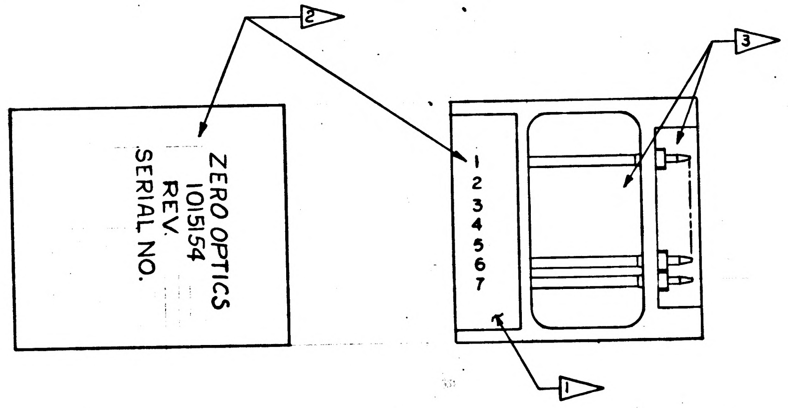
REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE PER TDRR. 01760	26 Jul 63	WR.
C	REVISED PER TDRR 03004	9-5-63	WR.
D	REVISED PER TDRR 03005	9-5-63	WR
E	REVISED PER TDRR 04451	5 Nov 63	JFW RPK WR
F	REVISED PER TDRR 05469	27 Dec 63	JFW RPK WR





Ⓑ REPLACES REV. A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM), UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2. MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3. AREAS TO BE FREE OF ENCAPSULATING COMPOUND

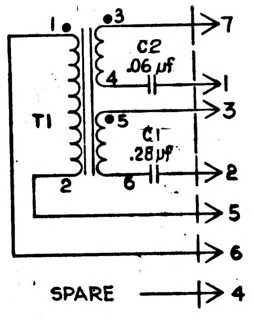
4. USE AS REQUIRED

6. COMPONENTS TO BE CEMENTED IN PLACE PER ND1002004

7. ASSEMBLE PER ND1002136

ALL WELDED CONNECTIONS TO BE MADE PER ND1002005

ON ITEM TWO BROKEN PATHS INDICATE SLEEVING



SCHEMATIC

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1010279 - 217	CAPACITOR	11
1	1010279 - 225	CAPACITOR	10
1	1010473	TRANSFORMER	9
7	1006775	INSULATOR, WRAPOST MALE MIN.	8
7	1006782-5	CONTACT, BLADE EDGE CONN.	7
AR	1006776-20	INSULATION SLEEVING	6
AR	1006776-21	INSULATION SLEEVING	5
AR	1006757-1	WIRE NICKEL RIBBON	4
2	AN500D-4-4	SCREW, PAN HEAD	3
1	1015166	WAFER BOARD	2
1	1015158	FRAME ASSY	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007158	
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX±.005 XX±.02 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN F Akell DATE 6-21-63
CHECKED L.A. Plummer
APPROVAL R.L. Battalion
APPROVAL
NASA APPROVAL 9/5/63
MIT APPROVAL W Kupfer 5 Sep 63

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HOUSTON, TEXAS

ZERO OPTICS
MODULE ASSEMBLY

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015154
SCALE 2X
WT
SHEET 1 OF 1

1015154

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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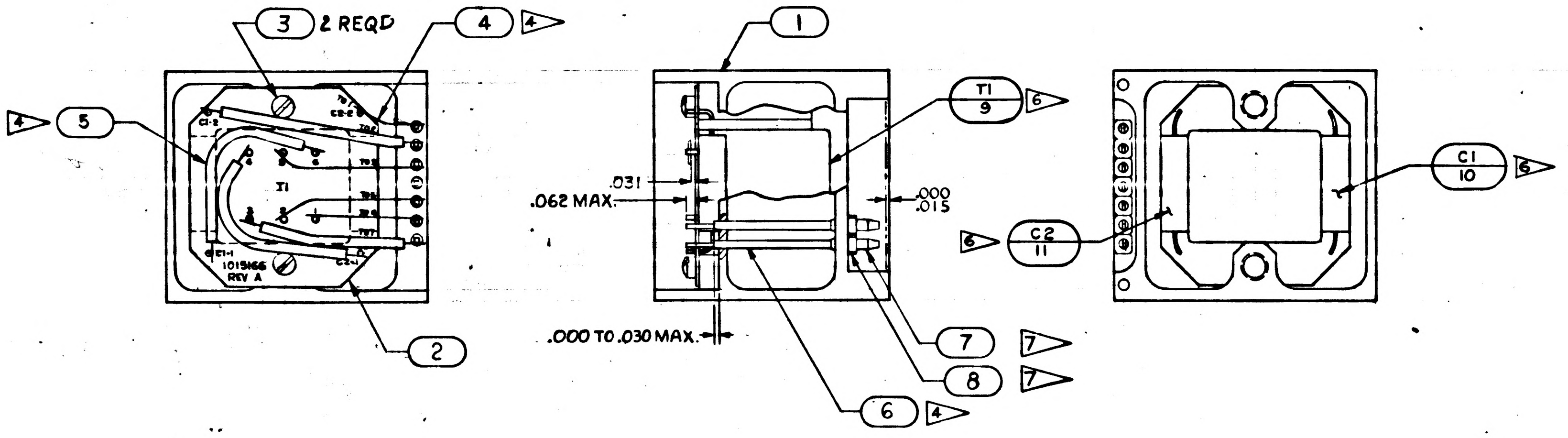
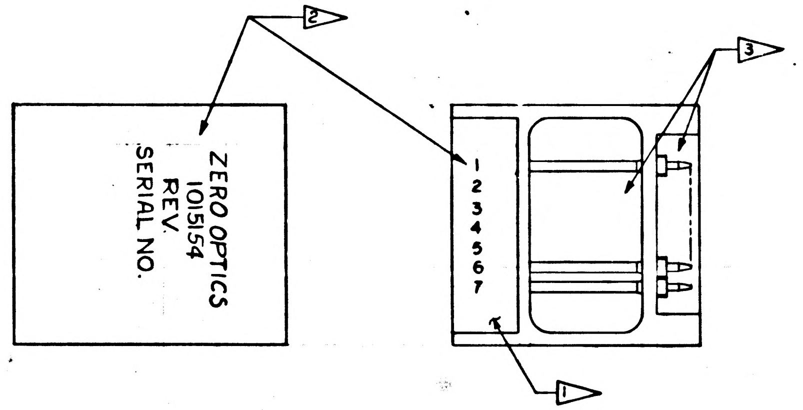
1015154 G

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH CHANGE PER TDRR 01760		WK.
C	REVISED PER TDRR 03004	9-5-63	WK
D	REVISED PER TDRR 03005	9-5-63	WK
E	REVISED PER TDRR 04451	5 Nov 63	WK
F	REVISED PER TDRR 05469	27 Dec 63	WK
G	REVISED PER TDRR 07285	6 APR 64	





Ⓑ REPLACES REV. A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1▷ ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM), UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2▷ MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND

4▷ USE AS REQUIRED

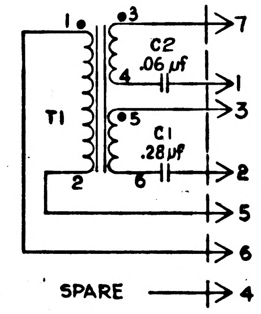
6▷ COMPONENTS TO BE CEMENTED IN PLACE PER ND1002004

7▷ ASSEMBLE PER ND1002136

ALL WELDED CONNECTIONS TO BE MADE PER ND1002005

ON ITEM TWO BROKEN PATHS INDICATE SLEEVING

PROCURE PER PS1015154



SCHEMATIC

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1010279-217	CAPACITOR	11
1	1010279-225	CAPACITOR	10
1	1010473	TRANSFORMER	9
7	1006775	INSULATOR, WRAPOST MALE MIN.	8
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AR	1006776-20	INSULATION SLEEVING	6
AR	1006776-21	INSULATION SLEEVING	5
AR	1006757-1	WIRE NICKEL RIBBON	4
2	AN500D-4-4	SCREW, PAN HEAD	3
1	1015166	WAFER BOARD	2
1	1015158	FRAME ASSY	1

LIST OF MATERIALS

1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX ± .005 XX ± .02 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG NO. CONTRACT NAS-9-497
DRAWN F. Akell DATE 6-21-63
CHECKED L.A. Plummer
APPROVAL K. L. Battaglini
APPROVAL
NASA APPROVAL [illegible] 9/13/63
MIT APPROVAL W Kupfer 5 Sep 63

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HOUSTON, TEXAS

ZERO OPTICS
MODULE ASSEMBLY

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015154
SCALE 2X
WT
SHEET 1 OF 1

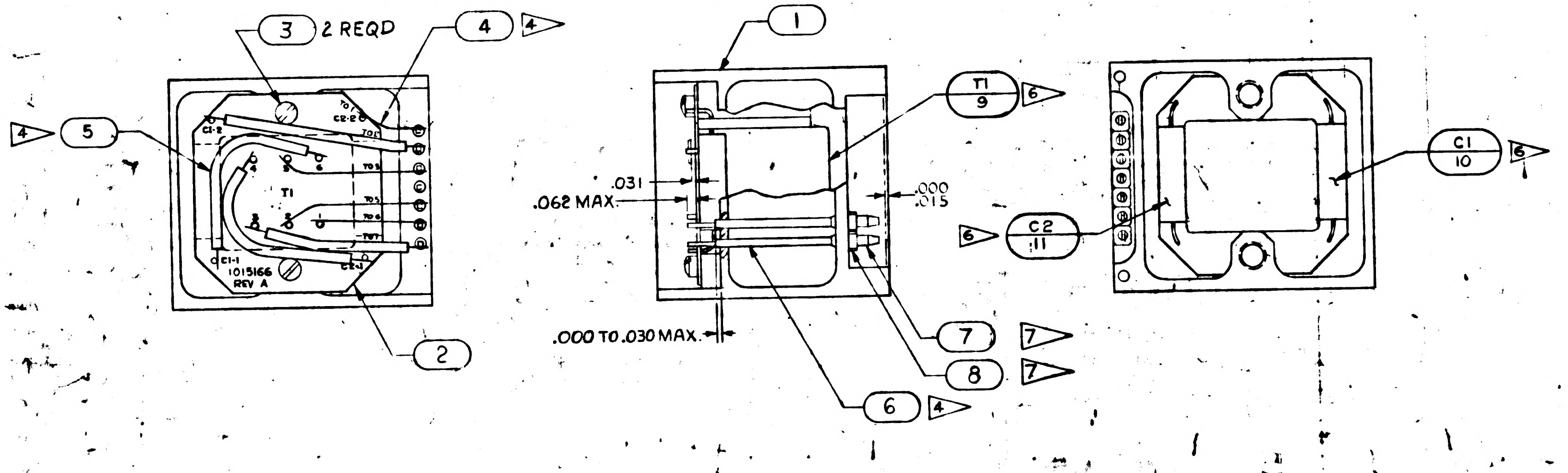
1015154 G

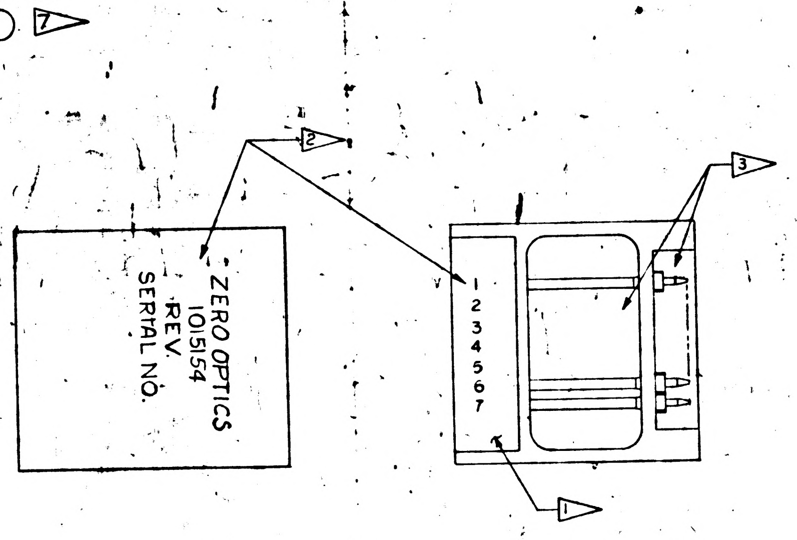
1015154

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS

	SYM	DESCRIPTION	DATE	APPROVAL
Ⓜ	B	REPLACES REV. A WITH CHANGE PER TDRR 01760	[illegible]	WK.
	C	REVISED PER TDRR 03004	9-5-63	WK
Ⓜ	D	REVISED PER TDRR 03005	9-5-63	WK
Ⓜ	E	REVISED PER TDRR 04451	5 NOV 63	WK
Ⓜ	F	REVISED PER TDRR 05469	[illegible]	WK
Ⓜ	G	REVISED PER TDRR 07285	6 APR 64	[illegible]
	H	REVISED PER TDRR 19427	1 JUN 65	JHR EF





Ⓑ REPLACES REV. A WITH CHANGE

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1▷ ENCAPSULATE MODULE PER ND1002[illegible] (BLACK POLYURETHANE FOAM), UNLESS OTHERWISE SPECIFIED PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2▷ MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND

4▷ USE AS REQUIRED

6▷ COMPONENTS TO BE CEMENTED IN PLACE PER ND1002004

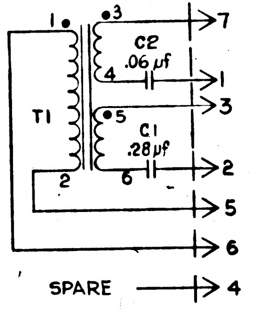
7▷ ASSEMBLE PER ND1002136

ALL WELDED CONNECTIONS TO BE MADE PER ND1002005

ON ITEM TWO BROKEN PATHS INDICATE SLEEVING

PROCURE PER PS 1015154

CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND 1002187 TYPE II.



SCHEMATIC

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
1	1010279 - 217	CAPACITOR	11
1	1010279 - 225	CAPACITOR	10
1	1010473	TRANSFORMER	9
7	1006775	INSULATOR, WRAPOST MALE, MIN.	8
7	1006782-5	CONTACT, BLADE EDGE CONN.	7
AR	1006776-20	INSULATION SLEEVING	6
AR	1006776-21	INSULATION SLEEVING	5
AR	1006757-1	WIRE NICKEL RIBBON	4
2	AN500D-4-4	SCREW, PAN HEAD	3
1	1015166	WAFER BOARD	2
1	1015158	FRAME ASSY	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007158	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±
DECIMALS XXX ± .005 XX ± .02
ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT NAS 9-497
DRAWN G. Akell DATE 6-21-63
CHECKED L.A. Plummer
APPROVAL K. L. Battalyn
APPROVAL
NASA APPROVAL [illegible]
MIT APPROVAL W. Kupfer 5/3/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ZERO OPTICS
MODULE ASSEMBLY

CODE IDENT NO 80230
SIZE D
NASA DRAWING NO. 1015154
SCALE 2X
WT
SHEET 1 OF 1

1015154

REVISIONS TDRR 01375			
SYM	DESCRIPTION	DATE	APPROVAL

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PART NO	DESCRIPTION	REQD
1010473	TRANSFORMER	1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

MASTER

1007158	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LE NANDOWSKI DATE 5-27-63
CHECKED R. L. Battalfan
APPROVAL R. L. Battalfan
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL 29 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TRANSFORMER ASSY
0° OPTICS

CODE IDENT NO. | SIZE C | NASA DRAWING NO. 1015154
SCALE | WT | SHEET OF

1015154

INCHES
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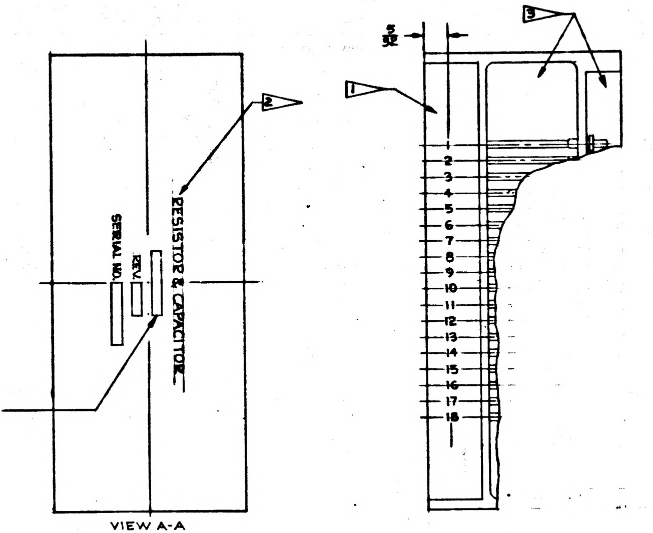
PHOTOGRAPHIC SCALE ONLY

1015155	A

REVISIONS 01762			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762		



RESISTOR & CAPACITOR
REV.
SERIAL NO.
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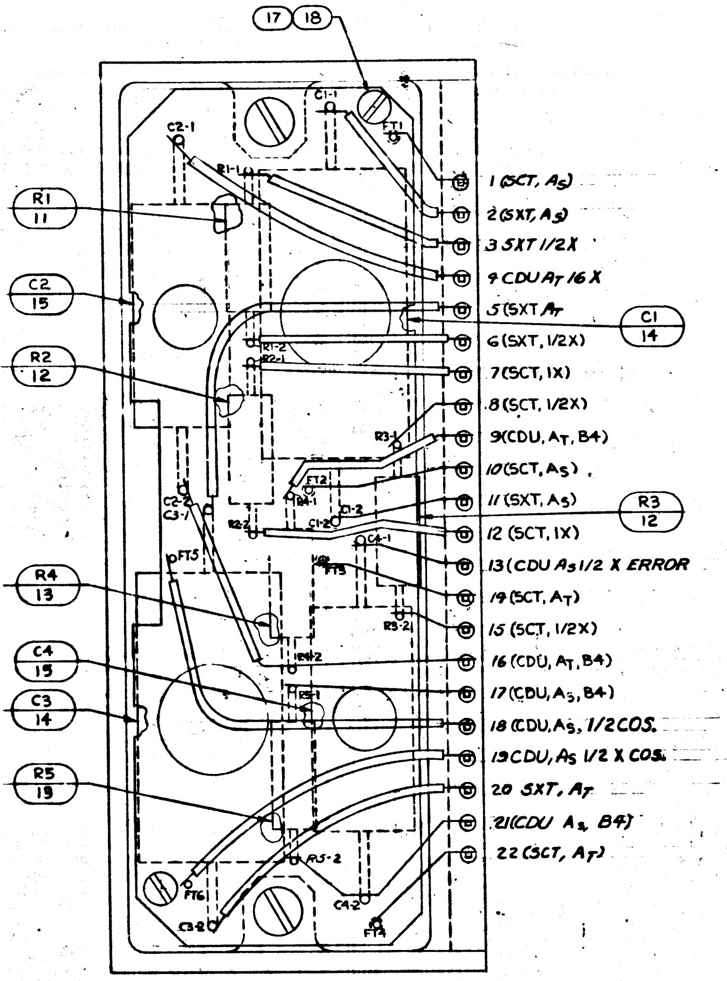
VIEW A-A
SCALE 2:1



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C2-1
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R2 12
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C3-1
R2-2
C1-2
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R4 13
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C4 15
C3 14
R5 19
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C3-2
R5-2
C4-2
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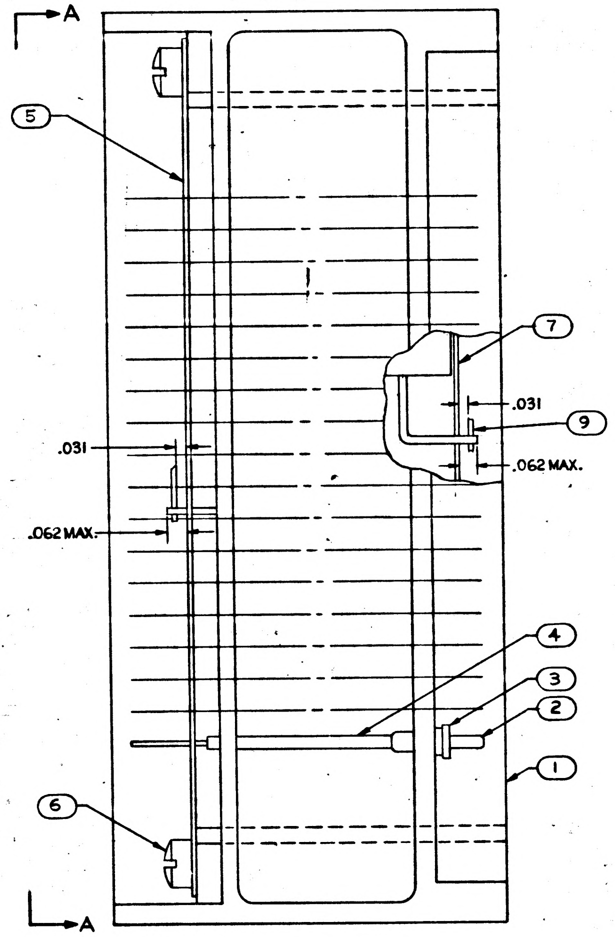
C1 14
R3 12
1 (SCT, A_S)
2 (SXT, A_S)
3 SXT 1/2X
4 CDU A_T 16 X
5 (SXT A_T
6 (SXT, 1/2X)
7 (SCT, 1X)
8 (SCT, 1/2X)
9 (CDU, A_T, B4)
10 (SCT, A_S)
11 (SXT, A_S)
12 (SCT, 1X)
13 (CDU A_S 1/2 X ERROR
14 (SCT, A_T)
15 (SCT, 1/2X)
16 (CDU, A_T, B4)
17 (CDU, A_S, B4)
18 (CDU, A_S, 1/2 COS.
19 CDU, A_S 1/2 X COS.
20 SXT, A_T
21 (CDU A_S, B4)
22 (SCT, A_T)



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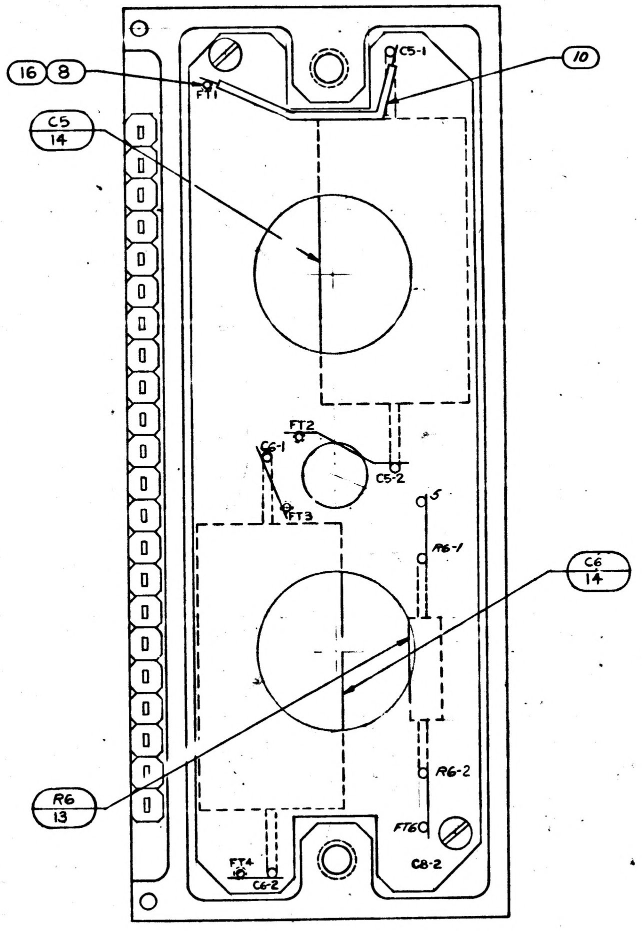

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FT2
C6-1
C5-2
FT3
R6-1
C6 14
R6-2
R6 13
FT6
FT4
C6-2
C8-2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND 1002005.
WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND 1002003.

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

2 MARK CHARACTERS .080 HIGH WHITE PER ND 1002019 CENTERED.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

DRAWING FOR REFERENCE:
1015161 SCHEMATIC DIAGRAM, ELECTRICAL.

FT INDICATES FEED THRU WIRE.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
4	AN500D-2-4	SCREW, PAN HD.	18
2	1015135-018	SPACER	17
AR	1006776-22	INSULATION SLEEVING	16
1	1010264-28	CAPACITOR	15
4	1010264-34	CAPACITOR	14
3	1010364-443	RESISTOR	13
2	1010364-739	RESISTOR	12
1	1010364-635	RESISTOR	11
AR	1006776-21	INSULATION SLEEVING	10
AR	1006757-1	.010 × .020 NICKEL RIBBON	9
AR	1006787-2	WIRE, FEED THRU	8
1	1015165	WAFER BOARD, LOWER	7
2	AN500D-4-4	SCREW, PAN HD.	6
1	1015164	WAFER BOARD, UPPER	5
AR	1006776-20	INSULATION SLEEVING	4
18	1006755	INSULATOR, WRAPOST-MALE MINIATURE	3
18	1006782-5	CONTACT, WRAPOST-MALE MINIATURE	2
1	1015163	FRAME	1

LIST OF MATERIALS

1015155 A

1007159		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE MASS DWG. NO. CONTRACT	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
NEXT ASSY	USED ON	DO NOT SCALE THIS DRAWING	DRAWN R. EMERY DATE 6-17-63 CHECKED APPROVAL R. L. Battey APPROVAL	MODULE ASSEMBLY RESISTOR & CAPACITOR	
APPLICATION		MATERIAL HEAT TREATMENT FINAL FINISH	NASA APPROVAL MIT APPROVAL 26 June 63	CODE IDENT NO.	SIZE E NASA DRAWING NO. 1015155
				SCALE 4:1	WT SHEET OF

MASTER

INCHES
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PHOTOGRAPHIC SCALE ONLY

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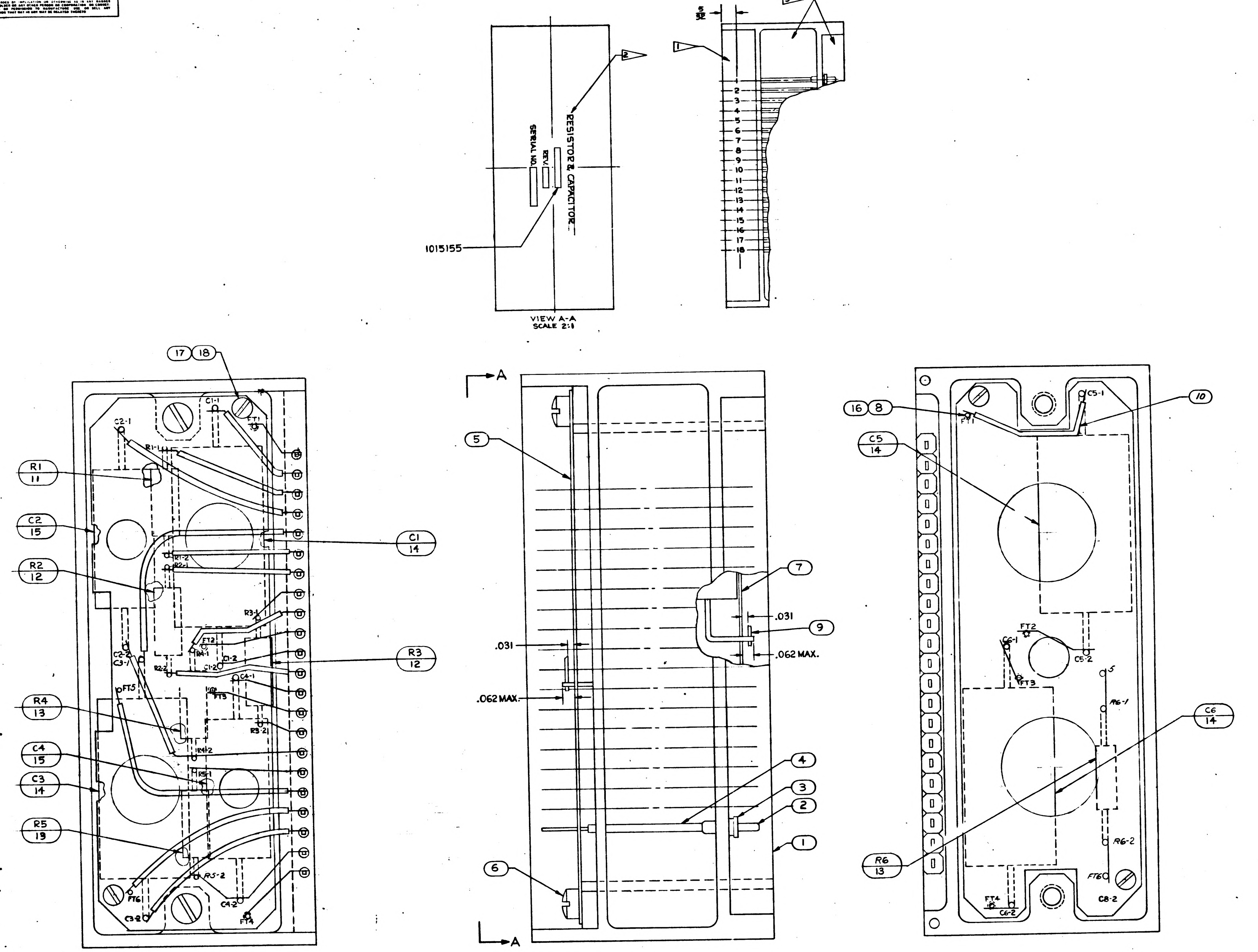
1015155 B

REVISIONS 01762			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762	8/21/63	
B	REVISED PER TDRR 03009	9-5-63	


RESISTOR & CAPACITOR
REV.
SERIAL NO.
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R6 13
R6-2
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FT4
C6-2
C8-2

VIEW A-A
SCALE 2:1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

2 MARK CHARACTERS .060/.100 HIGH WHITE PER ND1002019 CENTERED

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

DRAWING FOR REFERENCE:
1015161 SCHEMATIC DIAGRAM, ELECTRICAL.

FT INDICATES FEED THRU WIRE.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
4	AN500D-2-4	SCREW, PAN HD.	18
2	1015135-018	SPACER	17
AR	1006776-22	INSULATION SLEEVING	16
1	1010264-28	CAPACITOR	15
4	1010264-34	CAPACITOR	14
3	1010364-443	RESISTOR	13
2	1010364-739	RESISTOR	12
1	1010364-635	RESISTOR	11
AR	1006776-21	INSULATION SLEEVING	10
AR	1006757-1	.010×.020 NICKEL RIBBON	9
AR	1006787-2	WIRE, FEED THRU	8
1	1015165	WAFER BOARD, LOWER	7
2	AN500D-4-4	SCREW, PAN HD.	6
1	1015164	WAFER BOARD, UPPER	5
AR	1006776-20	INSULATION SLEEVING	4
18	1006775	INSULATOR, WRAPOST-MALE MINIATURE	3
18	1006782-5	CONTACT, WRAPOST-MALE MINIATURE	2
1	1015163	FRAME	1

LIST OF MATERIALS

1007159		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS DWG NO CONTRACT	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
NEXT ASSY	USED ON	MATERIAL	DRAWN R. EMERY DATE 6-17-63 CHECKED APPROVAL R. L. Battaglia APPROVAL	MODULE ASSEMBLY RESISTOR & CAPACITOR
APPLICATION		HEAT TREATMENT FINAL FINISH	NASA APPROVAL MIT APPROVAL 26 Jun 63	CODE IDENT NO. SIZE E NASA DRAWING NO. 1015155 SCALE 4:1 WT SHEET OF

MASTER

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

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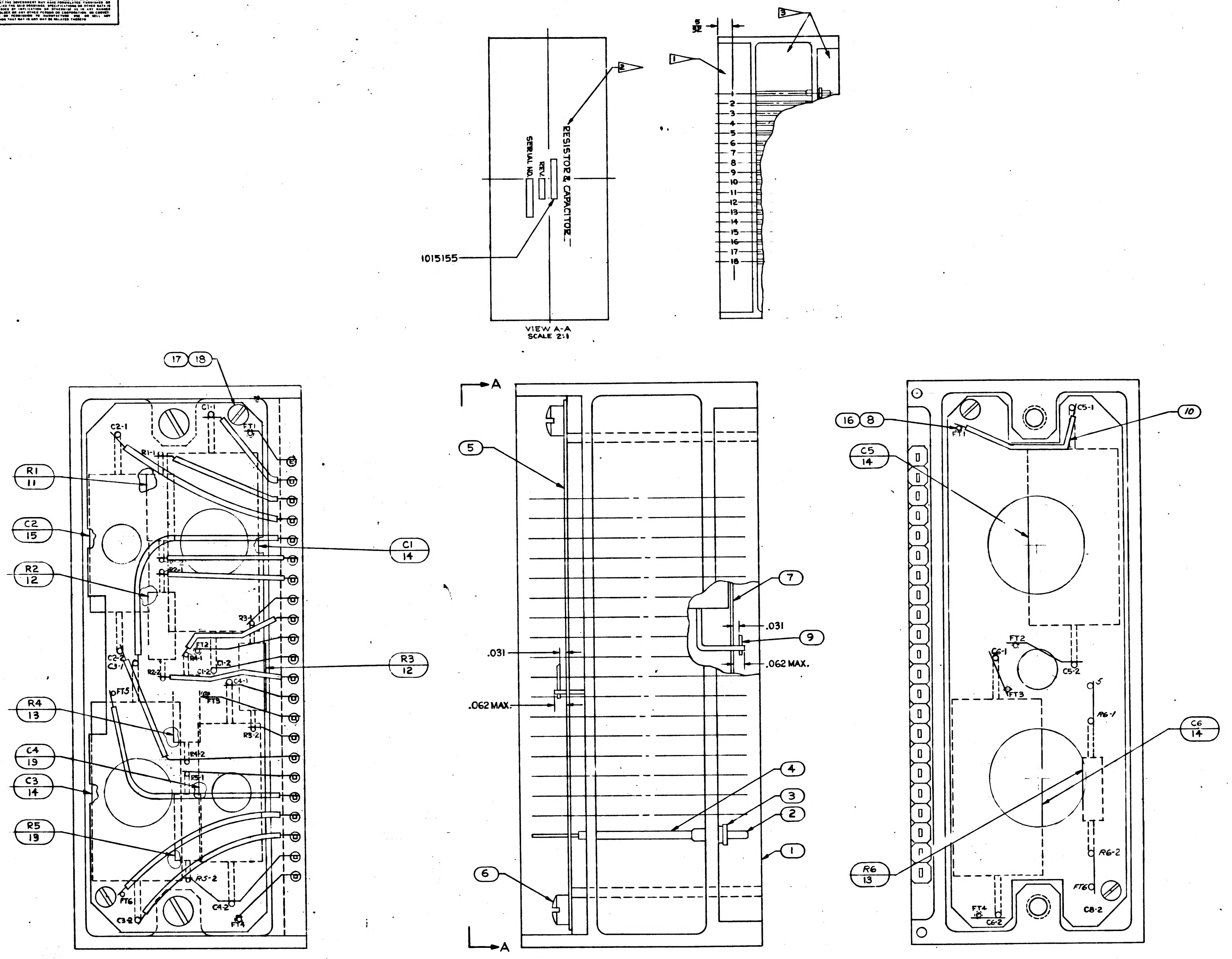
1015155 B

REVISIONS 01762			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762	8/26/63	
B	REVISED PER TDRR 03009	9-5-63	
C	REVISED PER TDRR 03093	9-11-63	WK



5/32
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RESISTOR & CAPACITOR
REV.
SERIAL NO.
1015155
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VIEW A-A
SCALE 2:1
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R1 11
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R3 12
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C6-1
C6-2
C6 14
R6-1
R6-2
R6 13
C8-2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

2 MARK CHARACTERS .060/.100 HIGH WHITE PER ND1002019 CENTERED

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

DRAWING FOR REFERENCE:
1015161 SCHEMATIC DIAGRAM, ELECTRICAL.

FT INDICATES FEED THRU WIRE.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
1	1010264 - 19	CAPACITOR	19
4	AN500D-2-4	SCREW, PAN HD.	18
2	1015135-018	SPACER	17
AR	1006776-22	INSULATION SLEEVING	16
1	1010264-28	CAPACITOR	15
4	1010264-34	CAPACITOR	14
3	1010364-443	RESISTOR	13
2	1010364-739	RESISTOR	12
1	1010364-635	RESISTOR	11
AR	1006776-21	INSULATION SLEEVING	10
AR	1006757-1	.010×.020 NICKEL RIBBON	9
AR	1006787-2	WIRE, FEED THRU	8
1	1015165	WAFER BOARD, LOWER	7
2	AN500D-4-4	SCREW, PAN HD.	6
1	1015164	WAFER BOARD, UPPER	5
AR	1006776-20	INSULATION SLEEVING	4
18	1006775	INSULATOR, WRAPOST-MALE MINIATURE	3
18	1006782-5	CONTACT, WRAPOST-MALE MINIATURE	2
1	1015163	FRAME	1

LIST OF MATERIALS

1007159	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT
DRAWN R. EMERY DATE 6-17-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY RESISTOR & CAPACITOR

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015155
SCALE 4:1
WT
SHEET OF

1015155 B

MASTER

INCHES
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PHOTOGRAPHIC SCALE ONLY

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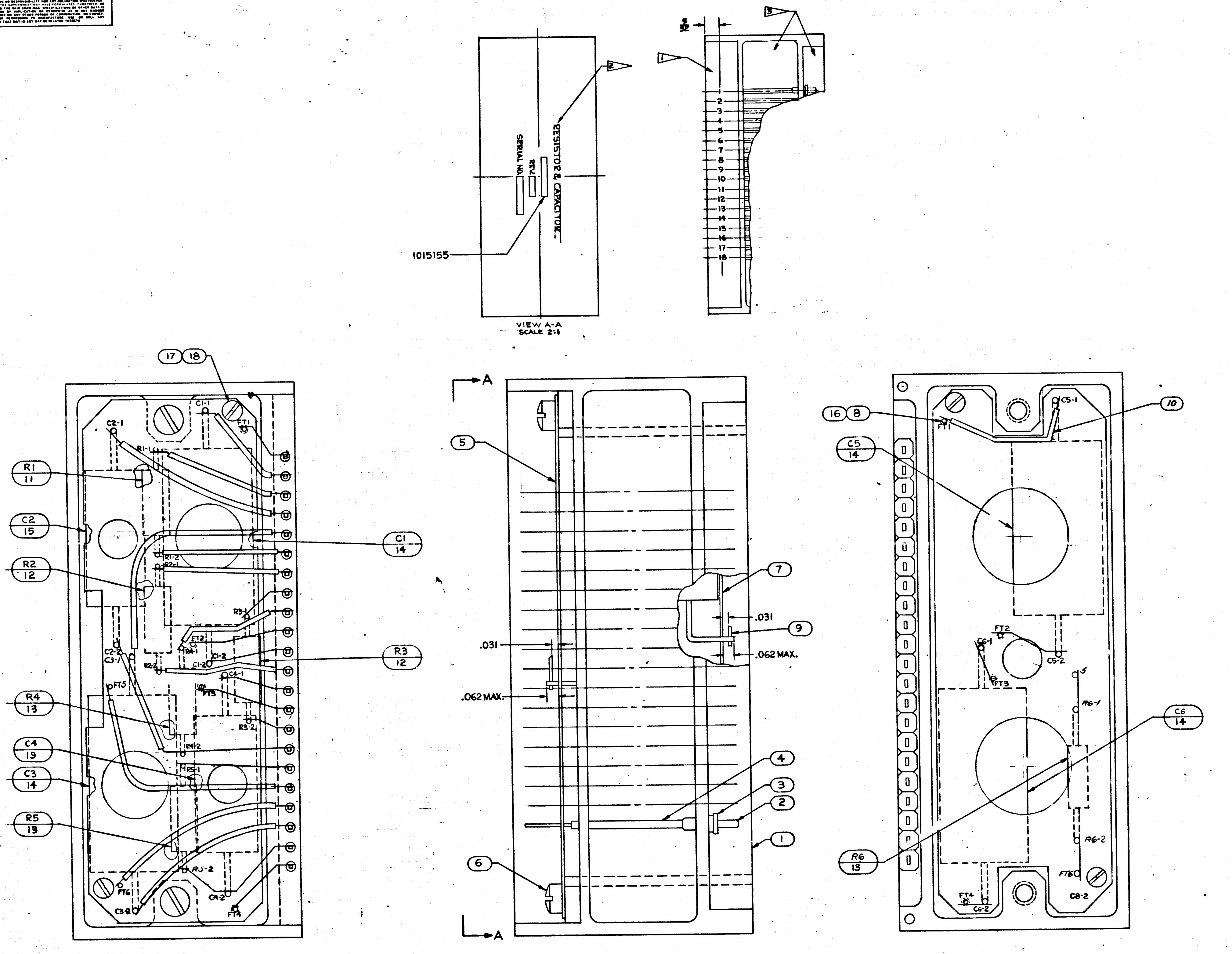
REVISIONS 01762			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762	8/26/63	
B	REVISED PER TDRR 03009	9-5-63	
C	REVISED PER TDRR 03093	9-11-63	WK
D	REVISED PER TDRR 04196	10-23-63	WR


VIEW A-A
SCALE 2:1
RESISTOR & CAPACITOR
REV.
SERIAL NO.
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FT3
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FT6
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INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1. ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.
2. MARK CHARACTERS .060/.100 HIGH WHITE PER ND1002019 CENTERED
3. AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

DRAWING FOR REFERENCE:
1015161 SCHEMATIC DIAGRAM, ELECTRICAL.

FT INDICATES FEED THRU WIRE.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1010264 - 19	CAPACITOR	19
4	AN500D-2-4	SCREW, PAN HD.	18
2	1015135-018	SPACER	17
AR	1006776-22	INSULATION SLEEVING	16
1	1010264-28	CAPACITOR	15
4	1010264-34	CAPACITOR	14
3	1010364-443	RESISTOR	13
2	1010364-739	RESISTOR	12
1	1010364-635	RESISTOR	11
AR	1006776-21	INSULATION SLEEVING	10
AR	1006757-1	.010×.020 NICKEL RIBBON	9
AR	1006787-2	WIRE, FEED THRU	8
1	1015165	WAFER BOARD, LOWER	7
2	AN500D-4-4	SCREW, PAN HD.	6
1	1015164	WAFER BOARD, UPPER	5
AR	1006776-20	INSULATION SLEEVING	4
22	1006775	INSULATOR, WRAPOST-MALE MINIATURE	3
22	1006782-5	CONTACT, WRAPOST-MALE MINIATURE	2
1	1015163	FRAME	1

LIST OF MATERIALS

1007159	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG NO. CONTRACT
DRAWN R. EMERY DATE 6-17-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY RESISTOR & CAPACITOR

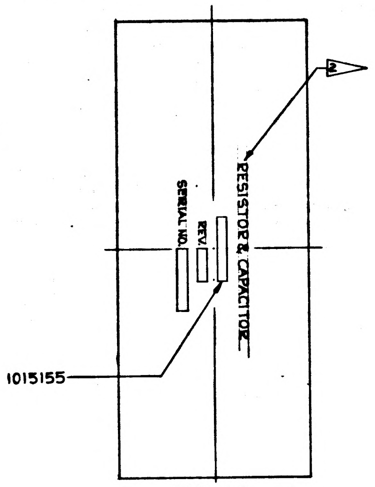
CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1015155
SCALE 4:1 | WT | SHEET OF

MASTER

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

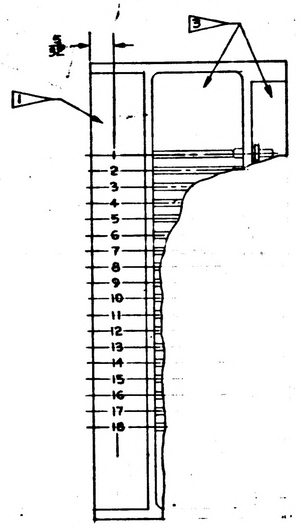
1015155 E

REVISIONS 01762			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762	[illegible]	[illegible]
B	REVISED PER TDRR 03009	9-5-63	[illegible]
C	REVISED PER TDRR 03093	9-11-63	WK
D	REVISED PER TDRR 04196	10-23-63	WK
E	REVISED PER TDRR 04450	5 Nov 63	WK



2
RESISTOR & CAPACITOR
REV.
SERIAL NO.
1015155

VIEW A-A
SCALE 2:1



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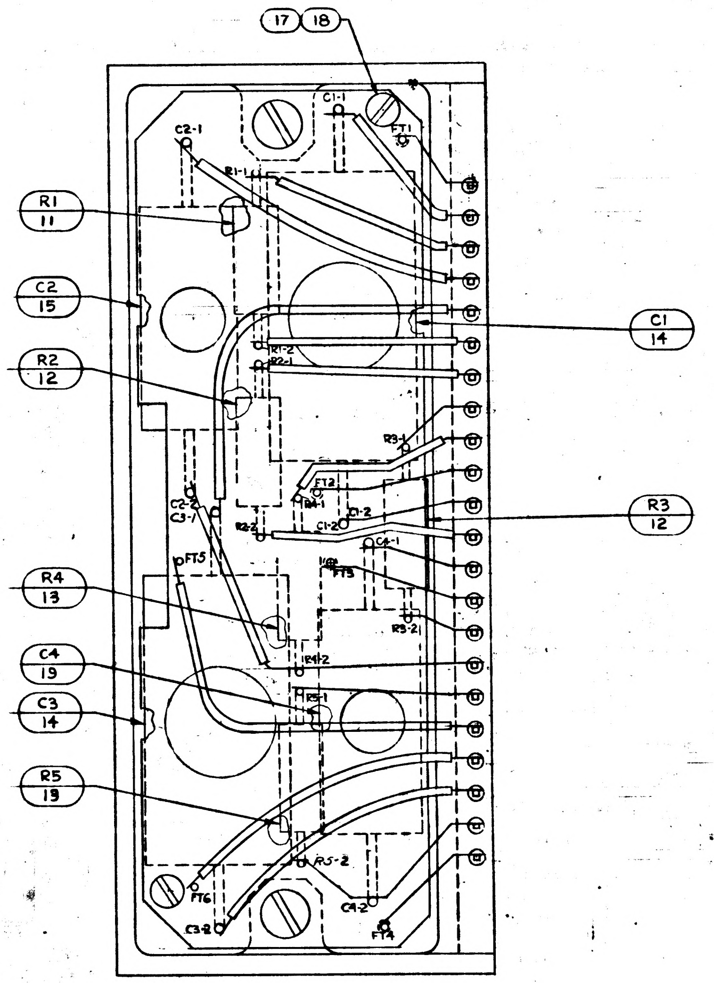

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C2-2
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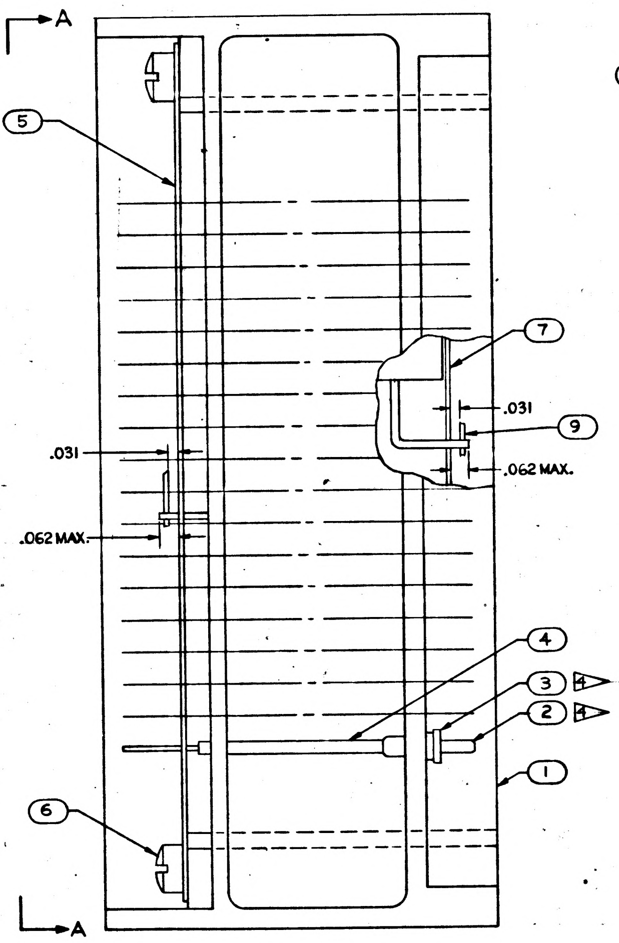
FT4



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.062 MAX.
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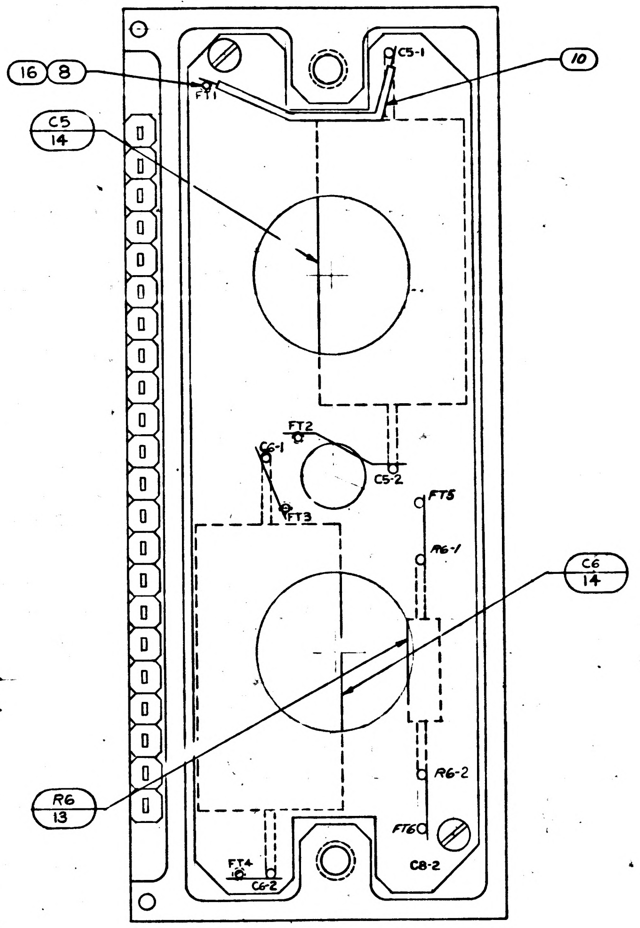

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C5
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FT2
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FT3
C5-2
FT5
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R6
13
R6-2
FT6
FT4
C6-2
C8-2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005
RESISTORS AND CAPACITORS TO BE CEMENTED IN PLACE PER ND 1002004

1▷ ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM). ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

2▷ MARK CHARACTERS .060/.100 HIGH WHITE PER ND1002019 CENTERED

3▷ AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

DRAWING FOR REFERENCE:
1015161 SCHEMATIC DIAGRAM, ELECTRICAL.

FT INDICATES FEED THRU WIRE.

4▷ ASSEMBLE PER ND 1002136

AR DENOTES AS REQUIRED

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
1	1010264 - 19	CAPACITOR	19
4	AN500D-2-4	SCREW, PAN HD.	18
2	1015135-018	SPACER	17
AR	1006776-22	INSULATION SLEEVING	16
1	1010264-28	CAPACITOR	15
4	1010264-34	CAPACITOR	14
3	1010364-443	RESISTOR	13
2	1010364-739	RESISTOR	12
1	1010364-635	RESISTOR	11
AR	1006776-21	INSULATION SLEEVING	10
AR	1006757-1	.010×.020 NICKEL RIBBON	9
AR	1006787-2	WIRE, FEED THRU	8
1	1015165	WAFER BOARD, LOWER	7
2	AN500D-4-4	SCREW, PAN HD.	6
1	1015164	WAFER BOARD, UPPER	5
AR	1006776-20	INSULATION SLEEVING	4
22	1006775	INSULATOR, WRAPOST-MALE MINIATURE	3
22	1006782-5	CONTACT, WRAPOST-MALE MINIATURE	2
1	1015163	FRAME	1

LIST OF MATERIALS

1015155 E

1007159	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN R. EMERY DATE 6-17-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY RESISTOR & CAPACITOR

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015155
SCALE 4:1
WT
SHEET OF

MASTER

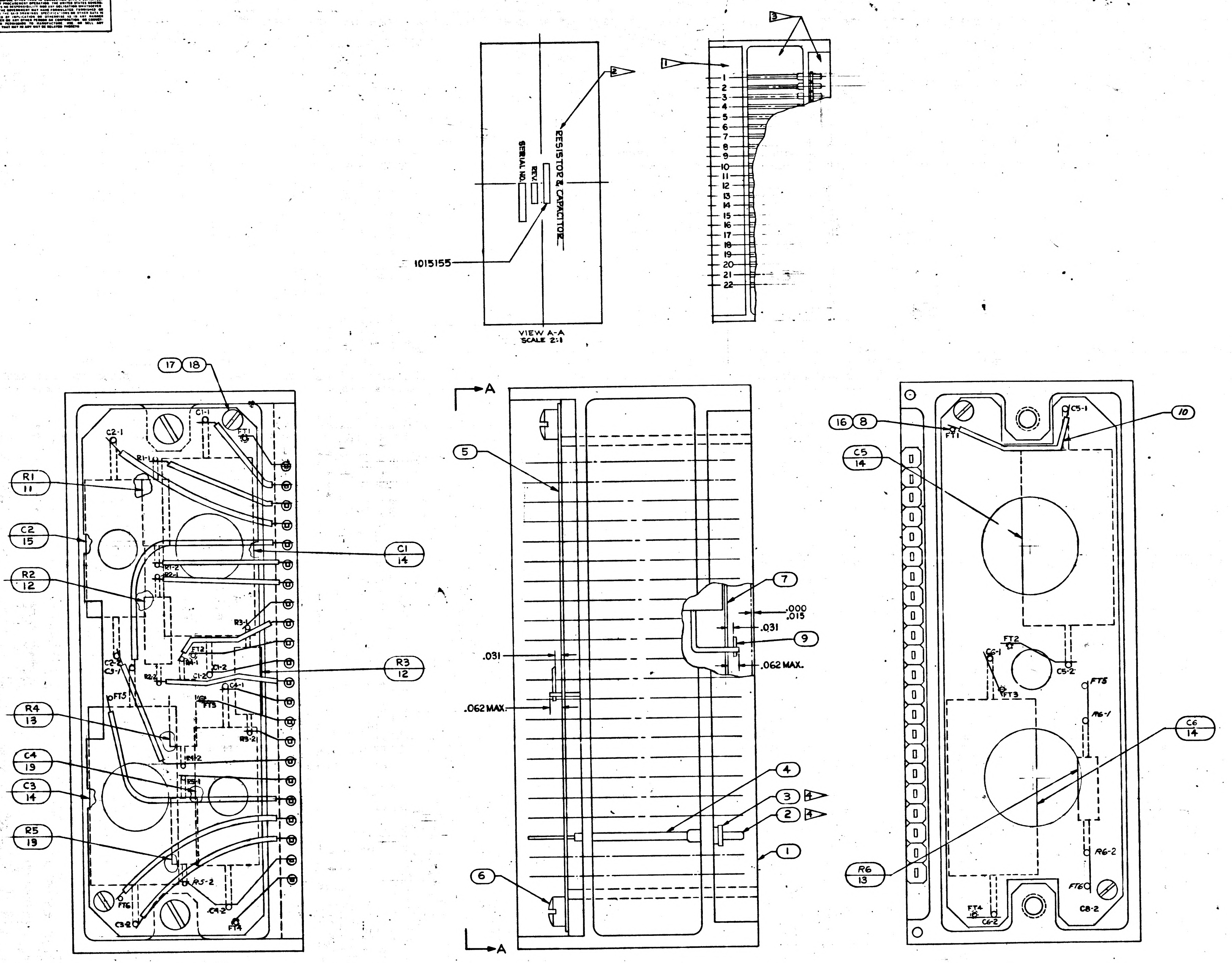
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015155 F

REVISIONS 01762

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762	8/26/63	
B	REVISED PER TDRR 03009	9-5-63	
C	REVISED PER TDRR 03093	9-11-63	WK
D	REVISED PER TDRR 04196	10-23-63	WK
E	REVISED PER TDRR 04450	5 Nov 63	WK
F	REVISED PER TDRR 05440	12-27-63	NK



INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

RESISTORS AND CAPACITORS TO BE CEMENTED IN PLACE PER ND 1002004

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM).

UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

DRAWING FOR REFERENCE:
1015161 SCHEMATIC DIAGRAM ELECTRICAL

FT INDICATES FEED THRU WIRE.

AR DENOTES AS REQUIRED.

4 ASSEMBLE PER ND 1002136.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1010264 - 19	CAPACITOR	19
4	AN500D-2-4	SCREW, PAN HD.	18
2	1015135-018	SPACER	17
AR	1006776-22	INSULATION SLEEVING	16
1	1010264-28	CAPACITOR	15
4	1010264-34	CAPACITOR	14
3	1010364-443	RESISTOR	13
2	1010364-739	RESISTOR	12
1	1010364-635	RESISTOR	11
AR	1006776-21	INSULATION SLEEVING	10
AR	1006757-1	.010×.020 NICKEL RIBBON	9
AR	1006787-2	WIRE, FEED THRU	8
1	1015165	WAFER BOARD, LOWER	7
2	AN500D-4-4	SCREW, PAN HD.	6
1	1015164	WAFER BOARD, UPPER	5
AR	1006776-20	INSULATION SLEEVING	4
22	1006775	INSULATOR, WRAPOST-MALE MINIATURE	3
22	1006782-5	CONTACT, WRAPOST-MALE MINIATURE	2
1	1015163.	FRAME	1

LIST OF MATERIALS

1015155 F

MASTER

NEXT ASSY	USED ON
1007159	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN R. EMERY DATE 6-17-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

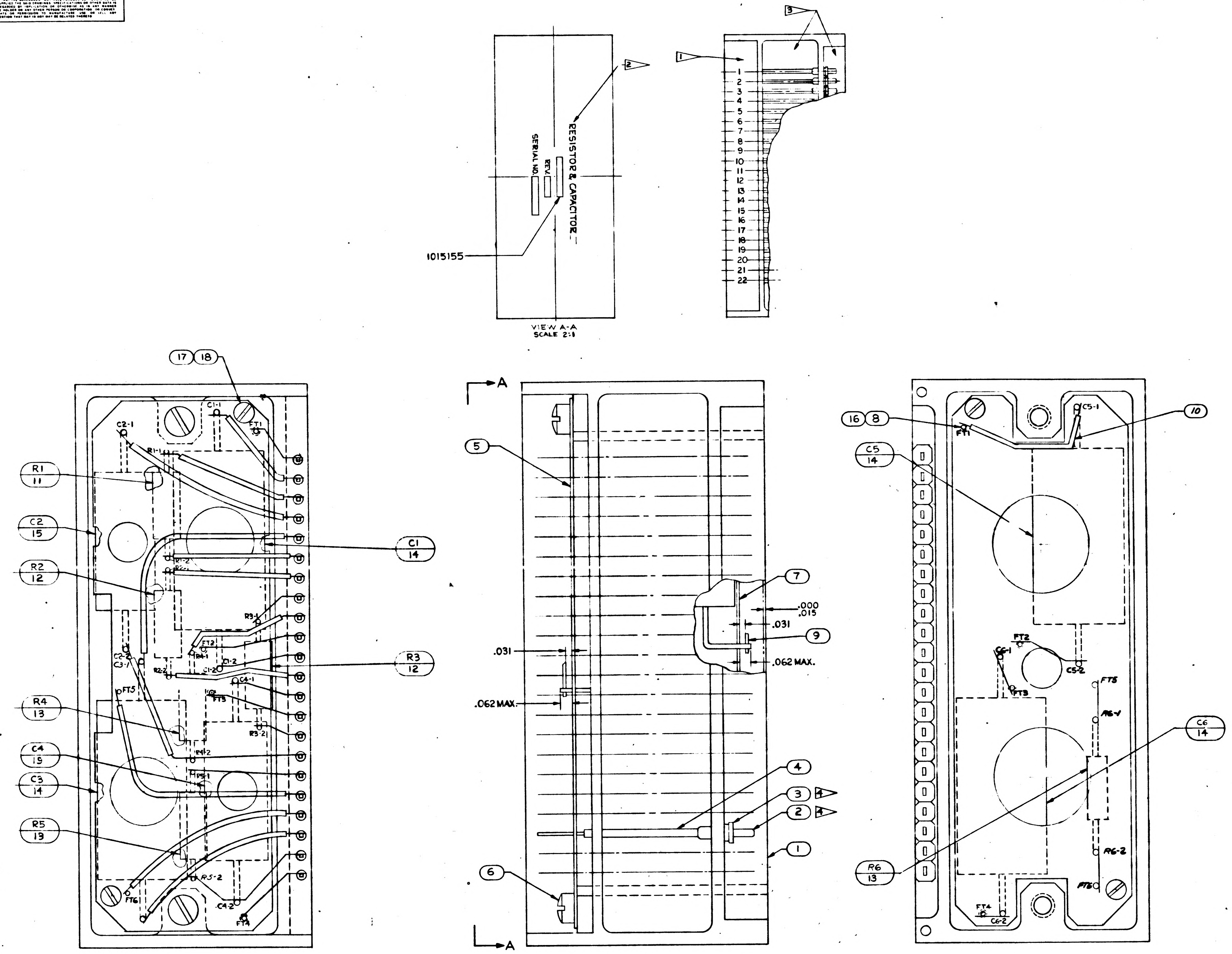
MODULE ASSEMBLY RESISTOR & CAPACITOR

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015155
SCALE 4:1
WT
SHEET 1 OF 1

INCHES
PHOTOGRAPHIC SCALE ONLY

1015155 G

SYM	REVISIONS 01762 DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762	8 JUL 63	JM
B	REVISED PER TDRR 03009	9-5-63	[illegible]
C	REVISED PER TDRR 03093	9-11-63	WK
D	REVISED PER TDRR 04196	10-25-63	WK
E	REVISED PER TDRR 04450	5 NOV 63	WK
F	REVISED PER TDRR 05440	12-27-63	NK
G	REVISED PER TDRR 07182	8 APR 64	[illegible]



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RESISTOR & CAPACITOR
REV.
SERIAL NO.
1015155
VIEW A-A
SCALE 2:1
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FT2
C6-1
C5-2
FT3
FT5
R6-1
C6
14
R6-2
R6
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FT6
FT4
C6-2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005
RESISTORS AND CAPACITORS TO BE CEMENTED IN PLACE PER ND 1002004

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM)
UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

DRAWING FOR REFERENCE:
1015161 SCHEMATIC DIAGRAM ELECTRICAL

FT INDICATES FEED THRU WIRE.

AR DENOTES AS REQUIRED.

4 ASSEMBLE PER ND 1002136.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
1	1010264 - 19	CAPACITOR	19
4	AN500D-2-4	SCREW, PAN HD.	18
2	1015135-018	SPACER	17
AR	1006776-22	INSULATION SLEEVING	16
1	1010264-28	CAPACITOR	15
4	1010264-34	CAPACITOR	14
3	1010364-943	RESISTOR	13
2	1010364-739	RESISTOR	12
1	1010364-635	RESISTOR	11
AR	1006776-21	INSULATION SLEEVING	10
AR	1006757-1	.010×.020 NICKEL RIBBON	9
AR	1006787-2	WIRE, FEED THRU	8
1	1015165	WAFER BOARD, LOWER	7
2	AN500D-4-4	SCREW, PAN HD.	6
1	1015164	WAFER BOARD, UPPER	5
AR	1006776-20	INSULATION SLEEVING	4
22	1006775	INSULATOR, WRAPOST-MALE MINIATURE	3
22	1006782-5	CONTACT, WRAPOST-MALE MINIATURE	2
1	1015163	FRAME	1

LIST OF MATERIALS

1007159	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN R EMERY DATE 6-17-63
CHECKED [illegible]
APPROVAL R. L. [illegible]
APPROVAL
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
RESISTOR & CAPACITOR

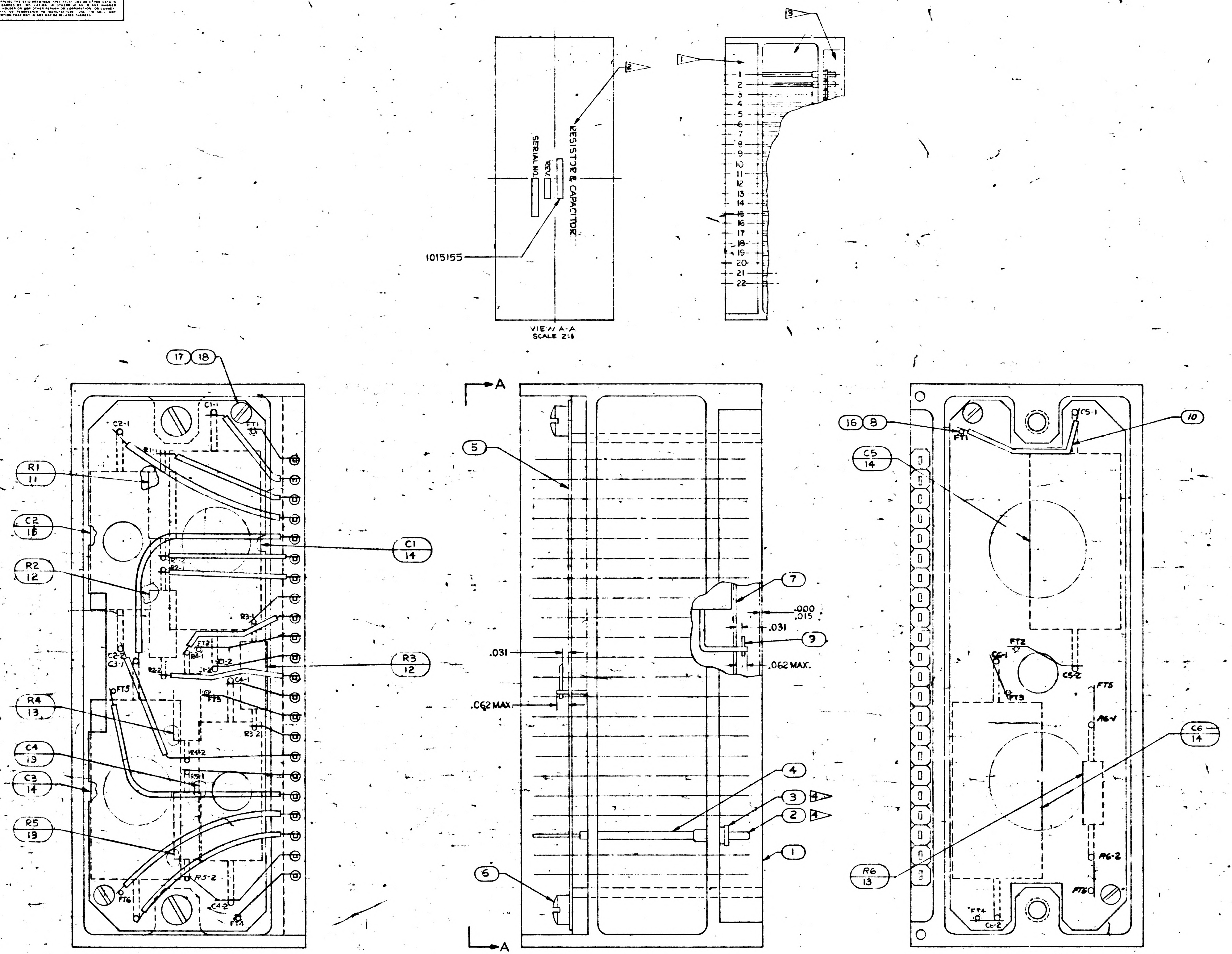
CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015155
SCALE 4:1
WT
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

H	1015155

REVISIONS 01762

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762	8/21/6	
B	REVISED PER TDRR 03089	9-5-63	
C	REVISED PER TDRR 03[illegible]93	[illegible]	
D	REVISED PER TDRR 04196	10-25-63	
E	REVISED PER TDRR 04450	5 Nov 63	
F	REVISED PER TDRR 05440	12-27-63	N.
G	REVISED PER TDRR 07132	8 Jan 64	
H	REVISED PER TDRR 07285	27 APR 64	MB



INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005
RESISTORS AND CAPACITORS TO BE CEMENTED IN PLACE PER ND 1002004

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM)
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2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.
DRAWING FOR REFERENCE:
1015161 SCHEMATIC DIAGRAM ELECTRICAL
FT INDICATES FEED THRU WIRE.
AR DENOTES AS REQUIRED.

4 ASSEMBLE PER ND 1002136.

5 PROCURE PER PS1015155

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
1	1010264 - 19	CAPACITOR	19
4	AN500D-2-4	SCREW, PAN HD.	18
2	1015135-018	SPACER	17
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1	1015165	WAFER BOARD, LOWER	7
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1	1015164	WAFER BOARD, UPPER	5
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1	1015163	FRAME	1

LIST OF MATERIALS

1007159	
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DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT NAS 9-497
DRAWN R EMERY DATE 6-17-63
CHECKED
APPROVAL R L Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY RESISTOR & CAPACITOR

CODE IDENT NO
SIZE E
NASA DRAWING NO 1015155
SCALE 4:1
WT
SHEET 1 OF 1

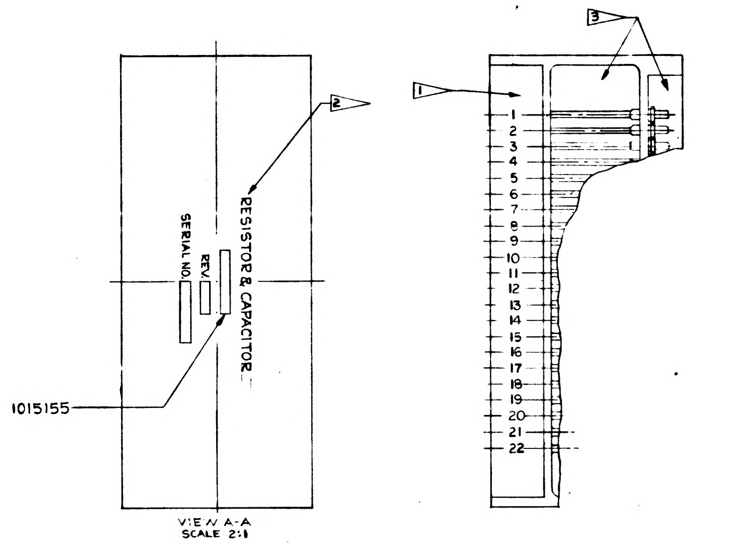
1015155 H

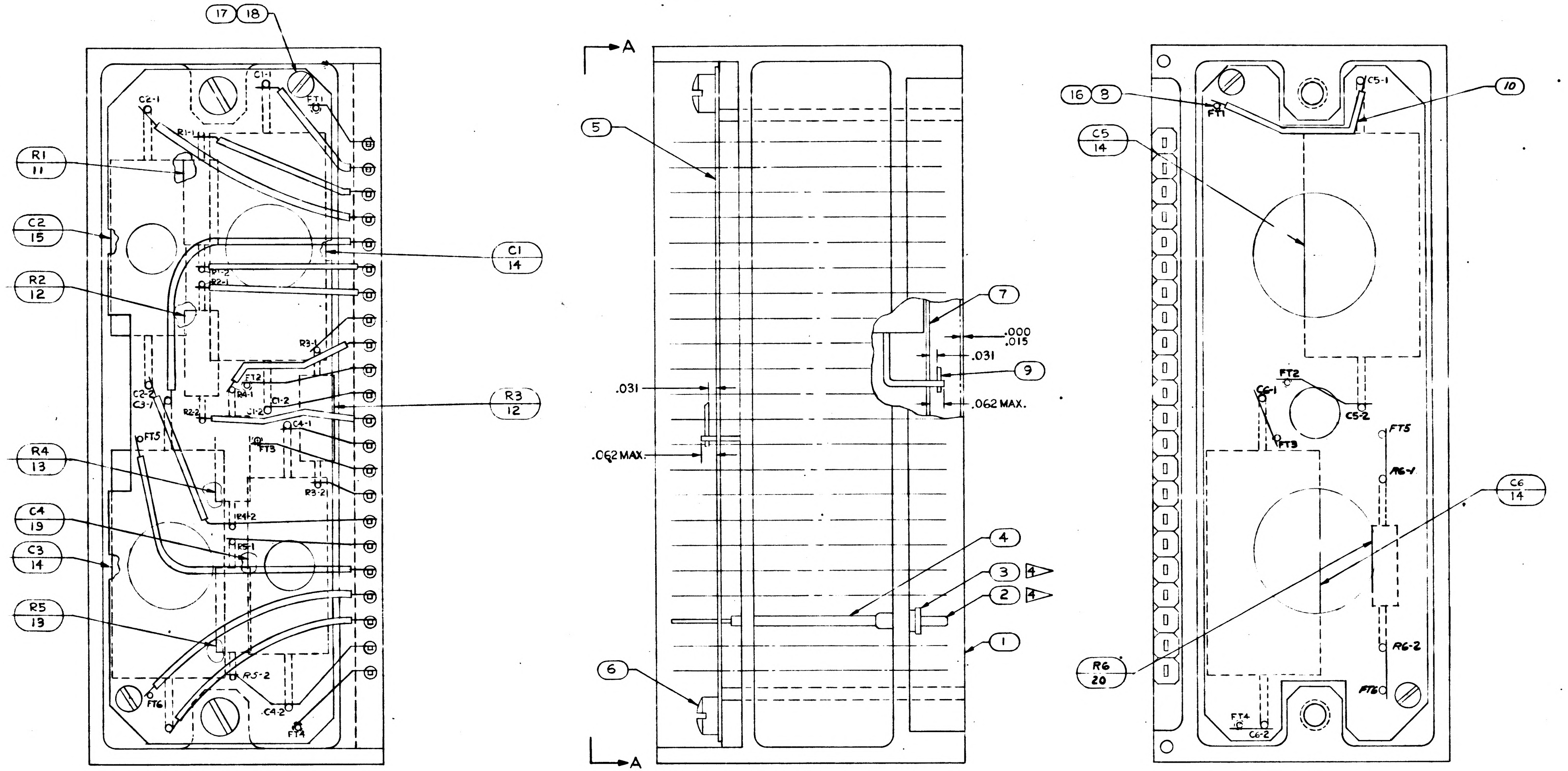
NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

1015155 J

REVISIONS 01762

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 2762	[illegible]	
B	REVISED PER TDRR 3009	9-5-63	
C	REVISED PER TDRR 03093	9-11-63	WK
D	REVISED PER TDRR 04196	10-25-63	
E	REVISED PER TDRR 04450	5 NOV 63	
F	REVISED PER TDRR 05440	12-27-63	
G	REVISED PER TDRR 07182	8 MAR 64	
H	REVISED PER TDRR 07285	27 APR 64	MB
J	REVISED PER TDRR 12627	SEP 64	





INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

RESISTORS AND CAPACITORS TO BE CEMENTED IN PLACE PER ND 1002004

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM)

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2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

DRAWING FOR REFERENCE:
1015161 SCHEMATIC DIAGRAM ELECTRICAL

FT INDICATES FEED THRU WIRE.

AR DENOTES AS REQUIRED.

4 ASSEMBLE PER ND 1002136.

5 PROCURE PER PS1015155

LIST OF MATERIALS

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
1	1010364-495	RESISTOR	20
1	1010264 - 19	CAPACITOR	19
4	AN500D-2-4	SCREW, PAN HD.	18
2	1015135-018	SPACER	17
AR	1006776-22	INSULATION SLEEVING	16
1	1010264-28	CAPACITOR	15
4	1010264-34	CAPACITOR	14
2	1010364-443	RESISTOR	13
2	1010364-739	RESISTOR	12
1	1010364-635	RESISTOR	11
AR	1006776-21	INSULATION SLEEVING	10
AR	1006757-1	.010 × .020 NICKEL RIBBON	9
AR	1006787-2	WIRE, FEED THRU	8
1	1015165	WAFER BOARD, LOWER	7
2	AN500D-4-4	SCREW, PAN HD.	6
1	1015164	WAFER BOARD UPPER	5
AR	1006776-20	INSULATION SLEEVING	4
22	1006775	INSULATOR, WRAPOST-MALE MINIATURE	3
22	1006782-5	CONTACT, WRAPOST-MALE MINIATURE	2
1	1015163	FRAME	1

NEXT ASSY	USED ON
1007159	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XX ±.02 XXX ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT NAS 9-497
DRAWN R EMERY DATE 6-17-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

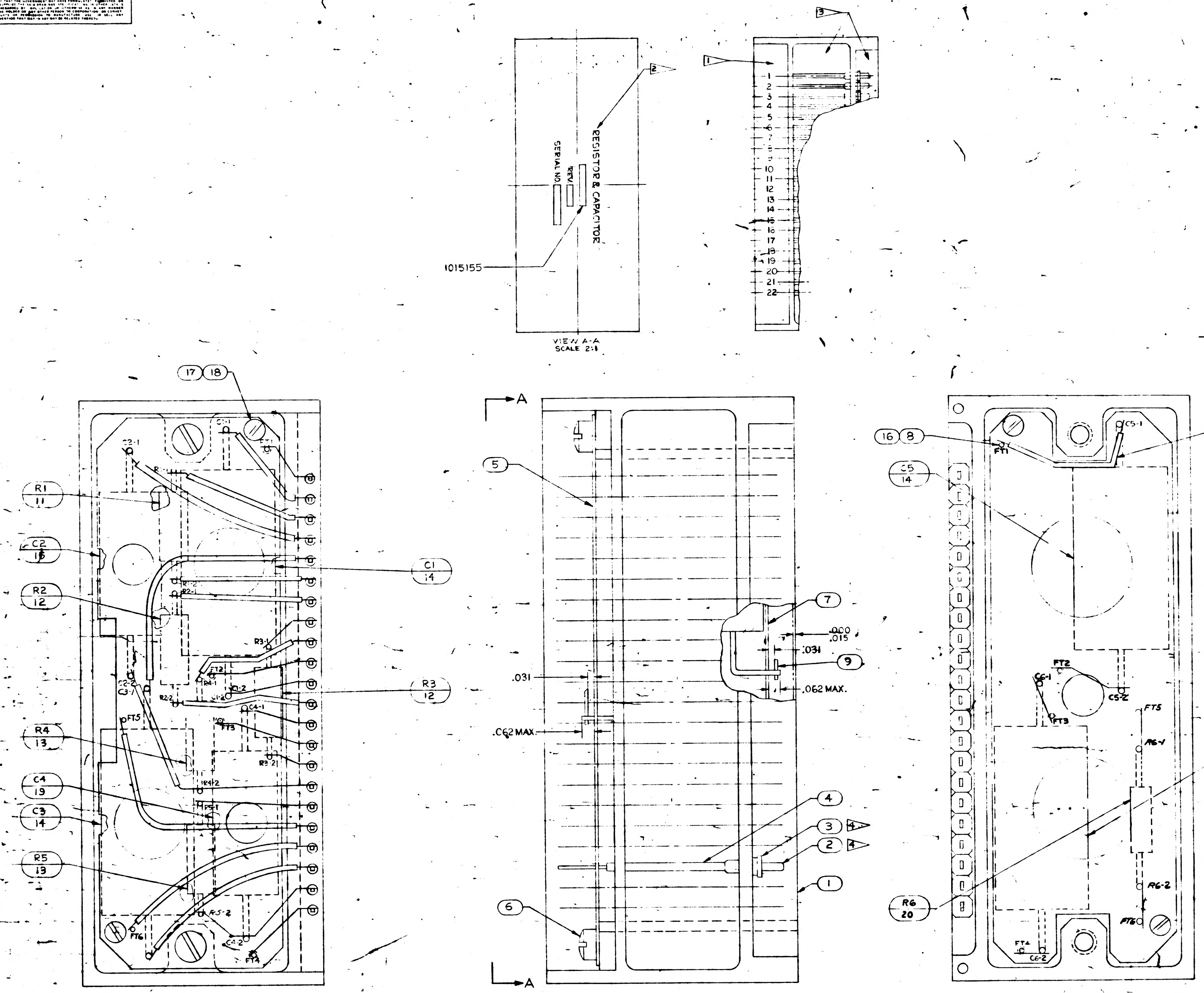
MODULE ASSEMBLY RESISTOR & CAPACITOR

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015155
SCALE 4:1
WT
SHEET 1 OF

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015155 K

	REVISIONS 01762		
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762	8/21/63	
B	REVISED PER TDRR 03019	9-5-63	
C	REVISED PER TDRR 03093	9-11-63	
D	REVISED PER TDRR 04196	10-23-63	
E	REVISED PER TDRR 04450	5 NOV 63	
F	REVISED PER TDRR 05440	12-27-63	
G	REVISED PER TDRR 07192	6 JAN 64	
H	REVISED PER TDRR 07285	27 APR 64	MB
J	REVISED PER TDRR 12627	25 SEP 64	
K	REVISED PER TDRR 19428	3 JUN	DEM



INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL WELDED CONNECTIONS TO BE MADE PER ND 1002005

RESISTORS AND CAPACITORS TO BE CEMENTED IN PLACE PER ND 1002004

1 ENCAPSULATE MODULE PER ND 1002002 (BLACK POLYURETHANE FOAM)

UNLESS OTHERWISE SPECIFIED, PERIPHERAL ENCAPSULANT DIMENSIONS MAY EXCEED THE NOMINAL HEATSINK WIDTH AND LENGTH DIMENSIONS BY A MAXIMUM OF .005. WHEN THE HEATSINK OUTLINE EXCEEDS THE ENCAPSULANT OUTLINE, THE MAXIMUM DIMENSION BETWEEN ANY HEATSINK SURFACE AND ITS RESPECTIVE ENCAPSULANT SURFACE SHALL NOT EXCEED .015. REMOVE ALL FLASHING.

2 MARK PIN NUMBERS .08 HIGH (WHITE) AND SERIALIZE AND MARK ALL OTHER CHARACTERS .12 HIGH (WHITE) PER ND 1002023. CENTRALIZE AS SHOWN. ABBREVIATIONS PERMISSIBLE.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

DRAWING FOR REFERENCE:
1015161 SCHEMATIC DIAGRAM ELECTRICAL

FT INDICATES FEED THRU WIRE.

AR DENOTES AS REQUIRED.

4 ASSEMBLE PER ND 1002136.

5 PROCURE PER PS1015155

CLEAN MODULE WHERE POSSIBLE BY DEGREASING WITH FREON AND ISO-PROPYL ALCOHOL. APPLY ADHESIVE TO FRAME ON ALL AVAILABLE FOAM CONTACT SURFACES TO WITHIN .03 INCH ±.03 OF EXTERNAL EDGES OF MODULE AND TO A DEPTH OF .25 MIN IN FROM EDGES. USE ADHESIVE PER ND 1002187 TYPE II.

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	1010364-495	RESISTOR	20
1	1010264-19	CAPACITOR	19
4	AN500D-2-4	SCREW, PAN HD.	18
2	1015155-018	SPACER	17
AR	1006776-22	INSULATION SLEEVING	16
1	1010264-28	CAPACITOR	15
4	1010264-34	CAPACITOR	14
2	1010364-443	RESISTOR	13
2	1010364-739	RESISTOR	12
1	1010364-635	RESISTOR	11
AR	1006776-21	INSULATION SLEEVING	10
AR	1006757-1	.010×.020 NICKEL RIBBON	9
AR	1006787-2	WIRE, FEED THRU	8
1	1015165	WAFER BOARD, LOWER	7
2	AN500D-4-4	SCREW, PAN HD.	6
1	1015164	WAFER BOARD, UPPER	5
AR	1006776-20	INSULATION SLEEVING	4
22	1006775	INSULATOR, WRAPOST-MALE MINIATURE	3
22	1006782-5	CONTACT, WRAPOST-MALE MINIATURE	2
1	1015163	FRAME	1

LIST OF MATERIALS

1007159	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
XX ±.03
XXX ±.005
DO NOT SCALE THIS DRAWING

MATERIAL

HEAT TREATMENT

FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT NAS 9-497

DRAWN R EMERY DATE 6-17-63
CHECKED
APPROVAL R L Battaglia
APPROVAL

NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

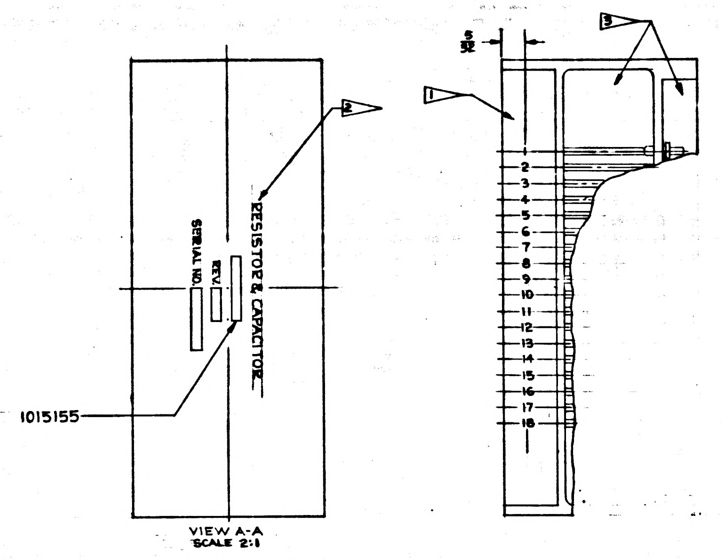
MODULE ASSEMBLY/ RESISTOR & CAPACITOR

CODE IDENT NO 80230
SIZE E
NASA DRAWING NO. 1015155
SCALE 4:1
WT
SHEET 1 OF 1

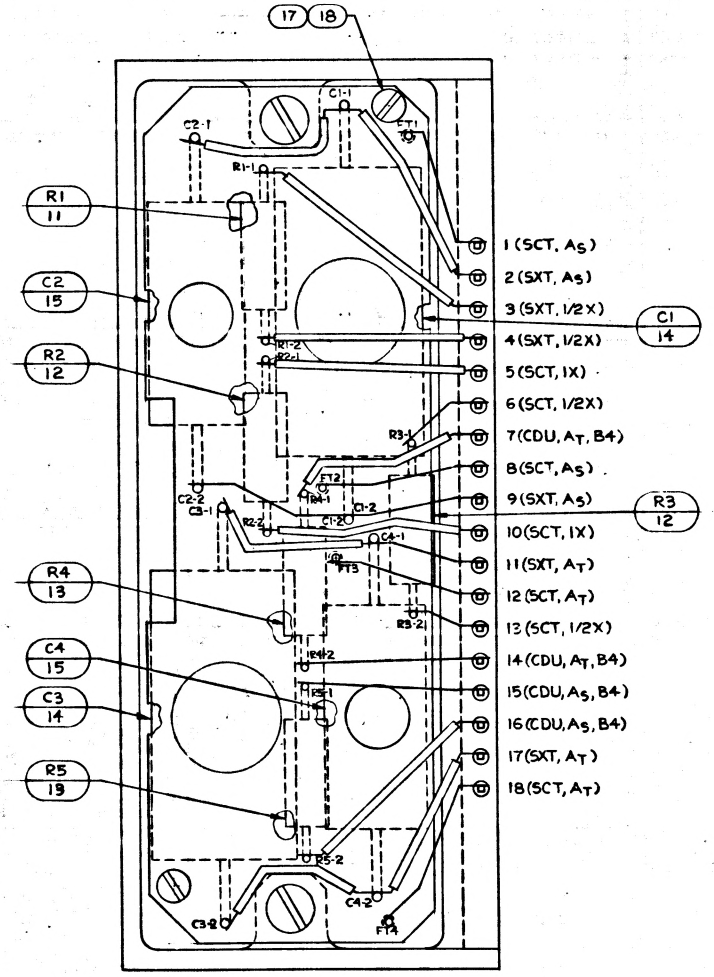
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

1015155

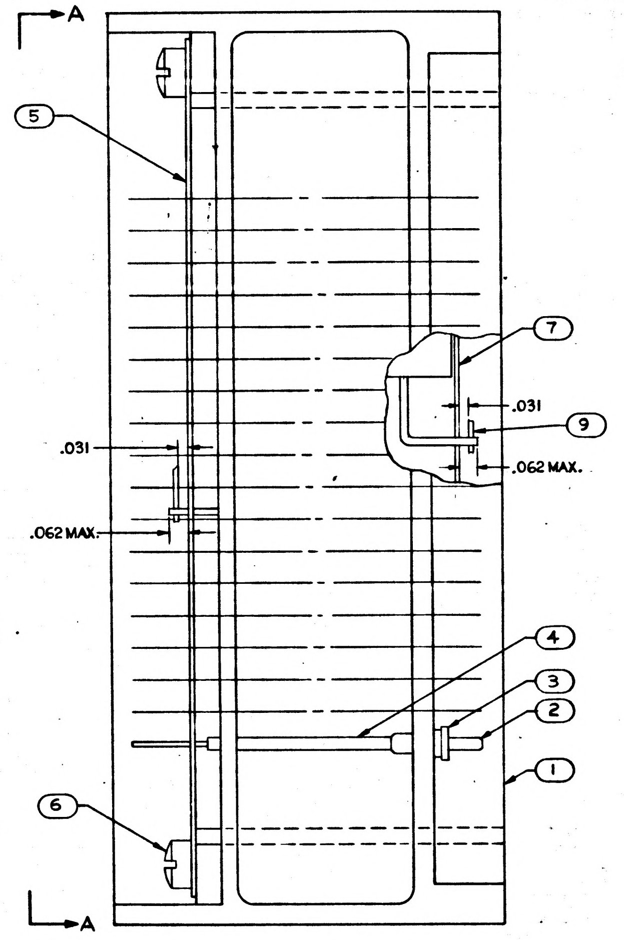
REVISIONS 01762			
SYM	DESCRIPTION	DATE	APPROVAL



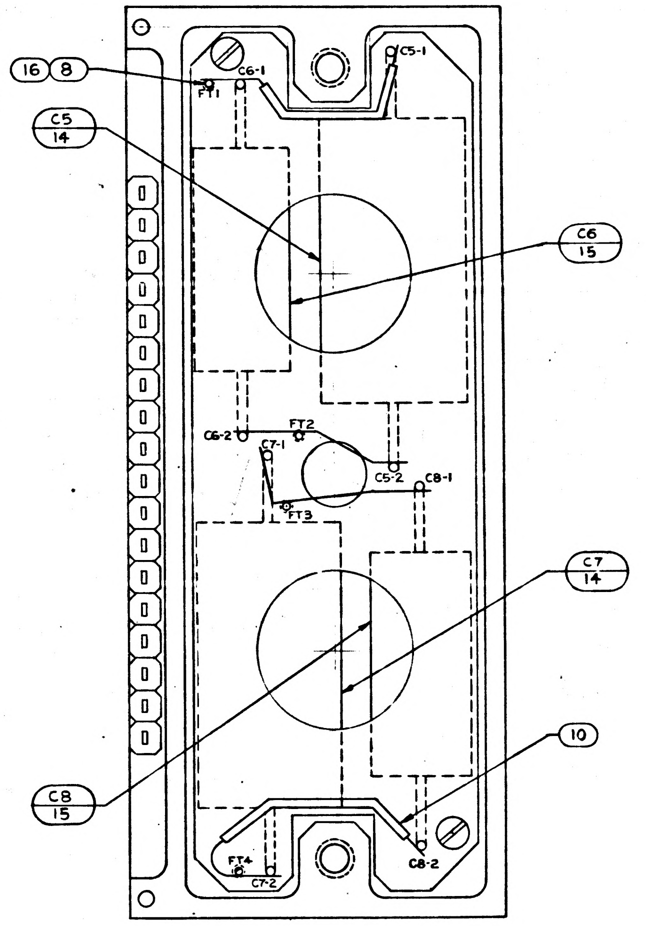
RESISTOR & CAPACITOR
REV.
SERIAL NO.
1015155
VIEW A-A
SCALE 2:1
1
2
3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18



17 18
R1 11
C2 15
R2 12
R4 13
C4 15
C3 14
R5 19
C1 14
R3 12
C2-1
C1-1
FT1
R1-1
R1-2
R2-1
R3-1
FT2
R4-1
C2-2
C3-1
R2-2
C1-2
C4-1
FT3
R3-2
R4-2
R5-1
R5-2
C3-2
C4-2
FT4
1 (SCT, A_S)
2 (SXT, A_S)
3 (SXT, 1/2X)
4 (SXT, 1/2X)
5 (SCT, 1X)
6 (SCT, 1/2X)
7 (CDU, A_T, B4)
8 (SCT, A_S)
9 (SXT, A_S)
10 (SCT, 1X)
11 (SXT, A_T)
12 (SCT, A_T)
13 (SCT, 1/2X)
14 (CDU, A_T, B4)
15 (CDU, A_S, B4)
16 (CDU, A_S, B4)
17 (SXT, A_T)
18 (SCT, A_T)



A
A
5
6
7
9
4
3
2
1
.031
.031
.062 MAX.
.062 MAX.



16 8
C5 14
C6 15
C7 14
C8 15
10
FT1
C6-1
C5-1
C6-2
FT2
C7-1
C5-2
C8-1
FT3
FT4
C7-2
C8-2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL CONNECTIONS TO BE MADE BY WELDING PER ND1002005.
WIRING STANDARDS FOR WELD UNITS IN ACCORDANCE WITH ND1002003.

1 ENCAPSULATE MODULE PER ND1002002 (BLACK POLYURETHANE FOAM). ENCAPSULATING COMPOUND MUST BE .000 TO .015 INSIDE OF FRAME PERIPHERY.

2 MARK CHARACTERS .080 HIGH WHITE PER ND1002019 CENTERED.

3 AREAS TO BE FREE OF ENCAPSULATING COMPOUND.

DRAWING FOR REFERENCE:
1015161 SCHEMATIC DIAGRAM, ELECTRICAL.

FT INDICATES FEED THRU WIRE.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
4	AN500D-2-4	SCREW, PAN HD.	18
2	1015135-018	SPACER	17
AR	1006776-22	INSULATION SLEEVING	16
4	1010264-29	CAPACITOR	15
4	1010264-37	CAPACITOR	14
2	1010364-385	RESISTOR	13
2	1010364-687	RESISTOR	12
1	1010364-635	RESISTOR	11
AR	1006776-21	INSULATION SLEEVING	10
AR	1006757-1	.010×.020 NICKEL RIBBON	9
AR	1006787-2	WIRE, FEED THRU	8
1	1015165	WAFER BOARD, LOWER	7
2	AN500D-4-4	SCREW, PAN HD.	6
1	1015164	WAFER BOARD, UPPER	5
AR	1006776-20	INSULATION SLEEVING	4
18	1006755	INSULATOR, WRAPOST-MALE MINIATURE	3
18	1006782-5	CONTACT, WRAPOST-MALE MINIATURE	2
1	1015163	FRAME	1

LIST OF MATERIALS

1015155

MASTER

1007159	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO. CONTRACT
DRAWN R. EMERY DATE 6-17-63
CHECKED
APPROVAL R. L. Battey
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MODULE ASSEMBLY
RESISTOR & CAPACITOR

CODE IDENT NO. SIZE E NASA DRAWING NO. 1015155
SCALE 4:1 WT SHEET OF

APOLLO G&N Specification
PS-1015155
18 February 1964
Class A Release
TDRR 06682

PROCUREMENT SPECIFICATION

FOR

RESISTOR AND CAPACITOR MODULE ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page i to iii and 1 to 4 inclusive.

APOLLO G&N Specification
PS-1015155
18 February 1964

PROCUREMENT SPECIFICATION

FOR

RESISTOR AND CAPACITOR MODULE ASSEMBLY

The purpose of this document is to establish the requirements for the procurement of the Resistor and Capacitor Module Assembly for use in APOLLO Guidance and Navigation Equipment.

18 Feb 64
MIT/IL DATE

2/18/64
NASA/MSC APPROVAL DATE

APOLLO G&N Specification
PS-1015155
18 February 1964

PROCUREMENT SPECIFICATION

FOR

RESISTOR AND CAPACITOR MODULE ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Resistor and Capacitor Module Assembly, Drawing 1015155, hereafter called the assembly.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM-1015155	Final Test Method for Resistor and Capacitor Module Assembly

DRAWINGS

APOLLO G&N

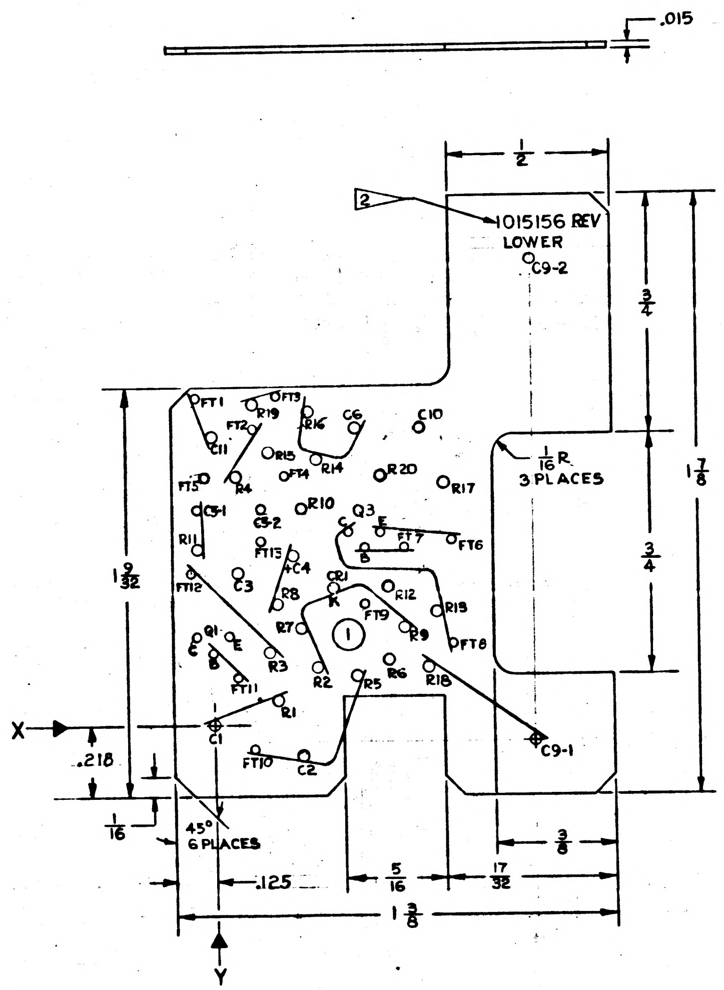
1015155	Resistor and Capacitor Module Assembly
1015161	Module Assembly, Resistor and Capacitor, Schematic Diagram (For Reference Only)

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015156 A

REVISIONS TDRR 01429			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02862	8-28-68	RPK



COORDINATE DIMENSIONS			
HOLE DESIG.	COORDINATE		HOLE DESCRIPTION (TOL. +.010, -.000)
	X (HORIZ.)	Y (VERT.)	
C9-1	1.000	.050	.043 DIA. THRU
C9-2	1.000	1.450	↓
FT-7	.600	.550	.024
FT-5	-.025	.775	↓
R-17	.725	.750	.043
R-13	.700	.350	
R-18	.675	.175	
C-10	.650	.925	
R-9	.600	.300	↓
FT-6	.750	.575	.024
R-6	.550	.200	.043
R-12	.550	.425	↓
Q3-E	.500	.600	.024
R-20	.525	.775	.043
FT-8	.750	.250	.024
Q3-B	.450	.550	↓
R-5	.450	.150	.043
C-6	.450	.925	↓
1	.425	.275	.093
Q3-C	.400	.600	.024
CR-1	.375	.425	.043
R-2	.325	.175	
R-14	.325	.825	
R-16	.300	.975	
C-2	.275	.100	
R-7	.275	.300	
R-10	.275	.675	
C-4	.250	.525	↓
FT-4	.225	.775	.024
R-1	.200	.075	.043
R-8	.200	.375	↓
FT-3	.200	1.025	.024
R-3	.175	.225	.043
R-15	.175	.850	↓
FT-12	-.075	.475	.024
C5-2	.150	.675	
FT-9	.475	.375	
FT-2	.125	.925	↓
R-19	.125	1.000	.043
FT-10	.125	-.075	.024
C-3	.075	.475	.043
R-4	.075	.775	↓
Q1-E	.050	.275	.024
C-1	0.000	0.000	.043
Q1-B	0.000	.225	.024
C-11	.000	.900	.043
FT-13	.150	.575	.024
Q1-C	-.050	.275	↓
R-11	-.050	.550	.043
C5-1	-.050	.675	.024
FT-1	-.050	1.025	
FT-11	.075	.150	↓

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.
DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.
MARK PATHS AS SHOWN 1/64 WIDE.
UNLESS OTHERWISE SPECIFIED:
    CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC.
    LOCATE APPROX. AS SHOWN.

1 MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE.

2 MARK 1015156 AND REVISION LETTER 3/64 PER MIL-STD-130.

SEE 1015156 SHEET 2 FOR PHOTOGRAPHIC MASTER

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1015124	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 6-3-63
CHECKED
APPROVAL R L Battey
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

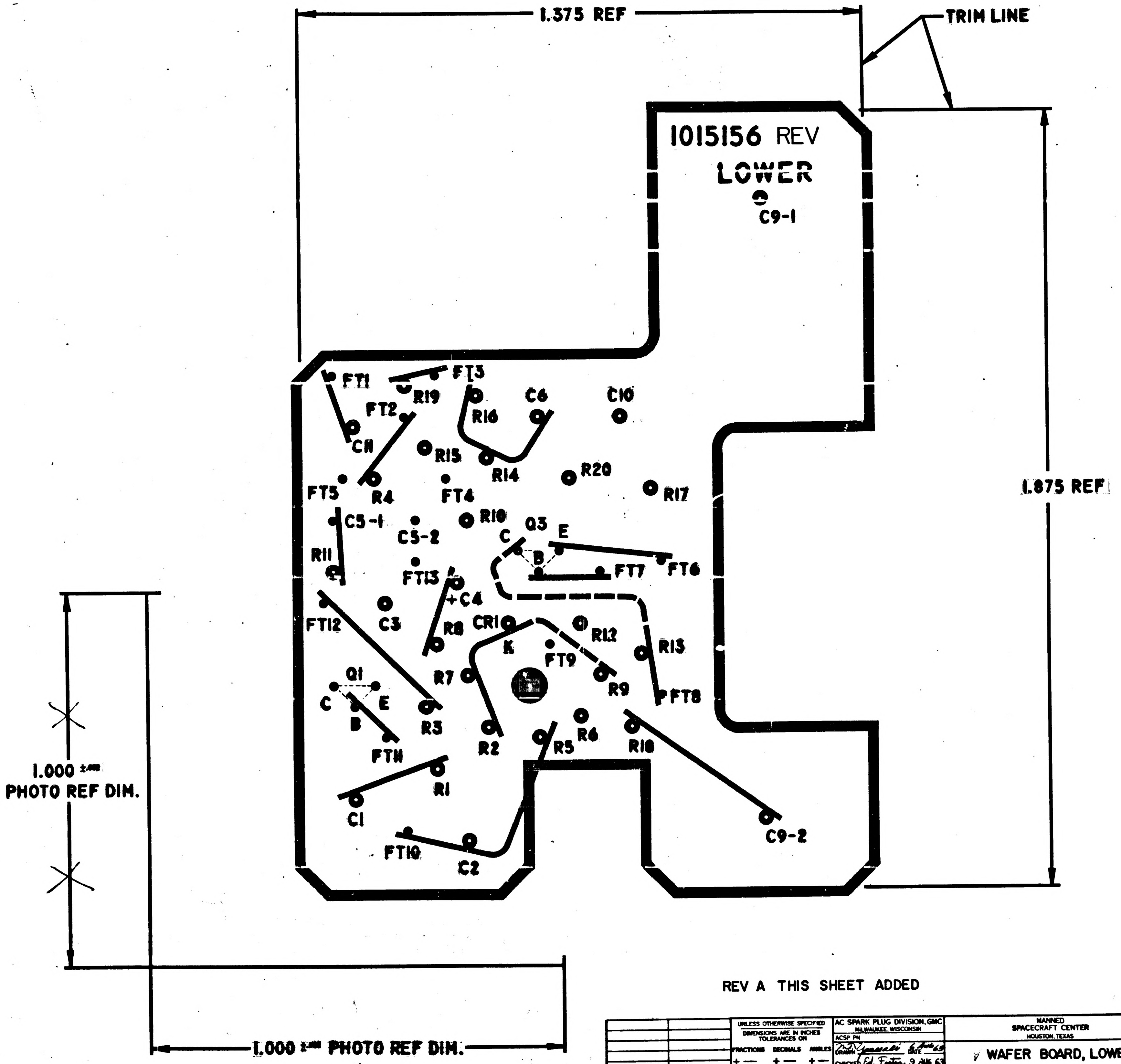
WAFER BOARD, LOWER
COSECANT GENERATOR

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015156
SCALE 4:1
WT
SHEET 1 OF 2

1015156 A

INCHES
0 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		THIS SHEET ADDED 02562		9-24-63	ZPK


1.375 REF
TRIM LINE
1.875 REF
1015156 REV
LOWER
C9-1
FT1
FT3
R19
FT2
R16
C6
C10
C11
R15
R14
R20
R17
FT5
R4
FT4
R10
C5-1
C5-2
Q3
C
E
B
FT6
FT7
R11
FT13
+C4
FT12
C3
R8
CR1
K
R12
FT9
R13
Q1
C
E
B
R7
R9
FT8
R3
R2
R5
R6
R18
FT11
R1
C1
C9-2
FT10
C2
1.000 ±.002 PHOTO REF DIM.
1.000 ±.002 PHOTO REF DIM.

REV A THIS SHEET ADDED

MASTER

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
APPLICATION		DO NOT SCALE THIS DRAWING	ACSP PN	WAFER BOARD, LOWER [redacted]
		MATERIAL	DRAWN M. Yamasaki DATE 6 Aug 63	
			CHECKED Ed Foster 9 AUG 63 9 AUG 63	
			APPROVAL	
			APPROVAL 20 AUG 63	
			NASA APPROVAL 9/4/63	CODE IDENT NO. | SIZE E | 1015156
		CONTRACT NAS9-497	MIT APPROVAL	SCALE 10:1 | SHEET 2 OF 2

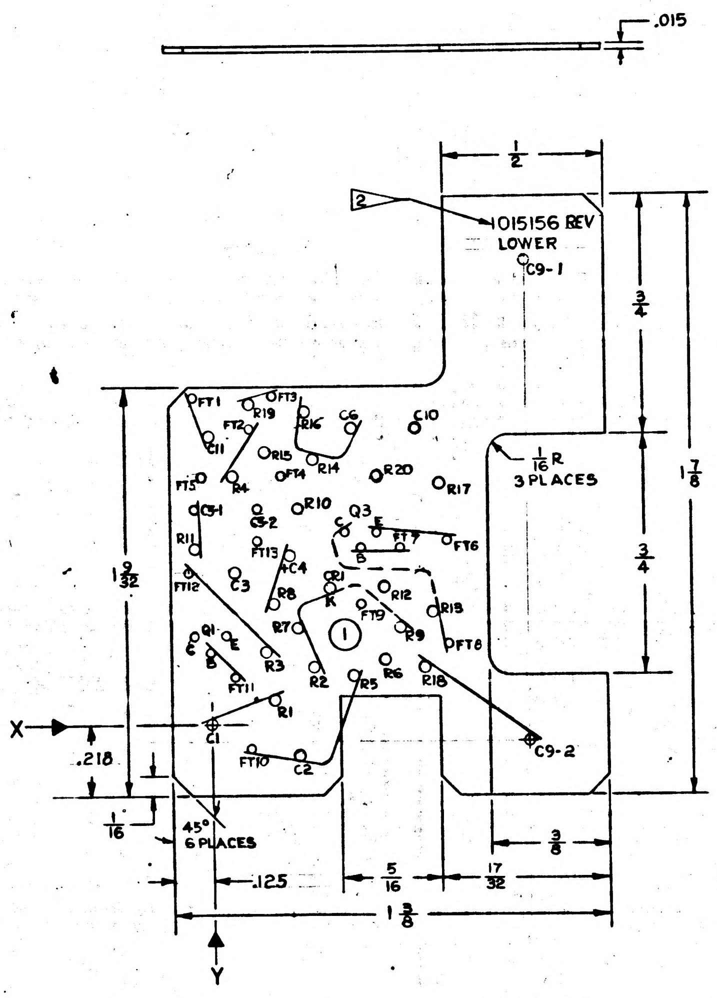
INCHES
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

B 1015156

REVISIONS TDRR 01429

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02862	8 Feb 63	RPK
B	REVISED PER TDRR 06172	4 Feb 64	RPK WR


.015
1/2
2
1015156 REV
LOWER
C9-1
3/4
1 7/8
1/16 R
3 PLACES
3/4
1 9/32
FT1 FT3 R19 FT2 R16 C6 C10 C11 R15 FT4 R14 R20 R17 FT5 R4 C5-1 C5-2 R10 Q3 C E B FT7 FT6 R11 FT13 C4 FT12 C3 R8 CR1 K R12 R13 FT9 R7 1 R9 FT8 Q1 C E B R3 R2 R6 R18 FT11 R5 R1 C1 C9-2 FT10 C2
X
.218
1/16
45°
6 PLACES
.125
5/16
17/32
3/8
1 3/8
Y

COORDINATE DIMENSIONS

HOLE DESIG.	COORDINATE X (HORIZ.)	COORDINATE Y (VERT.)	HOLE DESCRIPTION (TOL. +.010, -.000)
C9-1	1.000	.050	.043 DIA. THRU
C9-2	1.000	1.450	
FT-7	.600	.550	.024
FT-5	-.025	.775	
R-17	.725	.750	.043
R-13	.700	.350	
R-18	.675	.175	
C-10	.650	.925	
R-9	.600	.300	
FT-6	.750	.575	.024
R-6	.550	.200	.043
R-12	.550	.425	
Q3-E	.50[illegible]	.600	.024
R-20	.525	.775	.043
FT-8	.750	.250	.024
Q3-B	.450	.550	
R-5	.450	.150	.043
C-6	.450	.925	
1	.425	.275	.093
Q3-C	.400	.600	.024
CR-1	.375	.425	.043
R-2	.325	.175	
R-14	.325	.825	
R-16	.300	.975	
C-2	.275	.100	
R-7	.275	.300	
R-10	.275	.675	
C-4	.250	.525	
FT-4	.225	.775	.024
R-1	.200	.075	.043
R-8	.200	.375	
FT-3	.200	1.025	.024
R-3	.175	.225	.043
R-15	.175	.850	
FT-12	-.075	.475	.024
C5-2	.150	.675	
FT-9	.475	.375	
FT-2	.125	.925	
R-19	.125	1.000	.043
FT-10	.125	-.075	.024
C-3	.075	.475	.043
R-4	.075	.775	
Q1-E	.050	.275	.024
C-1	0.000	0.000	.043
Q1-B	0.000	.225	.024
C-11	.000	.900	.043
FT-13	.150	.575	.024
Q1-C	-.050	.275	
R-11	-.050	.550	.043
C5-1	-.050	.675	.024
FT-1	-.050	1.025	
FT-11	.075	.150	

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.
DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.
MARK PATHS AS SHOWN 1/64 WIDE.
UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC.
LOCATE APPROX. AS SHOWN.

1 ▷ MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE.

2 ▷ MARK 1015156 AND REVISION LETTER 3/64 PER MIL-STD-130.

SEE 1015156 SHEET 2 FOR PHOTOGRAPHIC MASTER

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1015124	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL 1 ▷
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 6-3-63
CHECKED
APPROVAL R L Battey
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD, LOWER
COSECANT GENERATOR

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015156
SCALE 4:1 WT SHEET 1 OF 2

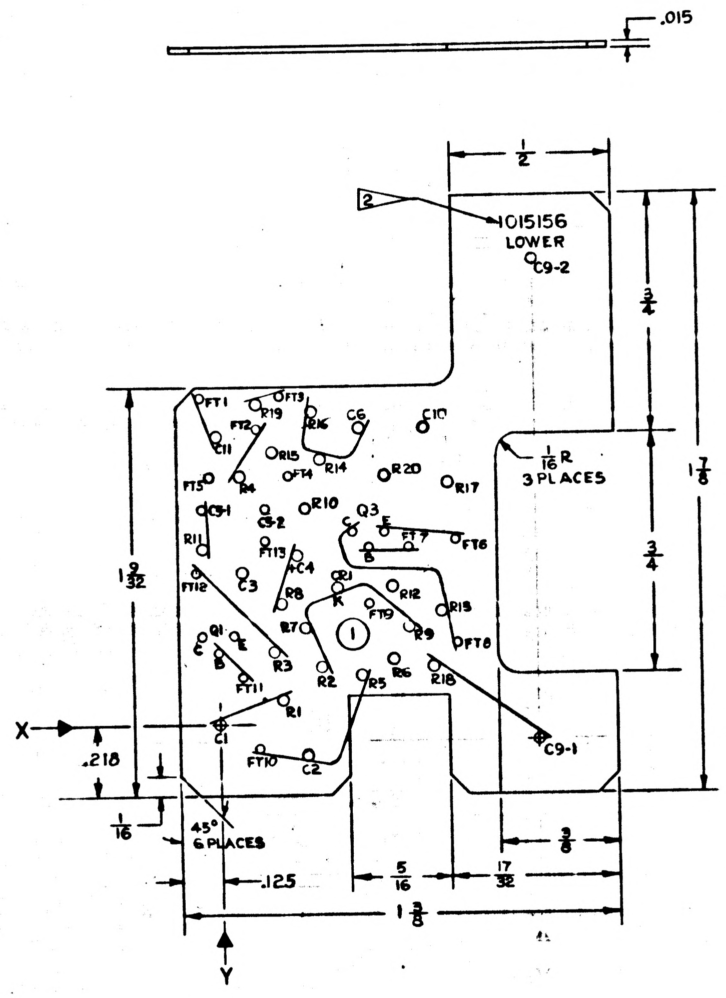
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015156

REVISIONS TCRR 01429

SYM	DESCRIPTION	DATE	APPROVAL



COORDINATE DIMENSIONS

HOLE DESIG.	COORDINATE X (HORIZ.)	COORDINATE Y (VERT.)	HOLE DESCRIPTION (TOL. +.010, −.000)
C9-1	1.000	.050	.043 DIA. THRU
C9-2	1.000	1.450	↓
FT-7	.600	.550	.024
FT-5	-.025	.775	↓
R-17	.725	.750	.043
R-13	.700	.350	↓
R-18	.675	.175	↓
C-10	.650	.925	↓
R-9	.600	.300	↓
FT-6	.750	.575	.024
R-6	.550	.200	.043
R-12	.550	.425	↓
Q3-E	.500	.600	.024
R-20	.525	.775	.043
FT-8	.750	.250	.024
Q3-B	.450	.550	↓
R-5	.450	.150	.043
C-6	.450	.925	↓
1	.425	.275	.093
Q3-C	.400	.600	.024
CR-1	.375	.425	.043
R-2	.325	.175	↓
R-14	.325	.825	↓
R-16	.300	.975	↓
C-2	.275	.100	↓
R-7	.275	.300	↓
R-10	.275	.675	↓
C-4	.250	.525	↓
FT-4	.225	.775	.024
R-1	.200	.075	.043
R-8	.200	.375	↓
FT-3	.200	1.025	.024
R-3	.175	.225	.043
R-15	.175	.850	↓
FT-12	-.075	.475	.024
C5-2	.150	.675	↓
FT-9	.475	.375	↓
FT-2	.125	.925	↓
R-19	.125	1.000	.043
FT-10	.125	-.075	.024
C-3	.075	.475	.043
R-4	.075	.775	↓
Q1-E	.050	.275	.024
C-1	0.000	0.000	.043
Q1-B	0.000	.225	.024
C-11	.000	.900	.043
FT-13	.150	.575	.024
Q1-C	-.050	.275	↓
R-11	-.050	.550	.043
C5-1	-.050	.675	.024
FT-1	-.050	1.025	↓
FT-11	.075	.150	↓

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY.
DIRECTION OF ARROWS INDICATES PLUS (+) DIMENSION.
MARK PATHS AS SHOWN 1/64 WIDE.
UNLESS OTHERWISE SPECIFIED:
  CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC.
  LOCATE APPROX. AS SHOWN.

1 ▷ MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE.
2 ▷ MARK 1015156 AND REVISION LETTER 3/64 PER MIL-STD-130.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1015124	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL 1 ▷
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN R. EMERY DATE 6-3-63
CHECKED
APPROVAL R L Battey
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

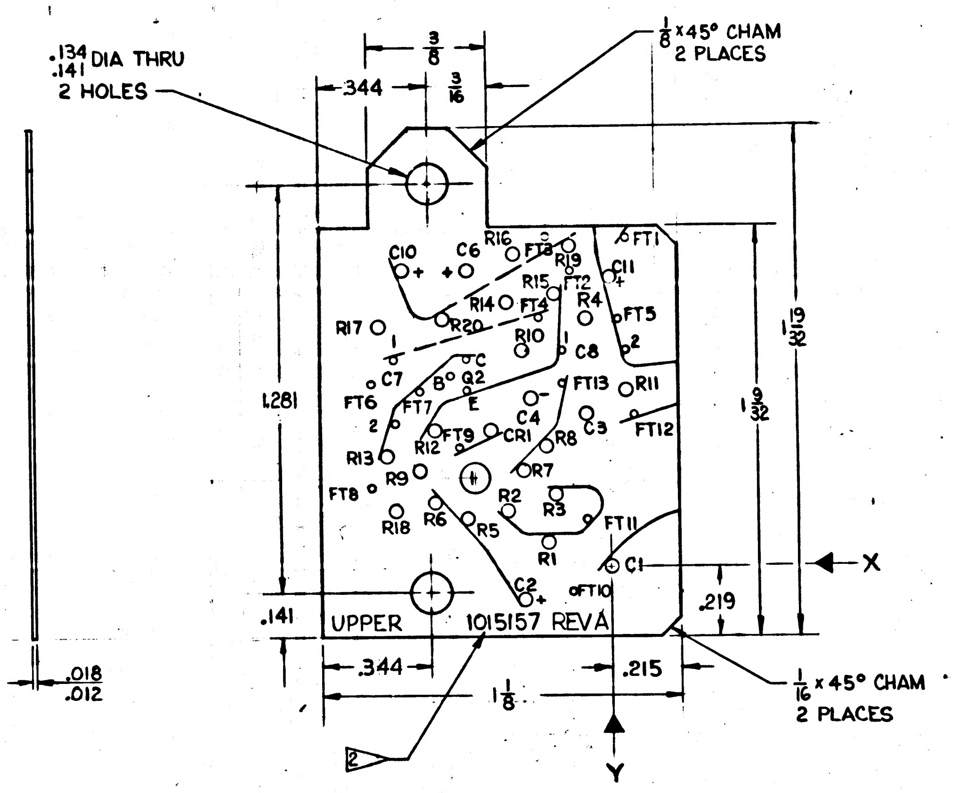
WAFER BOARD, LOWER
COSECANT GENERATOR

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015156
SCALE 4:1
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01429			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02862	8-28-63	RPK


.134 .141 DIA THRU
2 HOLES
3/8
.344
3/16
1/8 x45° CHAM
2 PLACES
C10
C6
R16
FT3
R19
FT1
C11
R15
FT2
R4
R14
FT4
FT5
R17
R20
R10
C8
C7
Q2
B
C
E
FT13
R11
FT6
FT7
C4
C3
FT12
R13
R12
FT9
CR1
R8
R9
R7
FT8
R2
R3
R18
R6
R5
FT11
R1
C1
C2
FT10
1.281
.141
UPPER
1015157 REVA
.219
1 19/32
1 9/32
X
.344
.215
1 1/8
Y
.018
.012
1/16 x 45° CHAM
2 PLACES
2

COORDINATE DIMENSIONS			
HOLE DESIG	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION (TOL +.010, -.000)
C1	0.000	0.000	.043 DIA THRU
C11	.000	.900	.043
FT5	-.025	.775	.024
R11	-.050	.550	.043
C8-2	-.050	.675	.024
FT1	-.050	1.025	
FT12	-.075	.475	
FT11	.075	.150	↓
C3	.075	.475	.043
R4	.075	.775	↓
FT 10	.125	-.075	.024
FT 2	.125	.925	↓
R19	.125	1.000	.043
FT13	.150	.575	.024
C8-1	.150	.675	↓
R3	.175	.225	.043
R15	.175	.850	
R1	.200	.075	
R8	.200	.375	↓
FT 3	.200	1.025	.024
FT 4	.225	.775	↓
C4	.250	.525	.043
C2	.275	-.100	
R7	.275	.300	
R10	.275	.675	
R16	.300	.975	
R2	.325	.175	
R14	.325	.825	
CR1	.375	.425	↓
NO 1	.425	.275	.093
R 5	.450	.150	.043
Q2-E	.450	.550	.024
Q2-C	.450	.650	↓
C6	.450	.925	.043
FT9	.475	.375	.024
Q2-B	.500	.600	↓
R20	.525	.775	.043
R6	.550	.200	
R12	.550	.425	
R9	.600	.300	↓
FT 7	.600	.550	.024
C10	.650	.925	.043
R18	.675	.175	↓
C7-2	.675	.400	.024
C7-1	.675	.650	↓
R13	.700	.350	.043
R17	.725	.750	↓
FT 8	.750	.250	.024
FT 6	.750	.575	↓

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

DIRECTION OF ARROW INDICATES PLUS(+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC
LOCATE APPROX. AS SHOWN.

1 MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE

2 MARK 1015157 AND REVISION LETTER 3/64 PER MIL-STD-130.
SEE 1015157 SHEET 2 FOR PHOTOGRAHIC MASTER

MASTER

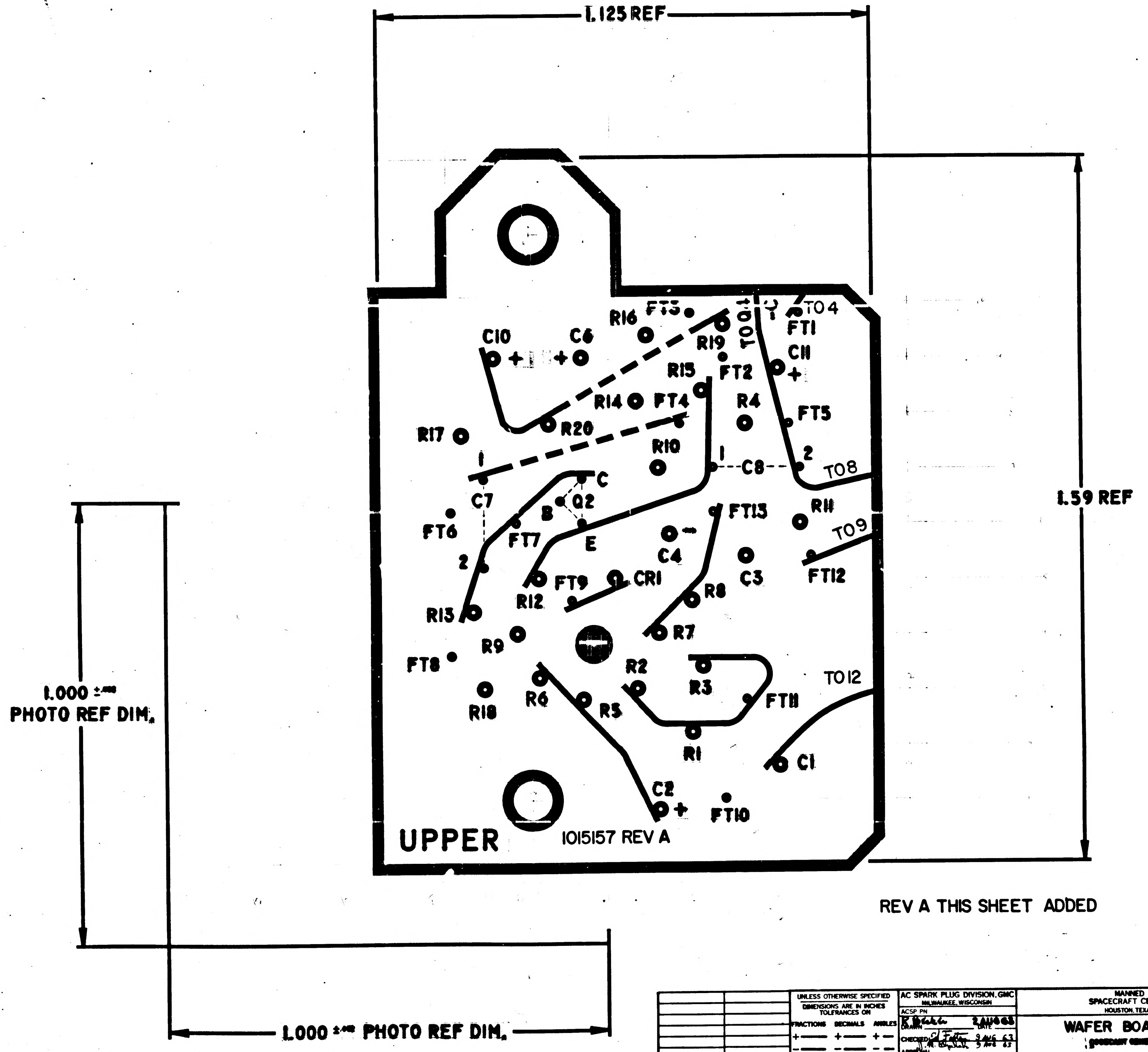
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

1015124		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ± DO NOT SCALE THIS DRAWING	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS. DWG. NO. CONTRACT	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
NEXT ASSY	USED ON	MATERIAL 1	DRAWN LEWANDOWSKI DATE 6-4-63 CHECKED APPROVAL R. L. Battelfor APPROVAL	WAFER BOARD UPPER COSECANT GENERATOR
APPLICATION		HEAT TREATMENT FINAL FINISH	NASA APPROVAL MIT APPROVAL 5 June 63	CODE IDENT NO. SIZE D NASA DRAWING NO. 1015157 SCALE 4X1 WT SHEET 1 OF 2

1015157 A

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
A		THIS SHEET ADDED 02862		6-28 63	



1.125 REF
1.59 REF
1.000 ± PHOTO REF DIM.
1.000 ± PHOTO REF DIM.
UPPER
1015157 REV A
C10
C6
R16
FT3
R19
TO01
TO4
FT1
C11
R15
FT2
R14
FT4
R4
FT5
R20
R17
R10
C8
TO8
C7
C
Q2
B
E
FT13
R11
FT6
FT7
C4
C3
TO9
FT12
FT9
CR1
R12
R8
R13
R7
R9
FT8
R2
R3
TO12
R18
R6
R5
FT11
R1
C1
C2
FT10

REV A THIS SHEET ADDED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R Beck DATE 2AUG63
CHECKED E Foster 9 AUG 63
9 AUG 63
APPROVAL
APPROVAL 28 AUG 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD, UPPER

CODE IDENT NO.
SIZE E
1015157
SCALE 10:1
SHEET 2 OF 2

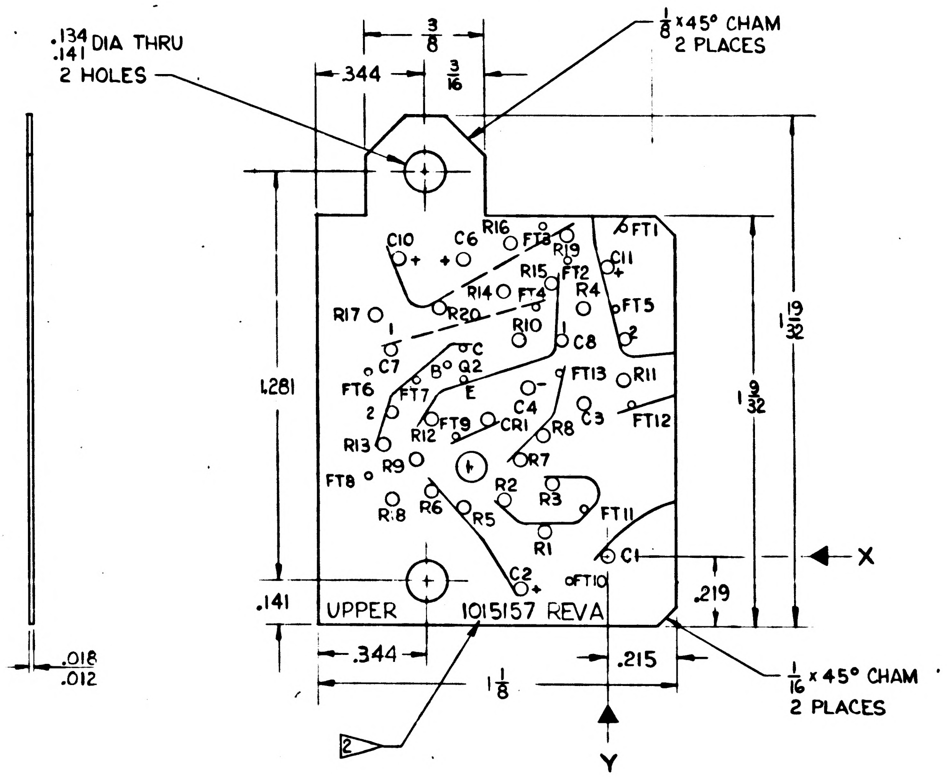
1015157 A

MASTER

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS TDRR 01429			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762		EPL
B	REVISED PER TDRR 07935	4 MAY 64	


.134 .141 DIA THRU
2 HOLES
3/8
.344
3/16
1/8 x45° CHAM
2 PLACES
C10
C6
R16
FT3
R19
FT1
C11
R15
FT2
R14
FT4
R4
FT5
R17
R20
R10
C8
1
2
C
C7
B
Q2
E
FT13
R11
FT6
FT7
C4
C3
FT12
FT9
CR1
R8
R13
R12
R9
R7
FT8
R2
R3
R:8
R6
R5
FT11
R1
C1
X
C2
FT10
1.281
1 19/32
1 9/32
.219
.141
UPPER
1015157 REVA
.344
.215
1 1/8
.018
.012
1/16 x 45° CHAM
2 PLACES
2
Y

COORDINATE DIMENSIONS			
HOLE DESIG	COORDINATE X (HORIZ)	COORDINATE Y(VERT)	HOLE DESCRIPTION (TOL +.010, -.000)
C1	0.000	0.000	.043 DIA THRU
C11	.000	.900	.043
FT5	-.025	.775	.024
R11	-.050	.550	.043
C8-2	-.050	.675	.043
FT1	-.050	1.025	.024
FT12	-.075	.475	
FT11	.075	.150	
C3	.075	.475	.043
R4	.075	.775	
FT 10	.125	-.075	.024
FT 2	.125	.925	
R19	.125	1.000	.043
FT13	.150	.575	.024
C8-1	.150	.675	.043
R3	.175	.225	.043
R15	.175	.850	
R1	.200	.075	
R8	.200	.375	
FT 3	.200	1.025	.024
FT 4	.225	.775	
C4	.250	.525	.043
C2	.275	-.100	
R7	.275	.300	
R10	.275	.675	
R16	.300	.975	
R2	.325	.175	
R14	.325	.825	
CR1	.375	.425	
NO 1	.425	.275	.093
R 5	.450	.150	.043
Q2-E	.450	.550	.024
Q2-C	.450	.650	
C6	.450	.925	.043
FT9	.475	.375	.024
Q2-B	.500	.600	
R 20	.525	.775	.043
R6	.550	.200	
R12	.550	.425	
R9	.600	.300	
FT 7	.600	.550	.024
C10	.650	.925	.043
R18	.675	.175	
C7-2	.675	.400	
C7-1	.675	.650	
R13	.700	.350	.043
R17	.725	.750	
FT 8	.750	.250	.024
FT 6	.750	.575	

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

DIRECTION OF ARROW INDICATES PLUS(+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED;
CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC
LOCATE APPROX. AS SHOWN.

1 MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE

2 MARK 1015157 AND REVISION LETTER 3/64 PER MIL-STD-130.
SEE 1015157 SHEET 2 FOR PHOTOGRAHIC MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1015124	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL: 1
HEAT TREATMENT:
FINAL FINISH:

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT

DRAWN LEWANDOWSKI DATE 6-4-63
CHECKED
APPROVAL R. L. Battey
APPROVAL
NASA APPROVAL
MIT APPROVAL 5 June 63

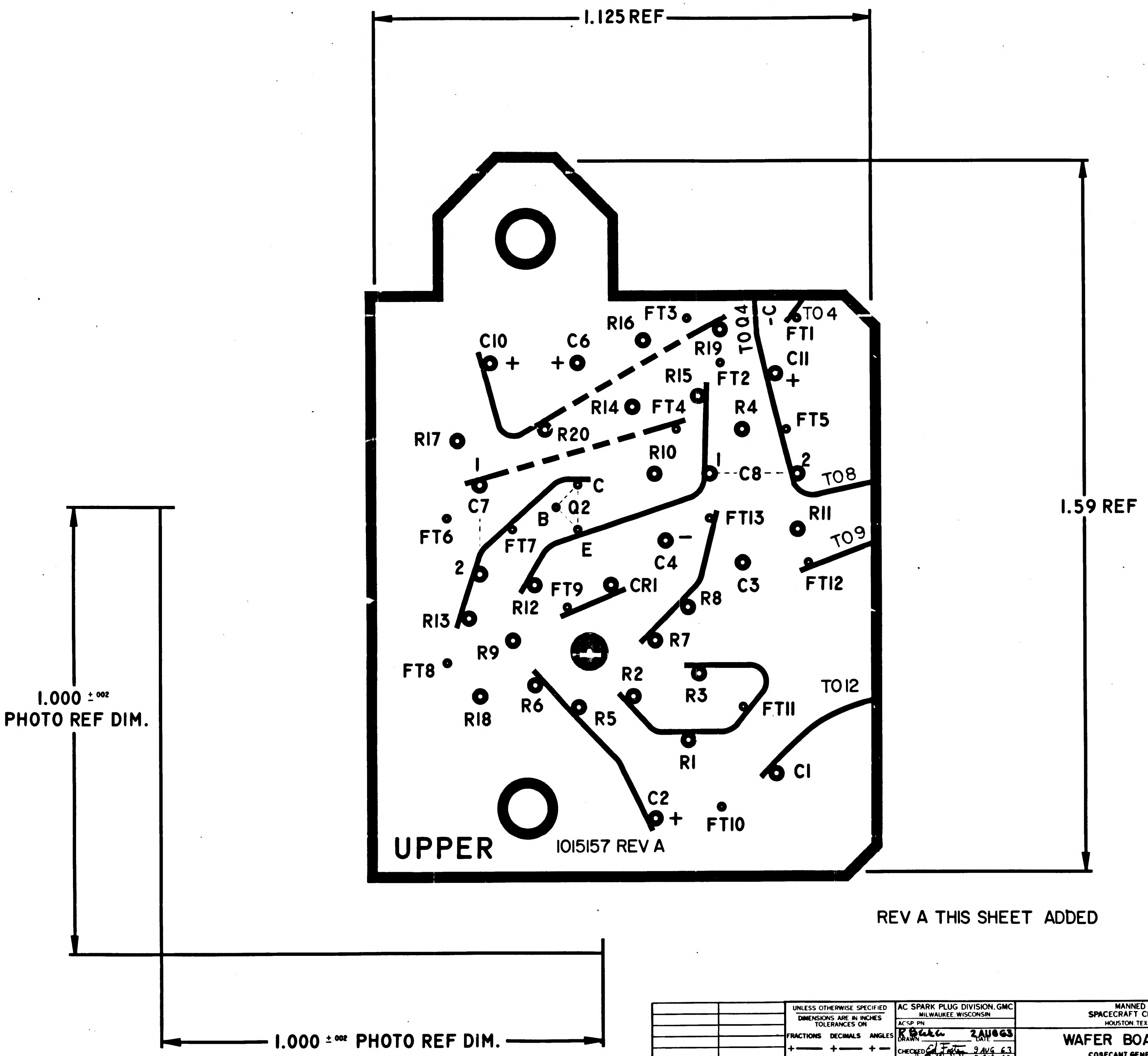
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD UPPER
COSECANT GENERATOR

CODE IDENT NO.:
SIZE: D
NASA DRAWING NO. 1015157
SCALE 4 X 1
WT:
SHEET 1 OF 2

1015157 B

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		THIS SHEET ADDED 2662		8-26-63	RPK
B		REVISED PER TDRR 07935		5 MAY 64	



1.125 REF
1.59 REF
1.000 ±.002 PHOTO REF DIM.
1.000 ±.002 PHOTO REF DIM.
UPPER
1015157 REV A
C10
C6
R16
FT3
TO04
-C
TO4
FT1
R19
C11
R15
FT2
R14
FT4
R4
FT5
R17
R20
R10
1
C8
2
TO8
1
C7
C
B
Q2
E
FT13
R11
FT6
FT7
C4
TO9
2
C3
FT12
FT9
CR1
R12
R8
R13
R7
R9
FT8
R2
R3
TO12
R18
R6
R5
FT11
R1
C1
C2
FT10

REV A THIS SHEET ADDED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R Blake DATE 2 AUG 63
CHECKED Ed Foster 9 AUG 63
APPROVAL 9 AUG 63
APPROVAL 28 AUG 63
NASA APPROVAL 8/26/63
MIT APPROVAL 8/28/63

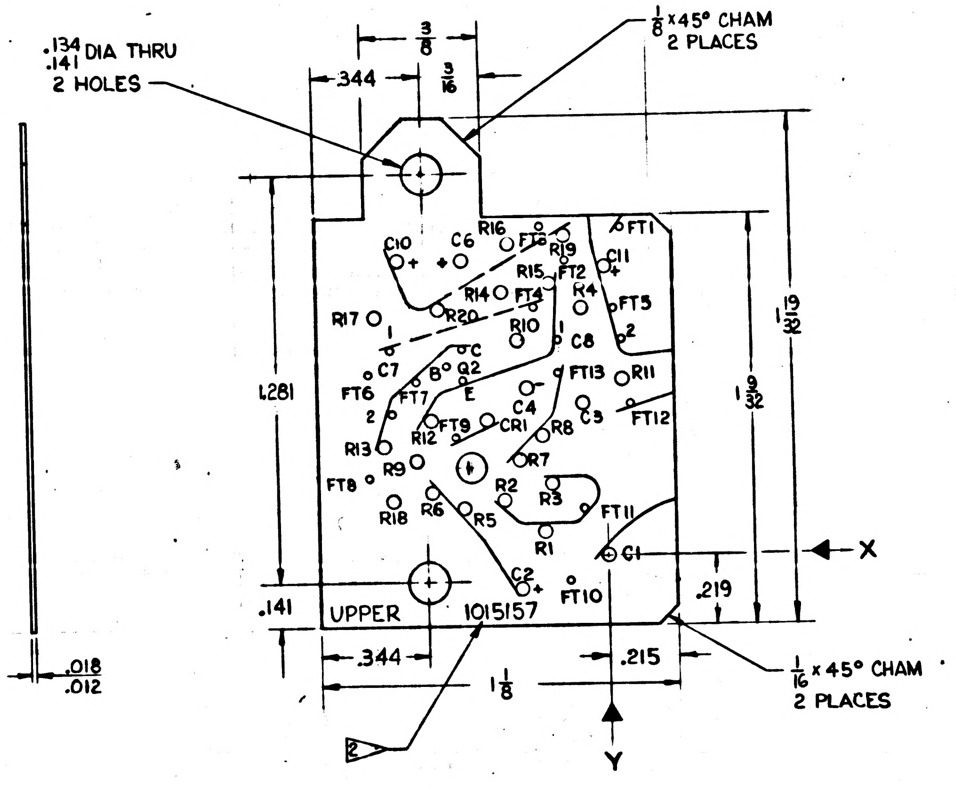
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD, UPPER
COSECANT GENERATOR

CODE IDENT NO
SIZE E
1015157
SCALE 10:1
SHEET 2 OF 2

REVISIONS	TDRR 0-429		
SYM	DESCRIPTION	DATE	APPROVAL

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


.134
.141 DIA THRU
2 HOLES
1/8 x45° CHAM
2 PLACES
3/8
.344
3/16
1.281
1 19/32
1 9/32
.141
.219
.344
.215
1 1/8
.018
.012
1/16 x45° CHAM
2 PLACES
UPPER
1015157
X
Y
2
C10
C6
R16
FT3
R19
FT1
C11
R15
FT2
R14
FT4
R4
FT5
R17
R20
R10
C8
C7
C
Q2
B
E
FT13
R11
FT6
FT7
C4
C3
FT12
R12
FT9
CR1
R8
R13
R7
R9
FT8
R2
R3
R18
R6
R5
FT11
R1
C1
C2
FT10

COORDINATE DIMENSIONS			
HOLE DESIG	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION (TOL +.010, -.000)
C1	0.000	0.000	.043 DIA THRU
C11	.000	.900	.043
FT5	-.025	.775	.024
R11	-.050	.550	.043
C8-2	-.050	.675	.024
FT1	-.050	1.025	
FT12	-.075	.475	
FT11	.075	.150	
C3	.075	.475	.043
R4	.075	.775	
FT10	.125	-.075	.024
FT2	.125	.925	
R19	.125	1.000	.043
FT13	.150	.575	.024
C8-1	.150	.675	
R3	.175	.225	.043
R15	.175	.850	
R1	.200	.075	
R8	.200	.375	
FT3	.200	1.025	.024
FT4	.225	.775	
C4	.250	.525	.043
C2	.275	-.100	
R7	.275	.300	
R10	.275	.675	
R16	.300	.975	
R2	.325	.175	
R14	.325	.825	
CR1	.375	.425	
NO 1	.425	.275	.093
R5	.450	.150	.043
Q2-E	.450	.550	.024
Q2-C	.450	.650	
C6	.450	.925	.043
FT9	.475	.375	.024
Q2-B	.500	.600	
R20	.525	.775	.043
R6	.550	.200	
R12	.550	.425	
R9	.600	.300	
FT7	.600	.550	.024
C10	.650	.925	.043
R18	.675	.175	
C7-2	.675	.400	.024
C7-1	.675	.650	
R13	.700	.350	.043
R17	.725	.750	
FT8	.750	.250	.024
FT6	.750	.575	

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

DIRECTION OF ARROW INDICATES PLUS(+) DIMENSION.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC
LOCATE APPROX. AS SHOWN.

1 MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE

2 MARK 1015157 AND REVISION LETTER 3/64 PER MIL-STD-130.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1015124	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEVANDOWSKI DATE 6-4-63
CHECKED
APPROVAL R. L. Battelson
APPROVAL
NASA APPROVAL 6/5/63
MIT APPROVAL 5 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD UPPER
COSECANT GENERATOR

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015157
SCALE 4 X 1
WT
SHEET OF

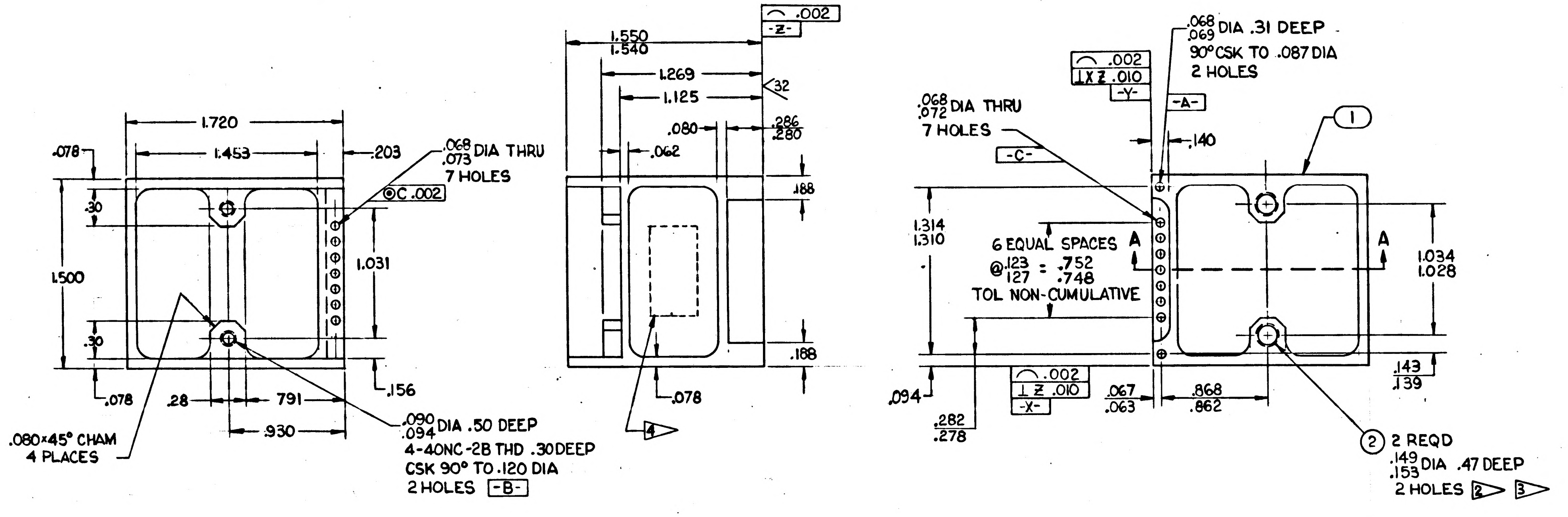
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015157

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015158 A

REVISIONS 01761			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02875	6-26-63	



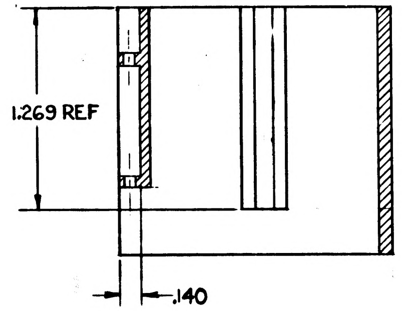
1.720
.078
1.453
.203
.30
1.500
.30
.078
.28
791
.930
.156
1.031
.068/.073 DIA THRU 7 HOLES
⊚C .002
.080×45° CHAM 4 PLACES
.090/.094 DIA .50 DEEP
4-40NC-2B THD .30 DEEP
CSK 90° TO .120 DIA
2 HOLES -B-
1.550/1.540
1.269
1.125
.080
.062
⌒ .002 -Z-
32
.286/.280
.188
.188
.078
4
.068/.072 DIA THRU 7 HOLES
-C-
⌒ .002 ⊥Z .010 -Y-
.068/.069 DIA .31 DEEP
90° CSK TO .087 DIA
2 HOLES
-A-
.140
1
1.314/1.310
6 EQUAL SPACES @ .123/.127 = .752/.748
TOL NON-CUMULATIVE
A
A
1.034/1.028
.143/.139
.094
⌒ .002 ⊥Z .010 -X-
.067/.063
.868/.862
.282/.278
2 2 REQD
.149/.153 DIA .47 DEEP
2 HOLES 2 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/8 R.
ALL CORNERS TO BE .005 TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED $\overset{125}{\surd}$.



1.269 REF
.140

SECTION A-A

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3▷ INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG

4▷ MARK 1015158 AND REVISION LETTER PER MIL-STD-130 LOCATE APPROX AS SHOWN

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS 122118	INSERT-CRES HELICAL COIL	2
1	1015158-1	FRAME 1▷	1

LIST OF MATERIALS

1015154	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± # DECIMALS .000 ± .005 .00 ± .020 ANGLES ± 2°
DO NOT SCALE THIS DRAWING

MATERIAL 1▷

HEAT TREATMENT

FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 6-6-63
CHECKED LaPlummer
APPROVAL R L Bottcher
APPROVAL

NASA APPROVAL Jack Barnard
MIT APPROVAL W Kupfer 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY
ZERO OPTICS TRANSFORMER

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015158

SCALE 2X1 WT SHEET OF

MASTER

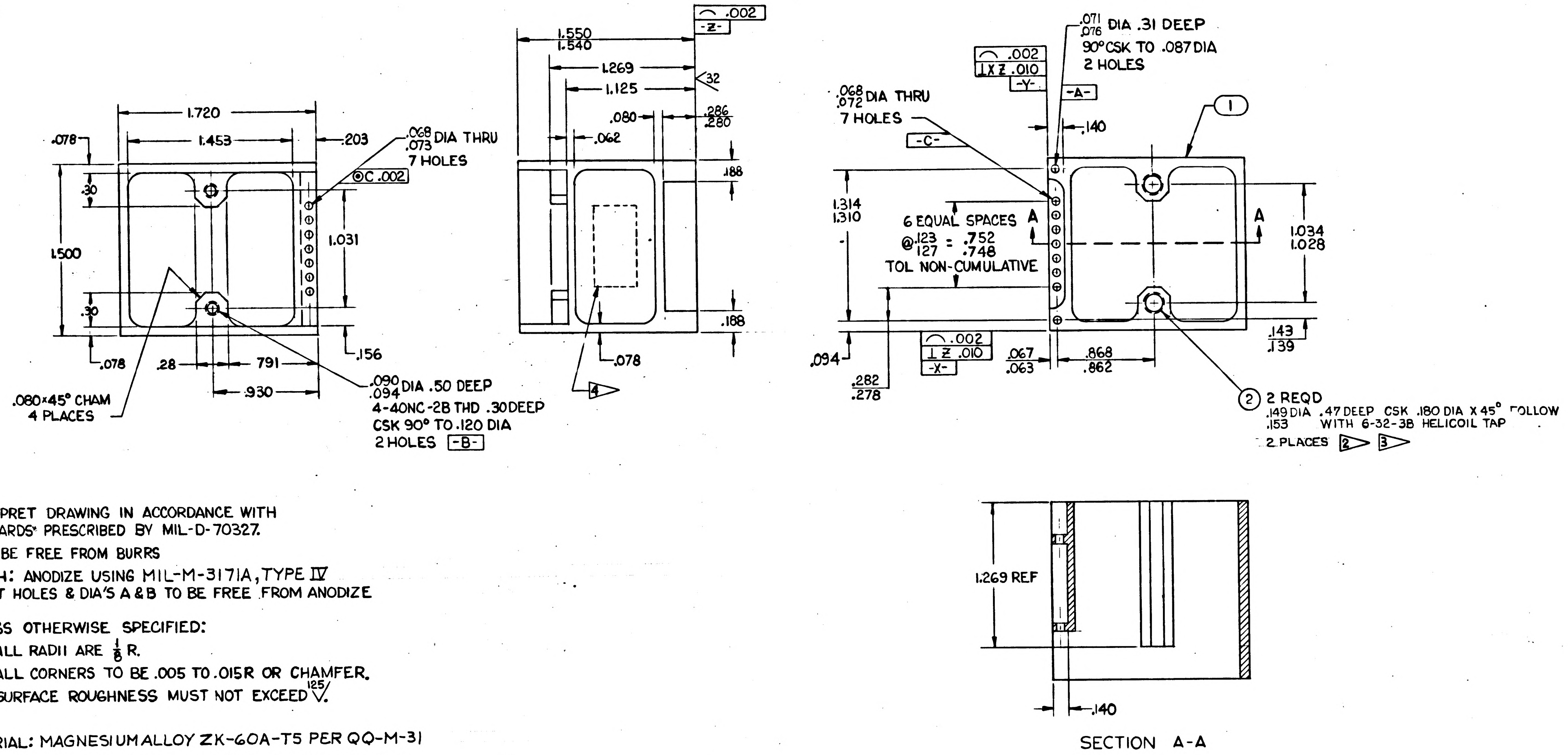
1015158 A

INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015158 C

REVISIONS 01761			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02875	5-26-63	
B	REVISED PER TDRR 03003	9-5-63	WK
C	REVISED PER TDRR 03005	9-5-63	WK



1.720
1.453
.078
.203
.068 .073 DIA THRU
7 HOLES
⊙C .002
.30
1.500
1.031
.30
.078
.28
.791
.930
.156
.080×45° CHAM
4 PLACES
.090 .094 DIA .50 DEEP
4-40NC-2B THD .30DEEP
CSK 90° TO .120 DIA
2 HOLES -B-
⌒ .002
-Z-
1.550
1.540
1.269
1.125
32
.080
.062
.286
.280
.188
.188
.078
4
.071 .076 DIA .31 DEEP
90° CSK TO .087 DIA
2 HOLES
⌒ .002
⊥X Z .010
-Y-
-A-
.068 .072 DIA THRU
7 HOLES
-C-
.140
1
1.314
1.310
6 EQUAL SPACES
@ .123 .127 = .752 .748
TOL NON-CUMULATIVE
A
A
1.034
1.028
.094
⌒ .002
⊥ Z .010
-X-
.282
.278
.067
.063
.868
.862
.143
.139
2 2 REQD
.149 DIA .47 DEEP CSK .180 DIA X 45° FOLLOW
.153 WITH 6-32-3B HELICOIL TAP
2 PLACES 2 3
1.269 REF
.140

SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE $\frac{1}{8}$ R.
ALL CORNERS TO BE .005 TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED $\overset{125}{\surd}$

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3▷ INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG

4▷ MARK 1015158 AND REVISION LETTER PER MIL-STD-130 LOCATE APPROX AS SHOWN

MASTER

2	MS21209-C0620	INSERT THREADED, LOCKING	2
1	1015158-1	FRAME 1▷	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1015154	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .000 ± .005, .00 ± .020 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN LEWANDOWSKI DATE 6-6-63
CHECKED L.A. Plummer
APPROVAL R. L. Bottagin
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W. Kupfer 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY
ZERO OPTICS TRANSFORMER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015158
SCALE 2 X 1
WT
SHEET OF

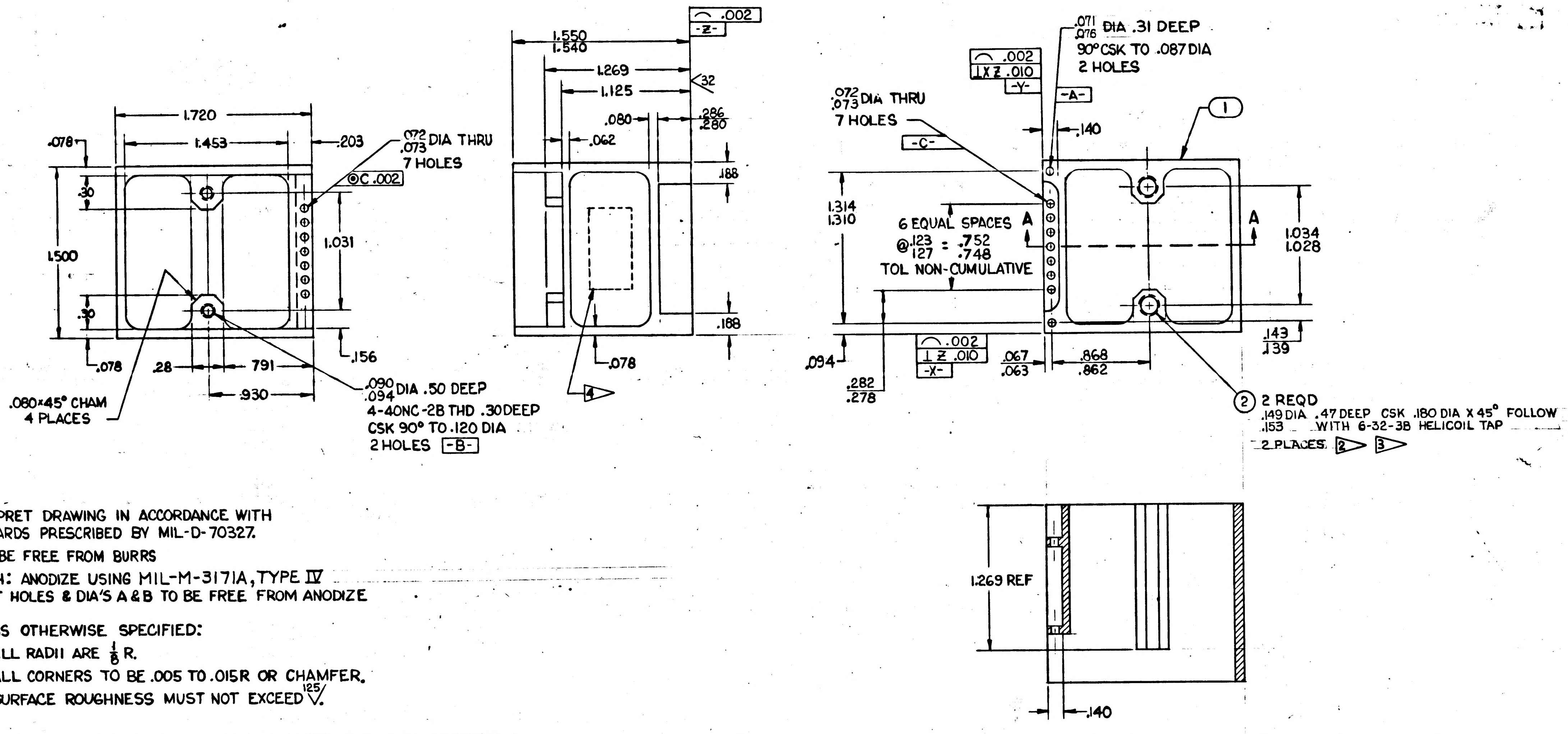
1015158 C

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015158 E

REVISIONS		01761	
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02875	8-26-63	
B	REVISED PER TDRR 03003	9-5-63	WK
C	REVISED PER TDRR 03005	9-5-63	WK
D	REVISED PER TDRR 03851	10-15-63	EPK
E	REVISED PER TDRR 03854	10-15-63	EPK


1.720
1.453
.078
.203
.072
.073 DIA THRU
7 HOLES
ⓒ .002
.30
1.500
1.031
.30
.078
.28
.791
.930
.156
.090
.094 DIA .50 DEEP
4-40NC-2B THD .30DEEP
CSK 90° TO .120 DIA
2 HOLES -B-
.080×45° CHAM
4 PLACES
1.550
1.540
1.269
1.125
.080
.062
32
.286
.280
.188
.188
.078
4
⌒ .002
-Z-
.071
.076 DIA .31 DEEP
90° CSK TO .087 DIA
2 HOLES
⌒ .002
⊥XZ .010
-Y-
-A-
.072
.073 DIA THRU
7 HOLES
-C-
.140
1
1.314
1.310
6 EQUAL SPACES
@ .123/.127 = .752/.748
TOL NON-CUMULATIVE
A
A
1.034
1.028
⌒ .002
⊥Z .010
-X-
.094
.282
.278
.067
.063
.868
.862
.143
.139
2 2 REQD
.149/.153 DIA .47 DEEP CSK .180 DIA X 45° FOLLOW WITH 6-32-3B HELICOIL TAP
2 PLACES 2 3
1.269 REF
.140

SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH
STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE $\frac{1}{8}$ R.
ALL CORNERS TO BE .005 TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED $\overset{125}{\surd}$.

1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3 INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG

4 MARK 1015158 AND REVISION LETTER PER ND 1002019 LOCATE APPROX AS SHOWN

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS21209-C0620	INSERT THREAD D, LOCKING	2
1	1015158-1	FRAME 1	1

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
1015154	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ; DECIMALS .000 ± .005, .00 ± .020; ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 6-6-63
CHECKED L.A. Plummer
APPROVAL R. L. Bottaga
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W. Hoffer 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY
ZERO OPTICS TRANSFORMER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015158
SCALE 2X1
WT
SHEET OF

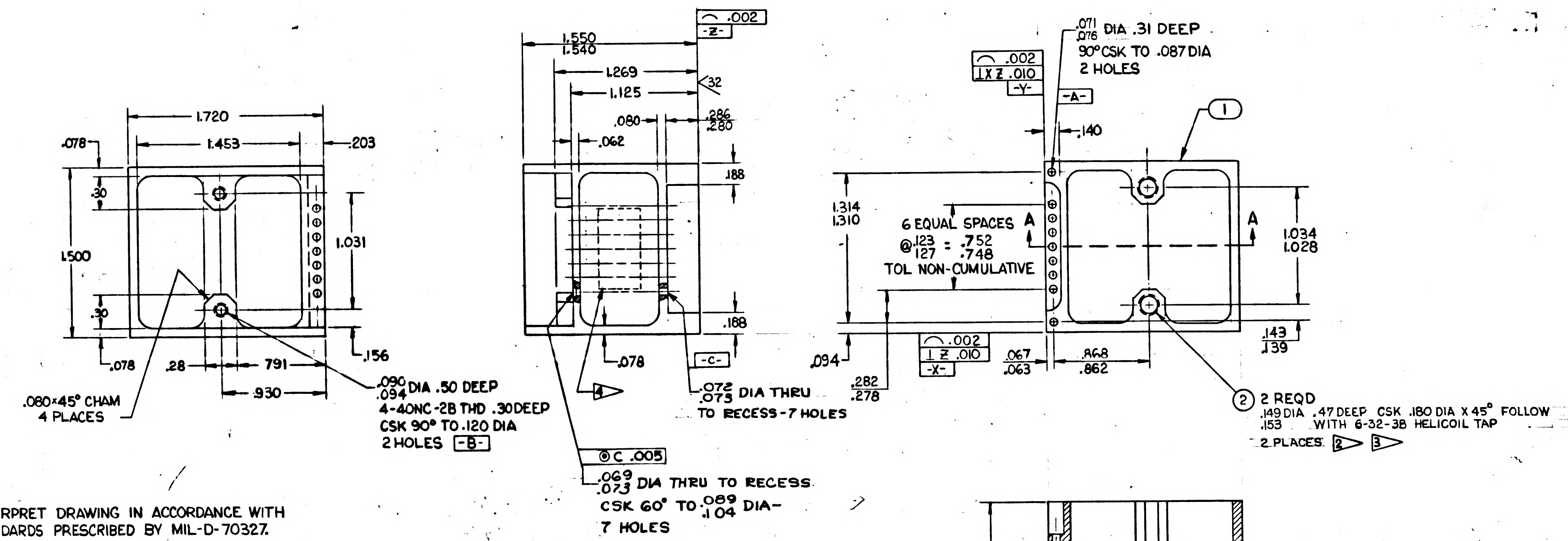
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015158 E

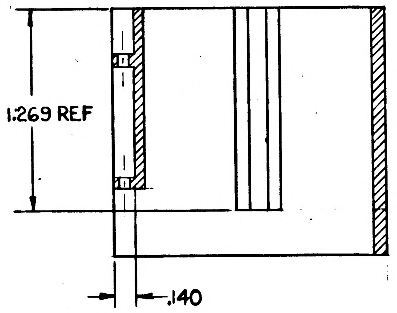
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015158 F

REVISIONS 01761			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02875	6-26-63	EPK
B	REVISED PER TDRR 03003	9-5-63	EPK WK
C	REVISED PER TDRR 03005	9-5-63	WK
D	REVISED PER TDRR 03851	10-15-63	EPK
E	REVISED PER TDRR 03854	10-15-63	EPK
F	REVISED PER TDRR 05468	27 DEC 63	EPK WK



1.720
1.453
.078
.203
.30
1.031
1.500
.30
.156
.078
.28
.791
.930
.080×45° CHAM 4 PLACES
.090/.094 DIA .50 DEEP 4-40NC-2B THD .30DEEP CSK 90° TO .120 DIA 2 HOLES -B-
1.550/1.540
.002 -Z-
1.269
1.125
32
.080
.286/.280
.062
.188
.188
.078
-C-
.072/.075 DIA THRU TO RECESS-7 HOLES
4
C .005
.069/.073 DIA THRU TO RECESS CSK 60° TO .089/.104 DIA-7 HOLES
.071/.076 DIA .31 DEEP 90° CSK TO .087 DIA 2 HOLES
.002 ⊥ X Z .010 -Y-
-A-
.140
1
1.314/1.310
6 EQUAL SPACES @ .123/.127 = .752/.748 TOL NON-CUMULATIVE
A
A
1.034/1.028
.143/.139
.094
.002 ⊥ Z .010 -X-
.282/.278
.067/.063
.868/.862
2 2 REQD .149/.153 DIA .47 DEEP CSK .180 DIA X 45° FOLLOW WITH 6-32-3B HELICOIL TAP 2 PLACES 2 3



1.269 REF
.140

SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE $\frac{1}{8}$ R.
ALL CORNERS TO BE .005 TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED $\overset{125}{\vee}$.

1. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31
2. COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
3. INSTALL, 6-32-2B INSERT PER MS 33649 BREAK OFF TANG
4. MARK 1015158 AND REVISION LETTER PER ND 1002019 LOCATE APPROX AS SHOWN

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS21209-C0620	INSERT THREADED, LOCKING	2
1	1015158-1	FRAME 1	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015154	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XXX ± .005 .XX ± .02 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DRAWN LEWANDOWSKI DATE 6-6-63
CHECKED LAPlummer
APPROVAL R L Bottcher
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W Kupfer 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY
ZERO OPTICS TRANSFORMER

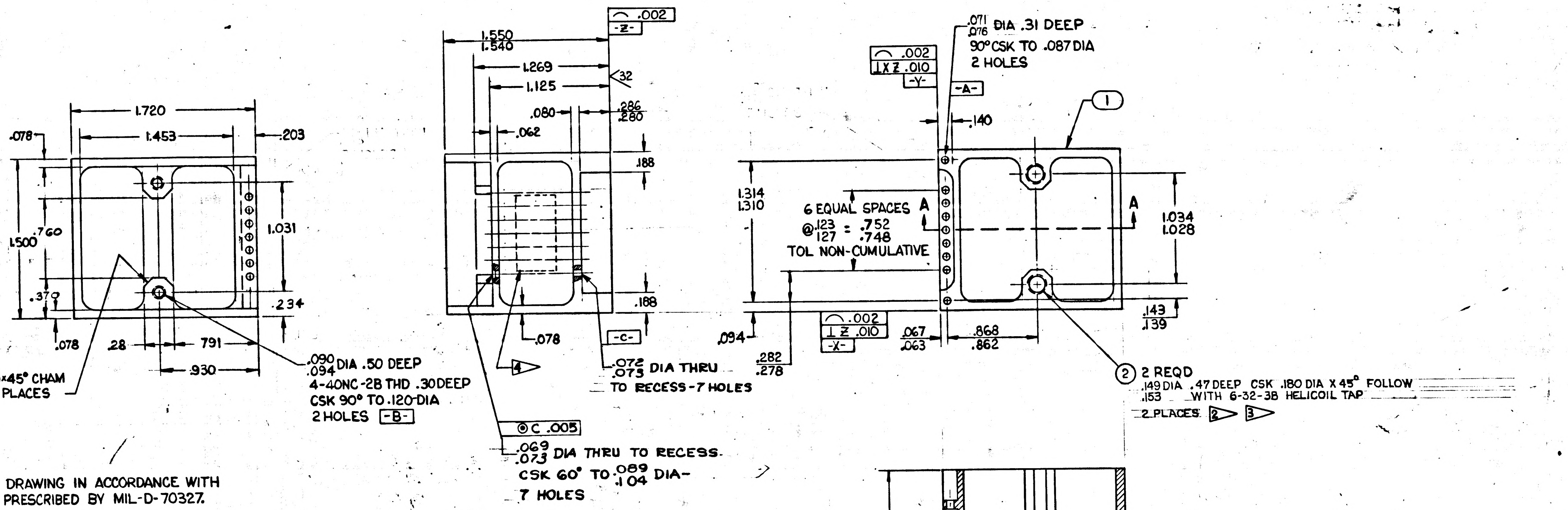
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015158
SCALE 2X1
WT
SHEET OF

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

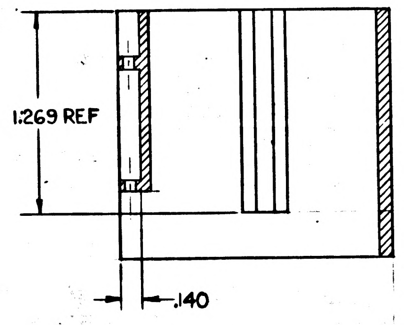
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015158 G

		REVISIONS	01761	
	SYM	DESCRIPTION	DATE	APPROVAL
Ⓜ	A	REVISED PER TDRR 02875	6-26-63	
	B	REVISED PER TDRR 03003	9-5-63	WK
	C	REVISED PER TDRR 03005	9-5-63	WK
	D	REVISED PER TDRR 03851	10-15-63	
	E	REVISED PER TDRR 03854	10-15-63	
	F	REVISED PER TDRR 05468	27 DEC 63	WK
Ⓜ	G	REVISED PER TDRR 05889	22 JAN 64	WK



.002
-Z-
1.550
1.540
1.269
1.125
32
.080
.286
.280
.062
.188
.188
1.720
1.453
.078
.203
.760
1.500
1.031
.370
.234
.078
.28
.791
.930
.078
-C-
.080×45° CHAM
4 PLACES
.090
.094 DIA .50 DEEP
4-40NC-2B THD .30 DEEP
CSK 90° TO .120 DIA
2 HOLES -B-
4
.072
.075 DIA THRU
TO RECESS-7 HOLES
◎ C .005
.069
.073 DIA THRU TO RECESS.
CSK 60° TO .089
.104 DIA-
7 HOLES
.071
.076 DIA .31 DEEP
90° CSK TO .087 DIA
2 HOLES
.002
⊥ X Z .010
-Y-
-A-
.140
1
1.314
1.310
6 EQUAL SPACES
@ .123
.127 = .752
.748
TOL NON-CUMULATIVE
A
A
1.034
1.028
.002
⊥ Z .010
-X-
.094
.282
.278
.067
.063
.868
.862
.143
.139
2 2 REQD
.149 DIA .47 DEEP CSK .180 DIA X 45° FOLLOW
.153 WITH 6-32-3B HELICOIL TAP
2 PLACES 2 3



1.269 REF
.140

SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE $\frac{1}{8}$ R.
ALL CORNERS TO BE .005 TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED $\overset{125}{\checkmark}$.

▷1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31
▷2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
▷3 INSTALL, 6-32-2B INSERT PER MS 33646 BREAK OFF TANG
▷4 MARK 1015158 AND REVISION LETTER PER ND 1002019 LOCATE APPROX AS SHOWN

MASTER

2	MS21209-C0620	INSERT THREADED, LOCKING	2
1	1015158-1	FRAME ▷1	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1015154	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XXX ± .005 .XX ± .02 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL ▷1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 6-6-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

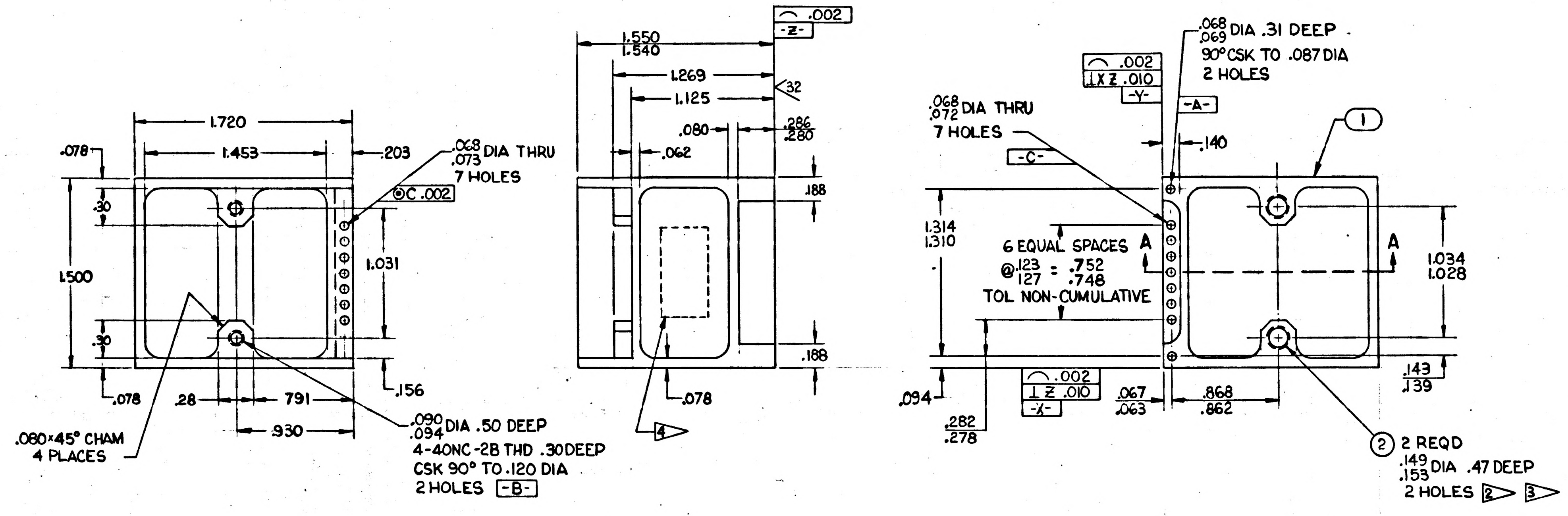
FRAME ASSY
ZERO OPTICS TRANSFORMER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015158
SCALE 2X1
WT
SHEET OF

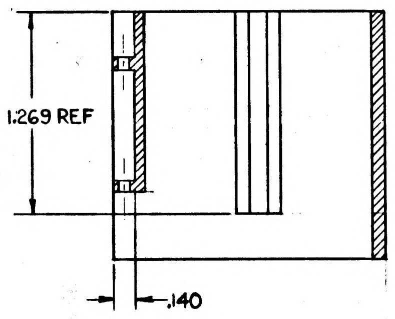
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015158

REVISIONS			01761
SYM	DESCRIPTION	DATE	APPROVAL



1.720
1.453
.203
.078
.068 .073 DIA THRU
7 HOLES
C .002
.30
1.500
1.031
.30
.078
.28
.791
.930
.156
.080×45° CHAM
4 PLACES
.090 .094 DIA .50 DEEP
4-40NC-2B THD .30 DEEP
CSK 90° TO .120 DIA
2 HOLES -B-
.002
-Z-
1.550
1.540
1.269
1.125
32
.080
.286 .280
.062
.188
.188
.078
4
.068 .072 DIA THRU
7 HOLES
-C-
.002
⊥ Z .010
-Y-
.068 .069 DIA .31 DEEP
90° CSK TO .087 DIA
2 HOLES
-A-
.140
1
1.314
1.310
6 EQUAL SPACES
@ .123 .127 = .752 .748
TOL NON-CUMULATIVE
A
A
1.034
1.028
.143
.139
.094
.002
⊥ Z .010
-X-
.067
.063
.868
.862
.282
.278
2 2 REQD
.149 .153 DIA .47 DEEP
2 HOLES 2 3



1.269 REF
.140

SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS

FINISH: ANODIZE USING MIL-A-8625, TYPE II DYED BLACK
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE $\frac{1}{8}$ R.
ALL CORNERS TO BE .005 TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED $\overset{125}{\surd}$

1 MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3 INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG

4 MARK 1015158 AND REVISION LETTER PER MIL-STD-130 LOCATE APPROX AS SHOWN

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS 122118	INSERT-CRES HELICAL COIL	2
1	1015158-1	FRAME 1	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015154	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ; DECIMALS .000 ± .005, .00 ± .020; ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN LEWANDOWSKI DATE 6-6-63
CHECKED L A Plummer
APPROVAL L L Bottaga
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W Kupfer 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY
ZERO OPTICS TRANSFORMER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015158
SCALE 2x1
WT
SHEET OF

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

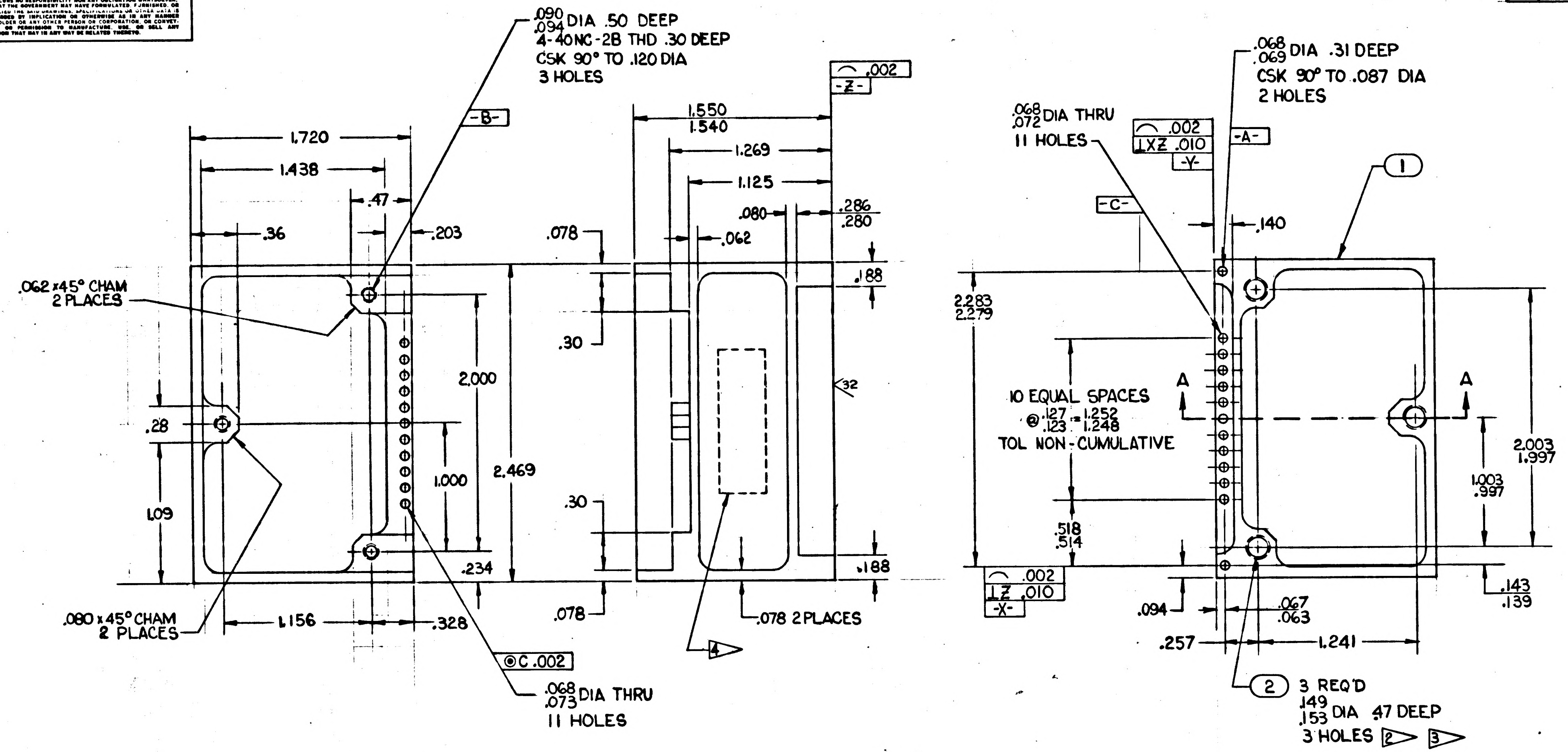
1015158

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015159 A

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02875	8 26 63	RPK JW

REVISIONS 01761



.090 .094 DIA .50 DEEP
4-40NC-2B THD .30 DEEP
CSK 90° TO .120 DIA
3 HOLES
-B-
1.720
1.438
.47
.36
.203
.062 x 45° CHAM 2 PLACES
2.000
.28
1.000
2.469
1.09
.234
.080 x 45° CHAM 2 PLACES
1.156
.328
◎C .002
.068 .073 DIA THRU
11 HOLES
1.550 1.540
1.269
1.125
.080
.062
.078
.30
.30
.078
.286 .280
.188
.188
32
.078 2 PLACES
4
⌒ .002
-Z-
.068 .072 DIA THRU
11 HOLES
⌒ .002
⊥XZ .010
-Y-
-A-
-C-
.068 .069 DIA .31 DEEP
CSK 90° TO .087 DIA
2 HOLES
.140
1
2.283 2.279
10 EQUAL SPACES
@ .127 .123 = 1.252 1.248
TOL NON-CUMULATIVE
A
A
.518 .514
⌒ .002
⊥Z .010
-X-
.094
.257
.067 .063
1.241
2.003 1.997
1.003 .997
.143 .139
2 3 REQ'D
.149 .153 DIA .47 DEEP
3 HOLES 2 3

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A&B TO BE FREE FROM ANODIZE

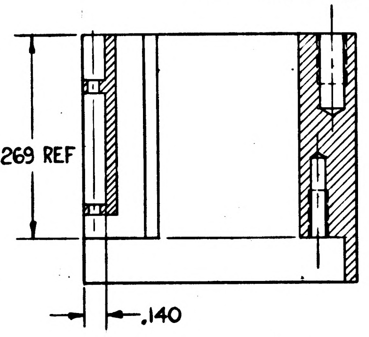
UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE $\frac{1}{8}$R.
ALL CORNERS TO BE .005 TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED $\overset{125}{\surd}$.

1 ▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2 ▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3 ▷ INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.

4 ▷ MARK 1015159 AND REVISION LETTER PER MIL-STD-130 LOCATE APPROX AS SHOWN.



1.269 REF
.140

SECTION A-A

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	MS 122118	INSERT-CRES HELICAL COIL	2
1	1015159-1	FRAMES 1 ▷	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015138	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± # DECIMALS .000 ±.005 .00 .020 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1 ▷
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 6-14-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY
ISOLATION TRANSFORMER

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015159
SCALE WT SHEET OF

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015159 B

REVISIONS 01761			
SYM	DESCRIPTION	DATE	APPROVAL
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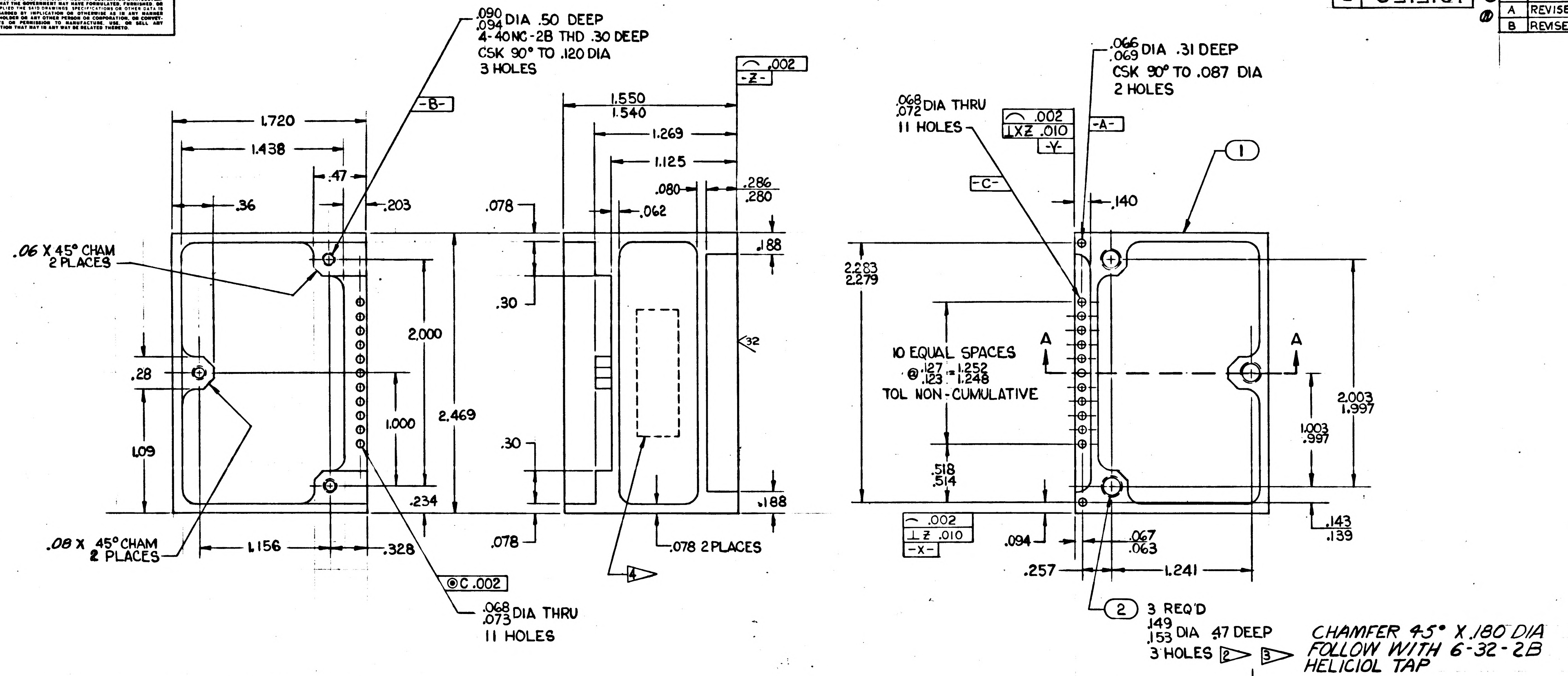
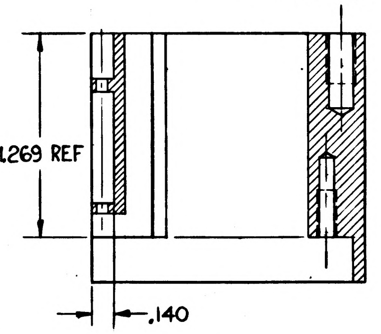
B	REVISED PER TDRR 03325	4-26-63	



.090/.094 DIA .50 DEEP
4-40NC-2B THD .30 DEEP
CSK 90° TO .120 DIA
3 HOLES
-B-
1.720
1.438
.47
.36
.203
.06 X 45° CHAM 2 PLACES
2.000
.28
1.000
2.469
1.09
.234
.08 X 45° CHAM 2 PLACES
1.156
.328
⊚C .002
.068/.073 DIA THRU
11 HOLES
⌒ .002
-Z-
1.550/1.540
1.269
1.125
.080
.062
.286/.280
.078
.188
.30
32
.30
.078
.188
.078 2 PLACES
4
.066/.069 DIA .31 DEEP
CSK 90° TO .087 DIA
2 HOLES
.068/.072 DIA THRU
11 HOLES
⌒ .002
⊥XZ .010
-Y-
-A-
-C-
1
.140
2.283/2.279
10 EQUAL SPACES
@ .127/.123 = 1.252/1.248
TOL NON-CUMULATIVE
A
A
2.003/1.997
1.003/.997
.518/.514
⌒ .002
⊥Z .010
-X-
.094
.067/.063
.143/.139
.257
1.241
2 3 REQ'D
.149/.153 DIA .47 DEEP
3 HOLES 2 3
CHAMFER 45° X .180 DIA
FOLLOW WITH 6-32-2B
HELICIOL TAP



1.269 REF
.140

SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A&B TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/8R.
ALL CORNERS TO BE .005 TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

1 ▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2 ▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3 ▷ INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.

4 ▷ MARK 1015159 AND REVISION LETTER PER MIL-STD-130 LOCATE APPROX AS SHOWN.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	MS 122118	INSERT-CRES HELICAL COIL	2
1	1015159-1	FRAMES 1 ▷	1

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
1015138	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± | DECIMALS .000 ±.005 .00 ±.020 | ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1 ▷
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 6-14-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY
ISOLATION TRANSFORMER

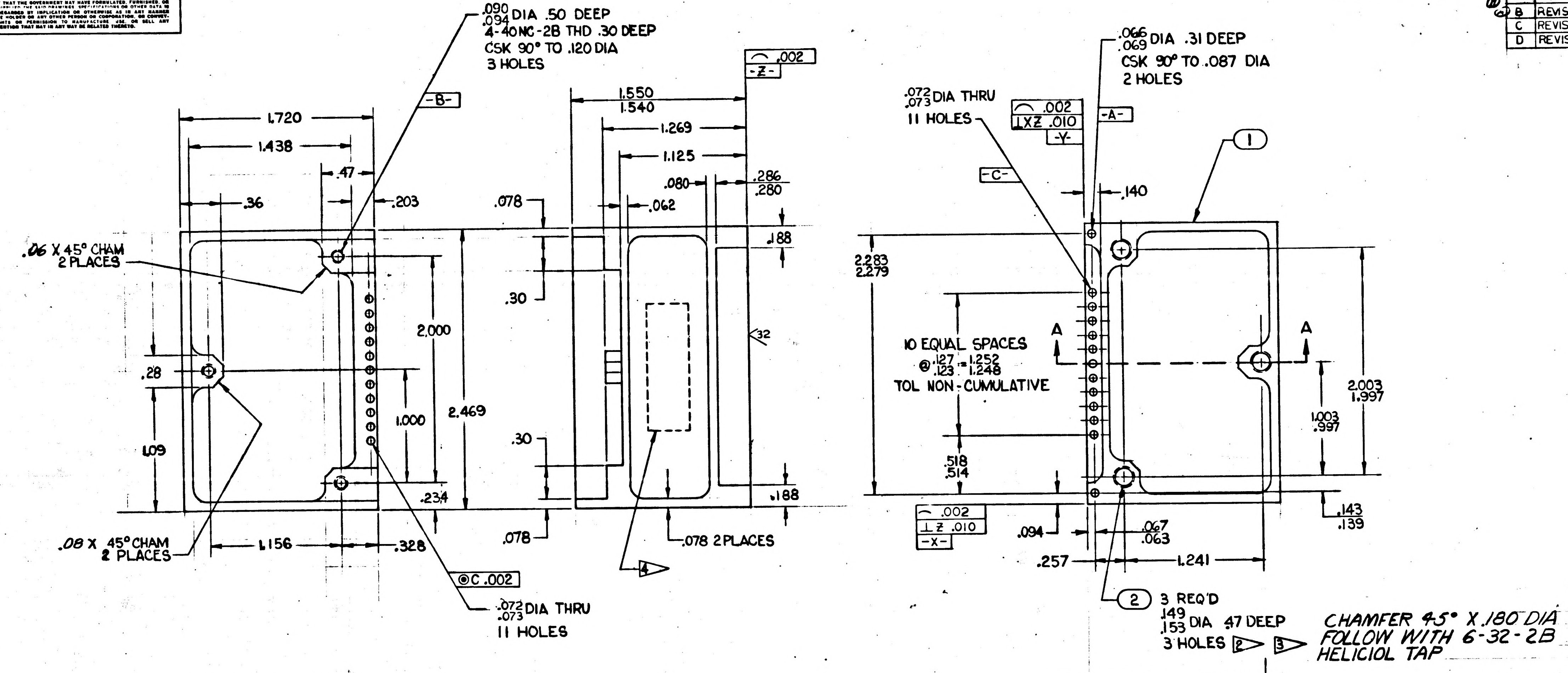
CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015159
SCALE | WT | SHEET OF

INCHES
0 2
PHOTOGRAPHIC SCALE ONLY

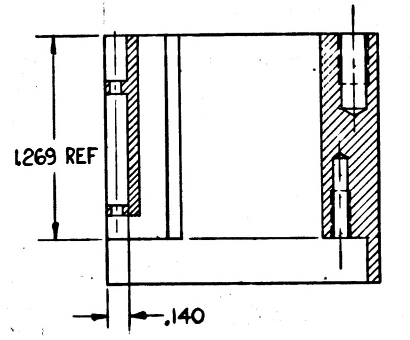
NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

D 1015159

REVISIONS 01761			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02875	3-28-63	RPK
B	REVISED PER TDRR 03325	4-26-63	
C	REVISED PER TDRR 03851	10-15-63	
D	REVISED PER TDRR 03854	10-15-63	



.090 .094 DIA .50 DEEP
4-40NC-2B THD .30 DEEP
CSK 90° TO .120 DIA
3 HOLES
-B-
1.720
1.438
.47
.36
.203
.06 X 45° CHAM 2 PLACES
2.000
.28
1.000
2.469
1.09
.234
.08 X 45° CHAM 2 PLACES
1.156
.328
◎ C .002
.072 .073 DIA THRU
11 HOLES
⌒ .002
-Z-
1.550 1.540
1.269
1.125
.080
.062
.078
.286 .280
.188
.30
32
.30
.078
.078 2 PLACES
.188
4
.066 .069 DIA .31 DEEP
CSK 90° TO .087 DIA
2 HOLES
.072 .073 DIA THRU
11 HOLES
⌒ .002
⊥ XZ .010
-Y-
-A-
-C-
1
.140
2.283 2.279
10 EQUAL SPACES
@ .127 .123 = 1.252 1.248
TOL NON-CUMULATIVE
A
A
2.003 1.997
1.003 .997
.518 .514
⌒ .002
⊥ Z .010
-X-
.094
.067 .063
.143 .139
.257
1.241
2 3 REQ'D
.149 .153 DIA .47 DEEP
3 HOLES 2 3
CHAMFER 45° X .180 DIA
FOLLOW WITH 6-32-2B
HELICIOL TAP



1.269 REF
.140

SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A&B TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/8 R.
ALL CORNERS TO BE .005 TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3▷ INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.

4▷ MARK 1015159 AND REVISION LETTER PER ND1002019
LOCATE APPROX AS SHOWN.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	MS 21209-C0620	INSERT-CRES HELICAL COIL	2
1	1015159-1	FRAMES 1▷	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015138	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS .000 ±.005 .00 ±.020 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 6-14-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY
ISOLATION TRANSFORMER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015159
SCALE
WT
SHEET OF

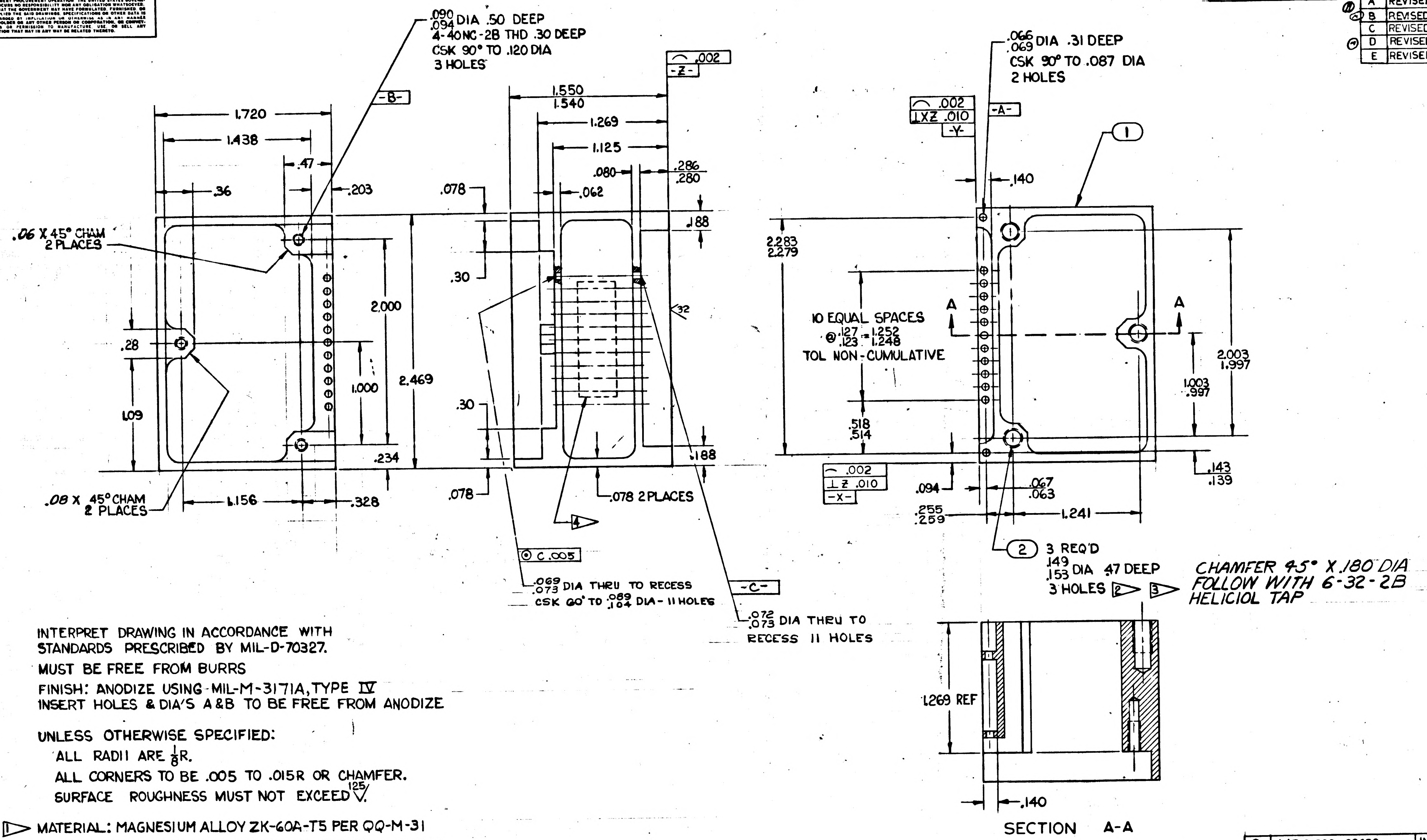
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015159 E

REVISIONS 01761

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02875	7-26-63	RPK
B	REVISED PER TDRR 03325	9-26-63	
C	REVISED PER TDRR 03851	10-15-63	
D	REVISED PER TDRR 03854	10-15-63	
E	REVISED PER TDRR 05432	27 DEC 63	


.090/.094 DIA .50 DEEP
4-40NC-2B THD .30 DEEP
CSK 90° TO .120 DIA
3 HOLES
-B-
1.720
1.438
.47
.36
.203
.06 X 45° CHAM 2 PLACES
2.000
.28
1.000
2.469
1.09
.234
.08 X 45° CHAM 2 PLACES
1.156
.328
.002
-Z-
1.550/1.540
1.269
1.125
.080
.286/.280
.078
.062
.188
.30
32
.30
.188
.078
.078 2 PLACES
4
⊙ C .005
.069/.073 DIA THRU TO RECESS
CSK 90° TO .089/.104 DIA - 11 HOLES
-C-
.072/.073 DIA THRU TO RECESS 11 HOLES
.066/.069 DIA .31 DEEP
CSK 90° TO .087 DIA
2 HOLES
.002
⊥XZ .010
-Y-
-A-
1
.140
2.283/2.279
10 EQUAL SPACES
.127/.123 = 1.252/1.248
TOL NON-CUMULATIVE
A
A
2.003/1.997
1.003/.997
.518/.514
.002
⊥Z .010
-X-
.094
.067/.063
.143/.139
.255/.259
1.241
2 3 REQ'D
.149/.153 DIA .47 DEEP
3 HOLES 2 3
CHAMFER 45° X .180 DIA
FOLLOW WITH 6-32-2B
HELICIOL TAP
1.269 REF
.140

SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/8R.
ALL CORNERS TO BE .005 TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3▷ INSTALL, 6-32-2B INSERT PER MS 33646 BREAK OFF TANG.

4▷ MARK 1015159 AND REVISION LETTER PER ND 1002019 LOCATE APPROX AS SHOWN.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	MS 21209-C0620	INSERT-CRES HELICAL COIL	2
1	1015159-1	FRAMES 1▷	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015138	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS XXX±.005 XX±.02 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 6-14-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY
ISOLATION TRANSFORMER

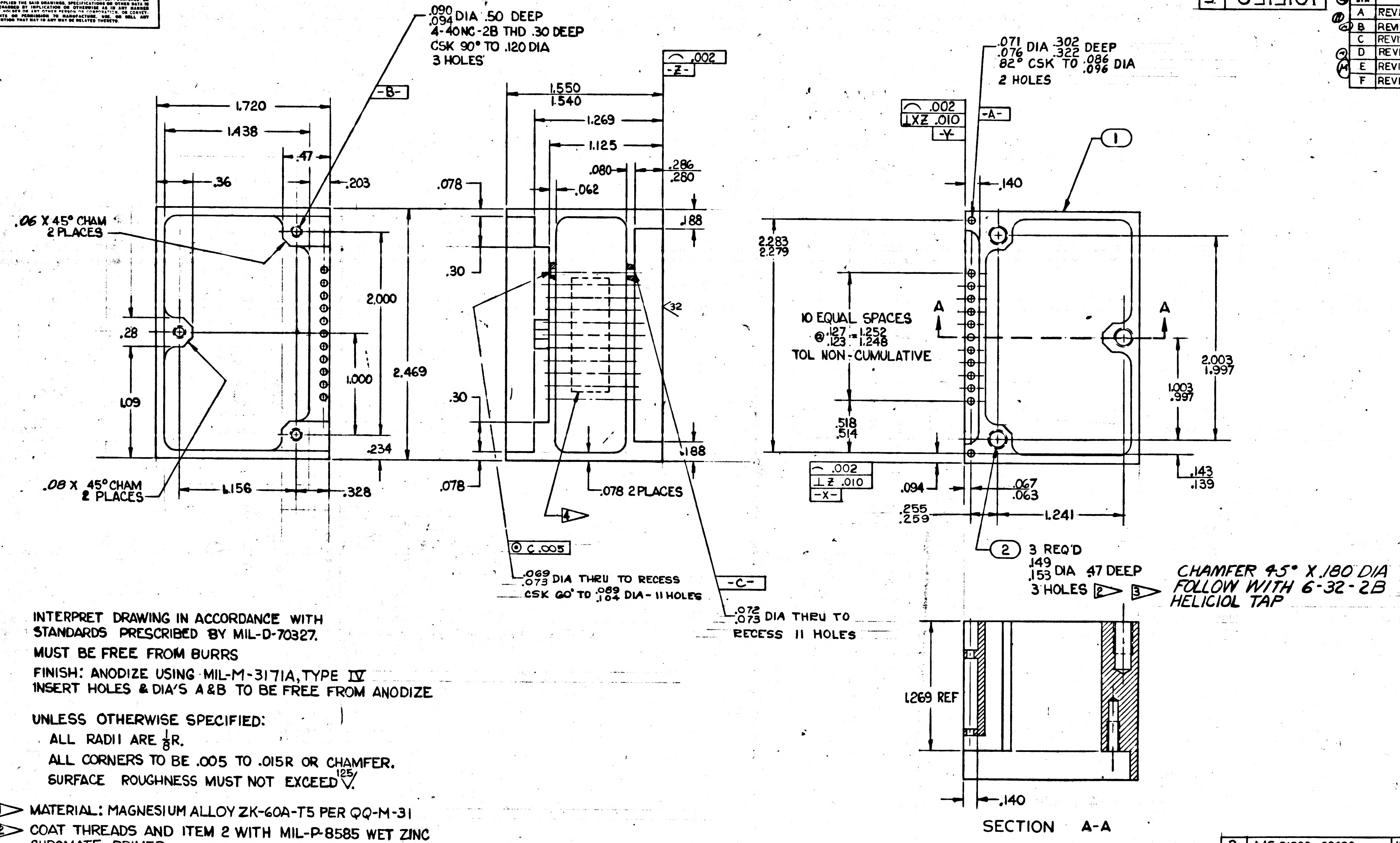
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015159
SCALE
WT
SHEET OF

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

F 1015159

REVISIONS 0176			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02875		RPK
B	REVISED PER TDRR 03325	6-26-63	
C	REVISED PER TDRR 03851	10-15-63	
D	REVISED PER TDRR 03854	10-15-63	
E	REVISED PER TDRR 05432	27 DEC 63	
F	REVISED PEP TDRR 05870	21 JAN 64	LK


.090 .094 DIA .50 DEEP
4-40NC-2B THD .30 DEEP
CSK 90° TO .120 DIA
3 HOLES
-B-
1.720
1.438
.47
.36
.203
.06 X 45° CHAM 2 PLACES
2.000
.28
1.000
2.469
1.09
.234
.08 X 45° CHAM 2 PLACES
1.156
.328
.002 -Z-
1.550 1.540
1.269
1.125
.286 .280
.080
.062
.078
.188
.30
32
.30
.188
.078
.078 2 PLACES
4
C .005
.069 .073 DIA THRU TO RECESS
CSK 60° TO .089 .104 DIA - 11 HOLES
-C-
.072 .075 DIA THRU TO RECESS 11 HOLES
.071 .076 DIA .302 .322 DEEP
82° CSK TO .086 .096 DIA
2 HOLES
.002
⊥XZ .010
-Y-
-A-
1
.140
2.283 2.279
10 EQUAL SPACES
@ .127 .123 = 1.252 1.248
TOL NON-CUMULATIVE
A
A
2.003 1.997
1.003 .997
.518 .514
.002
⊥Z .010
-X-
.094
.067 .063
.255 .259
1.241
.143 .139
2 3 REQ'D
.149 .153 DIA .47 DEEP
3 HOLES 2 3
CHAMFER 45° X .180 DIA
FOLLOW WITH 6-32-2B
HELICIOL TAP
1.269 REF
.140

SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/8 R.
ALL CORNERS TO BE .005 TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

2▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3▷ INSTALL, 6-32-2B INSERT PER MS 33646 BREAK OFF TANG.

4▷ MARK 1015159 AND REVISION LETTER PER ND 1002019 LOCATE APPROX AS SHOWN.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	MS 21209-C0620	INSERT-CRES HELICAL COIL	2
1	1015159-1	FRAMES 1▷	1

LIST OF MATERIALS

MASTER

NEXT ASSY	USED ON
1015138	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS XXX±.005 XX±.02 ANGLES ± 2°
DO NOT SCALE THIS DRAWING

MATERIAL 1▷

HEAT TREATMENT

FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN LEWANDOWSKI DATE 6-14-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY
ISOLATION TRANSFORMER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015159
SCALE
WT
SHEET OF

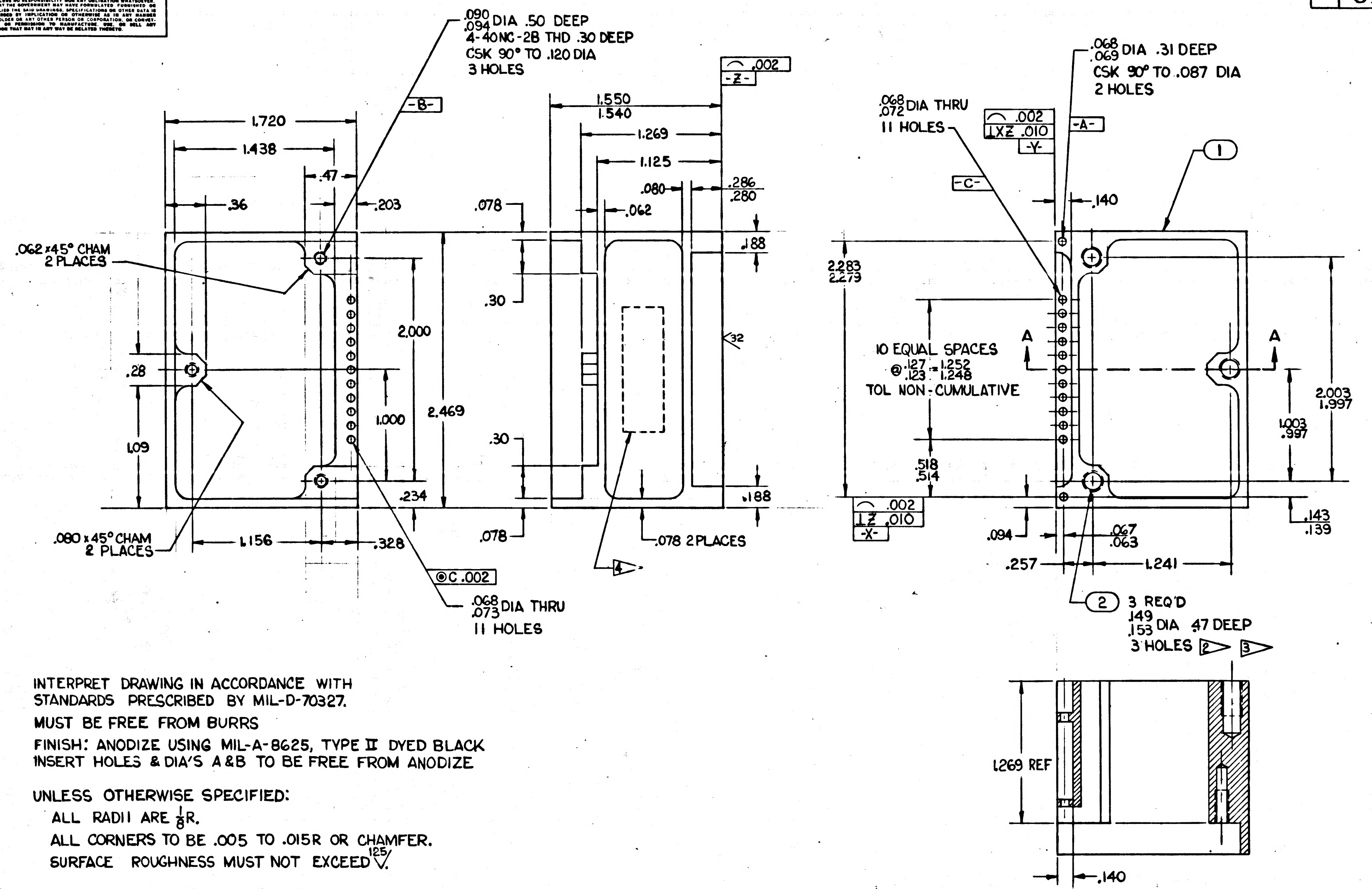
1015159

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015159

SYM	DESCRIPTION	DATE	APPROVAL

REVISIONS 01761



.090 .094 DIA .50 DEEP
4-40NC-2B THD .30 DEEP
CSK 90° TO .120 DIA
3 HOLES
-B-
1.720
1.438
.47
.36
.203
.062 x 45° CHAM 2 PLACES
.28
1.09
2.000
1.000
2.469
.234
.080 x 45° CHAM 2 PLACES
1.156
.328
⊚C .002
.068 .073 DIA THRU
11 HOLES
.002
-Z-
1.550 1.540
1.269
1.125
.080
.286 .280
.062
.078
.188
.30
32
.30
.188
.078
.078 2 PLACES
4
.068 .072 DIA THRU
11 HOLES
.002
⊥XZ .010
-Y-
-A-
-C-
.068 .069 DIA .31 DEEP
CSK 90° TO .087 DIA
2 HOLES
1
.140
2.283 2.279
10 EQUAL SPACES
@ .127 .123 = 1.252 1.248
TOL NON-CUMULATIVE
A
A
2.003 1.997
1.003 .997
.518 .514
.002
⊥Z .010
-X-
.094
.067 .063
.257
1.241
.143 .139
2
3 REQ'D
.149 .153 DIA .47 DEEP
3 HOLES 2 3
1.269 REF
.140

SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS

FINISH: ANODIZE USING MIL-A-8625, TYPE II DYED BLACK
INSERT HOLES & DIA'S A & B TO BE FREE FROM ANODIZE

UNLESS OTHERWISE SPECIFIED:
- ALL RADII ARE $\frac{1}{8}$R.
- ALL CORNERS TO BE .005 TO .015R OR CHAMFER.
- SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{125}$.

1. MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325
2. COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
3. INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.

4. MARK 1015159 AND REVISION LETTER PER MIL-STD-130 LOCATE APPROX AS SHOWN.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	MS 122118	INSERT-CRES HELICAL COIL	2
1	1015159-1	FRAMES 1	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015138	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS .000 ±.005, .00 ±.020 — ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN LEWANDOWSKI DATE 6-14-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME ASSY
ISOLATION TRANSFORMER

CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015159
SCALE | WT | SHEET OF

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

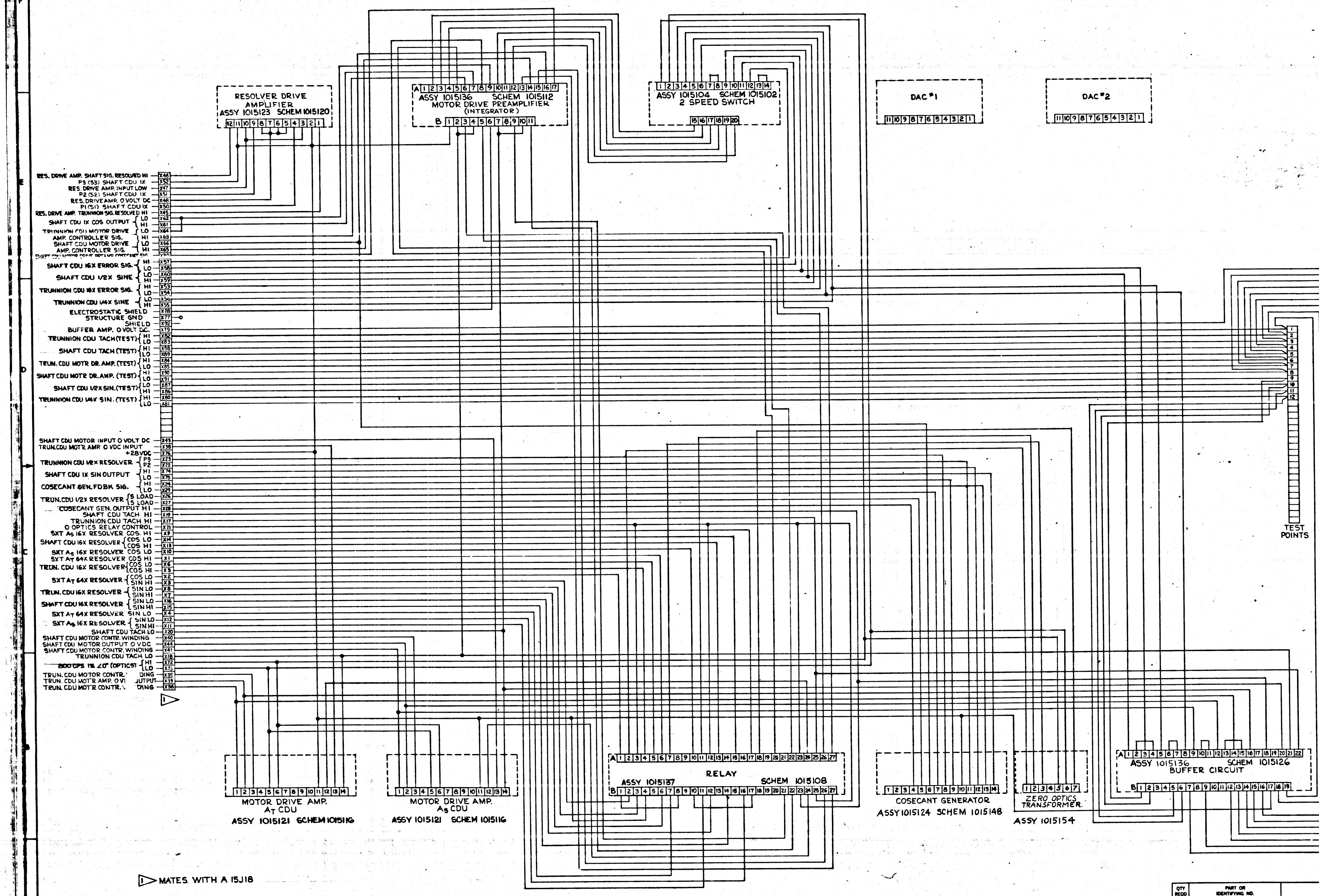
1015159

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015160 A

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REVERSED CONNECTIONS TO PINS 1&2 ON 2 SPEED SWITCH ADDED NOTE ▷ TDRR01756	26 Jun 63	W.H.


RESOLVER DRIVE AMPLIFIER
ASSY 1015123 SCHEM 1015120
12 11 10 9 8 7 6 5 4 3 2 1
A 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
ASSY 1015136 SCHEM 1015112
MOTOR DRIVE PREAMPLIFIER
(INTEGRATOR)
B 1 2 3 4 5 6 7 8 9 10 11
1 2 3 4 5 6 7 8 9 10 11 12 13 14
ASSY 1015104 SCHEM 1015102
2 SPEED SWITCH
15 16 17 18 19 20
DAC #1
11 10 9 8 7 6 5 4 3 2 1
DAC #2
11 10 9 8 7 6 5 4 3 2 1
RES. DRIVE AMP. SHAFT SIG. RESOLVED HI X46
P3 (S3) SHAFT CDU 1X X52
RES. DRIVE AMP. INPUT LOW X47
P2 (S2) SHAFT CDU 1X X51
RES. DRIVE AMP. 0 VOLT DC X48
P1 (S1) SHAFT CDU 1X X50
RES. DRIVE AMP. TRUNNION SIG. RESOLVED HI X45
SHAFT CDU 1X COS OUTPUT LO X62 HI X61
TRUNNION CDU MOTOR DRIVE AMP. CONTROLLER SIG. LO X64 HI X63
SHAFT CDU MOTOR DRIVE AMP. CONTROLLER SIG. LO X66 HI X65
SHAFT CDU MOTOR DRIVE PREAMP COSECANT SIG X30
SHAFT CDU 16X ERROR SIG. HI X57 LO X58
SHAFT CDU 1/2X SINE LO X60 HI X59
TRUNNION CDU 16X ERROR SIG. HI X53 LO X54
TRUNNION CDU 1/4X SINE LO X56 HI X55
ELECTROSTATIC SHIELD X78
STRUCTURE GND X77
SHIELD X92
BUFFER AMP. 0 VOLT DC. X79
TRUNNION CDU TACH (TEST) HI X82 LO X83
SHAFT CDU TACH (TEST) HI X88 LO X89
TRUN. CDU MOTR DR. AMP. (TEST) HI X84 LO X85
SHAFT CDU MOTR DR. AMP. (TEST) HI X90 LO X91
SHAFT CDU 1/2X SIN. (TEST) LO X87 HI X86
TRUNNION CDU 1/4X SIN. (TEST) HI X80 LO X81
SHAFT CDU MOTOR INPUT 0 VOLT DC X43
TRUN. CDU MOT'R AMP. 0 VDC INPUT X38
+28VDC X76
TRUNNION CDU 1/2X RESOLVER P3 X23 P2 X22
SHAFT CDU 1X SIN OUTPUT HI X74 LO X75
COSECANT GEN. FDBK SIG. HI X24 LO X29
TRUN. CDU 1/2X RESOLVER S LOAD X26 S LOAD X27
COSECANT GEN. OUTPUT HI X28
SHAFT CDU TACH HI X19
TRUNNION CDU TACH HI X17
0 OPTICS RELAY CONTROL X71
SXT A_S 16X RESOLVER COS. HI X9
SHAFT CDU 16X RESOLVER COS LO X14 COS HI X13
SXT A_S 16X RESOLVER COS LO X10
SXT A_T 64X RESOLVER COS HI X1
TRUN. CDU 16X RESOLVER COS LO X6 COS HI X5
SXT A_T 64X RESOLVER COS LO X2 SIN HI X3
TRUN. CDU 16X RESOLVER SIN LO X8 SIN HI X7
SHAFT CDU 16X RESOLVER SIN LO X16 SIN HI X15
SXT A_T 64X RESOLVER SIN LO X4
SXT A_S 16X RESOLVER SIN LO X12 SIN HI X11
SHAFT CDU TACH LO X20
SHAFT CDU MOTOR CONTR. WINDING X40
SHAFT CDU MOTOR OUTPUT 0 VDC X44
SHAFT CDU MOTOR CONTR. WINDING X41
TRUNNION CDU TACH LO X18
800 CPS 1% ∠0° (OPTICS) HI X72 LO X73
TRUN. CDU MOTOR CONTR. DING X35
TRUN. CDU MOT'R AMP. 0 V UTPUT X39
TRUN. CDU MOT'R CONTR. DING X36
1
TEST POINTS
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12 13 14
MOTOR DRIVE AMP.
A_T CDU
ASSY 1015121 SCHEM 1015116
1 2 3 4 5 6 7 8 9 10 11 12 13 14
MOTOR DRIVE AMP.
A_S CDU
ASSY 1015121 SCHEM 1015116
A 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
RELAY
ASSY 1015137 SCHEM 1015108
B 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
1 2 3 4 5 6 7 8 9 10 11 12 13 14
COSECANT GENERATOR
ASSY 1015124 SCHEM 1015148
1 2 3 4 5 6 7
ZERO OPTICS TRANSFORMER
ASSY 1015154
A 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
ASSY 1015136 SCHEM 1015126
BUFFER CIRCUIT
B 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

1 ▷ MATES WITH A 15J18

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO. CONTRACT
DRAWN R. EMERY DATE 6-6-63
CHECKED
APPROVAL R L Battey
APPROVAL
NASA APPROVAL 6-14-63
MIT APPROVAL 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC WIRING DIAGRAM, ELECTRICAL
TRAY 8

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015160
SCALE
WT
SHEET OF

1015160 A

MASTER

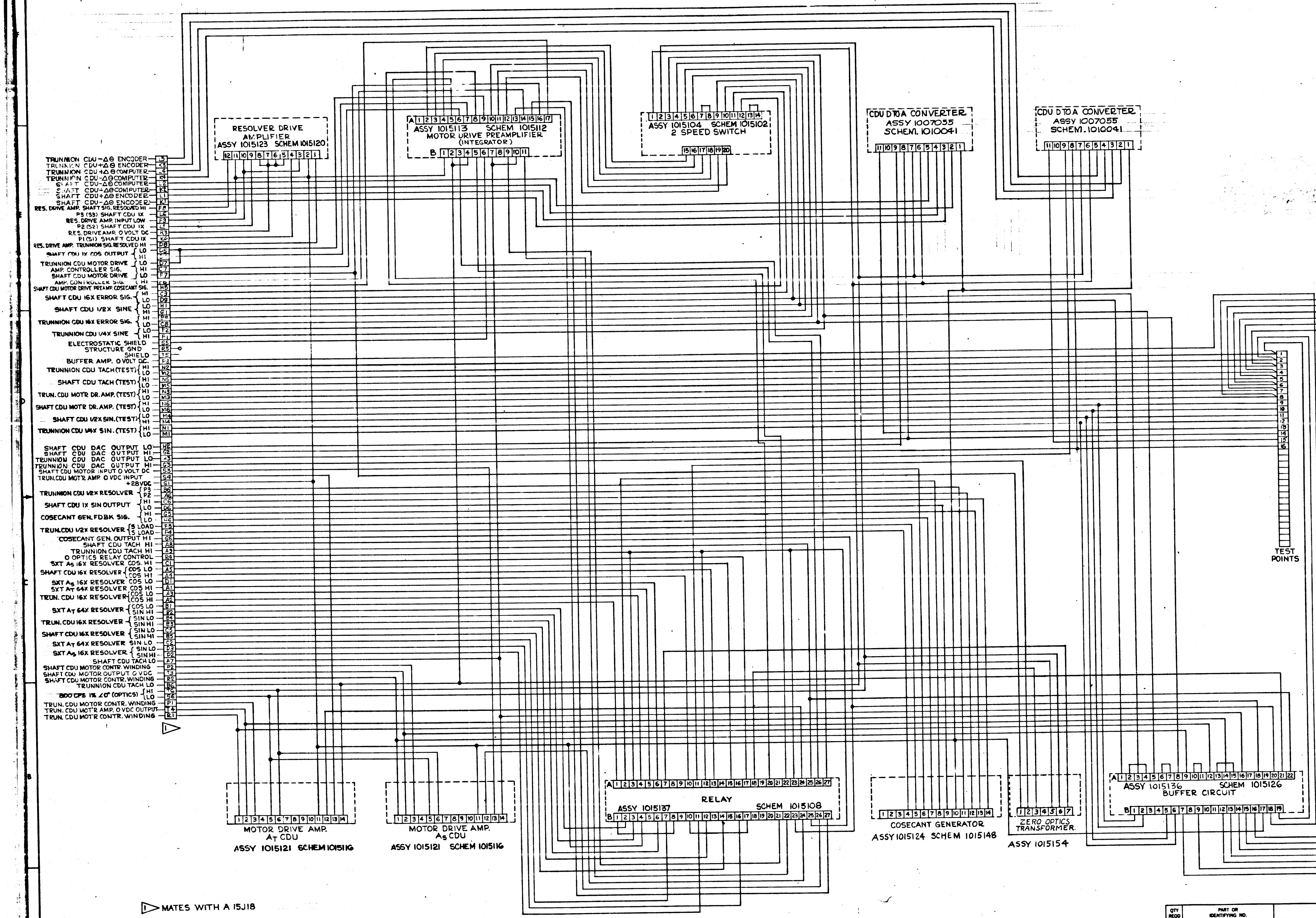
INCHES
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015160 B

REVISIONS

SYM.	DESCRIPTION	DATE	APPROVAL
A	REVERSED CONNECTIONS TO PINS 1&2 ON 2 SPEED SWITCH ADDED NOTE 1 TDRR 01750	24/1.63	WH
B	REVISED PER TDRR 02458	8/7/63	WK.


TRUNNION CDU −Δθ ENCODER L3
TRUNNION CDU +Δθ ENCODER K3
TRUNNION CDU +Δθ COMPUTER L4
TRUNNION CDU −Δθ COMPUTER K4
SHAFT CDU −Δθ COMPUTER L2
SHAFT CDU +Δθ COMPUTER K2
SHAFT CDU +Δθ ENCODER L1
SHAFT CDU −Δθ ENCODER K1
RES. DRIVE AMP. SHAFT SIG. RESOLVED HI F8
P3 (S3) SHAFT CDU 1X L6
RES. DRIVE AMP. INPUT LOW F9
P2 (S2) SHAFT CDU 1X L5
RES. DRIVE AMP. 0 VOLT DC R3
P1 (S1) SHAFT CDU 1X K6
RES. DRIVE AMP. TRUNNION SIG. RESOLVED HI D8
SHAFT CDU 1X COS OUTPUT LO D5
HI
TRUNNION CDU MOTOR DRIVE AMP. CONTROLLER SIG. LO D7
HI C7
SHAFT CDU MOTOR DRIVE AMP. CONTROLLER SIG. LO F7
HI
SHAFT CDU MOTOR DRIVE PREAMP. COSECANT SIG. H5
SHAFT CDU 16X ERROR SIG. HI C9
LO D9
SHAFT CDU 1/2X SINE LO H1
HI G1
TRUNNION CDU 16X ERROR SIG. HI
LO C8
TRUNNION CDU 1/4X SINE LO F2
HI F1
ELECTROSTATIC SHIELD S5
STRUCTURE GND R5
SHIELD T5
BUFFER AMP. 0 VOLT DC. P3
TRUNNION CDU TACH (TEST) HI N2
LO M2
SHAFT CDU TACH (TEST) HI N5
LO M5
TRUN. CDU MOTR DR. AMP. (TEST) HI N3
LO M3
SHAFT CDU MOTR DR. AMP. (TEST) HI N6
LO M6
SHAFT CDU 1/2X SIN. (TEST) LO M4
HI N4
TRUNNION CDU 1/4X SIN. (TEST) HI N1
LO M1
SHAFT CDU DAC OUTPUT LO H2
SHAFT CDU DAC OUTPUT HI G2
TRUNNION CDU DAC OUTPUT LO H3
TRUNNION CDU DAC OUTPUT HI G3
SHAFT CDU MOTOR INPUT 0 VOLT DC S3
TRUN. CDU MOT'R AMP. 0 VDC INPUT S4
+28VDC S1
TRUNNION CDU 1/2X RESOLVER P3 B6
P2 A6
SHAFT CDU 1X SIN OUTPUT HI C6
LO D6
COSECANT GEN. FDBK SIG. HI G5
LO H6
TRUN. CDU 1/2X RESOLVER S LOAD F3
S LOAD F4
COSECANT GEN. OUTPUT HI G6
SHAFT CDU TACH HI A8
TRUNNION CDU TACH HI A9
0 OPTICS RELAY CONTROL R4
SXT As 16X RESOLVER COS. HI C1
SHAFT CDU 16X RESOLVER COS LO A5
COS HI A4
SXT As 16X RESOLVER COS LO D1
SXT AT 64X RESOLVER COS HI A1
TRUN. CDU 16X RESOLVER COS LO A3
COS HI A2
SXT AT 64X RESOLVER COS LO B1
SIN HI B2
TRUN. CDU 16X RESOLVER SIN LO B4
SIN HI B3
SHAFT CDU 16X RESOLVER SIN LO C5
SIN HI B5
SXT AT 64X RESOLVER SIN LO C2
SXT As 16X RESOLVER SIN LO D3
SIN HI D2
SHAFT CDU TACH LO A7
SHAFT CDU MOTOR CONTR. WINDING P2
SHAFT CDU MOTOR OUTPUT 0 VDC T3
SHAFT CDU MOTOR CONTR. WINDING R2
TRUNNION CDU TACH LO B6
800 CPS 1% ∠0° (OPTICS) HI T6
LO S6
TRUN. CDU MOTOR CONTR. WINDING P1
TRUN. CDU MOT'R AMP. 0 VDC OUTPUT T4
TRUN. CDU MOT'R CONTR. WINDING R1
1
RESOLVER DRIVE AMPLIFIER
ASSY 1015123 SCHEM 1015120
12 11 10 9 8 7 6 5 4 3 2 1
A 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
ASSY 1015113 SCHEM 1015112
MOTOR DRIVE PREAMPLIFIER
(INTEGRATOR)
B 1 2 3 4 5 6 7 8 9 10 11
1 2 3 4 5 6 7 8 9 10 11 12 13 14
ASSY 1015104 SCHEM 1015102
2 SPEED SWITCH
15 16 17 18 19 20
CDU D TO A CONVERTER
ASSY 1007055
SCHEM. 1010041
11 10 9 8 7 6 5 4 3 2 1
CDU D TO A CONVERTER
ASSY 1007055
SCHEM. 1010041
11 10 9 8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
TEST POINTS
1 2 3 4 5 6 7 8 9 10 11 12 13 14
MOTOR DRIVE AMP.
AT CDU
ASSY 1015121 SCHEM 1015116
1 2 3 4 5 6 7 8 9 10 11 12 13 14
MOTOR DRIVE AMP.
As CDU
ASSY 1015121 SCHEM 1015116
A 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
RELAY
ASSY 1015137 SCHEM 1015108
B 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
1 2 3 4 5 6 7 8 9 10 11 12 13 14
COSECANT GENERATOR
ASSY 1015124 SCHEM 1015148
1 2 3 4 5 6 7
ZERO OPTICS TRANSFORMER
ASSY 1015154
A 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
ASSY 1015136 SCHEM 1015126
BUFFER CIRCUIT
B 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
6 5 4 3 2 1
F E D C B

1 MATES WITH A 15J18

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT
DRAWN R. EMERY DATE 6-6-63
CHECKED
APPROVAL R L Battalion
APPROVAL
NASA APPROVAL
6-19-63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC WIRING DIAGRAM, ELECTRICAL
TRAY 8

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015160
SCALE
WT
SHEET OF

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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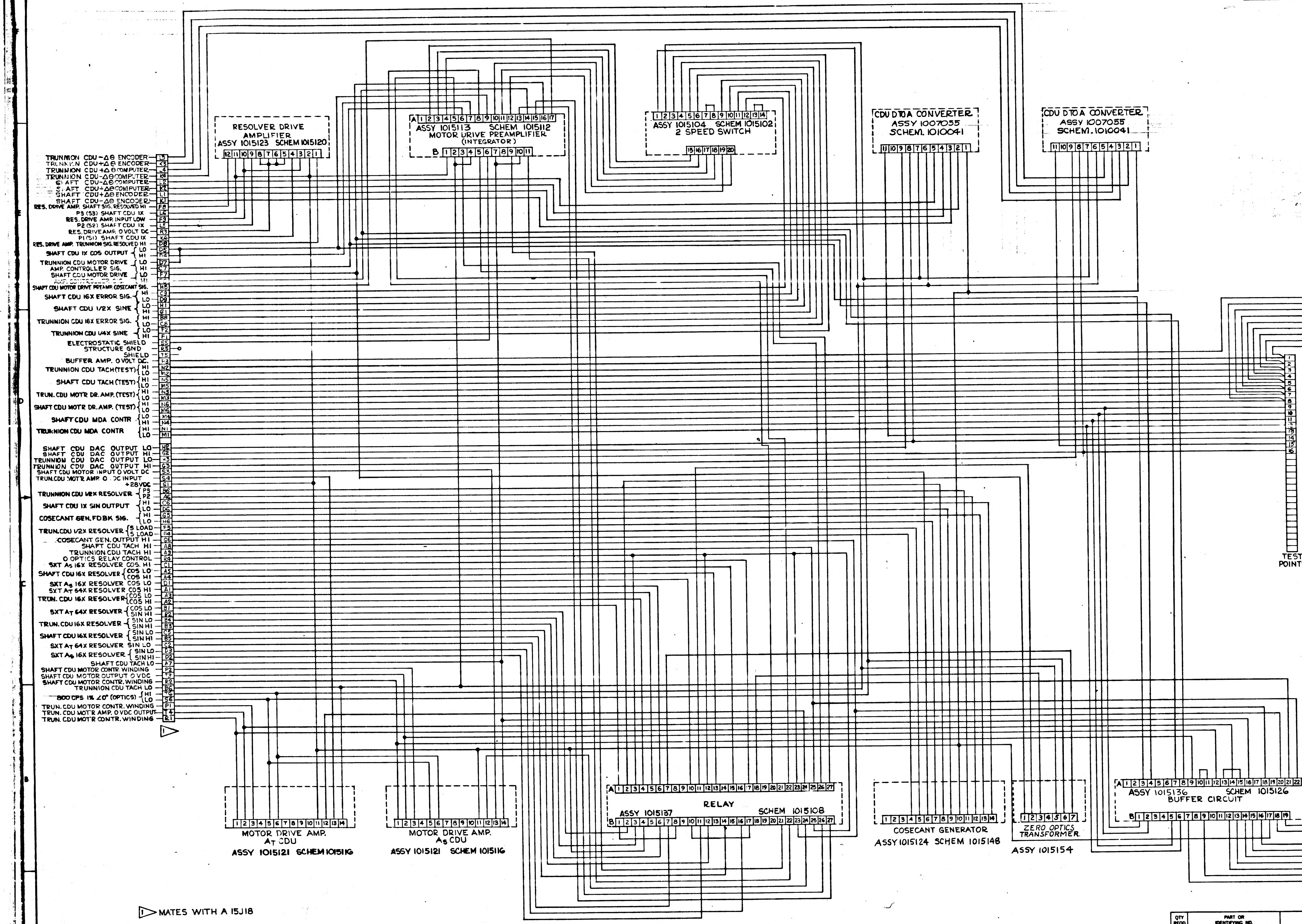
1015160 C

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	REVERSED CONNECTIONS TO PINS 1&2 ON 2 SPEED SWITCH ADDED NOTE ▷ TDRR 01750	26/63	W.H.
B	REVISED PER TDRR 02458	8/7/63	W.H.
C	REVISED PER TDRR 02716	8-21-63	A.T.


RESOLVER DRIVE AMPLIFIER
ASSY 1015123 SCHEM 1015120
ASSY 1015113 SCHEM 1015112
MOTOR DRIVE PREAMPLIFIER
(INTEGRATOR)
ASSY 1015104 SCHEM 1015102
2 SPEED SWITCH
CDU D TO A CONVERTER
ASSY 1007055
SCHEM. 1010041
CDU D TO A CONVERTER
ASSY 1007055
SCHEM. 1010041
TRUNNION CDU -Δθ ENCODER L3
TRUNNION CDU +Δθ ENCODER K3
TRUNNION CDU +Δθ COMPUTER L4
TRUNNION CDU -Δθ COMPUTER K4
SHAFT CDU -Δθ COMPUTER L2
SHAFT CDU +Δθ COMPUTER K2
SHAFT CDU +Δθ ENCODER L1
SHAFT CDU -Δθ ENCODER K1
RES. DRIVE AMP. SHAFT SIG. RESOLVED HI F8
P3 (S3) SHAFT CDU 1X L6
RES. DRIVE AMP. INPUT LOW F9
P2 (S2) SHAFT CDU 1X L5
RES. DRIVE AMP. 0 VOLT DC R3
P1 (S1) SHAFT CDU 1X K6
RES. DRIVE AMP. TRUNNION SIG. RESOLVED HI D8
SHAFT CDU 1X COS OUTPUT LO D5
HI D4
TRUNNION CDU MOTOR DRIVE AMP. CONTROLLER SIG. LO D7
HI C7
SHAFT CDU MOTOR DRIVE AMP. CONTROLLER SIG. LO F7
HI F6
SHAFT CDU MOTOR DRIVE PREAMP. COSECANT SIG. H5
SHAFT CDU 16X ERROR SIG. HI C9
LO D9
SHAFT CDU 1/2X SINE LO H1
HI G1
TRUNNION CDU 16X ERROR SIG. HI B8
LO C8
TRUNNION CDU 1/4X SINE LO F2
HI F1
ELECTROSTATIC SHIELD S5
STRUCTURE GND R5
SHIELD T5
BUFFER AMP. 0 VOLT DC. P3
TRUNNION CDU TACH (TEST) HI N2
LO M2
SHAFT CDU TACH (TEST) HI N5
LO M5
TRUN. CDU MOT'R DR. AMP. (TEST) HI N3
LO M3
SHAFT CDU MOT'R DR. AMP. (TEST) HI N6
LO M6
SHAFT CDU MDA CONTR LO M4
HI N4
TRUNNION CDU MDA CONTR HI N1
LO M1
SHAFT CDU DAC OUTPUT LO H2
SHAFT CDU DAC OUTPUT HI G2
TRUNNION CDU DAC OUTPUT LO H3
TRUNNION CDU DAC OUTPUT HI G3
SHAFT CDU MOTOR INPUT 0 VOLT DC S3
TRUN. CDU MOT'R AMP. 0 VDC INPUT S4
+28VDC S1
TRUNNION CDU 1/2X RESOLVER P3 B6
P2 A6
SHAFT CDU 1X SIN OUTPUT HI C6
LO D6
COSECANT GEN. FDBK SIG. HI G5
LO H6
TRUN. CDU 1/2X RESOLVER S LOAD F3
S LOAD F4
COSECANT GEN. OUTPUT HI G6
SHAFT CDU TACH HI A8
TRUNNION CDU TACH HI A9
0 OPTICS RELAY CONTROL R4
SXT A_S 16X RESOLVER COS. HI C1
SHAFT CDU 16X RESOLVER COS LO A5
COS HI A4
SXT A_S 16X RESOLVER COS LO D1
SXT A_T 64X RESOLVER COS HI A1
TRUN. CDU 16X RESOLVER COS LO A3
COS HI A2
SXT A_T 64X RESOLVER COS LO B1
SIN HI B2
TRUN. CDU 16X RESOLVER SIN LO B4
SIN HI B3
SHAFT CDU 16X RESOLVER SIN LO C5
SIN HI B5
SXT A_T 64X RESOLVER SIN LO C2
SXT A_S 16X RESOLVER SIN LO D3
SIN HI D2
SHAFT CDU TACH LO A7
SHAFT CDU MOTOR CONTR. WINDING P2
SHAFT CDU MOTOR OUTPUT 0 VDC T3
SHAFT CDU MOTOR CONTR. WINDING R2
TRUNNION CDU TACH LO B6
800 CPS 1% ∠0° (OPTICS) HI T6
LO S6
TRUN. CDU MOTOR CONTR. WINDING P1
TRUN. CDU MOT'R AMP. 0 VDC OUTPUT T4
TRUN. CDU MOT'R CONTR. WINDING R1
1
TEST POINTS
MOTOR DRIVE AMP.
A_T CDU
ASSY 1015121 SCHEM 1015116
MOTOR DRIVE AMP.
A_S CDU
ASSY 1015121 SCHEM 1015116
RELAY
ASSY 1015137 SCHEM 1015108
COSECANT GENERATOR
ASSY 1015124 SCHEM 1015148
ZERO OPTICS TRANSFORMER
ASSY 1015154
ASSY 1015136 SCHEM 1015126
BUFFER CIRCUIT

▷1 MATES WITH A 15J18

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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APPROVAL R. L. Battey
APPROVAL
NASA APPROVAL 6-14-63
MIT APPROVAL 14 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC WIRING DIAGRAM, ELECTRICAL
TRAY 8

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015160
SCALE
WT
SHEET OF

MASTER

INCHES
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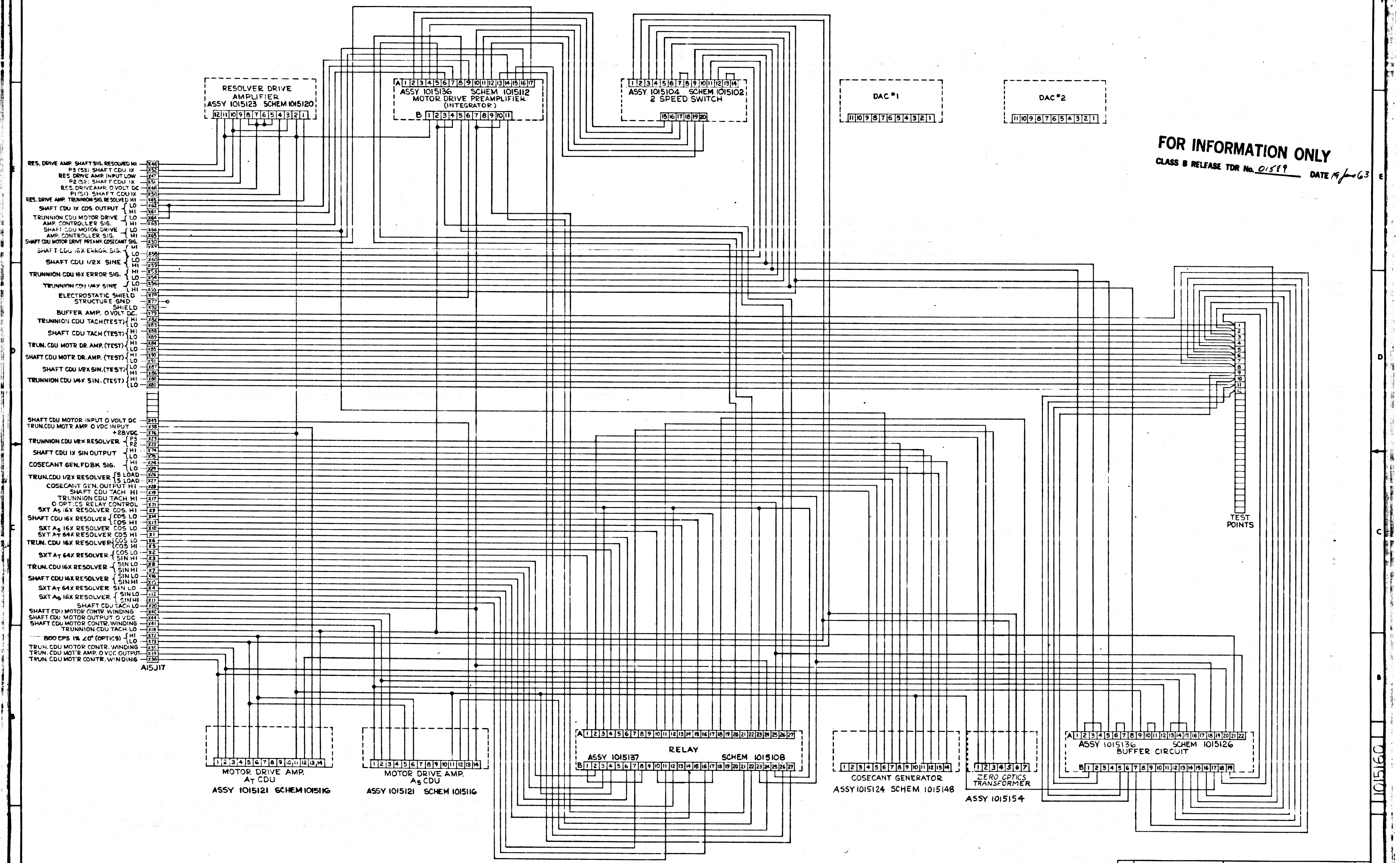
1015160

SYM	REVISIONS DESCRIPTION	DATE	APPROVAL

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01589 DATE 19 June 63


RESOLVER DRIVE AMPLIFIER
ASSY 1015123 SCHEM 1015120
ASSY 1015136 SCHEM 1015112
MOTOR DRIVE PREAMPLIFIER
(INTEGRATOR)
ASSY 1015104 SCHEM 1015102
2 SPEED SWITCH
DAC #1
DAC #2
RES. DRIVE AMP. SHAFT SIG. RESOLVED HI X46
P3 (S3) SHAFT CDU 1X X52
RES. DRIVE AMP. INPUT LOW X47
P2 (S2) SHAFT CDU 1X X51
RES. DRIVE AMP. 0 VOLT DC X48
P1 (S1) SHAFT CDU 1X X50
RES. DRIVE AMP. TRUNNION SIG. RESOLVED HI X45
SHAFT CDU 1X COS OUTPUT LO X62 HI X61
TRUNNION CDU MOTOR DRIVE AMP. CONTROLLER SIG. LO X64 HI X63
SHAFT CDU MOTOR DRIVE AMP. CONTROLLER SIG. LO X66 HI X65
SHAFT CDU MOTOR DRIVE PREAMP. COSECANT SIG. X30
SHAFT CDU 16X ERROR SIG. HI X57 LO X58
SHAFT CDU 1/2X SINE LO X60 HI X59
TRUNNION CDU 16X ERROR SIG. HI X53 LO X54
TRUNNION CDU 1/4X SINE LO X56 HI X55
ELECTROSTATIC SHIELD X78
STRUCTURE GND X77
SHIELD X92
BUFFER AMP. 0 VOLT DC. X79
TRUNNION CDU TACH (TEST) HI X82 LO X83
SHAFT CDU TACH (TEST) HI X88 LO X89
TRUN. CDU MOT'R DR. AMP. (TEST) HI X84 LO X85
SHAFT CDU MOT'R DR. AMP. (TEST) HI X90 LO X91
SHAFT CDU 1/2X SIN. (TEST) LO X87 HI X86
TRUNNION CDU 1/4X SIN. (TEST) HI X80 LO X81
SHAFT CDU MOTOR INPUT 0 VOLT DC X43
TRUN. CDU MOT'R. AMP. 0 VDC INPUT X38
+28VDC X76
TRUNNION CDU 1/2X RESOLVER P3 X23 P2 X22
SHAFT CDU 1X SIN OUTPUT HI X74 LO X75
COSECANT GEN. FDBK SIG. HI X24 LO X29
TRUN. CDU 1/2X RESOLVER S LOAD X26 S LOAD X27
COSECANT GEN. OUTPUT HI X28
SHAFT CDU TACH HI X19
TRUNNION CDU TACH HI X17
0 OPTICS RELAY CONTROL X71
SXT A_S 16X RESOLVER COS. HI X9
SHAFT CDU 16X RESOLVER COS LO X14 COS HI X13
SXT A_S 16X RESOLVER COS LO X10
SXT A_T 64X RESOLVER COS HI X1
TRUN. CDU 16X RESOLVER COS LO X6 COS HI X5
SXT A_T 64X RESOLVER COS LO X2 SIN HI X3
TRUN. CDU 16X RESOLVER SIN LO X8 SIN HI X7
SHAFT CDU 16X RESOLVER SIN LO X16 SIN HI X15
SXT A_T 64X RESOLVER SIN LO X4
SXT A_S 16X RESOLVER SIN LO X12 SIN HI X11
SHAFT CDU TACH LO X20
SHAFT CDU MOTOR CONTR. WINDING X40
SHAFT CDU MOTOR OUTPUT 0 VDC X44
SHAFT CDU MOTOR CONTR. WINDING X41
TRUNNION CDU TACH LO X18
800 CPS 1% ∠0° (OPTICS) HI X72 LO X73
TRUN. CDU MOTOR CONTR. WINDING X35
TRUN. CDU MOT'R AMP. 0 VDC OUTPUT X39
TRUN. CDU MOT'R CONTR. WINDING X36
A15J17
TEST POINTS
MOTOR DRIVE AMP.
A_T CDU
ASSY 1015121 SCHEM 1015116
MOTOR DRIVE AMP.
A_S CDU
ASSY 1015121 SCHEM 1015116
RELAY
ASSY 1015137 SCHEM 1015108
COSECANT GENERATOR
ASSY 1015124 SCHEM 1015148
ZERO OPTICS TRANSFORMER
ASSY 1015154
ASSY 1015136 SCHEM 1015126
BUFFER CIRCUIT

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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NASA APPROVAL W J 6-19-63
MIT APPROVAL 19 June 63

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SCHEMATIC WIRING DIAGRAM, ELECTRICAL
TRAY 8

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015160
SCALE
WT
SHEET OF

1015160

MASTER

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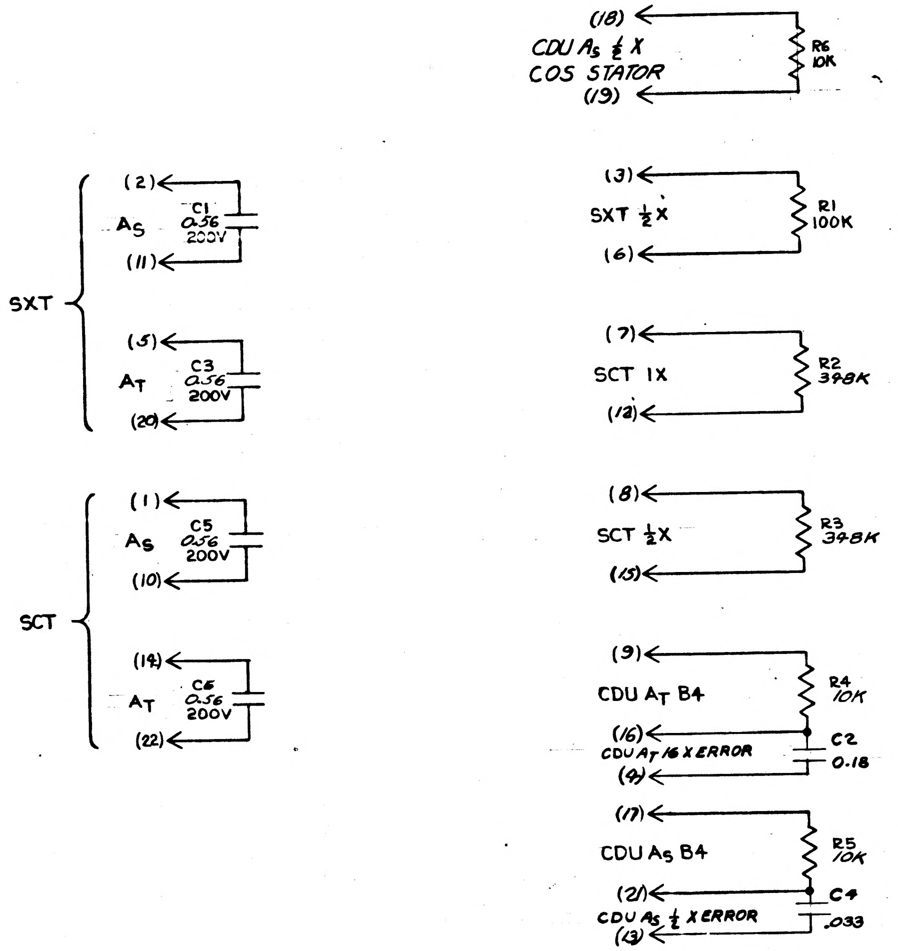
1015161 | A

REVISIONS 01762			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762	8/28/63	

REF. DESIG.	PART NUMBER	DESRIPTION	VALUE	TOL.	RATING
R1	1010364-635	RESISTOR	100K	1/8W	1%
R2	-739		398K		
R3	-739		398K		
R4	-493		10K		
R5	-493		10K		
C1	1010264-34	CAPACITOR	0.56		200V
C2	-28		0.18		
C3	-34		0.56		
C4	-19		0.33		
C5	-34		0.56		
C6	-34		0.56		
	-				
R6	1010364-493	RESISTOR	10.K	1/8W	1%


(18)
CDU A_S $\frac{1}{2}$X
COS STATOR
(19)
R6
10K
(3)
SXT $\frac{1}{2}$X
(6)
R1
100K
(7)
SCT 1X
(12)
R2
398K
(8)
SCT $\frac{1}{2}$X
(15)
R3
398K
(9)
CDU A_T B4
(16)
CDU A_T 16 X ERROR
(4)
R4
10K
C2
0.18
(17)
CDU A_S B4
(21)
CDU A_S $\frac{1}{2}$ X ERROR
(13)
R5
10K
C4
.033
SXT
(2)
A_S
C1
0.56
200V
(11)
(5)
A_T
C3
0.56
200V
(20)
SCT
(1)
A_S
C5
0.56
200V
(10)
(14)
A_T
C6
0.56
200V
(22)

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
RESISTOR VALUES ARE IN OHMS, K INDICATES THOUSANDS OF OHMS.
CAPACITOR VALUES ARE IN MICROFARADS.
DRAWING FOR REFERENCE: 1015155 RESISTOR & CAPACITOR MODULE · ASSY.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

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SCHEMATIC DIAGRAM
RESISTOR & CAPACITOR MODULE

CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015161
SCALE | WT | SHEET OF

INCHES
0 1 2
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1015161 | A

1015161

SYM	REVISIONS DESCRIPTION	DATE	APPROVAL
	01762		

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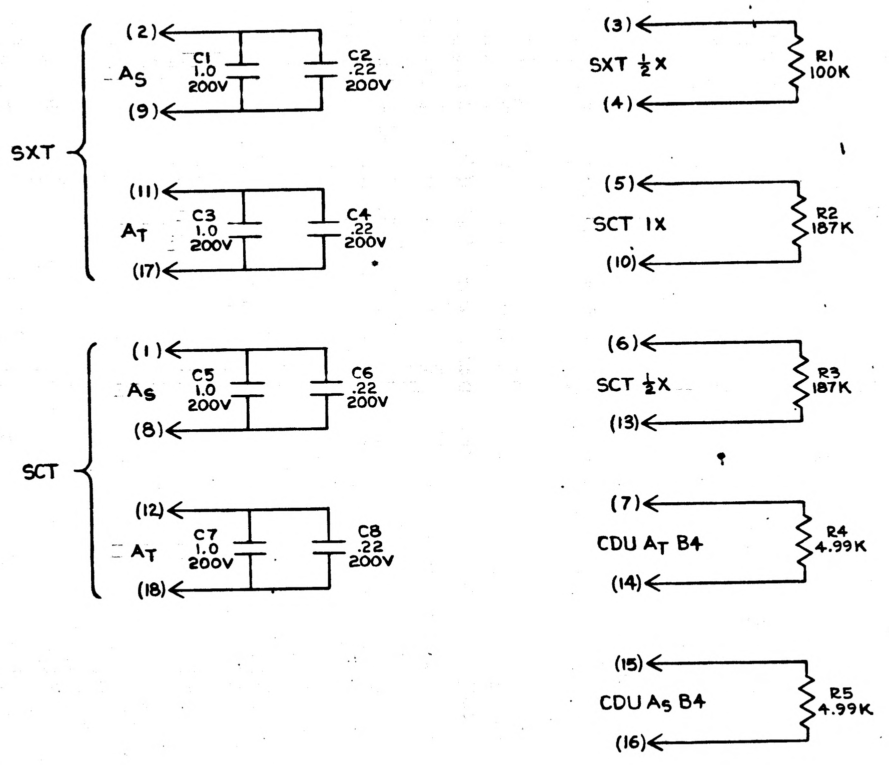
REF. DESIG.	PART NUMBER	DESRIPTION	VALUE	TOL.	RATING
R1	1010364-635	RESISTOR	100K	1/8W	1%
R2	-687	↓	187K	↓	↓
R3	-687	↓	187K	↓	↓
R4	-385	↓	4.99K	↓	↓
R5	-385	↓	4.99K	↓	↓
C1	1010264-37	CAPACITOR	1.0		200V
C2	-29	↓	0.22		↓
C3	-37	↓	1.0		↓
C4	-29	↓	0.22		↓
C5	-37	↓	1.0		↓
C6	-29	↓	0.22		↓
C7	-37	↓	1.0		↓
C8	-29	↓	0.22		↓



INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
RESISTOR VALUES ARE IN OHMS, K INDICATES THOUSANDS OF OHMS.
CAPACITOR VALUES ARE IN MICROFARADS.
DRAWING FOR REFERENCE: 1015155 RESISTOR & CAPACITOR MODULE-ASSY.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

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APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 24 June 63

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SCHEMATIC DIAGRAM
RESISTOR & CAPACITOR MODULE

CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015161
SCALE | WT | SHEET OF

1015161

INCHES 0 1 2
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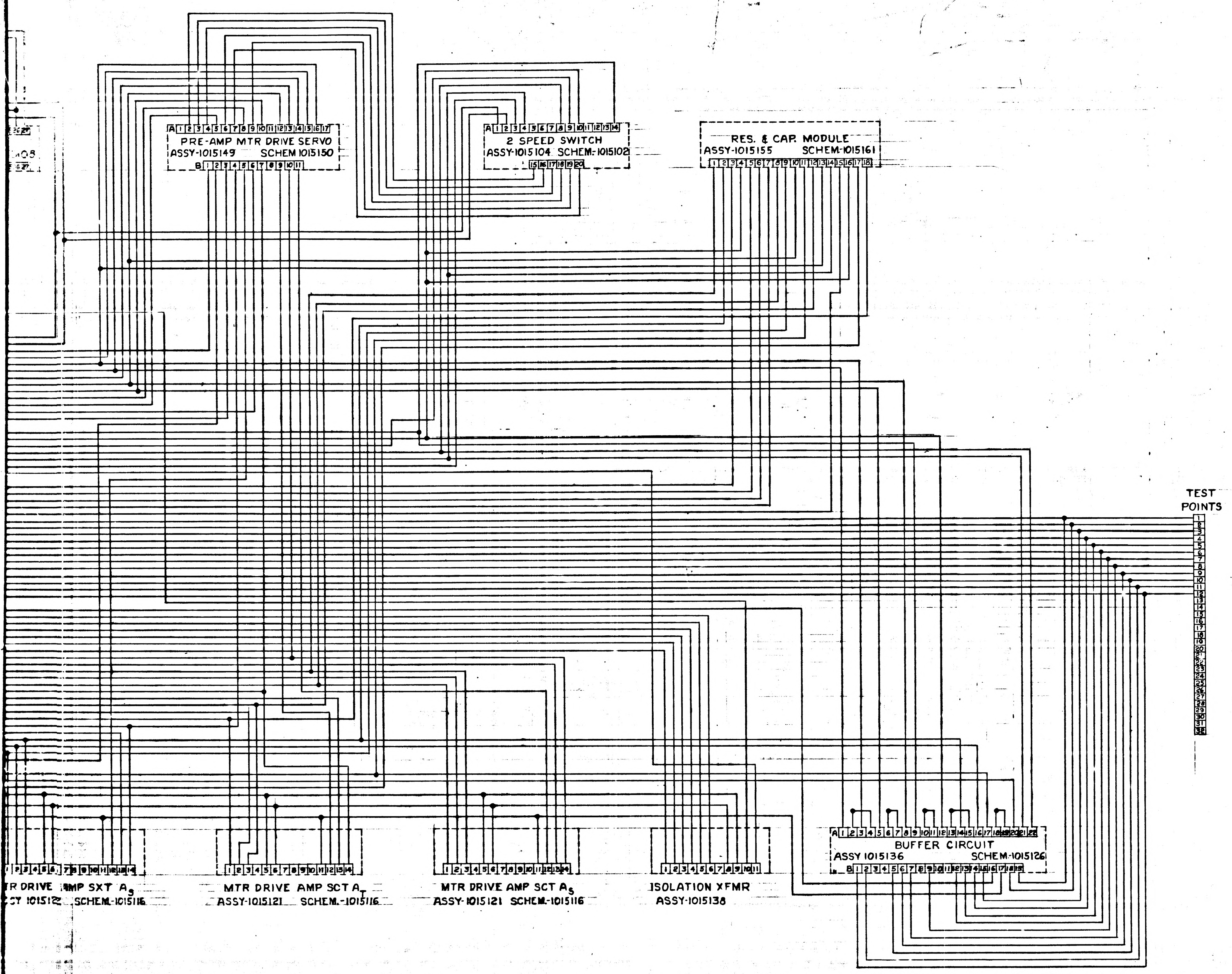
1015162

SYM	REVISIONS DESCRIPTION	DATE	APPROVAL
A22	(1) BUFFER CIRCUIT: A14 DID GO TO J18 X32 & A9, 2 SPEED SWITCH (2) A12 WAS COMMON WITH A16. (3) A16 DID GO TO J18 X33 & X53, A10 2 SPEED SWITCH, 2 & 10 RES. & CAP. MODULE (4) A17 DID GO TO J18 X29 & A3 2 SPEED SWITCH (5) A20 WAS COMMON WITH A21 (6) X90 DID GO TO A2, 2 SPEED SWITCH. (7) X91 DID GO TO A1 2 SPEED SWITCH. (8) X5 WAS X20 (9) X4 WAS X19 (10) X10 WAS X15 (11) X9 WAS X14 (12) X15 WAS X10 (13) X14 WAS X9 (14) X20 WAS X5 (15) X19 WAS X4 (16) ADDED ▽ (17) X75, π0 WAS HI (18) X73, C.T. WAS LO (19) X72 0°0 WAS HI. (20) X74, π0 WAS HI (21) X71, C.T. WAS LO. (22) X70, 0°0 WAS HI. TDRR 01757		WK



4
3
2
1
PRE-AMP MTR DRIVE SERVO
ASSY-1015149 SCHEM 1015150
2 SPEED SWITCH
ASSY-1015104 SCHEM-1015102
RES. & CAP. MODULE
ASSY-1015155 SCHEM-1015161
TEST POINTS
BUFFER CIRCUIT
ASSY 1015136 SCHEM-1015126
TR DRIVE AMP SXT A9
CT 1015122 SCHEM-1015116
MTR DRIVE AMP SCT A7
ASSY-1015121 SCHEM.-1015116
MTR DRIVE AMP SCT A5
ASSY-1015121 SCHEM-1015116
ISOLATION XFMR
ASSY-1015138
H
G
F
E
D
C
B
A

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

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APPROVAL
NASA APPROVAL W. J. Rhine 6-19-63
MIT APPROVAL 19 Jun 63

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HOUSTON, TEXAS

SCHEMATIC WIRING DIAGRAM, ELECTRICAL TRAY 9

CODE IDENT NO. | SIZE J | NASA DRAWING NO. 1015162
SCALE | WT | SHEET 1 OF 1

INCHES
PHOTOGRAPHIC SCALE ONLY
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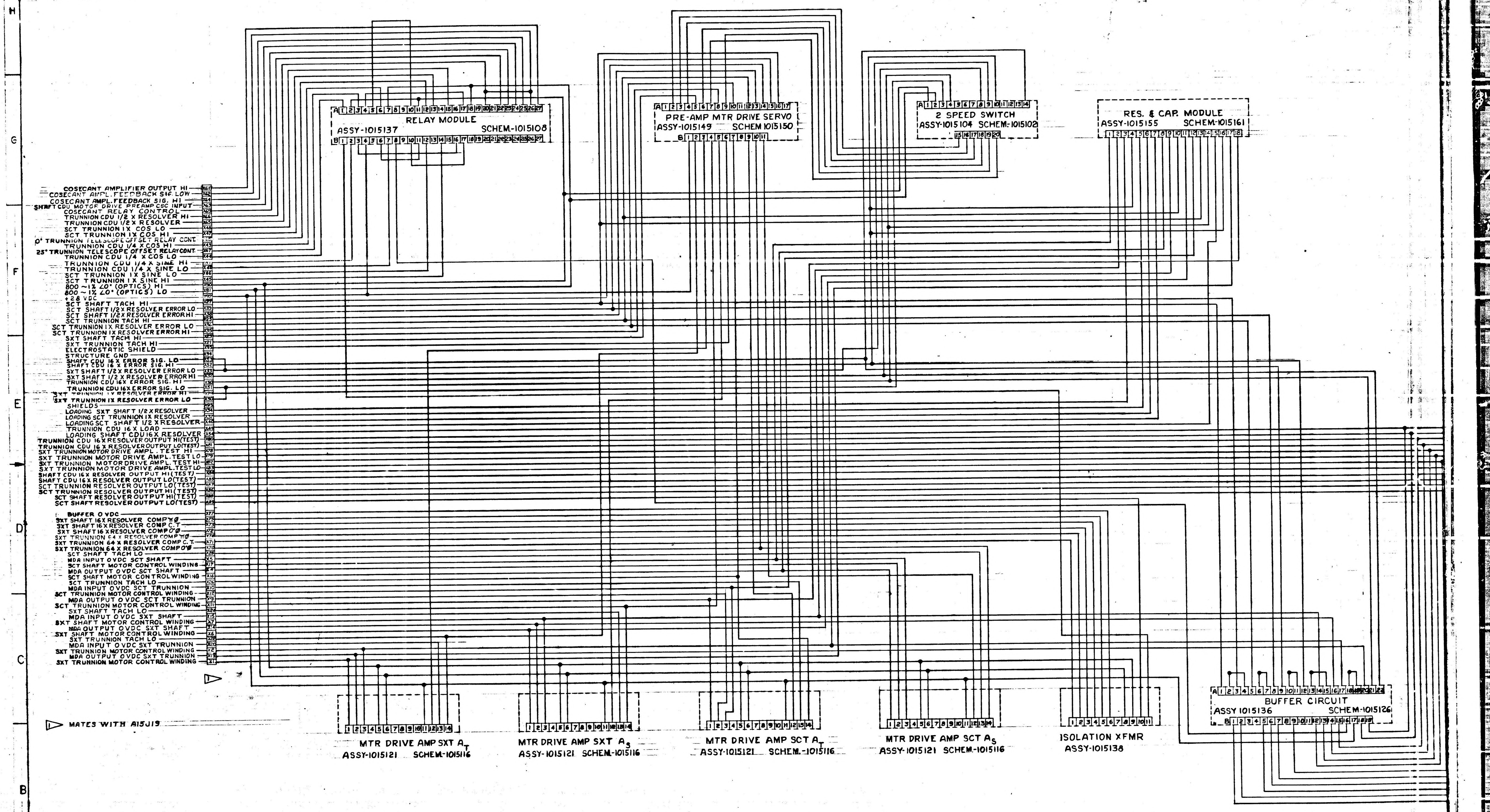
1015162

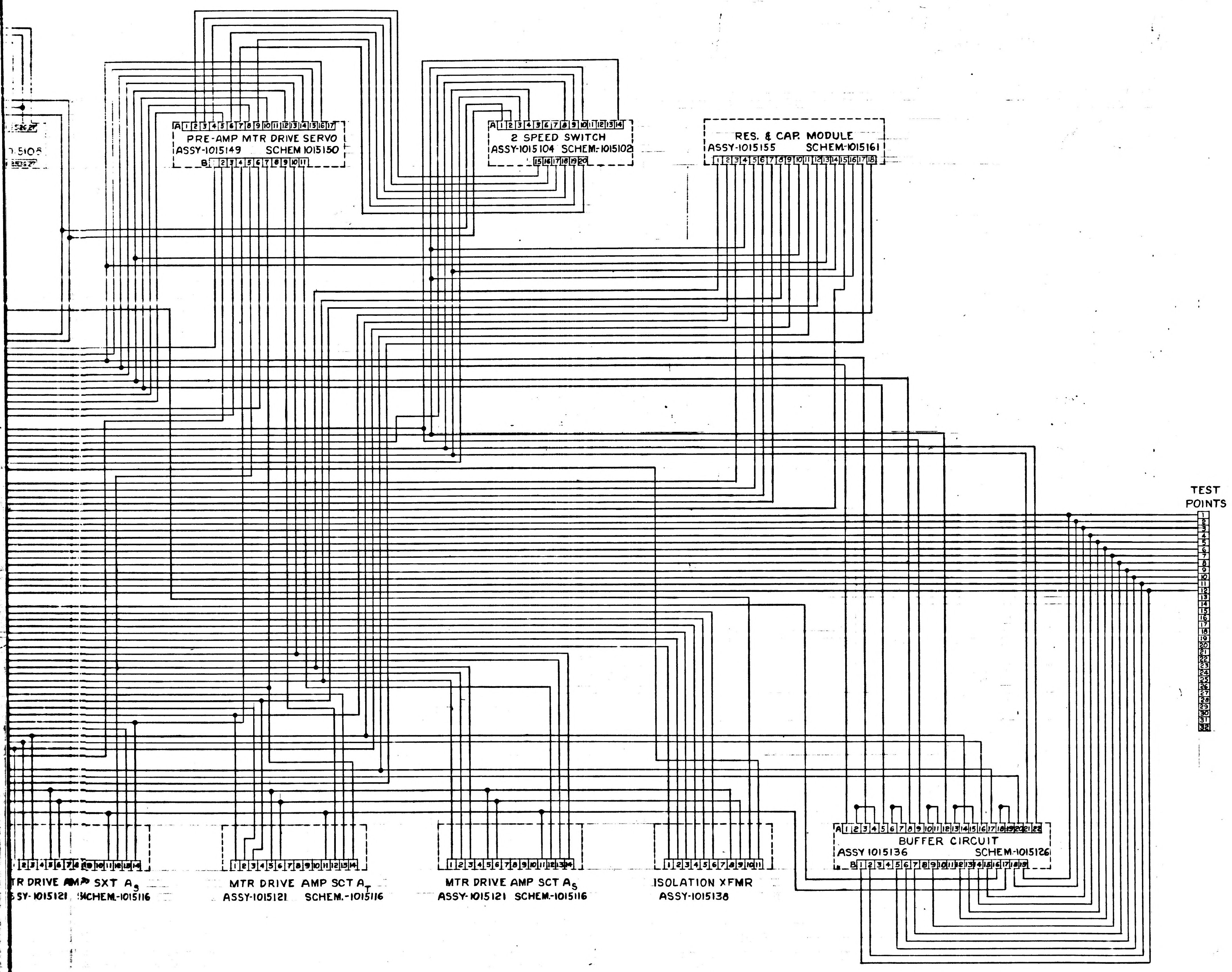

RELAY MODULE
ASSY-1015137 SCHEM-1015108
PRE-AMP MTR DRIVE SERVO
ASSY-1015149 SCHEM 1015150
2 SPEED SWITCH
ASSY-1015104 SCHEM-1015102
RES. & CAP. MODULE
ASSY-1015155 SCHEM-1015161
COSECANT AMPLIFIER OUTPUT HI X61
COSECANT AMPL. FEEDBACK SIG. LOW X62
COSECANT AMPL. FEEDBACK SIG. HI X64
SHAFT CDU MOTOR DRIVE PREAMP CSC INPUT X63
COSECANT RELAY CONTROL X69
TRUNNION CDU 1/2 X RESOLVER HI X66
TRUNNION CDU 1/2 X RESOLVER X65
SCT TRUNNION 1X COS LO X48
SCT TRUNNION 1X COS HI X47
0° TRUNNION TELESCOPE OFFSET RELAY CONT.
TRUNNION CDU 1/4 X COS HI X43
25° TRUNNION TELESCOPE OFFSET RELAY CONT. X67
TRUNNION CDU 1/4 X COS LO X44
TRUNNION CDU 1/4 X SINE HI
TRUNNION CDU 1/4 X SINE LO X42
SCT TRUNNION 1X SINE LO X46
SCT TRUNNION 1X SINE HI X45
800 ~ 1% ∠0° (OPTICS) HI X90
800 ~ 1% ∠0° (OPTICS) LO X91
+28 VDC X92
SCT SHAFT TACH HI X27
SCT SHAFT 1/2 X RESOLVER ERROR LO X39
SCT SHAFT 1/2 X RESOLVER ERROR HI X38
SCT TRUNNION TACH HI X25
SCT TRUNNION 1X RESOLVER ERROR LO X36
SCT TRUNNION 1X RESOLVER ERROR HI X35
SXT SHAFT TACH HI X23
SXT TRUNNION TACH HI X21
ELECTROSTATIC SHIELD X93
STRUCTURE GND X94
SHAFT CDU 16 X ERROR SIG. LO X53
SHAFT CDU 16 X ERROR SIG. HI X52
SXT SHAFT 1/2 X RESOLVER ERROR LO X33
SXT SHAFT 1/2 X RESOLVER ERROR HI X32
TRUNNION CDU 16X ERROR SIG. HI X50
TRUNNION CDU 16X ERROR SIG. LO X51
SXT TRUNNION 1X RESOLVER ERROR HI X29
SXT TRUNNION 1X RESOLVER ERROR LO X30
SHIELDS X95
LOADING SXT SHAFT 1/2 X RESOLVER X34
LOADING SCT TRUNNION 1X RESOLVER X37
LOADING SCT SHAFT 1/2 X RESOLVER X40
TRUNNION CDU 16 X LOAD X49
LOADING SHAFT CDU 16 X RESOLVER X54
TRUNNION CDU 16 X RESOLVER OUTPUT HI (TEST) X80
TRUNNION CDU 16 X RESOLVER OUTPUT LO (TEST) X81
SXT TRUNNION MOTOR DRIVE AMPL. TEST HI X78
SXT TRUNNION MOTOR DRIVE AMPL. TEST LO X79
SXT TRUNNION MOTOR DRIVE AMPL. TEST HI X82
SXT TRUNNION MOTOR DRIVE AMPL. TEST LO X83
SHAFT CDU 16 X RESOLVER OUTPUT HI (TEST) X84
SHAFT CDU 16 X RESOLVER OUTPUT LO (TEST) X85
SCT TRUNNION RESOLVER OUTPUT LO (TEST) X87
SCT TRUNNION RESOLVER OUTPUT HI (TEST) X86
SCT SHAFT RESOLVER OUTPUT HI (TEST) X88
SCT SHAFT RESOLVER OUTPUT LO (TEST) X89
BUFFER 0 VDC X77
SXT SHAFT 16 X RESOLVER COMP π0 X75
SXT SHAFT 16 X RESOLVER COMP C.T. X73
SXT SHAFT 16 X RESOLVER COMP 0°0 X72
SXT TRUNNION 64 X RESOLVER COMP π0 X74
SXT TRUNNION 64 X RESOLVER COMP C.T. X71
SXT TRUNNION 64 X RESOLVER COMP 0°0 X70
SCT SHAFT TACH LO X28
MDA INPUT 0 VDC SCT SHAFT X5
SCT SHAFT MOTOR CONTROL WINDING X17
MDA OUTPUT 0 VDC SCT SHAFT X4
SCT SHAFT MOTOR CONTROL WINDING X16
SCT TRUNNION TACH LO X26
MDA INPUT 0 VDC SCT TRUNNION X10
SCT TRUNNION MOTOR CONTROL WINDING X12
MDA OUTPUT 0 VDC SCT TRUNNION X9
SCT TRUNNION MOTOR CONTROL WINDING X11
SXT SHAFT TACH LO X24
MDA INPUT 0 VDC SXT SHAFT X15
SXT SHAFT MOTOR CONTROL WINDING X7
MDA OUTPUT 0 VDC SXT SHAFT X14
SXT SHAFT MOTOR CONTROL WINDING X6
SXT TRUNNION TACH LO X22
MDA INPUT 0 VDC SXT TRUNNION X20
SXT TRUNNION MOTOR CONTROL WINDING X2
MDA OUTPUT 0 VDC SXT TRUNNION X19
SXT TRUNNION MOTOR CONTROL WINDING X1
MTR DRIVE AMP SXT A_T
ASSY-1015121 SCHEM-1015116
MTR DRIVE AMP SXT A_S
ASSY-1015121 SCHEM-1015116
MTR DRIVE AMP SCT A_T
ASSY-1015121 SCHEM-1015116
MTR DRIVE AMP SCT A_S
ASSY-1015121 SCHEM-1015116
ISOLATION XFMR
ASSY-1015138
BUFFER CIRCUIT
ASSY 1015136 SCHEM-1015126

1 MATES WITH A15J19

E1 1015162

1015162 B

SYM	REVISIONS DESCRIPTION	DATE	APPROVAL
A22	(1) BUFFER CIRCUIT: A14 DID GO TO J18X32 & A9, 2 SPEED SWITCH (2) A12 WAS COMMON WITH A16. (3) A16 DID GO TO J18X33 & X53, A10 2 SPEED SWITCH, 2 & 10 RES. & CAP. MODULE (4) A17 DID GO TO J18X29 & A3 2 SPEED SWITCH (5) A20 WAS COMMON WITH A21 (6) X90 DID GO TO A2, 2 SPEED SWITCH (7) X91 DID GO TO A1 2 SPEED SWITCH. (8) X5 WAS X20 (9) X4 WAS X19 (10) X10 WAS X15 (11) X9 WAS X14 (12) X15 WAS X10 (13) X14 WAS X9 (14) X20 WAS X5 (15) X19 WAS X4 (16) ADDED (17) X75 π∅ WAS HI (18) X73 C.T. WAS LO (19) X72 0°∅ WAS HI. (20) X74, π∅ WAS HI (21) X71, C.T. WAS LO. (22) X70, 0°∅ WAS HI. TDRR 01757		WK
B	REVERSED MTR. DRIVE AMPIFIERS PINS 5 & 6 FOR PHASING 800 ~ HI & LO. TDRR 01796	63	



.5106
PRE-AMP MTR DRIVE SERVO
ASSY-1015149 SCHEM 1015150
2 SPEED SWITCH
ASSY-1015104 SCHEM-1015102
RES. & CAP. MODULE
ASSY-1015155 SCHEM-1015161
TEST POINTS
BUFFER CIRCUIT
ASSY 1015136 SCHEM-1015126
TR DRIVE AMP SXT A_S
SY-1015121 SCHEM.-1015116
MTR DRIVE AMP SCT A_T
ASSY-1015121 SCHEM.-1015116
MTR DRIVE AMP SCT A_S
ASSY-1015121 SCHEM.-1015116
ISOLATION XFMR
ASSY-1015138

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

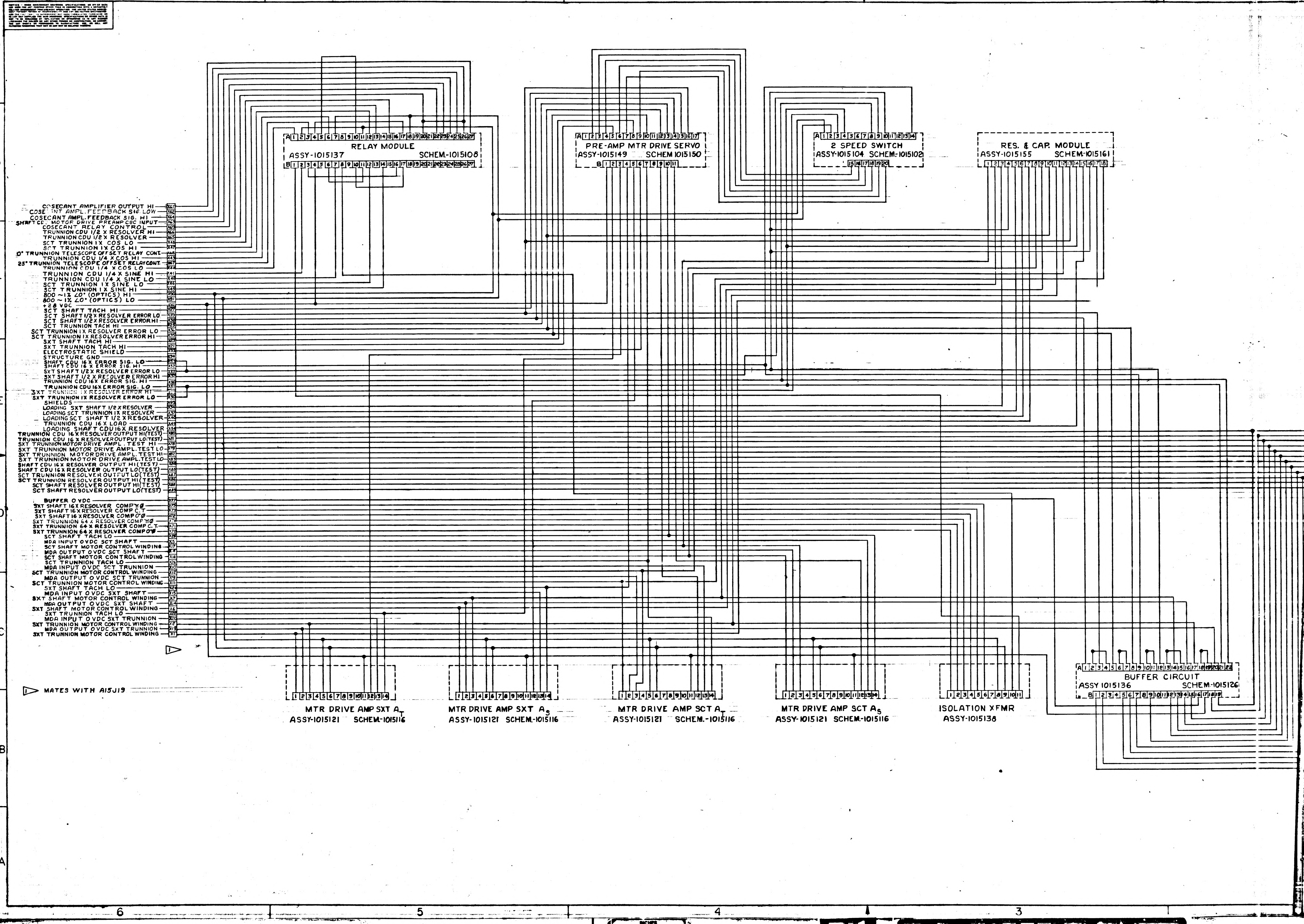
MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN G F Gould DATE 6-14
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL W J 6-19-63
MIT APPROVAL 19

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC WIRING DIAGRAM, ELECTRICAL TRAY 9

CODE IDENT NO. | SIZE J | NASA DRAWING NO. 1015162
SCALE | WT | SHEET 1 OF 1

F2 1015162

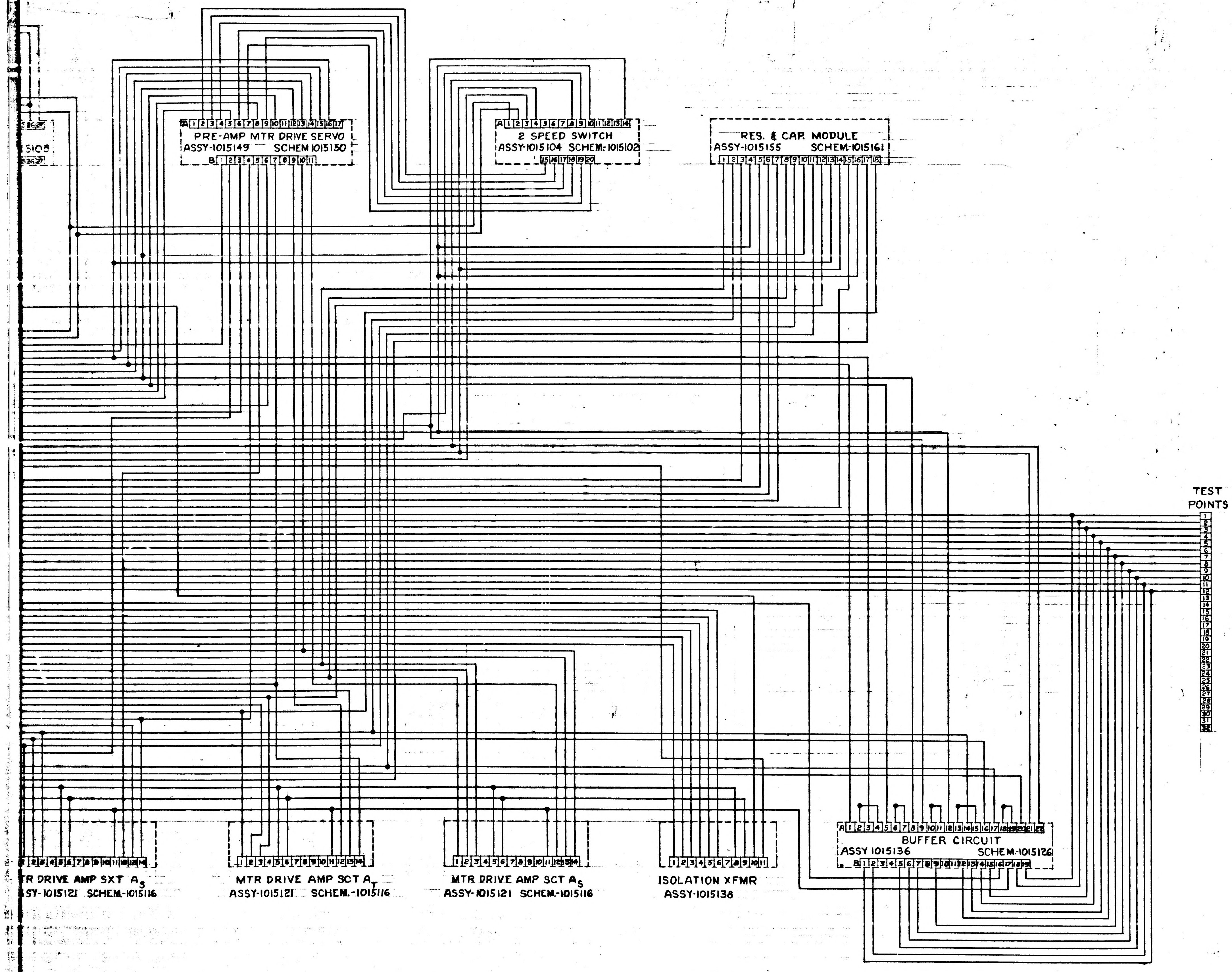

RELAY MODULE
ASSY-1015137 SCHEM-1015108
PRE-AMP MTR DRIVE SERVO
ASSY-1015149 SCHEM 1015150
2 SPEED SWITCH
ASSY-1015104 SCHEM-1015102
RES. & CAP. MODULE
ASSY-1015155 SCHEM-1015161
COSECANT AMPLIFIER OUTPUT HI X61
COSECANT AMPL. FEEDBACK SIG LOW X62
COSECANT AMPL. FEEDBACK SIG. HI X64
SHAFT CDU MOTOR DRIVE PREAMP CSC INPUT X63
COSECANT RELAY CONTROL X69
TRUNNION CDU 1/2 X RESOLVER HI X66
TRUNNION CDU 1/2 X RESOLVER X65
SCT TRUNNION 1X COS LO X48
SCT TRUNNION 1X COS HI X47
0° TRUNNION TELESCOPE OFFSET RELAY CONT. X68
TRUNNION CDU 1/4 X COS HI X43
25° TRUNNION TELESCOPE OFFSET RELAY CONT. X67
TRUNNION CDU 1/4 X COS LO X44
TRUNNION CDU 1/4 X SINE HI X41
TRUNNION CDU 1/4 X SINE LO X42
SCT TRUNNION 1X SINE LO X46
SCT TRUNNION 1X SINE HI X45
800 ~ 1% ∠0° (OPTICS) HI X90
800 ~ 1% ∠0° (OPTICS) LO X91
+28 VDC X92
SCT SHAFT TACH HI X27
SCT SHAFT 1/2 X RESOLVER ERROR LO X39
SCT SHAFT 1/2 X RESOLVER ERROR HI X38
SCT TRUNNION TACH HI X25
SCT TRUNNION 1X RESOLVER ERROR LO X36
SCT TRUNNION 1X RESOLVER ERROR HI X35
SXT SHAFT TACH HI X23
SXT TRUNNION TACH HI X21
ELECTROSTATIC SHIELD X93
STRUCTURE GND X94
SHAFT CDU 16X ERROR SIG. LO X53
SHAFT CDU 16X ERROR SIG. HI X52
SXT SHAFT 1/2 X RESOLVER ERROR LO X33
SXT SHAFT 1/2 X RESOLVER ERROR HI X32
TRUNNION CDU 16X ERROR SIG. HI X50
TRUNNION CDU 16X ERROR SIG. LO X51
SXT TRUNNION 1X RESOLVER ERROR HI
SXT TRUNNION 1X RESOLVER ERROR LO X30
SHIELDS X95
LOADING SXT SHAFT 1/2 X RESOLVER X34
LOADING SCT TRUNNION 1X RESOLVER X37
LOADING SCT SHAFT 1/2 X RESOLVER X40
TRUNNION CDU 16 X LOAD X49
LOADING SHAFT CDU 16X RESOLVER X54
TRUNNION CDU 16X RESOLVER OUTPUT HI (TEST) X80
TRUNNION CDU 16X RESOLVER OUTPUT LO (TEST) X81
SXT TRUNNION MOTOR DRIVE AMPL. TEST HI X78
SXT TRUNNION MOTOR DRIVE AMPL. TEST LO X79
SXT TRUNNION MOTOR DRIVE AMPL. TEST HI X82
SXT TRUNNION MOTOR DRIVE AMPL. TEST LO X83
SHAFT CDU 16X RESOLVER OUTPUT HI (TEST) X84
SHAFT CDU 16X RESOLVER OUTPUT LO (TEST) X85
SCT TRUNNION RESOLVER OUTPUT LO (TEST) X87
SCT TRUNNION RESOLVER OUTPUT HI (TEST) X86
SCT SHAFT RESOLVER OUTPUT HI (TEST) X88
SCT SHAFT RESOLVER OUTPUT LO (TEST) X89
BUFFER 0 VDC X77
SXT SHAFT 16X RESOLVER COMP π Ø X75
SXT SHAFT 16X RESOLVER COMP C.T. X73
SXT SHAFT 16X RESOLVER COMP 0° Ø X72
SXT TRUNNION 64 X RESOLVER COMP π Ø X74
SXT TRUNNION 64 X RESOLVER COMP C.T. X71
SXT TRUNNION 64 X RESOLVER COMP 0° Ø X70
SCT SHAFT TACH LO X28
MDA INPUT 0 VDC SCT SHAFT X5
SCT SHAFT MOTOR CONTROL WINDING X17
MDA OUTPUT 0 VDC SCT SHAFT X4
SCT SHAFT MOTOR CONTROL WINDING X16
SCT TRUNNION TACH LO X26
MDA INPUT 0 VDC SCT TRUNNION X10
SCT TRUNNION MOTOR CONTROL WINDING X12
MDA OUTPUT 0 VDC SCT TRUNNION X9
SCT TRUNNION MOTOR CONTROL WINDING X11
SXT SHAFT TACH LO X24
MDA INPUT 0 VDC SXT SHAFT X15
SXT SHAFT MOTOR CONTROL WINDING X7
MDA OUTPUT 0 VDC SXT SHAFT X14
SXT SHAFT MOTOR CONTROL WINDING X6
SXT TRUNNION TACH LO X22
MDA INPUT 0 VDC SXT TRUNNION X20
SXT TRUNNION MOTOR CONTROL WINDING X2
MDA OUTPUT 0 VDC SXT TRUNNION X19
SXT TRUNNION MOTOR CONTROL WINDING X1
MTR DRIVE AMP SXT A_T
ASSY-1015121 SCHEM-1015116
MTR DRIVE AMP SXT A_S
ASSY-1015121 SCHEM.-1015116
MTR DRIVE AMP SCT A_T
ASSY-1015121 SCHEM.-1015116
MTR DRIVE AMP SCT A_S
ASSY-1015121 SCHEM.-1015116
ISOLATION XFMR
ASSY-1015138
BUFFER CIRCUIT
ASSY 1015136 SCHEM-1015126
A
B

1 MATES WITH A15J19

F1 1015162

1015162 C

SYM	DESCRIPTION	DATE	APPROVAL
A22	(1) BUFFER CIRCUIT: A14 DID GO TO J18X32 & A9, 2 SPEED SWITCH (2) A12 WAS COMMON WITH A16. (3) A16 DID GO TO J18X33 & X53, A10 2 SPEED SWITCH, 2 & 10 RES. & CAP. MODULE (4) A17 DID GO TO J18X29 & A3 2 SPEED SWITCH (5) A20 WAS COMMON WITH A21 (6) X90 DID GO TO A2, 2 SPEED SWITCH (7) X91 DID GO TO A1 2 SPEED SWITCH (8) X5 WAS X20 (9) X4 WAS X19 (10) X10 WAS X15 (11) X3 WAS X14 (12) X15 WAS X10 (13) X14 WAS X9 (14) X20 WAS X5 (15) X19 WAS X4. (16) ADDED ▷ (17) X75, π0 WAS HI (18) X73, C.T. WAS LO (19) X72 0° 0 WAS HI. (20) X74, π0 WAS HI (21) X71, C. T. WAS LO. (22) X70, 0° 0 WAS HI. TDRR 01757		WK
B	REVERSED MTR. DRIVE AMPIFIERS PINS 5 & 6 FOR PHASING 800 ~ HI & LO. TDRR 01796	July 63	WK
C	REVISED PER TDRR 02459		WK



PRE-AMP MTR DRIVE SERVO
ASSY-1015149 SCHEM 1015150
2 SPEED SWITCH
ASSY-1015104 SCHEM-1015102
RES. & CAP. MODULE
ASSY-1015155 SCHEM-1015161
TEST POINTS
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
MTR DRIVE AMP SXT A_S
SSY-1015121 SCHEM-1015116
MTR DRIVE AMP SCT A_T
ASSY-1015121 SCHEM.-1015116
MTR DRIVE AMP SCT A_S
ASSY-1015121 SCHEM.-1015116
ISOLATION XFMR
ASSY-1015138
BUFFER CIRCUIT
ASSY 1015136 SCHEM-1015126
5108

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

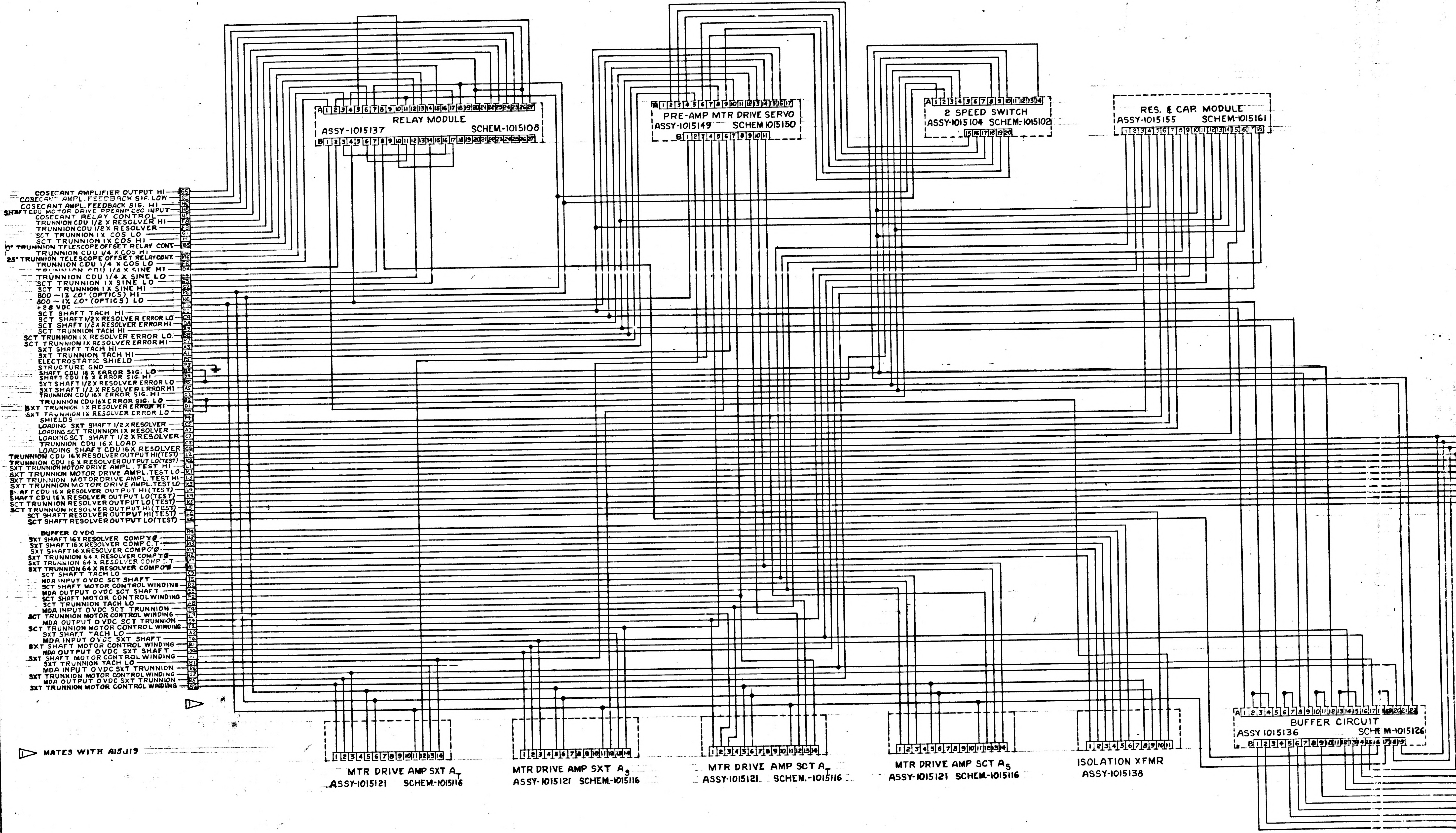
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN F. Gould DATE 6-14-63
CHECKED L.A. Brown
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL W. J. Rhine 6-18-63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC WIRING DIAGRAM, ELECTRICAL TRAY 9

CODE IDENT NO. | SIZE J | NASA DRAWING NO. 1015162
SCALE | WT | SHEET 1 OF 1


RELAY MODULE
ASSY-1015137 SCHEM-1015108
PRE-AMP MTR DRIVE SERVO
ASSY-1015149 SCHEM 1015150
2 SPEED SWITCH
ASSY-1015104 SCHEM-1015102
RES. & CAP. MODULE
ASSY-1015155 SCHEM-1015161
COSECANT AMPLIFIER OUTPUT HI G6
COSECANT AMPL. FEEDBACK SIG LOW G5
COSECANT AMPL. FEEDBACK SIG. HI H6
SHAFT CDU MOTOR DRIVE PREAMP CSC INPUT H5
COSECANT RELAY CONTROL N5
TRUNNION CDU 1/2 X RESOLVER HI F8
TRUNNION CDU 1/2 X RESOLVER F9
SCT TRUNNION 1X COS LO G1
SCT TRUNNION 1X COS HI H1
0° TRUNNION TELESCOPE OFFSET RELAY CONT. M5
TRUNNION CDU 1/4 X COS HI
25° TRUNNION TELESCOPE OFFSET RELAY CONT. M6
TRUNNION CDU 1/4 X COS LO F6
TRUNNION CDU 1/4 X SINE HI D4
TRUNNION CDU 1/4 X SINE LO F4
SCT TRUNNION 1X SINE LO G3
SCT TRUNNION 1X SINE HI G2
800 ~1% ∠0° (OPTICS) HI P6
800 ~1% ∠0° (OPTICS) LO N6
+28 VDC T1
SCT SHAFT TACH HI
SCT SHAFT 1/2 X RESOLVER ERROR LO C8
SCT SHAFT 1/2 X RESOLVER ERROR HI D8
SCT TRUNNION TACH HI A9
SCT TRUNNION 1X RESOLVER ERROR LO B8
SCT TRUNNION 1X RESOLVER ERROR HI B7
SXT SHAFT TACH HI A3
SXT TRUNNION TACH HI A1
ELECTROSTATIC SHIELD P5
STRUCTURE GND P3
SHAFT CDU 16 X ERROR SIG. LO B3
SHAFT CDU 16 X ERROR SIG. HI B4
SXT SHAFT 1/2 X RESOLVER ERROR LO B5
SXT SHAFT 1/2 X RESOLVER ERROR HI A5
TRUNNION CDU 16X ERROR SIG. HI C2
TRUNNION CDU 16X ERROR SIG. LO B2
SXT TRUNNION 1X RESOLVER ERROR HI D1
SXT TRUNNION 1X RESOLVER ERROR LO
SHIELDS P4
LOADING SXT SHAFT 1/2 X RESOLVER C5
LOADING SCT TRUNNION 1X RESOLVER A7
LOADING SCT SHAFT 1/2 X RESOLVER C7
TRUNNION CDU 16 X LOAD C3
LOADING SHAFT CDU 16 X RESOLVER C9
TRUNNION CDU 16 X RESOLVER OUTPUT HI (TEST) L2
TRUNNION CDU 16 X RESOLVER OUTPUT LO (TEST) K2
SXT TRUNNION MOTOR DRIVE AMPL. TEST HI L1
SXT TRUNNION MOTOR DRIVE AMPL. TEST LO K1
SXT TRUNNION MOTOR DRIVE AMPL. TEST HI L3
SXT TRUNNION MOTOR DRIVE AMPL. TEST LO K3
SHAFT CDU 16 X RESOLVER OUTPUT HI (TEST) L4
SHAFT CDU 16 X RESOLVER OUTPUT LO (TEST) K4
SCT TRUNNION RESOLVER OUTPUT LO (TEST) K5
SCT TRUNNION RESOLVER OUTPUT HI (TEST) L5
SCT SHAFT RESOLVER OUTPUT HI (TEST) L6
SCT SHAFT RESOLVER OUTPUT LO (TEST) K6
BUFFER 0 VDC R4
SXT SHAFT 16X RESOLVER COMP π0 N3
SXT SHAFT 16X RESOLVER COMP C.T. M3
SXT SHAFT 16X RESOLVER COMP 0°0 M4
SXT TRUNNION 64 X RESOLVER COMP π0 N2
SXT TRUNNION 64 X RESOLVER COMP C.T.
SXT TRUNNION 64 X RESOLVER COMP 0°0 M1
SCT SHAFT TACH LO C9
MDA INPUT 0 VDC SCT SHAFT T5
SCT SHAFT MOTOR CONTROL WINDING R2
MDA OUTPUT 0 VDC SCT SHAFT S5
SCT SHAFT MOTOR CONTROL WINDING P2
SCT TRUNNION TACH LO A8
MDA INPUT 0 VDC SCT TRUNNION T4
SCT TRUNNION MOTOR CONTROL WINDING
MDA OUTPUT 0 VDC SCT TRUNNION S4
SCT TRUNNION MOTOR CONTROL WINDING T2
SXT SHAFT TACH LO A2
MDA INPUT 0 VDC SXT SHAFT T6
SXT SHAFT MOTOR CONTROL WINDING R1
MDA OUTPUT 0 VDC SXT SHAFT S6
SXT SHAFT MOTOR CONTROL WINDING P1
SXT TRUNNION TACH LO B1
MDA INPUT 0 VDC SXT TRUNNION R6
SXT TRUNNION MOTOR CONTROL WINDING S3
MDA OUTPUT 0 VDC SXT TRUNNION R5
SXT TRUNNION MOTOR CONTROL WINDING S2
1
MTR DRIVE AMP SXT A_T
ASSY-1015121 SCHEM-1015116
MTR DRIVE AMP SXT A_S
ASSY-1015121 SCHEM-1015116
MTR DRIVE AMP SCT A_T
ASSY-1015121 SCHEM.-1015116
MTR DRIVE AMP SCT A_S
ASSY-1015121 SCHEM-1015116
ISOLATION XFMR
ASSY-1015138
BUFFER CIRCUIT
ASSY 1015136 SCHEM-1015126

1 MATES WITH A15J19

PHOTOGRAPHIC SCALE ONLY

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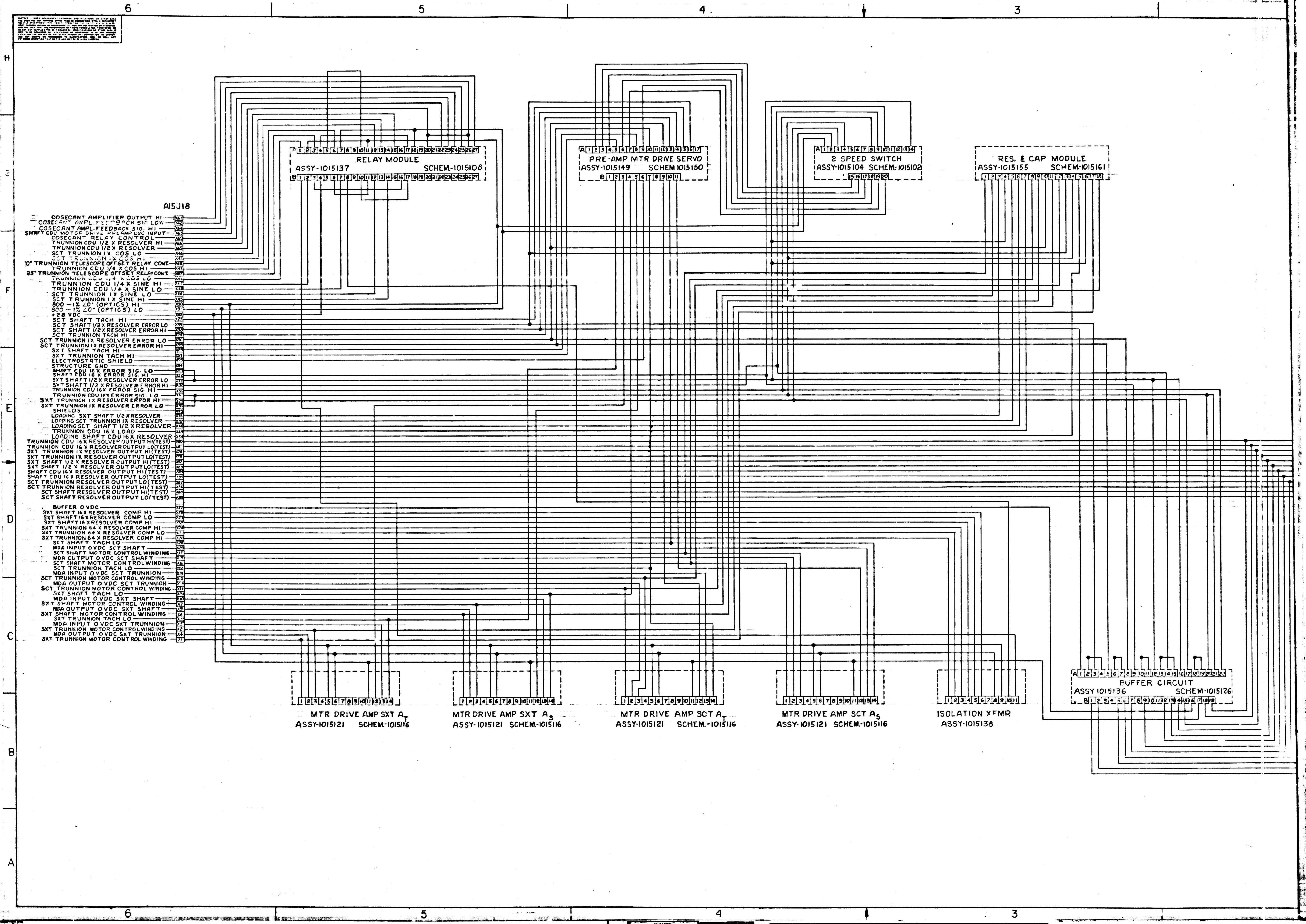
A15J18
COSECANT AMPLIFIER OUTPUT HI X61
COSECANT AMPL. FEEDBACK SIG LOW X62
COSECANT AMPL. FEEDBACK SIG. HI X64
SHAFT CDU MOTOR DRIVE PREAMP CSC INPUT X63
COSECANT RELAY CONTROL X69
TRUNNION CDU 1/2 X RESOLVER HI X66
TRUNNION CDU 1/2 X RESOLVER X65
SCT TRUNNION 1X COS LO X48
SCT TRUNNION 1X COS HI X47
0° TRUNNION TELESCOPE OFFSET RELAY CONT. X68
TRUNNION CDU 1/4 X COS HI X43
25° TRUNNION TELESCOPE OFFSET RELAY CONT. X67
TRUNNION CDU 1/4 X COS LO X44
TRUNNION CDU 1/4 X SINE HI X41
TRUNNION CDU 1/4 X SINE LO X42
SCT TRUNNION 1X SINE LO X46
SCT TRUNNION 1X SINE HI X45
800 ~1% ∠0° (OPTICS) HI X90
800 ~1% ∠0° (OPTICS) LO X91
+28 VDC X92
SCT SHAFT TACH HI X27
SCT SHAFT 1/2 X RESOLVER ERROR LO X39
SCT SHAFT 1/2 X RESOLVER ERROR HI X38
SCT TRUNNION TACH HI X25
SCT TRUNNION 1X RESOLVER ERROR LO X36
SCT TRUNNION 1X RESOLVER ERROR HI X35
SXT SHAFT TACH HI X23
SXT TRUNNION TACH HI X21
ELECTROSTATIC SHIELD X93
STRUCTURE GND X94
SHAFT CDU 16 X ERROR SIG. LO X53
SHAFT CDU 16 X ERROR SIG. HI X52
SXT SHAFT 1/2 X RESOLVER ERROR LO X33
SXT SHAFT 1/2 X RESOLVER ERROR HI X32
TRUNNION CDU 16X ERROR SIG. HI X50
TRUNNION CDU 16X ERROR SIG. LO X51
SXT TRUNNION 1X RESOLVER ERROR HI X29
SXT TRUNNION 1X RESOLVER ERROR LO X30
SHIELDS X95
LOADING SXT SHAFT 1/2 X RESOLVER X34
LOADING SCT TRUNNION 1X RESOLVER X37
LOADING SCT SHAFT 1/2 X RESOLVER X40
TRUNNION CDU 16 X LOAD X49
LOADING SHAFT CDU 16 X RESOLVER X54
TRUNNION CDU 16 X RESOLVER OUTPUT HI (TEST) X80
TRUNNION CDU 16 X RESOLVER OUTPUT LO (TEST) X81
SXT TRUNNION 1X RESOLVER OUTPUT HI (TEST) X78
SXT TRUNNION 1X RESOLVER OUTPUT LO (TEST) X79
SXT SHAFT 1/2 X RESOLVER OUTPUT HI (TEST) X82
SXT SHAFT 1/2 X RESOLVER OUTPUT LO (TEST) X83
SHAFT CDU 16X RESOLVER OUTPUT HI (TEST) X84
SHAFT CDU 16 X RESOLVER OUTPUT LO (TEST) X85
SCT TRUNNION RESOLVER OUTPUT LO (TEST) X87
SCT TRUNNION RESOLVER OUTPUT HI (TEST) X86
SCT SHAFT RESOLVER OUTPUT HI (TEST) X88
SCT SHAFT RESOLVER OUTPUT LO (TEST) X89
BUFFER 0 VDC X77
SXT SHAFT 16 X RESOLVER COMP HI X75
SXT SHAFT 16 X RESOLVER COMP LO X73
SXT SHAFT 16 X RESOLVER COMP HI X72
SXT TRUNNION 64 X RESOLVER COMP HI X74
SXT TRUNNION 64 X RESOLVER COMP LO X71
SXT TRUNNION 64 X RESOLVER COMP HI X70
SCT SHAFT TACH LO X28
MDA INPUT 0 VDC SCT SHAFT X20
SCT SHAFT MOTOR CONTROL WINDING X17
MDA OUTPUT 0 VDC SCT SHAFT X19
SCT SHAFT MOTOR CONTROL WINDING X16
SCT TRUNNION TACH LO X26
MDA INPUT 0 VDC SCT TRUNNION X15
SCT TRUNNION MOTOR CONTROL WINDING X12
MDA OUTPUT 0 VDC SCT TRUNNION X14
SCT TRUNNION MOTOR CONTROL WINDING X11
SXT SHAFT TACH LO X24
MDA INPUT 0 VDC SXT SHAFT X10
SXT SHAFT MOTOR CONTROL WINDING X7
MDA OUTPUT 0 VDC SXT SHAFT X9
SXT SHAFT MOTOR CONTROL WINDING X6
SXT TRUNNION TACH LO X22
MDA INPUT 0 VDC SXT TRUNNION X5
SXT TRUNNION MOTOR CONTROL WINDING X2
MDA OUTPUT 0 VDC SXT TRUNNION X4
SXT TRUNNION MOTOR CONTROL WINDING X1
RELAY MODULE
ASSY-1015137 SCHEM-1015108
PRE-AMP MTR DRIVE SERVO
ASSY-1015149 SCHEM 1015150
2 SPEED SWITCH
ASSY-1015104 SCHEM.-1015102
RES. & CAP MODULE
ASSY-1015155 SCHEM-1015161
MTR DRIVE AMP SXT A_T
ASSY-1015121 SCHEM.-1015116
MTR DRIVE AMP SXT A_S
ASSY-1015121 SCHEM.-1015116
MTR DRIVE AMP SCT A_T
ASSY-1015121 SCHEM.-1015116
MTR DRIVE AMP SCT A_S
ASSY-1015121 SCHEM.-1015116
ISOLATION XFMR
ASSY-1015138
BUFFER CIRCUIT
ASSY 1015136 SCHEM-1015126
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INCHES
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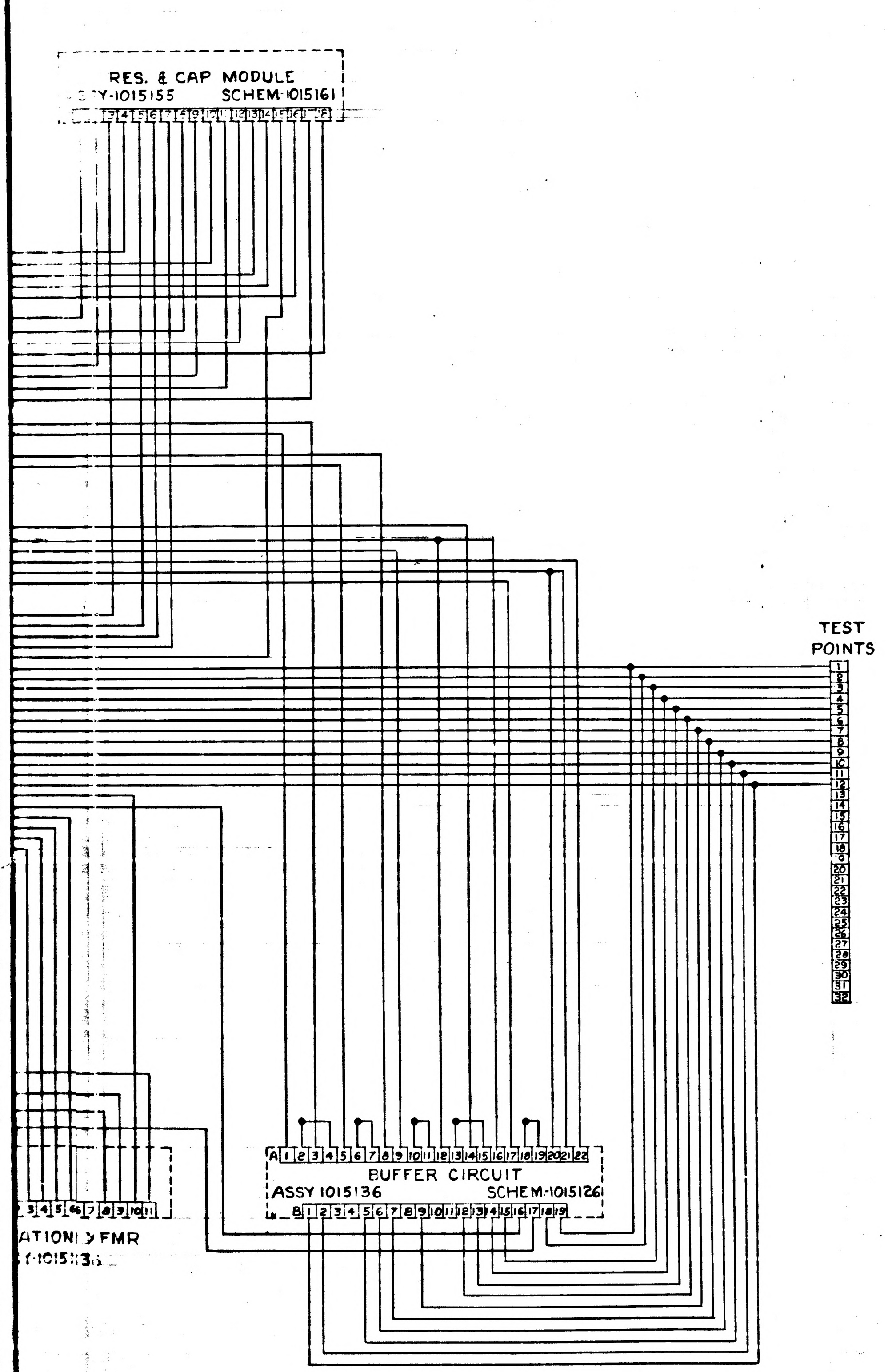
PHOTOGRAPHIC SCALE ONLY

F1 1015162

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL



RES. & CAP MODULE
ASSY-1015155
SCHEM-1015161
TEST POINTS
1
2
3
4
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11
12
13
14
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27
28
29
30
31
32
A
BUFFER CIRCUIT
ASSY 1015136
SCHEM-1015126
B
ATION FMR
1015136

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01589 DATE 19 June 63

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT
DRAWN F. Q. Kell DATE 6-14-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL W. J. Rhine 6-19-63
MIT APPROVAL 19 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC WIRING DIAGRAM,
ELECTRICAL TRAY 9

CODE IDENT NO.
SIZE J
NASA DRAWING NO. 1015162
SCALE
WT
SHEET 1 OF 1

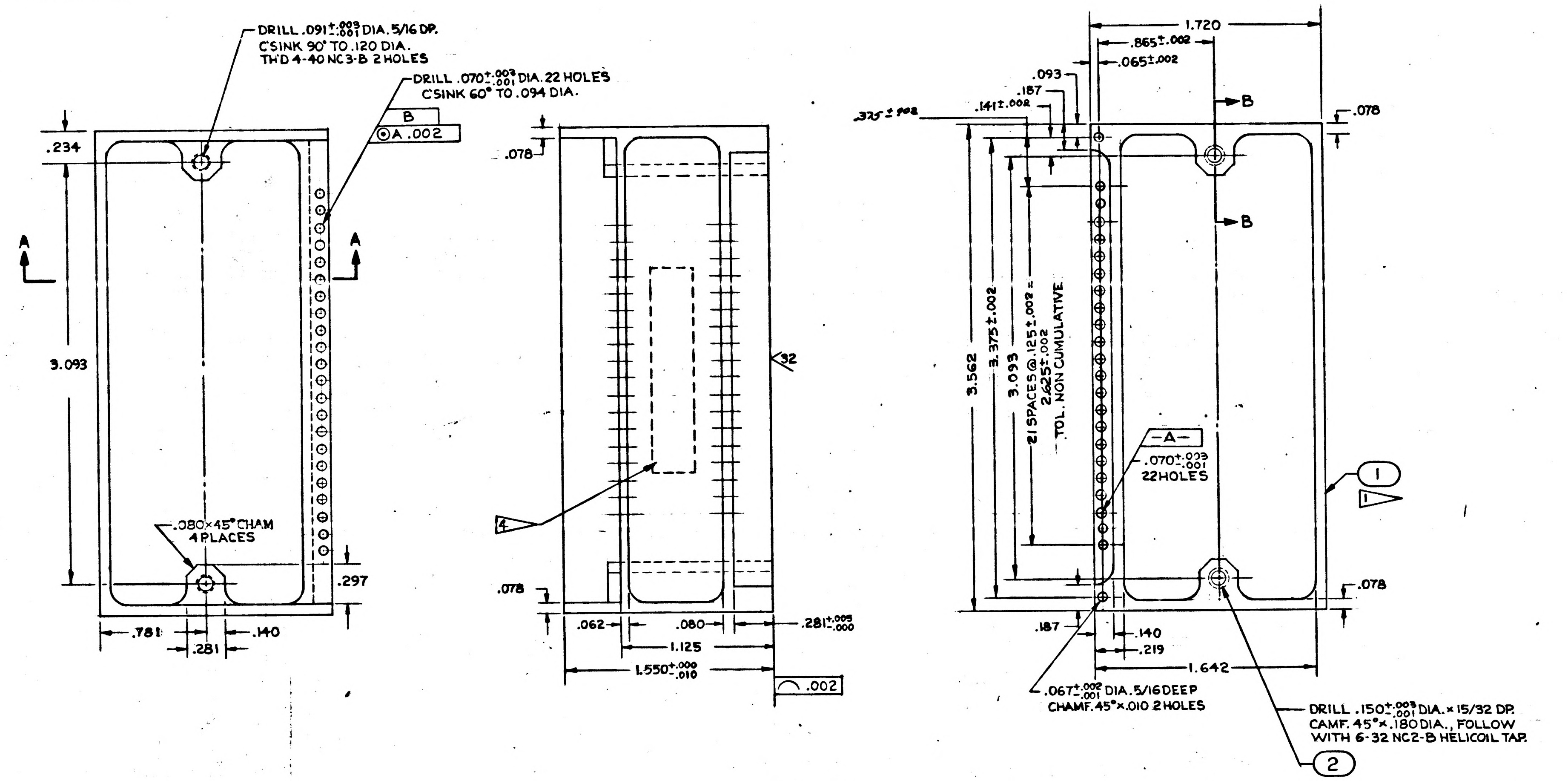
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

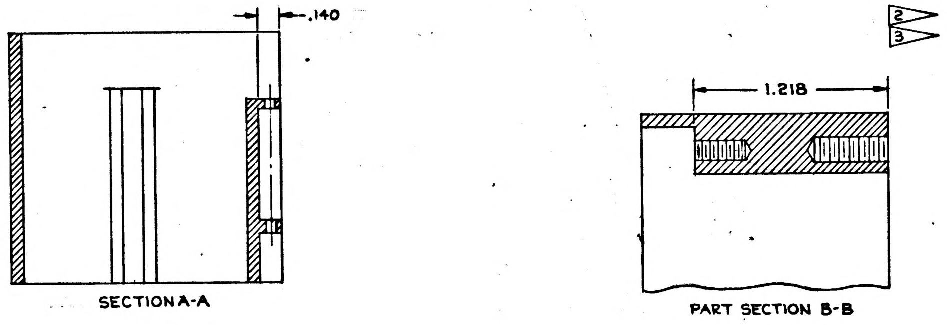
F-2 1015162

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015163 A

REVISIONS 01762			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762		


DRILL .091+.003/-.001 DIA. 5/16 DP.
C'SINK 90° TO .120 DIA.
THD 4-40 NC3-B 2 HOLES
DRILL .070+.003/-.001 DIA. 22 HOLES
C'SINK 60° TO .094 DIA.
B
⊙ A .002
.234
A
A
3.093
.080×45° CHAM
4 PLACES
.297
.781
.281
.140
.078
32
4
.078
.062
.080
1.125
1.550+.000/-.010
.281+.005/-.000
⌒ .002
1.720
.865±.002
.065±.002
.093
.187
.141±.002
.375±.002
B
B
.078
3.562
3.375±.002
3.093
21 SPACES @ .125±.002 = 2.625±.002
TOL. NON CUMULATIVE
-A-
.070+.003/-.001
22 HOLES
1
1
.078
.187
.140
.219
1.642
.067+.002/-.001 DIA. 5/16 DEEP
CHAMF. 45°×.010 2 HOLES
DRILL .150+.003/-.001 DIA. × 15/32 DP.
CAMF. 45°×.180 DIA., FOLLOW
WITH 6-32 NC2-B HELICOIL TAP.
2
2
3



SECTION A-A

PART SECTION B-B

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171, A TYPE IV

INSERT HOLES & DIAS. C & D TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/8 R.
ALL CORNERS TO BE .005R TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED √125.

1 MATERIAL: *MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31*

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 ZINC CHROMATE PRIMER.

3 INSTALL, 6-32-2B INSERT PER MS 35597. BREAK OFF TANG.

4 MARK 1015163 AND REV. LETTER PER MIL-STD-130. LOCATE APPROX. WHERE SHOWN.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS122118	INSERT-CRES HELICAL COIL	2
1	1015163-1	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015155	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± # DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING

MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN R. EMERY DATE 6-19-63
CHECKED
APPROVAL R. L. Battey
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME-INSEPARABLE ASS'Y RESISTOR & CAPACITOR

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015163
SCALE 2:1
WT
SHEET OF

101563 A

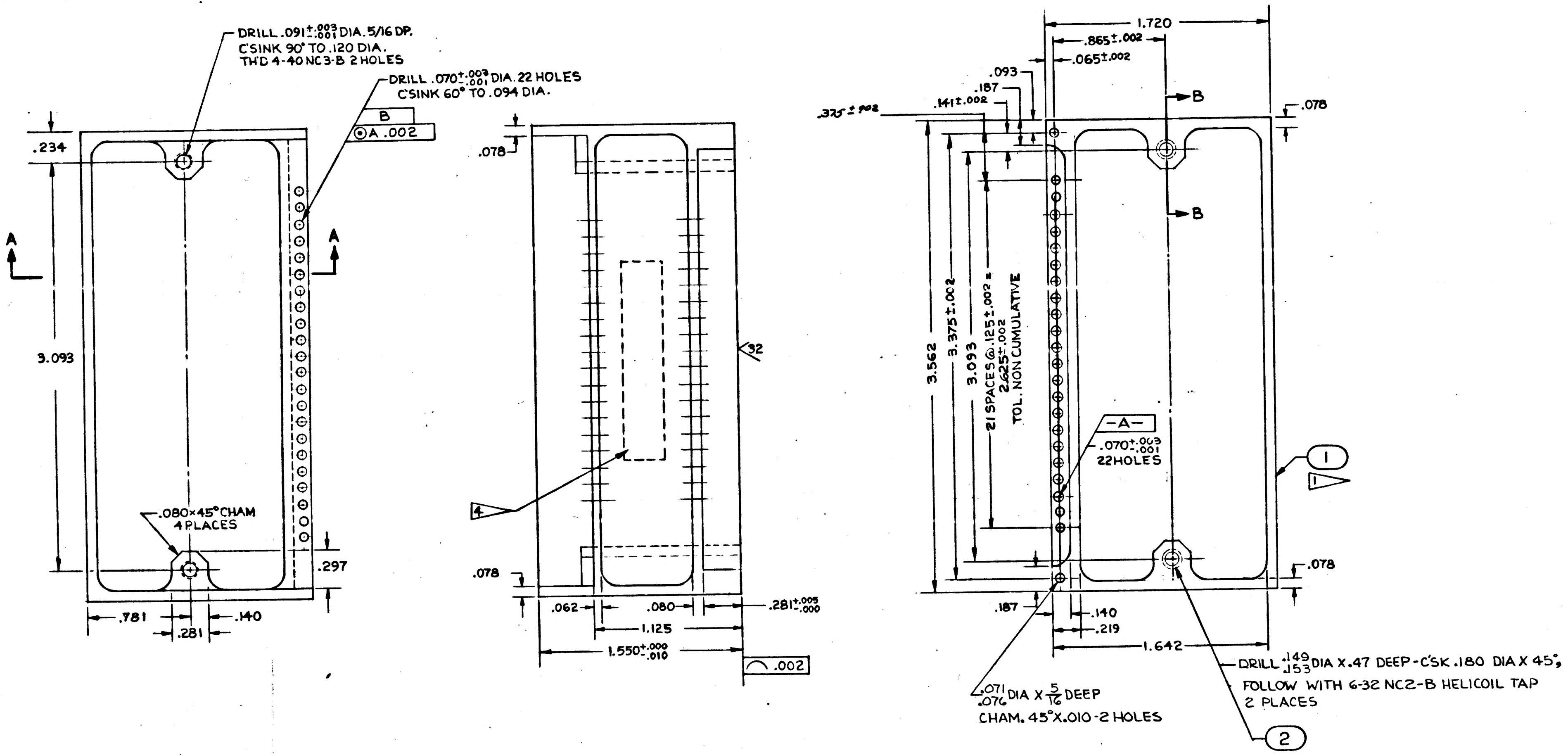
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015163 C

REVISIONS 01762

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762		
B	REVISED PER TDRR 03008	9-5-63	RFL
C	REVISED PER TDRR 03009	9-5-63	RFL


DRILL .091 +.003 -.001 DIA. 5/16 DP.
C'SINK 90° TO .120 DIA.
THD 4-40 NC3-B 2 HOLES
DRILL .070 +.003 -.001 DIA. 22 HOLES
C'SINK 60° TO .094 DIA.
B
⊙ A .002
.234
A
A
3.093
.080×45° CHAM
4 PLACES
.297
.781
.281
.140
.078
32
4
.078
.062
.080
.281 +.005 -.000
1.125
1.550 +.000 -.010
.002
1.720
.865±.002
.065±.002
.093
.187
.141±.002
.325±.002
B
B
.078
3.562
3.375±.002
3.093
21 SPACES @ .125±.002 = 2.625±.002
TOL. NON CUMULATIVE
-A-
.070 +.003 -.001
22 HOLES
1
1
.078
.187
.140
.219
1.642
DRILL .149/.153 DIA X .47 DEEP - C'SK .180 DIA X 45°,
FOLLOW WITH 6-32 NC2-B HELICOIL TAP
2 PLACES
2
2
3
.071/.076 DIA X 5/16 DEEP
CHAM. 45° X .010 - 2 HOLES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

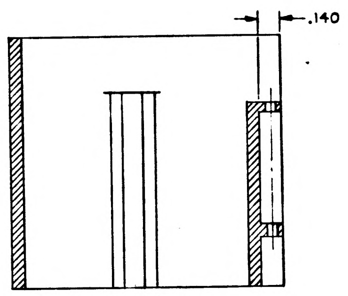
MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171, A TYPE IV

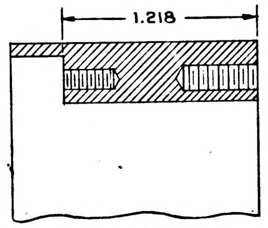
INSERT HOLES & DIAS. C & D TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
- ALL RADII ARE 1/8 R.
- ALL CORNERS TO BE .005R TO .015R OR CHAMFER.
- SURFACE ROUGHNESS MUST NOT EXCEED √125.

1. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31
2. COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
3. INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.
4. MARK 1015163 AND REV. LETTER PER MIL-STD-130. LOCATE APPROX. WHERE SHOWN.



SECTION A-A



PART SECTION B-B

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS21209-C0620	INSERT-THREADED, LOCKING	2
1	1015163-1	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015155	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN R. EMERY DATE 6-19-63
CHECKED
APPROVAL R. L. Battalfon
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME-INSEPARABLE ASS'Y
RESISTOR & CAPACITOR

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015163
SCALE 2:1
WT
SHEET OF

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

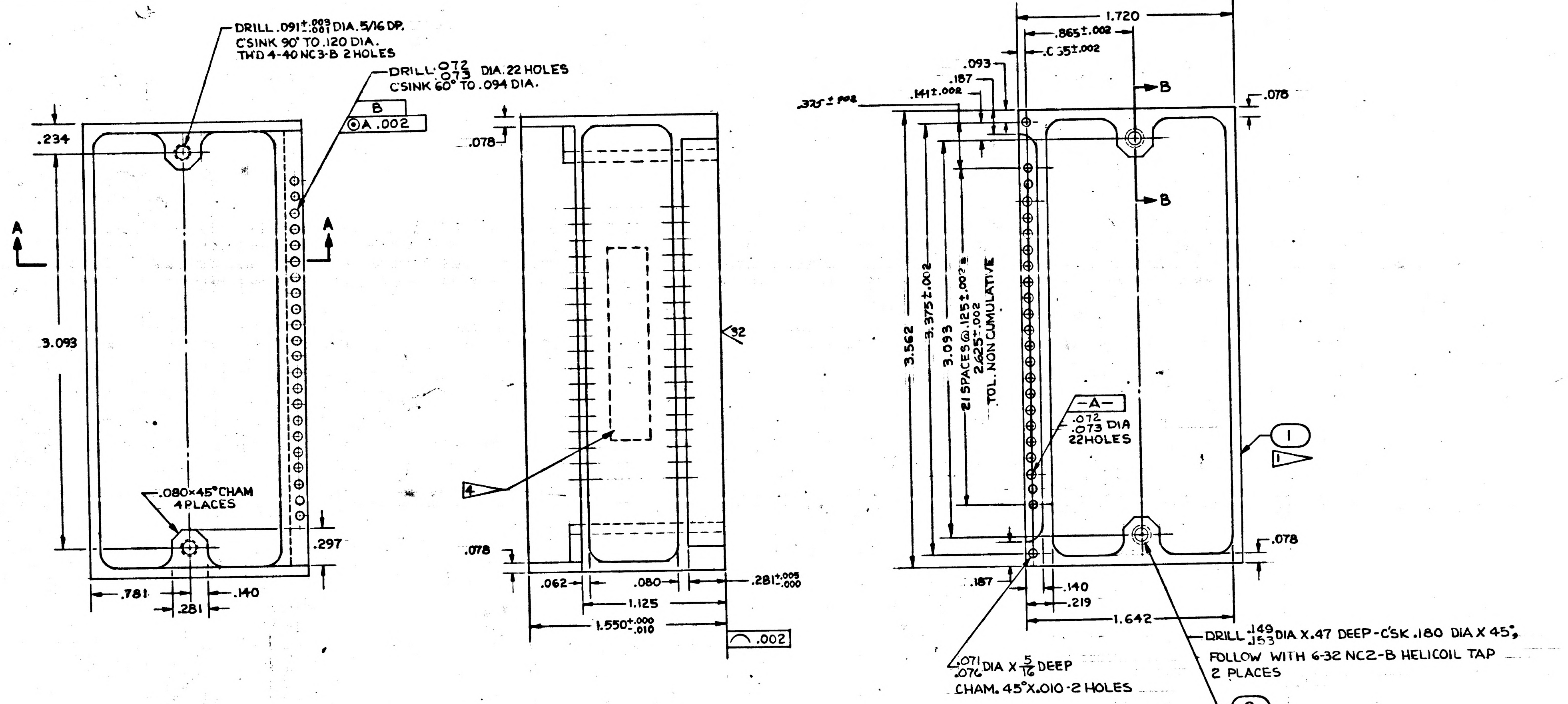
1015163 C

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

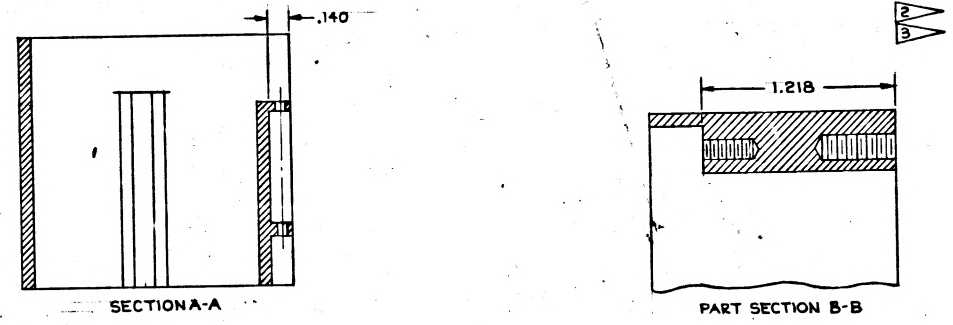
1015163 E

REVISIONS 01762

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762		
B	REVISED PER TDRR 03008	9-5-63	RPK
C	REVISED PER TDRR 03009	9-5-63	RPK
D	REVISED PER TDRR 03851	10-15-63	RPK
E	REVISED PER TDRR 03854	10-15-63	RPK



DRILL .091 +.003 -.001 DIA. 5/16 DP.
C'SINK 90° TO .120 DIA.
THD 4-40 NC3-B 2 HOLES
DRILL .072 .073 DIA. 22 HOLES
C'SINK 60° TO .094 DIA.
B
⊙ A .002
.234
A
A
3.093
.080×45° CHAM
4 PLACES
.297
.781
.281
.140
.078
32
4
.078
.062
.080
.281 +.005 -.000
1.125
1.550 +.000 -.010
⌒ .002
1.720
.865±.002
.035±.002
.093
.187
.141±.002
.325±.002
B
B
.078
3.562
3.375±.002
3.093
21 SPACES @ .125±.002 = 2.625±.002
TOL. NON CUMULATIVE
-A-
.072
.073 DIA
22 HOLES
1
1
.078
.187
.140
.219
1.642
DRILL .149 .153 DIA X .47 DEEP-C'SK .180 DIA X 45°,
FOLLOW WITH 6-32 NC2-B HELICOIL TAP
2 PLACES
.071 .076 DIA X 5/16 DEEP
CHAM. 45° X .010 - 2 HOLES
2
2
3



SECTION A-A

PART SECTION B-B

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
MUST BE FREE FROM BURRS.
FINISH: ANODIZE USING MIL-M-3171, A TYPE IV
INSERT HOLES & DIAS. C&D TO BE FREE FROM ANODIZE.
UNLESS OTHERWISE SPECIFIED:
    ALL RADII ARE 1/8R.
    ALL CORNERS TO BE .005R TO .015R OR CHAMFER.
    SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{125}$.

1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31
2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
3 INSTALL 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.
4 MARK 1015163 AND REV. LETTER PER ND 1002019 LOCATE APPROX. WHERE SHOWN.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS21209-C0620	INSERT-THREADED, LOCKING	2
1	1015163-1	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015155	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 6-19-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME-INSEPARABLE ASS'Y
RESISTOR & CAPACITOR

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015163
SCALE 2:1
WT
SHEET OF

MASTER

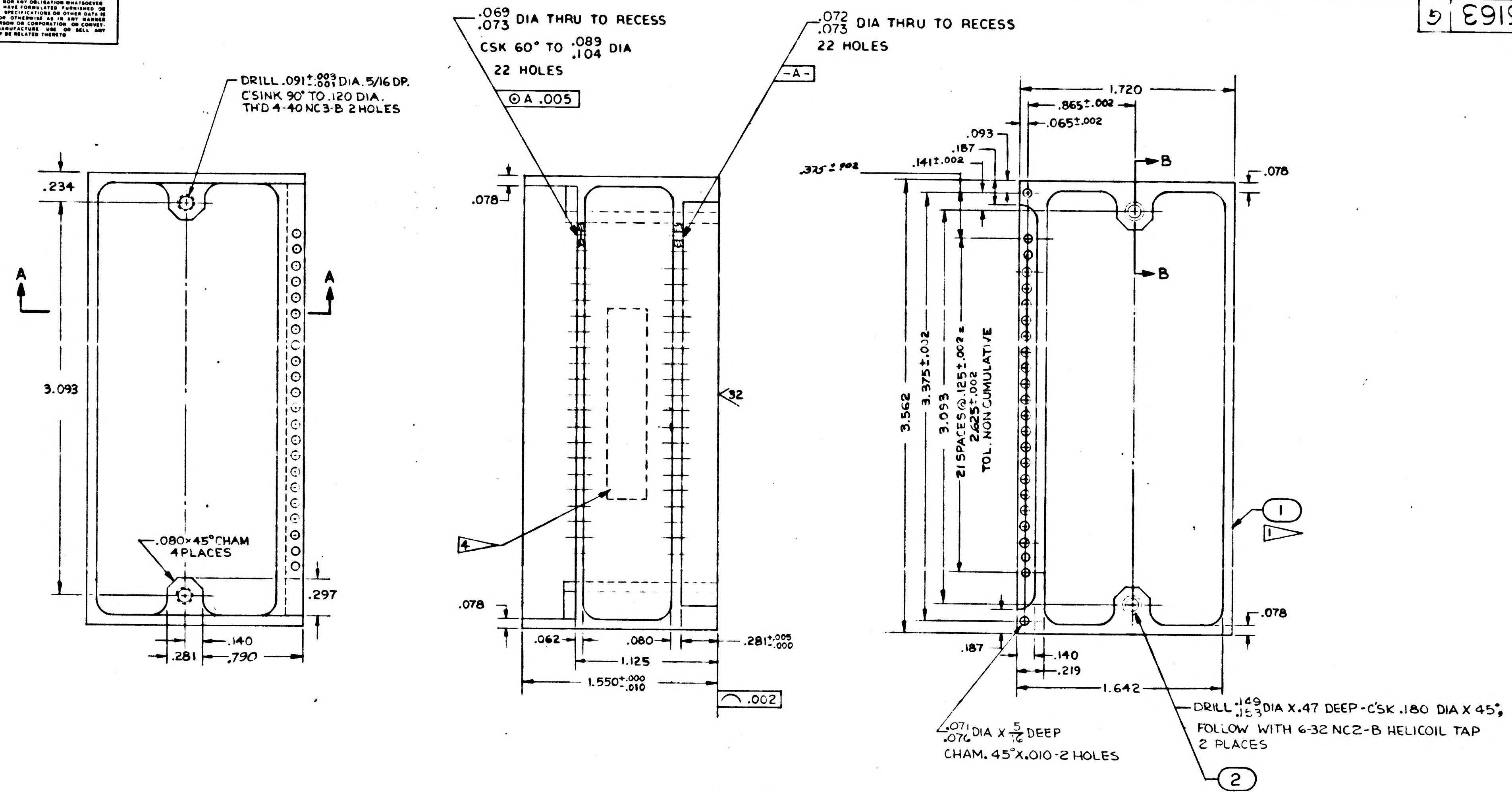
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

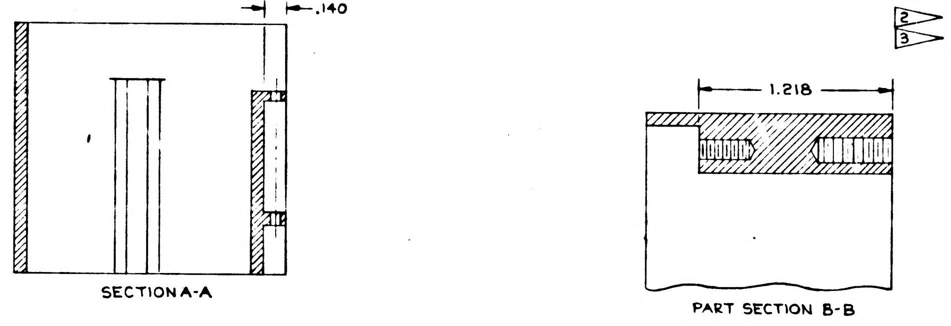
1015163 E

NOTICE — WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

1015163 G

REVISIONS 01762			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762	[illegible]	[illegible]
B	REVISED PER TDRR 03007	9-5-63	EPK [illegible]
C	REVISED PER TDRR 03009	9-5-63	EPK [illegible]
D	REVISED PER TDRR 03851	10-15-63	EPK [illegible]
E	REVISED PER TDRR 03854	10-15-63	EPK [illegible]
F	REVISED PER TDRR 05465	[illegible] 63	EPK [illegible]
G	REVISED PER TDRR 13918	10-NOV-64	[illegible]


DRILL .091 +.003 -.001 DIA. 5/16 DP.
CSINK 90° TO .120 DIA.
THD 4-40 NC3-B 2 HOLES
.234
3.093
A
A
.080×45° CHAM
4 PLACES
.297
.140
.281
.790
.069 .073 DIA THRU TO RECESS
CSK 60° TO .089 .104 DIA
22 HOLES
⊙ A .005
.078
32
4
.078
.062
.080
.281 +.005 -.000
1.125
1.550 +.000 -.010
⌒ .002
.072 .073 DIA THRU TO RECESS
22 HOLES
-A-
1.720
.865±.002
.065±.002
.093
.187
.141±.002
.325±.002
B
B
.078
3.562
3.375±.002
3.093
21 SPACES @ .125±.002 = 2.625±.002
TOL. NON CUMULATIVE
1
1
.078
.187
.140
.219
1.642
.071 .076 DIA X 5/16 DEEP
CHAM. 45°X.010-2 HOLES
DRILL .149 .153 DIA X .47 DEEP-C'SK .180 DIA X 45°,
FOLLOW WITH 6-32 NC2-B HELICOIL TAP
2 PLACES
2
2
3



SECTION A-A

PART SECTION B-B

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-M-3171, A TYPE IV

INSERT HOLES & DIAS. C & D TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/8 R.
ALL CORNERS TO BE .005R TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED √125.

1 MATERIAL: *MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31*

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

3 INSTALL, 6-32-2B INSERT PER MS 33646. BREAK OFF TANG.

4 MARK 1015163 AND REV. LETTER PER ND 1002019 LOCATE APPROX. WHERE SHOWN.

2	MS21209-C0620	INSERT-THREADED, LOCKING	2
1	1015163-1	FRAME	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1015155	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS XX ±.02 XXX ±.005 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT
DRAWN R. EMERY DATE 6-19-63
CHECKED
APPROVAL R. L. [illegible]
APPROVAL
NASA APPROVAL
MIT APPROVAL [illegible] 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

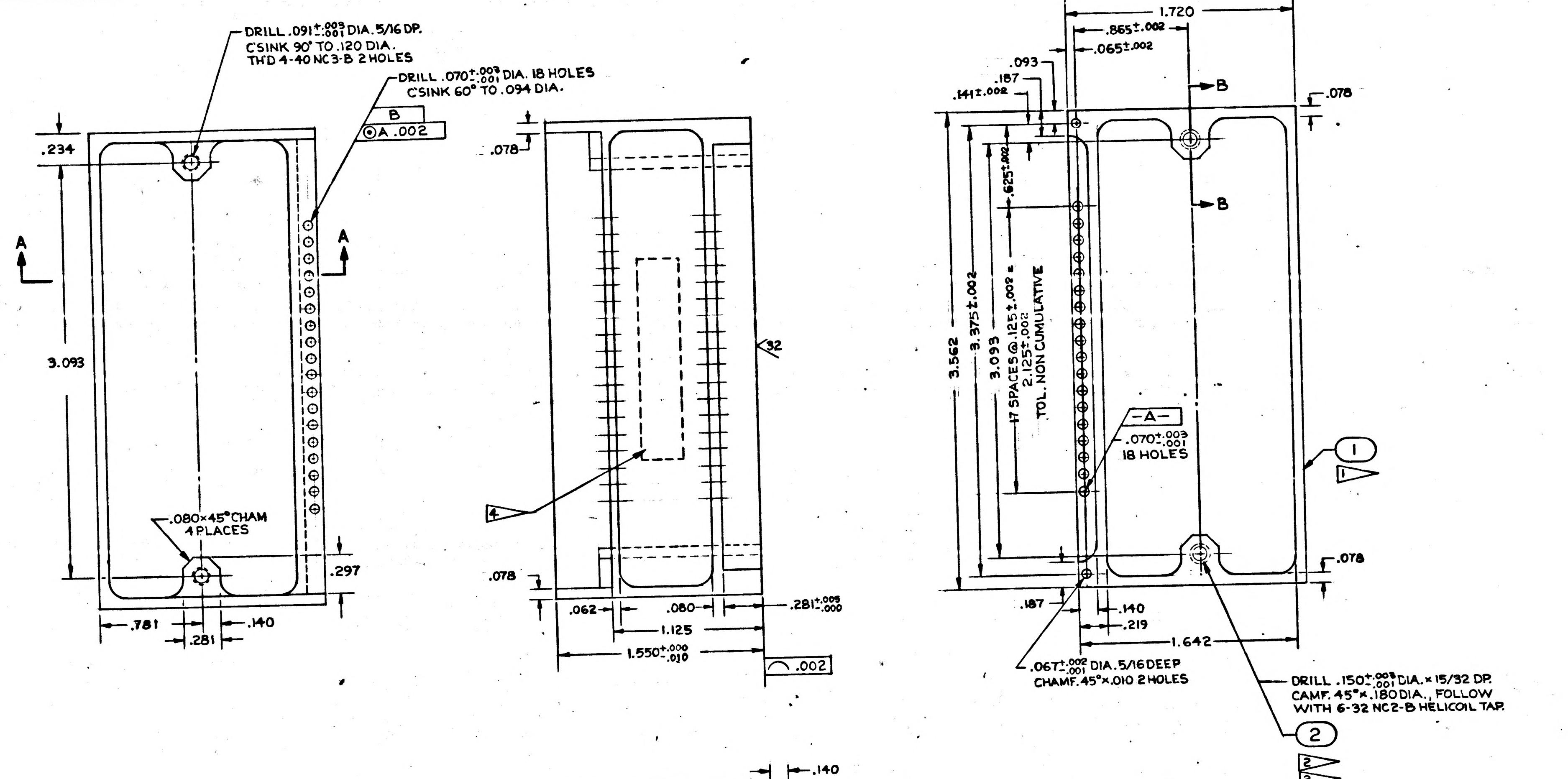
FRAME-INSEPARABLE ASS'Y
RESISTOR & CAPACITOR

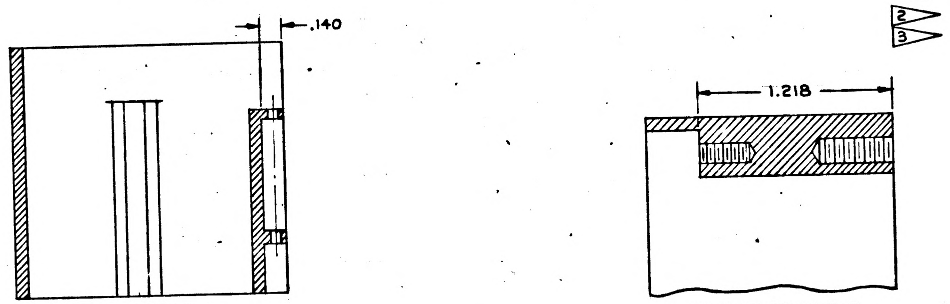
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015163
SCALE 2:1
WT
SHEET OF

1015163

SYM	DESCRIPTION	DATE	APPROVAL
REVISIONS 01762			

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.


DRILL .091 +.003 -.001 DIA. 5/16 DP.
C'SINK 90° TO .120 DIA.
THD 4-40 NC3-B 2 HOLES
DRILL .070 +.003 -.001 DIA. 18 HOLES
C'SINK 60° TO .094 DIA.
B
◎ A .002
A
A
.234
3.093
.080×45° CHAM
4 PLACES
.297
.781
.281
.140
.078
.078
32
4
.062
.080
.281 +.005 -.000
1.125
1.550 +.000 -.010
⌒ .002
1.720
.865±.002
.065±.002
.093
.187
.141±.002
.625±.002
B
B
.078
3.562
3.375±.002
3.093
17 SPACES @ .125±.002 = 2.125±.002
TOL. NON CUMULATIVE
-A-
.070 +.003 -.001
18 HOLES
1
1
.078
.187
.140
.219
1.642
.067 +.002 -.001 DIA. 5/16 DEEP
CHAMF. 45°×.010 2 HOLES
DRILL .150 +.003 -.001 DIA. × 15/32 DP.
CAMF. 45°× .180 DIA., FOLLOW
WITH 6-32 NC2-B HELICOIL TAP.
2
2
3



SECTION A-A

PART SECTION B-B

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS.

FINISH: ANODIZE USING MIL-A-8625 TYPE II, DYED BLACK.

INSERT HOLES & DIAS. C & D TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/8 R.
ALL CORNERS TO BE .005R TO .015R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED √125.

1 MATERIAL: ALUMINUM 6061-T6 PER QQA-325

2 COAT THREADS AND ITEM 2 WITH MIL-P-8585 ZINC CHROMATE PRIMER.

3 INSTALL, 6-32-2B INSERT PER MS 33537. BREAK OFF TANG.

4 MARK 1015163 AND REV. LETTER PER MIL-STD-130. LOCATE APPROX. WHERE SHOWN.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
2	MS122118	INSERT-CRES HELICAL COIL	2
1	1015163-1	FRAME	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1015155	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± # DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 6-19-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W. Kupfer 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME-INSEPARABLE ASS'Y
RESISTOR & CAPACITOR

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015163
SCALE 2:1
WT
SHEET OF

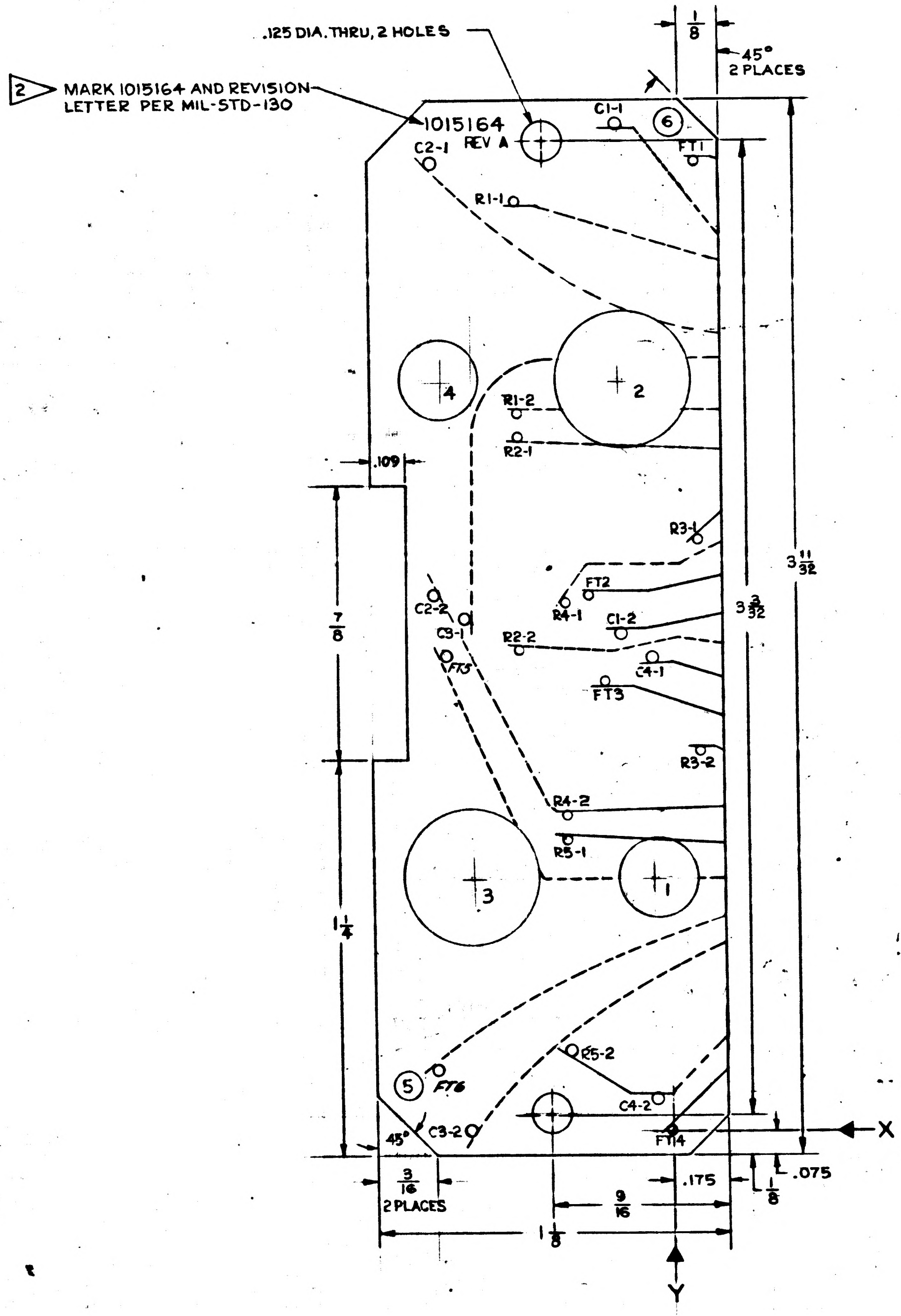
101563

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015164 A

REVISIONS 0176			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762	8/28/63	RPL



COORDINATE DIMENSIONS			
HOLE	COORDINATE		HOLE DESCRIPTION
DESIG.	X (HORIZ)	Y (VERT.)	TOL. +.010, -.000
FT4	.000	.000	.024 DIA. THRU
R3-2	-.100	1.200	.043
R3-1	-.100	1.875	.043
FT1	-.100	3.075	.024
C4-2	.050	.100	.043
1	.050	.800	.250
C4-1	.050	1.500	.043
C1-2	.150	1.575	.043
2	.150	2.375	.437
C1-1	.150	3.200	.043
FT3	.200	1.425	.024
FT2	.250	1.700	.024
R5-2	.325	.250	.043
R5-1	.325	.925	
R4-2	.325	1.000	
R4-1	.325	1.675	
R2-2	.475	1.525	
R2-1	.475	2.200	
R1-2	.475	2.275	
R1-1	.475	2.950	↓
3	.625	.800	.437
C3-2	.650	.000	.043
C3-1	.650	1.625	.043
4	.725	2.375	.250
C2-2	.750	1.700	.043
C2-1	.750	3.075	.043
5	.850	.150	.089
6	-.025	3.200	.089
F6	.725	.200	.024
F5	.725	1.425	.024

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1▷ MATERIAL: EPOXY GLASS .015 THK MIL-P-18177 TYPE GEE.

CHARACTERS AND PATHS FOR MFG REFERENCE ONLY.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

2▷ $\frac{3}{32}$ SANS SERIF GOTHIC CHARACTERS LOCATE APPROX. AS SHOWN.

OTHER CHARACTERS TO BE $\frac{1}{16}$ HIGH SANS SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

MARK PATHS AS SHOWN $\frac{1}{64}$ WIDE.

SEE 1015164 SHEET 2 FOR PHOTOGRAPHIC MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

MASTER

1015155	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 6-20-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

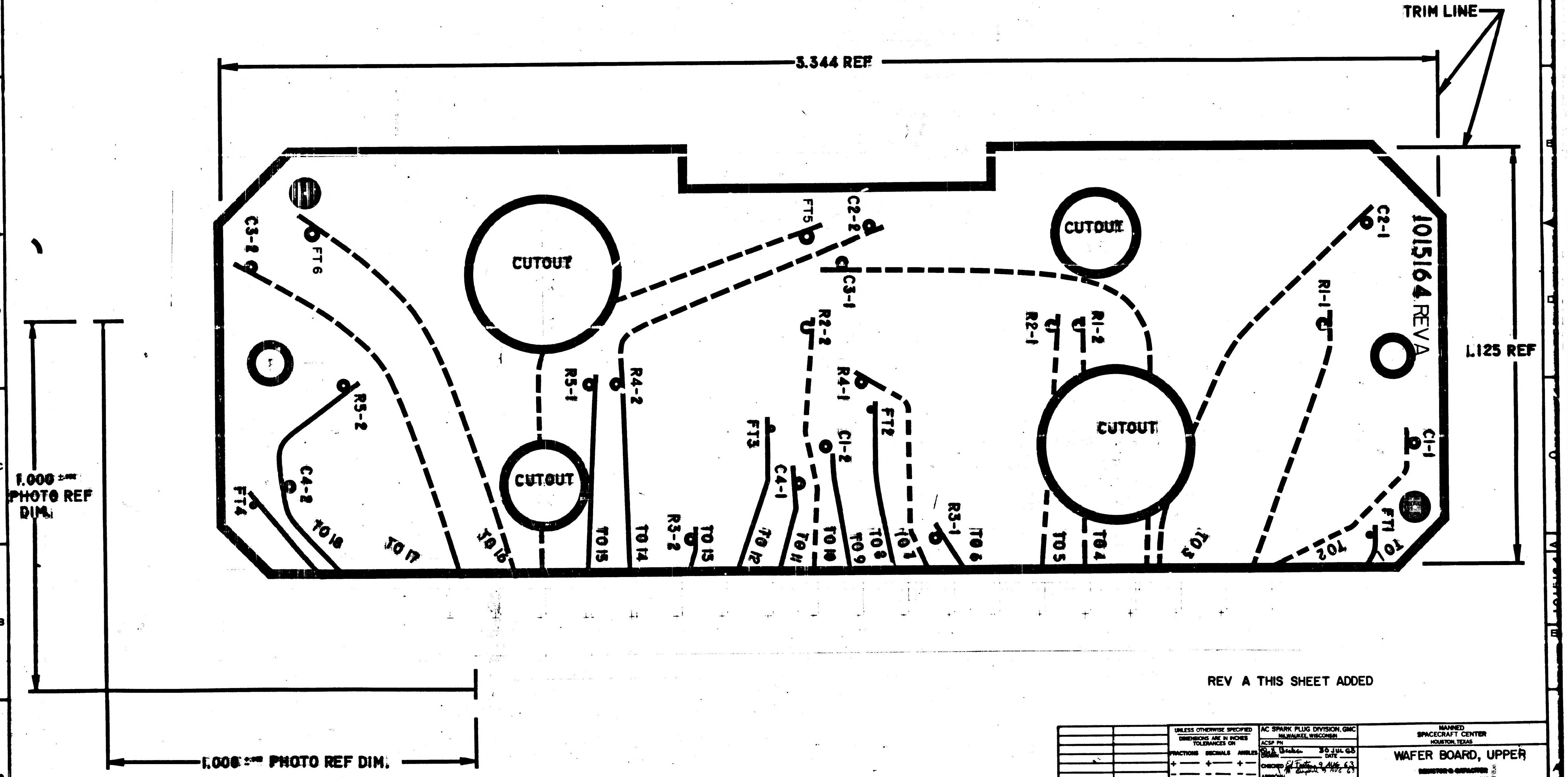
WAFER BOARD, UPPER
RESISTOR & CAPACITOR

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015164
SCALE 4:1
WT
SHEET 1 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015164 A

REVISIONS					
SYM	ZONE	DESCRIPTION		DATE	APPD.
A		THIS SHEET ADDED 02762	CHG NO.	[illegible]	[illegible]



TRIM LINE
3.344 REF
1.125 REF
1.000 PHOTO REF DIM.
1.000 PHOTO REF DIM.
1015164 REV A
CUTOUT
CUTOUT
CUTOUT
CUTOUT
C3-2
FT6
FT5
C2-2
C3-1
R2-2
R4-1
FT2
C1-2
R4-2
R5-1
R5-2
C4-2
FT4
FT3
C4-1
R3-2
R3-1
R2-1
R1-2
R1-1
C2-1
C1-1
FT1
TO 18
TO 17
TO 16
TO 15
TO 14
TO 13
TO 12
TO 11
TO 10
TO 9
TO 8
TO 7
TO 6
TO 5
TO 4
TO 3
TO 2
TO 1

REV A THIS SHEET ADDED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. J. Becker DATE 30 JUL 63
CHECKED Ed Foster 9 AUG 63
[illegible] 9 AUG 63
APPROVAL
APPROVAL
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

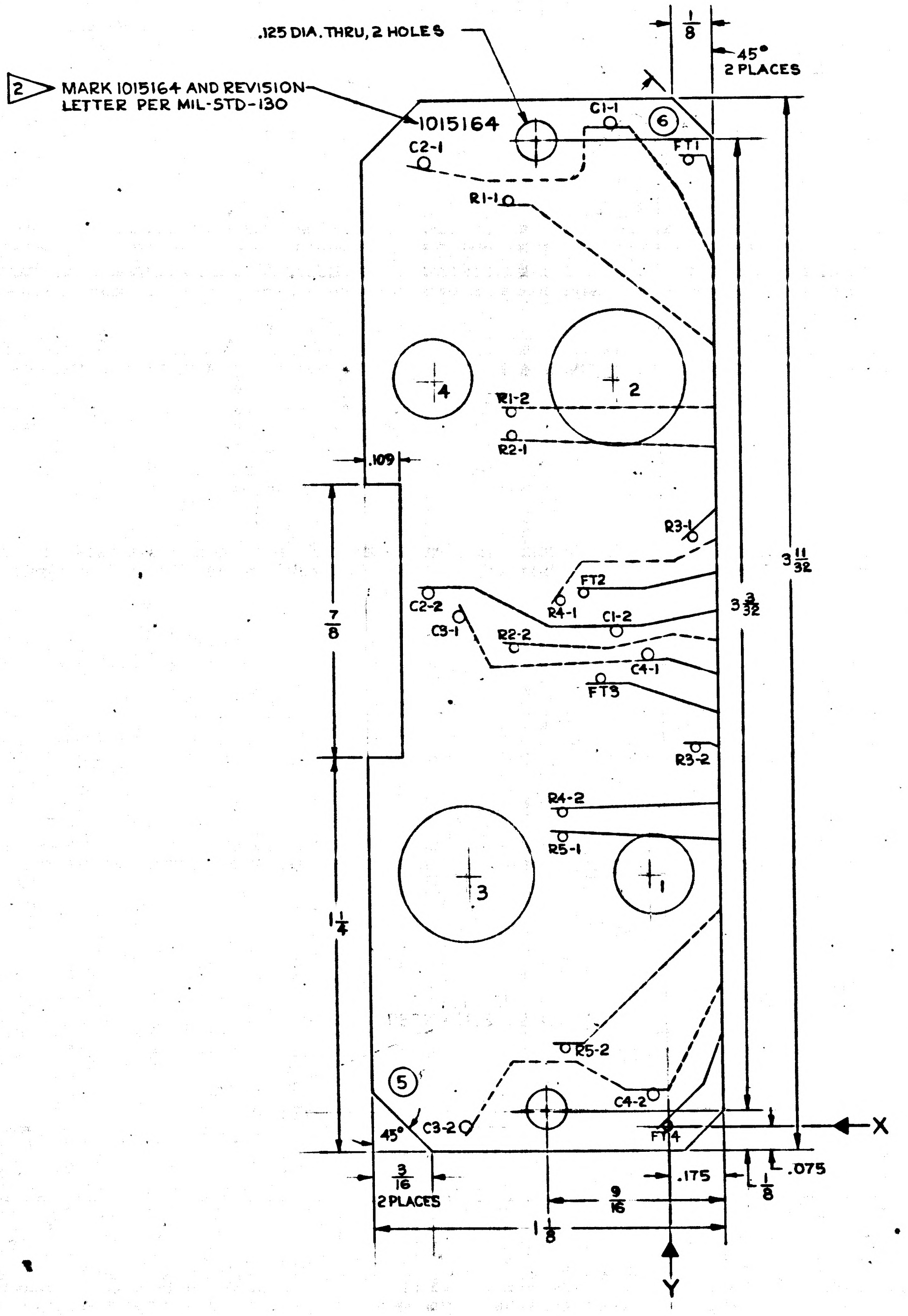
WAFER BOARD, UPPER
~~RESISTOR & CAPACITOR~~

CODE IDENT NO.
SIZE E
1015164
SCALE 10:1
SHEET 2 OF 2

1015164

REVISIONS 0176			
SYM	DESCRIPTION	DATE	APPROVAL

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



COORDINATE DIMENSIONS			
HOLE	COORDINATE		HOLE DESCRIPTION
DESIG.	X (HORIZ)	Y (VERT.)	TOL. +.010, -.000
FT4	.000	.000	.024 DIA. THRU
R3-2	-.100	1.200	.043
R3-1	-.100	1.875	.043
FT1	-.100	3.075	.024
C4-2	.050	.100	.043
1	.050	.800	.250
C4-1	.050	1.500	.043
C1-2	.150	1.575	.043
2	.150	2.375	.437
C1-1	.150	3.200	.043
FT3	.200	1.425	.024
FT2	.250	1.700	.024
R5-2	.325	.250	.043
R5-1	.325	.925	
R4-2	.325	1.000	
R4-1	.325	1.675	
R2-2	.475	1.525	
R2-1	.475	2.200	
R1-2	.475	2.275	
R1-1	.475	2.950	
3	.625	.800	.437
C3-2	.650	.000	.043
C3-1	.650	1.625	.043
4	.725	2.375	.250
C2-2	.750	1.700	.043
C2-1	.750	3.075	.043
5	.850	.150	.089
6	-.025	3.200	.089

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL: EPOXY GLASS .015 THK MIL-P-18177 TYPE GEE.

CHARACTERS AND PATHS FOR MFG REFERENCE ONLY.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

2 3/64 SANS SERIF GOTHIC CHARACTERS LOCATE APPROX. AS SHOWN.

OTHER CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

MARK PATHS AS SHOWN 1/64 WIDE.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

MASTER

1015155	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN R. EMERY DATE 6-20-63
CHECKED L.A. Plummer
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL W Kupfer 26 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD, UPPER
RESISTOR & CAPACITOR

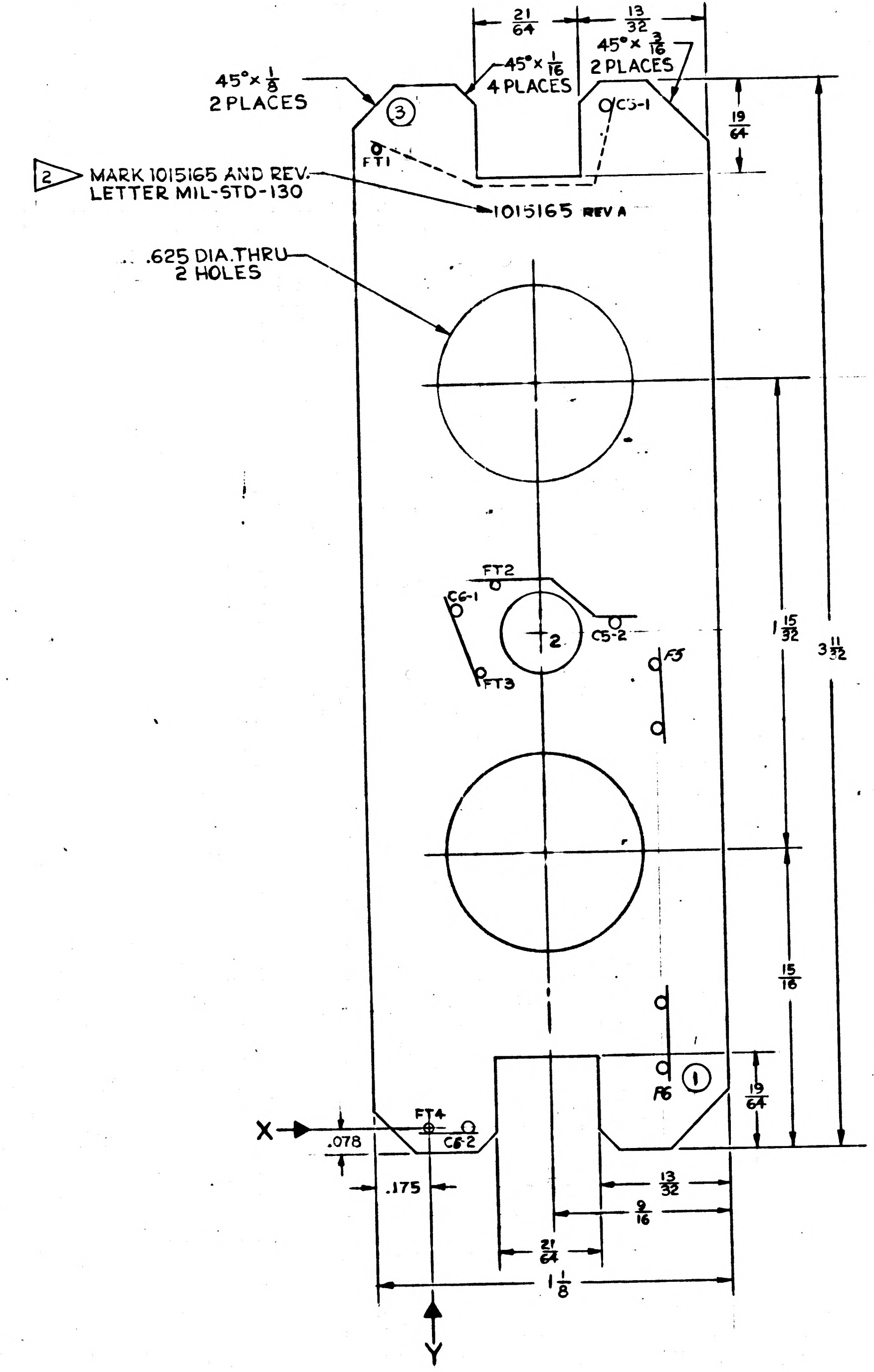
CODE IDENT NO.	SIZE	NASA DRAWING NO.	
	D	1015164	
SCALE 4:1	WT	SHEET	OF

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015165 A

REVISIONS		01762	
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762		



COORDINATE DIMENSIONS			
HOLE DESIG.	COORDINATE		HOLE DESCRIPTION TOL.+.010, -.000
	X (HORIZ.)	Y (VERT.)	
FT4	.000	.000	.024 DIA. THRU
FT1	-.100	3.075	.024
C6-2	.125	.000	
C6-1	.125	1.625	
FT3	.200	1.425	.024
FT2	.250	1.700	.024
2	.400	1.550	.250
C5-2	.625	1.575	.043
C5-1	.625	3.200	
R6-2	.725	.400	
R6-1	.725	1.200	
3	-.025	3.200	.089
1	.850	.150	.089
FT6	.725	.200	
FT5	.725	1.425	

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL: EPOXY GLASS .015 TH'K, MIL-P-18177 TYPE GEE.

CHARACTERS AND PATHS FOR MFG REFERENCE ONLY.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

2 3/32 SANS SERIF GOTHIC CHARACTERS, LOCATE APPROX. AS SHOWN.

OTHER CHARACTERS TO BE 1/16 HIGH SANS SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

MARK PATHS AS SHOWN 1/64 WIDE.

SEE 1015165 SHEET 2 FOR PHOTOGRAPHIC MASTER.

1015165 A

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

MASTER

1015155	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN R. EMERY DATE 6-21-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 24 June 63

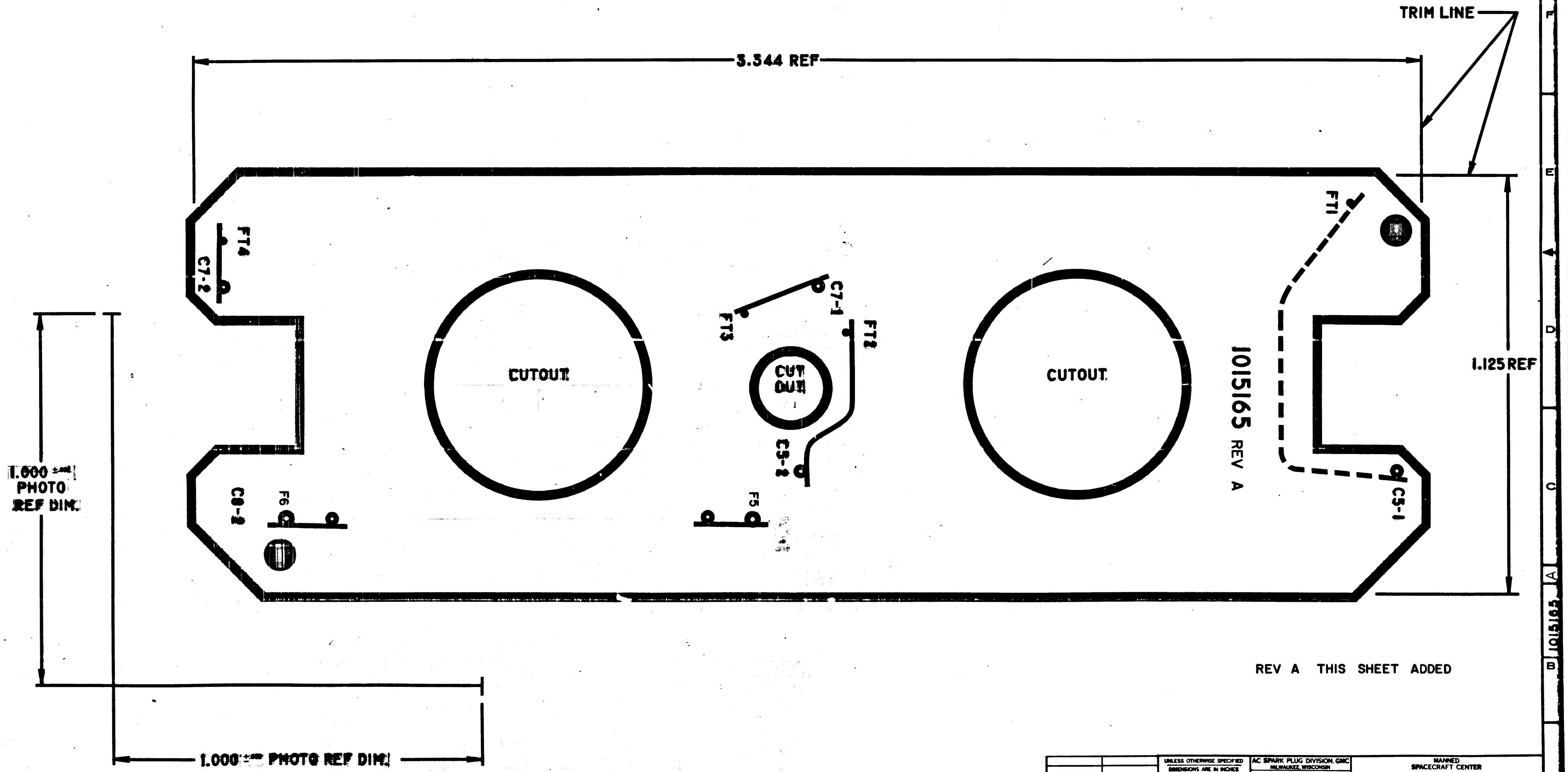
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD, LOWER
RESISTOR & CAPACITOR

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015165
SCALE 4:1
WT
SHEET 1 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		THIS SHEET ADDED 02762			



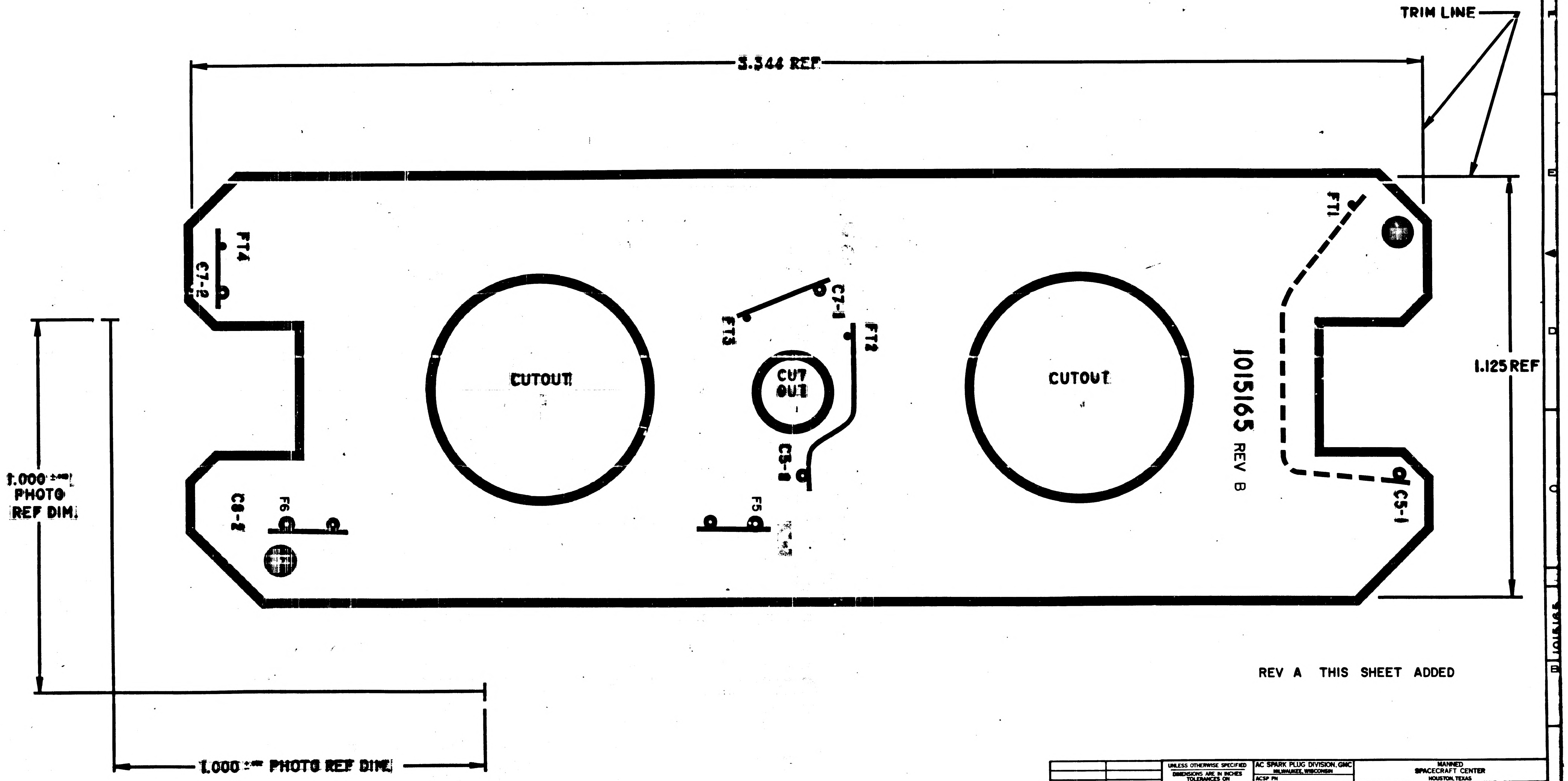
TRIM LINE
3.344 REF
1.125 REF
FT1
FT2
FT3
FT4
C7-1
C7-2
C5-1
C5-2
C8-2
F5
F6
CUTOUT
CUT OUT
CUTOUT
1015165 REV A
1.000 ± PHOTO REF DIM.
1.000 ± PHOTO REF DIM.

REV A THIS SHEET ADDED

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN 30 JUL 63 DATE CHECKED Ed Foster 9 AUG 63 9 AUG 63 APPROVAL APPROVAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS WAFER BOARD, LOWER RESISTOR & CAPACITOR
APPLICATION		MATERIAL CONTRACT	NASA APPROVAL MIT APPROVAL	CODE IDENT NO. SIZE E 1015165 SCALE 10:1 SHEET 2 OF 2

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		THIS SHEET ADDED 02762			
B		REVISED PER TDRR 03009			


TRIM LINE
3.344 REF
1.125 REF
1.000 ±.002 PHOTO REF DIM.
1.000 ±.002 PHOTO REF DIM.
FT4
C7-2
C8-2
F6
CUTOUT
FT3
C7-1
FT2
CUT OUT
C5-2
F5
CUTOUT
1015165 REV B
FT1
C5-1

REV A THIS SHEET ADDED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 30 JUL 63
CHECKED Ed Foster 9 AUG 63
9 AUG 63
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD, LOWER
[illegible]

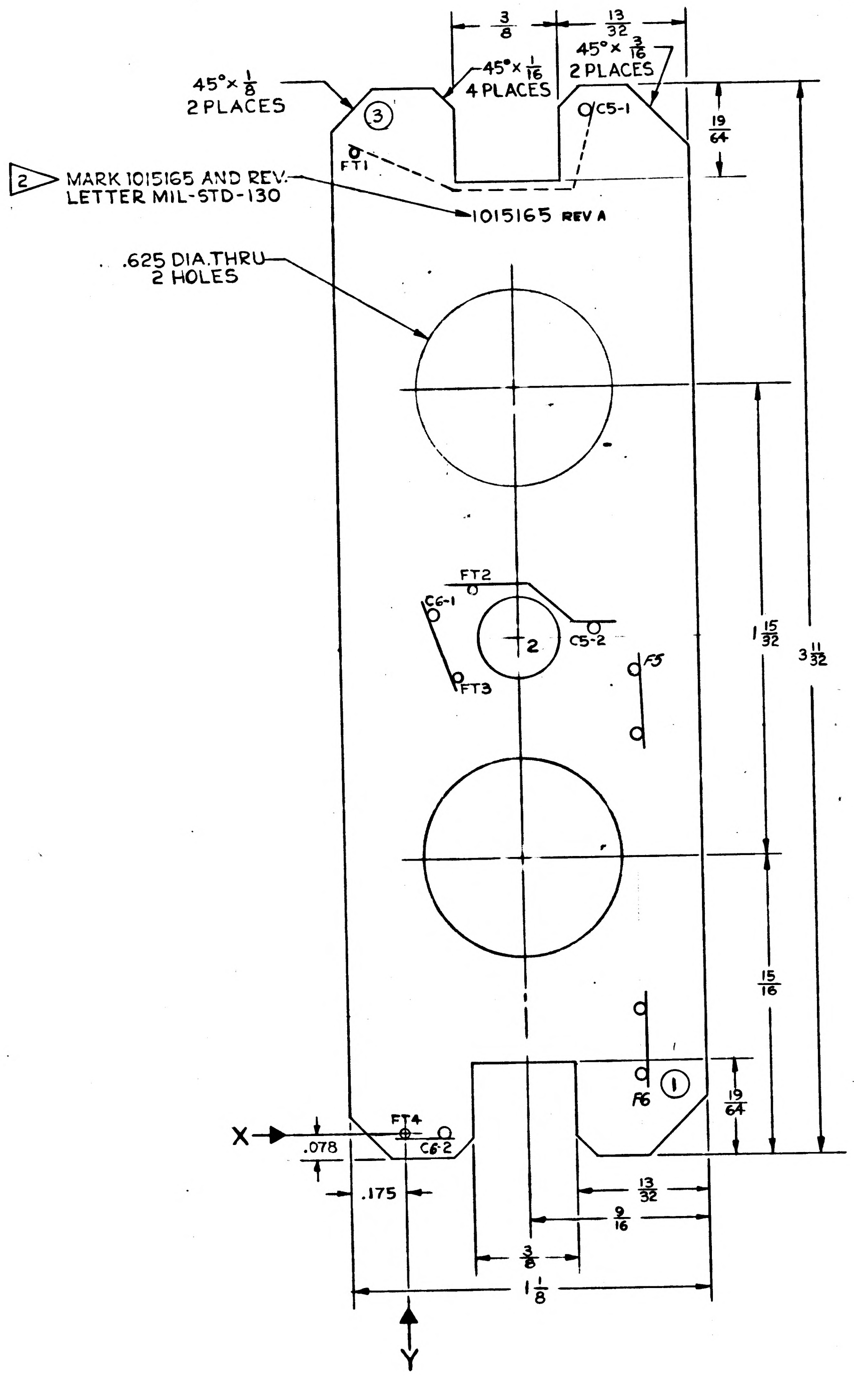
CODE IDENT NO.
SIZE E
1015165
SCALE 10:1
SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015165 B

REVISIONS 01762

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762		
B	REVISED PER TDRR 03009	9-5-67	RDK



FOR REFERENCE ONLY

COORDINATE DIMENSIONS			
HOLE DESIG.	COORDINATE X (HORIZ.)	COORDINATE Y (VERT.)	HOLE DESCRIPTION TOL.+.010,-.000
FT4	.000	.000	.024 DIA. THRU
FT1	-.100	3.075	.024
C6-2	.125	.000	
C6-1	.125	1.625	
FT3	.200	1.425	.024
FT2	.250	1.700	.024
2	.400	1.550	.250
C5-2	.625	1.575	.043
C5-1	.625	3.200	
R6-2	.725	.900	
R6-1	.725	1.200	
3	-.025	3.200	.089
1	.850	.150	.089
FT6	.725	.200	
FT5	.725	1.425	

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL: EPOXY GLASS .015 TH'K, MIL-P-18177 TYPE GEE.

CHARACTERS AND PATHS FOR MFG REFERENCE ONLY.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

2 3/32 SANS SERIF GOTHIC CHARACTERS, LOCATE APPROX. AS SHOWN.

OTHER CHARACTERS TO BE 1/16 HIGH SANS SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

MARK PATHS AS SHOWN 1/64 WIDE.

SEE 1015165 SHEET 2 FOR PHOTOGRAPHIC MASTER.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1015155	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 6-21-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL 24 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD, LOWER
RESISTOR & CAPACITOR

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015165
SCALE 4:1 WT SHEET 1 OF 2

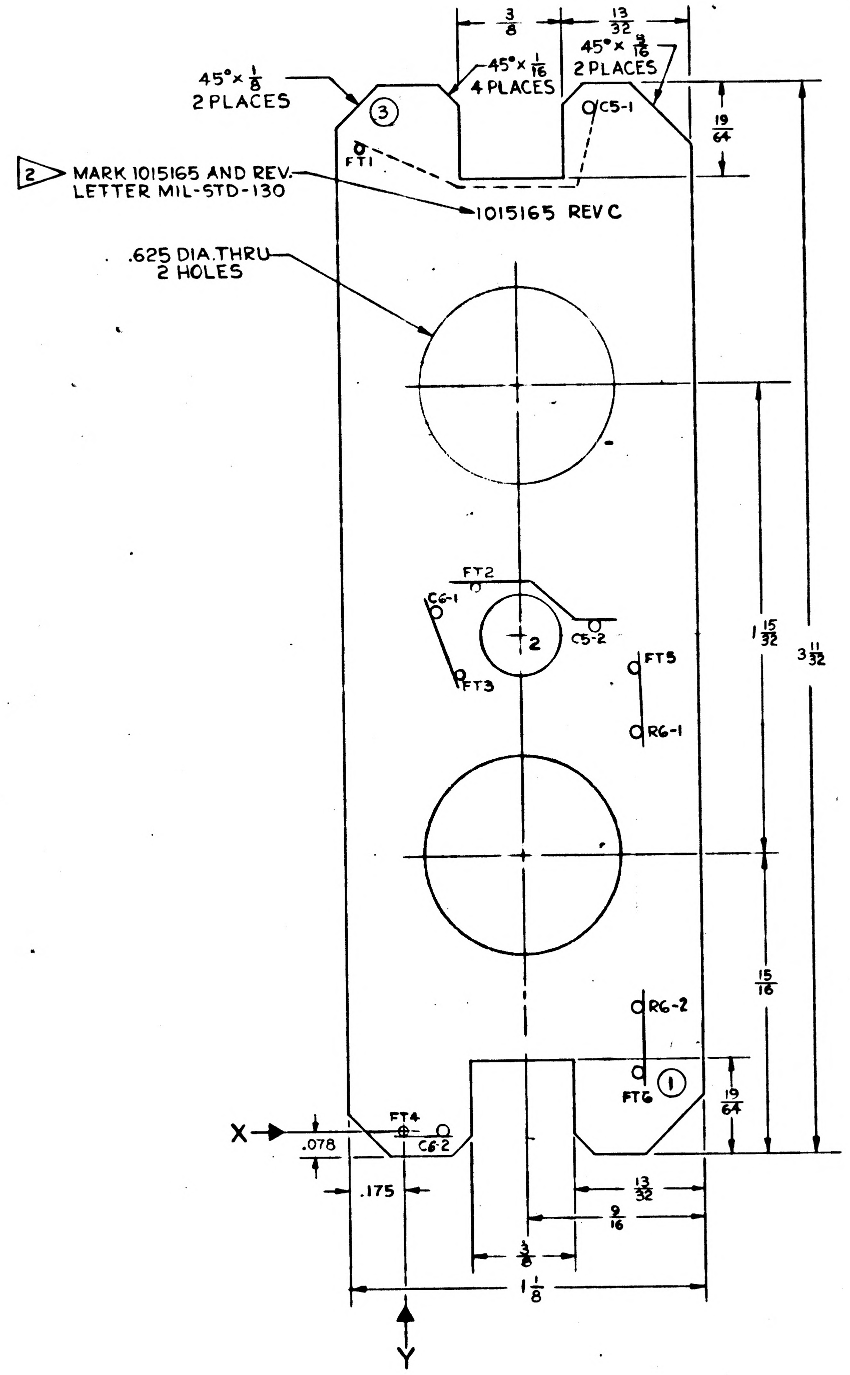
1015165 B

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015165 C

REVISIONS C1762			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02762		
B	REVISED PER TDRR 03009	9-5-63	RPK
C	REVISED PER TDRR 07132	8 APR 64	



FOR REFERENCE ONLY

COORDINATE DIMENSIONS			
HOLE DESIG.	COORDINATE X (HORIZ.)	COORDINATE Y (VERT.)	HOLE DESCRIPTION TOL. +.010, -.000
FT4	.000	.000	.024 DIA. THRU
FT1	-.100	3.075	.024
C6-2	.125	.000	
C6-1	.125	1.625	
FT3	.200	1.425	.024
FT2	.250	1.700	.024
2	.400	1.550	.250
C5-2	.625	1.575	.043
C5-1	.625	3.200	
R6-2	.725	.900	
R6-1	.725	1.200	
3	-.025	3.200	.089
1	.850	.150	.089
FT6	.725	.200	
FT5	.725	1.925	

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1▷ MATERIAL: EPOXY GLASS .015 TH'K, MIL-P-18177 TYPE GEE.

CHARACTERS AND PATHS FOR MFG REFERENCE ONLY.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

2▷ 3/32 SANS SERIF GOTHIC CHARACTERS, LOCATE APPROX. AS SHOWN.

OTHER CHARACTERS TO BE 1/16 HIGH SANS SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

MARK PATHS AS SHOWN 1/64 WIDE.

SEE 1015165 SHEET 2 FOR PHOTOGRAPHIC MASTER.

C	C
SHEET 1	SHEET 2
REVISION STATUS OF SHEETS	

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

1015155	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO.
CONTRACT
DRAWN R. EMERY DATE 6-21-63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL 24 Jun 63

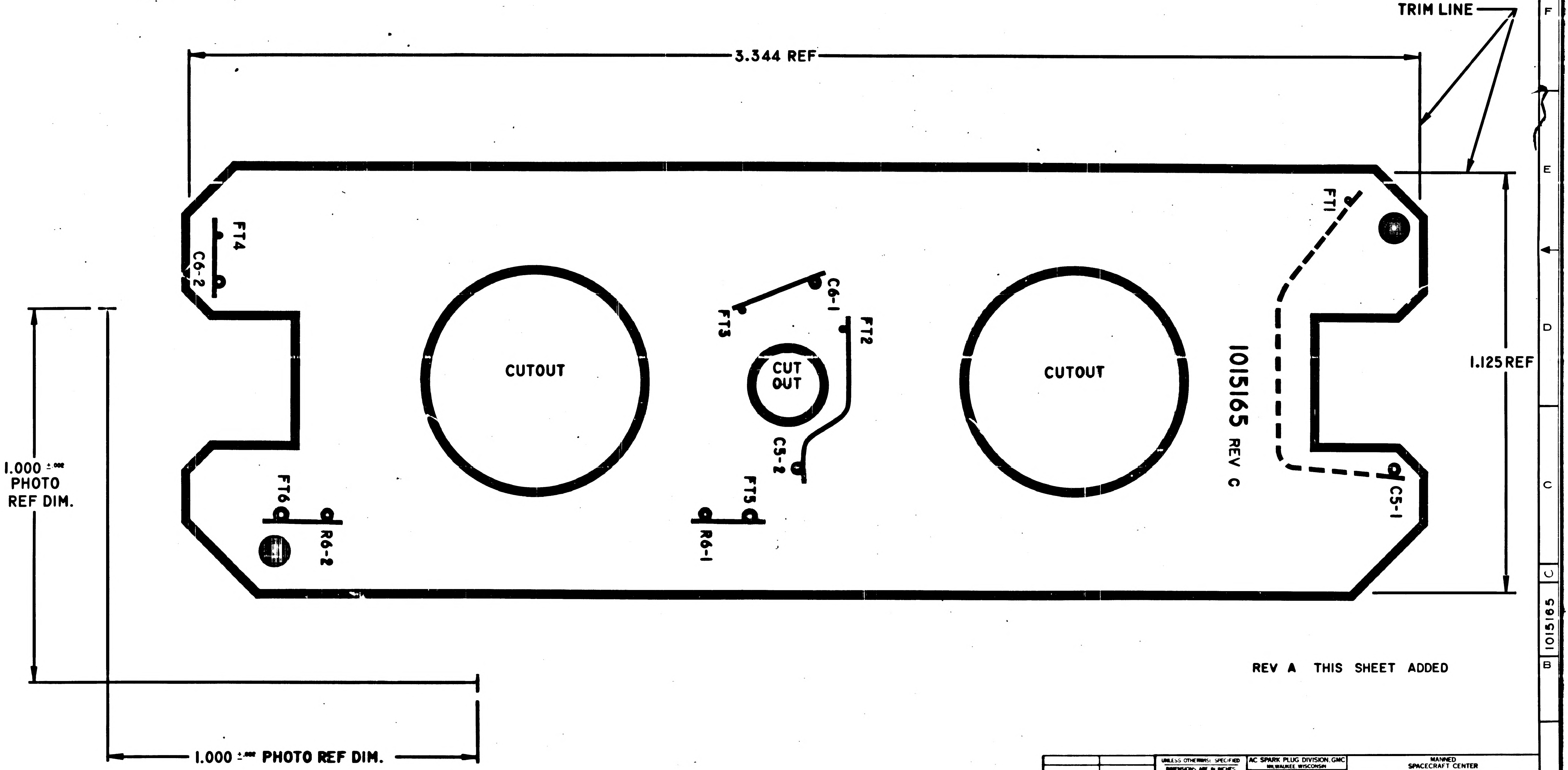
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD, LOWER RESISTOR & CAPACITOR

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015165
SCALE 4:1
WT
SHEET 1 OF 2

1015165 C

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		THIS SHEET ADDED 02762		8/20/63	
B		REVISED PER TDRR 03009		9-5-63	NK
C		REVISED PER TDRR 07132		8 APR 64	



TRIM LINE
3.344 REF
1.125 REF
1.000 ±.002 PHOTO REF DIM.
1.000 ±.002 PHOTO REF DIM.
FT1
FT2
FT3
FT4
FT5
FT6
C6-1
C6-2
C5-1
C5-2
R6-1
R6-2
CUTOUT
CUTOUT
CUT OUT
1015165 REV C

REV A THIS SHEET ADDED

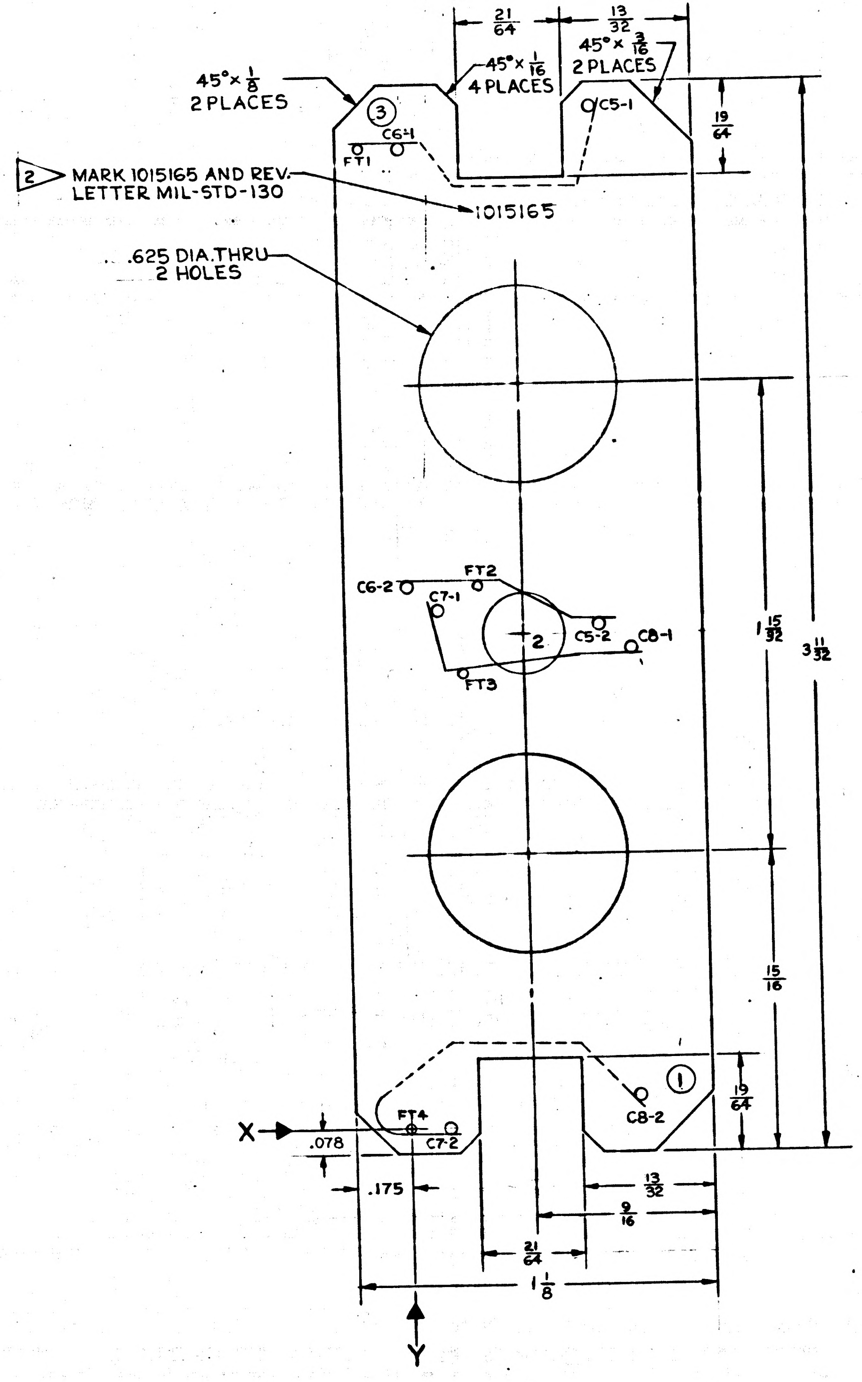
1015165 C

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
APPLICATION		DO NOT SCALE THIS DRAWING	ACSP PN	**WAFER BOARD, LOWER** RESISTOR & CAPACITOR
		MATERIAL	DRAWN 30 JUL 63 DATE	CODE IDENT NO
		CONTRACT	CHECKED Ed Foster 9 AUG 63 9 AUG 63	SIZE E
			APPROVAL	1015165
			APPROVAL	SCALE 10:1
			NASA APPROVAL 8/20/63	SHEET 2 OF 2
			MIT APPROVAL 8/20/63	

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015165

REVISIONS 01762			
SYM	DESCRIPTION	DATE	APPROVAL



COORDINATE DIMENSIONS

HOLE DESIG.	COORDINATE X (HORIZ.)	COORDINATE Y (VERT.)	HOLE DESCRIPTION TOL. +.010, -.000		
FT4	.000	.000	.024 DIA. THRU		
FT1	-.100	3.075	.024		
C6-2	.025	1.700	.043		
C6-1	.025	3.075	↓		
C7-2	.125	.000	↓		
C7-1	.125	1.625	↓		
FT3	.200	1.425	.024		
FT2	.250	1.700	.024		
2	.400	1.550	.250		
C5-2	.625	1.575	.043		
C5-1	.625	3.200	↓		
C8-2	.725	.100	↓		
C8-1	.725	1.500	↓		
3	-.025	3.200	.089		
1	.850	.150	.089		

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL: EPOXY GLASS .015 TH'K, MIL-P-18177 TYPE GEE.

CHARACTERS AND PATHS FOR MFG REFERENCE ONLY.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

2 3/64 SANS SERIF GOTHIC CHARACTERS, LOCATE APPROX. AS SHOWN.

OTHER CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

MARK PATHS AS SHOWN 1/64 WIDE.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1015155	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN R. EMERY DATE 6-21-63
CHECKED
APPROVAL R. L. Battaglia
APPROVAL
NASA APPROVAL
MIT APPROVAL 24 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD, LOWER
RESISTOR & CAPACITOR

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015165
SCALE 4:1
WT
SHEET OF

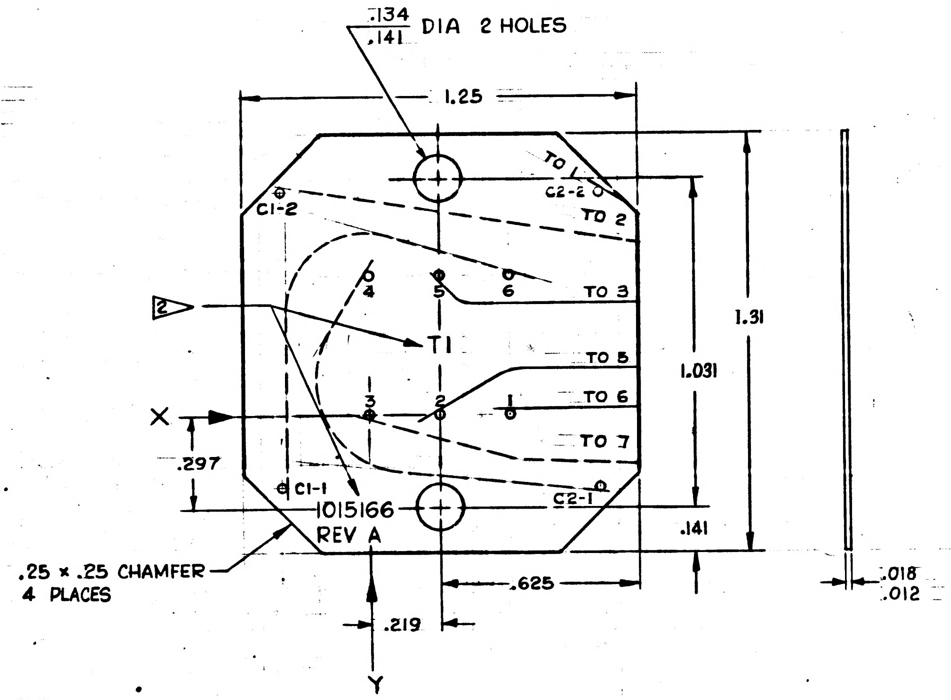
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015165

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015166 A

REVISIONS 01761			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 03330	9/24/63	RDK



COORDINATE DIMENSIONS			
HOLE	COORDINATE		HOLE DESCRIPTION
DESIG.	X (HORIZ)	Y (VERT)	
T1-3	0.000	0.000	.024 DIA THRU
T1-4	0.000	.438	
T1-5	.218	.438	
T1-2	.218	0.000	
T1-1	.438	0.000	
T1-6	.438	.438	
C1-1	-.275	-.225	
C1-2	-.275	.700	
C2-1	.725	-.225	
C2-2	.725	.700	.024 DIA THRU

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION

MARK PATHS AS SHOWN $\frac{1}{64}$ WIDE

UNLESS OTHERWISE SPECIFIED
CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC
LOCATE APPROX. AS SHOWN

1▷ MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE

2▷ MARK 1015166, REVISION LETTER AND T1 3/64 PER MIL-STD-130

SEE 1015166 SHEET 2 FOR PHOTOGRAPHIC MASTER.

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1015154	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .000 ± .005 ± 2°
.00 .02
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN F. Akell DATE 6-18-63
CHECKED L.A. Plummer
APPROVAL R.L. Bottorff
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W. Wyffer 26 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD
ZERO OPTICS

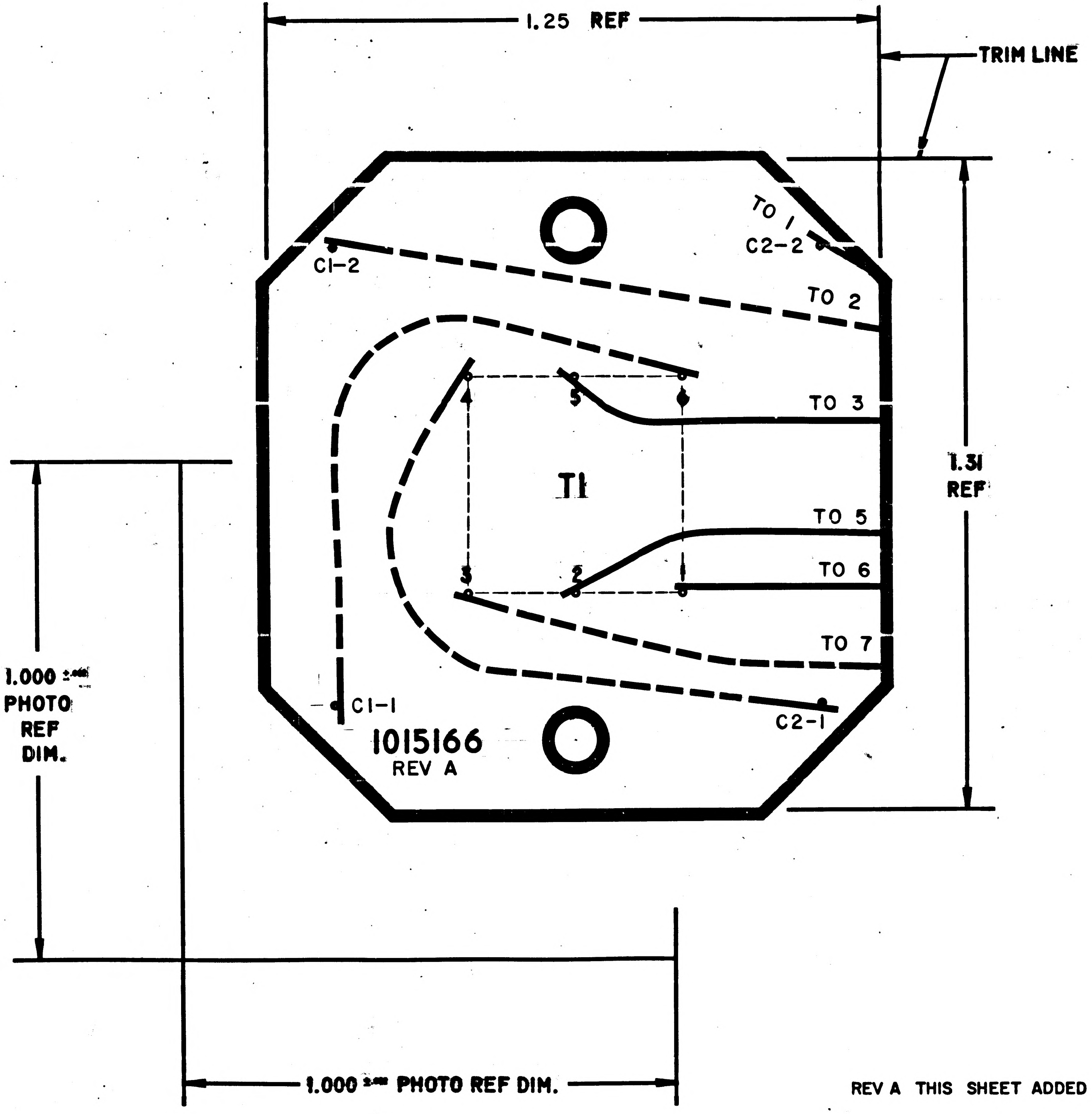
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015166
SCALE 4X
WT
SHEET 1 OF 2

1015166

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015166 A

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		THIS SHEET ADDED 03330		9-26-63	



1.25 REF
TRIM LINE
1.31 REF
TO 1
C2-2
C1-2
TO 2
TO 3
5
T1
TO 5
TO 6
3
2
TO 7
C1-1
C2-1
1015166
REV A
1.000 ± PHOTO REF DIM.
1.000 ± PHOTO REF DIM.

REV A THIS SHEET ADDED

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± — DECIMALS ± — ANGLES ± —	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
APPLICATION		DO NOT SCALE THIS DRAWING	ACSP PN	
		MATERIAL —	DRAWN DATE 2 Aug 63	WAFER BOARD
		CONTRACT NAS 9-497	CHECKED Ed Foster 9 AUG 63 9 AUG 63	
			APPROVAL	
			APPROVAL	
			NASA APPROVAL	CODE IDENT NO. — SIZE E — 1015166
			MIT APPROVAL	SCALE 10:1 — SHEET 2 OF 2

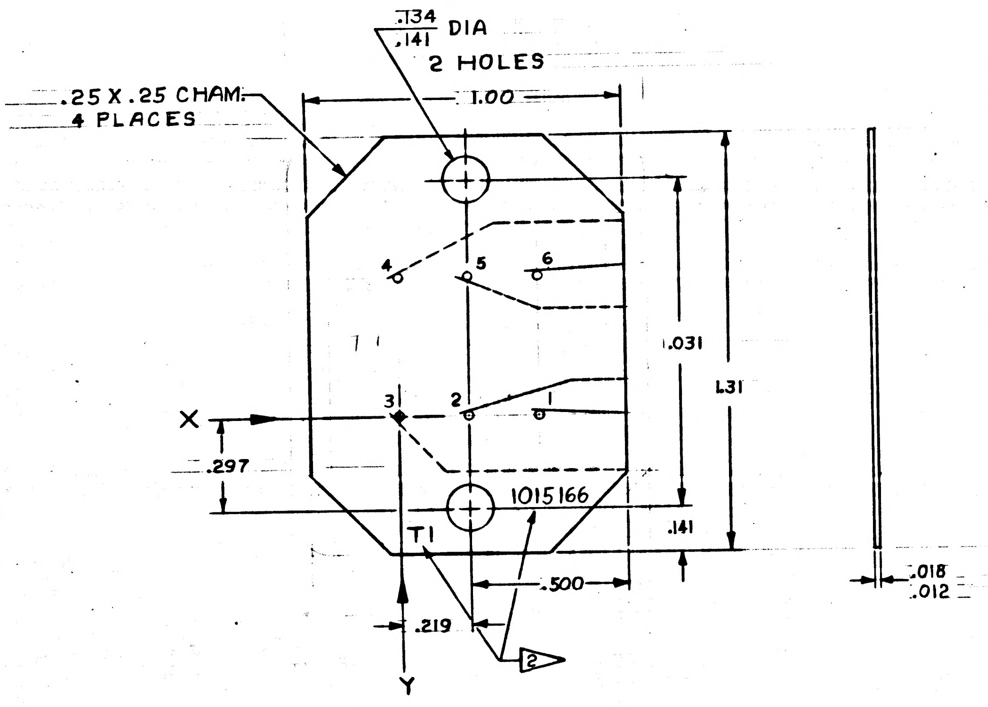
1015166

INCHES
PHOTOGRAPHIC SCALE ONLY

1015166

REVISIONS		0176	
SYM	DESCRIPTION	DATE	APPROVAL

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



COORDINATE DIMENSIONS			
HOLE	COORDINATE		HOLE DESCRIPTION
DESIG	X (HORIZ)	Y (VERT)	(TOL +.010, -.000)
3	0.000	0.000	.024 DIA THRU
4	0.000	.438	↓
5	.218	.438	↓
2	.218	0.000	↓
1	.438	0.000	↓
6	.438	.438	.024 DIA THRU

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION

MARK PATHS AS SHOWN $\frac{1}{64}$ WIDE

UNLESS OTHERWISE SPECIFIED
CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC
LOCATE APPROX. AS SHOWN

1 MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE

2 MARK 1015166, REVISION LETTER AND T1 3/64 PER MIL-STD-130

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1015154	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .000 ± .005 ± 2°
.00 .02
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN F. Akell DATE 6-18-63
CHECKED L.A. Plummer
APPROVAL R.L. Bottoflon
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD
ZERO OPTICS

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015166
SCALE 4X
WT
SHEET 1 OF 1

1015166

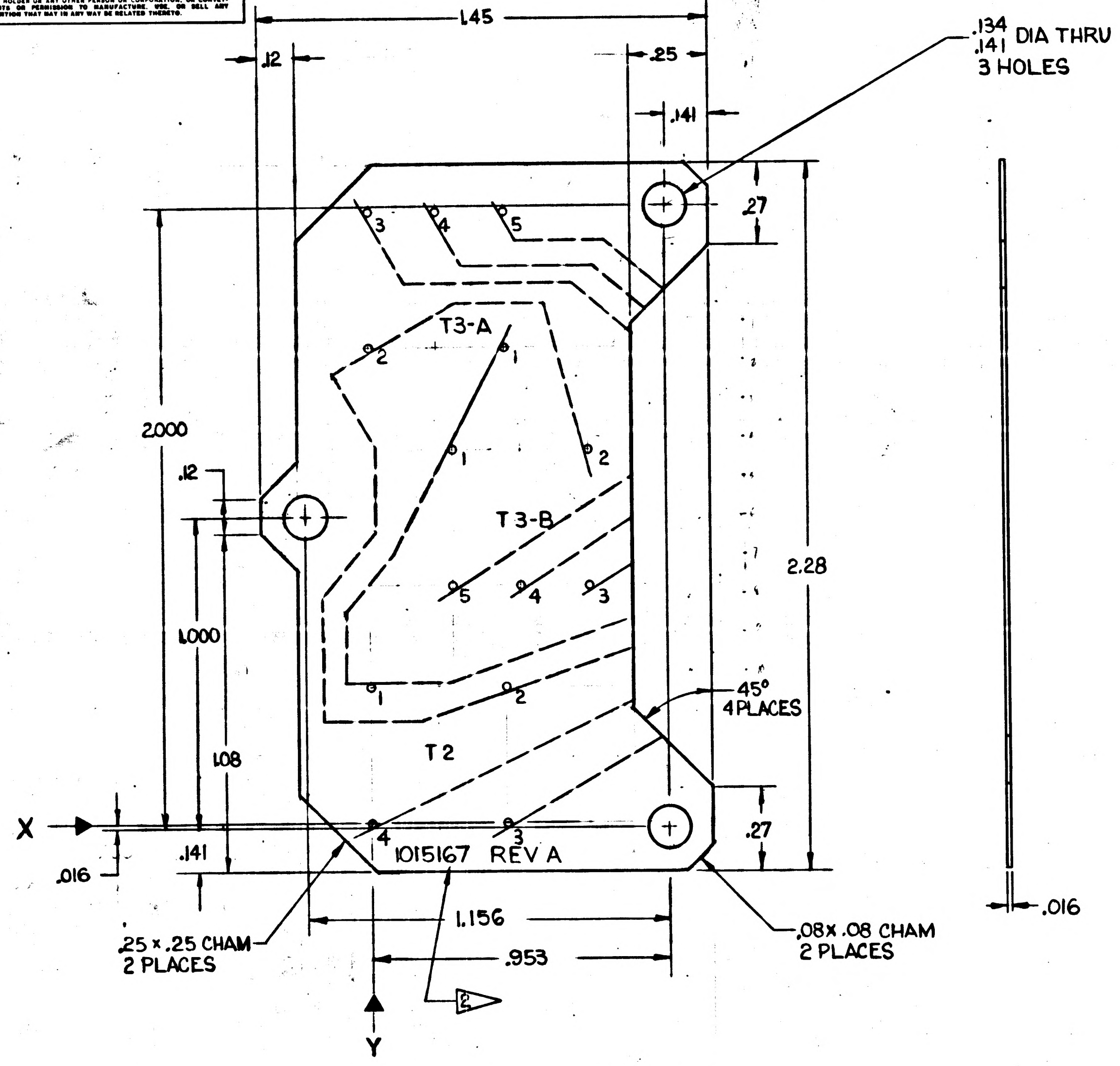
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015166

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015167 A

REVISIONS D176			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02862	8-28-63	RPK



COORDINATE DIMENSIONS			
HOLE DESIG	COORDINATE X (HORZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION (TOL +.010 -.000)
T2-4	0.000	0.000	.024 DIA THRU
T2-1	0.000	.438	
T3-A-2	0.000	1.531	
T3-A-3	0.000	1.969	
T3-A-4	.218	1.969	
T3-B-5	.266	.766	
T3-B-1	.266	1.203	
T2-3	.438	0.000	
T2-2	.438	.438	
T3-A-1	.438	1.531	
T3-A-5	.438	1.969	
T3-B-4	.484	.766	
T3-B-3	.703	.766	
T3-B-2	.703	1.203	

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION

MARK PATHS AS SHOWN $\frac{1}{64}$ WIDE

UNLESS OTHERWISE SPECIFIED
CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC
LOCATE APPROX. AS SHOWN.

1 MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE

2 MARK 1015167 AND REVISION LETTER $\frac{3}{64}$ PER MIL-STD-130

SEE 1015167 SHEET 2 FOR PHOTOGRAPHIC MASTER

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

1015138	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS # DECIMALS ±.000 ±.005 .00 .020 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN LEWANDOWSKI DATE 6-18-63
CHECKED
APPROVAL R.L. Bottorff
APPROVAL
NASA APPROVAL
MIT APPROVAL 26 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD
ISOLATION TRANSFORMER

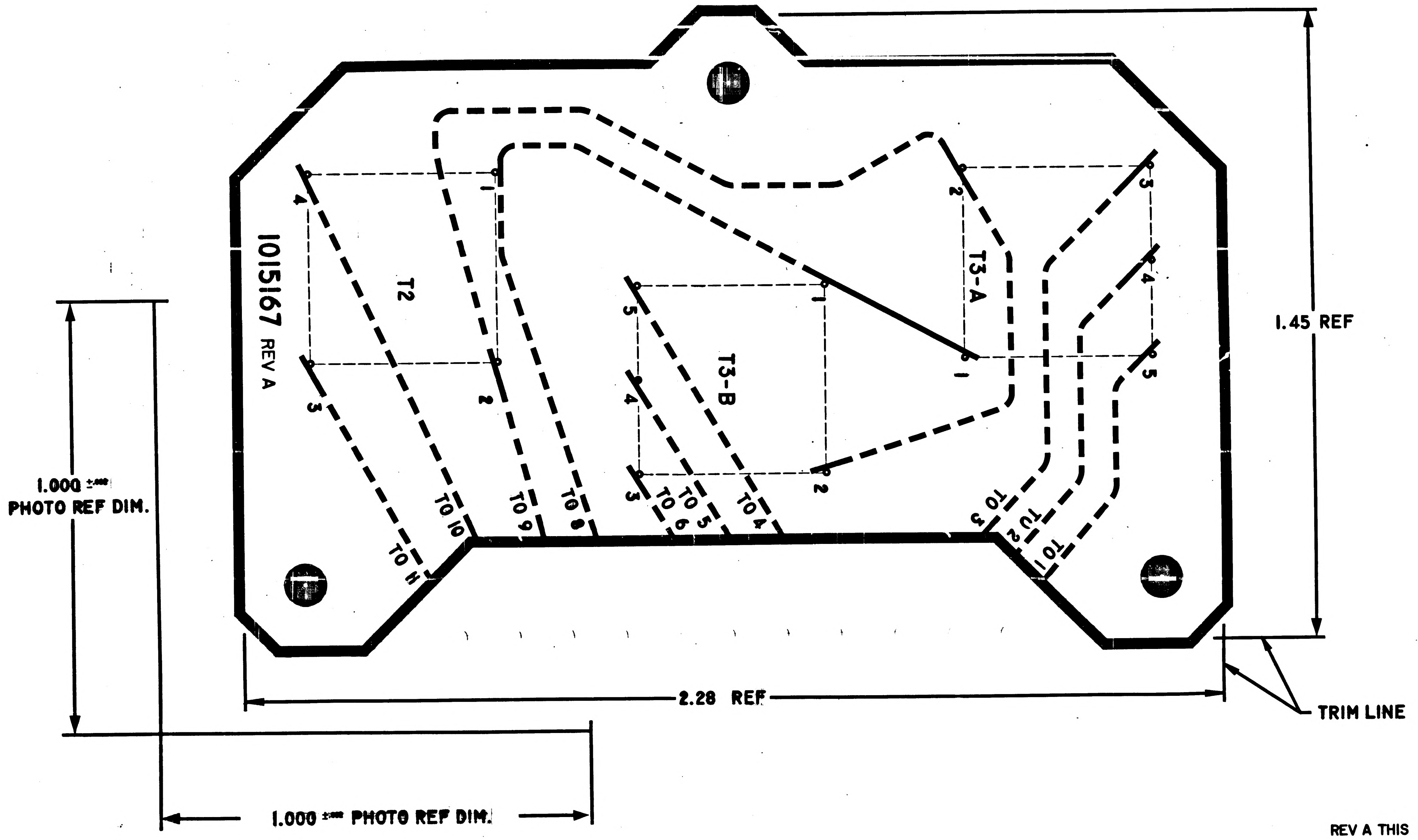
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015167
SCALE 4X1
WT
SHEET 1 OF 2

1015167 A

INCHES
0 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		THIS SHEET ADDED 2862		63	EPR


1015167 REV A
T2
T3-A
T3-B
1
2
3
4
5
TO 1
TO 2
TO 3
TO 4
TO 5
TO 6
TO 8
TO 9
TO 10
TO 11
1.45 REF
2.28 REF
TRIM LINE
1.000 ±.002 PHOTO REF DIM.
1.000 ±.002 PHOTO REF DIM.

REV A THIS SHEET ADDED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J Ross DATE 30 JULY 63
CHECKED Ed Foster 9 AUG 63
APPROVAL Bidwell 9 AUG 63
APPROVAL 28 AUG 63
NASA APPROVAL
MIT APPROVAL 8/28/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD
ISOLATION TRANSFORMER

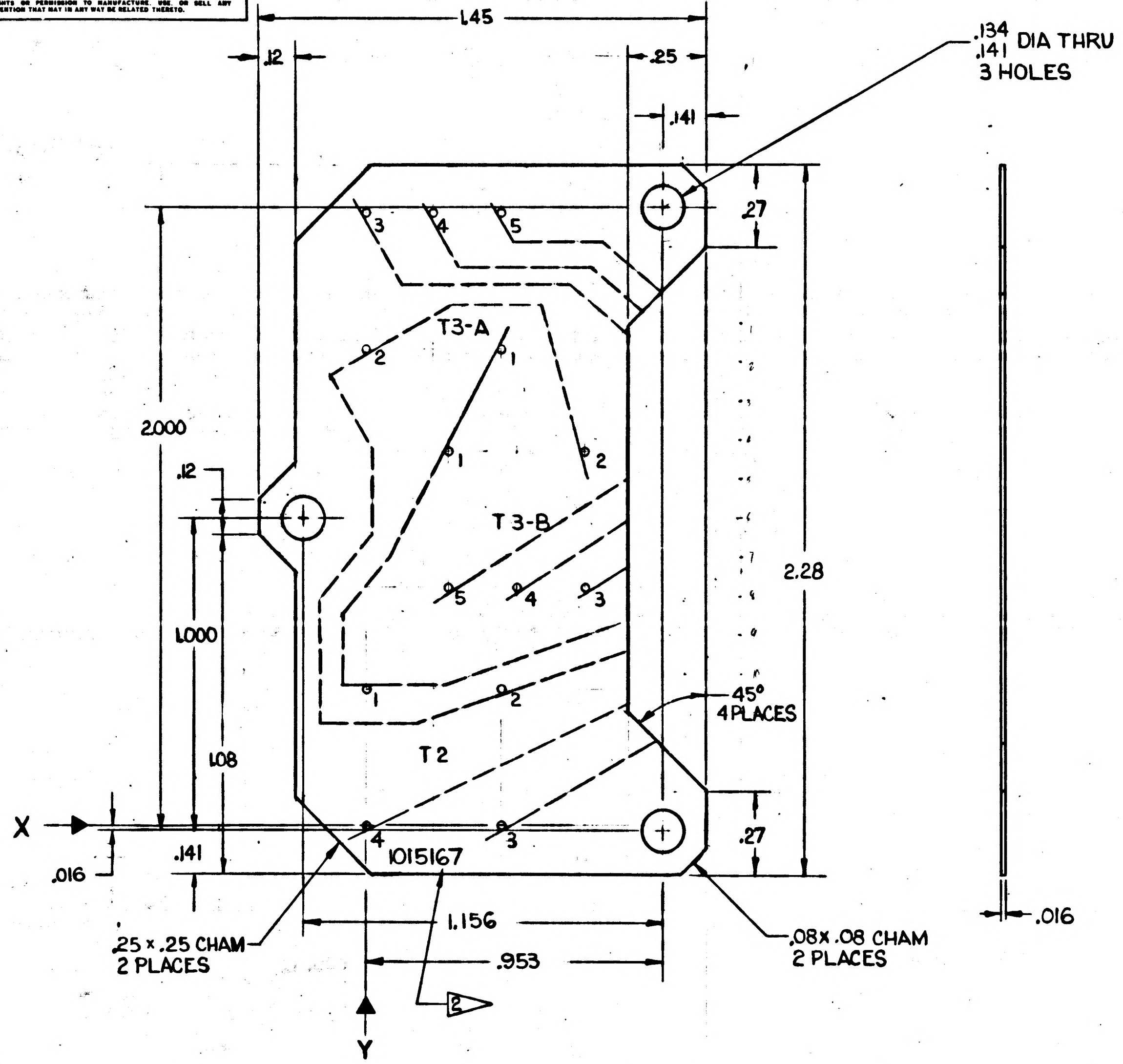
CODE IDENT NO.
SIZE E
1015167
SCALE 10:1
SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1015167

REVISIONS 0174			
SYM	DESCRIPTION	DATE	APPROVAL



COORDINATE DIMENSIONS			
HOLE DESIG	COORDINATE X (HORZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION (TOL +.010 -.000)
T2-4	0.000	0.000	.024 DIA THRU
T2-1	0.000	.438	
T3-A-2	0.000	1.531	
T3-A-3	0.000	1.969	
T3-A-4	.218	1.969	
T3-B-5	.266	.766	
T3-B-1	.266	1.203	
T2-3	.438	0.000	
T2-2	.438	.438	
T3-A-1	.438	1.531	
T3-A-5	.438	1.969	
T3-B-4	.484	.766	
T3-B-3	.703	.766	
T3-B-2	.703	1.203	

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

CHARACTERS AND PATHS FOR MANUFACTURING REFERENCE ONLY

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION

MARK PATHS AS SHOWN $\frac{1}{64}$ WIDE

UNLESS OTHERWISE SPECIFIED
CHARACTERS TO BE 1/32 HIGH SANS SERIF GOTHIC
LOCATE APPROX. AS SHOWN.

1 ▷ MATERIAL: GLASS EPOXY, MIL-P-18177, TYPE GEE

2 ▷ MARK 1015167 AND REVISION LETTER $\frac{3}{64}$ PER MIL-STD-130

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1015138	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS # DECIMALS .000 ±.005, .00 ±.020 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL 1 ▷
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN LEWANDOWSKI DATE 6-18-63
CHECKED LaPlummer
APPROVAL K. L. Bottorff
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W Kupfer 26 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER BOARD
ISOLATION TRANSFORMER

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015167
SCALE 4X1
WT
SHEET OF

1015167

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NASA DOCUMENT
PS 1015400A
16 JAN. 1963
Class A Release
TDRR No. [illegible]51

DESIGN REQUIREMENT SPECIFICICIFICATIONS
FOR
PROCUREMENT OF
COMPONENT LEAD:
NICKEL ALLOY 200 1/8 HARD

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Record of Revisions and Amendments

Revision Letter	Amendment Number	Date of Revision or Amendment
A TDRR00252		

This specification consists of page i to iii and 1 to 3 inclusive

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This document has been prepared for the purchase of material used in the manufacture of components; the performance requirements and tolerance of the components; the construction specifications; and inspection and test procedures for the components, used on Apollo G & N Equipment.

This document shall be used to check that parts and materials are procured, assembled, and tested to the latest approved and/or authenticated documentation. In case of conflict between this document and drawings and/or specifications the document with the latest date applies.

This document supersedes the original publication dated 3 October, 1962.

MIT Instrumentation Laboratory ______ Date 16 Jan 63

NASA/MSC Approval ______ Date

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
COMPONENT LEAD:
NICKEL ALLOY 200 1/8 HARD

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

TABLE OF CONTENTS

Section	Title	Page
1.	SCOPE	1
2.	APPLICABLE DOCUMENTS	1
3.	REQUIREMENTS	1
4.	QUALITY ASSURANCE AND COMPLIANCE	2
5.	NOTES	3

MATERIALS SPECIFICATION
FOR
COMPONENT LEAD:
NICKEL ALLOY 200 1/8 HARD

1. INTRODUCTION

1.1 Scope. This specification covers nickel alloy 200 wire for weldable lead materials and conductors in the fabrication of welded electronic modules.

2. APPLICABLE DOCUMENTS

SPECIFICATIONS

Federal -

Federal Standard Test Method No. 151

Military -

Nickel Bar, Flat Wire (Ribbon) and Strip MIL-N-46025
Nickel Rod and Wire (Round) MIL-N-46026

3. REQUIREMENTS

3.1 Description. This material shall be a gas free nickel alloy component lead in the 1/8 hard condition, in accordance with MIL-N-46025 and MIL-N-46026.

3.2 The chemical composition of the component lead shall be as shown in Table I.

NASA DOCUMENT
PS 1015400
3 Oct. 1962
Class A Release
TDRR No. 00051

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF:
NICKEL WIRE AND RIBBON 1/8 HARD FOR ELECTRONIC USE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Record of Revisions

Revision Letter	TDRR #	Pages Revised	Approvals	
			MIT	NASA
A [illegible]	00252	Page 2		
B	00478	Title Page, Pages iii, 1, 2, 3	WK 16 MAR 1963	3/16/63

This specification consists of page i to iii and 1 to 3 inclusive

Apollo G&N Specification
PS 1015400
3 Oct. 1962
Class A Release
TDRR No. 00051

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF:
NICKEL WIRE AND RIBBON FOR ELECTRONIC USE

Record of Revisions

Date	Revision Letter	TDRR #	Pages Revised	Approvals MIT	Approvals NASA
1/16/63	A	00252	Page 2	WK	WJR
2/27/63	B	00478	Title Page, Pages iii, 1, 2, 3	WK	WJR
5/22/63	C	01294	Title Page, Pages ii-iv, pages 1-4 inclusive		

This specification consists of page i to iv and 1 to 4 inclusive.

Apollo G&N Specification
PS 1015400
22 May 1963

This document has been prepared to control the purchase of parts and material used in the manufacture of articles; the performance requirements and tolerance of the articles; the construction specifications; and inspection and test procedures for the articles, used on Apollo G&N Equipment.

MIT Instrumentation Laboratory WH Kupfer 3 Oct 1962
Date

NASA/MSC ASPO Approval William J. Rhine 10-3-62
Date

Apollo G&N Specification
PS 1015400
27 Feb. 1963

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
NICKEL WIRE AND RIBBON FOR ELECTRONIC USE

TABLE OF CONTENTS

Section	Title	Page
1.	SCOPE	1
2.	APPLICABLE DOCUMENTS	1
3.	REQUIREMENTS	1
4.	QUALITY ASSURANCE AND COMPLIANCE	2
5.	NOTES	3

Apollo G&N Specification
PS 1015400
22 May 1963

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
NICKEL WIRE AND RIBBON FOR ELECTRONIC USE

1. INTRODUCTION

1.1 Scope. This specification covers nickel alloy wire for weldable lead materials and conductors in the fabrication of welded electronic modules

2. APPLICABLE DOCUMENTS

SPECIFICATIONS

Federal -

Federal Standard Test Method No. 151

Military -

Nickel Bar, Flat Wire (Ribbon) and Strip MIL-N-46025
Nickel Rod and Wire (Round) MIL-N-46-26
Gold Plating (Electro Deposited) MIL-G-45204

3. REQUIREMENTS

3.1 Description: This material shall be a gas free nickel alloy wire in accordance with MIL-N-46025 and MIL-N-46026.

3.2 Optional Gold Plating - The material may be gold plated, at the option of the purchaser, with 50 - 150 microinches of gold in accordance with MIL-G-45204, Type I, Class I.

3.3 The chemical composition of the wire shall be as shown in Table #1.

Table I - Chemical Composition
(Percent by Weight)

Nickel	Carbon	Iron	Copper	Manganese	Sulphur	Silicon	Titanium
99.5% min	0.05% max.	0.15% max.	0.12% max.	0.25 max.	0.0005% max.	0.07% max.	0.02% max.

3.4 Properties

3.4.1 Mechanical Properties. The mechanical properties of the wire shall conform to the requirements listed in Table II.

Apollo G&N Specification
PS 1015400
3 Oct. 1962
Class A Release
TDRR No. 00051

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF:
NICKEL WIRE AND RIBBON FOR ELECTRONIC USE

Record of Revisions

Date	Revision Letter	TDRR #	Pages Revised	Approvals MIT	Approvals NASA
1/16/63	A	00252	Page 2	WK	WJR
2/27/63	B	00478	Title Page, Pages iii, 1, 2, 3	WK	WJR
5/22/63	C	01294 01284	Title Page, Pages ii-iv, pages 1-4 inclusive		
8/21/63	D	02631	Title page, pages 1, 2, 3, Page 4 eliminated	8/21/63	

This specification consists of page i to iv and 1 to 3 inclusive.

Apollo G&N Specification
PS 1015400
22 May 1963

This document has been prepared to control the purchase of parts and material used in the manufacture of articles; the performance requirements and tolerance of the articles; the construction specifications; and inspection and test procedures for the articles, used on Apollo G&N Equipment.

MIT Instrumentation Laboratory WA Kupfer 3 Oct 1962
Date

NASA/MSC ASPO Approval William J. Rhine 10-3-62
Date

Apollo G&N Specification
PS 1015400
22 May 1963

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
NICKEL WIRE AND RIBBON FOR ELECTRONIC USE

1. INTRODUCTION

1.1 Scope. This specification covers nickel alloy wire for weldable lead materials and conductors in the fabrication of welded electronic modules

2. APPLICABLE DOCUMENTS

SPECIFICATIONS

Federal -

Federal Standard Test Method No. 151

Military -

Nickel Bar, Flat Wire (Ribbon) and Strip MIL-N-46025
Nickel Rod and Wire (Round) MIL-N-46-26
Gold Plating (Electro Deposited) MIL-G-45204

3. REQUIREMENTS

3.1 Description: This material shall be a gas free nickel alloy wire in accordance with MIL-N-46025 and MIL-N-46026.

3.2 Optional Gold Plating - The material may be gold plated, at the option of the purchaser, with 50 - 150 microinches of gold in accordance with MIL-G-45204, Type I, Class I.

3.3 The chemical composition of the wire shall be as shown in Table #1.

Table I - Chemical Composition
(Percent by Weight)

Nickel	Carbon	Iron	Copper	Manganese	Sulphur	Silicon	Titanium
99.5% min	0.05% max.	0.15% max.	0.12% max.	0.25 max.	0.005% max.	0.07% max.	0.02% max.

3.4 Properties

3.4.1 Mechanical Properties. The mechanical properties of the wire shall conform to the requirements listed in Table II.

Apollo G&N Specification
PS 1015400
27 Feb. 1963

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
NICKEL WIRE AND RIBBON FOR ELECTRONIC USE

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3 Oct. 1962
Class A Release
TDRR No. 00051

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF:
NICKEL WIRE AND RIBBON FOR ELECTRONIC USE

Record of Revisions

Date	Revision Letter	TDRR #	Pages Revised	Approvals MIT	Approvals NASA
1/16/63	A	00252	Page 2	WK	
2/27/63	B	00478	Title Page, Pages iii, 1, 2, 3	WK	
5/22/63	C	01294 01284	Title Page, Pages ii-iv, pages 1-4 inclusive		
8/21/63	D	02631	Title page, pages 1, 2, 3, Page 4 eliminated	8/21/63	
10/23/63	E	04053	2	WK 10/30/63	10/30/63

This specification consists of page i to iv and 1 to 3 inclusive.

Apollo G&N Specification
PS 1015400
22 May 1963

This document has been prepared to control the purchase of parts and material used in the manufacture of articles; the performance requirements and tolerance of the articles; the construction specifications; and inspection and test procedures for the articles, used on Apollo G&N Equipment.

MIT Instrumentation Laboratory WH Kupfer 3 Oct 1962
Date

NASA/MSC ASPO Approval William J. Rhine 10-3-62
Date

Apollo G&N Specification
PS 1015400
22 May 1963

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
NICKEL WIRE AND RIBBON FOR ELECTRONIC USE

1. INTRODUCTION

1.1 Scope. This specification covers nickel alloy wire for weldable lead materials and conductors in the fabrication of welded electronic modules

2. APPLICABLE DOCUMENTS

SPECIFICATIONS

Federal -

Federal Standard Test Method No. 151

Military -

Nickel Bar, Flat Wire (Ribbon) and Strip MIL-N-46025
Nickel Rod and Wire (Round) MIL-N-46-26
Gold Plating (Electro Deposited) MIL-G-45204

3. REQUIREMENTS

3.1 Description: This material shall be a gas free nickel alloy wire in accordance with MIL-N-46025 and MIL-N-46026.

3.2 Optional Gold Plating - The material may be gold plated, at the option of the purchaser, with 50 - 150 microinches of gold in accordance with MIL-G-45204, Type I, Class I.

3.3 The chemical composition of the wire shall be as shown in Table #1.

Table I - Chemical Composition
(Percent by Weight)

Nickel	Carbon	Iron	Copper	Manganese	Sulphur	Silicon	Titanium
99.5% min	0.05% max.	0.15% max.	0.12% max.	0.25 max.	0.005% max.	0.07% max.	0.02% max.

3.4 Properties

3.4.1 Mechanical Properties. The mechanical properties of the wire shall conform to the requirements listed in Table II.

Apollo G&N Specification
PS 1015400
27 Feb. 1963

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
NICKEL WIRE AND RIBBON FOR ELECTRONIC USE

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Apollo G&N Specification
PS 1015400
3 Oct. 1962
Class A Release
TDRR No. 00031

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF:
NICKEL WIRE AND RIBBON FOR ELECTRONIC USE

Record of Revisions

Date	Revision Letter	TDRR #	Pages Revised	Approvals MIT	Approvals NASA
1/16/63	A	00252	Page 2	WK	
2/27/63	B	00478	Title Page, Pages iii, 1, 2, 3	WK	
5/22/63	C	01294	Title Page, Pages ii-iv, pages 1-4 inclusive		
8/21/63	D	02631	Title page, pages 1, 2, 3, Page 4 eliminated		
10/23/63	E	04053	2	WK 10/2?/63	
3/22/67	F	3875	Page 1	3/22/67	

This specification consists of page i to iv and 1 to 3 inclusive.

Apollo G&N Specification
PS 1015400
22 May 1963

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
NICKEL WIRE AND RIBBON FOR ELECTRONIC USE

1. INTRODUCTION

1.1 Scope. This specification covers nickel alloy wire for weldable lead materials and conductors in the fabrication of welded electronic modules

2. APPLICABLE DOCUMENTS

SPECIFICATIONS

Federal -

Federal Standard Test Method No. 151

Military -

Nickel Bar, Flat Wire (Ribbon) and Strip MIL-N-46025
Nickel Rod and Wire (Round) MIL-N-46-26
Gold Plating (Electro Deposited) MIL-G-45204

3. REQUIREMENTS

3.1 Description: This material shall be a gas free nickel alloy wire in accordance with MIL-N-46025 and MIL-N-46026.

3.2 Optional Gold Plating - The material may be gold plated, at the option of the purchaser, with 50 - 150 microinches of gold in accordance with MIL-G-45204, Type I, Class I. Gold is to be plated directly on the properly activated nickel surface unless otherwise specified on the drawing.

3.3 The chemical composition of the wire shall be as shown in Table #1

Table I - Chemical Composition
(Percent by Weight)

Nickel	Carbon	Iron	Copper	Manganese	Sulphur	Silicon	Titanium
99.5% min	0.05% max.	0.15% max.	0.12% max.	0.25 max.	0.005% max.	0.07% max.	0.02% max.

3.4 Properties

3.4.1 Mechanical Properties. The mechanical properties of the wire shall conform to the requirements listed in Table II.

Apollo G&N Specification
PS 1015400
3 Oct. 1962
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DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF:
NICKEL WIRE AND RIBBON FOR ELECTRONIC USE

Record of Revisions

Date	Revision Letter	TDRR #	Pages Revised	Approvals MIT	Approvals NASA
1/16/63	A	00252	Page 2	WK	
2/27/63	B	00478	Title Page, Pages iii, 1, 2, 3	WK	
5/22/63	C	01294 01294	Title Page, Pages ii-iv, pages 1-4 inclusive		
8/21/63	D	02631	Title page, pages 1, 2, 3, Page 4 eliminated	8/21/63	
10/23/63	E	04053	2	WR 10/30/63	10/30/63
3/22/67	F	23875	Page 1		
6-8-67	G	33942	i, 2, 3	3/22/67	

This specification consists of page i to iv and 1 to 4 inclusive.

Table II

FORM	DIM	TOLERANCE PLUS	TOLERANCE MINUS	STRENGTH (LBS)	ELONGATION
Wire Ribbon	0.003X0.020	0.0005	0.0005	3.0 - 5.5	25% Min, 2" Min Gage Length
Wire Ribbon	0.005X0.020	0.0005	0.0005	5.5 - 7.5	25% Min, 2" Min Gage Length
Wire Ribbon	0.0100X0.0150	0.0005	0.0005	9.0 - 11.3	25% Min, 2" Min Gage Length
Wire Ribbon	0.0100X0.0200	0.0005	0.0005	12.0 -15.0	25% Min, 2" Min Gage Length
Wire Ribbon	0.0100X0.0300	0.0005	0.0005	18.0 -22.5	25% Min, 2" Min Gage Length
Wire Ribbon	0.0100X0.0500	0.0005	0.0005	30.0-37.5	25% Min, 2" Min Gage Length
Wire Ribbon	0.0200X0.0200	0.0005	0.0005	22.0-30.0	25% Min, 2" Min Gage Length
Wire Ribbon	0.0250X0.0250	0.0005	0.0005	37.5-46.9	25% Min, 2" Min Gage Length
Wire Round	0.0100	0.001	0.001	6.2 - 9.9	25% Min, 2" Min Gage Length
Wire Round	0.0159	0.001	0.001	11.1 -17.6	25% Min, 2" Min Gage Length
Wire Round	0.0200	0.001	0.001	17.0-24.0	25% Min, 1" Min Gage Length
Wire Round	0.0250	0.001	0.001	27.0-37.0	25% Min, 1" Min Gage Length
Wire Round	0.0320	0.001	0.001	45.0-60.0	25% Min, 1" Min Gage Length
Wire Round	0.0403	0.001	0.001	69.0-110.0	25% Min, 2" Min Gage Length

NASA DOCUMENT
PS 1015401
3 Oct. 1962
Class A Release
TDRR No. 00051

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
COMPONENT LEAD AND FEED THROUGH MATERIAL
IRON-NICKEL ALLOY, COPPER CLAD, ANNEALED, GOLD PLATED

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Record of Revisions

Revision Letter	TDRR #	Pages Revised	Approvals	
			MIT	NASA
A	00475	Title Page, Page iii, Pages 1 and 2	WK 6 MAR 1963	3/6/63

This specification consists of page i to iii and 1 to 4 inclusive

NASA DOCUMENT
PS 1015402A
16 Jan. 1963
Class A Release
Tdrr No. 00051

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
COMPONENT LEAD:
IRON-NICKEL - COBALT ALLOY, ANNEALED, GOLD PLATED

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Record of Revisions and Amendments

Revision Letter	Amendment Number	Date of Revision or Amendment
A TDRR 00251		

This specification consists of page i
to iii and 1 to 3 inclusive

NASA DOCUMENT
PS 1015402A
16 Jan. 1963
Class A Release

This document has been prepared for the purchase of material used in the manufacture of components; the performance requirements and tolerance of the components; the construction specifications; and inspection and test procedures for the components, used on Apollo G & N Equipment.

This document shall be used to check that parts and materials are procured, assembled, and tested to the latest approved and/or authenticated documentation. In case of conflict between this document and drawings and/or specifications the document with the latest date applies.

This document supersedes the original publication dated 3 October, 1962.

MIT Instrumentation Laboratory ______ Date

NASA/MSC Approval ______ Date

NASA DOCUMENT
PS 1015402A
16 Jan. 1963
Class A Release

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
COMPONENT LEAD:
IRON-NICKEL - COBALT ALLOY, ANNEALED, GOLD PLATED

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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NASA DOCUMENT
PS 1015402A
16 Jan. 1963
Class A Release

MATERIALS SPECIFICATION
FOR
COMPONENT LEAD:
IRON - NICKEL - COBALT ALLOY, ANNEALED, GOLD PLATED

1. INTRODUCTION

1.1 Scope. This specification covers gold plated iron-nickel-cobalt alloy wire for weldable lead materials and conductors used in the fabrication of welded electronic modules.

2. APPLICABLE DOCUMENTS

SPECIFICATIONS

Federal -

Federal Standard Test Method No. 151

Military -

Gold Plating (Electro Deposited) MIL-G-45204

3. REQUIREMENTS

3.1 Description. This material shall be a gold plated, nickel iron-cobalt alloy component lead in the annealed condition.

3.2 Surface finish.

3.2.1 The component lead shall be gold plated in accord with MIL-G-45204, Type I, Class I. The gold plate shall be a minimum of 50 and maximum of 150 microinches thick.

3.3 The chemical composition of the component lead shall be as shown in Table I.

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3 Oct. 1962
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TDRR No. 00051

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
COMPONENT LEAD:
IRON-NICKEL - COBALT ALLOY, ANNEALED, GOLD PLATED

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Record of Revisions

Revision Letter	TDRR #	Pages Revised	Approvals	
			MIT	NASA
A	00251	Page 2		
B	00476	Pages 1 and 2	WAK 6MAR 1963	3/6/63

This specification consists of page i to iii and 1 to 4 inclusive

NASA Apollo G and N Specification
PS 1015402
3 October 1962
Class A Release
TDRR No. 00051

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
COMPONENT LEAD:

IRON-NICKEL - COBALT ALLOY, ANNEALED, GOLD PLATED

Record of Revisions

Date	Revision Letter	TDRR #	Pages Revised	Approvals MIT	Approvals NASA
1/16/63	A	00251	Page 2		
2/27/63	B	00476	Pages 1 and 2	6 MAR 63	3-6-63
4/9/63	C	00802	Pages i, ii, iii 1-4 inclusive Title Page	10 APR 63	
5/22/63	D	01291	Title Page, pages i-iii, pages 1-4 inclusive.	5/22	

This specification consists of page i
to iii and 1 to 4 inclusive

This document is intended to control the purchase of material used in the assembly of the Apollo Guidance and Navigation system.

MIT Instrumentation Laboratory Walter S. Kupfer 3 Oct 63
Date

NASA/MSC Approval William J. Rhine 3-6-63
Date

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
COMPONENT LEAD:

IRON-NICKEL - COBALT ALLOY, ANNEALED, GOLD PLATED

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DESIGN REQUIREMENT SPECIFICATIONS
FOR PROCUREMENT OF
COMPONENT LEAD:

IRON-NICKEL - COBALT ALLOY, ANNEALED, GOLD PLATED

1. INTRODUCTION

1.1 Scope. This specification covers gold plated iron-nickel-cobalt alloy wire for weldable lead materials and conductors used in the fabrication of welded electronic modules.

2. APPLICABLE DOCUMENTS

SPECIFICATIONS

Federal -

Federal Standard Test Method No. 151

Military -

Gold Plating (Electro Deposited) MIL-G-45204

3. REQUIREMENTS

3.1 Description. This material shall be a gold plated, nickel iron-cobalt alloy component lead in the annealed condition.

3.2 Surface finish.

3.2.1 The component lead shall be gold plated in accord with MIL-G-45204. The gold plate shall be a minimum of 25 and maximum of 150 microinches thick deposited upon a nickel strike 10 microinches maximum thickness.

3.3 The chemical composition of the component lead shall be as shown in Table I.

NASA DOCUMENT
PS 1015403
3 Oct. 1962
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TDRR No. 00477

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
TERMINALS

BERYLLIUM-COPPER ALLOY, 1/2 HARD, GOLD PLATED OVER NICKEL

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Record of Revisions

Revision Letter	TDRR #	Pages Revised	Approvals	
			MIT	NASA
A	00477	Title page, Page iii Pages 1 and 2	WK 6 MARCH 1963	3/6/63

This specification consists of page i
to iii and 1 to 4 inclusive

NASA Apollo G and N Specification
ND 1015404
Class A Release
TDRR No. 00186
20 December 1962

GENERAL SPECIFICATION

CONFIGURATION, PROCESS AND QUALITY CONTROL REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR USE IN SPACECRAFT AND SUPPORTING EQUIPMENT

Record of Revisions

Revision Letter	TDRR #	Pages Revised	Approvals	
			MIT	NASA
A	00800	Title Page, pages ii, iii, i, 1-10 inclusive	WK.	WSL.

This specification consists of page i to iii and 1 to 10 inclusive.

NASA Apollo G and N Specification
ND 1015404
Class A ~~Release~~
TDRR No. 00186
20 December 1962

GENERAL SPECIFICATION
CONFIGURATION, PROCESS AND QUALITY CONTROL
REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR
USE IN SPACECRAFT AND SUPPORTING EQUIPMENT

Record of Revisions

Revision Letter	TDRR #	Pages Revised	Approvals	
			MIT	NASA
A	00800	Title Page, pagesii, iii, i, 1-10 inclusive	WK	WJL
B	01492	Revised cover sheet and all pages.	RRB	JB

This specification consists of page i
to iii and 1 to 10 inclusive.

NASA Apollo G and N Specification
~~NASA DOCUMENT~~
ND 1015404
20 December 1962
Class A Release

~~This document has been prepared to control the purchase of parts and material used in the manufacture of articles; the performance requirements and tolerance of the articles; the construction specifications; and inspection and test procedures for the articles, used on Apollo G and N Equipment.~~

~~This document shall be used to check that parts and materials are procured, assembled, and tested to the latest approved and/or authenticated documentation. In case of conflict between this document and drawings and/or specifications the document with the latest date applies.~~

This document establishes the quality assurance requirements for suppliers of parts and materials for use in Apollo Guidance and Navigation Equipment.

W.L. Kupfer Jr 20 Dec 1962
MIT Instrumentation Laboratory Date

NASA/MSC Approval William J Rhine 12-20-62
Date

GENERAL SPECIFICATION
CONFIGURATION, PROCESS AND QUALITY CONTROL
REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR
USE IN SPACECRAFT AND SUPPORTING EQUIPMENT

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GENERAL SPECIFICATION
CONFIGURATION, PROCESS AND QUALITY CONTROL
REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR
USE IN SPACECRAFT AND SUPPORTING EQUIPMENT

1. SCOPE

1.1 SCOPE. This specification covers the general requirements for configuration, process, and quality control to be followed by suppliers of high reliability articles intended for use in spacecraft and supporting equipment.

1.2 DEGREE OF CRITICALITY. The National Aeronautics and Space Administration (NASA) document which invokes this specification will also specify a degree of criticality, i.e., NASA Specification ND-1015404, Class 1, Class 2, or Class 3. The degree of criticality shall be determined by NASA or an authorized NASA representative and will be stipulated on affected documents by the following note: "Suppliers shall conform to the quality assurance provisions as contained in NASA Specification ND-1015404, Class 1, " or "...ND-1015404, Class 2," or "...ND-1015404, Class 3." as applicable.

2. APPLICABLE DOCUMENTS

2.1 The following documents shall form a part of this specification to the extent specified herein.

SPECIFICATIONS

Military

MIL-Q-9858 Quality Control System Requirements, dated 9 April 1959

PUBLICATIONS

National Aeronautics and Space Administration

NPC 200-3 Inspection System Provisions for Suppliers of Space Materials, Parts, Components, and Services, April 1962 Edition

This document establishes the quality assurance requirements for suppliers of parts and materials for use in Apollo Guidance and Navigation Equipment.

Walker Kupfer 20 Dec 1962
MIT Instrumentation Laboratory Date

20 Dec 1962
NASA/MSC Approval Date

MIT/IL

Reliability 19 Dec. '62
APPROVED BY TITLE DATE

APPROVED BY TITLE DATE

AC SPARK PLUG DIVISION, GENERAL MOTORS CORPORATION

Richard D. Geiger Sr Engineering Writer 10 Dec '62
PREPARED BY TITLE DATE

Head, Parts Engineering Dec 10, 1962
EXAMINED BY TITLE DATE

J. B. Kripke Mgr. Parts & Materials Engrg December 10, 1962
EXAMINED BY TITLE DATE

KOLLSMAN

Lucian De Bonis Chief Reliability Engr Dec. 18, 1962
EXAMINED BY TITLE DATE

EXAMINED BY TITLE DATE

RAYTHEON

Apollo [illegible] Mgr. 18 Dec 62
EXAMINED BY TITLE DATE

Thomas P. Cutler Apollo Program Director 19 Dec '62
EXAMINED BY TITLE DATE

GENERAL SPECIFICATION

CONFIGURATION, PROCESS AND QUALITY CONTROL

REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR USE IN APOLLO GUIDANCE AND NAVIGATION SYSTEMS

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GENERAL SPECIFICATION

CONFIGURATION, PROCESS AND QUALITY CONTROL

REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR USE IN APOLLO GUIDANCE AND NAVIGATION SYSTEMS

1. SCOPE

1.1 OBJECTIVE. This specification covers the general requirements for configuration, process, and quality control to be followed by suppliers of parts, materials and other articles intended for use in the Apollo Guidance and Navigation Systems. Long mission times, the safety and the lives of American Astronauts necessitates the attainment of the highest practicable degree of reliability. Therefore, more stringent requirements than heretofore must be imposed on all contractors involved in any way with the generation of Apollo hardware. This occurs chiefly in the area of strict configuration and process control. Prompt and effective corrective action directed towards the elimination of known failure mechanisms and manufacturing variances are also vital elements of the program. The qualification of the particular part, material or article for the Apollo mission will be obtained through the test program and early unmanned and manned flights. This validation and continued confidence in the reliability and quality levels of the item must be maintained by assuring similarity between the first and last produced. Maximum controls of process and configuration are essential to this as would be carefully evaluated corrective action resulting in part or process improvement. Supplier and contractor compliance in the spirit of this specification is vital to the success of the program.

1.2 PROPRIETARY RIGHTS. It is not the intent of this document to encroach upon proprietary rights of suppliers. Therefore, the provisions of this specification requiring disclosure either by documentation or inspection shall not apply to those manufacturing processes, equipments, materials, tests, inspections, or areas of design which have been negotiated between supplier and purchaser as proprietary. This does not however, exempt the suppliers from compliance to other aspects of this specification in areas

Apollo G and N Specification
ND 1015404
Class A Release
20 December 1962

GENERAL SPECIFICATION

CONFIGURATION, PROCESS AND QUALITY CONTROL

REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR USE IN APOLLO GUIDANCE AND NAVIGATION SYSTEMS

Record of Revisions

Revision Letter	TDRR #	Pages Revised	Approvals MIT	Approvals NASA
A	00800	Title Page, pages ii, iii, i, 1 - 10 inclusive	WK	[illegible]
B	01492	Revised cover sheet and all pages.	WK	[illegible]
C	04602	All pages rewritten to replace revision B	WK	[illegible]
D	07321	Page 2.	WK.	[illegible]

This specification consists of page i to iii and 1 to 9 inclusive.

Apollo G and N Specification
ND 1015404
20 December 1962
Class A Release

This document establishes the quality assurance requirements for suppliers of parts and materials for use in Apollo Guidance and Navigation Equipment.

Walker Kupfer 20 Dec 1962
MIT Instrumentation Laboratory Date

20 Dec. 1962
NASA/MSC Approval Date

GENERAL SPECIFICATION

CONFIGURATION, PROCESS AND QUALITY CONTROL

REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR USE IN APOLLO GUIDANCE AND NAVIGATION ~~SYSTEMS~~

1. SCOPE

1.1 OBJECTIVE. This specification covers the general requirements for configuration, process, and quality control to be followed by suppliers of parts, materials and other articles intended for use in the Apollo Guidance and Navigation ~~Systems I~~, [illegible]. Long mission times, the safety and the lives of American Astronauts necessitates the attainment of the highest practicable degree of reliability. Therefore, more stringent requirements than heretofore must be imposed on all contractors involved in any way with the generation of Apollo hardware. This occurs chiefly in the area of strict configuration and process control. Prompt and effective corrective action directed towards the elimination of known failure mechanisms and manufacturing variances are also vital elements of the program. The qualification of the particular part, material or article for the Apollo mission will be obtained through the test program and early unmanned and manned flights. This validation and continued confidence in the reliability and quality levels of the item must be maintained by assuring similarity between the first and last produced. Maximum controls of process and configuration are essential to this as would be carefully evaluated corrective action resulting in part or process improvement. Supplier and contractor compliance in the spirit of this specification is vital to the success of the program.

1.2 PROPRIETARY RIGHTS. It is not the intent of this document to encroach upon proprietary rights of suppliers. Therefore, the provisions of this specification requiring disclosure either by documentation or inspection shall not apply to those manufacturing processes, equipments, materials, tests, inspections, or areas of design which have been negotiated between supplier and purchaser as proprietary. This does not however, exempt the suppliers from compliance to other aspects of this specification in areas

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PHOTOGRAPHIC SCALE ONLY

Apollo G and N Specification
ND 1015404
Class A Release
20 December 1962

GENERAL SPECIFICATION
CONFIGURATION, PROCESS AND QUALITY CONTROL REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR USE IN APOLLO GUIDANCE AND NAVIGATION SYSTEMS

Record of Revisions

DATE	Revision Letter	TDRR #	Pages Revised	Approvals	
				MIT	NASA
	A	00800	Title Page, pages ii, iii, i, 1-10 inclusive.	WK	JBM
	B	01492	Revised cover sheet and all pages.	WK	JBM
	C	04602	All pages rewritten to replace revision B.	WK	JBM
	D	07321	Page 2.	WK	A.C.M
4/22/64	E	07843	All pages EXCEPT i, ii and page 1.	WK	W.J.R.
5/27/64	F	09635	Revised pages 1, 5, 6, 7, and 8	WK.	W.J.R.

This specification consists of page i to iv and 1 to 8 inclusive.

Apollo G and N Specification
ND 1015404
20 December 1962
Class A Release

for suppliers of parts and materials for use in Apollo Guidance and Navigation Equipment.

Walter Kupfer 20 Dec 1962
MIT Instrumentation Laboratory Date

20 Dec. 1962
NASA/MSC Approval Date

GENERAL SPECIFICATION
CONFIGURATION, PROCESS AND QUALITY CONTROL REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR USE IN APOLLO GUIDANCE AND NAVIGATION SYSTEMS

1. SCOPE

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Changes to design, processes, or materials deemed proprietary in nature need not be disclosed but notice that a change is contemplated and a discussion of its effect on the article shall be made in advance to the purchaser. Aspects, of design, materials and processes identified thereupon as non-critical may be modified at the discretion of the supplier. Whenever a proposed change in process or design is approved, the old process or design shall also be kept in file for reference if the hardware involving the process or design has at any time been accepted by the purchaser. The requirement for maintenance of documentation shall be automatically discontinued three (3) years after last article acceptance by the purchaser unless otherwise negotiated. The above shall apply to lower tier supplier when lower tier supplier's process or materials have been deemed critical.

3.3.5 SUPPLIER PROPOSED CHANGES. The supplier shall provide the purchaser with the engineering reasons and full details of any proposed change as described above. If a change is considered unacceptable by the purchaser, he may cancel his order if the supplier cannot revert his production to the original configuration. When a change is considered by the purchaser to be acceptable but to have no effect on interchangeability or reliability, the supplier shall incorporate the approved change in the article without changing the model or part number. Break in and effectivity of approved changes shall be keyed to the supplier's serialization or lot control for purposes of traceability. When a change is considered by the purchaser to be acceptable but to have an effect on interchangeability, form, fit, function, quality, or reliability, the supplier may incorporate the approved change but shall be required to provide a new model or part numbers for the article which contains or incorporates the approved change. The supplier's engineering drawings and other governing documents shall be revised to reflect all changes approved and incorporated in the article. The purchaser shall afford due consideration to all changes proposed by the supplier and shall provide a prompt disposition of such requests. If a change results in a new or revised model or part numbers, the supplier shall not furnish such new articles to the purchaser prior to the receipt of a new or modified purchase order calling for the newly identified article. Producibility and reliability shall be established by a pilot line or pilot production run in the event of substantial changes in design, materials or processes.

3.3.6 MAINTAINING QUALIFICATION. Whenever possible, the purchaser will maintain a sample of the most recently qualified configuration of the article. It shall be the prerogative of the purchaser to select, at any time, a sample of incoming material from any shipment for purposes of testing, dismantling, comparison with the qualified sample, or any combination of these operations. If the inspection reveals the presence of an unauthorized change as defined above, the purchaser may purchaser may reject the entire shipment and shall reserve the right to withdraw qualification approval. Any requalification testing deemed necessary by the purchaser under these conditions shall be the responsibility of the supplier. The purchaser reserves the right to cancel orders without cancellation charges whenever previous qualification is invalidated through unauthorized changes; this shall also apply to supplies accepted by the purchaser under the purchase order prior to discovery of the unauthorized change, which are returnable for credit regardless of condition.

3.3.7 AGE CONTROL. The supplier shall inform the purchaser in writing of any materials and articles having known characteristics of quality degradation of drift with age and/or use and these materials and articles shall be marked to indicate the date and test time or cycle the critical life was initiated or the date and test time or cycles at which useful life will be expended. Variables data shall be recorded and maintained; if required by the applicable drawing, variables data shall be furnished to the purchaser.

3.3.8 IDENTIFICATION AND TRACEABILITY. The supplier shall maintian a lot identification or serialization program designed to facilitate future traceability and isolation of articles of the same design, configuration, and materials. The program shall generally permit the determination of the following information for a specific part:

a. Date of article manufactured.

b. Production lines on which the article or its subassemblies were manufactured, if more than one involved.

c. Inspectors and inspection stations through which the articles or its subassemblies passed.

d. Operators and other personnel responsible for the manufacture of the article or its components.

e. Lot or serial numbers of critical raw materials and components and/or identification of articles simultaneously subjected to critical processing.

If lot identification is used, marking each part with a lot code number or symbol shall be a part of the lot control program. The supplier's shipping documents or certification on each shipment shall also bear reference to this particular lot identification marking. Other characteristics of the supplier's lot identification program may be developed by the supplier to suit his operations. However, adequacy of the program shall be assessed by the purchaser at time of documentation negotiation and the supplier shall furnish the purchaser documentation describing in detail this program.

3.4 CLASS 1

3.4.1 GENERAL. The supplier shall comply with the requirements of Class 2 and the following provision of this section.

3.4.2 DOCUMENTATION. The supplier shall select one of the following two options to assure documentation control:

a. A complete set of drawings, process descriptions, and other related documents as enumerated in paragraph 3.3.4 shall be supplied to the purchaser. After delivery of governing documentation, no changes or alterations, however slight, shall be made in processes, designs, or materials without prior written concurrence of the purchaser.

b. A complete set of documentation as emmerated in paragraph 3.3.4 shall be placed in a bonded file (see 6.1.3).

4. QUALITY ASSURANCE PROVISIONS. This section is not applicable to this specification.

5. PREPARATION FOR DELIVERY. This section is not applicable to this specification.

6. NOTES

6.1 DEFINITIONS

6.1.1 SUPPLIER. A contractor or subcontractor actually performing the services or producing the contract articles.

6.1.2 PURCHASER. Any agency initiating a purchase order, work statement or contract for the procurement of articles or supplies.

6.1.3 BONDED FILE. A bonded file is a supplier's file containing a purchaser's lock and which can be opened only by the purchaser or his representative. The supplier may also lock this file at his option.

6.1.4 FLOW CHART. For purposes of this specification the term Flow Chart as used in NPC 200-3 shall be construed to include such items as shop travelers, job cards, routings, or other manufacturing and inspection control documents which can be judged equivalent in effect.

Apollo G and N Specification
ND 1015404
Class A Release
20 December 1962

GENERAL SPECIFICATION
CONFIGURATION, PROCESS AND QUALITY CONTROL REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR USE IN APOLLO GUIDANCE AND NAVIGATION SYSTEMS

Record of Revisions

DATE	Revision Letter	TDRR #	Pages Revised	Approvals	
				MIT	NASA
	A	00800	Title Page, pages ii, iii, i, 1-10 inclusive.	WK	JBM
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5/27/64	F	09635	Revised pages 1, 5, 6, 7, and 8	WK.	W.J.R.

This specification consists of page i to iv and 1 to 8 inclusive.

Apollo G and N Specification
ND 1015404
20 December 1962
Class A Release

This document establishes the quality assurance requirements for suppliers of parts and materials for use in Apollo Guidance and Navigation Equipment.

Walter Kupfer 20 Dec 1962
MIT Instrumentation Laboratory Date

20 Dec. 1964
NASA/MSC Approval Date

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MIT/IL

Mayo	Reliability	19 Dec. 62
APPROVED BY	TITLE	DATE
APPROVED BY	TITLE	DATE

AC SPARK PLUG DIVISION, GENERAL MOTORS CORPORATION

Richard D. Geiger	Sr Engineering Writer	10 Dec '62
PREPARED BY	TITLE	DATE
John	Head, Parts Engineering	Dec 10, 1962
EXAMINED BY	TITLE	DATE
L. B. Kripke	Mgr. Parts & Materials Engrg	December 10, 1962
EXAMINED BY	TITLE	DATE

KOLLSMAN

Lucian De Bonis	Chief Reliability Engr	Dec. 18, 1962
EXAMINED BY	TITLE	DATE
EXAMINED BY	TITLE	DATE

RAYTHEON

James D. Howarth	Apollo Reliability and QC Mgr.	18 Dec 62
EXAMINED BY	TITLE	DATE
Thomas P. Cutler	Apollo Program Director	19 Dec '62
EXAMINED BY	TITLE	DATE

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Apollo G and N Specification
ND 1015404
12 November 1963

GENERAL SPECIFICATION
CONFIGURATION, PROCESS AND QUALITY CONTROL REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR USE IN APOLLO GUIDANCE AND NAVIGATION SYSTEMS

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Apollo G and N Specification
ND 1015404
12 November 1963

GENERAL SPECIFICATION

CONFIGURATION, PROCESS AND QUALITY CONTROL

REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR USE IN APOLLO GUIDANCE AND NAVIGATION SYSTEMS

1. SCOPE

1.1 OBJECTIVE. This specification covers the general requirements for configuration, process, and quality control to be followed by suppliers of parts, materials and other articles intended for use in the Apollo Guidance and Navigation Systems. Long mission times, the safety and the lives of American Astronauts necessitates the attainment of the highest practicable degree of reliability. Therefore, more stringent requirements than heretofore employed must be imposed on all contractors involved in any way with the generation of Apollo hardware. This occurs chiefly in the area of strict configuration and process control. Prompt and effective corrective action directed towards the elimination of known failure mechanisms and manufacturing variances are also vital elements of the program. The qualification of the particular part, material or article for the Apollo mission will be obtained through the test program and early unmanned and manned flights. This validation and continued confidence in the reliability and quality levels of the item must be maintained by assuring similarity between the first and last produced. Maximum controls of process and configuration are essential to this as would be carefully evaluated corrective action resulting in part of process improvement. Supplier and contractor compliance in the spirit of this specification is vital to the success of the program.

1.2 PROPRIETARY RIGHTS. It is not the intent of this document to encroach upon proprietary rights of suppliers. Therefore, the provisions of this specification requiring disclosure either by documentation or inspection shall not apply to those manufacturing processes, equipments, materials, tests, inspections, or areas of design which have been negotiated between supplier and purchaser as proprietary. This does not however, exempt the suppliers from compliance to other aspects of this specification in areas defined as proprietary and assurance or certification of such must be provided the purchaser. In the event elements of this specification requiring prior approval or advice concerning changes in configuration, process control or material are imposed on the supplier and a proprietary area is involved, the obligation to discuss the effect of the changes on the part or article still exists.

1.3 DEGREE OF CRITICALITY. The requirements of this specification are separated into three categories (Class 1, Class2, and Class 3) with Class 1 being the most stringent. The class applicable to the particular article will be stipulated on the drawing, the specification control drawing, or in the procurement documentation. The assignment of class is made on the basis of criticality in the application of the particular article. Those which by reason of their large population in the system or by singular application are potentially great contributors to mission unreliability are assigned the more stringent class.

2. APPLICABLE DOCUMENTS

2.1 The folowing documents shall form a part of this specification to the extent specified herein.

SPECIFICATIONS

Military

MIL-Q-9858	Quality Control Systems Requirements, dated 9 April 1959.
MIL-C-45662A	Calibration of Standards

PUBLICATIONS

National Aeronautics and Space Administration

NPC-200-3	Inspection System Provisions for Suppliers of Space Materials, Parts, Components, and Services, April 1962 Edition.

AF SPEC. Bulletin NR-515, Control of Nonconforming Suppliers.

3. REQUIREMENTS

3.1. RELATION TO DETAIL REQUIREMENTS. The quality program requirements set forth in this publication shall be satisfied in addition to all detail requirements contained in the procurement documents or in other parts of the purchase order. To the extent of any inconsistency between the purchase order or its General Provisions and this publication, the purchase order and the General Provisions shall control. However, the supplier shall bring any area of conflict to the attention of the purchaser.

3.2 CLASS 3

3.2.1 The supplier's quality control system shall comply with the requirements of MIL-Q-9858 in conjunction with Air Force Specification Bulletin NR 515 and MIL-C-45662A and all the following provisions of this section.

3.2.2 SURVEYS and SURVEILLANCE. The supplier shall provide for and permit cognizant NASA or other governmental agency, their designated representatives, or the purchaser to survey the supplier's quality program, or inspection system and implementation thereof in order to verify compliance with this specification and adequacy. Reasonable notice of impending visits will be provided the supplier. The supplier shall provide assistance to the purchaser to effect a similar survey of his lower tier suppliers where such is deemed necessary.

3.2.3 RESUBMISSION OF REJECTED MATERIAL. All supplies' rejected for failure to comply with any provisions of the purchaser's specifications and subsequently resubmitted by the supplier shall bear identification of such resubmission either on the supplies or on the supplier's shipping document. Reference shall be made to the purchaser's receiving inspection descrepancy report and evidence shall be given that the causes for rejection have been corrected and that corrective action has been performed. Resubmitted material shall meet the procurement provisions. nt specified in the procurement

3.2.4 TESTING AND FINAL ACCEPTANCE. Product tests or inspection performed or observed by the purchaser shall not relieve the supplier of his responsibility to meet all his contractual requirements nor guarantee final acceptance. Final acceptance shall be accomplished only at the point specified in the procurement document.

3.2.5 EVIDENCE OF SUPPLIER INSPECTION PERFORMED. Prior to shipment, the supplier shall completely test each article or lot to the requirements of the applicable drawings and specifications and a copy of the test results shall be furnished to the purchaser upon request or as specified on the applicable drawing. Particular emphasis shall be given to those characteristics which cannot be normally inspected by the purchaser after receipt to the article. Inspection records maintained by the supplier shall be adequate enough to ascertain the quality level of the production precesses and of the resultant articles. Inspection records and test data shall be held by the supplier for a period of three years after last article acceptance by the purchaser unless otherwise negotiated. Inspection record or test data shall be available to the purchaser on request.

3.2.6 FAILED PART ANALYSIS. Upon request, the supplier shall perform failed part analysis and submit the results of the analysis to the purchaser within 30 days of the receipt of the failed part. The analysis shall include the mode of failure, probable cause, and recommendations as well as applicable supporting information, such as test results or photographs. Corrective action and pertinent break in information shall be initiated by the supplier.

3.2.7 NOTIFICATION OF TESTING. When specifically requested by the purchaser, the supplier shall provide reasonable notice of when tests are to be conducted and permit the NASA or other cognizant government agency, his designated representative, or the purchaser to witness same.

3.2.8 RAW MATERIAL CONTROL. The supplier shall maintain adequate controls over the receipt and storage of raw materials. The supplier shall, as a minimum, receive certificates of compliance for the chemical and physical properties of all raw materials.

3.2.9 AGE CONTROL. The supplier shall inform the purchaser in writing of any materials or articles having known characteristics of quality degradation or drift with age and/or use.

3.3 CLASS 2

3.3.1 GENERAL. The supplier shall comply with NPC 200-3 in lieu of MIL-Q-9858, the requirement for Class 3 above, and the following provisions of this section. Whenever NPN 200-3 requires submittal of documentation to NASA, the documentation shall be submitted to the purchaser and subject to his disapproval.

The supplier shall submit to the purchaser an inspection plan containing the elements outlined in NPC 200-3, paragraph 2.2.

3.3.2 RAW MATERIALS TESTING. The supplier shall periodically verify certifications through actual chemical and physical testing.

3.3.3 CONFIGURATION AND MANUFACTURING PROCESS CONTROL. The supplier shall certify in writing with each shipment that all articles furnished in accordance with the purchase order comply with all requirements of the drawings, this specification, and other applicable documents.

3.3.4 DOCUMENTATION. The supplier shall assure that the design, manufacturing processes, materials, and sources of materials used by him and his lower tier suppliers are fully controlled by drawings or an equivalent system of documemtation and that articles to be furnished shall be fabricated in compliance with the same. The supplier shall permit review by the NASA or other cognizant government agency, their designated representative, or the purchaser of above documentation as may not infringe upon proprietary rights and the opportunity to observe the manner in which it is implemented within the supplier's facilities. The supplier and purchaser shall jointly review process, configuration, fabrication and material control documentation and agree on features therein which are critical based on the purchaser's application. Following mutual agreement and determination of the adequacy of the supplier's control, the supplier shall henceforth make no changes or alterations in processes, design and materials affecting these critical areas without first advising the purchaser and obtaining prior written concurrence of the purchaser. A current list of all documentation governing these features shall be supplied to the purchaser and shall include:

1. An identifying number and description of each document.
2. The date of most recent revision of each document.
3. Revision letter in effect (if applicable) of each document.
4. Identification and description of areas in the above documents deemed proprietary.

GENERAL SPECIFICATION

CONFIGURATION, PROCESS AND QUALITY CONTROL REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR USE IN SPACECRAFT AND SUPPORTING EQUIPMENT

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Record of Revisions and Amendments

Revision Letter	Amendment Number	Date of Revision or Amendment

This specification consists of page i to iii and 1 to 10 inclusive.

NASA DOCUMENT
ND 1015404
20 December 1962
Class A Release

This document has been prepared to control the purchase of parts and material used in the manufacture of articles; the performance requirements and tolerance of the articles; the construction specifications; and inspection and test procedures for the articles, used on Apollo G and N Equipment.

This document shall be used to check that parts and materials are procured, assembled, and tested to the latest approved and/or authenticated documentation. In case of conflict between this document and drawings and/or specifications the document with the latest date applies.

MIT Instrumentation Laboratory W.S. Kupfer Jr 20 Dec 1962
Date

NASA/MSC Approval William J Rhine 12-20-62
Date

GENERAL SPECIFICATION

CONFIGURATION, PROCESS AND QUALITY CONTROL REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR USE IN SPACECRAFT AND SUPPORTING EQUIPMENT

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GENERAL SPECIFICATION

CONFIGURATION, PROCESS AND QUALITY CONTROL REQUIREMENTS FOR SUPPLIERS OF HIGH RELIABILITY ARTICLES FOR USE IN SPACECRAFT AND SUPPORTING EQUIPMENT

1. SCOPE

1.1 SCOPE. This specification covers the general requirements for configuration, process, and quality control to be followed by suppliers of high reliability articles intended for use in spacecraft and supporting equipment.

1.2 DEGREE OF CRITICALITY. The National Aeronautics and Space Administration (NASA) document which invokes this specification will also specify a degree of criticality, i.e., NASA Specification ND-1015404, Class 1, Class 2, or Class 3. The degree of criticality shall be determined by NASA or an authorized NASA representative and will be stipulated on affected documents by the following note: "Suppliers shall conform to the quality assurance provisions as contained in NASA Specification ND-1015404, Class 1, " or "...ND-1015404, Class 2," or "...ND-1015404, Class 3." as applicable.

2. APPLICABLE DOCUMENTS

2.1 The following documents shall form a part of this specification to the extent specified herein.

SPECIFICATIONS

Military

MIL-Q-9858	Quality Control System Requirements, dated 9 April 1959

BLICATIONS

National Aeronautics and Space Administration

NPC 200-3	Inspection System Provisions for Suppliers of Space Materials, Parts, Components, and Services, April 1962 Edition

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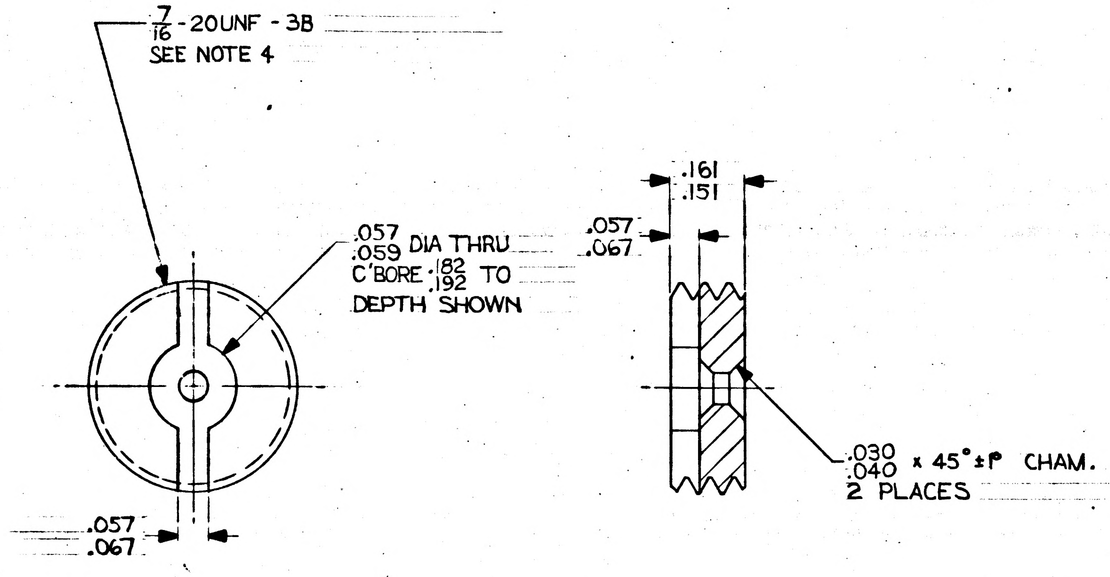
REVISIONS				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL
	A	REVISED & RELEASED	7/28/64	



NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH MIL-D-70327.
2. BREAK SHARP EDGES $^{.005}_{.015}$.
3. $\overset{32}{\surd}$ ALL OVER.
4. THREAD SPEC MIL-S-7742.
5. IDENTIFY USING DWG NO, REV LETTER & MANUFACTURERS SYMBOL PER MIL-STD-130.
6. PASSIVATE IN ACCORDANCE WITH MIL-F-14072 FIN E-300.

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 11250 **DATE** 7/28/64

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

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NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL:
CRES 303 STAINLESS

MIT
INSTRUMENTATION LAB
CONTRACT
NAS 9-153

		DATE
APPROVED	[illegible] RWB	7/7/64
CHECKED	[illegible]	7/6/64
DRAWN	WJP	10-28-63
APPROVED FOR MSC	A. C. [illegible]	7/28/64
MIT/IL APPROVAL		DATE
	[illegible]	7/28/64

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4/1		

MIT
INSTRUMENTATION
LABORATORY
CAMBRIDGE, MASS.
DWG. NO.
MANNED
SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO.
1015421
SHEET 1 OF 1

MASTER

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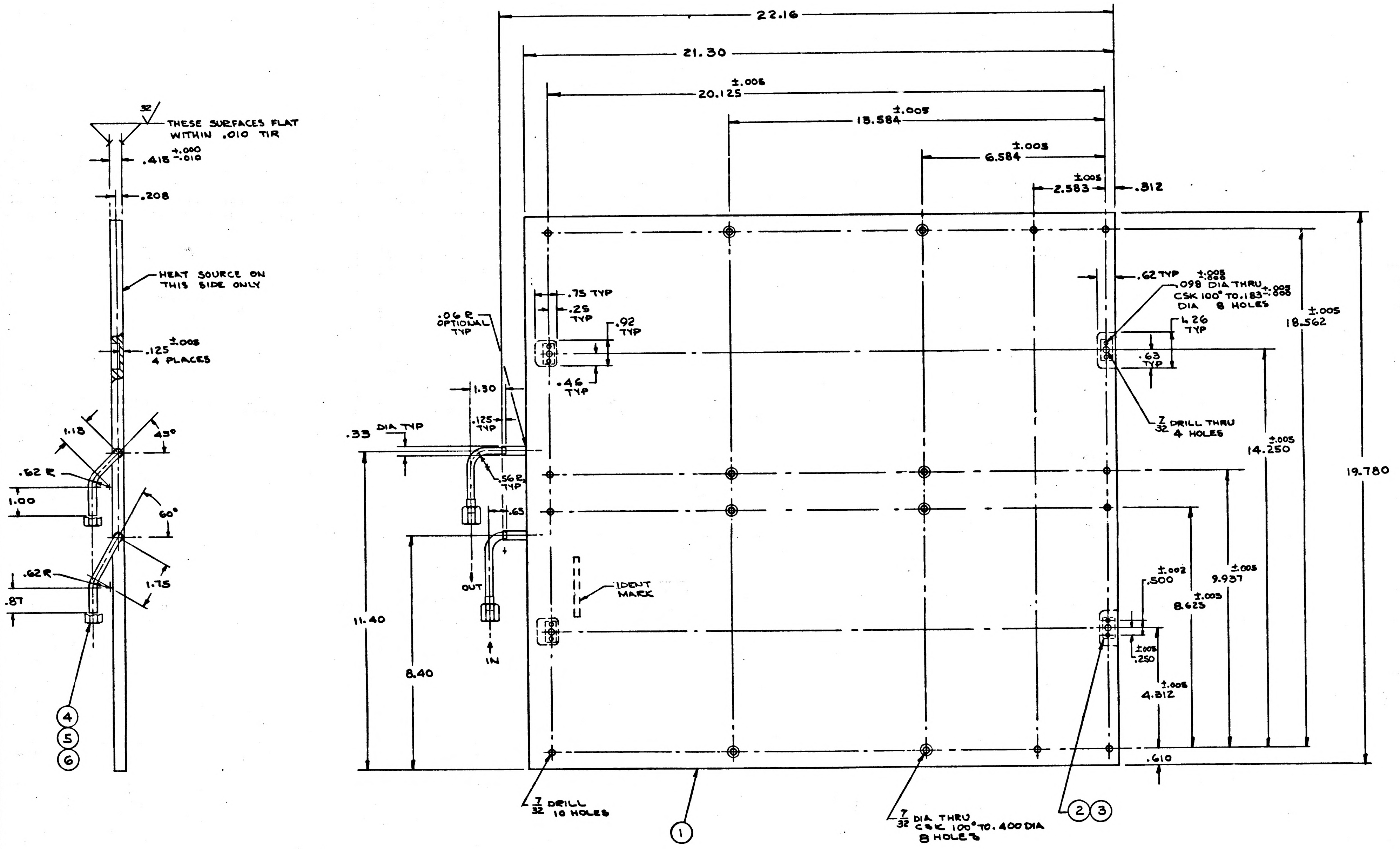
REVISIONS 05246				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL


22.16
21.30
±.005 20.125
±.005 18.584
±.005 6.584
±.005 2.583
.312
32
THESE SURFACES FLAT WITHIN .010 TIR
.418 +.000 −.010
.208
HEAT SOURCE ON THIS SIDE ONLY
±.005 .125 4 PLACES
1.18
45°
.62 R
1.00
60°
.62R
1.75
.87
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6
.06 R OPTIONAL TYP
.75 TYP
.25 TYP
.92 TYP
.46 TYP
1.30
.125 TYP
.33 DIA TYP
.56 R TYP
.65
OUT
IN
IDENT MARK
11.40
8.40
.62 TYP
±.005 ±.000 .098 DIA THRU CSK 100° TO .183 ±.005 DIA 8 HOLES
.26 TYP
.63 TYP
7/32 DRILL THRU 4 HOLES
±.005 18.562
±.005 14.250
19.780
±.002 .500
±.005 9.937
±.003 8.625
±.005 .250
±.005 4.312
.610
7/32 DRILL 10 HOLES
1
7/32 DIA THRU CSK 100° TO .400 DIA 8 HOLES
2
3

NOTES:

1. GENERAL:
   A. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
   B. MARKING: UNIT TO BE MARKED IN ACCORDANCE WITH MIL-STD-130 WITH THE NASA DWG NO & REV LETTER. STENCIL .12 HIGH BLK CHARACTERS & .03 WIDE LINES PER ND1002019 PACKAGING SHALL BE IN ACCORDANCE WITH MIL-STD-129 WITH MFR NAME &/OR SYMBOL, LOT OR SERIAL NO., DATE OF MFR OR CODING, NASA DWG NO & REV LETTER
2. ACCEPTANCE & INSPECTION:
   (1) DIM PER DWG
   (2) FINISH: CHEMICAL FILM IN ACCORDANCE WITH MIL-C-5541
   (3) FLOW RATE 80 LB/HR TO GIVE MAX 3 PSI DROP
   (4) LEAK TEST: WATER IMMERSION WITH AIR PRESSURE
   (5) PROOF PRESSURE: 90 PSIG
   (6) COLD PLATE SHALL WITHSTAND A VACUUM PRESSURE OF 500 MICRONS WITHOUT ANY DEFORMATION
   (7) MATERIAL OF COLD PLATE SHALL BE COMPATIBLE WITH A LIQUID COOLANT OF FOLLOWING COMPOSITION

PARTS BY WT	COMPONENT
62.500	ETHYLENE GLYCOL PER MIL-E-9500
37.422	TRIPLE DISTILLED WATER
1.563	TRIETHANOLAMINEPHOSPHATE
.156	SODIUMMERCAPTOBENZOTHIOZOL

   (8) COLD PLATE WILL WITHSTAND TEMP OF 325° F MAX WITHOUT DELETERIOUS EFFECTS
   (9) TUBING SHALL BE FLUSHED TO REMOVE FLUX OR OTHER DEPOSITS
3. THE THERMAL RESISTANCE FROM THE SURFACE OF THE PLATE TO THE LOCAL COOLANT WILL BE LESS THAN 40°F/W/IN²
4. ORIGINAL SOURCE OF SUPPLY:
   ASTRO DYNAMICS INC.
   BURLINGTON, MASSACHUSETTS
   MODEL CP7538

CLASS B RELEASE
FOR INFORMATION ONLY
TDRR 05246

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.
2	SLEEVE, FLARED TUBE FITTING	MS20819-4D		AL ALLOY	6
2	NUT, UNION	AN818-4D		AL ALLOY	5
2	TUBING .250 OD X .035 WALL		MIL-T-7081	6061-T6 ALUM	4
8	RIVET, SOLID, CSK 100°	MS20426AD3-6		2117-T4 AL ALLOY	3
4	NUT, ANCHOR, TWO LUG, FLOATING	NAS1068C3		CRES	2
1	COLD PLATE			6061-T6 ALUM	1

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ~ DECIMALS .XX ±.03 .XXX ±.010 ANGLES ±30'
DO NOT SCALE THIS DRAWING
MATERIAL: AS NOTED

MIT INSTRUMENTATION LAB
CONTRACT NAS 9-153

		DATE
APPROVED	L Goldman	12-11-63
CHECKED	JHS	12-10-63
DRAWN	JGC	12-10-63
APPROVED FOR MSC	W. S. Dung	12/17/63
BY DIRECTION	A. Hall	12/17/63

COLD PLATE ASSY
CONDUCTION COOLING
APOLLO GUIDANCE COMPUTER (AGC)
SPECIFICATION
CONTROL DRAWING

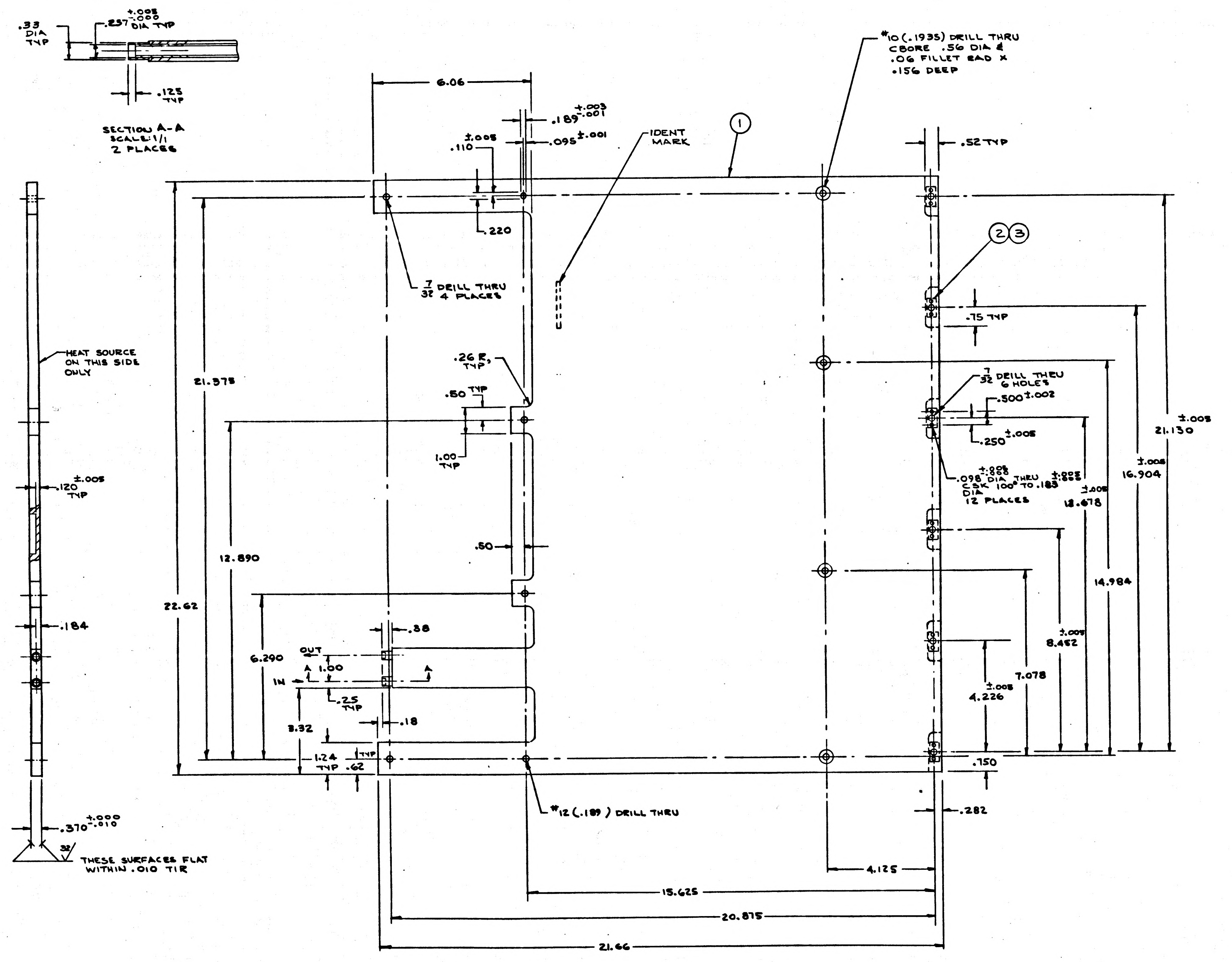
SCALE	UNIT WT.	CODE IDENT.
HALF		

MIT
INSTRUMENTATION
LABORATORY
CAMBRIDGE, MASS.
DWG. NO.
MANNED
SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO. 1015422
SHEET 1 OF 1

1015422

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS 03246				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL



.33 DIA TYP
.257 +.005 -.000 DIA TYP
.125 TYP
SECTION A-A SCALE:1/1 2 PLACES
6.06
.189 +.003 -.001
±.005 .110
.095 ±.001
.220
IDENT MARK
①
#10 (.1935) DRILL THRU CBORE .56 DIA & .06 FILLET RAD X .156 DEEP
.52 TYP
②③
7/32 DRILL THRU 4 PLACES
.75 TYP
HEAT SOURCE ON THIS SIDE ONLY
21.375
.26 R, TYP
.50 TYP
7/32 DRILL THRU 6 HOLES
.500 ±.002
.250 ±.005
1.00 TYP
21.130 ±.005
.098 +.003 -.002 DIA THRU CSK 100° TO .183 ±.005 DIA 12 PLACES
16.904 ±.005
12.678 ±.005
.120 ±.005 TYP
.50
12.890
14.984
22.62
.184
.38
8.452 ±.005
6.290
OUT
A 1.00
A
IN
7.078
.25 TYP
4.226 ±.005
.18
3.32
1.24 TYP
TYP .62
.750
#12 (.189) DRILL THRU
.282
.370 +.000 -.010
32/
THESE SURFACES FLAT WITHIN .010 TIR
4.125
15.625
20.875
21.66

NOTES:

1. GENERAL:
   - A. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
   - B. MARKING: UNIT TO BE MARKED IN ACCORDANCE WITH MIL-STD-130 WITH THE NASA DWG NO & REV LETTER. STENCIL .12 HIGH BLK CHARACTERS & .03 WIDE LINES PER ND1002019. PACKAGING SHALL BE IN ACCORDANCE WITH MIL-STD-129 WITH MFR NAME AND/OR SYMBOL, LOT OR SERIAL NO., DATE OF MFR OR CODING, NASA DWG NO & REV LETTER
2. ACCEPTANCE & INSPECTION:
   - (1) DIM PER DWG
   - (2) FINISH: CHEMICAL FILM IN ACCORDANCE WITH MIL-C-5541
   - (3) FLOW RATE 160 LB/HR TO GIVE MAX 3 PSI DROP
   - (4) LEAK TEST: WATER IMMERSION WITH AIR PRESSURE
   - (5) PROOF PRESSURE: 90 PSIG
   - (6) COLD PLATE SHALL WITHSTAND A VACUUM PRESSURE OF 500 MICRONS WITHOUT ANY DEFORMATION
   - (7) MATERIAL OF THE COLD PLATE SHALL BE COMPATIBLE WITH A LIQUID COOLANT OF THE FOLLOWING COMPOSITION

PARTS BY WT	COMPONENT
62.500	ETHYLENE GLYCOL PER MIL-E-9500
37.422	TRIPLE DISTILLED WATER
1.563	TRIETHANOLAMINEPHOSPHATE
.156	SODIUMMERCAPTOBENZOTHIOZOL

   - (8) COLD PLATE WILL WITHSTAND TEMP OF 325°F MAX WITHOUT DELETERIOUS EFFECTS
   - (9) TUBING SHALL BE FLUSHED TO REMOVE FLUX OR OTHER DEPOSITS
3. A. THE THERMAL RESISTANCE FROM THE SURFACE OF THE PLATE TO THE LOCAL COOLANT FOR THE TOP SECTION WILL BE LESS THAN 10°F/W/IN²
   B. THE LOWER SECTION SHALL BE LESS THAN 13°F/W/IN²
4. ORIGINAL SOURCE OF SUPPLY:
   ASTRO DYNAMICS INC.
   BURLINGTON, MASSACHUSETTS
   MODEL CP7540

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 03246 **DATE** 12/17/63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.
12	RIVET, SOLID, CSK 100°	MS20426AD3-6		2117-T4 AL ALLOY	3
6	NUT, ANCHOR, TWO LUG, FLOATING	NAS1068C3		CRES	2
1	COLD PLATE			6061-T6 ALUM	1

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ~ DECIMALS .XX ±.03 .XXX ±.010 ANGLES ±30'
DO NOT SCALE THIS DRAWING
MATERIAL: AS NOTED

MIT INSTRUMENTATION LAB CONTRACT NAS 9-153

		DATE
APPROVED		12/11/63
CHECKED	JHS	12-10-63
DRAWN	JGC	12-10-63

APPROVED FOR MSC 12/17/63 12/17/63

COLD PLATE ASSY CONDUCTION COOLING POWER & SERVO UNIT - SPECIFICATION CONTROL DRAWING

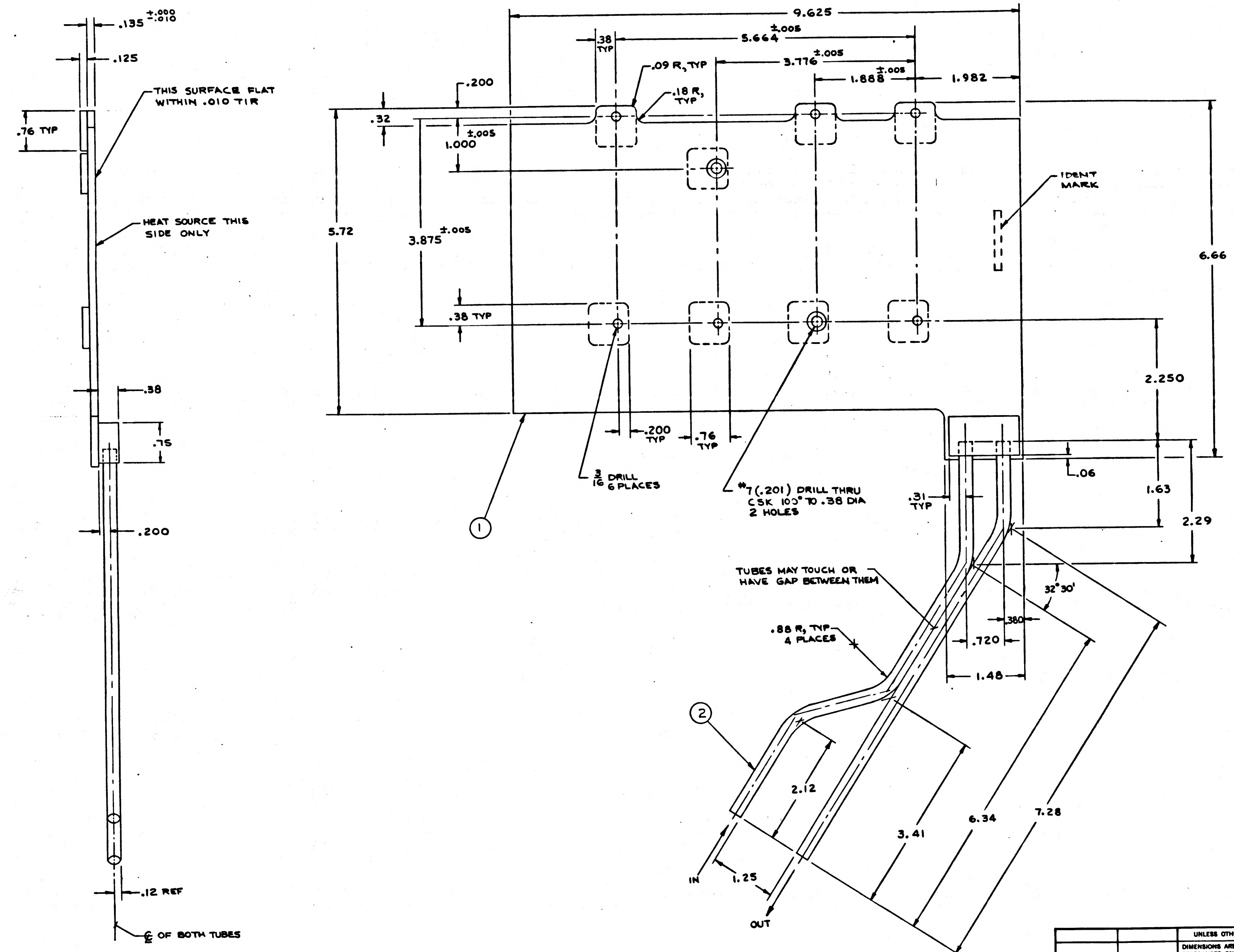
SCALE HALF | UNIT WT. - | CODE IDENT.

MIT INSTRUMENTATION LABORATORY
CAMBRIDGE, MASS.
DWG NO.
MANNED SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO. 1015423
SHEET 1 OF 1

1015423

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS 05246				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL


.135 +.000 -.010
.125
THIS SURFACE FLAT WITHIN .010 TIR
.76 TYP
HEAT SOURCE THIS SIDE ONLY
.38
.75
.200
.12 REF
℄ OF BOTH TUBES
9.625
.38 TYP
5.664 ±.005
.09 R, TYP
3.776 ±.005
1.888 ±.005
1.982
.18 R, TYP
.200
.32
1.000 ±.005
5.72
3.875 ±.005
IDENT MARK
6.66
.38 TYP
2.250
.200 TYP
.76 TYP
3/16 DRILL 6 PLACES
#7 (.201) DRILL THRU CSK 100° TO .38 DIA 2 HOLES
.06
.31 TYP
1.63
2.29
1
TUBES MAY TOUCH OR HAVE GAP BETWEEN THEM
32°30'
.380
.720
.88 R, TYP 4 PLACES
1.48
2
2.12
3.41
6.34
7.28
IN
1.25
OUT

NOTES:

1. GENERAL:
   A. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
   B. MARKING: UNIT TO BE MARKED IN ACCORDANCE WITH MIL-STD-130 WITH THE NASA DWG NO. & REV LETTER. STENCIL .12 HIGH BLK CHARACTERS & .03 WIDE LINES PER ND1002019. PACKAGING SHALL BE IN ACCORDANCE WITH MIL-STD-129 WITH MFR NAME AND/OR SYMBOL, LOT OR SERIAL NO., DATE OF MFR OR CODING, NASA DWG NO & REV LETTER
2. ACCEPTANCE & INSPECTION:
   (1) DIM PER DWG
   (2) FINISH: CHEMICAL FILM IN ACCORDANCE WITH MIL-C-5541
   (3) FLOW RATE 20 LB/HR TO GIVE MAX 1 PSI DROP
   (4) LEAK TEST: WATER IMMERSION WITH AIR PRESSURE
   (5) PROOF PRESSURE: 90 PSIG
   (6) COLD PLATE SHALL WITHSTAND A VACUUM PRESSURE OF 500 MICRONS WITHOUT ANY DEFORMATION
   (7) MATERIAL OF THE COLD PLATE SHALL BE COMPATIBLE WITH A LIQUID COOLANT OF THE FOLLOWING COMPOSITION

PARTS BY WT	COMPONENT
62.500	ETHYLENE GLYCOL PER MIL-E-9500
37.422	TRIPLE DISTILLED WATER
1.563	TRIETHANOLAMINEPHOSPHATE
.156	SODIUMMERCAPTOBENZOTHIOZOL

   (8) COLD PLATE WILL WITHSTAND TEMP OF 325°F MAX WITHOUT DELETERIOUS EFFECTS
   (9) TUBING SHALL BE FLUSHED TO REMOVE FLUX OR OTHER DEPOSITS
3. THE THERMAL RESISTANCE FROM THE SURFACE OF THE PLATE TO THE LOCAL COOLANT WILL BE LESS THAN 45°F/W/IN²
4. ORIGINAL SOURCE OF SUPPLY:
   ASTRO DYNAMICS INC
   BURLINGTON, MASSACHUSETTS
   MODEL CP7539

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05246 **DATE** 12/17/63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.
2	TUBING, .250 OD x .035 WALL		MIL-T-7081	6061-T6 ALUM	2
1	COLD PLATE			6061-T6 ALUM	1

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ~ DECIMALS .XX ±.03 .XXX ±.010 ANGLES ±30'
DO NOT SCALE THIS DRAWING
MATERIAL: AS NOTED

MIT INSTRUMENTATION LAB
CONTRACT NAS 9-153

		DATE
APPROVED	[illegible]	12-11-63
CHECKED	[illegible]	12-10-63
DRAWN	JGC	12-10-63
APPROVED FOR MSC	[illegible]	12/17/63
	[illegible]	12/17/63

COLD PLATE ASSY
CONDUCTION COOLING
CONTROL DISPLAY UNIT –
SPECIFICATION
CONTROL DRAWING

SCALE	UNIT WT.	CODE IDENT.
FULL		

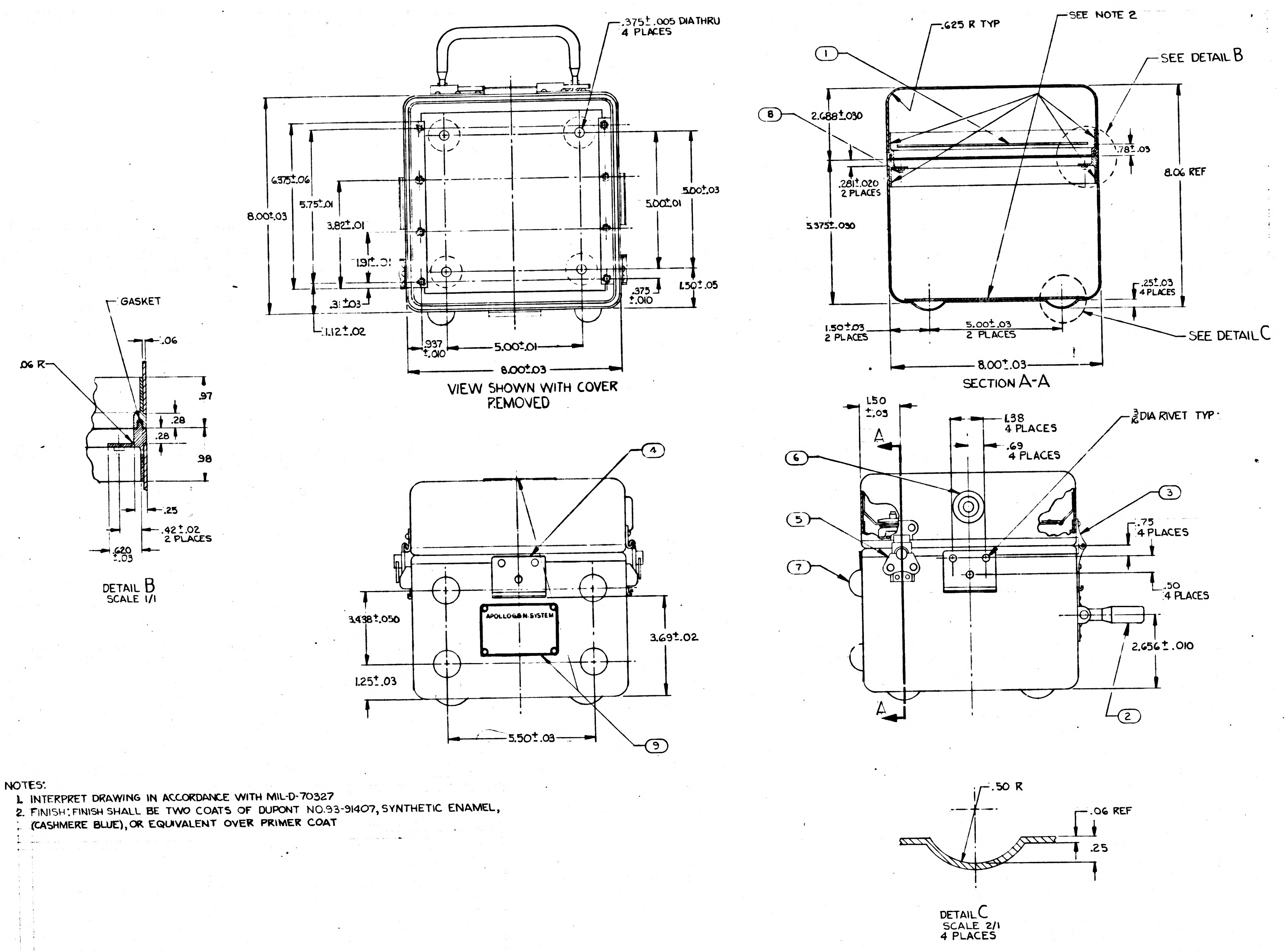
MIT
INSTRUMENTATION
LABORATORY
CAMBRIDGE, MASS.
DWG. NO.
MANNED SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO.
1015424
SHEET 1 OF 1

1015424

INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 05153

ZONE	SYM	DESCRIPTION	DATE	APPROVAL


.375±.005 DIA THRU
4 PLACES
6.375±.06
5.75±.01
8.00±.03
3.82±.01
1.91±.01
.31±.03
1.12±.02
5.00±.01
5.00±.03
1.50±.05
.375
±.010
.937
±.010
5.00±.01
8.00±.03
VIEW SHOWN WITH COVER REMOVED
.625 R TYP
SEE NOTE 2
SEE DETAIL B
1
8
2.688±.030
.281±.020
2 PLACES
5.375±.030
.78±.03
8.06 REF
.25±.03
4 PLACES
1.50±.03
2 PLACES
5.00±.03
2 PLACES
8.00±.03
SEE DETAIL C
SECTION A-A
GASKET
.06
.06 R
.97
.28
.28
.98
.25
.42±.02
2 PLACES
.620
±.03
DETAIL B
SCALE 1/1
4
APOLLO G&N SYSTEM
3.438±.050
3.69±.02
1.25±.03
5.50±.03
9
1.50
±.03
A
1.38
4 PLACES
.69
4 PLACES
3/16 DIA RIVET TYP
6
5
7
3
.75
4 PLACES
.50
4 PLACES
2.656±.010
A
2
.50 R
.06 REF
.25
DETAIL C
SCALE 2/1
4 PLACES

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. FINISH: FINISH SHALL BE TWO COATS OF DUPONT NO.93-91407, SYNTHETIC ENAMEL, (CASHMERE BLUE), OR EQUIVALENT OVER PRIMER COAT

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 **DATE** 10 DEC 63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.
2	PLATE, IDENTIFICATION	1000024			9
8	NUT, CLINCH-FLUSH MOUNTED	1000076-10			8
4	RUBBER FEET	1015444			7
1	VALVE, AUTOMATIC RELIEF	1015446			6
2	LATCH	1015442			5
4	CLIP, STRAP DOWN	1015449			4
2	HINGE	1015443			3
1	HANDLE	1015445			2
1	INNER-LID ASSEMBLY	1015440			1

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
	1900496

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL:

MIT
INSTRUMENTATION LAB
CONTRACT
NAS 9-153

		DATE
APPROVED		
CHECKED		
DRAWN	BGM	8-26-63
APPROVED FOR MSC	W. J.	10/63
MIT/IL APPROVAL		DATE
		10 Dec 63

COMBINATION CASE, INNER LID ASSEMBLY

SCALE	UNIT WT.	CODE IDENT.
NONE		

MIT
INSTRUMENTATION LABORATORY
CAMBRIDGE, MASS.
DWG. NO.
MANNED SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO. 1015425
SHEET OF

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 05153				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL

APOLLO IMU

PORTABLE TEMPERATURE CONTROLLER

THE FOLLOWING ARE PART OF AND ARE INCLUDED IN THE INERTIAL COMPONENTS TEMPERATURE CONTROLLER.

UNIT 1: PORTABLE TEMPERATURE CONTROLLER
UNIT 2: BATTERY POWER PACK

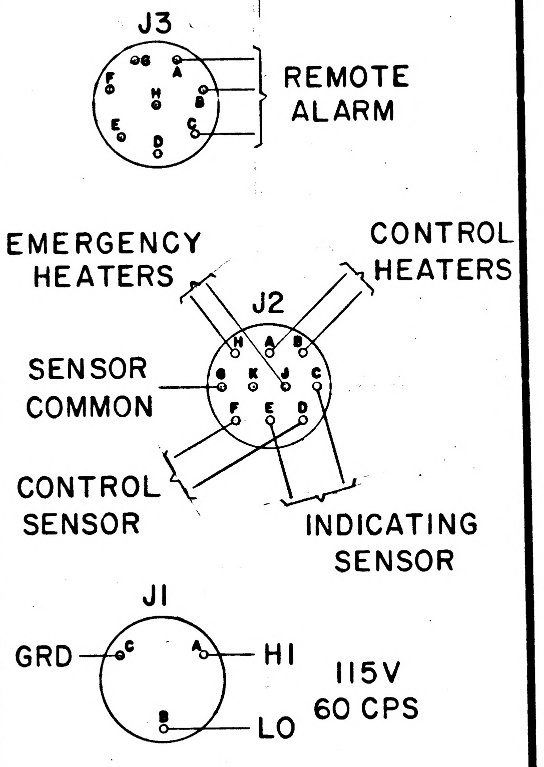
OPERATION:

CONNECT J1 OF THE PORTABLE TEMPERATURE CONTROLLER TO 115V 60 CPS POWER, AND J2 TO THE IMU. WHEN THE BATTERY POWER PACK IS USED WITH THE PTC, CONNECT J1 OF THE PTC TO J1 OF THE BPP, P1 OF THE BPP TO 115V 60 CPS, AND J3 OF THE PTC TO J2 OF THE BPP.

PANEL MARKINGS

TP1 & TP2 -	INPUT VOLTAGE
TP3 & TP4 -	HEATERS' VOLTAGE
R7-	HIGH LIMIT AMPLIFIER CALIBRATE
R8-	LOW LIMIT AMPLIFIER CALIBRATE
R12-	TEMPERATURE METER CALIBRATION
F1 & F2-	INPUT FUSES 1A SLOW BLOW
F3-F6-	HEATERS' FUSES 1A.
TEMP ADJ-	PROPORTIONAL CONTROL TEMPERATURE ADJUSTMENT

CONNECTOR PIN IDENTIFICATION



$5 \pm \frac{1}{64}$

$5\frac{7}{8} \pm \frac{1}{64}$

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 **DATE** 10 Dec 63

MASTER

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

MATERIAL:

MIT INSTRUMENTATION LAB CONTRACT NAS 9-153	DATE
APPROVED M. O'Blln	12/4/63
CHECKED M.D.03	12/4/63
DRAWN E.J.J.	10-18-63
APPROVED FOR MSC W S. Durig 12/30/63	
MIT/IL APPROVAL	DATE
W Trageser	10 Dec 63

PLATE, INFORMATION

SCALE	UNIT WT.	CODE IDENT.
2:1	—	—

MIT INSTRUMENTATION LABORATORY
CAMBRIDGE, MASS.

DWG. NO.

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

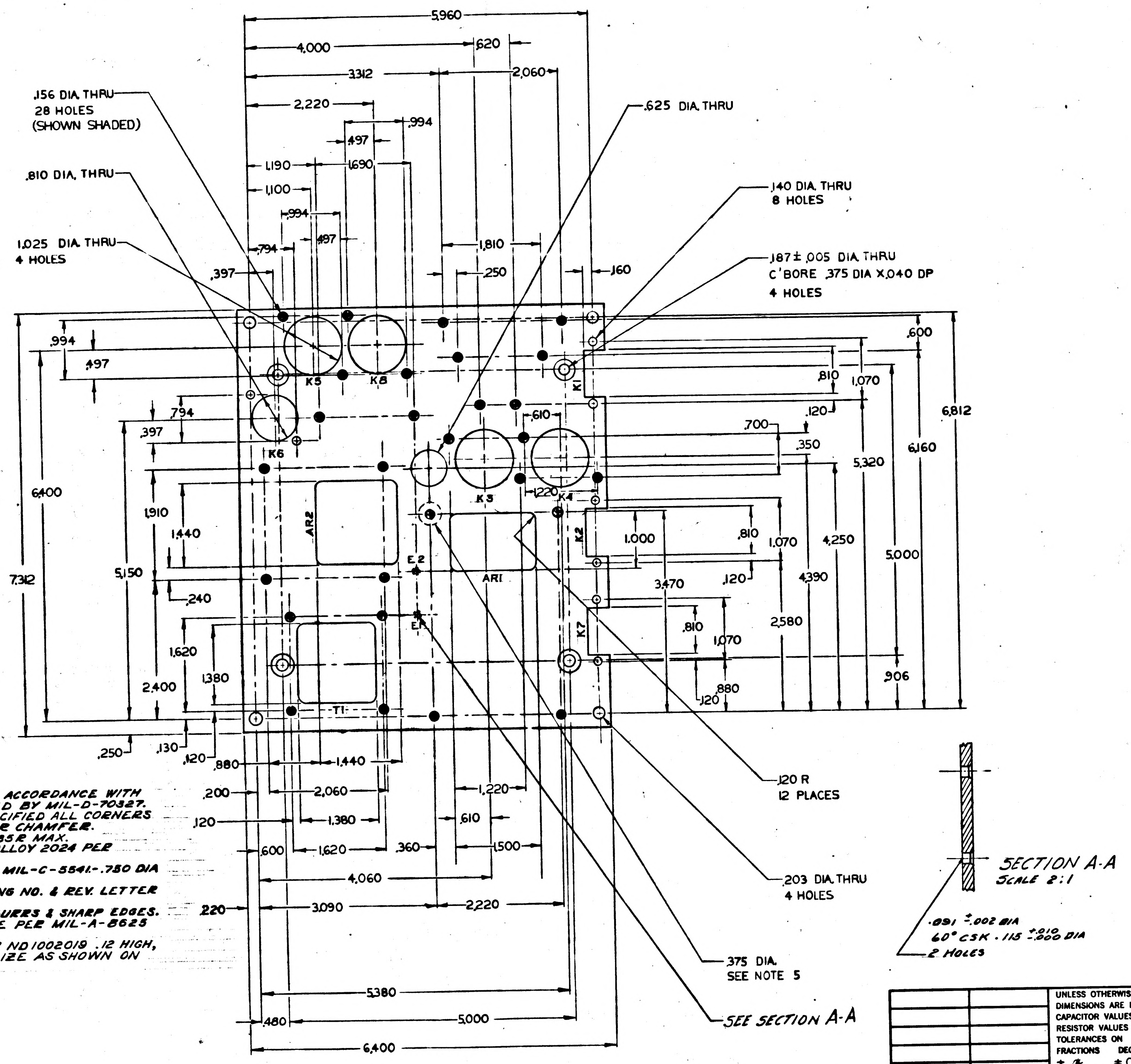
NASA DRAWING NO.
1015426

SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES REV A WITH CHANGES PER TDRR 18189				


5,960
4,000
.620
3312
2,060
2,220
.994
.497
1,190
1,690
1,100
.994
.497
.794
1,810
.250
.160
.397
.156 DIA. THRU
28 HOLES
(SHOWN SHADED)
.810 DIA. THRU
1,025 DIA. THRU
4 HOLES
.625 DIA. THRU
.140 DIA. THRU
8 HOLES
.187 ± .005 DIA. THRU
C'BORE .375 DIA X.040 DP
4 HOLES
.600
.810
1,070
6,812
.120
.700
.350
5,320
6,160
.994
.497
.794
.397
6,400
1,910
1,440
7,312
5,150
.240
1,620
2,400
1,380
K5
K8
K1
K6
K3
K4
AR2
AR1
K2
E2
E1
K7
T1
.610
1,220
1,000
.810
1,070
4,250
5,000
3,470
.120
4,390
2,580
.810
1,070
.906
.880
.120
.250
.130
.120
.880
1,440
.200
2,060
1,220
.120
1,380
.610
.600
1,620
.360
1,500
4,060
.220
3,090
2,220
5,380
.480
5,000
6,400
.120 R
12 PLACES
.203 DIA. THRU
4 HOLES
.375 DIA.
SEE NOTE 5
SEE SECTION A-A
SECTION A-A
SCALE 2:1
.091 ± .002 DIA
60° CSK .115 +.010 −.000 DIA
2 HOLES

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
3. ALL INSIDE CORNERS .035 R MAX.
4. MATERIAL: ALUMINUM ALLOY 2024 PER QQ-A-355 .090 THK.
5. SPOTFACE FARSIDE PER MIL-C-5541.-.750 DIA X .030 DEEP.
6. IDENTIFY USING DRAWING NO. & REV. LETTER PER ND1002019.
7. MUST BE FREE FROM BURRS & SHARP EDGES.
8. FINISH: CLEAR ANODIZE PER MIL-A-8625 TYPE II.
9. MARK CHARACTERS PER ND1002019 .12 HIGH, COLOR BLACK CENTRALIZE AS SHOWN ON REVERSE SIDE.

REPLACES REV A WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1021573	1900496

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.010 ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 4

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

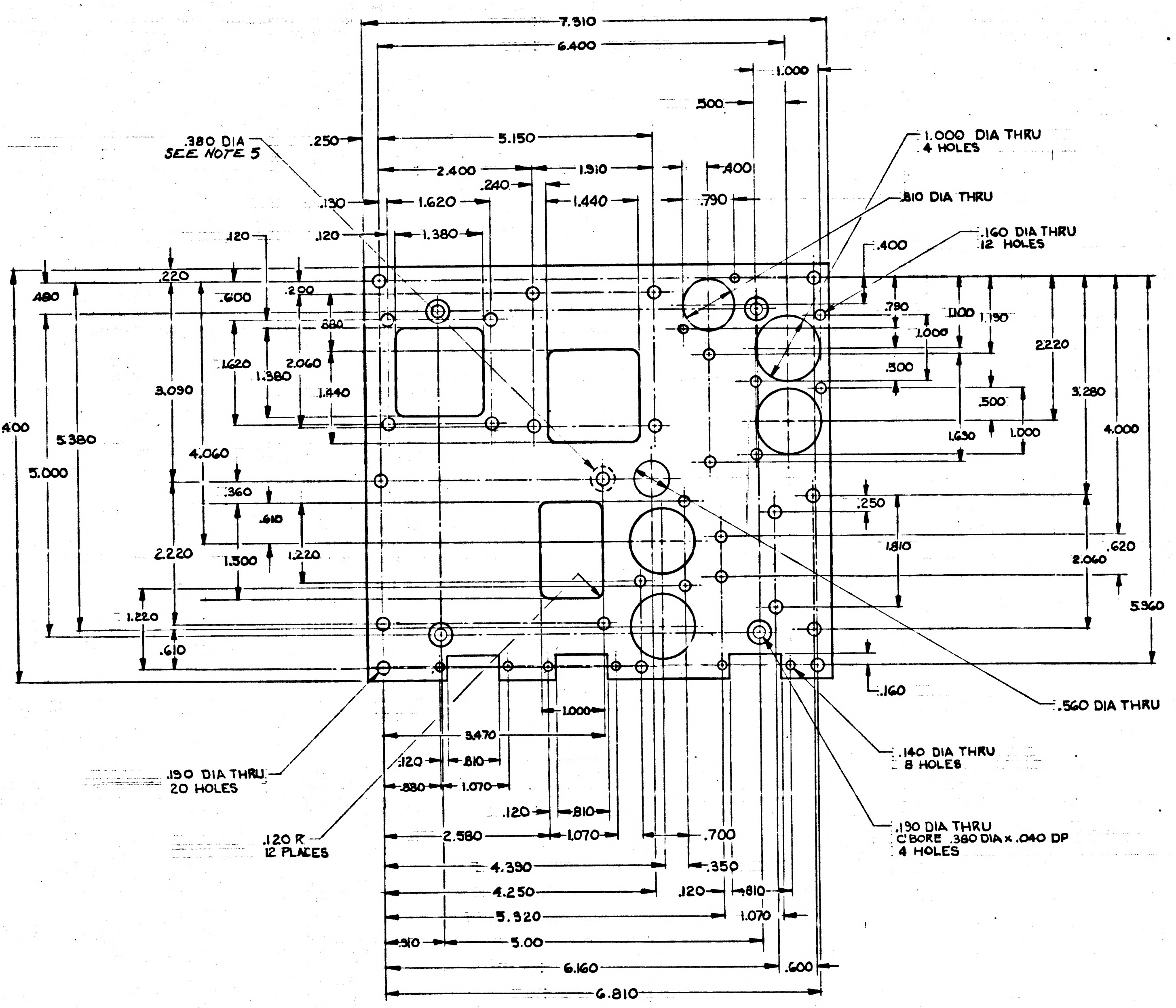
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

		DATE
DRAWN	R.C. HALL	8-11-64
CHECKED	Bert Katz	10/7/64
APPROVED	Bert Katz	2/26/65
APPROVED	J. Minuton	1/26/65
APPROVED MIT	W. Kupfer	13 Aug 65
APPROVED MSC	C.C. [illegible]	9/13/61

LOWER MOUNTING PLATE

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015427
SCALE 1/1
SHEET 1 OF 1

ZONE	SYM	REVISIONS TDRR 05153 DESCRIPTION	DATE	APPROVAL


7.310
6.400
1.000
.500
.380 DIA
SEE NOTE 5
.250
5.150
1.000 DIA THRU
4 HOLES
2.400
1.310
.400
.240
1.620
1.440
.790
.810 DIA THRU
.130
.120
.120
1.380
.160 DIA THRU
12 HOLES
.400
.220
.480
.600
.200
.660
1.620
2.060
1.380
1.840
3.090
6.400
5.380
5.000
4.060
.360
.610
2.220
1.300
1.220
1.220
.610
.790
1.100
1.190
1.000
.500
2.220
.500
3.280
1.630
1.000
4.000
.250
1.810
2.060
.620
5.960
.160
.560 DIA THRU
1.000
3.470
.120
.810
.880
1.070
.150 DIA THRU
20 HOLES
.140 DIA THRU
8 HOLES
.120
.810
.120 R
12 PLACES
2.580
1.070
.700
.130 DIA THRU
C'BORE .380 DIA x .040 DP
4 HOLES
4.390
.350
4.250
.120
.810
5.320
1.070
.910
5.00
6.160
.600
6.810

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. BREAK ALL SHARP EDGES .005-.015
3. ALL INSIDE CORNERS .035 R MAX
4. MATERIAL: .090 THK AL ALY 2024 ALT SPEC QQ-A-355
5. *SPOTFACE FARSIDE PER MIL-C-5541*

MASTER

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 **DATE** 10 DEC 63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS — DECIMALS ±.010 ANGLES —
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 4

MIT INSTRUMENTATION LAB
CONTRACT NAS 9 153
APPROVED M. [illegible] DATE
CHECKED [illegible]
DRAWN BCM 8-19-63
APPROVED FOR MSC W. J. [illegible] 12/6/63
MIT/IL APPROVAL W Kupfer DATE 10 Dec 63

MOUNTING PLATE, LOWER

SCALE 1/1
UNIT WT.
CODE IDENT.

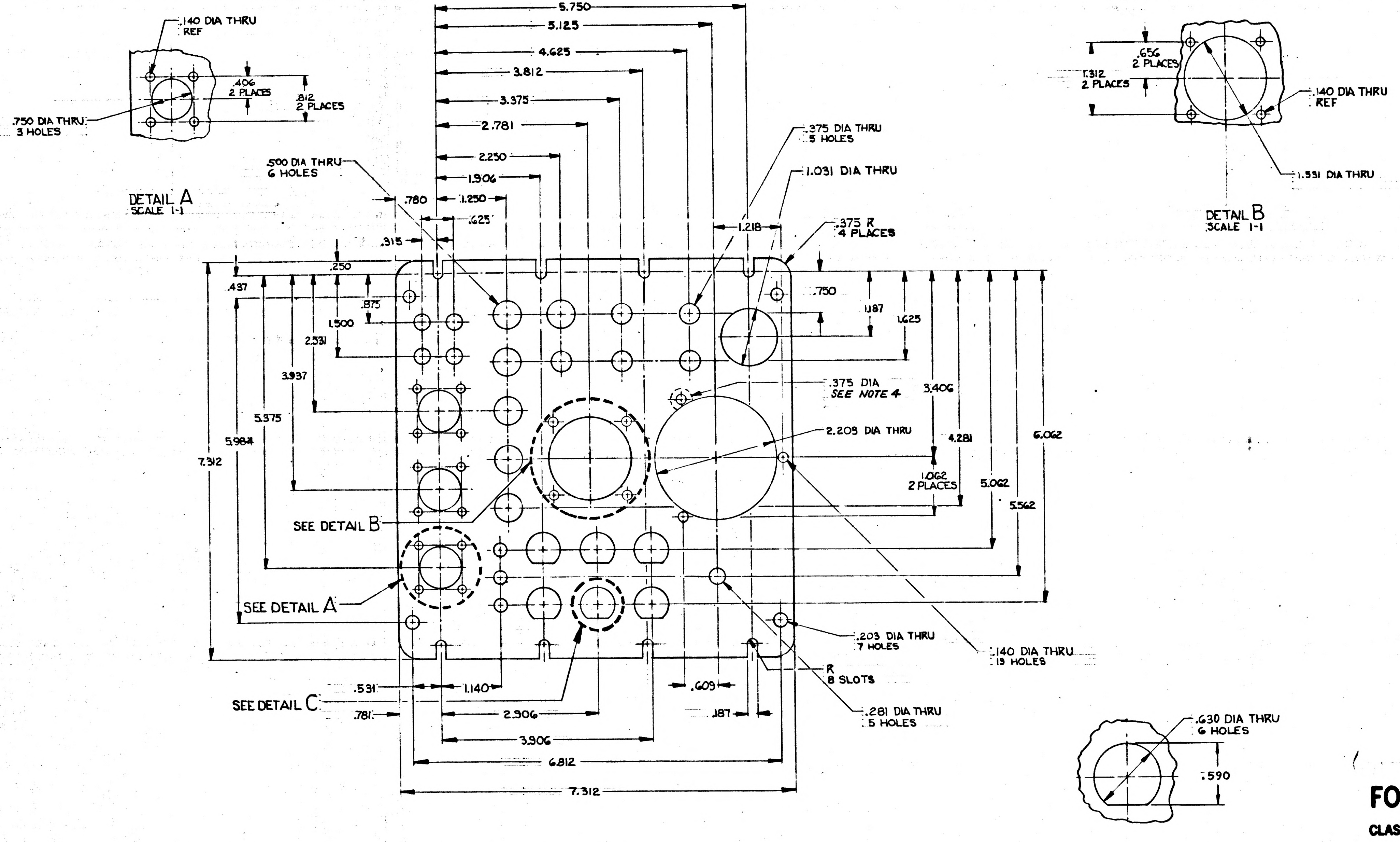
MIT INSTRUMENTATION LABORATORY
CAMBRIDGE, MASS.
DWG. NO.
MANNED SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO. 1015427
SHEET 1 OF 1

1015427

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 05153

ZONE	SYM	DESCRIPTION	DATE	APPROVAL



.140 DIA THRU
REF
.406
2 PLACES
.812
2 PLACES
.750 DIA THRU
3 HOLES
DETAIL A
SCALE 1-1
5.750
5.125
4.625
3.812
3.375
2.781
2.250
1.906
1.250
.780
.625
.315
.500 DIA THRU
6 HOLES
.375 DIA THRU
5 HOLES
1.031 DIA THRU
1.218
.375 R
4 PLACES
.250
.437
.875
1.500
2.531
3.937
5.375
5.984
7.312
.750
1.187
1.625
.375 DIA
SEE NOTE 4
3.406
2.203 DIA THRU
4.281
1.062
2 PLACES
5.062
5.562
6.062
SEE DETAIL B
SEE DETAIL A
.203 DIA THRU
7 HOLES
.140 DIA THRU
13 HOLES
R
8 SLOTS
.281 DIA THRU
5 HOLES
SEE DETAIL C
.531
.781
1.140
2.906
3.906
6.812
7.312
.609
.187
.656
2 PLACES
1.312
2 PLACES
.140 DIA THRU
REF
1.531 DIA THRU
DETAIL B
SCALE 1-1
.630 DIA THRU
6 HOLES
.590
DETAIL C
SCALE 2-1

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 DATE 10 DEC 63

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. BREAK ALL SHARP EDGES .005-.015
3. MATERIAL: .063 THK (STOCK SIZE) 2024 AL ALY ALT SPEC QQ-A-355
4. *SPOTFACE FAR SIDE PER MIL-C-5541*

MASTER

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
	1900496

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS — DECIMALS ±.005 ANGLES —
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 3

MIT INSTRUMENTATION LAB
CONTRACT NAS 9-153

		DATE
APPROVED	[illegible]	12/4/63
CHECKED	[illegible]	7/4/63
DRAWN	BGM	8/14/63
APPROVED FOR MSC	[illegible]	12/10/63
MIT/IL APPROVAL	W Kupfer	10 Dec 63

MOUNTING PLATE UPPER (ENG.)

MIT INSTRUMENTATION LABORATORY
CAMBRIDGE, MASS.
DWG. NO.
MANNED SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO. 1015428

SCALE	UNIT WT.	CODE IDENT.
1/1		

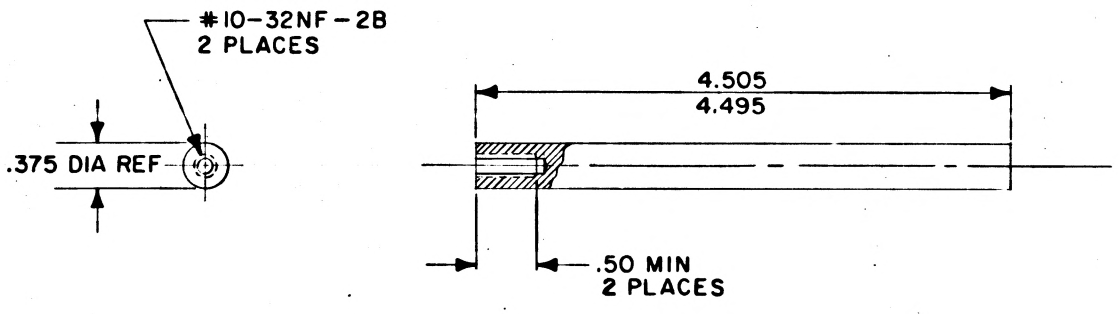
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015428

1015429

REVISIONS TDRR 05153				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL



NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. FINISH:
BLACK ANODIZED PER MIL-A-8625 TYPE II (SURFURIC)

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 DATE 11/10/63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

MASTER

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

MATERIAL:
3/8 ALUMINUM ROD

MIT
INSTRUMENTATION LAB
CONTRACT
NAS 9-153

		DATE
APPROVED		12/4/63
CHECKED		12/4/63
DRAWN	R.J.J.	10-21-63
APPROVED FOR MSC		12/10/63
MIT/IL APPROVAL		DATE

STANDOFF

SCALE	UNIT WT.	CODE IDENT.
1/1	—	—

MIT
INSTRUMENTATION
LABORATORY
CAMBRIDGE, MASS.

DWG. NO.

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

NASA DRAWING NO.
1015429

SHEET 1 OF 1

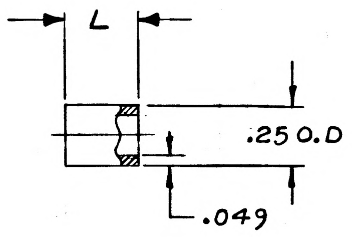
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015430

REVISIONS TDRR 05153

ZONE	SYM	DESCRIPTION	DATE	APPROVAL

PART NO.	L
1015430-1	.12
-2	.18
-3	.31



NOTES:
1. FINISH: BLACK ANODIZED PER MIL-A-8625
TYPE II (SURFURIC)

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 **DATE** 11/20/63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

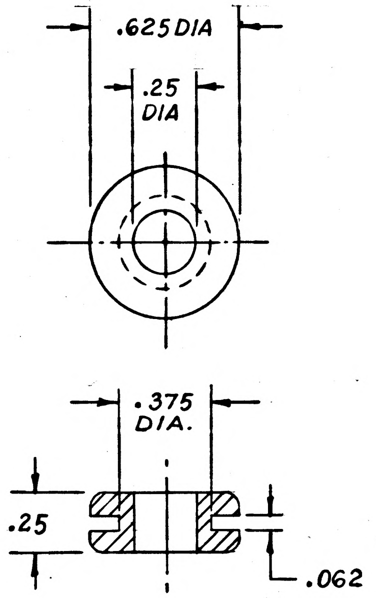
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES	MIT INSTRUMENTATION LAB CONTRACT NAS 9-153		SPACER, RELAY	MIT INSTRUMENTATION LABORATORY CAMBRIDGE, MASS.
			APPROVED	12/4/63		DWG. NO.
			CHECKED	12/4/63		MANNED SPACECRAFT CENTER HOUSTON TEXAS
		DO NOT SCALE THIS DRAWING	DRAWN R.J.J.	10-14-63		
	1900496	MATERIAL: ALUMINUM TUBING	APPROVED FOR MSC 12/16/63		SCALE NONE | UNIT WT. — | CODE IDENT. —	NASA DRAWING NO. 1015430
NEXT ASSY	USED ON		MIT/IL APPROVAL	DATE		SHEET 1 OF 1
APPLICATION						

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015431

REVISIONS TDRR 05153				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 **DATE** 11/10/63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

MASTER

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

MATERIAL:

MIT
INSTRUMENTATION LAB
CONTRACT
NAS 9-153

		DATE
APPROVED	M. J. O.	12/9/63
CHECKED		12/9/63
DRAWN	LWR	10-30-63
APPROVED FOR MSC	W. B.	12/10/63
MIT/IL APPROVAL		DATE

GROMMET, CABLE

SCALE	UNIT WT.	CODE IDENT.
2:1		

MIT
INSTRUMENTATION
LABORATORY
CAMBRIDGE, MASS.

DWG. NO.

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

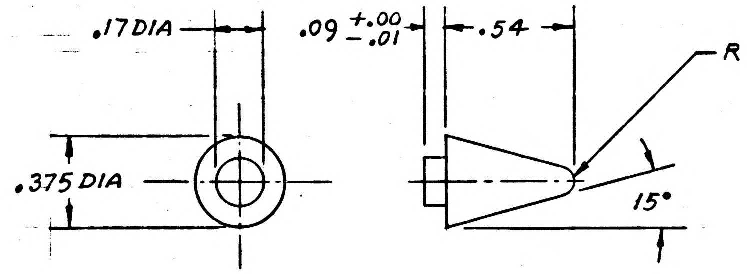
NASA DRAWING NO.
1015431

SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015433

REVISIONS		TDRR 05153		
ZONE	SYM	DESCRIPTION	DATE	APPROVAL



NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. BREAK SHARP EDGES .010 MAX.

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 **DATE** 11/10/63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL: ALUMINUM

MIT INSTRUMENTATION LAB
CONTRACT NAS 9-153

		DATE
APPROVED		12/4/63
CHECKED		12/4/63
DRAWN	LWR	10-18-63
APPROVED FOR MSC		
MIT/IL APPROVAL		DATE

PIN, LOCATING

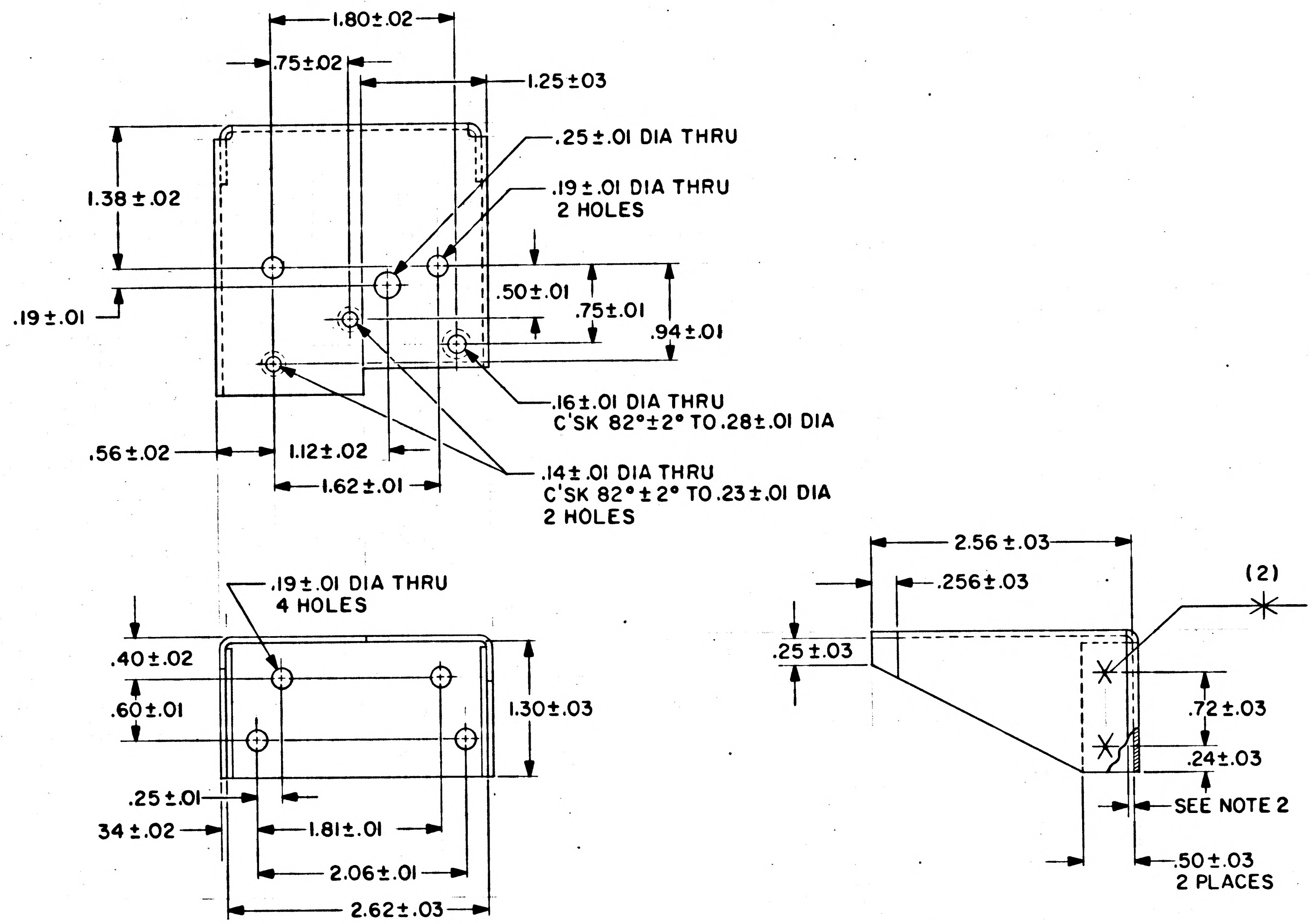
SCALE	UNIT WT.	CODE IDENT.
2:1		

MIT INSTRUMENTATION LABORATORY
CAMBRIDGE, MASS.
DWG. NO.
MANNED SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO. 1015433
SHEET 1 OF 1

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDR# 05153				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL


1.80±.02
.75±.02
1.25±03
.25±.01 DIA THRU
.19±.01 DIA THRU
2 HOLES
1.38±.02
.19±.01
.50±.01
.75±.01
.94±.01
.16±.01 DIA THRU
C'SK 82°±2° TO .28±.01 DIA
.56±.02
1.12±.02
1.62±.01
.14±.01 DIA THRU
C'SK 82°±2° TO .23±.01 DIA
2 HOLES
.19±.01 DIA THRU
4 HOLES
.40±.02
.60±.01
1.30±.03
.25±.01
34±.02
1.81±.01
2.06±.01
2.62±.03
2.56±.03
.256±.03
.25±.03
(2)
.72±.03
.24±.03
SEE NOTE 2
.50±.03
2 PLACES

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. BEND RELIEF .06±.02 QTY AS REQ.
3. ALL BEND RADII .06.
4. *FINISH: BLACK ANODIZED PER MIL-A-8625 TYPE I (CHROMIC)*

FOR INFORMATION ONLY

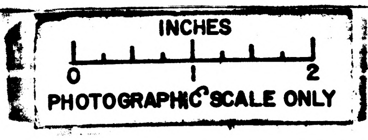
CLASS B RELEASE TDR No. 05153 **DATE** 10 DEC 63

MASTER

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

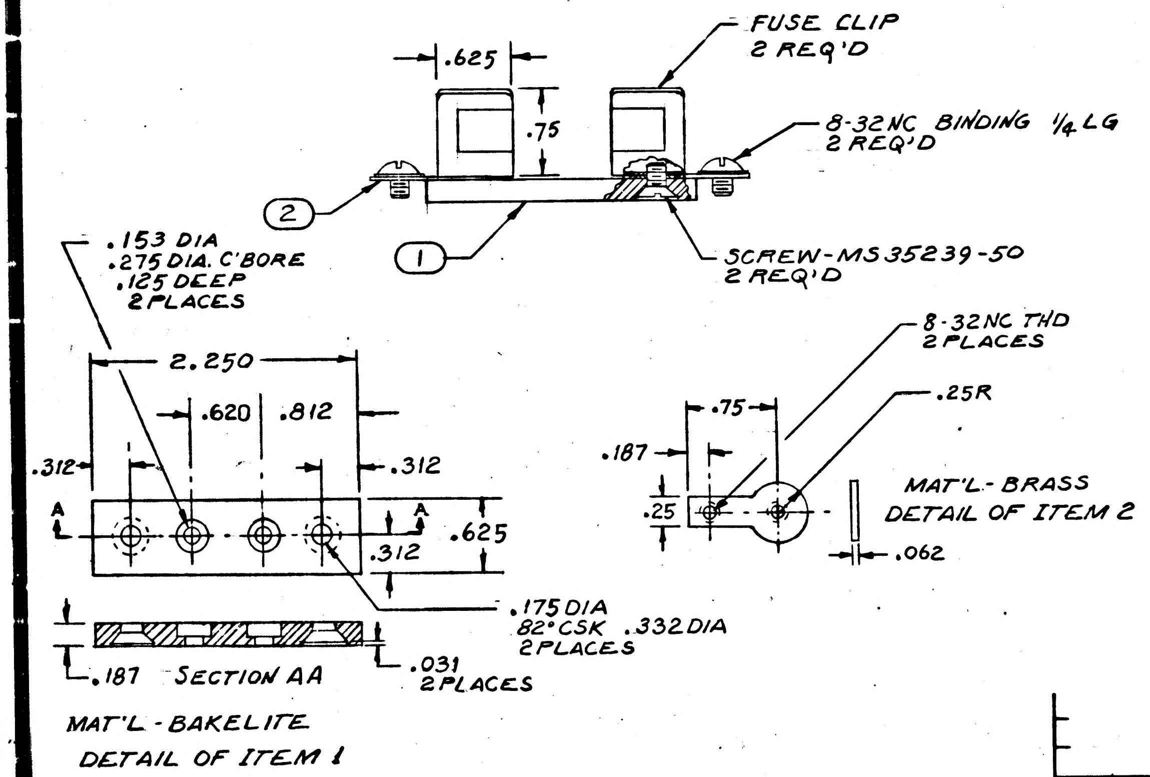
	1900496	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES	MIT INSTRUMENTATION LAB CONTRACT NAS 9-153	*BRACKET, BELL MOUNTING*		MIT INSTRUMENTATION LABORATORY CAMBRIDGE, MASS. DWG. NO.
NEXT ASSY	USED ON	DO NOT SCALE THIS DRAWING	APPROVED [illegible] 12/4/63 CHECKED [illegible] 12/4/63 DRAWN E. J. J. 10-15-63			MANNED SPACECRAFT CENTER HOUSTON TEXAS
APPLICATION		MATERIAL: 1160 .063 ALUMINUM (5052S-H32)	APPROVED FOR MSC W. J. [illegible] 12/21/63 MIT/IL APPROVAL DATE W Kupfer 10 Dec 63	SCALE 1/1	UNIT WT. —— CODE IDENT. ——	NASA DRAWING NO. 1015434 SHEET 1 OF 1


INCHES
0
1
2
PHOTOGRAPHIC SCALE ONLY

1015435

REVISIONS TDRR 05153

SYM	DESCRIPTION	DATE	APPROVAL


FUSE CLIP
2 REQ'D
.625
.75
8-32NC BINDING 1/4 LG
2 REQ'D
2
1
SCREW-MS35239-50
2 REQ'D
.153 DIA
.275 DIA. C'BORE
.125 DEEP
2 PLACES
2.250
.620
.812
.312
.312
A
A
.625
.312
.175 DIA
82° CSK .332 DIA
2 PLACES
.187
SECTION AA
.031
2 PLACES
MAT'L - BAKELITE
DETAIL OF ITEM 1
8-32NC THD
2 PLACES
.25R
.75
.187
.25
MAT'L - BRASS
DETAIL OF ITEM 2
.062

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 **DATE** 11/20/63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

MATERIAL:

MIT
INSTRUMENTATION LAB
CONTRACT
NAS 9-153

		DATE
APPROVED	M J O'Sullivan	12/4/63
CHECKED		12/4/63
DRAWN	LWR	10-7-63
APPROVED FOR MSC		12/10/63
BY DIRECTION		

FLASHER MOUNTING
ASSEMBLY

SCALE	UNIT WT.	CODE IDENT.
1:1		

MIT
INSTRUMENTATION
LABORATORY
CAMBRIDGE, MASS.

DWG. NO.

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

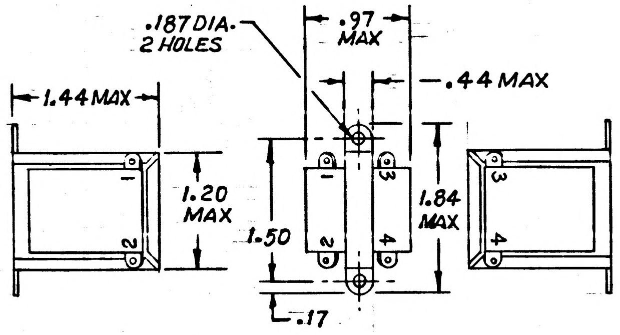
NASA DRAWING NO.
1015435

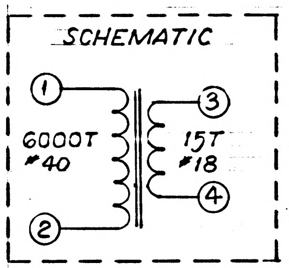
SHEET OF

MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS			TDRR 05153	
ZONE	SYM	DESCRIPTION	DATE	APPROVAL





WINDING DATA

WINDING	TURNS	AWG WIRE SIZE
PRI	6000	40
SEC	15	18

LAMINATIONS - SIZE E1 375
STACK 3/8" 1X1
GRADE M7X
THICKNESS .014

CORE TUBE:
MAT'L NYLON BOBBIN
PRIMARY-TURNS: 6000
WIRE SIZE & TYPE: 40
SEC. NO.1-TURNS: 15
WIRE SIZE & TYPE: 18
MAGNET INSULATATION: ELECTRICAL TAPE
IMPREGNATION-MATL: VARNISH
FOR TEST REQUIREMENTS SEE SHEET 2.

HI-POT VOLTAGE	CORE PRI	CORE SEC1	PRI SEC1
VOLTS RMS 60 CPS	500	500	500

DURATION OF HI-POT TEST - 60 SECONDS
INSULATION RESISTANCE:
100 MEGOHMS MIN AT 500 VOLTS DC

FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 05153 **DATE** 11/10/63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

MASTER

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL:

MIT
INSTRUMENTATION LAB
CONTRACT
NAS 9-153

		DATE
APPROVED	M.O. [illegible]	12/4/63
CHECKED	M.O.	2/4/63
DRAWN	L.W.R.	10-17-63
APPROVED FOR MSC	[illegible]	12/10/63
MIT/IL APPROVAL		DATE
[illegible]		10 Dec 63

TRANSFORMER,
CURRENT

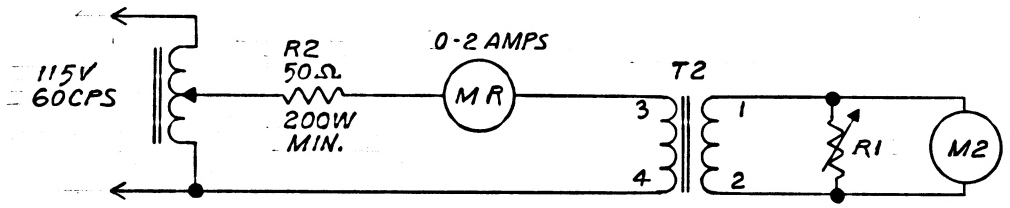
SCALE	UNIT WT.	CODE IDENT.
1:1		

MIT
INSTRUMENTATION
LABORATORY
CAMBRIDGE, MASS.
DWG. NO.
MANNED
SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO.
1015436
SHEET 1 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015436

REVISIONS				TDRR 05153
ZONE	SYM	DESCRIPTION	DATE	APPROVAL



CALIBRATION PROCEDURE:

A. CONNECT TRANSFORMER AND METER (M2) PER SCHEMATIC. ADJUST R1 TO 3K OHMS INITIALLY.
B. ADJUST CURRENT TO 2.0 AMPERES AS READ ON MR.
C. ADJUST R1 UNTIL M2 READS 2.0 ±0.05% AMPS.
D. CHECK METER CALIBRATION AT 0.5, 1.0, AND 1.5 AMPERES. M2 TO READ WITHIN 0.1 AMPERE OF MR AT THE THREE POINTS.
E. INSTALL A FIXED RESISTOR OF THE PROPER VALUE. RECHECK CALIBRATION WITH THE FIXED RESISTOR
F. R1 SHOULD BE APPROX. 2.49K

NOTES:

1. METER (M2) AND TRANSFORMER (T2) TO BE MAINTAINED AND MARKED AS MATCHED SET

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05133 **DATE** 10/10/63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

MATERIAL:

MASTER

MIT
INSTRUMENTATION LAB
CONTRACT
NAS 9-153

		DATE
APPROVED		12/4/63
CHECKED		12/4/63
DRAWN	LWR	10-21-63
APPROVED FOR MSC		12/10/63
MIT/IL APPROVAL		DATE
		10/1/63

TRANSFORMER, CURRENT
(TRANS. AND METER MATCHING)

SCALE	UNIT WT.	CODE IDENT.

MIT
INSTRUMENTATION
LABORATORY
CAMBRIDGE, MASS.

DWG. NO.

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

NASA DRAWING NO.
1015436

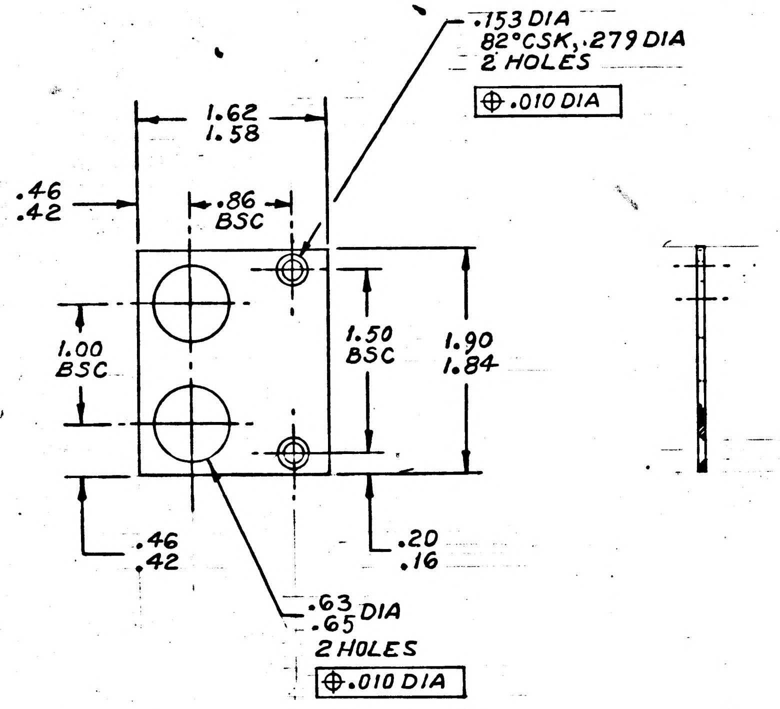
SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015437 A

ZONE	SYM	DESCRIPTION	DATE	APPROVAL
	A	REVISED PER TDRR 18190	8/13/65	WK

REVISIONS TDRR 05153



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. BREAK SHARP EDGES .010 MAX
3. FINISH: ZINC CHROMATE PRIMER PER MIL-P-6889 TYPE I, LIGHT GRAY SEMI-GLOSS ENAMEL TT-E-529 CLASS B COLOR 2644 PER FED STD 595

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1021572	1900496

APPLICATION

MASTER

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

MATERIAL: .075 CRS

MIT INSTRUMENTATION LAB
CONTRACT NAS 9-153

		DATE
APPROVED	M. J. O'Kelly	12/4/63
CHECKED		12/4/63
DRAWN	LWR	10-16-63
APPROVED FOR MSC	W. J. Swingle	12/10/63
MIT AL APPROVAL	W Kupfer	10 Dec 63

BRACKET, TRANSFORMER MOUNTING

SCALE	UNIT WT.	CODE IDENT.
1:1		80230

MIT INSTRUMENTATION LABORATORY
CAMBRIDGE, MASS.

DWG. NO.

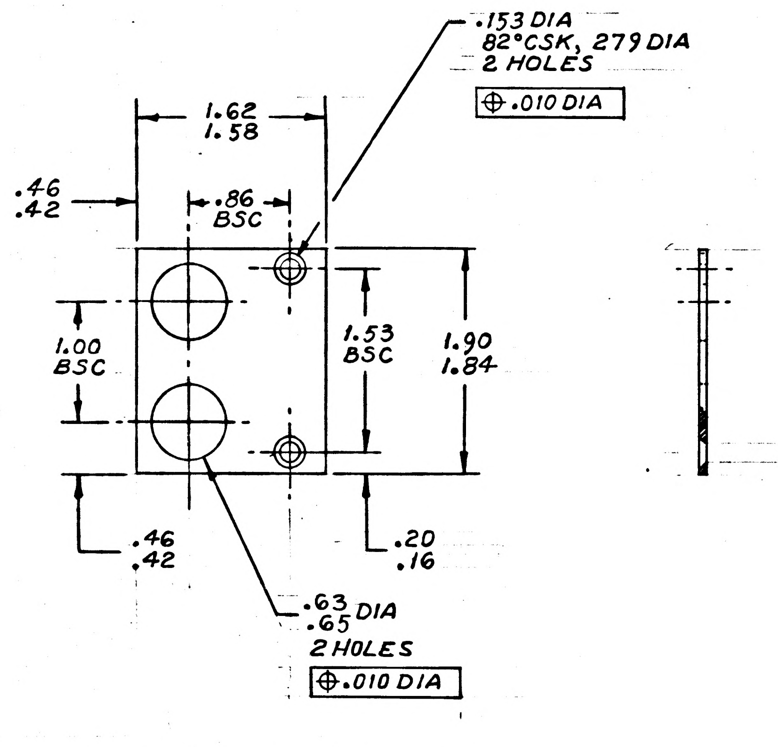
MANNED SPACECRAFT CENTER
HOUSTON TEXAS

NASA DRAWING NO. 1015437

SHEET 1 OF 1

1015437

REVISIONS		TDRR 05153		
ZONE	SYM	DESCRIPTION	DATE	APPROVAL



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 **DATE** 11/20/67

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. BREAK SHARP EDGES .010 MAX
3. FINISH: ZINC CHROMATE PRIMER PER MIL-P-6889 TYPE I, LIGHT GRAY SEMI-GLOSS ENAMEL TT-E-529 CLASS B COLOR 2644 PER FED STD 595

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

MASTER

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

MATERIAL:
.075 CRS

M I T
INSTRUMENTATION LAB
CONTRACT
NAS 9-153

		DATE
APPROVED	M. J. O'Keefe	12/4/63
CHECKED	MJOS	12/4/63
DRAWN	LWR	10-16-63

APPROVED FOR MSC
W. J. Dwight 12/4/63

MIT/IL APPROVAL	DATE
W. Kupfer	10 Dec 63

BRACKET,
TRANSFORMER
MOUNTING

SCALE	UNIT WT.	CODE IDENT.
1:1		

M I T
INSTRUMENTATION
LABORATORY
CAMBRIDGE, MASS.

DWG. NO.

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

NASA DRAWING NO.
1015437

SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES REV A WITH CHANGES PER TDRR 18189	R.J.			

ORIGIN	TERMINATION	DESTINATION	TERMINATION	COLOR	LENGTH	ROUTE (SEE NOTE)	AWG	REV
K1-5		AR2-10		ORN	OPT		22	
K1-4		K3-2		GRY				
K1-3		K2-8		RED				
K1-2		L1-1		BLU		A		
K1-1		AR2-9		GRN				
K1-8		T1-1		BRN				
K1-7		K8-2 K6-2		BLK				
K4-2		T1-2		ORN				
K4-3		K3-3		GRY				
K4-4		K8-10 S3-1C		BLK		A		
K4-5		K4-1 S3-2NO		YEL		A		
K4-11		K3-10		RED				
K4-10		K7-3		BRN				
K4-8		DS5-1		GRN		A		
K4-7		K3-8		BRN				
K4-6		DS3-1		GRY		A		
K3-3		DS1-2	MS 25036-2	GRY		A		
K3-4		K3-7 L1-2		RED		A		
K3-5		K3-1 S3-1NO		BLU		A		
K3-6		DS4-1		YEL				
K3-7		S3-2C		RED				
K3-11		K5-2		VIO				
K8-6		S3-1NO		BLU		A		
K8-7		K8-4 K8-10		RED				
K8-1		K8-5		GRY				
K8-9		S3-2NO		YEL		A		
K8-5		K6-7		GRY				
K8-3		K6-3		BRN				
K8-2		K5-1		BLK				
K5-1		K2-7		BLK				
K5-5		S2-2NC		ORN		A		
K5-3		S2-2NO		BRN				
K5-4		F1-2		GRY				
K5-6		J3-A		YEL				
K5-8		J3-C		RED				
K5-7		J3-B		VIO				
K6-8		L1-2 K7-8		RED		A		
AR2-1		AR1-1		RED				
AR2-2		AR1-2		BLK				
AR2-3		M1(+) R11-1	MS 25036-50	GRY		A B,A		
AR2-4		R12-GRN S6-2C		BRN		A		
AR2-5		K7-1		YEL				
AR2-6		E1 J2-G		WHT				
AR2-7		K2-1		BRN				
AR2-8		K2-5		YEL				
AR2-11		R7-GRN		GRN		A		
AR2-12		R8-RED		GRY				
AR2-13		R7-RED		BRN				
T1-2		K2-4		ORN				
T1-3		T2-3		BLU		A	18	
T1-4		TP-4		VIO			18	
AR1-1		F1-1		RED			22	
AR1-2		S7-1	MS 25036-49	BLK				
AR1-3		K2-3		BLU				
AR1-4		R1-CW		GRN		B,A		
AR1-5		E2		BRN				
AR1-6		J2-F		YEL				

ORIGIN	TERMINATION	DESTINATION	TERMINATION	COLOR	LENGTH	ROUTE (SEE NOTE)	AWG	REV
K2-7		F2-1		BLK	OPT		22	
K7-5		R10-2		VIO		B,A		
K7-2		DS6-1		WHT		A		
K7-8		TP2		RED				
GRD 1	MS 25036-48	GRD 2	MS 25036-2	WHT				
S7-1	MS 25036-49	TP1		BLK				
S7-2	MS 25036-49	DS1-1	MS 25036-2	WHT				
DS7-1		F2-2		YEL		B		
DS7-2		S2-3C		BLK				
R13-1		R1-CCW		BLU				
R3-1		S4-2NO		BLK				
R3-2		R4-2		WHT			SEE NOTE C	
R4-1		S5-2NO		BLK	OPT	B	22	
R4-2		R11-2		WHT				
R5-1		S6-2NO		BLK		B		
R5-2		R11-2		WHT			SEE NOTE C	
R11-1		R10-1		GRY	OPT		22	
R11-2		J2-C		WHT		B		
R10-2		R9-2		VIO				
R9-1		S6-2C		BRN		B		
DS6-2		F2-1 DS5-2		BLK				
DS5-2		DS3-2		BLK				
GRD-2	MS 25036-2	J1-C		WHT				
DS3-2		DS4-2		BLK				
DS4-2		DS2-2		BLK				
DS2-1		F1-1 TP2		RED				
DS2-2		TP1		BLK				
S1-1		F1-2		GRY				
S1-2		J1-A		BLK				
S1-3		F2-2		YEL				
S1-4		J1-B		RED				
S3-1C		S3-2C		RED				
S4-2C		S5-2NC		BRN				
S4-2NC		J2-E		BRN				
S5-2C		S6-2NC		BRN				
M1(-)	MS 25036-50	R12-RED		BLU				
T2-1		M2-1		BRN				
T2-2		M2-2		ORN				
T2-4		TP3		GRY			18	
R1-RED		R1-CW		GRN			22	
R13-2		J2-D		WHT			22	
F3-1		TP4 F5-1		VIO			18	
F3-2		J2-A		RED				
F4-1		TP3 F6-1		GRY				
F4-2		J2-B		BLK				
F5-2		J2-H		RED				
F6-2		J2-J		BLK				
R7-RED		R7-YEL		BRN			SEE NOTE C	
R7-YEL		R8-GRN		BRN	OPT		22	
R8-RED		R8-YEL		GRY			SEE NOTE C	
R12-RED		R12-YEL		BLU			SEE NOTE C	
K7-4		K3-4		RED				
K7-6		K3-3		GRY				
R2-1		R13-1		BLU				
J2-K		R2-2		WHT				
R14-1		T2-1		BRN				
R14-2		T2-2		ORN				

NOTES:
- A. ROUTE THRU 1015431.
- B. ROUTE THRU 1015432.
- C. USE ATTACHED LEADS.
- D. WIRE: AWG 18 & 22 VINYL COVERED LEADWIRE PER MIL-W-16878/2, TYPE C, LENGTH AND SKINNING AS REQUIRED.
- E. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

REPLACES REV A WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING

MATERIAL —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN R.J.J. 12-29-64
CHECKED B.K. 2/9/65
APPROVED 2/9/65
APPROVED W. Watson 2/16/65
APPROVED MIT W Kaufer 13 Apr 65
APPROVED MSC 4/13/65
DATE

APOLLO IMU
PORTABLE TEMPERATURE
CONTROLLER
WIRING ASSEMBLY

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1015441
SCALE —
SHEET 1 OF 1

1015441 B

MASTER

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
B		REPLACES REV A WITH CHANGES PER TDRR 18189	R.J.			
C		REVISED PER TDRR 21483				

ORIGIN	TERMINATION	DESTINATION	TERMINATION	COLOR	LENGTH	ROUTE (SEE NOTE)	AWG	REV
K1-5		AR2-10		ORN	OPT		22	
K1-4		K3-2		GRY				
K1-3		K2-8		RED				
K1-2		L1-1		BLU		A		
K1-1		AR2-9		GRN				
K1-8		T1-1		BRN				
K1-7		K8-2 K6-2		BLK				
K4-2		T1-2		ORN				
K4-3		K3-3		GRY				
K4-4		K8-10 S3-1C		BLK		A		
K4-5		K4-1 S3-2NO		YEL		A		
K4-11		K3-10		RED				
K4-10		K7-3		BRN				
K4-8		DS5-1		GRN		A		
K4-7		K3-8		BRN				
K4-6		DS3-1		GRY		A		
K3-3		DS1-2	MS 25036-2	GRY		A		
K3-4		K3-7 L1-2		RED		A		
K3-5		K3-1 S3-1NO		BLU		A		
K3-6		DS4-1		YEL				
K3-7		S3-2C		RED				
K3-11		K5-2		VIO				
K8-6		S3-1NO		BLU		A		
K8-7		K8-4 K8-10		RED				
K8-1		K8-5		GRY				
K8-9		S3-2NO		YEL		A		
K8-5		K6-7		GRY				
K8-3		K6-3		BRN				
K8-2		K5-1		BLK				
K5-1		K2-7		BLK				
K5-5		S2-2NC		ORN		A		
K5-3		S2-2NO		BRN				
K5-4		F1-2		GRY				
K5-6		J3-A		YEL				
K5-8		J3-C		RED				
K5-7		J3-B		VIO				
K6-5		L1-2 K7-8		RED		A		
AR2-1		AR1-1		RED				
AR2-2		AR1-2		BLK				
AR2-3		M1(+) R11-1	MS 25036-50	GRY		A B,A		
AR2-4		R12-GRN S6-2C		BRN		A		
AR2-5		K7-1		YEL				
AR2-6		E1 J2-G		WHT				
AR2-7		K2-1		BRN				
AR2-8		K2-5		YEL				
AR2-11		R7-GRN		GRN		A		
AR2-12		R8-RED		GRY				
AR2-13		R7-RED		BRN				
T1-2		K2-4		ORN				
T1-3		T2-3		BLU		A	18	
T1-4		TP-4		VIO			18	
AR1-1		F1-1		RED			22	
AR1-2		S7-1	MS 25036-49	BLK				
AR1-3		K2-3		BLU				
AR1-4		R1-CW		GRN		B,A		
AR1-5		E2		BRN				
AR1-6		J2-F		YEL				

ORIGIN	TERMINATION	DESTINATION	TERMINATION	COLOR	LENGTH	ROUTE (SEE NOTE)	AWG	REV
K2-7		F2-1		BLK	OPT		22	
K7-5		R10-2		VIO		B, A		
K7-2		DS6-1		WHT		A		
K7-8		TP2		RED				
GRD 1	MS 25036-48	GRD 2	MS 25036-2	WHT				
S7-1	MS 25036-49	TP1		BLK				
S7-2	MS 25036-49	DS1-1	MS 25036-2	WHT				
DS7-1		F2-2		YEL		B		
DS7-2		S2-2C		BLK				
R13-1		R1-CCW		BLU				
R3-1		S4-2NO		BLK				
R3-2		R4-2		WHT			SEE NOTE C	
R4-1		S5-2NO		BLK	OPT	B	22	
R4-2		R11-2		WHT				
R5-1		S6-2NO		BLK		B		
R5-2		R11-2		WHT			SEE NOTE C	
R11-1		R10-1		GRY	OPT		22	
R11-2		J2-C		WHT		B		
R10-2		R9-2		VIO				
R9-1		S6-2C		BRN		B		
DS6-2		F2-1 DS5-2		BLK				
DS5-2		DS3-2		BLK				
GRD-2	MS 25036-2	J1-C		WHT				
DS3-2		DS4-2		BLK				
DS4-2		DS2-2		BLK				
DS2-1		F1-1 TP2		RED				
DS2-2		TP1		BLK				
S1-1		F1-2		GRY				
S1-2		J1-A		BLK				
S1-3		F2-2		YEL				
S1-4		J1-B		RED				
S3-1C		S3-2C		RED				
S4-2C		S5-2NC		BRN				
S4-2NC		J2-E		BRN				
S5-2C		S6-2NC		BRN				
M1(-)	MS 25036-50	R12-RED		BLU				
T2-1		M2-1		BRN				
T2-2		M2-2		ORN				
T2-4		TP3		GRY			18	
R1-RED		R1-CW		GRN			22	
R13-2		J2-D		WHT			22	
F3-1		TP4 F5-1		VIO			18	
F3-2		J2-A		RED				
F4-1		TP3 F6-1		GRY				
F4-2		J2-B		BLK				
F5-2		J2-H		RED				
F6-2		J2-J		BLK				
R7-RED		R7-YEL		BRN			SEE NOTE C	
R7-YEL		R8-GRN		BRN	OPT		22	
R8-RED		R8-YEL		GRY			SEE NOTE C	
R12-RED		R12-YEL		BLU			SEE NOTE C	
K7-4		K3-4		RED				
K7-6		K3-3		GRY				
R2-1		R13-1		BLU				
J2-K		R2-2		WHT				
R14-1		T2-1		BRN				
R14-2		T2-2		ORN				

NOTES:

A. ROUTE THRU 1021499-9 GROMMET.

B. ROUTE THRU 1015985-205 CABLE CLAMP.

C. USE ATTACHED LEADS.

D. WIRE: AWG 18 & 22 VINYL COVERED LEADWIRE PER MIL-W-16878/2, TYPE C, LENGTH AND SKINNING AS REQUIRED.

E. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

REPLACES REV A WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN R.J.J. 12-29-64
CHECKED
APPROVED
APPROVED

APOLLO IMU
PORTABLE TEMPERATURE
CONTROLLER
WIRING ASSEMBLY

APPROVED MIT
APPROVED MSC
DATE

CODE IDENT NO. 80230
SIZE E
DRAWING NO. 1015441
SCALE —
SHEET 1 OF 1

1015441 C

REVISIONS TDRR 05153				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL

ORIGIN	TERMINATION	DESTINATION	TERMINATION	COLOR	LENGTH	ROUTE	GAUGE 8 MATL SPEC	REV
K1-5		A1-10		white	opt		22	
K1-4		K3-2						
K1-3		K2-8						
K1-2		L1-1				A		
K1-1		A1-9						
K1-8		T1-1						
K1-7		K8-2						
		K6-2						
K4-2		T1-2						
K4-3		K3-3						
K4-4		K8-10						
		S3-1C				A		
K4-5		K4-1						
		S3-2NO				A		
K4-11		K3-10						
K4-10		K7-3						
K4-8		DS5-1				A		
K4-7		K3-8						
K4-6		DS3-1				A		
K3-3		XDSI-2	MS 25036-2			A		
K3-4		K3-7						
		L1-2				A		
K3-5		K3-1						
		S3-1NO				A		
K3-6		DS4-1				A		
K3-7		S3-2C				A		
K3-11		K5-2						
K8-6		S3-1NO				A		
K8-7		K8-4						
		K8-10						
K8-1		K8-5						
K8-9		S3-2NO				A		
K8-5		K6-7						
K8-3		K6-3						
K8-2		K5-1						
K5-1		K2-7						
K5-5		S2-2NC				A		
K5-3		S2-2NO						
K5-4		XF1-2						
K5-6		J3-A						
K5-8		J3-C						
K5-7		J3-B						
K6-5		L1-2				A		
		K7-8						
A1-1		A2-1						
A1-2		A2-2						
A1-3		M1 +	MS 25036-50			A		
		R11-1				B A		
A1-4		R12-GRN				A		
		S6-2C				A		
A1-5		K7-1						
A1-6		A2-5						
A1-7		K2-1						
A1-8		K2-5						
A1-11		R7-GRN				A		
A1-12		R8-RED				A		
A1-13		R7-RED		white	opt	A	22	
A1-14		R6-1					C	
A1-15		R6-2					C	
		R14-1					C	
A1-16		R14-2					C	

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 DATE 10 DEC 63

MASTER

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

MATERIAL:

MIT INSTRUMENTATION LAB
CONTRACT NAS 9-153 DATE
APPROVED 12/4/63
CHECKED 12/4/63
DRAWN 11-1-63
APPROVED FOR MSC 12/10/63
MIT/IL APPROVAL DATE 10 Dec 63

APOLLO IMU
PORTABLE TEMPERATURE
CONTROLLER

WIRING ASSEMBLY

SCALE | UNIT WT. | CODE IDENT.

MIT
INSTRUMENTATION LABORATORY
CAMBRIDGE, MASS.

DWG. NO.

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

NASA DRAWING NO.
1015441

SHEET 1 OF 3

1015441

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

ORIGIN	TERMINATION	DESTINATION	TERMINATION	COLOR	LENGTH	ROUTE	GAUGE & MAT'L SPEC	REV
T1-2		K2-4		white	opt		22	
T1-3		T2-3				A		
T1-4		TP-4				A		
A2-1		XF1-1				A		
A2-2		XS7-1	MS 25036-49			A		
A2-3		K2-3						
A2-4		R2-2				B A		
A2-5		J2-G						
A2-6		J2-F						
K2-7		XF2-1						
K7-5		R10-2				B A		
K7-2		DS6-1				A		
K7-8		TP2				A		
Ground 1	MS 25036-48	Ground 2	MS 25036-2			A		
XS7-1	MS 25036-49	TP1						
XS7-2	MS 25036-49	XDS1-1	MS 25036-2					
DS7-1		XF2-2				B		
DS7-2		S2-2C				B		
R1-1		R1-CCW				B		
R3-1		S4-2NO		white	opt	B	22	
R3-2		R4-2					C	
R4-1		S5-2NO		white	opt	B	22	
R4-2		R11-2		white	opt		22	
R5-1		S6-2NO		white	opt	B	22	
R5-2		R11-2					C	
R11-1		R10-1		white	opt		22	
R11-2		J2-C				B		
R10-2		R9-2						
R9-1		S6-2C				B		
DS6-2		XF2-1						
		DS5-2						
DS5-2		DS3-2						
Ground 2	MS 25036-2	J1-C						
DS3-2		DS4-2						
DS4-2		DS2-2						
DS2-1		XF1-1						
		TP2						
DS2-2		TP1						
S1-1		XF1-2						
S1-2		J1-A						
S1-3		XF2-2						
S1-4		J1-B						
S3-1C		S3-2C						
S4-2C		S5-2NC						
S4-2NC		J2-E						
S5-2C		S6-2NC						
M1 -	MS 25036-50	R12-RED						
T2-1		M2-1						
T2-2		M2-2						
T2-4		TP3						
R1-RED		R1-CW						
R1-CW		J2-D						
XF3-1		TP3						
		XF5-1						
XF3-2		J2-A						
XF4-1		TP4						
		XF6-1						
XF4-2		J2-B						
XF5-2		J2-H						
XF6-2		J2-J		white	opt		22	
R7-RED		R7-YEL					C	

REVISIONS TDRR 05153				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL

MASTER

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 DATE 10 DEC 63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

MATERIAL:

MIT INSTRUMENTATION LAB
CONTRACT NAS 9-153

		DATE
APPROVED		12/4/63
CHECKED		12/4/63
DRAWN		11-1-63
APPROVED FOR MSC	W S [illegible]	12/4/63
MIT/IL APPROVAL	W [illegible]	10 Dec 63

APOLLO IMU
PORTABLE TEMPERATURE
CONTROLLER
WIRING ASSEMBLY

SCALE | UNIT WT. | CODE IDENT.

MIT
INSTRUMENTATION
LABORATORY
CAMBRIDGE, MASS.

DWG. NO.

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

NASA DRAWING NO.
1015441

SHEET 2 OF 3

1015441

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

ITEM	TERMINATION	DESTINATION	TERMINATION	COLOR	LENGTH	ROUTE	GAUGE & MAT'L SPEC	REV
R7-YEL		R8-GRN		white	opt		22	
R8-RED		R8-YEL					C	
R12-RED		R12-YEL					C	

NOTES:

A - Route Thru 1015431

B - Route Thru 1015432

C - Use Attached Leads

D - WIRE: NO. 22 VINYL COVERED LEADWIRE
PER MIL-W-16878/2A TYPE B
COLOR: WHITE
LENGTH AND SKINNING AS REQUIRED

REVISIONS TDRR 05153				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 **DATE** 10 DEC 63

MASTER

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
	1900496

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

MATERIAL:

MIT
INSTRUMENTATION LAB
CONTRACT
NAS 9-153

	DATE
APPROVED	12/4/63
CHECKED	12/4/63
DRAWN	11-1-63
APPROVED FOR MSC	12/10/63
MIT/IL APPROVAL	DATE
WK	10 Dec 63

APOLLO IMU
PORTABLE TEMPERATURE
CONTROLLER
WIRING ASSEMBLY

SCALE	UNIT WT.	CODE IDENT.

MIT
INSTRUMENTATION
LABORATORY
CAMBRIDGE, MASS.

DWG. NO.

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

NASA DRAWING NO.
1015441

SHEET 3 OF 3

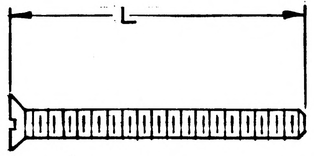
1015441

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

DASH NO.	SCREW SIZE	'L' DIM
1015450-1	NO.4(1.112)48NF-2A	1.250±.03
1015450-2	NO.4(1.112)48NF-2A	1.625±.03

1015450

REVISIONS				TDRR 05153
ZONE	SYM	DESCRIPTION	DATE	APPROVAL



NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. MATERIAL: CARBON STEEL, SPEC QQ-W-409 OR QQ-S-663
3. FINISH: CADMIUM PLATED, SPEC QQ-P-416, TYPE II, CLASS C

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 05153 **DATE** 11/10/63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

MASTER

	1900496
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

MATERIAL:
SEE NOTE 2

MIT INSTRUMENTATION LAB
CONTRACT
NAS 9-153

		DATE
APPROVED	M.J.[illegible]	12/4/63
CHECKED	MGO3	12/4/63
DRAWN	B.G.M.	11-20-63

APPROVED FOR MSC
W.D.[illegible] 12/10/63

MIT/IL APPROVAL	DATE
W.[illegible]	[illegible]

SCREW,
FLAT HEAD

SCALE	UNIT WT.	CODE IDENT.
2/1		

MIT
INSTRUMENTATION
LABORATORY
CAMBRIDGE, MASS.

DWG. NO.

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

NASA DRAWING NO.
1015450

SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS						21945
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 24179			30NOV65	

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. BOTH ENDS OF ROLLER CHAIN MUST END WITH ROLLER LINK PLATES AS SHOWN
3. DRILL $\frac{25}{128}$ DIA THRU AFTER ASSEMBLY OF ITEM (2) AND INSTALL ITEM (8)

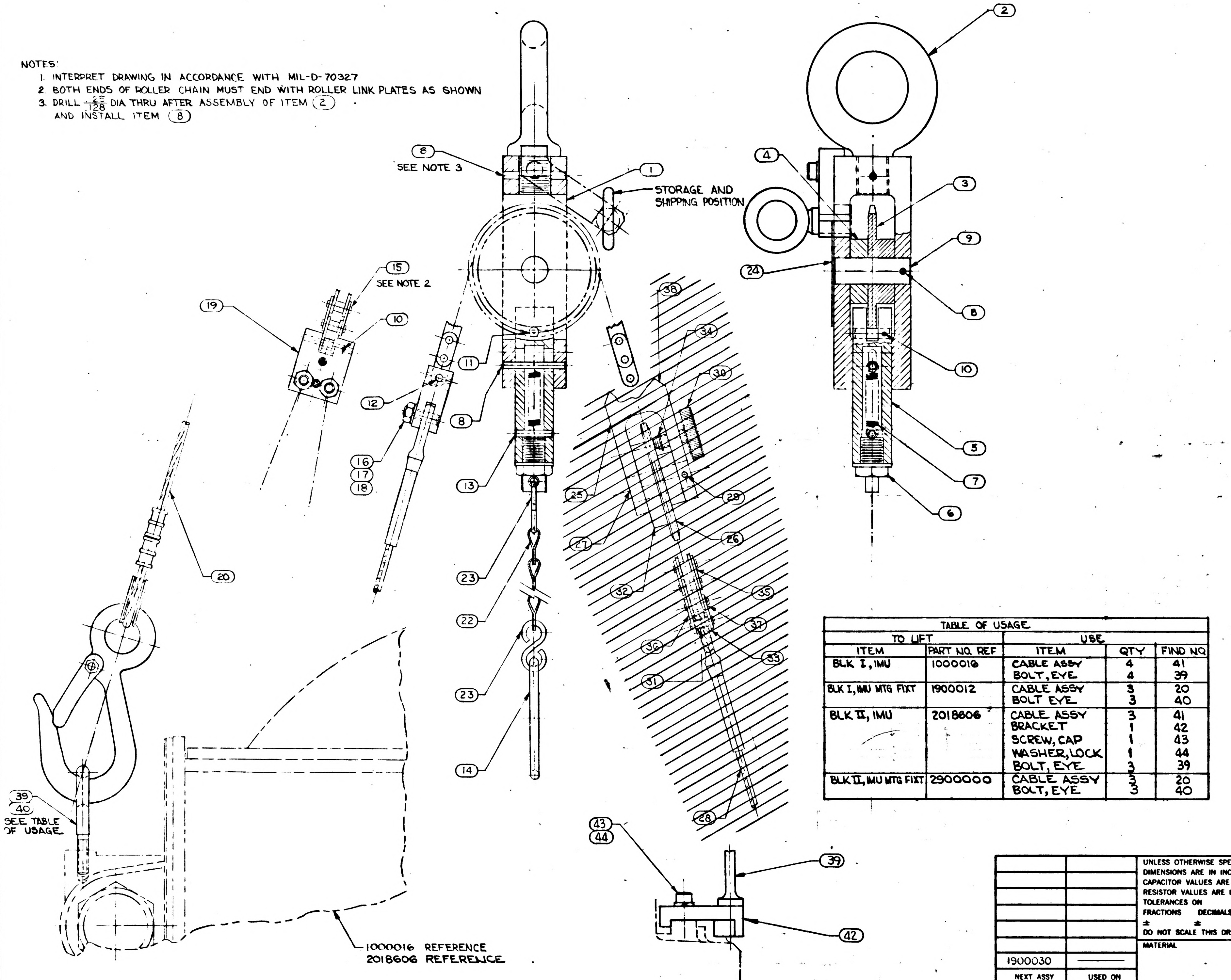


TABLE OF USAGE				
TO LIFT		USE		
ITEM	PART NO. REF	ITEM	QTY	FIND NO.
BLK I, IMU	1000016	CABLE ASSY BOLT, EYE	4 4	41 39
BLK I, IMU MTG FIXT	1900012	CABLE ASSY BOLT EYE	3 3	20 40
BLK II, IMU	2018606	CABLE ASSY BRACKET SCREW, CAP WASHER, LOCK BOLT, EYE	3 1 1 1 3	41 42 43 44 39
BLK II, IMU MTG FIXT	2900000	CABLE ASSY BOLT, EYE	3 3	20 40

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	MS35337-81		WASHER, LOCK	44
1	MS16996-10		SCREW, CAP	43
1	1021613		BRACKET	42
4	1021612		CABLE ASSY	41
3	1021615		BOLT, EYE	40
4	1021609		BOLT, EYE	39
~~1~~	~~[illegible]~~		~~PIN, SPRING~~	~~38~~
~~2~~	~~MIL-STD-421~~		~~CHAIN, SPRING CLIP FAST [illegible]~~	~~37~~
~~2~~	~~MIL-STD-421~~		~~CHAIN, CONNECTING LINK, [illegible]~~	~~36~~
~~1~~	~~MIL-STD-421~~	~~SEE NOTE 2~~	~~CHAIN ROLLER, [illegible]~~	~~35~~
~~1~~	~~[illegible]~~		~~SPRING, RETAINER~~	~~34~~
~~4~~	~~1021634-003~~		~~SPACER~~	~~33~~
~~1~~	~~1021634-002~~		~~SPACER~~	~~32~~
~~2~~	~~1021637~~		~~BUSHING~~	~~31~~
~~1~~	~~1021638~~		~~SCREW, THUMB~~	~~30~~
~~1~~	~~MS 171504~~		~~PIN, SPRING~~	~~29~~
~~2~~	~~1021632-002~~		~~CABLE ASSY~~	~~28~~
~~1~~	~~1021623-002~~		~~SHAFT, SPROCKET~~	~~27~~
~~1~~	~~1021636~~		~~SPROCKET (MODIFIED)~~	~~26~~
~~1~~	~~1021635~~		~~LINK, CHAIN & SPROCKET~~	~~25~~
1	1004260-161		NAME PLATE	24
2	MS 87006-13		HOOK, CHAIN-S	23
1	RR-C-271a, TYPE II, CLASS 3	STEEL	CHAIN SASH, NO. 35, 3½ LG	22
~~4~~	~~1021629-011~~		~~BOLT, EYE~~	~~21~~
3	1021632-003		CABLE ASSY	20
2	1021628		LINK, CHAIN & CABLE	19
6	MS-35337-80		WASHER, LOCK, SPLIT	18
6	MS-35649-84		NUT, PLAIN, HEX	17
6	1021621		SCREW, SHOULDER	16
1	MIL-STD-421	SEE NOTE 2	CHAIN ROLLER, 35-1RC-C, 12 3/8 LG ℄ TO ℄	15
1	RR-C-271a, TYPE VI		RING, 2 3/8" O.D., 2" I.D.	14
1	MS171530		PIN, SPRING	13
2	1021633		PIN, LINK	12
1	1021625		PIN, STOP	11
2	MS171436		PIN, SPRING	10
1	1021623-001		SHAFT, SPROCKET	9
3	MS171536		PIN, SPRING	8
1	MS24586-46		SPRING, HELICAL, EXTENSION	7
1	1021631		SCREW	6
1	1021627		PLUNGER	5
1	1021634-001		SPACER	4
1	1021622		SPROCKET, MODIFIED	3
1	1021626-011		BOLT, EYE, MODIFIED	2
1	1021630		HOUSING	1

-011 LIST OF MATERIALS

1015462-011 A

1900030	———
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN P. S. Greco 2-15-65
CHECKED 3-5-65
APPROVED L. Jedman 3/5/65
APPROVED
APPROVED MIT W. Kupfer
APPROVED MSC
DATE

IMU LIFT & HANDLING FIXTURE

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015462
SCALE 1/1
SHEET 1 OF 1

NOTICE WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 21945

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
Ⓜ A		REVISED PER TDRR 24179			30 NOV 65	
B		REVISED PER TDRR 26087	K	W.D.	18 NOV 66	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. BOTH ENDS OF ROLLER CHAIN MUST END WITH ROLLER LINK PLATES AS SHOWN
3. DRILL $\frac{.125}{.128}$ DIA THRU AFTER ASSEMBLY OF ITEM (2) AND INSTALL ITEM (8)
4. APPLY SEALING COMPOUND, ITEM (46) TO THE THREAD OF SCREW ITEM (45) UPON THE INSTALLATION OF NAME PLATE, ITEM (24).
5. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER TO ITEM (24) IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERALS TO BE .06 HIGH.

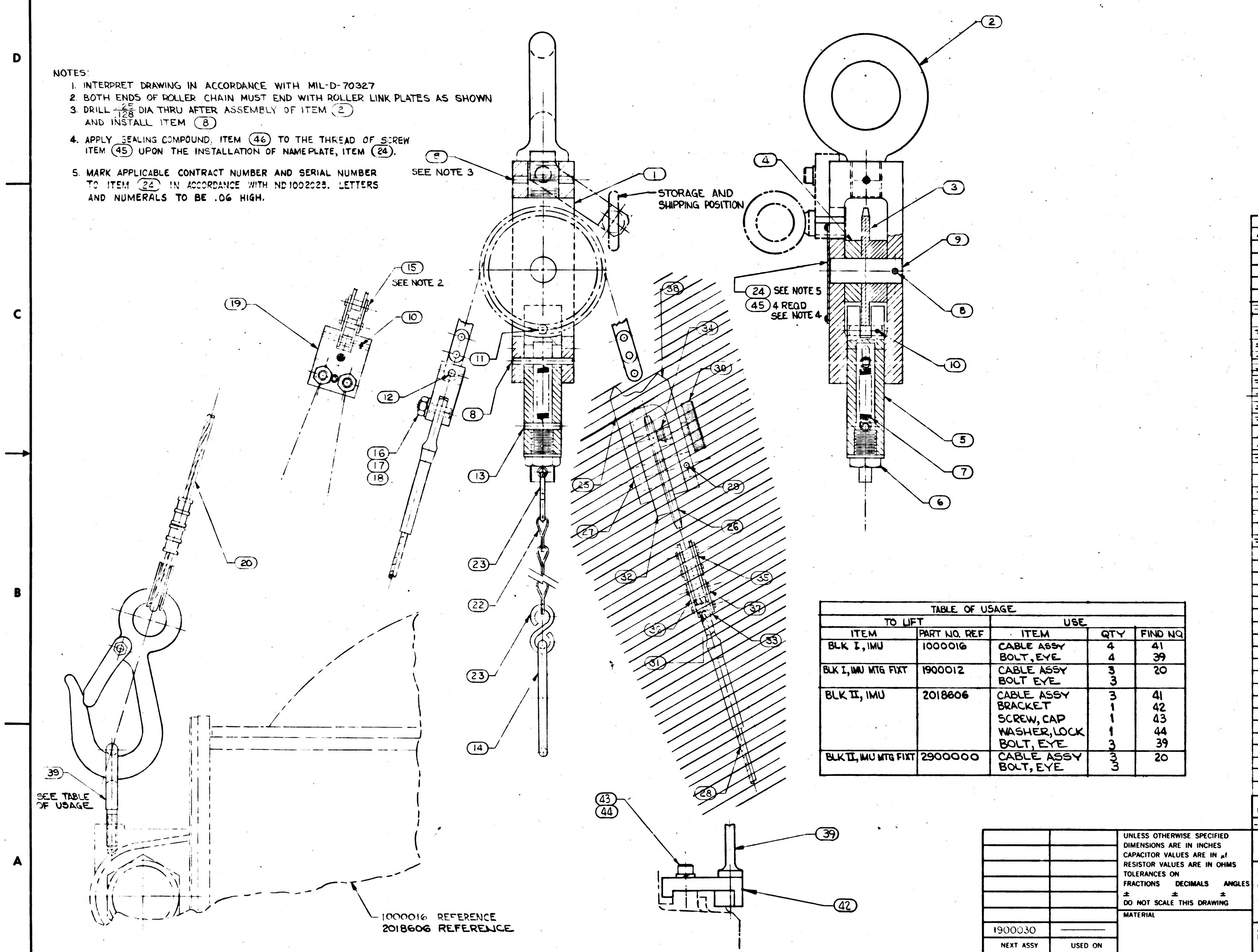


TABLE OF USAGE

TO LIFT		USE		
ITEM	PART NO. REF	ITEM	QTY	FIND NO
BLK I, IMU	1000016	CABLE ASSY BOLT, EYE	4 4	41 39
BLK I, IMU MTG FIXT	1900012	CABLE ASSY BOLT EYE	3 3	20
BLK II, IMU	2018606	CABLE ASSY BRACKET SCREW, CAP WASHER, LOCK BOLT, EYE	3 1 1 1 3	41 42 43 44 39
BLK II, IMU MTG FIXT	2900000	CABLE ASSY BOLT, EYE	3 3	20

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	MIL-S-22473 GRADE C		COMPOUND, SEALING & RETAINING (ES2544-3)	46
4	MS 35233-2		SCREW, PAN HD.	45
1	MS35337-81		WASHER, LOCK	44
1	MS16996-10		SCREW, CAP	43
1	1021613		BRACKET	42
4	1021612		CABLE ASSY	41
~~3~~	~~1021615~~		~~BOLT, EYE~~	~~40~~
4	1021609		BOLT, EYE	39
~~1~~	[illegible]		~~PIN, SPRING~~	~~38~~
~~2~~	~~MIL-STD-421~~		[illegible]	~~37~~
~~2~~	~~MIL-STD-421~~		[illegible]	~~36~~
~~1~~	~~MIL-STD-421~~	~~SEE NOTE 2~~	[illegible]	~~35~~
~~1~~	[illegible]		~~SPRING, RETAINER~~	~~34~~
~~4~~	~~1021634-003~~		~~SPACER~~	~~33~~
~~1~~	~~1021634-002~~		~~SPACER~~	~~32~~
~~2~~	~~1021637~~		~~BUSHING~~	~~31~~
~~1~~	~~1021638~~		~~SCREW, THUMB~~	~~30~~
~~1~~	~~MS 171504~~		~~PIN, SPRING~~	~~29~~
~~2~~	~~1021632-002~~		~~CABLE ASSY~~	~~28~~
~~1~~	~~1021623-002~~		~~SHAFT, SPROCKET~~	~~27~~
~~1~~	~~1021636~~		~~SPROCKET (MODIFIED)~~	~~26~~
~~1~~	~~1021635~~		~~LINK, CHAIN & SPROCKET~~	~~25~~
1	1004260-161		NAME PLATE	24
2	MS 87006-13		HOOK, CHAIN-S	23
1	RR-C-271a, TYPE II, CLASS 3	STEEL	CHAIN SASH, NO. 35, 3½ LG	22
~~4~~	~~1021629-011~~		~~BOLT, EYE~~	~~21~~
3	1021632-003		CABLE ASSY	20
2	1021628		LINK, CHAIN & CABLE	19
4	MS-35337-80		WASHER, LOCK, SPLIT	18
4	MS-35649-84		NUT, PLAIN, HEX	17
4	1021621		SCREW, SHOULDER	16
1	MIL-STD-421	SEE NOTE 2	CHAIN ROLLER, 35-1RC-C, 12 3/8 LG ℄ TO ℄	15
1	RR-C-271a, TYPE VI		RING, 2 3/8" O.D., 2" I.D.	14
1	MS171530		PIN, SPRING	13
2	1021633		PIN, LINK	12
1	1021625		PIN, STOP	11
2	MS171436		PIN, SPRING	10
1	1021623-001		SHAFT, SPROCKET	9
3	MS171536		PIN, SPRING	8
1	MS24586-46		SPRING, HELICAL, EXTENSION	7
1	1021631		SCREW	6
1	1021627		PLUNGER	5
1	1021634-001		SPACER	4
1	1021622		SPROCKET, MODIFIED	3
1	1021626-011		BOLT, EYE, MODIFIED	2
1	1021630		HOUSING	1

-011 LIST OF MATERIALS

1900030	———
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN µf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.

DRAWN 2-15-65
CHECKED 3-5-65
APPROVED 3/5/65
APPROVED
APPROVED MIT 26 Aug 65
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

IMU LIFT & HANDLING FIXTURE

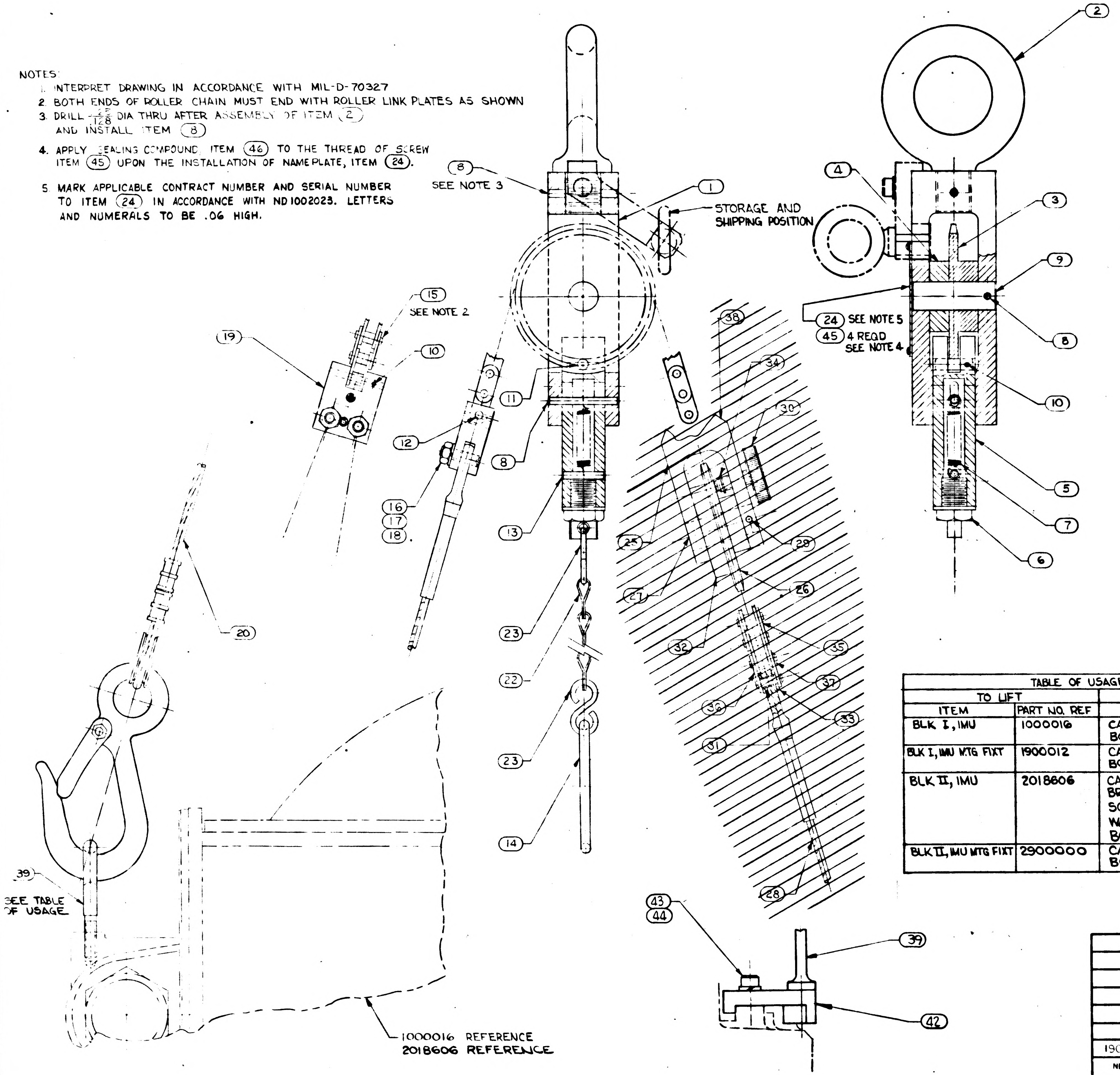
CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015462
SCALE 1/1
SHEET 1 OF 1

1015462-011 B

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. BOTH ENDS OF ROLLER CHAIN MUST END WITH ROLLER LINK PLATES AS SHOWN
3. DRILL $\frac{25}{128}$ DIA THRU AFTER ASSEMBLY OF ITEM (2) AND INSTALL ITEM (8)
4. APPLY SEALING COMPOUND, ITEM (46) TO THE THREAD OF SCREW ITEM (45) UPON THE INSTALLATION OF NAMEPLATE, ITEM (24).
5. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER TO ITEM (24) IN ACCORDANCE WITH ND1002023. LETTERS AND NUMERALS TO BE .06 HIGH.



REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRP 24179			30 NOV 65	
B		REVISED PER TDRR 26087			18 NOV 66	
C		REVISED PER TDRR 28977	JIMP	CP	25 MAY 66	

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	MIL-S-22473 GRADE C		COMPOUND, SEALING & RETAINING (ES2544-3)	46
4	MS 35233-2		SCREW, PAN HD.	45
1	MS35337-81		WASHER, LOCK	44
1	MS16996-10		SCREW, CAP	43
1	1021613		BRACKET	42
4	1021612		CABLE ASSY	41
~~3~~	~~1021615~~		~~BOLT, EYE~~	~~40~~
4	1021609		BOLT, EYE	39
~~1~~	~~MS171488~~		~~PIN, SPRING~~	~~38~~
~~2~~	~~MIL-STD-421~~		~~CHAIN, SPRING CLIP FAST. 35RC-C, CLASS 3~~	~~37~~
~~2~~	~~MIL-STD-421~~		~~CHAIN, CONNECTING LINK, 35-1RC-26L-C~~	~~36~~
~~1~~	~~MIL-STD-421~~	~~SEE NOTE 2~~	~~CHAIN ROLLER, 35-1RC-C, [illegible]~~	~~35~~
~~1~~	~~MS-[illegible]-1021~~		~~SPRING, RETAINER~~	~~34~~
~~4~~	~~1021634-003~~		~~SPACER~~	~~33~~
~~1~~	~~1021634-002~~		~~SPACER~~	~~32~~
~~2~~	~~1021637~~		~~BUSHING~~	~~31~~
~~1~~	~~1021638~~		~~SCREW, THUMB~~	~~30~~
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~~1~~	~~1021636~~		~~SPROCKET (MODIFIED)~~	~~26~~
~~1~~	~~1021635~~		~~LINK, CHAIN & SPROCKET~~	~~25~~
1	1004260-161		NAME PLATE	24
2	MS 87006-13		HOOK, CHAIN-S	23
1	1016067-003		CHAIN-SAFETY	22
~~4~~	~~1021629-011~~		~~BOLT, EYE~~	~~21~~
3	1021632-003		CABLE ASSY	20
2	1021628		LINK, CHAIN & CABLE	19
4	MS-35337-80		WASHER, LOCK, SPLIT	18
4	MS-35649-84		NUT, PLAIN, HEX	17
4	1021621		SCREW, SHOULDER	16
1	MIL-STD-421	SEE NOTE 2	CHAIN ROLLER, 35-1RC-C, 12 3/8 LG ℄ TO ℄ (1897446-001)	15
1	RR-C-271a, TYPE VI		RING, 2 3/8" O.D., 2" I.D. (1896921-004)	14
1	MS171530		PIN, SPRING	13
2	1021633		PIN, LINK	12
1	1021625		PIN, STOP	11
2	MS171436		PIN, SPRING	10
1	1021623-001		SHAFT, SPROCKET	9
3	MS171536		PIN, SPRING	8
1	MS24586-46		SPRING, HELICAL, EXTENSION	7
1	1021631		SCREW	6
1	1021627		PLUNGER	5
1	1021634-001		SPACER	4
1	1021622		SPROCKET, MODIFIED	3
1	1021626-011		BOLT, EYE, MODIFIED	2
1	1021630		HOUSING	1
-011	LIST OF MATERIALS			

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1900030	
NEXT ASSY	USED ON
APPLICATION	

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DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
Contract NAS 9-497

DRAWN 2-15-65
CHECKED 3-5-65
APPROVED L Jeleman 3/5/65
APPROVED
APPROVED MIT W Cuffin
APPROVED MSC
DATE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

IMU LIFT & HANDLING FIXTURE

CODE IDENT NO 80230
SIZE D
DRAWING NO. 1015462
SCALE 1/1
SHEET 1 OF 1

1015462-011 C

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. BOTH ENDS OF ROLLER CHAIN MUST END WITH ROLLER LINK PLATES AS SHOWN.
3. DRILL .125/.128 DIA THRU AFTER ASSEMBLY OF ITEM (2) AND INSTALL ITEM (8).
4. APPLY SEALING COMPOUND, ITEM (46) TO THE THREAD OF SCREW ITEM (45) UPON THE INSTALLATION OF NAMEPLATE, ITEM (24).
5. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER TO ITEM (24) IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERALS TO BE .06 HIGH.

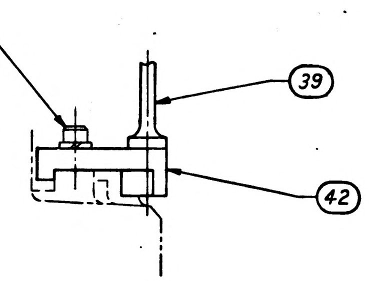
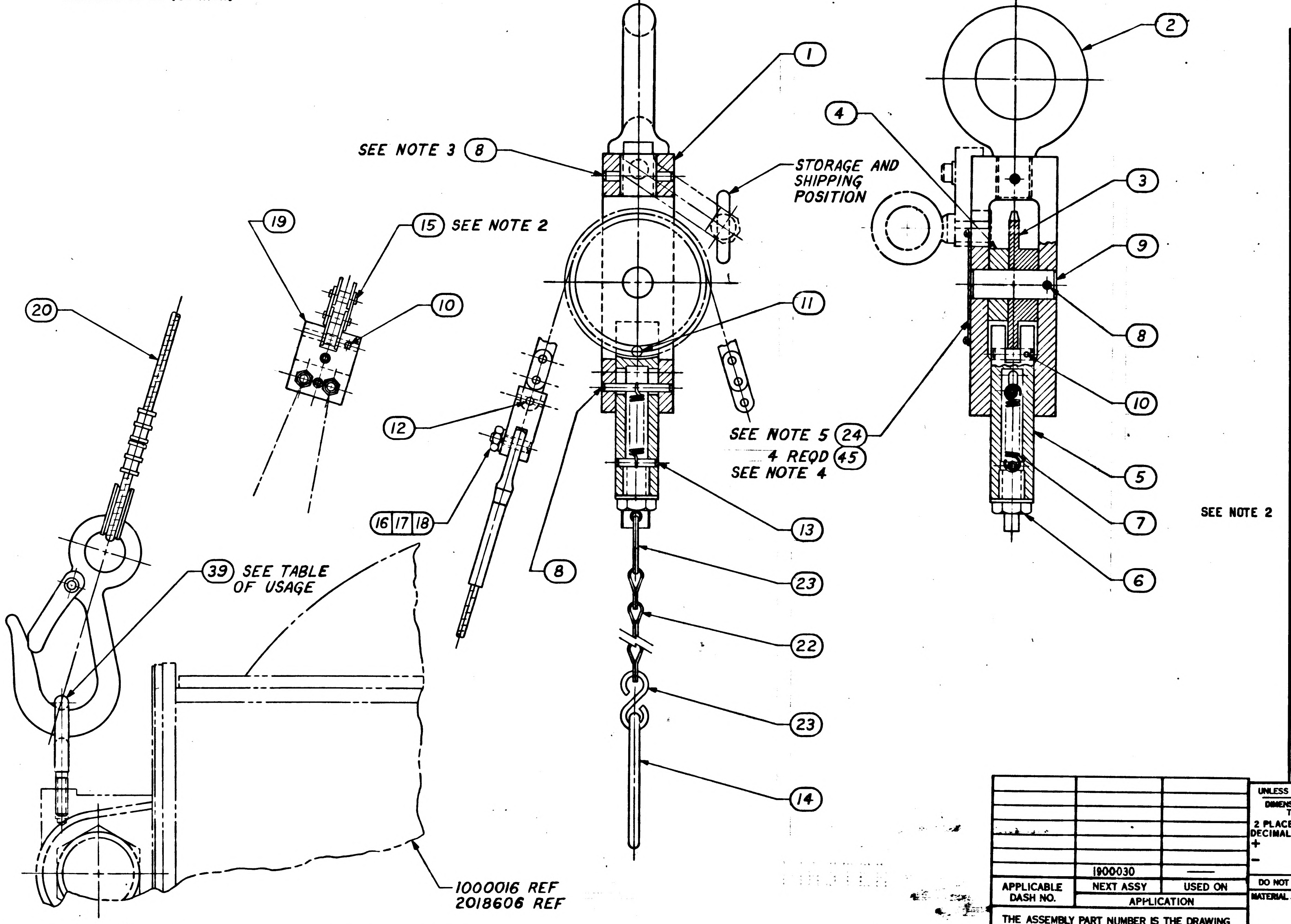


TABLE OF USAGE

TO LIFT		USE		
ITEM	PART NO. REF	ITEM	QTY	FIND NO.
BLK I, IMU	1000016	CABLE ASSY BOLT, EYE	4 4	41 39
BLK I, IMU MTG FIXT	1900012	CABLE ASSY BOLT EYE	3 3	20
BLK II, IMU	2018606	CABLE ASSY BRACKET SCREW, CAP WASHER, LOCK BOLT, EYE	3 1 1 1 3	41 42 43 44 39
BLK II, IMU MTG FIXT	2900000	CABLE ASSY BOLT, EYE	3 3	20

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
—	C	REPLACES REV "B" WITH CHANGE PER TDRR 28977		7-JUN-66	B. EF



				ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			AR	46	MIL-S-22473 GRADE C	COMPOUND, SEALING & RETAINING (ES2544-3)
			4	45	MS 35233-2	SCREW, PAN HD.
			1	44	MS 35337-81	WASHER, LOCK
			1	43	MS 16996-10	SCREW, CAP
			1	42	1021613	BRACKET
			4	41	1021612	CABLE ASSY
				40		
			4	39	1021609	BOLT, EYE
				38		
				37		
				36		
				35		
				34		
				33		
				32		
				31		
				30		
				29		
				28		
				27		
				26		
				25		
			1	24	1004260-161	NAMEPLATE
			2	23	MS 87006-13	HOOK, CHAIN - S
			1	22	1016067-003	CHAIN, SAFETY
				21		
			3	20	1021632-003	CABLE ASSY
			2	19	1021628	LINK, CHAIN & CABLE
			4	18	MS 35337-80	WASHER, LOCK, SPLIT
			4	17	MS 35649-84	NUT, PLAIN, HEX
			4	16	1021621	SCREW, SHOULDER
			1	15	MIL-STD-421	CHAIN ROLLER, 35-1RC-C 12-3/8 LG ℄ TO ℄ (1897416-001)
			1	14	RR-C-271a, TYPE VI	RING, 2-3/8" O.D., 2" I.D.(1896921-004)
			1	13	MS 171530	PIN, SPRING
			2	12	1021633	PIN, LINK
			1	11	1021625	PIN, STOP
			2	10	MS 171436	PIN, SPRING
			1	9	1021623-001	SHAFT, SPROCKET
			3	8	MS 171536	PIN, SPRING
			1	7	MS 24586-46	SPRING, HELICAL, EXTENSION
			1	6	1021631	SCREW
			1	5	1021627	PLUNGER
			1	4	1021634-001	SPACER
			1	3	1021622	SPROCKET, MODIFIED
			1	2	1021626-011	BOLT, EYE, MODIFIED
			1	1	1021630	HOUSING
			011	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED				LIST OF PARTS AND MATERIALS		

APPLICABLE DASH NO.	NEXT ASSY	USED ON
	1900030	—
	APPLICATION	

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS + −
3 PLACE DECIMALS + −
ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL.
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN P.S. GRECO DATE 15-FEB-65
CHECKED
APPROVAL
CONTRACT NAS 9-497
NASA APPROVAL A. C. METZGER
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

IMU LIFT AND HANDLING FIXTURE

SIZE D
CODE IDENT NO. 80230
1015462
SCALE FULL
SHEET 1 OF 1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. BOTH ENDS OF ROLLER CHAIN MUST END WITH ROLLER LINK PLATES AS SHOWN.
3. DRILL .125/.128 DIA THRU AFTER ASSEMBLY OF ITEM (2) AND INSTALL ITEM (8).
4. APPLY SEALING COMPOUND, ITEM (46) TO THE THREAD OF SCREW ITEM (45) UPON THE INSTALLATION OF NAMEPLATE, ITEM (24).
5. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER TO ITEM (24) IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERALS TO BE .06 HIGH.

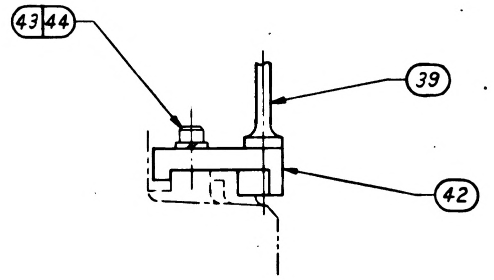


TABLE OF USAGE

TO LIFT		USE		
ITEM	PART NO. REF	ITEM	QTY	FIND NO.
BLK I, IMU	1000016	CABLE ASSY BOLT, EYE	4 4	41 39
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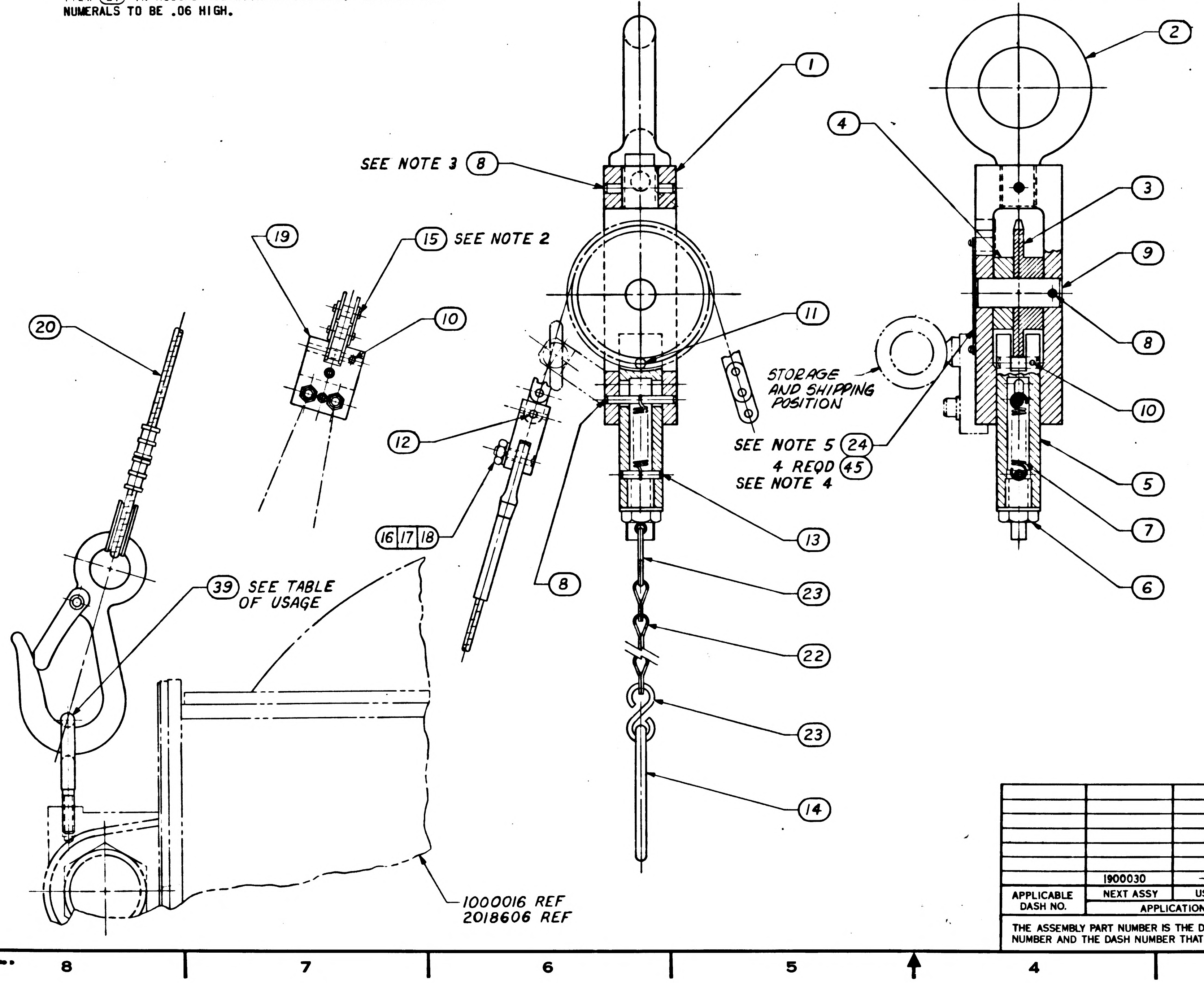
BLK II, IMU MTG FIXT	2900000	CABLE ASSY BOLT, EYE	3 3	20

REVISIONS

ZONE	LTR	DESCRIPTION	CHG. NO.	DATE	APPROVED
–	C	REPLACES REV "B" WITH CHANGE PER TDRR 28977		7-JUN-66	B. EF
	D	REVISED PER TDRR 30078		22 Jul 66	



SEE NOTE 2

			AR	46	MIL-S-22473 GRADE C	COMPOUND, SEALING & RETAINING (ES2544-3)
			4	45	MS 35233-2	SCREW, PAN HD.
			1	44	MS 35337-81	WASHER, LOCK
			1	43	MS 16996-10	SCREW, CAP
			1	42	1021613	BRACKET
			4	41	1021612	CABLE ASSY
				40		
			4	39	1021609	BOLT, EYE
				38		
				37		
				36		
				35		
				34		
				33		
				32		
				31		
				30		
				29		
				28		
				27		
				26		
				25		
			1	24	1004260-161	NAMEPLATE
			2	23	MS 87006-13	HOOK, CHAIN - S
			1	22	1016067-003	CHAIN, SAFETY
				21		
			3	20	1021632-003	CABLE ASSY
			2	19	1021628	LINK, CHAIN & CABLE
			4	18	MS 35337-80	WASHER, LOCK, SPLIT
			4	17	MS 35649-84	NUT, PLAIN, HEX
			4	16	1021621	SCREW, SHOULDER
			1	15	MIL-STD-421	CHAIN ROLLER, 35-1RC-C 12-3/8 LG ℄ TO ℄ (1897416-001)
			1	14	RR-C-271a, TYPE VI	RING, 2-3/8" O.D., 2" I.D.(1896921-004)
			1	13	MS 171530	PIN, SPRING
			2	12	1021633	PIN, LINK
			1	11	1021625	PIN, STOP
			2	10	MS 171436	PIN, SPRING
			1	9	1021623-001	SHAFT, SPROCKET
			3	8	MS 171536	PIN, SPRING
			1	7	MS 24586-46	SPRING, HELICAL, EXTENSION
			1	6	1021631	SCREW
			1	5	1021627	PLUNGER
			1	4	1021634-001	SPACER
			1	3	1021622	SPROCKET, MODIFIED
			1	2	1021626-011	BOLT, EYE, MODIFIED
			1	1	1021630	HOUSING
			011	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED				LIST OF PARTS AND MATERIALS		

	1900030	—
APPLICABLE DASH NO.	NEXT ASSY	USED ON
	APPLICATION	

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± 3 PLACE DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN P.S. GRECO DATE 15-FEB-65
CHECKED
APPROVAL
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

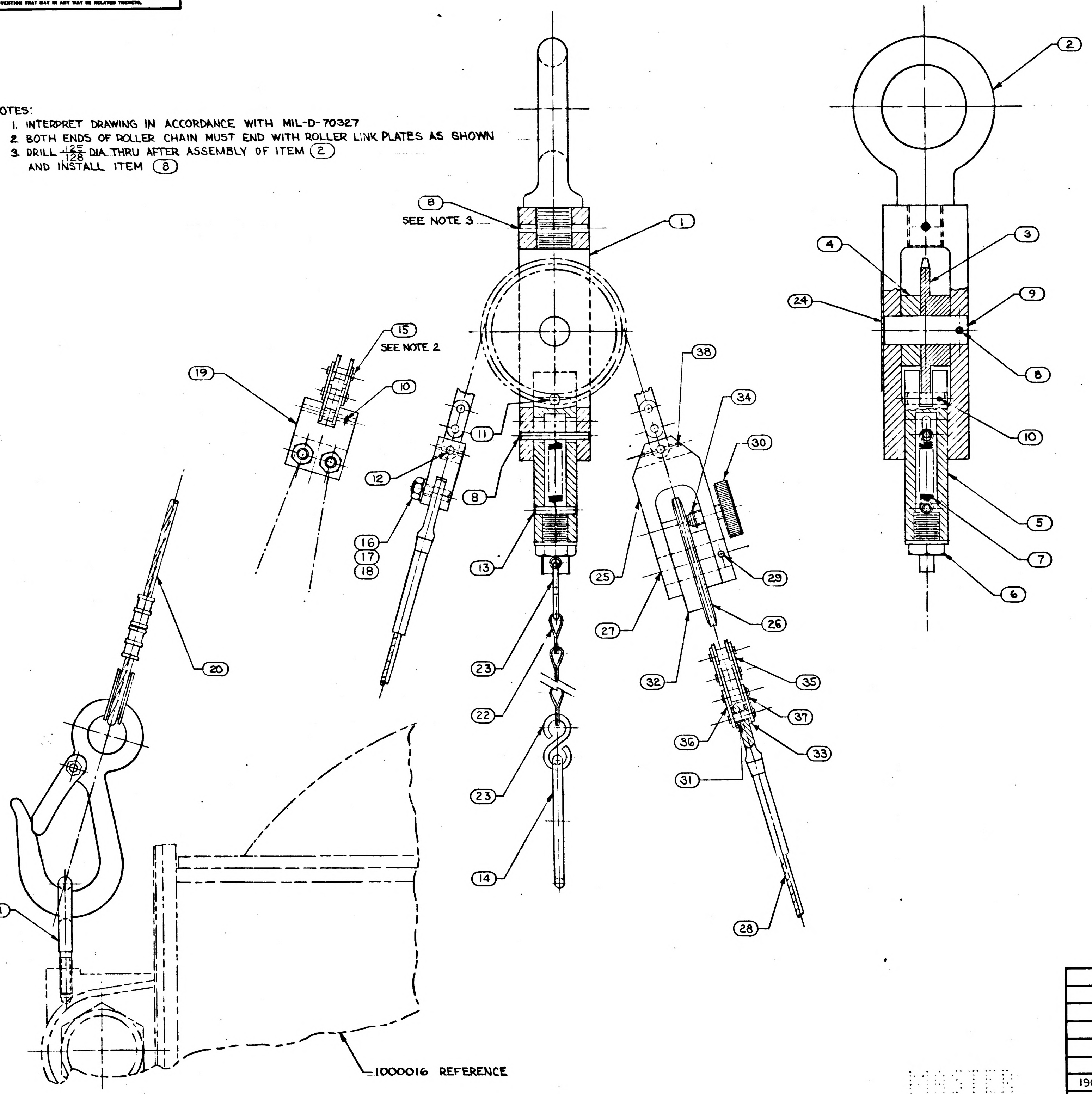
IMU LIFT AND HANDLING FIXTURE

SIZE D
CODE IDENT NO. 80230
1015462
SCALE FULL
SHEET 1 OF 1

NOTICE WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION. THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 21945						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. BOTH ENDS OF ROLLER CHAIN MUST END WITH ROLLER LINK PLATES AS SHOWN
3. DRILL $\frac{.125}{.128}$ DIA THRU AFTER ASSEMBLY OF ITEM (2) AND INSTALL ITEM (8)



MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
1	MS-171438		PIN, SPRING	38
2	MIL-STD-421		CHAIN, SPRING CLIP FAST 35-1RC-CL-C, CLASS 3	37
2	MIL-STD-421		CHAIN, CONNECTING LINK, 35-1RC-2CL-C	36
1	MIL-STD-421	SEE NOTE 2	CHAIN, ROLLER, 35-1RC-C, 7 7/8 LG ℄ TO ℄	35
1	MS-16632-1021		SPRING, RETAINER	34
4	1021634-003		SPACER	33
1	1021634-002		SPACER	32
2	1021637		BUSHING	31
1	1021638		SCREW, THUMB	30
1	MS 171504		PIN, SPRING	29
2	1021632-002		CABLE ASSY	28
1	1021623-002		SHAFT, SPROCKET	27
1	1021636		SPROCKET (MODIFIED)	26
1	1021635		LINK, CHAIN & SPROCKET	25
1	1004260-		NAME PLATE	24
2	MS 87006-13		HOOK, CHAIN-S	23
1	RR-C-271a, TYPE II, CLASS 3	STEEL	CHAIN SASH, NO. 35. 18" LG, SHORTEN TO SUIT	22
4	1021629-011		BOLT, EYE	21
2	1021632-001		CABLE ASSY	20
1	1021628		LINK, CHAIN & CABLE	19
2	MS-35337-80		WASHER, LOCK, SPLIT	18
2	MS-35649-84		NUT, PLAIN, HEX	17
2	1021621		SCREW, SHOULDER	16
1	MIL-STD-421	SEE NOTE 2	CHAIN ROLLER, 35-1RC-C, 12 3/8 LG ℄ TO ℄	15
1	RR-C-271a, TYPE VI		RING, 2 3/8" O.D., 2" I.D.	14
1	MS171530		PIN, SPRING	13
2	1021633		PIN, LINK	12
1	1021625		PIN, STOP	11
1	MS171436		PIN, SPRING	10
1	1021623-001		SHAFT, SPROCKET	9
3	MS171536		PIN, SPRING	8
1	MS24586-46		SPRING, HELICAL, EXTENSION	7
1	1021631		SCREW	6
1	1021627		PLUNGER	5
1	1021634-001		SPACER	4
1	1021622		SPROCKET, MODIFIED	3
1	1021626-011		BOLT, EYE, MODIFIED	2
1	1021630		HOUSING	1
-011	LIST OF MATERIALS			

NEXT ASSY	USED ON
1900030	——

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE. MASS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWN P. S. [illegible] 2-15-65
CHECKED H. [illegible] 3-5-65
APPROVED L. Jeldman 3/5/65
APPROVED
APPROVED MIT W. Rupfer 26 Aug 65
APPROVED MSC
DATE

IMU LIFT & HANDLING FIXTURE

CODE IDENT NO. 80230
SIZE D
DRAWING NO. 1015462
SCALE 1/1
SHEET 1 OF 1

1015466 -

REVISIONS				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL

Littlefuse Corporation

DASH NUMBER	MANUFACTURER'S PART NUMBER
-1	344125A
-2	344024A

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 09634 DATE 5/27/64

PROCURE ONLY FROM APPROVED SOURCES LISTED ON ND 1002034 FOR THIS DRAWING.

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

MATERIAL:

MIT
INSTRUMENTATION LAB
CONTRACT
NAS 9-153

		DATE
APPROVED		5/27/64
CHECKED		
DRAWN		5/20/64
APPROVED FOR MSC	5-27-64	
MIT/IL APPROVAL		DATE
		27 May 64

FUSEHOLDER

Specification Control Drawing

SCALE	UNIT WT.	CODE IDENT.

MIT
INSTRUMENTATION
LABORATORY
CAMBRIDGE, MASS.

DWG. NO.

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

NASA DRAWING NO.
1015466

SHEET OF

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS 15717					
SYM	ZONE	DESCRIPTION		DATE	APPD.
A		REVISED PER TDRR 17360	CHG NO	2 MAR 65	JHR MEM

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. THIS DRAWING FOR REFERENCE ONLY.

					1015065-021	1015065-021	1015065-021	1015065-021	1007059	1015065-011	1015065-011	1007059	1007059	1007059	1007059	D & C ELECTRONICS ASSY	50	7
					1015500-021	1015500-021	1015500-021	1015500-021	1015500-011	1015500-021	1015500-021	1015500-011	1015500-011	1015500-011	1015500-011	CDU ASSEMBLY	40	6
					1014628-011	1014628-011	1014628-011	1014628-011	1014526-011	1015095-011	1015095-011	1014526-011	1014526-011	1014526-011	1014526-011	IMU CONTROL PANEL ASSY	50	5
					1015064-021	1015064-021	1015064-021	1015064-021	1015003	1015064-011	1015064-011	1015003	1015003	1015003	1015003	CONTROL ELECTRONICS ASSY	50	4
									~~1014578-011~~	~~1015053-011~~	~~1015053-011~~	~~1014578-011~~	~~1014578-011~~	~~1014578-011~~	~~1014578-011~~	~~G & N INDICATOR CONTROL PANEL ASSY~~	~~50~~	3
					1007570-011	1007570-011	1007570-011	1007570-011	1021207-011	1007400-011	1007400-011	1007170	1007100	1007100	1007100	POWER AND SERVO ASSY	45	2
					1001500-031	1001500-021	1001500-021	1001500-021	1001479	1001500-011	1001500-011	1000201	1000201	1000201	1000201	INERTIAL MEASUREMENT UNIT ASSY	35	1
					-101	-091	-081	-071	-061	-051	-041	-031	-021	-011	-000	SUB-SYSTEM	EQUIV CODE	ITEM NO.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± __ DECIMALS ± __ ANGLES ± __
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 7-DEC-64
CHECKED 15 DEC 64
APPROVAL
APPROVAL 15 DEC 64
NASA APPROVAL
MIT APPROVAL 26 Jan 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INERTIAL SUB-SYSTEM
ASSEMBLY CONFIGURATION

CODE IDENT NO.
SIZE D
1015497
SCALE ——
SHEET 1 OF 1

1015497 B

REVISIONS 15717					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ A		REVISED PER TDRR 17360		12 MAR 65	JHR MEM
B		REVISED PER TDRR 22471		22 SEP 65	EF

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. THIS DRAWING FOR REFERENCE ONLY.

					1015065-041	1015065-041	1015065-021	1015065-041	1007059	1015065-011	1015065-011	1007059	1007059	1007059	1007059	D & C ELECTRONICS ASSY	50	7
					1015500-021	1015500-021	1015500-021	1015500-021	1015500-011	1015500-021	1015500-021	1015500-011	1015500-011	1015500-011	1015500-011	CDU ASSEMBLY	40	6
					1014628-011	1014628-011	1014628-011	1014628-011	1014526-011	1015095-011	1015095-011	1014526-011	1014526-011	1014526-011	1014526-011	IMU CONTROL PANEL ASSY	50	5
					1015064-021	1015064-021	1015064-021	1015064-021	1015003	1015064-011	1015064-011	1015003	1015003	1015003	1015003	CONTROL ELECTRONICS ASSY	50	4
									~~1014578-011~~	~~1015053-011~~	~~1015053-011~~	~~1014578-011~~	~~1014578-011~~	~~1014578-011~~	~~1014578-011~~	~~G & N INDICATOR CONTROL PANEL ASSY~~	~~50~~	3
					1007570-011	1007570-011	1007570-011	1007570-011	1021207-011	1007400-011	1007400-011	1007170	1007267	1007100	1007100	POWER AND SERVO ASSY	45	2
					1001500-031	1001500-021	1001500-021	1001500-021	1001479	1001500-011	1001500-011	1000201	1000201	1000201	1000201	INERTIAL MEASUREMENT UNIT ASSY	35	1
					-101	-091	-081	-071	-061	-051	-041	-031	-021	-011	-000	SUB-SYSTEM	EQUIP CODE	ITEM NO.
					121-124	111	110	109	20	17	12	8	7	6	5	G&N		

NEXT ASSY	USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + — − DECIMALS + — − ANGLES + — − DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN DATE 7 DEC 64 CHECKED 15 DEC 64 APPROVAL APPROVAL 15 Dec 64	MANNED SPACECRAFT CENTER HOUSTON, TEXAS INERTIAL SUB-SYSTEM ASSEMBLY CONFIGURATION
APPLICATION		MATERIAL — CONTRACT NAS 9-497	NASA APPROVAL G. C. Mist MIT APPROVAL 26 Jan 65	CODE IDENT NO. SIZE D 1015497 SCALE — SHEET 1 OF 1

1015497 C

REVISIONS 15717					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ A		REVISED PER TDRR 17360		12 MAR 65	JMR MEM
Ⓜ B		REVISED PER TDRR 22471		22 SEP 65	BP EF
C		REVISED PER TDRR 24089		29 NOV 65	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. THIS DRAWING FOR REFERENCE ONLY.

					1015065-041	1015065-041	1015065-021	1015065-041	1015065-031	1015065-011	1015065-011	1007059	1007059	1007059	1007059	D & C ELECTRONICS ASSY	50	7
					1015500-021	1015500-021	1015500-021	1015500-021	1015500-011	1015500-021	1015500-021	1015500-011	1015500-011	1015500-011	1015500-011	CDU ASSEMBLY	40	6
					1014628-011	1014628-011	1014628-011	1014628-011	1014526-011	1015095-011	1015095-011	1014526-011	1014526-011	1014526-011	1014526-011	IMU CONTROL PANEL ASSY	50	5
					1015064-021	1015064-021	1015064-021	1015064-021	1015003	1015064-011	1015064-011	1015003	1015003	1015003	1015003	CONTROL ELECTRONICS ASSY	50	4
									~~1014578-011~~	~~1015053-011~~	~~1015053-011~~	~~1014578-011~~	~~1014578-011~~	~~1014578-011~~	~~1014578-011~~	~~G & N INDICATOR CONTROL PANEL ASSY~~	~~50~~	3
					1007570-011	1007570-011	1007570-011	1007570-011	1021207-011	1007400-011	1007400-011	1007170	1007267	1007100	1007100	POWER AND SERVO ASSY	45	2
					1001500-031	1001500-021	1001500-021	1001500-021	1001479	1001500-011	1001500-011	1000201	1000201	1000201	1000201	INERTIAL MEASUREMENT UNIT ASSY	35	1
					-101	-091	-081	-071	-061	-051	-041	-031	-021	-011	-000	SUB - SYSTEM	EQUIP CODE	ITEM NO.
					121-124	111	110	109	20	17	12	8	7	6	5	G&N		

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — DECIMALS + — ANGLES + —
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN DATE 7 DEC 64
CHECKED 15 DEC 64
APPROVAL
APPROVAL 15 Dec 64
NASA APPROVAL G.C.
MIT APPROVAL 26 Jan 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INERTIAL SUB-SYSTEM
ASSEMBLY CONFIGURATION

CODE IDENT NO. 99974
SIZE D
1015497
SCALE ——
SHEET 1 OF 1

REVISIONS 15717					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
Ⓜ A		REVISED PER TDRR 17360		12 MAR 65	
Ⓜ B		REVISED PER TDRR 22471		22 SEP 65	
Ⓜ C		REVISED PER TDRR 24089		29 NOV 65	
D		REVISED PER TDRR 29525		21-JUN-66	B.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. THIS DRAWING FOR REFERENCE ONLY.

AS DELIVERED CONFIGURATIONS

					1015065-041	1015065-041	1015065-021	1015065-041	1015065-031	1015065-011	1015065-011	1007059	1007059	1007059	1007059	D & C ELECTRONICS ASSY	50	7
					1015500-021	1015500-021	1015500-021	1015500-021	1015500-011	1015500-021	1015500-021	1015500-011	1015500-011	1015500-011	1015500-011	CDU ASSEMBLY	40	6
					1014628-011	1014628-011	1014628-011	1014628-011	1014526-011	1015095-011	1015095-011	1014526-011	1014526-011	1014526-011	1014526-011	IMU CONTROL PANEL ASSY	50	5
					1015064-021	1015064-021	1015064-021	1015064-021	1015003	1015064-011	1015064-011	1015003	1015003	1015003	1015003	CONTROL ELECTRONICS ASSY	50	4
									~~1014578-011~~	~~1015053-011~~	~~1015053-011~~	~~1014578-011~~	~~1014578-011~~	~~1014578-011~~	~~1014578-011~~	~~G & N INDICATOR CONTROL PANEL ASSY~~	50	3
					1007570-011	1007570-011	1007570-011	1007570-011	1021207-011	1007400-011	1007400-011	1007170	1007267	1007100	1007100	POWER AND SERVO ASSY	45	2
					1001500-031	1001500-021	1001500-021	1001500-021	1001479	1001500-011	1001500-011	1000201	1000201	1000201	1000201	INERTIAL MEASUREMENT UNIT ASSY	35	1
					-101	-091	-081	-071	-061	-051	-041	-031	-021	-011	-000	SUB-SYSTEM	EQUIP CODE	ITEM NO.
					121-124	111	110	109	20	17	12	8	7	6	5	G&N		

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ___ ± ___ ± ___
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP MILWAUKEE WIS
DRAWN DATE 7-DEC-64
CHECKED 15 DEC 64
APPROVAL
APPROVAL 15 Dec 64
NASA APPROVAL
MIT APPROVAL 26 Jan 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INERTIAL SUB-SYSTEM
ASSEMBLY CONFIGURATION

CODE IDENT NO. 99974
SIZE D
1015497
SCALE ——
SHEET 1 OF 2

PRESENT CONFIGURATIONS

391	381	371	361	351	341	331	321	311	301	SUB-SYSTEM	EQUIP CODE	ITEM NO.
		1015065-041	1015065-041	1015065-091	1015065-041	1015065-101		1007059	SK44633	D & C ELECTRONICS ASSY	50	7
		1015500-041	1015500-021	1015500-041	1015500-021	1015500-041		1015500-011	1015500-011	CDU ASSEMBLY	40	6
		1014628-011	1014628-011	1014628-021	1014628-011	1014628-021		1014526-011	1014526-011	IMU CONTROL PANEL ASSY	50	5
		1015064-021	1015064-021	1015064-021	1015064-021	1015064-021		1015003	1015003	CONTROL ELECTRONICS ASSY	50	4
		1007570-011	1007570-011	1007500-021	1007570-011	1007570-121		1007267	1007100	POWER AND SERVO ASSY	45	2
		1001500-031	1001500-031	1001500-091	1001500-021	1001500-081		1000201	1000201	INERTIAL MEASUREMENT UNIT ASSY	35	1

PRESENT CONFIGURATIONS

491	481	471	461	451	441	431	421	411	401	SUB-SYSTEM	EQUIP CODE	ITEM NO.
		1015065-031				1007059	SK44633			D & C ELECTRONICS ASSY	50	7
		1015500-021				1015500-011	1015500-011			CDU ASSEMBLY	40	6
		1014526-031				1014526-011	1014526-011			IMU CONTROL PANEL ASSY	50	5
		1015064-011				1015003	1015003			CONTROL ELECTRONICS ASSY	50	4
		1007257-031				1007170	1007257-011			POWER AND SERVO ASSY	45	2
		1001479				1000201	1000201			INERTIAL MEASUREMENT UNIT ASSY	35	1

PRESENT CONFIGURATIONS

511	501	SUB-SYSTEM	EQUIP CODE	ITEM NO.
1015065-051	1015065-081	D & C ELECTRONICS ASSY	50	7
1015500-061	1015500-041	CDU ASSEMBLY	40	6
1015095-011	1014628-021	IMU CONTROL PANEL ASSY	50	5
1015064-011	1015064-011	CONTROL ELECTRONICS ASSY	50	4
1007257-051	1007257-061	POWER AND SERVO ASSY	45	2
1001500-011	1001500-041	INERTIAL MEASUREMENT UNIT ASSY	35	1

REVISIONS

SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD
D		THIS SHEET ADDED PER TDRR 29525		21-JUN-66	B.

Ⓓ THIS SHEET ADDED

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
2 PLACE DECIMALS ± —
3 PLACE DECIMALS ± —
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
APPROVAL

AC ELECTRONICS DIVISION
GENERAL MOTORS CORP. MILWAUKEE WIS.
DRAWN Bendar 21-JUN-66
CHECKED 22 JUN 66
APPROVAL
CONTRACT NAS 9-497
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

INERTIAL SUB-SYSTEM
ASSEMBLY CONFIGURATION

SIZE D
CODE IDENT NO. 99974
1015497
SCALE —
SHEET 2 OF 2

1015497

REVISIONS					15717
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. THIS DRAWING FOR REFERENCE ONLY.

-061	-051	-041	-031	-021	-011	-000	SUB-SYSTEM	EQUIP CODE	ITEM NO.
1007059	1015065-011	1015065-011	1007059	1007059	1007059	1007059	D & C ELECTRONICS ASSY	50	7
1015500-011	1015500-021	1015500-021	1015500-011	1015500-011	1015500-011	1015500-011	CDU ASSEMBLY	40	6
1014526-011	1015095-011	1015095-011	1014526-011	1014526-011	1014526-011	1014526-011	IMU CONTROL PANEL ASSY	50	5
1015003	1015064-011	1015064-011	1015003	1015003	1015003	1015003	CONTROL ELECTRONICS ASSY	50	4
1014578-011	1015053-011	1015053-011	1014578-011	1014578-011	1014578-011	1014578-011	G & N INDICATOR CONTROL PANEL ASSY	50	3
1021207-011	1007400-011	1007400-011	1007170	1007100	1007100	1007100	POWER AND SERVO ASSY	45	2
1001479	1001500-011	1001500-011	1000201	1000201	1000201	1000201	INERTIAL MEASUREMENT UNIT ASSY	35	1

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − DECIMALS + — − ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

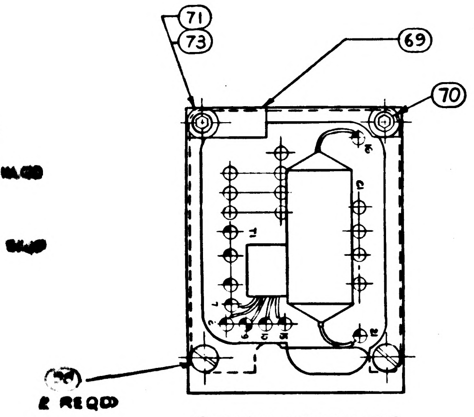
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 7-DEC-64
CHECKED 15 DEC 64
APPROVAL
APPROVAL 15 Dec 64
NASA APPROVAL G. C. [illegible]
MIT APPROVAL 26 Jan 65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

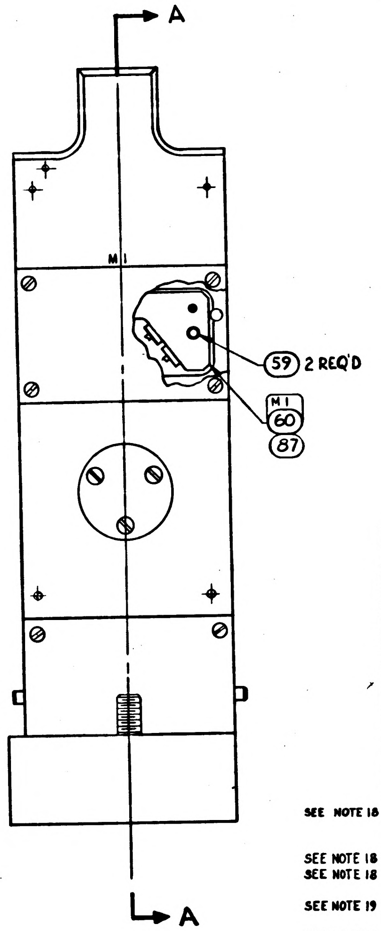
INERTIAL SUB-SYSTEM
ASSEMBLY CONFIGURATION

CODE IDENT NO.
SIZE D
1015497
SCALE ——
SHEET 1 OF 1

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
R		REDRAWN WITH CHANGE PER TDRR 16307	2-9-65	29 JAN 65	HTO
S		REVISED PER TDRR 16868 ADDED CUSTOMER DATA (2-65)		1 MAR 65	
T		REVISED PER TDRR 16870		8 MAR 65	RJJ AU
U		REVISED PER TDRR 18161		12-APR-65	
V		REVISED PER TDRR 18981		1 MAY 65	
W		REVISED PER TDRR 20322		26 JUN 65	JAC
Y		REVISED PER TDRR 20999		[illegible]	
Z		REVISED PER TDRR 25577		4 FEB 66	
AA		REVISED PER TDRR 26172		2 FEB 66	



PARTIAL SECTION F-F



			061	051	041	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			1	–	–	–	–	–		121	1014650-33	NAMEPLATE (SEE NOTE 16)
			AR	AR	AR	–	–	–		120	2021529	ADHESIVE-EPOXY
			–	1	–	–	–	–		119	1014650-28	NAMEPLATE (SEE NOTE 16)
			–	–	1	–	–	–		118	1014650-21	NAMEPLATE (SEE NOTE 16)
			–	2	2	–	–	–		117	1010617-2	NUT-HEX, SELF-LOCKING
			–	2	2	–	–	–		116	2010723	WASHER-SPECIAL
			–	2	2	–	–	–		115	2010722	STUD-SPECIAL
			–	–	–	1	–	–		114	1014650-15	NAMEPLATE (SEE NOTE 16)
			–	3	–	3	–	–		113	1017563	SET SCREW
			–	1	–	1	–	–		112	1017562-011	TERMINAL BOARD ASSY (INSEP)
			–	1	–	1	–	–		111	1017561-011	MOTOR TACH & PIN ASSY
			–	X	–	X	–	–		110	1017560	WIRING DIAGRAM
			–	X	–	X	–	–		109	1017559	SCHEMATIC DIAGRAM, ELECT.
			–	1	–	1	–	–		108	1017558	WIRING HARNESS A
			–	1	–	1	–	–		107	1017557	CLAMP, GEAR
			1	1	1	1	1	–		106	1017569	BRACKET, CONNECTOR
SEE NOTE 18			4	–	4	–	4	4		105	1010901-002	SWITCH, SENSITIVE
			1	1	1	1	1	–		104	1015666-031	WEDGE LIGHTING ASSY
			AR	AR	AR	AR	AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES2544-3)
SEE NOTE 18			AR	–	–	AR	AR	–		102	1010750	CURING AGENT, POLYAMIDE
SEE NOTE 18			AR	–	–	AR	AR	–		101	1010748	RESIN, EPOXY
			AR	–	–	AR	AR	–		100	1017555	SHIM
SEE NOTE 19			–	–	–	AR	AR	–		99	1012051	GREASE SILICONE (GE-G-300)
			2	2	2	2	2	2		98	MS35233-6	SCREW, PAN HD.
SEE NOTE 18			1	–	–	1	1	–		97	1010812-3	GASKET, MOISTURE SEAL
			X	–	X	–	X	–		96	1017545	WIRING DIAGRAM
			X	–	X	–	X	–		95	1017544	SCHEMATIC DIAGRAM
			–	–	–	–	–	X		94	1015670	WIRING DIAGRAM
			–	–	–	–	–	X		93	1010036	SCHEMATIC DIAGRAM, ELECT
			X	X	X	X	X	X		92	1015550	SCHEMATIC DIAGRAM, MECH.
			AR	AR	AR	AR	AR	–		91	1012505	PRIMER
SEE NOTE 18			AR	AR	AR	AR	AR	–		90	1012504	PRIMER
SEE NOTE 18			AR	AR	AR	AR	AR	–		89	1012503	COMPOUND, POLYURETHANE
			–	–	–	–	1	–		88	1014650-14	NAMEPLATE (SEE NOTE 16)
			1	1	1	1	1	–		87	1017546	DIGITAL CORE ASSY
			1	–	1	–	1	–		86	1017551-011	MOTOR-TACH & PIN ASSY
			1	1	1	1	1	–		85	1017550-011	RESOLVER & PIN ASSY 16X
			1	1	1	1	1	–		84	1017547-011	RESOLVER & PIN ASSY 1/4X
			1	1	1	1	1	–		83	1017549-011	RESOLVER & PIN ASSY 1X
			1	1	1	1	1	–		82	1017548-011	RESOLVER & PIN ASSY 1/2X
			1	–	1	–	1	–		81	1017541	WIRING HARNESS "A"
			1	1	1	1	1	–		80	1015665-021	HOUSING & CLAMP ASSY
										79		
			1	1	1	1	1	–		78	1017543	MOUNTING BOARD (INSEP ASSY)
			20	20	20	20	20	–		77	NAS1352C02-4	SCREW, CAP, SOC HD
SEE NOTE 19			AR	AR	AR	AR	AR	AR		76	1012050	OIL, SILICONE (GE F-50)
			AR	–	AR	–	AR	AR		75	AN960C3	WASHER-FLAT
			–	–	–	–	–	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
			1	–	1	–	1	1		73	MS15795-702	WASHER-PLAIN
			4	4	4	4	4	4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
SEE NOTE 18			1	–	1	–	1	1		71	1010468-4	SCREW, CAP, SOC HD
SEE NOTE 18			1	2	1	2	1	1		70	1011625-13	SCREW, CAP, SOC HD
SEE NOTE 18			1	–	1	–	1	1		69	1000220-7	CLAMP-CABLE
			4	4	4	4	4	4		68	1016896	SPACER
			–	–	–	–	–	1		67	1016898	MOUNTING BOARD (INSEP ASSY)
			–	–	–	–	–	1		66	1016897	WIRING HARNESS A
										65		
SEE NOTE 18			4	–	4	–	4	4		64	1010468-1	SCREW CAP, SOC HD
										63		
SEE NOTE 18			2	–	2	–	2	2		62	1010457-1	MICROSWITCH ACTUATOR
										61		
			–	–	–	–	–	1		60	1015559	DIGITAL CORE ASSY
			8	8	8	8	8	8		59	NAS1351C00LL2	SCREW-CAP, SOC HD
			–	–	–	–	–	1		58	1015673	RESOLVER, 16X-CDU
			–	–	–	–	–	1		57	1015674	MOTOR TACH-CDU
SEE NOTE 18			2	2	2	2	2	2		56	1010967-10	BALL BEARING
SEE NOTE 18			16	16	16	16	16	16		55	1010967-6	BALL BEARING
			1	1	1	1	1	1		54	1015680	GASKET, WEDGE LIGHT
										53		
			2	–	–	2	2	2		52	AN505DD4-6	SCREW, FLAT HD
SEE NOTE 18			3	3	3	3	3	3		51	1010468-2	SCREW, CAP, SOC
			–	–	–	–	–	20		50	NAS1352C02LL-4	SCREW, CAP, SOC
			2	–	–	2	2	2		49	MS20365D-440	NUT, SELF LOCKING
			1	–	1	–	1	1		48	NAS1081C02A2N	SCREW-SET
										47		
			1	1	1	1	1	1		46	1015664	WASHER, SPECIAL
			8	8	8	8	8	8		45	MS21269-A115	SCREW, INST, PAN HD
			6	6	6	6	6	6		44	MS21268-A110	SCREW, INST, FIL HD
			3	3	3	3	3	3		43	MS21268-A112	SCREW, INST, FIL HD
			1	1	1	1	1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
			1	1	1	1	1	1		41	1016892	COVER, TERMINAL BOARD
										40		
			1	–	1	–	1	1		39	MS16555-606	PIN, STRAIGHT
			–	–	–	–	–	1		38	1015681	RESOLVER, 1X-CDU
			1	1	1	1	1	1		37	1015512	CLAMP SCREW
			–	–	–	–	–	1		36	1016890	RESOLVER, 1/2X-CDU
			–	–	–	–	–	1		35	1015672	RESOLVER, 1/4X-CDU
			3	3	3	3	3	3		34	1015548	SPACER, SLEW SWITCH
			1	–	1	–	1	1		33	1015547	TOGGLE, SWITCH
			1	1	1	1	1	1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
			3	–	3	~~3~~	3	3		31	1015663	SET SCREW
			1	1	1	1	1	1		30	1015538-2	CLAMP, MOTOR MODIFIED
			12	12	12	12	12	12		29	1015543	SET SCREW
			4	4	4	4	4	4		28	1015542	CLAMP, SYNCHRO
			1	1	1	1	1	1		27	1015541	CLAMP, SYNCHRO MODIFIED
			1	1	1	1	1	1		26	1015540	CLAMP, SYNCHRO MODIFIED
			3	3	3	3	3	3		25	1015539	CLAMP, MOTOR
			1	1	1	1	1	1		24	1015538-1	CLAMP, MOTOR MODIFIED
			1	–	1	~~1~~	1	1		23	1015537	FLYWHEEL
			1	1	1	1	1	1		22	1015536	GEAR, SPUR
			1	1	1	1	1	1		21	1015535	DIAL, 1 SPEED
			1	1	1	1	1	1		20	1015534	DIAL, 36 SPEED
			1	1	1	1	1	1		19	1015533	DIAL, 1800 SPEED
			4	4	4	4	4	4		18	1015532	CLAMP, GEAR
			1	1	1	1	1	1		17	1015531	GEAR, SYNCHRO
			1	1	1	1	1	1		16	1015530	GEAR, SYNCHRO
			2	2	2	2	2	2		15	1015529	GEAR, SYNCHRO
			1	1	1	1	1	1		14	1015528	GEAR, CLUSTER, SPUR
SEE NOTE 18			1	1	1	1	1	1		13	1015527	GEAR, CLUSTER, SPUR
			1	1	1	1	1	1		12	1015526	GEAR, CLUSTER, SPUR
			1	1	1	1	1	1		11	1015525	GEAR, CLUSTER, SPUR
			1	1	1	1	1	1		10	1015524	GEAR, CLUSTER, SPUR
			1	1	1	1	1	1		9	1015523	GEAR, CLUSTER, SPUR
			1	1	1	1	1	1		8	1015522	GEAR, SPUR
			1	1	1	1	1	1		7	1015521	ADJUSTMENT, WHEEL
			1	1	1	1	1	1		6	1015520	GEAR, CLUSTER, SPUR
			1	1	1	1	1	1		5	1015517-011	PILOT SHAFT ASSY (INSEP)
			1	–	1	–	1	1		4	1016894	TERMINAL BOARD ASSY (INSEP)
			–	–	–	–	–	1		3	1015668	BRACKET, CONNECTOR
			–	–	–	~~1~~	–	1		2	1015666-011	WEDGE LIGHTING ASSY
			–	–	–	~~1~~	–	1		1	1015665-011	HOUSING AND CLAMP ASSY

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

Ⓡ REPLACES REV U WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-051	1016903-051	-061
1016903-041	1016903-041	-021
1021304-011	1021304-011	-051
1021304-011	1021304-011	-041
1016903-031	1016903-031	-031
1016903-021	1016903-021	-021
1016903-011	1016903-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN R. FOX DATE 2 JUL 63
CHECKED ED FOSTER 5 JUL 63
ED APPROVAL MEIDENBAUER 5 JUL 63
APPROVAL 2-5-65
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

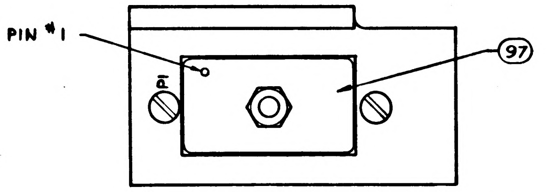
CDU ASSEMBLY

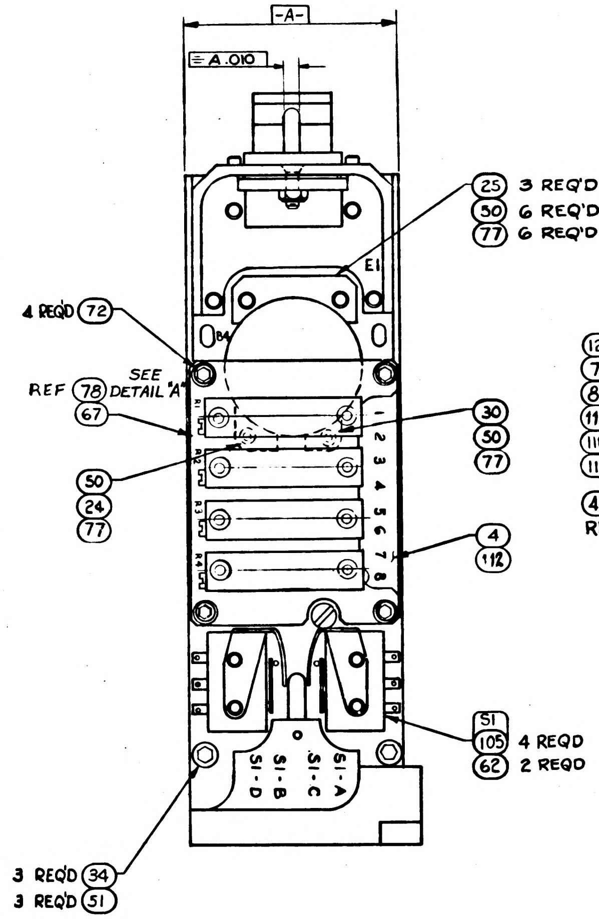
CODE IDENT NO. 80230
SIZE J
1015500
SCALE 2:1
SHEET 1 of 1

1015500 AA

NOTES:

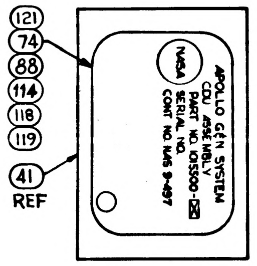
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4.
5. DELIVERABLE END ITEMS MUST MEET THE REQUIREMENTS OF PS-1015500.
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER ND 1002211 USING ITEM 103 UNLESS OTHERWISE SPECIFIED IN ATP 1015500.
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "G-G")
17. EACH GEAR SHALL BE LUBRICATED WITH ITEM 76 PER ATP 1015500
18. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
19. VENDOR ITEM - SEE SOURCE CONTROL DRAWING.





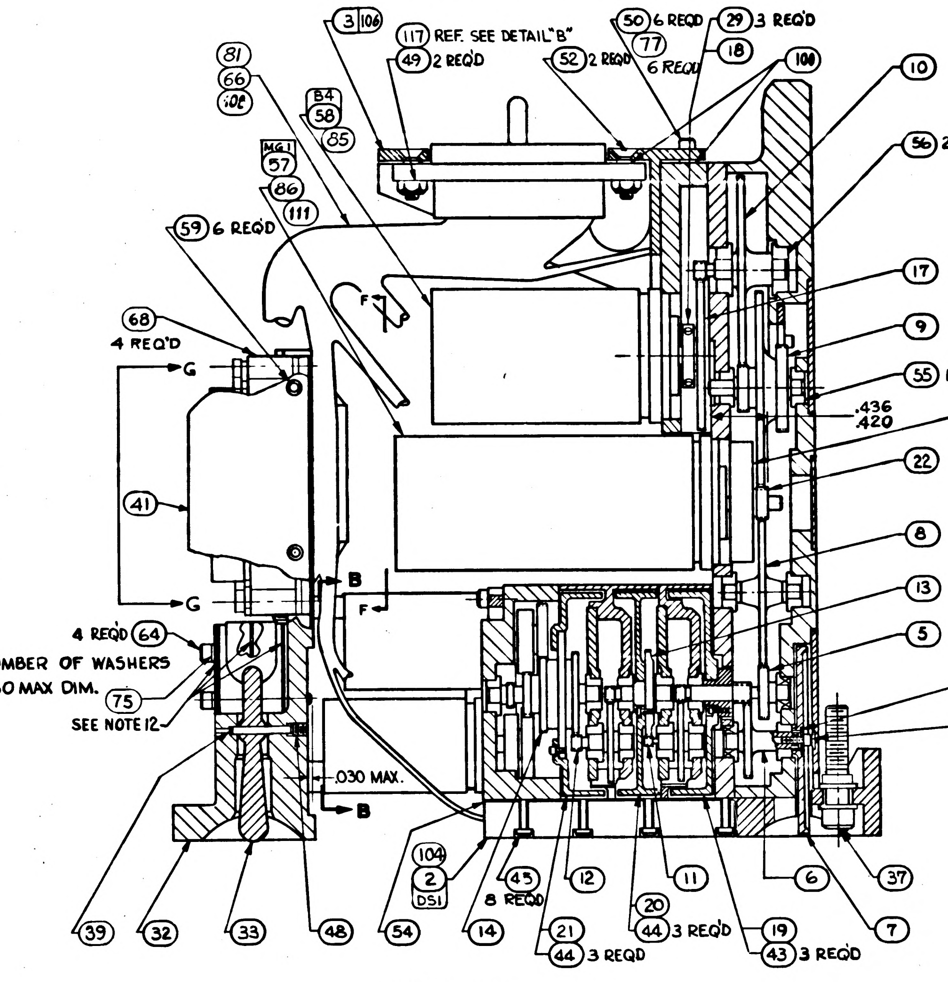
-A-
= A .010
E1
25 3 REQ'D
50 6 REQ'D
77 6 REQ'D
4 REQ'D 72
SEE DETAIL "A"
REF 78
67
30
50
77
50
24
77
4
112
51
105 4 REQD
62 2 REQD
3 REQ'D 34
3 REQ'D 51
S1-A
S1-C
S1-B
S1-D

(COVER REMOVED AND WIRE HARNESS NOT SHOWN)



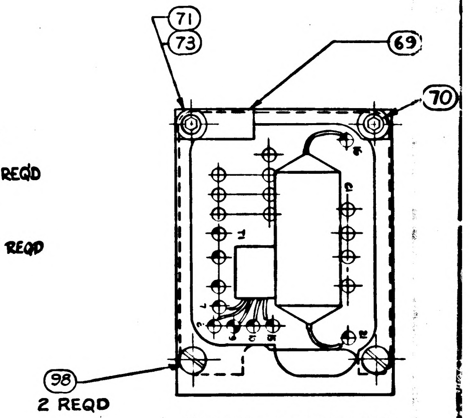
121
74
88
114
118
119
41
REF
APOLLO G&N SYSTEM
CDU ASSEMBLY
PART NO. 1015500-
SERIAL NO.
CONT NO. NAS 9-497
NASA

VIEW G-G



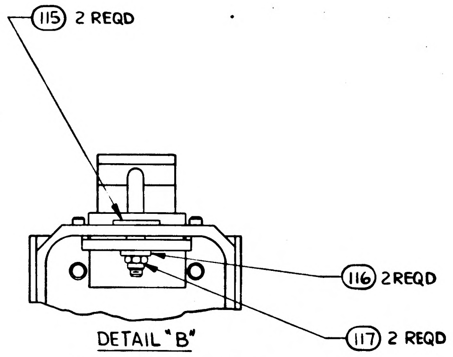
3 106
117 REF. SEE DETAIL "B"
49 2 REQ'D
52 2 REQ'D
50 6 REQ'D
77 6 REQ'D
29 3 REQ'D
18
108
10
81
66
102
B4
58
85
MG1
57
86
111
56 2 REQ'D
59 6 REQ'D
17
9
68
4 REQ'D
G
F
55 16 REQD
.436
.420
31 3 REQ'D
23
107
113 3 REQD
22
41
8
B
13
5
4 REQD 64
USE MINIMUM NUMBER OF WASHERS TO ACQUIRE .030 MAX DIM.
75
SEE NOTE 12
46
42
.030 MAX.
B
104
2
DS1
45
8 REQD
12
11
20
44 3 REQ'D
6
37
39
32
33
48
54
14
21
44 3 REQD
19
43 3 REQD
7

SECTION A-A



71
73
69
70
98
2 REQD

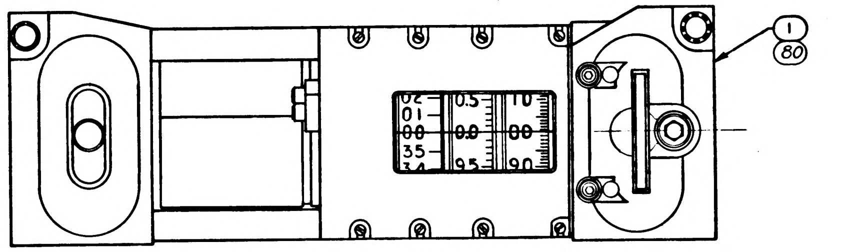
PARTIAL SECTION F-F

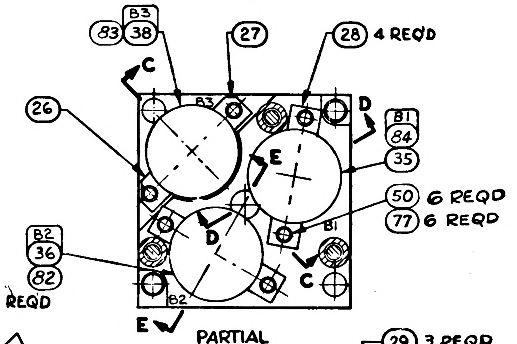


115 2 REQD
116 2 REQD
117 2 REQD

DETAIL "B"

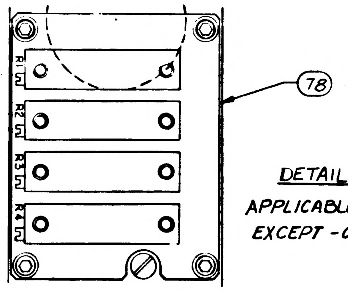
APPLICABLE TO -041 & -051 ASSEMBLIES ONLY





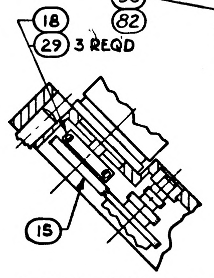
B3
83 38
27
28 4 REQ'D
C
D
26
B1
84
35
E
50 6 REQD
77 6 REQD
B2
36
82
D
C
B2
E

PARTIAL SECTION B-B



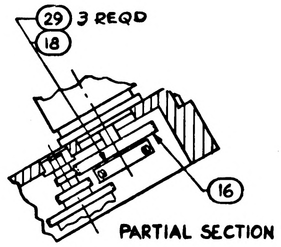
DETAIL A

APPLICABLE TO ALL ASSEMBLIES EXCEPT -011 ASS'Y



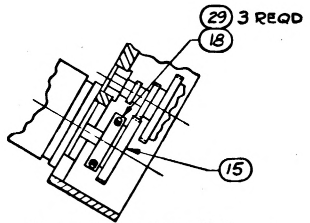
18
29 3 REQD
15

PARTIAL SECTION C-C



29 3 REQD
18
16

PARTIAL SECTION D-D



29 3 REQD
18
15

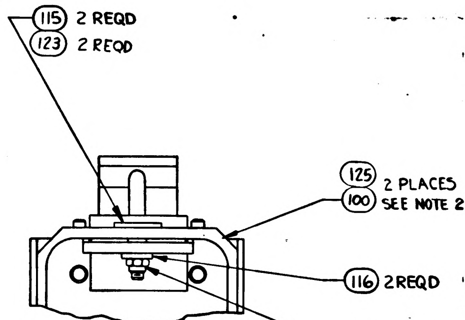
PARTIAL SECTION E-E

1015500 REV LTR AA SH 1 OF 1

1/1015500

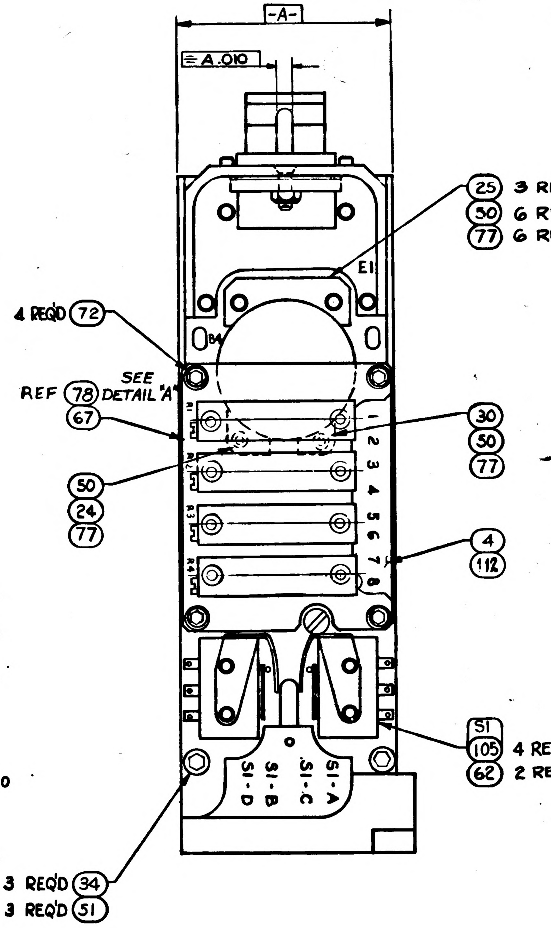
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4.
5. DELIVERABLE END ITEMS MUST MEET THE REQUIREMENTS OF PS-1015500.
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER ND 1002211 USING ITEM 103 UNLESS OTHERWISE SPECIFIED IN ATP 1015500.
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "G-G")
17. EACH GEAR SHALL BE LUBRICATED WITH ITEM 76 PER ATP 1015500
18. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
19. VENDOR ITEM - SEE SOURCE CONTROL DRAWING.
20. ITEMS 100 & 125 TO BE SELECTED PRIOR TO INSTALLATION (-071 AND -081 ASSEMBLIES ONLY).

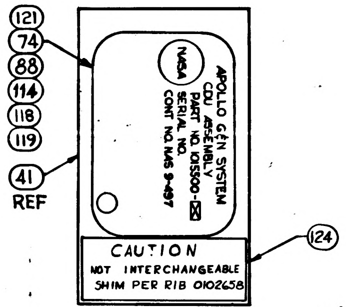

(115) 2 REQD
(123) 2 REQD
(125) 2 PLACES
(100) SEE NOTE 20
(116) 2 REQD
(117) 2 REQD

DETAIL "B"

APPLICABLE TO -041, -051, -071 & -081 ASSEMBLIES ONLY


-A-
A .010
(25) 3 REQ'D
(50) 6 REQ'D
(77) 6 REQ'D
E1
4 REQ'D (72)
SEE DETAIL "A"
REF (78)
(67)
(30)
(50)
(77)
(50)
(24)
(77)
(4)
(112)
(51)
(105) 4 REQD
(62) 2 REQD
S1-A
S1-B
S1-C
S1-D
3 REQ'D (34)
3 REQ'D (51)

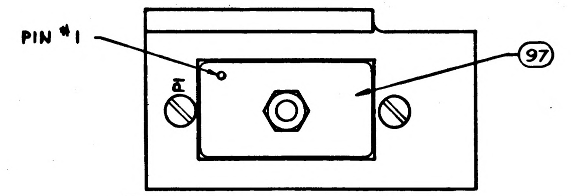
(COVER REMOVED AND WIRE HARNESS NOT SHOWN)

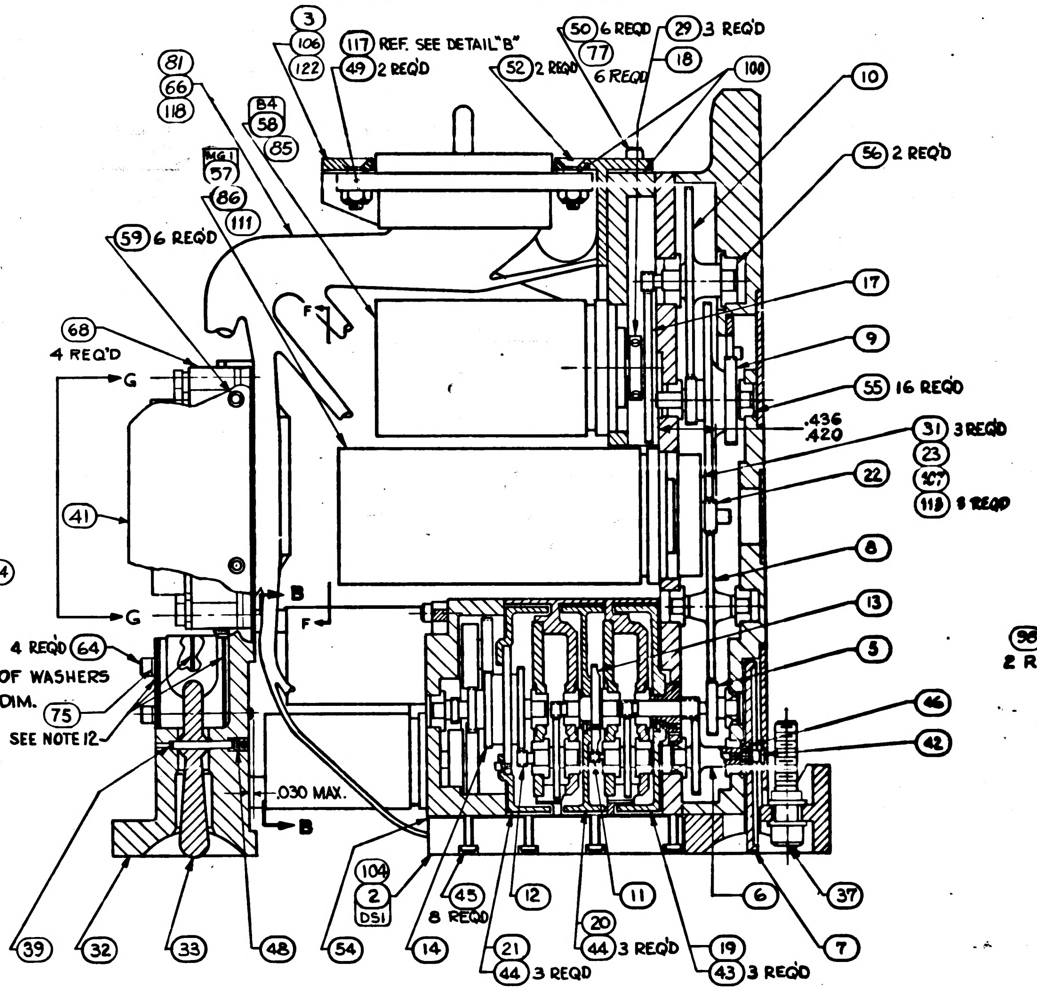

(121)
(74)
(88)
(114)
(118)
(119)
(41) REF
(124)

APOLLO G&N SYSTEM
CDU ASSEMBLY
PART NO. 1015500-☒
SERIAL NO.
CONT NO. NAS 9-497
NASA

CAUTION
NOT INTERCHANGEABLE
SHIM PER RIB 0102658

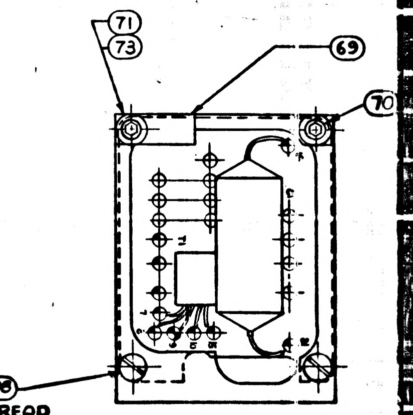
VIEW G-G



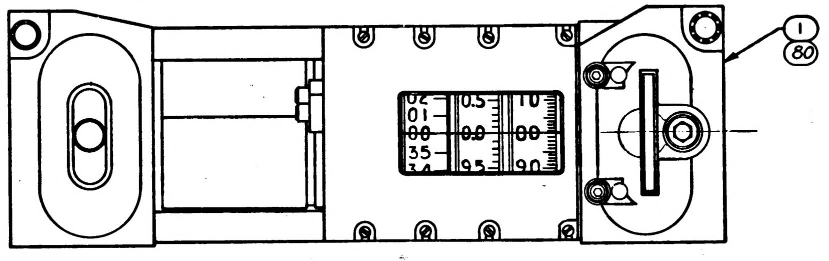

(3)
(106)
(122)
(117) REF. SEE DETAIL "B"
(49) 2 REQD
(50) 6 REQD
(77)
(52) 2 REQD
6 REQD
(29) 3 REQD
(18)
(100)
(10)
(81)
(66)
(118)
B4
(58)
(85)
MG1
(57)
(86)
(111)
(59) 6 REQD
(56) 2 REQD
(17)
(9)
(55) 16 REQD
.436
.420
(31) 3 REQD
(23)
(27)
(113) 3 REQD
(22)
(8)
(13)
(5)
(46)
(42)
(68)
4 REQ'D
G
(41)
G
B
F
4 REQD (64)
(75)
SEE NOTE 12
.030 MAX.
B
(104)
(2)
DS1
(45)
8 REQD
(12)
(20)
(11)
(6)
(37)
(39)
(32)
(33)
(48)
(54)
(14)
(21)
(44) 3 REQD
(44) 3 REQD
(19)
(43) 3 REQD
(7)

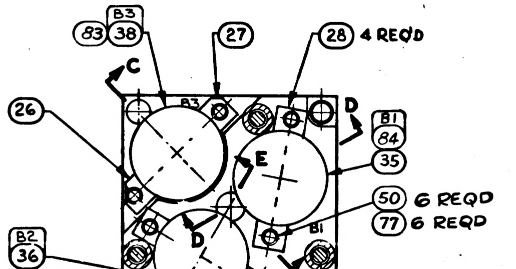
USE MINIMUM NUMBER OF WASHERS TO ACQUIRE .030 MAX DIM.

SECTION A-A

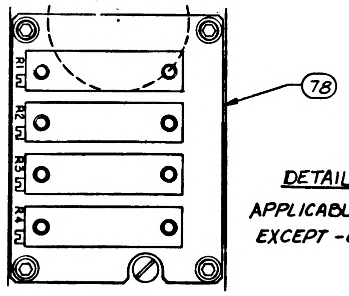

(71)
(73)
(69)
(70)
(96)
2 REQD

PARTIAL SECTION F-F



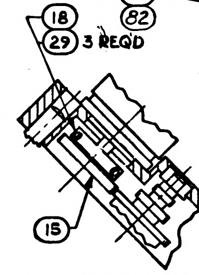

B3
(83) (38)
(27)
(28) 4 REQ'D
C
D
B1
(84)
(35)
(26)
E
(50) 6 REQD
(77) 6 REQD
B2
(36)
(82)
B1
C
D
E

PARTIAL SECTION B-B

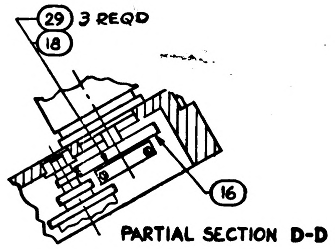

(78)
R1
R2
R3
R4

DETAIL A

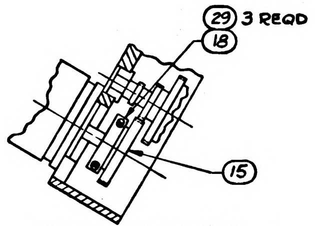
APPLICABLE TO ALL ASSEMBLIES EXCEPT -011 ASS'Y


(18)
(29) 3 REQD
(15)

PARTIAL SECTION C-C


(29) 3 REQD
(18)
(16)

PARTIAL SECTION D-D


(29) 3 REQD
(18)
(15)

PARTIAL SECTION E-E

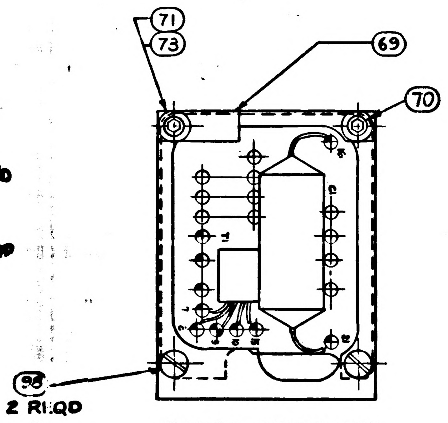
1015500 REV LTR AB SH 1 OF 1

1/1015500

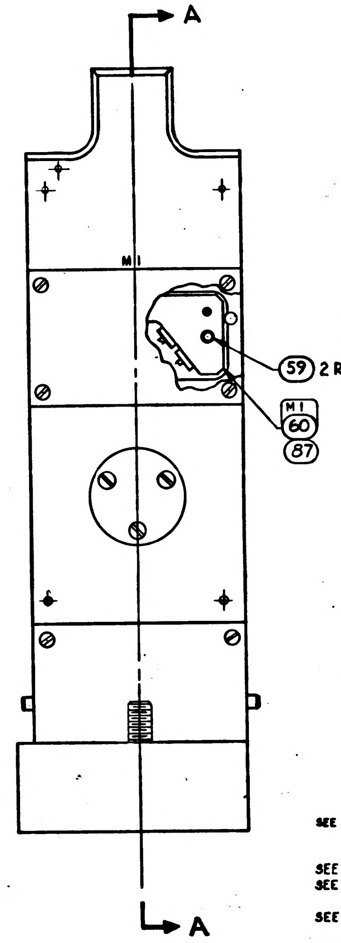
REVISIONS

01137

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
R		REDRAWN WITH CHANGE PER TDRR 16307	2-9-65	29 JAN 65	HTO
S		REVISED PER TDRR 16868 ADDED CUSTOMER DATA (2-65)		4 MAR 65	JK
T		REVISED PER TDRR 16870		8 MAR 65	RJJ AU
U		REVISED PER TDRR 18161		12-APR-65	W.D.
V		REVISED PER TDRR 18981		17 MAY 65	
W		REVISED PER TDRR 20322		26 JUN 65	JAC
Y		REVISED PER TDRR 20999		26 JUL 65	RTP W.D.
Z		REVISED PER TDRR 25577		4 FEB 66	
AA		REVISED PER TDRR 26172		21 FEB 66	JJJ EF
AB		REVISED PER TDRR 32089		7 DEC 66	SS N.W.



PARTIAL SECTION F-F



	081	071	061	051	041	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	A/R	A/R	–	–	–	–	–	–		125	1017555-001	SHIM
	1	1	–	–	–	–	–	–		124	1017580	PLATE, INSTRUCTION
	2	2	–	–	–	–	–	–		123	1017578	STUD-SPECIAL
	1	1	–	–	–	–	–	–		122	1017579	BRACKET, CONNECTOR
	–	–	1	–	–	–	–	–		121	1014650-33	NAMEPLATE (SEE NOTE 16)
	AR	AR	AR	AR	AR	–	–	–		120	2021529	ADHESIVE-EPOXY
	1	–	–	1	–	–	–	–		119	1014650-28	NAMEPLATE (SEE NOTE 16)
	–	1	–	–	1	–	–	–		118	1014650-21	NAMEPLATE (SEE NOTE 16)
	2	2	–	2	2	–	–	–		117	1010617-2	NUT-HEX, SELF-LOCKING
	2	2	–	2	2	–	–	–		116	2010723	~~WASHER-SPECIAL~~
	–	–	–	2	2	–	–	–		115	2010722	STUD SPECIAL
	–	–	–	–	–	1	–	–		114	1014650-15	NAMEPLATE (SEE NOTE 16)
	3	–	–	3	–	3	–	–		113	1017563	SET SCREW
	1	–	–	1	–	1	–	–		112	1017562-011	TERMINAL BOARD ASSY (INSEP)
	1	–	–	1	–	1	–	–		111	1017561-011	MOTOR TACH & PIN ASSY
	X	–	–	X	–	X	–	–		110	1017560	WIRING DIAGRAM
	X	–	–	X	–	X	–	–		109	1017559	SCHEMATIC DIAGRAM, ELECT.
	1	–	–	1	–	1	–	–		108	1017558	WIRING HARNESS A
	1	–	–	1	–	1	–	–		107	1017557	CLAMP, GEAR
	–	–	1	1	1	1	1	–		106	1017569	BRACKET, CONNECTOR
SEE NOTE 18	–	4	4	–	4	–	4	4		105	1010901-002	SWITCH, SENSITIVE
	1	1	1	1	1	1	1	–		104	1015666-031	WEDGE LIGHTING ASSY
	AR	AR	AR	AR	AR	AR	AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES2544-3)
SEE NOTE 18	–	–	AR	–	–	AR	AR	–		102	1010750	CURING AGENT, POLYAMIDE
SEE NOTE 18	–	–	AR	–	–	AR	AR	–		101	1010748	RESIN, EPOXY
	AR	AR	AR	–	–	AR	AR	–		100	1017555	SHIM
SEE NOTE 19	–	–	–	–	–	AR	AR	–		99	1012051	GREASE SILICONE (GE-G-300)
	2	2	2	2	2	2	2	2		98	MS35233-6	SCREW, PAN HD.
SEE NOTE 18	–	–	1	–	–	1	1	–		97	1010812-3	GASKET, MOISTURE SEAL
	–	X	X	–	X	–	X	–		96	1017545	WIRING DIAGRAM
	–	X	X	–	X	–	X	–		95	1017544	SCHEMATIC DIAGRAM
	–	–	–	–	–	–	–	X		94	1015670	WIRING DIAGRAM
	–	–	–	–	–	–	–	X		93	1010036	SCHEMATIC DIAGRAM, ELECT
	X	X	X	X	X	X	X	X		92	1015550	SCHEMATIC DIAGRAM, MECH.
	AR	AR	AR	AR	AR	AR	AR	–		91	1012505	PRIMER
SEE NOTE 18	AR	AR	AR	AR	AR	AR	AR	–		90	1012504	PRIMER
SEE NOTE 18	AR	AR	AR	AR	AR	AR	AR	–		89	1012503	COMPOUND, POLYURETHANE
	–	–	–	–	–	–	1	–		88	1014650-14	NAMEPLATE (SEE NOTE 16)
	1	1	1	1	1	1	1	–		87	1017546	DIGITAL CORE ASSY
	–	1	1	–	1	–	1	–		86	1017551-011	MOTOR-TACH & PIN ASSY
	1	1	1	1	1	1	1	–		85	1017550-011	RESOLVER & PIN ASSY 16X
	1	1	1	1	1	1	1	–		84	1017547-011	RESOLVER & PIN ASSY 1/4X
	1	1	1	1	1	1	1	–		83	1017549-011	RESOLVER & PIN ASSY 1X
	1	1	1	1	1	1	1	–		82	1017548-011	RESOLVER & PIN ASSY 1/2X
	–	1	1	–	1	–	1	–		81	1017541	WIRING HARNESS "A"
	1	1	1	1	1	1	1	–		80	1015665-021	HOUSING & CLAMP ASSY
										79		
	1	1	1	1	1	1	1	–		78	1017543	MOUNTING BOARD (INSEP ASSY)
	20	20	20	20	20	20	20	–		77	NAS1352C02-4	SCREW, CAP, SOC HD
SEE NOTE 19	AR	AR	AR	AR	AR	AR	AR	AR		76	1012050	OIL, SILICONE (GE F-50)
	–	AR	AR	–	AR	–	AR	AR		75	AN960C3	WASHER-FLAT
	–	–	–	–	–	–	–	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
	–	1	1	–	1	–	1	1		73	MS15795-702	WASHER-PLAIN
	4	4	4	4	4	4	4	4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
SEE NOTE 18	–	1	1	–	1	–	1	1		71	1010468-4	SCREW, CAP, SOC HD
SEE NOTE 18	2	1	1	2	1	2	1	1		70	1011625-13	SCREW, CAP, SOC HD
SEE NOTE 18	–	1	1	–	1	–	1	1		69	1000220-7	CLAMP-CABLE

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

Ⓡ REPLACES REV U WITH CHANGE

	081	071	061	051	041	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	4	4	4	4	4	4	4	4		68	1016896	SPACER
	–	–	–	–	–	–	–	1		67	1016898	MOUNTING BOARD (INSEP ASSY)
	–	–	–	–	–	–	–	1		66	1016897	WIRING HARNESS A
										65		
SEE NOTE 18	–	4	4	–	4	–	4	4		64	1010468-1	SCREW CAP, SOC HD
										63		
SEE NOTE 18	–	2	2	–	2	–	2	2		62	1010457-1	MICROSWITCH ACTUATOR
										61		
	–	–	–	–	–	–	–	1		60	1015559	DIGITAL CORE ASSY
	8	8	8	8	8	8	8	8		59	NAS1351C00LL2	SCREW-CAP, SOC HD
	–	–	–	–	–	–	–	1		58	1015673	RESOLVER, 16X-CDU
	–	–	–	–	–	–	–	1		57	1015674	MOTOR TACH-CDU
SEE NOTE 18	2	2	2	2	2	2	2	2		56	1010967-10	BALL BEARING
SEE NOTE 18	16	16	16	16	16	16	16	16		55	1010967-6	BALL BEARING
	1	1	1	1	1	1	1	1		54	1015680	GASKET, WEDGE LIGHT
										53		
	–	–	2	–	–	2	2	2		52	AN505DD4-6	SCREW, FLAT HD
SEE NOTE 18	3	3	3	3	3	3	3	3		51	1010468-2	SCREW, CAP, SOC
	–	–	–	–	–	–	–	20		50	NAS1352C02LL-4	SCREW, CAP, SOC
	–	–	2	–	–	2	2	2		49	MS20365D-440	NUT, SELF LOCKING
	–	1	1	–	1	–	1	1		48	NAS1081C02A2N	SCREW-SET
										47		
	1	1	1	1	1	1	1	1		46	1015664	WASHER, SPECIAL
	8	8	8	8	8	8	8	8		45	MS21269-A115	SCREW, INST, PAN HD
	6	6	6	6	6	6	6	6		44	MS21268-A110	SCREW, INST, FIL HD
	3	3	3	3	3	3	3	3		43	MS21268-A112	SCREW, INST, FIL HD
	1	1	1	1	1	1	1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
	1	1	1	1	1	1	1	1		41	1016892	COVER, TERMINAL BOARD
										40		
	–	1	1	–	1	–	1	1		39	MS16555-606	PIN, STRAIGHT
	–	–	–	–	–	–	–	1		38	1015681	RESOLVER, 1X-CDU
	1	1	1	1	1	1	1	1		37	1015512	CLAMP SCREW
	–	–	–	–	–	–	–	1		36	1016890	RESOLVER, 1/2X-CDU
	–	–	–	–	–	–	–	1		35	1015672	RESOLVER, 1/4X-CDU
	3	3	3	3	3	3	3	3		34	1015548	SPACER, SLEW SWITCH
	–	1	1	–	1	–	1	1		33	1015547	TOGGLE, SWITCH
	1	1	1	1	1	1	1	1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
	–	3	3	–	3	~~3~~	3	3		31	1015663	SET SCREW
	1	1	1	1	1	1	1	1		30	1015538-2	CLAMP, MOTOR MODIFIED
	12	12	12	12	12	12	12	12		29	1015543	SET SCREW
	4	4	4	4	4	4	4	4		28	1015542	CLAMP, SYNCHRO
	1	1	1	1	1	1	1	1		27	1015541	CLAMP, SYNCHRO MODIFIED
	1	1	1	1	1	1	1	1		26	1015540	CLAMP, SYNCHRO MODIFIED
	3	3	3	3	3	3	3	3		25	1015539	CLAMP, MOTOR
	1	1	1	1	1	1	1	1		24	1015538-1	CLAMP, MOTOR MODIFIED
	–	1	1	–	1	~~1~~	1	1		23	1015537	FLYWHEEL
	1	1	1	1	1	1	1	1		22	1015536	GEAR, SPUR
	1	1	1	1	1	1	1	1		21	1015535	DIAL, 1 SPEED
	1	1	1	1	1	1	1	1		20	1015534	DIAL, 36 SPEED
	1	1	1	1	1	1	1	1		19	1015533	DIAL, 1800 SPEED
	4	4	4	4	4	4	4	4		18	1015532	CLAMP, GEAR
	1	1	1	1	1	1	1	1		17	1015531	GEAR, SYNCHRO
	1	1	1	1	1	1	1	1		16	1015530	GEAR, SYNCHRO
	2	2	2	2	2	2	2	2		15	1015529	GEAR, SYNCHRO
	1	1	1	1	1	1	1	1		14	1015528	GEAR, CLUSTER, SPUR
SEE NOTE 18	1	1	1	1	1	1	1	1		13	1015527	GEAR, CLUSTER, SPUR
	1	1	1	1	1	1	1	1		12	1015526	GEAR, CLUSTER, SPUR
	1	1	1	1	1	1	1	1		11	1015525	GEAR, CLUSTER, SPUR
	1	1	1	1	1	1	1	1		10	1015524	GEAR, CLUSTER, SPUR
	1	1	1	1	1	1	1	1		9	1015523	GEAR, CLUSTER, SPUR
	1	1	1	1	1	1	1	1		8	1015522	GEAR, SPUR
	1	1	1	1	1	1	1	1		7	1015521	ADJUSTMENT, WHEEL
	1	1	1	1	1	1	1	1		6	1015520	GEAR, CLUSTER, SPUR
	1	1	1	1	1	1	1	1		5	1015517-011	PILOT SHAFT ASSY (INSEP)
	–	1	1	–	1	–	1	1		4	1016894	TERMINAL BOARD ASSY (INSEP)
	–	–	–	–	–	–	–	1		3	1015668	BRACKET, CONNECTOR
	–	–	–	–	–	~~1~~	–	1		2	1015666-011	WEDGE LIGHTING ASSY
	–	–	–	–	–	~~1~~	–	1		1	1015665-011	HOUSING AND CLAMP ASSY

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

APPLICABLE DASH NO.	APPLICATION: NEXT ASSY	APPLICATION: USED ON	APPLICATION: NEXT ASSY	APPLICATION: USED ON	APPLICABLE DASH NO.
			1016903-051	1016903-051	-061
			1016903-041	1016903-041	-021
			1021304-011	1021304-011	-051
-041	1021304-021	1021304-021	1021304-011	1021304-011	-041
-081	1021304-031	1021304-031	1016903-031	1016903-031	-031
-071	1021304-041	1021304-041	1016903-021	1016903-021	-021
-071	1021304-031	1021304-031	1016903-011	1016903-011	-011

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN R.FOX DATE 2 JUL 63
CHECKED ED FOSTER 5 JUL 63
APPROVAL ED. HEIDENBAUER 5 JUL 63
APPROVAL 2-5-65
NASA APPROVAL 2/4/65
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

CODE IDENT NO. 80230
SIZE J
1015500
SCALE 2:1
SHEET 1 of 1

1015500 REV LTR AB SH 1 OF 1

2/1015500

APOLLO G&N Specification
PS-1015500 A
31 December 1963
Class A Release
TDRR 05589

PROCUREMENT SPECIFICATION
FOR
CDU ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
4/7/64	A	07492	All		

This specification consists of page i to iii and 1 to 7 inclusive.

PROCUREMENT SPECIFICATION
FOR
CDU ASSEMBLY

The purpose of this document is to establish the requirements for the procurement of the CDU Assembly for use in APOLLO Guidance and Navigation equipment.

31 Dec 63
MIT/IL DATE

12/31/63
NASA/MSC DATE

PROCUREMENT SPECIFICATION
FOR
CDU ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the CDU Assembly, Drawing 1015500, hereafter called the assembly.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies.
FTM-1015500	Final Test Method for CDU Assembly

DRAWINGS

APOLLO G&N

1010036	Schematic Diagram CDU (For Reference Only)
1015500	CDU Assembly

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

APOLLO G&N Specification
PS-1015500 A
31 December 1963
Class A Release
TDRR 05589

PROCUREMENT SPECIFICATION

FOR

CDU ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
4/7/64	A	07492	All	WAR.	

This specification consists of page i
to iii and 1 to 7 inclusive.

APOLLO G&N Specification
PS-1015500 A
~~31 December 1963~~
7 April 1964

PROCUREMENT SPECIFICATION
FOR
CDU ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the CDU Assembly, Drawing 1015500, hereafter called the assembly.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies.
FTM-1015500	Final Test Method for CDU Assembly

DRAWINGS

APOLLO G&N

1010036	Schematic Diagram CDU (For Reference Only)
1015500	CDU Assembly

3. REQUIREMENTS

3.1 GENERAL SPECIFICATION. Unless otherwise specified herein, all of the requirements of Specification ND-1002210 shall apply as requirements of this specification.

3.2 DESCRIPTION. The assembly shall display the trunnion and shaft angles of the sextant and the gimbal angles of the IMU and shall provide the capability of manually setting gimbal angles.

3.3 FUNTIONAL REQUIREMENTS

3.3.1 Electrical Inputs. The assembly shall operate as specified herein with the following electrical inputs:

a. 28V±1%, 800±5 cps, 0° and -90° phase, 1% max distortion
b. 2.5V±1%, 25.6KC ± 1%, 3% max distortion
c. 5.5±0.28V, 400 or 800 cps, 3% max distortion

3.3.2 Continuity and DC Resistance. Continuity and DC resistance shall be as specified in Table I (Reference drawing 1010036).

TABLE I

CONTINUITY AND DC RESISTANCE

FROM	TO	RESISTANCE (Ohms)	CONDITIONS
P1-1	P1-14	170 max	
P1-2	P1-3	100 max	
P1-4	P1-17	61±15%	
P1-4	P1-18	61±15%	
P1-6	P1-20	215±15%	
P1-7	P1-21	215±15%	
P1-8	P1-22	78±15%	
P1-9	P1-10	78±15%	
P1-11	P1-25	61±15%	
P1-12	P1-25	61±15%	
P1-15	P1-30	<2.1	
P1-16	P1-30	<2.1	Actuate SIB and SID
P1-16	P1-30	<2.1	Actuate SIB and SIA
P1-28	P1-29	50 max	
P1-31	P1-32	100 max	
P1-31	P1-43	50 max	
P1-34	P1-45	270±15%	
P1-35	P1-45	270±15%	

TABLE I (Continued)

FROM	TO	RESISTANCE (Ohms)	CONDITIONS
P1-41	E1 (Chassis)	<0.1	
*P1-50	P1-60	15±15%	
P1-52	P1-61	<2.1	
P1-56	P1-66	78±15%	
P1-57	P1-67	78±15%	
P1-57	P1-68	49.9K ±3%	
P1-86	P1-100	215±15%	
P1-87	P1-101	215±15%	
P1-89	P1-90	445±15%	
P1-90	P1-104	445±15%	
P1-92	P1-106	2300 max	
P1-92	P1-105	<2.1	
P1-92	P1-105	115 max	Actuate SIA and SIC
P1-92	P1-105	115 max	Actuate SIB and SID
*P1-94	P1-107	125 max	
*P1-107	P1-108	250 max	
*P1-94	P1-108	125 max	

*DC current between the indicated points shall be limited to a maximum of 30 milliamperes.

3.3.3 Insulation Resistance. Insulation resistance shall be as specified in Table II.

TABLE II

INSULATION RESISTANCE

FROM	TO	APPLIED VOLTAGE (vdc ±10%)	MINIMUM RESISTANCE (Megohms)
P1-1	Chassis Gnd (E1)	175	50
P1-2	↑	175	100
P1-4		↑	↑
P1-6			
P1-7			
P1-8			
P1-9			
P1-11			
P1-15			↓
P1-16			100
P1-31			50
P1-34			100
P1-50			500
P1-52			100
P1-56			100
P1-57			50
P1-86			100
P1-87			100
P1-89		↓	100
P1-92	↓		50
P1-94	Chassis Gnd (E1)	175	100

3.3.4 Motor Starting Voltage. The in-phase voltage necessary to start and maintain motor shaft rotation shall not exceed 1.5V rms.

3.3.5 Motor Phasing. The CDU display shall increase when the control voltage is in-phase with the 0° reference and shall decrease when the control voltage is 180° out of phase with respect to the 0° reference.

3.3.6 Motor Speed. With rated voltage applied to all motor windings, the steady state motor speed shall be 11,000 ± 2500 rpm.

3.3.7 Tachometer Null. With the motor control voltage removed, the in-phase component of the tachometer output voltage shall be less than 4 mv rms, and the total tachometer voltage shall be less than 11 mv rms when the tachometer shaft is not rotating.

3.3.8 Tachometer Phasing. The tachometer output voltage shall be 180° out of phase with respect to the tachometer reference when the CDU display is increasing, and shall be in-phase with the tachometer reference when the CDU display is decreasing.

3.3.9 Motor Jog. With the motor shaft speed set at 50± 3 rpm, the variation from the set speed ~~shall not~~ exceed ±2 rpm.

3.3.10 Slew Voltage and Phasing. With the SLEW switch set in the "INC" position, the slewing transformer output shall be 6.25±1.00V rms, and in phase with the zero degrees reference. With the SLEW switch set in the "DEC" position, the slewing transformer output voltage shall be 6.25±1.00V rms, and 180° out of phase with the zero degrees reference.

3.3.11 Encoder Output Characteristics. With the motor driven at a constant speed each phase of the encoder output shall have the following characteristics.

3.3.11.1 Modulation Envelope Magnitude. The magnitude of the modulation envelope shall be greater than 125 mv pp, but less than 300 mv pp.

3.3.11.2 Zero Crossover (Null) Voltage. The zero crossover null voltage of the modulation envelope shall be less than 10 mv pp.

3.3.11.3 Lobe Mismatch. The difference between magnitudes of each successive half-cycle of modulation envelope of each phase shall not exceed 10 percent of the magnitude of the greatest half-cycle of modulation envelope.

3.3.12 Encoder Phase Relationship. With the motor driven at a constant speed such that the CDU display is increasing, the Phase 2 modulation envelope of the encoder output shall lead the Phase 1 modulation envelope by 90° ±20°. With the motor driven at a constant speed such that the CDU display is decreasing, the Phase 2 modulation envelope of the encoder output shall lag the Phase 1 modulation envelope by 90° ±20°.

3.3.13 CDU Zeroing. CDU zeroing shall be as follows.

3.3.13.1 16 Speed Resolver Zero. With the CDU display driven to zero by means of the 16 Speed Resolver the CDU display shall indicate 000.000±0.001°.

3.3.13.2 Encoder Null. With the CDU display at zero, the in-phase 16 Speed Resolver output shall be 21.0±8.0 millivolts rms at the closest Phase 2 null points on each side of the CDU display zero.

3.3.13.3 1, 1/2, and 1/4 Speed Resolvers Zero Null. With the CDU display set to indicate 000.000±0.001°; the output voltages of the 1, 1/2, and 1/4 Speed Resolvers shall be as specified in Table III.

TABLE III

CDU ZEROING

RESOLVER	OUTPUT VOLTAGE
1 speed	0±39 mv rms
1/2 speed	0±31 mv rms
1/4 speed	0±23 mv rms

3.3.14 CDU Resolver Accuracy. With the 16 Speed Resolver controlling the CDU at any angle, θ, the 1, 1/2, and 1/4 Speed Resolver electrical outputs shall correspond to the angles specified in Table IV.

TABLE IV

CDU RESOLVER ACCURACY

RESOLVER	DEVIATION LIMITS
1 speed	θ ±8 min
1/2 speed	θ/2 ±7,0 min
1/4 speed	θ/4 ±6,0 min

3.4 PERFORMANCE AND PRODUCT CHARACTERISTICS.

3.4.1 Service Life

3.4.1.1 Operating Life. The assembly shall meet performance specifications for at least 2000 hours of operation, excluding the supplier's test time of the completed unit.

3.4.1.2 Shelf Life. The assembly shall have a life of at least 3 years, without operation, at ambient room temperature after final acceptance at the supplier's facility.

3.4.2 Reliability. Design objectives require maximum reliability of the assembly during its period of useful life. Every effort shall be made to design and produce assemblies capable of meeting or exceeding failure rate of 3 per million hours.

1015500 B

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REVISED AND REDRAWN TDRR 01137	DO 51455	12 APR 63	WEP

PICTURE INCOMPLETE

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			X			1015670	WIRING DIAGRAM
			X			1010036	ELECT SCHEMATIC
			X			1015550	CDU GEAR BOX MECH. SCHEMATIC
						1015667	WIRE LIST BB
			1			NAS1081C02A2N	SCREW-SET
			1			1015668	BRACKET-CONNECTOR
			1			1015669-011	TERMINAL BOARD ASSY
			6			1010311-	RESISTORS
			8			MS21269-A115	SCREW- INST. PAN HD.
			1			1015666	WEDGE LIGHTING ASSY
			1			1015559	DIGITAL CORE (INSEP ASSY)
			3			1015663	SET SCREW
			1			1015664	WASHER-SPECIAL
			1			1015660	COVER, ACCESS HOLE
			6			AN510C0-3	SCREW-FL HD
			2			MS35649-24	NUT-HEX
			2			1010457-001	ACTUATOR - MICROSWITCH
			4			1010435-001	MICROSWITCH
			2			NAS1351C00LL2	SCREW-SOC HD CAP
			2			1010356-10	BALL BEARING
			16			1010356-6	BALL BEARING
			2			1015552	HEAT SINK
			2			1015551	CLAMP ASSY (INSEP)
			3			1010468-2	SCREW-SOC HD CAP
			30			NAS1352C02LL4	SCREW-SOC HD CAP
			1			NAS1351C00LL4	SCREW-SOC HD CAP
			2			NAS1352C04LL6	SCREW-SOC HD CAP
			6			MS21268-A110	SCREW-INST FIL HD
			3			MS21268-A112	SCREW-INST FIL HD
			4			1010468-1	SCREW
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			1			1010430	MOTOR-TACH.
			1			1010351	RESOLVER 16X
			2			1010428	RESOLVER, 1/4X & 1/2X
			1			1015538-2	CLAMP-MOTOR MODIFIED
			1			1010341	RESOLVER, 1X
			1			MS16624-18	RING, RETAINING
			4			AN960C2L	WASHER-FLAT
			2			1006982-7	WASHER-FLAT, NYLON
			1			MS16555-606	PIN - STRAIGHT
			1			1015512	CLAMP SCREW
			3			1015548	SPACER-SLEW SWITCH
			1			1015547	TOGGLE
			1			1015546	BRACKET-SLEW SWITCH
			12			1015543	SET SCREW
			4			1015542	CLAMP
			1			1015541	CLAMP-MODIFIED
			1			1015540	CLAMP-MODIFIED
			3			1015539	CLAMP-MOTOR
			1			1015538-1	CLAMP-MOTOR MODIFIED
			1			1015537	FLYWHEEL
			1			1015536	GEAR, SPUR
			1			1015535	DIAL- 1 SPEED
			1			1015534	DIAL- 36 SPEED
			1			1015533	DIAL-1800 SPEED
			4			1015532	CLAMP, GEAR
			1			1015517	PILOT SHAFT (INSEP ASSY)
			1			1015531	GEAR, SYNCHRO
			1			1015530	GEAR, SYNCHRO
			2			1015529	GEAR, SYNCHRO
			1			1015528	GEAR, CLUSTER
			1			1015527	GEAR, CLUSTER
			1			1015526	GEAR, CLUSTER
			1			1015525	GEAR, CLUSTER
			1			1015524	GEAR, CLUSTER
			1			1015523	GEAR, CLUSTER
			1			1015522	GEAR, SPUR
			1			1015521	WHEEL, ADJUSTMENT
			1			1015520	GEAR, CLUSTER
			1			1015665-011	HOUSING & CLAMP ASSY
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ ∽ + ∽ + ∽
− ∽ − ∽ − ∽
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN WUNDERLICH DATE 4-FEB 63
CHECKED E. HINTZ
APPROVAL J. PETRANYI
APPROVAL R. BOND
NASA APPROVAL
MIT APPROVAL 2 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

CODE IDENT NO.
SIZE D
1015500
SCALE —
SHEET —

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

APOLLO G&N Specification
PS-1015500 B
31 December 1963
Class A Release
TDRR 05589

PROCUREMENT SPECIFICATION

FOR

CDU ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
4/7/64	A	07492	All	WAR.	
12/8/64	B	14723	1, 2	W.K.	W.J.R.

This specification consists of page i to iii and 1 to 7 inclusive.

PROCUREMENT SPECIFICATION

FOR

CDU ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the CDU Assembly, Drawing 1015500, hereafter called the assembly.

1.2 CLASSIFICATION. The requirements for the equipment covered by this specification shall be classified as follows. Unless otherwise specified, all types shall meet all the requirements specified herein.

a. Type I: The requirements for Part Number 1015500-011 shall be designated as Type I.

b. Type II: The requirements for Part Number 1015500-021 shall be designated as Type II.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies.
FTM-1015500	Final Test Method for CDU Assembly

DRAWINGS

APOLLO G&N

1015500	CDU Assembly

3. REQUIREMENTS

3.1 GENERAL SPECIFICATION. Unless otherwise specified herein, all of the requirements of Specification ND-1002210 shall apply as requirements of this specification.

3.2 DESCRIPTION. The assembly shall display the trunnion and shaft angles of the sextant and the gimbal angles of the IMU and shall provide the capability of manually setting gimbal angles.

3.3 FUNCTIONAL REQUIREMENTS

3.3.1 Electrical Inputs. The assembly shall operate as specified herein with the following electrical inputs:

a. 28V±1%, 800±5 cps, 0° and -90° phase, 1% max distortion
b. 2.5V±1%, 25.6KC ± 1%, 3% max distortion
c. 5.5±0.28V, 400 or 800 cps, 3% max distortion

3.3.2 Continuity and DC Resistance. Continuity and DC resistance shall be as specified in Table I.

TABLE I

CONTINUITY AND DC RESISTANCE

FROM	TO	RESISTANCE (Ohms)	CONDITIONS
P1-1	P1-14	170 max	
P1-2	P1-3	100 max	
P1-4	P1-17	61±15%	
P1-4	P1-18	61±15%	
P1-6	P1-20	215±15%	
P1-7	P1-21	215±15%	
P1-8	P1-22	78±15%	
P1-9	P1-10	78±15%	
P1-11	P1-25	61±15%	
P1-12	P1-25	61±15%	
P1-15	P1-30	<2.1	
P1-16	P1-30	<2.1	Actuate SIB and SID
P1-16	P1-30	<2.1	Actuate SIB and SIA
P1-28	P1-29	50 max	
P1-31	P1-32	100 max	
P1-31	P1-43	50 max	
P1-34	P1-45	270±15%	
P1-35	P1-45	270±15%	

1015500C

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REVISED AND REDRAWN TDRR 01137	DO 51455	12 APR 63	WEP
C		REVISED PER TDRR# 02191		JULY 24 1963	WK

PICTURE INCOMPLETE

REPLACED WITH CHANGES BY REV. D.

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
X			1015670	WIRING DIAGRAM
X			1010036	ELECT. SCHEMATIC
X			1015550	CDU GEAR BOX MECH. SCHEMATIC
			1015667	WIRE LIST BB
1			NAS1081C02A2N	SCREW-SET
1			1015668	BRACKET-CONNECTOR
1			1015669	TERMINAL BOARD (INSEP. ASS'Y.)
6			1010311-	RESISTORS
1			1010347-2	CONNECTOR, PLUG
1			1015680	GASKET, WEDGE LIGHT
8			MS21269-A115	SCREW- INST. PAN HD.
1			1015666	WEDGE LIGHTING ASSY
1			1015559	DIGITAL CORE (INSEP ASSY)
3			1015663	SET SCREW
1			1015664	WASHER-SPECIAL
2			1010457-1	ACTUATOR-MICROSWITCH
4			1010435-002	MICROSWITCH
2			NAS1351C00LL2	SCREW-SOC HD CAP
2			1010356-10	BALL BEARING
16			1010356-6	BALL BEARING
3			1010468-2	SCREW-SOC HD CAP
30			NAS1352C02LL4	SCREW-SOC HD CAP
1			NAS1351C00LL4	SCREW-SOC HD CAP
2			NAS1352C04LL6	SCREW-SOC HD CAP
6			MS21268-A110	SCREW-INST FIL HD
3			MS21268-A112	SCREW-INST FIL HD
4			1010468-1	SCREW

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1			1010430	MOTOR-TACH
1			1010351	RESOLVER, RECEIVER
2			1010428	RESOLVER, TRANSMITTER
1			1015538-2	CLAMP-MOTOR-MODIFIED
1			1010341	RESOLVER, RECEIVER
1			MS16624-18	RING, RETAINING
2			1015684	WASHER, THRUST
1			MS16555-606	PIN-STRAIGHT
1			1015512	CLAMP SCREW
3			1015548	SPACER-SLEW SWITCH
1			1015547	TOGGLE
1			1015683	SLEWING SWITCH BRACKET (INSEP. ASS'Y.)
12			1015543	SET SCREW
4			1015542	CLAMP
1			1015541	CLAMP-MODIFIED
1			1015540	CLAMP-MODIFIED
3			1015539	CLAMP-MOTOR
1			1015538-1	CLAMP-MOTOR-MODIFIED
1			1015537	FLYWHEEL
1			1015536	GEAR, SPUR
1			1015535	DIAL- 1 SPEED
1			1015534	DIAL- 36 SPEED
1			1015533	DIAL-1800 SPEED
4			1015532	CLAMP, GEAR
1			1015517	PILOT SHAFT (INSEP ASSY)
1			1015531	GEAR, SYNCHRO
1			1015530	GEAR, SYNCHRO
2			1015529	GEAR, SYNCHRO
1			1015528	GEAR, CLUSTER
1			1015527	GEAR, CLUSTER
1			1015526	GEAR, CLUSTER
1			1015525	GEAR, CLUSTER
1			1015524	GEAR, CLUSTER
1			1015523	GEAR, CLUSTER
1			1015522	GEAR, SPUR
1			1015521	WHEEL, ADJUSTMENT
1			1015520	GEAR, CLUSTER
1			1015665-011	HOUSING & CLAMP ASSY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN WUNDERLICH DATE 4-FEB 63
CHECKED E. HINTZ
APPROVAL J. PETRANYI
APPROVAL R. BOND
NASA APPROVAL
MIT APPROVAL 2 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

CODE IDENT NO.
SIZE D
1015500
SCALE —
SHEET —

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

APOLLO G&N Specification
PS-1015500 C
31 December 1963
Class A Release
TDRR 05589

PROCUREMENT SPECIFICATION

FOR

CDU ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
4/7/64	A	07492	All	WAR.	
Ⓜ 12/8/64	B	14723	1, 2	W. K.	W. J. R.
6/2/65	C	19765	1-5	M. G. M.	T. M.

This specification consists of page i
to iii and 1 to 7 inclusive.

APOLLO G&N Specification
PS1015500 C

PROCUREMENT SPECIFICATION

FOR

CDU ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the CDU Assembly, Drawing 1015500, hereafter called the assembly.

1.2 CLASSIFICATION. The requirements for the equipment covered by this specification shall be classified as follows. Unless identified by the respective type, all requirements of this specification are applicable for all types.

a. Type I. The requirements forPart Number 1015500-011 shall be designated as Type I in this specification and identified as PS1015500-011.

b. Type II. The requirements for Part Number 1015500-021 shall be designated as Type II in this specification and identified as PS1015500-021.

c. Type III. The requirements for Part Number 1015500-031 shall be designated as Type III in this specification and identified as PS1015500-031.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies.
FTM-1015500	Final Test Method for CDU Assembly

DRAWINGS

APOLLO G&N

1015500	CDU Assembly

3. REQUIREMENTS

3.1 GENERAL SPECIFICATION. Unless otherwise specified herein, all of the requirements of Specification ND-1002210 shall apply as requirements of this specification.

3.2 DESCRIPTION. The assembly shall display the trunnion and shaft angles of the sextant and the gimbal angles of the IMU and shall provide the capability of manually setting gimbal angles.

3.3 FUNCTIONAL REQUIREMENTS

3.3.1 Electrical Inputs. The assembly shall operate as specified herein with the following electrical inputs:

a. 28V ±1%, 800±5 cps, 0° and -90° phase, 1% max distortion
b. 2.5V ±1%, 25.6KC ±1%, 3% max distortion
c. 5.5±0.28V, 400 or 800 cps, 3% max distortion

3.3.2 Continuity and DC Resistance. Continuity and DC resistance shall be as specified in Table I.

TABLE I

CONTINUITY AND DC RESISTANCE

FROM	TO	RESISTANCE (Ohms)	CONDITIONS
P1-1	P1-14	170 max	
P1-2	P1-3	100 max	
*1P1-2	P1-5	100 max	
P1-4	P1-17	61±15%	
P1-4	P1-18	61±15%	
P1-6	P1-20	215±15%	
P1-7	P1-21	215±15%	
P1-8	P1-22	78±15%	
P1-9	P1-10	78±15%	
P1-11	P1-25	61±15%	
P1-12	P1-25	61±15%	
*2P1-15	P1-30	<2.1	
*2P1-16	P1-30	<2.1	Actuate SIB and SID
*2P1-16	P1-30	<2.1	Actuate SIB and SIA
P1-28	P1-29	50 max	
P1-31	P1-32	100 max	
P1-31	P1-43	50 max	
P1-34	P1-45	270±15%	

Table I (Continued)

FROM	TO	RESISTANCE (Ohms)	CONDITIONS
P1-35	P1-45	270±15%	
P1-41	E1 (Chassis)	<0.1	
*3P1-50	P1-60	15±15%	
P1-52	P1-61	<2.1	
P1-56	P1-66	78±15%	
P1-57	P1-67	78±15%	
P1-57	P1-68	49.9K ±3%	
P1-86	P1-100	215±15%	
P1-87	P1-101	215±15%	
P1-89	P1-90	445±15%	
P1-90	P1-104	445±15%	
P1-92	P1-106	2300 max	
*2P1-92	P1-105	<2.1	
*2P1-92	P1-105	115 max	Actuate SIA and SIC
*2P1-92	P1-105	115 max	Actuate SIB and SID
*3P1-94	P1-107	125 max	
*3P1-107	P1-108	250 max	
*3P1-94	P1-108	125 max	

*1 Type III only.

*2 Type I and II only.

*3 DC current between the indicated points shall be limited to a maximum of 30 milliamperes.

3.3.3 Insulation Resistance. Insulation resistance shall be as specified in Table II.

TABLE II

INSULATION RESISTANCE

FROM	TO	APPLIED VOLTAGE (vdc ±10%)	MINIMUM RESISTANCE (Megohms)
P1-1	Chassis Gnd (E1)	175	50
P1-2	↑	↑	100
P1-4			↑
P1-6			
P1-7			
P1-8			
P1-9			
P1-11			
* P1-15			↓
* P1-16			100
P1-31			50
P1-34			100
P1-50			500
P1-52			100
P1-56			100
P1-57			50
P1-86			100
P1-87			100
P1-89			100
P1-92	↓	↓	50
P1-94	Chassis Gnd (E1)	175	100

* Type I and II only

3.3.4 Motor Starting Voltage. The in-phase voltage necessary to start and maintain motor shaft rotation shall not exceed 1.5V rms for Type I and III, and 2.0V rms for Type II.

3.3.5 Motor Phasing. The CDU display shall increase when the control voltage is in-phase with the 0° reference and shall decrease when the control voltage is 180° out of phase with respect to the 0° reference.

3.3.6 Motor Speed. With rated voltage applied to all motor windings, the steady state motor speed shall be 11,000 ± 2500 rpm.

3.3.7 Tachometer Null. With the motor control voltage removed, the in-phase component of the tachometer output voltage shall be less than 4 mv rms, and the total tachometer voltage shall be less than 11 mv rms when the tachometer shaft is not rotating.

3.3.8 Tachometer Phasing. The tachometer output voltage shall be 180° out of phase with respect to the tachometer reference when the CDU display is increasing, and shall be in-phase with the tachometer reference when the CDU display is decreasing.

3.3.9 Motor Jog. With the motor shaft speed set at 50 ± 3 rpm, the variation from the set speed ~~shall not~~ exceed ±2 rpm.

3.3.10 Slew Voltage and Phasing For Type I and II. With the SLEW switch set in the "INC" position, the slewing transformer output shall be 6.25±1.00V rms, and in phase with the zero degrees reference. With the SLEW switch set in the "DEC" position, the slewing transformer output voltage shall be 6.25±1.00V rms, and 180° out of phase with the zero degrees reference.
reference.

3.3.11 Encoder Output Characteristics. With the motor driven at a constant speed each phase of the encoder output shall have the following characteristics.

3.3.11.1 Modulation Envelope Magnitude. The magnitude of the modulation envelope shall be greater than 125 mv pp, but less than 300 mv pp.

3.3.11.2 Zero Crossover (Null) Voltage. The zero crossover null voltage of the modulation envelope shall be less than 10 mv pp.

3.3.11.3 Lobe Mismatch. The difference between magnitudes of each successive half-cycle, of modulation envelope of each phase shall not exceed 10 percent of the magnitude of the greatest half-cycle of modulation envelope.

3.3.12 Encoder Phase Relationship. With the motor driven at a constant speed such that the CDU display is increasing, the Phase 2 modulation envelope of the encoder output shall lead the Phase 1 modulation envelope by 90° ±20°. With the motor driven at a constant speed such that the CDU display is decreasing, the Phase 2 modulation envelope of the encoder output shall lag the Phase 1 modulation envelope by 90° ±20°.

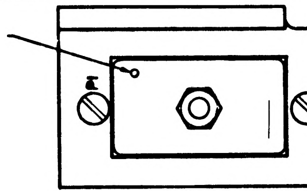
3.3.13 CDU Zeroing. CDU zeroing shall be as follows.

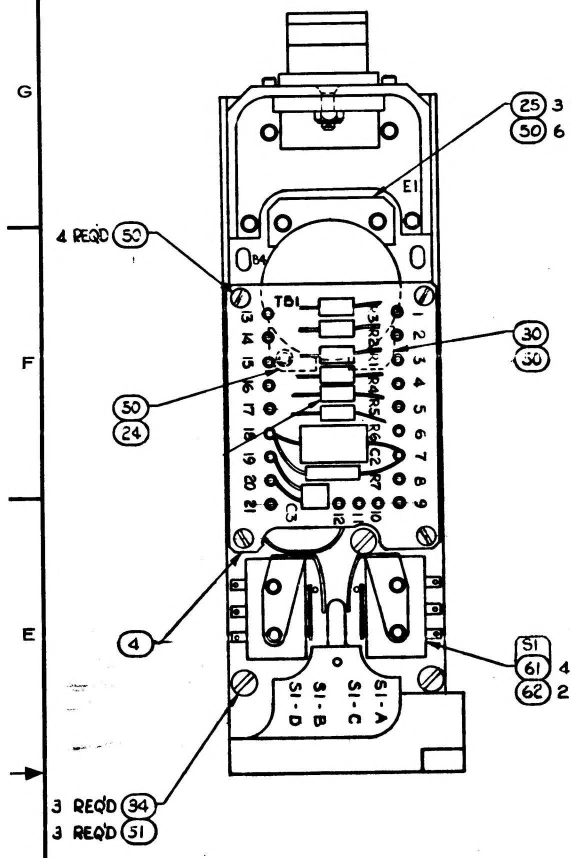
3.3.13.1 16 Speed Resolver Zero. With the CDU display driven to zero by means of the 16 Speed Resolver the CDU display shall indicate 000.000±0.001°.

3.3.13.2 Encoder Null. With the CDU display at zero, the in-phase 16 Speed Resolver output shall be 21.0±8.0 millivolts rms at the closest Phase 2 null points on each side of the CDU display zero.

3.3.13.3 1, 1/2, and 1/4 Speed Resolvers Zero Null. With the CDU display set to indicate 000.000±0.001°; the output voltages of the 1, 1/2, and 1/4 Speed Resolvers shall be as specified in Table III.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		REPLACES REV. C WITH CHANGES PER TDRR# 02191		JULY 19 1963	wK

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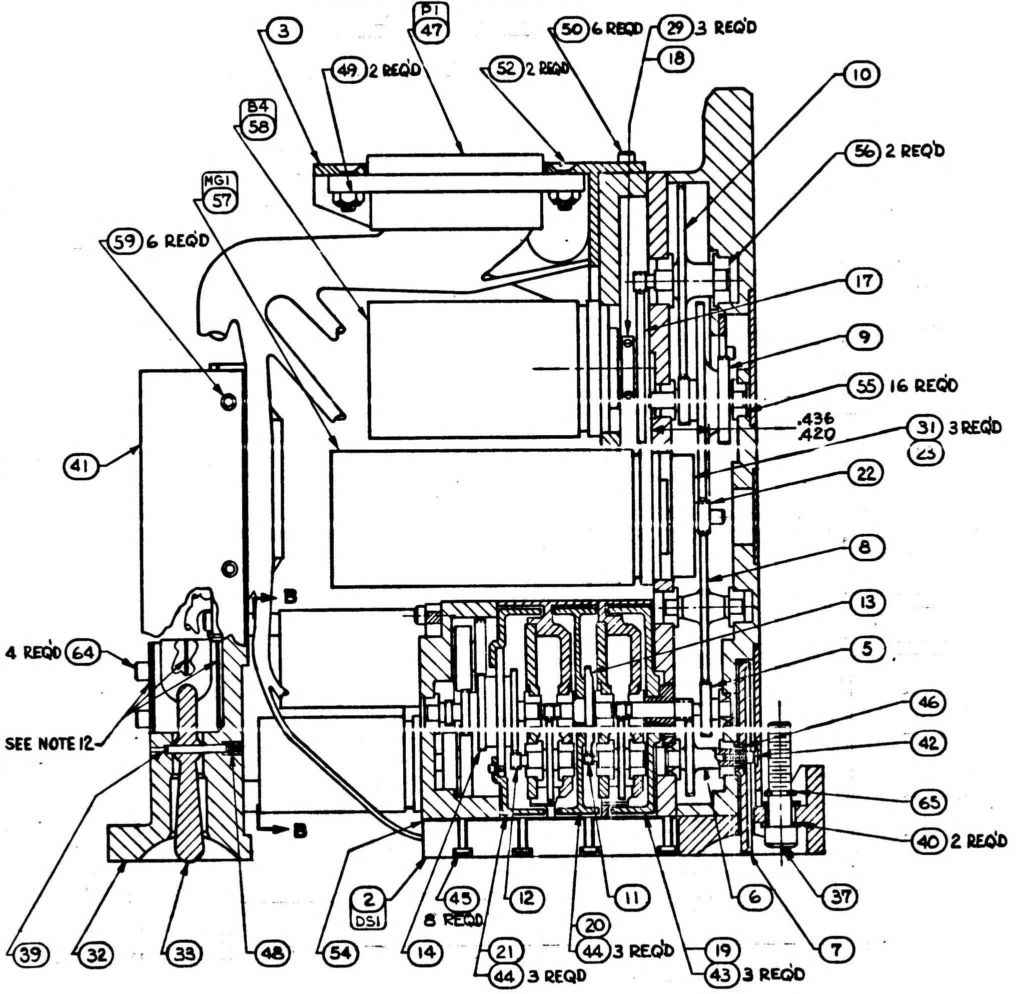
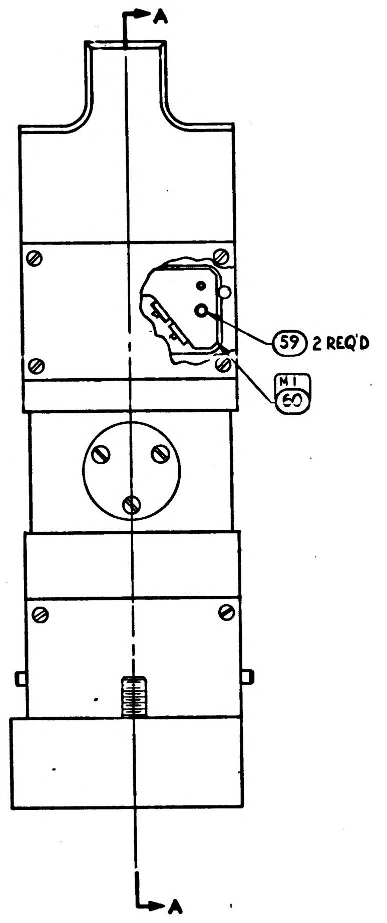
50 6 REQ'D
E1
4 REQ'D 50
TB1
30
50
50
24
4
S1
61 4 REQ'D
62 2 REQ'D
S1-A
S1-B
S1-C
S1-D
3 REQ'D 34
3 REQ'D 51

(COVER REMOVED AND WIRE HARNESS NOT SHOWN)

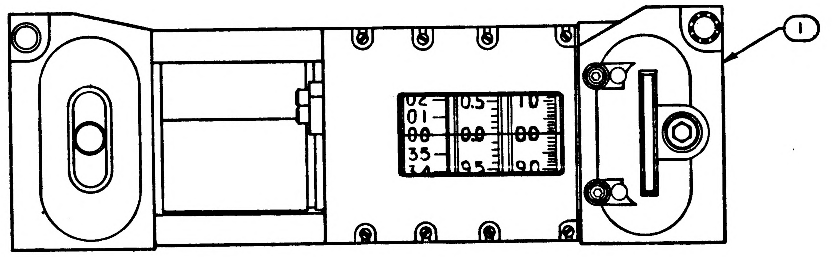

3
P1
47
49 2 REQ'D
52 2 REQ'D
50 6 REQ'D
29 3 REQ'D
18
10
56 2 REQ'D
B4
58
MG1
57
59 6 REQ'D
17
9
55 16 REQ'D
.436
.420
31 3 REQ'D
23
41
22
8
B
13
4 REQ'D 64
5
SEE NOTE 12
46
42
65
40 2 REQ'D
B
39
32
33
48
54
2
DS1
14
45
8 REQ'D
21
44 3 REQ'D
12
20
44 3 REQ'D
11
19
43 3 REQ'D
6
7
37

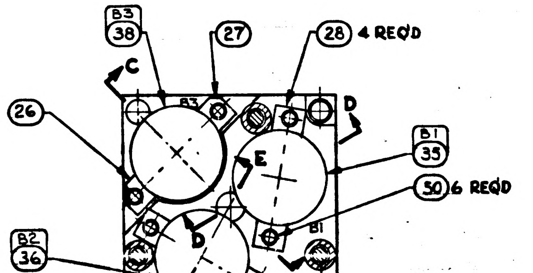
SECTION A-A


A
59 2 REQ'D
M1
60
A

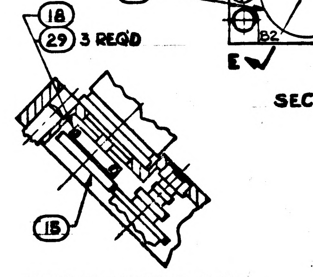
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4. DRAWINGS FOR REFERENCE
   - 1015550 CDU MECHANICAL SCHEMATIC DIAGRAM
   - 1010036 SCHEMATIC DIAGRAM, ELECTRICAL
   - 1015670 WIRING DIAGRAM
5. TORQUE SCREWS BETWEEN 6.3 AND 6.8 IN. LB.
6. TORQUE SCREWS BETWEEN 1.2 AND 1.3 IN. LB.
7. TORQUE SCREWS BETWEEN .4 AND .5 IN. LB.
8. TORQUE SCREWS BETWEEN .29 AND .39 IN. LB.
9. TORQUE SCREWS BETWEEN 3.4 AND 3.6 IN. LB.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER MIL-S-40083 (ORD) CLASS 20 LOCKTITE (ES-2544-3 GRADE C).
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14. TO AND FROM DESTINATIONS OF WIRE LIST B-B WHICH IS DONE ON TB1 TO BE SELECTED PER ATP 1015500.
15. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267)

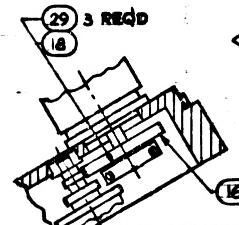

1
0.5
10
01
00
35


B3
38
27
28 4 REQ'D
C
D
26
E
B1
35
50 6 REQ'D
B2
36
D
C
B1
B2

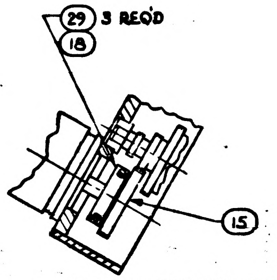
SECTION B-B


18
29 3 REQ'D
15

PARTIAL SECTION C-C


29 3 REQ'D
18
16

PARTIAL SECTION D-D


29 3 REQ'D
18
15

PARTIAL SECTION E-E

QUANTITY REQUIRED			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			1		65	MS 16624-18	RING, RETAINING
			4		64	1010468-1	SCREW CAP, SOC HD (SEE NOTE 9)
			1		63	1015667	WIRE LIST B-B
			2		62	1010457	MICROSWITCH ACTUATOR
			4		61	1010435-002	MICROSWITCH
			1		60	1015559	DIGITAL CORE ASSY
			8		59	NAS 1351C00LL2	SCREW-CAP, SOC HD (SEE NOTE 6)
			1		58	1015673	RESOLVER, 16X-CDU
			1		57	1015674	MOTOR TACH - CDU
			2		56	1010356-10	BALL BEARING
			16		55	1010356-6	BALL BEARING
			1		54	1015680	GASKET, WEDGE LIGHT
					53		
			2		52	AN505DD4-6	SCREW, FLAT HD
			3		51	1010468-2	SCREW, CAP, SOC HD (SEE NOTE 5)
			24		50	NAS 1352C02LL-4	SCREW, CAP, SOC HD (SEE NOTE 9)
			2		49	MS 20365D-440	NUT, SELF LOCKING
			1		48	NAS1081C02A2N	SCREW - SET (SEE NOTE 9)
			1		47	1010347-2	CONNECTOR, PLUG, ELECTRICAL
			1		46	1215664	WASHER, SPECIAL
			8		45	MS21269-A115	SCREW, INST, PAN HD (SEE NOTE 8)
			6		44	MS 21268-A110	SCREW, INST, FIL HD (SEE NOTE 7)
			3		43	MS 21268-A112	SCREW, INST, FIL HD (SEE NOTE 7)
			1		42	NAS1351C00LL4	SCREW, CAP, SOC HD (SEE NOTE 6)
			1		41	1016892	COVER, TERMINAL BOARD
			2		40	1015684	WASHER, THRUST
			1		39	MS16555-606	PIN, STRAIGHT
			1		38	1015681	RESOLVER, 1X-CDU
			1		37	1015512	CLAMP SCREW
			1		36	1016890	RESOLVER, 1/2 X-CDU
			1		35	1015672	RESOLVER, 1/4 X-CDU
			3		34	1015548	SPACER, SLEW SWITCH
			1		33	1015547	TOGGLE, SWITCH
			1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
			3		31	1015663	SET SCREW (SEE NOTE 5)
			1		30	1015538-2	CLAMP, MOTOR MODIFIED
			12		29	1015543	SET SCREW
			4		28	1015542	CLAMP, SYNCHRO
			1		27	1015541	CLAMP, SYNCHRO MODIFIED
			1		26	1015540	CLAMP, SYNCHRO MODIFIED
			3		25	1015539	CLAMP, MOTOR
			1		24	1015538-1	CLAMP, MOTOR MODIFIED
			1		23	1015537	FLYWHEEL
			1		22	1015536	GEAR, SPUR
			1		21	1015535	DIAL, 1 SPEED
			1		20	1015534	DIAL, 36 SPEED
			1		19	1015533	DIAL, 1800 SPEED
			4		18	1015532	CLAMP, GEAR
			1		17	1015531	GEAR, SYNCHRO
			1		16	1015530	GEAR, SYNCHRO
			2		15	1015529	GEAR, SYNCHRO
			1		14	1015528	GEAR, CLUSTER, SPUR
			1		13	1015527	GEAR, CLUSTER, SPUR
			1		12	1015526	GEAR, CLUSTER, SPUR
			1		11	1015525	GEAR, CLUSTER, SPUR
			1		10	1015524	GEAR, CLUSTER, SPUR
			1		9	1015523	GEAR, CLUSTER, SPUR
			1		8	1015522	GEAR, SPUR
			1		7	1015521	ADJUSTMENT, WHEEL
			1		6	1015520	GEAR, CLUSTER, SPUR
			1		5	1015517	PILOT SHAFT ASSY (INSEP)
			1		4		TERMINAL BOARD ASSY (INSEP
			1		3	1015668	BRACKET, CONNECTOR
			1		2	1015666-011	WEDGE LIGHTING ASSY
			1		1	1015665-011	HOUSING AND CLAMP ASSY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + ~ − ~
DECIMALS + ~ − ~
ANGLES + ~ − ~
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Fox DATE 2 JUL 63
CHECKED Ed Foster 5 JUL 63
APPROVAL 5 JUL 63
APPROVAL 5 JUL 63
NASA APPROVAL 7/24/63
MIT APPROVAL 24 July 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

CODE IDENT NO.
SIZE E
1015500
SCALE 2 : 1
SHEET 1 OF 1

R L Kupfer
5 JUL 63

1015500

INCHES
PHOTOGRAPHIC SCALE ONLY

APOLLO G&N Specification
PS-1015500 Ⓓ
31 December 1963
Class A Release
TDRR 05589

PROCUREMENT SPECIFICATION

FOR

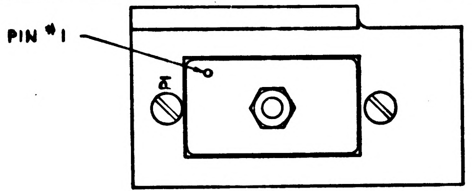
CDU ASSEMBLY

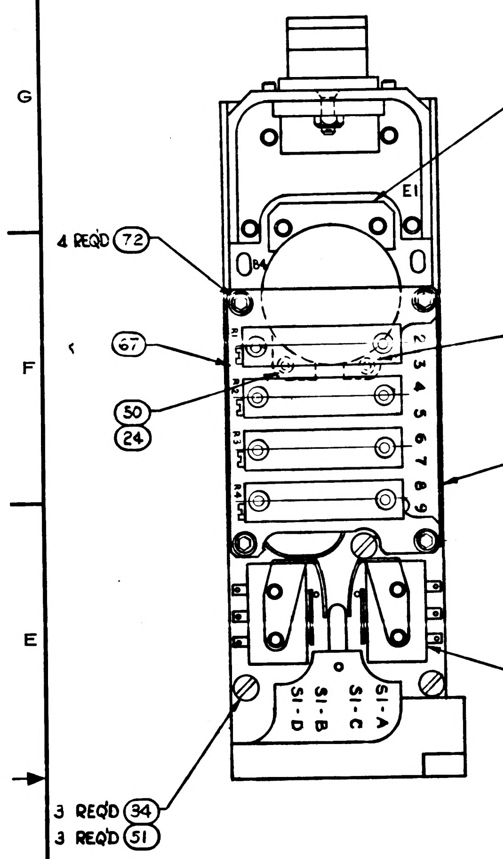
Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
4/7/64	A	07492	All	WK.	
Ⓜ 12/8/64	B	14723	1, 2	W.K.	W.J.R.
Ⓝ 6/2/65	C	19765	1-5	M.G.M.	T. M.
7-21-65	D	21105	2	WK	ACM

This specification consists of page i
to iii and 1 to 7 inclusive.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		REPLACES REV. C WITH CHANGES PER TDRR # 02191		JULY 19 1963	
E		REVISED PER TDRR NO 02897		9/10/63	WK

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30 6 REQ'D
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4 REQ'D 72
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24
4
S1
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62 2 REQ'D
S1-A
S1-C
S1-B
S1-D
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3 REQ'D 51

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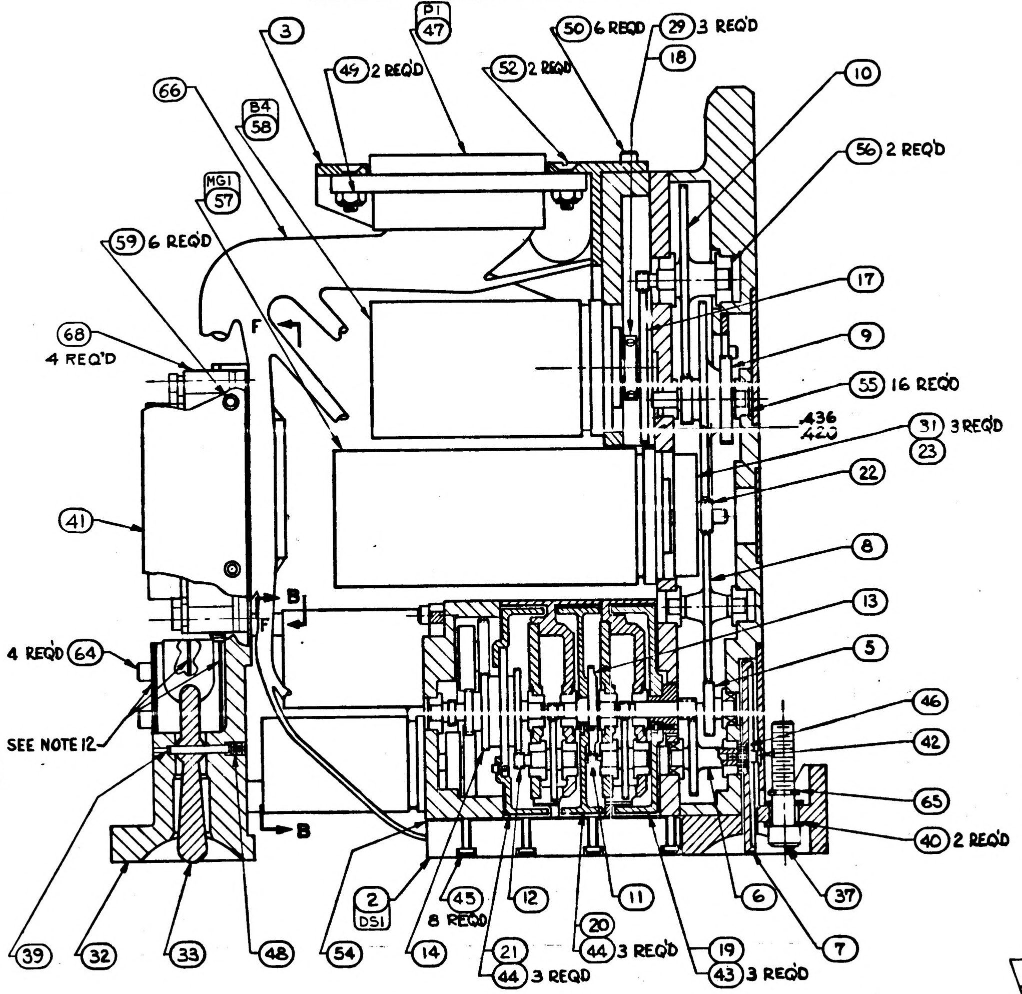
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B4 58
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MG1 57
59 6 REQ'D
17
9
68 4 REQ'D
55 16 REQ'D
.436
.420
31 3 REQ'D
23
22
41
8
13
5
4 REQ'D 64
SEE NOTE 12
46
42
65
40 2 REQ'D
37
B
F
2 DS1
45 8 REQ'D
12
11
20
44 3 REQ'D
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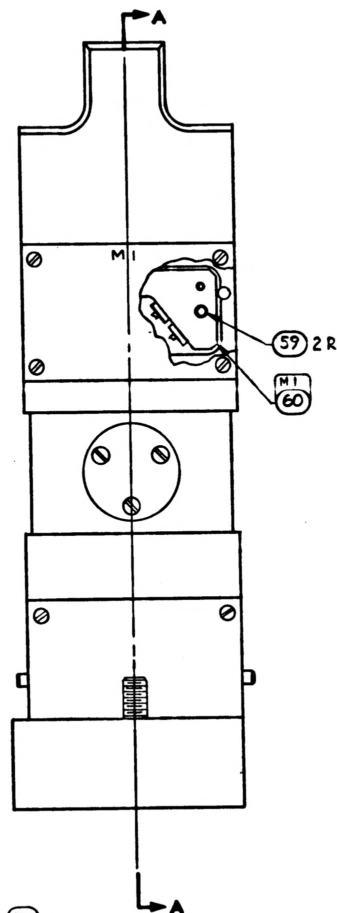
SECTION A-A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M1
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M1 60
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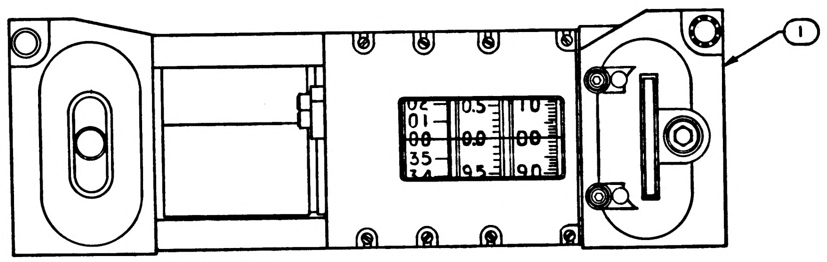
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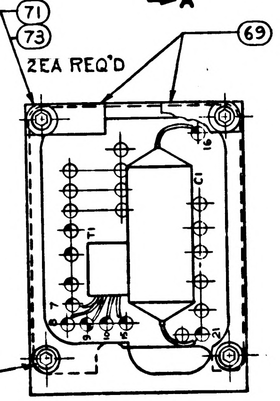
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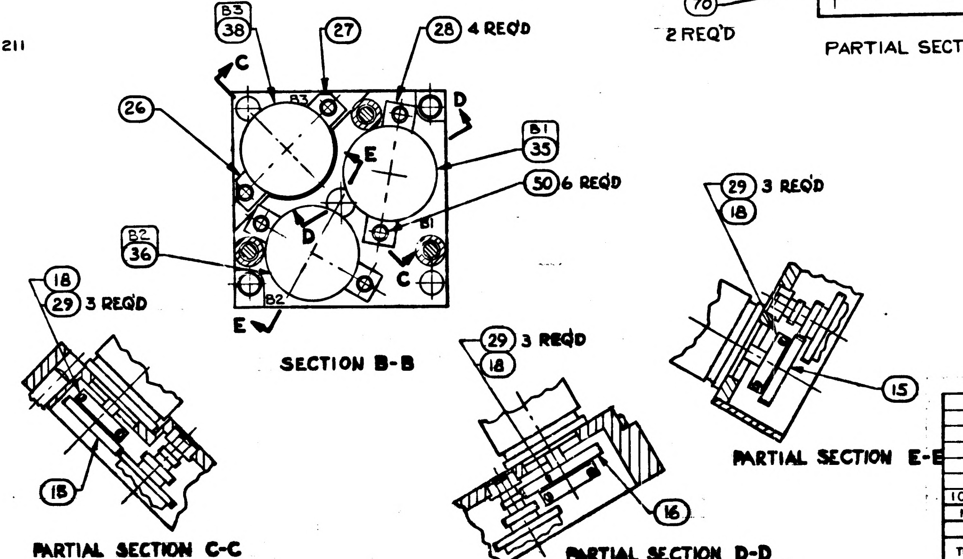
F
70
2 REQ'D

PARTIAL SECTION F-F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27
28 4 REQ'D
26
C
D
B3
E
B1 35
50 6 REQ'D
B1
B2 36
B2
E
C
D
18
29 3 REQ'D
18
29 3 REQ'D
18
16
29 3 REQ'D
18
15

SECTION B-B

PARTIAL SECTION C-C

PARTIAL SECTION D-D

PARTIAL SECTION E-E

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4. DRAWINGS FOR REFERENCE
   1015550 CDU MECHANICAL SCHEMATIC DIAGRAM
   1010036 SCHEMATIC DIAGRAM, ELECTRICAL
   1015670 WIRING DIAGRAM
5. TORQUE SCREWS BETWEEN 6.3 AND 6.8 IN. LB.
6. TORQUE SCREWS BETWEEN 1.2 AND 1.3 IN. LB.
7. TORQUE SCREWS BETWEEN .4 AND .5 IN. LB.
8. TORQUE SCREWS BETWEEN .29 AND .39 IN. LB.
9. TORQUE SCREWS BETWEEN 3.4 AND 3.6 IN. LB.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER MIL-S-40083 (ORD) CLASS 20 LOCKTITE (ES-2544-3 GRADE C) PER ND 1002211
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267)

			2		73	MS15795-702	WASHER - PLAIN
			4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD (SEE NOTE 9)
			2		71	1010468-4	SCREW, CAP, SOC HD (SEE NOTE 9)
			2		70	1011625-13	SCREW, CAP, SOC HD (SEE NOTE 9)
			2		69	1000220-6	CLAMP-CABLE
			4		68	1016896	SPACER
			1		67	1016898	MOUNTING BOARD (INSEP ASSY)
			1		66	1016897	WIRING HARNESS
			1		65	MS16624-18	RING, RETAINING
			4		64	1010468-1	SCREW CAP, SOC HD (SEE NOTE 9)
					63		
			2		62	1010457	MICROSWITCH ACTUATOR
			4		61	1010435-002	MICROSWITCH
			1		60	1015559	DIGITAL CORE ASSY
			8		59	NAS1351C00LL2	SCREW-CAP, SOC HD (SEE NOTE 6)
			1		58	1015673	RESOLVER, 16X - CDU
			1		57	1015674	MOTOR TACH - CDU
			2		56	1010356-10	BALL BEARING
			16		55	1010356-6	BALL BEARING
			1		54	1015680	GASKET, WEDGE LIGHT
					53		
			2		52	AN505DD4-6	SCREW, FLAT HD
			3		51	1010468-2	SCREW, CAP, SOC HD (SEE NOTE 5)
			20		50	NAS1352C02LL-4	SCREW, CAP, SOC HD (SEE NOTE 9)
			2		49	MS20365D-440	NUT, SELF LOCKING
			1		48	NAS1081C02A2N	SCREW - SET (SEE NOTE 9)
			1		47	1010347-2	CONNECTOR, PLUG, ELECTRICAL
			1		46	1015664	WASHER, SPECIAL
			8		45	MS21269-A115	SCREW, INST, PAN HD (SEE NOTE 8)
			6		44	MS21268-A110	SCREW, INST, FIL HD (SEE NOTE 7)
			3		43	MS21268-A112	SCREW, INST, FIL HD (SEE NOTE 7)
			1		42	NAS1351C00LL4	SCREW, CAP, SOC HD (SEE NOTE 6)
			1		41	1016892	COVER, TERMINAL BOARD
			2		40	1015684	WASHER, THRUST
			1		39	MS16555-606	PIN, STRAIGHT
			1		38	1015681	RESOLVER, 1X - CDU
			1		37	1015512	CLAMP SCREW
			1		36	1016890	RESOLVER, ½X - CDU
			1		35	1015672	RESOLVER, ¼X - CDU
			3		34	1015548	SPACER, SLEW SWITCH
			1		33	1015547	TOGGLE, SWITCH
			1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
			3		31	1015663	SET SCREW (SEE NOTE 5)
			1		30	1015538-2	CLAMP, MOTOR MODIFIED
			12		29	1015543	SET SCREW
			4		28	1015542	CLAMP, SYNCHRO
			1		27	1015541	CLAMP, SYNCHRO MODIFIED
			1		26	1015540	CLAMP, SYNCHRO MODIFIED
			3		25	1015539	CLAMP, MOTOR
			1		24	1015538-1	CLAMP, MOTOR MODIFIED
			1		23	1015537	FLYWHEEL
			1		22	1015536	GEAR, SPUR
			1		21	1015535	DIAL, 1 SPEED
			1		20	1015534	DIAL, 36 SPEED
			1		19	1015533	DIAL, 1800 SPEED
			4		18	1015532	CLAMP, GEAR
			1		17	1015531	GEAR, SYNCHRO
			1		16	1015530	GEAR, SYNCHRO
			2		15	1015529	GEAR, SYNCHRO
			1		14	1015528	GEAR, CLUSTER, SPUR
			1		13	1015527	GEAR, CLUSTER, SPUR
			1		12	1015526	GEAR, CLUSTER, SPUR
			1		11	1015525	GEAR, CLUSTER, SPUR
			1		10	1015524	GEAR, CLUSTER, SPUR
			1		9	1015523	GEAR, CLUSTER, SPUR
			1		8	1015522	GEAR, SPUR
			1		7	1015521	ADJUSTMENT, WHEEL
			1		6	1015520	GEAR, CLUSTER, SPUR
			1		5	1015517	PILOT SHAFT ASSY (INSEP)
			1		4	1016894	TERMINAL BOARD ASSY (INSEP)
			1		3	1015668	BRACKET, CONNECTOR
			1		2	1015666-011	WEDGE LIGHTING ASSY
			1		1	1015665-011	HOUSING AND CLAMP ASSY
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

1016903-011	1016903-011	
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + ~ − ~
DECIMALS + ~ − ~
ANGLES + ~ − ~
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Fox DATE 2 JUL 63
CHECKED Ed Foster 5 JUL 63
APPROVAL Ed Meckenburn 5 JUL 63
APPROVAL [illegible] 5 JUL 63
NASA APPROVAL [illegible] 11/4/63
MIT APPROVAL W Kupfer 24 July 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

CODE IDENT NO.
SIZE E
1015500
SCALE 2 : 1
SHEET 1 OF 1

R R Kupfer
5 Jul 63

APOLLO G&N Specification
PS-1015500 E
31 December 1963
Class A Release
TDRR 05589

PROCUREMENT SPECIFICATION

FOR

CDU ASSEMBLY

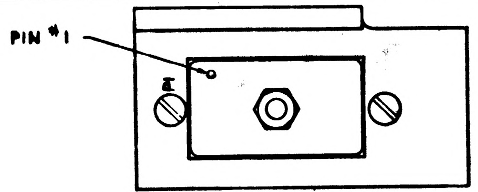
Record of Revisions

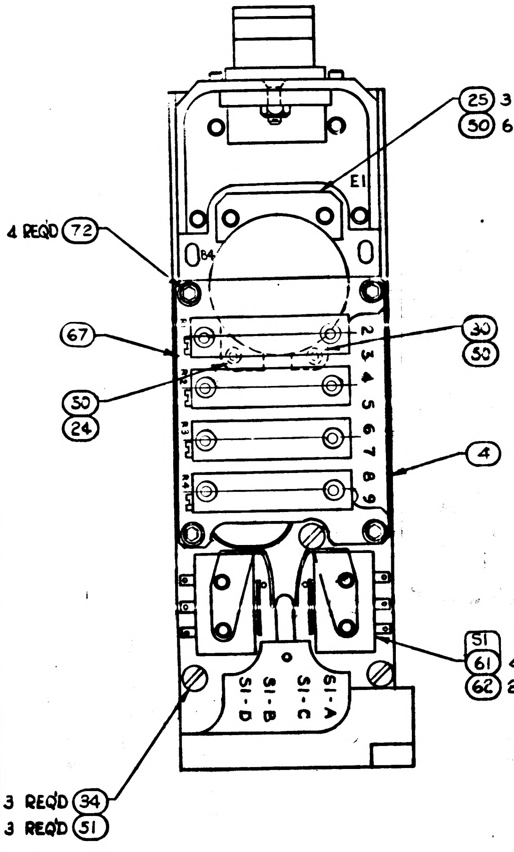
Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
4/7/64	A	07492	All	WAR.	
12/8/64	B	14723	1, 2	W.K.	W.J.R.
6/2/65	C	19765	1-5	M.G.M.	T. M.
7-21-65	D	21105	2	WK	ACM
7-21-65	E	21103	6	WK	ACM

This specification consists of page i to iii and 1 to 7 inclusive.

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		REPLACES REV. C WITH CHANGES PER TDRR# 02191		JULY 19 1963	WK
E		REVISED PER TDRR NO 02897		9/10/63	WK
F		REVISED PER TDRR NO. 03236		9/24/63	9-26-63





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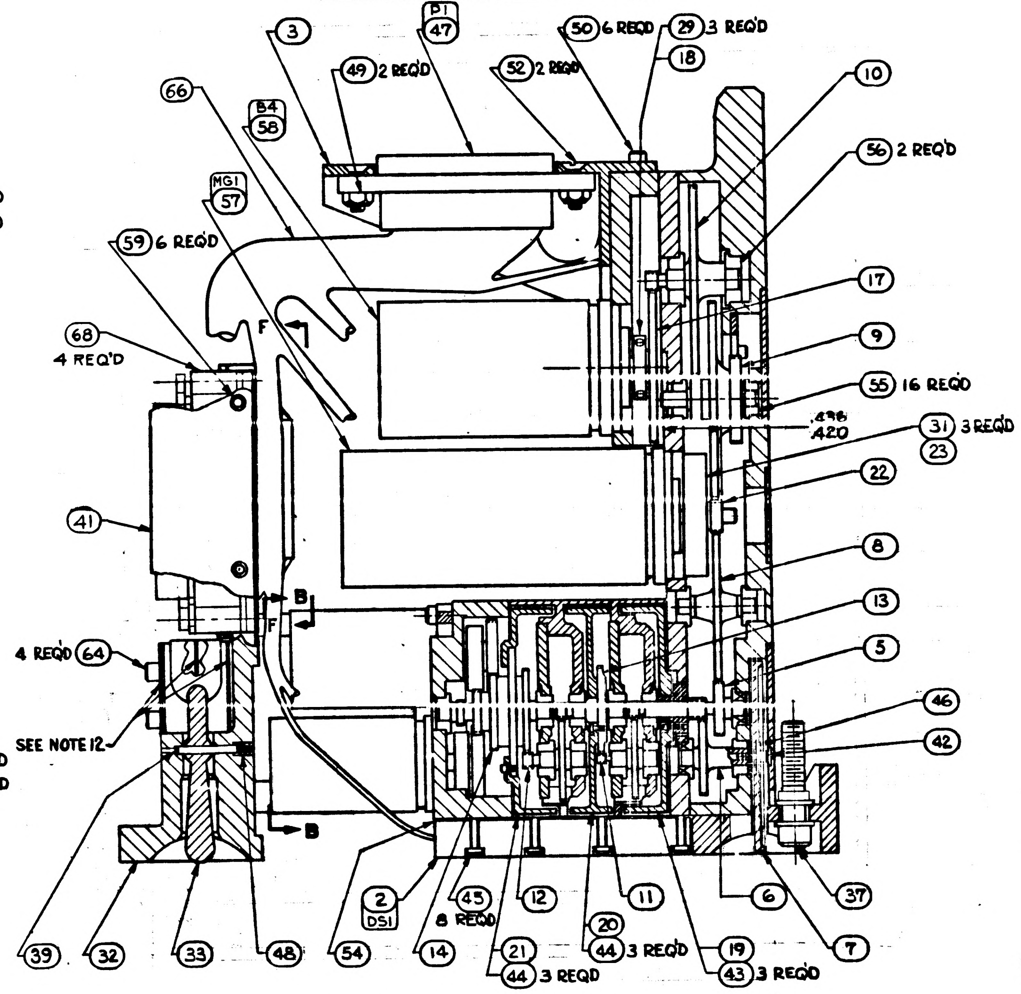
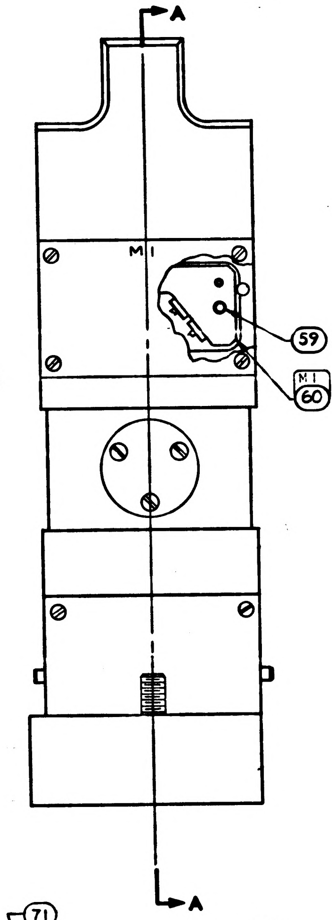
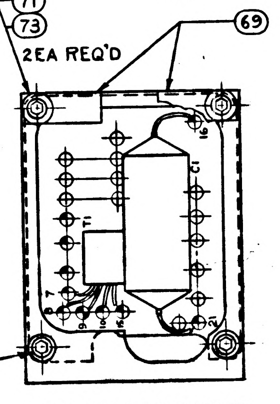
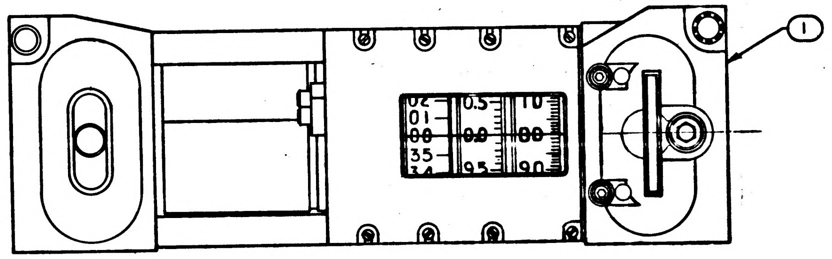


SECTION A-A





PARTIAL SECTION F-F

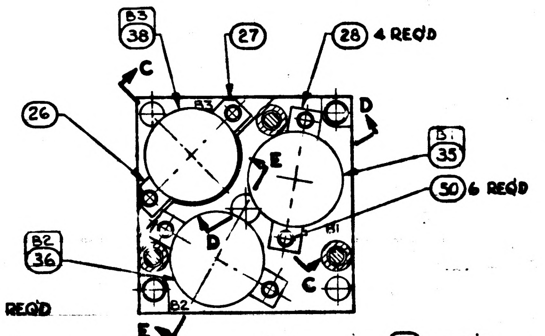


NOTES:

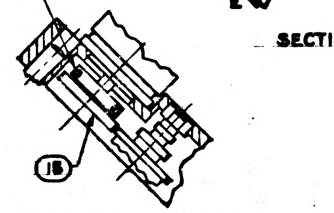
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4. DRAWINGS FOR REFERENCE
   - 1015550 CDU MECHANICAL SCHEMATIC DIAGRAM
   - 1010036 SCHEMATIC DIAGRAM, ELECTRICAL
   - 1015670 WIRING DIAGRAM
5. TORQUE SCREWS BETWEEN 6.3 AND 6.8 IN. LB.
6. TORQUE SCREWS BETWEEN 1.2 AND 1.3 IN. LB.
7. TORQUE SCREWS BETWEEN .4 AND .5 IN. LB.
8. TORQUE SCREWS BETWEEN .29 AND .39 IN. LB.
9. TORQUE SCREWS BETWEEN 3.4 AND 3.6 IN. LB.

SEE PARTS LIST

10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER MIL-S-40083 (ORD) CLASS 20 (ES-2544-3 GRADE C) PER ND 1002211
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13. TORQUE SCREWS BETWEEN 2.8 AND 3.0 IN. LB. -SEE PARTS LIST
14.
15. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267)



SECTION B-B



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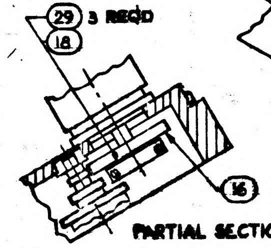

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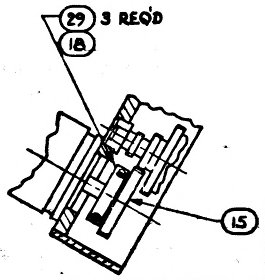


PARTIAL SECTION E-E

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2		73	MS15795-702	WASHER-PLAIN
4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD (SEE NOTE 9)
2		71	1010468-4	SCREW, CAP, SOC HD (SEE NOTE 9)
2		70	1011625-13	SCREW, CAP, SOC HD (SEE NOTE 9)
2		69	1000220-6	CLAMP-CABLE
4		68	1016896	SPACER
1		67	1016898	MOUNTING BOARD (INSEP ASSY)
1		66	1016897	WIRING HARNESS A
		65		
4		64	1010468-1	SCREW CAP, SOC HD (SEE NOTE 13)
		63		
2		62	1010457-1	MICROSWITCH ACTUATOR
4		61	1010435-002	MICROSWITCH
1		60	1015559	DIGITAL CORE ASSY
8		59	NAS1351C00LL2	SCREW-CAP, SOC HD (SEE NOTE 6)
1		58	1015673	RESOLVER, 16X-CDU
1		57	1015674	MOTOR TACH - CDU
2		56	1010356-10	BALL BEARING
16		55	1010356-6	BALL BEARING
1		54	1015680	GASKET, WEDGE LIGHT
		53		
2		52	AN505DD4-6	SCREW, FLAT HD (SEE NOTE 5)
3		51	1010468-2	SCREW, CAP, SOC. HD (SEE NOTE 5)
20		50	NAS1352C02LL-4	SCREW, CAP, SOC HD (SEE NOTE 9)
2		49	MS 20365D-440	NUT, SELF LOCKING
1		48	NAS1081C02A2N	SCREW-SET (SEE NOTE 9)
		47		
1		46	1015664	WASHER, SPECIAL
8		45	MS21269-A115	SCREW, INST, PAN HD (SEE NOTE 8)
6		44	MS 21268-A110	SCREW, INST, FIL HD (SEE NOTE 7)
3		43	MS 21268-A112	SCREW, INST, FIL HD (SEE NOTE 7)
1		42	NAS1351C00LL4	SCREW, CAP, SOC HD (SEE NOTE 6)
1		41	1016892	COVER, TERMINAL BOARD
		40		
1		39	MS16555-606	PIN, STRAIGHT
1		38	1015681	RESOLVER, 1X-CDU
1		37	1015512	CLAMP SCREW
1		36	1016890	RESOLVER, 1/2 X-CDU
1		35	1015672	RESOLVER, 1/4 X-CDU
3		34	1015548	SPACER, SLEW SWITCH
1		33	1015547	TOGGLE, SWITCH
1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
3		31	1015663	SET SCREW (SEE NOTE 5)
1		30	1015538-2	CLAMP, MOTOR MODIFIED
12		29	1015543	SET SCREW (SEE NOTE 9)
4		28	1015542	CLAMP, SYNCHRO
1		27	1015541	CLAMP, SYNCHRO MODIFIED
1		26	1015540	CLAMP, SYNCHRO MODIFIED
3		25	1015539	CLAMP, MOTOR
1		24	1015538-1	CLAMP, MOTOR MODIFIED
1		23	1015537	FLYWHEEL
1		22	1015536	GEAR, SPUR
1		21	1015535	DIAL, 1 SPEED
1		20	1015534	DIAL, 36 SPEED
1		19	1015533	DIAL, 1800 SPEED
4		18	1015532	CLAMP, GEAR
1		17	1015531	GEAR, SYNCHRO
1		16	1015530	GEAR, SYNCHRO
2		15	1015529	GEAR, SYNCHRO
1		14	1015528	GEAR, CLUSTER, SPUR
1		13	1015527	GEAR, CLUSTER, SPUR
1		12	1015526	GEAR, CLUSTER, SPUR
1		11	1015525	GEAR, CLUSTER, SPUR
1		10	1015524	GEAR, CLUSTER, SPUR
1		9	1015523	GEAR, CLUSTER, SPUR
1		8	1015522	GEAR, SPUR
1		7	1015521	ADJUSTMENT, WHEEL
1		6	1015520	GEAR, CLUSTER, SPUR
1		5	1015517	PILOT SHAFT ASSY (INSEP)
1		4	1016894	TERMINAL BOARD ASSY (INSEP)
1		3	1015668	BRACKET, CONNECTOR
1		2	1015666-011	WEDGE LIGHTING ASSY
1		1	1015665-011	HOUSING AND CLAMP ASSY

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-011	1016903-011	
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + ~ - ~ DECIMALS + ~ - ~ ANGLES + ~ - ~
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Fox DATE 2 JUL 63
CHECKED Ed Foster 5 JUL 63
APPROVAL [illegible] 5 JUL 63
APPROVAL [illegible] 5 JUL 63
NASA APPROVAL [illegible] 7/19/63
MIT APPROVAL [illegible] 24 July 63
R R Kupfer 5 JUL 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

CODE IDENT NO.
SIZE E
1015500
SCALE 2 : 1
SHEET 1 OF 1

1015500

INCHES
PHOTOGRAPHIC SCALE ONLY

APOLLO G&N Specification
PS-1015500 E
31 December 1963
Class A Release
TDRR 05589

PROCUREMENT SPECIFICATION

FOR

CDU ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
4/7/64	A	07492	All		
12/8/64	B	14723	1, 2	W. K.	W. J. R.
6/2/65	C	19765	1-5	M. G. M.	T. M.
7-21-65	D	21105	2	WK	ACM
7-21-65	E	21103	6	WK	ACM
2/8/66	F	26178	1, 3, 4 and 5	WK	--

This specification consists of page i
to iii and 1 to 7 inclusive.

PROCUREMENT SPECIFICATION

FOR

CDU ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the CDU Assembly, Drawing 1015500, hereafter called the assembly.

1.2 CLASSIFICATION. The requirements for the equipment covered by this specification shall be classified as follows. Unless identified by the respective type, all requirements of this specification are applicable for all types.

a. Type I. The requirements for Part Number 1015500-011 shall be designated as Type I in this specification and identified as PS1015500-011.

b. Type II. The requirements for Part Number 1015500-021 shall be designated as Type II in this specification and identified as PS1015500-021.

c. Type III. The requirements for Part Number 1015500-031 shall be designated as Type III in this specification and identified as PS1015500-031.

d. Type IV: The requirements for Part Number 1015500-041 shall be designated as Type IV in this specification.

e. Type V: The requirements for Part Number 1015500-051 shall be designated as Type V in this specification.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies
FTM-1015500	Final Test Method for CDU Assembly

DRAWINGS

APOLLO G&N

1015500	CDU Assembly

Table I (Continued)

FROM	TO	RESISTANCE (Ohms)	CONDITIONS
P1-35	P1-45	270±15%	
P1-41	E1 (Chassis)	<0.1	
*3P1-50	P1-60	15±15%	
P1-52	P1-61	<2.1	
P1-56	P1-66	78±15%	
P1-57	P1-67	78±15%	
P1-57	P1-68	49.9K ±3%	
P1-86	P1-100	215±15%	
P1-87	P1-101	215±15%	
P1-89	P1-90	445±15%	
P1-90	P1-104	445±15%	
P1-92	P1-106	2300 max	
*2P1-92	P1-105	<2.1	
*2P1-92	P1-105	115 max	Actuate SIA and SIC
*2P1-92	P1-105	115 max	Actuate SIB and SID
*3P1-94	P1-107	125 max	
*3P1-107	P1-108	250 max	
*3P1-94	P1-108	125 max	

*1 Types III and V only.

*2 Types I, II and IV only.

*3 DC current between the indicated points shall be limited to a maximum of 30 milliamperes.

3.3.3 Insulation Resistance. Insulation resistance shall be as specified in Table II.

TABLE II

INSULATION RESISTANCE

FROM	TO	APPLIED VOLTAGE (vdc ±10%)	MINIMUM RESISTANCE (Megohms)
P1-1	Chassis Gnd (E1)	175	50
P1-2	↑	↑	100
P1-4			↑
P1-6			
P1-7			
P1-8			
P1-9			
P1-11			
* P1-15			↓
* P1-16			100
P1-31			50
P1-34			100
P1-50			500
P1-52			100
P1-56			100
P1-57			50
P1-86			100
P1-87			100
P1-89			100
P1-92	↓	↓	50
P1-94	Chassis Gnd (E1)	175	100

* Types I, II and IV only

3.3.4 Motor Starting Voltage. The in-phase voltage necessary to start and maintain motor shaft rotation shall not exceed 1.5V rms for Types I, III and IV, and 2.0V rms for Types II and V.

3.3.5 Motor Phasing. The CDU display shall increase when the control voltage is in-phase with the 0° reference and shall decrease when the control voltage is 180° out of phase with respect to the 0° reference.

3.3.6 Motor Speed. With rated voltage applied to all motor windings, the steady state motor speed shall be 11,000 ± 2500 rpm.

3.3.7 Tachometer Null. With the motor control voltage removed, the in-phase component of the tachometer output voltage shall be less than 4 mv rms, and the total tachometer voltage shall be less than 11 mv rms when the tachometer shaft is not rotating.

3.3.8 Tachometer Phasing. The tachometer output voltage shall be 180° out of phase with respect to the tachometer reference when the CDU display is increasing, and shall be in-phase with the tachometer reference when the CDU display is decreasing.

3.3.9 Motor Jog. With the motor shaft speed set at 50± 3 rpm, the variation from the set speed shall not exceed ±2 rpm.

3.3.10 Slew Voltage and Phasing For Types I, II and IV. With the SLEW switch set in the "INC" position, the slewing transformer output shall be 6.25±1.00V rms, and in phase with the zero degrees reference. With the SLEW switch set in the "DEC" position, the slewing transformer output voltage shall be 6.25±1.00V rms, and 180° out of phase with the zero degrees reference.

reference.

3.3.11 Encoder Output Characteristics. With the motor driven at a constant speed each phase of the encoder output shall have the following characteristics.

3.3.11.1 Modulation Envelope Magnitude. The magnitude of the modulation envelope shall be greater than 125 mv pp, but less than 300 mv pp.

3.3.11.2 Zero Crossover (Null) Voltage. The zero crossover null voltage of the modulation envelope shall be less than 10 mv pp.

3.3.11.3 Lobe Mismatch. The difference between magnitudes of each successive half-cycle, of modulation envelope of each phase shall not exceed 10 percent of the magnitude of the greatest half-cycle of modulation envelope.

3.3.12 Encoder Phase Relationship. With the motor driven at a constant speed such that the CDU display is increasing, the Phase 2 modulation envelope of the encoder output shall lead the Phase 1 modulation envelope by 90° ±20°. With the motor driven at a constant speed such that the CDU display is decreasing, the Phase 2 modulation envelope of the encoder output shall lag the Phase 1 modulation envelope by 90° ±20°.

3.3.13 CDU Zeroing. CDU zeroing shall be as follows.

3.3.13.1 16 Speed Resolver Zero. With the CDU display driven to zero by means of the 16 Speed Resolver the CDU display shall indicate 000.000±0.001°.

3.3.13.2 Encoder Null. With the CDU display at zero, the in-phase 16 Speed Resolver output shall be 21.0± .6 millivolts rms at [illegible] Phase 2 half points on each side of the CDU display zero.

3.3.13.3 1, 1/2, and 1/4 Speed Resolvers Zero Null. With the CDU display set to indicate 000.000±0.001° the output voltages of the 1, 1/2, and 1/4 Speed Resolvers shall be as specified in Table III.

APOLLO G&N Specification
PS-1015500 G
31 December 1963
Class A Release
TDRR 05589

PROCUREMENT SPECIFICATION

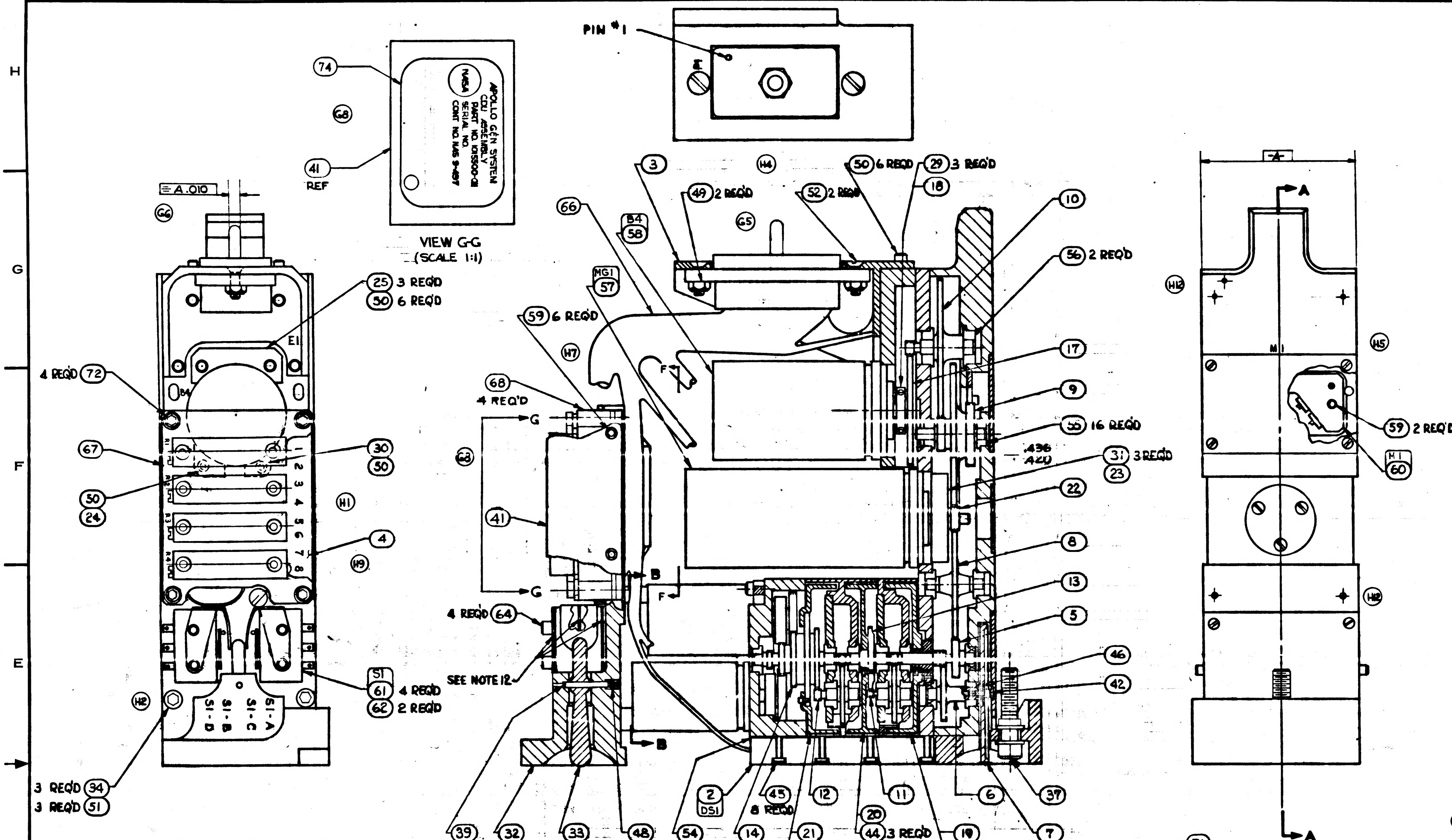
FOR

CDU ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA
4/7/64	A	07492	All	WAR.	
12/8/64	B	14723	1, 2	W. K.	W. J. R.
6/2/65	C	19765	1-5	M. G. M.	T. M.
7-21-65	D	21105	2	WK	ACM
7-21-65	E	21103	6	WK	ACM
2/8/66	F	26178	1, 3, 4 and 5	WK	--
2/23/66	G	26579	1, 3, 4, and 5	WK	--

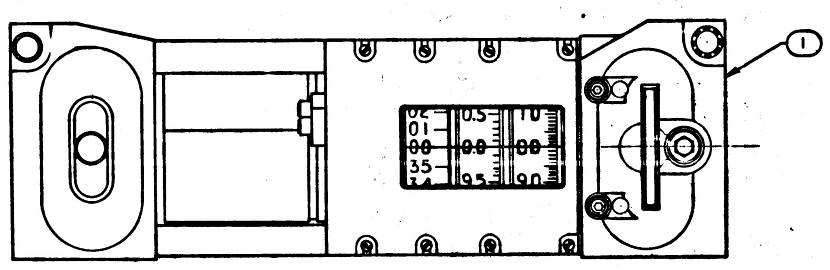
This specification consists of page i to iii and 1 to 7 inclusive.

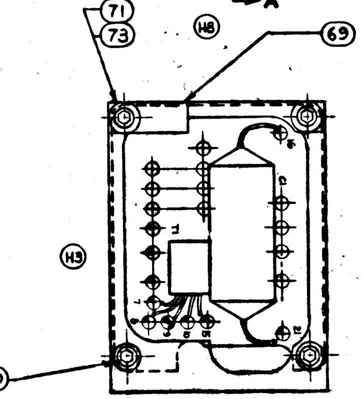


PIN #1
74
41
REF
APOLLO G&N SYSTEM
CDU ASSEMBLY
PART NO. 1015500-011
SERIAL NO.
CONT NO. NAS 9-497
VIEW G-G
(SCALE 1:1)
A.010
3 REQ'D 25
6 REQ'D 50
4 REQ'D 72
67
50
24
30
50
4
S1
61 4 REQ'D
62 2 REQ'D
S1-A
S1-C
S1-B
S1-D
3 REQ'D 34
3 REQ'D 51
3
49 2 REQ'D
52 2 REQ'D
50 6 REQ'D
29 3 REQ'D
18
10
66
58
57
59 6 REQ'D
56 2 REQ'D
17
9
68
4 REQ'D
55 16 REQ'D
.436
.420
31 3 REQ'D
23
22
41
8
13
5
4 REQ'D 64
SEE NOTE 12
46
42
G
F
B
2
45
8 REQ'D
12
11
20
44 3 REQ'D
19
43 3 REQ'D
6
7
37
39
32
33
48
54
14
21
44 3 REQ'D
A
59 2 REQ'D
60

(COVER REMOVED AND WIRE HARNESS NOT SHOWN)

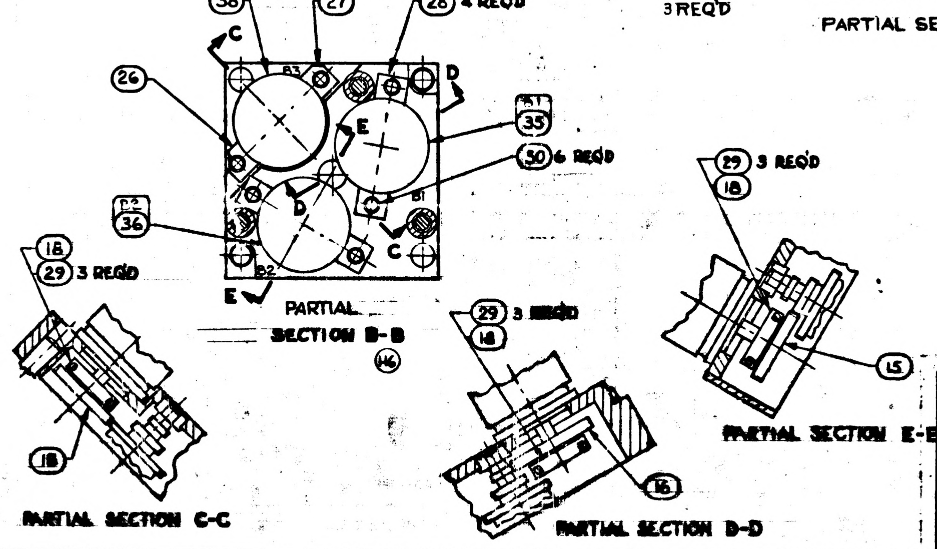
SECTION A-A





71
73
69
70
3 REQ'D

PARTIAL SECTION F-F



38
27
28 4 REQ'D
26
35
50 6 REQ'D
36
C
D
E
PARTIAL SECTION B-B
18
29 3 REQ'D
29 3 REQ'D
18
29 3 REQ'D
18
15
16
18
PARTIAL SECTION E-E

PARTIAL SECTION C-C

PARTIAL SECTION D-D

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4. DRAWINGS FOR REFERENCE
    1015550 CDU MECHANICAL SCHEMATIC DIAGRAM
    1010036 SCHEMATIC DIAGRAM, ELECTRICAL
    1015670 WIRING DIAGRAM
5.
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER MIL-S-40083 (ORD) CLASS 20 (ES-2544-3 GRADE C) PER ND 1002211
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "GG")

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		REPLACES REV. C WITH CHANGES PER TDRR # 02191		JULY 19 1963	WK
E		REVISED PER TDRR NO 02897		9/10/63	WK
F		REVISED PER TDRR NO. 03286		9/24/63	9/26/63
G8		REVISED PER TDRR NO. 04994		13 DEC. 63	12-17
H12		REVISED PER TDRR NO. 04995		16 DEC 63	12-

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
			1		73	MS15795-702	WASHER-PLAIN
			4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
			1		71	1010468-4	SCREW, CAP, SOC HD
			3		70	1011625-13	SCREW, CAP, SOC HD
			1		69	1000220-6	CLAMP-CABLE
			4		68	1016896	SPACER
			1		67	1016898	MOUNTING BOARD (INSEP ASSY)
			1		66	1016897	WIRING HARNESS A
					65		
			4		64	1010468-1	SCREW CAP, SOC HD
					63		
			2		62	1010457-1	MICROSWITCH ACTUATOR
			4		61	1010435-002	MICROSWITCH
			1		60	1015559	DIGITAL CORE ASSY
			8		59	NAS1351C00LL2	SCREW-CAP, SOC HD
			1		58	1015673	RESOLVER, 16X-CDU
			1		57	1015674	MOTOR TACH - CDU
			2		56	1010356-10	BALL BEARING
			16		55	1010356-6	BALL BEARING
			1		54	1015680	GASKET, WEDGE LIGHT
					53		
			2		52	AN505DD4-6	SCREW, FLAT HD
			3		51	1010468-2	SCREW, CAP, SOC
			20		50	NAS1352C02LL-4	SCREW, CAP, SOC
			2		49	MS 20365D-440	NUT, SELF LOCKING
			1		48	NAS1081C02A2N	SCREW-SET
					47		
			1		46	1015664	WASHER, SPECIAL
			8		45	MS21269-A115	SCREW, INST, PAN HD
			6		44	MS 21268-A110	SCREW, INST, FIL HD
			3		43	MS 21268-A112	SCREW, INST, FIL HD
			1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
			1		41	1016892	COVER, TERMINAL BOARD
					40		
			1		39	MS16555-606	PIN, STRAIGHT
			1		38	1015681	RESOLVER, 1X-CDU
			1		37	1015512	CLAMP SCREW
			1		36	1016890	RESOLVER, 1/2 X-CDU
			1		35	1015672	RESOLVER, 1/4 X-CDU
			3		34	1015548	SPACER, SLEW SWITCH
			1		33	1015547	TOGGLE, SWITCH
			1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
			3		31	1015663	SET SCREW
			1		30	1015538-2	CLAMP, MOTOR MODIFIED
			12		29	1015543	SET SCREW
			4		28	1015542	CLAMP, SYNCHRO
			1		27	1015541	CLAMP, SYNCHRO MODIFIED
			1		26	1015540	CLAMP, SYNCHRO MODIFIED
			3		25	1015539	CLAMP, MOTOR
			1		24	1015538-1	CLAMP, MOTOR MODIFIED
			1		23	1015537	FLYWHEEL
			1		22	1015536	GEAR, SPUR
			1		21	1015535	DIAL, 1 SPEED
			1		20	1015534	DIAL, 36 SPEED
			1		19	1015533	DIAL, 1800 SPEED
			4		18	1015532	CLAMP, GEAR
			1		17	1015531	GEAR, SYNCHRO
			1		16	1015530	GEAR, SYNCHRO
			2		15	1015529	GEAR, SYNCHRO
			1		14	1015528	GEAR, CLUSTER, SPUR
			1		13	1015527	GEAR, CLUSTER, SPUR
			1		12	1015526	GEAR, CLUSTER, SPUR
			1		11	1015525	GEAR, CLUSTER, SPUR
			1		10	1015524	GEAR, CLUSTER, SPUR
			1		9	1015523	GEAR, CLUSTER, SPUR
			1		8	1015522	GEAR, SPUR
			1		7	1015521	ADJUSTMENT, WHEEL
			1		6	1015520	GEAR, CLUSTER, SPUR
			1		5	1015517	PILOT SHAFT ASSY (INSEP)
			1		4	1016894	TERMINAL BOARD ASSY (INSEP)
			1		3	1015668	BRACKET, CONNECTOR
			1		2	1015666-011	WEDGE LIGHTING ASSY
			1		1	1015665-011	HOUSING AND CLAMP ASSY

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-011	1016903-011	

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

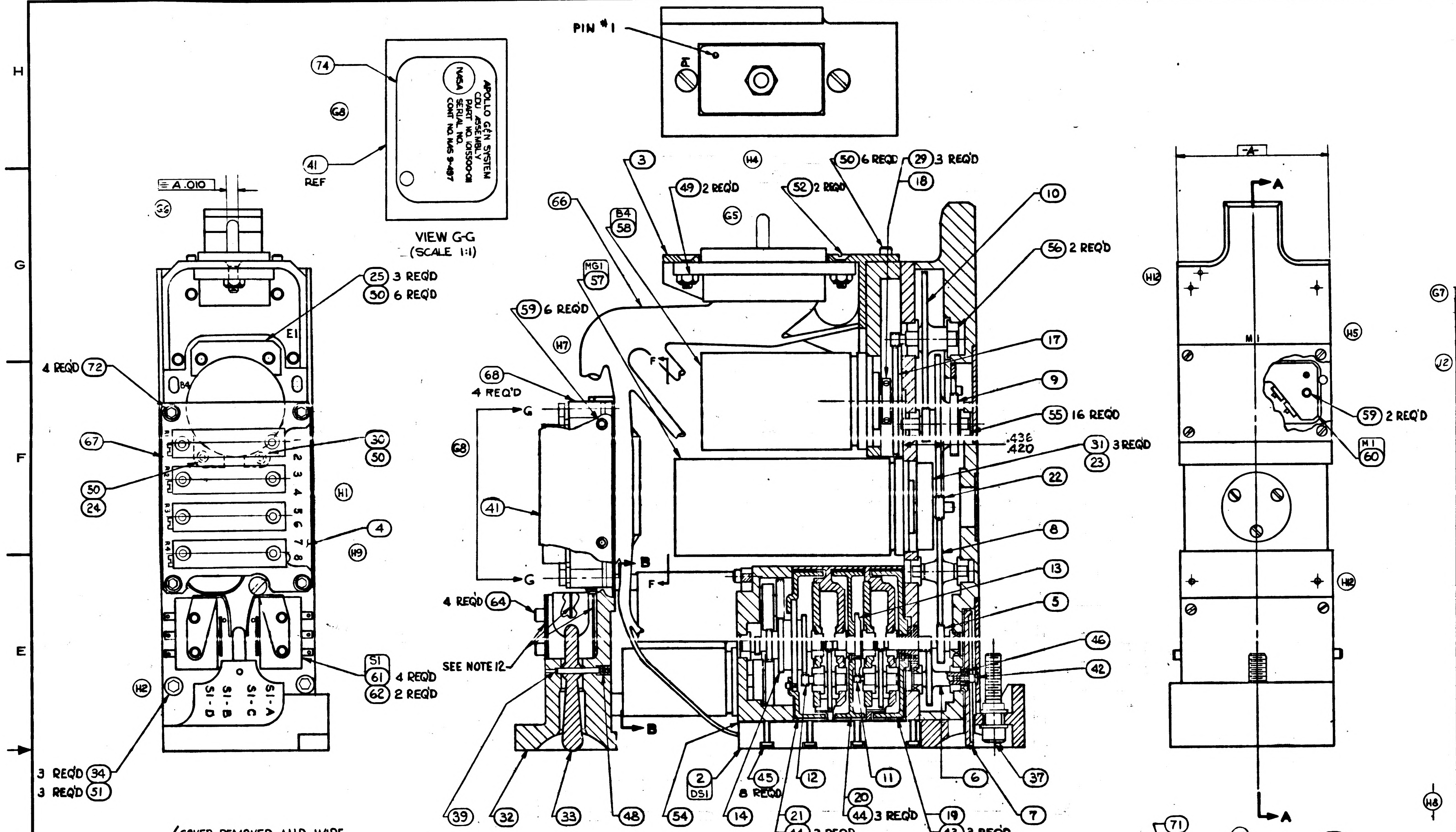
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Fox DATE 2 JUL 63
CHECKED Ed Foster 5 JUL 63
APPROVAL 5 JUL 63
APPROVAL 5 JULY 63
NASA APPROVAL
MIT APPROVAL 24 JUL 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

CODE IDENT NO.
SIZE E
1015500
SCALE 2:1
SHEET 1 OF 1

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		REPLACES REV. C WITH CHANGES PER TDRR # 02191		JULY 19 1963	WK
E		REVISED PER TDRR NO 02897		9/10/63	WK
F		REVISED PER TDRR NO. 03286		[illegible] 63	[illegible]
G8		REVISED PER TDRR NO. 04994		13 DEC 63	[illegible]
H12		REVISED PER TDRR NO. 04995		16 DEC 63	[illegible]
J2		REVISED PER TDRR NO. 05905		[illegible]	[illegible]

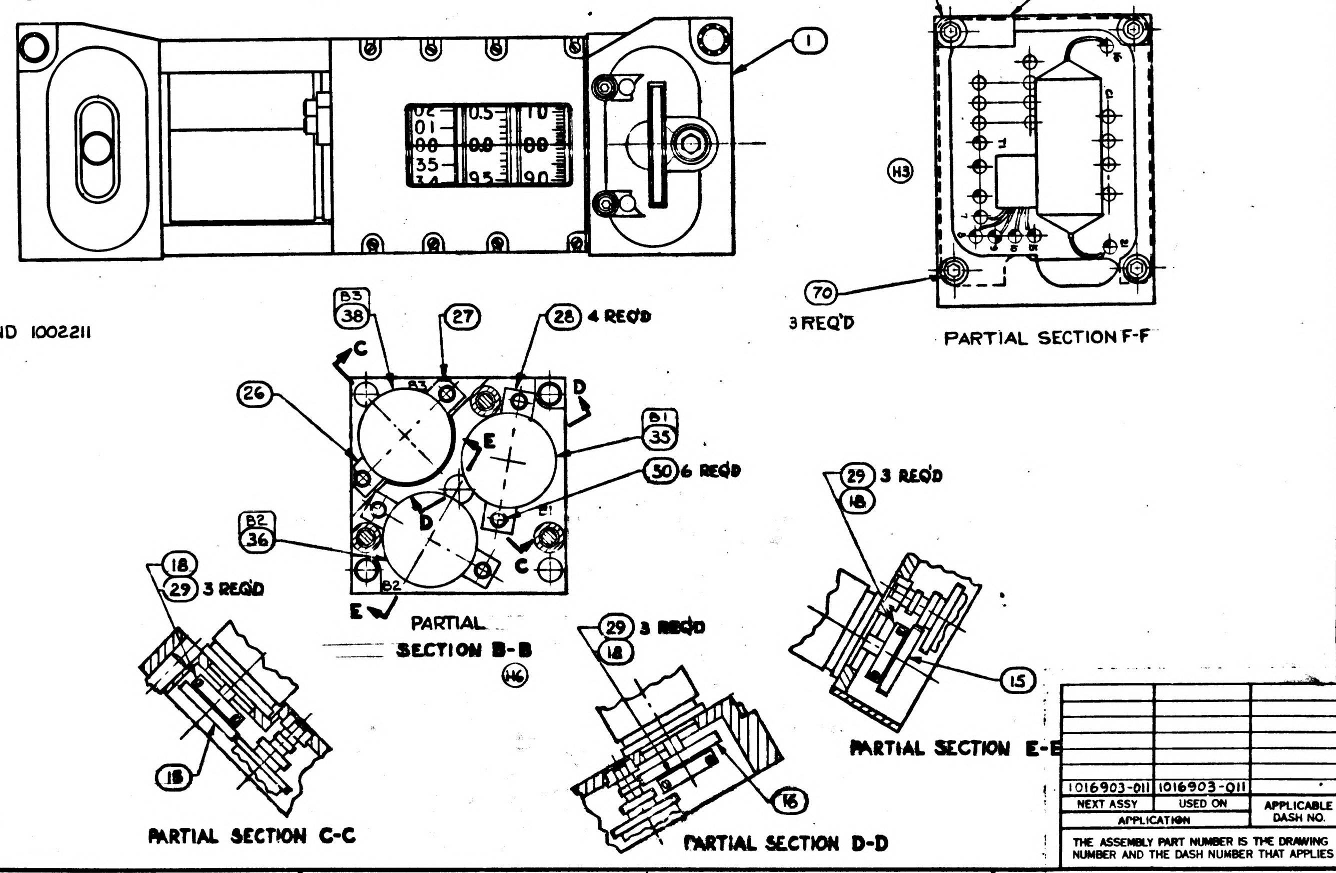

PIN #1
74
68
41
REF
APOLLO G&N SYSTEM
CDU ASSEMBLY
PART NO. 1015500-011
SERIAL NO.
CONT NO. NAS 9-497
NASA
VIEW G-G
(SCALE 1:1)
A .010
25 3 REQ'D
50 6 REQ'D
4 REQ'D 72
67
30
50
50
24
4
51
61 4 REQ'D
62 2 REQ'D
3 REQ'D 34
3 REQ'D 51
3
49 2 REQ'D
52 2 REQ'D
50 6 REQ'D
29 3 REQ'D
18
10
56 2 REQ'D
17
9
55 16 REQ'D
.436
.420
31 3 REQ'D
23
22
8
13
5
46
42
66
B4
58
65
MG1
57
59 6 REQ'D
68
4 REQ'D
G
F
B
4 REQ'D 64
SEE NOTE 12
39
32
33
48
54
2
DS1
45
8 REQ'D
14
21
44 3 REQ'D
12
20
44 3 REQ'D
11
19
43 3 REQ'D
6
7
37
A
M1
59 2 REQ'D
M1
60

(COVER REMOVED AND WIRE HARNESS NOT SHOWN)

SECTION A-A

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4. DRAWINGS FOR REFERENCE
   - 1015550 CDU MECHANICAL SCHEMATIC DIAGRAM
   - 1010036 SCHEMATIC DIAGRAM, ELECTRICAL
   - 1015670 WIRING DIAGRAM
5. *DELIVERABLE END ITEMS MUST MEET THE REQUIREMENTS OF PS-1015500*
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER MIL-S-40083 (ORD) CLASS 20 (ES-2544-3 GRADE C) PER ND 1002211
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "GG")


1
69
71
73
70
3 REQ'D
B3
38
27
28 4 REQ'D
26
B1
35
50 6 REQ'D
B2
36
C
D
E
18
29 3 REQ'D
15
16

PARTIAL SECTION F-F

PARTIAL SECTION B-B

PARTIAL SECTION C-C

PARTIAL SECTION D-D

PARTIAL SECTION E-E

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
1		73	MS15795-702	WASHER-PLAIN
4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
1		71	1010468-4	SCREW, CAP, SOC HD
3		70	1011625-13	SCREW, CAP, SOC HD
1		69	1000220-7	CLAMP-CABLE
4		68	1016896	SPACER
1		67	1016898	MOUNTING BOARD (INSEP ASSY)
1		66	1016897	WIRING HARNESS A
		65		
4		64	1010468-1	SCREW CAP. SOC HD
		63		
2		62	1010457-1	MICROSWITCH ACTUATOR
4		61	1010435-002	MICROSWITCH
1		60	1015559	DIGITAL CORE ASSY
8		59	NAS1351C00LL2	SCREW-CAP, SOC HD
1		58	1015673	RESOLVER, 16X-CDU
1		57	1015674	MOTOR TACH - CDU
2		56	1010356-10	BALL BEARING
16		55	1010356-6	BALL BEARING
1		54	1015680	GASKET, WEDGE LIGHT
		53		
2		52	AN505DD4-6	SCREW, FLAT HD
3		51	1010468-2	SCREW, CAP, SOC
20		50	NAS1352C02LL-4	SCREW, CAP, SOC
2		49	MS20365D-440	NUT, SELF LOCKING
1		48	NAS1081C02A2N	SCREW-SET
		47		
1		46	1015664	WASHER, SPECIAL
8		45	MS21269-A115	SCREW, INST, PAN HD
6		44	MS21268-A110	SCREW, INST, FIL HD
3		43	MS21268-A112	SCREW, INST, FIL HD
1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
1		41	1016892	COVER, TERMINAL BOARD
		40		
1		39	MS16555-606	PIN, STRAIGHT
1		38	1015681	RESOLVER, 1X-CDU
1		37	1015512	CLAMP SCREW
1		36	1016890	RESOLVER, 1/2 X-CDU
1		35	1015672	RESOLVER, 1/4 X-CDU
3		34	1015548	SPACER, SLEW SWITCH
1		33	1015547	TOGGLE, SWITCH
1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
3		31	1015663	SET SCREW
1		30	1015538-2	CLAMP, MOTOR MODIFIED
12		29	1015543	SET SCREW
4		28	1015542	CLAMP, SYNCHRO
1		27	1015541	CLAMP, SYNCHRO MODIFIED
1		26	1015540	CLAMP, SYNCHRO MODIFIED
3		25	1015539	CLAMP, MOTOR
1		24	1015538-1	CLAMP, MOTOR MODIFIED
1		23	1015537	FLYWHEEL
1		22	1015536	GEAR, SPUR
1		21	1015535	DIAL, 1 SPEED
1		20	1015534	DIAL, 36 SPEED
1		19	1015533	DIAL, 1800 SPEED
4		18	1015532	CLAMP, GEAR
1		17	1015531	GEAR, SYNCHRO
1		16	1015530	GEAR, SYNCHRO
2		15	1015529	GEAR, SYNCHRO
1		14	1015528	GEAR, CLUSTER, SPUR
1		13	1015527	GEAR, CLUSTER, SPUR
1		12	1015526	GEAR, CLUSTER, SPUR
1		11	1015525	GEAR, CLUSTER, SPUR
1		10	1015524	GEAR, CLUSTER, SPUR
1		9	1015523	GEAR, CLUSTER, SPUR
1		8	1015522	GEAR, SPUR
1		7	1015521	ADJUSTMENT, WHEEL
1		6	1015520	GEAR, CLUSTER, SPUR
1		5	1015517	PILOT SHAFT ASSY (INSEP)
1		4	1016894	TERMINAL BOARD ASSY (INSEP)
1		3	1015668	BRACKET, CONNECTOR
1		2	1015666-011	WEDGE LIGHTING ASSY
1		1	1015665-011	HOUSING AND CLAMP ASSY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-011	1016903-011	

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Fox DATE 2 JUL 63
CHECKED Ed Foster 5 JUL 63
APPROVAL [illegible] 5 JUL 63
APPROVAL [illegible] 5 JUL 63
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 24 July 63

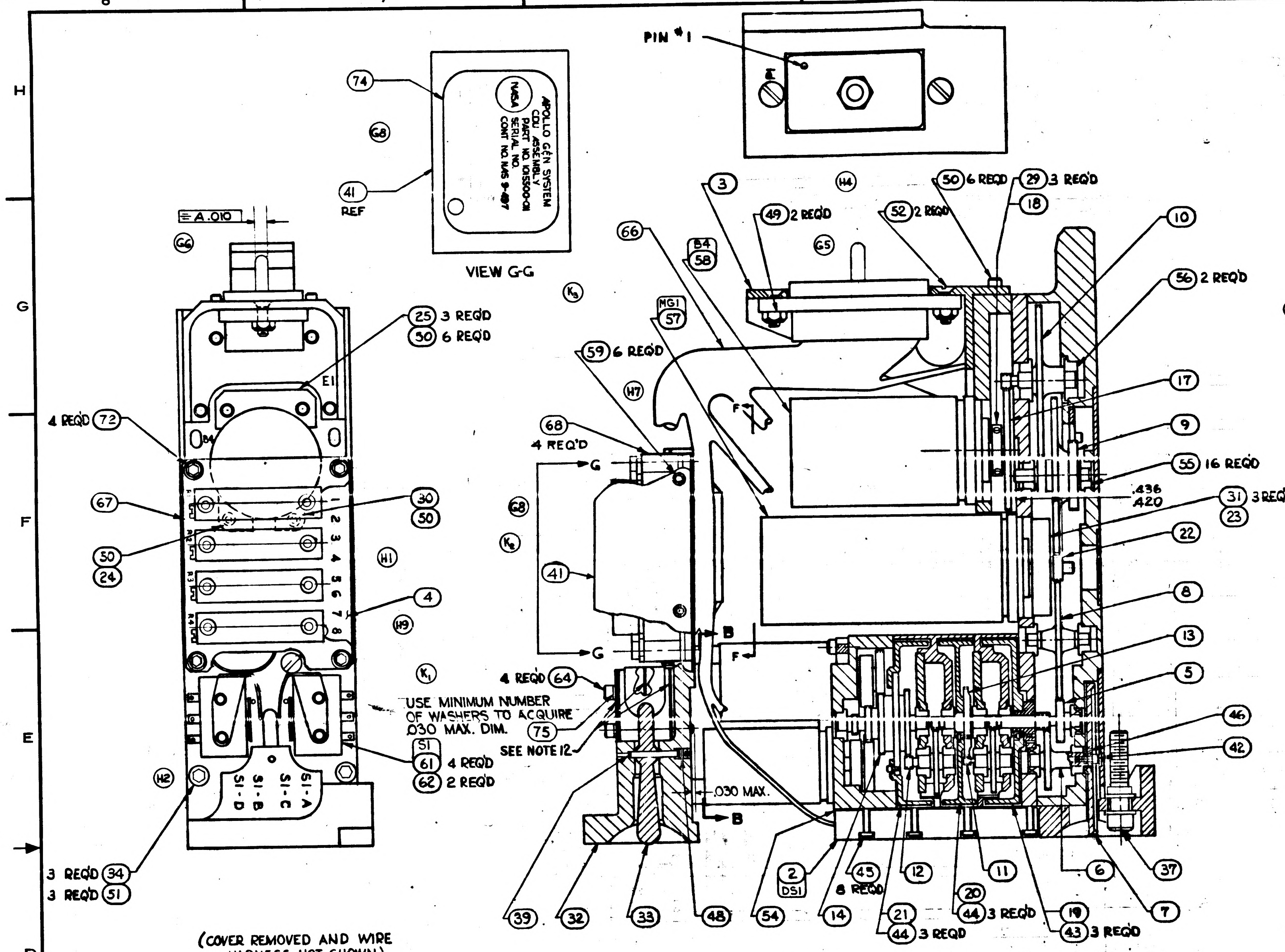
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

CODE IDENT NO.
SIZE E
1015500
SCALE 2 : 1
SHEET 1 OF 1

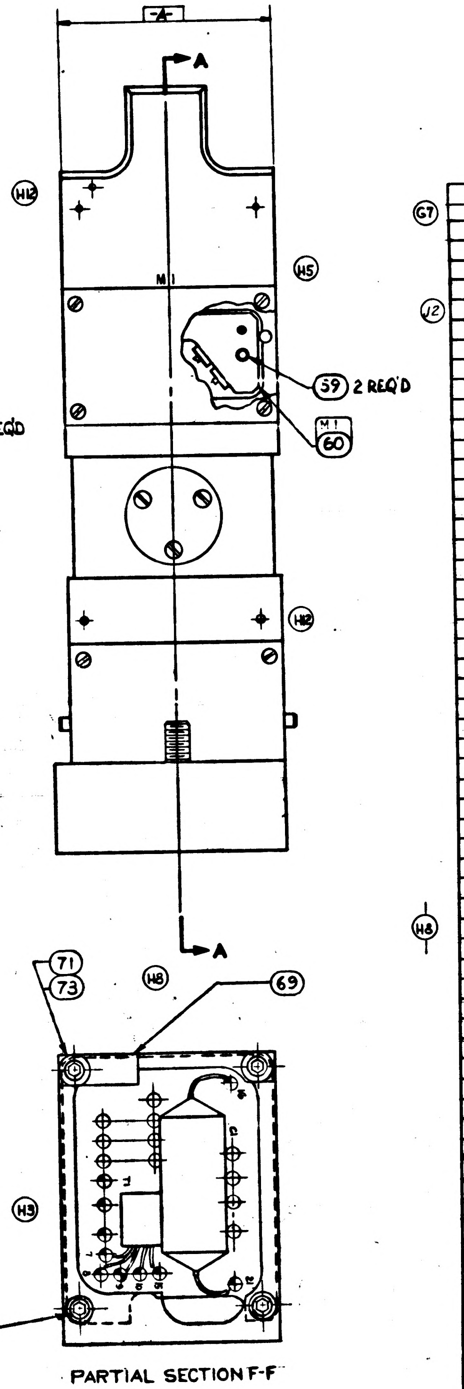
R R Kupfer

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
D		REPLACES REV. C WITH CHANGES PER TDRR# 02191		JULY 19 1963	WK
E		REVISED PER TDRR NO 02897		9/10/63	WK
F		REVISED PER TDRR NO. 03236		9/24/63	
G8		REVISED PER TDRR NO. 04994		13 DEC 63	
H12		REVISED PER TDRR NO. 04995		16 DEC 63	
J2		REVISED PER TDRR NO. 05[illegible]		[illegible]	
K3		REVISED PER TDRR NO. 06160		11 FEB 64	

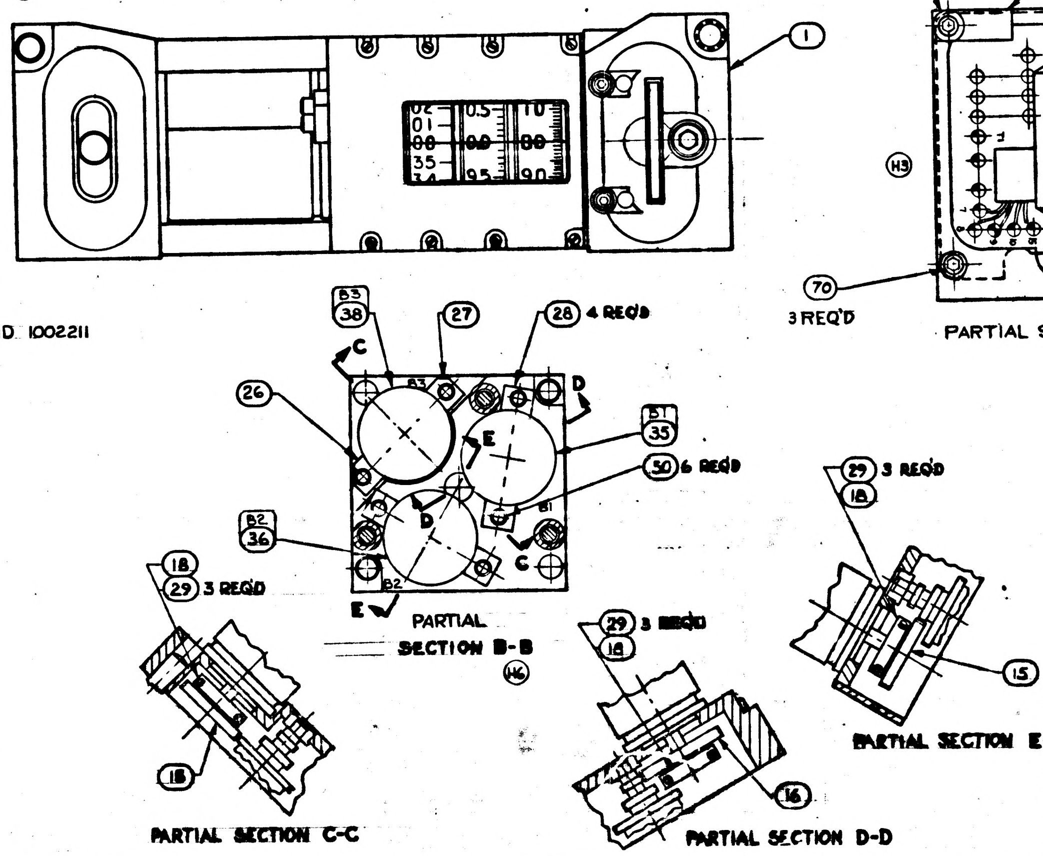


(COVER REMOVED AND WIRE HARNESS NOT SHOWN)

SECTION A-A



PARTIAL SECTION F-F



PARTIAL SECTION B-B

PARTIAL SECTION C-C

PARTIAL SECTION D-D

PARTIAL SECTION E-E

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4. DRAWINGS FOR REFERENCE
   1015550 CDU MECHANICAL SCHEMATIC DIAGRAM
   1010036 SCHEMATIC DIAGRAM, ELECTRICAL
   1015670 WIRING DIAGRAM
5. *DELIVERABLE END ITEMS MUST MEET THE REQUIREMENTS OF PS-1015500*
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER MIL-S-40083 (ORD) CLASS 20 (ES-2544-3 GRADE C) PER ND 1002211
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "G-G")

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
A/R		75	AN 960C3	WASHER - FLAT
1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
1		73	MS15795-702	WASHER - PLAIN
4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
1		71	1010468-4	SCREW, CAP, SOC HD
3		70	1011625-13	SCREW, CAP, SOC HD
1		69	1000220-7	CLAMP-CABLE
4		68	1016896	SPACER
1		67	1016898	MOUNTING BOARD (INSEP ASSY)
1		66	1016897	WIRING HARNESS A
		65		
4		64	1010468-1	SCREW CAP, SOC HD
		63		
2		62	1010457-1	MICROSWITCH ACTUATOR
4		61	1010435-002	MICROSWITCH
1		60	1015559	DIGITAL CORE ASSY
8		59	NAS1351C00LL2	SCREW-CAP, SOC HD
1		58	1015673	RESOLVER, 16X - CDU
1		57	1015674	MOTOR TACH - CDU
2		56	1010356-10	BALL BEARING
16		55	1010356-6	BALL BEARING
1		54	1015680	GASKET, WEDGE LIGHT
		53		
2		52	AN505DD4-6	SCREW, FLAT HD
3		51	1010468-2	SCREW, CAP, SOC
20		50	NAS1352C02LL-4	SCREW, CAP, SOC
2		49	MS 20365D-440	NUT, SELF LOCKING
1		48	NAS1081C02A2N	SCREW - SET
		47		
1		46	1015664	WASHER, SPECIAL
8		45	MS21269-A115	SCREW, INST, PAN HD
6		44	MS 21268-A110	SCREW, INST, FIL HD
3		43	MS 21268-A112	SCREW, INST, FIL HD
1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
1		41	1016892	COVER, TERMINAL BOARD
		40		
1		39	MS16555-606	PIN, STRAIGHT
1		38	1015681	RESOLVER, 1X - CDU
1		37	1015512	CLAMP SCREW
1		36	1016890	RESOLVER, 1/2 X - CDU
1		35	1015672	RESOLVER, 1/4 X - CDU
3		34	1015548	SPACER, SLEW SWITCH
1		33	1015547	TOGGLE, SWITCH
1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
3		31	1015663	SET SCREW
1		30	1015538-2	CLAMP, MOTOR MODIFIED
12		29	1015543	SET SCREW
4		28	1015542	CLAMP, SYNCHRO
1		27	1015541	CLAMP, SYNCHRO MODIFIED
1		26	1015540	CLAMP, SYNCHRO MODIFIED
3		25	1015539	CLAMP, MOTOR
1		24	1015538-1	CLAMP, MOTOR MODIFIED
1		23	1015537	FLYWHEEL
1		22	1015536	GEAR, SPUR
1		21	1015535	DIAL, 1 SPEED
1		20	1015534	DIAL, 36 SPEED
1		19	1015533	DIAL, 1800 SPEED
4		18	1015532	CLAMP, GEAR
1		17	1015531	GEAR, SYNCHRO
1		16	1015530	GEAR, SYNCHRO
2		15	1015529	GEAR, SYNCHRO
1		14	1015528	GEAR, CLUSTER, SPUR
1		13	1015527	GEAR, CLUSTER, SPUR
1		12	1015526	GEAR, CLUSTER, SPUR
1		11	1015525	GEAR, CLUSTER, SPUR
1		10	1015524	GEAR, CLUSTER, SPUR
1		9	1015523	GEAR, CLUSTER, SPUR
1		8	1015522	GEAR, SPUR
1		7	1015521	ADJUSTMENT, WHEEL
1		6	1015520	GEAR, CLUSTER, SPUR
1		5	1015517	PILOT SHAFT ASSY (INSEP)
1		4	1016894	TERMINAL BOARD ASSY (INSEP)
1		3	1015668	BRACKET, CONNECTOR
1		2	1015666-011	WEDGE LIGHTING ASSY
1		1	1015665-011	HOUSING AND CLAMP ASSY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-011	1016903-011	

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Fox DATE 2 JUL 63
CHECKED Ed Foster 5 JUL 63
APPROVAL 5 JUL 63
APPROVAL 5 JULY 63
NASA APPROVAL 11/29/63
MIT APPROVAL 24 Jul 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

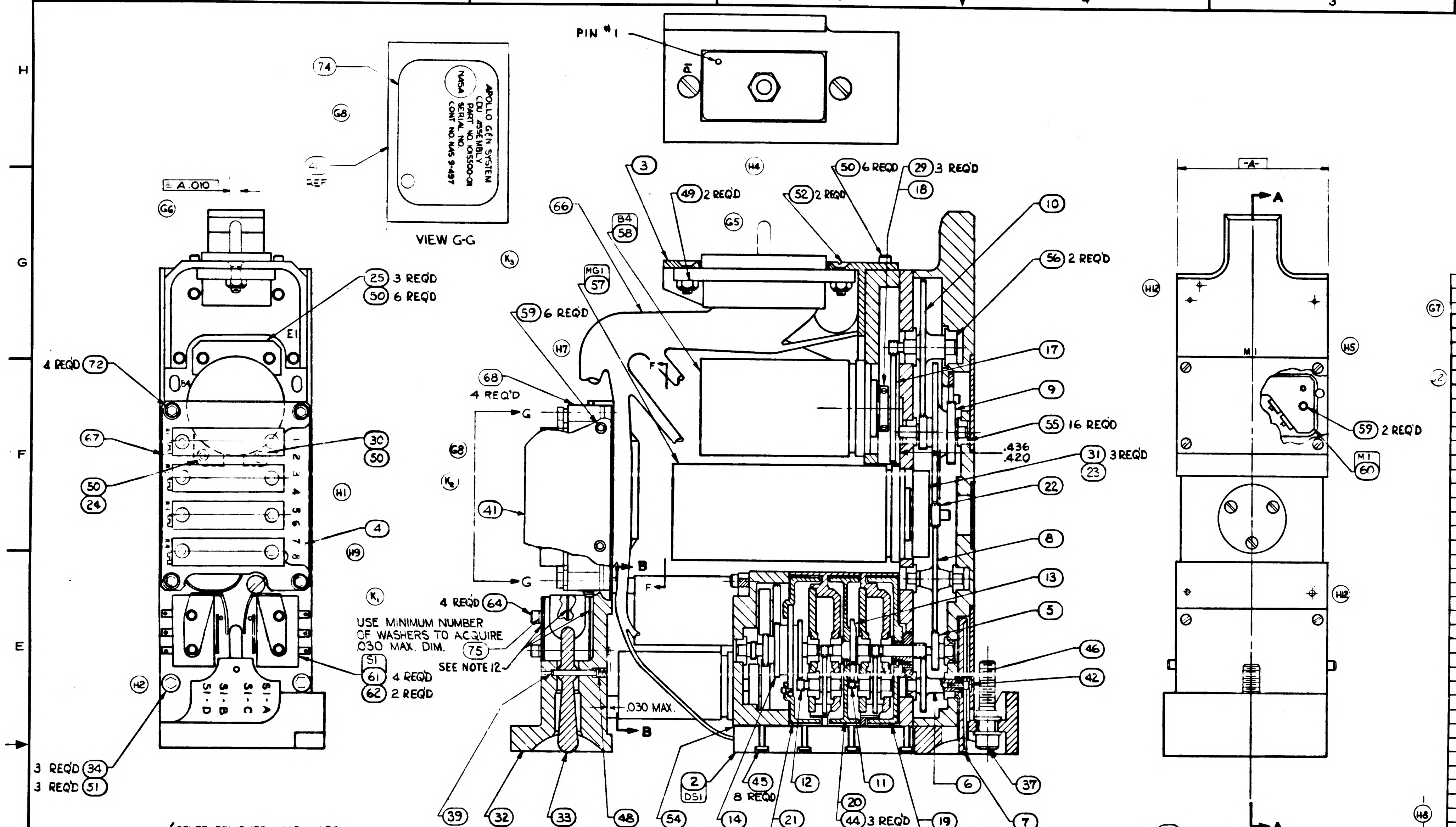
CDU ASSEMBLY

CODE IDENT NO.
SIZE E
1015500
SCALE 2 : 1
SHEET 1 OF 1

R R Ruffon

INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
D		REPLACES REV. C WITH CHANGES PER TDRR# 02191		JULY 19 1963	WK
E		REVISED PER TDRR NO 02897		9/10/63	WK
F		REVISED PER TDRR NO. 03236		9/24/63	
G8		REVISED PER TDRR NO. 04994		13 DEC 63	
H12		REVISED PER TDRR NO. 04995		16 DEC 63	
J2		REVISED PER TDRR NO. 05905			
K3		REVISED PER TDRR NO. 06160		11 FEB 64	WK
L		REVISED PER TDRR NO. 13470		27 OCT 64	


PIN #1
P1
(74)
(G8)
(41) REF
APOLLO GEN SYSTEM
CDU ASSEMBLY
PART NO. 1015500-011
SERIAL NO.
CONT NO. NAS 9-497
NASA
≡ A .010
(G6)
(25) 3 REQ'D
(50) 6 REQ'D
E1
4 REQ'D (72)
(67)
(30)
(50)
(50)
(24)
(4)
(H1)
(H9)
(H2)
(61) 4 REQ'D
(62) 2 REQ'D
S1
S1-A
S1-C
S1-B
S1-D
3 REQ'D (34)
3 REQ'D (51)
(K3)
(59) 6 REQ'D
(H7)
(68) 4 REQ'D
G
G
(41)
(K8)
(G8)
(57) MG1
(66)
(3)
(49) 2 REQ'D
(58) B4
(H4)
(G5)
(52) 2 REQ'D
(50) 6 REQ'D
(29) 3 REQ'D
(18)
(10)
(56) 2 REQ'D
(17)
(9)
(55) 16 REQ'D
.436
.420
(31) 3 REQ'D
(23)
(22)
(8)
(13)
(5)
(46)
(42)
(6)
(37)
(7)
(43) 3 REQ'D
(19)
(44) 3 REQ'D
(20)
(11)
(21)
(44) 3 REQ'D
(12)
(45) 8 REQ'D
(14)
(2) DS1
(54)
(48)
(33)
(32)
(39)
4 REQ'D (64)
USE MINIMUM NUMBER OF WASHERS TO ACQUIRE .030 MAX. DIM.
(75)
SEE NOTE 12
.030 MAX.
F
F
B
B
(K1)
(H12)
A
-A-
M1
(H5)
(59) 2 REQ'D
M1 (60)
(H12)
A

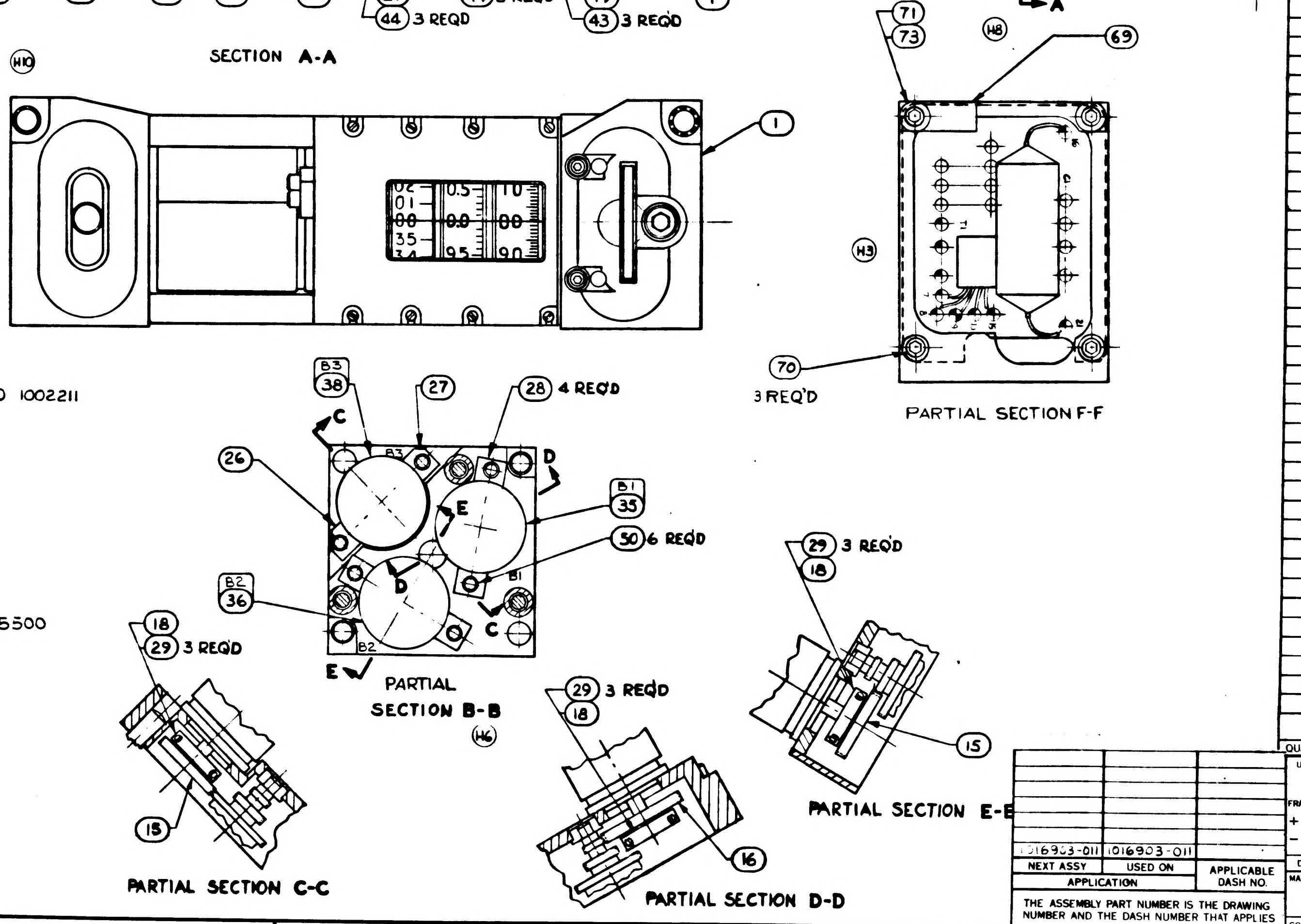
(COVER REMOVED AND WIRE HARNESS NOT SHOWN)

VIEW G-G

SECTION A-A

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4. DRAWINGS FOR REFERENCE
   - 1015550 CDU MECHANICAL SCHEMATIC DIAGRAM
   - 1010036 SCHEMATIC DIAGRAM, ELECTRICAL
   - 1015670 WIRING DIAGRAM
5. DELIVERABLE END ITEMS WILL MEET THE REQUIREMENTS OF PS-1015500
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER MIL-S-40083 (ORD) CLASS 20 (ES-2544-3 GRADE C) PER ND 1002211
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW 'GG')
17. EACH GEAR SHALL BE LUBRICATED WITH ITEM 76 PER ATP 1015500


(H10)
(1)
(H8)
(71)
(73)
(69)
(H3)
(70) 3 REQ'D
B3 (38)
(27)
(28) 4 REQ'D
C
D
(26)
E
B1 (35)
(50) 6 REQ'D
B2 (36)
B2
B1
C
E
(H6)
(18)
(29) 3 REQ'D
(15)
(29) 3 REQ'D
(18)
(16)
(29) 3 REQ'D
(18)
(15)

PARTIAL SECTION F-F

PARTIAL SECTION B-B

PARTIAL SECTION C-C

PARTIAL SECTION D-D

PARTIAL SECTION E-E

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			011				
			A/R		76	1012050	OIL, SILICONE (GE F-50)
			A/R		75	AN 960C3	WASHER - FLAT
			1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
			1		73	MS15795-702	WASHER - PLAIN
			4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
			1		71	1010468-4	SCREW, CAP, SOC HD
			3		70	1011625-13	SCREW, CAP, SOC HD
			1		69	1000220-7	CLAMP - CABLE
			4		68	1016896	SPACER
			1		67	1016898	MOUNTING BOARD (INSEP ASSY)
			1		66	1016897	WIRING HARNESS A
					65		
			4		64	1010468-1	SCREW CAP, SOC HD
					63		
			2		62	1010457-1	MICROSWITCH ACTUATOR
			4		61	1010435-002	MICROSWITCH
			1		60	1015559	DIGITAL CORE ASSY
			8		59	NAS1351C00LL2	SCREW-CAP SOC HD
			1		58	1015673	RESOLVER, 16X - CDU
			1		57	1015674	MOTOR TACH - CDU
			2		56	1010356-10	BALL BEARING
			16		55	1010356-6	BALL BEARING
			1		54	1015680	GASKET, WEDGE LIGHT
					53		
			2		52	AN505DD4-6	SCREW, FLAT HD
			3		51	1010468-2	SCREW, CAP, SOC
			20		50	NAS1352C02LL-4	SCREW, CAP, SOC
			2		49	MS 20365D-440	NUT, SELF LOCKING
			1		48	NAS1081C02A2N	SCREW - SET
					47		
			1		46	1015664	WASHER, SPECIAL
			8		45	MS21269-A115	SCREW, INST, PAN HD
			6		44	MS 21268-A110	SCREW, INST, FIL HD
			3		43	MS 21268-A112	SCREW, INST, FIL HD
			1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
			1		41	1016892	COVER, TERMINAL BOARD
					40		
			1		39	MS16555-606	PIN, STRAIGHT
			1		38	1015681	RESOLVER, 1X - CDU
			1		37	1015512	CLAMP SCREW
			1		36	1016890	RESOLVER, ½X - CDU
			1		35	1015672	RESOLVER, ¼X - CDU
			3		34	1015548	SPACER, SLEW SWITCH
			1		33	1015547	TOGGLE, SWITCH
			1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
			3		31	1015663	SET SCREW
			1		30	1015538-2	CLAMP, MOTOR MODIFIED
			12		29	1015543	SET SCREW
			4		28	1015542	CLAMP, SYNCHRO
			1		27	1015541	CLAMP, SYNCHRO MODIFIED
			1		26	1015540	CLAMP, SYNCHRO MODIFIED
			3		25	1015539	CLAMP, MOTOR
			1		24	1015538-1	CLAMP, MOTOR MODIFIED
			1		23	1015537	FLYWHEEL
			1		22	1015536	GEAR, SPUR
			1		21	1015535	DIAL, 1 SPEED
			1		20	1015534	DIAL, 36 SPEED
			1		19	1015533	DIAL, 1800 SPEED
			4		18	1015532	CLAMP, GEAR
			1		17	1015531	GEAR, SYNCHRO
			1		16	1015530	GEAR, SYNCHRO
			2		15	1015529	GEAR, SYNCHRO
			1		14	1015528	GEAR, CLUSTER, SPUR
			1		13	1015527	GEAR, CLUSTER, SPUR
			1		12	1015526	GEAR, CLUSTER, SPUR
			1		11	1015525	GEAR, CLUSTER, SPUR
			1		10	1015524	GEAR, CLUSTER, SPUR
			1		9	1015523	GEAR, CLUSTER, SPUR
			1		8	1015522	GEAR, SPUR
			1		7	1015521	ADJUSTMENT, WHEEL
			1		6	1015520	GEAR, CLUSTER, SPUR
			1		5	1015517	PILOT SHAFT ASSY (INSEP)
			1		4	1016894	TERMINAL BOARD ASSY (INSEP)
			1		3	1015668	BRACKET, CONNECTOR
			1		2	1015666-011	WEDGE LIGHTING ASSY
			1		1	1015665-011	HOUSING AND CLAMP ASSY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-011	1016903-011	

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + ~ - ~
DECIMALS + ~ - ~
ANGLES + ~ - ~
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

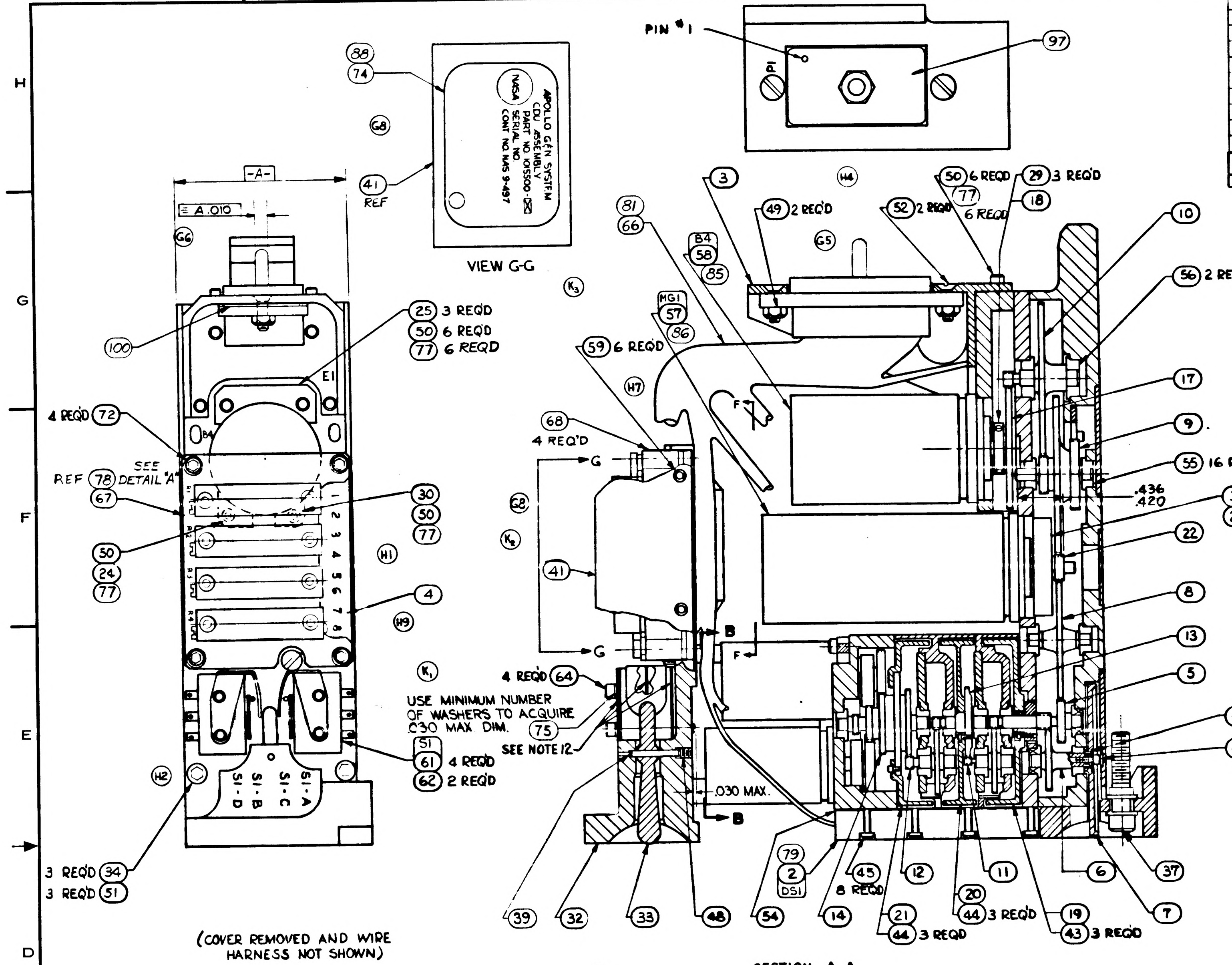
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Fox DATE 2 JUL 63
CHECKED Ed Foster 5 JUL 63
APPROVAL 5 JUL 63
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

CODE IDENT NO
SIZE E
1015500
SCALE 2 : 1
SHEET 1 OF 1

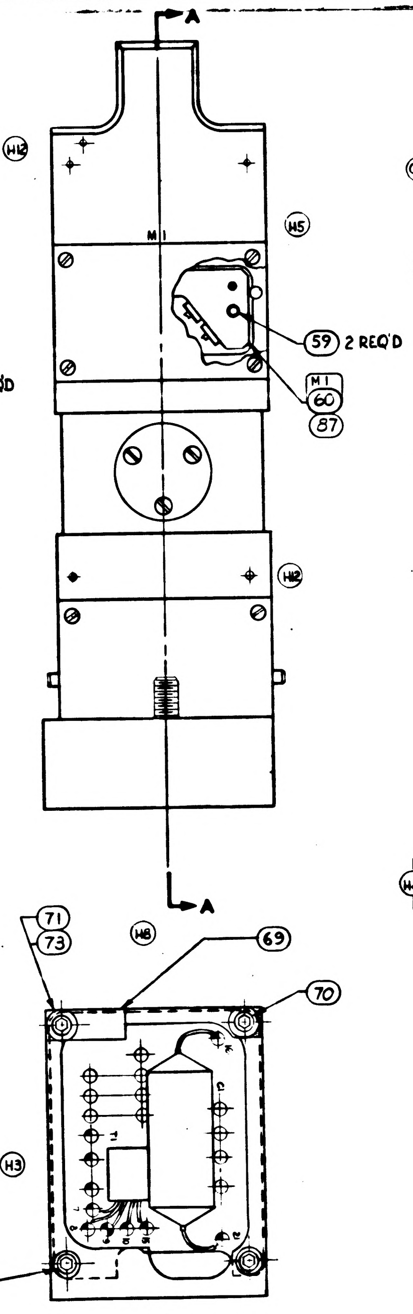
5 JUL 63


PIN # 1
97
P1
88
74
APOLLO G&N SYSTEM CDU ASSEMBLY PART NO 1015500-021 SERIAL NO CONT NO NAS 9-497
NASA
41
REF
G8
G6
-A-
E A .010
100
25 3 REQ'D
50 6 REQ'D
77 6 REQ'D
E1
4 REQ'D 72
SEE DETAIL "A"
REF 78
67
30
50
77
50
24
77
4
H1
H9
K1
S1
61 4 REQ'D
62 2 REQ'D
S1-A S1-B S1-C S1-D
H2
3 REQ'D 34
3 REQ'D 51
3
49 2 REQ'D
H4
G5
50 6 REQ'D
77
52 2 REQ'D
29 3 REQ'D
18
77 6 REQ'D
10
81
66
B4
58
85
HG1
57
86
K5
59 6 REQ'D
H7
56 2 REQ'D
17
9
68
4 REQ'D
G
55 16 REQ'D
.436
.420
31 3 REQ'D
23
G2
K6
41
22
8
B
13
5
F
G
4 REQ'D 64
USE MINIMUM NUMBER OF WASHERS TO ACQUIRE .030 MAX DIM.
75
SEE NOTE 12
46
42
.030 MAX.
B
79
2
DS1
45
8 REQ'D
12
11
6
37
7
39
32
33
48
54
14
21
44 3 REQ'D
20
44 3 REQ'D
19
43 3 REQ'D

VIEW G-G

(COVER REMOVED AND WIRE HARNESS NOT SHOWN)

SECTION A-A


A
H12
H5
M1
59 2 REQ'D
M1
60
87
H2
A
H8
71
73
69
70
H3
98
2 REQ'D

PARTIAL SECTION F-F

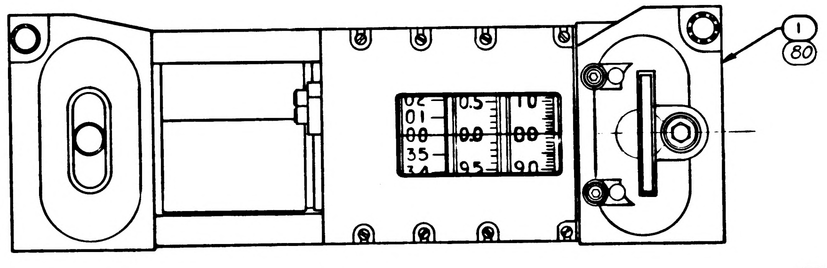
		AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES-2544-3)
		AR	—		102	1010750	CURING AGENT, POLYAMIDE
		AR	—		101	1010748	RESIN, EPOXY
		AR	—		100	1017555	SHIM
		AR	—		99	1012051	GREASE SILICONE (GE 300)
		2	2		98	MS35233-6	SCREW, PAN HD.
		1	—		97	1010812-3	GASKET, MOISTURE SEAL
		☒	—		96	1017545	WIRING DIAGRAM
		☒	—		95	1017544	SCHEMATIC DIAGRAM
		—	☒		94	1015670	WIRING DIAGRAM
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

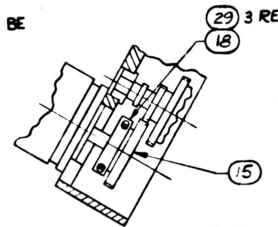
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
D		REPLACES REV. C WITH CHANGES PER TDRR # 02191		JULY 19 1963	WK
E		REVISED PER TDRR NO 02897		9/10/63	WK
F		REVISED PER TDRR NO. 03236		9/20/63	[illegible]
G8		REVISED PER TDRR NO. 04994		13 DEC 63	[illegible]
H12		REVISED PER TDRR NO. 04995		16 DEC 63	[illegible]
J2		REVISED PER TDRR NO. 05990		[illegible]	[illegible]
K5		REVISED PER TDRR NO. 06160		11 FEB 64	WK
L		REVISED PER TDRR 13470		27-OCT-64	[illegible]
M		REVISED PER TDRR 14316		23-NOV-64	[illegible]

		1	—		79	1015666-021	WEDGE-LIGHTING ASSY
		1	—		78	1017543	MOUNTING BOARD (INSEP ASSY)
		20	—		77	NAS1352C02-4	SCREW, CAP, SOC HD
		A/R	A/R		76	1012050	OIL, SILICONE (GE F-50)
		A/R	A/R		75	AN 960C3	WASHER - FLAT
		—	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
		1	1		73	MS15795-702	WASHER - PLAIN
		4	4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
		1	1		71	1010468-4	SCREW, CAP, SOC HD
		1	1		70	1011625-13	SCREW, CAP, SOC HD
		1	1		69	1000220-7	CLAMP-CABLE
		4	4		68	1016896	SPACER
		—	1		67	1016898	MOUNTING BOARD (INSEP ASSY)
		—	1		66	1016897	WIRING HARNESS A
					65		
		4	4		64	1010468-1	SCREW CAP, SOC HD
					63		
		2	2		62	1010457-1	MICROSWITCH ACTUATOR
		4	4		61	1010435-002	MICROSWITCH
		—	1		60	1015559	DIGITAL CORE ASSY
		8	8		59	NAS1351C00LL2	SCREW-CAP SOC HD
		—	1		58	1015673	RESOLVER, 16X - CDU
		—	1		57	1015674	MOTOR TACH - CDU
		2	2		56	1010356-10	BALL BEARING
		16	16		55	1010356-6	BALL BEARING
		1	1		54	1015680	GASKET, WEDGE LIGHT
					53		
		2	2		52	AN505DD4-6	SCREW, FLAT HD
		3	3		51	1010468-2	SCREW, CAP, SOC
		—	20		50	NAS1352C02LL-4	SCREW, CAP, SOC
		2	2		49	MS 20365D-440	NUT, SELF LOCKING
		1	1		48	NAS1081C02A2N	SCREW - SET
					47		
		1	1		46	1015664	WASHER, SPECIAL
		8	8		45	MS21269-A115	SCREW, INST, PAN HD
		6	6		44	MS 21268-A110	SCREW, INST, FIL HD
		3	3		43	MS 21268-A112	SCREW, INST, FIL HD
		1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
		1	1		41	1016892	COVER, TERMINAL BOARD
					40		
		1	1		39	MS16555-606	PIN, STRAIGHT
		—	1		38	1015681	RESOLVER, 1X - CDU
		1	1		37	1015512	CLAMP SCREW
		—	1		36	1016890	RESOLVER, ½X - CDU
		—	1		35	1015672	RESOLVER, ¼X - CDU
		3	3		34	1015548	SPACER, SLEW SWITCH
		1	1		33	1015547	TOGGLE, SWITCH
		1	1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
		3	3		31	1015663	SET SCREW
		1	1		30	1015538-2	CLAMP, MOTOR MODIFIED
		12	12		29	1015543	SET SCREW
		4	4		28	1015542	CLAMP, SYNCHRO
		1	1		27	1015541	CLAMP, SYNCHRO MODIFIED
		1	1		26	1015540	CLAMP, SYNCHRO MODIFIED
		3	3		25	1015539	CLAMP, MOTOR
		1	1		24	1015538-1	CLAMP, MOTOR MODIFIED
		1	1		23	1015537	FLYWHEEL
		1	1		22	1015536	GEAR, SPUR
		1	1		21	1015535	DIAL, 1 SPEED
		1	1		20	1015534	DIAL, 36 SPEED
		1	1		19	1015533	DIAL, 1800 SPEED
		4	4		18	1015532	CLAMP, GEAR
		1	1		17	1015531	GEAR, SYNCHRO
		1	1		16	1015530	GEAR, SYNCHRO
		2	2		15	1015529	GEAR, SYNCHRO
		1	1		14	1015528	GEAR, CLUSTER, SPUR
		1	1		13	1015527	GEAR, CLUSTER, SPUR
		1	1		12	1015526	GEAR, CLUSTER, SPUR
		1	1		11	1015525	GEAR, CLUSTER, SPUR
		1	1		10	1015524	GEAR, CLUSTER, SPUR
		1	1		9	1015523	GEAR, CLUSTER, SPUR
		1	1		8	1015522	GEAR, SPUR
		1	1		7	1015521	ADJUSTMENT, WHEEL
		1	1		6	1015520	GEAR, CLUSTER, SPUR
		1	1		5	1015517	PILOT SHAFT ASSY (INSEP)
		1	1		4	1016894	TERMINAL BOARD ASSY (INSEP)
		1	1		3	1015668	BRACKET, CONNECTOR
		—	1		2	1015666-011	WEDGE LIGHTING ASSY
		—	1		1	1015665-011	HOUSING AND CLAMP ASSY
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

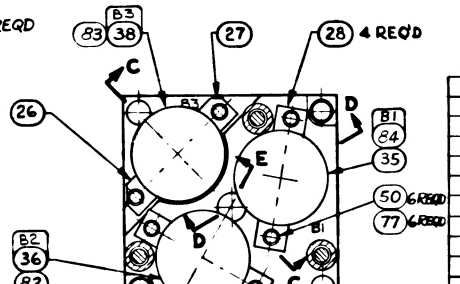
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4
5. DELIVERABLE END ITEMS MUST MEET THE REQUIREMENTS OF PS-1015500
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER ND1002211 USING ITEM 103.
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "GG")
17. EACH GEAR SHALL BE LUBRICATED WITH ITEM 76 PER ATP 1015500

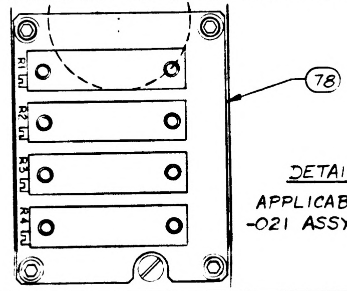

H10
1
80
02 01 00 35
10.5 00 0.0 9.5
18 10 00 90


29 3 REQ'D
18
15

PARTIAL SECTION E-E

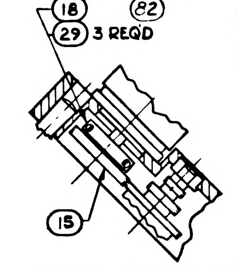

B3
83 38
27
28 4 REQ'D
C
D
B1
84
35
26
50 6 REQ'D
77 6 REQ'D
B2
36
82
B1
C
E

PARTIAL SECTION B-B

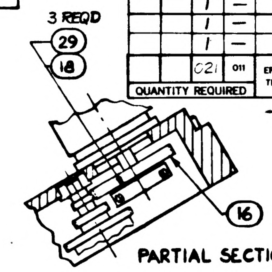

R1
R2
R3
R4
78

DETAIL A

APPLICABLE TO -021 ASSY ONLY


18
29 3 REQ'D
15

PARTIAL SECTION C-C


3 REQ'D
29
18
16

PARTIAL SECTION D-D

		—	☒		93	1010036	SCHEMATIC DIAGRAM, ELECT.
		☒	☒		92	1015550	SCHEMATIC DIAGRAM, MECH.
		AR	—		91	1012505	PRIMER
		AR	—		90	1012504	PRIMER
		AR	—		89	1012503	COMPOUND, POLYURETHANE
		1	—		88	1014650-14	NAMEPLATE (SEE NOTE 16)
		1	—		87	1017546	DIGITAL CORE ASSY
		1	—		86	1017551	MOTOR-TACH & PIN ASSY
		1	—		85	1017550	RESOLVER & PIN ASSY 16X
		1	—		84	1017547	RESOLVER & PIN ASSY ¼X
		1	—		83	1017543	RESOLVER & PIN ASSY 1X
		1	—		82	1017548	RESOLVER & PIN ASSY ½X
		1	—		81	1017541	WIRING HARNESS "A"
		1	—		80	1015665-021	HOUSING & CLAMP ASSY
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-021	1016903-021	-021
1016903-011	1016903-011	-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ~ ± ~ ± ~
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Fox DATE 2 JUL 63
CHECKED Ed Foster 5 JUL 63
APPROVAL Ed [illegible] 5 JUL 63
APPROVAL [illegible] 5 JUL 63
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

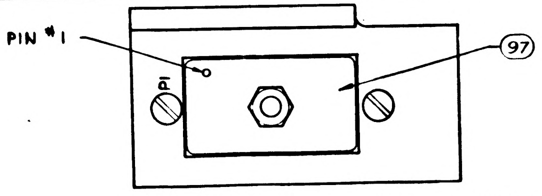
CODE IDENT NO
SIZE E
1015500
SCALE 2 : 1
SHEET 1 OF 1

5 JUL 63

1015500

021	011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1	—		[illegible]	[illegible]	WEDGE LIGHTING ASSY

LIST OF PARTS AND MATERIALS



021	011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES 2544-3)
AR	—		102	1010750	CURING AGENT, POLYAMIDE
AR	—		101	1010748	RESIN, EPOXY
AR	—		100	1017555	SHIM
AR	—		99	1012051	GREASE SILICONE (GE 300)
2	2		98	MS35233-6	SCREW, PAN HD.
1	—		97	1010912-3	GASKET, MOISTURE SEAL
╳	—		96	1017545	WIRING DIAGRAM
╳	—		95	1017544	SCHEMATIC DIAGRAM
—	╳		94	1015670	WIRING DIAGRAM

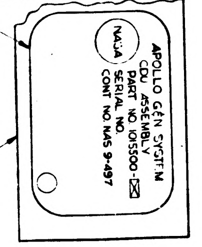
LIST OF PARTS AND MATERIALS

REVISIONS

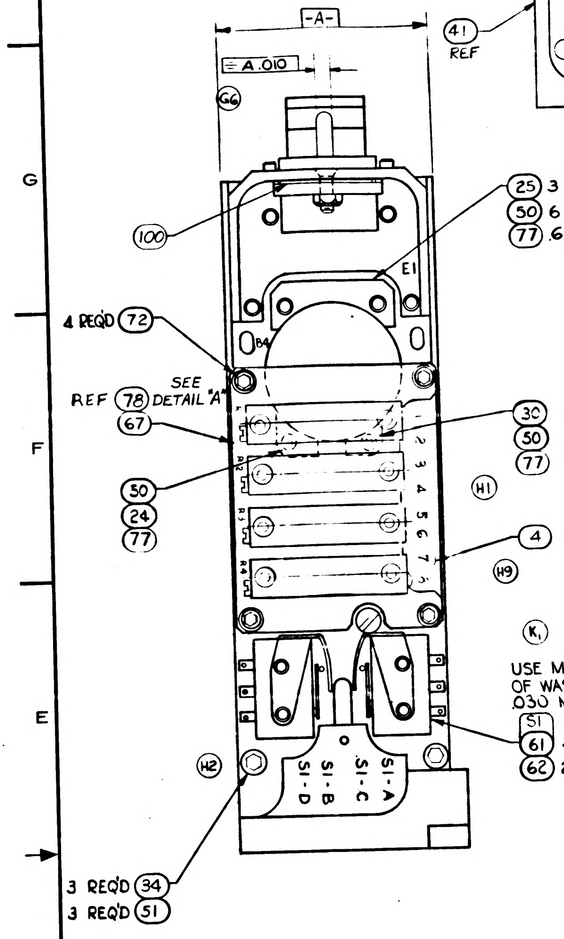
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
D		REPLACES REV. C WITH CHANGES PER TDRR #02191		JULY 19 1963	WK
E		REVISED PER TDRR NO 02897		9/10/63	WK
F		REVISED PER TDRR NO. 03236		9/24/63	
G8		REVISED PER TDRR NO 04994		13 DEC. 63	12/17
H12		REVISED PER TDRR NO. 04995		16 DEC 63	12/17
J2		REVISED PER TDRR NO 05990		28/1/64	WE
K3		REVISED PER TDRR NO. 06160		11 FEB 64	WH
L		REVISED PER TDRR 13470		27-OCT-64	JJ
M		REVISED PER TDRR 14316		23-NOV-64	

REVISIONS

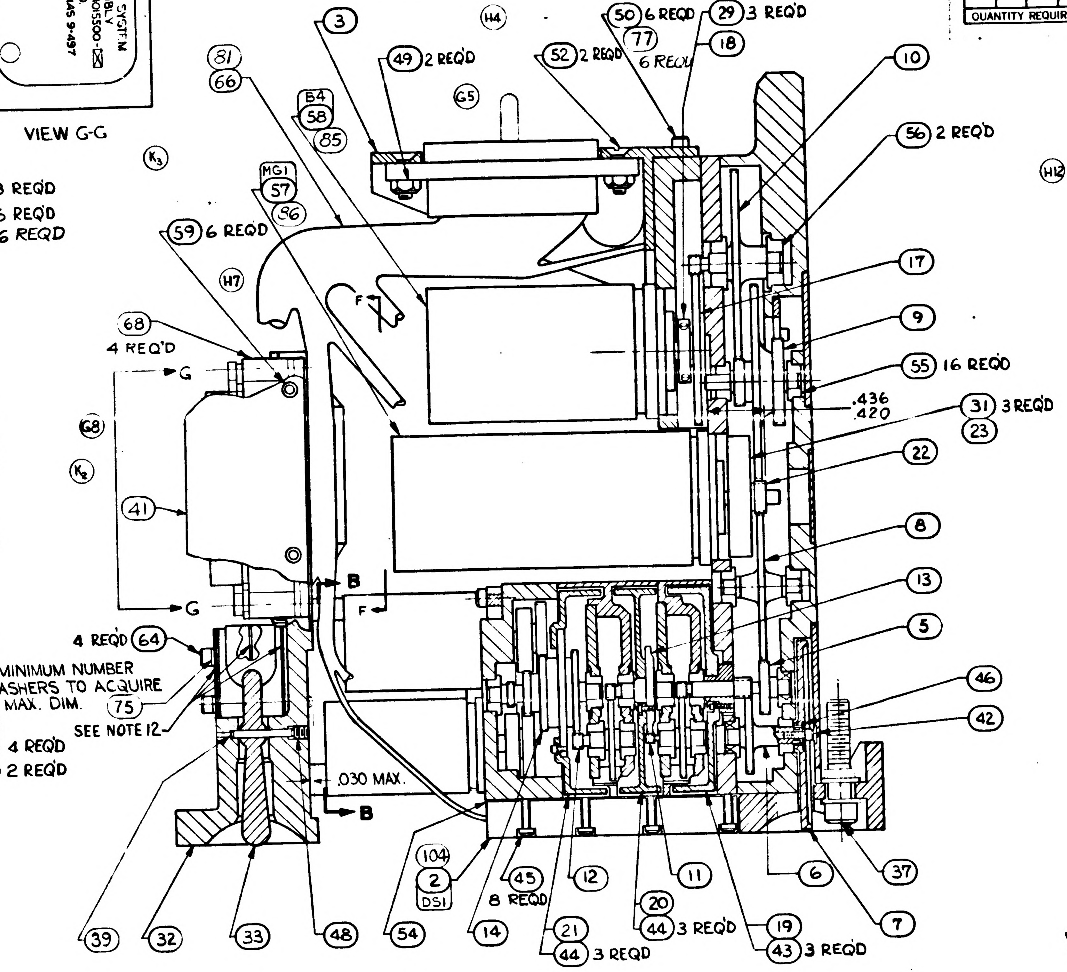
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
N		REVISED PER TDRR 4550		7 DEC 64	JNP


74
88
G8
APOLLO GEN SYST M
CDU ASSEMBLY
PART NO. 1015500-
SERIAL NO.
CONT NO. NAS 9-497
NASA
41
REF

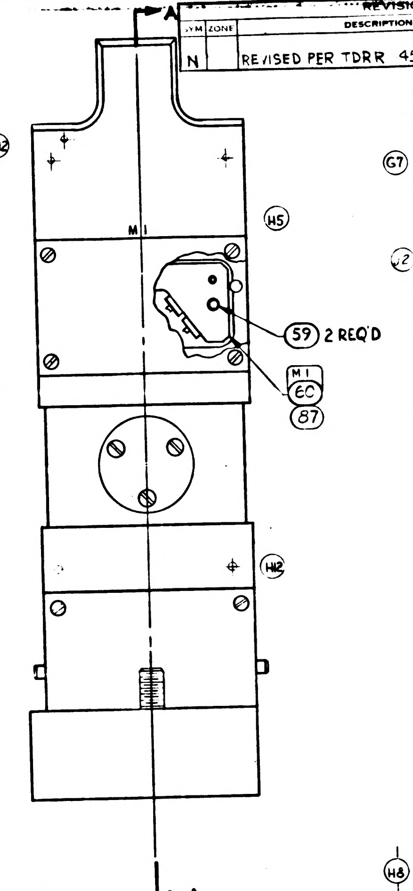
VIEW G-G

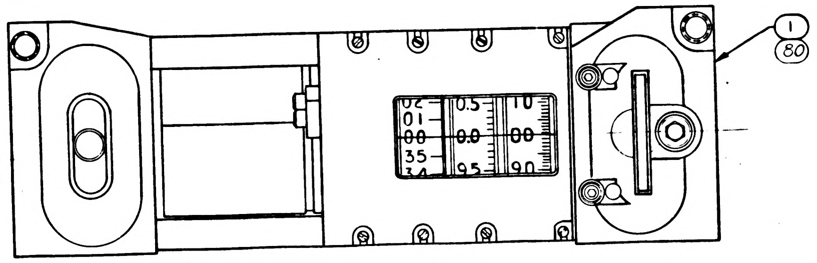

-A-
A .010
G6
100
25 3 REQ'D
50 6 REQ'D
77 6 REQ'D
E1
4 REQ'D 72
REF 78 SEE DETAIL "A"
67
30
50
77
50
24
77
4
H1
H9
S1
61 4 REQ'D
62 2 REQ'D
SI-A
SI-C
SI-B
SI-D
H2
3 REQ'D 34
3 REQ'D 51

(COVER REMOVED AND WIRE HARNESS NOT SHOWN)


3
H4
50 6 REQ'D
77
6 REQ'D
29 3 REQ'D
18
49 2 REQ'D
52 2 REQ'D
G5
10
31
66
B4
58
85
56 2 REQ'D
MG1
57
86
K3
59 6 REQ'D
H7
17
9
68
4 REQ'D
G
55 16 REQ'D
.436
.420
31 3 REQ'D
23
G8
K6
22
41
8
G
B
F
13
5
K1
4 REQ'D 64
USE MINIMUM NUMBER OF WASHERS TO ACQUIRE .030 MAX. DIM.
75
SEE NOTE 12
46
42
.030 MAX.
B
104
2
DS1
45
8 REQ'D
12
11
20
44 3 REQ'D
19
43 3 REQ'D
21
44 3 REQ'D
6
37
7
39
32
33
48
54
14

SECTION A-A


A
H12
M1
H5
G7
59 2 REQ'D
M1
60
87
H2
A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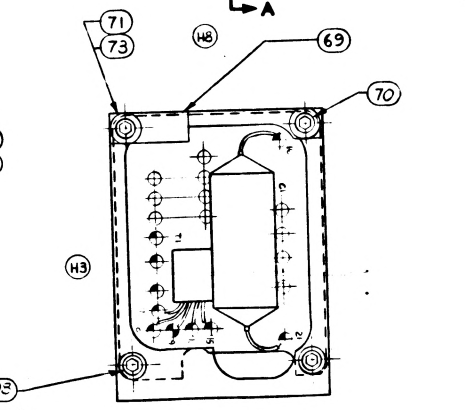
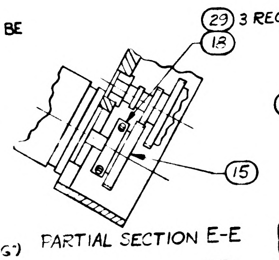
0.5
1.0
0.0
9.5
9.0
0.0


71
73
H8
69
70
H3
93
2 REQ'D

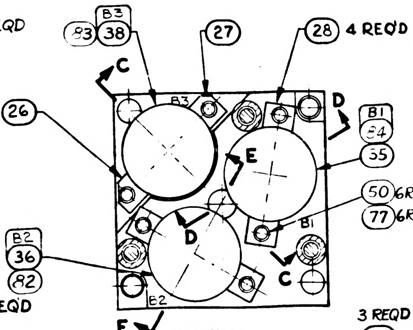
PARTIAL SECTION F-F

NOTES:

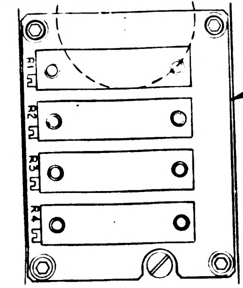
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4
5. [illegible] FS-1015500
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER ND1002211 USING ITEM 103.
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW 'GG')
17. EACH GEAR SHALL BE LUBRICATED WITH ITEM 76 PER ATP 1015500


29 3 REQ'D
18
15

PARTIAL SECTION E-E

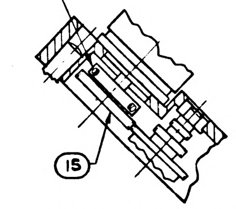

B3
38
27
28 4 REQ'D
C
D
B1
54
35
26
E
E
D
50 6 REQ'D
77 6 REQ'D
B2
36
82
B1
C
E
E2

PARTIAL SECTION B-B

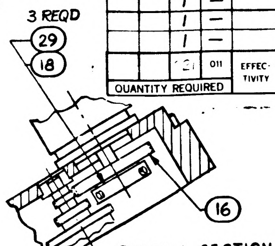

78
R1
R2
R3
R4

DETAIL A

APPLICABLE TO -021 ASSY ONLY


18
29 3 REQ'D
15

PARTIAL SECTION C-C


3 REQD
29
18
16

PARTIAL SECTION D-D

021	011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
—	╳		93	1010036	SCHEMATIC DIAGRAM, ELECT.
╳	╳		92	1015550	SCHEMATIC DIAGRAM, MECH.
AR	—		91	1012505	PRIMER
AR	—		90	1012504	PRIMER
AR	—		89	1012503	COMPOUND, POLYURETHANE
1	—		88	1014650-14	NAMEPLATE (SEE NOTE 16)
1	—		87	1017546	DIGITAL CORE ASSY
1	—		86	1017551	MOTOR-TACH & PIN ASSY
1	—		85	1017550	RESOLVER & PIN ASSY 16X
1	—		84	1017547	RESOLVER & PIN ASSY ¼X
1	—		83	1017549	RESOLVER & PIN ASSY 1X
1	—		82	1017548	RESOLVER & PIN ASSY ½X
1	—		81	1017541	WIRING HARNESS "A"
1	—		80	1015665-021	HOUSING & CLAMP ASSY

LIST OF PARTS AND MATERIALS

021	011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
~~1~~	~~—~~		79	~~1015666-021~~	~~WEDGE-LIGHTING ASSY~~
1	—		78	1017543	MOUNTING BOARD (INSEP ASSY)
20	—		77	NAS1352C02-4	SCREW, CAP, SOC HD
A/R	A/R		76	1012050	OIL, SILICONE (GE F-50)
A/R	A/R		75	AN 960C3	WASHER - FLAT
—	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
1	1		73	MS15795-702	WASHER - PLAIN
4	4		72	NAS1352C02LL3	SCREW, CAP, SOC HD
1	1		71	1010468-4	SCREW, CAP, SOC HD
1	1		70	1011625-13	SCREW, CAP, SOC HD
1	1		69	1000220-7	CLAMP-CABLE
4	4		68	1016896	SPACER
—	1		67	1016898	MOUNTING BOARD (INSEP ASSY)
—	1		66	1016897	WIRING HARNESS A
			65		
4	4		64	1010468-1	SCREW CAP, SOC HD
			63		
2	2		62	1010457-1	MICROSWITCH ACTUATOR
4	4		61	1010435-002	MICROSWITCH
—	1		60	1015559	DIGITAL CORE ASSY
8	8		59	NAS1351C00LL2	SCREW-CAP. SOC HD
—	1		58	1015673	RESOLVER, 16X - CDU
—	1		57	1015674	MOTOR TACH - CDU
2	2		56	1010356-10	BALL BEARING
16	16		55	1010356-6	BALL BEARING
1	1		54	1015680	GASKET, WEDGE LIGHT
			53		
2	2		52	AN505DD4-6	SCREW, FLAT HD
3	3		51	1010468-2	SCREW, CAP, SOC
—	20		50	NAS1352C02LL-4	SCREW, CAP, SOC
2	2		49	MS 20365D-440	NUT, SELF LOCKING
1	1		48	NAS1081C02A2N	SCREW - SET
			47		
1	1		46	1015664	WASHER, SPECIAL
8	8		45	MS21269-A115	SCREW, INST, PAN HD
6	6		44	MS 21268-A110	SCREW, INST, FIL HD
3	3		43	MS 21268-A112	SCREW, INST, FIL HD
1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
1	1		41	1016892	COVER, TERMINAL BOARD
			40		
1	1		39	MS16555-606	PIN, STRAIGHT
—	1		38	1015681	RESOLVER, 1X - CDU
1	1		37	1015512	CLAMP SCREW
—	1		36	1016890	RESOLVER, ½X - CDU
—	1		35	1015672	RESOLVER, ¼X - CDU
3	3		34	1015548	SPACER, SLEW SWITCH
1	1		33	1015547	TOGGLE, SWITCH
1	1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
3	3		31	1015663	SET SCREW
1	1		30	1015538-2	CLAMP, MOTOR MODIFIED
12	12		29	1015543	SET SCREW
4	4		28	1015542	CLAMP, SYNCHRO
1	1		27	1015541	CLAMP, SYNCHRO MODIFIED
1	1		26	1015540	CLAMP, SYNCHRO MODIFIED
3	3		25	1015539	CLAMP, MOTOR
1	1		24	1015538-1	CLAMP, MOTOR MODIFIED
1	1		23	1015537	FLYWHEEL
1	1		22	1015536	GEAR, SPUR
1	1		21	1015535	DIAL, 1 SPEED
1	1		20	1015534	DIAL, 36 SPEED
1	1		19	1015533	DIAL, 1800 SPEED
4	4		18	1015532	CLAMP, GEAR
1	1		17	1015531	GEAR, SYNCHRO
1	1		16	1015530	GEAR, SYNCHRO
2	2		15	1015529	GEAR, SYNCHRO
1	1		14	1015528	GEAR, CLUSTER, SPUR
1	1		13	1015527	GEAR, CLUSTER, SPUR
1	1		12	1015526	GEAR, CLUSTER, SPUR
1	1		11	1015525	GEAR, CLUSTER, SPUR
1	1		10	1015524	GEAR, CLUSTER, SPUR
1	1		9	1015523	GEAR, CLUSTER, SPUR
1	1		8	1015522	GEAR, SPUR
1	1		7	1015521	ADJUSTMENT, WHEEL
1	1		6	1015520	GEAR, CLUSTER, SPUR
1	1		5	1015517	PILOT SHAFT ASSY (INSEP)
1	1		4	1016894	TERMINAL BOARD ASSY (INSEP)
1	1		3	1015668	BRACKET, CONNECTOR
—	1		2	1015666-011	WEDGE LIGHTING ASSY
—	1		1	1015665-011	HOUSING AND CLAMP ASSY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-021	1016 [illegible]-021	-021
1016903-011	1016903-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± ~ DECIMALS ± ~ ANGLES ± ~
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

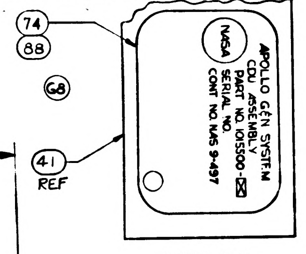
AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN R. Fox DATE 2 JUL 63
CHECKED Ed Foster 5 JUL 63
APPROVAL Ed Muckenbauer 5 JUL 63
APPROVAL
NASA APPROVAL
MIT APPROVAL
R K [illegible] 5 JUL 63

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

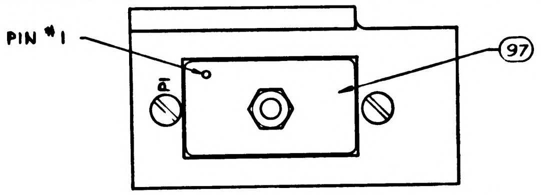
CDU ASSEMBLY

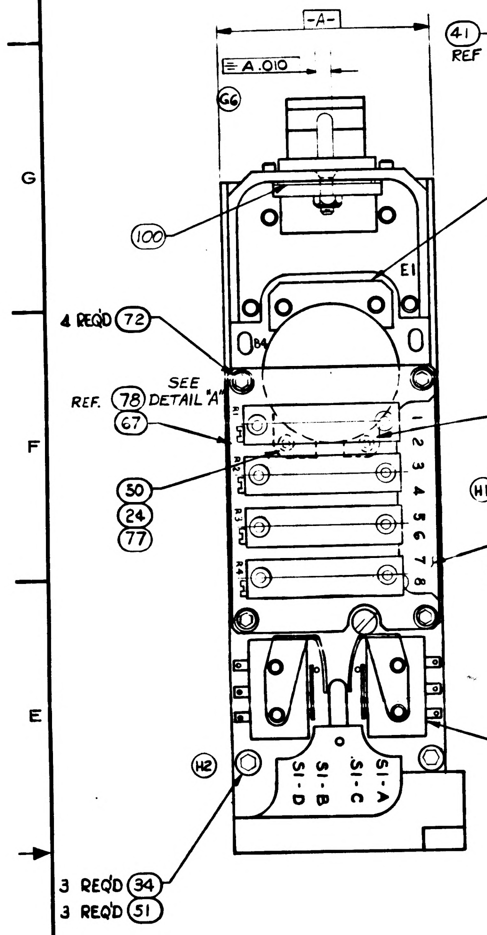
CODE IDENT NO
SIZE E
1015500
SCALE 2:1
SHEET 1 OF 1

		1	—			1015666-031	WEDGE LIGHTING ASSY
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED						LIST OF PARTS AND MATERIALS	

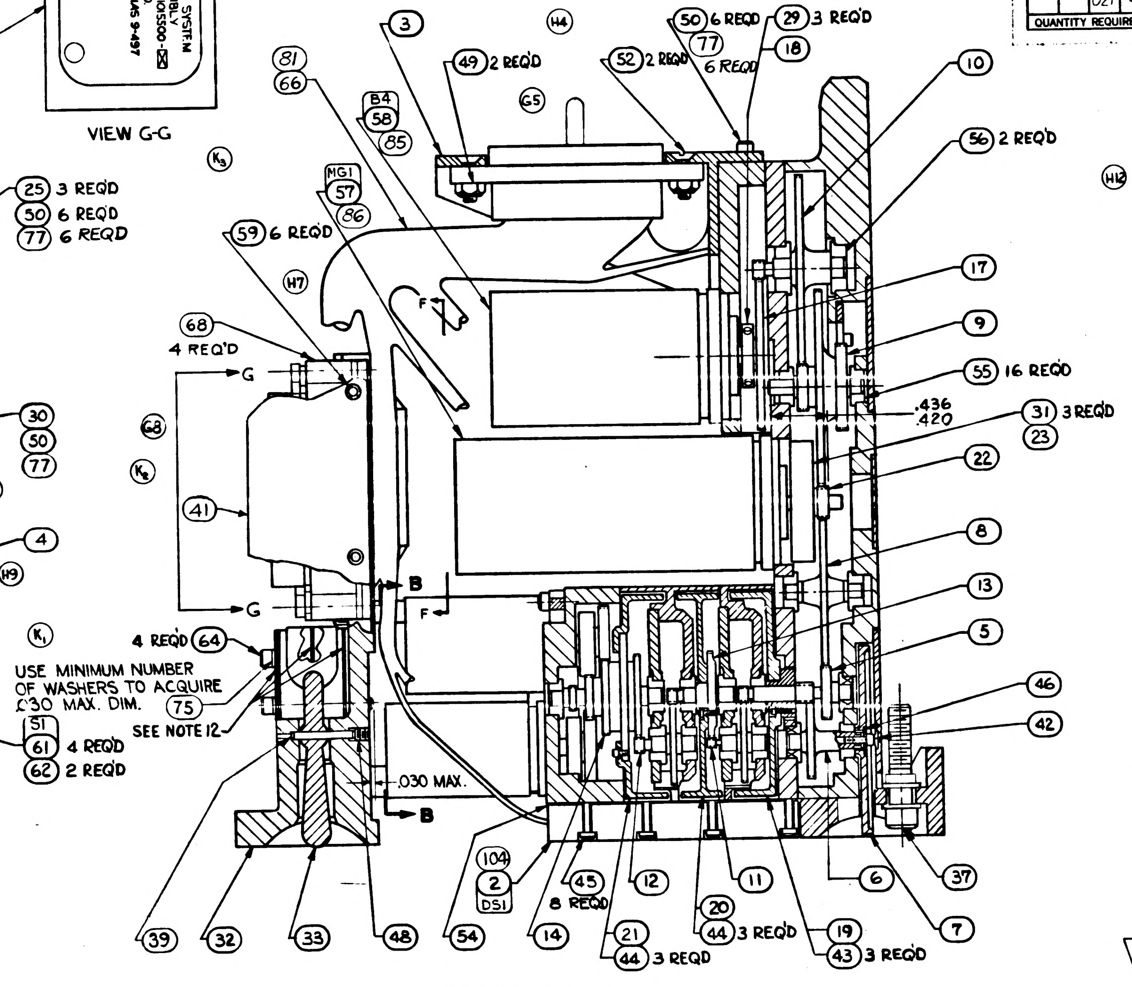

74
88
G8
41
REF
APOLLO GEN SYSTEM
CDU ASSEMBLY
PART NO. 1015500-
SERIAL NO.
CONT NO. NAS 9-497
NASA

VIEW G-G

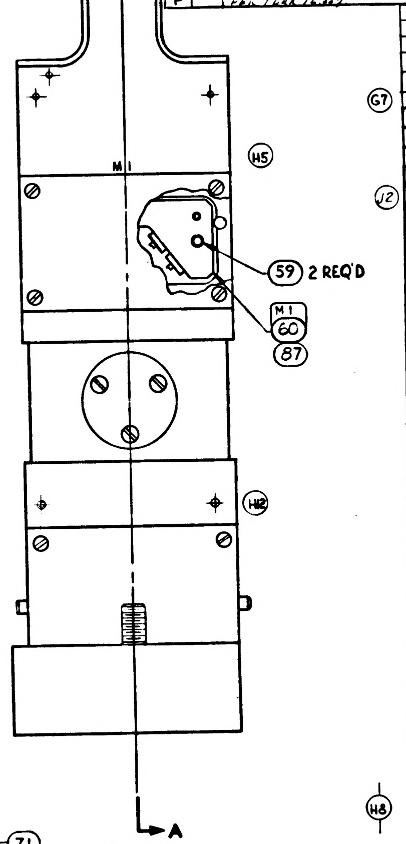


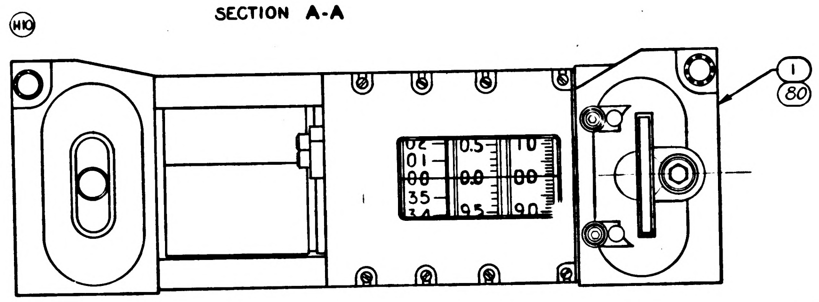

-A-
A .010
G6
100
25 3 REQ'D
50 6 REQ'D
77 6 REQ'D
E1
4 REQ'D 72
SEE DETAIL "A"
REF. 78
67
30
50
77
50
24
77
H1
4
H9
H2
51
61 4 REQ'D
62 2 REQ'D
SI-A
SI-B
SI-D
3 REQ'D 34
3 REQ'D 51

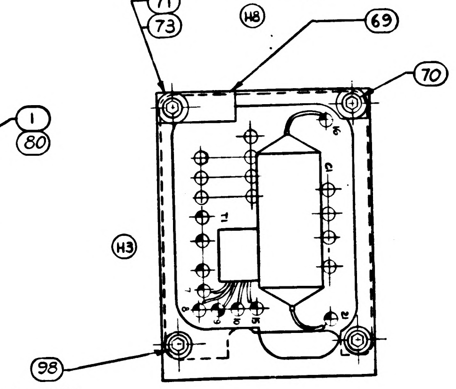
(COVER REMOVED AND WIRE HARNESS NOT SHOWN)


81
66
3
B4
58
85
H4
49 2 REQ'D
65
50 6 REQ'D
77
29 3 REQ'D
18
52 2 REQ'D
6 REQ'D
10
56 2 REQ'D
K3
HG1
57
86
59 6 REQ'D
H7
F
17
9
68
4 REQ'D
G
55 16 REQ'D
.436
.420
31 3 REQD
23
K8
22
41
8
G
B
F
13
5
4 REQ'D 64
K1
USE MINIMUM NUMBER OF WASHERS TO ACQUIRE .030 MAX. DIM.
75
SEE NOTE 12
46
42
.030 MAX.
B
104
2
DS1
45
8 REQ'D
12
11
6
37
20
44 3 REQ'D
19
43 3 REQ'D
7
21
44 3 REQD
39
32
33
48
54
14

SECTION A-A


A
H12
M1
H5
59 2 REQ'D
M1
60
87
H2
A

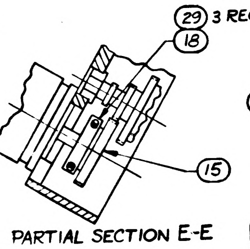



71
73
H8
69
70
H3
98
2 REQ'D

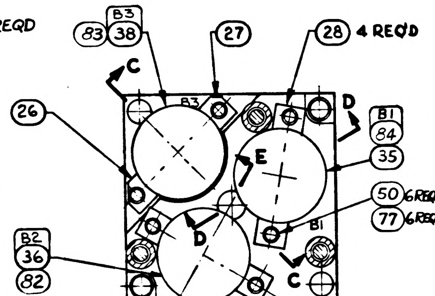
PARTIAL SECTION F-F

NOTES:

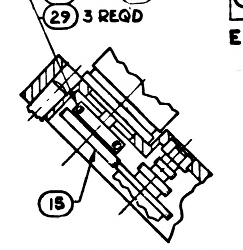
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4.
5. DELIVERABLE END ITEMS MUST MEET THE REQUIREMENTS OF PS-1015500
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER ND1002211 USING ITEM 103.
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "GG")
17. EACH GEAR SHALL BE LUBRICATED WITH ITEM 76 PER ATP 1015500


29 3 REQD
18
15

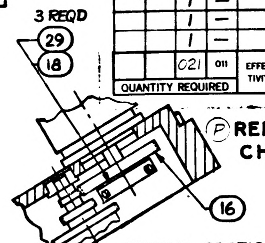
PARTIAL SECTION E-E


B3
83
38
27
28 4 REQD
C
D
26
B1
84
35
50 6 REQD
77 6 REQD
B2
36
82
E
D
C
B1
B2

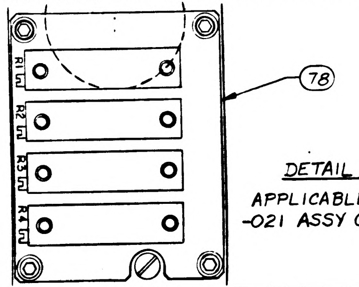
PARTIAL SECTION B-B


18
29 3 REQD
15

PARTIAL SECTION C-C


3 REQD
29
18
16

PARTIAL SECTION D-D


78
R1
R2
R3
R4

DETAIL A
APPLICABLE TO -021 ASSY ONLY

		AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES-2544-3)
		AR	—		102	1010750	CURING AGENT, POLYAMIDE
		AR	—		101	1010748	RESIN, EPOXY
		AR	—		100	1017555	SHIM
		AR	—		99	1012051	GREASE SILICONE (GE 300)
		2	2		98	MS35233-6	SCREW, PAN HD.
		1	—		97	1010812-3	GASKET, MOISTURE SEAL
		☒	—		96	1017545	WIRING DIAGRAM
		☒	—		95	1017544	SCHEMATIC DIAGRAM
		—	☒		94	1015670	WIRING DIAGRAM
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED						LIST OF PARTS AND MATERIALS	

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
D		REPLACES REV. C WITH CHANGES PER TDRR # 02191		JULY 19 1963	WK
E		REVISED PER TDRR NO 02897		9/10/63	WK
F		REVISED PER TDRR NO. 03236		9/24/63	
G8		REVISED PER TDRR NO. 04994		13 DEC 63	
H12		REVISED PER TDRR NO. 04995		16 DEC 63	
J2		REVISED PER TDRR NO. 05900			
K3		REVISED PER TDRR NO. 06160		11 FEB 64	WH
L		REVISED PER TDRR 13470		2-64	
M		REVISED PER TDRR 4316		23-64	

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD
N		REV. PER TDRR 14550	7 DEC 64	JWP DLP
P		REPLACED WITH CHANGE BY REV R PER TDRR 16302	20 JAN 65	HTO WD

		~~1~~	~~—~~		~~79~~	~~1015666-021~~	~~WEDGE-LIGHTING ASSY~~
		1	—		78	1017543	MOUNTING BOARD (INSEP ASSY)
		20	—		77	NAS1352C02-4	SCREW, CAP, SOC HD
		A/R	A/R		76	1012050	OIL, SILICONE (GE F-50)
		A/R	A/R		75	AN 960C3	WASHER - FLAT
		—	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
		1	1		73	MS15795-702	WASHER - PLAIN
		4	4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
		1	1		71	1010468-4	SCREW, CAP, SOC HD
		1	1		70	1011625-13	SCREW, CAP, SOC HD
		1	1		69	1000220-7	CLAMP-CABLE
		4	4		68	1016896	SPACER
		—	1		67	1016898	MOUNTING BOARD (INSEP ASSY)
		—	1		66	1016897	WIRING HARNESS A
					65		
		4	4		64	1010468-1	SCREW CAP, SOC HD
					63		
		2	2		62	1010457-1	MICROSWITCH ACTUATOR
		4	4		61	1010435-002	MICROSWITCH
		—	1		60	1015559	DIGITAL CORE ASSY
		8	8		59	NAS1351C00LL2	SCREW-CAP. SOC HD
		—	1		58	1015673	RESOLVER, 16X - CDU
		—	1		57	1015674	MOTOR TACH - CDU
		2	2		56	1010356-10	BALL BEARING
		16	16		55	1010356-6	BALL BEARING
		1	1		54	1015680	GASKET, WEDGE LIGHT
					53		
		2	2		52	AN505DD4-6	SCREW, FLAT HD
		3	3		51	1010468-2	SCREW, CAP, SOC
		—	20		50	NAS 1352C02LL-4	SCREW, CAP, SOC
		2	2		49	MS 20365D-440	NUT, SELF LOCKING
		1	1		48	NAS1081C02A2N	SCREW - SET
					47		
		1	1		46	1015664	WASHER, SPECIAL
		8	8		45	MS21269-A115	SCREW, INST, PAN HD
		6	6		44	MS 21268-A110	SCREW, INST, FIL HD
		3	3		43	MS 21268-A112	SCREW, INST, FIL HD
		1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
		1	1		41	1016892	COVER, TERMINAL BOARD
					40		
		1	1		39	MS16555-606	PIN, STRAIGHT
		—	1		38	1015681	RESOLVER, 1X - CDU
		1	1		37	1015512	CLAMP SCREW
		—	1		36	1016890	RESOLVER, ½X - CDU
		—	1		35	1015672	RESOLVER, ¼X - CDU
		3	3		34	1015548	SPACER, SLEW SWITCH
		1	1		33	1015547	TOGGLE, SWITCH
		1	1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
		3	3		31	1015663	SET SCREW
		1	1		30	1015538-2	CLAMP, MOTOR MODIFIED
		12	12		29	1015543	SET SCREW
		4	4		28	1015542	CLAMP, SYNCHRO
		1	1		27	1015541	CLAMP, SYNCHRO MODIFIED
		1	1		26	1015540	CLAMP, SYNCHRO MODIFIED
		3	3		25	1015539	CLAMP, MOTOR
		1	1		24	1015538-1	CLAMP, MOTOR MODIFIED
		1	1		23	1015537	FLYWHEEL
		1	1		22	1015536	GEAR, SPUR
		1	1		21	1015535	DIAL, 1 SPEED
		1	1		20	1015534	DIAL, 36 SPEED
		1	1		19	1015533	DIAL, 1800 SPEED
		4	4		18	1015532	CLAMP, GEAR
		1	1		17	1015531	GEAR, SYNCHRO
		1	1		16	1015530	GEAR, SYNCHRO
		2	2		15	1015529	GEAR, SYNCHRO
		1	1		14	1015528	GEAR, CLUSTER, SPUR
		1	1		13	1015527	GEAR, CLUSTER, SPUR
		1	1		12	1015526	GEAR, CLUSTER, SPUR
		1	1		11	1015525	GEAR, CLUSTER, SPUR
		1	1		10	1015524	GEAR, CLUSTER, SPUR
		1	1		9	1015523	GEAR, CLUSTER, SPUR
		1	1		8	1015522	GEAR, SPUR
		1	1		7	1015521	ADJUSTMENT, WHEEL
		1	1		6	1015520	GEAR, CLUSTER, SPUR
		1	1		5	1015517	PILOT SHAFT ASSY (INSEP)
		1	1		4	1016894	TERMINAL BOARD ASSY (INSEP)
		1	1		3	1015668	BRACKET, CONNECTOR
		—	1		2	1015666-011	WEDGE LIGHTING ASSY
		—	1		1	1015665-011	HOUSING AND CLAMP ASSY
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED						LIST OF PARTS AND MATERIALS	

		—	☒		93	1010036	SCHEMATIC DIAGRAM, ELECT.
		☒	☒		92	1015550	SCHEMATIC DIAGRAM, MECH.
		AR	—		91	1012505	PRIMER
		AR	—		90	1012504	PRIMER
		AR	—		89	1012503	COMPOUND, POLYURETHANE
		1	—		88	1014650-14	NAMEPLATE (SEE NOTE 16)
		1	—		87	1017546	DIGITAL CORE ASSY
		1	—		86	1017551	MOTOR-TACH & PIN ASSY
		1	—		85	1017550	RESOLVER & PIN ASSY 16X
		1	—		84	1017547	RESOLVER & PIN ASSY ¼X
		1	—		83	1017549	RESOLVER & PIN ASSY 1X
		1	—		82	1017548	RESOLVER & PIN ASSY ½X
		1	—		81	1017541	WIRING HARNESS "A"
		1	—		80	1015665-021	HOUSING & CLAMP ASSY
		021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED						LIST OF PARTS AND MATERIALS	

Ⓟ REPLACED WITH CHANGE BY REV. R

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-021	1016903-021	-021
1016903-011	1016903-011	-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + ~ − ~
DECIMALS + ~ − ~
ANGLES + ~ − ~
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Fox DATE 2 JUL 63
CHECKED Ed Foster 5 JUL 63
APPROVAL Ed Muckenbauer 5 JUL 63
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

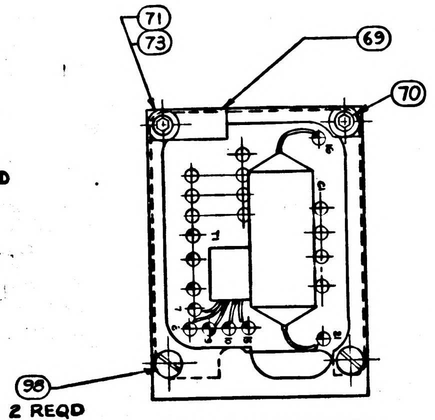
CODE IDENT NO
SIZE E
1015500
SCALE 2 : 1
SHEET 1 OF 1

RR 5 JUL 63

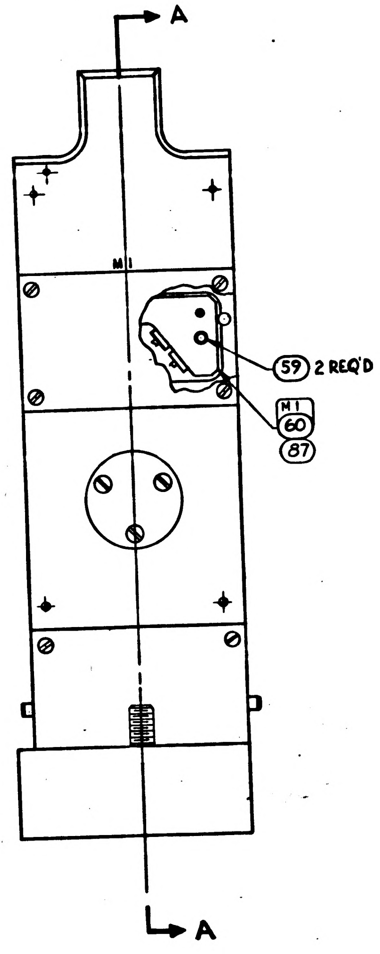
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
R		REDRAWN WITH CHANGE PER TORR 16307	2-9-65	29 JAN 65	MTO / mw.D

REVISIONS C. 37

2 REQ'D
6 REQ'D
31
3 REQ'D
23
46
42
1
80



PARTIAL SECTION F-F



021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			112		
-	-		111		
-	-		110		
-	-		109		
-	-		108		
-	-		107		
-	-		106		
4	4		105	1010901-002	SWITCH, SENSITIVE
1	-		104	1015666-031	WEDGE LIGHTING ASSY
AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES2544-3)
AR	-		102	1010750	CURING AGENT, POLYAMIDE
AR	-		101	1010748	RESIN, EPOXY
AR	-		100	1017555	SHIM
AR	-		99	1012051	GREASE SILICONE (GE 300)
2	2		98	MS35233-6	SCREW, PAN HD.
1	-		97	1010812-3	GASKET, MOISTURE SEAL
X	-		96	1017545	WIRING DIAGRAM
X	-		95	1017544	SCHEMATIC DIAGRAM
-	X		94	1015670	WIRING DIAGRAM
-	X		93	1010036	SCHEMATIC DIAGRAM, ELECT
X	X		92	1015550	SCHEMATIC DIAGRAM, MECH.
AR	-		91	1012505	PRIMER
AR	-		90	1012504	PRIMER
AR	-		89	1012503	COMPOUND, POLYURETHANE
1	-		88	1014650-14	NAMEPLATE (SEE NOTE 16)
1	-		87	1017546	DIGITAL CORE ASSY
1	-		86	1017551	MOTOR-TACH & PIN ASSY
1	-		85	1017550	RESOLVER & PIN ASSY 16X
1	-		84	1017547	RESOLVER & PIN ASSY 1/4X
1	-		83	1017549	RESOLVER & PIN ASSY 1X
1	-		82	1017548	RESOLVER & PIN ASSY 1/2X
1	-		81	1017541	WIRING HARNESS "A"
1	-		80	1015665-021	HOUSING & CLAMP ASSY
			79		
1	-		78	1017543	MOUNTING BOARD (INSEP ASSY)
20	-		77	NAS1352C02-4	SCREW, CAP, SOC HD
AR	AR		76	1012050	OIL, SILICONE (GE F-50)
AR	AR		75	AN960C3	WASHER-FLAT
-	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
1	1		73	MS15795-702	WASHER-PLAIN
4	4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
1	1		71	1010468-4	SCREW, CAP, SOC HD
1	1		70	1011625-13	SCREW, CAP, SOC HD
1	1		69	1000220-7	CLAMP-CABLE

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

Ⓡ REPLACES REV P WITH CHANGE

021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
4	4		68	1016896	SPACER
-	1		67	1016898	MOUNTING BOARD (INSEP ASSY)
-	1		66	1016897	WIRING HARNESS A
			65		
4	4		64	1010468-1	SCREW CAP, SOC HD
			63		
2	2		62	1010457-1	MICROSWITCH ACTUATOR
			61		
-	1		60	1015559	DIGITAL CORE ASSY
8	8		59	NAS1351C00LL2	SCREW-CAP, SOC HD
-	1		58	1015673	RESOLVER, 16X-CDU
-	1		57	1015674	MOTOR TACH-CDU
2	2		56	1010356-10	BALL BEARING
16	16		55	1010356-6	BALL BEARING
1	1		54	1015680	GASKET, WEDGE LIGHT
			53		
2	2		52	AN505DD4-6	SCREW, FLAT HD
3	3		51	1010468-2	SCREW, CAP, SOC
-	20		50	NAS1352C02LL-4	SCREW, CAP, SOC
2	2		49	MS20365D-440	NUT, SELF LOCKING
1	1		48	NAS1081C02A2N	SCREW-SET
			47		
1	1		46	1015664	WASHER, SPECIAL
8	8		45	MS21269-A115	SCREW, INST, PAN HD
6	6		44	MS21268-A110	SCREW, INST, FIL HD
3	3		43	MS21268-A112	SCREW, INST, FIL HD
1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
1	1		41	1016892	COVER, TERMINAL BOARD
			40		
1	1		39	MS16555-606	PIN, STRAIGHT
-	1		38	1015681	RESOLVER, 1X-CDU
1	1		37	1015512	CLAMP SCREW
-	1		36	1016890	RESOLVER, 1/2X-CDU
-	1		35	1015672	RESOLVER, 1/4X-CDU
3	3		34	1015548	SPACER, SLEW SWITCH
1	1		33	1015547	TOGGLE, SWITCH
1	1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
3	3		31	1015663	SET SCREW
1	1		30	1015538-2	CLAMP, MOTOR MODIFIED
12	12		29	1015543	SET SCREW
4	4		28	1015542	CLAMP, SYNCHRO
1	1		27	1015541	CLAMP, SYNCHRO MODIFIED
1	1		26	1015540	CLAMP, SYNCHRO MODIFIED
3	3		25	1015539	CLAMP, MOTOR
1	1		24	1015538-1	CLAMP, MOTOR MODIFIED
1	1		23	1015537	FLYWHEEL
1	1		22	1015536	GEAR, SPUR
1	1		21	1015535	DIAL, 1 SPEED
1	1		20	1015534	DIAL, 36 SPEED
1	1		19	1015533	DIAL, 1800 SPEED
4	4		18	1015532	CLAMP, GEAR
1	1		17	1015531	GEAR, SYNCHRO
1	1		16	1015530	GEAR, SYNCHRO
2	2		15	1015529	GEAR, SYNCHRO
1	1		14	1015528	GEAR, CLUSTER, SPUR
1	1		13	1015527	GEAR, CLUSTER, SPUR
1	1		12	1015526	GEAR, CLUSTER, SPUR
1	1		11	1015525	GEAR, CLUSTER, SPUR
1	1		10	1015524	GEAR, CLUSTER, SPUR
1	1		9	1015523	GEAR, CLUSTER, SPUR
1	1		8	1015522	GEAR, SPUR
1	1		7	1015521	ADJUSTMENT, WHEEL
1	1		6	1015520	GEAR, CLUSTER, SPUR
1	1		5	1015517	PILOT SHAFT ASSY (INSEP)
1	1		4	1016894	TERMINAL BOARD ASSY (INSEP)
1	1		3	1015668	BRACKET, CONNECTOR
-	1		2	1015666-011	WEDGE LIGHTING ASSY
-	1		1	1015665-011	HOUSING AND CLAMP ASSY

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-021	1016903-021	-021
1016903-011	1016903-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. FOX DATE 2 JUL 63
CHECKED ED FOSTER 5 JUL 63
ED. APPROVAL MEIDENBAUER 5 JUL 63
APPROVAL 2-5-65
NASA APPROVAL 2/8/65
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

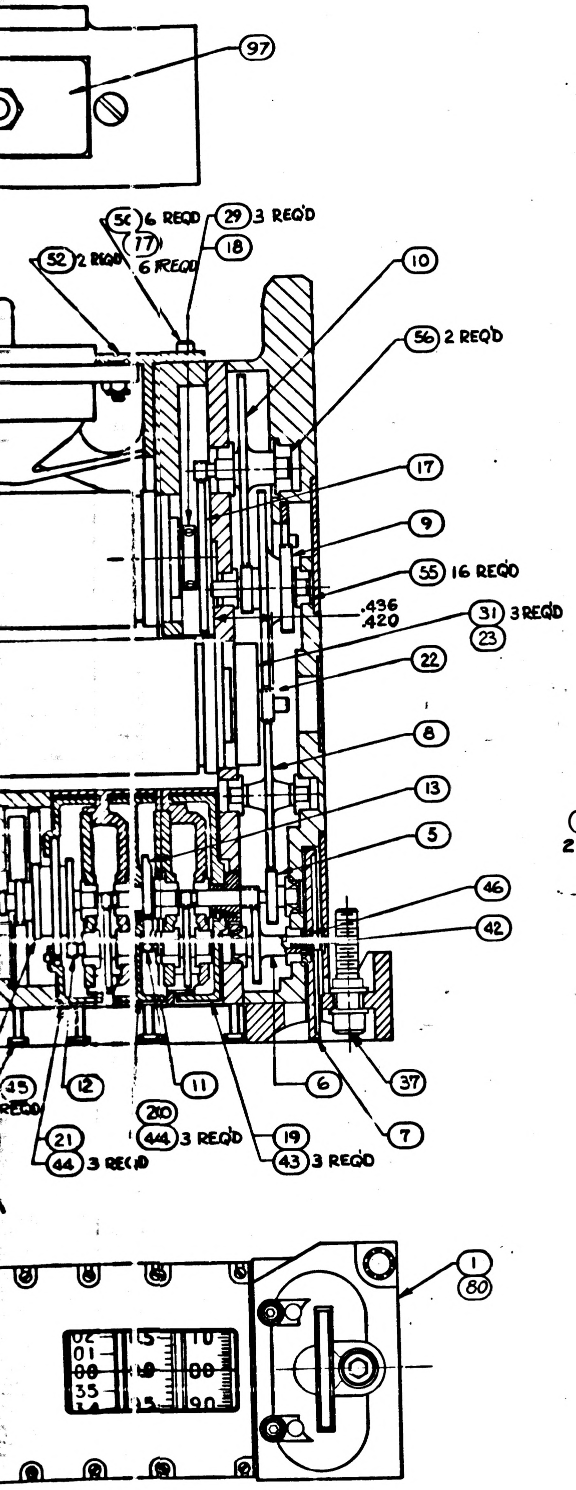
CODE IDENT NO.
SIZE J
1015500
SCALE 2:1
SHEET 1 of 1

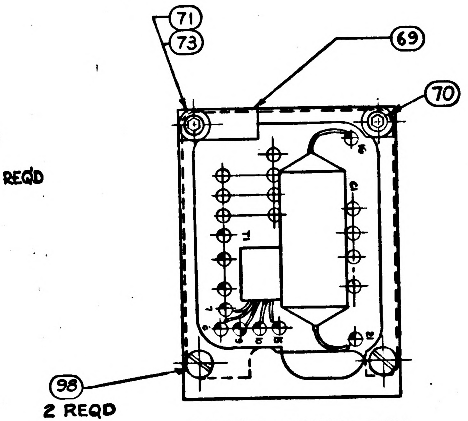
R 1015500

1015500

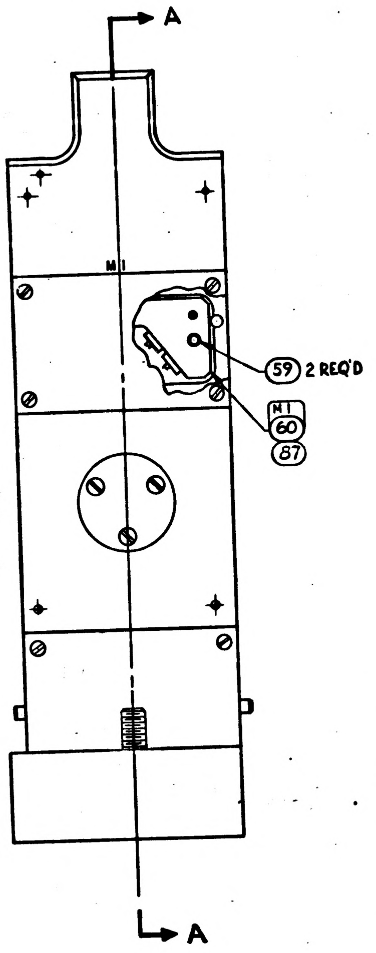
E-3

SYM	ZONE	DESCRIPTION
R		REDRAWN W.T. [illegible] CHANGE PER TDRR [illegible]630T





PARTIAL SECTION F-F



021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			112		
-	-		111		
-	-		110		
-	-		109		
-	-		108		
-	-		107		
-	-		106		
4	4		105	1010901-002	SWITCH, SENSITIVE
1	-		104	1015666-031	WEDGE LIGHTING ASSY
AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES2544-3)
AR	-		102	1010750	CURING AGENT, POLYAMIDE
AR	-		101	1010748	RESIN, EPOXY
AR	-		100	1017555	SHIM
AR	-		99	1012051	GREASE SILICONE (GE 300)
2	2		98	MS35233-6	SCREW, PAN HD.
1	-		97	1010812-3	GASKET, MOISTURE SEAL
X	-		96	1017545	WIRING DIAGRAM
X	-		95	1017544	SCHEMATIC DIAGRAM
-	X		94	1015670	WIRING DIAGRAM
-	X		93	1010036	SCHEMATIC DIAGRAM, ELECT
X	X		92	1015550	SCHEMATIC DIAGRAM, MECH.
AR	-		91	1012505	PRIMER
AR	-		90	1012504	PRIMER
AR	-		89	1012503	COMPOUND, POLYURETHANE
1	-		88	1014650-14	NAMEPLATE (SEE NOTE 16)
1	-		87	1017546	DIGITAL CORE ASSY
1	-		86	1017551	MOTOR-TACH & PIN ASSY
1	-		85	1017550	RESOLVER & PIN ASSY 16X
1	-		84	1017547	RESOLVER & PIN ASSY 1/4X
1	-		83	1017549	RESOLVER & PIN ASSY 1X
1	-		82	1017548	RESOLVER & PIN ASSY 1/2X
1	-		81	1017541	WIRING HARNESS "A"
1	-		80	1015665-021	HOUSING & CLAMP ASSY
			79		
1	-		78	1017543	MOUNTING BOARD (INSEP ASSY)
20	-		77	NAS1352C02-4	SCREW, CAP, SOC HD
AR	AR		76	1012050	OIL, SILICONE (GF F-50)
AR	AR		75	AN960C3	WASHER-FLAT
-	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
1	1		73	MS15795-702	WASHER-PLAIN
4	4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
1	1		71	1010468-4	SCREW, CAP, SOC HD
1	1		70	1011625-13	SCREW, CAP, SOC HD
1	1		69	1000220-7	CLAMP-CABLE

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

Ⓡ REPLACES REV P WITH CHANGE

021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
4	4		68	1016896	SPACER
-	1		67	1016898	MOUNTING BOARD (INSEP
-	1		66	1016897	WIRING HARNESS A
			65		
4	4		64	1010468-1	SCREW CAP, SOC HD
			63		
2	2		62	1010457-1	MICROSWITCH ACTUATOR
			61		
-	1		60	1015559	DIGITAL CORE ASSY
8	8		59	NAS1351C00LL2	SCREW-CAP, SOC HD
-	1		58	1015673	RESOLVER, 16X-CDU
-	1		57	1015674	MOTOR TACH-CDU
2	2		56	1010356-10	BALL BEARING
16	16		55	1010356-6	BALL BEARING
1	1		54	1015680	GASKET, WEDGE LIGHT
			53		
2	2		52	AN505DD4-6	SCREW, FLAT HD
3	3		51	1010468-2	SCREW, CAP, SOC
-	20		50	NAS1352C02LL-4	SCREW, CAP, SOC
2	2		49	MS20365D-440	NUT, SELF LOCKING
1	1		48	NAS1081C02A2W	SCREW-SET
			47		
1	1		46	1015664	WASHER, SPECIAL
8	8		45	MS21269-A115	SCREW, INST, PAN HD
6	6		44	MS21268-A110	SCREW, INST, FIL HD
3	3		43	MS21268-A112	SCREW, INST, FIL HD
1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
1	1		41	1016892	COVER, TERMINAL [illegible]
			40		
1	1		39	MS16555-606	PIN, STRAIGHT
-	1		38	1015681	RESOLVER, 1X-CDU
1	1		37	1015512	CLAMP SCREW
-	1		36	1016890	RESOLVER, 1/2X-CDU
-	1		35	1015672	RESOLVER, 1/4X-CDU
3	3		34	1015548	SPACER, SLEW SWITCH
1	1		33	1015547	TOGGLE, SWITCH
1	1		32	1015683	BRACKET, SLEWING SW
3	3		31	1015663	SET SCREW
1	1		30	1015538-2	CLAMP, MOTOR MODIFIER
12	12		29	1015543	SET SCREW
4	4		28	1015542	CLAMP, SYNCHRO
1	1		27	1015541	CLAMP, SYNCHRO MODIF
1	1		26	1015540	CLAMP, SYNCHRO MODIF
3	3		25	1015539	CLAMP, MOTOR
1	1		24	1015538-1	CLAMP, MOTOR MODIFIER
1	1		23	1015537	FLYWHEEL
1	1		22	1015536	GEAR, SPUR
1	1		21	1015535	DIAL, 1 SPEED
1	1		20	1015534	DIAL, 36 SPEED
1	1		19	1015533	DIAL, 1800 SPEED
4	4		18	1015532	CLAMP, GEAR
1	1		17	1015531	GEAR, SYNCHRO
1	1		16	1015530	GEAR, SYNCHRO
2	2		15	1015529	GEAR, SYNCHRO
1	1		14	1015528	GEAR, CLUSTER, SPUR
1	1		13	1015527	GEAR, CLUSTER, SPUR
1	1		12	1015526	GEAR, CLUSTER, SPUR
1	1		11	1015525	GEAR, CLUSTER, SPUR
1	1		10	1015524	GEAR, CLUSTER, SPUR
1	1		9	1015523	GEAR, CLUSTER, SPUR
1	1		8	1015522	GEAR, SPUR
1	1		7	1015521	ADJUSTMENT, WHEEL
1	1		6	1015520	GEAR, CLUSTER, SPUR
1	1		5	1015517	PILOT SHAFT ASSY (IN
1	1		4	1016894	TERMINAL BOARD ASSY
1	1		3	1015668	BRACKET, CONNECTOR
-	1		2	1015666-011	WEDGE LIGHTING ASSY
-	1		1	1015665-011	HOUSING AND CLAMP A

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-021	1016903-021	-021
1016903-011	1016903-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + - DECIMALS + - ANGLES + -
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. FOX DATE 2 JUL 63
CHECKED ED FOSTER 5 JUL 63
ED APPROVAL MEIDENBAUER 5 JUL 63
APPROVAL 2-5-65
NASA APPROVAL
MIT APPROVAL 4-6-65

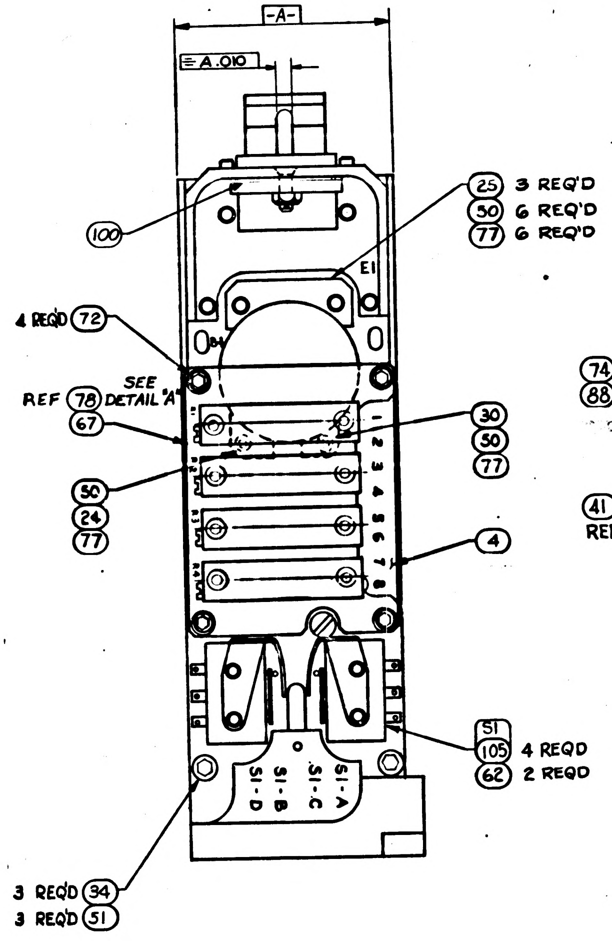
MANNED
SPACECRAFT C
CDU

CODE IDENT NO. SIZE J 101
SCALE

1015500

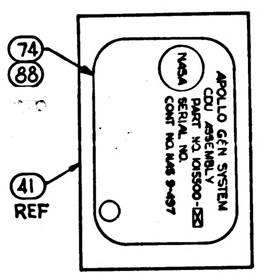
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4.
5. DELIVERABLE END ITEMS MUST MEET THE REQUIREMENTS OF PS-1015500.
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER ND 1002211 USING ITEM 103.
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "G-G")
17. EACH GEAR SHALL BE LUBRICATED WITH ITEM 76 PER ATP 1015500



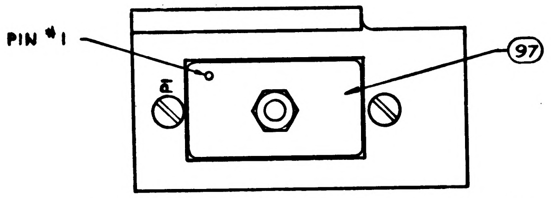
-A-
A .010
100
25 3 REQ'D
50 6 REQ'D
77 6 REQ'D
E1
4 REQ'D 72
SEE DETAIL "A"
REF 78
67
30
50
77
50
24
77
4
S1
105 4 REQD
62 2 REQD
S1-A
S1-C
S1-B
S1-D
3 REQ'D 34
3 REQ'D 51

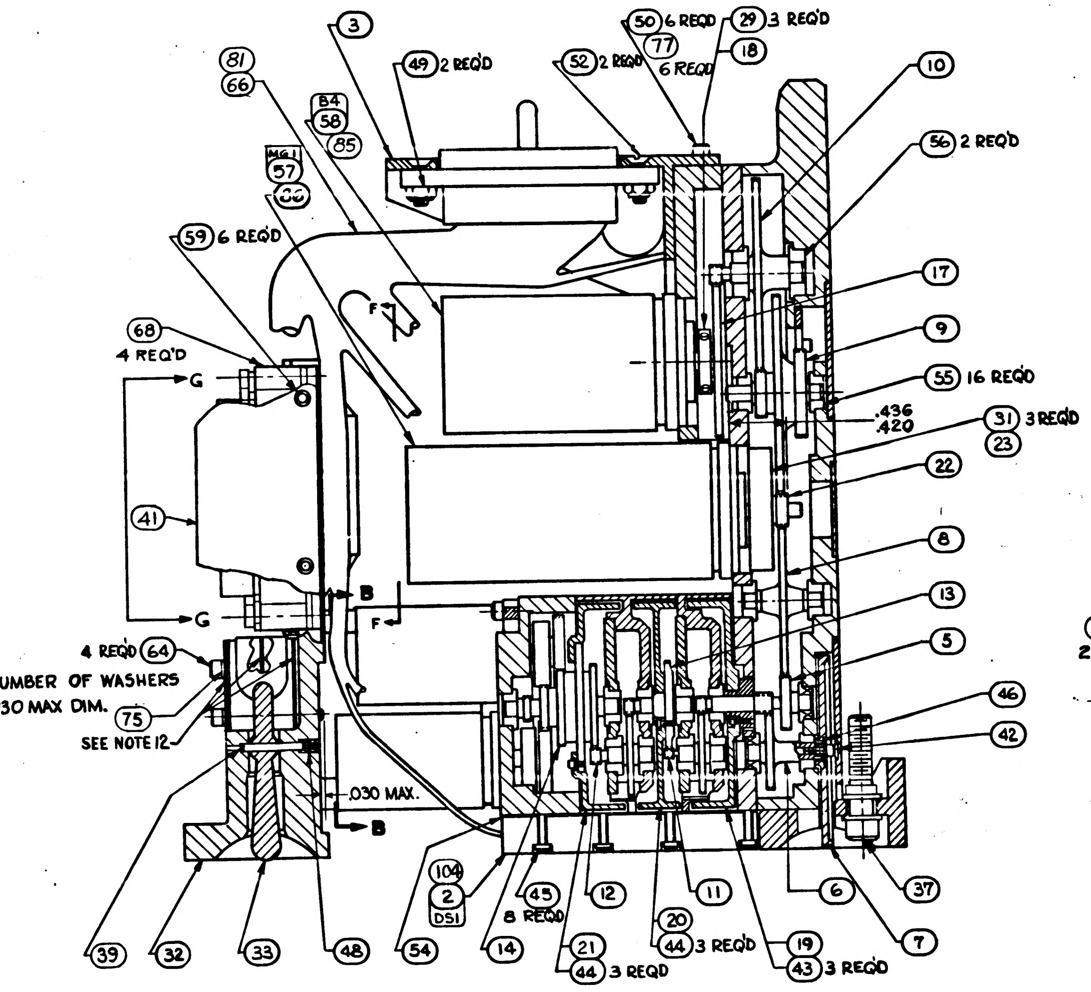
(COVER REMOVED AND WIRE HARNESS NOT SHOWN)



74
88
41
REF
APOLLO G&N SYSTEM
CDU ASSEMBLY
PART NO. 1015500-☒
SERIAL NO.
CONT NO. NAS 9-497
NASA

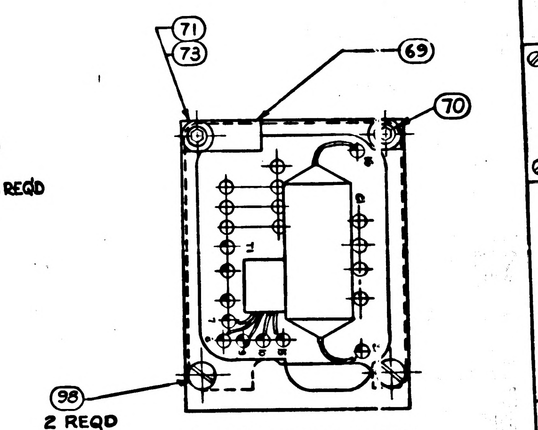
VIEW G-G





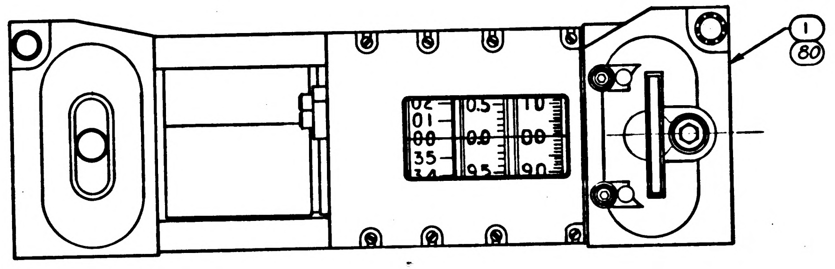
3
49 2 REQ'D
52 2 REQ'D
50 6 REQ'D
77 6 REQ'D
29 3 REQ'D
18
10
81
66
B4
58
85
MG1
57
86
56 2 REQ'D
59 6 REQ'D
17
9
68
4 REQ'D
G
F
55 16 REQ'D
.436
.420
31 3 REQ'D
23
41
22
8
B
13
4 REQ'D 64
USE MINIMUM NUMBER OF WASHERS
TO ACQUIRE .030 MAX DIM.
75
SEE NOTE 12
5
46
42
.030 MAX.
104
2
DS1
45
8 REQ'D
12
11
20
44 3 REQ'D
19
43 3 REQ'D
6
37
7
39
32
33
48
54
14
21
44 3 REQD

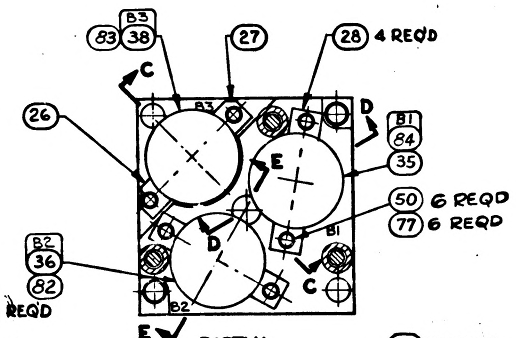
SECTION A-A



71
73
69
70
98
2 REQD

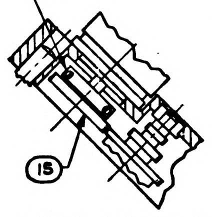
PARTIAL SECTION F-F





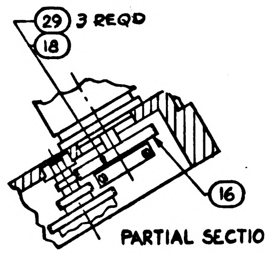
B3
83 38
27
28 4 REQ'D
C
D
26
B3
E
B1
84
35
50 6 REQD
77 6 REQD
B2
36
82
B1
D
C
B2
E

PARTIAL SECTION B-B



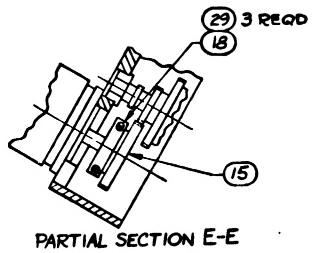
18
29 3 REQD
15

PARTIAL SECTION C-C



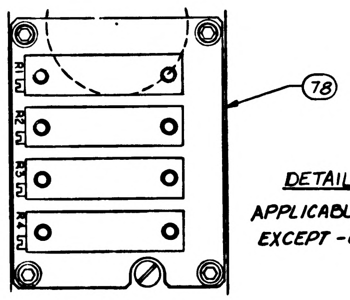
29 3 REQD
18
16

PARTIAL SECTION D-D



29 3 REQD
18
15

PARTIAL SECTION E-E



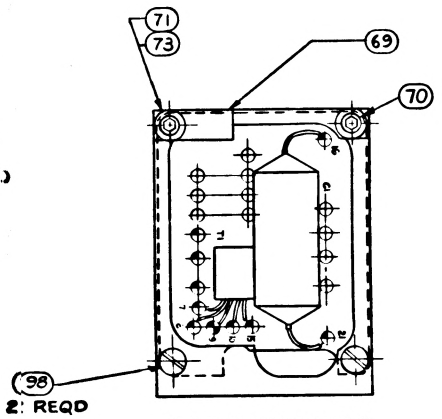
78
R1
R2
R3
R4

DETAIL A

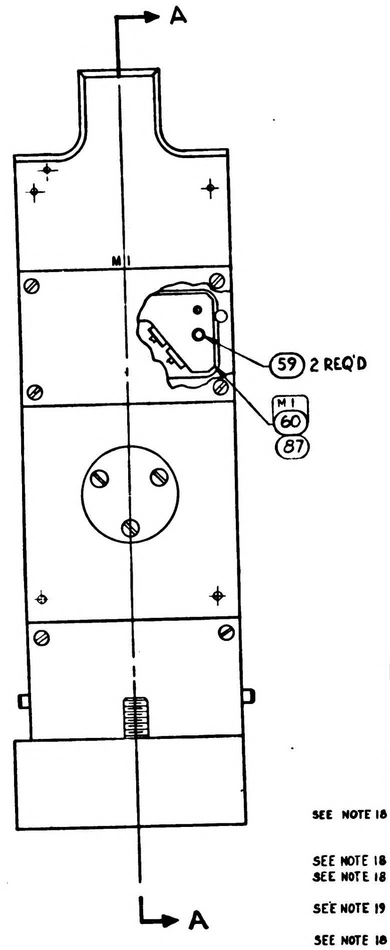
APPLICABLE TO ALL ASSEMBLIES EXCEPT -011 ASS'Y

1015500

REVISIONS 01137					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
R		REDRAWN WITH CHANGE PER TORR 16307	2-9-65	29 JAN 65	HTO
S		REVISED PER TORR 16868 ADDED CUSTOMER DATA (2-65)		4 MAR 65	



PARTIAL SECTION F-F



	021	011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
				112		
				111		
				110		
				109		
				108		
				107		
	1	-		106	1017569	BRACKET, CONNECTOR
SEE NOTE 18	4	4		105	1010901-002	SWITCH, SENSITIVE
	1	-		104	1015666-031	WEDGE LIGHTING ASSY
	AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES2544-3)
SEE NOTE 18	AR	-		102	1010750	CURING AGENT, POLYAMIDE
SEE NOTE 18	AR	-		101	1010748	RESIN, EPOXY
	AR	-		100	1017555	SHIM
SEE NOTE 19	AR	-		99	1012051	GREASE SILICONE (GE 300)
	2	2		98	MS35233-6	SCREW, PAN HD.
SEE NOTE 18	1	-		97	1010812-3	GASKET, MOISTURE SEAL
	X	-		96	1017545	WIRING DIAGRAM
	X	-		95	1017544	SCHEMATIC DIAGRAM
	-	X		94	1015670	WIRING DIAGRAM
	-	X		93	1010036	SCHEMATIC DIAGRAM, ELECT
	X	X		92	1015550	SCHEMATIC DIAGRAM, MECH.
	AR	-		91	1012505	PRIMER
SEE NOTE 18	AR	-		90	1012504	PRIMER
SEE NOTE 18	AR	-		89	1012503	COMPOUND, POLYURETHANE
	1	-		88	1014650-14	NAMEPLATE (SEE NOTE 16)
	1	-		87	1017546	DIGITAL CORE ASSY
	1	-		86	1017551	MOTOR-TACH & PIN ASSY
	1	-		85	1017550	RESOLVER & PIN ASSY 16X
	1	-		84	1017547	RESOLVER & PIN ASSY 1/4X
	1	-		83	1017549	RESOLVER & PIN ASSY 1X
	1	-		82	1017548	RESOLVER & PIN ASSY 1/2X
	1	-		81	1017541	WIRING HARNESS "A"
	1	-		80	1015665-021	HOUSING & CLAMP ASSY
				79		
	1	-		78	1017543	MOUNTING BOARD (INSEP ASSY)
	20	-		77	NAS1352C02-4	SCREW, CAP, SOC HD
SEE NOTE 19	AR	AR		76	1012050	OIL, SILICONE (GF F-50)
	AR	AR		75	AN960C3	WASHER-FLAT
	-	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
	1	1		73	MS15795-702	WASHER-PLAIN
	4	4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
SEE NOTE 18	1	1		71	1010468-4	SCREW, CAP, SOC HD
SEE NOTE 18	1	1		70	1011625-13	SCREW, CAP, SOC HD
SEE NOTE 18	1	1		69	1000220-7	CLAMP-CABLE
	4	4		68	1016896	SPACER
	-	1		67	1016898	MOUNTING BOARD (INSEP ASSY)
	-	1		66	1016897	WIRING HARNESS A
				65		
SEE NOTE 18	4	4		64	1010468-1	SCREW CAP, SOC HD
				63		
SEE NOTE 18	2	2		62	1010457-1	MICROSWITCH ACTUATOR
				61		
	-	1		60	1015559	DIGITAL CORE ASSY
	8	8		59	NAS1351C00LL2	SCREW-CAP, SOC HD
	-	1		58	1015673	RESOLVER, 16X-CDU
	-	1		57	1015674	MOTOR TACH-CDU
SEE NOTE 18	2	2		56	1010356-10	BALL BEARING
SEE NOTE 18	16	16		55	1010356-6	BALL BEARING
	1	1		54	1015680	GASKET, WEDGE LIGHT
				53		
	2	2		52	AN505DD4-6	SCREW, FLAT HD
SEE NOTE 18	3	3		51	1010468-2	SCREW, CAP, SOC
	-	20		50	NAS1352C02LL-4	SCREW, CAP, SOC
	2	2		49	MS20365D-440	NUT, SELF LOCKING
	1	1		48	NAS1081C02A2N	SCREW-SET
				47		
	1	1		46	1015664	WASHER, SPECIAL
	8	8		45	MS21269-A115	SCREW, INST, PAN HD
	6	6		44	MS21268-A110	SCREW, INST, FIL HD
	3	3		43	MS21268-A112	SCREW, INST, FIL HD
	1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
	1	1		41	1016892	COVER, TERMINAL BOARD
				40		
	1	1		39	MS16555-606	PIN, STRAIGHT
	-	1		38	1015681	RESOLVER, 1X-CDU
	1	1		37	1015512	CLAMP SCREW
	-	1		36	1016890	RESOLVER, 1/2X-CDU
	-	1		35	1015672	RESOLVER, 1/4X-CDU
	3	3		34	1015548	SPACER, SLEW SWITCH
	1	1		33	1015547	TOGGLE, SWITCH
	1	1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
	3	3		31	1015663	SET SCREW
	1	1		30	1015538-2	CLAMP, MOTOR MODIFIED
	12	12		29	1015543	SET SCREW
	4	4		28	1015542	CLAMP, SYNCHRO
	1	1		27	1015541	CLAMP, SYNCHRO MODIFIED
	1	1		26	1015540	CLAMP, SYNCHRO MODIFIED
	3	3		25	1015539	CLAMP, MOTOR
	1	1		24	1015538-1	CLAMP, MOTOR MODIFIED
	1	1		23	1015537	FLYWHEEL
	1	1		22	1015536	GEAR, SPUR
	1	1		21	1015535	DIAL, 1 SPEED
	1	1		20	1015534	DIAL, 36 SPEED
	1	1		19	1015533	DIAL, 1800 SPEED
	4	4		18	1015532	CLAMP, GEAR
	1	1		17	1015531	GEAR, SYNCHRO
	1	1		16	1015530	GEAR, SYNCHRO
	2	2		15	1015529	GEAR, SYNCHRO
	1	1		14	1015528	GEAR, CLUSTER, SPUR
SEE NOTE 18	1	1		13	1015527	GEAR, CLUSTER, SPUR
	1	1		12	1015526	GEAR, CLUSTER, SPUR
	1	1		11	1015525	GEAR, CLUSTER, SPUR
	1	1		10	1015524	GEAR, CLUSTER, SPUR
	1	1		9	1015523	GEAR, CLUSTER, SPUR
	1	1		8	1015522	GEAR, SPUR
	1	1		7	1015521	ADJUSTMENT, WHEEL
	1	1		6	1015520	GEAR, CLUSTER, SPUR
	1	1		5	1015517	PILOT SHAFT ASSY (INSEP)
	1	1		4	1016894	TERMINAL BOARD ASSY (INSEP)
	-	1		3	1015668	BRACKET, CONNECTOR
	-	1		2	1015666-011	WEDGE LIGHTING ASSY
	-	1		1	1015665-011	HOUSING AND CLAMP ASSY
QUANTITY REQUIRED				LIST OF PARTS AND MATERIALS		

Ⓡ REPLACES REV P WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-021	1016903-021	-021
1016903-011	1016903-011	-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. FOX DATE 2 JUL 63
CHECKED ED FOSTER 5 JUL 63
ED APPROVAL MEIDENBAUER 5 JUL 63
APPROVAL 2-5-65
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

CODE IDENT NO. | SIZE J | 1015500
SCALE 2:1 | SHEET 1 of 1

1015500 S

1015500 REV LTR S SH 1 OF 1

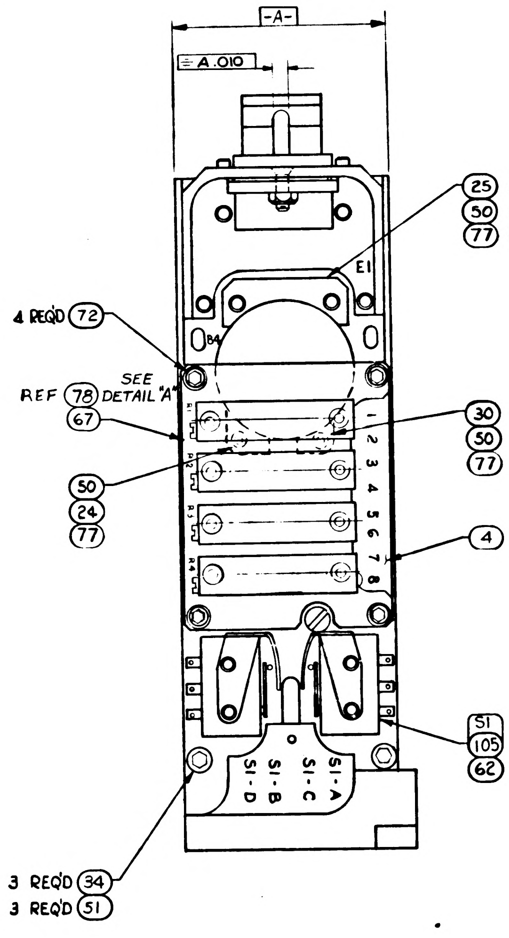
3"

1012200

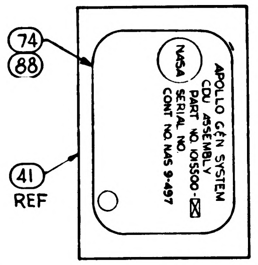
2/1015500

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4.
5. DELIVERABLE END ITEMS MUST MEET THE REQUIREMENTS OF PS-1015500.
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER ND 1002211 USING ITEM 103.
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "G-G")
17. EACH GEAR SHALL BE LUBRICATED WITH ITEM 76 PER ATP 1015500
18. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
19. VENDOR ITEM - SEE SOURCE CONTROL DRAWING.


-A-
⌯ A .010
E1
B4
25 3 REQ'D
50 6 REQ'D
77 6 REQ'D
4 REQ'D 72
SEE DETAIL "A"
REF 78
67
30
50
77
50
24
77
1 2 3 4 5 6 7 8
4
S1
105 4 REQD
62 2 REQD
SI-A
SI-B
SI-C
SI-D
3 REQ'D 34
3 REQ'D 51

(COVER REMOVED AND WIRE HARNESS NOT SHOWN)


74
88
41
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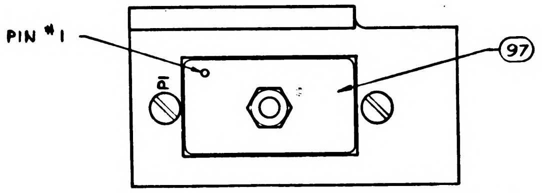
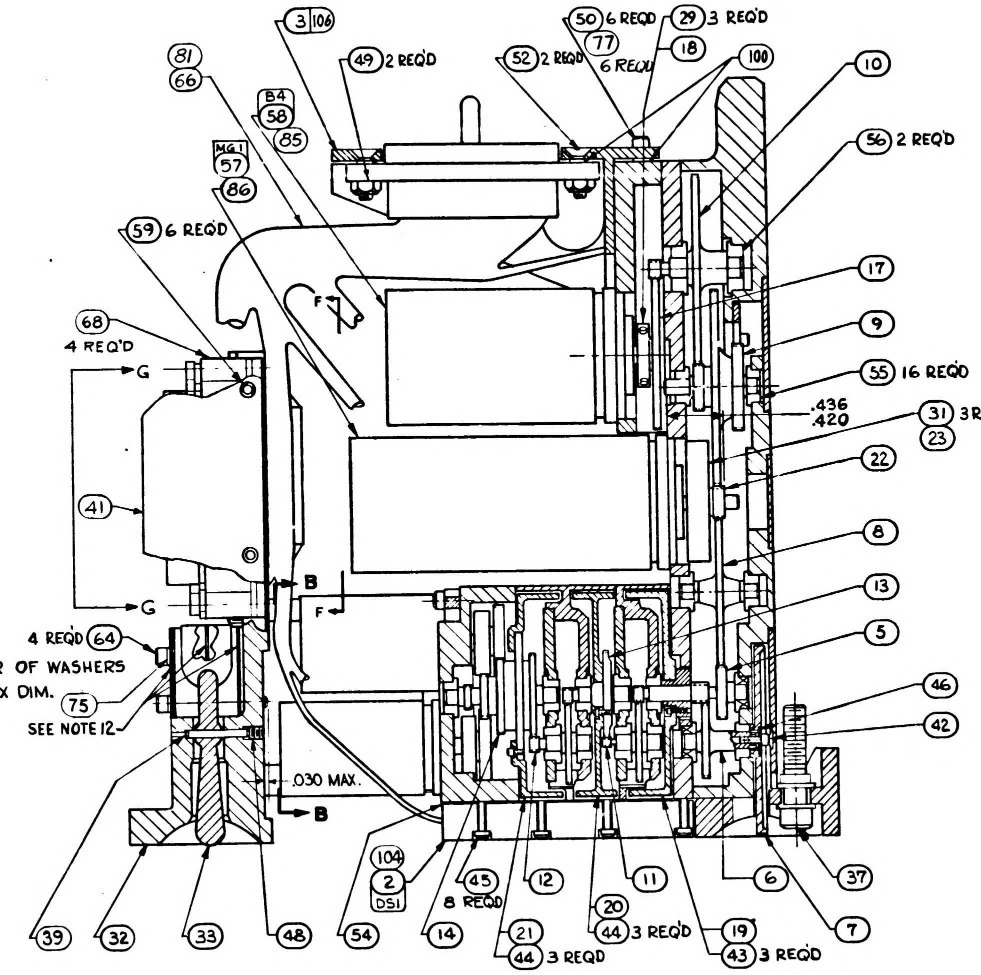
NASA
APOLLO G&N SYSTEM
CDU ASSEMBLY
PART NO. 1015500-☒
SERIAL NO.
CONT NO. NAS 9-497

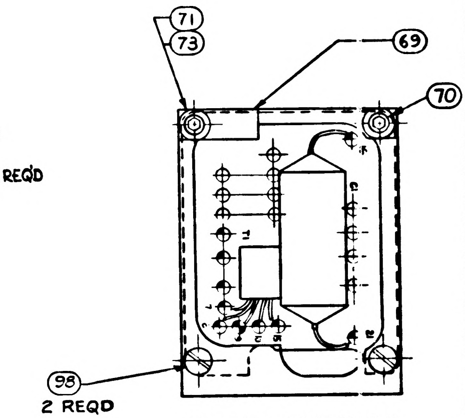
VIEW G-G



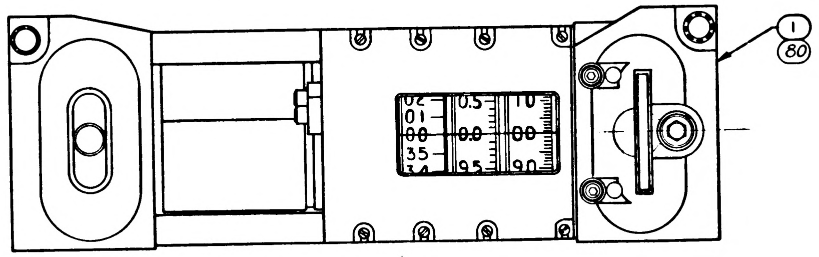

3 106
49 2 REQ'D
52 2 REQD
50 6 REQD
77
6 REQD
29 3 REQ'D
18
100
10
81
66
B4
58
85
MG1
57
86
59 6 REQD
56 2 REQ'D
17
9
55 16 REQD
.436
.420
31 3 REQ'D
23
22
8
13
5
46
42
68
4 REQ'D
G
G
F
F
41
B
B
4 REQ'D 64
75
SEE NOTE 12
.030 MAX.
104
2
DS1
45
8 REQD
12
11
20
6
37
7
39
32
33
48
54
14
21
44 3 REQD
44 3 REQ'D
19
43 3 REQD

USE MINIMUM NUMBER OF WASHERS TO ACQUIRE .030 MAX DIM.

SECTION A-A


71
73
69
70
98
2 REQD

PARTIAL SECTION F-F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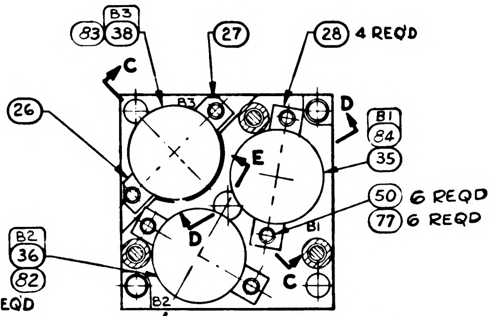
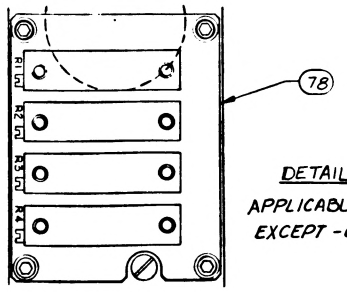
80
02
01
00
35
0.5
0.0
95
10
00
90

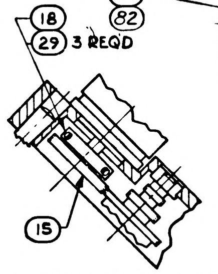

B3
83
38
27
28 4 REQ'D
C
C
D
D
E
E
B1
84
35
26
B3
B1
B2
50 6 REQD
77 6 REQD
B2
36
82

PARTIAL SECTION B-B

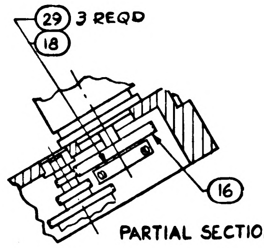

R1
R2
R3
R4
78

DETAIL A

APPLICABLE TO ALL ASSEMBLIES EXCEPT -011 ASS'Y


18
29 3 REQD
15

PARTIAL SECTION C-C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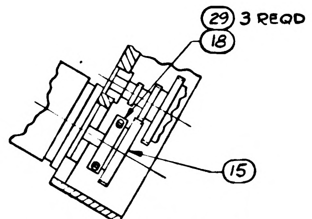
18
16

PARTIAL SECTION D-D


29 3 REQD
18
15

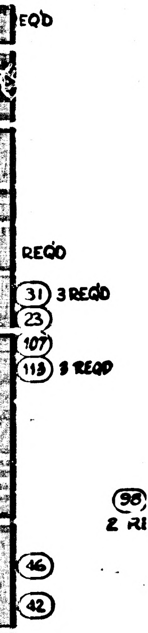
PARTIAL SECTION E-E

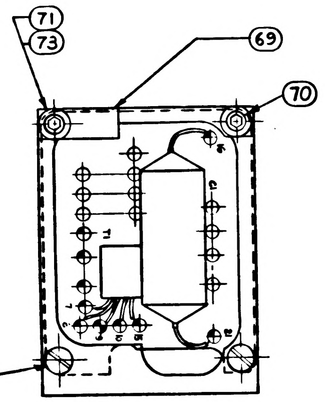
1015500	REV LTR S	SH 1 OF 1

REVISIONS

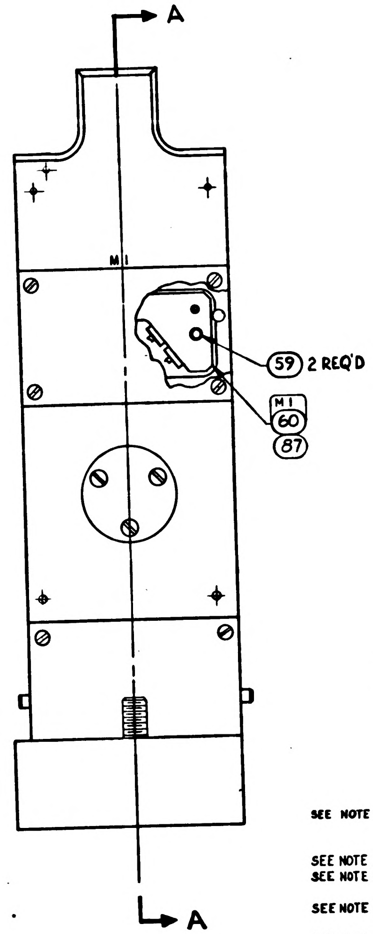
C. 37

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
R		REDRAWN WITH CHANGE PER TDRR 16307	2-9-65	9 JAN 65	HTO
S		REVISED PER TDRR 16868 ADDED CUSTOMER DATA (2-65)		4 MAR 65	
T		REVISED PER TDRR 16870		8 MAR 65	AC





PARTIAL SECTION F-F



	QUANTITY REQUIRED 031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	1	-	-		114	1014650-15	NAMEPLATE (SEE NOTE 16)
	3	-	-		113	1017563	SET SCREW
	1	-	-		112	1017562-011	TERMINAL BOARD
	1	-	-		111	1017561-011	MOTOR TACH & PIN ASSY
	X	-	-		110	1017560	WIRING DIAGRAM
	X	-	-		109	1017559	SCHEMATIC DIAGRAM, ELECT.
	1	-	-		108	1017558	WIRING HARNESS A
	1	-	-		107	1017557	CLAMP, GEAR
	1	1	-		106	1017569	BRACKET, CONNECTOR
SEE NOTE 18	4	4	4		105	1010901-002	SWITCH, SENSITIVE
	1	1	-		104	1015666-031	WEDGE LIGHTING ASSY
	AR	AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES2544-3)
SEE NOTE 18	AR	AR	-		102	1010750	CURING AGENT, POLYAMIDE
SEE NOTE 18	AR	AR	-		101	1010748	RESIN, EPOXY
	AR	AR	-		100	1017555	SHIM
SEE NOTE 19	AR	AR	-		99	1012051	GREASE SILICONE (GE-G-300)
	2	2	2		98	MS35233-6	SCREW, PAN HD.
SEE NOTE 18	1	1	-		97	1010812-3	GASKET, MOISTURE SEAL
	-	X	-		96	1017545	WIRING DIAGRAM
	-	X	-		95	1017544	SCHEMATIC DIAGRAM
	-	-	X		94	1015670	WIRING DIAGRAM
	-	-	X		93	1010036	SCHEMATIC DIAGRAM, ELECT
	X	X	X		92	1015550	SCHEMATIC DIAGRAM, MECH.
	AR	AR	-		91	1012505	PRIMER
SEE NOTE 18	AR	AR	-		90	1012504	PRIMER
SEE NOTE 18	AR	AR	-		89	1012503	COMPOUND, POLYURETHANE
	-	1	-		88	1014650-14	NAMEPLATE (SEE NOTE 16)
	1	1	-		87	1017546	DIGITAL CORE ASSY
	-	1	-		86	1017551-011	MOTOR-TACH & PIN ASSY
	1	1	-		85	1017550-011	RESOLVER & PIN ASSY 16X
	1	1	-		84	1017547-011	RESOLVER & PIN ASSY 1/4X
	1	1	-		83	1017549-011	RESOLVER & PIN ASSY 1X
	1	1	-		82	1017548-011	RESOLVER & PIN ASSY 1/2X
	-	1	-		81	1017541	WIRING HARNESS "A"
	1	1	-		80	1015665-021	HOUSING & CLAMP ASSY
					79		
	1	1	-		78	1017543	MOUNTING BOARD (INSEP ASSY)
	20	20	-		77	NAS1352C02-4	SCREW, CAP, SOC HD
SEE NOTE 19	AR	AR	AR		76	1012050	OIL, SILICONE (GF F-50)
	-	AR	AR		75	AN960C3	WASHER-FLAT
	-	-	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
	-	1	1		73	MS15795-702	WASHER-PLAIN
	4	4	4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
SEE NOTE 18	-	1	1		71	1010468-4	SCREW, CAP, SOC HD
SEE NOTE 18	2	1	1		70	1011625-13	SCREW, CAP, SOC HD
SEE NOTE 18	-	1	1		69	1000220-7	CLAMP-CABLE

LIST OF PARTS AND MATERIALS

Ⓡ REPLACES REV P WITH CHANGE

	QUANTITY REQUIRED 031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	4	4	4		68	1016896	SPACER
	-	-	1		67	1016898	MOUNTING BOARD (INSEP ASSY)
	-	-	1		66	1016897	WIRING HARNESS A
					65		
SEE NOTE 18	-	4	4		64	1010468-1	SCREW CAP, SOC HD
					63		
SEE NOTE 18	-	2	2		62	1010457-1	MICROSWITCH ACTUATOR
					61		
	-	-	1		60	1015559	DIGITAL CORE ASSY
		8	8		59	NAS1351C00LL2	SCREW-CAP, SOC HD
	-	-	1		58	1015673	RESOLVER, 16X-CDU
	-	-	1		57	1015674	MOTOR TACH-CDU
SEE NOTE 18	2	2	2		56	1010356-10	BALL BEARING
SEE NOTE 18	16	16	16		55	1010356-6	BALL BEARING
	1	1	1		54	1015680	GASKET, WEDGE LIGHT
					53		
	2	2	2		52	AN505DD4-6	SCREW, FLAT HD
SEE NOTE 18	3	3	3		51	1010468-2	SCREW, CAP, SOC
	-	-	20		50	NAS1352C02LL-4	SCREW, CAP, SOC
	2	2	2		49	MS20365D-440	NUT, SELF LOCKING
	-	1	1		48	NAS1081C02A2N	SCREW-SET
					47		
	1	1	1		46	1015664	WASHER, SPECIAL
	8	8	8		45	MS21269-A115	SCREW, INST, PAN HD
	6	6	6		44	MS21268-A110	SCREW, INST, FIL HD
	3	3	3		43	MS21268-A112	SCREW, INST, FIL HD
	1	1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
	1	1	1		41	1016892	COVER, TERMINAL BOARD
					40		
	-	1	1		39	MS16555-606	PIN, STRAIGHT
	-	-	1		38	1015681	RESOLVER, 1X-CDU
	1	1	1		37	1015512	CLAMP SCREW
	-	-	1		36	1016890	RESOLVER, 1/2X-CDU
	-	-	1		35	1015672	RESOLVER, 1/4X-CDU
	3	3	3		34	1015548	SPACER, SLEW SWITCH
	-	1	1		33	1015547	TOGGLE, SWITCH
	1	1	1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
	-	3	3		31	1015663	SET SCREW
	1	1	1		30	1015538-2	CLAMP, MOTOR MODIFIED
	12	12	12		29	1015543	SET SCREW
	4	4	4		28	1015542	CLAMP, SYNCHRO
	1	1	1		27	1015541	CLAMP, SYNCHRO MODIFIED
	1	1	1		26	1015540	CLAMP, SYNCHRO MODIFIED
	3	3	3		25	1015539	CLAMP, MOTOR
	1	1	1		24	1015538-1	CLAMP, MOTOR MODIFIED
	-	1	1		23	1015537	FLYWHEEL
	1	1	1		22	1015536	GEAR, SPUR
	1	1	1		21	1015535	DIAL, 1 SPEED
	1	1	1		20	1015534	DIAL, 36 SPEED
	1	1	1		19	1015533	DIAL, 1800 SPEED
	4	4	4		18	1015532	CLAMP, GEAR
	1	1	1		17	1015531	GEAR, SYNCHRO
	1	1	1		16	1015530	GEAR, SYNCHRO
	2	2	2		15	1015529	GEAR, SYNCHRO
	1	1	1		14	1015528	GEAR, CLUSTER, SPUR
SEE NOTE 18	1	1	1		13	1015527	GEAR, CLUSTER, SPUR
	1	1	1		12	1015526	GEAR, CLUSTER, SPUR
	1	1	1		11	1015525	GEAR, CLUSTER, SPUR
	1	1	1		10	1015524	GEAR, CLUSTER, SPUR
	1	1	1		9	1015523	GEAR, CLUSTER, SPUR
	1	1	1		8	1015522	GEAR, SPUR
	1	1	1		7	1015521	ADJUSTMENT, WHEEL
	1	1	1		6	1015520	GEAR, CLUSTER, SPUR
	1	1	1		5	1015517	PILOT SHAFT ASSY (INSEP)
	-	1	1		4	1016894	TERMINAL BOARD ASSY (INSEP)
	-	-	1		3	1015668	BRACKET, CONNECTOR
	1	-	1		2	1015666-011	WEDGE LIGHTING ASSY
	1	-	1		1	1015665-011	HOUSING AND CLAMP ASSY

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-031	1016903-031	-031
1016903-021	1016903-021	-021
1016903-011	1016903-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. FOX DATE 2 JUL 63
CHECKED ED FOSTER 5 JUL 63
ED APPROVAL MEIDENBAUER 5 JUL 63
APPROVAL 2-5-65
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

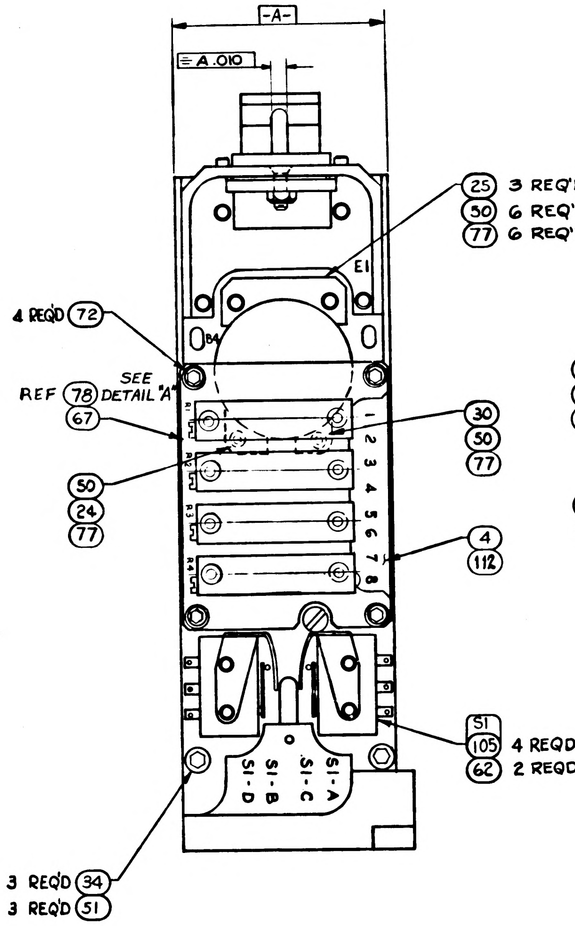
CODE IDENT NO.
SIZE J
1015500
SCALE 2:1
SHEET 1 of 1

1012200

1015500

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4.
5. DELIVERABLE END ITEMS MUST MEET THE REQUIREMENTS OF PS-1015500.
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER ND 1002211 USING ITEM 103.
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "G-G")
17. EACH GEAR SHALL BE LUBRICATED WITH ITEM 76 PER ATP 1015500
18. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
19. VENDOR ITEM-SEE SOURCE CONTROL DRAWING.


-A-
A .010
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77 6 REQ'D
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4 REQ'D 72
SEE
REF 78 DETAIL "A"
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B4
30
50
77
50
24
77
1 2 3 4 5 6 7 8
R1 R2 R3 R4
4
112
S1
105 4 REQD
62 2 REQD
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S1-C
S1-B
S1-D
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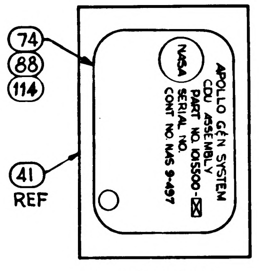
(COVER REMOVED AND WIRE HARNESS NOT SHOWN)


74
88
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41
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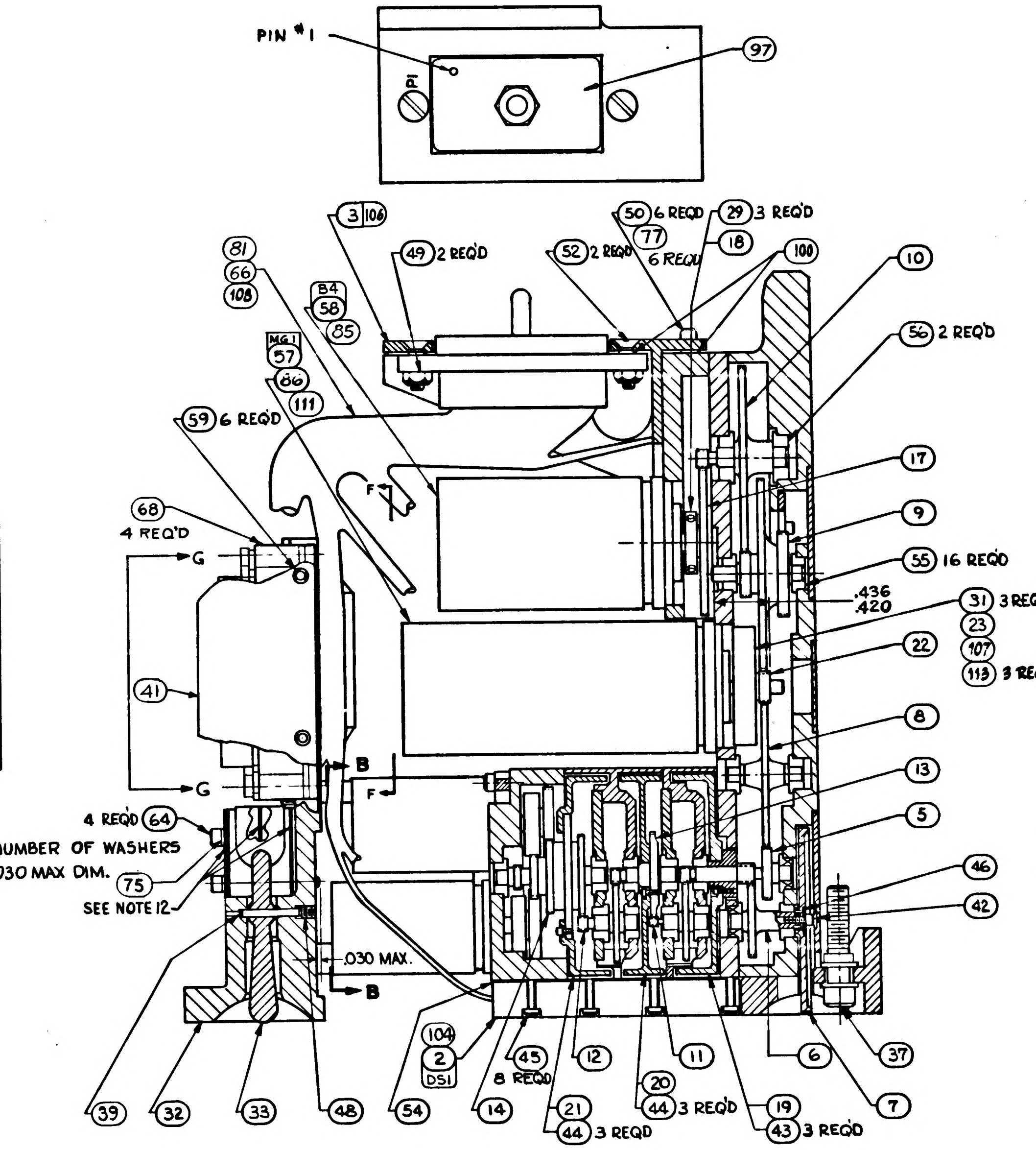
NASA
APOLLO G&N SYSTEM
CDU ASSEMBLY
PART NO 1015500-☒
SERIAL NO.
CONT NO NAS 9-497

VIEW G-G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52 2 REQ'D
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77 6 REQD
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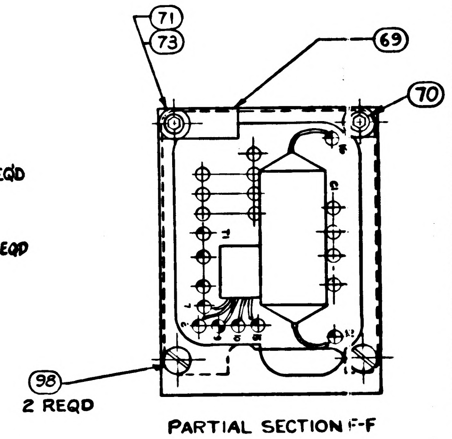
10
81
66
108
B4
58
85
MG1
57
86
111
56 2 REQ'D
59 6 REQ'D
17
F
68
4 REQ'D
G
9
55 16 REQD
.436
.420
31 3 REQD
23
107
113 3 REQD
41
22
8
B
G
F
13
4 REQ'D 64
5
75
SEE NOTE 12
46
42
.030 MAX.
B
104
2
DS1
45
8 REQD
12
11
20
44 3 REQ'D
19
43 3 REQ'D
6
37
7
39
32
33
48
54
14
21
44 3 REQD

USE MINIMUM NUMBER OF WASHERS TO ACQUIRE .030 MAX DIM.

SECTION A-A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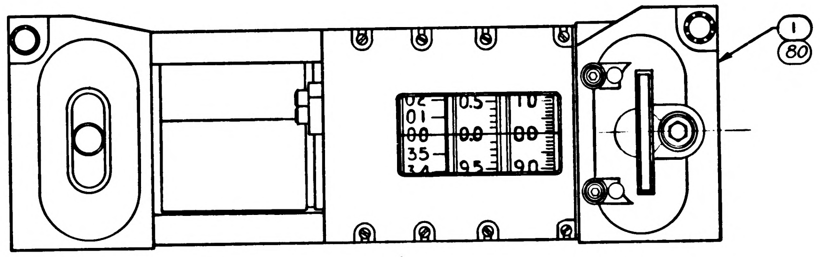
69
70
98
2 REQD

PARTIAL SECTION F-F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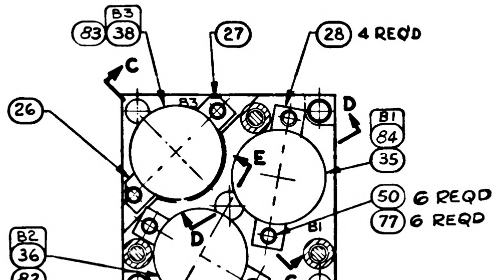
02 01 00 35
0.5 0.0 95
10 00 90


B3
83 38
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28 4 REQ'D
C
D
26
B3
E
B1
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B2
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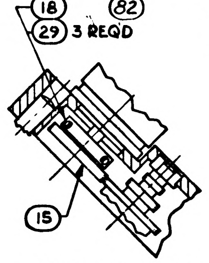
D
C
B2
E

PARTIAL SECTION B-B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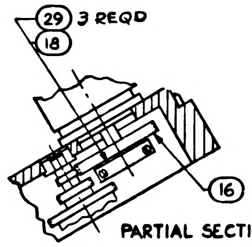
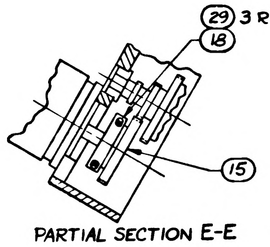
29 3 REQD
15

PARTIAL SECTION C-C


29 3 REQD
18
16

PARTIAL SECTION D-D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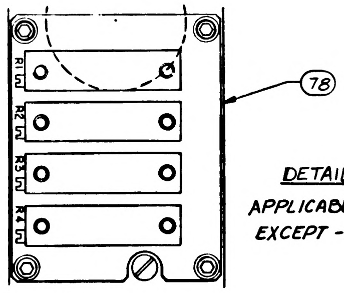
18
15

PARTIAL SECTION E-E

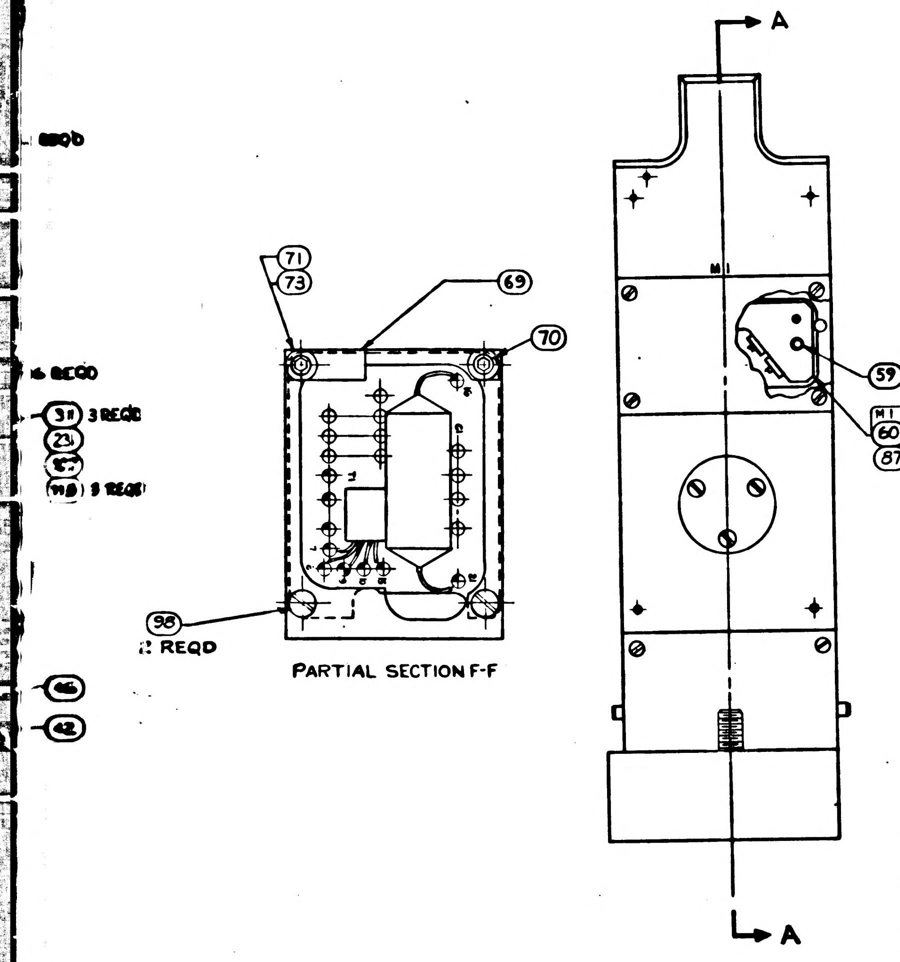

R1
R2
R3
R4
78

DETAIL A

APPLICABLE TO ALL ASSEMBLIES EXCEPT -011 ASS'Y

1015500	REV LTR T	SH 1 OF 1

REVISIONS 6137					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
R		REDRAWN WITH CHANGE PER TDRR 16307	2-9-65	29 JAN 65	HTO
S		REVISED PER TDRR 16868 ADDED CUSTOMER DATA (2-65)		4 MAR 65	
Ⓜ T		REVISED PER TDRR 16870		8 MAR 65	RJJ AU
U		REVISED PER TDRR 18161		12-4-65	



PARTIAL SECTION F-F

	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	1	-	-		114	1014650-15	NAMEPLATE (SEE NOTE 16)
	—	-	-		113	1017563	SET SCREW
	1	-	-		112	1017562-011	TERMINAL BOARD
	1	-	-		111	1017561-011	MOTOR TACH & PIN ASSY
	X	-	-		110	1017560	WIRING DIAGRAM
	X	-	-		109	1017559	SCHEMATIC DIAGRAM, ELECT.
	1	-	-		108	1017558	WIRING HARNESS A
	—	-	-		107	1017557	CLAMP, GEAR
	1	1	-		106	1017569	BRACKET, CONNECTOR
SEE NOTE 18	—	4	4		105	1010901-002	SWITCH, SENSITIVE
	1	1	-		104	1015666-031	WEDGE LIGHTING ASSY
	AR	AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES2544-3)
SEE NOTE 18	AR	AR	-		102	1010750	CURING AGENT, POLYAMIDE
SEE NOTE 18	AR	AR	-		101	1010748	RESIN, EPOXY
	AR	AR	-		100	1017555	SHIM
SEE NOTE 19	AR	AR	-		99	1012051	GREASE SILICONE (GE-G-300)
	2	2	2		98	MS35233-6	SCREW, PAN HD.
SEE NOTE 18	1	1	-		97	1010812-3	GASKET, MOISTURE SEAL
	-	X	-		96	1017545	WIRING DIAGRAM
	-	X	-		95	1017544	SCHEMATIC DIAGRAM
	-	-	X		94	1015670	WIRING DIAGRAM
	-	-	X		93	1010036	SCHEMATIC DIAGRAM, ELECT
	X	X	X		92	1015550	SCHEMATIC DIAGRAM, MECH.
	AR	AR	-		91	1012505	PRIMER
SEE NOTE 18	AR	AR	-		90	1012504	PRIMER
SEE NOTE 18	AR	AR	-		89	1012503	COMPOUND, POLYURETHANE
	-	1	-		88	1014650-14	NAMEPLATE (SEE NOTE 16)
	1	1	-		87	1017546	DIGITAL CORE ASSY
	—	1	-		86	1017551-011	MOTOR-TACH & PIN ASSY
	1	1	-		85	1017550-011	RESOLVER & PIN ASSY 16X
	1	1	-		84	1017547-011	RESOLVER & PIN ASSY 1/4X
	1	1	-		83	1017549-011	RESOLVER & PIN ASSY 1X
	1	1	-		82	1017548-011	RESOLVER & PIN ASSY 1/2X
	-	1	-		81	1017541	WIRING HARNESS "A"
	1	1	-		80	1015665-021	HOUSING & CLAMP ASSY
					79		
	1	1	-		78	1017543	MOUNTING BOARD (INSEP ASSY)
	20	20	-		77	NAS1352C02-4	SCREW, CAP, SOC HD
SEE NOTE 19	AR	AR	AR		76	1012050	OIL, SILICONE (GF F-50)
	-	AR	AR		75	AN960C3	WASHER-FLAT
	-	-	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
	-	1	1		73	MS15795-702	WASHER-PLAIN
	4	4	4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
SEE NOTE 18	-	1	1		71	1010468-4	SCREW, CAP, SOC HD
SEE NOTE 18	2	1	1		70	1011625-13	SCREW, CAP, SOC HD
SEE NOTE 18	-	1	1		69	1000220-7	CLAMP-CABLE
	QUANTITY REQUIRED				LIST OF PARTS AND MATERIALS		

Ⓡ REPLACES REV P WITH CHANGE

	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	4	4	4		68	1016896	SPACER
	-	-	1		67	1016898	MOUNTING BOARD (INSEP ASSY)
	-	-	1		66	1016897	WIRING HARNESS A
					65		
SEE NOTE 18	-	4	4		64	1010468-1	SCREW CAP, SOC HD
					63		
SEE NOTE 18	-	2	2		62	1010457-1	MICROSWITCH ACTUATOR
					61		
	-	-	1		60	1015559	DIGITAL CORE ASSY
		8	8		59	NAS1351C00LL2	SCREW CAP, SOC HD
	-	-	1		58	1015673	RESOLVER, 16X-CDU
	-	-	1		57	1015674	MOTOR TACH-CDU
SEE NOTE 18	2	2	2		56	1010356-10	BALL BEARING
SEE NOTE 18	16	16	16		55	1010356-6	BALL BEARING
	1	1	1		54	1015680	GASKET, WEDGE LIGHT
					53		
	2	2	2		52	AN505DD4-6	SCREW, FLAT HD
SEE NOTE 18	3	3	3		51	1010468-2	SCREW, CAP, SOC
	-	-	20		50	NAS1352C02LL-4	SCREW, CAP, SOC
	2	2	2		49	MS20365D-440	NUT, SELF LOCKING
	-	1	1		48	NAS1081C02A2N	SCREW-SET
					47		
	1	1	1		46	1015664	WASHER, SPECIAL
	8	8	8		45	MS21269-A115	SCREW, INST, PAN HD
	6	6	6		44	MS21268-A110	SCREW, INST, FIL HD
	3	3	3		43	MS21268-A112	SCREW, INST, FIL HD
	1	1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
	1	1	1		41	1016892	COVER, TERMINAL BOARD
					40		
	-	1	1		39	MS16555-606	PIN, STRAIGHT
	-	-	1		38	1015681	RESOLVER, 1X-CDU
	1	1	1		37	1015512	CLAMP SCREW
	-	-	1		36	1016890	RESOLVER, 1/2X-CDU
	-	-	1		35	1015672	RESOLVER, 1/4X-CDU
	3	3	3		34	1015548	SPACER, SLEW SWITCH
	-	1	1		33	1015547	TOGGLE, SWITCH
	1	1	1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
	3	3	3		31	1015663	SET SCREW
	1	1	1		30	1015538-2	CLAMP, MOTOR MODIFIED
	12	12	12		29	1015543	SET SCREW
	4	4	4		28	1015542	CLAMP, SYNCHRO
	1	1	1		27	1015541	CLAMP, SYNCHRO MODIFIED
	1	1	1		26	1015540	CLAMP, SYNCHRO MODIFIED
	3	3	3		25	1015539	CLAMP, MOTOR
	1	1	1		24	1015538-1	CLAMP, MOTOR MODIFIED
	1	1	1		23	1015537	FLYWHEEL
	1	1	1		22	1015536	GEAR, SPUR
	1	1	1		21	1015535	DIAL, 1 SPEED
	1	1	1		20	1015534	DIAL, 36 SPEED
	1	1	1		19	1015533	DIAL, 1800 SPEED
	4	4	4		18	1015532	CLAMP, GEAR
	1	1	1		17	1015531	GEAR, SYNCHRO
	1	1	1		16	1015530	GEAR, SYNCHRO
	2	2	2		15	1015529	GEAR, SYNCHRO
	1	1	1		14	1015528	GEAR, CLUSTER, SPUR
SEE NOTE 18	1	1	1		13	1015527	GEAR, CLUSTER, SPUR
	1	1	1		12	1015526	GEAR, CLUSTER, SPUR
	1	1	1		11	1015525	GEAR, CLUSTER, SPUR
	1	1	1		10	1015524	GEAR, CLUSTER, SPUR
	1	1	1		9	1015523	GEAR, CLUSTER, SPUR
	1	1	1		8	1015522	GEAR, SPUR
	1	1	1		7	1015521	ADJUSTMENT, WHEEL
	1	1	1		6	1015520	GEAR, CLUSTER, SPUR
	1	1	1		5	1015517	PILOT SHAFT ASSY (INSEP)
	-	1	1		4	1016894	TERMINAL BOARD ASSY (INSEP)
	-	-	1		3	1015668	BRACKET, CONNECTOR
	1	-	1		2	1015666-011	WEDGE LIGHTING ASSY
	1	-	1		1	1015665-011	HOUSING AND CLAMP ASSY
	QUANTITY REQUIRED				LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-031	1016903-031	-031
1016903-021	1016903-021	-021
1016903-011	1016903-011	-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. FOX DATE 2 JUL 63
CHECKED ED FOSTER 5 JUL 63
ED APPROVAL WEIDENBAUER 5 JUL 63
APPROVAL 2-5-65
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

CODE IDENT NO.
SIZE J
1015500
SCALE 2:1
SHEET 1 of 1

U
1015500

3"

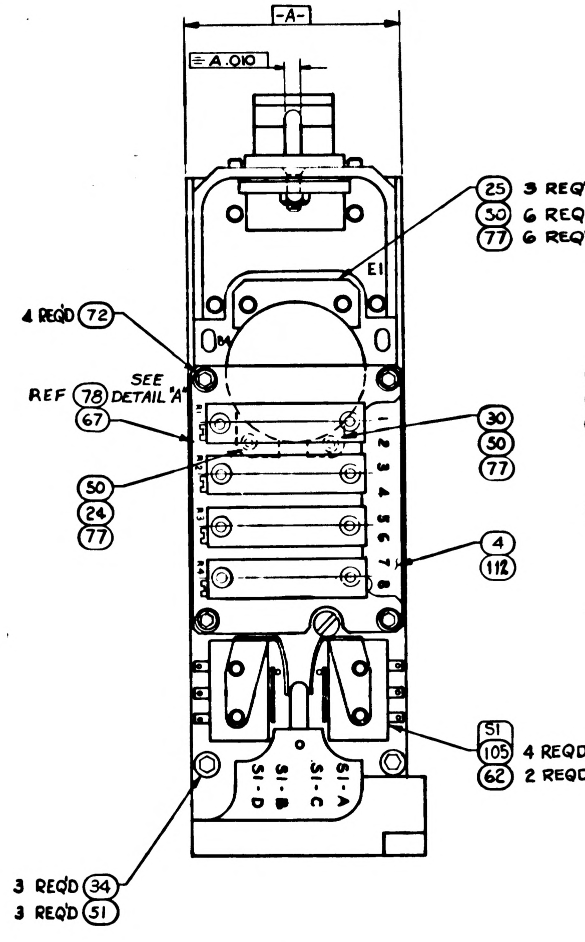
1015500 REV LTR U SH 1

1012200

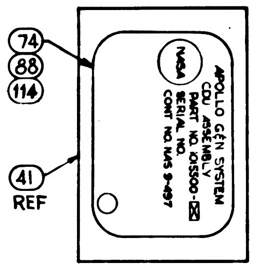
27 1015500

NOTES:

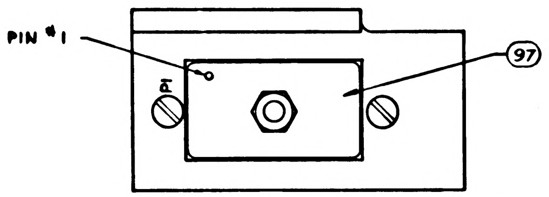
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4.
5. DELIVERABLE END ITEMS MUST MEET THE REQUIREMENTS OF PS-1015500.
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER ND 1002211 USING ITEM 103.
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "G-G")
17. EACH GEAR SHALL BE LUBRICATED WITH ITEM 76 PER ATP 1015500
18. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
19. VENDOR ITEM-SEE SOURCE CONTROL DRAWING.

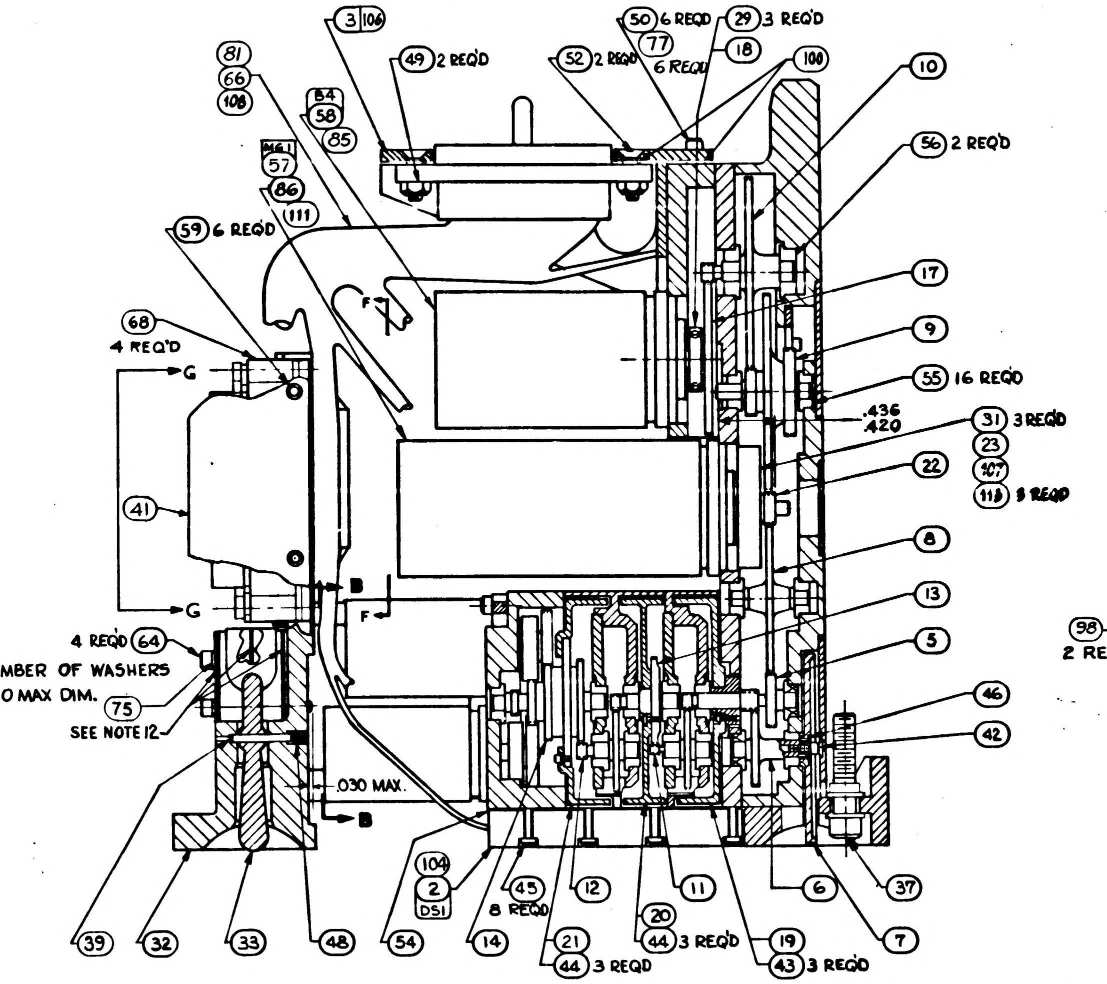

-A-
A .010
25 3 REQ'D
50 6 REQ'D
77 6 REQ'D
E1
B4
4 REQD 72
SEE DETAIL "A"
REF 78
67
30
50
77
50
24
77
1 2 3 4 5 6 7 8
4
112
S1
105 4 REQD
62 2 REQD
S1-A
S1-C
S1-B
S1-D
3 REQD 34
3 REQD 51

(COVER REMOVED AND WIRE HARNESS NOT SHOWN)


74
88
114
41
REF
NASA
APOLLO G&N SYSTEM
CDU ASSEMBLY
PART NO. 1015500-☒
SERIAL NO.
CONT NO. NAS 9-497

VIEW G-G

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B6 1
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86
111
49 2 REQD
52 2 REQD
50 6 REQD
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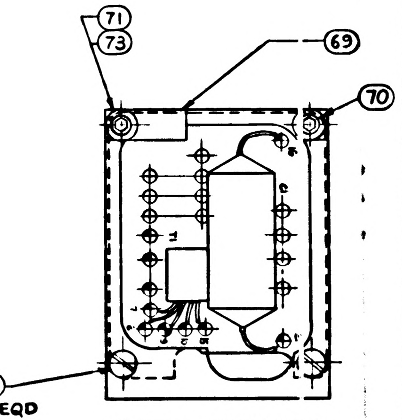
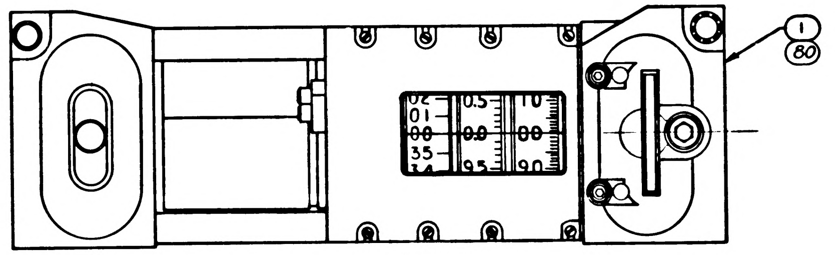
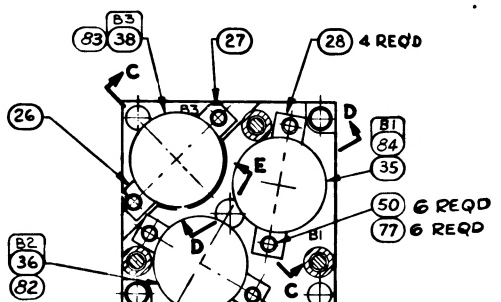
6 REQD
29 3 REQD
18
100
10
56 2 REQD
59 6 REQD
F
68
4 REQ'D
G
17
9
55 16 REQD
.436
.420
31 3 REQD
23
107
113 8 REQD
22
41
8
G
B
F
13
5
4 REQD 64
USE MINIMUM NUMBER OF WASHERS TO ACQUIRE .030 MAX DIM.
75
SEE NOTE 12
46
42
.030 MAX.
B
37
104
2
DS1
45
8 REQD
12
11
20
44 3 REQD
19
43 3 REQD
6
7
39
32
33
48
54
14
21
44 3 REQD

SECTION A-A

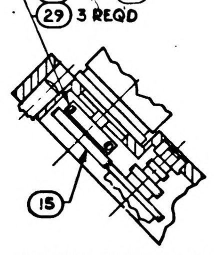

71
73
69
70
98
2 REQD

PARTIAL SECTION F-F

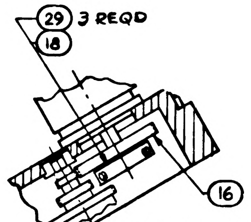



B3
83 38
27
28 4 REQD
C
B3
D
B1
84
35
26
E
50 6 REQD
77 6 REQD
B2
36
82
D
B1
C
B2

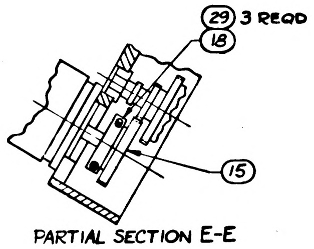
PARTIAL SECTION B-B


18
29 3 REQD
15

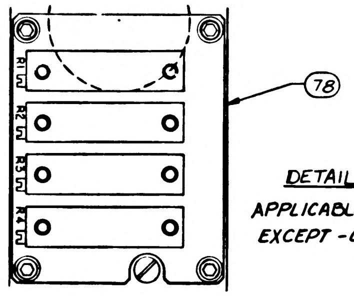
PARTIAL SECTION C-C


29 3 REQD
18
16

PARTIAL SECTION D-D


29 3 REQD
18
15

PARTIAL SECTION E-E


R1 UU
R2 UU
R3 UU
R4 UU
78

DETAIL A

APPLICABLE TO ALL ASSEMBLIES EXCEPT -011 ASS'Y

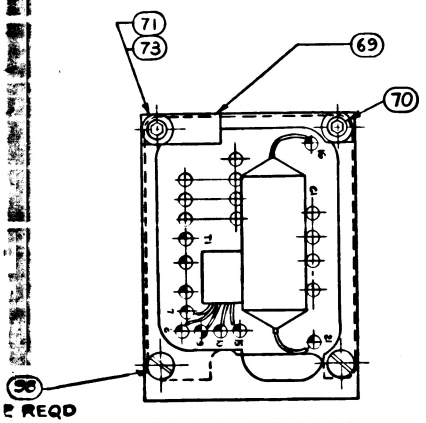
1015500 REV LTR U SH 1 OF 1

1/1015500

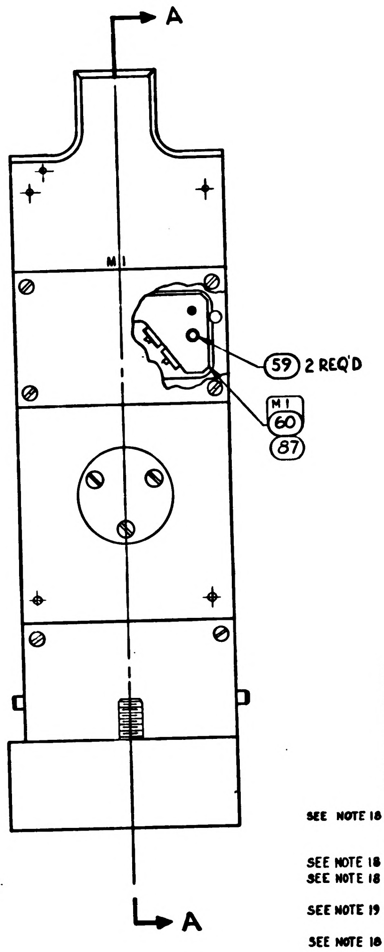
REVISIONS

01137

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
R		REDRAWN WITH CHANGE PER TDRR 16307	— 2-9-65	29 JAN 65	HTO WWD
S		REVISED PER TDRR 16868 ADDED CUSTOMER DATA (2-65)		4 MAR 65	
T		REVISED PER TDRR 16870		8 MAR 65	AU
U		REVISED PER TDRR 18161		12-APR-65	
V		REVISED PER TDRR 18981		1 MAY 65	



PARTIAL SECTION F-F



	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	1	-	-		114	1014650-15	NAMEPLATE (SEE NOTE 16)
	—	-	-		113	1017563	SET SCREW
	1	-	-		112	1017562-011	TERMINAL BOARD ASSY (INSEP)
	1	-	-		111	1017561-011	MOTOR TACH & PIN ASSY
	X	-	-		110	1017560	WIRING DIAGRAM
	X	-	-		109	1017559	SCHEMATIC DIAGRAM, ELECT.
	1	-	-		108	1017558	WIRING HARNESS A
	—	-	-		107	1017557	CLAMP, GEAR
	1	1	-		106	1017569	BRACKET, CONNECTOR
SEE NOTE 18	—	4	4		105	1010901-002	SWITCH, SENSITIVE
	1	1	-		104	1015666-031	WEDGE LIGHTING ASSY
	AR	AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES2544-3)
SEE NOTE 18	AR	AR	-		102	1010750	CURING AGENT, POLYAMIDE
SEE NOTE 18	AR	AR	-		101	1010748	RESIN, EPOXY
	AR	AR	-		100	1017555	SHIM
SEE NOTE 19	AR	AR	-		99	1012051	GREASE SILICONE (GE-G-300)
	2	2	2		98	MS35233-6	SCREW, PAN HD.
SEE NOTE 18	1	1	-		97	1010812-3	GASKET, MOISTURE SEAL
	-	X	-		96	1017545	WIRING DIAGRAM
	-	X	-		95	1017544	SCHEMATIC DIAGRAM
	-	-	X		94	1015670	WIRING DIAGRAM
	-	-	X		93	1010036	SCHEMATIC DIAGRAM, ELECT
	X	X	X		92	1015550	SCHEMATIC DIAGRAM, MECH.
	AR	AR	-		91	1012505	PRIMER
SEE NOTE 18	AR	AR	-		90	1012504	PRIMER
SEE NOTE 18	AR	AR	-		89	1012503	COMPOUND, POLYURETHANE
	-	1	-		88	1014650-14	NAMEPLATE (SEE NOTE 16)
	1	1	-		87	1017546	DIGITAL CORE ASSY
	—	1	-		86	1017551-011	MOTOR-TACH & PIN ASSY
	1	1	-		85	1017550-011	RESOLVER & PIN ASSY 16X
	1	1	-		84	1017547-011	RESOLVER & PIN ASSY 1/4X
	1	1	-		83	1017549-011	RESOLVER & PIN ASSY 1X
	1	1	-		82	1017548-011	RESOLVER & PIN ASSY 1/2X
	-	1	-		81	1017541	WIRING HARNESS "A"
	1	1	-		80	1015665-021	HOUSING & CLAMP ASSY
					79		
	1	1	-		78	1017543	MOUNTING BOARD (INSEP ASSY)
	20	20	-		77	NAS1352C02-4	SCREW, CAP, SOC HD
SEE NOTE 19	AR	AR	AR		76	1012050	OIL, SILICONE (GE F-50)
	—	AR	AR		75	AN960C3	WASHER-FLAT
	-	-	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
	-	1	1		73	MS15795-702	WASHER-PLAIN
	4	4	4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
SEE NOTE 18	-	1	1		71	1010468-4	SCREW, CAP, SOC HD
SEE NOTE 18	2	1	1		70	1011625-13	SCREW, CAP, SOC HD
SEE NOTE 18	-	1	1		69	1000220-7	CLAMP-CABLE

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	4	4	4		68	1016896	SPACER
	-	-	1		67	1016898	MOUNTING BOARD (INSEP ASSY)
	-	-	1		66	1016897	WIRING HARNESS A
					65		
SEE NOTE 18	-	4	4		64	1010468-1	SCREW CAP, SOC HD
					63		
SEE NOTE 18	-	2	2		62	1010457-1	MICROSWITCH ACTUATOR
					61		
	-	-	1		60	1015559	DIGITAL CORE ASSY
	8	8	8		59	NAS1351C00LL2	SCREW-CAP, SOC HD
	-	-	1		58	1015673	RESOLVER, 16X-CDU
	-	-	1		57	1015674	MOTOR TACH-CDU
SEE NOTE 18	2	2	2		56	1010356-10	BALL BEARING
SEE NOTE 18	16	16	16		55	1010356-6	BALL BEARING
	1	1	1		54	1015680	GASKET, WEDGE LIGHT
					53		
	2	2	2		52	AN505DD4-6	SCREW, FLAT HD
SEE NOTE 18	3	3	3		51	1010468-2	SCREW, CAP, SOC
	-	-	20		50	NAS1352C02LL-4	SCREW, CAP, SOC
	2	2	2		49	MS20365D-440	NUT, SELF LOCKING
	-	1	1		48	NAS1081C02A2N	SCREW-SET
					47		
	1	1	1		46	1015664	WASHER, SPECIAL
	8	8	8		45	MS21269-A115	SCREW, INST, PAN HD
	6	6	6		44	MS21268-A110	SCREW, INST, FIL HD
	3	3	3		43	MS21268-A112	SCREW, INST, FIL HD
	1	1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
	1	1	1		41	1016892	COVER, TERMINAL BOARD
					40		
	-	1	1		39	MS16555-606	PIN, STRAIGHT
	-	-	1		38	1015681	RESOLVER, 1X-CDU
	1	1	1		37	1015512	CLAMP SCREW
	-	-	1		36	1016890	RESOLVER, 1/2X-CDU
	-	-	1		35	1015672	RESOLVER, 1/4X-CDU
	3	3	3		34	1015548	SPACER, SLEW SWITCH
	-	1	1		33	1015547	TOGGLE, SWITCH
	1	1	1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
	3	3	3		31	1015663	SET SCREW
	1	1	1		30	1015538-2	CLAMP, MOTOR MODIFIED
	12	12	12		29	1015543	SET SCREW
	4	4	4		28	1015542	CLAMP, SYNCHRO
	1	1	1		27	1015541	CLAMP, SYNCHRO MODIFIED
	1	1	1		26	1015540	CLAMP, SYNCHRO MODIFIED
	3	3	3		25	1015539	CLAMP, MOTOR
	1	1	1		24	1015538-1	CLAMP, MOTOR MODIFIED
	1	1	1		23	1015537	FLYWHEEL
	1	1	1		22	1015536	GEAR, SPUR
	1	1	1		21	1015535	DIAL, 1 SPEED
	1	1	1		20	1015534	DIAL, 36 SPEED
	1	1	1		19	1015533	DIAL, 1800 SPEED
	4	4	4		18	1015532	CLAMP, GEAR
	1	1	1		17	1015531	GEAR, SYNCHRO
	1	1	1		16	1015530	GEAR, SYNCHRO
	2	2	2		15	1015529	GEAR, SYNCHRO
	1	1	1		14	1015528	GEAR, CLUSTER, SPUR
SEE NOTE 18	1	1	1		13	1015527	GEAR, CLUSTER, SPUR
	1	1	1		12	1015526	GEAR, CLUSTER, SPUR
	1	1	1		11	1015525	GEAR, CLUSTER, SPUR
	1	1	1		10	1015524	GEAR, CLUSTER, SPUR
	1	1	1		9	1015523	GEAR, CLUSTER, SPUR
	1	1	1		8	1015522	GEAR, SPUR
	1	1	1		7	1015521	ADJUSTMENT, WHEEL
	1	1	1		6	1015520	GEAR, CLUSTER, SPUR
	1	1	1		5	1015517	PILOT SHAFT ASSY (INSEP)
	-	1	1		4	1016894	TERMINAL BOARD ASSY (INSEP)
	-	-	1		3	1015668	BRACKET, CONNECTOR
	#	-	1		2	1015666-011	WEDGE LIGHTING ASSY
	#	-	1		1	1015665-011	HOUSING AND CLAMP ASSY

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

Ⓡ REPLACES REV U WITH CHANGE

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-031	1016903-031	-031
1016903-021	1016903-021	-021
1016903-011	1016903-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — DECIMALS + — ANGLES + —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN R. FOX DATE 2 JUL 63
CHECKED ED FOSTER 5 JUL 63
ED APPROVAL MEIDENBAUER 5 JUL 63
APPROVAL 2-5-65
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

CODE IDENT NO. 80230
SIZE J
1015500
SCALE 2:1
SHEET 1 of 1

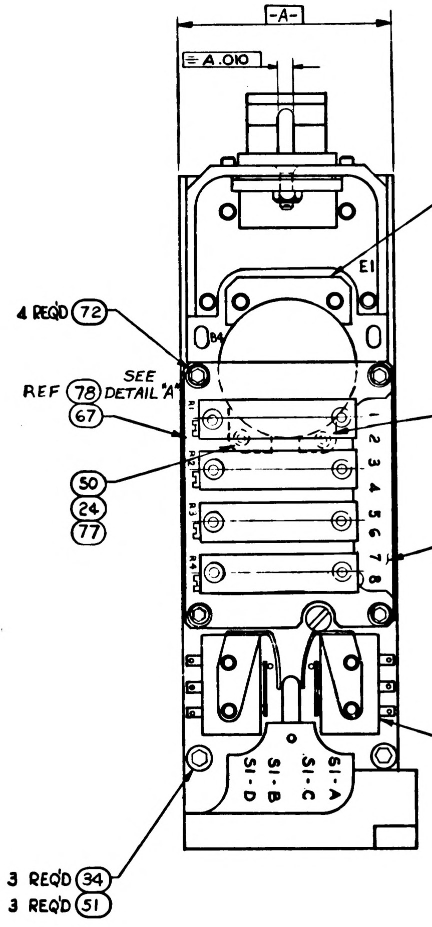
1015500 V

1015500 REV LTR V SH 1 OF 1

2/1015500

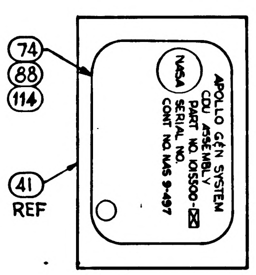
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4.
5. DELIVERABLE END ITEMS MUST MEET THE REQUIREMENTS OF PS-1015500.
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER ND 1002211 USING ITEM 103.
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "G-G")
17. EACH GEAR SHALL BE LUBRICATED WITH ITEM 76 PER ATP 1015500
18. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
19. VENDOR ITEM - SEE SOURCE CONTROL DRAWING.



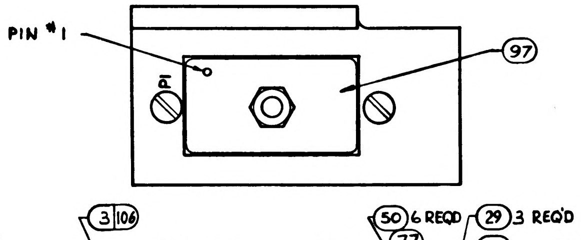
-A-
A .010
E1
25 3 REQ'D
50 6 REQ'D
77 6 REQ'D
4 REQ'D 72
SEE DETAIL "A"
REF 78
67
30
50
77
50
24
77
4
112
1 2 3 4 5 6 7 8
51
105 4 REQD
62 2 REQD
S1-A
S1-C
S1-B
S1-D
3 REQ'D 34
3 REQ'D 51

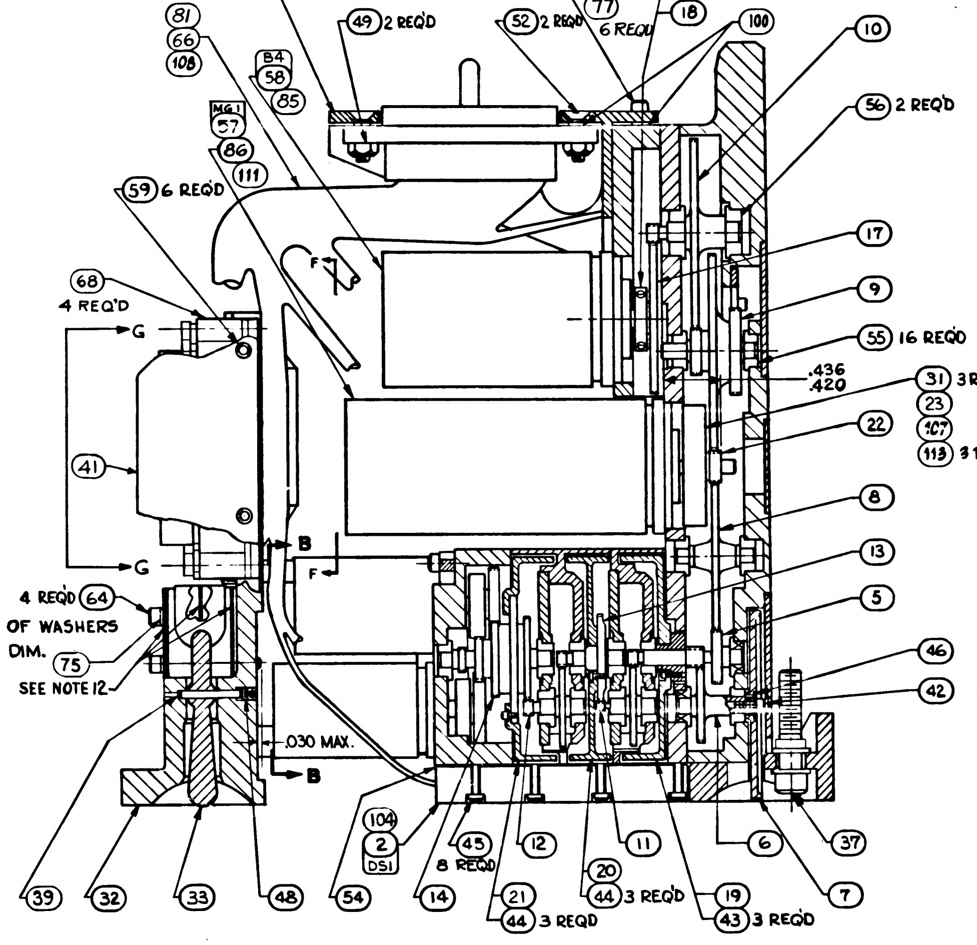
(COVER REMOVED AND WIRE HARNESS NOT SHOWN)



74
88
114
41
REF
NASA
APOLLO G&N SYSTEM
CDU ASSEMBLY
PART NO. 1015500-☒
SERIAL NO.
CONT NO. NAS 9-497

VIEW G-G

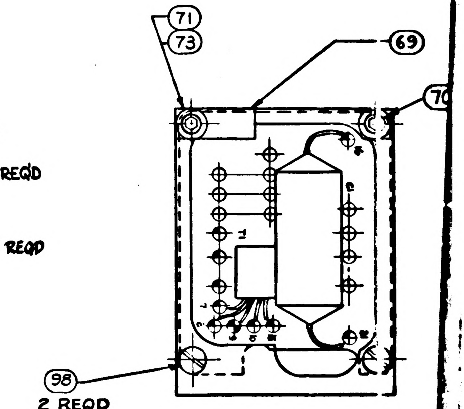




3 106
49 2 REQ'D
52 2 REQ'D
50 6 REQ'D
77 6 REQ'D
29 3 REQ'D
18
100
10
81
66
108
B4
58
85
MG1
57
86
111
56 2 REQ'D
59 6 REQ'D
68
4 REQ'D
G
F
17
9
55 16 REQ'D
.436
.420
31 3 REQ'D
23
107
113 3 REQ'D
22
41
8
B
13
4 REQ'D 64
5
75
SEE NOTE 12
46
42
.030 MAX.
104
2
DS1
45
8 REQ'D
12
11
20
44 3 REQ'D
21
44 3 REQ'D
19
43 3 REQ'D
6
37
7
39
32
33
48
54
14

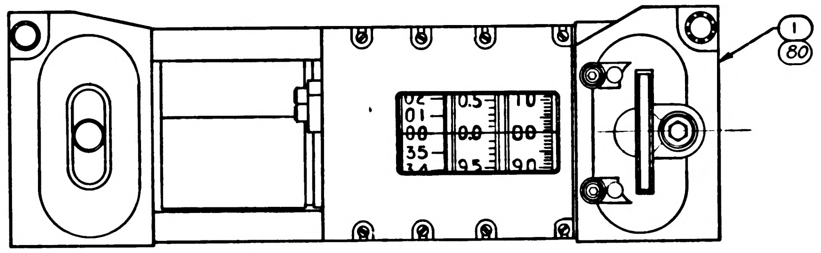
USE MINIMUM NUMBER OF WASHERS TO ACQUIRE .030 MAX DIM.

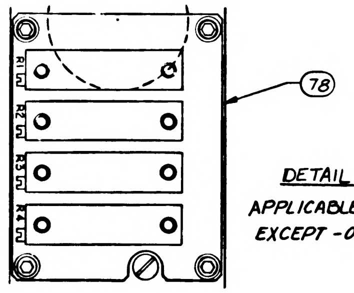
SECTION A-A



71
73
69
70
98
2 REQD

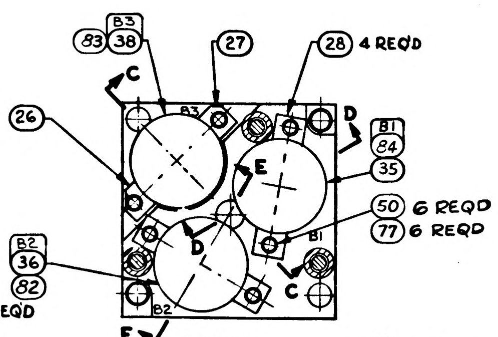
PARTIAL SECTION F-F





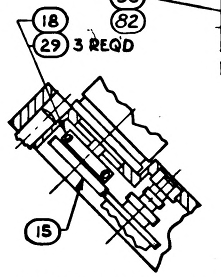
DETAIL A

APPLICABLE TO ALL ASSEMBLIES EXCEPT -011 ASS'Y



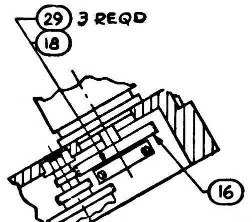
B3
83
38
27
28 4 REQ'D
C
D
26
B1
84
35
E
50 6 REQD
77 6 REQD
B2
36
82
D
B1
C
B2
E

PARTIAL SECTION B-B



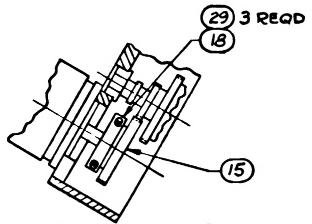
18
29 3 REQD
15

PARTIAL SECTION C-C



29 3 REQD
18
16

PARTIAL SECTION D-D



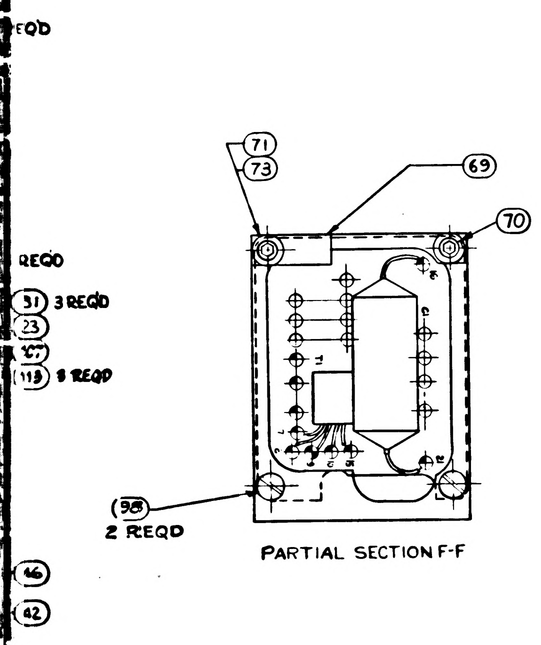
29 3 REQD
18
15

PARTIAL SECTION E-E

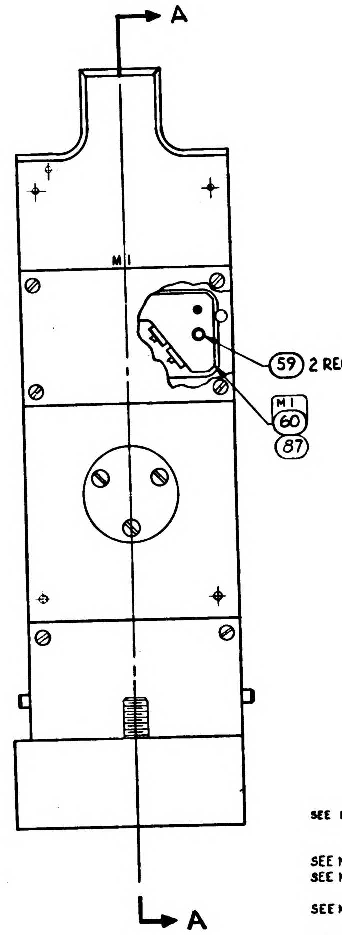
1015500 REV LTR V SH 1 OF 1

1/1015500

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
R		REDRAWN WITH CHANGE PER TDRR 16307	2-9-65	29 JAN 65	[illegible]
S		REVISED PER TDRR 16868 ADDED CUSTOMER DATA (2-65)		4 MAR 65	[illegible]
T		REVISED PER TDRR 16870		8 MAR 65	[illegible]
U		REVISED PER TDRR 18161		12-APR-65	[illegible]
V		REVISED PER TDRR 18981		17 MAY 65	[illegible]
W		REVISED PER TDRR 20322		26 JUN 65	[illegible]



PARTIAL SECTION F-F



	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	1	-	-		114	1014650-15	NAMEPLATE (SEE NOTE 16)
	3	-	-		113	1017563	SET SCREW
	1	-	-		112	1017562-011	TERMINAL BOARD ASSY (INSEP)
	1	-	-		111	1017561-011	MOTOR TACH & PIN ASSY
	X	-	-		110	1017560	WIRING DIAGRAM
	X	-	-		109	1017559	SCHEMATIC DIAGRAM, ELECT.
	1	-	-		108	1017558	WIRING HARNESS A
	1	-	-		107	1017557	CLAMP, GEAR
	1	1	-		106	1017569	BRACKET, CONNECTOR
SEE NOTE 18	—	4	4		105	1010901-002	SWITCH, SENSITIVE
	1	1	-		104	1015666-031	WEDGE LIGHTING ASSY
	AR	AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES2544-3)
SEE NOTE 18	AR	AR	-		102	1010750	CURING AGENT, POLYAMIDE
SEE NOTE 18	AR	AR	-		101	1010748	RESIN, EPOXY
	AR	AR	-		100	1017555	SHIM
SEE NOTE 19	AR	AR	-		99	1012051	GREASE SILICONE (GE-G-300)
	2	2	2		98	MS35233-6	SCREW, PAN HD.
SEE NOTE 18	1	1	-		97	1010812-3	GASKET, MOISTURE SEAL
	-	X	-		96	1017545	WIRING DIAGRAM
	-	X	-		95	1017544	SCHEMATIC DIAGRAM
	-	-	X		94	1015670	WIRING DIAGRAM
	-	-	X		93	1010036	SCHEMATIC DIAGRAM, ELECT
	X	X	X		92	1015550	SCHEMATIC DIAGRAM, MECH.
	AR	AR	-		91	1012505	PRIMER
SEE NOTE 18	AR	AR	-		90	1012504	PRIMER
SEE NOTE 18	AR	AR	-		89	1012503	COMPOUND, POLYURETHANE
	-	1	-		88	1014650-14	NAMEPLATE (SEE NOTE 16)
	1	1	-		87	1017546	DIGITAL CORE ASSY
	-	1	-		86	1017551-011	MOTOR-TACH & PIN ASSY
	1	1	-		85	1017550-011	RESOLVER & PIN ASSY 16X
	1	1	-		84	1017547-011	RESOLVER & PIN ASSY 1/4X
	1	1	-		83	1017549-011	RESOLVER & PIN ASSY 1X
	1	1	-		82	1017548-011	RESOLVER & PIN ASSY 1/2X
	-	1	-		81	1017541	WIRING HARNESS "A"
	1	1	-		80	1015665-021	HOUSING & CLAMP ASSY
					79		
	1	1	-		78	1017543	MOUNTING BOARD (INSEP ASSY)
	20	20	-		77	NAS1352C02-4	SCREW, CAP, SOC HD
SEE NOTE 19	AR	AR	AR		76	1012050	OIL, SILICONE (GE F-50)
	-	AR	AR		75	AN960C3	WASHER-FLAT
	-	-	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
	-	1	1		73	MS15795-702	WASHER-PLAIN
	4	4	4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
SEE NOTE 18	-	1	1		71	1010468-4	SCREW, CAP, SOC HD
SEE NOTE 18	2	1	1		70	1011625-13	SCREW, CAP, SOC HD
SEE NOTE 18	-	1	1		69	1000220-7	CLAMP-CABLE

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

Ⓡ REPLACES REV U WITH CHANGE

	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	4	4	4		68	1016896	SPACER
	-	-	1		67	1016898	MOUNTING BOARD (INSEP ASSY)
	-	-	1		66	1016897	WIRING HARNESS A
					65		
SEE NOTE 18	-	4	4		64	1010468-1	SCREW CAP, SOC HD
					63		
SEE NOTE 18	-	2	2		62	1010457-1	MICROSWITCH ACTUATOR
					61		
	-	-	1		60	1015559	DIGITAL CORE ASSY
	8	8	8		59	NAS1351C00LL2	SCREW-CAP, SOC HD
	-	-	1		58	1015673	RESOLVER, 16X-CDU
	-	-	1		57	1015674	MOTOR TACH-CDU
SEE NOTE 18	2	2	2		56	1010356-10	BALL BEARING
SEE NOTE 18	16	16	16		55	1010356-6	BALL BEARING
	1	1	1		54	1015680	GASKET, WEDGE LIGHT
					53		
	2	2	2		52	AN505DD4-6	SCREW, FLAT HD
SEE NOTE 18	3	3	3		51	1010468-2	SCREW, CAP, SOC
	-	-	20		50	NAS1352C02LL-4	SCREW, CAP, SOC
	2	2	2		49	MS20365D-440	NUT, SELF LOCKING
	-	1	1		48	NAS1081C02A2N	SCREW-SET
					47		
	1	1	1		46	1015664	WASHER, SPECIAL
	8	8	8		45	MS21269-A115	SCREW, INST, PAN HD
	6	6	6		44	MS21268-A110	SCREW, INST, FIL HD
	3	3	3		43	MS21268-A112	SCREW, INST, FIL HD
	1	1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
	1	1	1		41	1016892	COVER, TERMINAL BOARD
					40		
	-	1	1		39	MS16555-606	PIN, STRAIGHT
	-	-	1		38	1015681	RESOLVER, 1X-CDU
	1	1	1		37	1015512	CLAMP SCREW
	-	-	1		36	1016890	RESOLVER, 1/2X-CDU
	-	-	1		35	1015672	RESOLVER, 1/4X-CDU
	3	3	3		34	1015548	SPACER, SLEW SWITCH
	-	1	1		33	1015547	TOGGLE, SWITCH
	1	1	1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
	~~3~~	3	3		31	1015663	SET SCREW
	1	1	1		30	1015538-2	CLAMP, MOTOR MODIFIED
	12	12	12		29	1015543	SET SCREW
	4	4	4		28	1015542	CLAMP, SYNCHRO
	1	1	1		27	1015541	CLAMP, SYNCHRO MODIFIED
	1	1	1		26	1015540	CLAMP, SYNCHRO MODIFIED
	3	3	3		25	1015539	CLAMP, MOTOR
	1	1	1		24	1015538-1	CLAMP, MOTOR MODIFIED
	~~1~~	1	1		23	1015537	FLYWHEEL
	1	1	1		22	1015536	GEAR, SPUR
	1	1	1		21	1015535	DIAL, 1 SPEED
	1	1	1		20	1015534	DIAL, 36 SPEED
	1	1	1		19	1015533	DIAL, 1800 SPEED
	4	4	4		18	1015532	CLAMP, GEAR
	1	1	1		17	1015531	GEAR, SYNCHRO
	1	1	1		16	1015530	GEAR, SYNCHRO
	2	2	2		15	1015529	GEAR, SYNCHRO
	1	1	1		14	1015528	GEAR, CLUSTER, SPUR
SEE NOTE 18	1	1	1		13	1015527	GEAR, CLUSTER, SPUR
	1	1	1		12	1015526	GEAR, CLUSTER, SPUR
	1	1	1		11	1015525	GEAR, CLUSTER, SPUR
	1	1	1		10	1015524	GEAR, CLUSTER, SPUR
	1	1	1		9	1015523	GEAR, CLUSTER, SPUR
	1	1	1		8	1015522	GEAR, SPUR
	1	1	1		7	1015521	ADJUSTMENT, WHEEL
	1	1	1		6	1015520	GEAR, CLUSTER, SPUR
	1	1	1		5	1015517-011	PILOT SHAFT ASSY (INSEP)
	-	1	1		4	1016894	TERMINAL BOARD ASSY (INSEP)
	-	-	1		3	1015668	BRACKET, CONNECTOR
	~~1~~	-	1		2	1015666-011	WEDGE LIGHTING ASSY
	~~1~~	-	1		1	1015665-011	HOUSING AND CLAMP ASSY

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-031	1016903-031	-031
1016903-021	1016903-021	-021
1016903-011	1016903-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
Cambridge Mass
DRAWN R. FOX DATE 2 JUL 63
CHECKED ED FOSTER 5 JUL 63
ED APPROVAL MEIDENBAUER 5 JUL 63
APPROVAL [illegible] 2-5-65
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

CODE IDENT NO. 80230
SIZE J
1015500
SCALE 2:1
SHEET 1 of 1

1015500 W

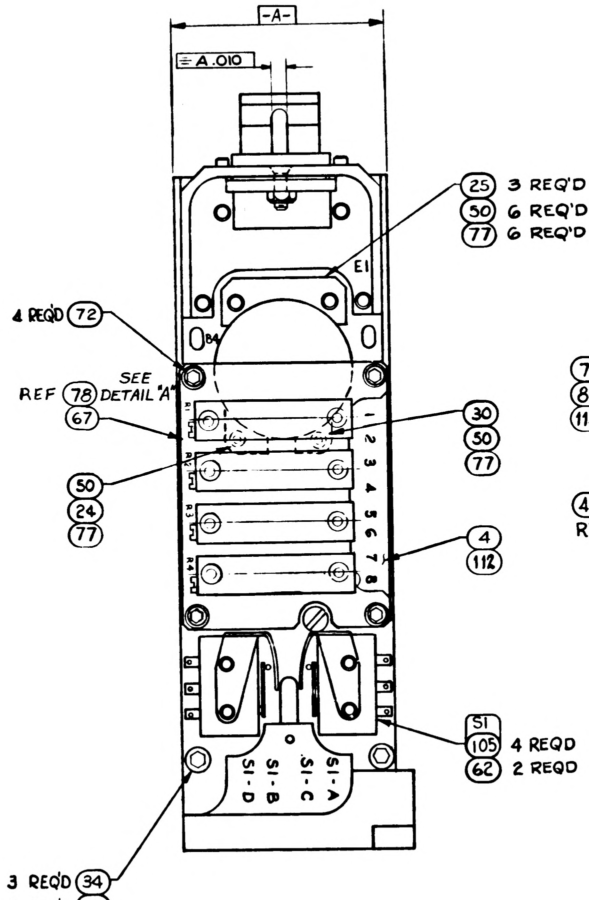
1015500 REV LTR SH 1 of 1

2/1015500

1012200

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4.
5. DELIVERABLE END ITEMS MUST MEET THE REQUIREMENTS OF PS-1015500.
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER ND 1002211 USING ITEM 103.
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "G-G")
17. EACH GEAR SHALL BE LUBRICATED WITH ITEM 76 PER ATP 1015500
18. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
19. VENDOR ITEM - SEE SOURCE CONTROL DRAWING.



-A-
A .010
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SEE DETAIL "A"
REF 78
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77
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112
R1
R2
R3
R4
1 2 3 4 5 6 7 8
S1
105 4 REQD
62 2 REQD
S1-A
S1-C
S1-B
S1-D
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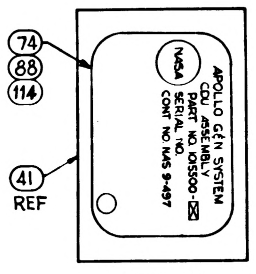
(COVER REMOVED AND WIRE HARNESS NOT SHOWN)



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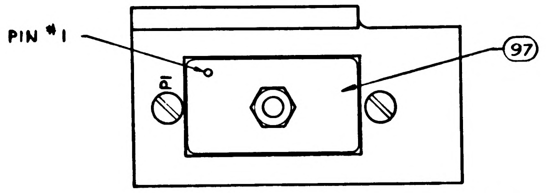
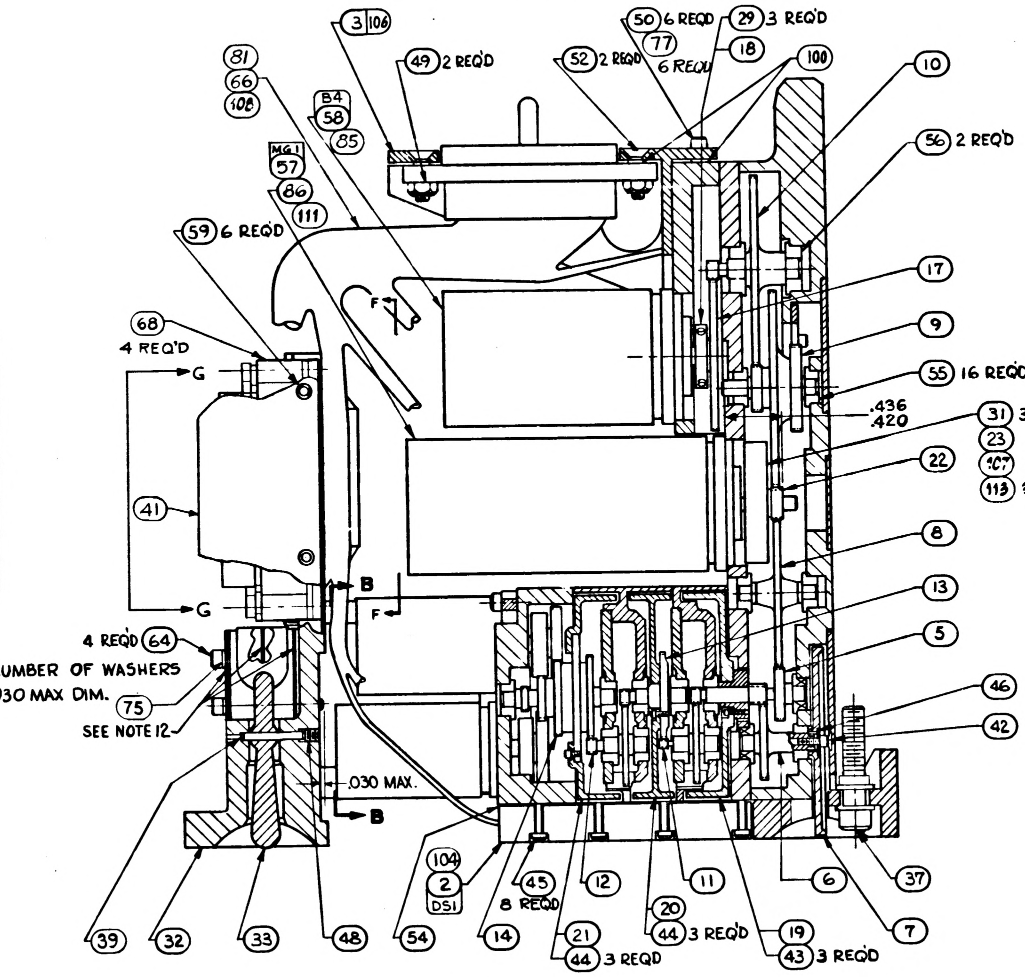
NASA
APOLLO G&N SYSTEM
CDU ASSEMBLY
PART NO. 1015500-☒
SERIAL NO.
CONT NO. NAS 9-497

VIEW G-G





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.420
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"C7"
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USE MINIMUM NUMBER OF WASHERS TO ACQUIRE .030 MAX DIM.
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SEE NOTE 12
.030 MAX.
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DS1
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12
11
20
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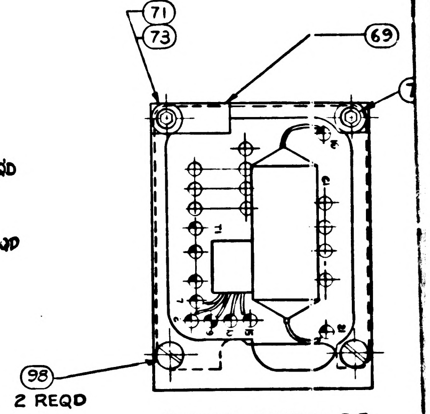
SECTION A-A



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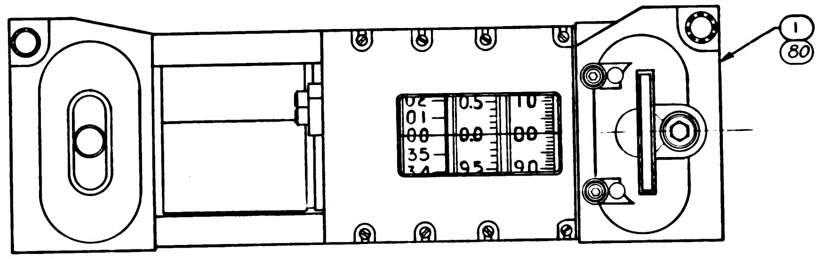
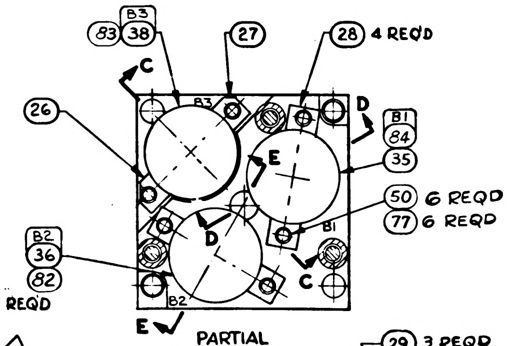
98 2 REQD

PARTIAL SECTION F-F





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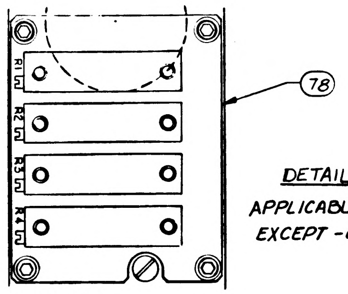
E

PARTIAL SECTION B-B



78
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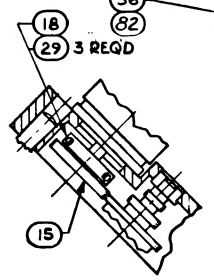
R2
R3
R4

DETAIL A

APPLICABLE TO ALL ASSEMBLIES EXCEPT -011 ASS'Y



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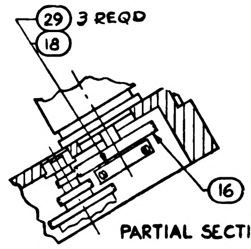
PARTIAL SECTION C-C



29 3 REQD
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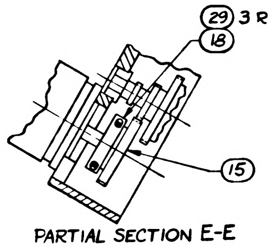
16

PARTIAL SECTION D-D

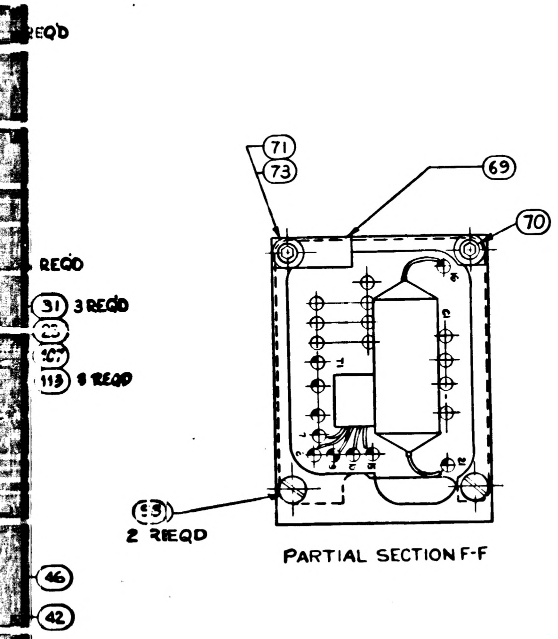


29 3 REQD
18
15

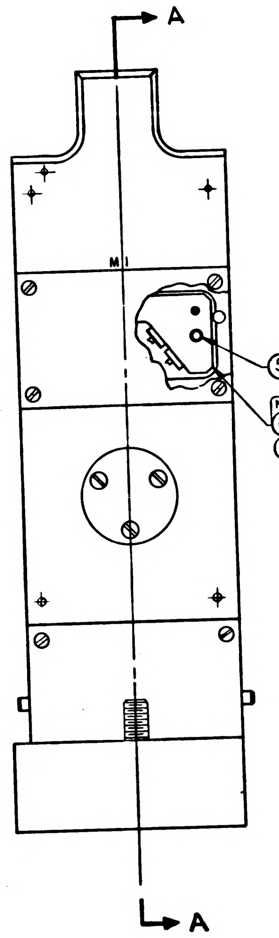
PARTIAL SECTION E-E

1015500

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
R		REDRAWN WITH CHANGE PER TDRR 16307	2-9-65	9 JAN 65	HTO
S		REVISED PER TDRR 16868 ADDED CUSTOMER DATA (2-65)		4 MAR 65	
T		REVISED PER TDRR 16870		8 MAR 65	RJ AU
U		REVISED PER TDRR 18161		12-APR-65	
V		REVISED PER TDRR 18981		17 MAY 65	
W		REVISED PER TDRR 20322		26 JUN 65	EAC
Y		REVISED PER TDRR 20999			



PARTIAL SECTION F-F



	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	1	-	-		114	1014650-15	NAMEPLATE (SEE NOTE 16)
	3	-	-		113	1017563	SET SCREW
	1	-	-		112	1017562-011	TERMINAL BOARD ASSY (INSEP)
	1	-	-		111	1017561-011	MOTOR TACH & PIN ASSY
	X	-	-		110	1017560	WIRING DIAGRAM
	X	-	-		109	1017559	SCHEMATIC DIAGRAM, ELECT.
	1	-	-		108	1017558	WIRING HARNESS A
	1	-	-		107	1017557	CLAMP, GEAR
	1	1	-		106	1017569	BRACKET, CONNECTOR
SEE NOTE 18	—	4	4		105	1010901-002	SWITCH, SENSITIVE
	1	1	-		104	1015666-031	WEDGE LIGHTING ASSY
	AR	AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES2544-3)
SEE NOTE 18	AR	AR	-		102	1010750	CURING AGENT, POLYAMIDE
SEE NOTE 18	AR	AR	-		101	1010748	RESIN, EPOXY
	AR	AR	-		100	1017555	SHIM
SEE NOTE 19	AR	AR	-		99	1012051	GREASE SILICONE (GE-G-300)
	2	2	2		98	MS35233-6	SCREW, PAN HD.
SEE NOTE 18	1	1	-		97	1010812-3	GASKET, MOISTURE SEAL
	-	X	-		96	1017545	WIRING DIAGRAM
	-	X	-		95	1017544	SCHEMATIC DIAGRAM
	-	-	X		94	1015670	WIRING DIAGRAM
	-	-	X		93	1010036	SCHEMATIC DIAGRAM, ELECT
	X	X	X		92	1015550	SCHEMATIC DIAGRAM, MECH.
	AR	AR	-		91	1012505	PRIMER
SEE NOTE 18	AR	AR	-		90	1012504	PRIMER
SEE NOTE 18	AR	AR	-		89	1012503	COMPOUND, POLYURETHANE
	-	1	-		88	1014650-14	NAMEPLATE (SEE NOTE 16)
	1	1	-		87	1017546	DIGITAL CORE ASSY
	-	1	-		86	1017551-011	MOTOR-TACH & PIN ASSY
	1	1	-		85	1017550-011	RESOLVER & PIN ASSY 16X
	1	1	-		84	1017547-011	RESOLVER & PIN ASSY 1/4X
	1	1	-		83	1017549-011	RESOLVER & PIN ASSY 1X
	1	1	-		82	1017548-011	RESOLVER & PIN ASSY 1/2X
	-	1	-		81	1017541	WIRING HARNESS "A"
	1	1	-		80	1015665-021	HOUSING & CLAMP ASSY
					79		
	1	1	-		78	1017543	MOUNTING BOARD (INSEP ASSY)
	20	20	-		77	NAS1352C02-4	SCREW, CAP, SOC HD
SEE NOTE 19	AR	AR	AR		76	1012050	OIL, SILICONE (GE F-50)
	-	AR	AR		75	AN960C3	WASHER-FLAT
	-	-	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
	-	1	1		73	MS15795-702	WASHER-PLAIN
	4	4	4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
SEE NOTE 18	-	1	1		71	1010468-4	SCREW, CAP, SOC HD
SEE NOTE 18	2	1	1		70	1011625-13	SCREW, CAP, SOC HD
SEE NOTE 18	-	1	1		69	1000220-7	CLAMP-CABLE
	QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS	

Ⓡ REPLACES REV U WITH CHANGE

	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	4	4	4		68	1016896	SPACER
	-	-	1		67	1016898	MOUNTING BOARD (INSEP ASSY)
	-	-	1		66	1016897	WIRING HARNESS A
					65		
SEE NOTE 18	-	4	4		64	1010468-1	SCREW CAP, SOC HD
					63		
SEE NOTE 18	-	2	2		62	1010457-1	MICROSWITCH ACTUATOR
					61		
	-	-	1		60	1015559	DIGITAL CORE ASSY
	8	8	8		59	NAS1351C00LL2	SCREW-CAP, SOC HD
	-	-	1		58	1015673	RESOLVER, 16X-CDU
	-	-	1		57	1015674	MOTOR TACH-CDU
SEE NOTE 18	2	2	2		56	1010967-10	BALL BEARING
SEE NOTE 18	16	16	16		55	1010967-6	BALL BEARING
	1	1	1		54	1015680	GASKET, WEDGE LIGHT
					53		
	2	2	2		52	AN505DD4-6	SCREW, FLAT HD
SEE NOTE 18	3	3	3		51	1010468-2	SCREW, CAP, SOC
	-	-	20		50	NAS1352C02LL-4	SCREW, CAP, SOC
	2	2	2		49	MS20365D-440	NUT, SELF LOCKING
	-	1	1		48	NAS1081C02A2N	SCREW-SET
					47		
	1	1	1		46	1015664	WASHER, SPECIAL
	8	8	8		45	MS21269-A115	SCREW, INST, PAN HD
	6	6	6		44	MS21268-A110	SCREW, INST, FIL HD
	3	3	3		43	MS21268-A112	SCREW, INST, FIL HD
	1	1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
	1	1	1		41	1016892	COVER, TERMINAL BOARD
					40		
	-	1	1		39	MS16555-606	PIN, STRAIGHT
	-	-	1		38	1015681	RESOLVER, 1X-CDU
	1	1	1		37	1015512	CLAMP SCREW
	-	-	1		36	1016890	RESOLVER, 1/2X-CDU
	-	-	1		35	1015672	RESOLVER, 1/4X-CDU
	3	3	3		34	1015548	SPACER, SLEW SWITCH
	-	1	1		33	1015547	TOGGLE, SWITCH
	1	1	1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
	~~3~~	3	3		31	1015663	SET SCREW
	1	1	1		30	1015538-2	CLAMP, MOTOR MODIFIED
	12	12	12		29	1015543	SET SCREW
	4	4	4		28	1015542	CLAMP, SYNCHRO
	1	1	1		27	1015541	CLAMP, SYNCHRO MODIFIED
	1	1	1		26	1015540	CLAMP, SYNCHRO MODIFIED
	3	3	3		25	1015539	CLAMP, MOTOR
	1	1	1		24	1015538-1	CLAMP, MOTOR MODIFIED
	~~1~~	1	1		23	1015537	FLYWHEEL
	1	1	1		22	1015536	GEAR, SPUR
	1	1	1		21	1015535	DIAL, 1 SPEED
	1	1	1		20	1015534	DIAL, 36 SPEED
	1	1	1		19	1015533	DIAL, 1800 SPEED
	4	4	4		18	1015532	CLAMP, GEAR
	1	1	1		17	1015531	GEAR, SYNCHRO
	1	1	1		16	1015530	GEAR, SYNCHRO
	2	2	2		15	1015529	GEAR, SYNCHRO
	1	1	1		14	1015528	GEAR, CLUSTER, SPUR
	1	1	1		13	1015527	GEAR, CLUSTER, SPUR
SEE NOTE 18	1	1	1		12	1015526	GEAR, CLUSTER, SPUR
	1	1	1		11	1015525	GEAR, CLUSTER, SPUR
	1	1	1		10	1015524	GEAR, CLUSTER, SPUR
	1	1	1		9	1015523	GEAR, CLUSTER, SPUR
	1	1	1		8	1015522	GEAR, SPUR
	1	1	1		7	1015521	ADJUSTMENT, WHEEL
	1	1	1		6	1015520	GEAR, CLUSTER, SPUR
	1	1	1		5	1015517-011	PILOT SHAFT ASSY (INSEP)
	-	1	1		4	1016894	TERMINAL BOARD ASSY (INSEP)
	-	-	1		3	1015668	BRACKET, CONNECTOR
	~~1~~	-	1		2	1015666-011	WEDGE LIGHTING ASSY
	~~1~~	-	1		1	1015665-011	HOUSING AND CLAMP ASSY
	QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS	

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1016903-031	1016903-031	-031
1016903-021	1016903-021	-021
1016903-011	1016903-011	-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN R. FOX DATE 2 JUL 63
CHECKED ED FOSTER 5 JUL 63
EO APPROVAL MEIDENBAUER 5 JUL 63
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

CDU ASSEMBLY

CODE IDENT NO. 80230
SIZE J
1015500
SCALE 2:1
SHEET 1 of 1

2-/-1015500

NOTES:

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3. SERIALIZE PER ND 1002023.
4.
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6.
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15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "G-G")
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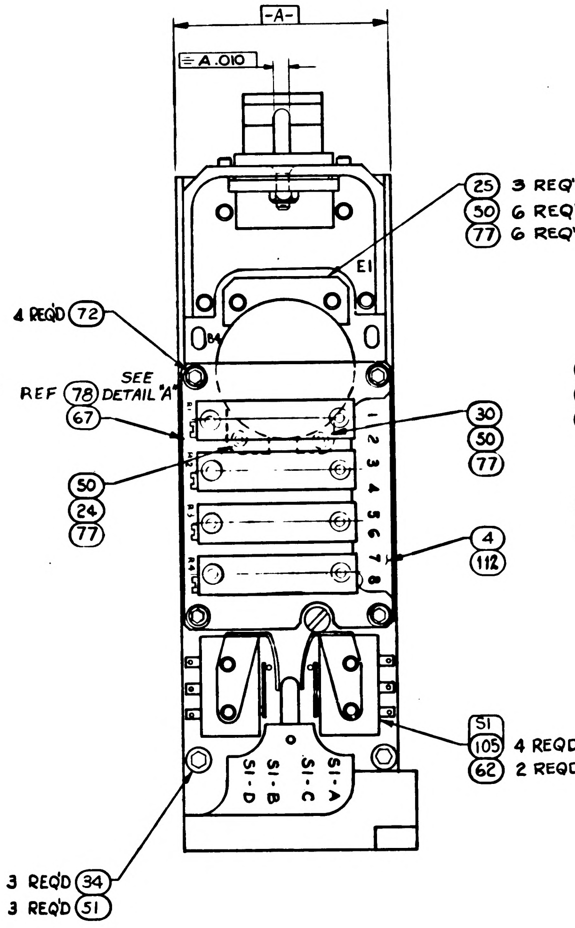
19. VENDOR ITEM - SEE SOURCE CONTROL DRAWING.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77 6 REQ'D
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SEE DETAIL "A"
REF 78
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S1-A
S1-C
S1-B
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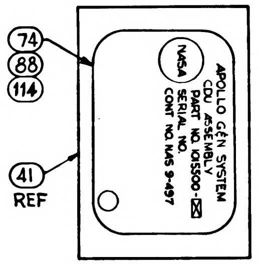
3 REQD 51

(COVER REMOVED AND WIRE HARNESS NOT SHOWN)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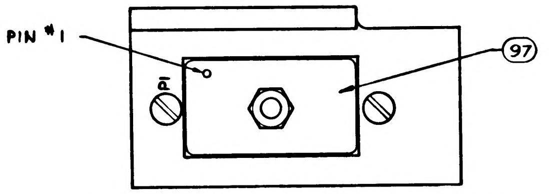
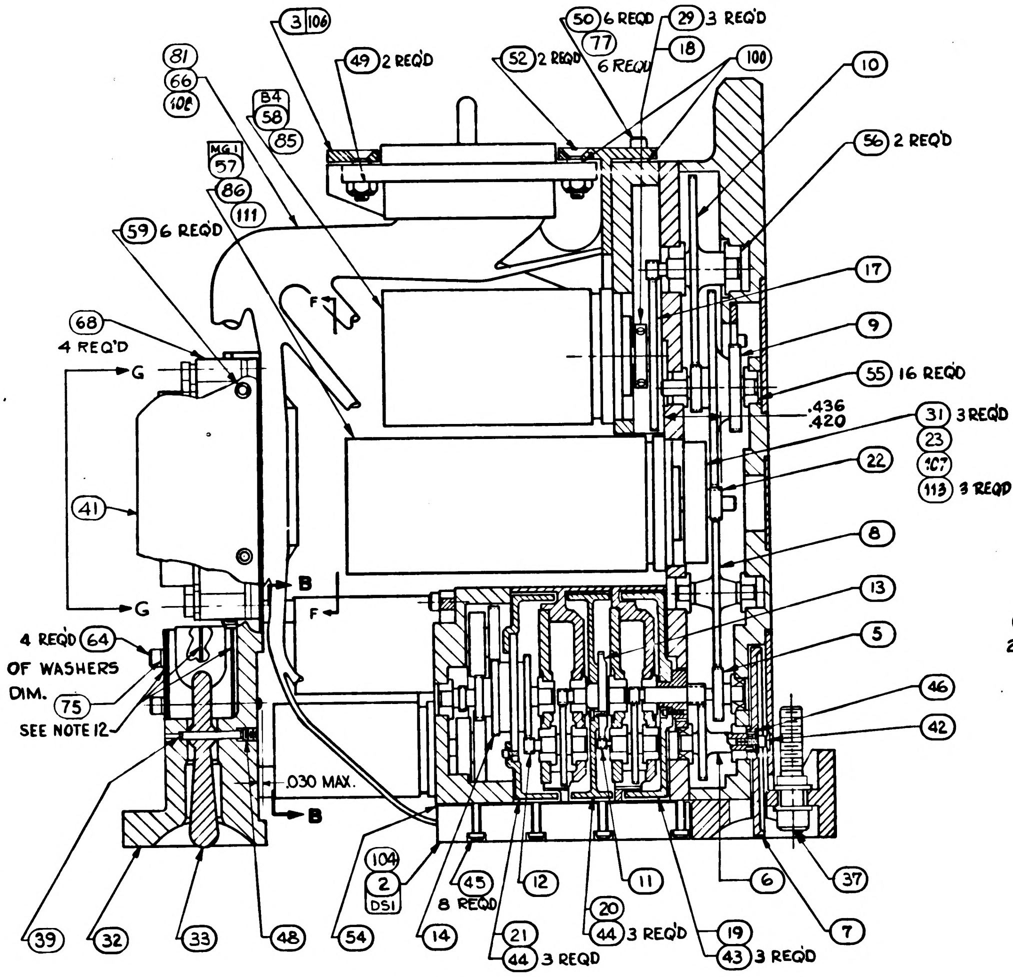
NASA
APOLLO GEN SYSTEM
CDU ASSEMBLY
PART NO. 1015500-☒
SERIAL NO.
CONT NO. NAS 9-497

VIEW G-G



USE MINIMUM NUMBER OF WASHERS TO ACQUIRE .030 MAX DIM.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MG1
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4 REQD 64
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SEE NOTE 12
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.030 MAX.
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8 REQD
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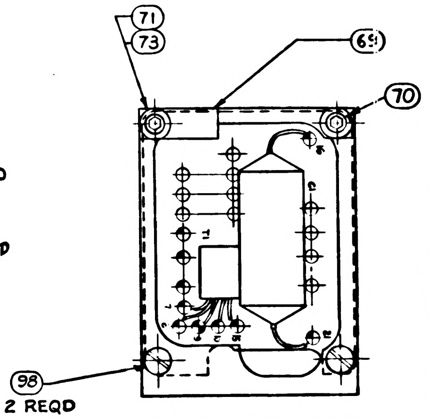
SECTION A-A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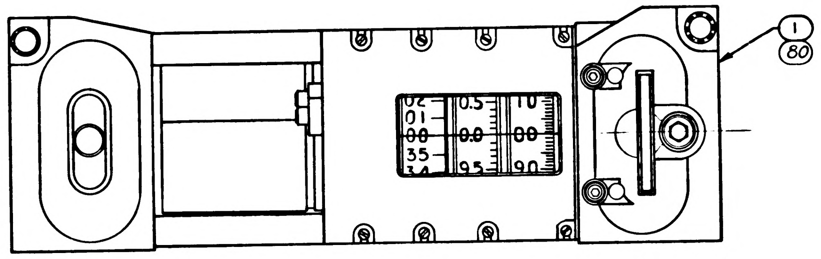
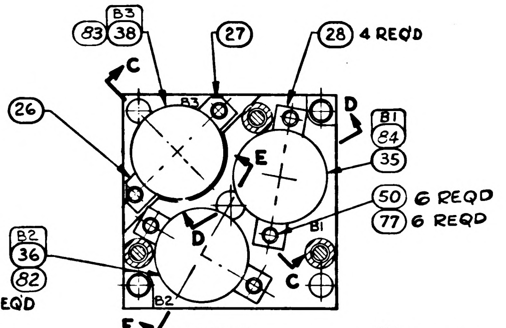
2 REQD

PARTIAL SECTION F-F

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83 38
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B3
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B2
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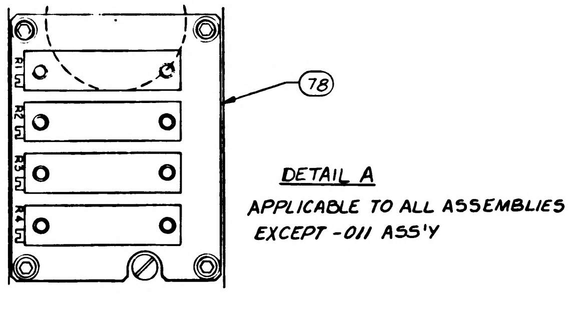
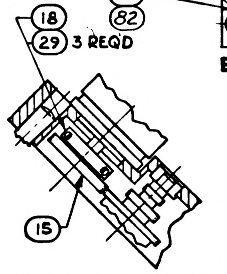
E

PARTIAL SECTION B-B


78
R1
R2
R3
R4

DETAIL A

APPLICABLE TO ALL ASSEMBLIES EXCEPT -011 ASS'Y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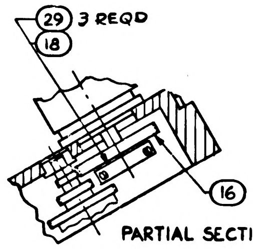
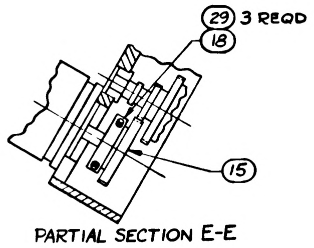
15

PARTIAL SECTION C-C


29 3 REQD
18
16

PARTIAL SECTION D-D


29 3 REQD
18
15

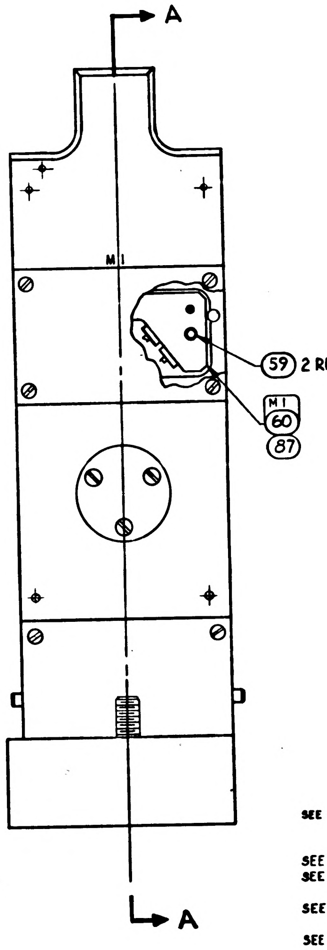
PARTIAL SECTION E-E

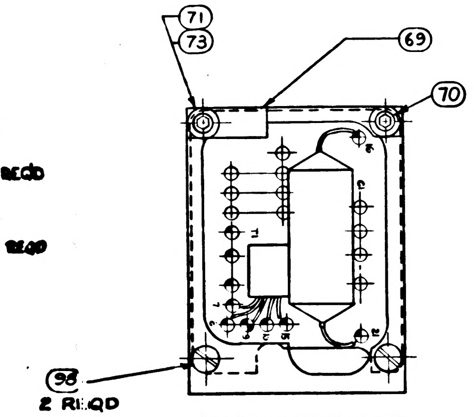
1015500 REV LTR Y SH 1 OF 1

1/1015500

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APP'D
R		REDRAWN WITH CHANGE PER TDRR 16307	2-9-65	29 JAN 65	HTO
S		REVISED PER TDRR 16868 ADDED CUSTOMER DATA (2-65)		4 MAR 65	
T		REVISED PER TDRR 16870		8 MAR 65	RJJ AC
U		REVISED PER TDRR 18161		12-APR-65	
V		REVISED PER TDRR 18981		MAY 65	
W		REVISED PER TDRR 20322		26 JUN 65	JAC
Y		REVISED PER TDRR 20999		[illegible]	
Z		REVISED PER TDRR 25577		4 FEB 66	

C1137





PARTIAL SECTION F-F

Ⓡ REPLACES REV U WITH CHANGE

				QUANTITY REQUIRED					EFFECTIVITY	LIST OF PARTS AND MATERIALS		
				051	041	031	021	011		ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
				1	—	—	—	—		119	1014650-28	NAMEPLATE (SEE NOTE 16)
				—	1	—	—	—		118	1014650-21	NAMEPLATE (SEE NOTE 16)
				2	2	—	—	—		117	1010617-2	NUT-HEX, SELF-LOCKING
				2	2	—	—	—		116	2010723	WASHER-SPECIAL
				2	2	—	—	—		115	2010722	STUD-SPECIAL
				—	—	1	-	-		114	1014650-15	NAMEPLATE (SEE NOTE 16)
				3	—	3	-	-		113	1017563	SET SCREW
				1	—	1	-	-		112	1017562-011	TERMINAL BOARD ASSY (INSEP)
				1	—	1	-	-		111	1017561-011	MOTOR TACH & PIN ASSY
				X	—	X	-	-		110	1017560	WIRING DIAGRAM
				X	—	X	-	-		109	1017559	SCHEMATIC DIAGRAM, ELECT.
				1	—	1	-	-		108	1017558	WIRING HARNESS A
				1	—	1	-	-		107	1017557	CLAMP, GEAR
				1	1	1	1	-		106	1017569	BRACKET, CONNECTOR
SEE NOTE 18				—	4	—	4	4		105	1010901-002	SWITCH, SENSITIVE
				1	1	1	1	-		104	1015666-031	WEDGE LIGHTING ASSY
				AR	AR	AR	AR	AR		103	MIL-S-22473 GRADE C	SEALING COMPOUND, RETAINING (ES2544-3)
SEE NOTE 18				AR	AR	AR	AR	-		102	1010750	CURING AGENT, POLYAMIDE
SEE NOTE 18				AR	AR	AR	AR	-		101	1010748	RESIN, EPOXY
				—	—	AR	AR	-		100	1017555	SHIM
SEE NOTE 19				AR	AR	AR	AR	-		99	1012051	GREASE SILICONE (GE-G-300)
				2	2	2	2	2		98	MS35233-6	SCREW, PAN HD.
SEE NOTE 18				—	—	1	1	-		97	1010812-3	GASKET, MOISTURE SEAL
				—	X	-	X	-		96	1017545	WIRING DIAGRAM
				—	X	-	X	-		95	1017544	SCHEMATIC DIAGRAM
				—	—	-	-	X		94	1015670	WIRING DIAGRAM
				—	—	-	-	X		93	1010036	SCHEMATIC DIAGRAM, ELECT
				X	X	X	X	X		92	1015550	SCHEMATIC DIAGRAM, MECH.
				AR	AR	AR	AR	-		91	1012505	PRIMER
SEE NOTE 18				AR	AR	AR	AR	-		90	1012504	PRIMER
SEE NOTE 18				AR	AR	AR	AR	-		89	1012503	COMPOUND, POLYURETHANE
				—	—	-	1	-		88	1014650-14	NAMEPLATE (SEE NOTE 16)
				1	1	1	1	-		87	1017546	DIGITAL CORE ASSY
				—	1	—	1	-		86	1017551-011	MOTOR-TACH & PIN ASSY
				1	1	1	1	-		85	1017550-011	RESOLVER & PIN ASSY 16X
				1	1	1	1	-		84	1017547-011	RESOLVER & PIN ASSY 1/4X
				1	1	1	1	-		83	1017549-011	RESOLVER & PIN ASSY 1X
				1	1	1	1	-		82	1017548-011	RESOLVER & PIN ASSY 1/2X
				—	1	—	1	-		81	1017541	WIRING HARNESS "A"
				1	1	1	1	-		80	1015665-021	HOUSING & CLAMP ASSY
										79		
				1	1	1	1	-		78	1017543	MOUNTING BOARD (INSEP ASSY)
				20	20	20	20	-		77	NAS1352C02-4	SCREW, CAP, SOC HD
SEE NOTE 19				AR	AR	AR	AR	AR		76	1012050	OIL, SILICONE (GE F-50)
				—	AR	—	AR	AR		75	AN960C3	WASHER-FLAT
				—	—	-	-	1		74	1014650-4	NAMEPLATE (SEE NOTE 16)
				—	1	—	1	1		73	MS15795-702	WASHER-PLAIN
				4	4	4	4	4		72	NAS1352-C02LL3	SCREW, CAP, SOC HD
SEE NOTE 18				—	1	—	1	1		71	1010468-4	SCREW, CAP, SOC HD
SEE NOTE 18				2	1	2	1	1		70	1011625-13	SCREW, CAP, SOC HD
SEE NOTE 18				—	1	—	1	1		69	1000220-7	CLAMP-CABLE
				4	4	4	4	4		68	1016896	SPACER
				—	—	-	-	1		67	1016898	MOUNTING BOARD (INSEP ASSY)
				—	—	-	-	1		66	1016897	WIRING HARNESS A
										65		
SEE NOTE 18				—	4	-	4	4		64	1010468-1	SCREW CAP, SOC HD
										63		
SEE NOTE 18				—	2	-	2	2		62	1010457-1	MICROSWITCH ACTUATOR
										61		
				—	—	-	-	1		60	1015559	DIGITAL CORE ASSY
				8	8	8	8	8		59	NAS1351C00LL2	SCREW-CAP, SOC HD
				—	—	-	-	1		58	1015673	RESOLVER, 16X-CDU
				—	—	-	-	1		57	1015674	MOTOR TACH-CDU
SEE NOTE 18				2	2	2	2	2		56	1010967-10	BALL BEARING
SEE NOTE 18				16	16	16	16	16		55	1010967-6	BALL BEARING
				1	1	1	1	1		54	1015680	GASKET, WEDGE LIGHT
										53		
				—	—	2	2	2		52	AN505DD4-6	SCREW, FLAT HD
SEE NOTE 18				3	3	3	3	3		51	1010468-2	SCREW, CAP, SOC
				—	—	-	-	20		50	NAS1352C02LL-4	SCREW, CAP, SOC
				—	—	2	2	2		49	MS20365D-440	NUT, SELF LOCKING
				—	1	-	1	1		48	NAS1081C02A2N	SCREW-SET
										47		
				1	1	1	1	1		46	1015664	WASHER, SPECIAL
				8	8	8	8	8		45	MS21269-A115	SCREW, INST, PAN HD
				6	6	6	6	6		44	MS21268-A110	SCREW, INST, FIL HD
				3	3	3	3	3		43	MS21268-A112	SCREW, INST, FIL HD
				1	1	1	1	1		42	NAS1351C00LL4	SCREW, CAP, SOC HD
				1	1	1	1	1		41	1016892	COVER, TERMINAL BOARD
										40		
				—	1	-	1	1		39	MS16555-606	PIN, STRAIGHT
				—	—	-	-	1		38	1015681	RESOLVER, 1X-CDU
				1	1	1	1	1		37	1015512	CLAMP SCREW
				—	—	-	-	1		36	1016890	RESOLVER, 1/2X-CDU
				—	—	-	-	1		35	1015672	RESOLVER, 1/4X-CDU
				3	3	3	3	3		34	1015548	SPACER, SLEW SWITCH
				—	1	-	1	1		33	1015547	TOGGLE, SWITCH
				1	1	1	1	1		32	1015683	BRACKET, SLEWING SW (INSEP ASSY)
				—	3	~~3~~	3	3		31	1015663	SET SCREW
				1	1	1	1	1		30	1015538-2	CLAMP, MOTOR MODIFIED
				12	12	12	12	12		29	1015543	SET SCREW
				4	4	4	4	4		28	1015542	CLAMP, SYNCHRO
				1	1	1	1	1		27	1015541	CLAMP, SYNCHRO MODIFIED
				1	1	1	1	1		26	1015540	CLAMP, SYNCHRO MODIFIED
				3	3	3	3	3		25	1015539	CLAMP, MOTOR
				1	1	1	1	1		24	1015538-1	CLAMP, MOTOR MODIFIED
				—	1	~~1~~	1	1		23	1015537	FLYWHEEL
				1	1	1	1	1		22	1015536	GEAR, SPUR
				1	1	1	1	1		21	1015535	DIAL, 1 SPEED
				1	1	1	1	1		20	1015534	DIAL, 36 SPEED
				1	1	1	1	1		19	1015533	DIAL, 1800 SPEED
				4	4	4	4	4		18	1015532	CLAMP, GEAR
				1	1	1	1	1		17	1015531	GEAR, SYNCHRO
				1	1	1	1	1		16	1015530	GEAR, SYNCHRO
				2	2	2	2	2		15	1015529	GEAR, SYNCHRO
				1	1	1	1	1		14	1015528	GEAR, CLUSTER, SPUR
SEE NOTE 18				1	1	1	1	1		13	1015527	GEAR, CLUSTER, SPUR
				1	1	1	1	1		12	1015526	GEAR, CLUSTER, SPUR
				1	1	1	1	1		11	1015525	GEAR, CLUSTER, SPUR
				1	1	1	1	1		10	1015524	GEAR, CLUSTER, SPUR
				1	1	1	1	1		9	1015523	GEAR, CLUSTER, SPUR
				1	1	1	1	1		8	1015522	GEAR, SPUR
				1	1	1	1	1		7	1015521	ADJUSTMENT, WHEEL
				1	1	1	1	1		6	1015520	GEAR, CLUSTER, SPUR
				1	1	1	1	1		5	1015517-011	PILOT SHAFT ASSY (INSEP)
				—	1	-	1	1		4	1016894	TERMINAL BOARD ASSY (INSEP)
				—	—	-	-	1		3	1015668	BRACKET, CONNECTOR
				—	—	~~1~~	-	1		2	1015666-011	WEDGE LIGHTING ASSY
				—	—	~~1~~	-	1		1	1015665-011	HOUSING AND CLAMP ASSY

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1021304-011	1021304-011	-051
1021304-011	1021304-011	-041
1016903-031	1016903-031	-031
1016903-021	1016903-021	-021
1016903-011	1016903-011	-011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — DECIMALS + — ANGLES + —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN R.FOX DATE 2 JUL 63
CHECKED ED FOSTER 5 JUL 63
ED. APPROVAL MEIDENBAUER 5 JUL 63
APPROVAL 2-5-65
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CDU ASSEMBLY

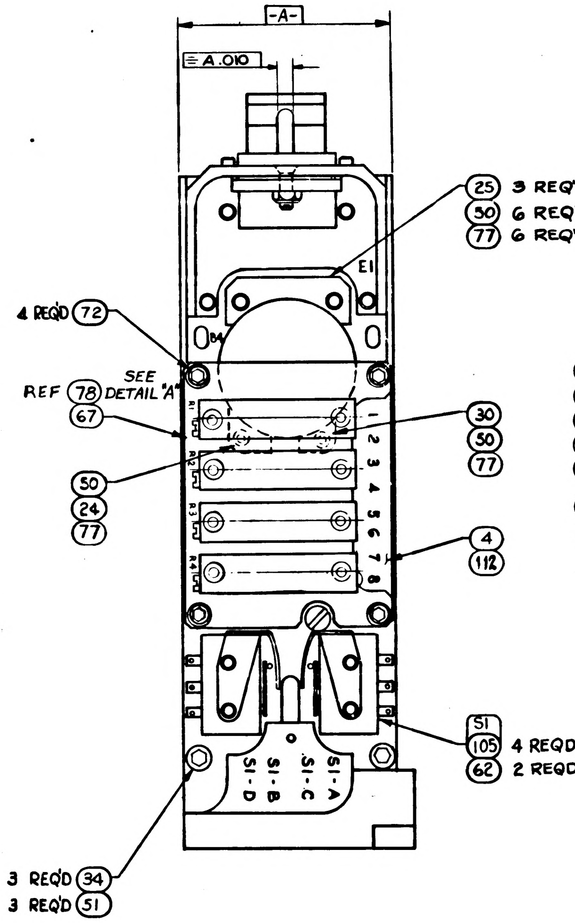
CODE IDENT NO. 80230
SIZE J
1015500
SCALE 2:1
SHEET 1 of 1

1015500 REV LTR Z SH 1 OF 1

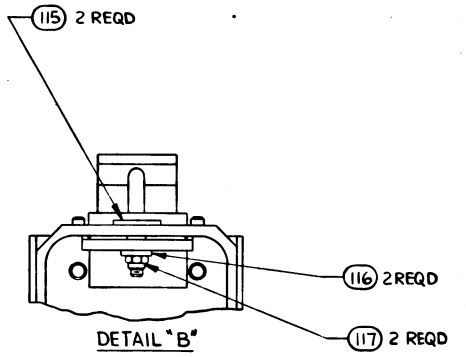
2/1015500

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ASSEMBLE AND TEST PER ATP 1015500.
3. SERIALIZE PER ND 1002023.
4.
5. DELIVERABLE END ITEMS MUST MEET THE REQUIREMENTS OF PS-1015500.
6.
7.
8.
9.
10. ALL SCREWS WHICH ARE NOT SECURED BY LOCKING DEVICES SHALL BE SECURED PER ND 1002211 USING ITEM 103.
11. BEARINGS TO BE FITTED TO HOUSINGS AND SHAFTS FROM .0000 TO .0001 LOOSE
12. ISOLATE MICROSWITCHES WITH INSULATORS PROVIDED WITH MICROSWITCH ACTUATORS.
13.
14.
15.
16. ITEM 74 TO BE APPROXIMATELY CENTERED ON ITEM 41 (SEE VIEW "G-G")
17. EACH GEAR SHALL BE LUBRICATED WITH ITEM 76 PER ATP 1015500
18. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
19. VENDOR ITEM - SEE SOURCE CONTROL DRAWING.

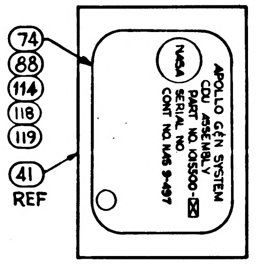

-A-
A .010
E1
25 3 REQ'D
50 6 REQ'D
77 6 REQ'D
4 REQ'D 72
SEE DETAIL "A"
REF 78
67
30
50
77
50
24
77
4
112
51
105 4 REQD
62 2 REQD
S1-A
S1-C
S1-B
S1-D
3 REQ'D 34
3 REQ'D 51

(COVER REMOVED AND WIRE HARNESS NOT SHOWN)

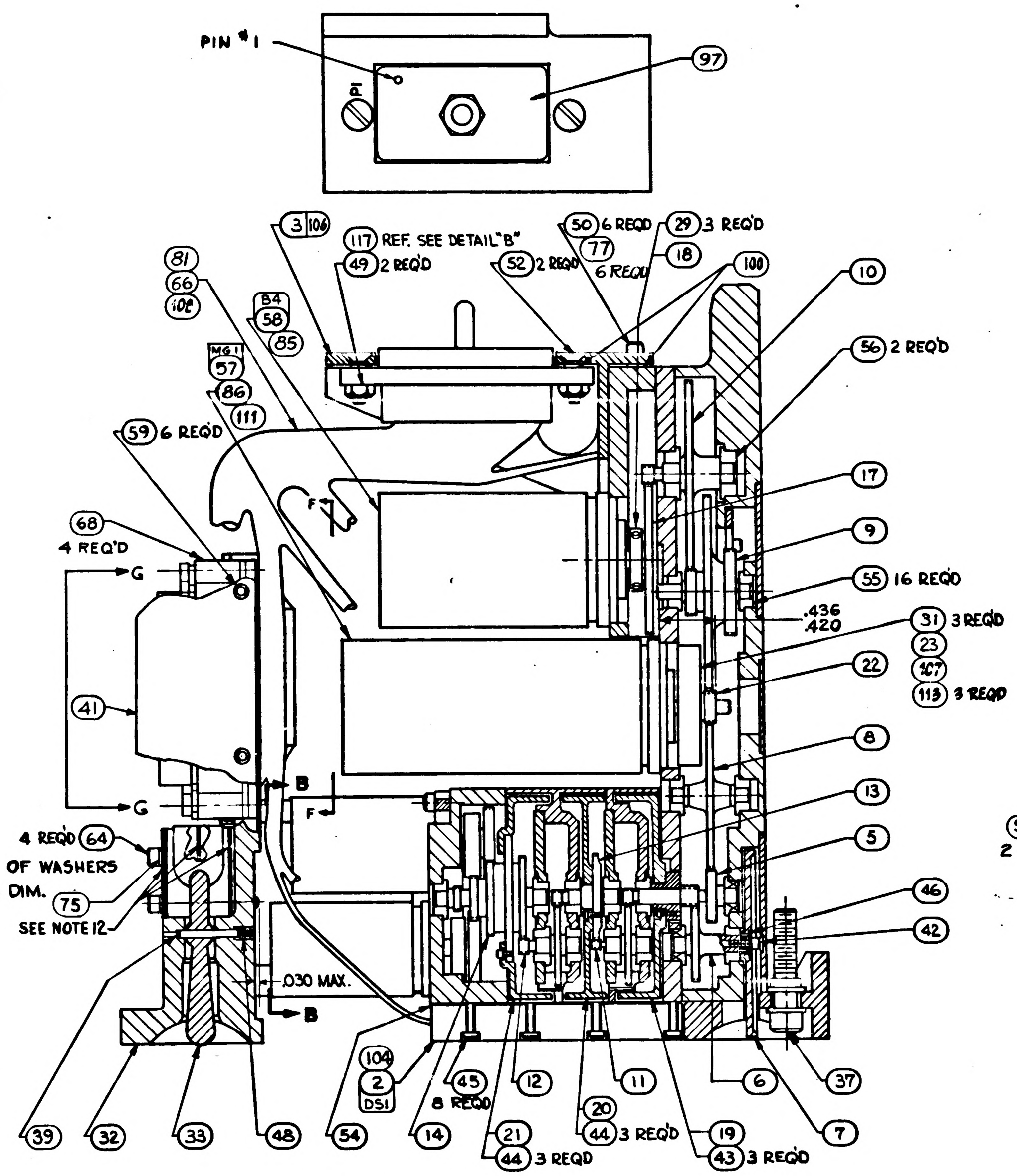

115 2 REQD
116 2 REQD
117 2 REQD

DETAIL "B"

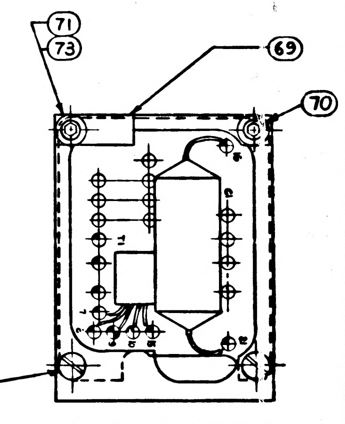
APPLICABLE TO -041 & -051 ASSEMBLIES ONLY


74
88
114
118
119
41
REF
APOLLO G&N SYSTEM
CDU ASSEMBLY
PART NO. 1015500-
SERIAL NO.
CONT NO. NAS 9-497
NASA

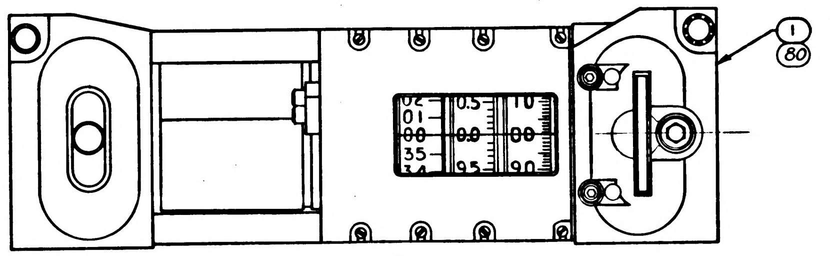
VIEW G-G

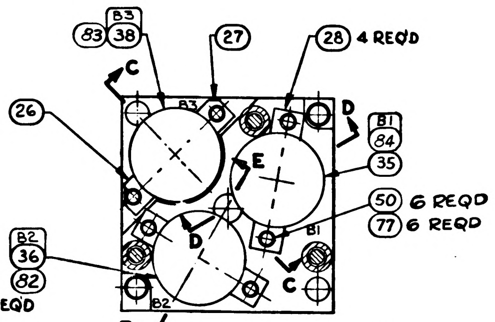

PIN #1
97
3 106
117 REF. SEE DETAIL "B"
49 2 REQD
52 2 REQD
50 6 REQD
77
29 3 REQD
18
6 REQD
100
10
81
66
102
B4
58
85
MG1
57
86
111
56 2 REQD
59 6 REQD
68
4 REQ'D
G
F
17
9
55 16 REQD
.436
.420
31 3 REQD
23
107
113 3 REQD
22
41
B
G
F
8
13
5
4 REQD 64
USE MINIMUM NUMBER OF WASHERS TO ACQUIRE .030 MAX DIM.
75
SEE NOTE 12
46
42
.030 MAX.
B
104
2
DS1
45
8 REQD
12
11
20
6
37
39
32
33
48
54
14
21
44 3 REQD
44 3 REQD
19
43 3 REQD
7

SECTION A-A

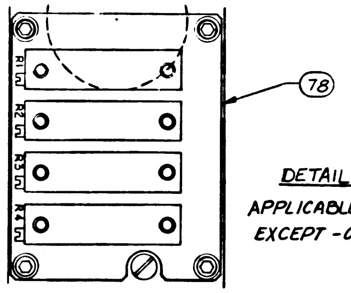

71
73
69
70
98
2 REQD

PARTIAL SECTION F-F



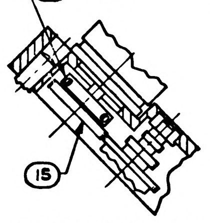

B3
83 38
27
28 4 REQD
C
D
B1
84
35
26
E
50 6 REQD
77 6 REQD
B2
36
82
D
B1
C
B2
E

PARTIAL SECTION B-B

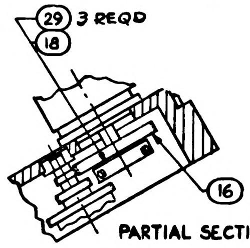

R1
R2
R3
R4
78

DETAIL A

APPLICABLE TO ALL ASSEMBLIES EXCEPT -011 ASS'Y


18
29 3 REQD
15

PARTIAL SECTION C-C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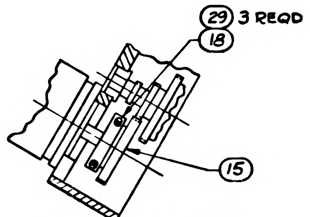
18
16

PARTIAL SECTION D-D


29 3 REQD
18
15

PARTIAL SECTION E-E

1015500 REV LTR Z SH 1 OF 1

17/1015500

APOLLO G&N Specification
PS-1015500

Class A Release
TDRR 05589

PROCUREMENT SPECIFICATION

FOR

CDU ASSEMBLY

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				MIT	NASA

This specification consists of page i to iii and 1 to 7 inclusive.

TDRR 05589
31 DEC 1963

PROCUREMENT SPECIFICATION

FOR

CDU ASSEMBLY

The purpose of this document is to establish the requirements for the procurement of the CDU Assembly for use in APOLLO Guidance and Navigation equipment.

31 Dec 63
MIT/IL DATE

12/31/63
NASA/MSC DATE

PROCUREMENT SPECIFICATION

FOR

CDU ASSEMBLY

1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the CDU Assembly, Drawing 1015500, hereafter called the assembly.

2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of this specification form a part of this specification to the extent specified herein.

SPECIFICATIONS

APOLLO G&N

ND-1002210	General Specification for Procurement of APOLLO Guidance and Navigation Assemblies and Subassemblies.
FTM-1015500	Final Test Method for CDU Assembly

DRAWINGS

APOLLO G&N

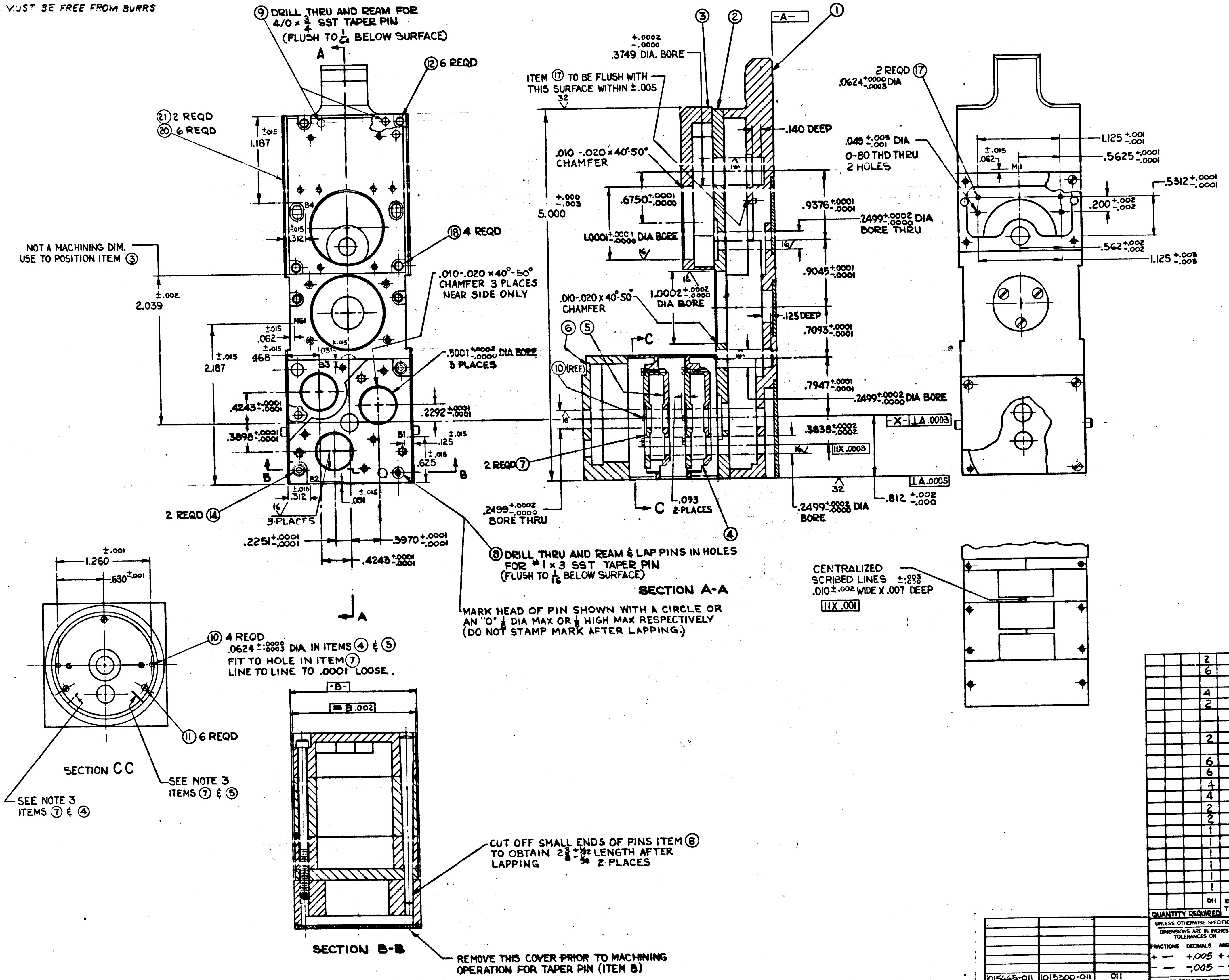
1010036	Schematic Diagram CDU (For Reference Only)
1015500	CDU Assembly

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. IDENTIFY USING DRAWING Nº AND REVISION LETTER PER MIL-STD-130 (ES-267)
3. MATCH MARK ITEM 7 WITH ITEM 5 AND ITEM 7 WITH ITEM 4 IN APPROXIMATE POSITION SHOWN PER ND 1002019, DO NOT STAMP
4. MARK .062 ±.015 HIGH CHARACTERS WHERE SHOWN USING RUBBER STAMP, STENCIL, OR SILK SCREEN AS PER ND 1002019.
5. MUST BE FREE FROM BURRS

REVISIONS TDRR 0.3?					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
F		UPGRADED FOR CLASS A RELEASE		MAY 63	J.F.
G		REVISED PER TDRR # 02644		JULY 25 1963	

Ⓜ



⑨ DRILL THRU AND REAM FOR 4/0 × 3/4 SST TAPER PIN (FLUSH TO 1/64 BELOW SURFACE)
A
⑫ 6 REQD
㉑ 2 REQD
⑳ 6 REQD
1.187 ±.015
B4
.312 ±.015
⑱ 4 REQD
NOT A MACHINING DIM. USE TO POSITION ITEM ③
2.039 ±.002
.010-.020 × 40°-50° CHAMFER 3 PLACES NEAR SIDE ONLY
.062 ±.015
.468
2.187 ±.015
B3
.5001 +.0002 -.0000 DIA BORE 3 PLACES
.4243 ±.0001
.2292 ±.0001
.3898 ±.0001
B1
.125 ±.015
.625 ±.015
B2
B
2 REQD ⑭
.312 ±.015
.031
5 PLACES
.2251 ±.0001
.3970 ±.0001
.4243 ±.0001
⑧ DRILL THRU AND REAM & LAP PINS IN HOLES FOR #1 × 3 SST TAPER PIN (FLUSH TO 1/16 BELOW SURFACE)
MARK HEAD OF PIN SHOWN WITH A CIRCLE OR AN "O" 1/8 DIA MAX OR 1/8 HIGH MAX RESPECTIVELY (DO NOT STAMP MARK AFTER LAPPING)
.3749 +.0002 -.0000 DIA. BORE
ITEM ⑰ TO BE FLUSH WITH THIS SURFACE WITHIN ±.005
③ ② -A- ①
.140 DEEP
.010-.020 × 40°-50° CHAMFER
5.000 +.000 -.003
.6750 +.0001 -.0000
.9376 +.0001 -.0001
.2499 +.0002 -.0000 DIA BORE THRU
1.0001 +.0001 -.0000 DIA BORE
.9045 +.0001 -.0001
.010-.020 × 40°-50° CHAMFER
1.0002 +.0002 -.0000 DIA BORE
.125 DEEP
.7093 +.0001 -.0001
⑥ ⑤
C
⑩ (REF)
.7947 +.0001 -.0001
.2499 +.0002 -.0000 DIA BORE
.3838 +.0002 -.0002
-X- ⊥ A .0003
|| X .0003
⊥ A .0005
2 REQD ⑦
.2499 +.0002 -.0000 BORE THRU
.093 2 PLACES
④
.2499 +.0002 -.0000 DIA BORE
.812 +.002 -.000
SECTION A-A
2 REQD ⑰
.0624 +.0000 -.0003 DIA
.049 +.003 -.001 DIA
0-80 THD THRU 2 HOLES
.062 ±.015
M1
1.125 +.001 -.001
.5625 +.0001 -.0001
.5312 +.0001 -.0001
.200 +.002 -.002
.562 +.002 -.002
1.125 +.003 -.003
CENTRALIZED SCRIBED LINES ±.003 .010 ±.002 WIDE X .007 DEEP
|| X .001
1.260 ±.001
.630 ±.001
⑩ 4 REQD .0624 +.0000 -.0003 DIA. IN ITEMS ④ & ⑤ FIT TO HOLE IN ITEM ⑦ LINE TO LINE TO .0001 LOOSE.
⑪ 6 REQD
SECTION CC
SEE NOTE 3 ITEMS ⑦ & ④
SEE NOTE 3 ITEMS ⑦ & ⑤
-B-
= B .002
CUT OFF SMALL ENDS OF PINS ITEM ⑧ TO OBTAIN 2 3/8 +1/32 -1/32 LENGTH AFTER LAPPING 2 PLACES
SECTION B-B
REMOVE THIS COVER PRIOR TO MACHINING OPERATION FOR TAPER PIN (ITEM 8)

			2		21	1015516	COVER, SYNCHRO MOUNT
			6		20	AN510C0-2	SCREW-FLAT HD
					19		
			4		18	NAS1352C02LL6	SCREW-SOC HD CAP
			2		17	MS16555-601	PIN-STRAIGHT
			2		14	1010468-3	SCREW-SOC HD CAP
			6		12	NAS1352C02LL4.	SCREW-SOC HD CAP
			6		11	MS21268-A112	SCREW-FILL HD
			4		10	MS16555-602	PIN-STRAIGHT
			4		9	MS24692-84	PIN-TAPER 4/0
			2		8	1015509	PIN-TAPER #1
			2		7	1015508	BEARING SUPPORT
			1		6	1015507	CAP-MOUNTING
			1		5	1015506	INTERNAL SUPPORT SPACER
			1		4	1015505	SUPPORT BASE
			1		3	1015504	MOUNTING PAD
			1		2	1015503	COVER
			1		1	1015662	BASE ASSEMBLY
			011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED							

1015665-011	1015500-011	011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	+.005	+ —
— —	-.005	— —

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Hendrick DATE 21-Jan 63
CHECKED E. Wilson 31 JAN 63
APPROVAL E. Scholl 31 JAN 63
APPROVAL 31 JAN 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HOUSING-MACHINING ASSEMBLY

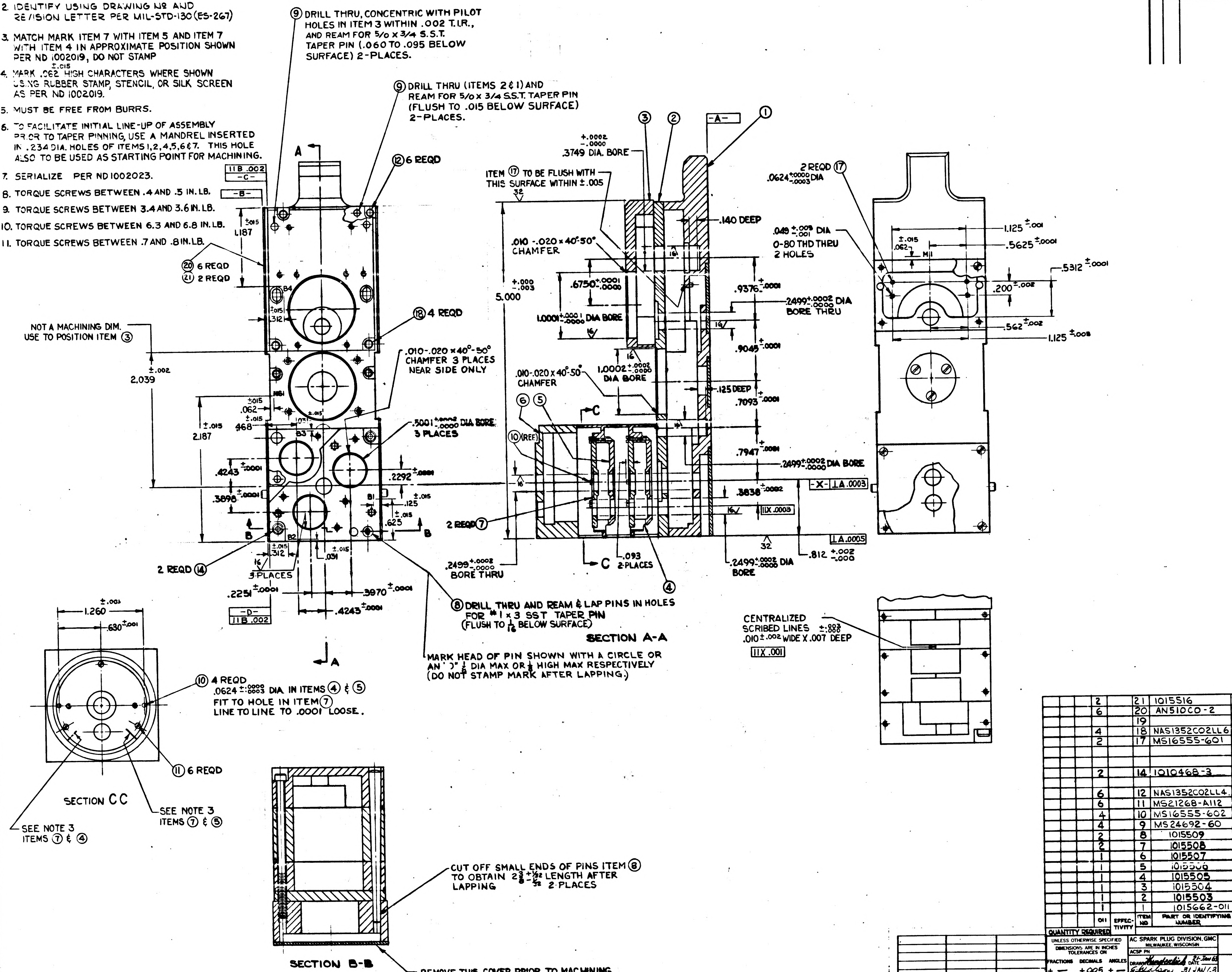
CODE IDENT NO.
SIZE E
1015501
SCALE 2:1
SHEET OF

1015501

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. IDENTIFY USING DRAWING NO AND REVISION LETTER PER MIL-STD-130 (ES-267)
3. MATCH MARK ITEM 7 WITH ITEM 5 AND ITEM 7 WITH ITEM 4 IN APPROXIMATE POSITION SHOWN PER ND 1002019, DO NOT STAMP
4. MARK $.062^{\pm.015}$ HIGH CHARACTERS WHERE SHOWN USING RUBBER STAMP, STENCIL, OR SILK SCREEN AS PER ND 1002019.
5. MUST BE FREE FROM BURRS.
6. TO FACILITATE INITIAL LINE-UP OF ASSEMBLY PRIOR TO TAPER PINNING, USE A MANDREL INSERTED IN .234 DIA. HOLES OF ITEMS 1,2,4,5,6 & 7. THIS HOLE ALSO TO BE USED AS STARTING POINT FOR MACHINING.
7. SERIALIZE PER ND 1002023.
8. TORQUE SCREWS BETWEEN .4 AND .5 IN. LB.
9. TORQUE SCREWS BETWEEN 3.4 AND 3.6 IN. LB.
10. TORQUE SCREWS BETWEEN 6.3 AND 6.8 IN. LB.
11. TORQUE SCREWS BETWEEN .7 AND .8 IN. LB.


⑨ DRILL THRU, CONCENTRIC WITH PILOT HOLES IN ITEM 3 WITHIN .002 T.I.R., AND REAM FOR 5/0 x 3/4 S.S.T. TAPER PIN (.060 TO .095 BELOW SURFACE) 2-PLACES.
⑨ DRILL THRU (ITEMS 2 & 1) AND REAM FOR 5/0 x 3/4 S.S.T. TAPER PIN (FLUSH TO .015 BELOW SURFACE) 2-PLACES.
A
⑫ 6 REQD
11B .002
-C-
-B-
±.015
1.187
⑳ 6 REQD
㉑ 2 REQD
B4
±.015
.312
⑱ 4 REQD
NOT A MACHINING DIM. USE TO POSITION ITEM ③
±.002
2.039
.010-.020 x 40°-50° CHAMFER 3 PLACES NEAR SIDE ONLY
±.015
.062
±.015
.468
M61
±.015
2.187
.031
B3
.5001 +.0002 -.0000 DIA BORE 3 PLACES
.4243 ±.0001
.3898 ±.0001
.2292 ±.0001
B1
±.015
.125
±.015
.625
B
B
B2
2 REQD ⑭
±.015
.312
±.015
.031
16
3 PLACES
.2251 ±.0001
.3970 ±.0001
.4243 ±.0001
-D-
11B .002
A
⑧ DRILL THRU AND REAM & LAP PINS IN HOLES FOR #1 x 3 SST TAPER PIN (FLUSH TO 1/16 BELOW SURFACE)
MARK HEAD OF PIN SHOWN WITH A CIRCLE OR AN ")" 1/8 DIA MAX OR 1/8 HIGH MAX RESPECTIVELY (DO NOT STAMP MARK AFTER LAPPING.)
③
②
-A-
①
+.0002 -.0000 .3749 DIA. BORE
ITEM ⑰ TO BE FLUSH WITH THIS SURFACE WITHIN ±.005
32
.140 DEEP
.010 -.020 x 40°-50° CHAMFER
+.000 -.003
5.000
.6750 +.0001 -.0000
1.0001 +.0001 -.0000 DIA BORE
16
.9376 ±.0001
.2499 +.0002 -.0000 DIA BORE THRU
16
.9045 ±.0001
1.0002 +.0002 -.0000 DIA BORE
.010-.020 x 40°-50° CHAMFER
.125 DEEP
.7093 ±.0001
⑥ ⑤
C
⑩ (REF)
.7947 ±.0001
.2499 +.0002 -.0000 DIA BORE
-X- ⊥A .0003
.3838 ±.0002
16
∥X .0003
2 REQD ⑦
⊥A .0005
32
.2499 +.0002 -.0000 BORE THRU
C
.093 2-PLACES
④
.2499 +.0002 -.0000 DIA BORE
.812 +.002 -.000
SECTION A-A
2 REQD ⑰ .0624 +.0000 -.0003 DIA
.049 +.003 -.001 DIA 0-80 THD THRU 2 HOLES
±.015
.062
M11
1.125 ±.001
.5625 ±.0001
.5312 ±.0001
.200 ±.002
.562 ±.002
1.125 ±.003
CENTRALIZED SCRIBED LINES +.003 -.000 .010 ±.002 WIDE X .007 DEEP
∥X .001
±.001
1.260
.630 ±.001
⑩ 4 REQD .0624 +.0000 -.0003 DIA. IN ITEMS ④ & ⑤ FIT TO HOLE IN ITEM ⑦ LINE TO LINE TO .0001 LOOSE.
⑪ 6 REQD
SECTION CC
SEE NOTE 3 ITEMS ⑦ & ④
SEE NOTE 3 ITEMS ⑦ & ⑤
CUT OFF SMALL ENDS OF PINS ITEM ⑧ TO OBTAIN 2 3/8 +1/32 -1/32 LENGTH AFTER LAPPING 2 PLACES
SECTION B-B
REMOVE THIS COVER PRIOR TO MACHINING OPERATION FOR TAPER PIN (ITEM 8)

REVISIONS [illegible]

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
(M) F		UPGRADED FOR CLASS A RELEASE		MAY 63	A.J.F.
(M) G		REVISED PER TDRR # 02644		JULY 25 1963	[illegible]
H 11		REVISED PER TDRR NO. 03070		9-8-63	

			2		21	1015516	COVER, SYNCHRO MOUNT
			6		20	AN510C0-2	SCREW-FLAT HD (SEE NOTE 11)
					19		
			4		18	NAS1352C02LL6	SCREW-SOC HD CAP (SEE NOTE 9)
			2		17	MS16555-601	PIN-STRAIGHT
			2		14	1010468-3	SCREW-SOC HD CAP (SEE NOTE 10)
			6		12	NAS1352C02LL4	SCREW-SOC HD CAP (SEE NOTE 9)
			6		11	MS21268-A112	SCREW-FILL HD (SEE NOTE 8)
			4		10	MS16555-602	PIN-STRAIGHT
			4		9	MS24692-60	PIN-TAPER 5/0
			2		8	1015509	PIN-TAPER #1
			2		7	1015508	BEARING SUPPORT
			1		6	1015507	CAP-MOUNTING
			1		5	1015506	INTERNAL SUPPORT SPACER
			1		4	1015505	SUPPORT BASE
			1		3	1015504	MOUNTING PAD
			1		2	1015503	COVER
			1		1	1015662-011	BASE ASSEMBLY
			011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED							

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015665-011	1015500-011	011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − —
DECIMALS ±.005
ANGLES + — − —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Kunderlich DATE 21-Jan 63
CHECKED E. Wilson 31 JAN 63
APPROVAL E. Scholl 31 JAN 63
APPROVAL R.B.C. 31 JAN 63
NASA APPROVAL W. J. R. 5-22-63
MIT APPROVAL W. [illegible] 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HOUSING-MACHINING
ASSEMBLY

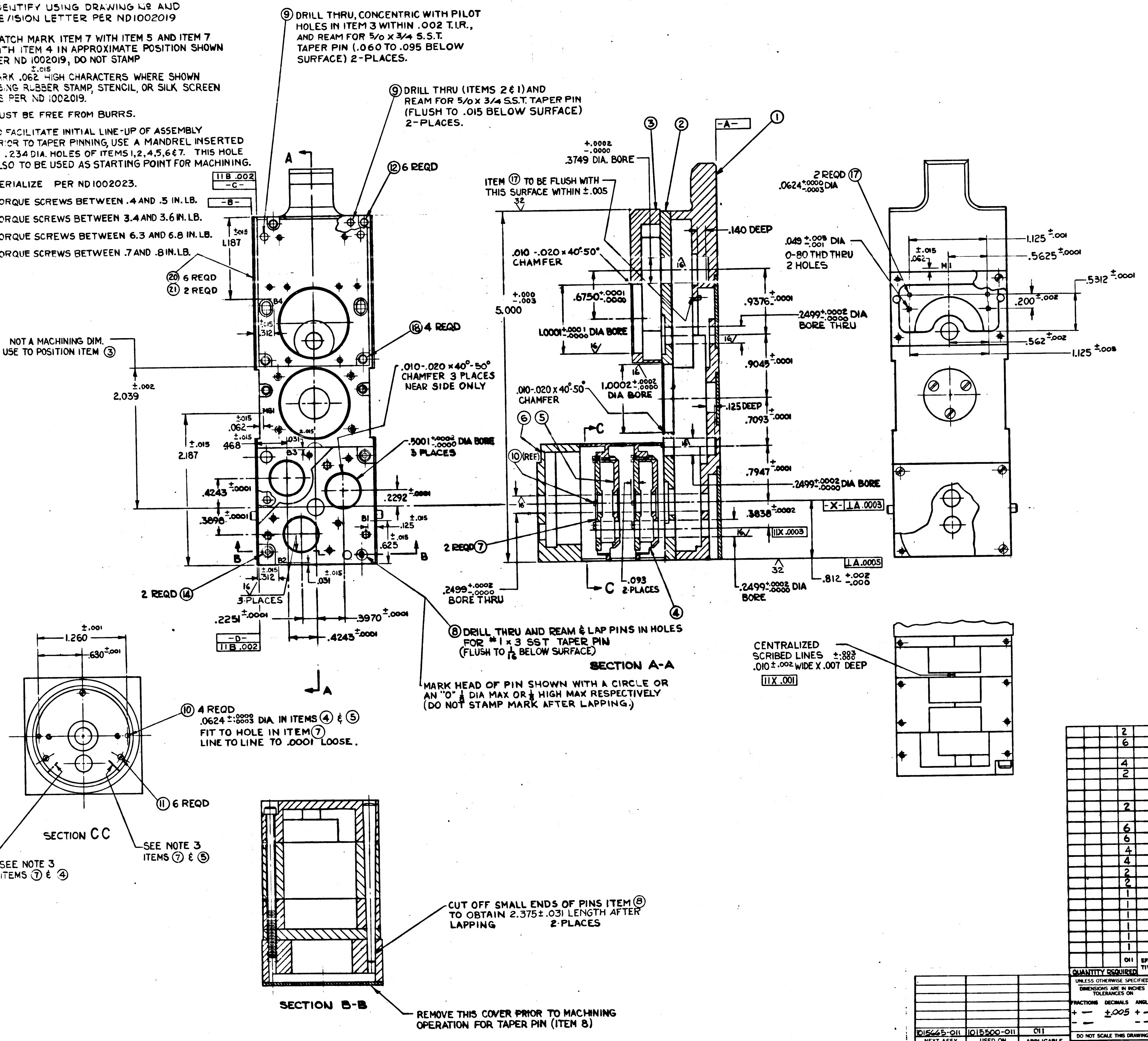
CODE IDENT NO.
SIZE E
1015501
SCALE 2:1
SHEET OF 1

1015501

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. IDENTIFY USING DRAWING № AND REVISION LETTER PER ND1002019
3. MATCH MARK ITEM 7 WITH ITEM 5 AND ITEM 7 WITH ITEM 4 IN APPROXIMATE POSITION SHOWN PER ND 1002019, DO NOT STAMP
4. MARK .062 ±.015 HIGH CHARACTERS WHERE SHOWN USING RUBBER STAMP, STENCIL, OR SILK SCREEN AS PER ND 1002019.
5. MUST BE FREE FROM BURRS.
6. TO FACILITATE INITIAL LINE-UP OF ASSEMBLY PRIOR TO TAPER PINNING, USE A MANDREL INSERTED IN .234 DIA. HOLES OF ITEMS 1,2,4,5,6 & 7. THIS HOLE ALSO TO BE USED AS STARTING POINT FOR MACHINING.
7. SERIALIZE PER ND1002023.
8. TORQUE SCREWS BETWEEN .4 AND .5 IN. LB.
9. TORQUE SCREWS BETWEEN 3.4 AND 3.6 IN. LB.
10. TORQUE SCREWS BETWEEN 6.3 AND 6.8 IN. LB.
11. TORQUE SCREWS BETWEEN .7 AND .8 IN. LB.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
F		UPGRADED FOR CLASS A RELEASE		MAY 63	
G		REVISED PER TDRR # 02644		JULY 25 1963	
H		REVISED PER TDRR NO. 03070		9/5/63	
J		REVISED PER TDRR NO. 04241		1 NOV. 63	



⑨ DRILL THRU, CONCENTRIC WITH PILOT HOLES IN ITEM 3 WITHIN .002 T.I.R., AND REAM FOR 5/0 x 3/4 S.S.T. TAPER PIN (.060 TO .095 BELOW SURFACE) 2-PLACES.
⑨ DRILL THRU (ITEMS 2 & 1) AND REAM FOR 5/0 x 3/4 S.S.T. TAPER PIN (FLUSH TO .015 BELOW SURFACE) 2-PLACES.
⑫ 6 REQD
⑱ 4 REQD
⑳ 6 REQD
㉑ 2 REQD
A
-B-
-C-
11B .002
1.187
2.039
2.187
NOT A MACHINING DIM. USE TO POSITION ITEM ③
.010-.020 x 40°-50° CHAMFER 3 PLACES NEAR SIDE ONLY
.5001 +.0002 -.0000 DIA BORE 3 PLACES
.4243
.3898
.2292
.625
.125
2 REQD ⑭
3-PLACES
.2251
.3970
.4243
-D-
11B .002
B
⑧ DRILL THRU AND REAM & LAP PINS IN HOLES FOR #1 x 3 SST TAPER PIN (FLUSH TO 1/16 BELOW SURFACE)
MARK HEAD OF PIN SHOWN WITH A CIRCLE OR AN "O" 1/8 DIA MAX OR 1/8 HIGH MAX RESPECTIVELY (DO NOT STAMP MARK AFTER LAPPING.)
SECTION A-A
ITEM ⑰ TO BE FLUSH WITH THIS SURFACE WITHIN ±.005
.3749 +.0002 -.0000 DIA. BORE
-A-
.140 DEEP
.010-.020 x 40°-50° CHAMFER
5.000 +.000 -.003
.6750 +.0001 -.0000
1.0001 +.0001 -.0000 DIA BORE
1.0002 +.0002 -.0000 DIA BORE
.9376
.9045
.125 DEEP
.7093
.7947
.2499 +.0002 -.0000 DIA BORE THRU
.2499 +.0002 -.0000 DIA BORE
.3838
-X- ⊥A .0003
11X .0003
⊥A .0005
.812 +.002 -.000
.093 2-PLACES
2 REQD ⑦
⑩ (REF)
C
2 REQD ⑰ .0624 +.0000 -.0003 DIA
.049 +.003 -.001 DIA 0-80 THD THRU 2 HOLES
1.125 ±.001
.5625 ±.0001
.5312 ±.0001
.200 ±.002
.562 ±.002
1.125 ±.003
CENTRALIZED SCRIBED LINES .010 ±.002 WIDE X .007 DEEP
11X .001
1.260 ±.001
.630 ±.001
⑩ 4 REQD .0624 +.0000 -.0003 DIA. IN ITEMS ④ & ⑤ FIT TO HOLE IN ITEM ⑦ LINE TO LINE TO .0001 LOOSE.
⑪ 6 REQD
SECTION C C
SEE NOTE 3 ITEMS ⑦ & ④
SEE NOTE 3 ITEMS ⑦ & ⑤
CUT OFF SMALL ENDS OF PINS ITEM ⑧ TO OBTAIN 2.375 ±.031 LENGTH AFTER LAPPING 2-PLACES
SECTION B-B
REMOVE THIS COVER PRIOR TO MACHINING OPERATION FOR TAPER PIN (ITEM 8)

QUANTITY REQUIRED					ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			011	EFFECTIVITY			
			2		21	1015516	COVER, SYNCHRO MOUNT
			6		20	AN510C0-2	SCREW-FLAT HD (SEE NOTE 11)
					19		
			4		18	NAS1352C02LL6	SCREW-SOC HD CAP (SEE NOTE 9)
			2		17	MS16555-601	PIN-STRAIGHT
			2		14	1010468-3	SCREW-SOC HD CAP (SEE NOTE 10)
			6		12	NAS1352C02LL4	SCREW-SOC HD CAP (SEE NOTE 9)
			6		11	MS21268-A112	SCREW-FILL HD (SEE NOTE 8)
			4		10	MS16555-602	PIN-STRAIGHT
			4		9	1017539-078	PIN-TAPER
			2		8	1015509	PIN-TAPER #1
			2		7	1015508	BEARING SUPPORT
			1		6	1015507	CAP-MOUNTING
			1		5	1015506	INTERNAL SUPPORT SPACER
			1		4	1015505	SUPPORT BASE
			1		3	1015504	MOUNTING PAD
			1		2	1015503	COVER
			1		1	1015662-011	BASE ASSEMBLY

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015665-011	1015500-011	011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — - —
DECIMALS ±.005
ANGLES + — - —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Kunderlick DATE 21-Jan 63
CHECKED E. Wilson 31 JAN 63
APPROVAL E. Scholl 31 JAN 63
APPROVAL 31 JAN 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

HOUSING-MACHINING ASSEMBLY

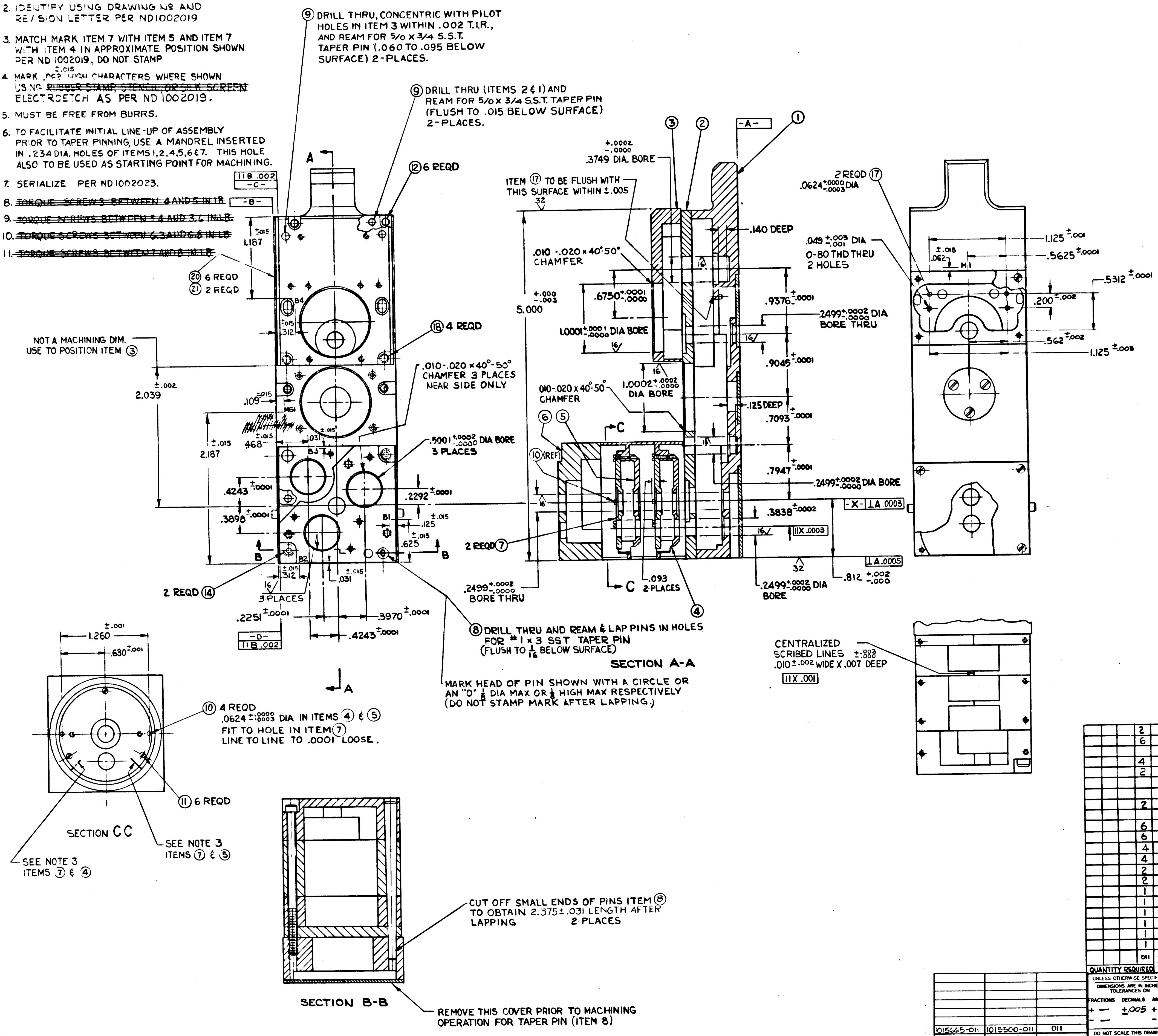
CODE IDENT NO.
SIZE E
1015501
SCALE 2:1
SHEET OF

1015501

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
F		UPGRADED FOR CLASS A RELEASE		MAY 63	
G		REVISED PER TDRR # 02644		JULY 25 1963	
H		REVISED PER TDRR NO.03070		9/18/63	
J		REVISED PER TDRR NO.04241		1 NOV. 63	
K		REVISED PER TDRR 10001		16 JUN 64	

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. IDENTIFY USING DRAWING Nº AND REVISION LETTER PER ND1002019
3. MATCH MARK ITEM 7 WITH ITEM 5 AND ITEM 7 WITH ITEM 4 IN APPROXIMATE POSITION SHOWN PER ND 1002019, DO NOT STAMP
4. MARK .062 ±.015 HIGH CHARACTERS WHERE SHOWN USING ~~RUBBER STAMP, STENCIL, OR SILK SCREEN~~ ELECTROETCH AS PER ND 1002019.
5. MUST BE FREE FROM BURRS.
6. TO FACILITATE INITIAL LINE-UP OF ASSEMBLY PRIOR TO TAPER PINNING, USE A MANDREL INSERTED IN .234 DIA. HOLES OF ITEMS 1,2,4,5,6 & 7. THIS HOLE ALSO TO BE USED AS STARTING POINT FOR MACHINING.
7. SERIALIZE PER ND1002023.
8. ~~TORQUE SCREWS BETWEEN 4 AND 5 IN.LB.~~
9. ~~TORQUE SCREWS BETWEEN 3.4 AND 3.6 IN.LB.~~
10. ~~TORQUE SCREWS BETWEEN 6.3 AND 6.8 IN.LB.~~
11. ~~TORQUE SCREWS BETWEEN 7 AND 8 IN.LB.~~



⑨ DRILL THRU, CONCENTRIC WITH PILOT HOLES IN ITEM 3 WITHIN .002 T.I.R., AND REAM FOR 5/0 x 3/4 S.S.T. TAPER PIN (.060 TO .095 BELOW SURFACE) 2-PLACES.
⑨ DRILL THRU (ITEMS 2 & 1) AND REAM FOR 5/0 x 3/4 S.S.T. TAPER PIN (FLUSH TO .015 BELOW SURFACE) 2-PLACES.
A
11B .002
-C-
-B-
⑫ 6 REQD
1.187 ±.015
⑳ 6 REQD
㉑ 2 REQD
B4
.312 ±.015
⑱ 4 REQD
NOT A MACHINING DIM. USE TO POSITION ITEM ③
2.039 ±.002
.109 ±.015
MG1
.010-.020 x 40°-50° CHAMFER 3 PLACES NEAR SIDE ONLY
2.187 ±.015
.468 ±.015
.031
B3
.5001 +.0002 -.0000 DIA BORE 3 PLACES
.4243 ±.0001
.2292 ±.0001
.3898 ±.0001
B1
.125 ±.015
.625 ±.015
B
B2
B
2 REQD ⑭
.312 ±.015
16
3 PLACES
.031 ±.015
.2251 ±.0001
.3970 ±.0001
.4243 ±.0001
-D-
11B .002
A
⑧ DRILL THRU AND REAM & LAP PINS IN HOLES FOR #1 x 3 SST TAPER PIN (FLUSH TO 1/16 BELOW SURFACE)
MARK HEAD OF PIN SHOWN WITH A CIRCLE OR AN "O" 1/8 DIA MAX OR 1/8 HIGH MAX RESPECTIVELY (DO NOT STAMP MARK AFTER LAPPING.)
③
②
-A-
①
.3749 +.0002 -.0000 DIA. BORE
ITEM ⑰ TO BE FLUSH WITH THIS SURFACE WITHIN ±.005
32
.010-.020 x 40°-50° CHAMFER
5.000 +.000 -.003
.6750 +.0001 -.0000
1.0001 +.0001 -.0000 DIA BORE
16
1.0002 +.0002 -.0000 DIA BORE
.010-.020 x 40°-50° CHAMFER
⑥ ⑤
C
⑩ (REF)
2 REQD ⑦
.2499 +.0002 -.0000 BORE THRU
C
.093 2 PLACES
④
.140 DEEP
.9376 ±.0001
.2499 +.0002 -.0000 DIA BORE THRU
.9045 ±.0001
.125 DEEP
.7093 ±.0001
.7947 ±.0001
.2499 +.0002 -.0000 DIA BORE
-X- ⊥A .0003
.3838 ±.0002
∥X .0003
⊥A .0005
.812 +.002 -.000
.2499 +.0002 -.0000 DIA BORE
SECTION A-A
2 REQD ⑰
.0624 +.0000 -.0003 DIA
.049 +.003 -.001 DIA 0-80 THD THRU 2 HOLES
.062 ±.015
M1
1.125 ±.001
.5625 ±.0001
.5312 ±.0001
.200 ±.002
.562 ±.002
1.125 ±.008
CENTRALIZED SCRIBED LINES .010 ±.002 WIDE X .007 +.003 -.000 DEEP
∥X .001
1.260 ±.001
.630 ±.001
⑩ 4 REQD .0624 +.0000 -.0003 DIA IN ITEMS ④ & ⑤ FIT TO HOLE IN ITEM ⑦ LINE TO LINE TO .0001 LOOSE.
⑪ 6 REQD
SECTION CC
SEE NOTE 3 ITEMS ⑦ & ⑤
SEE NOTE 3 ITEMS ⑦ & ④
CUT OFF SMALL ENDS OF PINS ITEM ⑧ TO OBTAIN 2.375 ±.031 LENGTH AFTER LAPPING 2-PLACES
SECTION B-B
REMOVE THIS COVER PRIOR TO MACHINING OPERATION FOR TAPER PIN (ITEM 8)

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			011				
			2		21	1015516	COVER, SYNCHRO MOUNT
			6		20	AN510C0-2	SCREW-FLAT HD (SEE NOTE 11)
					19		
			4		18	NAS1352C02LL6	SCREW-SOC HD CAP (SEE NOTE 9)
			2		17	MS16555-601	PIN-STRAIGHT
			2		14	1010468-3	SCREW-SOC HD CAP (SEE NOTE 10)
			6		12	NAS1352C02LL4	SCREW-SOC HD CAP (SEE NOTE 9)
			6		11	MS21268-A112	SCREW-FILL HD (SEE NOTE 8)
			4		10	MS16555-602	PIN-STRAIGHT
			4		9	1017539-078	PIN-TAPER
			2		8	1015509	PIN-TAPER #1
			2		7	1015508	BEARING SUPPORT
			1		6	1015507	CAP-MOUNTING
			1		5	1015506	INTERNAL SUPPORT SPACER
			1		4	1015505	SUPPORT BASE
			1		3	1015504	MOUNTING PAD
			1		2	1015503	COVER
			1		1	1015662-011	BASE ASSEMBLY

1015501 K

APPLICATION		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015665-011	1015500-011	011

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — — —
DECIMALS ±.005
ANGLES + — — —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Hunderlich DATE 21-Jan 63
CHECKED E. Wilson 31 JAN 63
APPROVAL E. Scholl 31 JAN 63
APPROVAL 31 JAN 63
NASA APPROVAL 5-22-63
APPROVAL 22/63

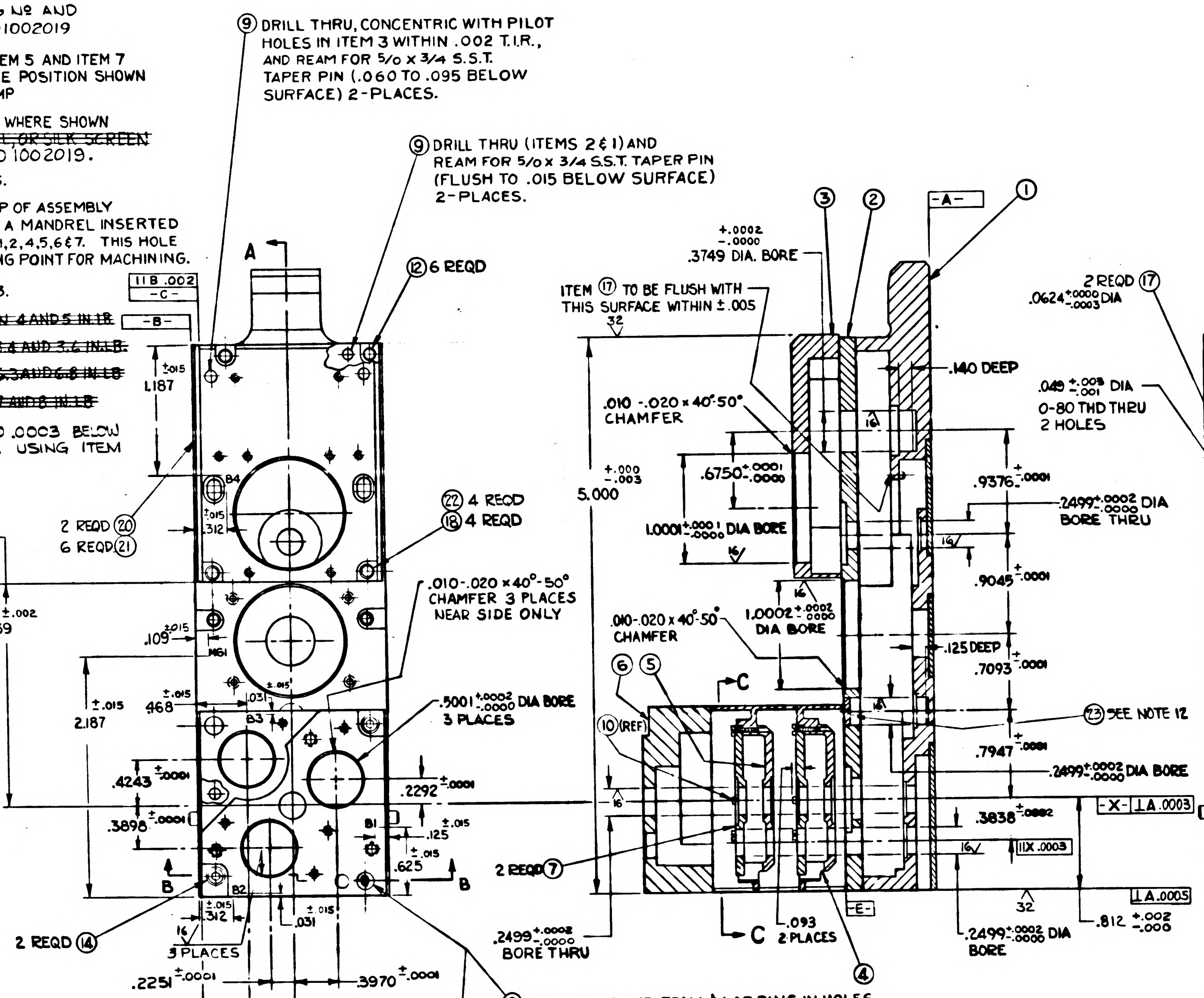
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HOUSING-MACHINING
ASSEMBLY

CODE IDENT NO.
SIZE E
1015501
SCALE 2:1
SHEET 1 OF 1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. IDENTIFY USING DRAWING Nº AND REVISION LETTER PER ND1002019
3. MATCH MARK ITEM 7 WITH ITEM 5 AND ITEM 7 WITH ITEM 4 IN APPROXIMATE POSITION SHOWN PER ND 1002019, DO NOT STAMP
4. MARK .062 ±.015 HIGH CHARACTERS WHERE SHOWN USING ~~RUBBER STAMP, STENCIL, OR SILK SCREEN~~ ELECTROETCH AS PER ND 1002019.
5. MUST BE FREE FROM BURRS.
6. TO FACILITATE INITIAL LINE-UP OF ASSEMBLY PRIOR TO TAPER PINNING, USE A MANDREL INSERTED IN .234 DIA. HOLES OF ITEMS 1,2,4,5,6 & 7. THIS HOLE ALSO TO BE USED AS STARTING POINT FOR MACHINING.
7. SERIALIZE PER ND1002023.
8. ~~TORQUE SCREWS BETWEEN 4 AND 5 IN LB~~
9. ~~TORQUE SCREWS BETWEEN 3.4 AND 3.6 IN.LB.~~
10. ~~TORQUE SCREWS BETWEEN 6.3 AND 6.8 IN LB~~
11. ~~TORQUE SCREWS BETWEEN 7 AND 8 IN LB~~
12. INSTALL ITEM 23 FLUSH TO .0003 BELOW SURFACE E OF ITEM 2 USING ITEM 24 PER ND 1002211.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
F		UPGRADED FOR CLASS A RELEASE			
G		REVISED PER TDRR # 02644		JULY 25 1963	
H		REVISED PER TDRR NO.03070		9/18/63	
J		REVISED PER TDRR NO.04241		1 NOV. 63	WK
K		REVISED PER TDRR 10001		16 JUN 64	R.W.
L		REVISED PER TDRR 14315		23 NOV 64	R.


A
11B .002
-C-
-B-
L187 ±.015
B4
.312 ±.015
2.039 ±.002
.109 ±.015
M61
2.187 ±.015
468 ±.015
.031
B3
.4243 ±.0001
.3898 ±.0001
.2292 ±.0001
B1
.125 ±.015
.625 ±.015
B
B2
.312 ±.015
16
3 PLACES
.031 ±.015
.2251 ±.0001
.3970 ±.0001
.4243 ±.0001
-D-
11B .002
③
②
-A-
①
.3749 +.0002 -.0000 DIA. BORE
32
5.000 +.000 -.003
.140 DEEP
.010 -.020 × 40°-50° CHAMFER
.6750 +.0001 -.0000
.9376 ±.0001
1.0001 +.0001 -.0000 DIA BORE
.2499 +.0002 -.0000 DIA BORE THRU
.9045 ±.0001
.010-.020 × 40°-50° CHAMFER
1.0002 +.0002 -.0000 DIA BORE
.125 DEEP
.7093 ±.0001
⑥ ⑤
C
⑩ (REF)
.7947 ±.0001
.2499 +.0002 -.0000 DIA BORE
-X- ⊥A .0003
.3838 ±.0002
11X .0003
⊥A .0005
E
.093 2 PLACES
④
.2499 +.0002 -.0000 BORE THRU
.2499 +.0002 -.0000 DIA BORE
.812 +.002 -.000

⑨ DRILL THRU, CONCENTRIC WITH PILOT HOLES IN ITEM 3 WITHIN .002 T.I.R., AND REAM FOR 5/0 x 3/4 S.S.T. TAPER PIN (.060 TO .095 BELOW SURFACE) 2-PLACES.

⑨ DRILL THRU (ITEMS 2 & 1) AND REAM FOR 5/0 x 3/4 S.S.T. TAPER PIN (FLUSH TO .015 BELOW SURFACE) 2-PLACES.

⑫ 6 REQD

ITEM ⑰ TO BE FLUSH WITH THIS SURFACE WITHIN ±.005

NOT A MACHINING DIM. USE TO POSITION ITEM ③

2 REQD ⑳
6 REQD ㉑

㉒ 4 REQD
⑱ 4 REQD

.010-.020 × 40°-50° CHAMFER 3 PLACES NEAR SIDE ONLY

.5001 +.0002 -.0000 DIA BORE 3 PLACES

㉓ SEE NOTE 12

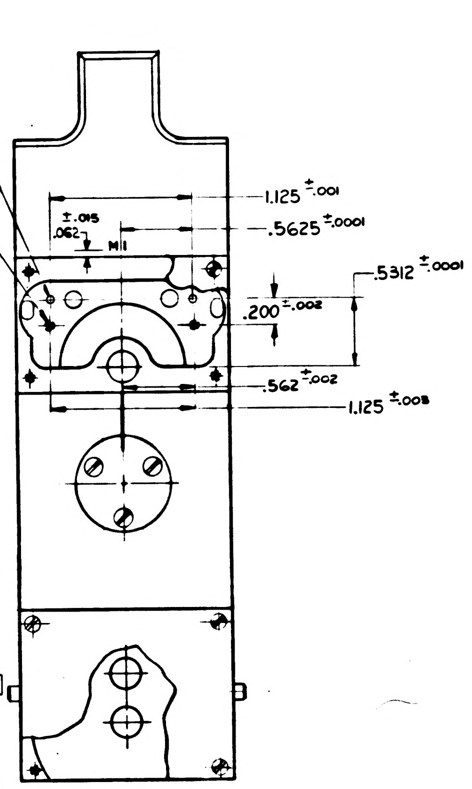
2 REQD ⑦

2 REQD ⑭

⑧ DRILL THRU AND REAM & LAP PINS IN HOLES FOR #1 x 3 SST TAPER PIN (FLUSH TO 1/16 BELOW SURFACE)

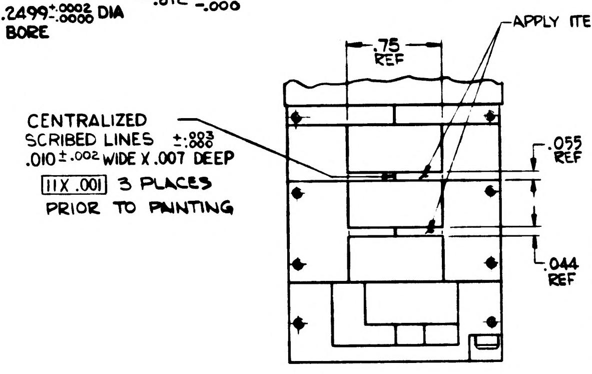
SECTION A-A

MARK HEAD OF PIN SHOWN WITH A CIRCLE OR AN "O" 1/8 DIA MAX OR 1/8 HIGH MAX RESPECTIVELY (DO NOT STAMP MARK AFTER LAPPING.)


1.125 ±.001
.062 ±.015
M11
.5625 ±.0001
.5312 ±.0001
.200 ±.002
.562 ±.002
1.125 ±.003

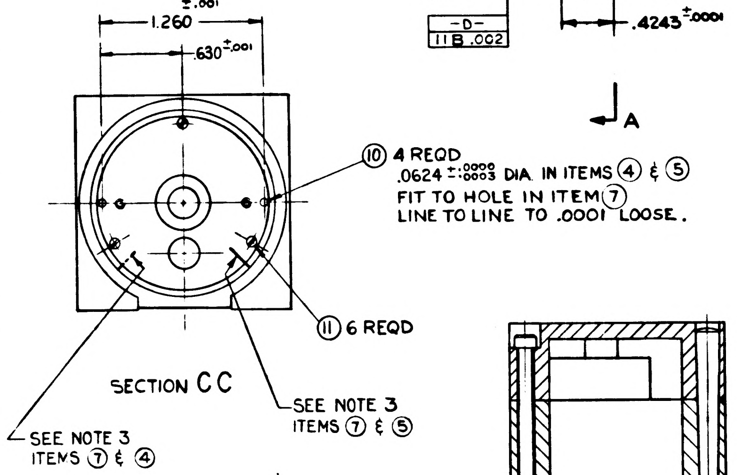
2 REQD ⑰ .0624 +.0000 -.0003 DIA

.049 +.003 -.001 DIA 0-80 THD THRU 2 HOLES


.75 REF
.055 REF
.044 REF

APPLY ITEM 25

CENTRALIZED SCRIBED LINES +.003 -.000 .010 ±.002 WIDE X .007 DEEP 11X .001 3 PLACES PRIOR TO PAINTING


1.260 ±.001
.630 ±.001

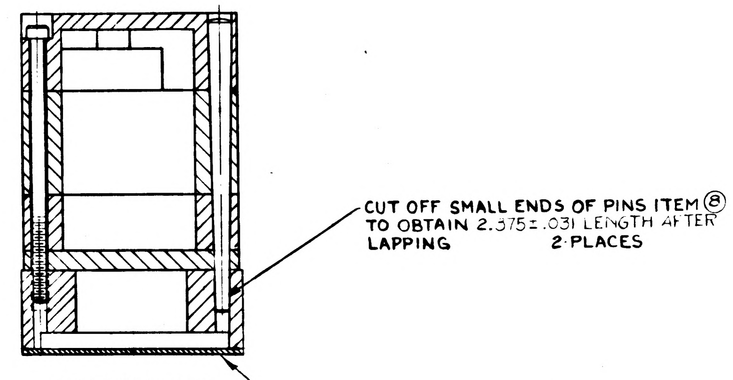
⑩ 4 REQD .0624 +.0000 -.0003 DIA. IN ITEMS ④ & ⑤ FIT TO HOLE IN ITEM ⑦ LINE TO LINE TO .0001 LOOSE.

⑪ 6 REQD

SECTION CC

SEE NOTE 3 ITEMS ⑦ & ⑤

SEE NOTE 3 ITEMS ⑦ & ④



CUT OFF SMALL ENDS OF PINS ITEM ⑧ TO OBTAIN 2.375±.031 LENGTH AFTER LAPPING 2-PLACES

SECTION B-B

REMOVE THIS COVER PRIOR TO MACHINING OPERATION FOR TAPER PIN (ITEM 8)

		021	011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		AR	-		25	1010767-4	ENAMEL, SILK SCREEN (BLACK
		AR	-		24	MIL-S-22473	SEALING COMPOUND, GRADE A
		1			23	1017554	PLUG
		4			22	NAS1352C02-6	SCREW, SOC HD CAP
		2	2		21	1015516	COVER, SYNCHRO MOUNT
		6	6		20	AN510C0-2	SCREW-FLAT HD
					19		
		-	4		18	NAS1352C02LL6	SCREW-SOC HD CAP
		2	2		17	MS16555-601	PIN-STRAIGHT
		2	2		14	1010468-3	SCREW-SOC HD CAP
		6	6		12	NAS1352C02LL4	SCREW-SOC HD CAP
		6	6		11	MS21268-A112	SCREW-FILL HD
		4	4		10	MS16555-602	PIN-STRAIGHT
		4	4		9	1017539-078	PIN-TAPER
		2	2		8	1015509	PIN-TAPER #1
		2	2		7	1015508	BEARING SUPPORT
		1	1		6	1015507	CAP-MOUNTING
		1	1		5	1015506	INTERNAL SUPPORT SPACER
		1	1		4	1015505	SUPPORT BASE
		1	1		3	1015504	MOUNTING PAD
		1	1		2	1015503	COVER
		1	1		1	1015662-011	BASE ASSEMBLY

QUANTITY REQUIRED

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015665-021	1015500-021	021
1015665-011	1015500-011	011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — — —
DECIMALS ±.005
ANGLES + — — —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Hunderlich DATE 21-Jan 63
CHECKED E. Wilson 31 JAN 63
APPROVAL E. Scholl 31 JAN 63
APPROVAL 31 JAN 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HOUSING-MACHINING ASSEMBLY

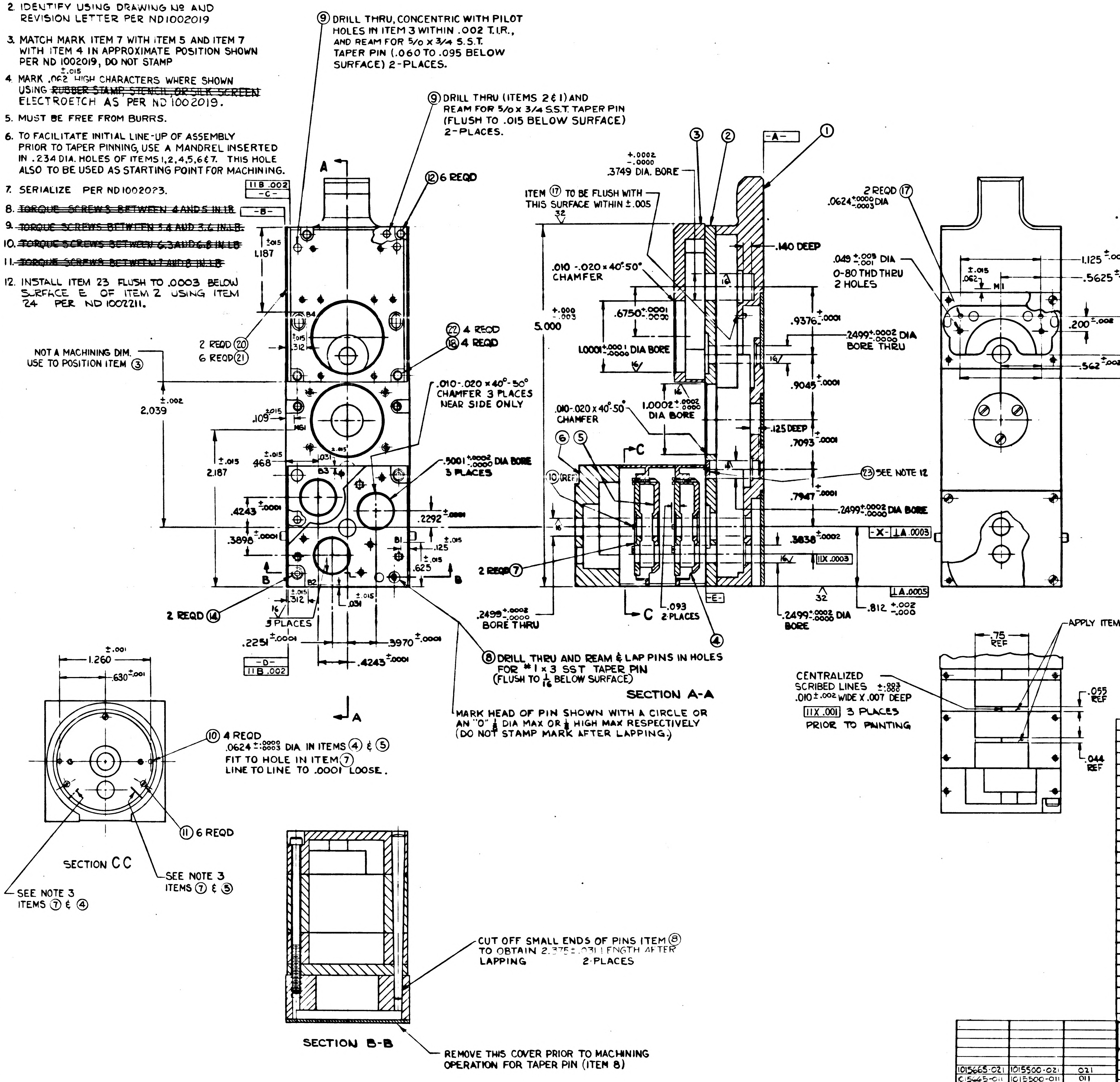
CODE IDENT NO
SIZE E
1015501
SCALE 2:1
SHEET 1 OF 1

1015501 L

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. IDENTIFY USING DRAWING № AND REVISION LETTER PER ND1002019
3. MATCH MARK ITEM 7 WITH ITEM 5 AND ITEM 7 WITH ITEM 4 IN APPROXIMATE POSITION SHOWN PER ND 1002019, DO NOT STAMP
4. MARK .062 ±.015 HIGH CHARACTERS WHERE SHOWN USING ~~RUBBER STAMP, STENCIL, OR SILK SCREEN~~ ELECTROETCH AS PER ND 1002019.
5. MUST BE FREE FROM BURRS.
6. TO FACILITATE INITIAL LINE-UP OF ASSEMBLY PRIOR TO TAPER PINNING, USE A MANDREL INSERTED IN .234 DIA. HOLES OF ITEMS 1,2,4,5,6 & 7. THIS HOLE ALSO TO BE USED AS STARTING POINT FOR MACHINING.
7. SERIALIZE PER ND1002073.
8. ~~TORQUE SCREWS BETWEEN 4 AND 5 IN.LB.~~
9. ~~TORQUE SCREWS BETWEEN 3.4 AND 3.6 IN.LB.~~
10. ~~TORQUE SCREWS BETWEEN 6.3 AND 6.8 IN.LB.~~
11. ~~TORQUE SCREWS BETWEEN 7 AND 8 IN.LB.~~
12. INSTALL ITEM 23 FLUSH TO .0003 BELOW SURFACE E OF ITEM 2 USING ITEM 24 PER ND 1002211.

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
F		UPGRADED FOR CLASS A RELEASE		MAY 63	
G		REVISED PER TDRR # 02644		JULY 25 1963	
H		REVISED PER TDRR NO.03070		9/18/63	
J		REVISED PER TDRR NO.04241		1 NOV. 63	WK
K		REVISED PER TDRR 10001		16 JUN 64	R.W.T.
L		REVISED PER TDRR 14315		23 NOV 64	
M		REVISED PER TDRR 15451		18 JAN 65	



A
A
B
B
C
C
-A-
-B-
-C-
-D-
-E-
-X-
11B .002
⊥A .0003
⊥A .0005
11X .0003
11X .001
① ② ③ ④ ⑤ ⑥
⑫ 6 REQD
2 REQD ⑳
6 REQD ㉑
㉒ 4 REQD
⑱ 4 REQD
2 REQD ⑭
2 REQD ⑦
⑩ (REF)
⑪ 6 REQD
2 REQD ⑰
㉓ SEE NOTE 12
B1
B2
B3
B4
M1
MG1
1.187 ±.015
.312 ±.015
2.039 ±.002
2.187 ±.015
.109 ±.015
.468 ±.015
.031
.4243 ±.0001
.3898 ±.0001
.2292 ±.0001
.125 ±.015
.625 ±.015
.2251 ±.0001
.3970 ±.0001
.4243 ±.0001
3 PLACES
.0624 +.0000 -.0003 DIA
.3749 +.0002 -.0000 DIA. BORE
5.000 +.000 -.003
.6750 +.0001 -.0000
1.0001 +.0001 -.0000 DIA BORE
1.0002 +.0002 -.0000 DIA BORE
.9376 +.0001
.9045 +.0001
.7093 +.0001
.7947 +.0001
.3838 ±.0002
.812 +.002 -.000
.140 DEEP
.125 DEEP
.2499 +.0002 -.0000 DIA BORE THRU
.2499 +.0002 -.0000 DIA BORE
.2499 +.0002 -.0000 BORE THRU
.5001 +.0002 -.0000 DIA BORE 3 PLACES
.093 2 PLACES
.010 - .020 × 40°-50° CHAMFER
.010-.020 × 40°-50° CHAMFER 3 PLACES NEAR SIDE ONLY
.049 +.003 -.001 DIA 0-80 THD THRU 2 HOLES
1.125 ±.001
.5625 ±.0001
.062 ±.015
.5312 ±.0001
.200 ±.002
.562 ±.002
1.125 ±.008
1.260 ±.001
.630 ±.001
.75 REF
.055 REF
.044 REF
32
16
APPLY ITEM 25
SEE NOTE 3 ITEMS ⑦ & ④
SEE NOTE 3 ITEMS ⑦ & ⑤

⑨ DRILL THRU, CONCENTRIC WITH PILOT HOLES IN ITEM 3 WITHIN .002 T.I.R., AND REAM FOR 5/0 X 3/4 S.S.T. TAPER PIN (.060 TO .095 BELOW SURFACE) 2-PLACES.

⑨ DRILL THRU (ITEMS 2 & 1) AND REAM FOR 5/0 X 3/4 S.S.T. TAPER PIN (FLUSH TO .015 BELOW SURFACE) 2-PLACES.

ITEM ⑰ TO BE FLUSH WITH THIS SURFACE WITHIN ±.005

NOT A MACHINING DIM. USE TO POSITION ITEM ③

⑧ DRILL THRU AND REAM & LAP PINS IN HOLES FOR #1 x 3 SST TAPER PIN (FLUSH TO 1/16 BELOW SURFACE)

MARK HEAD OF PIN SHOWN WITH A CIRCLE OR AN "O" 1/8 DIA MAX OR 1/8 HIGH MAX RESPECTIVELY (DO NOT STAMP MARK AFTER LAPPING.)

⑩ 4 REQD .0624 +.0000 -.0003 DIA. IN ITEMS ④ & ⑤ FIT TO HOLE IN ITEM ⑦ LINE TO LINE TO .0001 LOOSE.

CENTRALIZED SCRIBED LINES .010 ±.002 WIDE X .007 +.003 -.000 DEEP 11X .001 3 PLACES PRIOR TO PAINTING

CUT OFF SMALL ENDS OF PINS ITEM ⑧ TO OBTAIN 2.375 ±.031 LENGTH AFTER LAPPING 2-PLACES

REMOVE THIS COVER PRIOR TO MACHINING OPERATION FOR TAPER PIN (ITEM 8)

SECTION A-A

SECTION CC

SECTION B-B

		QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
		AR	-		25	1010767-4	ENAMEL, SILK SCREEN (BLACK)
		AR	-		24	MIL-S-22473	SEALING COMPOUND, GRADE AA (ES-25441D)
		1			23	1017554	PLUG
		4			22	NAS1352C02-6	SCREW, SOC HD CAP
		2	2		21	1015516	COVER SYNCHRO MOUNT
		6	6		20	AN510C0-2	SCREW-FLAT HD
					19		
		-	4		18	NAS1352C02LL6	SCREW-SOC HD CAP
		2	2		17	MS16555-601	PIN-STRAIGHT
		2	2		14	1010468-3	SCREW-SOC HD CAP
		6	6		12	NAS1352C02LL4	SCREW-SOC HD CAP
		6	6		11	MS21268-A112	SCREW-FILL HD
		4	4		10	MS16555-602	PIN-STRAIGHT
		4	4		9	1017539-078	PIN-TAPER
		2	2		8	1015509	PIN-TAPER #1
		2	2		7	1015508	BEARING SUPPORT
		1	1		6	1015507	CAP-MOUNTING
		1	1		5	1015506	INTERNAL SUPPORT SPACER
		1	1		4	1015505	SUPPORT BASE
		1	1		3	1015504	MOUNTING PAD
		1	1		2	1015503	COVER
		1	1		1	1015662-011	BASE ASSEMBLY

1015501 M

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015665-021	1015500-021	021
1015665-011	1015500-011	011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − — DECIMALS ±.005 ANGLES + — − —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Wunderlich DATE 21-Jan 63
CHECKED E. Wilson 31 JAN 63
APPROVAL E. Scholl 31 JAN 63
APPROVAL 31 JAN 63
NASA APPROVAL 5-22-63
MIT APPROVAL 5/24/63

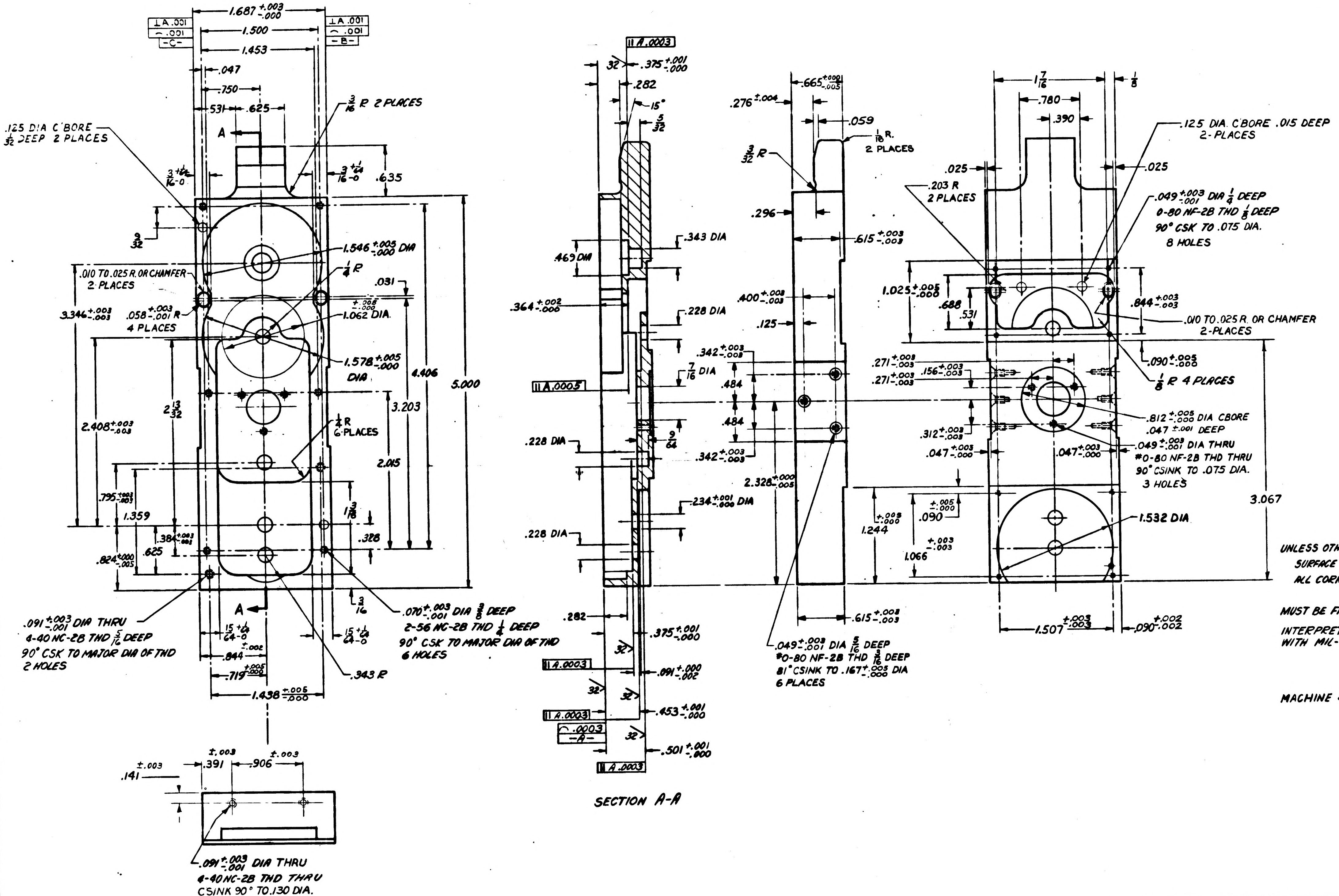
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HOUSING-MACHINING
ASSEMBLY

CODE IDENT NO
SIZE E
1015501
SCALE 2:1
SHEET 1 OF 1

1015502 G

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
G		UPGRADED FOR CLASS A RELEASE			



1.687 +.003 -.000
1.500
1.453
.047
.750
.531
.625
3/16 R 2 PLACES
.125 DIA C'BORE 1/32 DEEP 2 PLACES
.635
1.546 +.005 -.000 DIA
1/4 R
.031
.010 TO .025 R OR CHAMFER 2 PLACES
3.344 +.003 -.003
.058 +.003 -.001 R 4 PLACES
1.062 DIA
1.578 +.005 -.000 DIA
4.406
5.000
3.203
2 13/32
1/2 R 6 PLACES
2.015
2.408 +.003 -.003
.795
1.359
.384
.625
.824
.328
.091 +.003 -.001 DIA THRU 4-40 NC-2B THD 5/16 DEEP 90° CSK TO MAJOR DIA OF THD 2 HOLES
.070 +.003 -.001 DIA 3/8 DEEP 2-56 NC-2B THD 1/4 DEEP 90° CSK TO MAJOR DIA OF THD 6 HOLES
.844
.719
1.438 +.005 -.000
.343 R
.141
.391
.906
.091 +.003 -.001 DIA THRU 4-40 NC-2B THD THRU CSINK 90° TO .130 DIA. 2 PLACES
.375 +.001 -.000
.282
15°
5/32
.343 DIA
.469 DIA
.364 +.002 -.000
.228 DIA
7/16 DIA
.234 +.001 -.000 DIA
.453 +.001 -.000
.501 +.001 -.000
.091 +.000 -.002
SECTION A-A
.665 +.001 -.003
.276 +.004
.059
1/16 R. 2 PLACES
3/32 R
.296
.615 +.003 -.003
.400 +.003 -.003
.125
.342 +.003 -.003
.484
2.328 +.000 -.005
1.244
1.066
.049 +.003 -.001 DIA 5/16 DEEP #0-80 NF-2B THD 3/16 DEEP 81° CSINK TO .167 +.005 -.000 DIA 6 PLACES
1 7/16
.780
.390
1/8
.025
.203 R 2 PLACES
.125 DIA C'BORE .015 DEEP 2-PLACES
.049 +.003 -.001 DIA 1/4 DEEP 0-80 NF-2B THD 1/8 DEEP 90° CSK TO .075 DIA. 8 HOLES
1.025 +.005 -.000
.688
.531
.844 +.003 -.003
.010 TO .025 R. OR CHAMFER 2-PLACES
.090 +.005 -.000
1/8 R 4 PLACES
.271 +.003 -.003
.156 +.003 -.003
.812 +.005 -.000 DIA CBORE .047 ±.001 DEEP
.049 +.003 -.001 DIA THRU #0-80 NF-2B THD THRU 90° CSINK TO .075 DIA. 3 HOLES
.312 +.003 -.003
.047 +.003 -.000
3.067
.090 +.005 -.000
1.532 DIA
1.507 +.003 -.003
.090 +.002 -.002

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63/AA
ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.

MUST BE FREE FROM BURRS.

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327

MACHINE & HEAT TREAT PER ND1002114 (ES-2044)

1015662	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+1°
-1/64	-.005	-1°

DO NOT SCALE THIS DRAWING
MATERIAL MIL-B-21531 ES-7389 BERYLLIUM)
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN C. Ramdeck DATE 21 JAN 63
CHECKED W. Tuehl 29 JAN 63
APPROVAL E. Scholl 31 JAN 63
APPROVAL 31 JAN 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

BASE

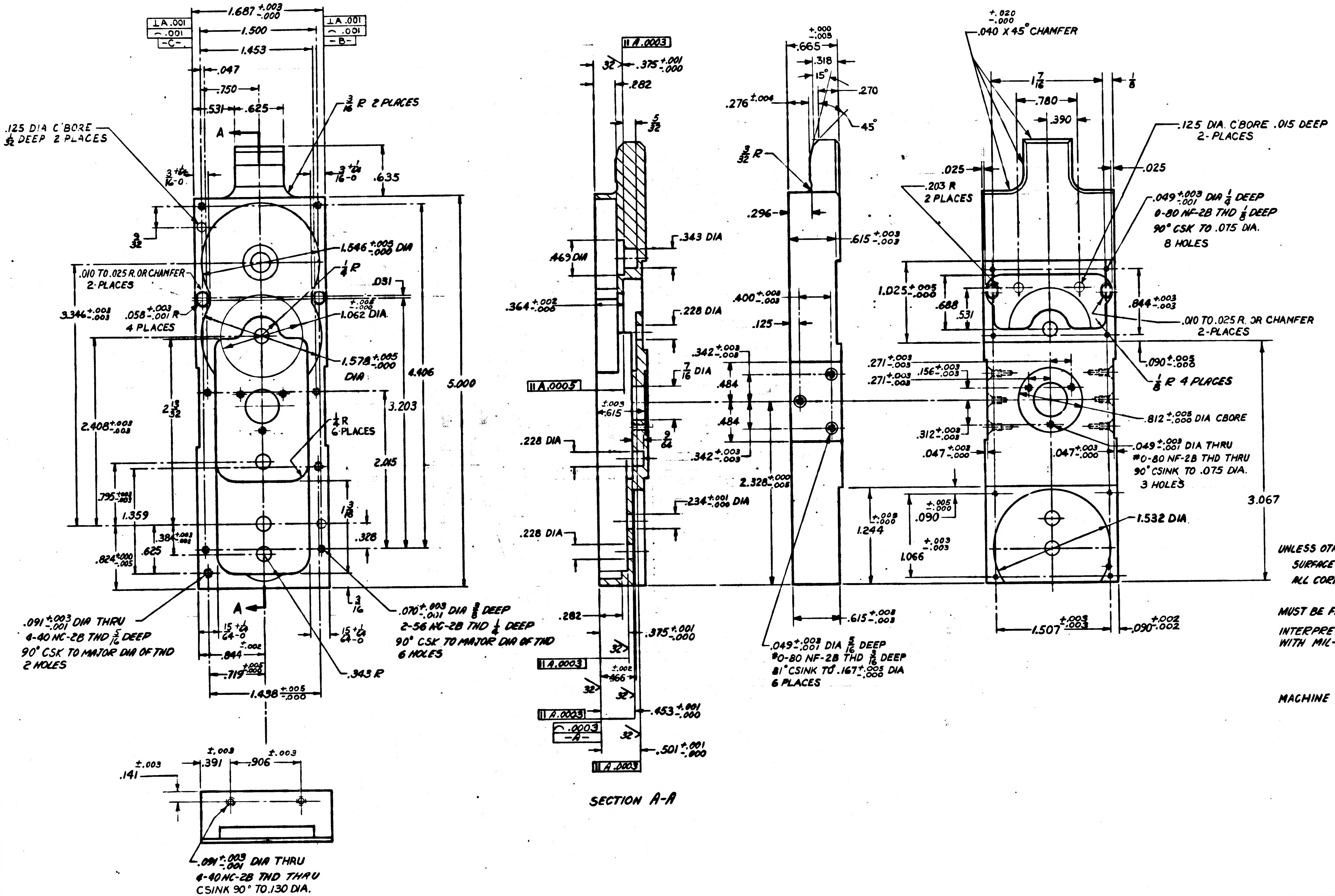
CODE IDENT NO
SIZE E
1015502
SCALE 2:1
SHEET

1015502

INCHES
PHOTOGRAPHIC SCALE ONLY

1015502	H

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
G		UPGRADED FOR CLASS A RELEASE		May 63	
H		REVISED PER TDRR # 01516		JUNE 6.1963	



1.687 +.003 -.000
1.500
1.453
.047
.750
.531
.625
A
3/16 R 2 PLACES
.125 DIA C'BORE 1/32 DEEP 2 PLACES
.635
3/32
.010 TO .025 R OR CHAMFER 2 PLACES
3.346 +.003 -.003
.058 +.003 -.001 R 4 PLACES
1.546 +.003 -.000 DIA
1/4 R
.031
1.062 DIA.
1.578 +.005 -.000 DIA
4.406
5.000
3.203
2 13/32
2.408 +.003 -.003
1/4 R 6 PLACES
2.015
.795
1.359
.384
.625
.824
.328
.091 +.003 -.001 DIA THRU 4-40 NC-2B THD 5/16 DEEP 90° CSK TO MAJOR DIA OF THD 2 HOLES
.070 +.003 -.011 DIA 3/8 DEEP 2-56 NC-2B THD 1/4 DEEP 90° CSK TO MAJOR DIA OF THD 6 HOLES
.844
.719
1.438 +.005 -.000
.343 R
.141
.391
.906
.091 +.003 -.001 DIA THRU 4-40 NC-2B THD THRU CSINK 90° TO .130 DIA. 2 PLACES
.375 +.001 -.000
.282
5/32
.469 DIA
.343 DIA
.364 +.002 -.000
.228 DIA
.615
7/16 DIA
9/64
.234 +.001 -.000 DIA
.453 +.001 -.000
.501 +.001 -.000
SECTION A-A
.665
.318
15°
.270
45°
.276 +.004
3/32 R
.296
.615 +.003 -.003
.400 +.003 -.003
.125
.342 +.003 -.003
.484
2.328 +.000 -.003
1.244
1.066
.049 +.003 -.001 DIA 5/16 DEEP #0-80 NF-2B THD 3/16 DEEP 81° CSINK TO .167 +.005 -.000 DIA 6 PLACES
.040 X 45° CHAMFER
1 7/16
.780
.390
1/8
.025
.203 R 2 PLACES
.125 DIA. C'BORE .015 DEEP 2-PLACES
.049 +.003 -.001 DIA 1/4 DEEP 0-80 NF-2B THD 1/8 DEEP 90° CSK TO .075 DIA. 8 HOLES
1.025 +.005 -.000
.688
.531
.844 +.003 -.003
.010 TO .025 R. OR CHAMFER 2-PLACES
.090 +.005 -.000
1/8 R 4 PLACES
.271 +.003 -.003
.156 +.003 -.003
.812 +.005 -.000 DIA CBORE
.312 +.003 -.003
.047 +.003 -.000
.049 +.003 -.001 DIA THRU #0-80 NF-2B THD THRU 90° CSINK TO .075 DIA. 3 HOLES
3.067
.090
1.532 DIA
1.507 +.003 -.003
.090 +.002 -.002

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED $^{63}\sqrt{AA}$
ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.

MUST BE FREE FROM BURRS.

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327

MACHINE & HEAT TREAT PER ND1002114 (ES-2044)

1015662-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+1°
-1/64	-.005	-1°

DO NOT SCALE THIS DRAWING
MATERIAL MIL-B-21531 ES-7389 BERYLLIUM)
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN C Paradock DATE 21 JAN 63
CHECKED W. Fidell 29 JAN 63
APPROVAL E. Scholl 31 JAN 63
APPROVAL 31 JAN 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

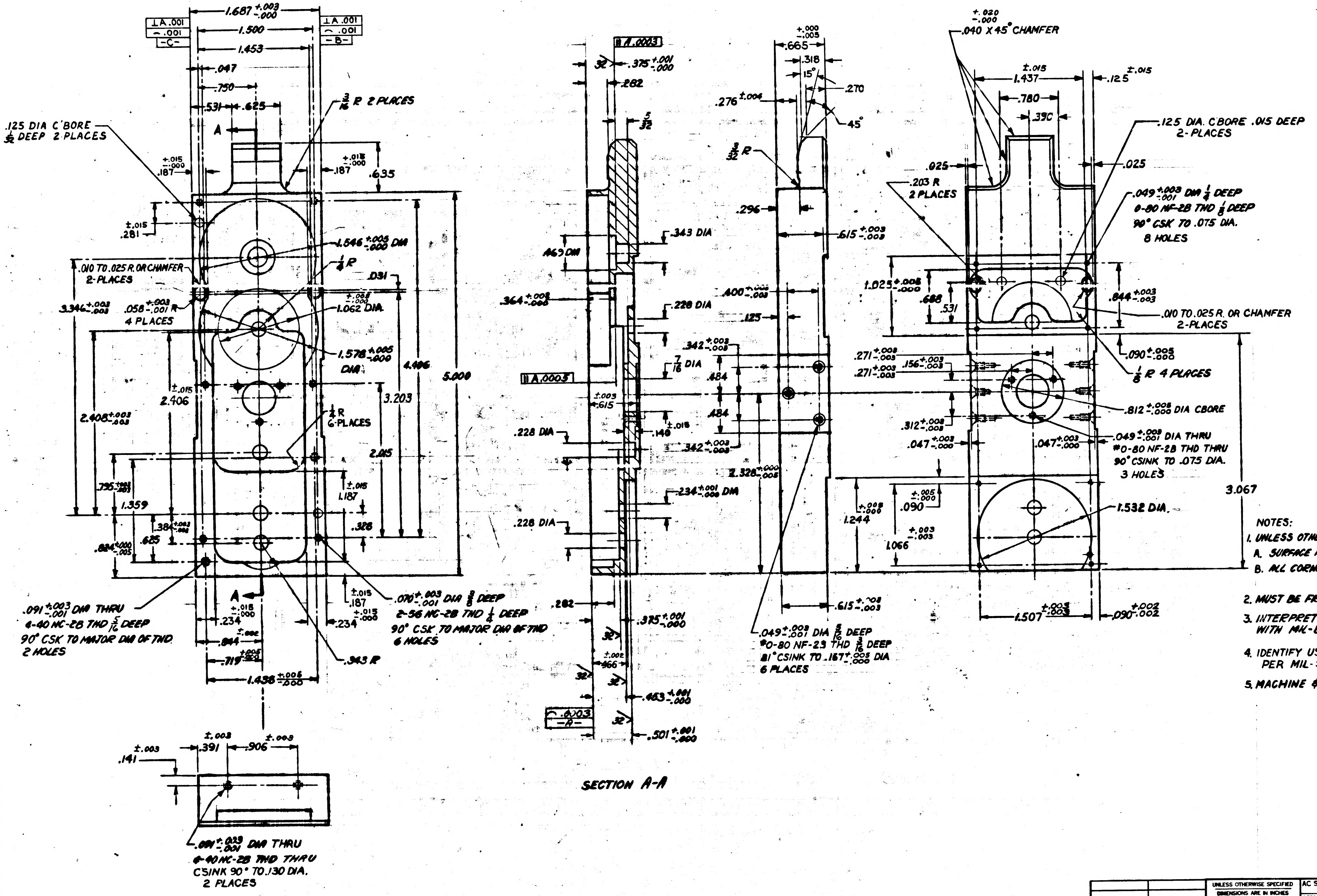
BASE

CODE IDENT NO. | SIZE E | 1015502
SCALE 2:1 | SHEET

1015502

1015502 I

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
REVISIONS TDRR 0.3.5					
G		UPGRADED FOR CLASS A RELEASE		MAY 63	BH
H		REVISED PER TDRR # 01516		JUNE 6, 1963	
J		REVISED PER TDRR # 02080		JULY 3, 1963	



⊥ A .001
⌒ .001
-C-
1.687 +.003 -.000
1.500
1.453
⊥ A .001
⌒ .001
-B-
.047
.750
.531
.625
3/16 R 2 PLACES
.125 DIA C'BORE 1/32 DEEP 2 PLACES
A
+.015 -.000 .187
+.015 -.000 .187
.635
±.015 .281
1.546 +.005 -.000 DIA
1/4 R
.010 TO .025 R. OR CHAMFER 2-PLACES
.031
+.005 -.000
3.346 +.003 -.003
.058 +.003 -.001 R 4 PLACES
1.062 DIA
1.578 +.005 -.000 DIA
4.406
5.000
±.015 2.406
3.203
2.408 +.003 -.003
1/4 R 6-PLACES
2.015
.795 +.003 -.003
±.015 1.187
1.359
.384 +.003 -.003
.328
.625
.824 +.000 -.005
.091 +.003 -.001 DIA THRU 4-40 NC-2B THD 5/16 DEEP 90° CSK TO MAJOR DIA OF THD 2 HOLES
A
+.015 -.000 .234
±.015 .187
+.015 -.000 .234
.070 +.003 -.001 DIA 3/8 DEEP 2-56 NC-2B THD 1/4 DEEP 90° CSK TO MAJOR DIA OF THD 6 HOLES
±.002 .844
.719 +.005 -.000
.343 R
1.438 +.005 -.000
±.003 .141
±.003 .391
±.003 .906
.091 +.003 -.001 DIA THRU 4-40 NC-2B THD THRU CSINK 90° TO .130 DIA. 2 PLACES
∥ A .0003
32
.375 +.001 -.000
.282
5/32
.343 DIA
.469 DIA
.364 +.003 -.000
.228 DIA
∥ A .0005
±.003 .615
.228 DIA
±.015 .140
.342 +.003 -.003
7/16 DIA
.342 +.003 -.003
.234 +.001 -.000 DIA
.228 DIA
.282
.375 +.001 -.000
32
±.002 .466
32
32
.463 +.001 -.000
⌒ .0003
-A-
32
.501 +.001 -.000
SECTION A-A
+.000 -.005 .665
.318
15°
.270
.276 ±.004
45°
3/32 R
.296
.615 +.003 -.003
.400 +.003 -.003
.125
.484
.484
2.328 +.000 -.005
+.008 -.000 1.244
.615 +.003 -.003
.049 +.003 -.001 DIA 5/16 DEEP #0-80 NF-2B THD 3/16 DEEP 81° CSINK TO .167 +.005 -.000 DIA 6 PLACES
+.020 -.000 .040 X 45° CHAMFER
±.015 1.437
±.015 .125
.780
.390
.125 DIA. CBORE .015 DEEP 2-PLACES
.025
.025
.203 R 2 PLACES
.049 +.003 -.001 DIA 1/4 DEEP 0-80 NF-2B THD 1/8 DEEP 90° CSK TO .075 DIA. 8 HOLES
1.025 +.008 -.000
.688
.531
.844 +.003 -.003
.010 TO .025 R. OR CHAMFER 2-PLACES
.090 +.005 -.000
1/8 R 4 PLACES
.271 +.003 -.003
.271 +.003 -.003
.156 +.003 -.003
.812 +.005 -.000 DIA CBORE
.312 +.003 -.003
.047 +.003 -.000
.047 +.003 -.000
.049 +.003 -.001 DIA THRU #0-80 NF-2B THD THRU 90° CSINK TO .075 DIA. 3 HOLES
3.067
+.005 -.000 .090
+.003 -.003 1.066
1.532 DIA.
1.507 +.003 -.003
.090 +.002 -.002

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   - A. SURFACE ROUGHNESS MUST NOT EXCEED $^{63}\sqrt{}$AA
   - B. ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.
2. MUST BE FREE FROM BURRS.
3. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
4. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER MIL-STD-130 (ES-267)
5. MACHINE & HEAT TREAT PER ND1002114 (ES-2044)

1015662-011	1015500-011	MATERIAL MIL-B-21531 ES-7389 BERYLLIUM)	NASA APPROVAL 5-22-63
NEXT ASSY	USED ON	CONTRACT NAS-9-497	MIT APPROVAL 22 May 63
APPLICATION			

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+1°
-1/64	-.005	-1°

DO NOT SCALE THIS DRAWING

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

DRAWN	C. Rybarczyk	DATE 21 JAN 63
CHECKED	W. Diehl	29 JAN 63
APPROVAL	E. Scholl	31 JAN 63
APPROVAL		31 JAN 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE

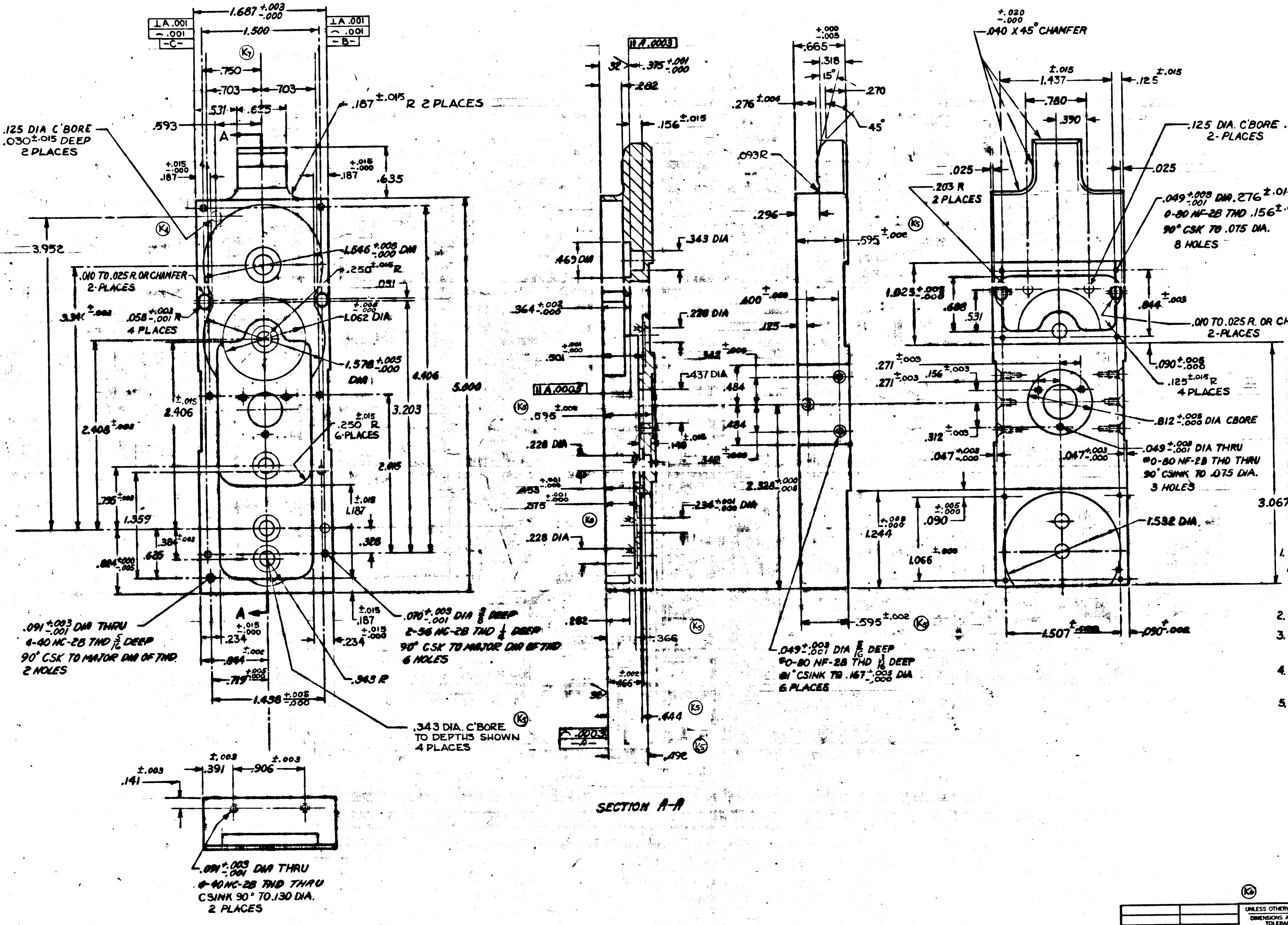
CODE IDENT NO.	SIZE	
	E	1015502
SCALE 2:1		SHEET 1 OF 1

1015502 I

INCHES
PHOTOGRAPHIC SCALE ONLY

1015502 K

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
G		UPGRADED FOR CLASS A RELEASE		5 MAY 63	BH
H		REVISED PER TDRR # 01516		JUNE 6, 1963	
J		REVISED PER TDRR # 02080		JULY 3, 1963	
K8		REVISED PER TDRR NO. 03073		10 SEPT 63	



1.687 +.003 −.000
1.500
.750
.703
.531
.625
.593
.187 ±.015 R 2 PLACES
.125 DIA C'BORE .030 ±.015 DEEP 2 PLACES
.635
3.952
.010 TO .025 R OR CHAMFER 2-PLACES
.058 +.003 −.001 R 4 PLACES
1.546 +.005 −.000 DIA
.250 +.015 R
1.062 DIA.
1.578 +.005 −.000 DIA
4.406
5.000
3.203
2.406
2.408
.250 R 6-PLACES
2.015
1.359
1.187
.328
.685
.091 +.003 −.001 DIA THRU 4-40 NC-2B THD 5/16 DEEP 90° CSK TO MAJOR DIA OF THD. 2 HOLES
.070 +.003 −.001 DIA 3/16 DEEP 2-56 NC-2B THD 1/8 DEEP 90° CSK TO MAJOR DIA OF THD 6 HOLES
.234
.844
.719
1.438 +.005 −.000
.343 R
.343 DIA. C'BORE TO DEPTHS SHOWN 4 PLACES
.141
.391
.906
.091 +.003 −.001 DIA THRU 4-40 NC-2B THD THRU CSINK 90° TO .130 DIA. 2 PLACES
A
SECTION A-A
.375 +.001 −.000
.282
.156 ±.015
.343 DIA
.469 DIA
.364 +.002 −.000
.228 DIA
.501
.437 DIA
.595
.228 DIA
.348
2.328
.234 DIA
.282
.366
.444
.492
.665
.318
15°
.270
45°
.276 ±.004
.093 R
.296
.595 +.002
.400
.125
.484
.049 +.001 −.001 DIA 5/16 DEEP #0-80 NF-2B THD 1/8 DEEP 82° CSINK TO .167 +.005 −.000 DIA 6 PLACES
1.244
1.066
.040 X 45° CHAMFER
1.437
.780
.390
.125 DIA. C'BORE .015 DEEP 2-PLACES
.025
.203 R 2 PLACES
.049 +.003 −.001 DIA .276 ±.015
0-80 NF-2B THD .156 ±.015
90° CSK TO .075 DIA.
8 HOLES
1.025
.688
.531
.844
.010 TO .025 R. OR CHAMFER 2-PLACES
.271 ±.003
.156 ±.003
.090 +.005 −.000
.125 ±.015 R 4 PLACES
.812 +.005 −.000 DIA CBORE
.312
.047
.049 +.003 −.001 DIA THRU #0-80 NF-2B THD THRU 90° CSINK TO .075 DIA. 3 HOLES
1.532 DIA.
.090
1.507
3.067

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED $^{63}\sqrt{}$AA
   B. ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.
2. MUST BE FREE FROM BURRS.
3. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
4. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER MIL-STD.-130 (ES-267)
5. MACHINE & HEAT TREAT PER ND1002114 (ES-2044)

1015862-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL MIL-B-21531 ES-7989 BERYLLIUM)
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 21 JAN 63
CHECKED W. Diehl 29 JAN 63
APPROVAL E. Scholl 31 JAN 63
APPROVAL 31 JAN 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

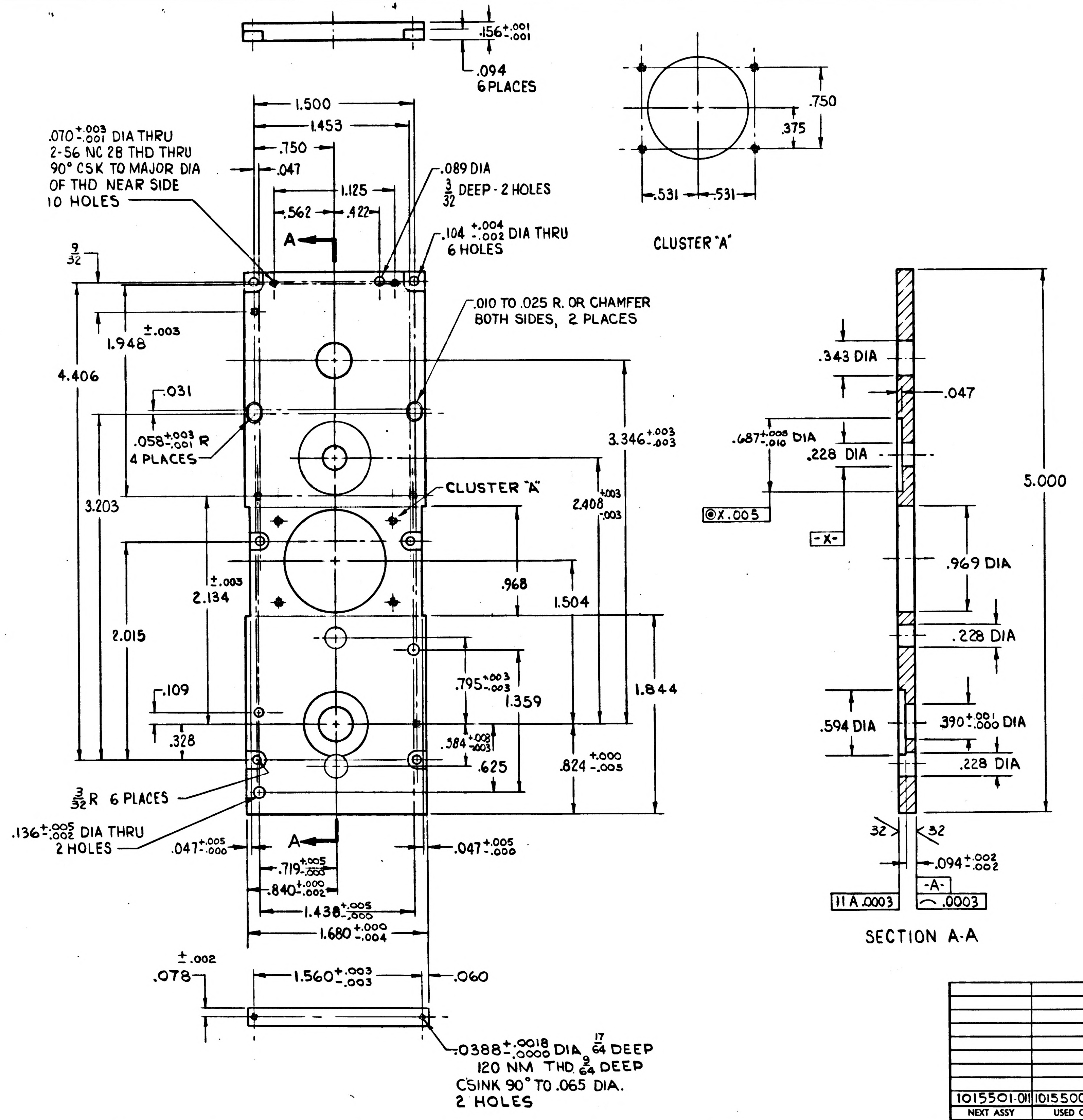
BASE

CODE IDENT NO.
SIZE E
1015502
SCALE 2:1
SHEET 1 OF 1

1015502 K

F 1015503

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
F		UPGRADED FOR CLASS A RELEASE		5 MAY 63	RH


.156 +.001 -.001
.094 6 PLACES
1.500
1.453
.750
.047
1.125
.562
.422
.070 +.003 -.001 DIA THRU 2-56 NC 2B THD THRU 90° CSK TO MAJOR DIA OF THD NEAR SIDE 10 HOLES
.089 DIA 3/32 DEEP - 2 HOLES
.104 +.004 -.002 DIA THRU 6 HOLES
A
9/32
1.948 ±.003
4.406
.031
.058 +.003 -.001 R 4 PLACES
3.203
.010 TO .025 R. OR CHAMFER BOTH SIDES, 2 PLACES
3.346 +.003 -.003
CLUSTER "A"
2.408 +.003 -.003
2.134 ±.003
2.015
.968
1.504
.795 +.003 -.003
1.359
1.844
.109
.328
.584 +.002 -.003
.625
.824 +.000 -.005
3/32 R 6 PLACES
.136 +.005 -.002 DIA THRU 2 HOLES
.047 +.005 -.000
.047 +.005 -.000
.719 +.005 -.000
.840 +.000 -.002
1.438 +.005 -.000
1.680 +.000 -.004
.078 ±.002
1.560 +.003 -.003
.060
.0388 +.0018 -.0000 DIA 17/64 DEEP 120 NM THD 9/64 DEEP CSINK 90° TO .065 DIA. 2 HOLES
.750
.375
.531
.531
CLUSTER "A"
.343 DIA
.047
.687 +.005 -.010 DIA
.228 DIA
⊚X.005
-X-
5.000
.969 DIA
.228 DIA
.594 DIA
.390 +.001 -.000 DIA
.228 DIA
32
32
.094 +.002 -.002
-A-
// A .0003
⌒ .0003
SECTION A-A

UNLESS OTHERWISE SPECIFIED:

SURFACE ROUGHNESS MUST NOT EXCEED 63√

ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.

PIECEMARK PER MIL-STD-130 (ES-267)

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327

MUST BE FREE FROM BURRS.

MACHINE AND HEAT TREAT PER ND1002114 (ES-2044).

1015501-011	1015500-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN Woolski DATE 21-JAN 63 CHECKED Ed Foster 29 JAN 63 APPROVAL E. Scholl 30 JAN 63 APPROVAL 30 JAN 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS COVER
NEXT ASSY	USED ON	MATERIAL MIL-B-21531, (ES-7389 BERYLLIUM)	NASA APPROVAL W J Rhine 5-23-67	CODE IDENT NO. SIZE D 1015503
APPLICATION		CONTRACT NAS9-497	MIT APPROVAL W Kupfer 22 Jan 63	SCALE 2:1 SHEET

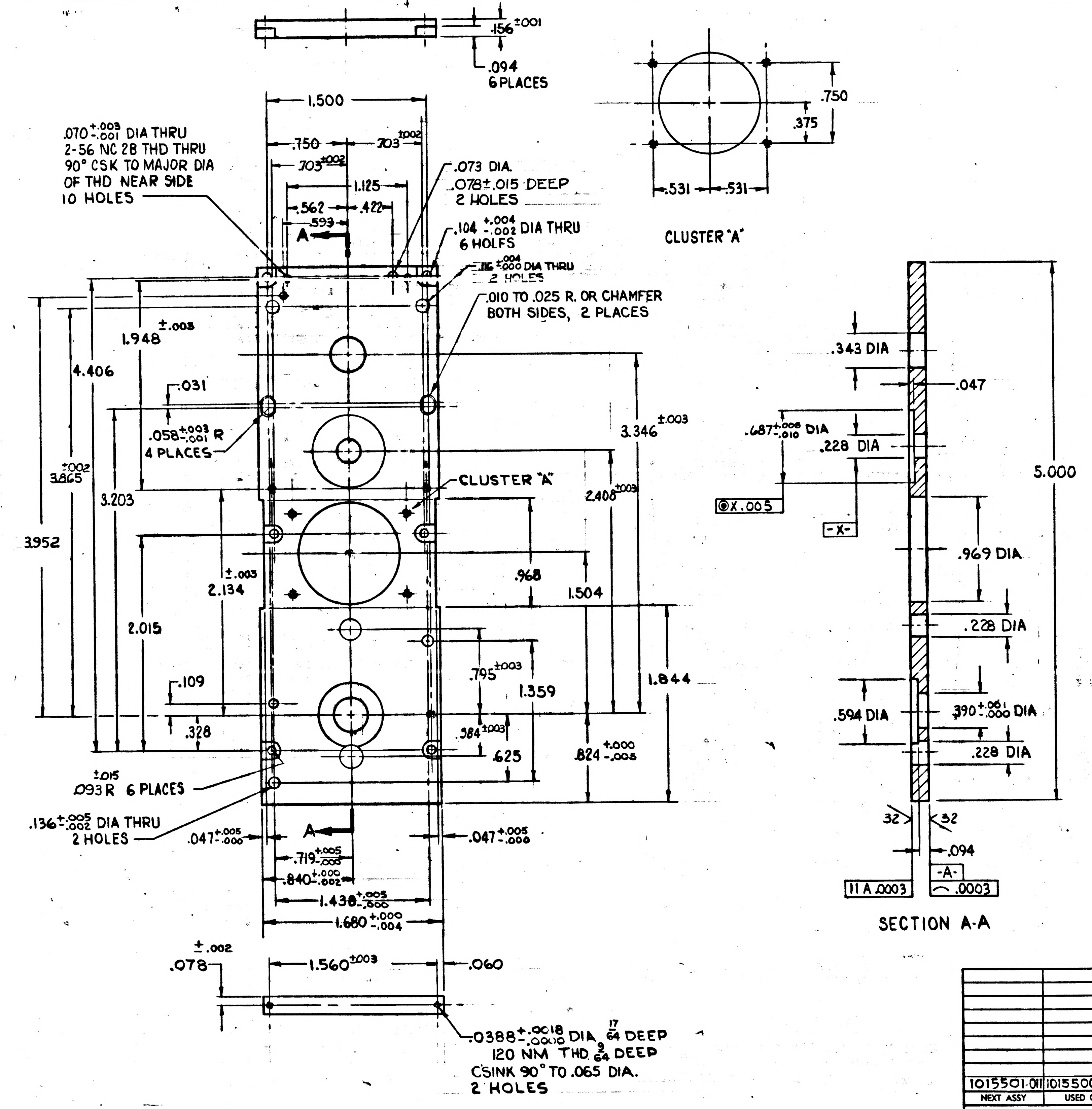
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

MIL 10770-P

1015503

REVISIONS TDRR 01315

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
F		UPGRADED FOR CLASS A RELEASE		8 MAY 63	RH
G9		REVISED PER TDRR NO. 03072			



.156 ±.001
.094 6 PLACES
1.500
.750
.703 ±.002
.703 ±.002
1.125
.562
.422
.593
A
.070 +.003 -.001 DIA THRU 2-56 NC 2B THD THRU 90° CSK TO MAJOR DIA OF THD NEAR SIDE 10 HOLES
.073 DIA. .078 ±.015 DEEP 2 HOLES
.104 +.004 -.002 DIA THRU 6 HOLES
.116 +.004 -.000 DIA THRU 2 HOLES
.010 TO .025 R. OR CHAMFER BOTH SIDES, 2 PLACES
1.948 ±.003
4.406
.031
.058 +.003 -.001 R 4 PLACES
3.865 ±.002
3.203
3.952
2.134 ±.003
2.015
.109
.328
CLUSTER "A"
3.346 ±.003
2.408 ±.003
.968
1.504
.795 ±.003
1.359
1.844
.584 ±.003
.625
.824 +.000 -.005
.093 R ±.015 6 PLACES
.136 +.005 -.002 DIA THRU 2 HOLES
.047 +.005 -.000
.047 +.005 -.000
.719 +.005 -.000
.840 +.000 -.002
1.438 +.005 -.000
1.680 +.000 -.004
.078 ±.002
1.560 ±.003
.060
.0388 +.0018 -.0000 DIA 17/64 DEEP 120 NM THD. 9/64 DEEP CSINK 90° TO .065 DIA. 2 HOLES
.750
.375
.531
.531
CLUSTER "A"
.343 DIA
.047
.687 +.005 -.010 DIA
.228 DIA
⊚X.005
-X-
5.000
.969 DIA
.228 DIA
.594 DIA
.390 +.001 -.000 DIA
.228 DIA
32
32
.094
-A-
∥ A .0003
⌒ .0003
SECTION A-A

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   - A. SURFACE ROUGHNESS MUST NOT EXCEED 63/
   - B. ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.
2. PIECEMARK PER MIL-STD-130 (ES-267)
3. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
4. MUST BE FREE FROM BURRS.
5. MACHINE AND HEAT TREAT PER ND1002114 (ES-2044).

1015501-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
±.005
DO NOT SCALE THIS DRAWING
MATERIAL MIL-B-21531, (ES-7389 BERYLLIUM)
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Jbolski DATE 21-JAN-63
CHECKED Ed Foster 29 JAN 63
APPROVAL E. Scholl 30 JAN 63
APPROVAL 30 JAN 63
NASA APPROVAL 5-23-67
MIT APPROVAL W Kupfer 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER

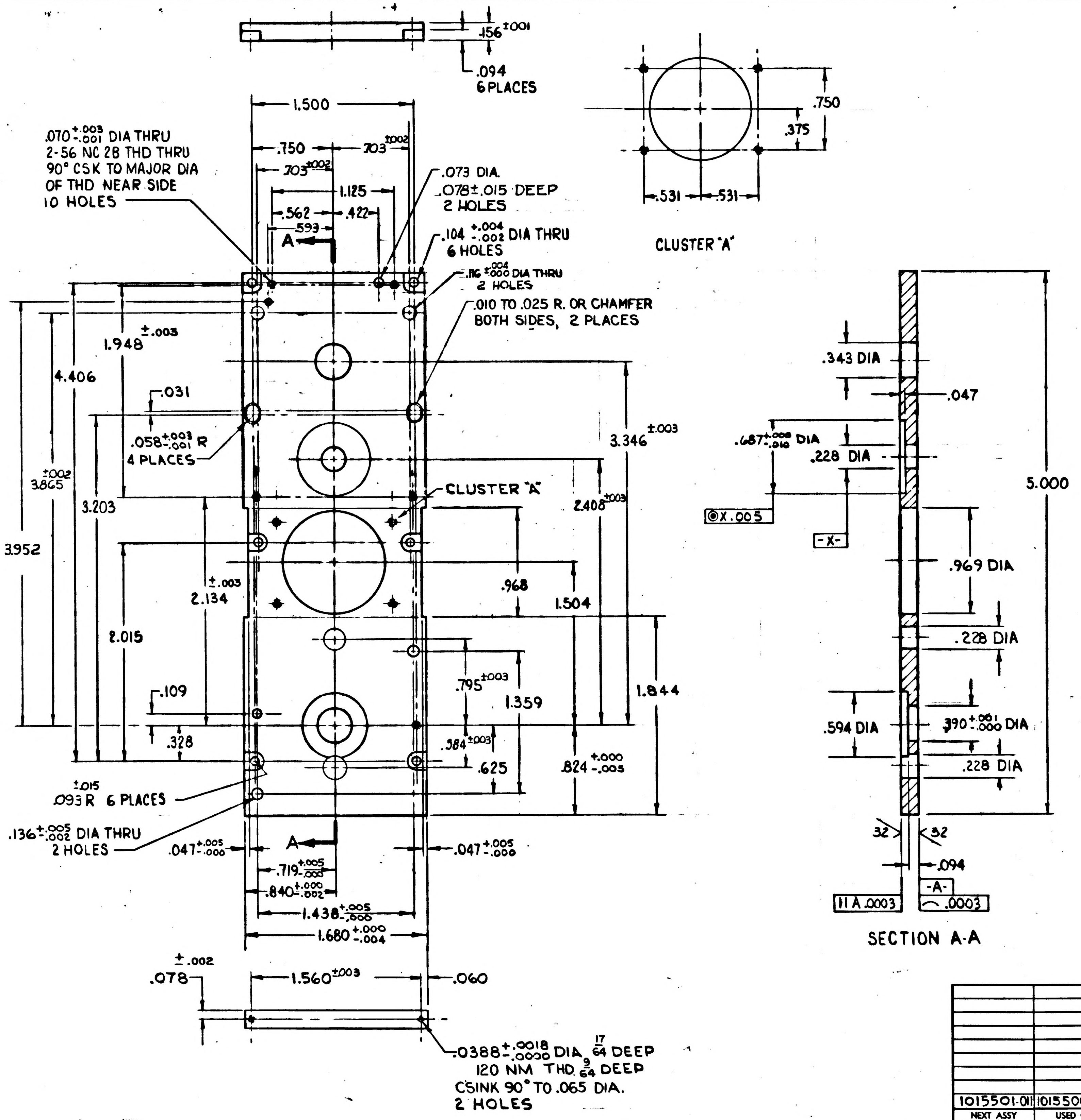
CODE IDENT NO.
SIZE D
1015503
SCALE 2:1
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

H	1015503	2

REVISIONS TDRR 01315

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
F		UPGRADED FOR CLASS A RELEASE		8 May 63	RH
G9		REVISED PER TDRR NO. 03072		14	
H		REVISED PER TDRR 07290		6 APR 69	8a.



.156 ±.001
.094
6 PLACES
1.500
.070 +.003 −.001 DIA THRU
2-56 NC 2B THD THRU
90° CSK TO MAJOR DIA
OF THD NEAR SIDE
10 HOLES
.750
.703 ±.002
.703 ±.002
1.125
.562
.422
.593
A
.073 DIA
.078 ±.015 DEEP
2 HOLES
.104 +.004 −.002 DIA THRU
6 HOLES
.116 +.004 −.000 DIA THRU
2 HOLES
.010 TO .025 R. OR CHAMFER
BOTH SIDES, 2 PLACES
.750
.375
.531
.531
CLUSTER "A"
1.948 ±.003
4.406
.031
.058 +.003 −.001 R
4 PLACES
3.865 ±.002
3.203
3.952
3.346 ±.003
CLUSTER "A"
2.408 ±.003
2.134 ±.003
2.015
.968
1.504
.795 ±.003
1.359
1.844
.109
.328
.584 ±.003
.625
.824 +.000 −.005
.093 R ±.015 6 PLACES
.136 +.005 −.002 DIA THRU
2 HOLES
.047 +.005 −.000
.047 +.005 −.000
A
.719 +.005 −.000
.840 +.000 −.002
1.438 +.005 −.000
1.680 +.000 −.004
.078 ±.002
1.560 ±.003
.060
.0388 +.0018 −.0000 DIA 17/64 DEEP
120 NM THD. 9/64 DEEP
CSINK 90° TO .065 DIA.
2 HOLES
.343 DIA
.047
.687 +.008 −.010 DIA
.228 DIA
⊚ X .005
-X-
5.000
.969 DIA
.228 DIA
.594 DIA
.390 +.001 −.000 DIA
.228 DIA
32
32
.094
-A-
// A .0003
⌒ .0003
SECTION A-A

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   - A. SURFACE ROUGHNESS MUST NOT EXCEED 63√
   - B. ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.
2. PIECEMARK PER MIL-STD-130 (ES-267)
3. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
4. MUST BE FREE FROM BURRS.
5. MACHINE AND HEAT TREAT PER ND1002114 (ES-2044).

1015501-011	1015500-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ±.005 DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
NEXT ASSY	USED ON	MATERIAL ND1002125 (ES-2190 BERYLLIUM)	DRAWN Jbolski DATE 21-JAN-63 CHECKED Ed Foster 29 JAN 63 APPROVAL E. Scholl 30 JAN 63 APPROVAL 30 JAN 63	COVER
APPLICATION		CONTRACT NAS9-497	NASA APPROVAL 5-22-68 MIT APPROVAL W Kupfer 63	CODE IDENT NO. SIZE D 1015503 SCALE 2:1 SHEET 1 OF 1

1015504 E

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63√.

ALL CORNERS NOT TO EXCEED .010R OR CHAMFER.

MUST BE FREE FROM BURRS.

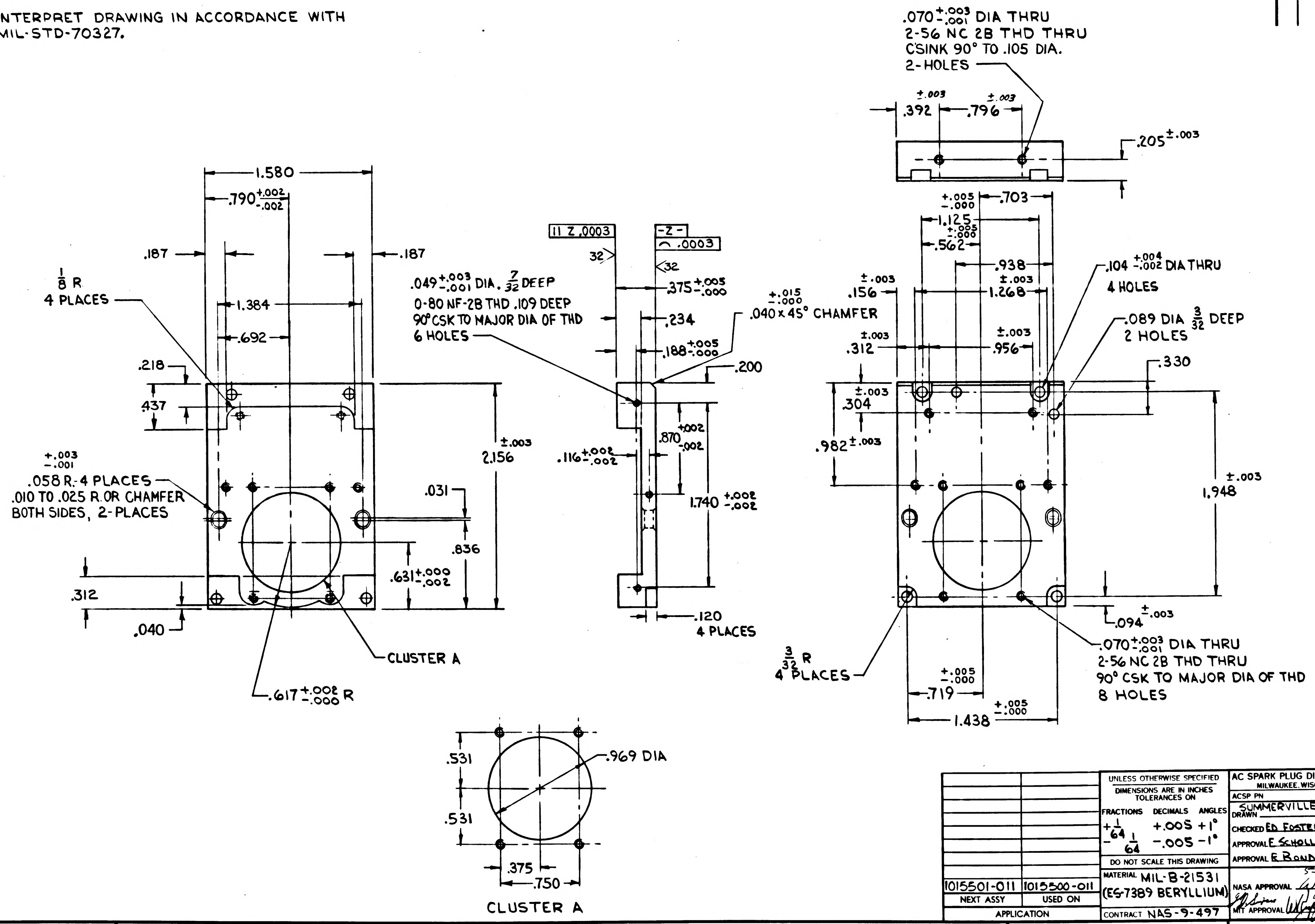
MACHINE & HEAT TREAT PER ND1002114.

IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-70327.

REVISIONS TDAR 01315

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		UPGRADED FOR CLASS A RELEASE		11 MAY 63	A.J.F. / DFK



.070 +.003 -.001 DIA THRU
2-56 NC 2B THD THRU
CSINK 90° TO .105 DIA.
2-HOLES
±.003 .392
±.003 .796
.205 ±.003
1.580
.790 +.002 -.002
.187
.187
1/8 R 4 PLACES
1.384
.692
.218
.437
+.003 -.001 .058 R. 4 PLACES
.010 TO .025 R. OR CHAMFER BOTH SIDES, 2-PLACES
±.003 2.156
.031
.836
.631 +.000 -.002
.312
.040
CLUSTER A
.617 +.002 -.000 R
.049 +.003 -.001 DIA. 7/32 DEEP
0-80 NF-2B THD .109 DEEP
90° CSK TO MAJOR DIA OF THD
6 HOLES
11 Z .0003
32
-Z-
⌒ .0003
32
.375 +.005 -.000
.234
.188 +.005 -.000
+.015 -.000 .040 x 45° CHAMFER
.200
.116 +.002 -.002
.870 +.002 -.002
1.740 +.002 -.002
.120 4 PLACES
+.005 -.000 .703
1.125 +.005 -.000
.562
±.003 .156
.938
±.003 1.268
±.003 .312
±.003 .956
.104 +.004 -.002 DIA THRU 4 HOLES
.089 DIA 3/32 DEEP 2 HOLES
.330
±.003 .304
.982 ±.003
±.003 1.948
.094 ±.003
3/32 R 4 PLACES
.070 +.003 -.001 DIA THRU
2-56 NC 2B THD THRU
90° CSK TO MAJOR DIA OF THD
8 HOLES
+.005 -.000 .719
1.438 +.005 -.000
.531
.531
.969 DIA
.375
.750
CLUSTER A

1015501-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
$+\frac{1}{64}$ $-\frac{1}{64}$	+.005 -.005	+1° -1°

DO NOT SCALE THIS DRAWING

MATERIAL MIL-B-21531 (ES-7389 BERYLLIUM)

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN SUMMERVILLE DATE 6 JAN 63
CHECKED ED FOSTER 30 JAN 63
APPROVAL E SCHOLL 30 JAN 63
APPROVAL E BOND 31 JAN 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

PAD, MOUNTING

CODE IDENT NO.
SIZE D
1015504
SCALE 2:1
SHEET -

MIL 10770-P

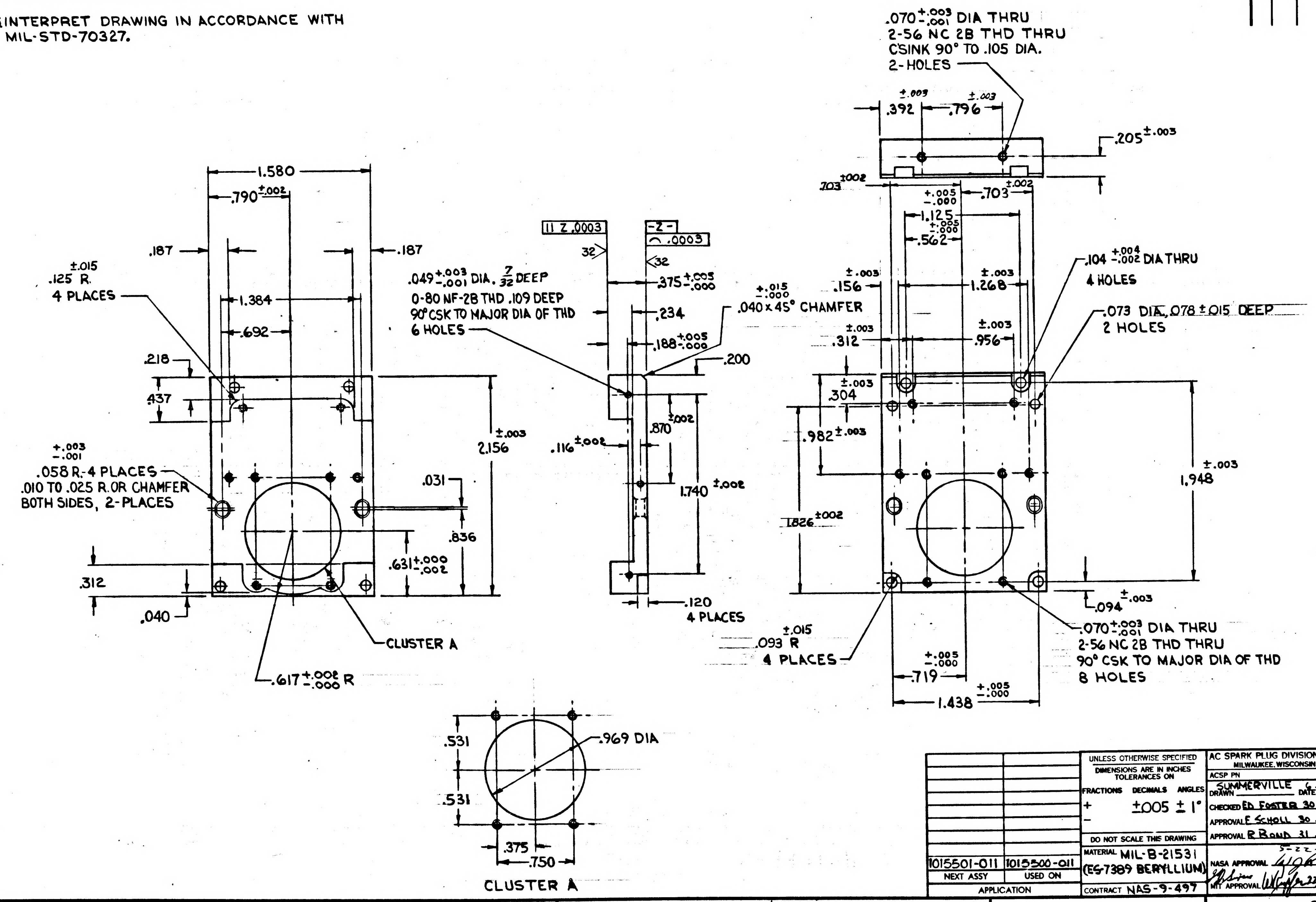
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED $\overset{63}{\vee}$.
   B. ALL CORNERS NOT TO EXCEED .010R OR CHAMFER.
2. MUST BE FREE FROM BURRS.
3. MACHINE & HEAT TREAT PER ND1002114.
4. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
5. INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-70327.

F | 1015504 | 2

REVISIONS		TDRR 01315			
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
(M) E		UPGRADED FOR CLASS A RELEASE		11-MAY-63	A.J.F.
F7		REVISED PER TDRR NO. 03071			9/1963



.070 +.003/-.001 DIA THRU
2-56 NC 2B THD THRU
CSINK 90° TO .105 DIA.
2-HOLES
.392 ±.003
.796 ±.003
.205 ±.003
.703 ±.002
.703 ±.002
.125 +.005/-.000
.562 +.005/-.000
.104 +.004/-.002 DIA THRU
4 HOLES
.156 ±.003
1.268 ±.003
.073 DIA .078 ±.015 DEEP
2 HOLES
.312 ±.003
.956 ±.003
.304 ±.003
.982 ±.003
1.948 ±.003
1.826 ±.002
.094 ±.003
.093 R ±.015
4 PLACES
.070 +.003/-.001 DIA THRU
2-56 NC 2B THD THRU
90° CSK TO MAJOR DIA OF THD
8 HOLES
.719 +.005/-.000
1.438 +.005/-.000
1.580
.790 ±.002
.187
.187
.125 R ±.015
4 PLACES
1.384
.692
.218
.437
2.156 ±.003
.058 R +.003/-.001 4 PLACES
.010 TO .025 R OR CHAMFER
BOTH SIDES, 2-PLACES
.031
.836
.631 +.000/-.002
.312
.040
CLUSTER A
.617 +.002/-.000 R
// Z .0003
32
-Z-
⌒ .0003
32
.049 +.003/-.001 DIA. 7/32 DEEP
0-80 NF-2B THD .109 DEEP
90° CSK TO MAJOR DIA OF THD
6 HOLES
.375 +.005/-.000
.234
.188 +.005/-.000
.040 x 45° CHAMFER +.015/-.000
.200
.116 ±.002
.870 ±.002
1.740 ±.002
.120
4 PLACES
.531
.531
.969 DIA
.375
.750
CLUSTER A
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

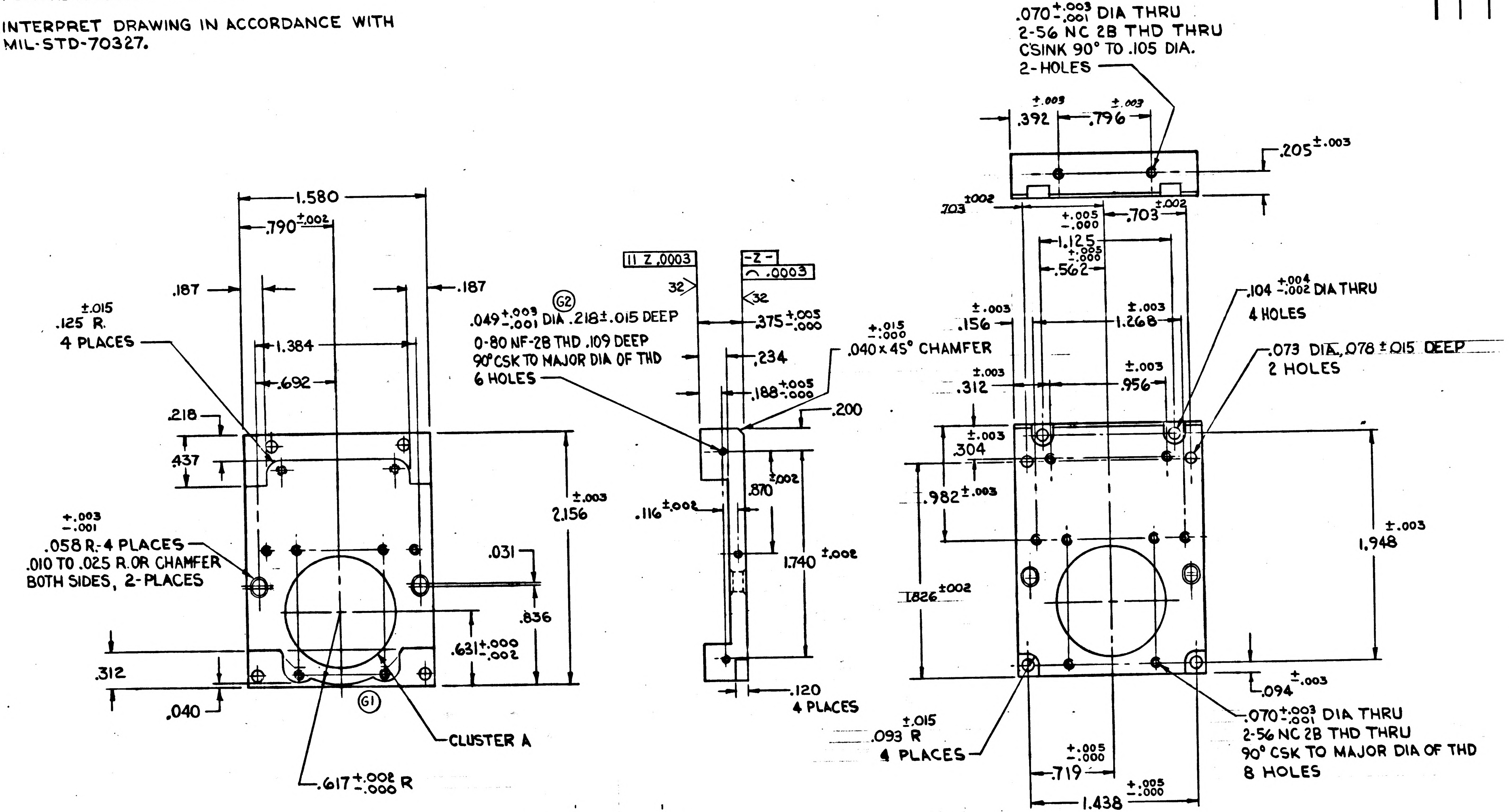
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
		FRACTIONS + − DECIMALS ±.005 ANGLES ± 1°	ACSP PN	PAD, MOUNTING		
			DRAWN SUMMERVILLE DATE 6 JAN 63			
			CHECKED ED FOSTER 30 JAN 63			
			APPROVAL E SCHOLL 30 JAN 63			
		DO NOT SCALE THIS DRAWING	APPROVAL R BOND 31 JAN 63			
1015501-011	1015500-011	MATERIAL MIL-B-21531 (ES-7389 BERYLLIUM)	NASA APPROVAL 5-22-63	CODE IDENT NO.	SIZE D	1015504
NEXT ASSY	USED ON		MIT APPROVAL 22 May 63	SCALE 2:1		SHEET 1 OF 1
APPLICATION		CONTRACT NAS-9-497				

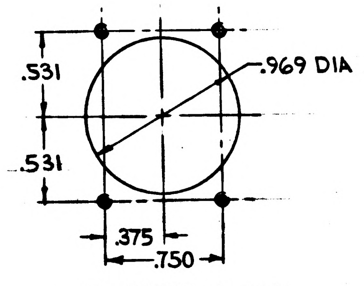
G	1015504	2

REVISIONS	TDRR 01315				
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ E		UPGRADED FOR CLASS A RELEASE		11-MAY-63	A.J.F. / DPK
F7		REVISED PER TDRR NO. 03071			WK 9/10/63
G3		REVISED PER TDDR NO.04231.		25 OCT. 63	WK

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED 63√.
   B. ALL CORNERS NOT TO EXCEED .010R OR CHAMFER.
2. MUST BE FREE FROM BURRS.
3. MACHINE & HEAT TREAT PER ND1002114.
4. Ⓖ3 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER ND 1002019.
5. INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-70327.


1.580
.790 ±.002
.187
.187
±.015 .125 R. 4 PLACES
1.384
.692
.218
.437
+.003 −.001 .058 R.-4 PLACES
.010 TO .025 R. OR CHAMFER BOTH SIDES, 2-PLACES
.031
.836
.631 +.000 −.002
.312
.040
Ⓖ1
CLUSTER A
.617 +.002 −.000 R
2.156 ±.003
11 Z .0003
-Z-
⌒ .0003
32
32
Ⓖ2
.049 +.003 −.001 DIA .218 ±.015 DEEP
0-80 NF-2B THD .109 DEEP
90° CSK TO MAJOR DIA OF THD
6 HOLES
.375 +.005 −.000
.234
.188 +.005 −.000
+.015 −.000 .040 x 45° CHAMFER
.200
.870 ±.002
.116 ±.002
1.740 ±.002
.120 4 PLACES
.070 +.003 −.001 DIA THRU
2-56 NC 2B THD THRU
C'SINK 90° TO .105 DIA.
2-HOLES
.392 ±.003
.796 ±.003
.205 ±.003
.703 ±.002
.703 ±.002
1.125 +.005 −.000
.562 +.005 −.000
.156 ±.003
1.268 ±.003
.104 +.004 −.002 DIA THRU
4 HOLES
.073 DIA, .078 ±.015 DEEP
2 HOLES
.312 ±.003
.956 ±.003
.304 ±.003
.982 ±.003
1.826 ±.002
1.948 ±.003
.094 ±.003
.093 ±.015 R
4 PLACES
.070 +.003 −.001 DIA THRU
2-56 NC 2B THD THRU
90° CSK TO MAJOR DIA OF THD
8 HOLES
.719 +.005 −.000
1.438 +.005 −.000


.531
.531
.969 DIA
.375
.750

CLUSTER A

1015501-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS ±.005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL MIL-B-21531 (ES-7389 BERYLLIUM)
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN SUMMERVILLE DATE 6 JAN 63
CHECKED ED FOSTER 30 JAN 63
APPROVAL E SCHOLL 30 JAN 63
APPROVAL R BOND 31 JAN 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

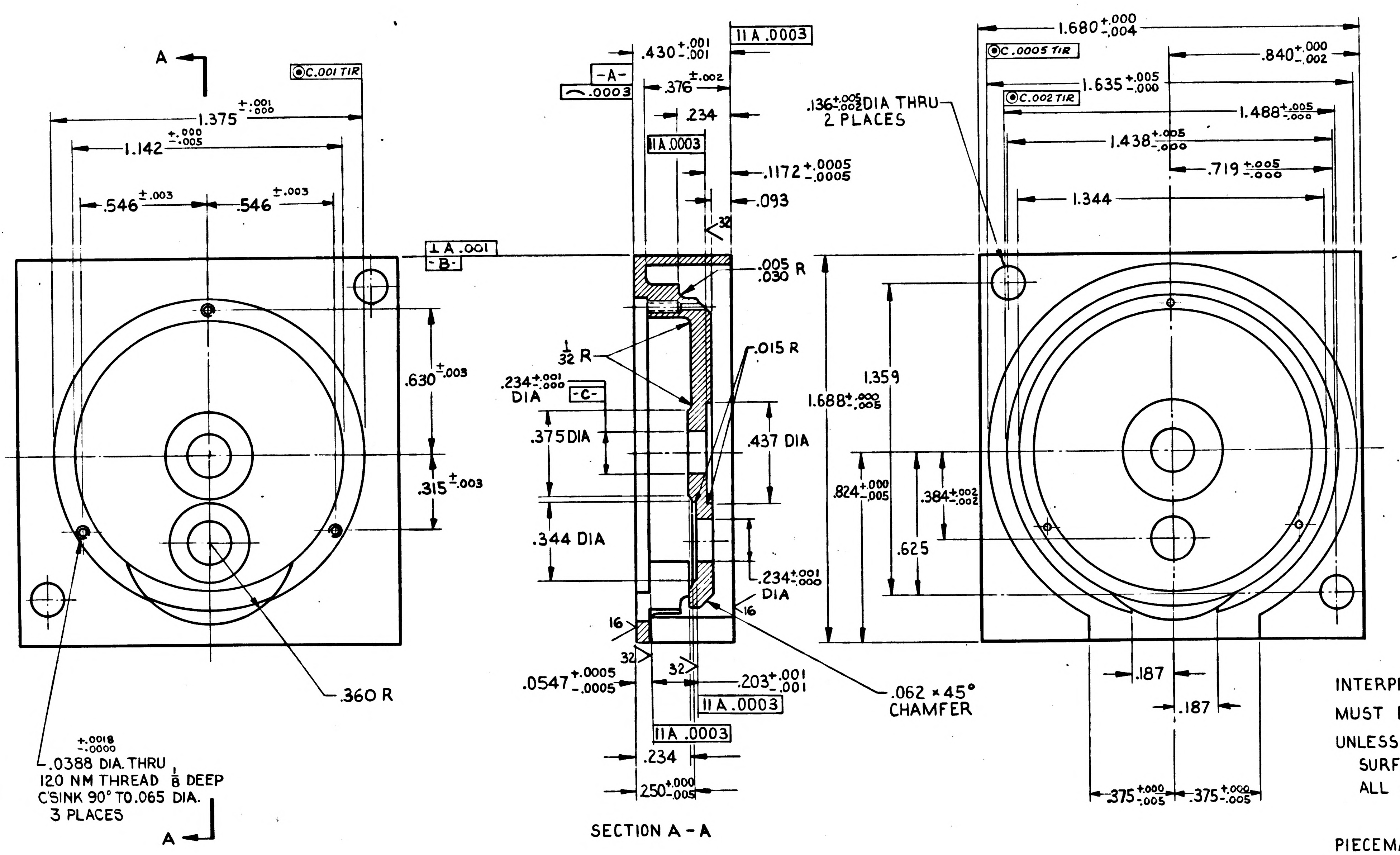
PAD, MOUNTING

CODE IDENT NO.
SIZE D
1015504
SCALE 2:1
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

D 1015505 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
D		UPGRADED FOR CLASS A RELEASE		6 APR 63	



A
⦾C.001 TIR
1.375 +.001 −.000
1.142 +.000 −.005
.546 ±.003
.546 ±.003
⊥ A .001
-B-
.630 ±.003
.315 ±.003
.360 R
.0388 +.0018 −.0000 DIA. THRU
120 NM THREAD 1/8 DEEP
C'SINK 90° TO .065 DIA.
3 PLACES
A
.430 +.001 −.001
-A-
⌒ .0003
.376 ±.002
.234
// A .0003
// A .0003
.1172 +.0005 −.0005
.093
32
.005 R
.030
1/32 R
.015 R
.234 +.001 −.000 DIA
-C-
.375 DIA
.437 DIA
.344 DIA
.234 +.001 −.000 DIA
16
16
32
32
.0547 +.0005 −.0005
.203 +.001 −.001
// A .0003
// A .0003
.234
.250 +.000 −.005
.062 × 45° CHAMFER
SECTION A-A
1.680 +.000 −.004
⦾C.0005 TIR
.840 +.000 −.002
1.635 +.005 −.000
⦾C.002 TIR
1.488 +.005 −.000
1.438 +.005 −.000
.719 +.005 −.000
1.344
.136 +.005 −.002 DIA THRU
2 PLACES
1.359
1.688 +.000 −.005
.824 +.000 −.005
.384 +.002 −.002
.625
.187
.187
.375 +.000 −.005
.375 +.000 −.005

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.

MUST BE FREE FROM BURRS.

UNLESS OTHERWISE SPECIFIED
SURFACE ROUGHNESS MUST NOT EXCEED $\overset{63}{\surd}$ AA
ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.

PIECEMARK PER MIL-STD-130 (ES-267, SELECT, FROM -1 THRU -19).

MACHINE AND HEAT TREAT PER ND 1002114 (ES-2044)

1015501-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
$+\frac{1}{64}$	+.005	+ 1°
$-\frac{1}{64}$	−.005	− 1°

DO NOT SCALE THIS DRAWING

MATERIAL MIL-B-21531(ES-7388 BERYLLIUM)
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. MURRAY DATE 18 JAN 63
CHECKED W. Diehl 29 JAN 63
APPROVAL E. Scholl 30 JAN 63
APPROVAL 30 JAN 63
NASA APPROVAL 5-22-63
MIT APPROVAL W. Kupfer 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SUPPORT BASE

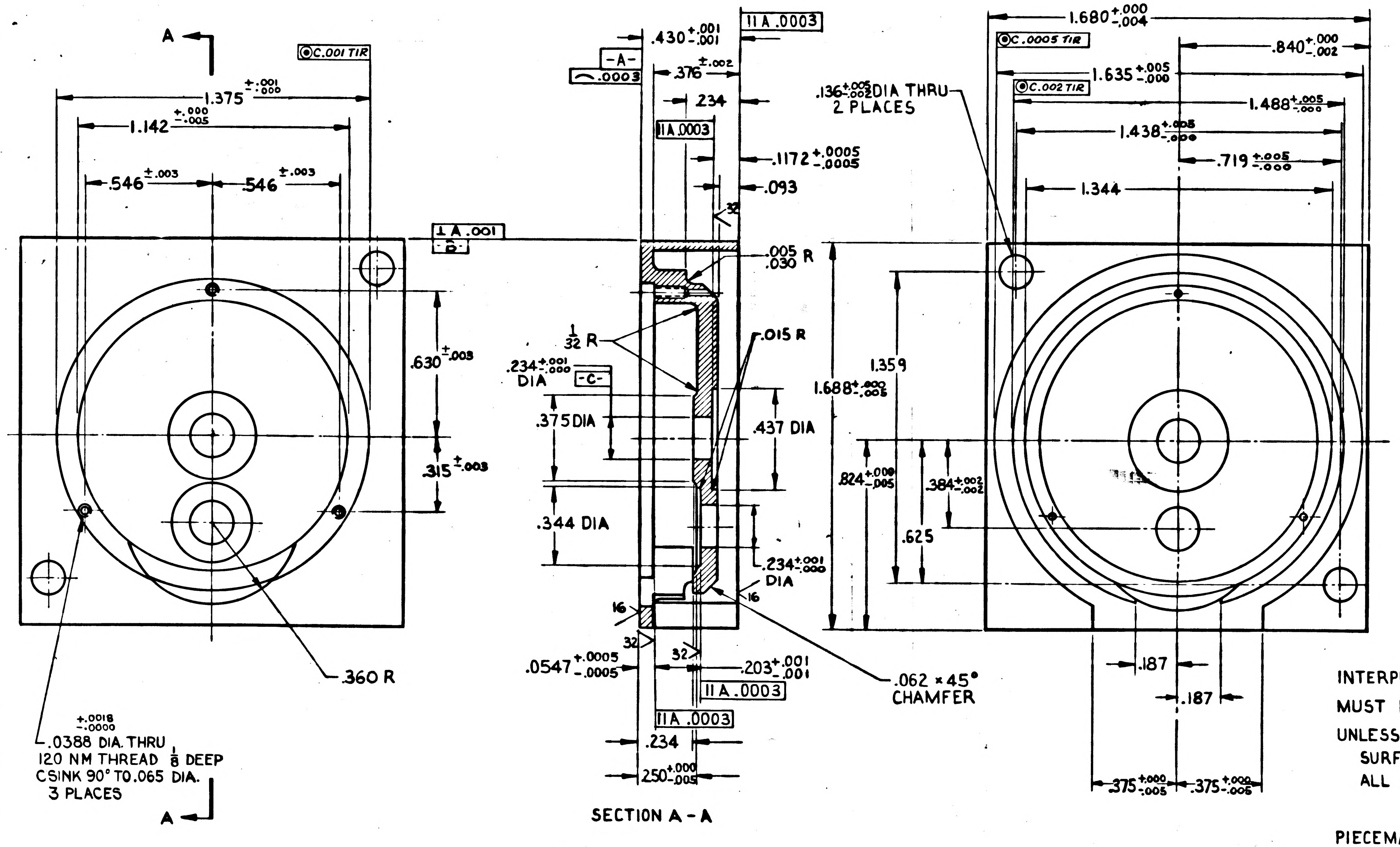
CODE IDENT NO.
SIZE D
1015505
SCALE 4 : 1
SHEET

4 Feb 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

E 1015505

SYM	ZONE	REVISIONS TDRR 01315 DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ D		UPGRADED FOR CLASS A RELEASE		6 APR 63	
E		REVISED PER TDRR 07290		3 APR 64	



A
⊚C.001 TIR
1.375 +.001 -.000
1.142 +.000 -.005
.546 ±.003
.546 ±.003
.630 ±.003
.315 ±.003
.360 R
+.0018 -.0000 .0388 DIA. THRU 120 NM THREAD 1/8 DEEP CSINK 90° TO .065 DIA. 3 PLACES
A
⊥ A .001
-D-
-A-
⌒ .0003
.430 +.001 -.001
.376 ±.002
.234
‖ A .0003
‖ A .0003
.1172 +.0005 -.0005
.093
32
.005 R .030
1/32 R
.015 R
.234 +.001 -.000 DIA
-C-
.375 DIA
.437 DIA
.344 DIA
.234 +.001 -.000 DIA
16
16
32
32
.0547 +.0005 -.0005
.203 +.001 -.001
‖ A .0003
‖ A .0003
.234
.250 +.000 -.005
.062 × 45° CHAMFER
SECTION A-A
1.680 +.000 -.004
⊚C.0005 TIR
.840 +.000 -.002
1.635 +.005 -.000
⊚C.002 TIR
1.488 +.005 -.000
.136 +.005 -.002 DIA THRU 2 PLACES
1.438 +.005 -.000
.719 +.005 -.000
1.344
1.359
1.688 +.002 -.005
.824 +.000 -.005
.384 +.002 -.002
.625
.187
.187
.375 +.000 -.005
.375 +.000 -.005

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.

MUST BE FREE FROM BURRS.

UNLESS OTHERWISE SPECIFIED
SURFACE ROUGHNESS MUST NOT EXCEED 63√ AA
ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.

PIECEMARK PER MIL-STD-130 (ES-267, SELECT, FROM -1 THRU -19).

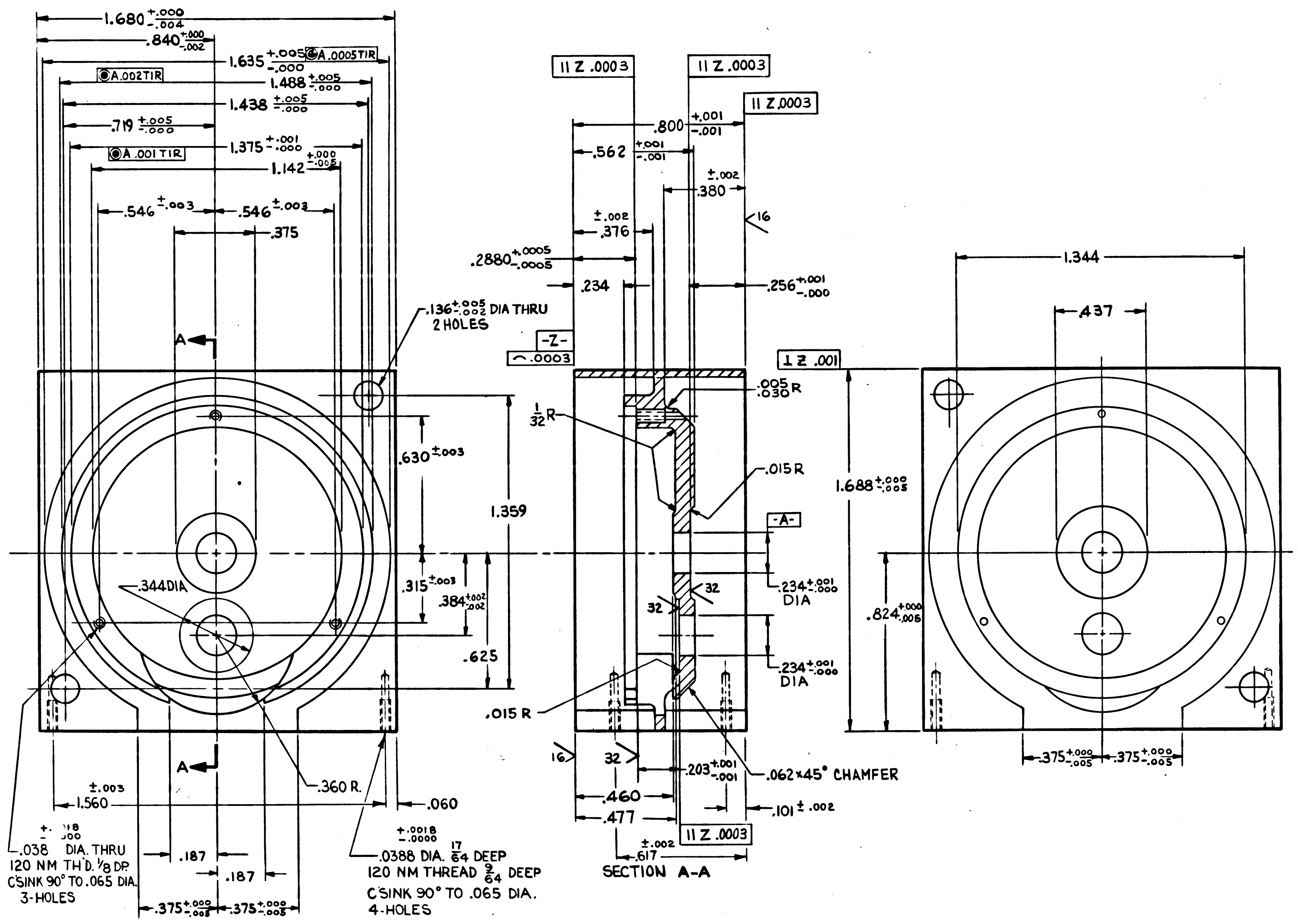
MACHINE AND HEAT TREAT PER ND 1002114 (ES-2044)

1015501-011	1015500-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±1° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN G. MURRAY DATE 18 JAN 63 CHECKED W. Diehl 29 JAN 63 APPROVAL E. Scholl 30 JAN 63 APPROVAL 30 JAN 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS SUPPORT BASE
NEXT ASSY	USED ON	MATERIAL ND1002125 (ES-2190 BERYLLIUM)	5-22-67 NASA APPROVAL	CODE IDENT NO. — SIZE D — 1015505
APPLICATION		CONTRACT NAS-9-497	MIT APPROVAL 22 Apr 63	SCALE 4:1 — SHEET

4 Feb 63

D 1015506

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
D		UPGRADED FOR CLASS A RELEASE		APR 63	



1.680 +.000 -.004
.840 +.000 -.002
1.635 +.005 -.000
A .0005 TIR
A .002 TIR
1.488 +.005 -.000
1.438 +.005 -.000
.719 +.005 -.000
1.375 +.001 -.000
A .001 TIR
1.142 +.000 -.005
.546 ±.003
.546 ±.003
.375
.136 +.005 -.002 DIA THRU 2 HOLES
A
.630 ±.003
1.359
.315 ±.003
.384 +.002 -.002
.625
.344 DIA
.360 R.
±.003 1.560
.060
.038 +.018 -.000 DIA. THRU 120 NM TH'D. 1/8 DP. CSINK 90° TO .065 DIA. 3-HOLES
.187
.187
.375 +.000 -.005
.375 +.000 -.005
.0388 DIA. +.0018 -.0000 17/64 DEEP 120 NM THREAD 9/64 DEEP CSINK 90° TO .065 DIA. 4-HOLES
Z .0003
Z .0003
Z .0003
.800 +.001 -.001
.562 +.001 -.001
.380 ±.002
16
.376 ±.002
.2880 +.0005 -.0005
.234
.256 +.001 -.000
-Z-
.0003
Z .001
.005 .030 R
1/32 R
.015 R
-A-
.234 +.001 -.000 DIA
32
32
.234 +.001 -.000 DIA
.015 R
16
32
.203 +.001 -.001
.062 x 45° CHAMFER
.460
.477
.101 ±.002
.617 ±.002
Z .0003
SECTION A-A
1.688 +.000 -.005
.824 +.000 -.005
1.344
.437
.375 +.000 -.005
.375 +.000 -.005

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63/AA.
ALL CORNERS NOT TO EXCEED .010 OR CHAMFER.

MUST BE FREE FROM BURRS.

PIECEMARK PER MIL-STD-130 (ES-267, SELECT FROM -1 THRU -19)

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.

MACHINE AND HEAT TREAT PER ND 1002114 (ES-2044)

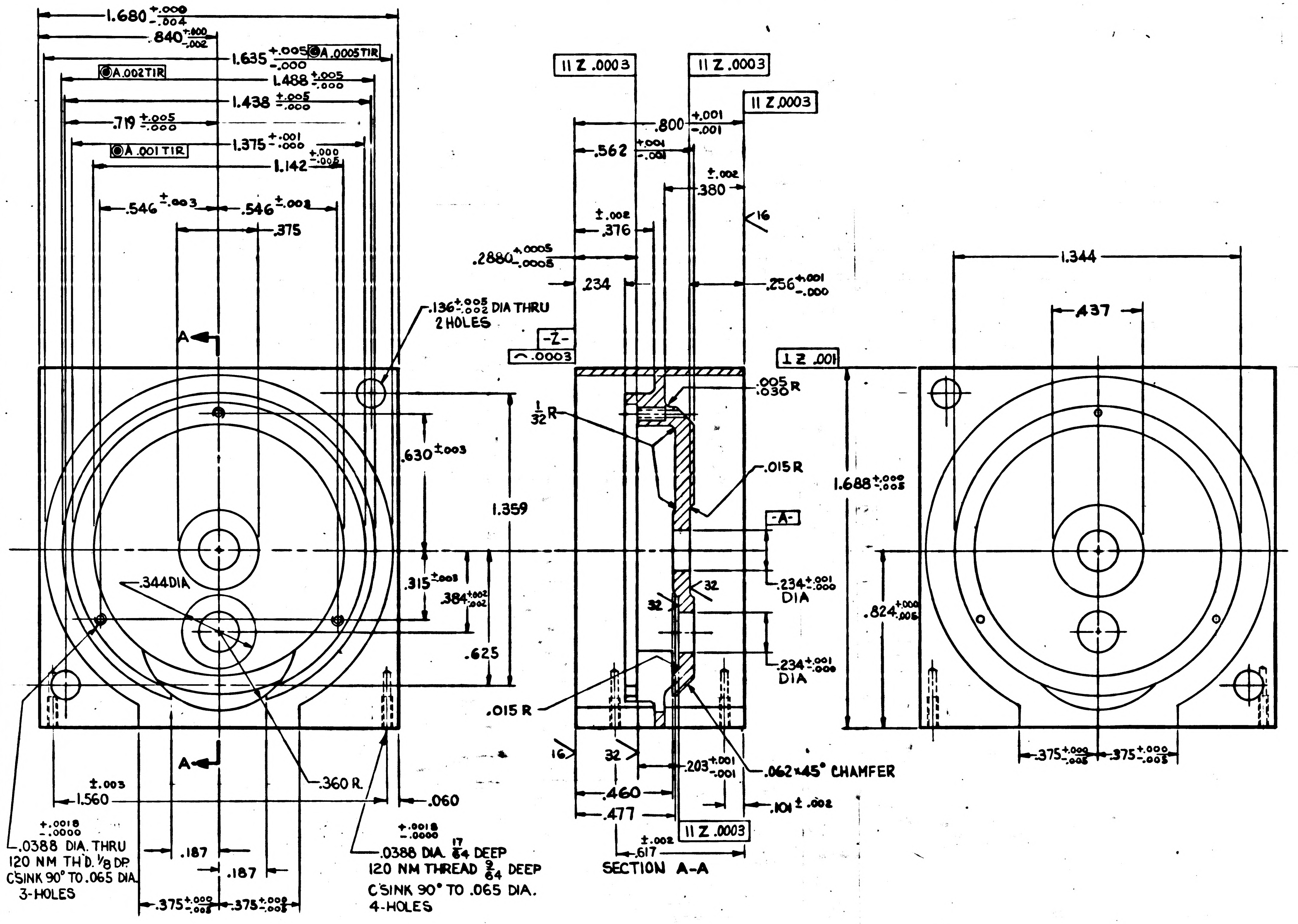
NEXT ASSY: 1015501-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + 1/64 − 1/64 DECIMALS +.005 −.005 ANGLES +1° −1° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
USED ON: 1015500-011		DRAWN Summerville DATE 18 JAN 63 CHECKED Ed Foster 25 JAN 63 APPROVAL E. Scholl 30 JAN 63 APPROVAL 30 JAN 63	SPACER, INTERNAL SUPPORT
APPLICATION	MATERIAL MIL-B-21531 (ES-7389 BERYLLIUM)	NASA APPROVAL 5-22-63 MIT APPROVAL 22 Feb 63	CODE IDENT NO. — SIZE D — 1015506
	CONTRACT NAS-9-497		SCALE 4:1 — SHEET —

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

E 1015506

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		UPGRADED FOR CLASS A RELEASE		6 APR 63	RH
E		REVISED PER TDRR 07290		6 APR 64	

REVISIONS TDRR 01315



1.680 +.000 -.004
.840 +.000 -.002
1.635 +.005 -.000
◎A .0005 TIR
◎A .002 TIR
1.488 +.005 -.000
1.438 +.005 -.000
.719 +.005 -.000
1.375 +.001 -.000
◎A .001 TIR
1.142 +.000 -.005
.546 ±.003
.546 ±.003
.375
A
.136 +.005 -.002 DIA THRU 2 HOLES
-Z-
⌒ .0003
.630 ±.003
1.359
.315 ±.003
.384 +.002 -.002
.625
.344 DIA
.360 R.
±.003 1.560
.060
+.0018 -.0000 .0388 DIA. THRU 120 NM TH'D. 1/8 DP. C'SINK 90° TO .065 DIA. 3-HOLES
.187
.187
.375 +.000 -.005
.375 +.000 -.005
+.0018 -.0000 .0388 DIA. 17/64 DEEP 120 NM THREAD 9/64 DEEP C'SINK 90° TO .065 DIA. 4-HOLES
∥ Z .0003
∥ Z .0003
∥ Z .0003
.800 +.001 -.001
.562 +.001 -.001
.380 ±.002
.376 ±.002
16
.2880 +.0005 -.0005
.234
.256 +.001 -.000
⊥ Z .001
.005 .030 R
1/32 R
.015 R
-A-
.234 +.001 -.000 DIA
32
32
.234 +.001 -.000 DIA
.015 R
16
32
.203 +.001 -.001
.062 × 45° CHAMFER
.460
.477
.101 ±.002
∥ Z .0003
.617 ±.002
SECTION A-A
1.688 +.000 -.005
.824 +.000 -.005
1.344
.437
.375 +.000 -.005
.375 +.000 -.005

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63/√ AA.
ALL CORNERS NOT TO EXCEED .010 OR CHAMFER.

MUST BE FREE FROM BURRS.

PIECEMARK PER MIL-STD-130 (ES-267, SELECT FROM -1 THRU -19)

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.

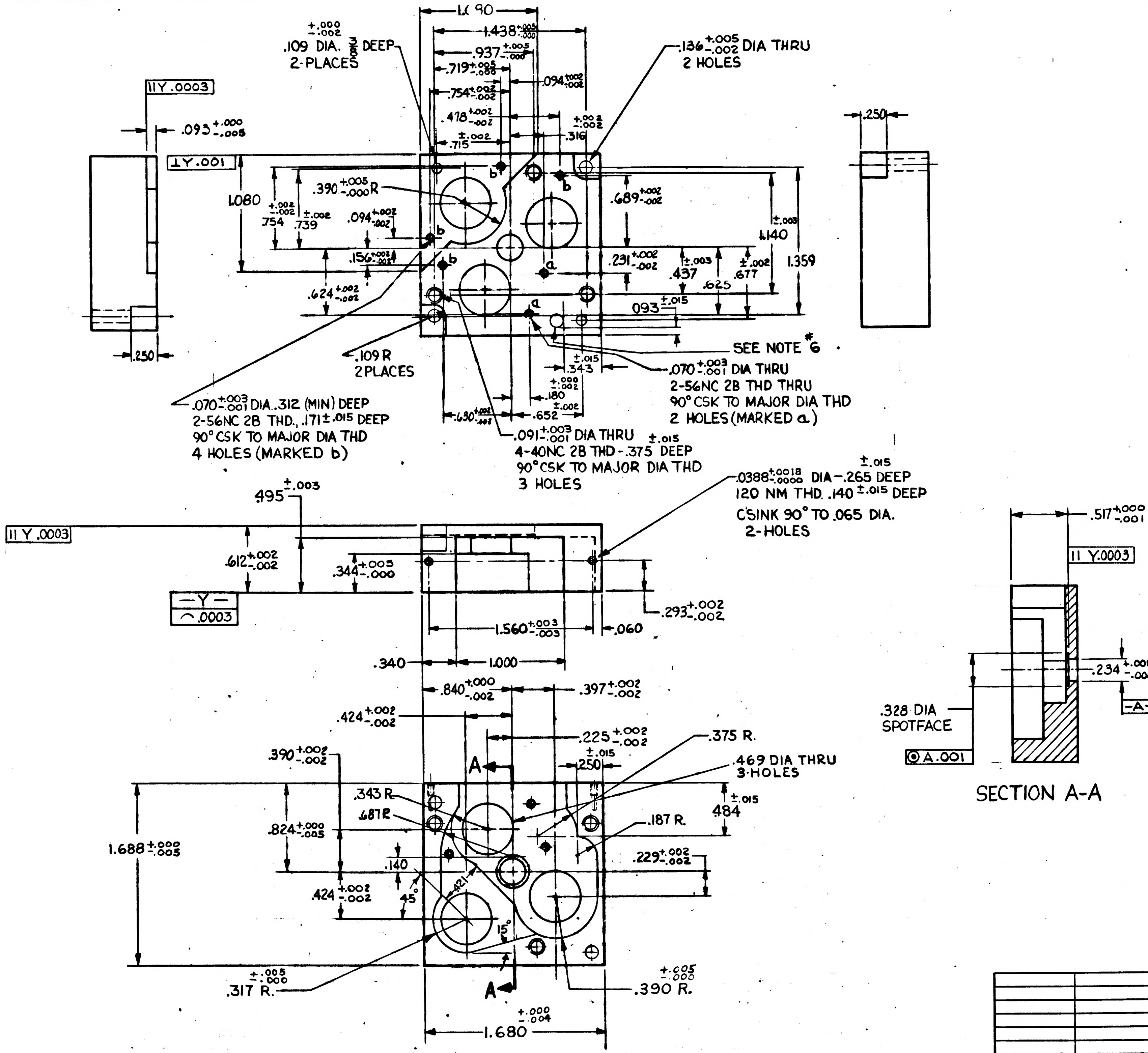
MACHINE AND HEAT TREAT PER ND 1002114 (ES-2044)

1015501-011	1015500-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±1° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN Summerville DATE 15 JAN 63 CHECKED Ed Foster 25 JAN 63 APPROVAL E. Scholl 30 JAN 63 APPROVAL 30 JAN 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS SPACER, INTERNAL SUPPORT
NEXT ASSY	USED ON	MATERIAL ND 1002125 (ES-2190 BERYLLIUM)	NASA APPROVAL 5-23-63	CODE IDENT NO. SIZE D 1015506
APPLICATION		CONTRACT NAS-9-497	MIT APPROVAL 22 May 63	SCALE 4:1 SHEET —

1 Feb 63

H | 1015507 | 2

REVISIONS TDRR 01315					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
Ⓜ F		UPGRADED FOR CLASS A RELEASE		4 MAY 63	WET
G		REVISED PER TDRR# 02189		7-18-63	WR
H		REVISED PER TDRR# 02190		7-24-63	WR



1.090
1.438 +.005 −.000
.937 +.005 −.000
.719 +.005 −.000
.754 +.002 −.002
.478 +.002 −.002
±.002 .715
.094 +.002 −.002
+.002 −.002 .316
.109 DIA. +.000 −.002 3/8 DEEP 2-PLACES
.136 +.005 −.002 DIA THRU 2 HOLES
‖Y.0003
.093 +.000 −.005
⊥Y.001
1.080
+.002 −.002 .754
±.002 .739
.390 +.005 −.000 R
.094 +.002 −.002
.156 +.002 −.002
.624 +.002 −.002
.689 +.002 −.002
±.003 1.140
1.359
.231 +.002 −.002
±.003 .437
.625
±.002 .677
.093 ±.015
.250
b
a
SEE NOTE #6
.109 R 2 PLACES
±.015 .343
±.000 −.002 .180
±.002 .652
.630 +.002 −.002
.070 +.003 −.001 DIA .312 (MIN) DEEP 2-56NC 2B THD., .171 ±.015 DEEP 90° CSK TO MAJOR DIA THD 4 HOLES (MARKED b)
.070 +.003 −.001 DIA THRU 2-56NC 2B THD THRU 90° CSK TO MAJOR DIA THD 2 HOLES (MARKED a)
.091 +.003 −.001 DIA THRU 4-40NC 2B THD - .375 ±.015 DEEP 90° CSK TO MAJOR DIA THD 3 HOLES
.0388 +.0018 −.0000 DIA − .265 ±.015 DEEP 120 NM THD. .140 ±.015 DEEP C'SINK 90° TO .065 DIA. 2-HOLES
.495 ±.003
‖Y.0003
.612 +.002 −.002
.344 +.005 −.000
—Y— ⌒.0003
.293 +.002 −.002
1.560 +.003 −.003
.060
.340
1.000
.840 +.000 −.002
.397 +.002 −.002
.424 +.002 −.002
.225 +.002 −.002
±.015 .250
.390 +.002 −.002
.375 R.
.469 DIA THRU 3-HOLES
A
.343 R
.687 R
.187 R.
±.015 .484
.824 +.000 −.005
1.688 +.000 −.005
.229 +.002 −.002
.140
.421
45°
15°
.424 +.002 −.002
.317 R. ±.005 −.000
.390 R. +.005 −.000
1.680 +.000 −.004
.517 +.000 −.001
‖Y.0003
.234 +.001 −.000 DIA
-A-
.328 DIA SPOTFACE
⊚A.001
SECTION A-A

NOTES:

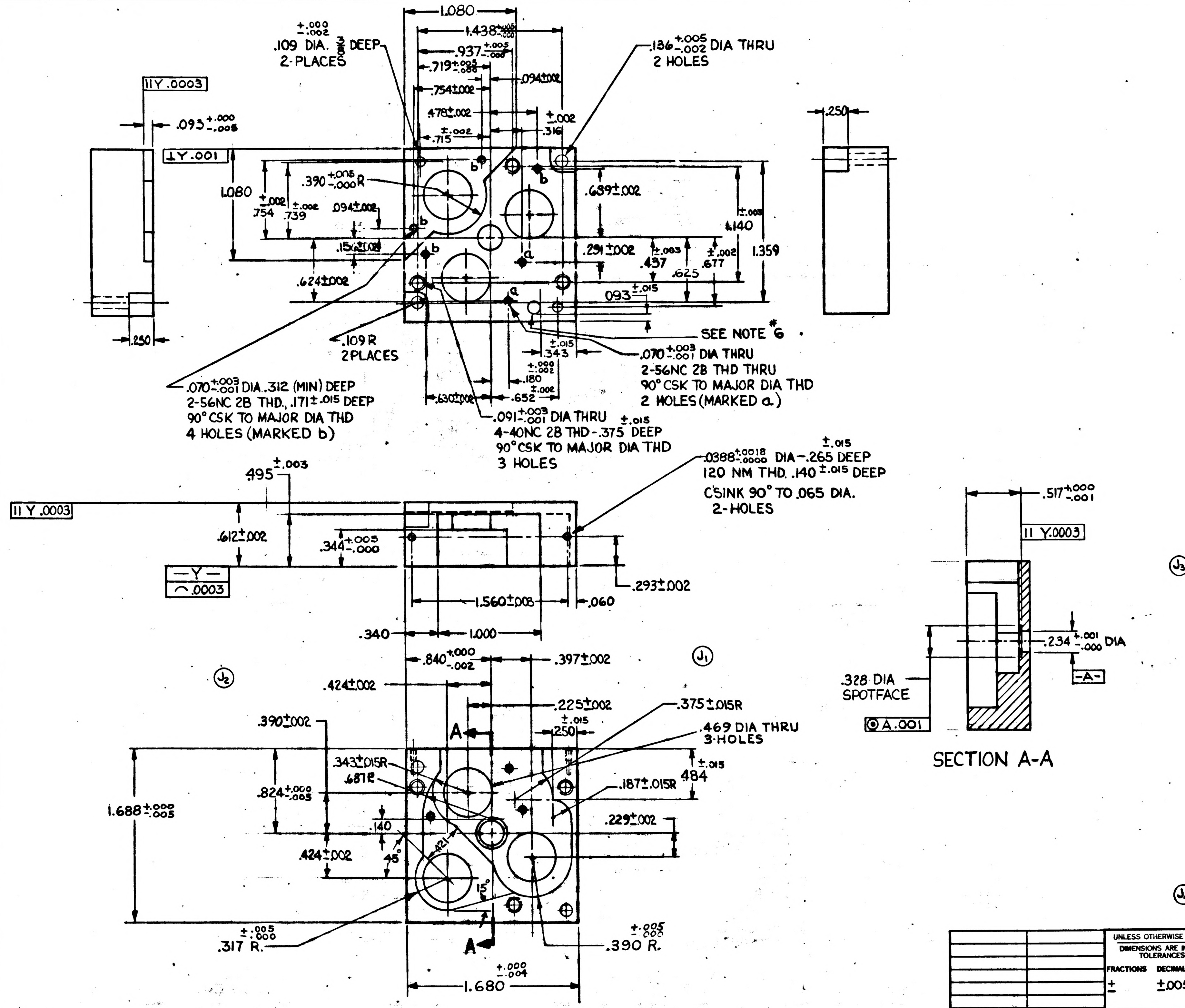
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. IDENTIFY USING DRAWING № AND REVISION LETTER PER MIL-STD-130 (ES-267)
3. MUST BE FREE FROM BURRS.
4. UNLESS OTHERWISE SPECIFIED:
   - A. SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{63}$ AA.
   - B. ALL CORNERS NOT TO EXCEED .010R, OR CHAMFER.
5. MACHINE AND HEAT TREAT PER ND 1002114 (ES-2044)
6. MARK WITH "O" OR CIRCLE 1/8 HIGH MAX, OR 1/8 DIA MAX CIRCLE PER ND 1002019, DO NOT STAMP.

1015501-011	1015500-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + +.005 +1° − −.005 −1° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN EMILLER DATE 17 JAN 63 CHECKED L. Wilson 29 JAN 63 APPROVAL E. Scholl 30 JAN 63 APPROVAL 30 JAN 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS CAP, MOUNTING
NEXT ASSY	USED ON	MATERIAL MIL-B-21531 (ES-7389 BERYLLIUM)	5-22-63 NASA APPROVAL MIT APPROVAL 22 May 63	CODE IDENT NO.
APPLICATION		CONTRACT NAS9-497		SIZE D 1015507
				SCALE 2:1 SHEET 1 OF 1

3 4 Feb 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 01315					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
F		UPGRADED FOR CLASS A RELEASE		4 MAY 63	WEH
G		REVISED PER TDRR # 02189		7-18-63	WK
H		REVISED PER TDRR # 02190		7-24-63	WK
J		REVISED PER TDRR # 06162		11 FEB 64	WK



.109 DIA. $^{+.000}_{-.002}$ 3/8 DEEP 2-PLACES
1.080
1.438 $^{+.005}_{-.000}$
.937 $^{+.005}_{-.000}$
.719 $^{+.005}_{-.000}$
.094±.002
.754±.002
.478±.002
.715 ±.002
.316 ±.002
.136 $^{+.005}_{-.002}$ DIA THRU 2 HOLES
II Y .0003
.093 $^{+.000}_{-.005}$
⊥ Y .001
1.080
.754 ±.002
.739 ±.002
.390 $^{+.005}_{-.000}$ R
.094±.002
.151±.002
.624±.002
.689±.002
1.140 ±.005
.291±.002
.437 ±.003
.625
.677 ±.002
1.359
.093 ±.015
.250
.250
SEE NOTE # 6
.109 R 2 PLACES
.343 ±.015
.180 $^{+.000}_{-.002}$
.652 ±.002
.630±.002
.070 $^{+.003}_{-.001}$ DIA THRU 2-56NC 2B THD THRU 90° CSK TO MAJOR DIA THD 2 HOLES (MARKED a)
.070 $^{+.003}_{-.001}$ DIA .312 (MIN) DEEP 2-56NC 2B THD., .171 ±.015 DEEP 90° CSK TO MAJOR DIA THD 4 HOLES (MARKED b)
.091 $^{+.003}_{-.001}$ DIA THRU 4-40NC 2B THD - .375 ±.015 DEEP 90° CSK TO MAJOR DIA THD 3 HOLES
.0388 $^{+.0018}_{-.0000}$ DIA - .265 ±.015 DEEP 120 NM THD. .140 ±.015 DEEP C'SINK 90° TO .065 DIA. 2-HOLES
.495 ±.003
II Y .0003
.612±.002
.344 $^{+.005}_{-.000}$
—Y—
⌒ .0003
.293±.002
1.560±.008
.060
.340
1.000
.840 $^{+.000}_{-.002}$
.397±.002
.424±.002
.225±.002
.250 ±.015
.390±.002
.375±.015R
.469 DIA THRU 3-HOLES
.343±.015R
.687R
.824 $^{+.000}_{-.005}$
.484 ±.015
.187±.015R
1.688 $^{+.000}_{-.005}$
.140
.229±.002
.424±.002
45°
.421
15°
.317 R. $^{+.005}_{-.000}$
.390 R. $^{+.005}_{-.000}$
1.680 $^{+.000}_{-.004}$
A
A
J1
J2
.517 $^{+.000}_{-.001}$
II Y .0003
.234 $^{+.001}_{-.000}$ DIA
-A-
.328 DIA SPOTFACE
◎ A .001

SECTION A-A

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. IDENTIFY PER ND 1002019
3. MUST BE FREE FROM BURRS.
4. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{63}$ AA.
   B. ALL CORNERS NOT TO EXCEED .010R, OR CHAMFER.
5. MACHINE AND HEAT TREAT PER ND 1002114 (ES-2044)
6. MARK WITH "O" OR CIRCLE 1/8 HIGH MAX, OR 1/8 DIA MAX CIRCLE PER ND 1002019, DO NOT STAMP.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ±.005 ANGLES ± 1° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
	DRAWN EMILLER DATE 17 JAN 63 CHECKED J. Wilson 29 JAN 63 APPROVAL E. Scholl 30 JAN 63 APPROVAL 30 JAN 63	CAP, MOUNTING		
MATERIAL MIL-B-21531 (ES-7389 BERYLLIUM)	NASA APPROVAL 5-22-63	CODE IDENT NO.	SIZE D	1015507
CONTRACT NAS9-497	MIT APPROVAL 22 May 63	SCALE 2:1		SHEET 1 OF 1

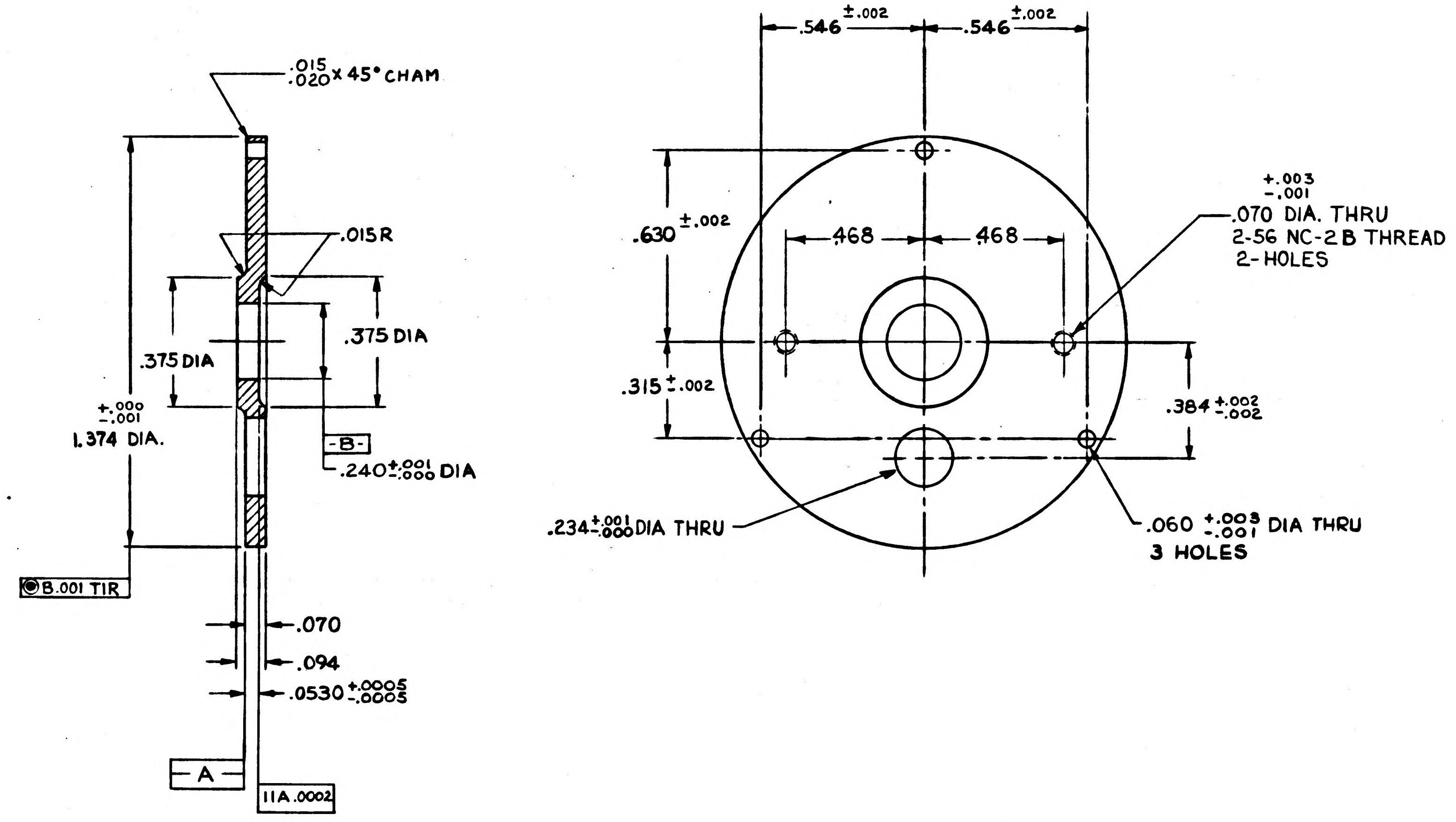
1015501-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

4 Feb 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

D 1015508 2

REVISIONS TRR 035					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
D		UPGRADED FOR CLASS A RELEASE		6 APR 63	



.015 .020 X 45° CHAM
.015R
.375 DIA
.375 DIA
+.000 -.001 1.374 DIA.
-B-
.240 +.001 -.000 DIA
B .001 TIR
.070
.094
.0530 +.0005 -.0005
-A-
A .0002
.546 ±.002
.546 ±.002
.630 ±.002
.468
.468
.315 ±.002
.384 +.002 -.002
+.003 -.001 .070 DIA. THRU
2-56 NC-2B THREAD
2-HOLES
.234 +.001 -.000 DIA THRU
.060 +.003 -.001 DIA THRU
3 HOLES

MACHINE AND HEAT TREAT PER ND 1002114 (ES-2044)

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63/AA.
ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.

MUST BE FREE FROM BURRS.
INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
PIECEMARK PER MIL-STD-130 (ES-267, SELECT FROM -1 THRU -19)

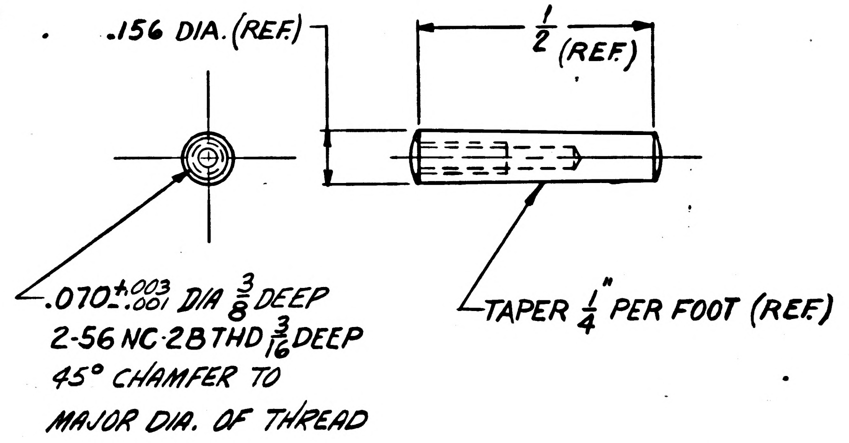
1015501-011 NEXT ASSY	1015500-011 USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + — − — DECIMALS +.005 −.005 ANGLES +5° −5° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN R. Fox DATE 17 JAN 63 CHECKED W. Diehl 25 JAN 63 APPROVAL E. Scholl 28 JAN '63 APPROVAL J. Ruder 28 JAN 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS BEARING SUPPORT
APPLICATION		MATERIAL MIL-B-21531 (ES-7389 BERYLLIUM) CONTRACT NAS-9-497	5-22-63 NASA APPROVAL MIT APPROVAL 22 May 63	CODE IDENT NO. SIZE D 1015508 SCALE 4:1 SHEET

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

1 1015510 | C |

REVISIONS TDRR 1379

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED FOR CLASS A RELEASE TDRR01379		6 APR 63	RH WC


.156 DIA. (REF.)
1/2 (REF.)
.070 +.003/-.001 DIA 3/8 DEEP
2-56 NC-2B THD 3/16 DEEP
45° CHAMFER TO
MAJOR DIA. OF THREAD
TAPER 1/4" PER FOOT (REF.)

PIECEMARK PER MIL-STD-130. (ES-267, SELECT FROM -1 THRU -19)
INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327

1 MAKE FROM MS24692-147

1015665-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+ —	+ 2°
- 1/64	- —	- 2°

DO NOT SCALE THIS DRAWING

MATERIAL 1

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN KOSMATKA DATE 18 JAN 63
CHECKED Ed Foster 24 JAN 63
APPROVAL J F Petrang 24 JAN 63
APPROVAL R Bond 24 JAN 63
NASA APPROVAL Jack Barnard
MIT APPROVAL W Kupfer 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

PIN - TAPER #1/0

CODE IDENT NO.
SIZE B
1015510
SCALE —
SHEET

MIL 10778-P

4 Feb 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

D 1015511

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		UPGRADED FOR D379 CLASS A RELEASE		MAY 63	MUX

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.

MUST BE FREE FROM BURRS.

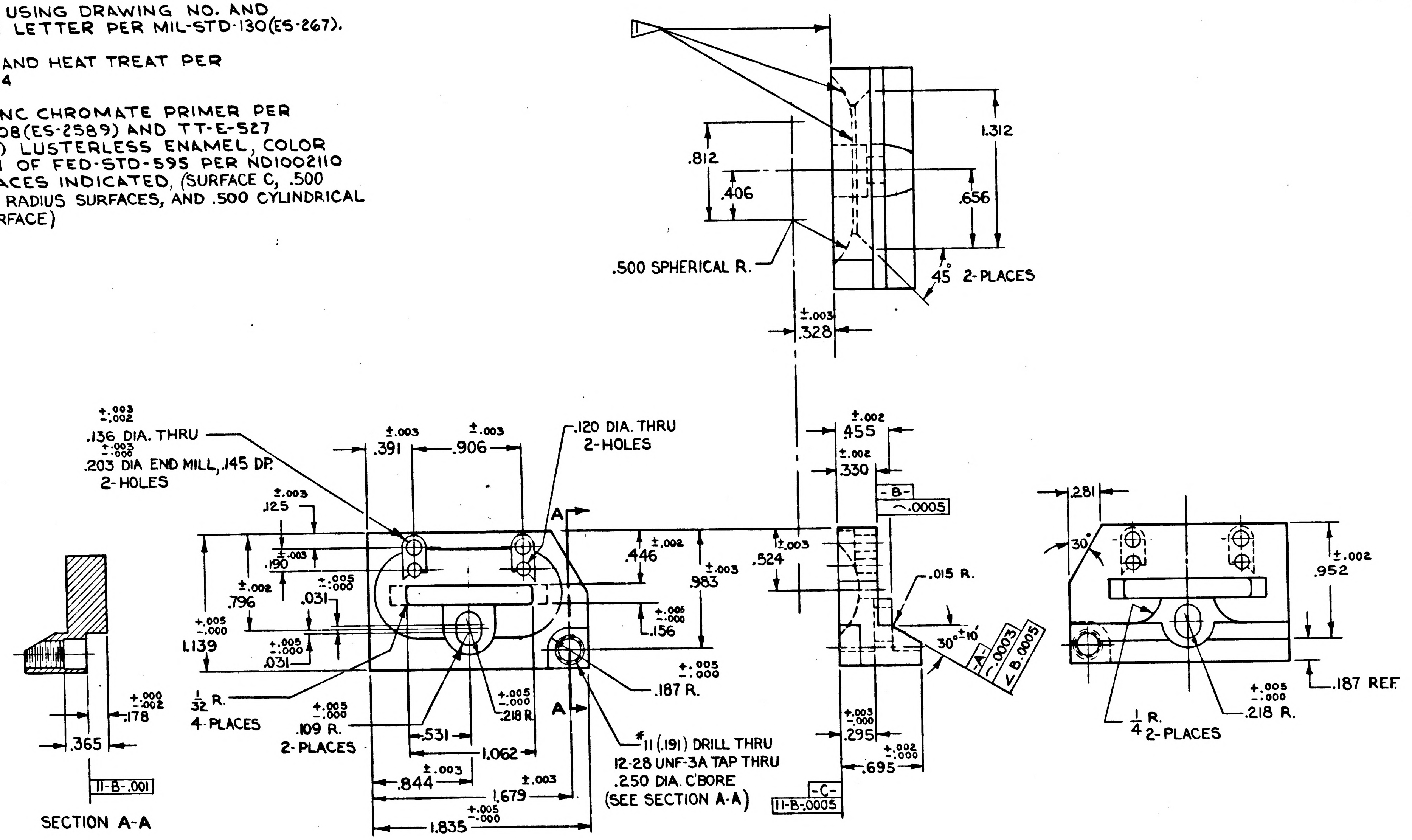
UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63 √.

ALL CORNERS NOT TO EXCEED .010R OR CHAMFER.

IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130(ES-267).

MACHINE AND HEAT TREAT PER ND1002114

1 APPLY ZINC CHROMATE PRIMER PER MIL-P-6808(ES-2589) AND TT-E-527 (ES-2602) LUSTERLESS ENAMEL, COLOR NO. 36231 OF FED-STD-595 PER ND1002110 TO SURFACES INDICATED, (SURFACE C, .500 SPHERICAL RADIUS SURFACES, AND .500 CYLINDRICAL RADIUS SURFACE)


1
.812
.406
1.312
.656
.500 SPHERICAL R.
45° 2-PLACES
±.003 .328
+.003 −.002 .136 DIA. THRU
+.003 −.000 .203 DIA END MILL, .145 DP.
2-HOLES
±.003 .391
±.003 .906
.120 DIA. THRU
2-HOLES
±.003 .125
±.003 .190
±.002 .796
+.005 −.000 .031
+.005 −.000 1.139
+.005 −.000 .031
A
±.002 .446
±.003 .983
+.005 −.000 .156
±.003 .524
1/32 R.
4-PLACES
+.005 −.000 .109 R.
2-PLACES
.531
+.005 −.000 .218 R
1.062
±.003 .844
±.003 1.679
+.005 −.000 1.835
+.005 −.000 .187 R.
#11 (.191) DRILL THRU
12-28 UNF-3A TAP THRU
.250 DIA. C'BORE
(SEE SECTION A-A)
+.000 −.002 .178
.365
11-B-.001
SECTION A-A
±.002 .455
±.002 .330
-B-
⌒.0005
.015 R.
30° ±10'
-A-
⌒.0003
∠B.0005
+.003 −.000 .295
+.002 −.000 .695
-C-
11-B-.0005
.281
30°
±.002 .952
.187 REF.
1/4 R.
2-PLACES
+.005 −.000 .218 R.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ±1/64 DECIMALS +.005 −.005 ANGLES +1° −1° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN E. MILLER DATE 21 JAN 63 CHECKED FESLER 28 JAN 63 APPROVAL E SCHOLL 30 JAN 63 APPROVAL R BOND 30 JAN 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS MOUNTING CLAMP	
1015665-011 NEXT ASSY	1015500-011 USED ON	MATERIAL MIL-B-21531(ES-7389 BERYLLIUM)	NASA APPROVAL	CODE IDENT NO.	SIZE D	1015511
APPLICATION		CONTRACT NAS-9-497	MIT APPROVAL 24 May 63	SCALE 2:1		SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.

MUST BE FREE FROM BURRS.

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63√

ALL CORNERS NOT TO EXCEED .010R OR CHAMFER.

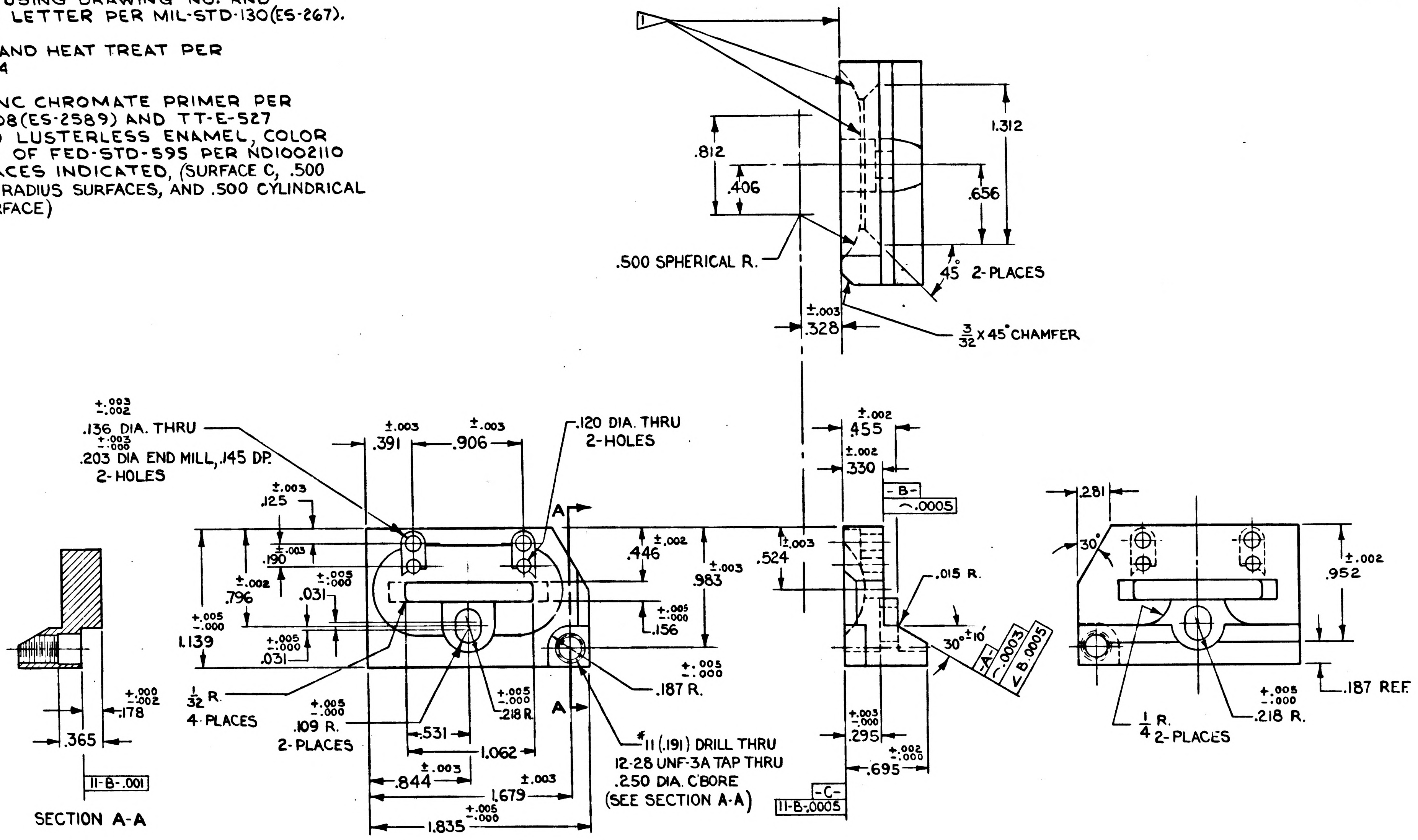
IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130(ES-267).

MACHINE AND HEAT TREAT PER ND1002114

1 APPLY ZINC CHROMATE PRIMER PER MIL-P-6808(ES-2589) AND TT-E-527 (ES-2602) LUSTERLESS ENAMEL, COLOR NO. 36231 OF FED-STD-595 PER ND1002110 TO SURFACES INDICATED, (SURFACE C, .500 SPHERICAL RADIUS SURFACES, AND .500 CYLINDRICAL RADIUS SURFACE)

REVISIONS TDRR 0.375

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		UPGRADED FOR 0375 CLASS A RELEASE		11 MAY 63	
E		REVISED PER TDRR* 01591		JUNE 17 63	



1
1.312
.812
.406
.656
.500 SPHERICAL R.
45° 2-PLACES
±.003 .328
3/32 X 45° CHAMFER
+.003 -.002 .136 DIA. THRU
+.003 -.000 .203 DIA END MILL, .145 DP. 2-HOLES
±.003 .391
±.003 .906
.120 DIA. THRU 2-HOLES
±.003 .125
±.003 .190
±.002 .796
+.005 -.000 .031
+.005 -.000 1.139
+.005 -.000 .031
±.002 .446
±.003 .983
+.005 -.000 .156
1/32 R. 4-PLACES
+.005 -.000 .109 R. 2-PLACES
.531
+.005 -.000 .218 R.
1.062
±.003 .844
±.003 1.679
+.005 -.000 1.835
+.005 -.000 .187 R.
#11 (.191) DRILL THRU 12-28 UNF-3A TAP THRU .250 DIA. C'BORE (SEE SECTION A-A)
A
A
±.002 .455
±.002 .330
-B- ⌒.0005
±.003 .524
.015 R.
30°±10'
-A- ⌒.0003 ∠B.0005
+.003 -.000 .295
+.002 -.000 .695
-C- 11-B-.0005
+.000 -.002 .178
.365
11-B-.001
SECTION A-A
.281
30°
±.002 .952
.187 REF.
1/4 R. 2-PLACES
+.005 -.000 .218 R.

1015682	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
± 1/64	+.005 -.005	+1° -1°

DO NOT SCALE THIS DRAWING

MATERIAL MIL-B-21531(ES-7389 BERYLLIUM)
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

DRAWN E MILLER DATE 21 JAN 63
CHECKED FESLER 28 JAN 63
APPROVAL E SCHOLL 30 JAN 63
APPROVAL R BOND 30 JAN 63
NASA APPROVAL
MIT APPROVAL 24 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

MOUNTING CLAMP

CODE IDENT NO.
SIZE D
1015511
SCALE 2:1
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

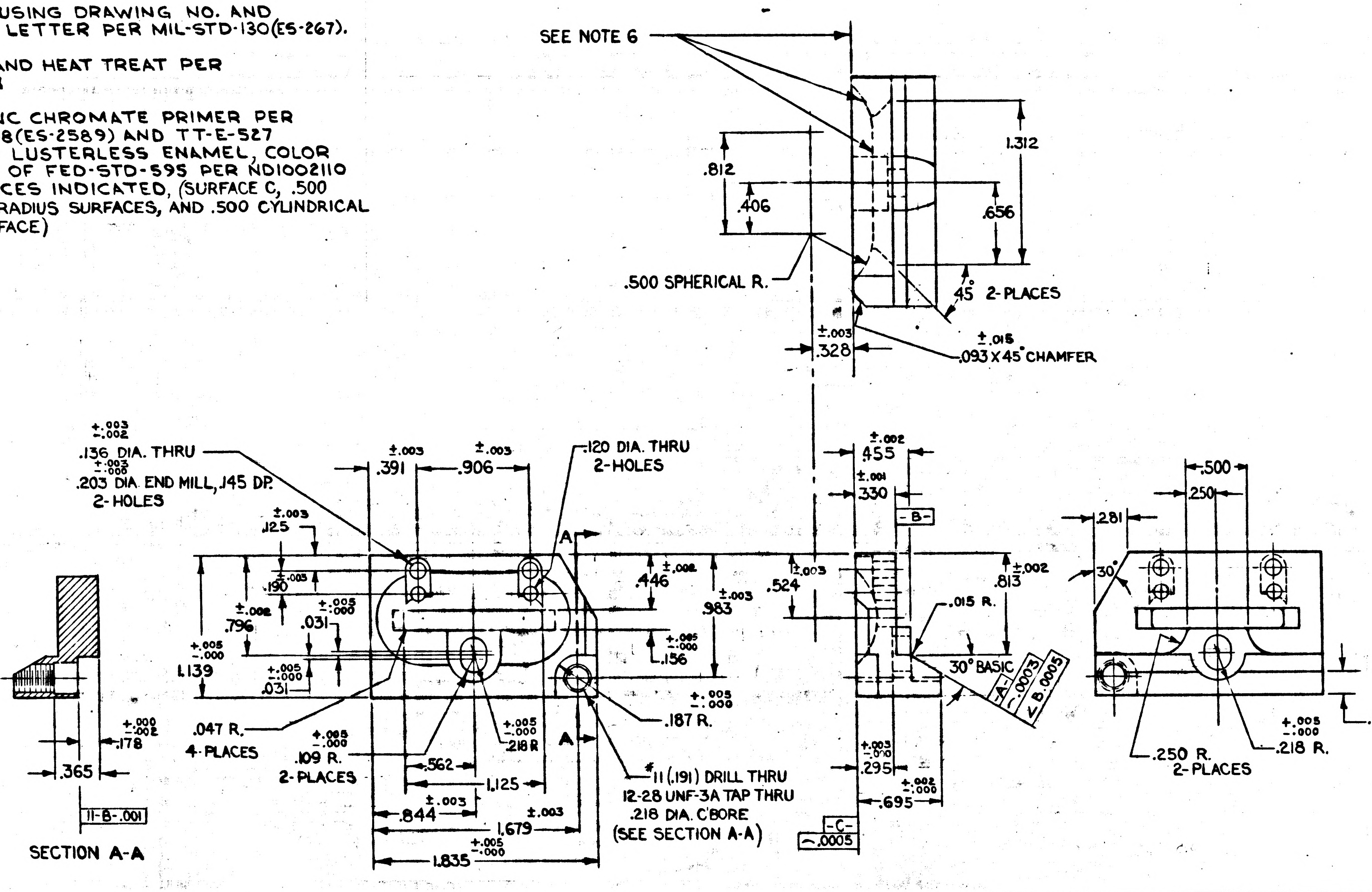
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. MUST BE FREE FROM BURRS.
3. UNLESS OTHERWISE SPECIFIED:
   - A. SURFACE ROUGHNESS MUST NOT EXCEED 63√.
   - B. ALL CORNERS NOT TO EXCEED .010R OR CHAMFER.
4. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130(ES-267).
5. MACHINE AND HEAT TREAT PER ND1002114
6. APPLY ZINC CHROMATE PRIMER PER MIL-P-6808(ES-2589) AND TT-E-527 (ES-2602) LUSTERLESS ENAMEL, COLOR NO. 36231 OF FED-STD-595 PER ND1002110 TO SURFACES INDICATED, (SURFACE C, .500 SPHERICAL RADIUS SURFACES, AND .500 CYLINDRICAL RADIUS SURFACE)

F 1015511

REVISIONS TDRR 01379

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		UPGRADED FOR 01379 CLASS A RELEASE		11 MAY 63	
E		REVISED PER TDRR# 01591		JUNE 17 63	WK.
F		REVISED PER TDRR# 02077		7-16-63	7/17



SEE NOTE 6
1.312
.812
.406
.656
.500 SPHERICAL R.
45° 2-PLACES
±.003 .328
±.015 .093 X 45° CHAMFER
+.003 -.002 .136 DIA. THRU
+.003 -.000 .203 DIA. END MILL, .145 DP. 2-HOLES
±.003 .391
±.003 .906
.120 DIA. THRU 2-HOLES
±.003 .125
±.003 .190
±.002 .796
+.005 -.000 .031
+.005 -.000 1.139
+.005 -.000 .031
A
A
±.002 .446
±.003 .983
+.005 -.000 .156
+.005 -.000 .187 R.
.047 R. 4-PLACES
+.005 -.000 .109 R. 2-PLACES
+.005 -.000 .218 R
.562
1.125
±.003 .844
±.003 1.679
+.005 -.000 1.835
#11 (.191) DRILL THRU 12-28 UNF-3A TAP THRU .218 DIA. C'BORE (SEE SECTION A-A)
+.000 -.002 .178
.365
11-B-.001
SECTION A-A
±.002 .455
±.001 .330
-B-
±.003 .524
±.002 .813
.015 R.
30° BASIC
-A- ⌒.0003 ∠B.0005
+.003 -.000 .295
+.002 -.000 .695
-C- ⌒.0005
.500
.250
.281
30°
.187 REF.
.250 R. 2-PLACES
+.005 -.000 .218 R.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
		FRACTIONS DECIMALS ANGLES + +.005 +1° - -.005 -1°	ACSP PN DRAWN E. MILLER DATE 21 JAN 63 CHECKED FESLER 28 JAN 63 APPROVAL E SCHOLL 30 JAN 63 APPROVAL R BOND 30 JAN 63	MOUNTING CLAMP	
		DO NOT SCALE THIS DRAWING			
1015682	1015500-011	MATERIAL MIL-B-21531(ES-7389 BERYLLIUM)	NASA APPROVAL	CODE IDENT NO.	SIZE D 1015511
NEXT ASSY	USED ON	CONTRACT NAS-9-497	MIT APPROVAL 24 Jun 63	SCALE 2:1	SHEET 1 OF 1
APPLICATION					

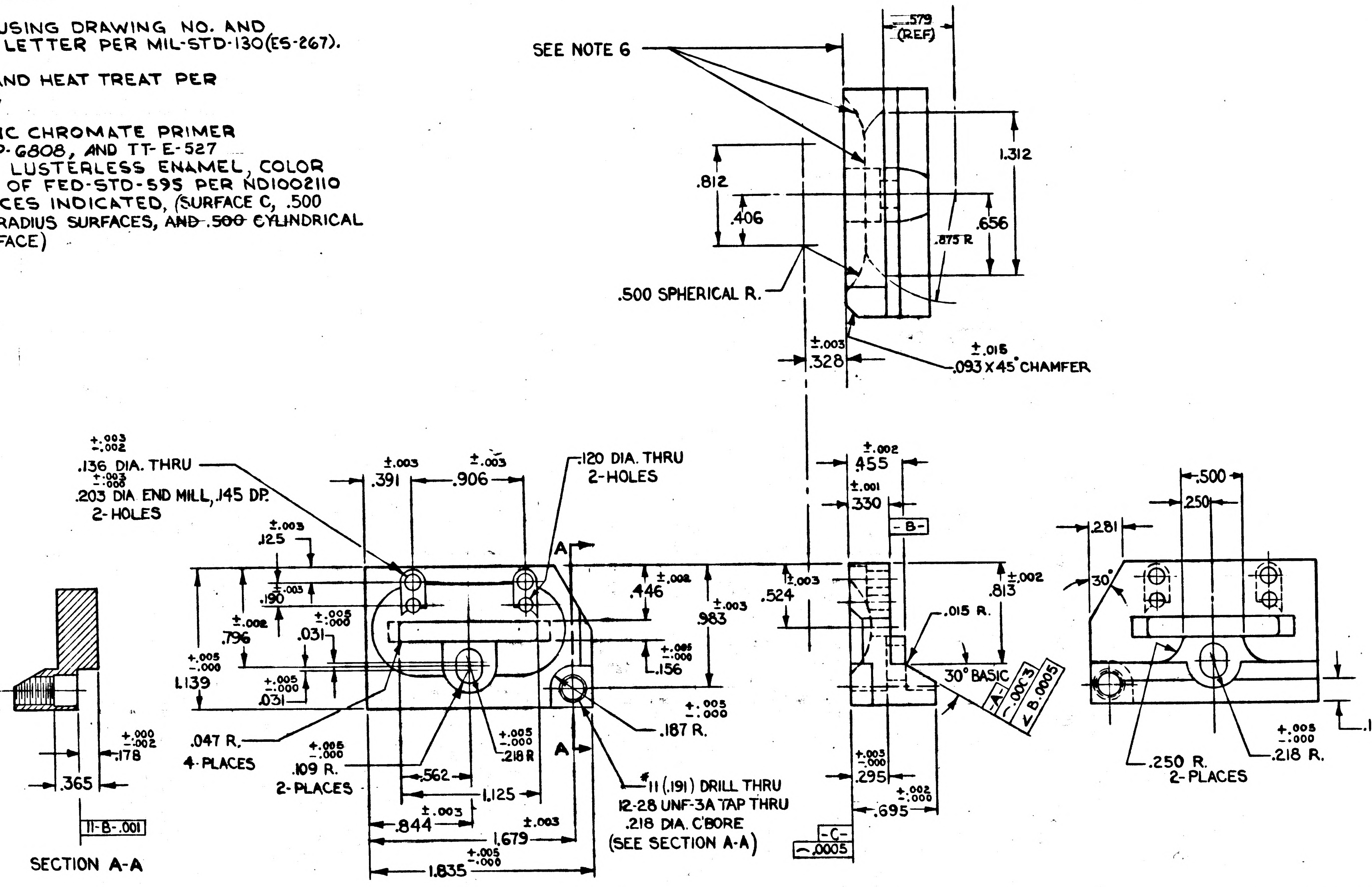
INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 01379

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		UPGRADED FOR 01379 CLASS A RELEASE		11 MAY 63	
E		REVISED PER TDRR# 01591		JUNE 17 63	WR.
F		REVISED PER TDRR# 02077		7-16-63	7/17
G4		REVISED PER TDRR# 03066		19 SEP 63	WR

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. MUST BE FREE FROM BURRS.
3. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED 63√.
   B. ALL CORNERS NOT TO EXCEED .010R OR CHAMFER.
4. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130(ES-267).
5. MACHINE AND HEAT TREAT PER ND1002114
6. APPLY ZINC CHROMATE PRIMER PER MIL-P-6808, AND TT-E-527 (ES-2602) LUSTERLESS ENAMEL, COLOR NO. 36231 OF FED-STD-595 PER ND1002110 TO SURFACES INDICATED, (SURFACE C, .500 SPHERICAL RADIUS SURFACES, ~~AND .500 CYLINDRICAL~~ RADIUS SURFACE)



SEE NOTE 6
.579 (REF)
1.312
.812
.406
.656
.875 R
.500 SPHERICAL R.
±.003 .328
±.015 .093 X 45° CHAMFER
+.003 -.002 .136 DIA. THRU
+.003 -.000 .203 DIA END MILL, .145 DP. 2-HOLES
±.003 .391
±.003 .906
.120 DIA. THRU 2-HOLES
±.003 .125
±.003 .190
±.002 .796
+.005 -.000 .031
+.005 -.000 1.139
+.005 -.000 .031
±.002 .446
±.003 .983
+.005 -.000 .156
±.003 .524
A
A
.047 R. 4-PLACES
+.005 -.000 .109 R. 2-PLACES
+.005 -.000 .218 R
+.005 -.000 .187 R.
.562
1.125
±.003 .844
±.003 1.679
+.005 -.000 1.835
#11 (.191) DRILL THRU 12-28 UNF-3A TAP THRU .218 DIA. C'BORE (SEE SECTION A-A)
+.000 -.002 .178
.365
11-B-.001
SECTION A-A
±.002 .455
±.001 .330
-B-
±.002 .813
.015 R.
30° BASIC
-A- ⌒ .0003 ∠ B .0005
+.003 -.000 .295
+.002 -.000 .695
-C-
⌒ .0005
.500
.250
.281
30°
.187 REF
.250 R. 2-PLACES
+.005 -.000 .218 R.

1015682	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
±.005 ±1°
DO NOT SCALE THIS DRAWING

MATERIAL MIL-B-~~21531~~(ES-7389 BERYLLIUM)
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. MILLER DATE 21 JAN 63
CHECKED FESLER 28 JAN 63
APPROVAL E SCHOLL 30 JAN 63
APPROVAL R BOND 30 JAN 63
NASA APPROVAL
MIT APPROVAL 24 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

MOUNTING CLAMP

CODE IDENT NO.
SIZE D
1015511
SCALE 2:1
SHEET 1 OF 1

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

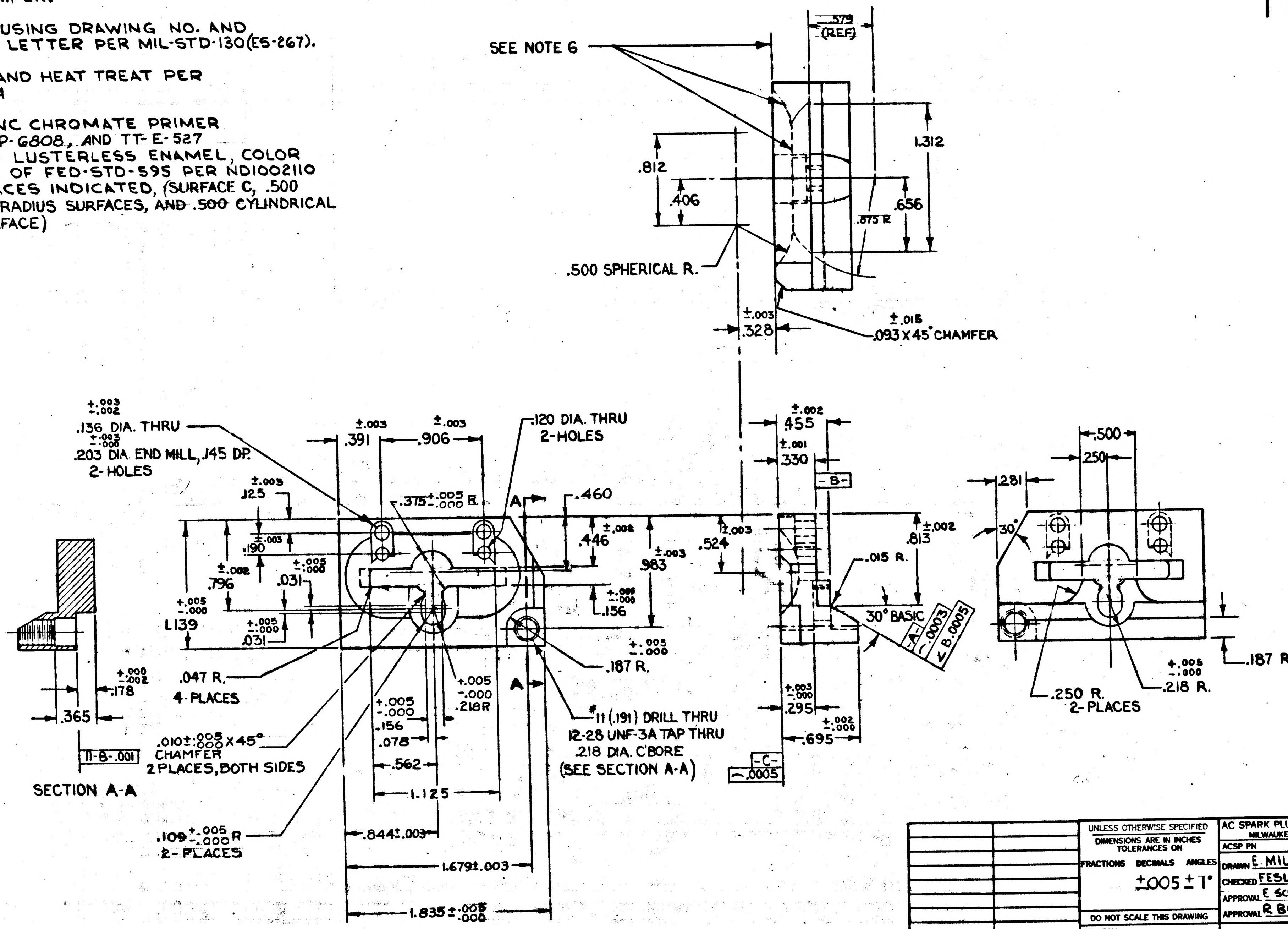
H 1015511 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. MUST BE FREE FROM BURRS.
3. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED 63√.
   B. ALL CORNERS NOT TO EXCEED .010R OR CHAMFER.
4. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130(ES-267).
5. MACHINE AND HEAT TREAT PER ND1002114
6. APPLY ZINC CHROMATE PRIMER PER MIL-P-6808, AND TT-E-527 (ES-2602) LUSTERLESS ENAMEL, COLOR NO. 36231 OF FED-STD-595 PER ND1002110 TO SURFACES INDICATED, (SURFACE C, .500 SPHERICAL RADIUS SURFACES, ~~AND .500 CYLINDRICAL RADIUS SURFACE~~)

REVISIONS TDRR 01379

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		UPGRADED FOR 01379 CLASS A RELEASE		11 MAY 63	RWY
E		REVISED PER TDRR# 01591		JUNE 17 63	WK.
F		REVISED PER TDRR# 02077		7-16-63	
G 4		REVISED PER TDRR# 03066		16 SEP 63	WK
H 2		REVISED PER TDRR NO. 03238		9/23/63	9/26/63



SEE NOTE 6
.579 (REF)
1.312
.812
.406
.656
.875 R
.500 SPHERICAL R.
±.003 .328
±.015 .093 X 45° CHAMFER
±.003 ±.002 .136 DIA. THRU
±.003 ±.000 .203 DIA. END MILL, .145 DP. 2-HOLES
±.003 .391
±.003 .906
.120 DIA. THRU 2-HOLES
.375 +.005 -.000 R.
±.003 .125
±.003 .190
±.002 .796
.031
+.005 -.000 1.139
+.005 -.000 .031
A
.460
±.002 .446
±.003 .983
+.005 -.000 .156
+.005 -.000 .187 R.
.047 R. 4-PLACES
+.005 -.000 .156
.078
+.005 -.000 .218R
.010 ±.005 ±.000 X 45° CHAMFER 2 PLACES, BOTH SIDES
.562
1.125
.109 +.005 -.000 R 2-PLACES
.844±.003
1.679±.003
1.835 +.005 -.000
#11 (.191) DRILL THRU 12-28 UNF-3A TAP THRU .218 DIA. C'BORE (SEE SECTION A-A)
+.000 -.002 .178
.365
11-B-.001
SECTION A-A
±.002 .455
±.001 .330
-B-
±.003 .524
±.002 .813
.015 R.
30° BASIC
-A-.0003
∠ B .0005
+.003 -.000 .295
+.002 -.000 .695
-C-
⌒.0005
.500
.250
.281
30°
.187 REF
+.005 -.000 .218 R.
.250 R. 2-PLACES

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ±.005 ±1°	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
			ACSP PN	MOUNTING CLAMP
			DRAWN E. MILLER DATE 21 JAN 63	
			CHECKED FESLER 28 JAN 63	
			APPROVAL E SCHOLL 30 JAN 63	
		DO NOT SCALE THIS DRAWING	APPROVAL R BOND 30 JAN 63	
1015682	1015500-011	MATERIAL MIL-B-~~21531~~(ES-7389) BERYLLIUM)	NASA APPROVAL	CODE IDENT NO. SIZE D 1015511
NEXT ASSY	USED ON		MIT APPROVAL 24 May 63	SCALE 2:1 SHEET 1 OF 1
APPLICATION		CONTRACT NAS-9-497		

INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

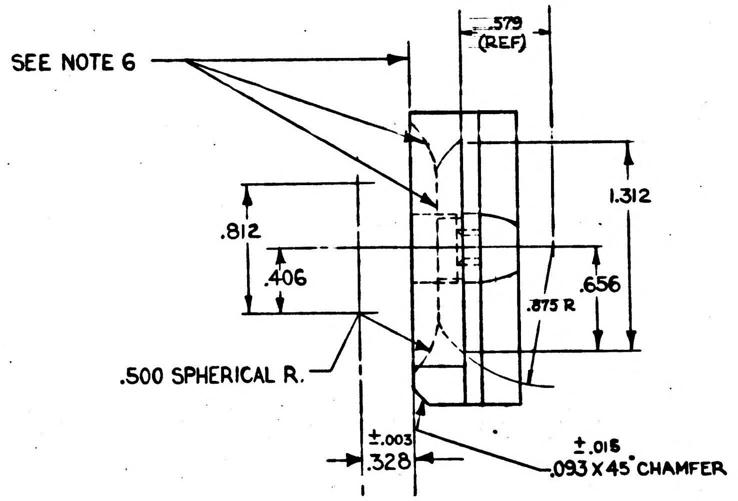
1015511

NOTES:

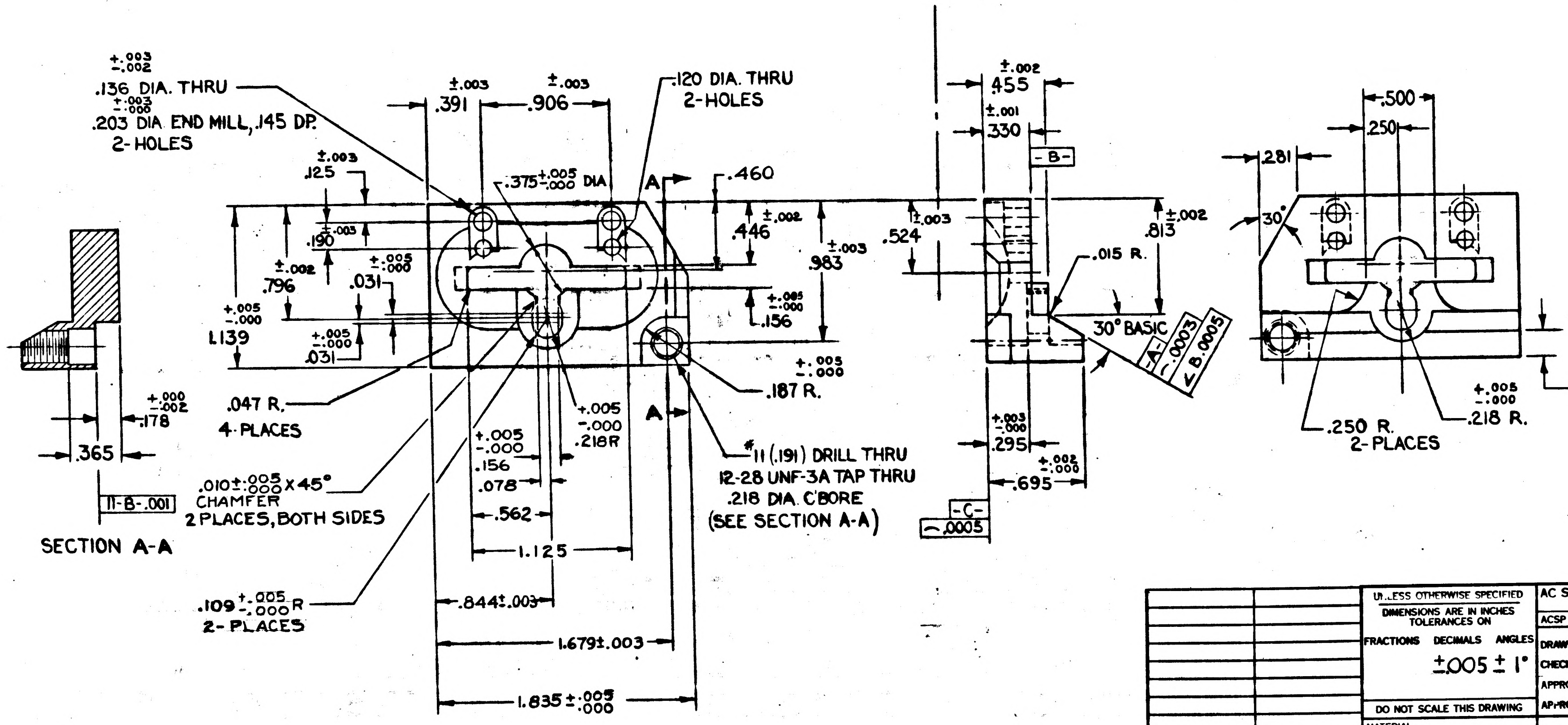
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. MUST BE FREE FROM BURRS.
3. UNLESS OTHERWISE SPECIFIED:
   - A. SURFACE ROUGHNESS MUST NOT EXCEED 63
   - B. ALL CORNERS NOT TO EXCEED .010R OR CHAMFER.
4. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130(ES-267).
5. MACHINE AND HEAT TREAT PER ND1002114
6. APPLY ZINC CHROMATE PRIMER PER MIL-P-6808, AND TT-E-527 (ES-2602) LUSTERLESS ENAMEL, COLOR NO. 36231 OF FED-STD-595 PER ND1002110 TO SURFACES INDICATED, (SURFACE C, .500 SPHERICAL RADIUS SURFACES, ~~AND .500 CYLINDRICAL~~ RADIUS SURFACE)

REVISIONS TDRR 01379

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		UPGRADED FOR 01379 CLASS A RELEASE		11 MAY 63	
E		REVISED PER TDRR* 01591		JUNE 17 63	WK
F		REVISED PER TDRR* 02077		7-16-63	
G 4		REVISED PER TDRR* 03066		15SEP63	WK
H 2		REVISED PER TDRR NO. 03238		9/23/63	9/26/63
J		REVISED PER TDRR NO. 04447		7 NOV 63	WK



SEE NOTE 6
.579 (REF)
1.312
.812
.406
.656
.875 R
.500 SPHERICAL R.
±.003 .328
±.015 .093 X 45° CHAMFER

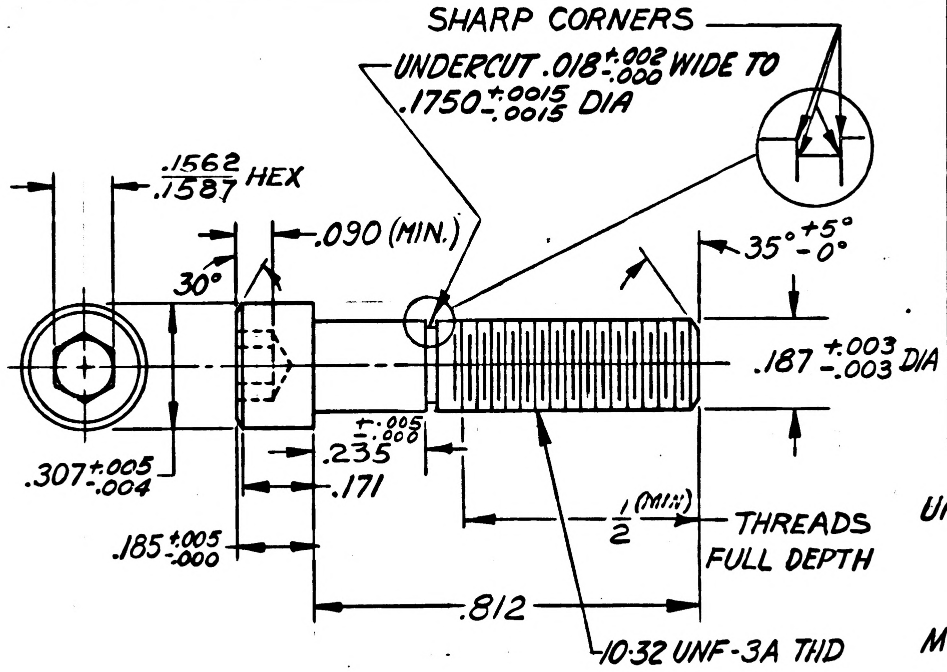


+.003 -.002 .136 DIA. THRU
+.003 -.000 .203 DIA END MILL, .145 DP.
2-HOLES
±.003 .391
±.003 .906
.120 DIA. THRU
2-HOLES
±.003 .125
.375 +.005 -.000 DIA
A
.460
±.002 .446
±.003 .983
.190 ±.003
±.002 .796
+.005 -.000 .031
+.005 -.000 1.139
+.005 -.000 .031
+.005 -.000 .156
+.005 -.000
.047 R.
4-PLACES
.187 R.
+.005 -.000 .218R
+.005 -.000 .156
.078
.562
1.125
.010 +.005 -.000 X 45° CHAMFER
2 PLACES, BOTH SIDES
.109 +.005 -.000 R
2-PLACES
#11 (.191) DRILL THRU
12-28 UNF-3A TAP THRU
.218 DIA. C'BORE
(SEE SECTION A-A)
.844±.003
1.679±.003
1.835 +.005 -.000
+.000 -.002 .178
.365
11-B-.001
SECTION A-A
±.002 .455
±.001 .330
-B-
±.003 .524
±.002 .813
.015 R.
30° BASIC
A .0005
∠ B .0005
+.003 -.000 .295
+.002 -.000 .695
-C-
⏤ .0005
.500
.250
.281
30°
.187 REF
+.005 -.000 .218 R.
.250 R.
2-PLACES

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
		FRACTIONS DECIMALS ANGLES ±.005 ±1°	ACSP PN	MOUNTING CLAMP
			DRAWN E. MILLER DATE 21 JAN 63 CHECKED FESLER 28 JAN 63 APPROVAL E SCHOLL 30 JAN 63 APPROVAL R BOND 30 JAN 63	
		DO NOT SCALE THIS DRAWING		
1015682	1015500-011	MATERIAL MIL-B-~~21531(ES-7383~~ BERYLLIUM)	NASA APPROVAL	CODE IDENT NO. / SIZE D / 1015511
NEXT ASSY	USED ON		MIT APPROVAL W Kupper 24 May 63	
APPLICATION		CONTRACT NAS-9-497		SCALE 2:1 / SHEET 1 OF 1

INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

REVISIONS	TDRR 01379			
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED FOR CLASS A RELEASE TDRR 01379		11-MAY 63	A. J. F.



SHARP CORNERS
UNDERCUT .018 +.002 -.000 WIDE TO .1750 +.0015 -.0015 DIA
.1562 .1587 HEX
.090 (MIN.)
30°
35° +5° -0°
.187 +.003 -.003 DIA
+.005 -.000 .235
.307 +.005 -.004
.171
.185 +.005 -.000
1/2 (MIN) THREADS FULL DEPTH
.812
10-32 UNF-3A THD

UNLESS OTHERWISE SPECIFIED
ALL CORNERS MUST NOT EXCEED .010 R OR CHAMFER
SURFACE ROUGHNESS MUST NOT EXCEED 125√
MUST BE FREE FROM BURRS
PIECEMARK PER MIL-STD-130 (ES-267)

FINISH PER MIL-F-14072 (SIG C) FINISH E300 (ES-585, PASSIVATE).
INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327

(MAY BE MADE FROM MS 16996-16)

1015500-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ 2°
- 1/64	-.005	- 2°

DO NOT SCALE THIS DRAWING
MATERIAL QQ-S-763 COND A, CL. 302-304 (ES-376, SST)
CONTRACT NAS 9-497
J Smith 4 Feb 63

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Turner DATE 21 JAN 63
CHECKED Fesler 28 JAN 63
APPROVAL J Petrany 30 JAN 63
APPROVAL J Bond 30 JAN 63
NASA APPROVAL Jack Bernard
J J Sirow
MIT APPROVAL W Kupfer 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CLAMP - SCREW

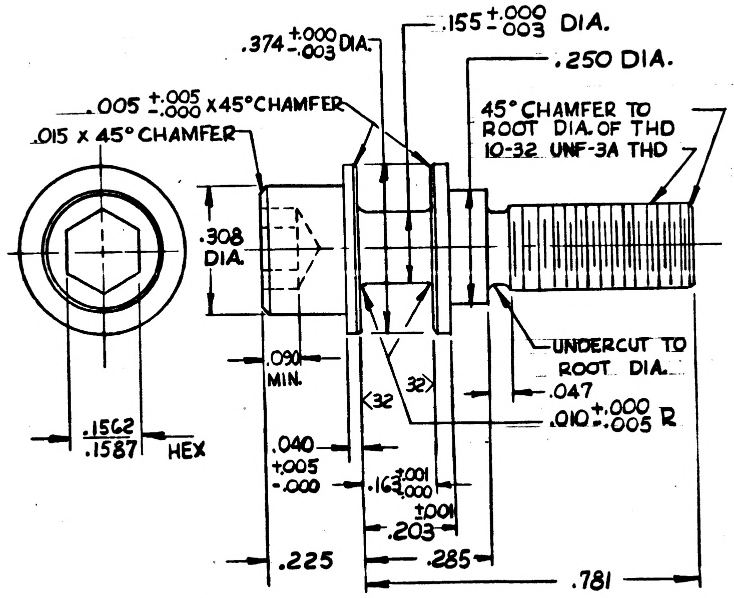
CODE IDENT NO.
SIZE B
1015512
SCALE 4:1
SHEET

MIL 10778-P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 01379

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED FOR CLASS A RELEASE TDRR 01379		11-MAY 63	A.J.F.
D	REVISED PER TDRR NO. 03237		9/26/63	



.374 +.000 -.003 DIA.
.155 +.000 -.003 DIA.
.250 DIA.
.005 +.005 -.000 X45° CHAMFER
.015 X 45° CHAMFER
45° CHAMFER TO ROOT DIA. OF THD
10-32 UNF-3A THD
.308 DIA.
.090 MIN.
UNDERCUT TO ROOT DIA.
.047
.010 +.000 -.005 R
32
32
.1562 / .1587 HEX
.040 +.005 -.000
.163 +.001 -.000
.203 ±.001
.225
.285
.781

NOTES:

1. UNLESS OTHERWISE SPECIFIED
   A. ALL CORNERS MUST NOT EXCEED .010 R OR CHAMFER
   B. SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt[63]{}$ EXCEPT AS NOTED
2. MUST BE FREE FROM BURRS
3. PIECEMARK PER MIL-STD-130 (ES-267)
4. FINISH PER MIL-F-14072 (SIG C) FINISH E300 (ES-585, PASSIVATE).
5. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327

NEXT ASSY	USED ON
1015500-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + −
DECIMALS ±.005
ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL QQ-S-763 COND A, CL. 302-304 (ES-376, SST)
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Turner DATE 21 JAN 63
CHECKED Fesler 28 JAN 63
APPROVAL J. Petrany 30 JAN 63
APPROVAL 30 JAN 63
NASA APPROVAL Jack Barnard
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CLAMP - SCREW

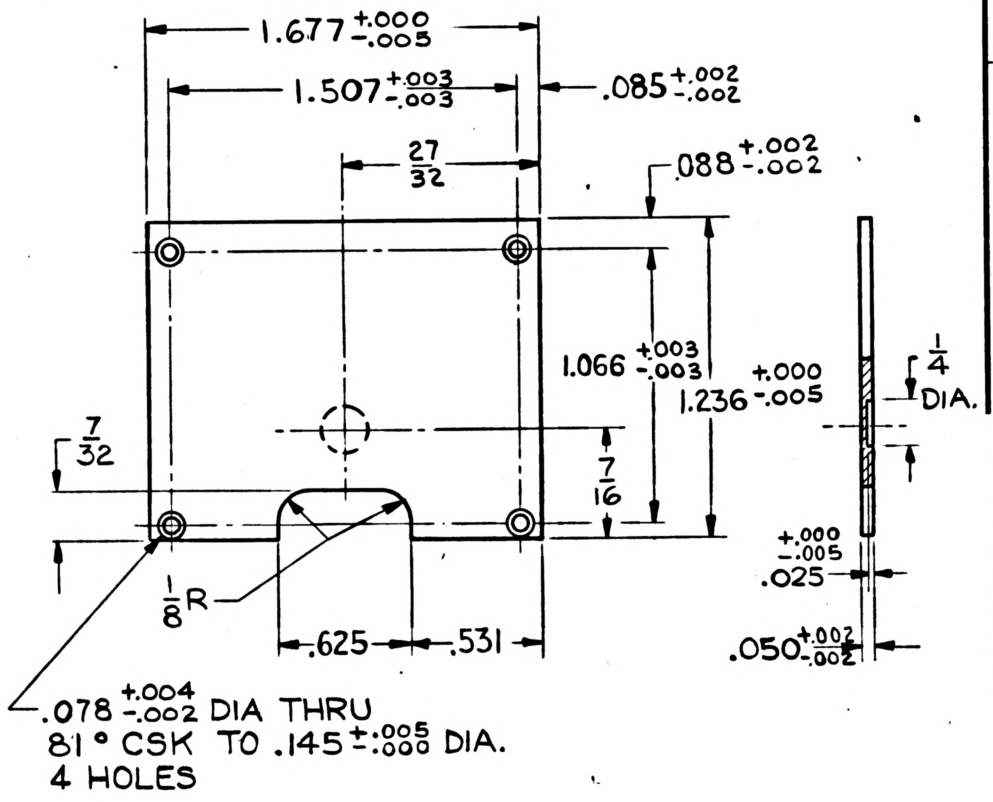
CODE IDENT NO.
SIZE B
1015512
SCALE 4:1
SHEET 1 OF 1

MIL 10778—P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 01315

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED FOR CLASS A RELEASE		6 APR 63	RH



1.677 +.000 -.005
1.507 +.003 -.003
.085 +.002 -.002
27/32
.088 +.002 -.002
1.066 +.003 -.003
1.236 +.000 -.005
1/4 DIA.
7/32
7/16
1/8 R
.625
.531
+.000 -.005 .025
.050 +.002 -.002
.078 +.004 -.002 DIA THRU
81° CSK TO .145 +.005 -.000 DIA.
4 HOLES

INTERPRET DWG IN ACCORDANCE WITH MIL-D-70327

MACHINE & HEAT TREAT PER ND 1002114 (ES-2044)

PIECEMARK PER MIL-STD-130 (ES-267, SELECT FROM -1 THRU -19)

MUST BE FREE FROM BURRS

UNLESS OTHERWISE SPECIFIED:

SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt[63]{}$ AA

ALL CORNERS NOT TO EXCEED .010R OR CHAMFER

1015662-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+1°
-1/64	-.005	-1°

DO NOT SCALE THIS DRAWING

MATERIAL MIL-B-21531 (ES-7389 BERYLLIUM)

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN B. Sullivan DATE 18 JAN 63
CHECKED Ed Foster 25 JAN 63
APPROVAL J. F. Pettamp 25 JAN 63
APPROVAL Bond 25 JAN 63
NASA APPROVAL W. J. Rhine 5-22-63
MIT APPROVAL W. Kupfer 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER, ADJ WHEEL

CODE IDENT NO.	SIZE	
	B	1015514
SCALE 2:1		SHEET

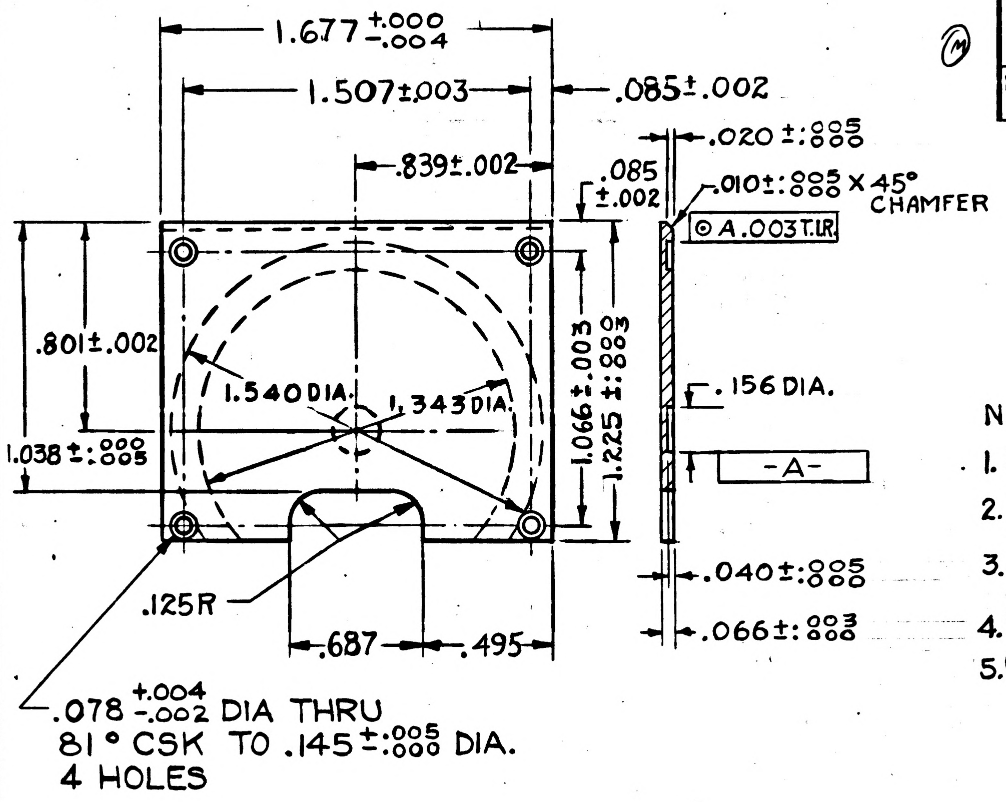
MIL 1077B—P

4 Feb 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1 1015514 D

REVISIONS TDRR 01315				
SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED FOR CLASS A RELEASE		6 APR 63	RH
D 11	REVISED PER TDRR NO. 03217		9/20/63	WK



1.677 +.000 -.004
1.507±.003
.085±.002
.839±.002
.085 ±.002
.020 ±.005 .000
.010 ±.005 .000 X 45° CHAMFER
⊚ A .003 T.I.R.
.801±.002
1.038 ±.000 .005
1.540 DIA.
1.343 DIA.
1.066±.003
1.225 ±.003
.156 DIA.
-A-
.125R
.687
.495
.040 ±.005 .000
.066 ±.003 .000
.078 +.004 -.002 DIA THRU
81° CSK TO .145 ±.005 .000 DIA.
4 HOLES

NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH MIL-D-70327
2. MACHINE & HEAT TREAT PER ND 1002114 (ES-2044)
3. PIECEMARK PER MIL-STD-130 (ES-267, SELECT FROM -1 THRU -19)
4. MUST BE FREE FROM BURRS
5. UNLESS OTHERWISE SPECIFIED:
   - A. SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt[63]{}$ AA
   - B. ALL CORNERS NOT TO EXCEED .010R OR CHAMFER

1015662-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+.005	+
–	–	–

DO NOT SCALE THIS DRAWING

MATERIAL MIL-B-21531 (ES-7389 BERYLLIUM)

CONTRACT NAS-9-497

4 Feb 63

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

DRAWN B. Sullivan DATE 18 JAN 63
CHECKED Ed Foster 25 JAN 63
APPROVAL J. F. Petrangi 25 JAN 63
APPROVAL 25 JAN 63
NASA APPROVAL W. J. 5-22-63
MIT APPROVAL W. Kupfer 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER, ADJ WHEEL

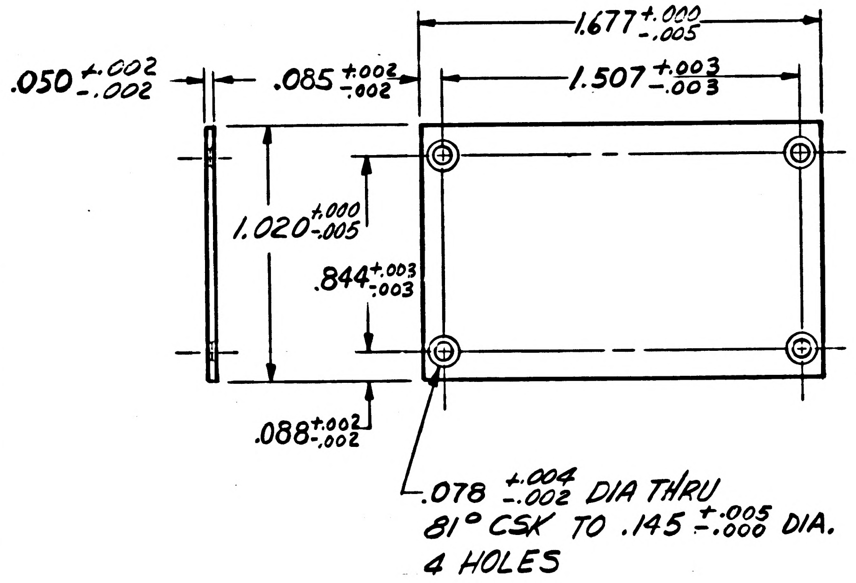
CODE IDENT NO.	SIZE	
	B	1015514
SCALE 2:1		SHEET 1 OF 1

MIL 1077B-P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 01315

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED FOR CLASS A RELEASE		8 APR 63	



.050 +.002 −.002
.085 +.002 −.002
1.677 +.000 −.005
1.507 +.003 −.003
1.020 +.000 −.005
.844 +.003 −.003
.088 +.002 −.002
.078 +.004 −.002 DIA THRU
81° CSK TO .145 +.005 −.000 DIA.
4 HOLES

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{63}$AA
ALL CORNERS NOT TO EXCEED .010 R
OR CHAMFER.

MACHINE & HEAT TREAT PER ND 1002114 (ES-2044)

PIECEMARK PER MIL-STD-130(ES-267, SELECT FROM -1 THRU -19)
MUST BE FREE FROM BURRS.

NEXT ASSY	USED ON
1015662-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ -	+.005	+1°
- -	-.005	-1°

DO NOT SCALE THIS DRAWING

MATERIAL MIL-B-21531(ES-7389 BERYLLIUM)

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN KOSMATKA DATE 16 JAN 63
CHECKED Ed Foster 25 JAN 63
APPROVAL J. F. Petra 25 JAN 63
APPROVAL 25 JAN 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22 Apr 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER - ENCODER

CODE IDENT NO.
SIZE B
1015515
SCALE 2:1
SHEET

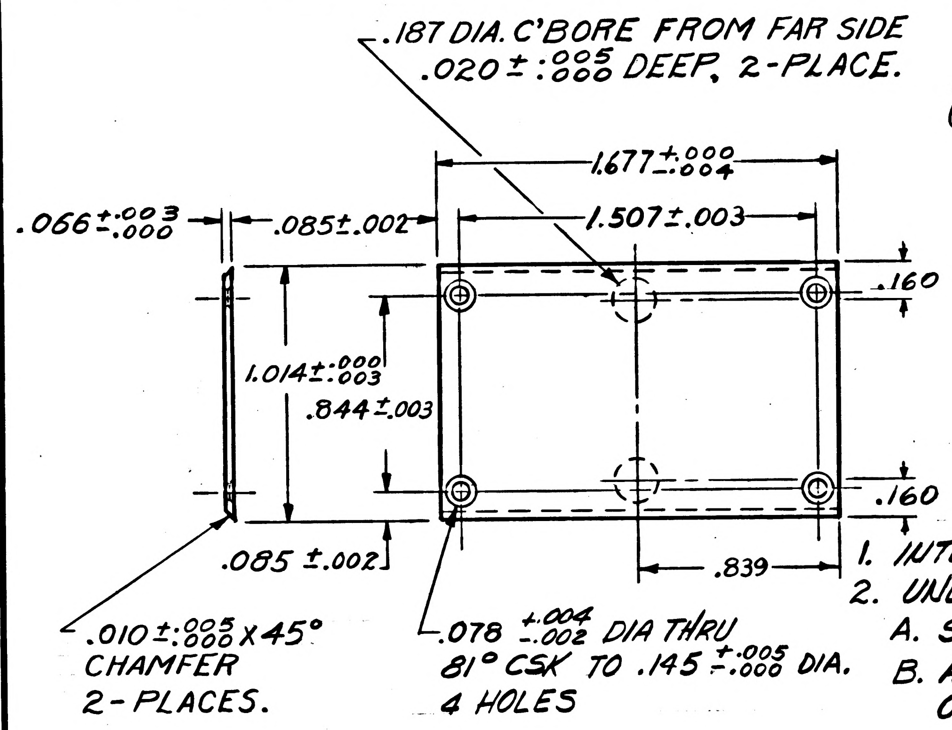
MIL 10778—P

4 Feb 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 01315

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED FOR CLASS A RELEASE		8 APR 63	
D 8	REVISED PER TDRR NO. 03218		9/20/63	WK



.187 DIA. C'BORE FROM FAR SIDE .020 ± .005/.000 DEEP, 2-PLACE.
1.677 +.000/-.004
1.507 ± .003
.066 ±.003/.000
.085 ± .002
.160
1.014 ±.000/.003
.844 ± .003
.160
.085 ± .002
.839
.010 ±.005/.000 X 45° CHAMFER 2-PLACES.
.078 +.004/-.002 DIA THRU 81° CSK TO .145 +.005/-.000 DIA. 4 HOLES

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED:
   - A. SURFACE ROUGHNESS MUST NOT EXCEED 63/AA
   - B. ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.
3. MACHINE & HEAT TREAT PER ND 1002114 (ES-2044)
4. PIECEMARK PER MIL-STD-130(ES-267, SELECT FROM -1 THRU -19)
5. MUST BE FREE FROM BURRS.

NEXT ASSY	USED ON
1015662-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
± -	± .005	± 1°

DO NOT SCALE THIS DRAWING

MATERIAL MIL-B-21531(ES-7389 BERYLLIUM)

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN KOSMATKA DATE 16 JAN 63
CHECKED Ed Foster 25 JAN 63
APPROVAL J. F. Petr 25 JAN 63
APPROVAL 25 JAN 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER - ENCODER

CODE IDENT NO. SIZE B 1015515

SCALE 2:1 SHEET 1 OF 1

MIL 10778-P

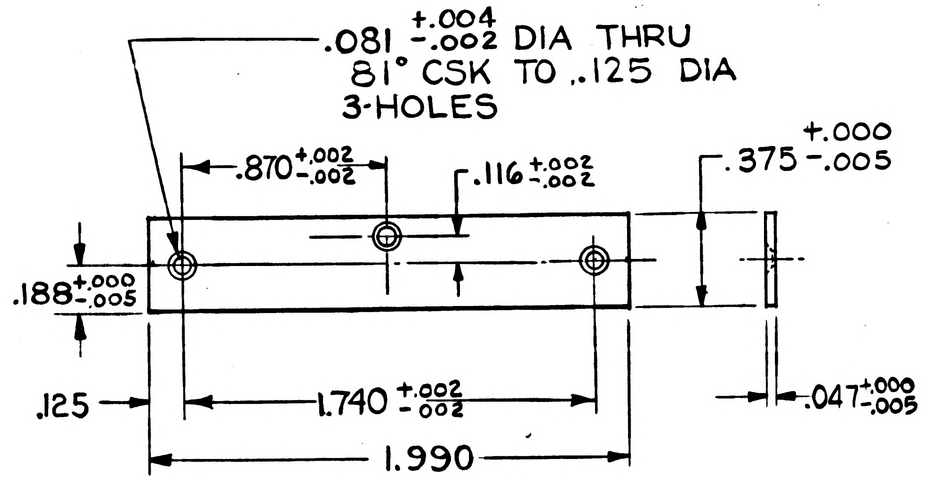
J Smith 4 Feb 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1 1015516 | C |

REVISIONS TDRR 01315

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED FOR CLASS A RELEASE		8 APR 63	



.081 +.004 -.002 DIA THRU
81° CSK TO .125 DIA
3-HOLES
.870 +.002 -.002
.116 +.002 -.002
.375 +.000 -.005
.188 +.000 -.005
.125
1.740 +.002 -.002
1.990
.047 +.000 -.005

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
PIECEMARK PER MIL-STD-130 (ES-267, SELECT FROM -1 THRU -19)
FINISH: MIL-A-8625 TYPE 1 (ES-385 ANODIZE)

MUST BE FREE FROM BURRS
UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{63}$ AA
ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER

NEXT ASSY	USED ON
1015501-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
$+\frac{1}{64}$	+.005	+ 1°
$-\frac{1}{64}$	-.005	- 1°

DO NOT SCALE THIS DRAWING

MATERIAL QQ-A-318, 5052-H34 (ES 2105 AL. AL.)

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN J.R. Sullivan DATE 15 JAN 63
CHECKED C Pryda 29 JAN 63
APPROVAL E. Scholl 30 JAN 63
APPROVAL 30 JAN 63
NASA APPROVAL W J Rhine 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER, SYNCHRO MOUNT

CODE IDENT NO.
SIZE B
1015516
SCALE 2:1
SHEET

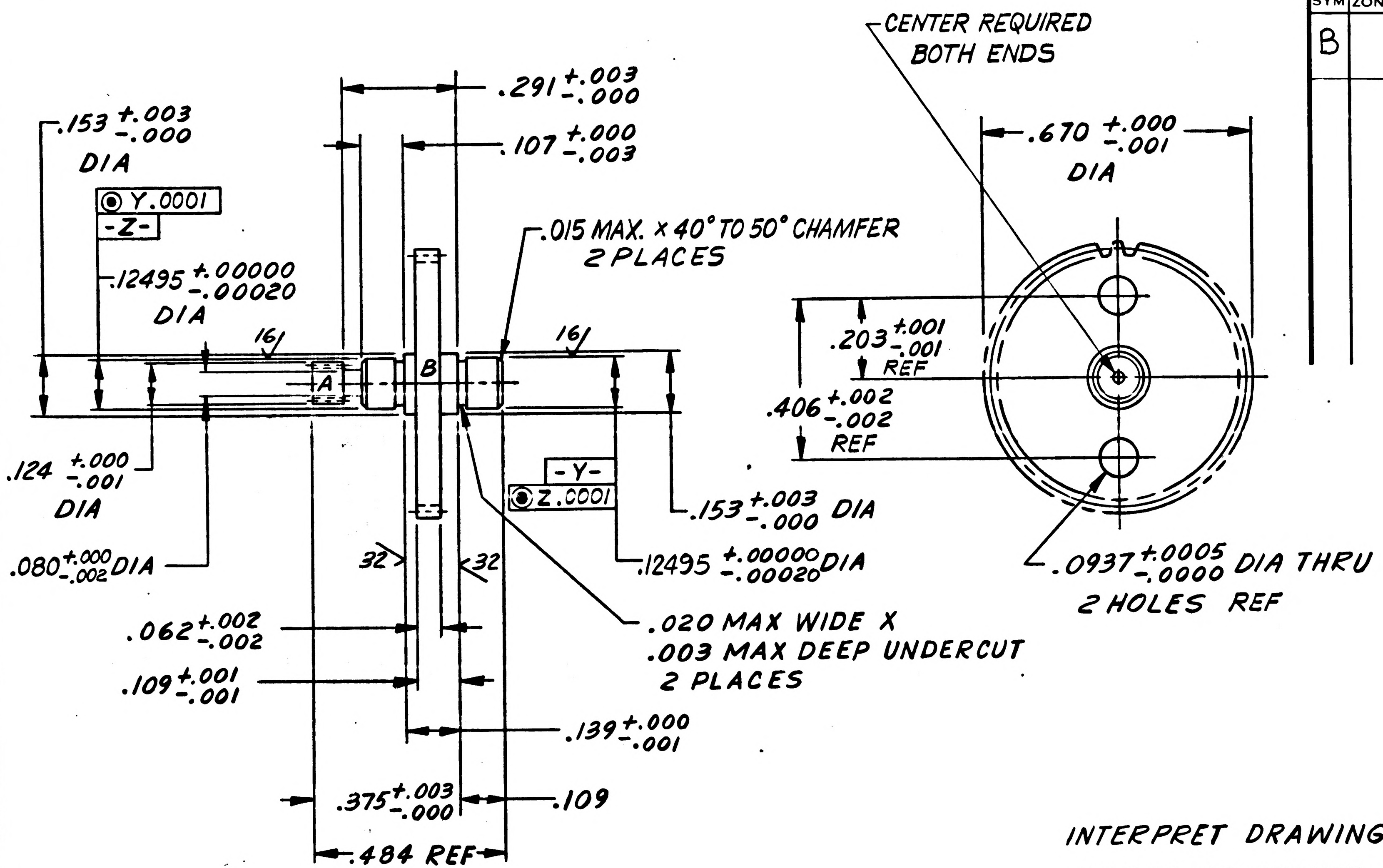
MIL 10778-P

Feb 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS

SYM	ZONE	DESCRIPTION	~~CHG NO.~~ IDCR	DATE	APPD.
B		UPGRADED FOR CLASS A RELEASE	01137	6 APR 63	RH wk



CENTER REQUIRED BOTH ENDS
.153 +.003 -.000 DIA
Y .0001
-Z-
.12495 +.00000 -.00020 DIA
16
.291 +.003 -.000
.107 +.000 -.003
.015 MAX. x 40° TO 50° CHAMFER 2 PLACES
16
A
B
.124 +.000 -.001 DIA
-Y-
Z .0001
.153 +.003 -.000 DIA
.080 +.000 -.002 DIA
32
32
.12495 +.00000 -.00020 DIA
.020 MAX WIDE X .003 MAX DEEP UNDERCUT 2 PLACES
.062 +.002 -.002
.109 +.001 -.001
.139 +.000 -.001
.375 +.003 -.000
.109
.484 REF
.670 +.000 -.001 DIA
.203 +.001 -.001 REF
.406 +.002 -.002 REF
.0937 +.0005 -.0000 DIA THRU 2 HOLES REF

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63√ AA
ALL CORNERS NOT TO EXCEED .010 R, OR CHAMFER

FINISH: MIL-F-14072 (SIG C) FINISH E-300 (ES-585, PASSIVATE)

PIECEMARK PER MIL-STD 130 (ES-267, SELECT FROM -1 THRU -19)

1 ▷ MATERIAL: SPEC QQ-S-763, COND. A CL. 416 (ES-374 SST)

BEFORE PRIMARY MACHINING HEAT TREAT PER MIL-H-6875, (ES-2013) ROCKWELL C 24-30

MUST BE FREE OF BURRS.

	A	B
NUMBER OF TEETH	16	96
DIAMETRAL PITCH	146	146
BASIC PRESSURE ANGLE	20°	20°
BASIC PITCH DIAMETER	.1096 REF	.6575 REF
WHOLE TOOTH DEPTH	.0181 REF	.0181 REF
ROOT DIAMETER	.0920 MAX .0837 MIN	.6382 MAX .6219 MIN
MAXIMUM ROUGHNESS - WORKING SURFACE OF TEETH	32√	32√
CENTER DISTANCE WHEN MESHED WITH STANDARD INSPECTION MASTER - AS REFERRED TO CENTER OF DIAMETERS Z&Y	.8052	1.0783
TOTAL COMPOSITE ERROR	+.00000 -.00025	+.00000 -.00025
BASIC PITCH DIAMETER OF MASTER	1.5000	1.5000
CHECKING PRESSURE	4 OZ	4 OZ
RUNOUT (TIR)		
TOOTH TO TOOTH COMPOSITE ERROR	.0002 MAX	.0002 MAX

NEXT ASSY	USED ON
1015500	1015500

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ -	+.005	+2°
- -	-.005	-2°

DO NOT SCALE THIS DRAWING

MATERIAL 1 ▷

CONTRACT NAS 9-497

Edmie 4 Feb 63

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Geschke DATE 16 JAN 63
CHECKED R. W. Hogue 29 JAN 63
APPROVAL J. Petrazzi 29 JAN 63
APPROVAL R. B. 29 JAN 63
NASA APPROVAL 5/2/63
MIT APPROVAL 2 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GEAR CLUSTER, SPUR
146 DP, 16T ; 146 DP, 96T

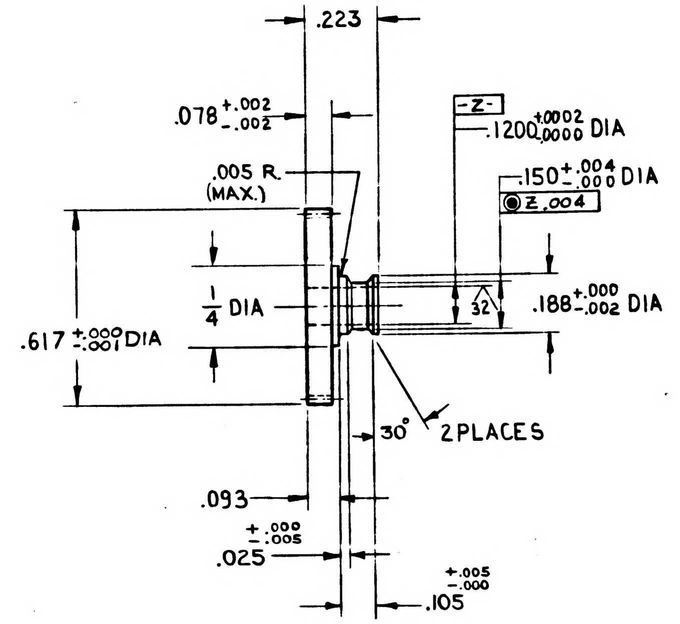
CODE IDENT NO.
SIZE C
1015526
SCALE 4:1
SHEET

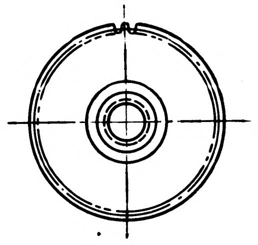
MIL 1077C—P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

B 1015529

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		UPGRADED FOR CLASS A RELEASE	DR'C 0437	6 APR 63	RW





UNLESS OTHERWISE SPECIFIED
SURFACE ROUGHNESS MUST NOT EXCEED 63√.
ALL CORNERS NOT TO EXCEED .010R
OR CHAMFER.

FINISH PER MIL-F-14072 (SIG C) FINISH # 300.(ES-585, PASSIVATE)

REMOVE ALL BURRS

PIECEMARK PER MIL-STD-130.(ES-267, SELECT FROM -1 THRU -19)

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.

HEAT TREAT PER MIL-H-6875 (ES 2013) R_c 24-30
BEFORE PRIMARY MACHINING.

NUMBER OF TEETH	72
DIAMETRAL PITCH	120
BASIC PRESSURE ANGLE	20°
BASIC PITCH DIAMETER	.6000
WHOLE TOOTH DEPTH	.0216
ROOT DIAMETER	.5780 MAX .5607 MIN
MAXIMUM ROUGHNESS - WORKING SURFACE OF TEETH	32√
CENTER DISTANCE WHEN MESHED WITH STANDARD INSPECTION MASTER - AS REFERRED TO CENTER OF DIAMETER Z	.8000
TOTAL COMPOSITE ERROR	+.00000 -.00025
BASIC PITCH DIAMETER OF MASTER	1.0000
CHECKING PRESSURE	4 Oz
RUNOUT (TIR)	
TOOTH TO TOOTH COMPOSITE ERROR	.0002 MAX

NEXT ASSY	USED ON
1015500	1015500

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ 2°
- 1/64	-.005	- 2°

DO NOT SCALE THIS DRAWING

MATERIAL QQ-S-763
COND A CL 416
(ES-374 SST)
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. MURRAY DATE 15 JAN 63
CHECKED 24 JAN 63
APPROVAL 24 JAN 63
APPROVAL 24 JAN 63
NASA APPROVAL 5-12-63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GEAR-SYNCHRO
120 DP + 72 T

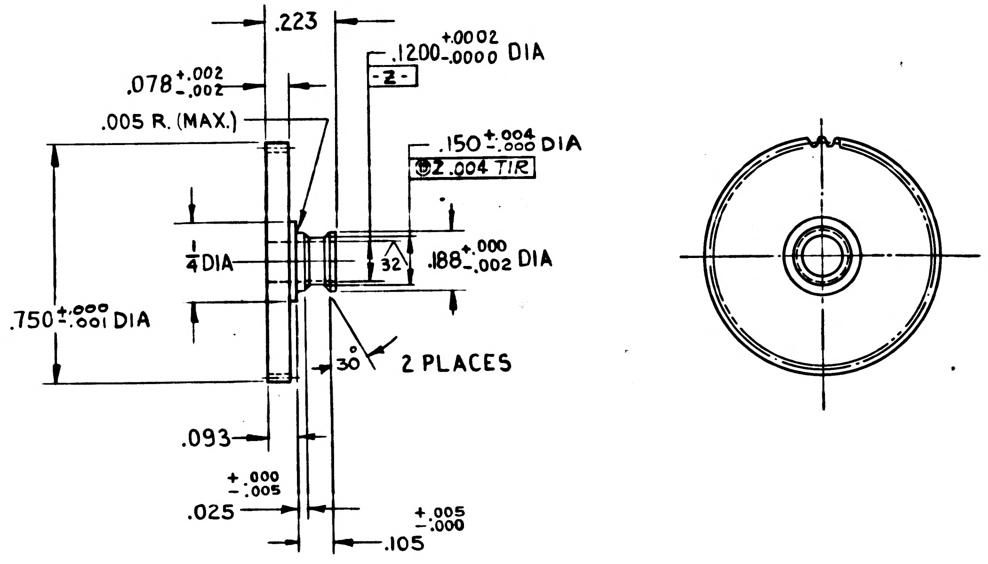
CODE IDENT NO.
SIZE D
1015529
SCALE 4 : 1
SHEET

3 4 Feb 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

B 1015530

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
B		UPGRADED FOR CLASS A RELEASE	DRR 0037	6 APR 63	WK



UNLESS OTHERWISE SPECIFIED
SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt[63]{}$ AA
ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.

FINISH PER MIL-F-14072 (SIG C) FINISH E 300.(ES-585, PASSIVATE)

PIECEMARK PER MIL-STD-130.(ES-267, SELECT FROM -1 THRU -19)

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.

HEAT TREAT PER MIL-H-6875, (ES-2013) 24-30 ROCKWELL C BEFORE PRIMARY MACHINING.

REMOVE ALL BURRS

NUMBER OF TEETH	88
DIAMETRAL PITCH	120
BASIC PRESSURE ANGLE	20°
BASIC PITCH DIAMETER	.7333
WHOLE TOOTH DEPTH	.0216
ROOT DIAMETER	.7113 MAX .6940 MIN
MAXIMUM ROUGHNESS - WORKING SURFACE OF TEETH	$\sqrt[32]{}$
CENTER DISTANCE WHEN MESHED WITH STANDARD INSPECTION MASTER - AS REFERRED TO CENTER OF DIAMETER Z	.8666
TOTAL COMPOSITE ERROR	+.00000 -.00025
BASIC PITCH DIAMETER OF MASTER	1.0000
CHECKING PRESSURE	4 Oz
RUNOUT (TIR)	
TOOTH TO TOOTH COMPOSITE ERROR	.0002 MAX

1015500	1015500
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
$+\frac{1}{64}$ $-\frac{1}{64}$	+.005 -.005	+2° -2°

DO NOT SCALE THIS DRAWING

MATERIAL QQ-S-763 COND A CL 416 (ES-374, SST)

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN G. MURRAY DATE 14 JAN63
CHECKED 24 JAN63
APPROVAL J. F. Petrangi 24 JAN63
APPROVAL 24 JAN63
NASA APPROVAL 5/2/63
MIT APPROVAL 24 Jan 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GEAR-SYNCHRO
120 DP - 88 T

CODE IDENT NO. SIZE D 1015530

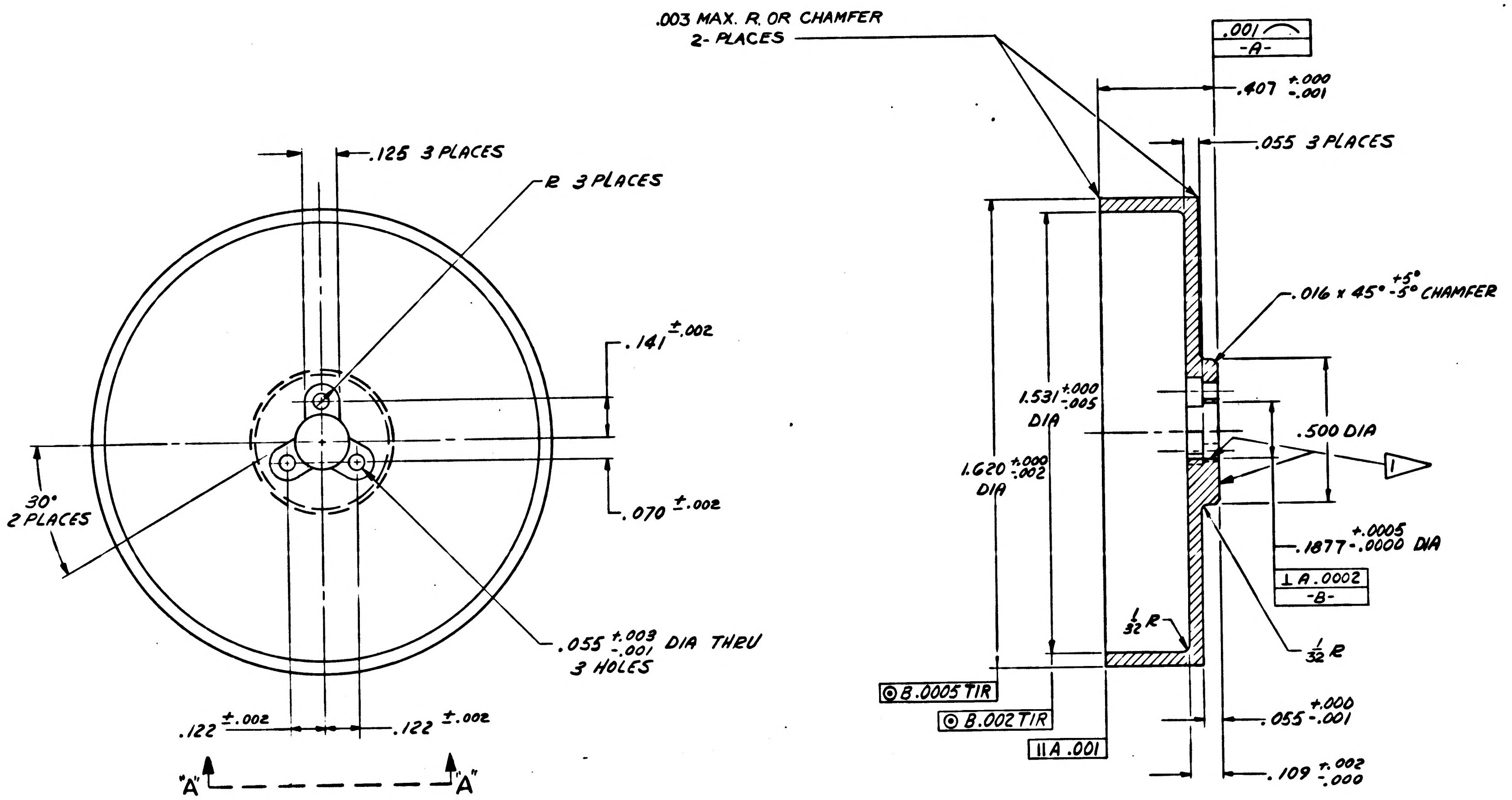
SCALE 4:1 SHEET

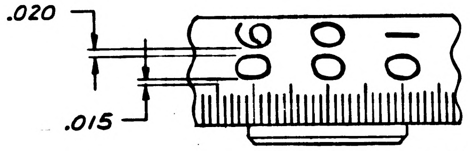
4 Feb 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

C 1015533

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
C		UPGRADED FOR CLASS A RELEASE	[illegible]	6 APR 63	[illegible]


.003 MAX. R. OR CHAMFER
2- PLACES
.125 3 PLACES
R 3 PLACES
.141 ±.002
.070 ±.002
30° 2 PLACES
.055 +.003 -.001 DIA THRU 3 HOLES
.122 ±.002
.122 ±.002
"A"
"A"
.001
-A-
.407 +.000 -.001
.055 3 PLACES
.016 x 45° +5° -5° CHAMFER
1.531 +.000 -.005 DIA
1.620 +.000 -.002 DIA
.500 DIA
1
.1877 +.0005 -.0000 DIA
⊥ A .0002
-B-
1/32 R
1/32 R
◎ B .0005 TIR
◎ B .002 TIR
∥ A .001
.055 +.000 -.001
.109 +.002 -.000



PARTIAL VIEW "A"-"A"

ENGRAVING NOTES

CHARACTERS- CONDENSED GOTHIC				LINES			
HEIGHT	WIDTH	THICKNESS	DEPTH	LONG	SHORT	WIDTH	DEPTH
.109	.078	.010	.007	.125	.093	.010	.007

ALL TOLERANCES ±.002, EXCEPT DEPTHS WHICH ARE $^{+.003}_{-.000}$.

LINES, 160 SHORT AND 40 LONG SPACED AS SHOWN, ARE GRADUATED EVERY 1.8° ± 6 MINUTES NON-CUMULATIVE.

BOTH HALVES OF DIAL ARE GRADUATED FROM 00 TO 90 INCLUSIVE, AND THE CHARACTERS ARE CENTRALIZED RELATIVE TO ALTERNATE LONG LINES.

FILL CHARACTERS AND LINES PER ND 1002130, WHITE (ES-2560).

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63√ AA.
ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER

PRIOR TO ENGRAVING — FINISH: MIL-A-8625, TYPE II, BLACK (ES-384, ANODIZE).
PIECE MARK PER MIL-STD-130 (ES-267, SELECT FROM 1 THRU 19).
MUST BE FREE FROM BURRS.
INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.

▷1 THESE SURFACES SHALL BE FREE FROM ANODIC TREATMENT.

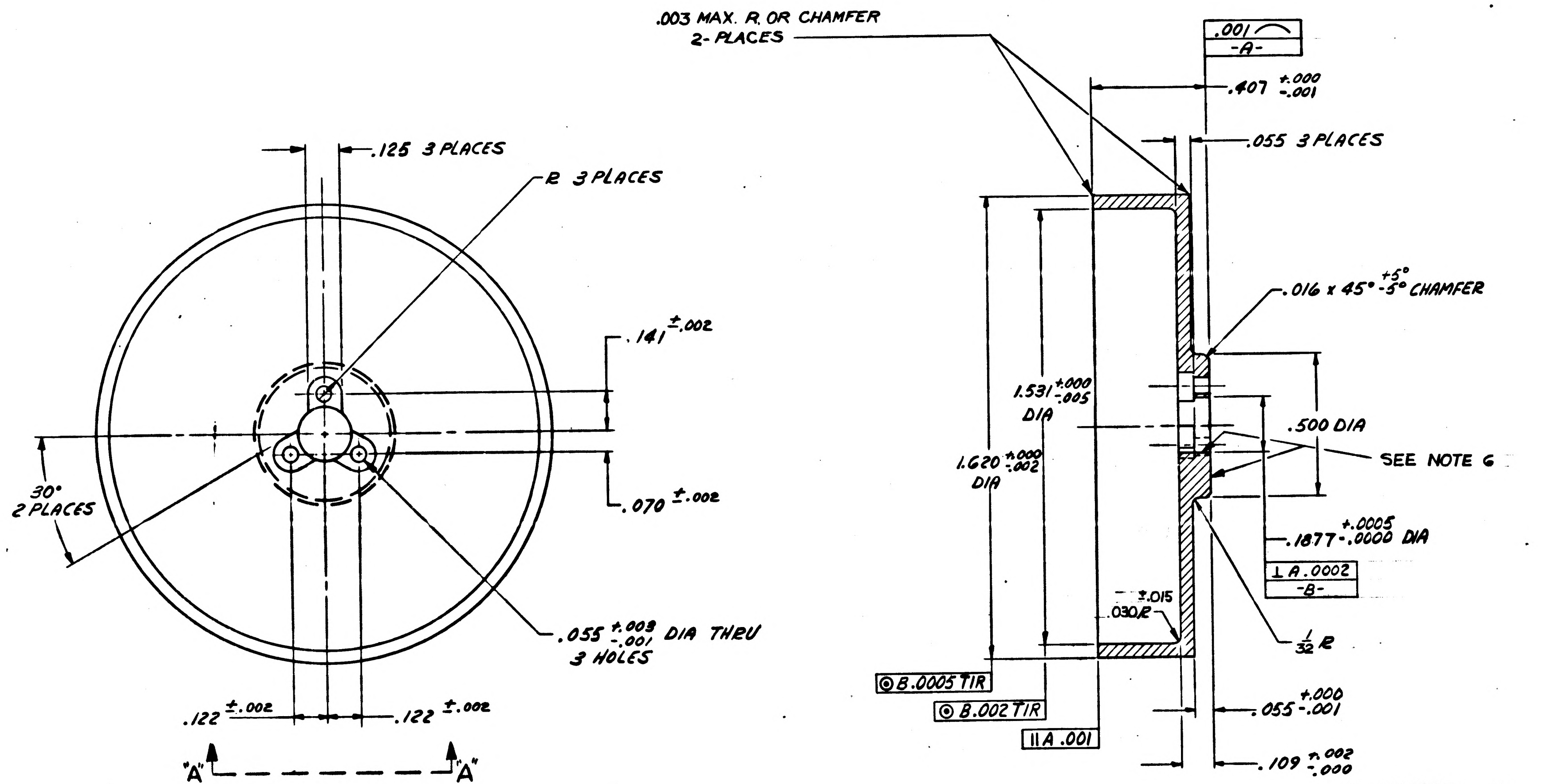
1015500	1015500	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + 1/64 − 1/64 DECIMALS +.005 −.005 ANGLES +1° −1° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN DATE 18 JAN 63 CHECKED J. GRIEB 28 JAN 63 APPROVAL E. Scholl 31 JAN 63 APPROVAL 31 JAN 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS DIAL, 1800 SPEED
NEXT ASSY	USED ON	MATERIAL QQ-A-270, TEMPER T6, 6061-T6 (ES-2106, AL ALY)	NASA APPROVAL	CODE IDENT NO.
APPLICATION		CONTRACT NAS 9-497	MIT APPROVAL	SIZE D
				1015533
				SCALE 4:1
				SHEET

MIL 10770-P

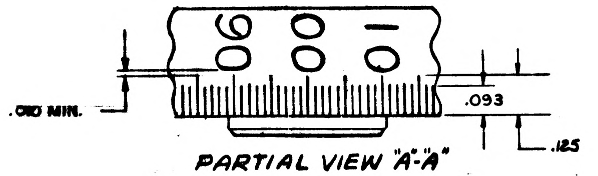
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

D 1015533 2

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
C		UPGRADED FOR CLASS A RELEASE	37	6 APR 63	
D		REVISED PER TDRR NO. 03067			9/9/63



.003 MAX. R OR CHAMFER 2-PLACES
.001 -A-
.407 +.000 -.001
.125 3 PLACES
R 3 PLACES
.055 3 PLACES
.016 x 45° +5° -5° CHAMFER
.141 ±.002
.070 ±.002
30° 2 PLACES
1.531 +.000 -.005 DIA
1.620 +.000 -.002 DIA
.500 DIA
SEE NOTE 6
.1877 +.0005 -.0000 DIA
⊥ A .0002 -B-
.030 R ±.015
1/32 R
.055 +.003 -.001 DIA THRU 3 HOLES
◎ B .0005 TIR
◎ B .002 TIR
∥ A .001
.055 +.000 -.001
.109 +.002 -.000
.122 ±.002
.122 ±.002
"A" "A"



90 00 10
.010 MIN.
.093
.125

PARTIAL VIEW "A-A"

7 ENGRAVINGS:
- A. ENGRAVE NUMERALS 3/32 HIGH PER ND 1002122, TYPE II, CLASS 2. ENGRAVE WITH TOOL POINT HAVING 30°(REF) INCLUDED ANGLE. WITH .002 (REF) FLAT TIP.
- B. THE 160 SHORT, AND 40 LONG GRADUATION LINES ARE TO BE .010 ±.002 WIDE X .007 $^{+.003}_{-.000}$ DEEP AND SPACED EVERY 1.8° ±6 MINUTES NON-CUMULATIVE, AS SHOWN.
- C. BOTH HALVES OF DIAL ARE MARKED FROM 00 TO 90 INCLUSIVE AND THE NUMERALS CENTRALIZED RELATIVE TO THE ALTERNATE LONG GRADUATION LINES.
- D. FILL NUMERALS AND LINES PER ND 1002130, WHITE (ES-2560)

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   - A. SURFACE ROUGHNESS MUST NOT EXCEED 63√ AA.
   - B. ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER
2. FINISH (PRIOR TO ENGRAVING): MIL-A-8625, TYPE II, BLACK (ES-384, ANODIZE).
3. PIECE MARK PER MIL-STD-130 (ES-267, SELECT FROM 1 THRU 19).
4. MUST BE FREE FROM BURRS.
5. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
6. THESE SURFACES SHALL BE FREE FROM ANODIC TREATMENT.

NEXT ASSY	USED ON
1015500-011	1015500-011
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
±.005 ±1°
DO NOT SCALE THIS DRAWING
MATERIAL QQ-A-270, TEMPER T6, 6061-T6 (ES-2106, AL ALY)
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN DATE 18 JAN 63
CHECKED 28 JAN 63
APPROVAL E. Scholl 31 JAN 63
APPROVAL 31 JAN 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DIAL, 1800 SPEED

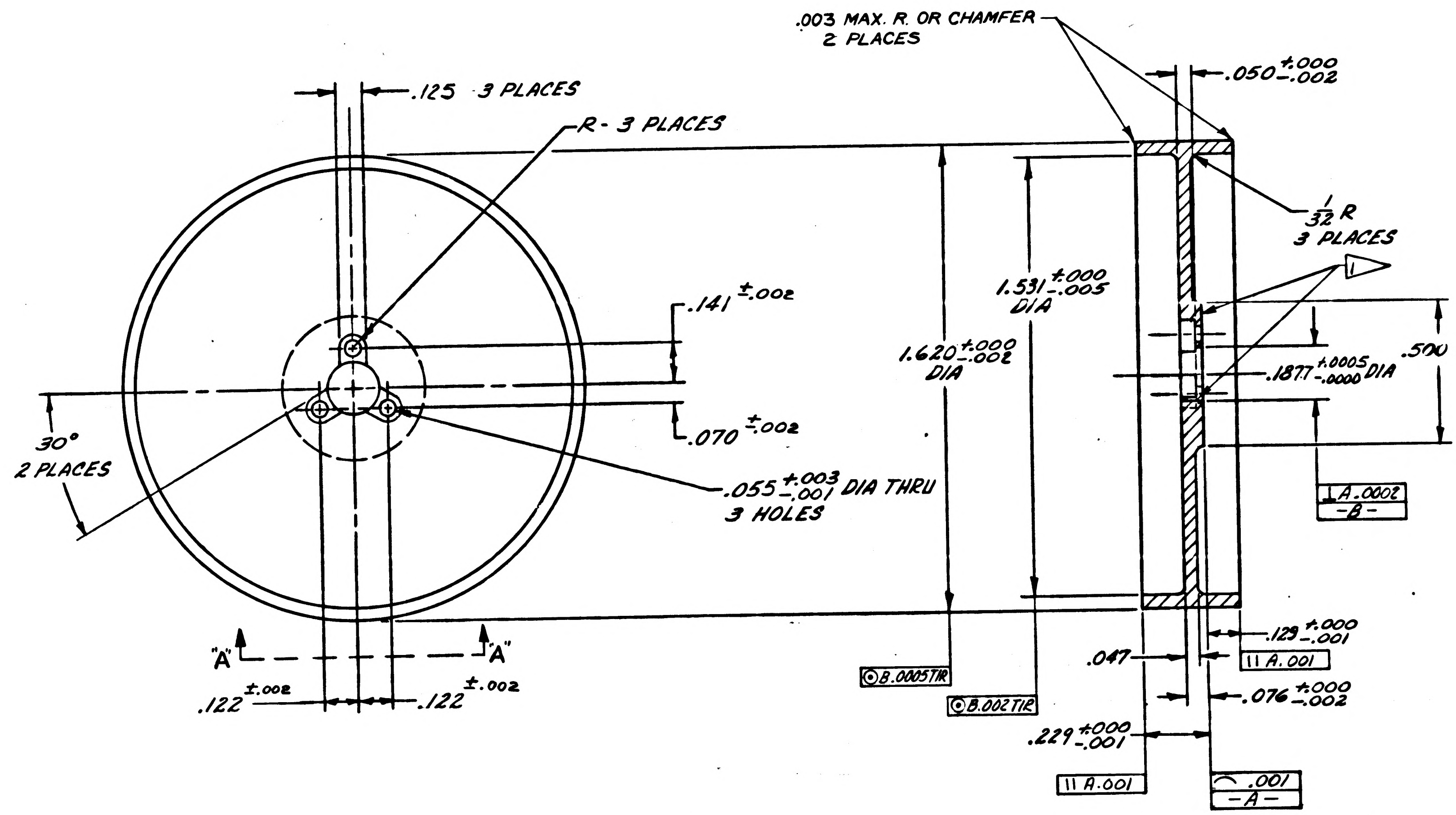
CODE IDENT NO.
SIZE D
1015533
SCALE 4:1
SHEET 1 OF 1

INCHES
0 2
PHOTOGRAPHIC SCALE ONLY

C	1015534

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
C		UPGRADED FOR CLASS A RELEASE	[illegible]	APR 63	[illegible]



.003 MAX. R. OR CHAMFER
2 PLACES
.125 3 PLACES
R - 3 PLACES
.050 +.000 -.002
1/32 R
3 PLACES
1
.141 ±.002
.070 ±.002
1.531 +.000 -.005 DIA
1.620 +.000 -.002 DIA
.1877 +.0005 -.0000 DIA
.500 DIA
30°
2 PLACES
.055 +.003 -.001 DIA THRU
3 HOLES
⊥ A .0002
-B-
"A"
"A"
.122 ±.002
.122 ±.002
⊙ B .0005 TIR
⊙ B .002 TIR
.047
.129 +.000 -.001
∥ A .001
.076 +.000 -.002
.229 +.000 -.001
∥ A .001
⌒ .001
-A-

UNLESS OTHERWISE SPECIFIED:

SURFACE ROUGHNESS MUST NOT EXCEED 63√AA.

ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.

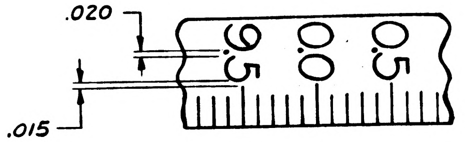
PIECE MARK PER MIL-STD-130 (ES-267, SELECT FROM 1 THRU 19).

MUST BE FREE FROM BURRS.

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.

PRIOR TO ENGRAVING — FINISH: MIL-A-8625, TYPE II, BLACK (ES-384, ANODIZE).

1 ▷ THESE SURFACES SHALL BE FREE FROM ANODIC TREATMENT.



.020
.015
0.5
0.0
9.5

PARTIAL VIEW "A-A"

ENGRAVING NOTES

CHARACTERS-CONDENSED GOTHIC				LINES			
HEIGHT	WIDTH	THICKNESS	DEPTH	LONG	SHORT	WIDTH	DEPTH
.109	.078	.010	.007	.125	.093	.010	.007

ALL TOLERANCES ±.002, EXCEPT DEPTHS WHICH ARE +.003 -.000.

LINES, 80 SHORT AND 20 LONG ARE SPACED AS SHOWN, ARE GRADUATED EVERY 3.6° ± 6 MINUTES NON-CUMULATIVE.

TWENTY CHARACTERS, GRADUATED FROM 0.0 TO 9.5 INCLUSIVE, ARE CENTRALIZED RELATIVE TO THE LONG LINES.

DECIMAL POINT - .015 DIA x .010 DEEP.

FILL CHARACTERS & LINES PER ND 1002130, WHITE (ES-2560).

1015500	1015500
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+1°
- 1/64	-.005	-1°

DO NOT SCALE THIS DRAWING
MATERIAL QQ-A-270 TEMPER T6 (ES-2106, AL ALY 6061)
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN C. M. Kulo DATE 17 JAN 63
CHECKED J. GRIEB 28 JAN 63
APPROVAL E. Scholl 31 JAN 63
APPROVAL 31 JAN 63
NASA APPROVAL W. J. Swingle 5/2/63
MIT APPROVAL 2 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DIAL, 36 SPEED

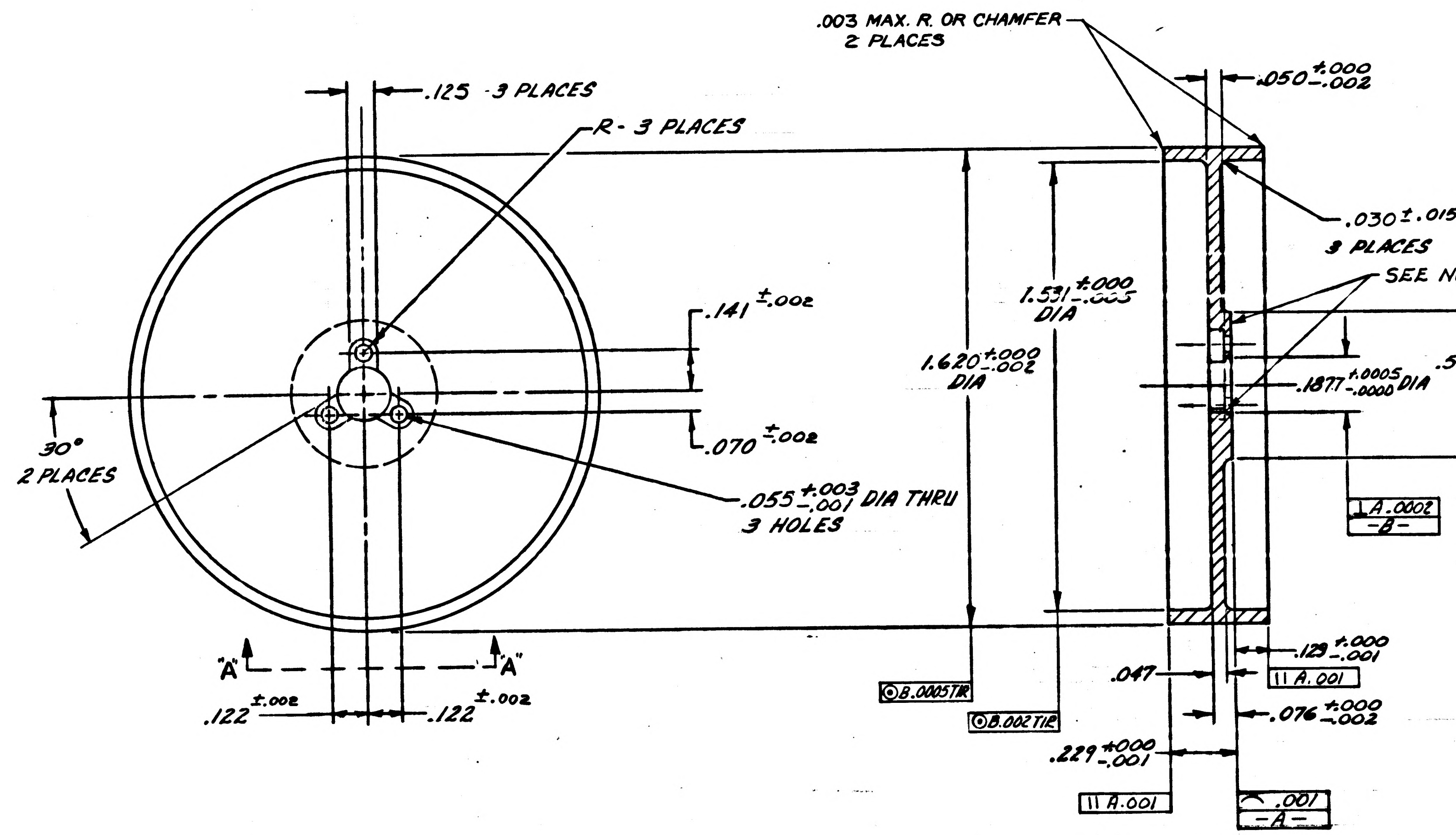
CODE IDENT NO.
SIZE D
1015534
SCALE 4:1
SHEET

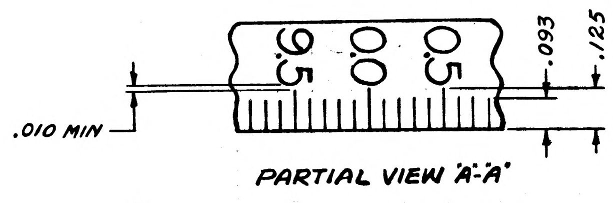
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

MIL 10770-F

D 1015534

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
REVISIONS					
C		UPGRADED FOR CLASS A RELEASE	TDRR 01137	6 APR 63	WK
D 11		REVISED PER TDRR NO. 03068		9/16/63	9/16/63


.125 -3 PLACES
R- 3 PLACES
.141 ±.002
.070 ±.002
30° 2 PLACES
.055 +.003 -.001 DIA THRU 3 HOLES
"A" "A"
.122 ±.002
.122 ±.002
.003 MAX. R. OR CHAMFER 2 PLACES
.050 +.000 -.002
.030 ±.015 R 3 PLACES
SEE NOTE 6
1.531 +.000 -.005 DIA
1.620 +.000 -.002 DIA
.1877 +.0005 -.0000 DIA
.500 DIA
⊥ A .0002
-B-
.129 +.000 -.001
.047
∥ A .001
◎ B .0005 TIR
◎ B .002 TIR
.076 +.000 -.002
.229 +.000 -.001
∥ A .001
⌒ .001
-A-


0.5
0.0
9.5
.093
.125
.010 MIN

PARTIAL VIEW 'A-A'

7. ENGRAVINGS:

A. ENGRAVE CHARACTERS 3/32 HIGH PER ND1002122, TYPE II, CLASS 2. ENGRAVE WITH TOOL POINT HAVING 30° (REF) INCLUDED ANGLE WITH .002 (REF) FLAT TIP.

B. THE 80 SHORT, AND 20 LONG GRADUATION LINES ARE TO BE .010 ± .002 WIDE X .007 $^{+.003}_{-.002}$ DEEP AND SPACED EVERY 3.6° ± 6 MINUTES NON-CUMULATIVE, AS SHOWN.

C. THE CHARACTERS FROM 0.0 TO 9.5 INCLUSIVE ARE TO BE CENTRALIZED RELATIVE TO THE LONG GRADUATION LINES.

D. FILL CHARACTERS AND LINES PER ND 1002130, WHITE (ES-2560).

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED $\overset{63}{\surd}$AA.
   B. ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.
2. PIECE MARK PER MIL-STD-130 (ES-267, SELECT FROM 1 THRU 19).
3. MUST BE FREE FROM BURRS.
4. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
5. FINISH: (PRIOR TO ENGRAVING) MIL-A-8625, TYPE II, BLACK (ES-384, ANODIZE).
6. THESE SURFACES SHALL BE FREE FROM ANODIC TREATMENT.

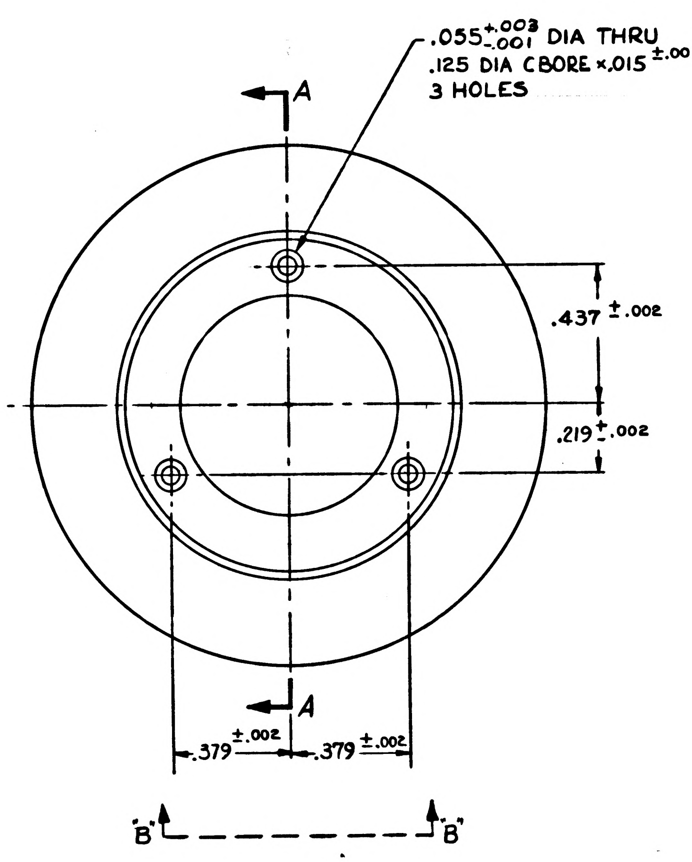
1015500-011 NEXT ASSY	1015500-011 USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ±.005 ±1°	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
APPLICATION		DO NOT SCALE THIS DRAWING	ACSP PN	DIAL, 36 SPEED
		MATERIAL QQ-A-270 TEMPER T6 (ES-2106, AL ALY 6061)	DRAWN C.M. Kuhn DATE 17 JAN 63	CODE IDENT NO.
		CONTRACT NAS 9-497	CHECKED J. GRIEB 28 JAN 63	SIZE D
			APPROVAL E. Scholl 31 JAN 63	1015534
			APPROVAL 31 JAN 63	SCALE 4:1
			NASA APPROVAL 5/2/63	SHEET 1 OF 1
			MIT APPROVAL 7 May 63	

3 4 Feb 63

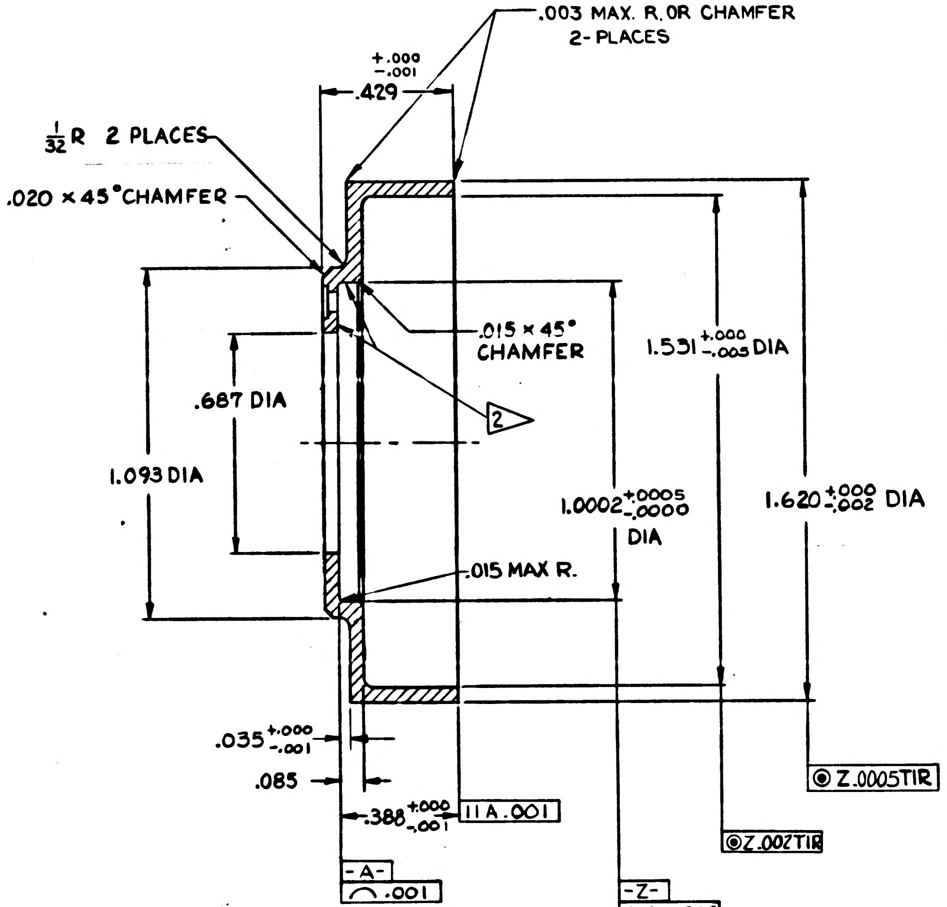
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

C 1015535

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		UPGRADED FOR CLASS A RELEASE		APR 63	

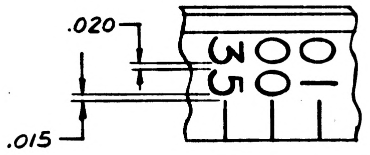


.055 +.003 -.001 DIA THRU
.125 DIA CBORE × .015 ±.002 DEEP
3 HOLES
A
A
.437 ±.002
.219 ±.002
.379 ±.002
.379 ±.002
B
B



.003 MAX. R. OR CHAMFER 2-PLACES
.429 +.000 -.001
1/32 R 2 PLACES
.020 × 45° CHAMFER
.015 × 45° CHAMFER
2
.687 DIA
1.093 DIA
1.531 +.000 -.005 DIA
1.0002 +.0005 -.0000 DIA
1.620 +.000 -.002 DIA
.015 MAX R.
.035 +.000 -.001
.085
.388 +.000 -.001
// A .001
◎ Z .0005 TIR
◎ Z .002 TIR
-A-
⌒ .001
-Z-
⊥ A .0002

SECTION A-A



PARTIAL VIEW 'B'-'B'

ENGRAVING NOTES

CHARACTERS-CONDENSED GOTHIC				LINES		
HEIGHT	WIDTH	THICKNESS	DEPTH	LENGTH	WIDTH	DEPTH
.109	.078	.010	.007	.125	.010	.007

ALL TOLERANCES ±.002, EXCEPT DEPTHS WHICH ARE $^{+.003}_{-.000}$.

THIRTY SIX LINES ARE GRADUATED EVERY 10° ±6 MINUTES NON-CUMULATIVE.

THIRTY SIX CHARACTERS, GRADUATED FROM 00 TO 35 INCLUSIVE, ARE CENTRALIZED RELATIVE TO THE LINES.

FILL CHARACTERS AND LINES PER ND-1002130, WHITE (ES-2560).

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63/ AA
ALL CORNERS NOT TO EXCEED .010 R. OR CHAMFER.

PRIOR TO ENGRAVING – FINISH: MIL-A-8625 TYPE II, BLACK. (ES 384, ANODIZE)

PIECEMARK PER MIL-STD-130 (ES-267, SELECT FROM -1 THRU -19)

1▷ QQ-A-270 TEMP T-6 (ES-2106, TYPE 6061, T-6 AL ALY)

2▷ THESE SURFACES SHALL BE FREE FROM ANODIC TREATMENT

REMOVE ALL BURRS

1015500	1015500
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64 − 1/64	+.005 −.005	+5° −5°

DO NOT SCALE THIS DRAWING
MATERIAL 1▷
4 Feb 63
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Fox DATE 1-18-63
CHECKED C. Wilson 29 JAN 63
APPROVAL E. Scholl 31 JAN 63
APPROVAL 31 JAN 63
NASA APPROVAL 5/2/63
MIT APPROVAL 2 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DIAL, 1 SPEED

CODE IDENT NO.
SIZE D
1015535
SCALE 4 : 1
SHEET

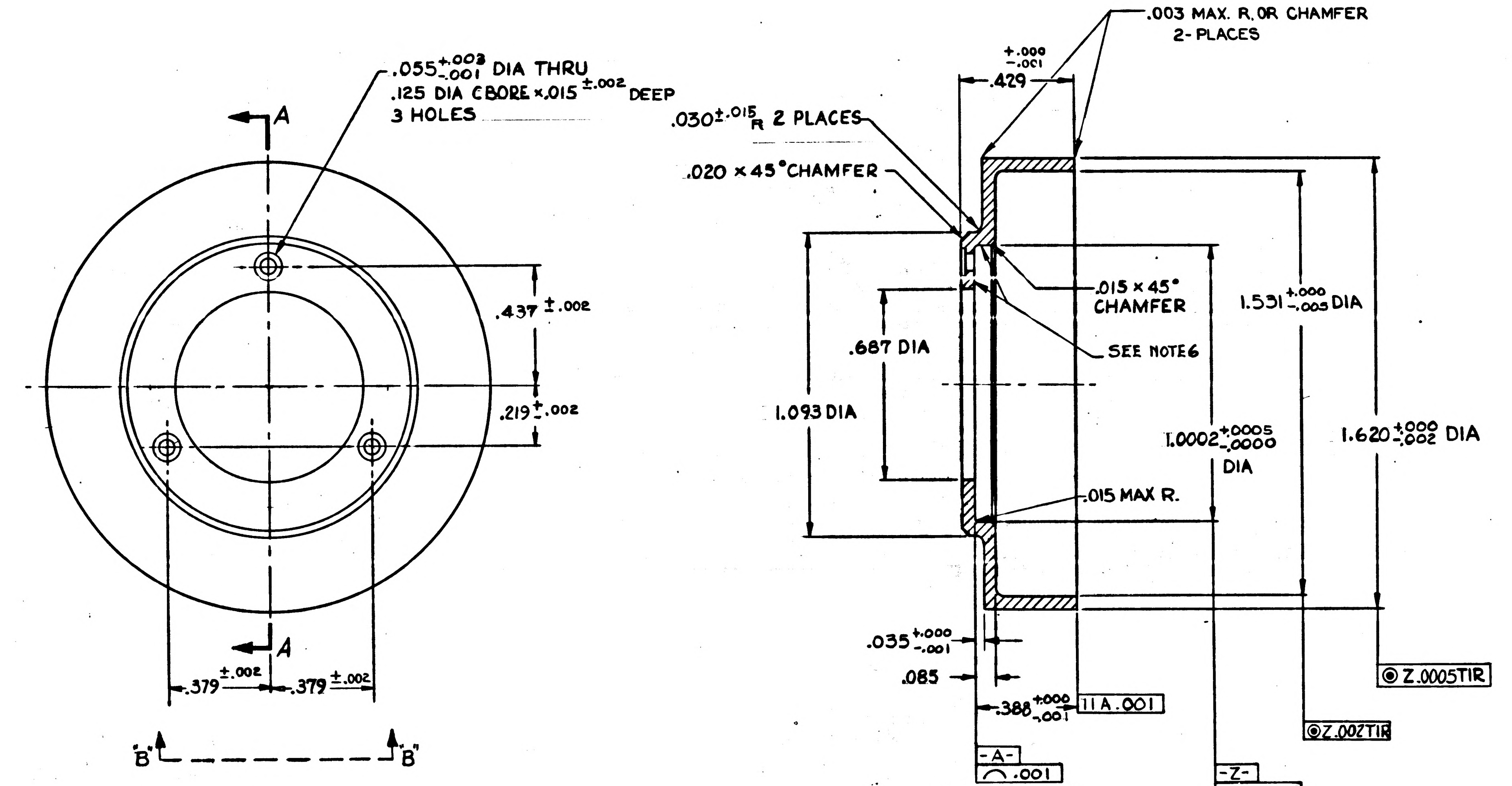
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

MIL 1077D-P

D	1015535

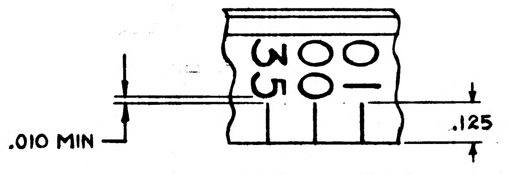
REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		UPGRADED FOR CLASS A RELEASE	TDRR	6 APR 63	
D		REVISED PER TDRR NO. 03069		9/16/63	9/19/63



A
A
.055 +.003 -.001 DIA THRU
.125 DIA CBORE × .015 ±.002 DEEP
3 HOLES
.437 ±.002
.219 ±.002
.379 ±.002
.379 ±.002
"B"
"B"
.003 MAX. R. OR CHAMFER 2-PLACES
+.000 -.001 .429
.030 ±.015 R 2 PLACES
.020 × 45° CHAMFER
.015 × 45° CHAMFER
SEE NOTE 6
.687 DIA
1.093 DIA
1.531 +.000 -.005 DIA
1.0002 +.0005 -.0000 DIA
1.620 +.000 -.002 DIA
.015 MAX R.
.035 +.000 -.001
.085
.388 +.000 -.001
∥ A .001
-A-
⌒ .001
-Z-
⊥ A .0002
◎ Z .002 TIR
◎ Z .0005 TIR

SECTION A-A



00
35
.010 MIN
.125

PARTIAL VIEW "B-B"

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED 63/ AA
   B. ALL CORNERS NOT TO EXCEED .010 R. OR CHAMFER.
3. FINISH: (PRIOR TO ENGRAVING) MIL-A-8625 TYPE II, BLACK. (ES-384, ANODIZE).
4. PIECEMARK PER MIL-STD-130 (ES-267, SELECT FROM -1 THRU -19)
5. QQ-A-270 TEMP T-6 (ES-2106, TYPE 6061, T-6 AL ALY)
6. THESE SURFACES SHALL BE FREE FROM ANODIC TREATMENT
7. REMOVE ALL BURRS

8. ENGRAVINGS:
   A. ENGRAVE NUMERALS 3/32 HIGH PER ND1002122, TYPE II, CLASS 2. ENGRAVE WITH TOOL POINT HAVING 30° (REF) INCLUDED ANGLE WITH .002 (REF) FLAT TIP.
   B. THE 36 GRADUATION LINES ARE TO BE .010 ±.002 WIDE X .007 +.003 -.002 DEEP AND SPACED EVERY 10° ±6 MINUTES NON-CUMULATIVE.
   C. THE NUMERALS FROM 00 TO 35 INCLUSIVE ARE TO BE CENTRALIZED RELATIVE TO THE GRADUATION LINES.
   D. FILL NUMERALS AND LINES PER ND1002130, WHITE (ES-2560).

NEXT ASSY	USED ON
1015500-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ±.005 ANGLES ±.5°
DO NOT SCALE THIS DRAWING

MATERIAL SEE NOTE 5
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Fox DATE 1-18-63
CHECKED C. Wilson 29 JAN 63
APPROVAL E. Scholl 31 JAN 63
APPROVAL 31 JAN 63
NASA APPROVAL 5/2/63
MIT APPROVAL 1 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DIAL, 1 SPEED

CODE IDENT NO.
SIZE D
1015535
SCALE 4 : 1
SHEET 1 OF 1

INCHES
0 2
PHOTOGRAPHIC SCALE ONLY

INTERPRET DWG IN ACCORDANCE WITH MIL-D-70327.

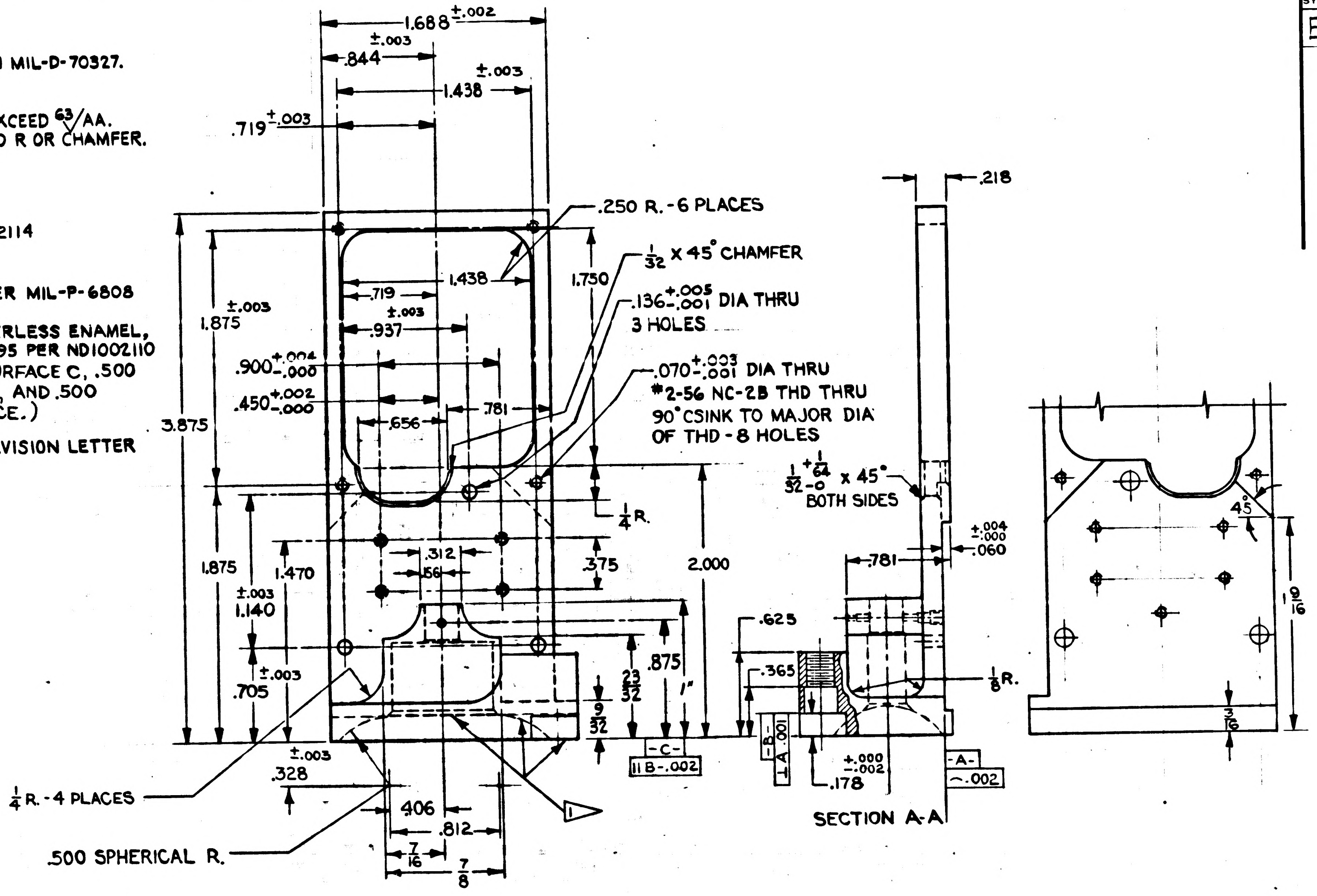
UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63/AA.
ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.

MUST BE FREE FROM BURRS.

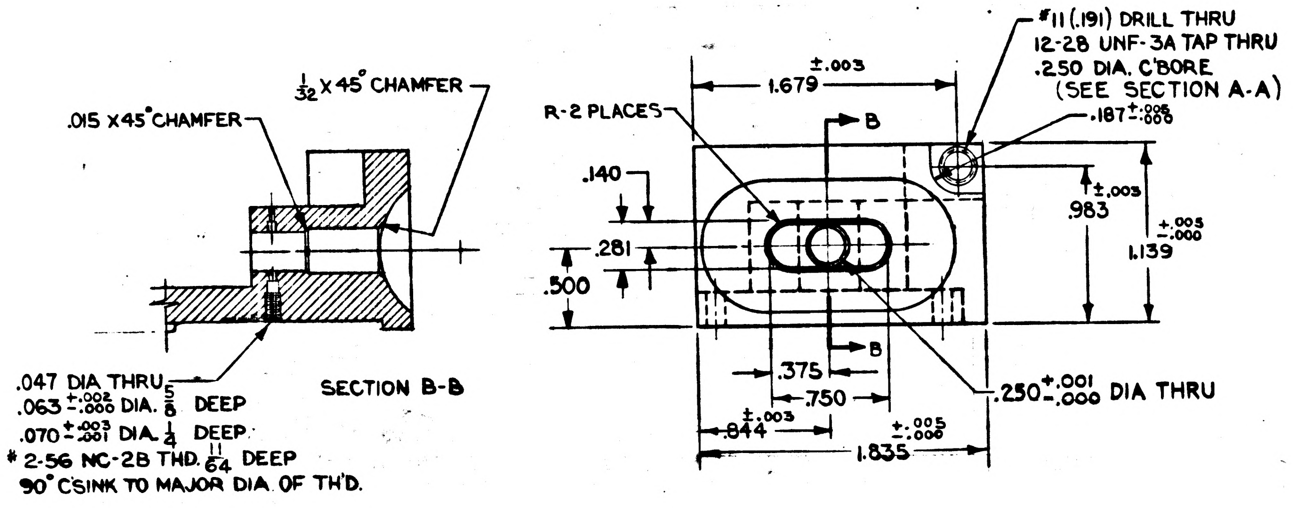
MACHINE AND HEAT TREAT PER ND1002114

1. APPLY ZINC CHROMATE PRIMER PER MIL-P-6808 (ES-2589).
APPLY TT-E-527 (ES-2602) LUSTERLESS ENAMEL, COLOR NO. 36231 OF FED-STD-595 PER ND1002110 TO SURFACES INDICATED, (SURFACE C, .500 SPHERICAL RADIUS SURFACES, AND .500 CYLINDRICAL RADIUS SURFACE.)

IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).



1.688 ±.002
±.003
.844
±.003
1.438
.719 ±.003
.250 R.-6 PLACES
1/32 X 45° CHAMFER
1.438
1.750
.719
±.003
.937
.136 +.005 -.001 DIA THRU 3 HOLES
.070 +.003 -.001 DIA THRU
*2-56 NC-2B THD THRU 90° CSINK TO MAJOR DIA OF THD-8 HOLES
±.003
1.875
.900 +.004 -.000
.450 +.002 -.000
.781
.656
3.875
1/4 R.
.312
.156
.375
2.000
1.875
1.470
±.003
1.140
.875
23/32
1"
±.003
.705
9/32
-C-
11 B -.002
±.003
.328
.406
.812
7/16
7/8
1/4 R.-4 PLACES
.500 SPHERICAL R.
1
.218
1/32 +1/64 -0 x 45°
BOTH SIDES
+.004 -.000
.060
.781
.625
.365
1/8 R.
-B-
⊥ A .001
+.000 -.002
.178
-A-
~ .002
SECTION A-A
45°
1 9/16
3/16



1/32 X 45° CHAMFER
.015 X 45° CHAMFER
.047 DIA THRU
.063 +.002 -.000 DIA. 5/8 DEEP
.070 ±.003 -.001 DIA. 1/4 DEEP
* 2-56 NC-2B THD. 11/64 DEEP
90° C'SINK TO MAJOR DIA. OF TH'D.
SECTION B-B
±.003
1.679
R-2 PLACES
B
#11 (.191) DRILL THRU
12-28 UNF-3A TAP THRU
.250 DIA. C'BORE
(SEE SECTION A-A)
.187 +.005 -.000
.140
.281
.500
.983
±.003
+.005 -.000
1.139
B
.375
.750
±.003
.844
+.005 -.000
1.835
.250 +.001 -.000 DIA THRU

E	1015546	2	1

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		UPGRADED FOR CLASS A RELEASE TDRR 01436		8 MAY '63	

1015683	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+2°
-1/64	-.005	-2°

DO NOT SCALE THIS DRAWING

MATERIAL
MIL-B-21531 (ES-7389)
BERYLLIUM

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN	WUNDERLICH	22 JAN '63
CHECKED	P. REMDE	25 JAN '63
APPROVAL	E. SCHOLL	29 JAN '63
APPROVAL	J. RUDER	29 JAN '63

NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BRACKET-SLEWING SWITCH

CODE IDENT NO.	SIZE	
	D	1015546
SCALE 2:1		SHEET –

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

F 1015546

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		UPGRADED FOR CLASS A RELEASE TDRR 01436		8 MAY 63	
F		REVISED PER TDRR# 01592		JUNE 17 63	WK

INTERPRET DWG IN ACCORDANCE WITH MIL-D-70327.

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63/AA.
ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.

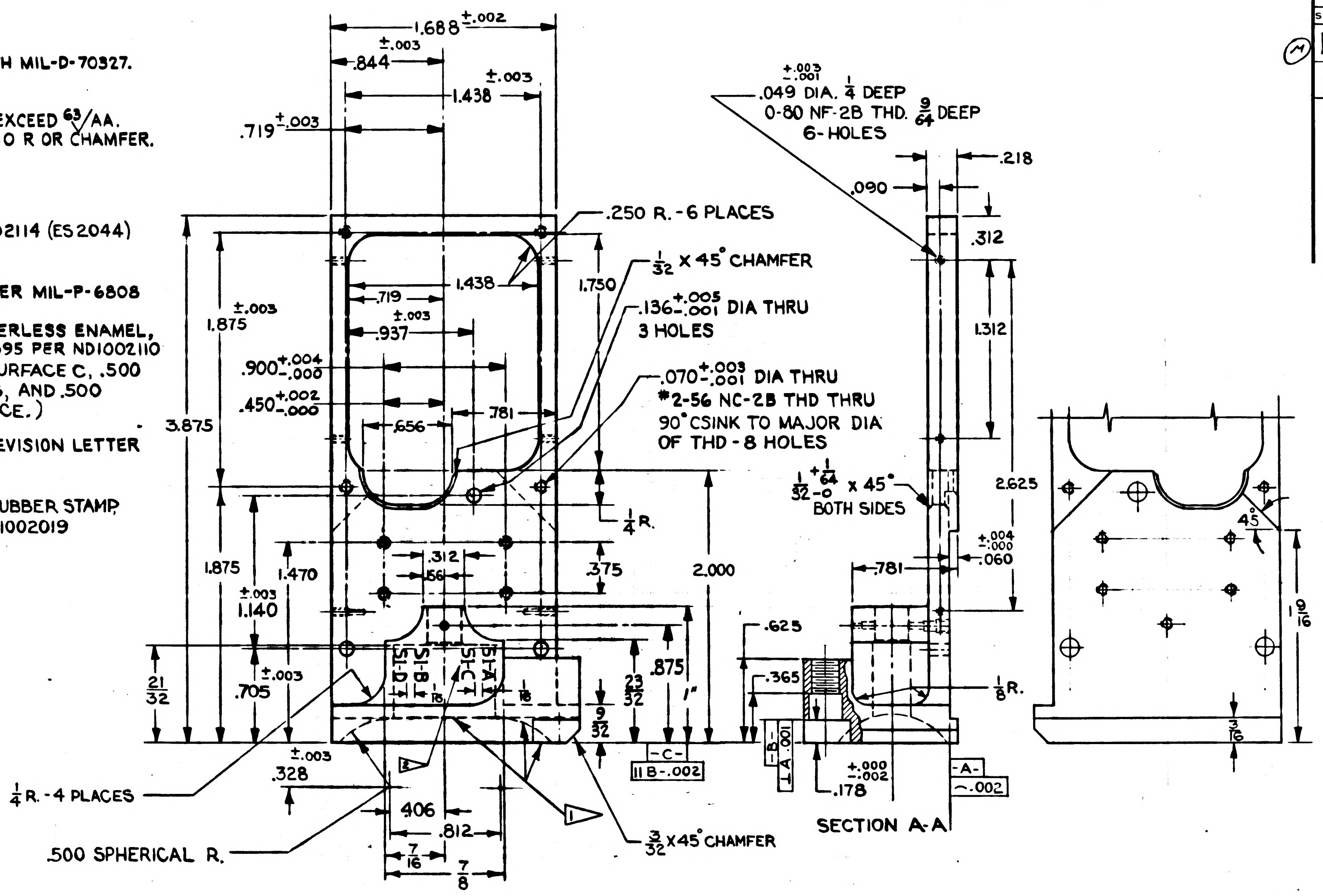
MUST BE FREE FROM BURRS.

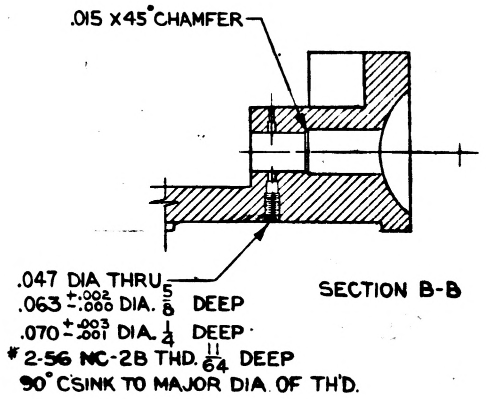
MACHINE AND HEAT TREAT PER ND1002114 (ES2044)

1. APPLY ZINC CHROMATE PRIMER PER MIL-P-6808 (ES-2589).
APPLY TT-E-527 (ES-2602) LUSTERLESS ENAMEL, COLOR NO. 36231 OF FED-STD-595 PER ND1002110 TO SURFACES INDICATED, (SURFACE C, .500 SPHERICAL RADIUS SURFACES, AND .500 CYLINDRICAL RADIUS SURFACE.)

IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

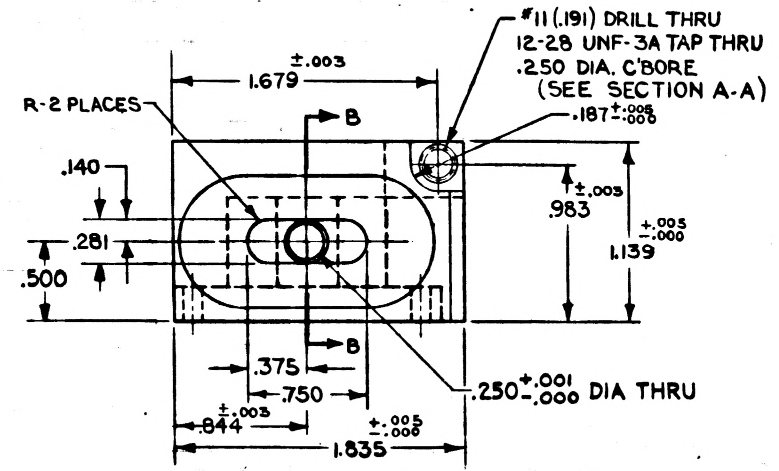
2. MARK $\frac{3}{32}$ HIGH CHARACTERS USING RUBBER STAMP, STENCIL OR SILK SCREEN AS PER ND 1002019


1.688 ±.002
.844 ±.003
1.438 ±.003
.719 ±.003
.250 R. - 6 PLACES
1/32 X 45° CHAMFER
.136 +.005 -.001 DIA THRU 3 HOLES
.070 +.003 -.001 DIA THRU
#2-56 NC-2B THD THRU
90° CSINK TO MAJOR DIA OF THD - 8 HOLES
1.750
1.875 ±.003
.900 +.004 -.000
.450 +.002 -.000
.937
.656
.781
3.875
1.470
1.140 ±.003
.312
.156
.375
2.000
1/4 R.
.875
1"
21/32
.705 ±.003
23/32
9/32
.328 ±.003
1/4 R. - 4 PLACES
.500 SPHERICAL R.
.406
.812
7/16
7/8
3/32 X 45° CHAMFER
-C-
11 B-.002
.049 DIA. 1/4 DEEP +.003 -.001
0-80 NF-2B THD. 9/64 DEEP
6-HOLES
.090
.218
.312
1.312
2.625
1/32 +1/64 -0 x 45° BOTH SIDES
+.004 -.000 .060
.781
.625
.365
1/8 R.
+.000 -.002
.178
-A-
⌒ .002
-B-
⊥ A .001
SECTION A-A
45°
1 9/16
3/16


.015 X45° CHAMFER

.047 DIA THRU
.063 +.002 -.000 DIA. 5/8 DEEP
.070 +.003 -.001 DIA. 1/4 DEEP
#2-56 NC-2B THD. 11/64 DEEP
90° CSINK TO MAJOR DIA. OF TH'D.

SECTION B-B


#11 (.191) DRILL THRU
12-28 UNF-3A TAP THRU
.250 DIA. C'BORE
(SEE SECTION A-A)
.187 +.005 -.000
1.679 ±.003
R-2 PLACES
B
.140
.281
.500
.983 ±.003
1.139 +.005 -.000
.375
.750
.844 ±.003
1.835 +.005 -.000
.250 +.001 -.000 DIA THRU

1015683	1015500-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 2° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN WUNDERLICH DATE 22 JAN '63 CHECKED P. REMDE 25 JAN '63 APPROVAL E. SCHOLL 29 JAN '63 APPROVAL J. RIDER 29 JAN '63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS BRACKET-SLEWING SWITCH
NEXT ASSY	USED ON	MATERIAL MIL-B-21531 (ES-7389) BERYLLIUM	NASA APPROVAL MIT APPROVAL 5 June 63	CODE IDENT NO. SIZE D 1015546
APPLICATION		CONTRACT NAS 9-497		SCALE 2:1 SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

INTERPRET DWG IN ACCORDANCE WITH MIL-D-70327.

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63/AA.
ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.

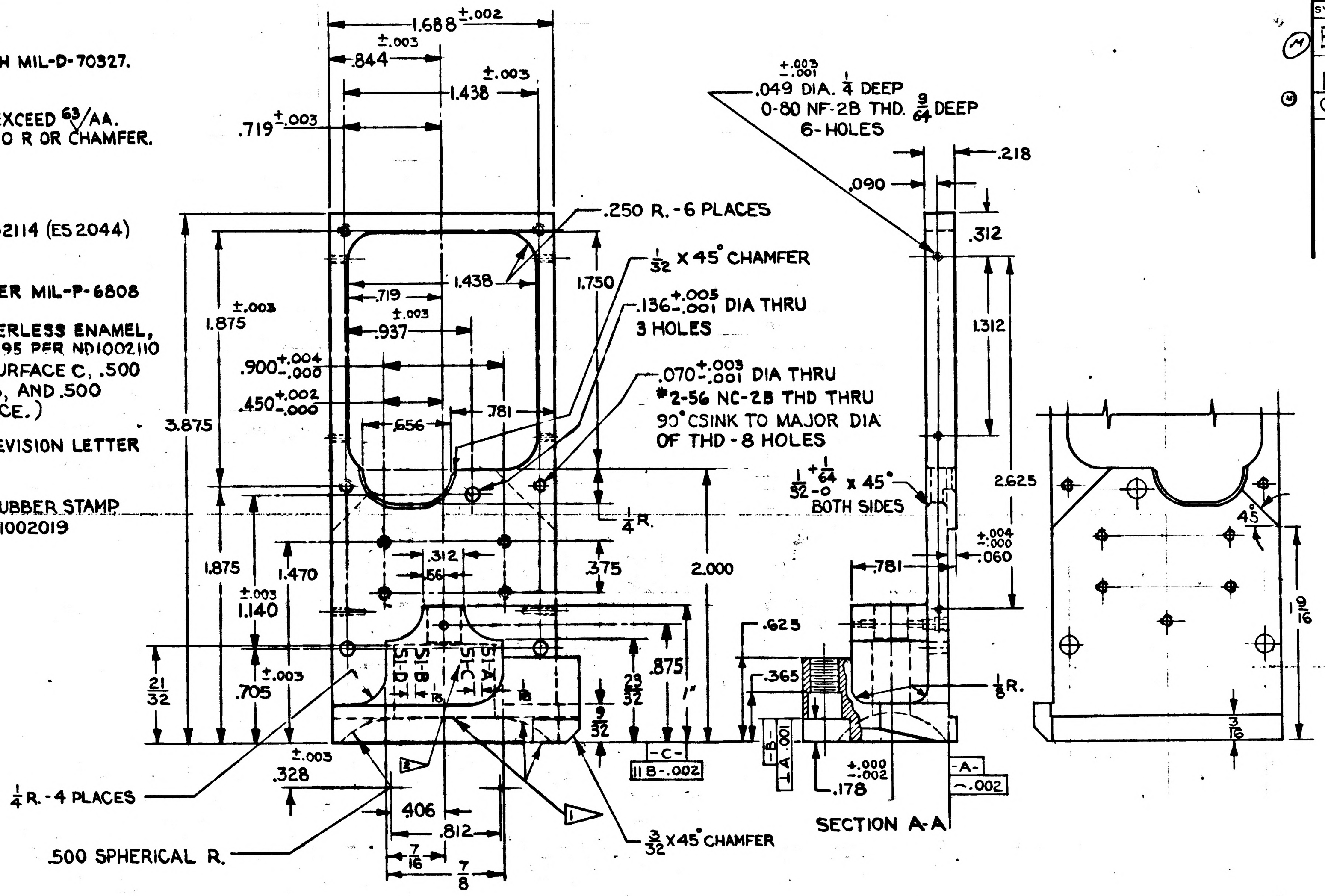
MUST BE FREE FROM BURRS.

MACHINE AND HEAT TREAT PER ND1002114 (ES2044)

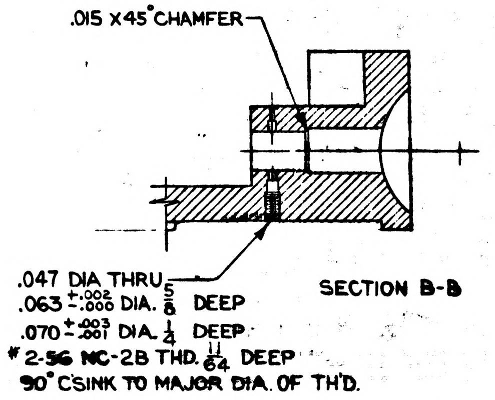
▷1 APPLY ZINC CHROMATE PRIMER PER MIL-P-6808 (ES-2589).
APPLY TT-E-527 (ES-2602) LUSTERLESS ENAMEL, COLOR NO. 36231 OF FED-STD-595 PER ND1002110 TO SURFACES INDICATED, (SURFACE C, .500 SPHERICAL RADIUS SURFACES, AND .500 CYLINDRICAL RADIUS SURFACE.)

IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

▷2 MARK 3/32 HIGH CHARACTERS USING RUBBER STAMP STENCIL OR SILK SCREEN AS PER ND 1002019

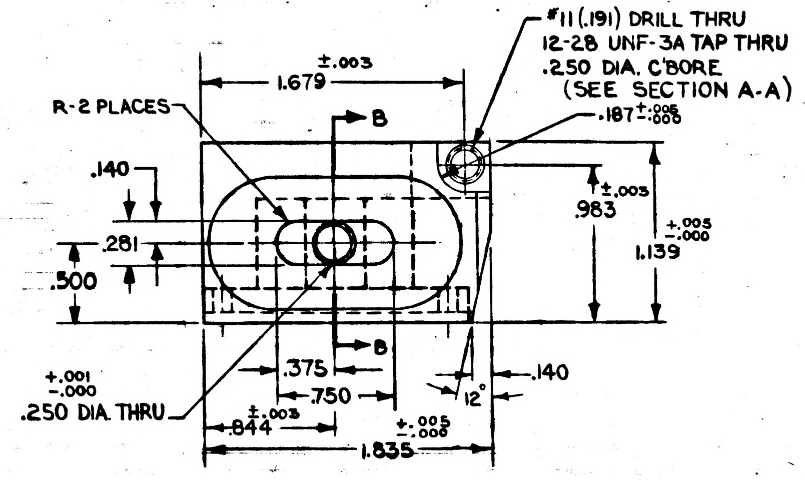


1.688 ±.002
.844 ±.003
1.438 ±.003
.719 ±.003
.049 DIA. 1/4 DEEP
0-80 NF-2B THD. 9/64 DEEP
6-HOLES
.218
.090
.250 R.-6 PLACES
.312
1/32 X 45° CHAMFER
.136 +.005 -.001 DIA THRU
3 HOLES
1.312
.719
1.438
1.750
1.875 ±.003
.937 ±.003
.900 +.004 -.000
.450 +.002 -.000
.656
.781
3.875
.070 +.003 -.001 DIA THRU
#2-56 NC-2B THD THRU
90° CSINK TO MAJOR DIA OF THD - 8 HOLES
2.625
1/32 +1/64 -0 X 45° BOTH SIDES
45°
1/4 R.
.312
.156
.375
2.000
+.004 -.000 .060
.781
1 9/16
1.875
1.470
1.140 ±.003
.625
.875
1"
.365
1/8 R.
21/32
.705 ±.003
23/32
9/32
3/16
-C-
⊥ B -.002
-B-
⊥ A .001
+.000 -.002 .178
-A-
⌒ .002
SECTION A-A
.328 ±.003
1/4 R.-4 PLACES
.406
.812
7/16
7/8
.500 SPHERICAL R.
3/32 X 45° CHAMFER



.015 X 45° CHAMFER
.047 DIA THRU
.063 +.002 -.000 DIA. 5/8 DEEP
.070 +.003 -.001 DIA. 1/4 DEEP
#2-56 NC-2B THD. 11/64 DEEP
90° CSINK TO MAJOR DIA. OF TH'D.

SECTION B-B



#11 (.191) DRILL THRU
12-28 UNF-3A TAP THRU
.250 DIA. C'BORE
(SEE SECTION A-A)
.187 +.005 -.000
1.679 ±.003
R-2 PLACES
B
.140
.281
.500
.983 ±.003
1.139 +.005 -.000
.375
.750
.844 ±.003
1.835 +.005 -.000
12°
.140
+.001 -.000 .250 DIA. THRU

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		UPGRADED FOR CLASS A RELEASE TDRR 01436		8 MAY '63	
F		REVISED PER TDRR# 01592		JUNE 17 63	WK
G		REVISED PER TDRR# 01699		6/21/63	

1015683	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64 − 1/64	+.005 −.005	+2° −2°

DO NOT SCALE THIS DRAWING

MATERIAL
MIL-B-21531 (ES-7389)
BERYLLIUM

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN WUNDERLICH DATE 22 JAN '63
CHECKED P. REMDE 25 JAN '63
APPROVAL E. SCHOLL 29 JAN '63
APPROVAL J. RUDER 29 JAN '63

NASA APPROVAL
MIT APPROVAL 5 Jan 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BRACKET-SLEWING SWITCH

CODE IDENT NO. SIZE D 1015546

SCALE 2:1 SHEET –

1015546 G

INCHES
PHOTOGRAPHIC SCALE ONLY

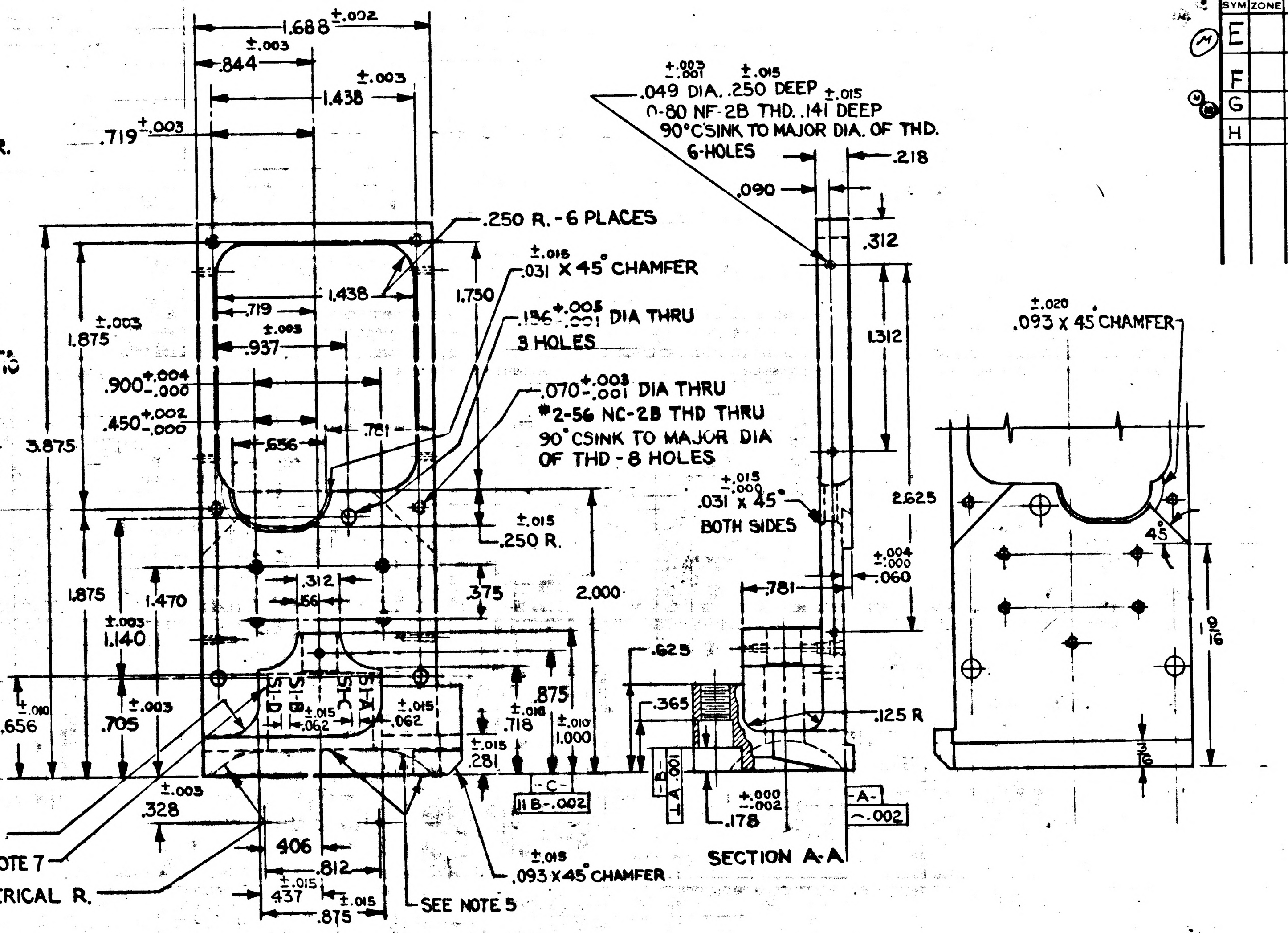
H 1015546

NOTES:

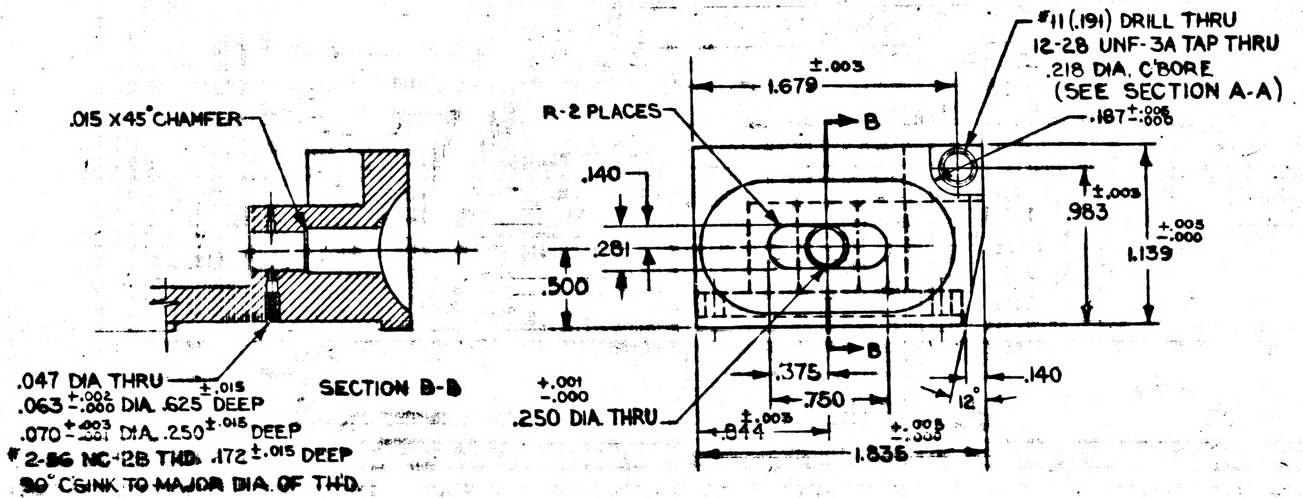
1. INTERPRET DWG IN ACCORDANCE WITH MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED:
   - A. SURFACE ROUGHNESS MUST NOT EXCEED 63/AA.
   - B. ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.
3. MUST BE FREE FROM BURRS.
4. MACHINE AND HEAT TREAT PER ND1002114 (ES 2044)
5. APPLY ZINC CHROMATE PRIMER PER MIL-P-6808 (ES-2589). APPLY TT-E-527 (ES-2602) LUSTERLESS ENAMEL, COLOR NO. 36231 OF FED-STD-595 PER ND1002110 TO SURFACES INDICATED, (SURFACE C, .500 SPHERICAL RADIUS SURFACES, AND .500 CYLINDRICAL RADIUS SURFACE.)
6. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
7. MARK 3/32 HIGH CHARACTERS USING RUBBER STAMP, STENCIL OR SILK SCREEN AS PER ND 1002019

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		UPGRADED FOR CLASS A RELEASE TDRR 01436		8 MAY '63	
F		REVISED PER TDRR # 01592		JUNE 17 63	WK
G		REVISED PER TDRR # 01699		6/21/63	
H		REVISED PER TDRR # 02076		7-16-63	



1.688 ±.002
.844 ±.003
1.438 ±.003
.719 ±.003
.250 R.-6 PLACES
.031 X 45° CHAMFER ±.015
.136 +.005 -.001 DIA THRU 3 HOLES
.070 +.003 -.001 DIA THRU
#2-56 NC-2B THD THRU
90° CSINK TO MAJOR DIA OF THD - 8 HOLES
.250 R. ±.015
1.875 ±.003
.900 +.004 -.000
.450 +.002 -.000
3.875
.937 ±.003
.719
1.438
.656
.781
1.750
1.875
1.470
1.140 ±.003
.312
.156
.375
2.000
.875
.718 ±.015
1.000 ±.010
.281 ±.015
.656 ±.010
.705 ±.003
.328 ±.003
.062 ±.015
.250 R.-4 PLACES ±.015
SEE NOTE 7
.500 SPHERICAL R.
.406
.812
.437 ±.015
.875 ±.015
SEE NOTE 5
.093 X 45° CHAMFER ±.015
C
B -.002
.049 DIA. .250 DEEP +.003 -.001 ±.015
0-80 NF-2B THD. .141 DEEP ±.015
90° CSINK TO MAJOR DIA. OF THD. 6-HOLES
.090
.218
.312
1.312
2.625
.031 X 45° +.015 -.000 BOTH SIDES
.060 +.004 -.000
.781
.625
.365
.125 R
.178
.000 -.002
A .001
B
-A-
~.002
SECTION A-A
.093 X 45 CHAMFER ±.020
45°
1 9/16
3/16



.015 X 45° CHAMFER
.047 DIA THRU
.063 +.002 -.000 DIA .625 DEEP ±.015
.070 +.003 -.001 DIA .250 ±.015 DEEP
#2-56 NC-2B THD. .172 ±.015 DEEP
90° CSINK TO MAJOR DIA. OF THD.
SECTION B-B
R-2 PLACES
1.679 ±.003
B
.140
.281
.500
.250 DIA. THRU +.001 -.000
.375
.750
.844 ±.003
1.836 ±.005 -.000
12°
.140
#11 (.191) DRILL THRU
12-28 UNF-3A TAP THRU
.218 DIA. C'BORE (SEE SECTION A-A)
.187 +.005 -.000
.983 ±.003
1.139 +.005 -.000

1015683	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+.005	+2°
−	−.005	−2°

DO NOT SCALE THIS DRAWING

MATERIAL
MIL-B-21531 (ES-7389)
BERYLLIUM
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

DRAWN WUNDERLICH DATE 22 JAN '63
CHECKED P. REMDE 25 JAN '63
APPROVAL E. SCHOLL 29 JAN '63
APPROVAL J. RUDER 29 JAN '63
NASA APPROVAL
MIT APPROVAL 5 Jul 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BRACKET-SLEWING SWITCH

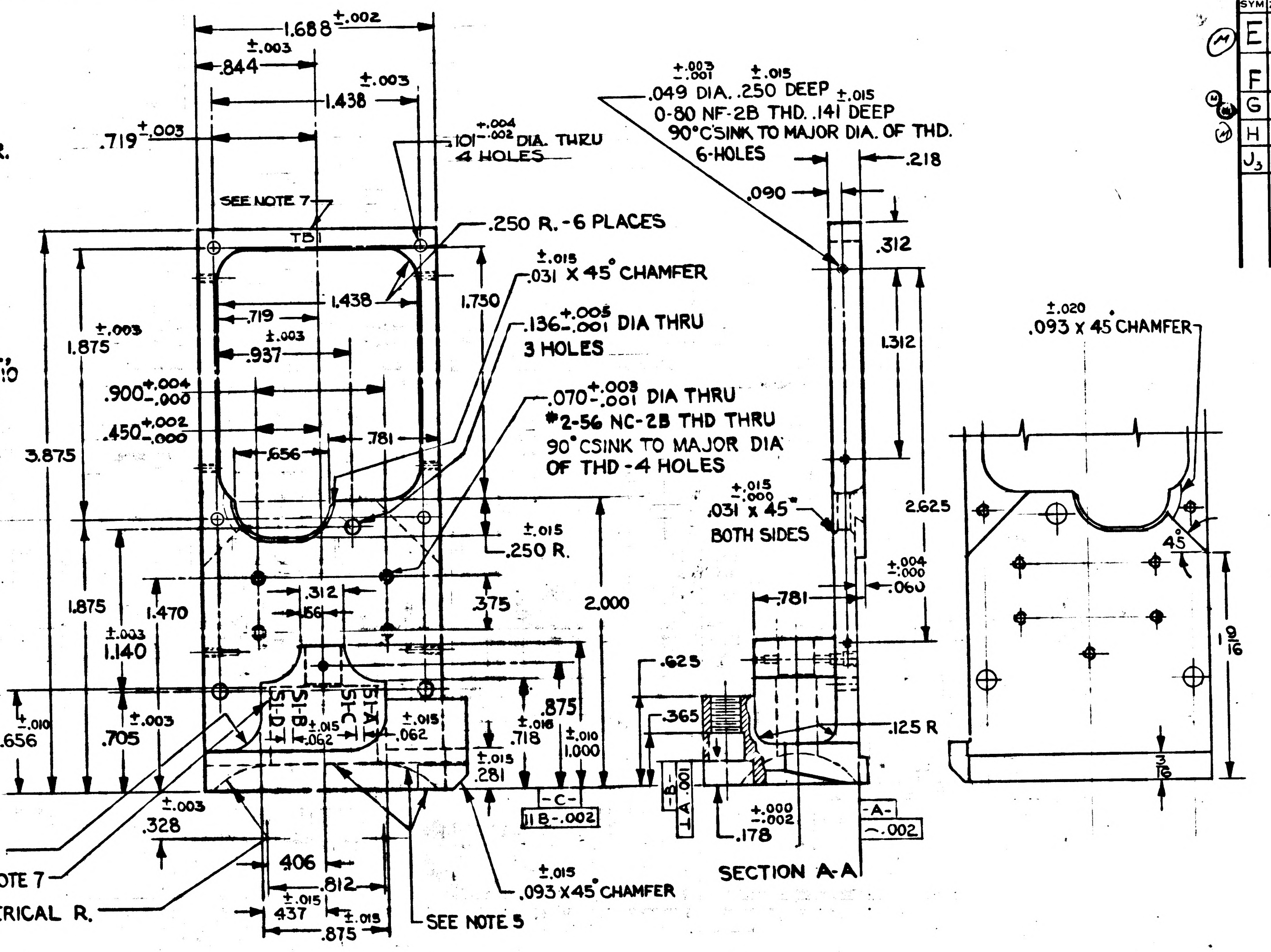
CODE IDENT NO. SIZE D 1015546
SCALE 2:1 SHEET 1 OF 1

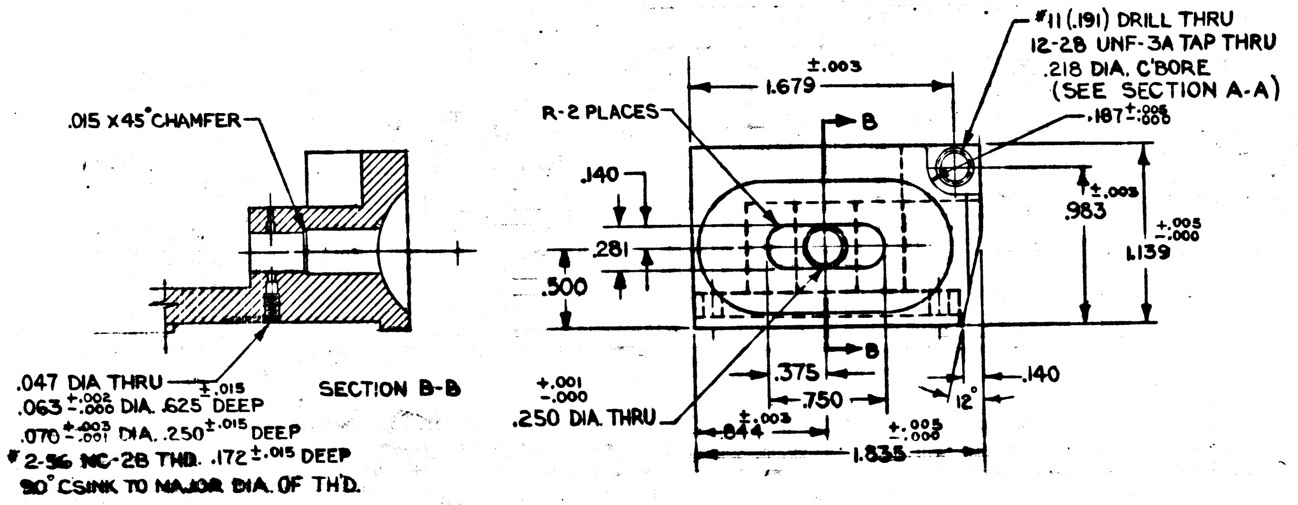
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015546 J

NOTES:

1. INTERPRET DWG IN ACCORDANCE WITH MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED 63/AA.
   B. ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.
3. MUST BE FREE FROM BURRS.
4. MACHINE AND HEAT TREAT PER ND1002114 (ES2044)
5. APPLY ZINC CHROMATE PRIMER PER MIL-P-6808 (ES-2589).
   APPLY TT-E-527 (ES-2602) LUSTERLESS ENAMEL, COLOR NO. 36251 OF FED-STD-595 PER ND1002110 TO SURFACES INDICATED, (SURFACE C, .500 SPHERICAL RADIUS SURFACES, AND .500 CYLINDRICAL RADIUS SURFACE.)
6. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
7. MARK 3/32 HIGH CHARACTERS USING RUBBER STAMP, STENCIL OR SILK SCREEN AS PER ND 1002019


1.688 ±.002
.844 ±.003
1.438 ±.003
.719 ±.003
.101 +.004 −.002 DIA. THRU 4 HOLES
SEE NOTE 7
TD
.250 R.-6 PLACES
.031 X 45° CHAMFER ±.015
1.438
1.750
.136 +.005 −.001 DIA THRU 3 HOLES
.719
.937 ±.003
1.875 ±.003
.900 +.004 −.000
.450 +.002 −.000
.781
.656
3.875
.070 +.003 −.001 DIA THRU
#2-56 NC-2B THD THRU
90° CSINK TO MAJOR DIA OF THD-4 HOLES
.250 R. ±.015
.312
.156
.375
2.000
1.875
1.470
1.140 ±.003
.656 ±.010
.705 ±.003
.062 ±.015
.062 ±.015
.875
.718 ±.015
1.000 ±.010
.281 ±.015
SLOT
S-B
SLOT
-C-
118-.002
.328 ±.003
.250 R.-4 PLACES ±.015
SEE NOTE 7
.500 SPHERICAL R.
.406
.812
.437 ±.015
.875 ±.015
SEE NOTE 5
.093 X 45° CHAMFER ±.015
.049 DIA. +.003 −.001 .250 DEEP ±.015
0-80 NF-2B THD. .141 DEEP ±.015
90° CSINK TO MAJOR DIA. OF THD.
6-HOLES
.090
.218
.312
1.312
2.625
.031 X 45° ±.015 −.000 BOTH SIDES
.060 +.004 −.000
.781
.625
.365
.125 R
-B-
⊥ A .001
.178 +.000 −.002
-A-
⏤ .002
SECTION A-A
.093 X 45° CHAMFER ±.020
45°
1 9/16
3/16


.015 X 45° CHAMFER
SECTION B-B
.047 DIA THRU ±.015
.063 +.002 −.000 DIA .625 DEEP
.070 +.003 −.001 DIA .250 ±.015 DEEP
#2-56 NC-2B THD. .172 ±.015 DEEP
90° CSINK TO MAJOR DIA. OF TH'D.
1.679 ±.003
R-2 PLACES
B
#11 (.191) DRILL THRU
12-28 UNF-3A TAP THRU
.218 DIA. C'BORE
(SEE SECTION A-A)
.187 +.005 −.000
.140
.281
.500
.983 ±.003
1.139 +.005 −.000
.250 DIA. THRU +.001 −.000
.375
.750
.844 ±.003
1.835 ±.005 −.003
12°
.140

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
E		UPGRADED FOR CLASS A RELEASE TDRR 01436		8 MAY 63	
F		REVISED PER TDRR # 01592		JUNE 17 63	WK
G		REVISED PER TDRR # 01699		6/21/63	WK
H		REVISED PER TDRR # 02076		7-16-63	7/17/63
J3		REVISED PER TDRR NO. 02642		27 AUG 63	

1015683	1015500-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS +.005 −.005 ANGLES +2° −2° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN WUNDERLICH DATE 22 JAN '63 CHECKED P. REMDE 25 JAN '63 APPROVAL E. SCHOLL 29 JAN '63 APPROVAL J. RUDER 29 JAN '63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS BRACKET-SLEWING SWITCH
NEXT ASSY	USED ON	MATERIAL MIL-B-21531 (ES-7389) BERYLLIUM	NASA APPROVAL MIT APPROVAL 5 June 63	CODE IDENT NO. SIZE D 1015546
APPLICATION		CONTRACT NAS 9-497		SCALE 2:1 SHEET 1 OF 1

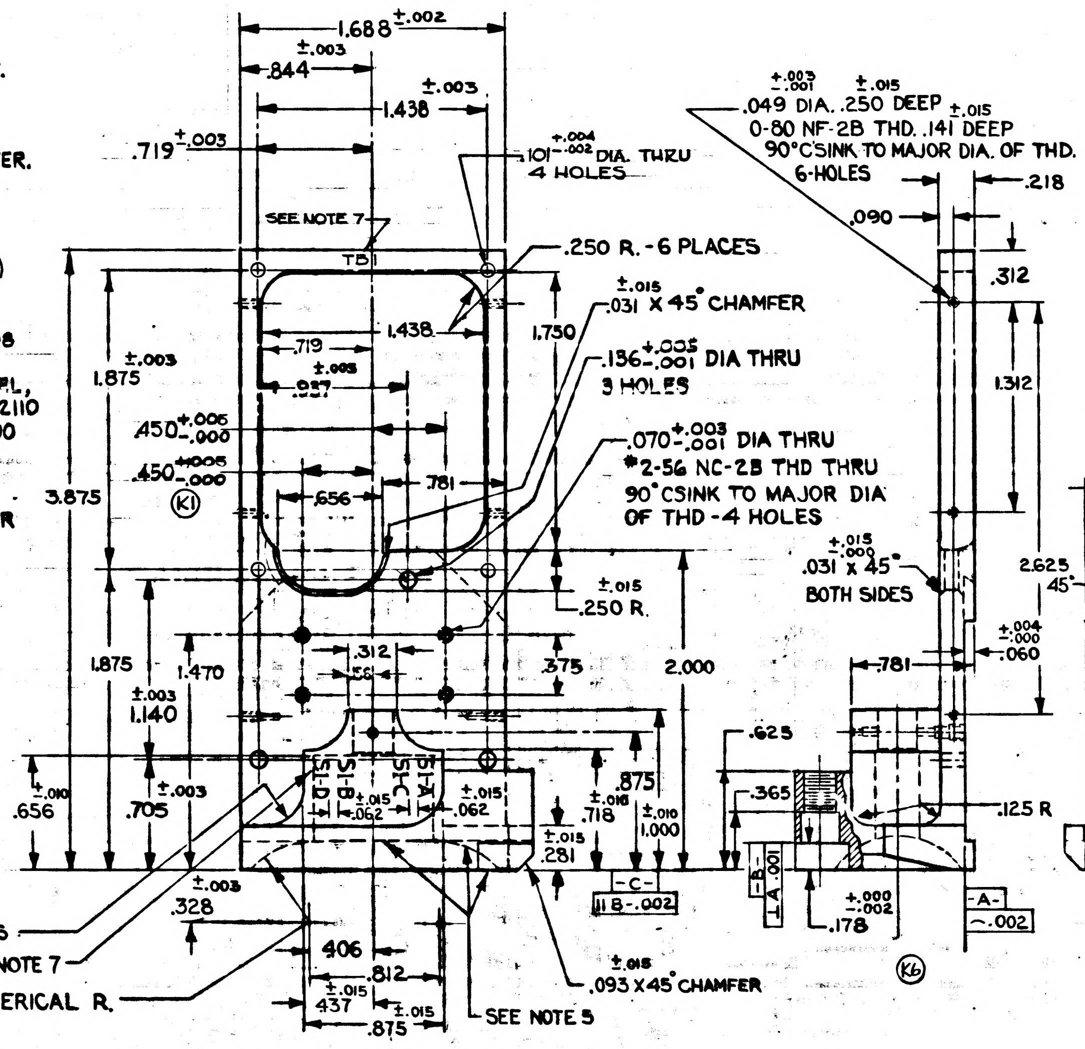
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTES:

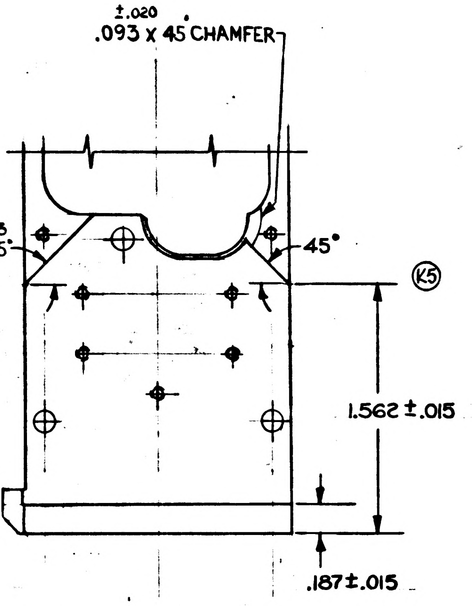
1. INTERPRET DWG IN ACCORDANCE WITH MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED:
   - A. SURFACE ROUGHNESS MUST NOT EXCEED 63/AA.
   - B. ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.
3. MUST BE FREE FROM BURRS.
4. MACHINE AND HEAT TREAT PER ND1002114 (ES2044)
5. (K2) ~~APPLY ZINC CHROMATE PRIMER PER MIL-P-6808 OVER FINISHED MACHINED SURFACES.~~ APPLY TT-E-527 (ES-2602) LUSTERLESS ENAMEL, COLOR NO. 36231 OF FED-STD-595 PER ND1002110 TO SURFACES INDICATED, (SURFACE C, .500 SPHERICAL RADIUS SURFACES, AND .500 CYLINDRICAL RADIUS SURFACE.)
6. (K3) IDENTIFY USING DRAWING NO. AND REVISION LETTER PER ND1002019.
7. MARK 3/32 HIGH CHARACTERS USING RUBBER STAMP, STENCIL OR SILK SCREEN AS PER ND 1002019

REVISIONS

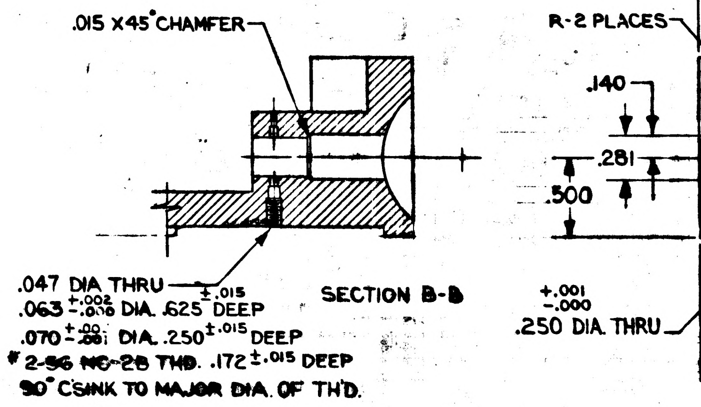
	SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ	E		UPGRADED FOR CLASS A RELEASE TDRR 01436		8 MAY '63	
	F		REVISED PER TDRR # 01592		JUNE 17 63	WK
Ⓜ	G		REVISED PER TDRR # 01699		6/21/63	
Ⓜ	H		REVISED PER TDRR # 02076		7-16-63	
Ⓜ	J3		REVISED PER TDRR NO. 02642		27 AUG 63	
	K7		REVISED PER TDRR NO. 04576		13 NOV 63	11/20/63



1.688 ±.002
.844 ±.003
1.438 ±.003
.719 ±.003
.101 +.004 -.002 DIA. THRU 4 HOLES
SEE NOTE 7
TB1
.250 R. - 6 PLACES
.031 X 45° CHAMFER ±.015
1.438
.719
.937 ±.005
1.750
1.875 ±.003
3.875
.136 +.005 -.001 DIA THRU 3 HOLES
.450 +.005 -.000
.450 +.005 -.000
(K1)
.656
.781
.070 +.003 -.001 DIA THRU
#2-56 NC-2B THD THRU 90° CSINK TO MAJOR DIA OF THD - 4 HOLES
.250 R. ±.015
.312
.156
1.875
1.470
1.140 ±.003
.375
2.000
S-D
S-B
S-C
S-A
.062 ±.015
.062 ±.015
.656 ±.010
.705 ±.003
.875
.718 ±.010
1.000 ±.010
.281 ±.015
-C-
∥ B -.002
.328 ±.003
.250 R. - 4 PLACES ±.015
SEE NOTE 7
.500 SPHERICAL R.
.406
.812
.437 ±.015
.875 ±.015
SEE NOTE 5
.093 X 45° CHAMFER ±.015
.049 DIA. +.003 -.001 .250 DEEP ±.015
0-80 NF-2B THD. .141 DEEP ±.015
90° C'SINK TO MAJOR DIA. OF THD.
6-HOLES
.218
.090
.312
1.312
.031 X 45° +.015 -.000 BOTH SIDES
2.625
.060 +.004 -.000
.781
.625
.365
.125 R
-B-
⊥ A .001
.178 +.000 -.002
-A-
⌒ .002
(K6)

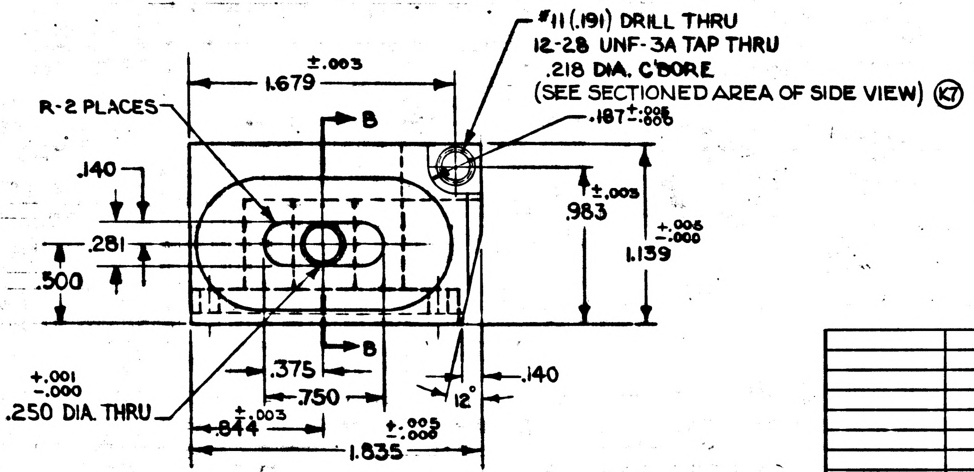


.093 X 45° CHAMFER ±.020
45°
45°
(K5)
1.562 ±.015
.187 ±.015



.015 X 45° CHAMFER
.047 DIA THRU
.063 +.002 -.000 DIA. .625 DEEP ±.015
.070 +.00 -.001 DIA. .250 ±.015 DEEP
# 2-56 NC-2B THD. .172 ±.015 DEEP
90° C'SINK TO MAJOR DIA. OF TH'D.

SECTION B-B



#11 (.191) DRILL THRU
12-28 UNF-3A TAP THRU
.218 DIA. C'BORE
(SEE SECTIONED AREA OF SIDE VIEW) (K7)
.187 +.005 -.000
1.679 ±.003
R-2 PLACES
B
B
.140
.281
.500
.983 ±.003
1.139 +.005 -.000
.250 DIA. THRU +.001 -.000
.375
.750
.844 ±.003
1.835 +.005 -.000
12°
.140

(K4)

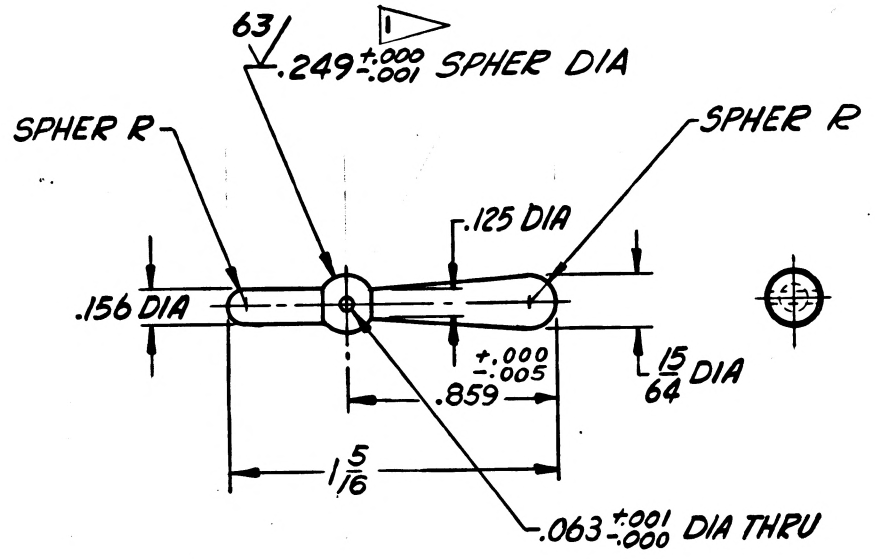
1015683	1015500-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ±.005 ANGLES ±2° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
NEXT ASSY	USED ON	MATERIAL MIL-B-21531 (ES-7389) BERYLLIUM	DRAWN WUNDERLICH DATE 22 JAN '63 CHECKED P. REMES 25 JAN '63 APPROVAL E. SCHOLL 29 JAN '63 APPROVAL J. RUDER 29 JAN '63	BRACKET-SLEWING SWITCH
APPLICATION		CONTRACT NAS 9-497	NASA APPROVAL MIT APPROVAL	CODE IDENT NO. SIZE D 1015546 SCALE 2:1 SHEET 1 OF 1

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

1 1015547 C 1

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
C	UPGRADED FOR CLASS A RELEASE 01137		8 APR 63	RH / W.K.



FINISH: MIL-A-8625, TYPE II BLACK (ES-384 ANODIZE)

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327

SURFACE ROUGHNESS MUST NOT EXCEED 63√AA.

ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER

PIECEMARK PER MIL-STD-130 (ES-267, SELECT FROM -1 THRU -19)

REMOVE ALL BURRS

1 ▷ SURFACE MUST BE FREE FROM ANODIC TREATMENT.

NEXT ASSY	USED ON
1015500	'015500

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ –
– 1/64	–.005	– –

DO NOT SCALE THIS DRAWING

MATERIAL QQ-A-270, TEMPER 6 (ES-2106 AL ALLOY 6061)

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Wunderlich DATE 24 JAN 63
CHECKED P. Ronde 24 JAN 63
APPROVAL E. Scholl 29 JAN '63
APPROVAL J. Ruder 29 JAN 63

NASA APPROVAL 5/2/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TOGGLE, SWITCH

CODE IDENT NO.
SIZE B
1015547
SCALE 2:1
SHEET ~

MIL 10778-P

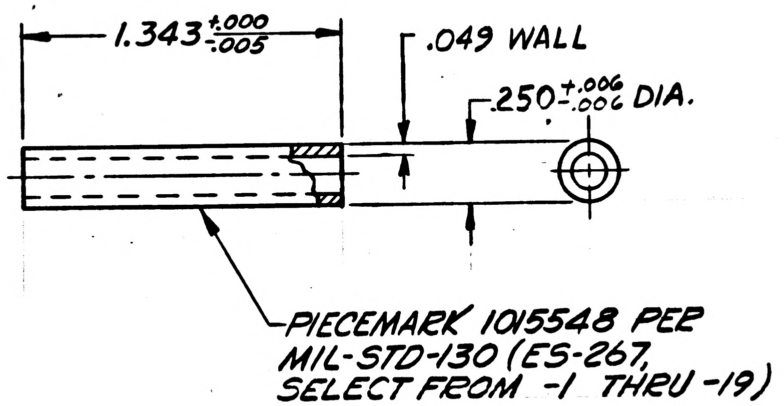
4 Feb 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015548 B

REVISIONS

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
B	UPGRADED FOR CLASS A RELEASE 01137		8 APR 63	RH / WK



1.343 +.000 -.005
.049 WALL
.250 +.006 -.006 DIA.
PIECEMARK 1015548 PER MIL-STD-130 (ES-267, SELECT FROM -1 THRU -19)

SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{63}$ AA.
ALL CORNERS NOT TO EXCEED .010 R. OR CHAMFER.
INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327
FINISH PER MIL-C-5541 (ES-591 CHEMICAL FILM)
REMOVE ALL BURRS.

NEXT ASSY	USED ON
1015500	1015500
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+ —
- 1/64	-.005	- —

DO NOT SCALE THIS DRAWING

MATERIAL QQ-A-270 TEMPER T6, 6061-T6 (AL ALY ES-2106)
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Wunderlich DATE 23-JAN 63
CHECKED P. Remde 24 JAN 63
APPROVAL E. Scholl 29 JAN '63
APPROVAL J. Ruder 29 JAN 63
NASA APPROVAL 5/2/63
MIT APPROVAL W Kupfer 2 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SPACER - SLEW SWITCH

CODE IDENT NO.
SIZE B
1015548
SCALE 2:1
SHEET ~

MIL 10778-P

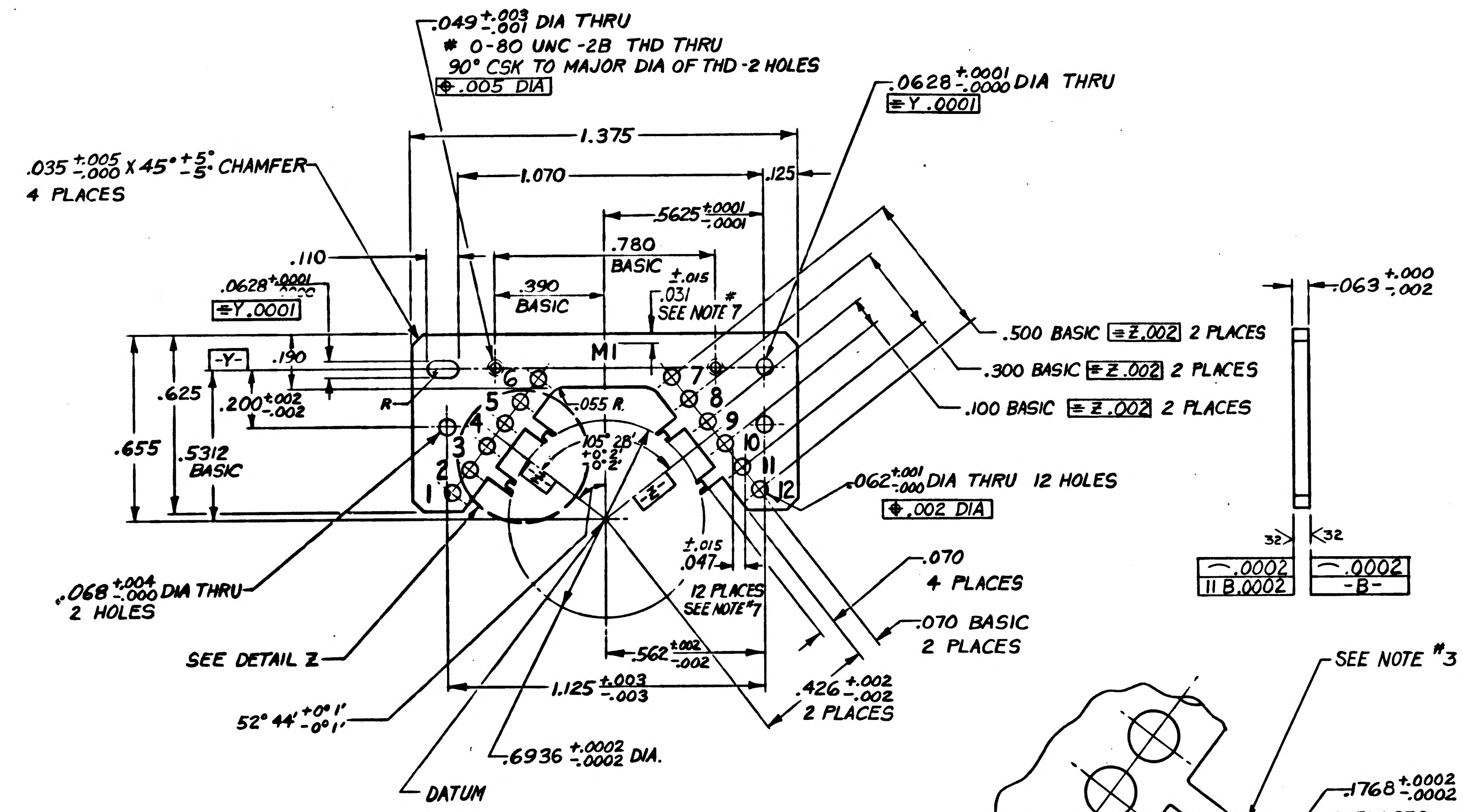
J. Smim 4 Feb 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

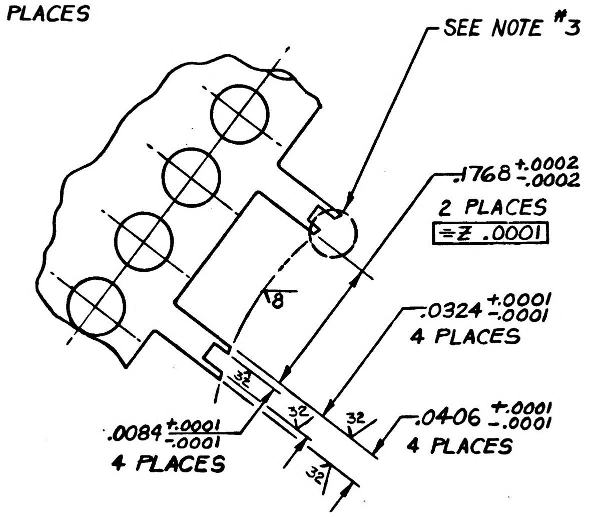
1015554

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR # 02188		JULY 22,1963	WK

REVISIONS TDRR 0,244



.049 +.003 -.001 DIA THRU
# 0-80 UNC -2B THD THRU
90° CSK TO MAJOR DIA OF THD -2 HOLES
⊕ .005 DIA
.0628 +.0001 -.0000 DIA THRU
⌯ Y .0001
.035 +.005 -.000 X 45° +5° -5° CHAMFER
4 PLACES
1.375
1.070
.125
.5625 +.0001 -.0001
.780 BASIC
±.015 .031 SEE NOTE #7
.390 BASIC
.110
.0628 +.0001 -.0000
⌯ Y .0001
-Y-
.190
.200 +.002 -.002
.625
.655
.5312 BASIC
R
.055 R.
105° 28' +0° 2' -0° 2'
M1
1 2 3 4 5 6 7 8 9 10 11 12
-Z-
.500 BASIC ⌯ Z .002 2 PLACES
.300 BASIC ⌯ Z .002 2 PLACES
.100 BASIC ⌯ Z .002 2 PLACES
.062 +.001 -.000 DIA THRU 12 HOLES
⊕ .002 DIA
±.015 .047
12 PLACES SEE NOTE #7
.070 4 PLACES
.070 BASIC 2 PLACES
.068 +.004 -.000 DIA THRU
2 HOLES
SEE DETAIL Z
.562 +.002 -.002
1.125 +.003 -.003
.426 +.002 -.002 2 PLACES
52° 44' +0° 1' -0° 1'
.6936 +.0002 -.0002 DIA.
DATUM
.063 +.000 -.002
32
32
⌒ .0002 ∥ B .0002
⌒ .0002 -B-



SEE NOTE #3
.1768 +.0002 -.0002
2 PLACES
⌯ Z .0001
8
.0324 +.0001 -.0001
4 PLACES
.0084 +.0001 -.0001
4 PLACES
.0406 +.0001 -.0001
4 PLACES
32
32
32
32

DETAIL Z
SCALE: 10/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS SHALL NOT EXCEED 63√
   B. INSIDE CORNERS .003 R MAX
   C. REMOVE BURRS AND BREAK SHARP EDGES .005 R. MAX.
3. CIRCUMSCRIBED AREA TO HAVE CORNERS SHARP (AS MACHINED), 4 PLACES
4. HEAT TREAT: 1450° F FOR 1 HOUR, FURNACE COOL AFTER ROUGH MACHINING
5. MATERIAL: QQ-S-633 GRADE 1113 (ES-2110-3 CARBON STEEL, FREE CUTTING) LAY OF GRAIN TO BE PERPENDICULAR TO SURFACE B.
6. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
7. MARK .062 ±.015 HIGH CHARACTERS USING RUBBER STAMP, STENCIL, OR SILK SCREEN AS PER ND 1002019
8. .00015 TO .00025 THICK PLATING PER ND 1002176 EXCEPT .0628 DIA. HOLE AND .0628 WIDE SLOT TO BE FREE OF PLATING.

NEXT ASSY	USED ON
1015559	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+.005	+ 2°
−	−.005	− 2°

DO NOT SCALE THIS DRAWING

MATERIAL SEE NOTE #5

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN W. MUNSON DATE 7 MAR 63
CHECKED Main Kamske 19 APR 63
APPROVAL J. Petrangi 17 APR 63
APPROVAL Nordel 19 APR 63
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CORE, PICKOFF

CODE IDENT NO.
SIZE D
1015554
SCALE 4/1
SHEET 1 OF 1

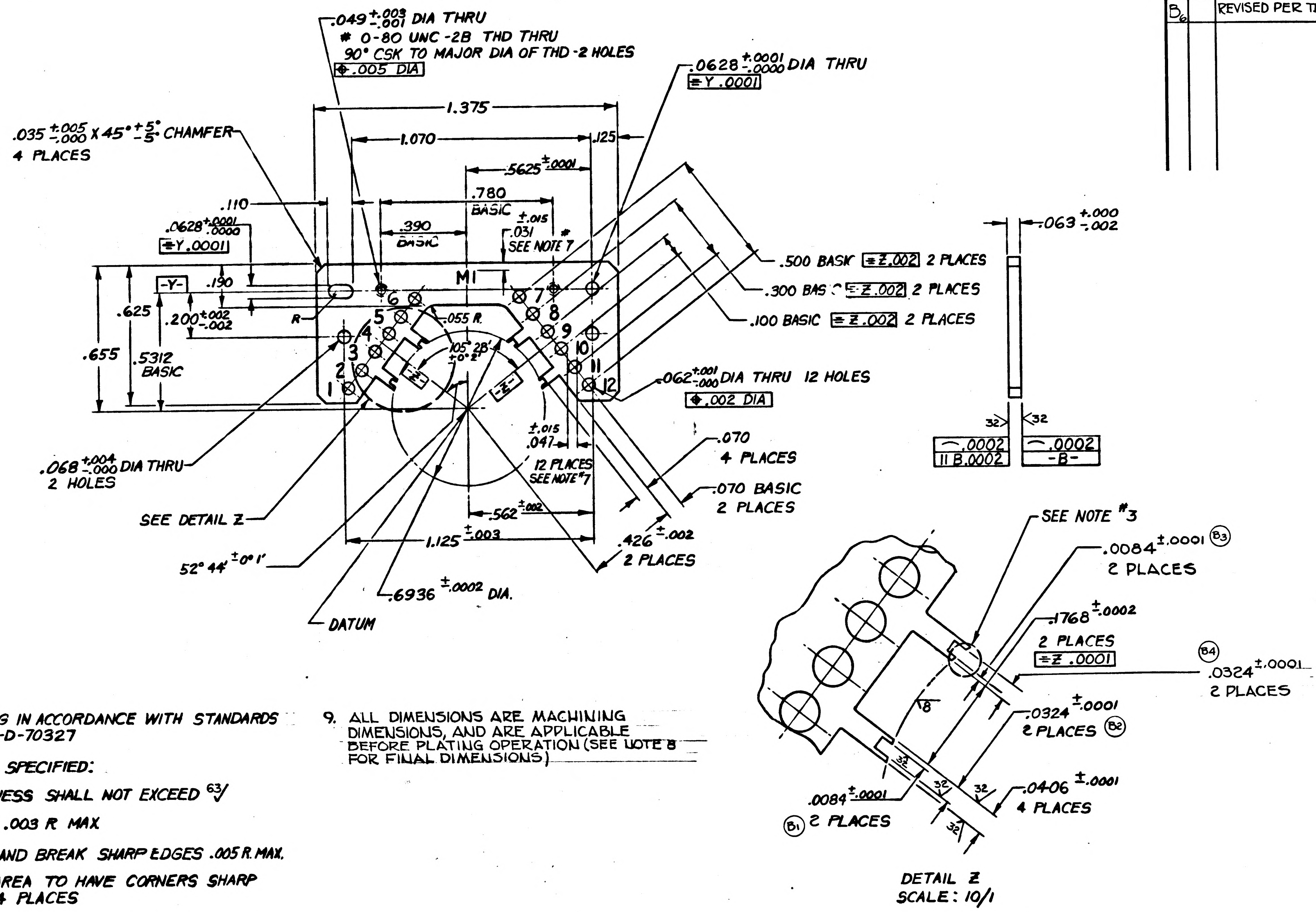
Charleston 19 APR 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

MIL 1077D-P

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR # 02188		JULY 22, 1963	WK
B6		REVISED PER TDRR NO. 02641		27 AUG 63	

REVISIONS TDRR 0,244



.049 +.003 −.001 DIA THRU
# 0-80 UNC-2B THD THRU
90° CSK TO MAJOR DIA OF THD - 2 HOLES
⌖ .005 DIA
.0628 +.0001 −.0000 DIA THRU
≡ Y .0001
1.375
1.070
.125
.5625 ±.0001
.035 +.005 −.000 X 45° +5° −5° CHAMFER 4 PLACES
.110
.0628 +.0001 −.0000
≡ Y .0001
.780 BASIC
.390 BASIC
±.015 .031 SEE NOTE 7
-Y-
.190
M1
.625
.200 ±.002
.655
.5312 BASIC
R
.055 R
.105 .28 +0 −2
-Z-
1 2 3 4 5 6 7 8 9 10 11 12
.500 BASIC ≡ Z .002 2 PLACES
.300 BASIC ≡ Z .002 2 PLACES
.100 BASIC ≡ Z .002 2 PLACES
.062 +.001 −.000 DIA THRU 12 HOLES
⌖ .002 DIA
.068 +.004 −.000 DIA THRU 2 HOLES
±.015 .047
12 PLACES SEE NOTE 7
.070 4 PLACES
.070 BASIC 2 PLACES
SEE DETAIL Z
.562 ±.002
1.125 ±.003
.426 ±.002 2 PLACES
52° 44' ±0° 1'
.6936 ±.0002 DIA.
DATUM
.063 +.000 −.002
32 32
.0002
11 B .0002
.0002
-B-
SEE NOTE #3
.0084 ±.0001 2 PLACES
.1768 ±.0002 2 PLACES
≡ Z .0001
.0324 ±.0001 2 PLACES
18
.0324 ±.0001 2 PLACES
.0089 ±.0001 2 PLACES
32
.0406 ±.0001 4 PLACES
DETAIL Z
SCALE: 10/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED:
   - A. SURFACE ROUGHNESS SHALL NOT EXCEED 63√
   - B. INSIDE CORNERS .003 R MAX
   - C. REMOVE BURRS AND BREAK SHARP EDGES .005 R. MAX.
3. CIRCUMSCRIBED AREA TO HAVE CORNERS SHARP (AS MACHINED), 4 PLACES
4. HEAT TREAT: 1450° F FOR 1 HOUR, FURNACE COOL AFTER ROUGH MACHINING
5. MATERIAL: QQ-S-633 GRADE 1113 (ES-2110-3 CARBON STEEL, FREE CUTTING) LAY OF GRAIN TO BE PERPENDICULAR TO SURFACE B.
6. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
7. MARK .062 ±.015 HIGH CHARACTERS USING RUBBER STAMP, STENCIL, OR SILK SCREEN AS PER ND 1002019
8. .00015 TO .00025 THICK PLATING PER ND 1002176 EXCEPT .0628 DIA. HOLE AND .0628 WIDE SLOT TO BE FREE OF PLATING.
9. ALL DIMENSIONS ARE MACHINING DIMENSIONS, AND ARE APPLICABLE BEFORE PLATING OPERATION (SEE NOTE 8 FOR FINAL DIMENSIONS)

1015559 NEXT ASSY	1015500-011 USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS ±.005 ANGLES ± 2° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN W. MUNSON DATE 7 MAR 63 CHECKED 19 APR 63 APPROVAL Petrangi 17 APR 63 APPROVAL 19 APR 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	CORE, PICKOFF
APPLICATION		MATERIAL SEE NOTE #5 CONTRACT NAS 9-497	NASA APPROVAL MIT APPROVAL 15 May 63	CODE IDENT NO. SCALE 4/1	SIZE D 1015554 SHEET 1 OF 1

3 Charleston 19 APR 63

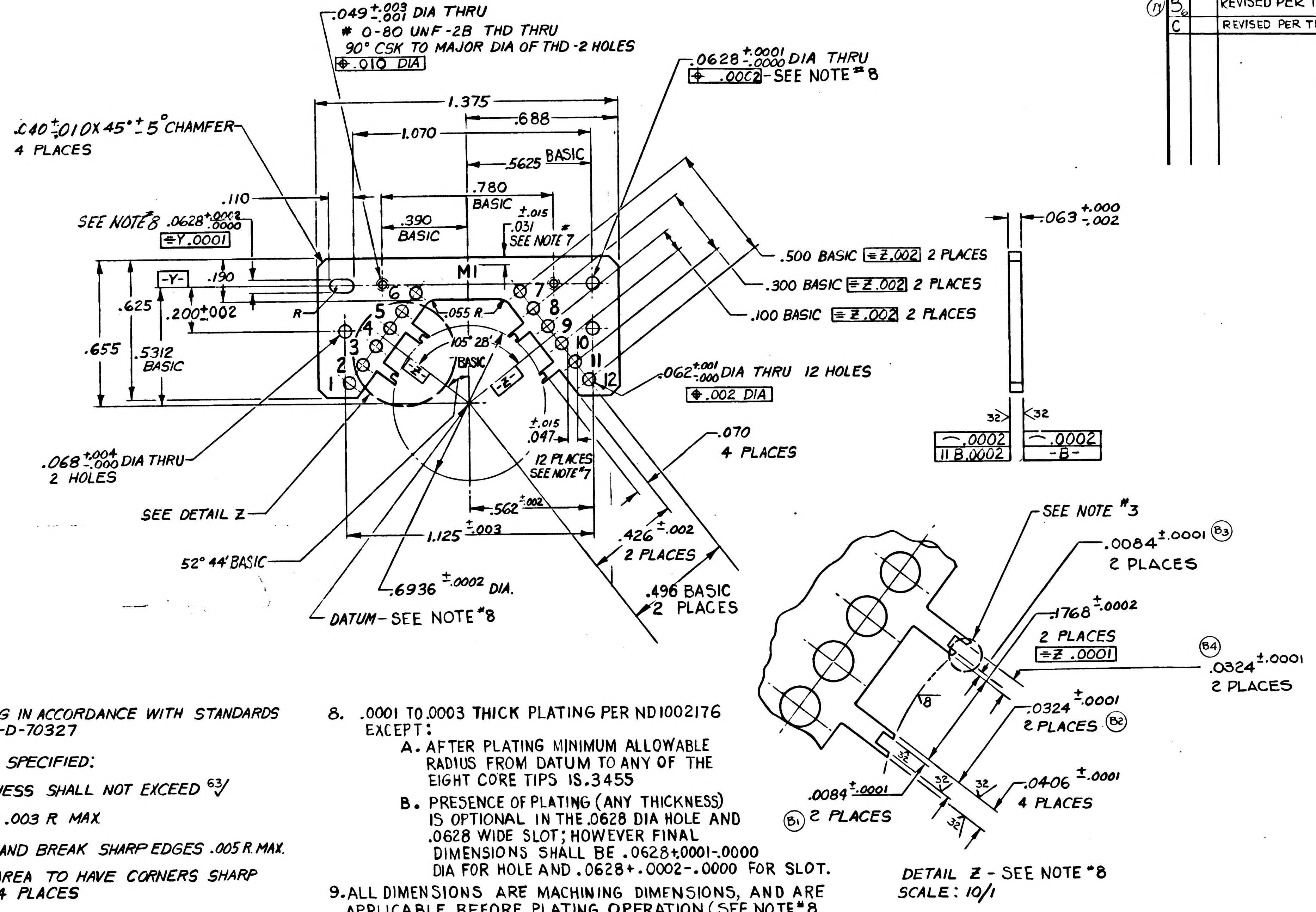
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

MIL 10779-P

C	1015554	2		

REVISIONS TDRR 0 244

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR # 02188		JULY 22,1963	WK
B6		REVISED PER TDRR NO.02641		27 AUG 63	
C		REVISED PER TDRR 10005		16 JUN 64	R.W.T.



.049 +.003 -.001 DIA THRU
# 0-80 UNF-2B THD THRU
90° CSK TO MAJOR DIA OF THD-2 HOLES
⌖ .010 DIA
.0628 +.0001 -.0000 DIA THRU
⌖ .0002 - SEE NOTE #8
.040 ±.010 X 45° ± 5° CHAMFER
4 PLACES
1.375
.688
1.070
.5625 BASIC
.780 BASIC
.390 BASIC
.110
SEE NOTE #8 .0628 +.0002 -.0000
≡ Y .0001
±.015 .031 SEE NOTE 7
M1
-Y-
.190
.625
.200 ±.002
R
.655
.5312 BASIC
.055 R
105° 28' BASIC
1 2 3 4 5 6 7 8 9 10 11 12
.500 BASIC ≡ Z .002 2 PLACES
.300 BASIC ≡ Z .002 2 PLACES
.100 BASIC ≡ Z .002 2 PLACES
.063 +.000 -.002
.062 +.001 -.000 DIA THRU 12 HOLES
⌖ .002 DIA
32
⌒ .0002
∥ B .0002
⌒ .0002
-B-
.068 +.004 -.000 DIA THRU
2 HOLES
±.015 .047
12 PLACES SEE NOTE #7
.070
4 PLACES
SEE DETAIL Z
.562 ±.002
1.125 ±.003
.426 ±.002
2 PLACES
52° 44' BASIC
.6936 ±.0002 DIA.
.496 BASIC
2 PLACES
DATUM - SEE NOTE #8
SEE NOTE #3
.0084 ±.0001 B3
2 PLACES
.1768 ±.0002
2 PLACES
≡ Z .0001
B4
.0324 ±.0001
2 PLACES
8
.0324 ±.0001
2 PLACES B2
32
.0084 ±.0001
B1 2 PLACES
.0406 ±.0001
4 PLACES

DETAIL Z - SEE NOTE #8
SCALE: 10/1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED:
   - A. SURFACE ROUGHNESS SHALL NOT EXCEED 63√
   - B. INSIDE CORNERS .003 R MAX.
   - C. REMOVE BURRS AND BREAK SHARP EDGES .005 R. MAX.
3. CIRCUMSCRIBED AREA TO HAVE CORNERS SHARP (AS MACHINED), 4 PLACES
4. HEAT TREAT: 1450° F FOR 1 HOUR, FURNACE COOL AFTER ROUGH MACHINING
5. MATERIAL: QQ-S-633 GRADE 1113 (ES-2110-3 CARBON STEEL, FREE CUTTING) LAY OF GRAIN TO BE PERPENDICULAR TO SURFACE B.
6. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER ND 1002019
7. MARK .062 ±.015 HIGH CHARACTERS USING RUBBER STAMP, STENCIL, OR SILK SCREEN AS PER ND1002019.
8. .0001 TO .0003 THICK PLATING PER ND1002176 EXCEPT:
   - A. AFTER PLATING MINIMUM ALLOWABLE RADIUS FROM DATUM TO ANY OF THE EIGHT CORE TIPS IS .3455
   - B. PRESENCE OF PLATING (ANY THICKNESS) IS OPTIONAL IN THE .0628 DIA HOLE AND .0628 WIDE SLOT; HOWEVER FINAL DIMENSIONS SHALL BE .0628+.0001-.0000 DIA FOR HOLE AND .0628+.0002-.0000 FOR SLOT.
9. ALL DIMENSIONS ARE MACHINING DIMENSIONS, AND ARE APPLICABLE BEFORE PLATING OPERATION (SEE NOTE #8 FOR FINAL DIMENSIONS)
10. SERIALIZE PER ND1002023.

1015559	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ ±.005 ± 2°
−
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE #5
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN W. MUNSON DATE 7 MAR 63
CHECKED 19 APR 63
APPROVAL J. Petrangi 17 APR 63
APPROVAL 19 APR 63
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

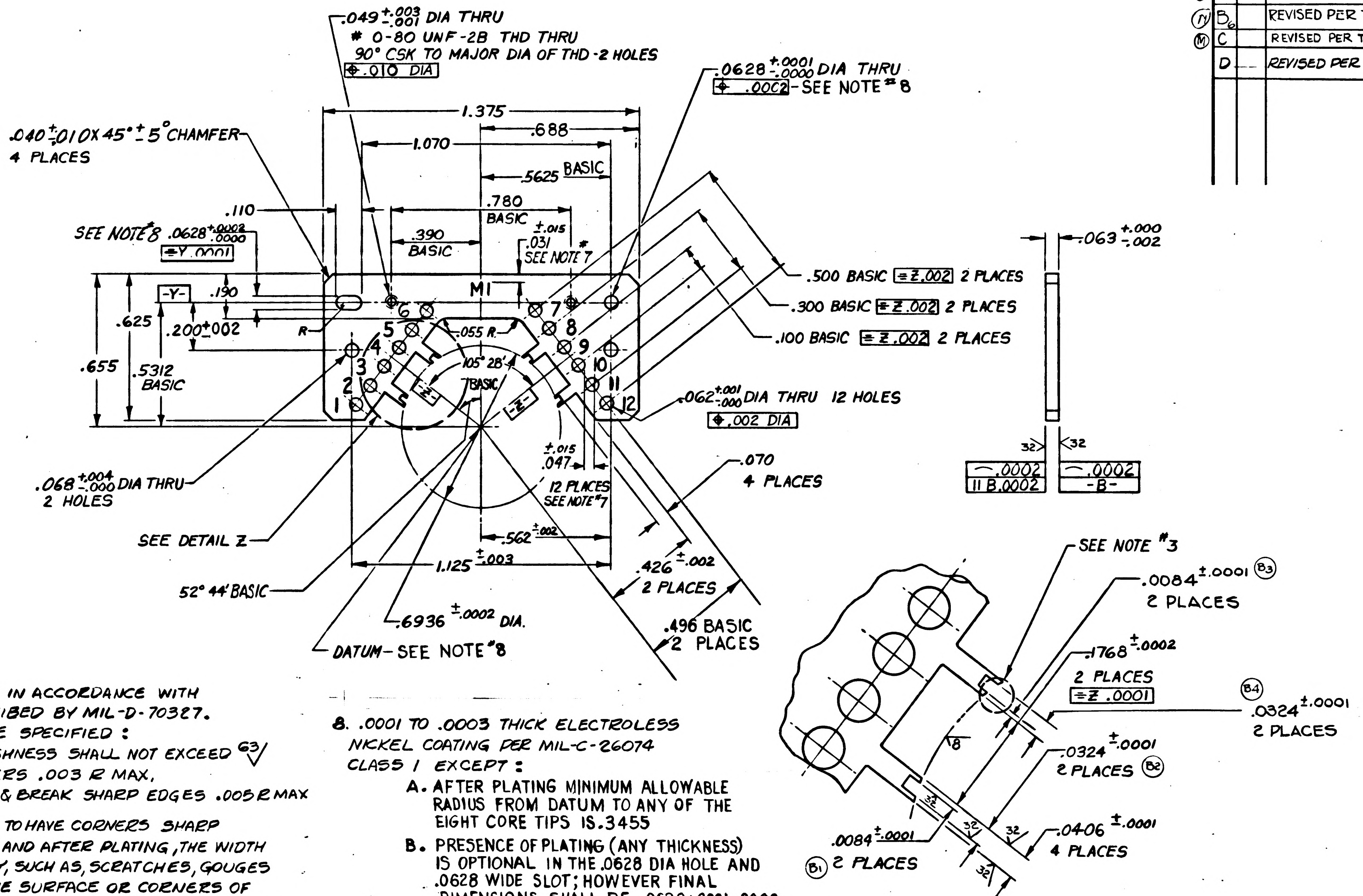
CORE, PICKOFF

CODE IDENT NO.
SIZE D
1015554
SCALE 4/1
SHEET 1 OF 1

19 APR 63

MIL 1077D-P

REVISIONS TDRR 01244					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR # 02188		JULY 22,1963	WK
B		REVISED PER TDRR NO.02641		27 AUG 63	
C		REVISED PER TDRR 10005		16 JUN 64	R.W.T.
D	—	REVISED PER TDRR 16863		8 MAR 65	HTO MEM



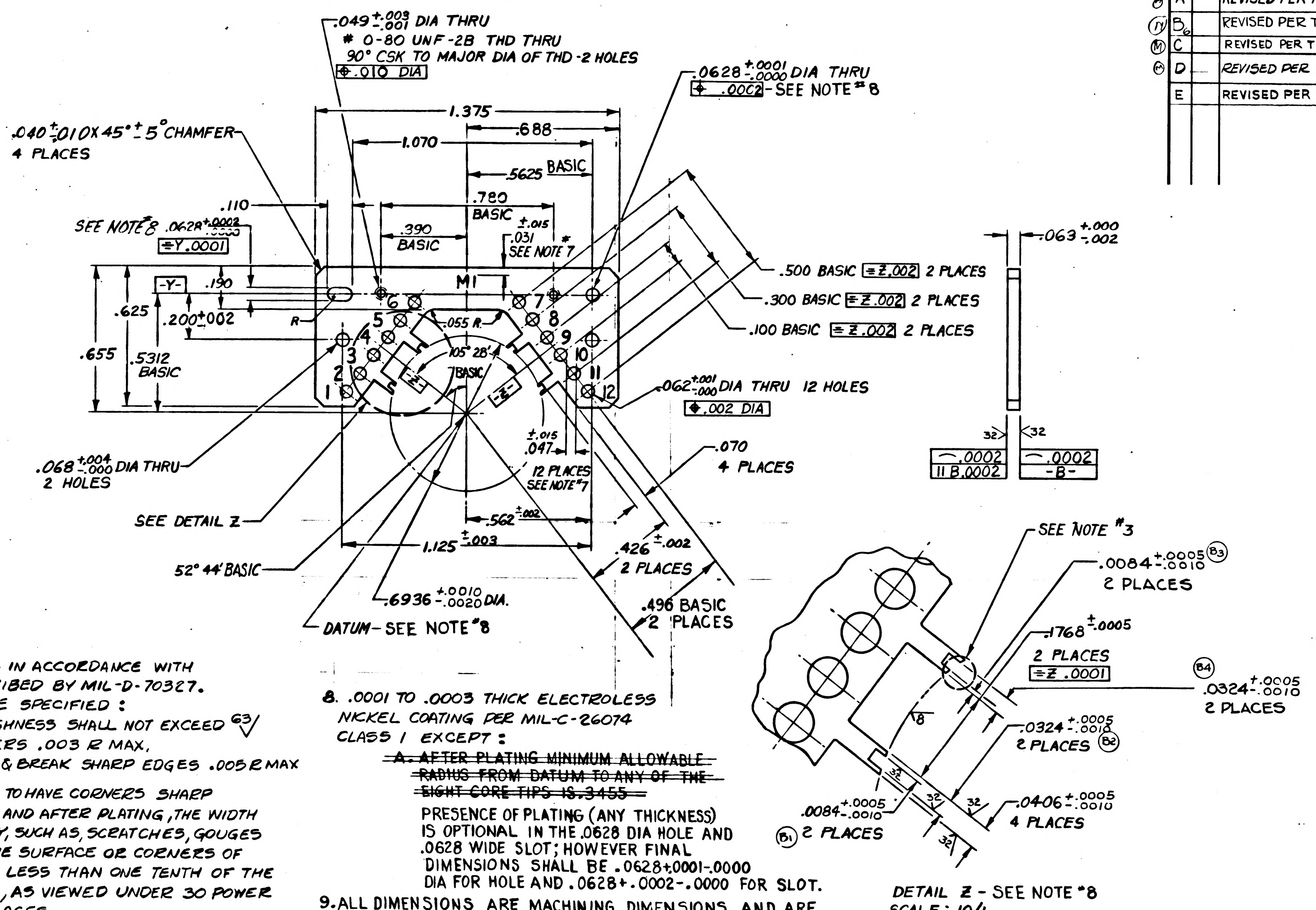
.049 +.003 -.001 DIA THRU
# 0-80 UNF-2B THD THRU
90° CSK TO MAJOR DIA OF THD -2 HOLES
⌖ .010 DIA
.0628 +.0001 -.0000 DIA THRU
⌖ .0002 - SEE NOTE # 8
.040 ±.010 X 45° ± 5° CHAMFER
4 PLACES
1.375
1.070
.688
.5625 BASIC
.780 BASIC
.390 BASIC
.031 ±.015 SEE NOTE 7
.110
SEE NOTE 8 .0628 +.0002 -.0000
= Y .0001
-Y-
.190
.200 ±.002
.625
.655
.5312 BASIC
R
M1
.055 R
105° 28' BASIC
.500 BASIC = Z .002 2 PLACES
.300 BASIC = Z .002 2 PLACES
.100 BASIC = Z .002 2 PLACES
.062 +.001 -.000 DIA THRU 12 HOLES
⌖ .002 DIA
.070 4 PLACES
.068 +.004 -.000 DIA THRU 2 HOLES
.047 ±.015
12 PLACES SEE NOTE 7
SEE DETAIL Z
.562 ±.002
1.125 ±.003
.426 ±.002 2 PLACES
52° 44' BASIC
.6936 ±.0002 DIA.
.496 BASIC 2 PLACES
DATUM - SEE NOTE 8
1 2 3 4 5 6 7 8 9 10 11 12
.063 +.000 -.002
32
⌒ .0002 ∥ B .0002
⌒ .0002 -B-
SEE NOTE # 3
.0084 ±.0001 (B3) 2 PLACES
.1768 ±.0002 2 PLACES = Z .0001
(B4) .0324 ±.0001 2 PLACES
.0324 ±.0001 2 PLACES (B2)
.0406 ±.0001 4 PLACES
.0084 ±.0001 (B1) 2 PLACES
8
32

DETAIL Z - SEE NOTE # 8
SCALE: 10/1

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS SHALL NOT EXCEED 63✓
   B. INSIDE CORNERS .003 R MAX.
   C. REMOVE BURRS & BREAK SHARP EDGES .005 R MAX
3. CIRCUMSCRIBED AREA TO HAVE CORNERS SHARP (AS MACHINED), BEFORE AND AFTER PLATING, THE WIDTH OF ANY IRREGULARITY, SUCH AS, SCRATCHES, GOUGES OR CHAMFERS ON THE SURFACE OR CORNERS OF EACH LEG SHALL BE LESS THAN ONE TENTH OF THE WIDTH OF EACH LEG, AS VIEWED UNDER 30 POWER MAGNIFICATION, 4 PLACES.
4. HEAT TREAT: 1450° F FOR 1 HOUR, FURNACE COOL AFTER ROUGH MACHINING
5. MATERIAL: QQ-S-633 GRADE 1113 (ES-2110-3 CARBON STEEL, FREE CUTTING) LAY OF GRAIN TO BE PERPENDICULAR TO SURFACE B.
6. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER ND 1002019
7. MARK .062 ±.015 HIGH CHARACTERS USING RUBBER STAMP, STENCIL, OR SILK SCREEN AS PER ND1002019.
8. .0001 TO .0003 THICK ELECTROLESS NICKEL COATING PER MIL-C-26074 CLASS 1 EXCEPT:
   A. AFTER PLATING MINIMUM ALLOWABLE RADIUS FROM DATUM TO ANY OF THE EIGHT CORE TIPS IS .3455
   B. PRESENCE OF PLATING (ANY THICKNESS) IS OPTIONAL IN THE .0628 DIA HOLE AND .0628 WIDE SLOT; HOWEVER FINAL DIMENSIONS SHALL BE .0628±.0001-.0000 DIA FOR HOLE AND .0628+.0002-.0000 FOR SLOT.
9. ALL DIMENSIONS ARE MACHINING DIMENSIONS, AND ARE APPLICABLE BEFORE PLATING OPERATION (SEE NOTE # 8 FOR FINAL DIMENSIONS)
10. SERIALIZE PER ND1002023.

1017546	1015500-021	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + – DECIMALS ±.005 ANGLES ± 2°	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
1015559	1015500-011	DO NOT SCALE THIS DRAWING	ACSP PN DRAWN W. MUNSON DATE 7 MAR 63 CHECKED 19 APR 63 APPROVAL J. Petrangi 17 APR 63 APPROVAL 19 APR 63	CORE, PICKOFF		
NEXT ASSY	USED ON	MATERIAL SEE NOTE # 5	NASA APPROVAL	CODE IDENT NO.	SIZE D	1015554
APPLICATION		CONTRACT NAS 9-497	MIT APPROVAL 15 May 63	SCALE 4/1		SHEET 1 OF 1

Charleston 19 APR 63


.049 +.003 -.001 DIA THRU
# 0-80 UNF-2B THD THRU
90° CSK TO MAJOR DIA OF THD-2 HOLES
⌖ .010 DIA
.0628 +.0001 -.0000 DIA THRU
⌖ .0002 - SEE NOTE #8
.040 ±.010 X 45° ± 5° CHAMFER
4 PLACES
1.375
.688
1.070
.5625 BASIC
.780 BASIC
.390 BASIC
±.015 .031 SEE NOTE 7
.110
SEE NOTE 8 .0628 +.0002 -.0000
≡ Y .0001
-Y-
.190
.200 ±.002
.625
.655
.5312 BASIC
R
.055 R
105° 28' BASIC
M1
1 2 3 4 5 6 7 8 9 10 11 12
.500 BASIC ≡ Z .002 2 PLACES
.300 BASIC ≡ Z .002 2 PLACES
.100 BASIC ≡ Z .002 2 PLACES
.062 +.001 -.000 DIA THRU 12 HOLES
⌖ .002 DIA
.068 +.004 -.000 DIA THRU
2 HOLES
SEE DETAIL Z
±.015 .047
12 PLACES SEE NOTE 7
.070
4 PLACES
.562 ±.002
1.125 ±.003
.426 ±.002
2 PLACES
52° 44' BASIC
.6936 +.0010 -.0020 DIA.
.496 BASIC
2 PLACES
DATUM - SEE NOTE #8
.063 +.000 -.002
32
⌒ .0002
∥ B .0002
⌒ .0002
-B-
SEE NOTE #3
.0084 +.0005 -.0010 (B3)
2 PLACES
.1768 ±.0005
2 PLACES
≡ Z .0001
(B4) .0324 +.0005 -.0010
2 PLACES
8
.0324 +.0005 -.0010 (B2)
2 PLACES
.0084 +.0005 -.0010
(B1) 2 PLACES
.0406 +.0005 -.0010
4 PLACES
32

DETAIL Z - SEE NOTE #8
SCALE: 10/1

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS SHALL NOT EXCEED 63√
   B. INSIDE CORNERS .003 R MAX.
   C. REMOVE BURRS & BREAK SHARP EDGES .005 R MAX
3. CIRCUMSCRIBED AREA TO HAVE CORNERS SHARP (AS MACHINED), BEFORE AND AFTER PLATING, THE WIDTH OF ANY IRREGULARITY, SUCH AS, SCRATCHES, GOUGES OR CHAMFERS ON THE SURFACE OR CORNERS OF EACH LEG SHALL BE LESS THAN ONE TENTH OF THE WIDTH OF EACH LEG, AS VIEWED UNDER 30 POWER MAGNIFICATION, 4 PLACES.
4. HEAT TREAT: 1450° F FOR 1 HOUR, FURNACE COOL AFTER ROUGH MACHINING
5. MATERIAL: QQ-S-633 GRADE 1113 (ES-2110-3 CARBON STEEL, FREE CUTTING) LAY OF GRAIN TO BE PERPENDICULAR TO SURFACE B.
6. IDENTIFY USING DRAWING NO. PER ND-1002019
7. MARK .062 ±.015 HIGH CHARACTERS USING RUBBER STAMP, STENCIL, OR SILK SCREEN AS PER ND1002019.
8. .0001 TO .0003 THICK ELECTROLESS NICKEL COATING PER MIL-C-26074 CLASS 1 EXCEPT:
   ~~A. AFTER PLATING MINIMUM ALLOWABLE RADIUS FROM DATUM TO ANY OF THE EIGHT CORE TIPS IS .3455~~
   PRESENCE OF PLATING (ANY THICKNESS) IS OPTIONAL IN THE .0628 DIA HOLE AND .0628 WIDE SLOT; HOWEVER FINAL DIMENSIONS SHALL BE .0628+.0001-.0000 DIA FOR HOLE AND .0628+.0002-.0000 FOR SLOT.
9. ALL DIMENSIONS ARE MACHINING DIMENSIONS, AND ARE APPLICABLE BEFORE PLATING OPERATION (SEE NOTE #8 FOR FINAL DIMENSIONS)
10. SERIALIZE PER ND1002023.

E | 1015554

REVISIONS TDRR 0,244

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR # 02188		JULY 22, 1963	WK
B6		REVISED PER TDRR NO. 02641		27 AUG 63	
C		REVISED PER TDRR 10005		16 JUN 64	R.W.T.
D		REVISED PER TDRR 16863		8 MAR 65	HTO MEM
E		REVISED PER TDRR 18982		13 MAY 65	J J J

NEXT ASSY	USED ON
1017546	1015500-021
1015559	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS ±.005 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE #5
CONTRACT NAS 9-4?7

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN W. MUNSON DATE 7 MAR 63
CHECKED 19 APR 63
APPROVAL Petrangi 17 APR 63
APPROVAL 19 APR 63
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CORE, PICKOFF

CODE IDENT NO. 80230
SIZE D
1015554
SCALE 4/1
SHEET 1 OF 1

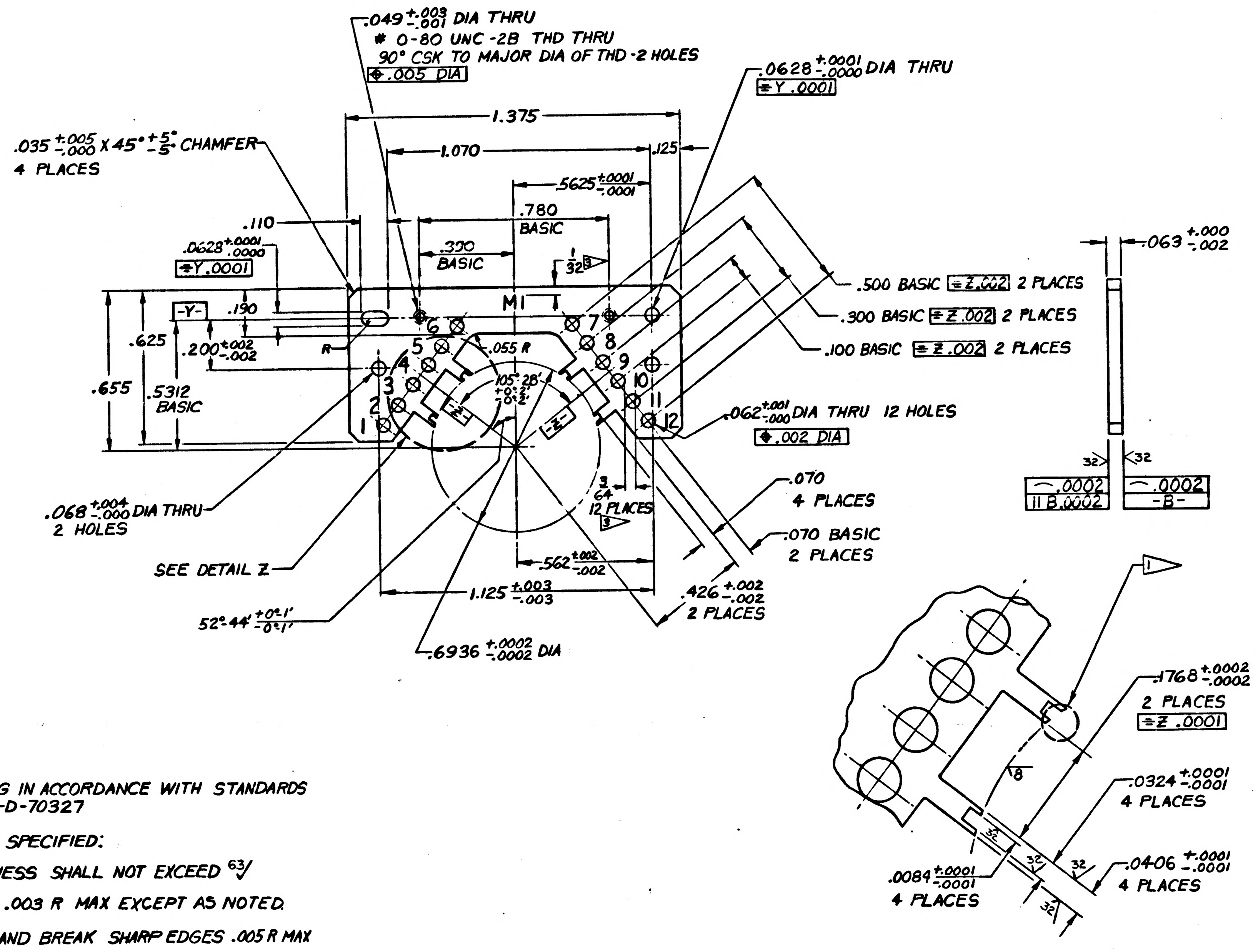
Charleston 19 APR 63

MIL 1077D-P

1015554

REVISIONS TDRR 0.244

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.


.049 +.003 -.001 DIA THRU
# 0-80 UNC-2B THD THRU
90° CSK TO MAJOR DIA OF THD - 2 HOLES
⌖ .005 DIA
.0628 +.0001 -.0000 DIA THRU
≡ Y .0001
1.375
1.070
.125
.5625 ±.0001
.780 BASIC
.390 BASIC
1/32 3
.110
.0628 +.0001 .0000
≡ Y .0001
.035 +.005 -.000 X 45° +5° -5° CHAMFER 4 PLACES
-Y-
.190
.625
.200 +.002 -.002
R
.655
.5312 BASIC
M1
.055 R
105° 28' +0° 2' -0° 2'
-Z-
1 2 3 4 5 6 7 8 9 10 11 12
.500 BASIC ≡ Z .002 2 PLACES
.300 BASIC ≡ Z .002 2 PLACES
.100 BASIC ≡ Z .002 2 PLACES
.062 +.001 -.000 DIA THRU 12 HOLES
⌖ .002 DIA
.068 +.004 -.000 DIA THRU 2 HOLES
SEE DETAIL Z
3/64 12 PLACES 3
.070 4 PLACES
.070 BASIC 2 PLACES
.562 +.002 -.002
1.125 +.003 -.003
.426 +.002 -.002 2 PLACES
52° 44' +0° 1' -0° 1'
.6936 +.0002 -.0002 DIA
.063 +.000 -.002
32
32
⌒ .0002
∥ B .0002
⌒ .0002
-B-
1
.1768 +.0002 -.0002 2 PLACES
≡ Z .0001
8
.0324 +.0001 -.0001 4 PLACES
.0406 +.0001 -.0001 4 PLACES
.0084 +.0001 -.0001 4 PLACES
32
32
32
32

DETAIL Z
SCALE: 10/1

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

UNLESS OTHERWISE SPECIFIED:

SURFACE ROUGHNESS SHALL NOT EXCEED 63√

INSIDE CORNERS .003 R MAX EXCEPT AS NOTED.

REMOVE BURRS AND BREAK SHARP EDGES .005 R MAX

1 ▷ CIRCUMSCRIBED AREA TO HAVE CORNERS SHARP (AS MACHINED), 4 PLACES

HEAT TREAT: 1450° F FOR 1 HOUR, FURNACE COOL AFTER ROUGH MACHINING

2 ▷ MATERIAL: QQ-S-633 GRADE 1113 (ES-2110-3 CARBON STEEL, FREE CUTTING) LAY OF GRAIN TO BE PERPENDICULAR TO SURFACE B.
IDENTIFY WITH PART NUMBER, REVISION AND MANUFACTURER'S SYMBOL PER MIL-STD-130 (ES-267)

3 ▷ MARK 1/16 HIGH CHARACTERS USING RUBBER STAMP, STENCIL, OR SILK SCREEN AS PER ND 1002019

PLATE PER ND 1002176 EXCEPT .0628 DIA. HOLE AND .0628 WIDE SLOT TO BE FREE OF PLATING.

1015559	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64	+.005	+2°
-1/64	-.005	-2°

DO NOT SCALE THIS DRAWING
MATERIAL 2 ▷
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN W. MUNSON DATE 7 MAR 63
CHECKED 19 APR 63
APPROVAL J. Petrangi 17 APR 63
APPROVAL 19 APR 63
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

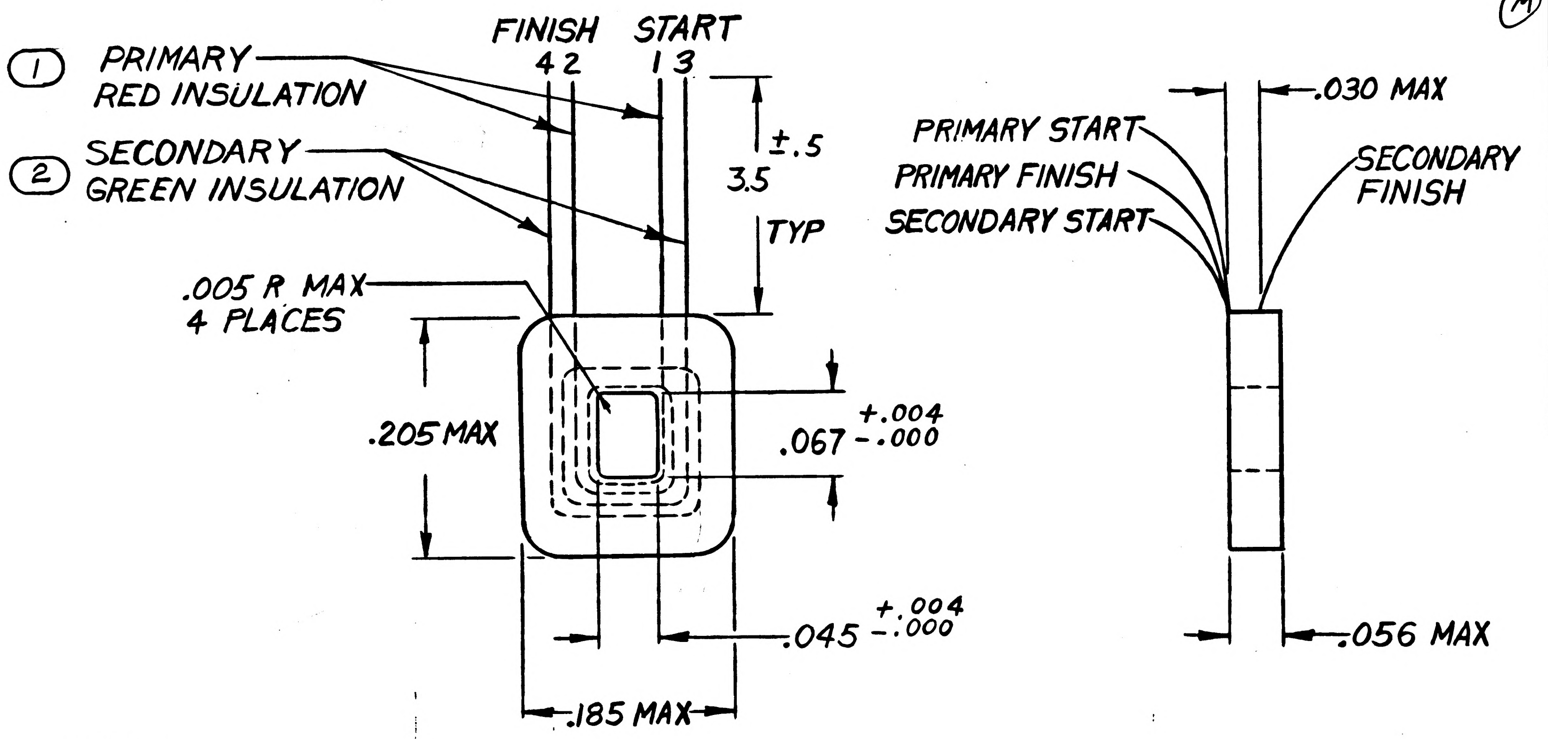
CORE, PICKOFF

CODE IDENT NO.
SIZE D
1015554
SCALE 4/1
SHEET

Charleston 19 APR 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 01315					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR# 02187		JULY 22, 1963	WK



① PRIMARY
RED INSULATION
② SECONDARY
GREEN INSULATION
FINISH
START
4 2
1 3
±.5
3.5
TYP
.005 R MAX
4 PLACES
.205 MAX
.067 +.004 -.000
.045 +.004 -.000
.185 MAX
PRIMARY START
PRIMARY FINISH
SECONDARY START
SECONDARY FINISH
.030 MAX
.056 MAX

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2. WINDING DATA:
   COIL TO BE WOUND CLOCKWISE (AS SHOWN) ON MANDRIL WRAPPED WITH AT LEAST FIVE COMPLETE TURNS OF ITEM ③. COIL (WIRE AND LENS PAPER) TO BE IMPREGNATED WITH ITEM ④ AND MADE SELF SUPPORTING.
   PRIMARY TO BE 100 ± 1 TURN (INNER)
   SECONDARY TO BE 100 ± 1 TURN (OUTER)

3. WIRE ENDS TO BE NUMBERED WITH TEMPORARY MARKING; USING TAGS, MASKING TAPE OR OTHER SUITABLE DEVICE. NOT MORE THAN 1 INCH OF EACH WIRE (MEASURED FROM END) SHALL BE USED FOR MARKING. NUMBER AS FOLLOWS:
   PRIMARY START-#1, PRIMARY FINISH-#2
   SECONDARY START-#3, SECONDARY FINISH-#4

4. SUPPLIER SHALL CONFORM TO QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND 1015404, CLASS 2.

5. ELECTRICAL TEST REQUIREMENTS:
   A. INDUCED VOLTAGE - TEST PER MIL-T-27A PARAGRAPH 3.9. PERFORM AT 2.0 VOLTS RMS AT A FREQUENCY OF 51.6 KILOCYCLES.
   B. INSULATION RESISTANCE - TEST PER MIL-T-27A PARAGRAPH 3.10. THE INSULATION RESISTANCE SHALL BE 1000 MEGOHMS MINIMUM AT 500 VOLTS D.C.

ITEM NO.	NO. REQD	PART OR IDENTIFYING	NOMENCLATE OR DESCRIPTION	
4	A/R	ND 1002175	IMPREGNANT	
3	A/R	SCD 1010640	LENS PAPER	
2	2	ND 1002174	MAGNET WIRE	41 A.W.G. GREEN - 50 INCHES APPROX TOTAL LENGTH
1	1	ND 1002174	MAGNET WIRE	41 A.W.G RED - 40 INCHES APPROX. TOTAL LENGTH

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015559	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

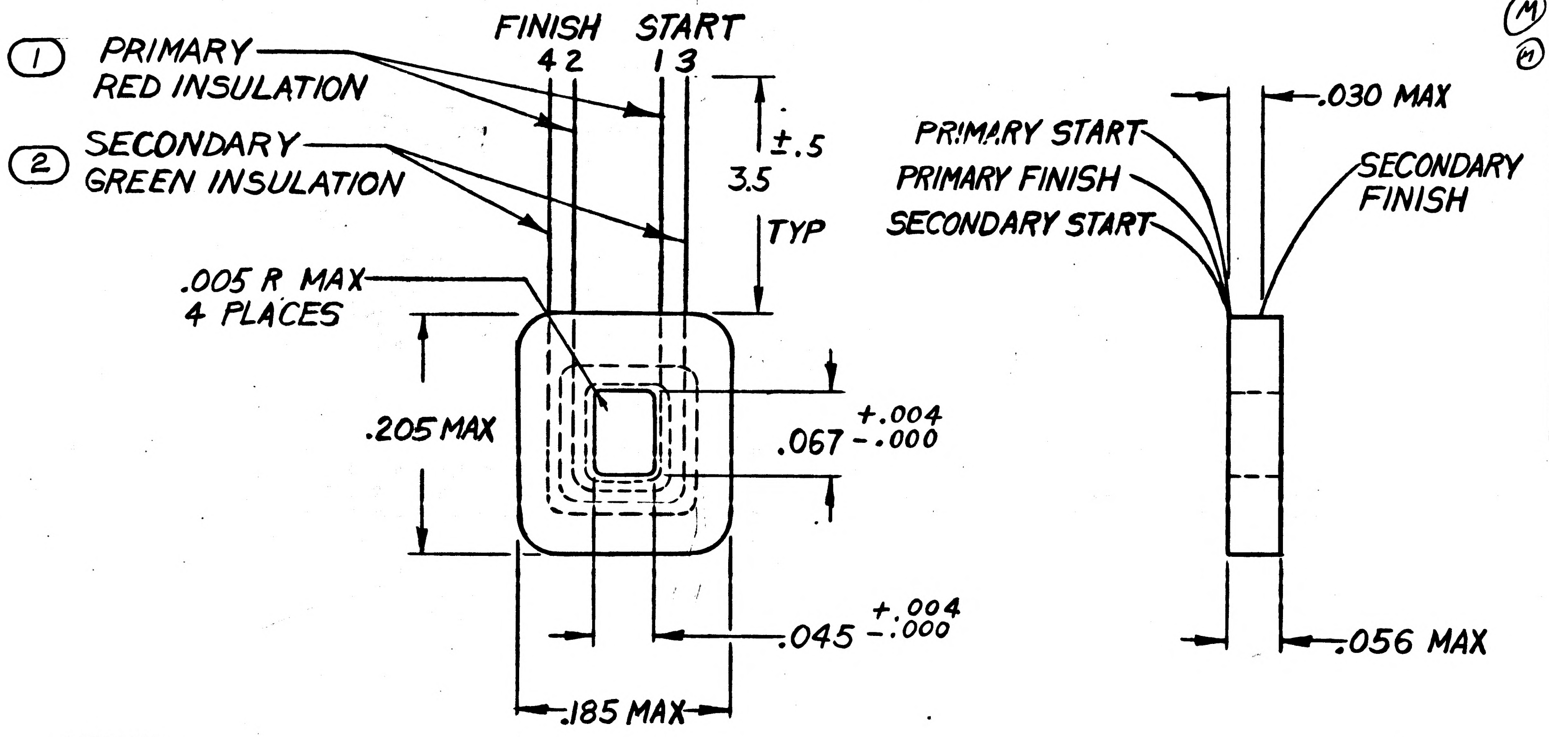
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN W. MUNSON DATE 11 MAR 63
CHECKED 19 APR 63
APPROVAL J. Petrange 17 APR 63
APPROVAL 19 APR 63
NASA APPROVAL W J Rhine 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COIL, DIGITAL PICKOFF

CODE IDENT NO.
SIZE C
1015558
SCALE 10/1
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY


① PRIMARY
RED INSULATION
② SECONDARY
GREEN INSULATION
FINISH
4 2
START
1 3
±.5
3.5
TYP
.005 R MAX
4 PLACES
.205 MAX
+.004
.067 -.000
+.004
.045 -.000
.185 MAX
PRIMARY START
PRIMARY FINISH
SECONDARY START
SECONDARY FINISH
.030 MAX
.056 MAX

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

2. WINDING DATA:
COIL TO BE WOUND CLOCKWISE (AS SHOWN) ON MANDRIL WRAPPED WITH AT LEAST FIVE COMPLETE TURNS OF ITEM ③. COIL (WIRE AND LENS PAPER) TO BE IMPREGNATED WITH ITEM ④ AND MADE SELF SUPPORTING.
PRIMARY TO BE 100 ± 1 TURN (INNER)
SECONDARY TO BE 100 ± 1 TURN (OUTER)

3. WIRE ENDS TO BE NUMBERED WITH TEMPORARY MARKING; USING TAGS, MASKING TAPE OR OTHER SUITABLE DEVICE. NOT MORE THAN 1 INCH OF EACH WIRE (MEASURED FROM END) SHALL BE USED FOR MARKING. NUMBER AS FOLLOWS:
PRIMARY START-#1, PRIMARY FINISH-#2
SECONDARY START-#3, SECONDARY FINISH-#4

4. SUPPLIER SHALL CONFORM TO QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND 1015404, CLASS 2.

5. ELECTRICAL TEST REQUIREMENTS:
   A. INDUCED VOLTAGE - TEST PER MIL-T-27A PARAGRAPH 3.9. PERFORM AT 2.0 VOLTS RMS AT A FREQUENCY OF 51.6 KILOCYCLES.
   B. INSULATION RESISTANCE - TEST PER MIL-T-27A PARAGRAPH 3.10. THE INSULATION RESISTANCE SHALL BE 1000 MEGOHMS MINIMUM AT 500 VOLTS D.C.

REVISIONS TDRR 01315

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
Ⓜ A		REVISED PER TDRR# 02187		JULY 22, 1963	WK
B		REVISED PER TDRR NO. 06635		3 MAR 64	WK

ITEM NO.	NO. REQD	PART OR IDENTIFYING	NOMENCLATE OR DESCRIPTION	
4	A/R	ND 1002175	IMPREGNANT	
3	A/R	SCD 1010640	LENS PAPER	
2	1	ND 1002116-75	MAGNET WIRE	41 AWG GREEN-50 INCHES APPROX TOTAL LENGTH
1	1	ND 1002116-75	MAGNET WIRE	41 A.W.G. RED-40 INCHES APPROX. TOTAL LENGTH

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015559	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — — — DECIMALS + — — — ANGLES + — — —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN W. MUNSON DATE 11 MAR 63
CHECKED 19 APR 63
APPROVAL Petrangs 17 APR 63
APPROVAL 19 APR 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

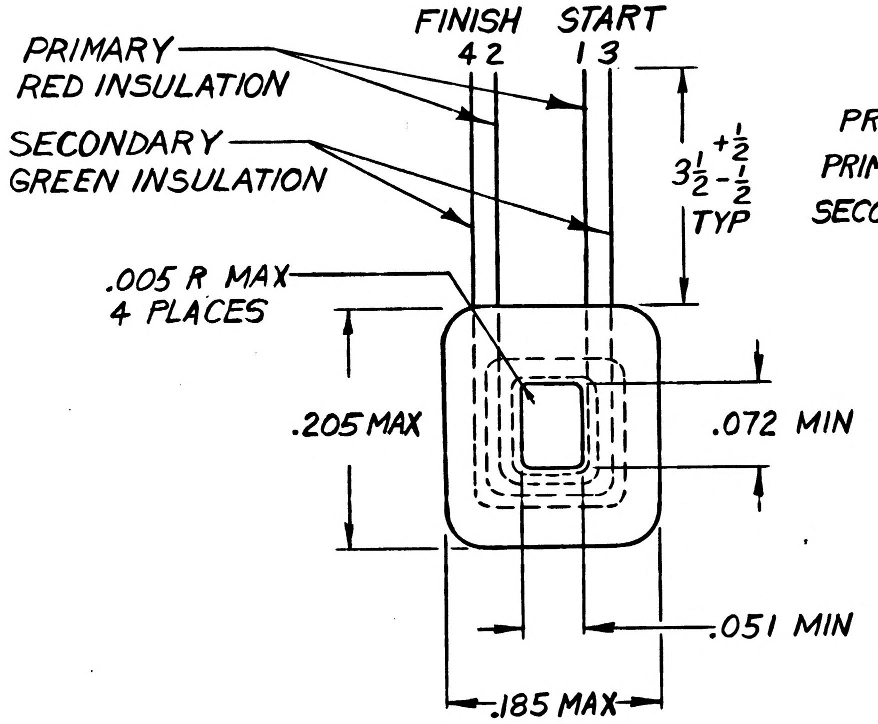
COIL, DIGITAL PICKOFF

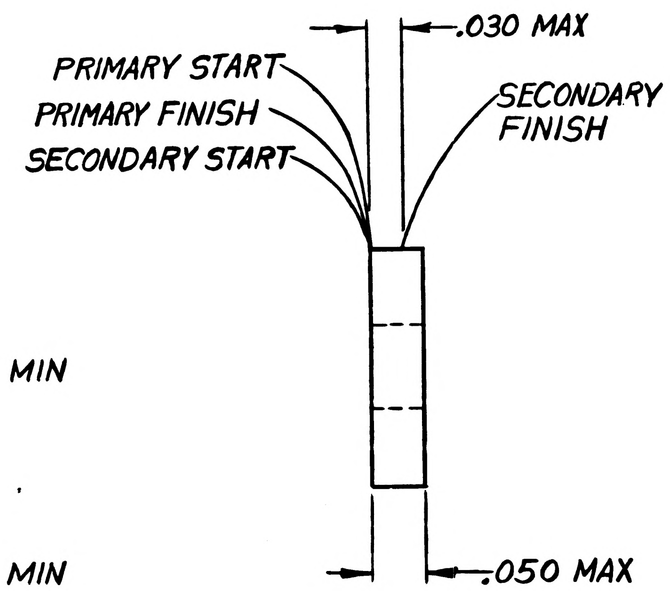
CODE IDENT NO.
SIZE C
1015558
SCALE 10/1
SHEET 1 OF 1

MIL 1077C-P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	REVISIONS IDRR 01315 DESCRIPTION	CHG NO.	DATE	APPD.


FINISH
START
4 2
1 3
PRIMARY
RED INSULATION
SECONDARY
GREEN INSULATION
3½ +½ -½ TYP
.005 R MAX
4 PLACES
.205 MAX
.072 MIN
.051 MIN
.185 MAX


.030 MAX
PRIMARY START
PRIMARY FINISH
SECONDARY START
SECONDARY FINISH
.050 MAX

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1 WIND COIL WITH COPPER MAGNET WIRE, NO. 41 AWG, SINGLE STRAND, HEAVY POLYURETHANE INSULATED PER ND 1002174, AND MAKE SELF-SUPPORTING BY IMPREGNATING COIL PER ND 1002175

WINDING DATA: WINDINGS TO BE WOUND CLOCKWISE AS SHOWN

PRIMARY TO BE 100 ± 1 TURN (WOUND FIRST)

SECONDARY TO BE 100 ± 1 TURN (WOUND LAST)

WIRE ENDS TO BE NUMBERED WITH TEMPORARY MARKING; USING TAGS, MASKING TAPE OR OTHER SUITABLE DEVICE. NOT MORE THAN 1 INCH OF EACH WIRE (MEASURED FROM END) SHALL BE USED FOR MARKING. NUMBER AS FOLLOWS:
PRIMARY START-#1, PRIMARY FINISH-#2
SECONDARY START-#3, SECONDARY FINISH-#4

SUPPLIER SHALL CONFORM TO QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND 1015404, CLASS 2.

ELECTRICAL TEST REQUIREMENTS; PER REFERENCED PARAGRAPH OF MIL-T-27

PAR. 4.7.7 INSULATION RESISTANCE: 1000 MEGOHMS MINIMUM AT 500 VOLTS D.C.

PAR. 4.7.6.1 INDUCED VOLTAGE: SHALL BE PERFORMED AT 3.0 VOLTS RMS AT A FREQUENCY OF 51.6 KILOCYCLES.

NEXT ASSY	USED ON
1015559	1015500-011
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — — —   DECIMALS + — — —   ANGLES + — — —
DO NOT SCALE THIS DRAWING
MATERIAL 1
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN W. MUNSON DATE 11 MAR 63
CHECKED 19 APR 63
APPROVAL Petrange 17 APR 63
APPROVAL 19 APR 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COIL, DIGITAL PICKOFF

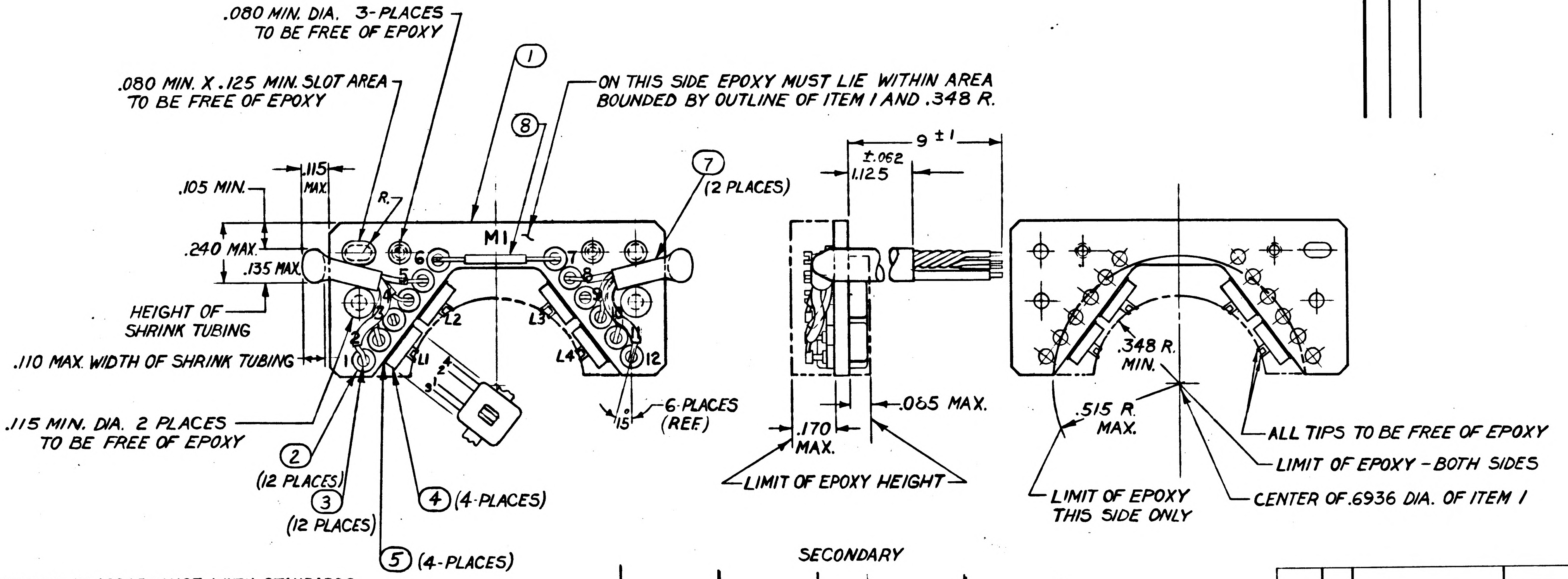
CODE IDENT NO.
SIZE C
1015558
SCALE 10/1
SHEET

MIL 1077C—F

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR# 02186		JULY 23, 1963	W

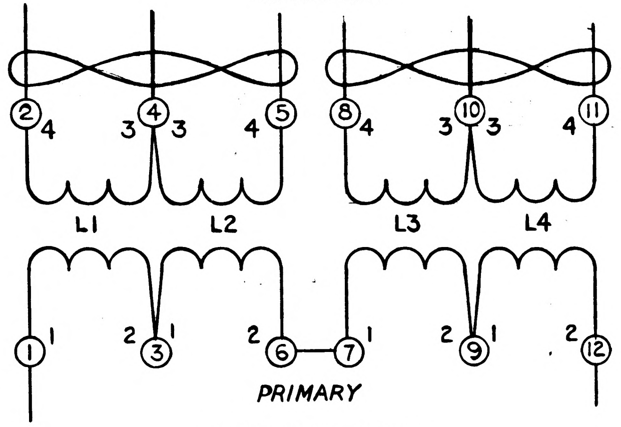
REVISIONS TDRR 01244



.080 MIN. DIA. 3-PLACES TO BE FREE OF EPOXY
.080 MIN. X .125 MIN. SLOT AREA TO BE FREE OF EPOXY
①
⑧
ON THIS SIDE EPOXY MUST LIE WITHIN AREA BOUNDED BY OUTLINE OF ITEM 1 AND .348 R.
⑦ (2 PLACES)
.105 MIN.
.115 MAX.
R.
.240 MAX.
.135 MAX.
HEIGHT OF SHRINK TUBING
.110 MAX. WIDTH OF SHRINK TUBING
M1
L1
L2
L3
L4
6-PLACES (REF.)
15°
.115 MIN. DIA. 2 PLACES TO BE FREE OF EPOXY
② (12 PLACES)
③ (12 PLACES)
④ (4-PLACES)
⑤ (4-PLACES)
9 ± 1
±.062
1.125
.170 MAX.
.065 MAX.
LIMIT OF EPOXY HEIGHT
.348 R. MIN.
.515 R. MAX.
ALL TIPS TO BE FREE OF EPOXY
LIMIT OF EPOXY - BOTH SIDES
CENTER OF .6936 DIA. OF ITEM 1
LIMIT OF EPOXY THIS SIDE ONLY

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. IDENTIFY WITH PART NUMBER, REVISION AND MANUFACTURER'S SYMBOL PER MIL-STD-130 (ES-267)
3. ASSEMBLE AND TEST IN ACCORDANCE WITH ATP 1015559
4. ENCAPSULATE PER ND1002187 USING ITEM ⑩. EPOXY TO COMPLETELY COVER COMPONENTS AND WIRING AS SHOWN.
5. SOLDER LEADS FROM ITEMS ④ AND ⑥ TO ITEM ③ PER ATP1015559 USING SOLDER ITEM ⑨.
6. LEADS TO BE TWISTED AS SHOWN ON THE SCHEMATIC. 3 FULL TURNS PER INCH MINIMUM.
7. ITEMS ③ TO BE CEMENTED TO ITEMS ②, ITEMS ② TO BE CEMENTED TO ITEM ① AND ITEMS ⑤ AND ④ TO BE CEMENTED TO ITEM ① BEFORE ENCAPSULATION USING ITEM ⑩.



SECONDARY
②
④
⑤
⑧
⑩
⑪
4
3
L1
L2
L3
L4
①
③
⑥
⑦
⑨
⑫
1
2
PRIMARY

SCHEMATIC OF M1

NO. REQD.	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
A/R	10	ND1002152	EPOXY
A/R	9	QQ-S-571	SOLDER SN60 WARP 2
1	8	MIL-I-23053 CL.1	INSULATION-HEAT SHRINK SIZE 24 1/4 LG.
2	7	MIL-I-23053 CL.1	INSULATION-HEAT SHRINK SIZE 14-1 3/8 LG.
1	6	1015661	WIRE LIST A-A
4	5	1015555	INSULATOR, COIL
4	4	1015558	COIL, DIGITAL PICKOFF
12	3	1015557	TERMINAL, PICKOFF
12	2	1015556	INSULATOR, TERMINAL
1	1	1015554	CORE, PICKOFF

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015500-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN W. MUNSON DATE 11 MAR 63
CHECKED 19 APR 63
APPROVAL J. Petrangi 17 APR 63
APPROVAL 19 APR 63
NASA APPROVAL 5/13/63
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DIGITAL CORE
(INSEPARABLE)
ASSEMBLY

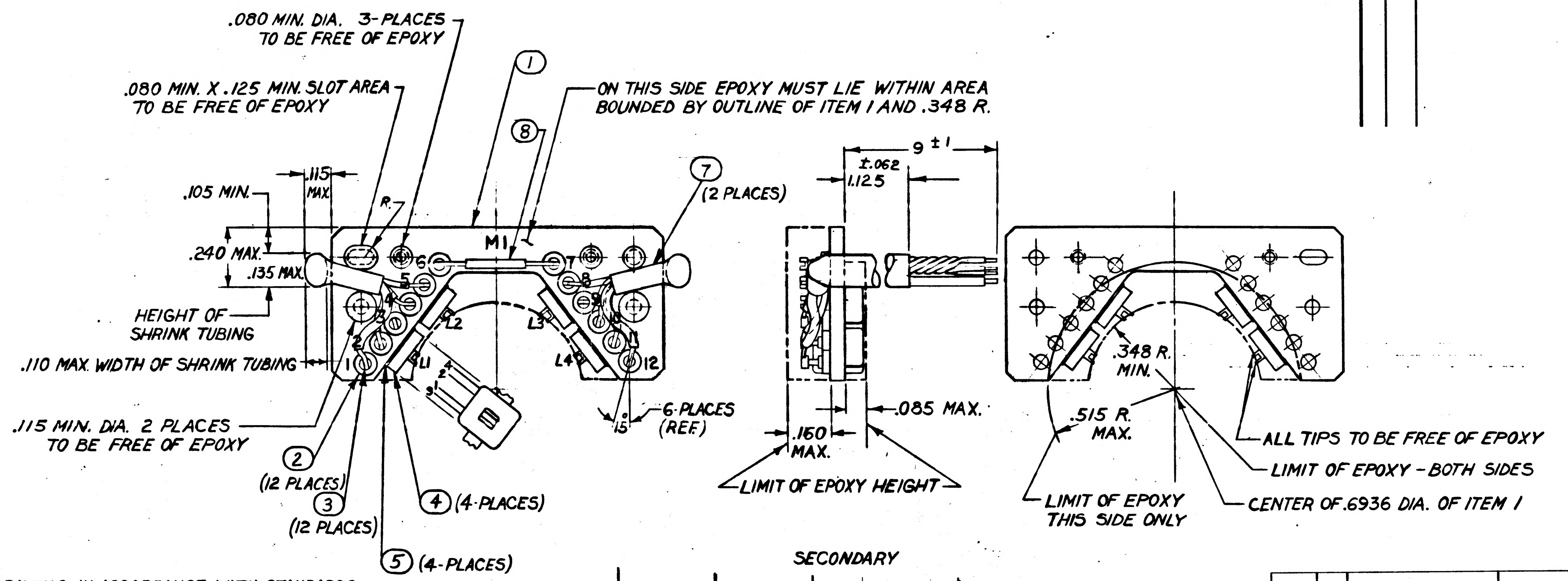
CODE IDENT NO. SIZE D 1015559
SCALE 4/1 SHEET 1 OF 1

Charleston 19 APR 63

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

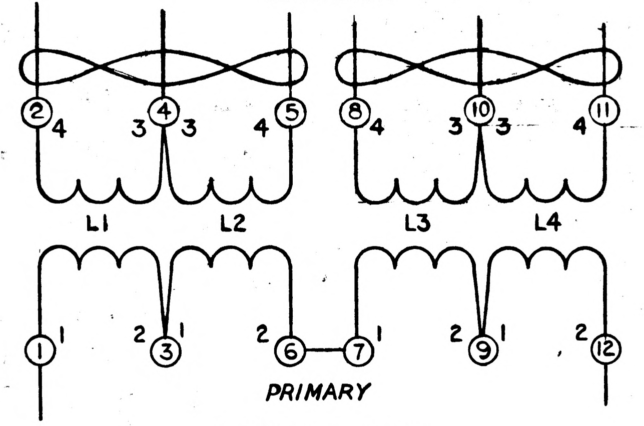
REVISIONS TDRR 01244

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR # 02186		JULY 23, 1963	WK
B 3		REVISED PER TDRR NO. 03222		9/20/63	WK


.080 MIN. DIA. 3-PLACES TO BE FREE OF EPOXY
.080 MIN. X .125 MIN. SLOT AREA TO BE FREE OF EPOXY
①
⑧
ON THIS SIDE EPOXY MUST LIE WITHIN AREA BOUNDED BY OUTLINE OF ITEM 1 AND .348 R.
.115 MAX.
.105 MIN.
R.
⑦ (2 PLACES)
M1
.240 MAX.
.135 MAX.
HEIGHT OF SHRINK TUBING
.110 MAX. WIDTH OF SHRINK TUBING
1 2 3 4 5 6 7 8 9 10 11 12
L1 L2 L3 L4
15°
6-PLACES (REF.)
.115 MIN. DIA. 2 PLACES TO BE FREE OF EPOXY
② (12 PLACES)
③ (12 PLACES)
④ (4-PLACES)
⑤ (4-PLACES)
9 ± 1
±.062 1.125
.085 MAX.
.160 MAX.
LIMIT OF EPOXY HEIGHT
.348 R. MIN.
.515 R. MAX.
ALL TIPS TO BE FREE OF EPOXY
LIMIT OF EPOXY - BOTH SIDES
CENTER OF .6936 DIA. OF ITEM 1
LIMIT OF EPOXY THIS SIDE ONLY

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. IDENTIFY WITH PART NUMBER, REVISION AND MANUFACTURER'S SYMBOL PER MIL-STD-130 (ES-267)
3. ASSEMBLE AND TEST IN ACCORDANCE WITH ATP 1015559
4. ENCAPSULATE PER ND1002187 USING ITEM ⑩. EPOXY TO COMPLETELY COVER COMPONENTS AND WIRING AS SHOWN.
5. SOLDER LEADS FROM ITEMS ④ AND ⑥ TO ITEM ③ PER ATP1015559 USING SOLDER ITEM ⑨, OR A COMBINATION OF ⑪ AND ⑫
6. LEADS TO BE TWISTED AS SHOWN ON THE SCHEMATIC. 3 FULL TURNS PER INCH MINIMUM.
7. ITEMS ③ TO BE CEMENTED TO ITEMS ②, ITEMS ② TO BE CEMENTED TO ITEM ⑦ AND ITEMS ⑤ AND ④ TO BE CEMENTED TO ITEM ① BEFORE ENCAPSULATION USING ITEM ⑩.


SECONDARY
② 4 3 ④ 3 4 ⑤
⑧ 4 3 ⑩ 3 4 ⑪
L1 L2 L3 L4
① 1 2 ③ 1 2 ⑥ ⑦ 1 2 ⑨ 1 2 ⑫
PRIMARY

SCHEMATIC OF M1

NO. REQD.	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
A/R	12	MIL-F-14256	FLUX (ES-2798)
A/R	11	QQ-S-571	SOLDER SN60WS
A/R	10	ND1002152	EPOXY
A/R	9	QQ-S-571	SOLDER SN60 WARP 2
1	8	MIL-I-23053 CL. I	INSULATION-HEAT SHRINK SIZE 24 ¼ LG.
2	7	MIL-I-23053 CL. I	INSULATION-HEAT SHRINK SIZE 14-1⅜ LG.
1	6	1015661	WIRE LIST A-A
4	5	1015555	INSULATOR, COIL
4	4	1015558	COIL, DIGITAL PICKOFF
12	3	1015557	TERMINAL, PICKOFF
12	2	1015556	INSULATOR, TERMINAL
1	1	1015554	CORE, PICKOFF

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015500-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± — ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN W. MUNSON DATE 11 MAR 63
CHECKED 19 APR 63
APPROVAL 17 APR 63
APPROVAL 19 APR 63
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

DIGITAL CORE
(INSEPARABLE)
ASSEMBLY

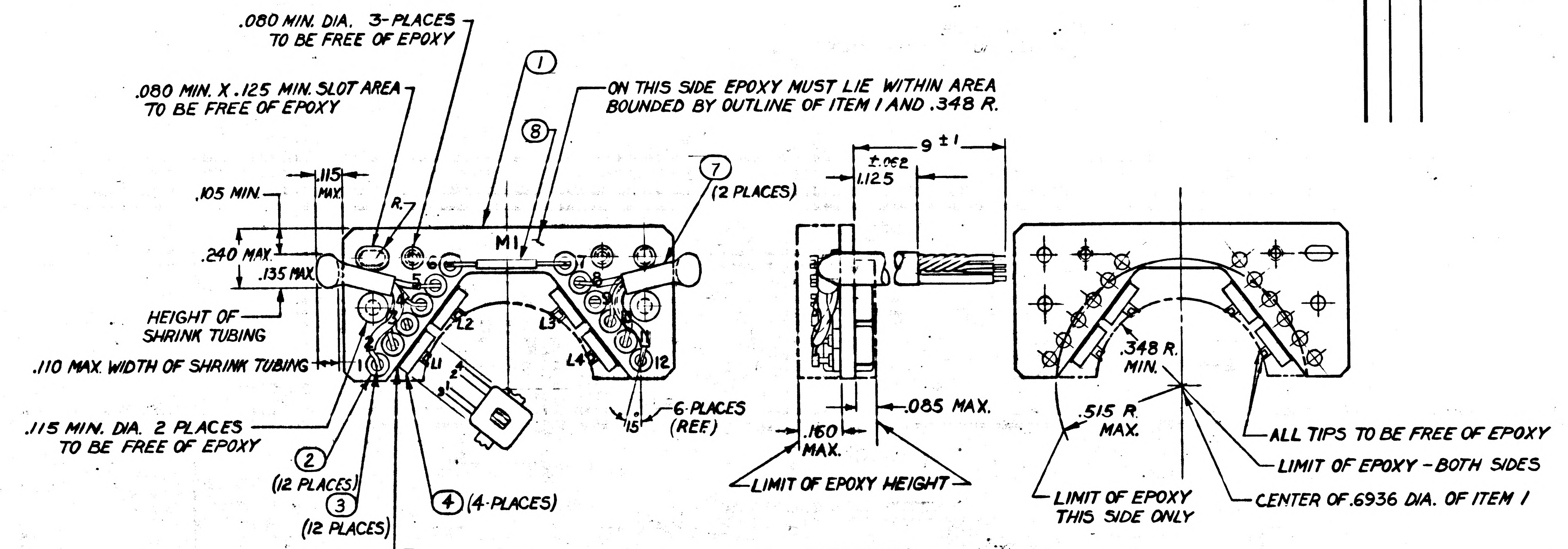
CODE IDENT NO.
SIZE D
1015559
SCALE 4/1
SHEET 1 OF 1

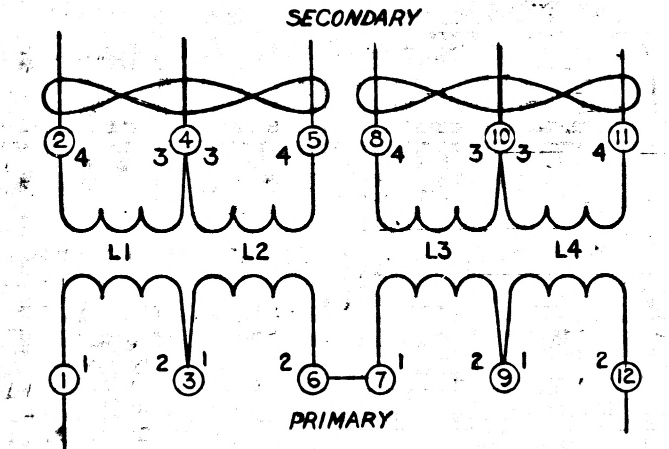
Charleston 19 APR 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015559 C

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
REVISIONS TDRR 01244					
A		REVISED PER TDRR # 02186		JULY 23, 1963	WK
B	3	REVISED PER TDRR NO. 03222		9/20/63	WK
C	4	REVISED PER TDRR NO. 04574		18 NOV 63	11/20/63


.080 MIN. DIA. 3-PLACES TO BE FREE OF EPOXY
.080 MIN. X .125 MIN. SLOT AREA TO BE FREE OF EPOXY
①
⑧
ON THIS SIDE EPOXY MUST LIE WITHIN AREA BOUNDED BY OUTLINE OF ITEM 1 AND .348 R.
⑦ (2 PLACES)
.105 MIN.
.115 MAX
R.
.240 MAX.
.135 MAX.
HEIGHT OF SHRINK TUBING
.110 MAX. WIDTH OF SHRINK TUBING
M1
L1
L2
L3
L4
15°
6-PLACES (REF.)
.115 MIN. DIA. 2 PLACES TO BE FREE OF EPOXY
② (12 PLACES)
③ (12 PLACES)
④ (4-PLACES)
⑤ (4-PLACES)
9 ± 1
±.062 1.125
.160 MAX.
.085 MAX.
LIMIT OF EPOXY HEIGHT
.348 R. MIN.
.515 R. MAX.
ALL TIPS TO BE FREE OF EPOXY
LIMIT OF EPOXY - BOTH SIDES
LIMIT OF EPOXY THIS SIDE ONLY
CENTER OF .6936 DIA. OF ITEM 1


SECONDARY
②
④
⑤
⑧
⑩
⑪
L1
L2
L3
L4
①
③
⑥
⑦
⑨
⑫
PRIMARY

SCHEMATIC OF M1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. IDENTIFY WITH PART NUMBER, REVISION AND MANUFACTURER'S SYMBOL PER ND1002019.
3. ASSEMBLE AND TEST IN ACCORDANCE WITH ATP 1015559
4. COMPLETELY COVER COMPONENTS AND WIRING, AS SHOWN, PER ND1002187, USING ITEMS 13 AND 14. ITEM 7 TO BE SECURELY BONDED TO ITEM 1.
5. SOLDER LEADS FROM ITEMS ④ AND ⑥ TO ITEM ③ PER ATP1015559 USING SOLDER ITEM ⑨, OR A COMBINATION OF ⑪ AND ⑫.
6. LEADS TO BE TWISTED AS SHOWN ON THE SCHEMATIC. 3 FULL TURNS PER INCH MINIMUM.
7. ITEMS ③ TO BE CEMENTED TO ITEMS ②, ITEMS ② TO BE CEMENTED TO ITEM ① AND ITEMS ⑤ AND ④ TO BE CEMENTED TO ITEM ① BEFORE ENCAPSULATION USING ITEM ⑬ AND ⑭.

NO. REQD.	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
A/R	14	1010679	ADHESIVE ACTIVATOR
A/R	13	1010661	EPOXY RESIN
A/R	12	MIL-F-14256	FLUX (ES-2798)
A/R	11	QQ-S-571	SOLDER SN60WS
	10		
A/R	9	QQ-S-571	SOLDER SN60 WARP 2
1	8	1010490-060	INSULATION-HEAT SHRINK
2	7	1010490-322	INSULATION-HEAT SHRINK
1	6	1015661	WIRE LIST A-A
4	5	1015555	INSULATOR, COIL
4	4	1015558	COIL, DIGITAL PICKOFF
12	3	1015557	TERMINAL, PICKOFF
12	2	1015556	INSULATOR, TERMINAL
1	1	1015554	CORE, PICKOFF

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015500-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN W. MUNSON DATE 11 MAR 63
CHECKED 19 APR 63
APPROVAL 17 APR 63
APPROVAL 19 APR 63
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DIGITAL CORE
(INSEPARABLE)
ASSEMBLY

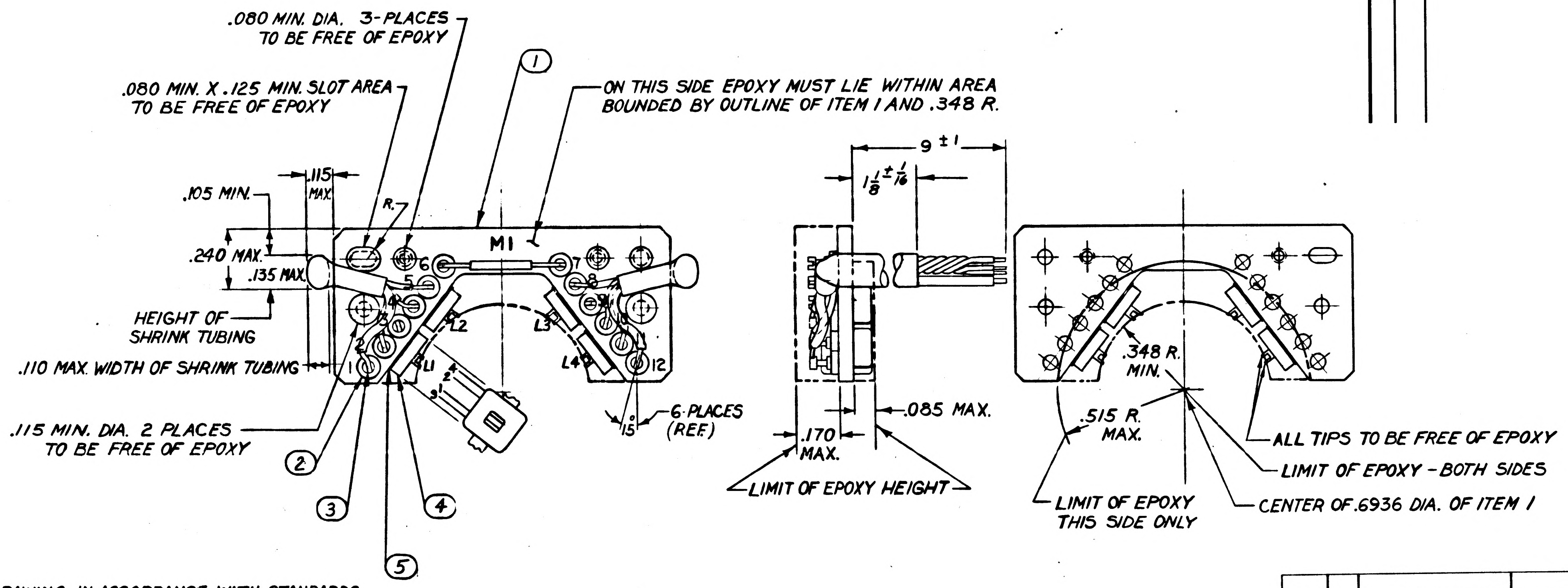
CODE IDENT NO.
SIZE D
1015559
SCALE 4/1
SHEET 1 OF 1

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

1015559

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.

REVISIONS TDRR 01244


.080 MIN. DIA. 3-PLACES
TO BE FREE OF EPOXY
.080 MIN. X .125 MIN. SLOT AREA
TO BE FREE OF EPOXY
①
ON THIS SIDE EPOXY MUST LIE WITHIN AREA
BOUNDED BY OUTLINE OF ITEM 1 AND .348 R.
.105 MIN.
.115 MAX.
R.
.240 MAX.
.135 MAX.
HEIGHT OF
SHRINK TUBING
.110 MAX. WIDTH OF SHRINK TUBING
M1
L1
L2
L3
L4
6-PLACES
(REF.)
15°
.115 MIN. DIA. 2 PLACES
TO BE FREE OF EPOXY
②
③
④
⑤
9 ± 1
1 1/8 ± 1/16
.170
MAX.
.085 MAX.
LIMIT OF EPOXY HEIGHT
.348 R.
MIN.
.515 R.
MAX.
ALL TIPS TO BE FREE OF EPOXY
LIMIT OF EPOXY - BOTH SIDES
CENTER OF .6936 DIA. OF ITEM 1
LIMIT OF EPOXY
THIS SIDE ONLY

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

IDENTIFY WITH PART NUMBER, REVISION AND MANUFACTURER'S SYMBOL PER MIL-STD-130 (ES-267)

ASSEMBLE AND TEST IN ACCORDANCE WITH ATP 1015559

NO. REQD.	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	6	1015661	WIRE LIST A-A
4	5	1015555	INSULATOR, COIL
4	4	1015558	COIL, DIGITAL PICKOFF
12	3	1015557	TERMINAL, PICKOFF
12	2	1015556	INSULATOR, TERMINAL
1	1	1015554	CORE, PICKOFF

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015500-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+ —	+
− 1/64	− —	−

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN W. MUNSON DATE 11 MAR 63
CHECKED 19 APR 63
APPROVAL J Petrangi 17 APR 63
APPROVAL 19 APR 63

NASA APPROVAL 5/13/63
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DIGITAL CORE
(INSEPARABLE)
ASSEMBLY

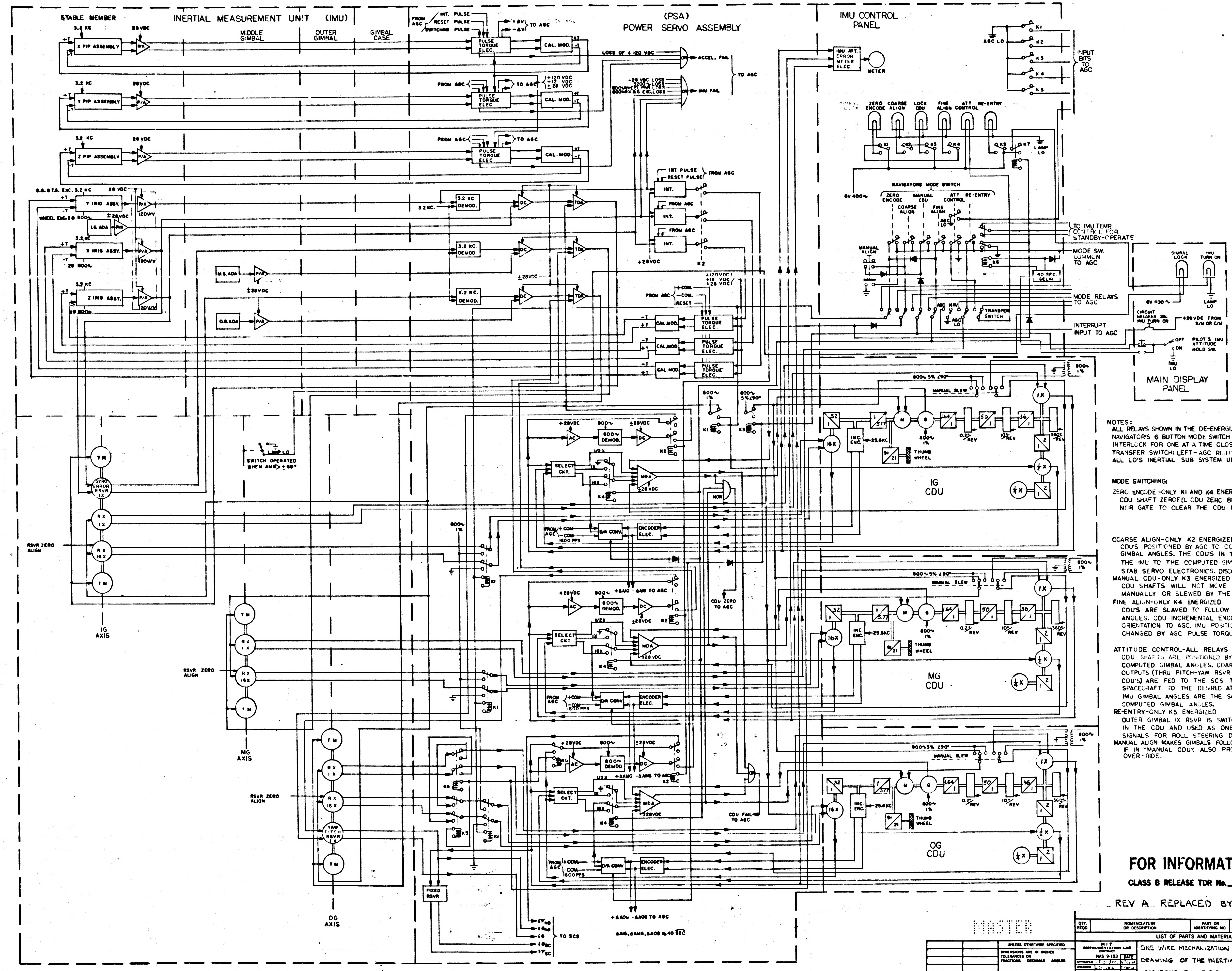
CODE IDENT NO.
SIZE D
1015559
SCALE 4/1
SHEET

Charleston 19 APR 63

MIL 10790-F

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL
	A	REDRAWN & REPL BY REV B PER TDRR 01413	5 Jun 63	WK



STABLE MEMBER
INERTIAL MEASUREMENT UNIT (IMU)
MIDDLE GIMBAL
OUTER GIMBAL
GIMBAL CASE
(PSA) POWER SERVO ASSEMBLY
IMU CONTROL PANEL
X PIP ASSEMBLY
Y PIP ASSEMBLY
Z PIP ASSEMBLY
3.2 KC
28 VDC
P/A
INT. PULSE
RESET PULSE
SWITCHING PULSE
FROM AGC
PULSE TORQUE ELEC.
CAL. MOD.
TO AGC
LOSS OF +120 VDC
ACCEL. FAIL
IMU FAIL
METER
IMU ATT. ERROR METER ELEC.
AGC LO
K1
K2
K3
K4
K5
INPUT BITS TO AGC
ZERO ENCODE
COARSE ALIGN
LOCK CDU
FINE ALIGN
ATT CONTROL
RE-ENTRY
LAMP LO
NAVIGATORS MODE SWITCH
MANUAL CDU
6V 400~
MANUAL ALIGN
TO IMU TEMP CONTROL FOR STANDBY-OPERATE
MODE SW. COMMON TO AGC
40 SEC. DELAY
MODE RELAYS TO AGC
TRANSFER SWITCH
INTERRUPT INPUT TO AGC
GIMBAL LOCK
IMU TURN ON
CIRCUIT BREAKER SW. IMU TURN ON
+28VDC FROM S/M OR CM
PILOT'S IMU ATTITUDE HOLD SW.
OFF
ON
IMU LO
MAIN DISPLAY PANEL
Y IRIG ASSY.
X IRIG ASSY.
Z IRIG ASSY.
S.G. & T.G. EXC. 3.2 KC
WHEEL EXC. 26 800~
I.G. ADA
M.G. ADA
O.G. ADA
3.2 KC. DEMOD.
DC
TDA
INT.
+28VDC
CAL MOD
800~ 5% ∠90°
MANUAL SLEW
800~ 1%
16X
1X
INC ENC
25.6KC
THUMB WHEEL
0.2°/REV
10°/REV
360°/REV
½X
¼X
IG CDU
MG CDU
OG CDU
TM
GYRO ERROR RSVR 1X
RX 1X
RX 16X
RSVR ZERO ALIGN
IG AXIS
MG AXIS
OG AXIS
YAW PITCH RSVR
SWITCH OPERATED WHEN AMG > ±60°
LAMP LO
SELECT CKT.
MDA
800~ DEMOD.
D/A CONV.
ENCODER ELEC.
1600 PPS
NOR
CDU ZERO TO AGC
CDU FAIL TO AGC
FIXED RSVR
TO SCS
+ΔAIG -ΔAIG TO AGC
ΔAIG, ΔAMG, ΔAOG ≤ 40 SEC

NOTES:
ALL RELAYS SHOWN IN THE DE-ENERGIZED POSITION
NAVIGATOR'S 6 BUTTON MODE SWITCH HAS A MECHANICAL INTERLOCK FOR ONE AT A TIME CLOSURE ONLY
TRANSFER SWITCH: LEFT-AGC RIGHT-NAVIGATOR
ALL LO'S INERTIAL SUB SYSTEM UNLESS OTHERWISE NOTED

MODE SWITCHING:

ZERO ENCODE-ONLY K1 AND K4 ENERGIZED
CDU SHAFT ZEROED. CDU ZERO BIT SENT TO AGC THRU NOR GATE TO CLEAR THE CDU REGISTERS.

COARSE ALIGN-ONLY K2 ENERGIZED
CDU'S POSITIONED BY AGC TO COMPUTED GIMBAL ANGLES. THE CDU'S IN TURN COARSE ALIGN THE IMU TO THE COMPUTED GIMBAL ANGLES VIA THE STAB SERVO ELECTRONICS. DISCONNECTS SCS INTERFACE.
MANUAL CDU-ONLY K3 ENERGIZED
CDU SHAFTS WILL NOT MOVE UNLESS DRIVEN MANUALLY OR SLEWED BY THE SLEW SWITCH
FINE ALIGN-ONLY K4 ENERGIZED
CDU'S ARE SLAVED TO FOLLOW THE IMU GIMBAL ANGLES. CDU INCREMENTAL ENCODERS TRANSMIT IMU ORIENTATION TO AGC. IMU POSITION MAY NOW BE CHANGED BY AGC PULSE TORQUING TO IRIG ELECTRONICS

ATTITUDE CONTROL-ALL RELAYS DE-ENERGIZED
CDU SHAFTS ARE POSITIONED BY THE AGC TO THE COMPUTED GIMBAL ANGLES. COARSE CDU 1X RSVR OUTPUTS (THRU PITCH-YAW RSVR FOR PITCH AND YAW CDU'S) ARE FED TO THE SCS TO COMMAND THE SPACECRAFT TO THE DESIRED ATTITUDE AT WHICH THE IMU GIMBAL ANGLES ARE THE SAME AS THE AGC COMPUTED GIMBAL ANGLES.
RE-ENTRY-ONLY K5 ENERGIZED
OUTER GIMBAL 1X RSVR IS SWITCHED TO THE 16X RSVR IN THE CDU AND USED AS ONE OF THE ERROR SIGNALS FOR ROLL STEERING DURING RE-ENTRY.
MANUAL ALIGN MAKES GIMBALS FOLLOW THE CDU ANGLES IF IN "MANUAL CDU". ALSO PROVIDES TIME DELAY OVER-RIDE.

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00325 **DATE** 6 FEB 63

REV A REPLACED BY REV B

MASTER

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL:

MIT INSTRUMENTATION LAB CONTRACT
NAS 9-153

		DATE
APPROVED		
CHECKED		
DRAWN	WACHHOLZ	2-5-63
APPROVED FOR MSC		2/6
BY DIRECTION	MIT APPROVAL	
	WK	6 FEB 63

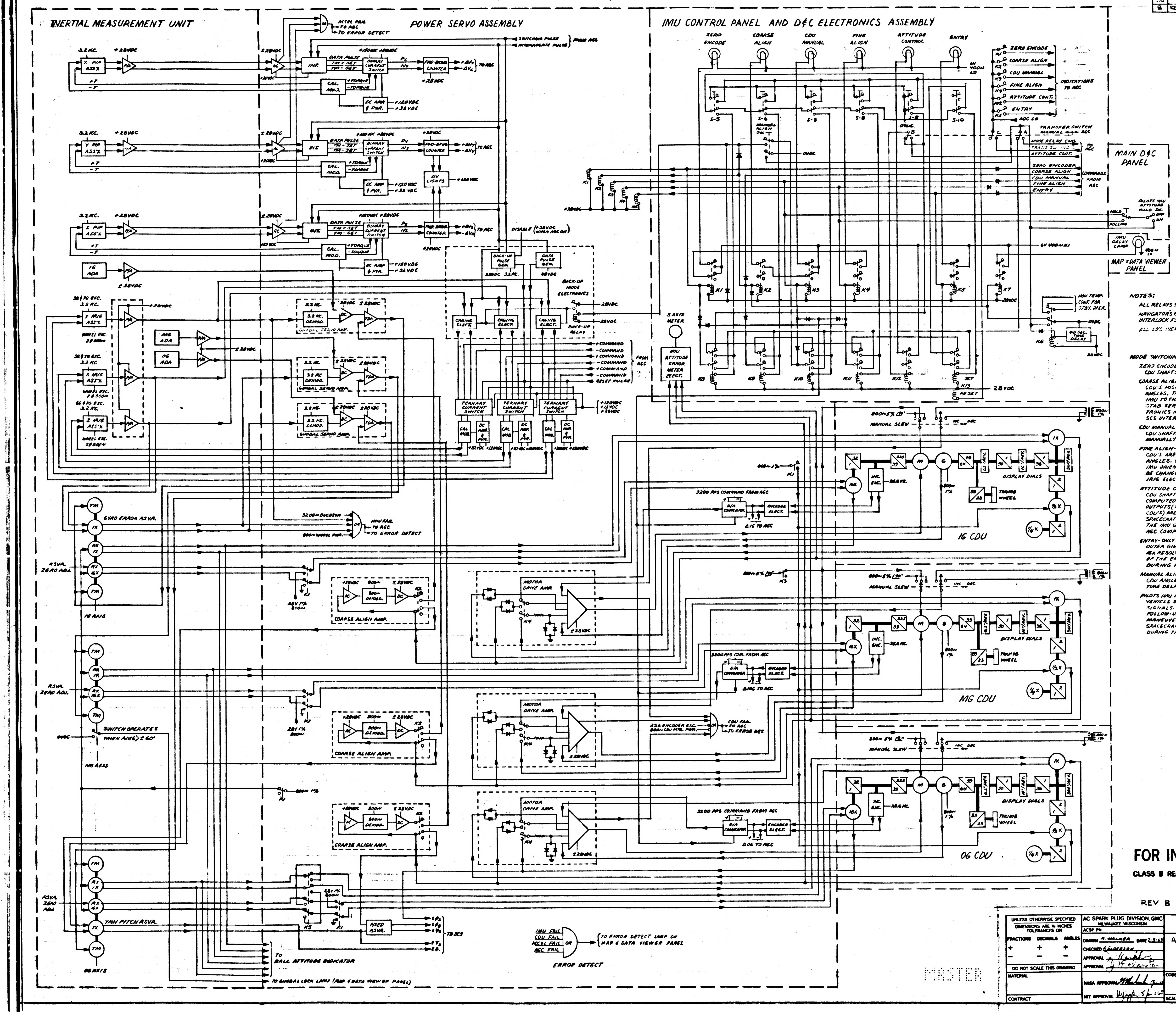
ONE WIRE MECHANIZATION
DRAWING OF THE INERTIAL
MEASUREMENT UNIT SUBSYSTEM

SCALE	UNIT WT.	CODE IDENT.

MIT INSTRUMENTATION LABORATORY
CAMBRIDGE, MASS.
DWG. NO.
MANNED SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO.
1015 560
SHEET OF

INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A PER TDRR 01437	5 June 63	VK



INERTIAL MEASUREMENT UNIT
POWER SERVO ASSEMBLY
IMU CONTROL PANEL AND D&C ELECTRONICS ASSEMBLY
X PIP ASS'Y
Y PIP ASS'Y
Z PIP ASS'Y
3.2 KC.
+28VDC
±28VDC
P/A
AC
INT.
DATA PULSE
TM + SET
TM - SET
BINARY CURRENT SWITCH
FWD-BKWD COUNTER
TO AGC
CAL. MOD.
+TORQUE
-TORQUE
DC AMP & PVR.
+120VDC
+32VDC
ΔV LIGHTS
ACCEL FAIL
TO AGC
TO ERROR DETECT
SWITCHING PULSE
INTERROGATE PULSE
FROM AGC
DISABLE (+28VDC WHEN AGC ON)
BACK-UP PULSE GEN.
DATA PULSE GEN.
BACK-UP MODE ELECTRONICS
BACK-UP RELAY
CAGING ELECT.
IG ADA
MG ADA
Y IRIG ASS'Y
X IRIG ASS'Y
Z IRIG ASS'Y
WHEEL EXC.
3.2 KC. DEMOD.
GIMBAL SERVO AMP.
TDA
TERNARY CURRENT SWITCH
COMMAND
RESET PULSE
FROM AGC
ZERO ENCODE
COARSE ALIGN
CDU MANUAL
FINE ALIGN
ATTITUDE CONTROL
ENTRY
S-5
S-6
S-7
S-8
S-9
S-10
MANUAL ALIGN SW.
6V 400~ LO
ZERO ENCODE
COARSE ALIGN
CDU MANUAL
FINE ALIGN
ATTITUDE CONT.
ENTRY
INDICATIONS TO AGC
AGC LO
TRANSFER SWITCH MANUAL ↔ AGC
MODE RELAY COM.
TRANS SW. IND.
ATTITUDE CONT.
TO AGC
ZERO ENCODER
COARSE ALIGN
CDU MANUAL
FINE ALIGN
ENTRY
COMMANDS FROM AGC
MAIN D&C PANEL
PILOTS IMU ATTITUDE HOLD SW.
HOLD
FOLLOW
OFF
ON
IMU DELAY LAMP
400~ LO
MAP & DATA VIEWER PANEL
6V 400~HI
K1
K2
K3
K4
K5
K6
K7
IMU TEMP. CONT. FOR STBY. OPER.
0VDC
28VDC
40 SEC. TIME DELAY
3 AXIS METER
IMU ATTITUDE ERROR METER ELECT.
MANUAL SLEW
3200 PPS COMMAND FROM AGC
D/A CONVERTER
ENCODER ELECT.
INC. ENC.
DISPLAY DIALS
THUMB WHEEL
IG CDU
MG CDU
OG CDU
GYRO ERROR RSVR.
RSVR. ZERO ADJ.
IG AXIS
MG AXIS
OG AXIS
COARSE ALIGN AMP.
MOTOR DRIVE AMP.
SWITCH OPERATES WHEN AMG ≥ 60°
IMU FAIL
CDU FAIL
YAW PITCH RSVR.
FIXED RSVR.
TO SCS
TO BALL ATTITUDE INDICATOR
TO GIMBAL LOCK LAMP (MAP & DATA VIEWER PANEL)
IMU FAIL
CDU FAIL
ACCEL FAIL
AGC FAIL
OR
TO ERROR DETECT LAMP ON MAP & DATA VIEWER PANEL
ERROR DETECT

NOTES:

ALL RELAYS SHOWN IN THE DE-ENERGIZED POSITION.

NAVIGATOR'S 6 BUTTON MODE SWITCH HAS ELECTRICAL INTERLOCK FOR ONE AT A TIME CLOSURE ONLY.

ALL LDS INERTIAL SUBSYSTEM UNLESS OTHERWISE NOTED.

MODE SWITCHING: (PSA RELAYS)

ZERO ENCODE - ONLY K1 AND K4 ENERGIZED.
CDU SHAFTS ZEROED.

COARSE ALIGN - ONLY K2 ENERGIZED.
CDU'S POSITIONED BY AGC TO COMPUTED GIMBAL ANGLES. THE CDU'S IN TURN COARSE ALIGN THE IMU TO THE COMPUTED GIMBAL ANGLES VIA THE STAB SERVO ELECTRONICS. THE CAGING ELECTRONICS NULLS THE GYRO FLOAT. DISCONNECTS SCS INTERFACE.

CDU MANUAL - ONLY K3 ENERGIZED.
CDU SHAFTS WILL NOT MOVE UNLESS DRIVEN MANUALLY OR SLEWED BY THE SLEW SWITCH.

FINE ALIGN - ONLY K4 ENERGIZED.
CDU'S ARE SLAVED TO FOLLOW THE IMU GIMBAL ANGLES. CDU INCREMENTAL ENCODERS TRANSMIT IMU ORIENTATION TO AGC. IMU POSITION MAY NOW BE CHANGED BY AGC PULSE TORQUING TO THE IRIG ELECTRONICS.

ATTITUDE CONTROL - ALL RELAYS DE-ENERGIZED.
CDU SHAFTS ARE POSITIONED BY THE AGC TO THE COMPUTED GIMBAL ANGLES. COARSE CDU 1X RSVR OUTPUTS (THRU YAW-PITCH RSVR FOR IG AND MG CDU'S) ARE FED TO THE SCS TO COMMAND THE SPACECRAFT TO THE DESIRED ATTITUDE AT WHICH THE IMU GIMBAL ANGLES ARE THE SAME AS THE AGC COMPUTED GIMBAL ANGLES.

ENTRY - ONLY K5 ENERGIZED.
OUTER GIMBAL 1X RESOLVER IS SWITCHED TO THE 16X RESOLVER IN THE OG CDU AND USED AS ONE OF THE ERROR SIGNALS FOR ROLL STEERING DURING RE-ENTRY.

MANUAL ALIGN - MAKES GIMBALS FOLLOW THE CDU ANGLES IF IN "CDU MANUAL". ALSO PROVIDES TIME DELAY OVER-RIDE.

PILOTS IMU ATTITUDE HOLD - PERMITS HOLDING VEHICLE ORIENTATION VIA STEERING ERROR SIGNALS. THE CDU'S ARE SWITCHED TO AN IMU FOLLOW-UP DURING SPACECRAFT ATTITUDE MANEUVER AND TURNED OFF AT THE NEW POSITION. SPACECRAFT SCS IS SWITCHED (NOT SHOWN) OUT DURING THE MANEUVER.

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01437 DATE

REV B REPLACES REV A.

MASTER

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ \+ \+
- \- \-
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. WALKER DATE 2-5-63
CHECKED E. ANDERSON
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL 5 Jun 63

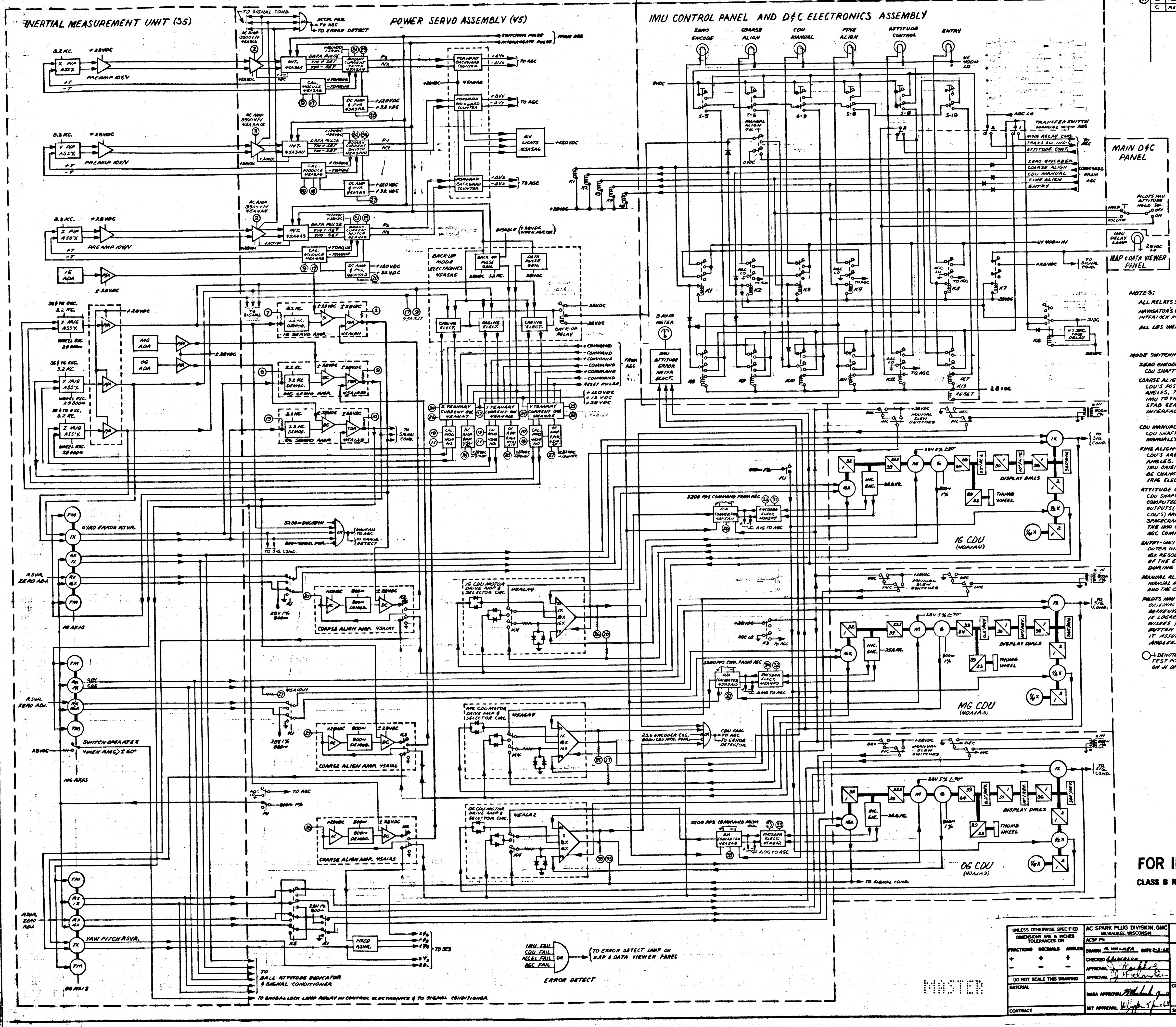
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

APOLLO INERTIAL SUBSYSTEM
ONE LINE
MECHANIZATION DRAWING

CODE IDENT NO. SIZE 1015560
SCALE SHEET

PHOTOGRAPHIC SCALE ONLY

SYM	DESCRIPTION	DATE	APPROVAL
Ⓐ B	REPLACES REV. A PER TDRR 01437	5 June 63	WR
C	REVISED PER TDRR 05694	1/7/64	WR


INERTIAL MEASUREMENT UNIT (35)
POWER SERVO ASSEMBLY (45)
IMU CONTROL PANEL AND D&C ELECTRONICS ASSEMBLY
ZERO ENCODE
COARSE ALIGN
CDU MANUAL
FINE ALIGN
ATTITUDE CONTROL
ENTRY
MAIN D&C PANEL
MAP & DATA VIEWER PANEL
IMU DELAY LAMP
PILOTS IMU ATTITUDE HOLD SW.
3 AXIS METER
PREAMP 10V/V
GYRO ERROR RSVR.
YAW PITCH RSVR.
SWITCH OPERATES WHEN AMG ≥ 60°
COARSE ALIGN AMP.
IG CDU MOTOR DRIVE AMP & SELECTOR CKT.
MG CDU MOTOR DRIVE AMP & SELECTOR CKT.
OG CDU MOTOR DRIVE AMP & SELECTOR CKT.
IG CDU (40A1A4)
MG CDU (40A1A5)
OG CDU (40A1A3)
DISPLAY DIALS
THUMB WHEEL
BACK-UP MODE ELECTRONICS
CAGING ELECT.
BACK-UP RELAY
FORWARD BACKWARD COUNTER
IMU FAIL
CDU FAIL
ACCEL FAIL
AGC FAIL
ERROR DETECT
TO ERROR DETECT LAMP ON MAP & DATA VIEWER PANEL
TO BALL ATTITUDE INDICATOR & SIGNAL CONDITIONER
TO GIMBAL LOCK LAMP RELAY IN CONTROL ELECTRONICS & TO SIGNAL CONDITIONER
TO SCS
TRANSFER SWITCH
MANUAL SLEW SWITCHES
28VDC
800~ 1%
3200 PPS COMMAND FROM AGC
RESET PULSE

NOTES:

ALL RELAYS SHOWN DE-ENERGIZED. K13-RESET.

NAVIGATOR'S 6 BUTTON MODE SWITCH HAS ELECTRICAL INTERLOCK FOR ONE AT A TIME CLOSURE ONLY.

ALL LO'S INERTIAL SUBSYSTEM UNLESS OTHERWISE NOTED.

MODE SWITCHING:

ZERO ENCODE - ONLY K1 & K4 (PSA) AND K4 K4 & K6 (D&C) ENERGIZED. CDU SHAFTS ZEROED.

COARSE ALIGN - ONLY K2 (PSA) AND K2 & K8 (D&C) ENERGIZED. CDU'S POSITIONED BY AGC TO COMPUTED GIMBAL ANGLES. THE CDU'S IN TURN COARSE ALIGN THE IMU TO THE COMPUTED GIMBAL ANGLES VIA THE STAB SERVO ELECTRONICS. DISCONNECTS SCS INTERFACE.

CDU MANUAL - ONLY K3 (PSA) AND K3 & K10 (D&C) ENERGIZED. CDU SHAFTS WILL NOT MOVE UNLESS DRIVEN MANUALLY OR SLEWED BY THE SLEW SWITCH.

FINE ALIGN - ONLY K4 (PSA) AND K4 & K11 (D&C) ENERGIZED. CDU'S ARE SLAVED TO FOLLOW THE IMU GIMBAL ANGLES. CDU INCREMENTAL ENCODERS TRANSMIT IMU ORIENTATION TO AGC. IMU POSITION MAY NOW BE CHANGED BY AGC PULSE TORQUING TO THE IRIG ELECTRONICS.

ATTITUDE CONTROL - ONLY K12 (D&C) ENERGIZED. CDU SHAFTS ARE POSITIONED BY THE AGC TO THE COMPUTED GIMBAL ANGLES. COARSE CDU 1X RSVR OUTPUTS (THRU YAW-PITCH RSVR FOR IG AND MG CDU'S) ARE FED TO THE SCS TO COMMAND THE SPACECRAFT TO THE DESIRED ATTITUDE AT WHICH THE IMU GIMBAL ANGLES ARE THE SAME AS THE AGC COMPUTED GIMBAL ANGLES.

ENTRY - ONLY K5 (PSA) AND K5 & K13 (PSA) ENERGIZED. (K13 SET). OUTER GIMBAL 1X RESOLVER IS SWITCHED TO THE 16X RESOLVER IN THE OG CDU AND USED AS ONE OF THE ERROR SIGNALS FOR ROLL STEERING DURING RE-ENTRY.

MANUAL ALIGN - PROVIDES TIME DELAY OVERRIDE. IN CDU MANUAL MODE GIMBALS ARE MADE TO FOLLOW CDU ANGLES AND THE CAGING ELECTRONICS NULLS THE GYRO FLOAT.

PILOTS IMU ATTITUDE HOLD - PERMITS RETURN TO ORIGINAL REFERENCE ATTITUDE AFTER PILOT USES MANEUVER CONTROL OF THE SCS, SINCE CDU SHAFT IS LOCKED IN "CDU" MANUAL MODE. IF ASTRONAUT WISHES TO STAY AT NEW ATTITUDE THE "FOLLOW" BUTTON PLACES CDU IN "FINE ALIGN" MODE AND IT ASSUMES AS A COMMAND THE NEW GIMBAL ANGLES.

○┤ DENOTES TEST POINT. PHYSICAL LOCATION OF TEST POINTS SHOWN ADJACENT TO MODULES IS ON J1 OF MODULE TRAY.

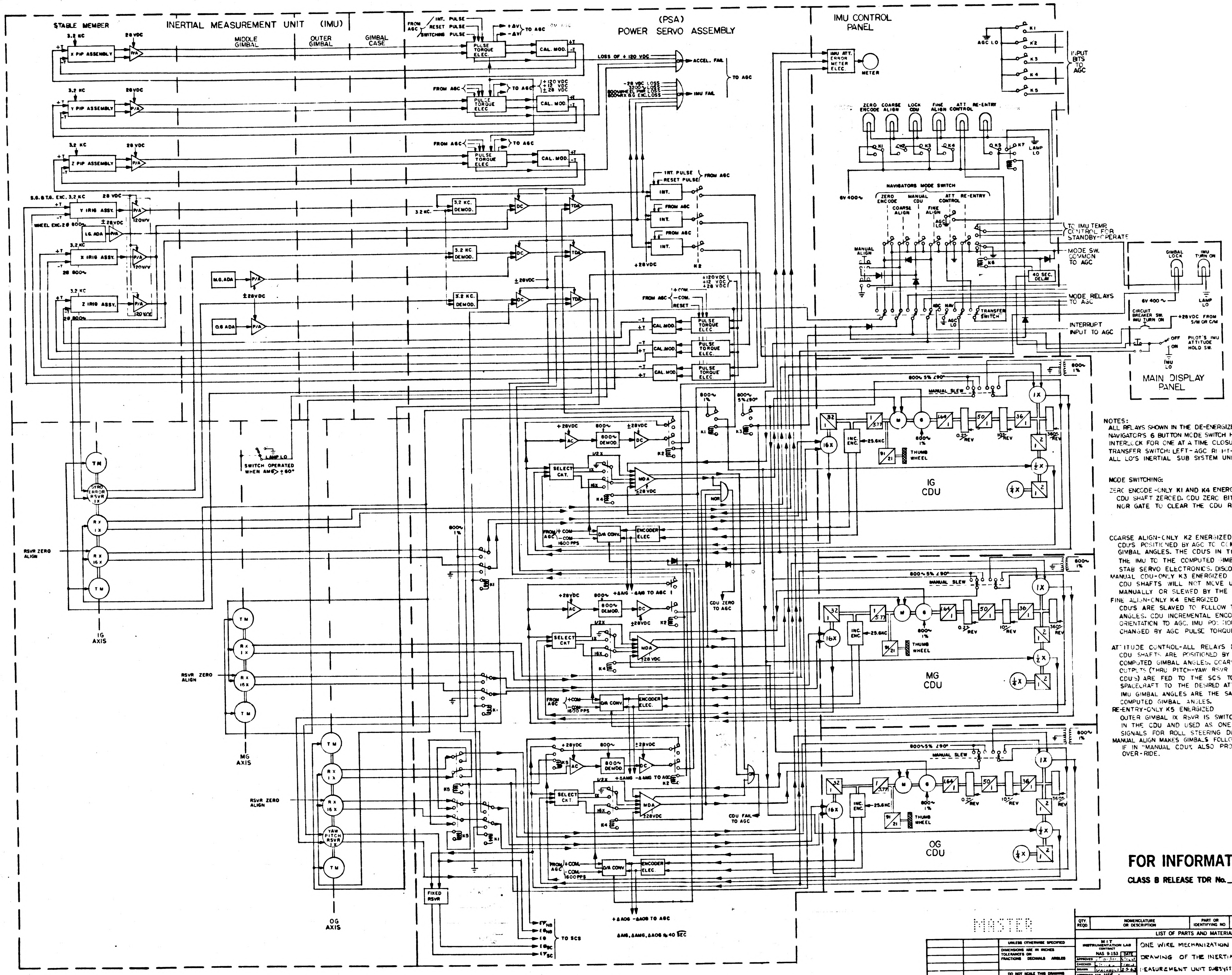
FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01437 **DATE**

MASTER

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
	ACSP PN		
	DRAWN R. WALKER DATE 2-5-63 CHECKED A. ANDERSON APPROVAL APPROVAL	APOLLO INERTIAL SUBSYSTEM ONE LINE MECHANIZATION DRAWING	
DO NOT SCALE THIS DRAWING			
MATERIAL	NASA APPROVAL	CODE IDENT NO.	SIZE 1015560
CONTRACT	MIT APPROVAL 5 June 63	SCALE	SHEET

REVISIONS				
ZONE	SYM	DESCRIPTION	DATE	APPROVAL


INERTIAL MEASUREMENT UNIT (IMU)
STABLE MEMBER
MIDDLE GIMBAL
OUTER GIMBAL
GIMBAL CASE
(PSA) POWER SERVO ASSEMBLY
IMU CONTROL PANEL
X PIP ASSEMBLY
Y PIP ASSEMBLY
Z PIP ASSEMBLY
Y IRIG ASSY.
X IRIG ASSY.
Z IRIG ASSY.
I.G. ADA
M.G. ADA
O.G. ADA
PULSE TORQUE ELEC.
CAL. MOD.
3.2 KC. DEMOD.
INT.
ACCEL. FAIL
IMU FAIL
TO AGC
FROM AGC
IMU ATT. ERROR METER ELEC.
METER
ZERO ENCODE
COARSE ALIGN
LOCK CDU
FINE ALIGN
ATT CONTROL
RE-ENTRY
INPUT BITS TO AGC
NAVIGATORS MODE SWITCH
MANUAL ALIGN
TRANSFER SWITCH
TO IMU TEMP. CONTROL FOR STANDBY-OPERATE
MODE SW. COMMON TO AGC
40 SEC. DELAY
MODE RELAYS TO AGC
INTERRUPT INPUT TO AGC
GIMBAL LOCK
IMU TURN ON
CIRCUIT BREAKER SW. IMU TURN ON
+28VDC FROM S/M OR C/M
PILOT'S IMU ATTITUDE HOLD SW.
MAIN DISPLAY PANEL
SWITCH OPERATED WHEN AMG ≥ ±60°
LAMP LO
RSVR ZERO ALIGN
IG AXIS
MG AXIS
OG AXIS
800~ DEMOD.
SELECT CKT.
MDA
NOR
D/A CONV.
ENCODER ELEC.
INC. ENC.
THUMB WHEEL
MANUAL SLEW
IG CDU
MG CDU
OG CDU
CDU ZERO TO AGC
CDU FAIL TO AGC
YAW PITCH RSVR 1X
FIXED RSVR
TO SCS
+ΔAOG -ΔAOG TO AGC
ΔAIG, ΔAMG, ΔAOG ≙ 40 SEC

NOTES:
ALL RELAYS SHOWN IN THE DE-ENERGIZED POSITION
NAVIGATOR'S 6 BUTTON MODE SWITCH HAS A MECHANICAL INTERLOCK FOR ONE AT A TIME CLOSURE ONLY
TRANSFER SWITCH: LEFT-AGC RIGHT-NAVIGATOR
ALL LO'S INERTIAL SUB SYSTEM UNLESS OTHERWISE NOTED

MODE SWITCHING:

ZERO ENCODE-ONLY K1 AND K4 ENERGIZED
CDU SHAFT ZEROED. CDU ZERO BIT SENT TO AGC THRU NOR GATE TO CLEAR THE CDU REGISTERS.

COARSE ALIGN-ONLY K2 ENERGIZED
CDU'S POSITIONED BY AGC TO COMPUTED GIMBAL ANGLES. THE CDU'S IN TURN COARSE ALIGN THE IMU TO THE COMPUTED GIMBAL ANGLES VIA THE STAB SERVO ELECTRONICS. DISCONNECTS SCS INTERFACE.
MANUAL CDU-ONLY K3 ENERGIZED
CDU SHAFTS WILL NOT MOVE UNLESS DRIVEN MANUALLY OR SLEWED BY THE SLEW SWITCH
FINE ALIGN-ONLY K4 ENERGIZED
CDU'S ARE SLAVED TO FOLLOW THE IMU GIMBAL ANGLES. CDU INCREMENTAL ENCODERS TRANSMIT IMU ORIENTATION TO AGC. IMU POSITION MAY NOW BE CHANGED BY AGC PULSE TORQUING TO IRIG ELECTRONICS

ATTITUDE CONTROL-ALL RELAYS DE-ENERGIZED
CDU SHAFTS ARE POSITIONED BY THE AGC TO THE COMPUTED GIMBAL ANGLES. COARSE CDU 1X RSVR OUTPUTS (THRU PITCH-YAW RSVR FOR PITCH AND YAW CDU'S) ARE FED TO THE SCS TO COMMAND THE SPACECRAFT TO THE DESIRED ATTITUDE AT WHICH THE IMU GIMBAL ANGLES ARE THE SAME AS THE AGC COMPUTED GIMBAL ANGLES.
RE-ENTRY-ONLY K5 ENERGIZED
OUTER GIMBAL 1X RSVR IS SWITCHED TO THE 16X RSVR IN THE CDU AND USED AS ONE OF THE ERROR SIGNALS FOR ROLL STEERING DURING RE-ENTRY.
MANUAL ALIGN MAKES GIMBALS FOLLOW THE CDU ANGLES IF IN "MANUAL CDU" ALSO PROVIDES TIME DELAY OVER-RIDE.

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00325 **DATE** 6 FEB 63

MASTER

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL:

MIT INSTRUMENTATION LAB CONTRACT NAS 9-153
		DATE
APPROVED	[illegible]	5 Feb 63
CHECKED	[illegible]	Feb
DRAWN	WACHHOLZ	2-5-63

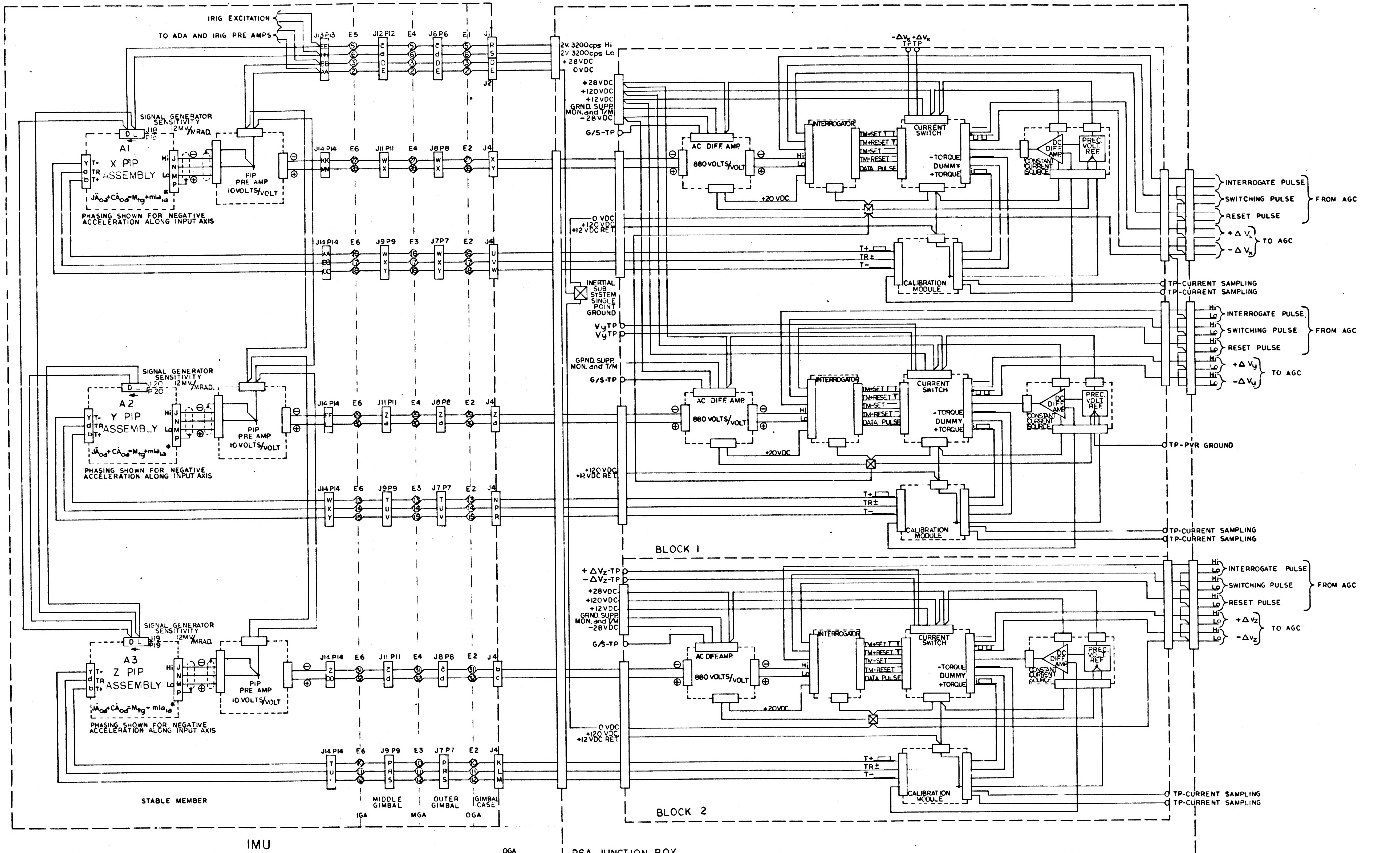
APPROVED FOR MSC
2/6/63
BY DIRECTION M.I.T. Approval
6 Feb 63

ONE WIRE MECHANIZATION DRAWING OF THE INERTIAL MEASUREMENT UNIT SUBSYSTEM

SCALE
UNIT WT.
CODE IDENT.

MIT INSTRUMENTATION LABORATORY
CAMBRIDGE, MASS.
DWG. NO.
MANNED SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO. 1015 560
SHEET OF

ZONE	SYM	DESCRIPTION	DATE	APPROVAL
REVISIONS				
	A	REDRAWN AND REPLACED BY REV B PER TDRR 01437	5 June '63	WK.

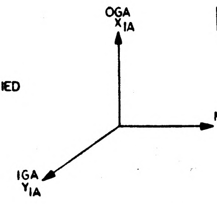

IRIG EXCITATION
TO ADA AND IRIG PRE AMPS
SIGNAL GENERATOR SENSITIVITY 12MV/MRAD.
A1
X PIP ASSEMBLY
PIP PRE AMP 10VOLTS/VOLT
PHASING SHOWN FOR NEGATIVE ACCELERATION ALONG INPUT AXIS
A2
Y PIP ASSEMBLY
A3
Z PIP ASSEMBLY
J13 P13
J12 P12
J14 P14
J11 P11
J9 P9
J8 P8
J7 P7
J6 P6
E1
E2
E3
E4
E5
E6
J4
J2
2V. 3200cps Hi
2V. 3200cps Lo
+28VDC
0VDC
+120VDC
+12VDC
GRND. SUPP. MON. and T/M
-28VDC
G/S-TP
AC DIFF. AMP.
880 VOLTS/VOLT
+20VDC
INTERROGATOR
TM+SET
TM+RESET
TM-SET
TM-RESET
DATA PULSE
CURRENT SWITCH
-TORQUE
DUMMY
+TORQUE
CONSTANT CURRENT SOURCE
DC DIFF AMP
PREC VOLT REF
CALIBRATION MODULE
T+
TR±
T-
$-\Delta V_x$ $+\Delta V_x$
TP TP
INTERROGATE PULSE
SWITCHING PULSE
RESET PULSE
FROM AGC
$+\Delta V_x$
$-\Delta V_x$
TO AGC
TP-CURRENT SAMPLING
INERTIAL SUB SYSTEM SINGLE POINT GROUND
V_yTP
V_yTP
$+\Delta V_y$
$-\Delta V_y$
TP-PVR GROUND
BLOCK 1
$+\Delta V_z$-TP
$-\Delta V_z$-TP
$+\Delta V_z$
$-\Delta V_z$
BLOCK 2
$J\ddot{A}_{oa}+C\dot{A}_{oa}=M_{tg}+mla_{ia}$
STABLE MEMBER
MIDDLE GIMBAL
OUTER GIMBAL
GIMBAL CASE
IGA
MGA
OGA
PSA JUNCTION BOX
IMU
PSA

WHEN OPERATED WITH 2V. 3200cps EXCITATION THE PIP WILL BEHAVE AS FOLLOWS:

1. A POSITIVE FLOAT ANGLE IS DEFINED TO BE WHEN THE SIGNAL GENERATOR Lo IS IN PHASE WITH RESPECT TO THE REFERENCE EXCITATION.
2. AN ACCELERATION ALONG THE POSITIVE INPUT AXIS RESULTS IN A NEGATIVE RATE OF CHANGE OF FLOAT ANGLE.
3. CURRENT FLOWING BETWEEN T+ AND TR RESULTS IN A POSITIVE RATE OF CHANGE OF FLOAT ANGLE AND IS DEFINED AS POSITIVE CURRENT.

WHEN OPERATED WITH THE INTERROGATE SWITCHING AND RESET PULSES FROM THE AGC, THE PULSE TORQUE ELECTRONICS WILL BEHAVE AS FOLLOWS:

AN INPUT SIGNAL Lo IN PHASE WITH THE REF. EXC. AND ABOVE 2.6V. PEAK TO PEAK APPLIED TO THE INTERROGATOR WILL RESULT IN A TM+SET PULSE BEING APPLIED TO THE CURRENT SWITCH. THE TM+SET PULSE APPLIED TO THE CURRENT SWITCH WILL RESULT IN POSITIVE CURRENT (+TORQUE) OUTPUT AND $-\Delta V$ PULSES.


OGA
X_{IA}
MGA
Z_{IA}
IGA
Y_{IA}

*
$J = 14$ GM-CM^2
$C = 80{,}000$ DYNE-CM./RAD./SEC.
$M_{tg} = 0.42$ DYNE-CM./MA^2
$ml = 0.25$ GM-CM.

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00325 DATE 6 FEB 63

REV A REPLACED BY REV B

MASTER

QTY REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.
LIST OF PARTS AND MATERIALS					

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL:

MIT INSTRUMENTATION LAB CONTRACT NAS 9-153
APPROVED
CHECKED
DRAWN 2-5-63
APPROVED FOR MSC 2/6/63
BY DIRECTION MIT APPROVAL
6 Feb 63

TWO WIRE MECH.
DWG. OF PIPA
LOOPS.

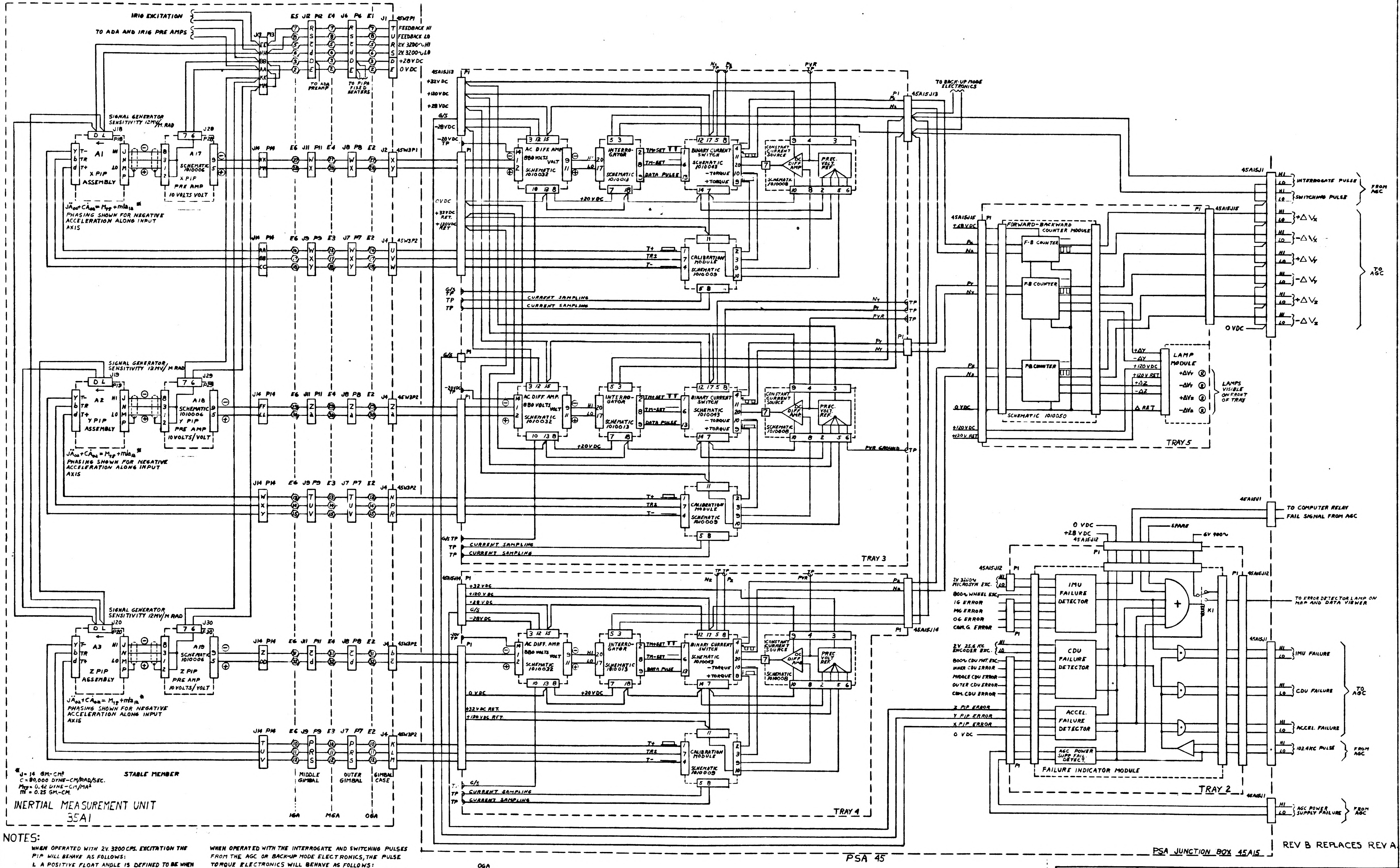
SCALE
UNIT WT.
CODE IDENT.

MIT INSTRUMENTATION LABORATORY
CAMBRIDGE, MASS.
DWG. NO.
MANNED SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO.
1015 561
SHEET 1 OF 1

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH SYSTEM CHANGES PER TDRR 01437	5 JUNE '63	WK

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01437 **DATE**



IRIG EXCITATION
TO ADA AND IRIG PRE AMPS
E5 J12 P12 E4 J6 P6 E1 J1 45W2P1
FEEDBACK HI
FEEDBACK LO
2V. 3200~HI
2V. 3200~LO
+28 VDC
0 VDC
TO ADA PREAMP
TO PIPA FIXED HEATERS
SIGNAL GENERATOR SENSITIVITY 12MV/M. RAD
J18 P18 J28 P28
A1
X PIP ASSEMBLY
A17
SCHEMATIC 1010006
X PIP PRE AMP
10 VOLTS VOLT
$J\ddot{A}_{oa} + C\dot{A}_{oa} = M_{pp} + ml a_{ia}$ *
PHASING SHOWN FOR NEGATIVE ACCELERATION ALONG INPUT AXIS
J14 P14 E6 J11 P11 E4 J8 P8 E2 J2 45W3P1
J14 P14 E6 J9 P9 E3 J7 P7 E2 J4 45W3P2
SIGNAL GENERATOR SENSITIVITY 12MV/M RAD
J19 P19 J29
A2
Y PIP ASSEMBLY
A18
SCHEMATIC 1010006
Y PIP PRE AMP
10 VOLTS/VOLT
SIGNAL GENERATOR SENSITIVITY 12MV/M RAD
J20 P20 J30
A3
Z PIP ASSEMBLY
A19
SCHEMATIC 1010006
Z PIP PRE AMP
10 VOLTS/VOLT
* J = 14 GM-CM²
C = 80,000 DYNE-CM/RAD/SEC.
Mpp = 0.42 DYNE-CM/MA²
ml = 0.25 GM.-CM.
STABLE MEMBER
MIDDLE GIMBAL
OUTER GIMBAL
GIMBAL CASE
INERTIAL MEASUREMENT UNIT
35A1
IGA
MGA
OGA
45A15J13
+32V DC
+120V DC
+28 VDC
G/S
-28VDC
-20V DC TP
0 VDC
+32VDC RET.
+120VDC RET
G/S TP
TP
AC DIFF AMP
880 VOLTS VOLT
SCHEMATIC 1010032
INTERROGATOR
SCHEMATIC 1010013
TM+SET
TM-SET
DATA PULSE
BINARY CURRENT SWITCH
SCHEMATIC 1010043
-TORQUE
+TORQUE
CONSTANT CURRENT SOURCE
DC DIFF AMP
PREC. VOLT. REF.
SCHEMATIC 1010008
+20 VDC
NX TP
PX TP
PVR TP
T+
TR
T-
CALIBRATION MODULE
SCHEMATIC 1010009
CURRENT SAMPLING
CURRENT SAMPLING
TO BACK-UP MODE ELECTRONICS
45A15J13
Ny
Py
PYR
TP
PVR GROUND
TRAY 3
TRAY 4
45A15J14
PSA 45
45A15J15
+28VDC
Px
Nx
Py
Ny
Pz
Nz
FORWARD-BACKWARD COUNTER MODULE
F-B COUNTER
F-B COUNTER
F-B COUNTER
SCHEMATIC 1010050
+ΔY
-ΔY
+120VDC
+120V RET
+ΔZ
-ΔZ
Δ RET
LAMP MODULE
+ΔVy
-ΔVy
+ΔVz
-ΔVz
LAMPS VISIBLE ON FRONT OF TRAY
TRAY 5
45A15J1
INTERROGATE PULSE
SWITCHING PULSE
FROM AGC
+ΔVx
-ΔVx
+ΔVy
-ΔVy
+ΔVz
-ΔVz
TO AGC
TO COMPUTER RELAY
FAIL SIGNAL FROM AGC
0 VDC
+28 VDC
45A15J12
SPARE
6V 400~
2V 3200~ MICROSYN EXC.
800~ WHEEL EXC.
IG ERROR
MG ERROR
OG ERROR
COM.G ERROR
2V 25.6 KC ENCODER EXC.
800~ CDU MOT. EXC.
INNER CDU ERROR
MIDDLE CDU ERROR
OUTER CDU ERROR
COM. CDU ERROR
Z PIP ERROR
Y PIP ERROR
X PIP ERROR
0 VDC
IMU FAILURE DETECTOR
CDU FAILURE DETECTOR
ACCEL. FAILURE DETECTOR
AGC POWER SUPP FAIL. DETECT.
FAILURE INDICATOR MODULE
K1
TO ERROR DETECTOR LAMP ON MAP AND DATA VIEWER
IMU FAILURE
CDU FAILURE
ACCEL. FAILURE
TO AGC
102.4KC PULSE
FROM AGC
TRAY 2
AGC POWER SUPPLY FAILURE
FROM AGC
PSA JUNCTION BOX 45A15

REV B REPLACES REV A.

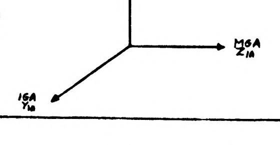
NOTES:

WHEN OPERATED WITH 2V. 3200CPS. EXCITATION THE PIP WILL BEHAVE AS FOLLOWS:

1. A POSITIVE FLOAT ANGLE IS DEFINED TO BE WHEN THE SIGNAL GENERATOR Lo IS IN PHASE WITH RESPECT TO THE REFERENCE EXCITATION.
2. AN ACCELERATION ALONG THE POSITIVE INPUT AXIS RESULTS IN A NEGATIVE RATE OF CHANGE OF FLOAT ANGLE
3. CURRENT FLOWING BETWEEN T+ AND TR RESULTS IN A POSITIVE RATE OF CHANGE OF FLOAT ANGLE AND IS DEFINED AS POSITIVE CURRENT.

WHEN OPERATED WITH THE INTERROGATE AND SWITCHING PULSES FROM THE AGC OR BACK-UP MODE ELECTRONICS, THE PULSE TORQUE ELECTRONICS WILL BEHAVE AS FOLLOWS:

1. AN INPUT SIGNAL Lo IN PHASE WITH THE REF. EXC AND ABOVE 2.6V PEAK TO PEAK APPLIED TO THE INTERROGATOR, WILL RESULT IN A TM+SET PULSE BEING APPLIED TO THE CURRENT SWITCH. THE TM+SET PULSE APPLIED TO THE CURRENT SWITCH WILL RESULT IN POSITIVE CURRENT (+TORQUE) OUTPUT AND "N" PULSES. "N" PULSES TO THE FORWARD-BACKWARD COUNTER GIVES -ΔV PULSES TO THE AGC.
2. DURING ZERO ACCELERATION, THE LOOP GIVES THREE "P" AND THREE "N" PULCES TO THE FORWARD-BACKWARD COUNTER RESULTING IN NO ΔV PULSES TO THE AGC.



OGA X_{IA}
MGA Z_{IA}
IGA Y_{IA}

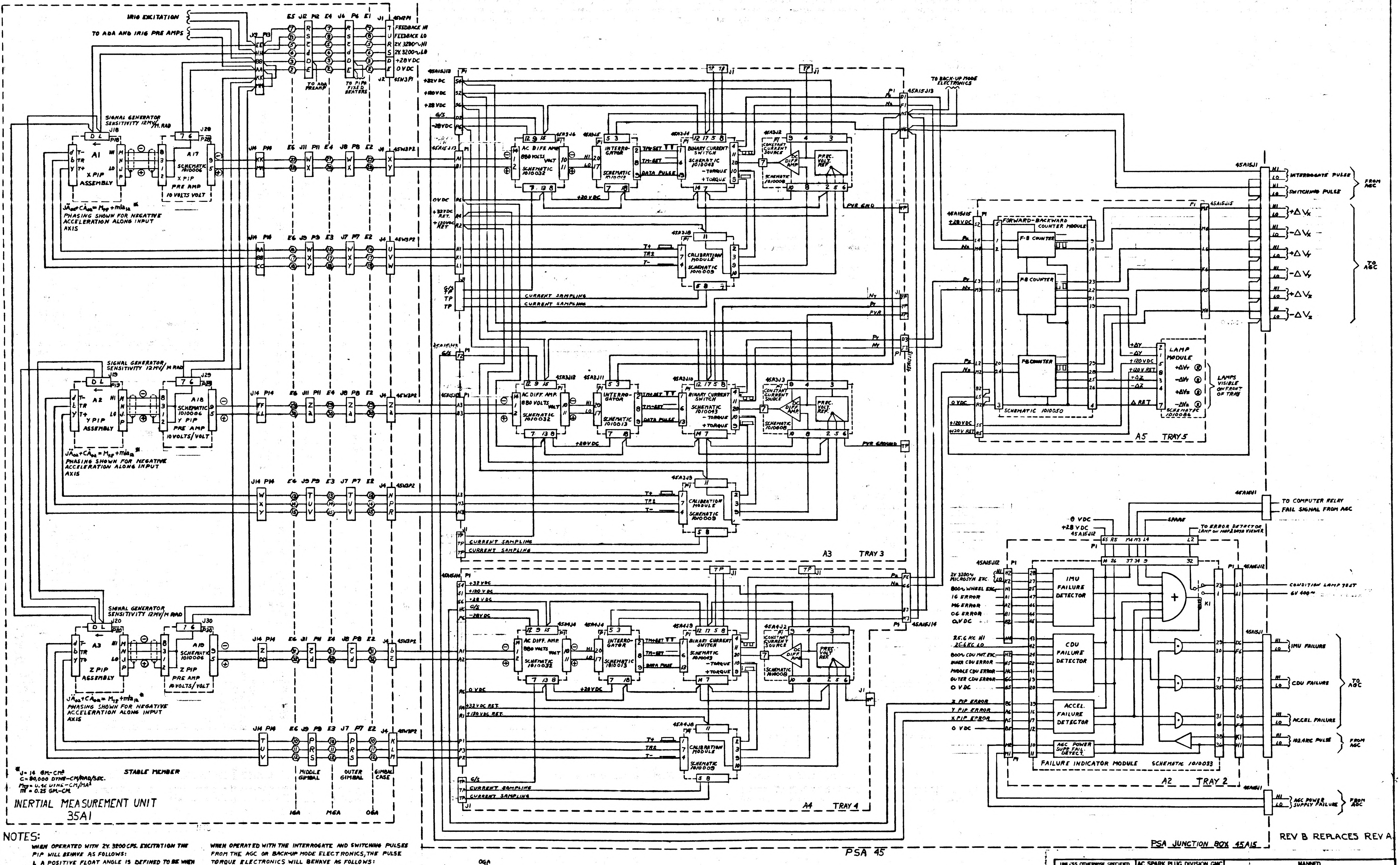
MASTER

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
FRACTIONS + − DECIMALS + − ANGLES + −	ACSP PN	
	DRAWN C. J. KORSAN DATE 5-?-63	TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS
	CHECKED ALLEN ALDERSON	
	APPROVAL	
DO NOT SCALE THIS DRAWING	APPROVAL J. H. Hanten	
MATERIAL	NASA APPROVAL 5 Jun 63	CODE IDENT NO. SIZE 1015561
CONTRACT	MIT APPROVAL W Kupfer 5 Jun 63	SCALE SHEET

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV. A WITH SYSTEM CHANGES PER TDRR 01437	5 JUNE '63	WK
C	Added Pn No's + System Changes 02557	31/7/63	WK

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01437 DATE


IRIG EXCITATION
TO ADA AND IRIG PRE AMPS
FEEDBACK HI
FEEDBACK LO
2V 3200~HI
2V 3200~LO
+28 VDC
0 VDC
TO ADA PREAMP
TO PIPA FIXED CENTERS
SIGNAL GENERATOR SENSITIVITY 12MV/M RAD
X PIP ASSEMBLY
A17
SCHEMATIC 1010006
X PIP PRE AMP
10 VOLTS/VOLT
PHASING SHOWN FOR NEGATIVE ACCELERATION ALONG INPUT AXIS
Y PIP ASSEMBLY
A18
Y PIP PRE AMP
Z PIP ASSEMBLY
A19
Z PIP PRE AMP
AC DIFF AMP
INTERROGATOR
BINARY CURRENT SWITCH
CONSTANT CURRENT SOURCE
PREC. VOLT. REF.
DIFF AMP
CALIBRATION MODULE
TM+SET
TM-SET
DATA PULSE
-TORQUE
+TORQUE
CURRENT SAMPLING
PVR GND
TO BACK-UP MODE ELECTRONICS
INTERROGATE PULSE
SWITCHING PULSE
FROM AGC
TO AGC
FORWARD-BACKWARD COUNTER MODULE
F-B COUNTER
SCHEMATIC 1010050
LAMP MODULE
LAMPS VISIBLE ON FRONT OF TRAY
A5 TRAY 5
A3 TRAY 3
A4 TRAY 4
TO COMPUTER RELAY FAIL SIGNAL FROM AGC
TO ERROR DETECTOR LAMP
IMU FAILURE DETECTOR
CDU FAILURE DETECTOR
ACCEL. FAILURE DETECTOR
AGC POWER SUPPLY FAIL DETECT
FAILURE INDICATOR MODULE SCHEMATIC 1010033
A2 TRAY 2
CONDITION LAMP 70ΩT
IMU FAILURE
CDU FAILURE
ACCEL. FAILURE
102.4KC PULSE
AGC POWER SUPPLY FAILURE
STABLE MEMBER
MIDDLE GIMBAL
OUTER GIMBAL
GIMBAL CASE
IGA
MGA
OGA
PSA JUNCTION BOX 45A15
PSA 45

*J = 14 GM-CM²
C = 80,000 DYNE-CM/RAD/SEC.
M_{TG} = 0.42 DYNE-CM/MA²
m = 0.25 GM-CM

INERTIAL MEASUREMENT UNIT
35A1

REV B REPLACES REV A.

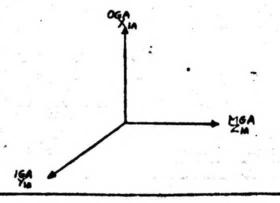
NOTES:

WHEN OPERATED WITH 2V. 3200 CPS. EXCITATION THE PIP WILL BEHAVE AS FOLLOWS:

1. A POSITIVE FLOAT ANGLE IS DEFINED TO BE WHEN THE SIGNAL GENERATOR Lo IS IN PHASE WITH RESPECT TO THE REFERENCE EXCITATION.
2. AN ACCELERATION ALONG THE POSITIVE INPUT AXIS RESULTS IN A NEGATIVE RATE OF CHANGE OF FLOAT ANGLE
3. CURRENT FLOWING BETWEEN T+ AND TR RESULTS IN A POSITIVE RATE OF CHANGE OF FLOAT ANGLE AND IS DEFINED AS POSITIVE CURRENT.

WHEN OPERATED WITH THE INTERROGATE AND SWITCHING PULSES FROM THE AGC OR BACK-UP MODE ELECTRONICS, THE PULSE TORQUE ELECTRONICS WILL BEHAVE AS FOLLOWS:

1. AN INPUT SIGNAL Lo IN PHASE WITH THE REF. EXC. AND ABOVE 2.6V PEAK TO PEAK APPLIED TO THE INTERROGATOR, WILL RESULT IN A TM+SET PULSE BEING APPLIED TO THE CURRENT SWITCH. THE TM+SET PULSE APPLIED TO THE CURRENT SWITCH WILL RESULT IN POSITIVE CURRENT (+TORQUE) OUTPUT AND "N" PULSES. "N" PULSES TO THE FORWARD-BACKWARD COUNTER GIVES -ΔV PULSES TO THE AGC.
2. DURING ZERO ACCELERATION, THE LOOP GIVES THREE "P" AND THREE "N" PULSES TO THE FORWARD-BACKWARD COUNTER RESULTING IN NO ΔV PULSES TO THE AGC.



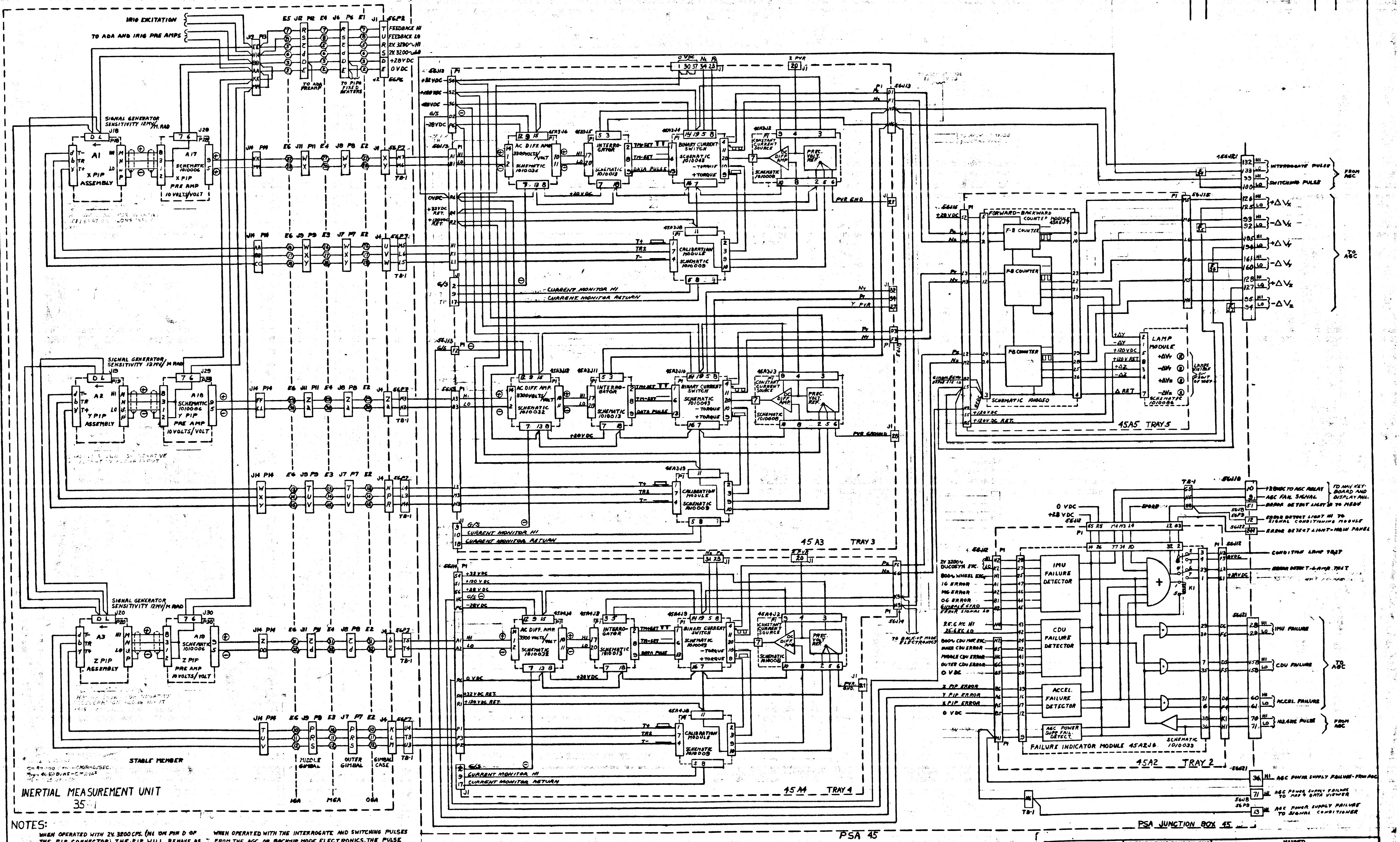
MASTER

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
DO NOT SCALE THIS DRAWING	DRAWN C. J. KORSAN DATE 5-24-63 CHECKED ALLEN ALDERSON APPROVAL APPROVAL J. H.	TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS
MATERIAL	NASA APPROVAL 5 Jun 63	CODE IDENT NO. | SIZE | 1015561
CONTRACT	MIT APPROVAL W Kupfer 5 June 63	SCALE | SHEET

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01437 **DATE**

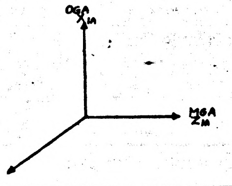
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	~~REPLACES~~ ~~SCHEMATIC~~ WITH ~~SYSTEM~~ CHANGES PER TORR 01437	5 JUNE '63	WK
C	Added Pin No's + System Changes D2357	31/7/63	WK
D	CORRECTED PHASING - ADDED & CHANGED TERMINAL DESIGNATIONS TORR 04460	12-2-63	WK.



IRIG EXCITATION
TO ADA AND IRIG PRE AMPS
FEEDBACK HI
FEEDBACK LO
2V 3200~/HI
2V 3200~/LO
+28 VDC
0 VDC
TO ADA PREAMP
TO PIP FIXED HEATERS
SIGNAL GENERATOR SENSITIVITY 12MV/M RAD
A1
X PIP ASSEMBLY
A17
SCHEMATIC 1010006
X PIP PRE AMP 10 VOLTS/VOLT
A2
Y PIP ASSEMBLY
A18
Y PIP PRE AMP 10 VOLTS/VOLT
A3
Z PIP ASSEMBLY
A19
Z PIP PRE AMP 10 VOLTS/VOLT
STABLE MEMBER
MIDDLE GIMBAL
OUTER GIMBAL
GIMBAL CASE
IGA
MGA
OGA
TB-1
AC DIFF AMP 3300 VOLTS/VOLT
SCHEMATIC 1010032
INTERROGATOR
SCHEMATIC 1010013
BINARY CURRENT SWITCH
SCHEMATIC 1010043
CONSTANT CURRENT SOURCE
DC DIFF AMP
PREC. VOLT. REF.
SCHEMATIC 1010008
CALIBRATION MODULE
SCHEMATIC 1010005
TM+SET
TM-SET
DATA PULSE
-TORQUE
+TORQUE
+28 VDC
PVR GND
CURRENT MONITOR HI
CURRENT MONITOR RETURN
45A3
TRAY 3
45A4
TRAY 4
TO BACK-UP MODE ELECTRONICS
FORWARD-BACKWARD COUNTER MODULE 45A5J7
F-B COUNTER
SCHEMATIC 1010050
LAMP MODULE
SCHEMATIC 1010086
45A5 TRAY 5
INTERROGATE PULSE
SWITCHING PULSE
FROM AGC
+ΔVx
-ΔVx
+ΔVy
-ΔVy
+ΔVz
-ΔVz
TO AGC
+28 VDC TO AGC RELAY
AGC FAIL SIGNAL
ERROR DETECT LIGHT
TO NAV KEYBOARD AND DISPLAY PNL.
TO MDU
ERROR DETECT LIGHT TO SIGNAL CONDITIONING MODULE
ERROR DETECT LIGHT-MAIN PANEL
CONDITION LAMP TEST
ERROR DETECT LAMP TEST
IMU FAILURE DETECTOR
CDU FAILURE DETECTOR
ACCEL. FAILURE DETECTOR
AGC POWER SUPP. FAIL DETECT.
FAILURE INDICATOR MODULE 45A2J6
SCHEMATIC 1010035
45A2 TRAY 2
IMU FAILURE
CDU FAILURE
ACCEL FAILURE
102 KPC PULSE
AGC POWER SUPPLY FAILURE - FROM AGC
AGC POWER SUPPLY FAILURE TO MAP & DATA VIEWER
AGC POWER SUPPLY FAILURE TO SIGNAL CONDITIONER
PSA JUNCTION BOX 45
PSA 45

INERTIAL MEASUREMENT UNIT

35



OGA X_{IA}
MGA Z_{IA}
IGA Y_{IA}

NOTES:

WHEN OPERATED WITH 2V. 3200 CPS. (HI ON PIN D OF THE PIP CONNECTOR) THE PIP WILL BEHAVE AS FOLLOWS:

1. AN ACCELERATION ALONG THE NEGATIVE INPUT AXIS RESULTS IN AN IN PHASE
2. SIGNAL AT THE SIGNAL GENERATOR HI (PIN M OF THE PIP CONNECTOR) WITH RESPECT TO THE REFERENCE EXCITATION.
2. CURRENT FLOWING BETWEEN T+ & TR RESULTS IN AN OUT OF PHASE SIGNAL AT THE SIGNAL GENERATOR HI.
3. PHASING SHOWN FOR NEGATIVE ACCELERATION ALONG PIP INPUT AXIS.

WHEN OPERATED WITH THE INTERROGATE AND SWITCHING PULSES FROM THE AGC OR BACK-UP MODE ELECTRONICS, THE PULSE TORQUE ELECTRONICS WILL BEHAVE AS FOLLOWS:

1. AN INPUT SIGNAL IN PHASE WITH THE REF. EXC. AND 0V ± 1V PEAK TO PEAK APPLIED TO THE INTERROGATOR, WILL RESULT IN A TM+SET PULSE BEING APPLIED TO THE CURRENT SWITCH. THE TM+SET PULSE APPLIED TO THE CURRENT SWITCH WILL RESULT IN POSITIVE CURRENT (+TORQUE) OUTPUT AND "N" PULSES. "N" PULSES TO THE FORWARD-BACKWARD COUNTER GIVES -ΔV PULSES TO THE AGC.

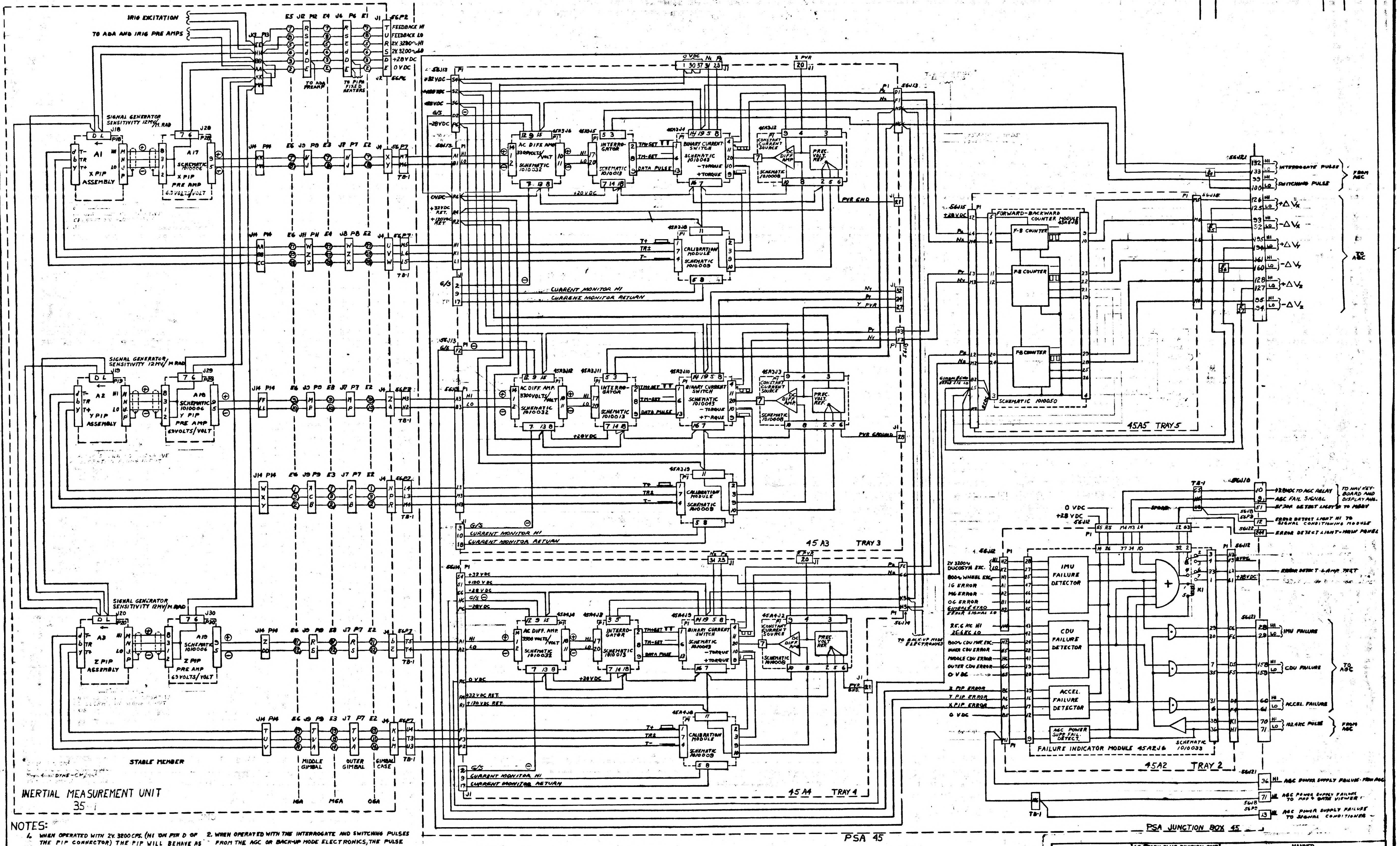
MASTER

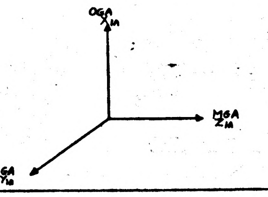
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
	ACSP PN		
	DRAWN C.J. KORSON DATE 5-20-63	TWO WIRE MECHANIZATION OF APOLLO PIPA LOOPS	
	CHECKED ALLEN ALDERSON		
	APPROVAL		
DO NOT SCALE THIS DRAWING	APPROVAL J H Blanton		
MATERIAL	NASA APPROVAL 5 June 63	CODE IDENT NO.	SIZE 1015561
CONTRACT	MIT APPROVAL W Kupfer 5 June 63	SCALE	SHEET

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01437 DATE

		REVISIONS		
	SYM	DESCRIPTION	DATE	APPROVAL
B	B	REPLACES ~~[illegible]~~ WITH [illegible] CHANGES PER TDRR 01437	5 JUNE '63	WK
C	C	Added Pin No's + System Changes D2357	31/7/63	WK
D	D	CORRECTED PHASING - ADDED & CHANGED TERMINAL DESIGNATIONS TDRR 04460	12-2-63	WK
	E	REVISED PER TDRR 06209	2/4/64	WK


IR16 EXCITATION
TO ADA AND IR16 PRE AMPS
FEEDBACK HI
FEEDBACK LO
2V 3200~ HI
2V 3200~ LO
+28V DC
0 V DC
TO ADA PREAMP
TO PIPA FIXED HEATERS
SIGNAL GENERATOR SENSITIVITY 12MV/MRAD
A1
X PIP ASSEMBLY
A17
SCHEMATIC 1010006
X PIP PRE AMP
6.3 VOLTS/VOLT
A2
Y PIP ASSEMBLY
A18
Y PIP PRE AMP
A3
Z PIP ASSEMBLY
A19
Z PIP PRE AMP
STABLE MEMBER
MIDDLE GIMBAL
OUTER GIMBAL
GIMBAL CASE
IGA
MGA
OGA
INERTIAL MEASUREMENT UNIT 35
AC DIFF AMP
3300 VOLTS/VOLT
SCHEMATIC 1010032
INTERROGATOR
SCHEMATIC 1010013
TM+SET
TM-SET
DATA PULSE
BINARY CURRENT SWITCH
SCHEMATIC 1010043
-TORQUE
+TORQUE
CONSTANT CURRENT SOURCE
SCHEMATIC 1010008
DIFF AMP
PREC. VOLT. REF.
+20 VDC
PVR GND
PVR GROUND
CALIBRATION MODULE
SCHEMATIC 1010003
CURRENT MONITOR HI
CURRENT MONITOR RETURN
45A3 TRAY 3
45A4 TRAY 4
TO BACK UP MODE ELECTRONICS
FORWARD-BACKWARD COUNTER MODULE
F-B COUNTER
SCHEMATIC 1010050
45A5 TRAY 5
INTERROGATE PULSE
SWITCHING PULSE
FROM AGC
+ΔVx
-ΔVx
+ΔVy
-ΔVy
+ΔVz
-ΔVz
TO AGC
+28VDC TO AGC RELAY
AGC FAIL SIGNAL
PIPA DETECT LIGHT
TO NAV KEYBOARD AND DISPLAY ASS.
ERROR DETECT LIGHT
ERROR DETECT LIGHT - MAIN PANEL
ERROR DETECT LAMP TEST
IMU FAILURE DETECTOR
CDU FAILURE DETECTOR
ACCEL. FAILURE DETECTOR
AGC POWER SUPPLY FAIL DETECT
SCHEMATIC 1010033
FAILURE INDICATOR MODULE 45A2J6
45A2 TRAY 2
IMU FAILURE
CDU FAILURE
ACCEL. FAILURE
102.4KC PULSE
FROM AGC
AGC POWER SUPPLY FAILURE - FROM AGC
AGC POWER SUPPLY FAILURE TO MAP + DATA VIEWER
AGC POWER SUPPLY FAILURE TO SIGNAL CONDITIONER
PSA JUNCTION BOX 45
PSA 45
TB-1



NOTES:

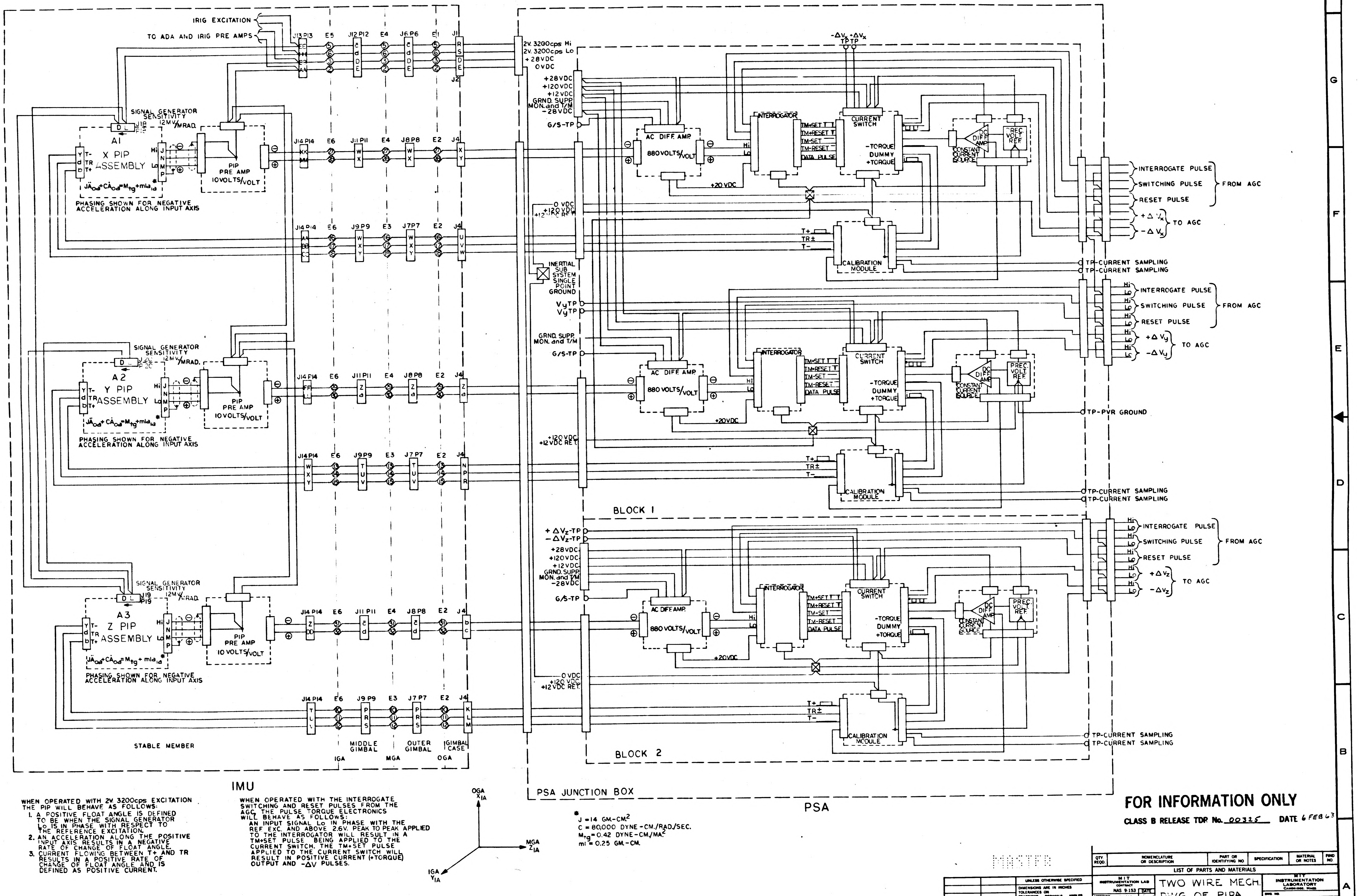
1. WHEN OPERATED WITH 2V. 3200 CPS. (HI ON PIN D OF THE PIP CONNECTOR) THE PIP WILL BEHAVE AS FOLLOWS:
    - a. AN ACCELERATION ALONG THE NEGATIVE INPUT AXIS RESULTS IN AN IN PHASE SIGNAL AT THE SIGNAL GENERATOR HI (PIN M OF THE PIP CONNECTOR) WITH RESPECT TO THE REFERENCE EXCITATION.
    - b. CURRENT FLOWING BETWEEN T+ & TR RESULTS IN AN OUT OF PHASE SIGNAL AT THE SIGNAL GENERATOR HI.
    - c. PHASING SHOWN FOR NEGATIVE ACCELERATION ALONG PIP INPUT AXIS.
2. WHEN OPERATED WITH THE INTERROGATE AND SWITCHING PULSES FROM THE AGC OR BACK-UP MODE ELECTRONICS, THE PULSE TORQUE ELECTRONICS WILL BEHAVE AS FOLLOWS:
    - a. AN INPUT SIGNAL IN PHASE WITH THE REF. EXC. AND 0V ± 1V PEAK TO PEAK APPLIED TO THE INTERROGATOR, WILL RESULT IN A TM+SET PULSE BEING APPLIED TO THE CURRENT SWITCH. THE TM+SET PULSE APPLIED TO THE CURRENT SWITCH WILL RESULT IN POSITIVE CURRENT (+TORQUE) OUTPUT AND "N" PULSES. "N" PULSES TO THE FORWARD-BACKWARD COUNTER GIVES -ΔV PULSES TO THE AGC.
3. INTERPRET DWG. IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4. REFER TO ASSOCIATED DRAWINGS IN ACCORDANCE WITH MIT APOLLO DWG. STANDARDS E1167 SEC. 8 AND PARAGRAPH 12.9.

MASTER

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN C.J. KORSAN DATE 5-20-63 CHECKED ALLEN ALDERSON APPROVAL APPROVAL J. H. [illegible]	TWO PIPE MECHANIZATION OF APOLLO PIPA LOOPS
MATERIAL	NASA APPROVAL [illegible] 5 Jun 63	CODE IDENT NO. · SIZE E · 1015561
CONTRACT	MIT APPROVAL W. Kupfer 5 Jun 63	SCALE · SHEET

INCHES

PHOTOGRAPHIC SCALE ONLY


IRIG EXCITATION
TO ADA AND IRIG PRE AMPS
J13 P13
E5
J12 P12
E4
J6 P6
E1
J1
J2
2V. 3200cps Hi
2V. 3200cps Lo
+28VDC
0VDC
SIGNAL GENERATOR SENSITIVITY 12MV/MRAD.
A1
X PIP ASSEMBLY
PIP PRE AMP 10VOLTS/VOLT
J14 P14
E6
J11 P11
J8 P8
E2
J4
PHASING SHOWN FOR NEGATIVE ACCELERATION ALONG INPUT AXIS
J9 P9
E3
J7 P7
A2
Y PIP ASSEMBLY
A3
Z PIP ASSEMBLY
STABLE MEMBER
MIDDLE GIMBAL
OUTER GIMBAL
GIMBAL CASE
IGA
MGA
OGA
IMU
+28VDC
+120VDC
+12VDC
GRND. SUPP. MON. and T/M
-28VDC
G/S-TP
AC DIFF AMP
880 VOLTS/VOLT
INTERROGATOR
TM+SET
TM+RESET
TM-SET
TM-RESET
DATA PULSE
CURRENT SWITCH
-TORQUE
DUMMY
+TORQUE
CONSTANT CURRENT SOURCE
DC DIFF AMP
PREC VOLT REF
+20VDC
0 VDC
+120 VDC
+12 VDC RET
CALIBRATION MODULE
T+
TR±
T−
−ΔVx +ΔVx TP TP
INTERROGATE PULSE
SWITCHING PULSE
RESET PULSE
FROM AGC
+ΔVx
−ΔVx
TO AGC
TP-CURRENT SAMPLING
INERTIAL SUB SYSTEM SINGLE POINT GROUND
VyTP
VyTP
+ΔVy
−ΔVy
TP-PVR GROUND
BLOCK 1
+ΔVz-TP
−ΔVz-TP
+ΔVz
−ΔVz
BLOCK 2
PSA JUNCTION BOX
PSA
OGA X_{IA}
MGA Z_{IA}
IGA Y_{IA}

$J\ddot{A}_{od} + C\dot{A}_{od} = M_{tg} + m l a_{ia}$ *

WHEN OPERATED WITH 2V. 3200cps EXCITATION THE PIP WILL BEHAVE AS FOLLOWS:

1. A POSITIVE FLOAT ANGLE IS DEFINED TO BE WHEN THE SIGNAL GENERATOR Lo IS IN PHASE WITH RESPECT TO THE REFERENCE EXCITATION.
2. AN ACCELERATION ALONG THE POSITIVE INPUT AXIS RESULTS IN A NEGATIVE RATE OF CHANGE OF FLOAT ANGLE.
3. CURRENT FLOWING BETWEEN T+ AND TR RESULTS IN A POSITIVE RATE OF CHANGE OF FLOAT ANGLE AND IS DEFINED AS POSITIVE CURRENT.

WHEN OPERATED WITH THE INTERROGATE SWITCHING AND RESET PULSES FROM THE AGC, THE PULSE TORQUE ELECTRONICS WILL BEHAVE AS FOLLOWS:
AN INPUT SIGNAL Lo IN PHASE WITH THE REF. EXC. AND ABOVE 2.6V. PEAK TO PEAK APPLIED TO THE INTERROGATOR WILL RESULT IN A TM+SET PULSE BEING APPLIED TO THE CURRENT SWITCH. THE TM+SET PULSE APPLIED TO THE CURRENT SWITCH WILL RESULT IN POSITIVE CURRENT (+TORQUE) OUTPUT AND -ΔV PULSES.

*
$J = 14$ GM-CM^2
$C = 80{,}000$ DYNE-CM./RAD./SEC.
$M_{tg} = 0.42$ DYNE-CM./MA^2
$ml = 0.25$ GM.-CM.

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00325 DATE 6 FEB 63

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL:

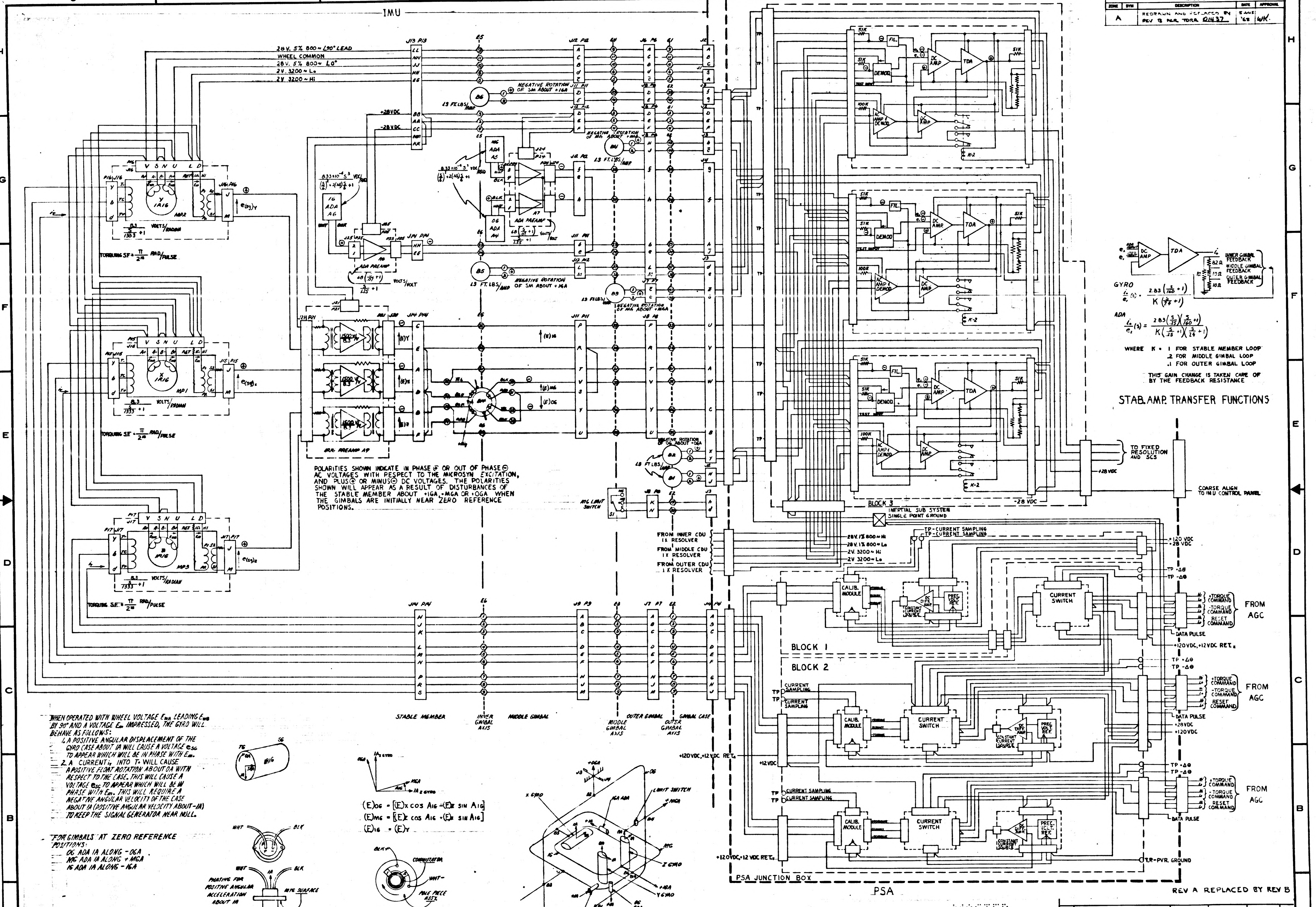
MIT INSTRUMENTATION LAB CONTRACT NAS 9-153
APPROVED
CHECKED
DRAWN 2-5-63
APPROVED FOR MSC 2/6/63
BY DIRECTION MIT APPROVAL 6 FEB 63

TWO WIRE MECH.
DWG. OF PIPA
LOOPS.

SCALE
UNIT WT.
CODE IDENT.

MIT INSTRUMENTATION LABORATORY CAMBRIDGE, MASS.
DWG. NO.
MANNED SPACECRAFT CENTER HOUSTON TEXAS
NASA DRAWING NO. 1015 561
SHEET 1 OF 1

ZONE	SYM	DESCRIPTION	DATE	APPROVAL
A		REDRAWN AND REPLACED BY REV B PER TORR 01437	5 JUNE '63	WK.



IMU
28 V. 5% 800 ~ ∠90° LEAD
WHEEL COMMON
28 V. 5% 800 ~ ∠0°
2 V. 3200 ~ Lo
2 V 3200 ~ HI
+28 VDC
-28 VDC
NEGATIVE ROTATION OF SM ABOUT +IGA
NEGATIVE ROTATION OF MG ABOUT +MGA
NEGATIVE ROTATION OF SM ABOUT +IGA
NEGATIVE ROTATION OF MG ABOUT +OGA
ADA PREAMP
IRIG PREAMP A9
TORQUING SF = π/2^16 RAD/PULSE
MP1
MP2
MP3
STABLE MEMBER
INNER GIMBAL AXIS
MIDDLE GIMBAL
MIDDLE GIMBAL AXIS
OUTER GIMBAL
OUTER GIMBAL AXIS
GIMBAL CASE
MG LIMIT SWITCH
FROM INNER CDU 1X RESOLVER
FROM MIDDLE CDU 1X RESOLVER
FROM OUTER CDU 1X RESOLVER
28V 1% 800 ~ Hi
28V 1% 800 ~ Lo
2V 3200 ~ Hi
2V 3200 ~ Lo
TP - CURRENT SAMPLING
DEMOD
FIL.
DC AMP
TDA
TEST INPUT
AC AMP & DEMOD
K-2
BLOCK 1
BLOCK 2
BLOCK 3
INERTIAL SUB SYSTEM SINGLE POINT GROUND
CALIB. MODULE
CURRENT SWITCH
PREC. VOLT. REF.
CONSTANT CURRENT SOURCE
BINARY AMP
+TORQUE COMMAND
-TORQUE COMMAND
RESET COMMAND
DATA PULSE
FROM AGC
TP +Δθ
TP -Δθ
+120 VDC
+28 VDC
+120VDC, +12VDC RET.
+12 VDC
T.R-PVR. GROUND
TO FIXED RESOLUTION AND SCS
COARSE ALIGN TO IMU CONTROL PANEL
PSA JUNCTION BOX
PSA
IA
OA
SRA
TG
SG
IRIG
WHT
BLK
PHASING FOR POSITIVE ANGULAR ACCELERATION ABOUT IA
MTG SURFACE
ANGULAR DIFFERENTIATING ACCELEROMETER (ADA)
OGA
MGA
AIG
IA Z GYRO
IA X GYRO
COMMUTATOR
POLE PIECE
TORQUE MOTOR PHASING
A PLUS DC VOLTAGE AT TERMINAL NO. 1 WILL RESULT IN A CCW ROTATION OF THE COMMUTATOR WHEN VIEWED FROM THE BRUSH ASSEMBLY END.
X GYRO
Y GYRO
Z GYRO
LIMIT SWITCH
INERTIAL COMPONENT MECHANICAL SCHEMATIC

POLARITIES SHOWN INDICATE IN PHASE ⊕ OR OUT OF PHASE ⊖ AC VOLTAGES WITH RESPECT TO THE MICROSYN EXCITATION, AND PLUS ⊕ OR MINUS ⊖ DC VOLTAGES. THE POLARITIES SHOWN WILL APPEAR AS A RESULT OF DISTURBANCES OF THE STABLE MEMBER ABOUT +IGA, +MGA OR +OGA WHEN THE GIMBALS ARE INITIALLY NEAR ZERO REFERENCE POSITIONS.

GYRO

$$\frac{i_o}{e_1}(s) = \frac{2.83\left(\frac{s}{160}+1\right)}{K\left(\frac{s}{24}+1\right)}$$

ADA

$$\frac{i_o}{e_2}(s) = \frac{2.83\left(\frac{s}{.25}\right)\left(\frac{s}{160}+1\right)}{K\left(\frac{s}{.25}+1\right)\left(\frac{s}{24}+1\right)}$$

WHERE K = 1 FOR STABLE MEMBER LOOP
.2 FOR MIDDLE GIMBAL LOOP
.1 FOR OUTER GIMBAL LOOP

THIS GAIN CHANGE IS TAKEN CARE OF BY THE FEEDBACK RESISTANCE

STAB. AMP. TRANSFER FUNCTIONS

WHEN OPERATED WITH WHEEL VOLTAGE E_{WA} LEADING E_{WB} BY 90° AND A VOLTAGE E_m IMPRESSED, THE GYRO WILL BEHAVE AS FOLLOWS:

1. A POSITIVE ANGULAR DISPLACEMENT OF THE GYRO CASE ABOUT IA WILL CAUSE A VOLTAGE e_{SG} TO APPEAR WHICH WILL BE IN PHASE WITH E_m.
2. A CURRENT i_T INTO T+ WILL CAUSE A POSITIVE FLOAT ROTATION ABOUT OA WITH RESPECT TO THE CASE. THIS WILL CAUSE A VOLTAGE e_{SG} TO APPEAR WHICH WILL BE IN PHASE WITH E_m. THIS WILL REQUIRE A NEGATIVE ANGULAR VELOCITY OF THE CASE ABOUT IA (POSITIVE ANGULAR VELOCITY ABOUT -IA) TO KEEP THE SIGNAL GENERATOR NEAR NULL.

FOR GIMBALS AT ZERO REFERENCE POSITIONS:
OG ADA IA ALONG -OGA
MG ADA IA ALONG +MGA
IG ADA IA ALONG -IGA

$$(E)_{OG} = \left[(E)_X \cos A_{IG} - (E)_Z \sin A_{IG}\right]$$
$$(E)_{MG} = \left[(E)_Z \cos A_{IG} + (E)_X \sin A_{IG}\right]$$
$$(E)_{IG} = (E)_Y$$

REV A REPLACED BY REV B

MASTER

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00325 DATE 6 FEB 63

QTY REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO	SPECIFICATION	MATERIAL OR NOTES	FIND NO.

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL:

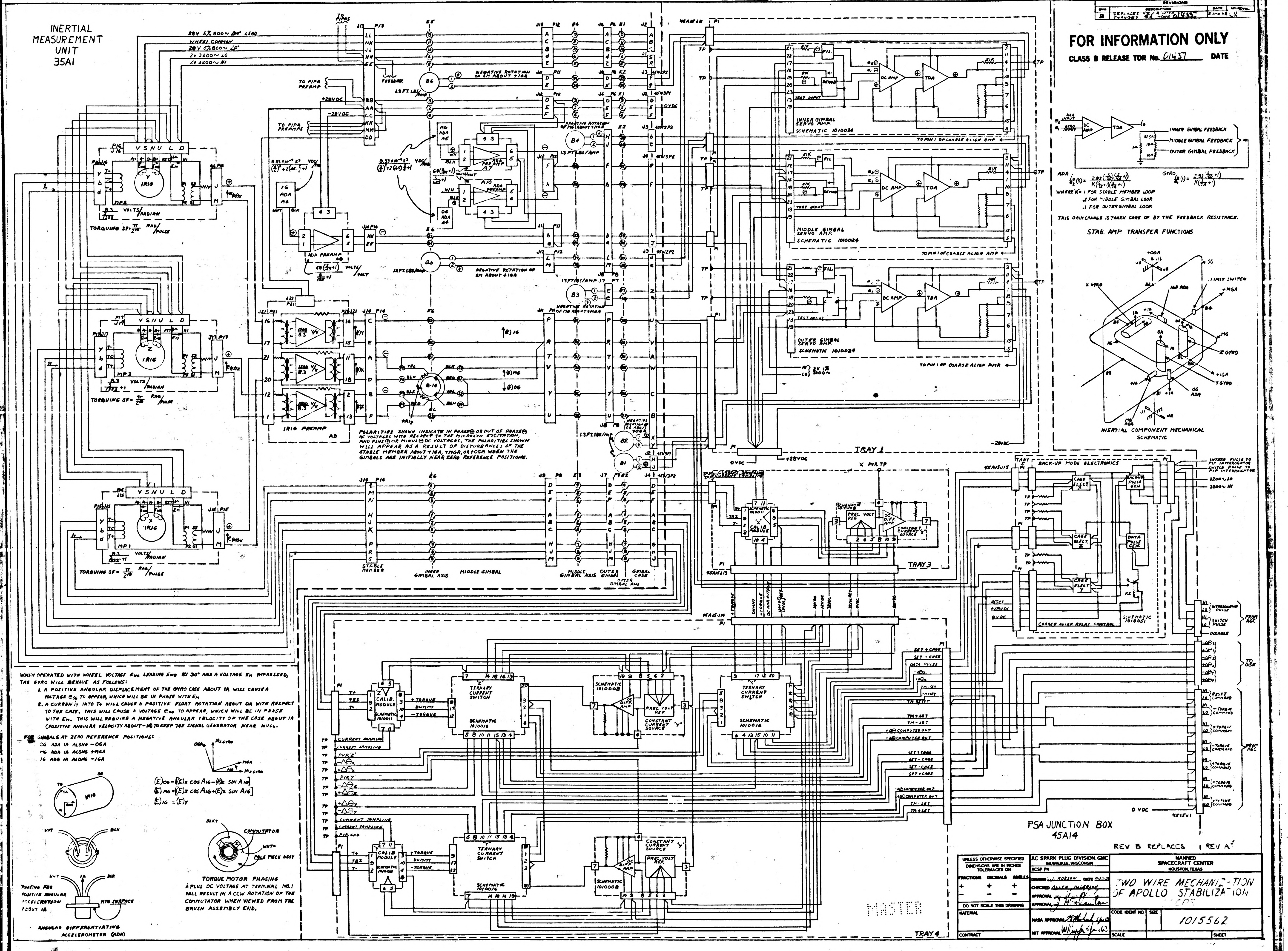
MIT INSTRUMENTATION LAB CONTRACT
NAS 9-153 DATE
APPROVED [illegible] 5 [illegible]
CHECKED [illegible] [illegible]
DRAWN [illegible] [illegible]
APPROVED FOR MSC
[illegible] 4/6/63
BY DIRECTION MIT APPROVAL
WK 6 FEB 63

TWO WIRE MECHANIZATION
DRAWING OF IMU
STABILIZATION LOOPS.

SCALE
UNIT WT.
CODE IDENT.

MIT
INSTRUMENTATION LABORATORY
CAMBRIDGE, MASS.
DWG. NO.
MANNED SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO.
1015 562
SHEET OF

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY


INERTIAL MEASUREMENT UNIT 35A1
28V 57.800~ 90° LEAD
WHEEL COMMON
28V 57.800~ 0°
2V 3200~ LO
2V 3200~ HI
TO PIPAS
TO PIPA PREAMP
TO PIPA PREAMPS
+28VDC
-28VDC
FEEDBACK
NEGATIVE ROTATION OF SM ABOUT +IGA
NEGATIVE ROTATION OF MG ABOUT +MGA
NEGATIVE ROTATION OF EM ABOUT +IGA
IRIG
MP3
MP2
MP1
TORQUING SF
VOLTS/RADIAN
RAD/PULSE
ADA PREAMP A7
ADA PREAMP A8
ADA PREAMP A10
IG ADA A6
MG ADA A5
OG ADA A4
IRIG PREAMP A9
B-14
B1
B2
B3
B4
B5
B6
STABLE MEMBER
INNER GIMBAL AXIS
MIDDLE GIMBAL
MIDDLE GIMBAL AXIS
OUTER GIMBAL
OUTER GIMBAL AXIS
GIMBAL CASE
INNER GIMBAL SERVO AMP. SCHEMATIC 1010024
MIDDLE GIMBAL SERVO AMP. SCHEMATIC 1010024
OUTER GIMBAL SERVO AMP. SCHEMATIC 1010024
DC AMP
TDA
FIL
DEMOD
TEST INPUT
TO PIN 1 OF COARSE ALIGN AMP
TRAY 1
TRAY 3
TRAY 4
BACK-UP MODE ELECTRONICS
CASE ELECT. X
CASE ELECT. Y
CASE ELECT. Z
INTERR PULSE GEN.
DATA PULSE GEN.
COARSE ALIGN RELAY CONTROL SCHEMATIC 1010051
CALIB. MODULE SCHEMATIC 1010011
TERNARY CURRENT SWITCH SCHEMATIC 1010016
DIFF AMP
PREC. VOLT REF.
CONSTANT CURRENT SOURCE
SCHEMATIC 1010008
FROM AGC
TO GSE
PSA JUNCTION BOX 45A14
INERTIAL COMPONENT MECHANICAL SCHEMATIC
LIMIT SWITCH
X GYRO
Y GYRO
Z GYRO
MASTER

POLARITIES SHOWN INDICATE IN PHASE ⊕ OR OUT OF PHASE ⊖ AC VOLTAGES WITH RESPECT TO THE MICROSYN EXCITATION, AND PLUS ⊕ OR MINUS ⊖ DC VOLTAGES. THE POLARITIES SHOWN WILL APPEAR AS A RESULT OF DISTURBANCES OF THE STABLE MEMBER ABOUT +IGA, +MGA, OR +OGA WHEN THE GIMBALS ARE INITIALLY NEAR ZERO REFERENCE POSITIONS.

WHEN OPERATED WITH WHEEL VOLTAGE E_{WA} LEADING E_{WB} BY 90° AND A VOLTAGE E_M IMPRESSED, THE GYRO WILL BEHAVE AS FOLLOWS:

1. A POSITIVE ANGULAR DISPLACEMENT OF THE GYRO CASE ABOUT IA WILL CAUSE A VOLTAGE e_{SG} TO APPEAR, WHICH WILL BE IN PHASE WITH E_M
2. A CURRENT i_T INTO T+ WILL CAUSE A POSITIVE FLOAT ROTATION ABOUT OA WITH RESPECT TO THE CASE. THIS WILL CAUSE A VOLTAGE e_{SG} TO APPEAR, WHICH WILL BE IN PHASE WITH E_M. THIS WILL REQUIRE A NEGATIVE ANGULAR VELOCITY OF THE CASE ABOUT IA (POSITIVE ANGULAR VELOCITY ABOUT -IA) TO KEEP THE SIGNAL GENERATOR NEAR NULL.

FOR GIMBALS AT ZERO REFERENCE POSITIONS:
OG ADA IA ALONG -OGA
MG ADA IA ALONG +MGA
IG ADA IA ALONG -IGA

$$(E)_{OG} = [(E)_X \cos A_{IG} - (E)_Z \sin A_{IG}]$$
$$(E)_{MG} = [(E)_Z \cos A_{IG} + (E)_X \sin A_{IG}]$$
$$(E)_{IG} = (E)_Y$$

PHASING FOR POSITIVE ANGULAR ACCELERATION ABOUT IA

ANGULAR DIFFERENTIATING ACCELEROMETER (ADA)

TORQUE MOTOR PHASING

A PLUS DC VOLTAGE AT TERMINAL NO. 1 WILL RESULT IN A CCW ROTATION OF THE COMMUTATOR WHEN VIEWED FROM THE BRUSH ASSEMBLY END.

ADA $$\frac{i_0}{e_2}(s) = \frac{2.83\left(\frac{s}{.23}\right)\left(\frac{s}{160}+1\right)}{K\left(\frac{s}{.23}+1\right)\left(\frac{s}{7.4}+1\right)}$$

GYRO $$\frac{i_0}{e_1}(s) = \frac{2.83\left(\frac{s}{160}+1\right)}{K\left(\frac{s}{7.4}+1\right)}$$

WHERE "K" = 1 FOR STABLE MEMBER LOOP
.2 FOR MIDDLE GIMBAL LOOP
.1 FOR OUTER GIMBAL LOOP

THIS GAIN CHANGE IS TAKEN CARE OF BY THE FEEDBACK RESISTANCE.

STAB. AMP. TRANSFER FUNCTIONS

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGES PER TDRS 01435	5 June 63	

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01437 DATE

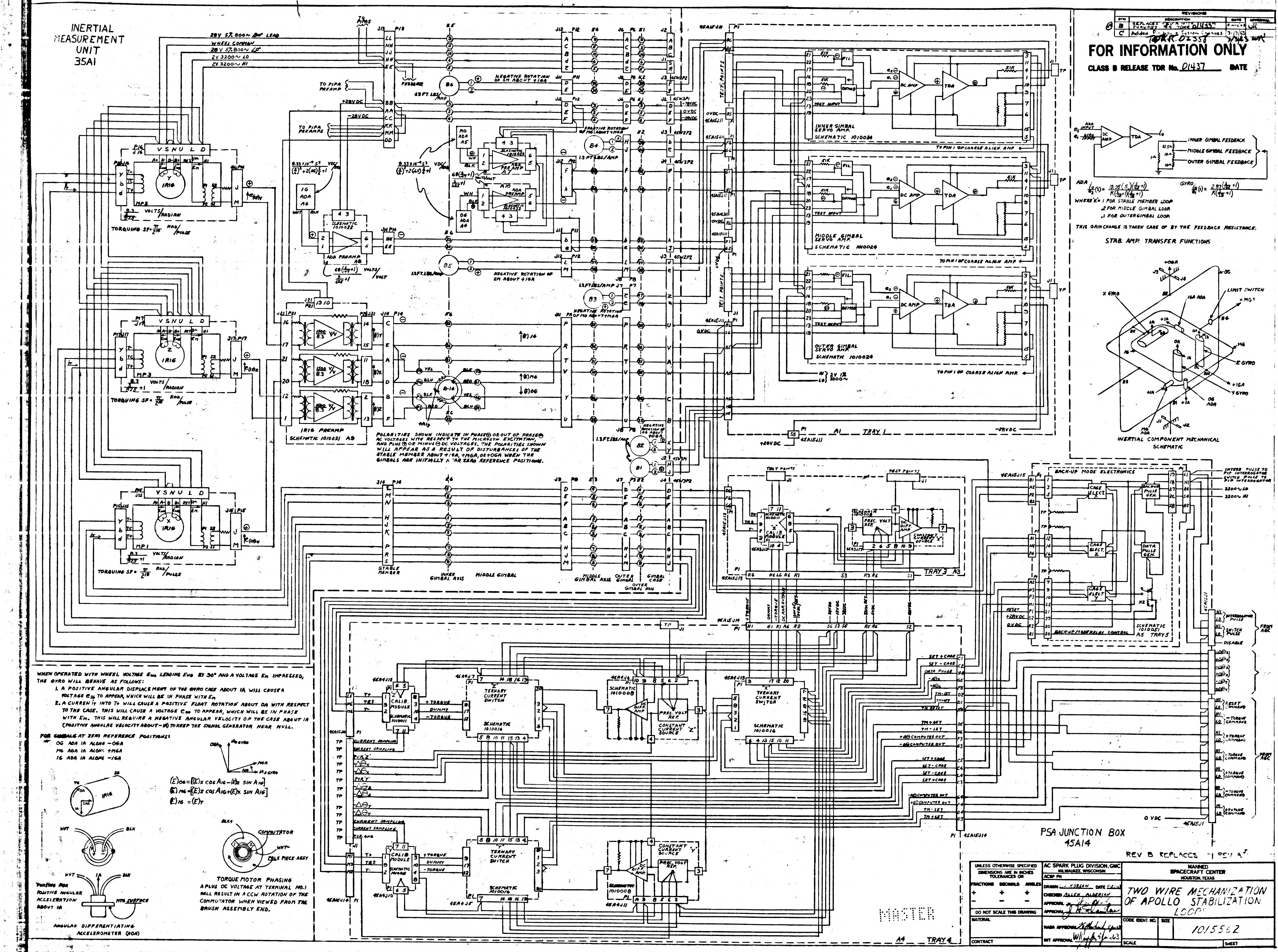
REV B REPLACES REV A

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	ACSP PN DRAWN J. KORSAN DATE 5-20-63 CHECKED ALLEN ALLERSON APPROVAL APPROVAL J. H.	TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS
MATERIAL	NASA APPROVAL	CODE IDENT NO. / SIZE / 1015562
CONTRACT	MIT APPROVAL	SCALE / SHEET

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH 11435 CHANGES PER TDRR 01435	5 June 63	WK
C	Added Pinout + System Changes TDRR 02358	31/7/63 7/31/63	WR

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01437 **DATE**



INERTIAL MEASUREMENT UNIT 35A1
28V 5% 800~ Ø LEAD
WHEEL COMMON
28V 5% 800~ LO
2V 3200~ LO
2V 3200~ HI
TO PIPA PREAMP
FEEDBACK
NEGATIVE ROTATION OF SM ABOUT +IGA
NEGATIVE ROTATION OF MG ABOUT +MGA
IRIG
MP3
MP1
VOLTS/RADIAN
TORQUING SF = π/2^18 RAD/PULSE
IG ADA A6
MG ADA A5
OG ADA A4
ADA PREAMP A8
ADA PREAMP A7
ADA PREAMP A10
SCHEMATIC 1010022
IRIG PREAMP SCHEMATIC 1010021 A9
B-14
STABLE MEMBER
INNER GIMBAL AXIS
MIDDLE GIMBAL
MIDDLE GIMBAL AXIS
OUTER GIMBAL
GIMBAL CASE
TEST POINTS
DC AMP
TDA
TEST INPUT
INNER GIMBAL SERVO AMP. SCHEMATIC 1010024
MIDDLE GIMBAL SERVO AMP. SCHEMATIC 1010024
OUTER GIMBAL SERVO AMP. SCHEMATIC 1010024
TO PIN 1 OF COARSE ALIGN AMP
A1 TRAY 1
+28VDC
-28VDC
ADA INPUT
GYRO INPUT
INNER GIMBAL FEEDBACK
MIDDLE GIMBAL FEEDBACK
OUTER GIMBAL FEEDBACK
X GYRO
Y GYRO
Z GYRO
IGA ADA
LIMIT SWITCH
INERTIAL COMPONENT MECHANICAL SCHEMATIC
BACK-UP MODE ELECTRONICS
CAGE ELECT X
CAGE ELECT Y
CAGE ELECT Z
BACKUP PULSE GEN.
DATA PULSE GEN.
BACK-UP MODE RELAY CONTROL
SCHEMATIC 1010021 A5 TRAY 5
INTERR PULSE TO PIP INTERROGATOR
SWITCH PULSE TO PIP INTERROGATOR
3200~ LO
3200~ HI
FROM AGC
INTERROGATOR PULSE
SWITCH PULSE
DISABLE
RESET COMMAND
TORQUE COMMAND
CALIB MODULE
TERNARY CURRENT SWITCH SCHEMATIC 1010016
DIFF AMP
PREC. VOLT REF.
CONSTANT CURRENT SOURCE
SCHEMATIC 1010008
TRAY 3 A3
A4 TRAY 4
PSA JUNCTION BOX 45A14
0 VDC
45A15J1
45A15J14
REV B REPLACES REV A
MASTER
WHT
BLK
IA
MTG SURFACE
PHASING FOR POSITIVE ANGULAR ACCELERATION ABOUT IA
ANGULAR DIFFERENTIATING ACCELEROMETER (ADA)
BLK+
WHT-
COMMUTATOR
POLE PIECE ASSY
OGA
IA z GYRO
MGA
AIG
IA y GYRO
TG
SG
OA

POLARITIES SHOWN INDICATE IN PHASE ⊕ OR OUT OF PHASE ⊖ AC VOLTAGES WITH RESPECT TO THE MICROSYN EXCITATION, AND PLUS ⊕ OR MINUS ⊖ DC VOLTAGES. THE POLARITIES SHOWN WILL APPEAR AS A RESULT OF DISTURBANCES OF THE STABLE MEMBER ABOUT +IGA, +MGA, OR +OGA WHEN THE GIMBALS ARE INITIALLY NEAR ZERO REFERENCE POSITIONS.

ADA $\frac{i_0}{e_2}(s) = \frac{10.05(S)(\frac{S}{.63}+1)}{K(\frac{S}{.23}+1)(\frac{S}{.23}+1)}$

GYRO $\frac{i_0}{e_1}(s) = \frac{2.87(\frac{S}{.63}+1)}{K(\frac{S}{.23}+1)}$

WHERE "K" = 1 FOR STABLE MEMBER LOOP
.2 FOR MIDDLE GIMBAL LOOP
.1 FOR OUTER GIMBAL LOOP

THIS GAIN CHANGE IS TAKEN CARE OF BY THE FEEDBACK RESISTANCE.

STAB. AMP. TRANSFER FUNCTIONS

WHEN OPERATED WITH WHEEL VOLTAGE E_{WA} LEADING E_{WB} BY 30° AND A VOLTAGE E_M IMPRESSED, THE GYRO WILL BEHAVE AS FOLLOWS:

1. A POSITIVE ANGULAR DISPLACEMENT OF THE GYRO CASE ABOUT IA WILL CAUSE A VOLTAGE e_{SG} TO APPEAR, WHICH WILL BE IN PHASE WITH E_M
2. A CURRENT i_T INTO T+ WILL CAUSE A POSITIVE FLOAT ROTATION ABOUT OA WITH RESPECT TO THE CASE. THIS WILL CAUSE A VOLTAGE e_{SG} TO APPEAR, WHICH WILL BE IN PHASE WITH E_M. THIS WILL REQUIRE A NEGATIVE ANGULAR VELOCITY OF THE CASE ABOUT IA (POSITIVE ANGULAR VELOCITY ABOUT -IA) TO KEEP THE SIGNAL GENERATOR NEAR NULL.

FOR GIMBALS AT ZERO REFERENCE POSITIONS:
OG ADA IA ALONG -OGA
MG ADA IA ALONG +MGA
IG ADA IA ALONG -IGA

$$(E)_{OG} = [(E)_X \cos A_{IG} - (E)_Z \sin A_{IG}]$$
$$(E)_{MG} = [(E)_Z \cos A_{IG} + (E)_X \sin A_{IG}]$$
$$(E)_{IG} = (E)_Y$$

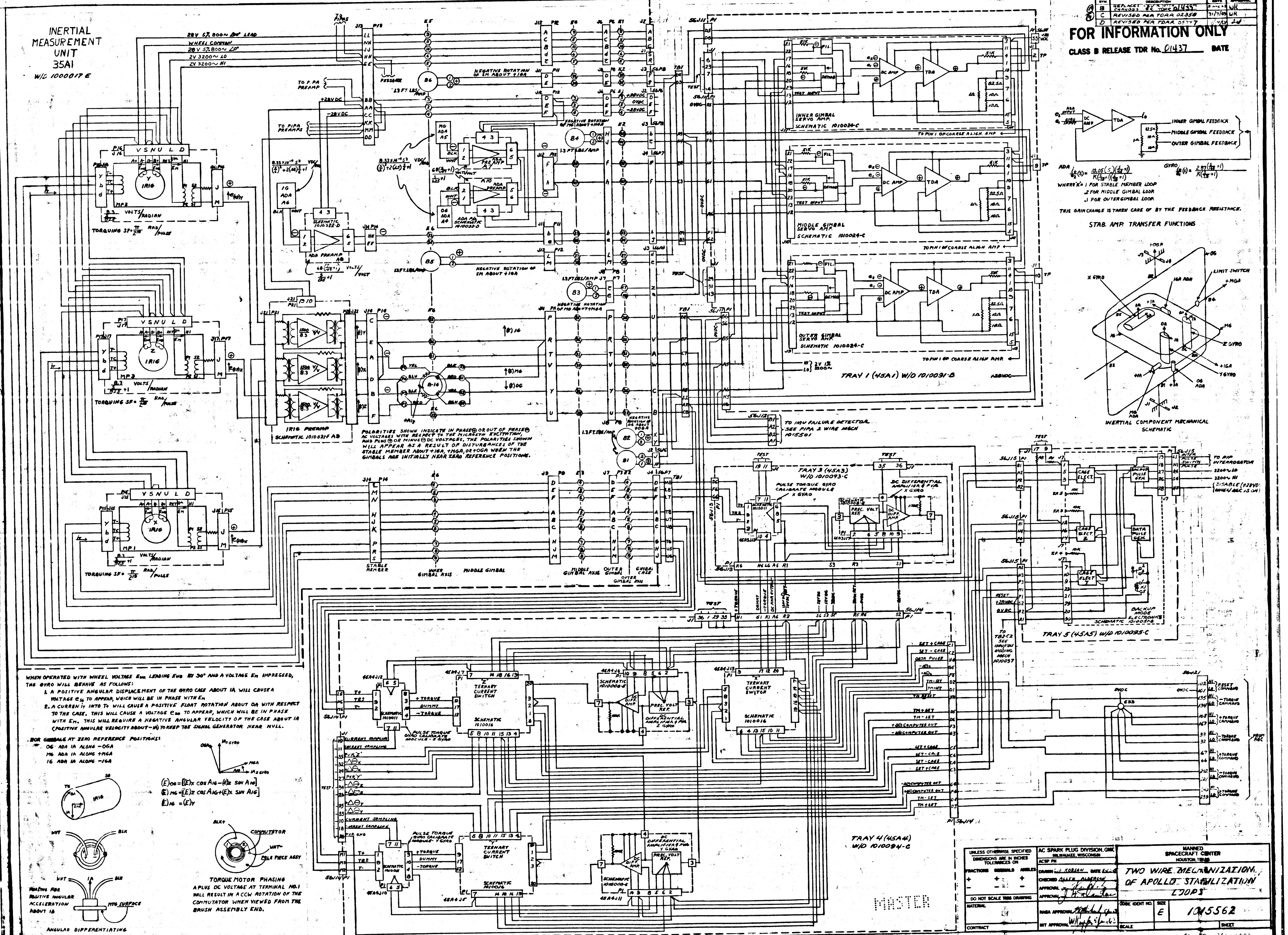
TORQUE MOTOR PHASING
A PLUS DC VOLTAGE AT TERMINAL NO. 1 WILL RESULT IN A CCW ROTATION OF THE COMMUTATOR WHEN VIEWED FROM THE BRUSH ASSEMBLY END.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
DO NOT SCALE THIS DRAWING	DRAWN C.J. KORSAN DATE 5-2-63 CHECKED ALLEN ALDERSON APPROVAL APPROVAL J. H.	TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS
MATERIAL	NASA APPROVAL 5/63	CODE IDENT NO. · SIZE · 1015562
CONTRACT	MIT APPROVAL 5/63	SCALE · SHEET

SYM	DESCRIPTION	DATE	APPROVAL
B	REPLACES REV A WITH CHANGES PER TDRR 01435	5 June 63	WK
C	REVISED PER TDRR 02358	31/7/63	WK
D	REVISED PER TDRR 05747	1/4/64	

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01437 DATE


INERTIAL MEASUREMENT UNIT 35A1
W/O 1000017 E
28V 57.800~ 80° LEAD
WHEEL COMMON
28V 57.800~ 0°
2V 3200~ LO
2V 3200~ HI
TORQUING SF = $\frac{\pi}{2^{15}}$ RAD/PULSE
VOLTS/RADIAN
IRIG
IRIG PREAMP
SCHEMATIC 1010027-AB
ADA PREAMP
NEGATIVE ROTATION OF SM ABOUT +IGA
NEGATIVE ROTATION OF MG ABOUT +MGA
NEGATIVE ROTATION OF OG ABOUT +OGA
STABLE MEMBER
INNER GIMBAL AXIS
MIDDLE GIMBAL
MIDDLE GIMBAL AXIS
OUTER GIMBAL
GIMBAL CASE
OUTER GIMBAL AXIS
B-14
INNER GIMBAL SERVO AMP. SCHEMATIC 1010024-C
MIDDLE GIMBAL SERVO AMP. SCHEMATIC 1010024-C
OUTER GIMBAL SERVO AMP. SCHEMATIC 1010024-C
DC AMP
TDA
TO PIN 1 OF COARSE ALIGN AMP
TRAY 1 (45A1) W/O 1010091-B
TO IMU FAILURE DETECTOR SEE PIPA 2 WIRE MECH 1015501
TRAY 3 (45A3) W/O 1010093-C
PULSE TORQUE GYRO CALIBRATE MODULE X GYRO
DC DIFFERENTIAL AMPLIFIER FOR X GYRO
TRAY 5 (45A5) W/O 1010095-C
CASE ELECT
BACKUP PULSE GEN.
DATA PULSE GEN.
BACKUP MODE ELECTRONICS
TO DIP INTERROGATOR
TRAY 4 (45A4) W/O 1010094-C
TERNARY CURRENT SWITCH SCHEMATIC 1010016
PULSE TORQUE GYRO CALIBRATE MODULE Z GYRO
PULSE TORQUE GYRO CALIBRATE MODULE Y GYRO
DIFFERENTIAL AMPLIFIER FOR Z GYRO
DC DIFFERENTIAL AMPLIFIER FOR Y GYRO
PREC. VOLT REF.
+TORQUE COMMAND
-TORQUE COMMAND
RESET COMMAND
ADA INPUT
GYRO INPUT
INNER GIMBAL FEEDBACK
MIDDLE GIMBAL FEEDBACK
OUTER GIMBAL FEEDBACK
STAB. AMP. TRANSFER FUNCTIONS
X GYRO
Y GYRO
Z GYRO
IGA ADA
MG ADA
OG ADA
LIMIT SWITCH
+OGA
+MGA
+IGA
INERTIAL COMPONENT MECHANICAL SCHEMATIC
IRIG
BLK+
WHT-
COMMUTATOR
POLE PIECE ASSY
MTG SURFACE
MASTER

ADA $\frac{i_0}{e_2}(s)=\frac{10.05(S)\left(\frac{s}{1.6}+1\right)}{K\left(\frac{s}{.25}+1\right)\left(\frac{s}{25}+1\right)}$ GYRO $\frac{i_0}{e_1}(s)=\frac{2.87\left(\frac{s}{1.6}+1\right)}{K\left(\frac{s}{25}+1\right)}$

WHERE "K" = 1 FOR STABLE MEMBER LOOP
.2 FOR MIDDLE GIMBAL LOOP
.1 FOR OUTER GIMBAL LOOP.

THIS GAIN CHANGE IS TAKEN CARE OF BY THE FEEDBACK RESISTANCE.

STAB. AMP. TRANSFER FUNCTIONS

POLARITIES SHOWN INDICATE IN PHASE ⊕ OR OUT OF PHASE ⊖ AC VOLTAGES WITH RESPECT TO THE MICROSYN EXCITATION, AND PLUS ⊕ OR MINUS ⊖ DC VOLTAGES. THE POLARITIES SHOWN WILL APPEAR AS A RESULT OF DISTURBANCES OF THE STABLE MEMBER ABOUT +IGA, +MGA, OR +OGA WHEN THE GIMBALS ARE INITIALLY NEAR ZERO REFERENCE POSITIONS.

WHEN OPERATED WITH WHEEL VOLTAGE E_{WA} LEADING E_{WB} BY 30° AND A VOLTAGE E_M IMPRESSED, THE GYRO WILL BEHAVE AS FOLLOWS:

1. A POSITIVE ANGULAR DISPLACEMENT OF THE GYRO CASE ABOUT IA WILL CAUSE A VOLTAGE e_{SG} TO APPEAR, WHICH WILL BE IN PHASE WITH E_M
2. A CURRENT i_T INTO T+ WILL CAUSE A POSITIVE FLOAT ROTATION ABOUT OA WITH RESPECT TO THE CASE. THIS WILL CAUSE A VOLTAGE e_{SG} TO APPEAR, WHICH WILL BE IN PHASE WITH E_M. THIS WILL REQUIRE A NEGATIVE ANGULAR VELOCITY OF THE CASE ABOUT IA (POSITIVE ANGULAR VELOCITY ABOUT -IA) TO KEEP THE SIGNAL GENERATOR NEAR NULL.

FOR GIMBALS AT ZERO REFERENCE POSITIONS:

OG ADA IA ALONG -OGA
MG ADA IA ALONG +MGA
IG ADA IA ALONG -IGA

$$(E)_{OG}=\left[(E)_X \cos A_{IG}-(E)_Z \sin A_{IG}\right]$$
$$(E)_{MG}=\left[(E)_Z \cos A_{IG}+(E)_X \sin A_{IG}\right]$$
$$(E)_{IG}=(E)_Y$$

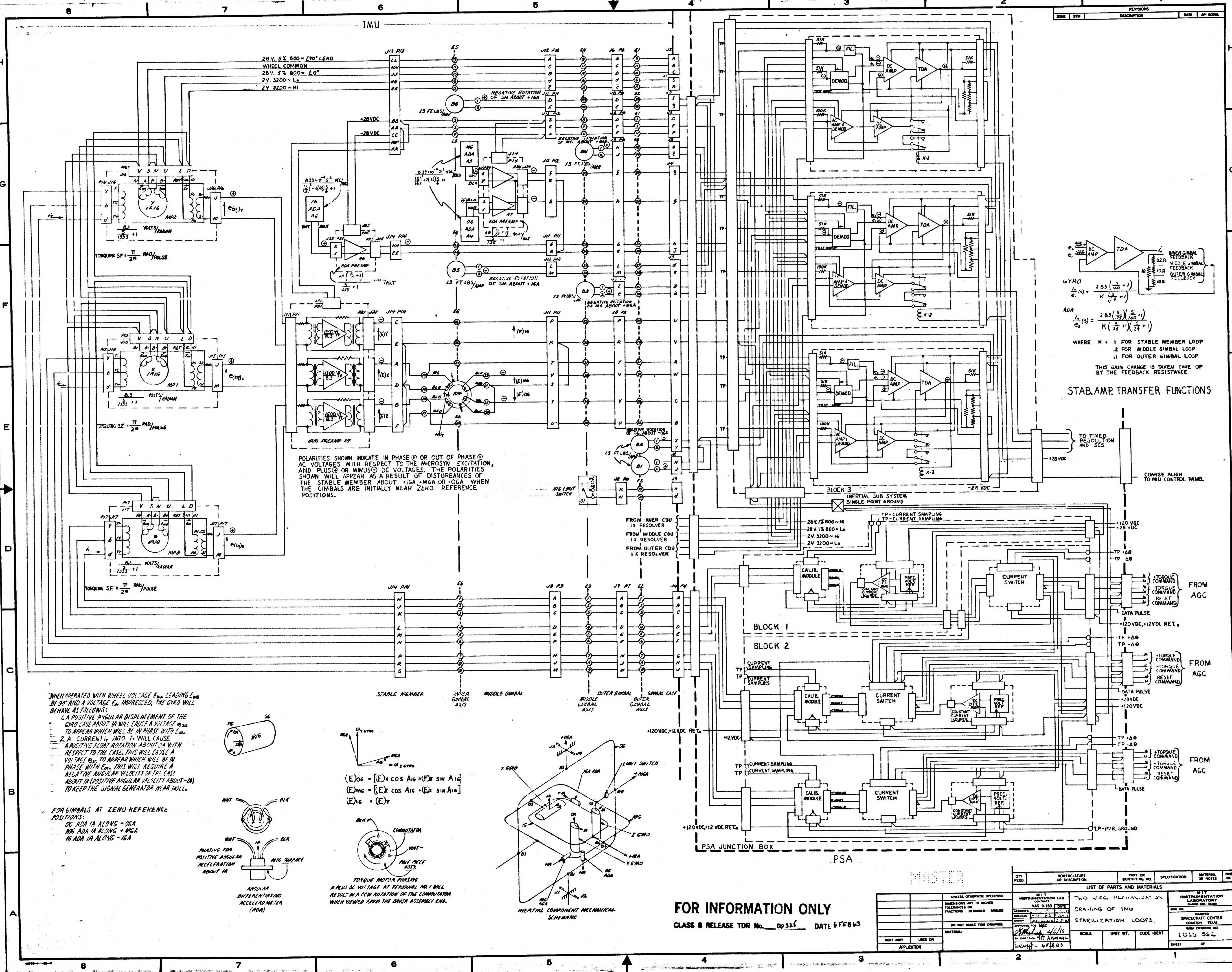
PHASING FOR POSITIVE ANGULAR ACCELERATION ABOUT IA

ANGULAR DIFFERENTIATING ACCELEROMETER (ADA)

TORQUE MOTOR PHASING

A PLUS DC VOLTAGE AT TERMINAL NO. 1 WILL RESULT IN A CCW ROTATION OF THE COMMUTATOR WHEN VIEWED FROM THE BRUSH ASSEMBLY END.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
	ACSP PN	
	DRAWN C.J. KORSAN DATE CHECKED ALLEN ALDERSON APPROVAL APPROVAL J. H.	TWO WIRE MECHANIZATION OF APOLLO STABILIZATION LOOPS
DO NOT SCALE THIS DRAWING		
MATERIAL	NASA APPROVAL	CODE IDENT NO. | SIZE E | 1015562
CONTRACT	MIT APPROVAL W 5 Jun 63	SCALE | SHEET


IMU
28 V. 5% 800~ ∠90° LEAD
WHEEL COMMON
28 V. 5% 800~ ∠0°
2V. 3200~ Lo
2V 3200~ HI
+28VDC
-28VDC
NEGATIVE ROTATION OF SM ABOUT +IGA
NEGATIVE ROTATION OF MG ABOUT +MGA
NEGATIVE ROTATION OF OG ABOUT +OGA
ADA PREAMP
IRIG PREAMP A9
MG LIMIT SWITCH
TORQUING SF = π/2¹⁸ RAD/PULSE
VOLTS/RADIAN
STABLE MEMBER
INNER GIMBAL AXIS
MIDDLE GIMBAL
MIDDLE GIMBAL AXIS
OUTER GIMBAL
OUTER GIMBAL AXIS
GIMBAL CASE
FROM INNER CDU 1X RESOLVER
FROM MIDDLE CDU 1X RESOLVER
FROM OUTER CDU 1X RESOLVER
INERTIAL SUB SYSTEM SINGLE POINT GROUND
DC AMP
TDA
DEMOD
FIL.
TEST INPUT
K-2
BLOCK 3
BLOCK 1
BLOCK 2
CALIB. MODULE
CURRENT SWITCH
CONSTANT CURRENT SOURCE
PREC. VOLT. REF.
TP-CURRENT SAMPLING
+TORQUE COMMAND
-TORQUE COMMAND
RESET COMMAND
DATA PULSE
FROM AGC
+120 VDC
+28 VDC
+12 VDC
+120VDC, +12VDC RET.
TP-PVR. GROUND
TO FIXED PESOLUTION AND SCS
COARSE ALIGN TO IMU CONTROL PANEL
PSA JUNCTION BOX
PSA
IRIG
PHASING FOR POSITIVE ANGULAR ACCELERATION ABOUT IA
MTG SURFACE
ANGULAR DIFFERENTIATING ACCELEROMETER (ADA)
COMMUTATOR
POLE PIECE ASSY.
TORQUE MOTOR PHASING
X GYRO
Y GYRO
Z GYRO
LIMIT SWITCH
INERTIAL COMPONENT MECHANICAL SCHEMATIC

POLARITIES SHOWN INDICATE IN PHASE ⊕ OR OUT OF PHASE ⊖ AC VOLTAGES WITH RESPECT TO THE MICROSYN EXCITATION, AND PLUS ⊕ OR MINUS ⊖ DC VOLTAGES. THE POLARITIES SHOWN WILL APPEAR AS A RESULT OF DISTURBANCES OF THE STABLE MEMBER ABOUT +IGA, +MGA OR +OGA WHEN THE GIMBALS ARE INITIALLY NEAR ZERO REFERENCE POSITIONS.

GYRO

$$\frac{i_o}{e_1}(s) = \frac{2.83\left(\frac{s}{160}+1\right)}{K\left(\frac{s}{24}+1\right)}$$

ADA

$$\frac{i_o}{e_2}(s) = \frac{2.83\left(\frac{s}{.25}\right)\left(\frac{s}{160}+1\right)}{K\left(\frac{s}{.25}+1\right)\left(\frac{s}{24}+1\right)}$$

WHERE K = 1 FOR STABLE MEMBER LOOP
.2 FOR MIDDLE GIMBAL LOOP
.1 FOR OUTER GIMBAL LOOP

THIS GAIN CHANGE IS TAKEN CARE OF BY THE FEEDBACK RESISTANCE

STAB. AMP. TRANSFER FUNCTIONS

WHEN OPERATED WITH WHEEL VOLTAGE E_{WA} LEADING E_{WB} BY 90° AND A VOLTAGE E_m IMPRESSED, THE GYRO WILL BEHAVE AS FOLLOWS:

1. A POSITIVE ANGULAR DISPLACEMENT OF THE GYRO CASE ABOUT IA WILL CAUSE A VOLTAGE e_{SG} TO APPEAR WHICH WILL BE IN PHASE WITH E_m.
2. A CURRENT i_T INTO T+ WILL CAUSE A POSITIVE FLOAT ROTATION ABOUT OA WITH RESPECT TO THE CASE. THIS WILL CAUSE A VOLTAGE e_{SG} TO APPEAR WHICH WILL BE IN PHASE WITH E_m. THIS WILL REQUIRE A NEGATIVE ANGULAR VELOCITY OF THE CASE ABOUT IA (POSITIVE ANGULAR VELOCITY ABOUT -IA) TO KEEP THE SIGNAL GENERATOR NEAR NULL.

FOR GIMBALS AT ZERO REFERENCE POSITIONS:
OG ADA IA ALONG -OGA
MG ADA IA ALONG +MGA
IG ADA IA ALONG -IGA

$$(E)_{OG} = [(E)_X \cos A_{IG} - (E)_Z \sin A_{IG}]$$
$$(E)_{MG} = [(E)_Z \cos A_{IG} + (E)_X \sin A_{IG}]$$
$$(E)_{IG} = (E)_Y$$

TORQUE MOTOR PHASING
A PLUS DC VOLTAGE AT TERMINAL NO. 1 WILL RESULT IN A CCW ROTATION OF THE COMMUTATOR WHEN VIEWED FROM THE BRUSH ASSEMBLY END.

INERTIAL COMPONENT MECHANICAL SCHEMATIC

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00325 **DATE** 6 FEB 63

MASTER

QTY. REQD.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTES	FIND NO

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL:

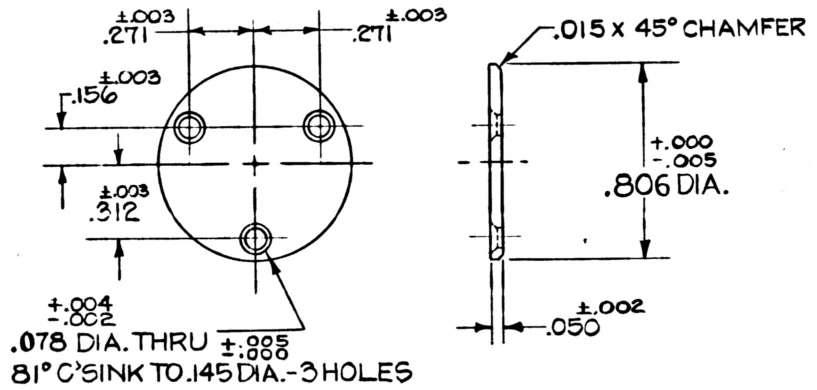
MIT INSTRUMENTATION LAB
CONTRACT NAS 9-153
DATE
APPROVED
CHECKED
DRAWN
APPROVED FOR MSC 2/6/63
BY DIRECTION MIT APPROVAL
6 FEB 63

TWO WIRE MECHANIZATION
DRAWING OF IMU
STABILIZATION LOOPS.

SCALE | UNIT WT. | CODE IDENT.

MIT INSTRUMENTATION LABORATORY
CAMBRIDGE, MASS.
DWG NO.
MANNED SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO.
1015 562
SHEET OF

REVISIONS
ZONE | SYM | DESCRIPTION | DATE | APPROVAL


.271 ±.003
.271 ±.003
.156 ±.003
.312 ±.003
.015 x 45° CHAMFER
.806 DIA. +.000 -.005
.050 ±.002
.078 DIA. THRU +.004 -.002
81° C'SINK TO .145 DIA. ±.005 ±.000 -3 HOLES

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{63}$.

MUST BE FREE FROM BURRS.

ALL CORNERS NOT TO EXCEED .010 R. OR CHAMFER.

MARK PER MIL-STD-130 (ES-267, SELECT FROM -1 THRU -19)

MACHINE & HEAT TREAT PER ND 1002114 (ES-2044)

REVISIONS TDRR 01315

SYM	DESCRIPTION	CHG NO.	DATE	APPD.
B	UPGRADED FOR CLASS A RELEASE		8 APR 63	

1015662-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — — —
DECIMALS + — — —
ANGLES ± 1°
DO NOT SCALE THIS DRAWING

MATERIAL MIL-B-21531 (ES-7389) BERYLLIUM

CONTRACT NAS-9-497

J Smin 14 MAR 63

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R W Heisel DATE 13 MAR 63
CHECKED 14 MAR 63
APPROVAL 14 MAR 63
APPROVAL E. J.
NASA APPROVAL 5-22-63
MIT APPROVAL W Kupfer 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

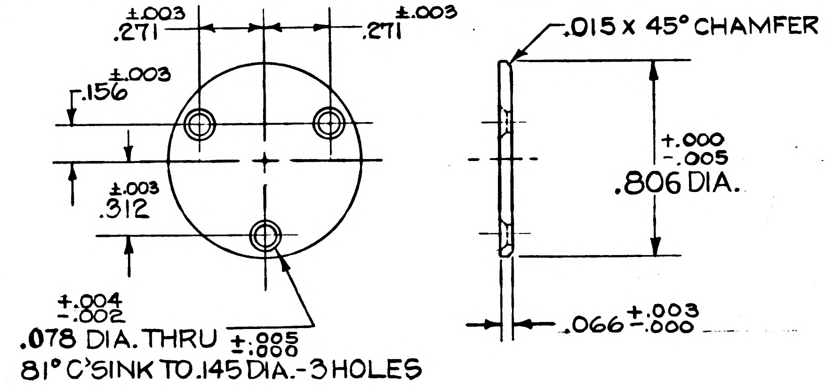
COVER, ACCESS HOLE

CODE IDENT NO.
SIZE B
1015660
SCALE 2:1
SHEET —

MIL 10778-P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015660 C



±.003
.271
.271 ±.003
.015 x 45° CHAMFER
.156 ±.003
±.003
.312
+.000
-.005
.806 DIA.
+.004
-.002
.078 DIA. THRU ±.005 -.000
81° C'SINK TO .145 DIA. - 3 HOLES
.066 +.003 -.000

REVISIONS TDRR 01315				
SYM	DESCRIPTION		DATE	APPD.
B	UPGRADED FOR CLASS A RELEASE	CHG NO.	8 APR 63	WK
C4	REVISED PER TDRR NO. 03220			WK

NOTES:

1. MUST BE FREE FROM BURRS.
2. ALL CORNERS NOT TO EXCEED .010 R. OR CHAMFER.
3. MARK PER MIL-STD-130 (ES-267, SELECT FROM -1 THRU -19)
4. MACHINE & HEAT TREAT PER ND 1002114 (ES-2044)
5. UNLESS OTHERWISE SPECIFIED: SURFACE ROUGHNESS MUST NOT EXCEED 63.

1015662-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − —
DECIMALS + — − —
ANGLES ±1°
DO NOT SCALE THIS DRAWING

MATERIAL MIL-B-21531 (ES-7389) BERYLLIUM

CONTRACT NAS-9-497

14 MAR 63

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN RW Heisel DATE 13 MAR 63
CHECKED 14 MAR 63
APPROVAL 14 MAR 63
APPROVAL E. J.
NASA APPROVAL 5-22-63
MIT APPROVAL W Kupfer 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COVER, ACCESS HOLE

CODE IDENT NO.
SIZE B
1015660
SCALE 2:1
SHEET 1 OF 1

MIL 10778-P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

TDRR 03219 9/17/63

APPLICATION	
NEXT ASSY	USED ON
1015559	1015500-011

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL

MASTER

REV					
SHEET					
REV STATUS	REV	—	—	—	—
OF SHEETS	SHEET	1	2	3	4

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
- ±.02 -

DO NOT SCALE THIS DRAWING
MATERIAL: ——

		DATE
APPROVED		9/16/63
CHECKED	WINBERG	9-13-63
DRAWN	THENO	8-16-63
APPROVED FOR MSC	for MI [illegible] Nagel	9/16/63
BY DIRECTION		

WIRE LIST AA
DIGITAL CORE ASSY

DWG NO.
MANNED
SPACECRAFT CENTER
HOUSTON TEXAS
NASA DRAWING NO.
1015661
SCALE —
REVISION —
SHEET 1 OF 4

TDRR 03219

LIST OF MATERIAL

ITEM	QTY	PART NO. OR IDENTIFYING NO.	DESCRIPTION	TOTAL LENGTH
1	1	MIL-W-16878-ET 26	WIRE 26 AWG BRN	10 INCHES
2	1	MIL-W-16878-ET 26	WIRE 26 AWG RED	10 INCHES
3	1	MIL-W-16878-ET 28	WIRE 28 AWG YEL	10 INCHES
4	1	MIL-W-16878-ET 28	WIRE 28 AWG WHT/ORN	10 INCHES
5	1	MIL-W-16878-ET 28	WIRE 28 AWG ORN	10 INCHES
6	1	MIL-W-16878-ET 28	WIRE 28 AWG BLU	10 INCHES
7	1	MIL-W-16878-ET 28	WIRE 28 AWG WHT/GRN	10 INCHES
8	1	MIL-W-16878-ET 28	WIRE 28 AWG GRN	10 INCHES
9	1	QQ-W-343	SOLID WIRE 26 AWG TIN COATED 0.5 INC	
10	AR	QQ-S-571 SN 60 WARP 2	SOLDER	
11	AR	QQ-S-571 SN 60 WS	SOLDER	
12	AR	MIL-F-14256	FLUX (ES-2798)	

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS
REVISION —
NASA DRAWING NO.
1015661
SHEET 2 OF 4

TDRR 03219

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. Y OR N IN TINNED COLUMN INDICATES YES OR NO.
3. DIMENSIONS ARE IN INCHES & 2 PLACE DECIMALS.
4. CONDUCTORS WITH THE SAME NUMBER ARE TWISTED TOGETHER.
5. TWISTED CONDUCTORS ARE TO CONSIST OF 3 FULL TURNS PER INCH MINIMUM.
6. SOLDER PER MIL-STD-440 USING ITEM 10 OR A COMBINATION OF 11 AND 12.
7. CIRCUIT POINTS OF CONDUCTORS AA4-YEL, AA4-ORN, AA5-BLU, & AA5-GRN ARE TO BE DETERMINED AT FINAL ASSY PER ATP 1015500.
8. SUFFIX LETTERS ON CONDUCTOR NUMBERS INDICATE THE FOLLOWING:
   - Y INDICATES YELLOW
   - C INDICATES WHT/ORANGE
   - O INDICATES ORANGE
   - L INDICATES BLUE
   - P INDICATES WHITE/GREEN
   - G INDICATES GREEN

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS
REVISION —
NASA DRAWING NO.
1015661
SHEET 3 OF 4

TDRR 03219

CONDUCTOR			FROM						TO					
FIND NUMBER	NO.	INDIVIDUAL LENGTH	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET	Y/N	TERMINATION FIND NO.	SPEC	NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET	Y/N	TERMINATION FIND NO.	SPEC	NO.
AA1	1	10 00	M 1 1	09	Y				TB 1 11	12	Y			
AA2	2	10 00	M 1 12	09	Y				TB 1 12	12	Y			
AA3	9	50	M 1 6	09	Y				M 1 7	09	Y			
AA4 Y	3	10 00	M 1 2	09	Y				SEE NOTE 7	12	Y			
AA4 C	4	10 00	M 1 4	09	Y				TB 1 4	12	Y			
AA4 O	5	10 00	M 1 5	09	Y				SEE NOTE 7	12	Y			
AA5 L	6	10 00	M 1 8	09	Y				SEE NOTE 7	12	Y			
AA5 P	7	10 00	M 1 10	09	Y				TB 1 19	12	Y			
AA5 G	8	10 00	M 1 11	09	Y				SEE NOTE 7	12	Y			

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS
REVISION —
NASA DRAWING NO.
1015661
SHEET 4 OF 4

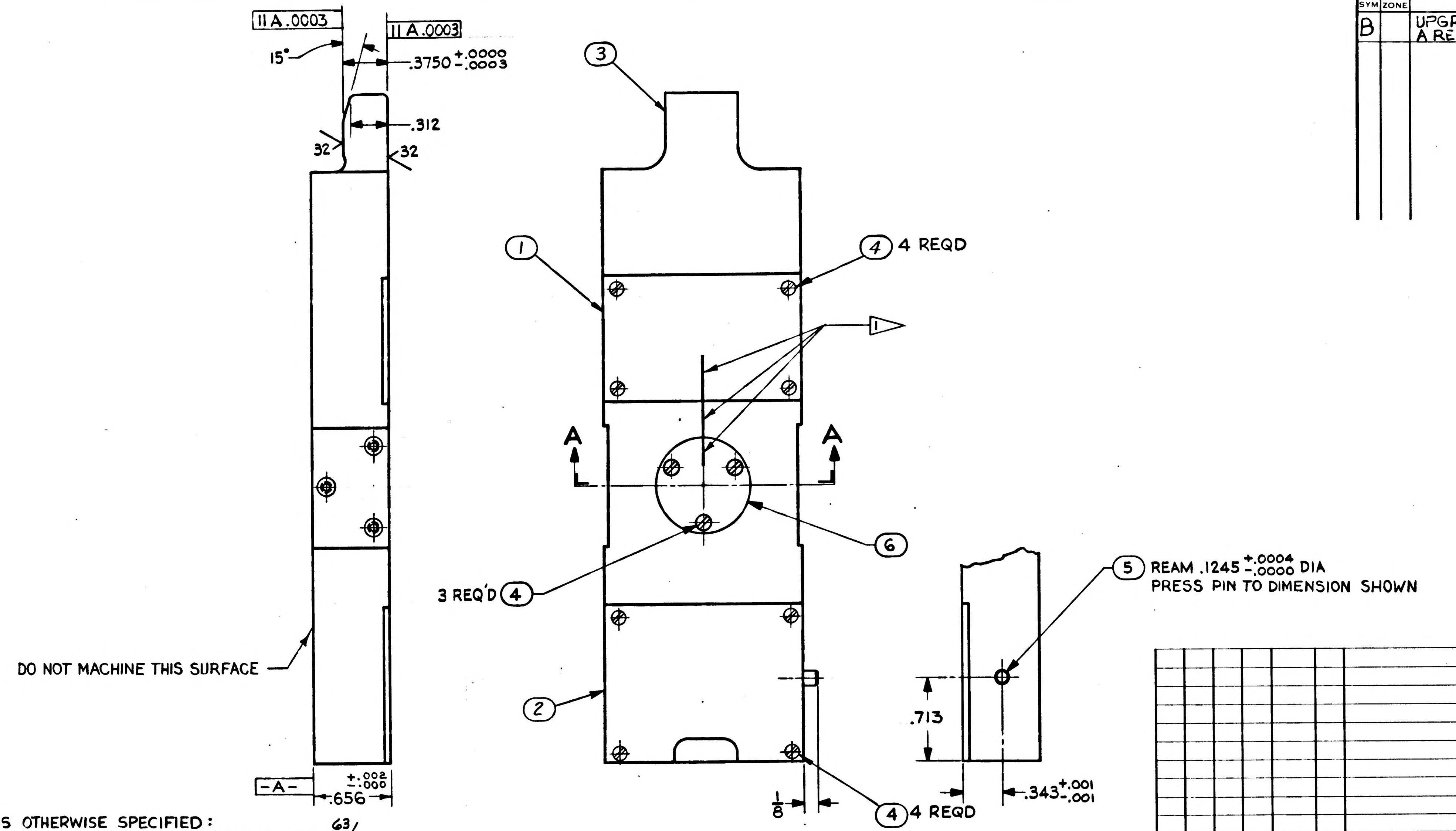
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

8 7 6 5 4 3 2 1

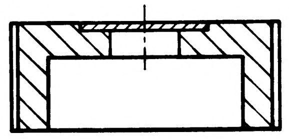
B 1015662 2

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
B		UPGRADED FOR CLASS A RELEASE		3 MAY '63	Rch

REVISIONS TDRR 613.5



11 A .0003
11 A .0003
15°
.3750 +.0000 −.0003
.312
32
32
③
①
④ 4 REQD
1
A
A
⑥
3 REQ'D ④
⑤ REAM .1245 +.0004 −.0000 DIA
PRESS PIN TO DIMENSION SHOWN
DO NOT MACHINE THIS SURFACE
②
.713
−A−
+.002 −.000
.656
1/8
④ 4 REQD
.343 +.001 −.001



SECTION A-A

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63√.
ALL CORNERS NOT TO EXCEED .010R, OR CHAMFER.

MUST BE FREE FROM BURRS.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

IDENTIFY USING DRAWING NO., REVISION LETTER AND MANUFACTURERS SYMBOL PER MIL-STD-130(ES-267).

▷ MATCH MARK WITH RUBBER STAMP PER ND 1002019 AFTER MACHINING

COVER SCREWS SHALL BE TIGHTENED TO .9 TO 1.0 LB.-IN. TORQUE.

QUANTITY REQUIRED				EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			011				
			1		6	1015660	COVER, ACCESS HOLE
			1		5	MS16555-625	PIN-STRAIGHT
			11		4	AN510C0-2	SCREW, FLAT HD
			1		3	1015502	BASE
			1		2	1015514	COVER, ADJ WHEEL
			1		1	1015515	COVER, ENCODER

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015501-011	1015500-011	011
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
$+\frac{1}{64}$ $-\frac{1}{64}$	+.005 −.005	+1° −1°

DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 10 APR 63
CHECKED C. Pirode 12 APR 63
APPROVAL J. Pettanagi 12 APR 63
APPROVAL A. Model 12 APR 63
NASA APPROVAL W. J. Rhine 5-22-63
MIT APPROVAL W. Kupfer 22 May 63

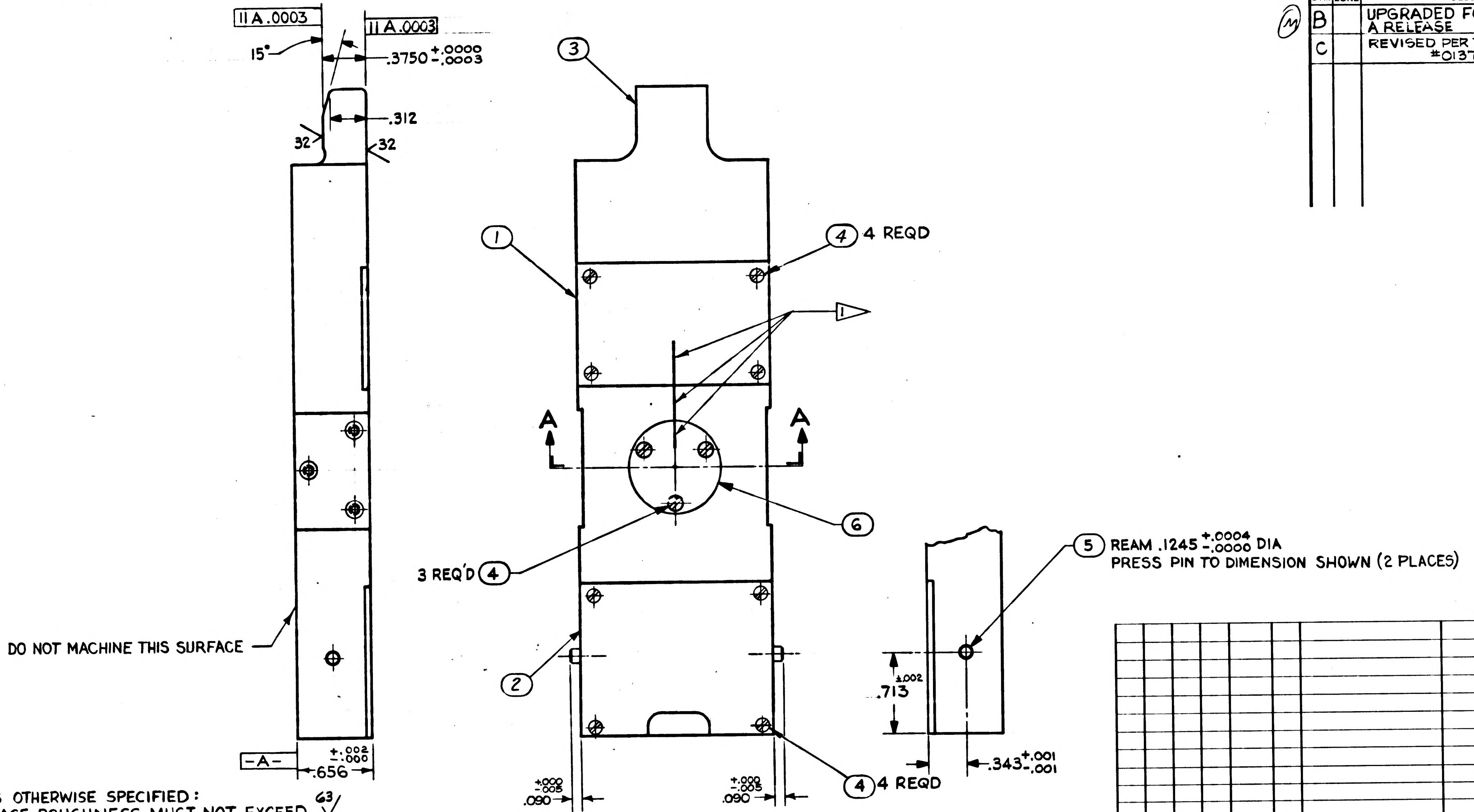
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE ASSEMBLY

CODE IDENT NO.
SIZE D
1015662
SCALE 2:1
SHEET

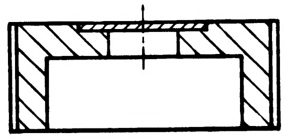
8 7 6 5 4 3 Houston 12 APR 63 2 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY



11 A .0003
11 A .0003
15°
.3750 +.0000 −.0003
.312
32
32
③
①
④ 4 REQD
A
A
⑥
3 REQ'D ④
⑤ REAM .1245 +.0004 −.0000 DIA
PRESS PIN TO DIMENSION SHOWN (2 PLACES)
DO NOT MACHINE THIS SURFACE
②
.713 ±.002
.343 +.001 −.001
−A−
.656 +.002 −.000
.090 +.000 −.005
.090 +.000 −.005
④ 4 REQD

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63√.
ALL CORNERS NOT TO EXCEED .010R, OR CHAMFER.
MUST BE FREE FROM BURRS.
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
IDENTIFY USING DRAWING NO, REVISION LETTER AND MANUFACTURERS SYMBOL PER MIL-STD-130(ES-267).
▷1 MATCH MARK WITH RUBBER STAMP PER ND 1002019 AFTER MACHINING.
COVER SCREWS SHALL BE TIGHTENED TO .9 TO 1.0 LB.-IN. TORQUE.



SECTION A-A

1015662 | B

REVISIONS TDRR 01315

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
B		UPGRADED FOR CLASS A RELEASE		3 MAY '63	Rch
C		REVISED PER TDRR #01378		29 MAY '63	WLK

QUANTITY REQUIRED			011	EFFECTIVITY	ITEM NO	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			1		6	1015660	COVER, ACCESS HOLE
			2		5	MS16555-625	PIN-STRAIGHT
			11		4	AN510C0-2	SCREW, FLAT HD
			1		3	1015502	BASE
			1		2	1015514	COVER, ADJ WHEEL
			1		1	1015515	COVER, ENCODER

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015501-011	1015500-011	011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±1/64 DECIMALS +.005 −.005 ANGLES +1° −1°
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 10 APR 63
CHECKED C. Pioda 12 APR 63
APPROVAL Pettang 12 APR 63
APPROVAL A. Prudel 12 APR 63
NASA APPROVAL W J Rhine 5-22-67
MIT APPROVAL W Kupfer 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE ASSEMBLY

CODE IDENT NO.
SIZE D
1015662
SCALE 2:1
SHEET

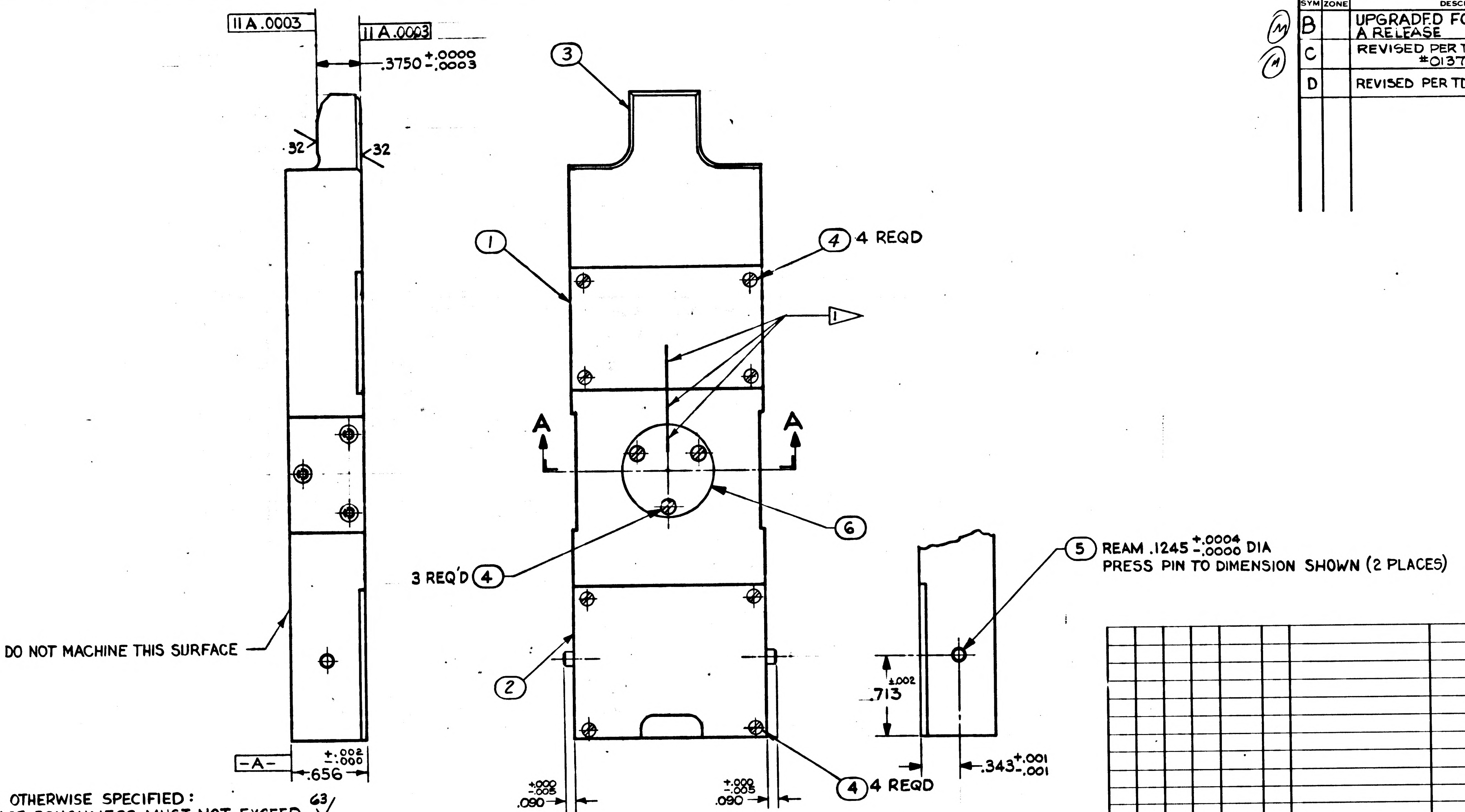
Charleston 12 APR 63

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

D	1015662	2

REVISIONS TDRR 01315

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APP
B		UPGRADED FOR CLASS A RELEASE		3 MAY '63	RCh
C		REVISED PER TDRR #01378		29 MAY '63	WJK
D		REVISED PER TDRR # 01517		10 JUNE '63	P.K.B.



11 A .0003
11 A .0003
.3750 +.0000 -.0003
32
32
DO NOT MACHINE THIS SURFACE
-A-
.656 +.002 -.000
3
1
4 4 REQD
A
A
6
3 REQ'D 4
2
4 4 REQD
.090 +.000 -.005
.090 +.000 -.005
5 REAM .1245 +.0004 -.0000 DIA
PRESS PIN TO DIMENSION SHOWN (2 PLACES)
.713 ±.002
.343 +.001 -.001

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63 √.
ALL CORNERS NOT TO EXCEED .010R, OR CHAMFER.

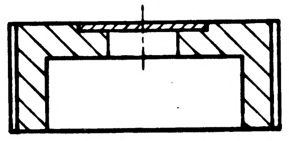
MUST BE FREE FROM BURRS.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

IDENTIFY USING DRAWING NO, REVISION LETTER AND MANUFACTURERS SYMBOL PER MIL-STD-130(ES-267).

▷ MATCH MARK WITH RUBBER STAMP PER ND 1002019 AFTER MACHINING.

COVER SCREWS SHALL BE TIGHTENED TO .9 TO 1.0 LB.-IN. TORQUE.



SECTION A-A

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
1		6	1015660	COVER, ACCESS HOLE
2		5	MS16555-625	PIN-STRAIGHT
11		4	AN510C0-2	SCREW, FLAT HD
1		3	1015502	BASE
1		2	1015514	COVER, ADJ WHEEL
1		1	1015515	COVER, ENCODER

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015501-011	1015500-011	011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64
DECIMALS ±.005
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 10 APR 63
CHECKED C. Pierda 12 APR 63
J. Pettaway 12 APR 63
APPROVAL
APPROVAL 12 APR 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE ASSEMBLY

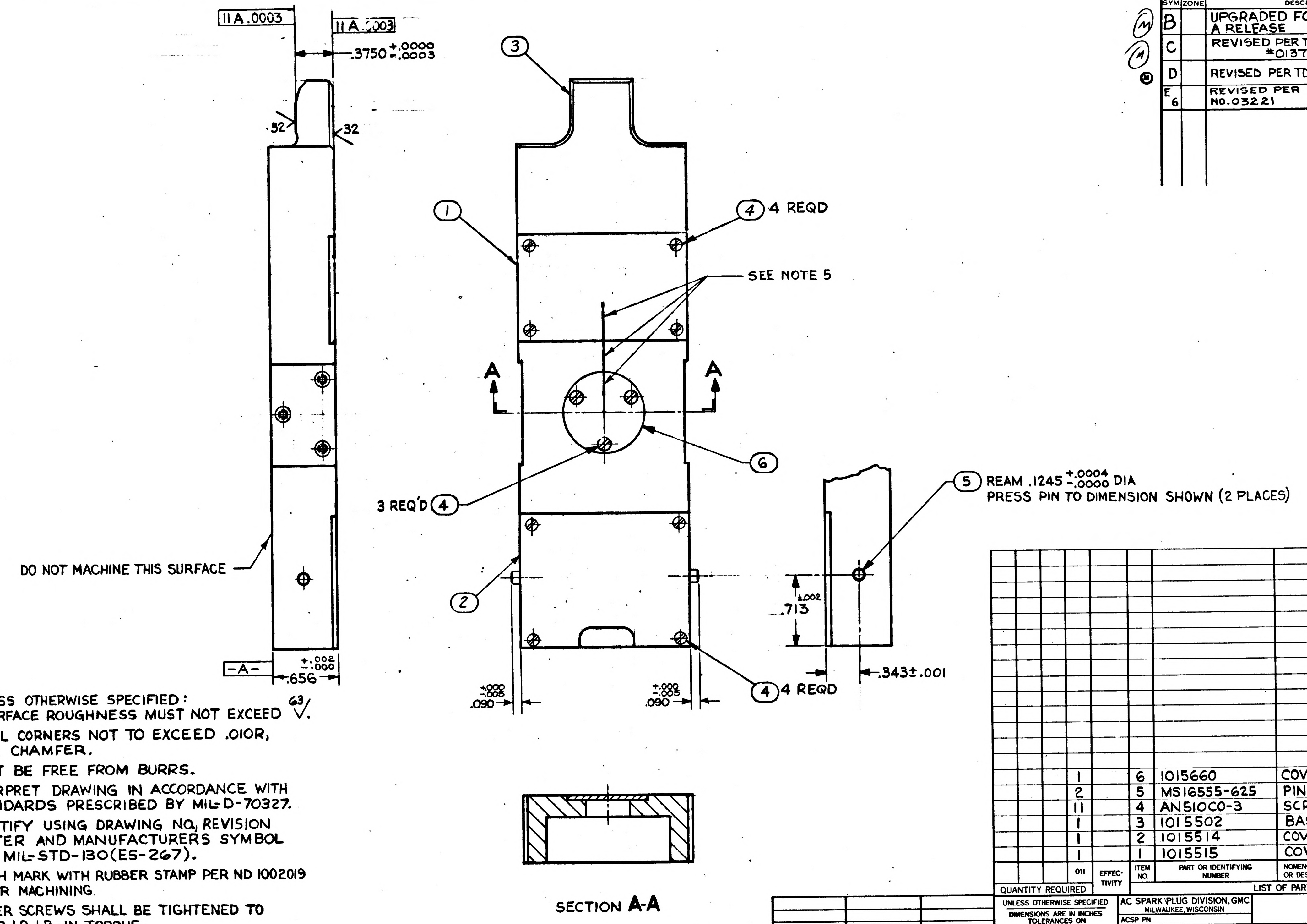
CODE IDENT NO.
SIZE D
1015662
SCALE 2:1
SHEET

3 Charleston 12 APR 63.

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

D	1015662	2	

REVISIONS TDRR 01315					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		UPGRADED FOR CLASS A RELEASE		8 MAY '63	Rah
C		REVISED PER TDRR #01378		29 MAY '63	WJK.
D		REVISED PER TDRR # 01517		10 JUNE '63	P.K.B.
E 6		REVISED PER TDRR NO.03221		9/19/63	WK



11 A .0003
11 A .0003
.3750 +.0000 -.0003
.32
.32
3
1
4 4 REQD
SEE NOTE 5
A
A
6
3 REQ'D 4
DO NOT MACHINE THIS SURFACE
2
4 4 REQD
-A-
+.002 -.000
.656
+.000 -.005
.090
+.000 -.005
.090
5 REAM .1245 +.0004 -.0000 DIA
PRESS PIN TO DIMENSION SHOWN (2 PLACES)
±.002
.713
.343±.001
SECTION A-A

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   A. SURFACE ROUGHNESS MUST NOT EXCEED 63√.
   B. ALL CORNERS NOT TO EXCEED .010R, OR CHAMFER.
2. MUST BE FREE FROM BURRS.
3. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4. IDENTIFY USING DRAWING NO., REVISION LETTER AND MANUFACTURERS SYMBOL PER MIL-STD-130(ES-267).
5. MATCH MARK WITH RUBBER STAMP PER ND 1002019 AFTER MACHINING.
6. COVER SCREWS SHALL BE TIGHTENED TO .9 TO 1.0 LB.-IN. TORQUE.

			1		6	1015660	COVER, ACCESS HOLE
			2		5	MS16555-625	PIN-STRAIGHT
			11		4	AN510C0-3	SCREW, FLAT HD
			1		3	1015502	BASE
			1		2	1015514	COVER, ADJ WHEEL
			1		1	1015515	COVER, ENCODER
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

1015501-011	1015500-011	011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 10 APR 63
CHECKED C. Pioda 12 APR 63
J. Pettanyi 12 APR 63
APPROVAL
APPROVAL 12 APR 63
5-22-63
NASA APPROVAL W.J. Rhine
MIT APPROVAL W Kupfer 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BASE ASSEMBLY

CODE IDENT NO.
SIZE D
1015662
SCALE 2:1
SHEET 1 OF 1

3 Charleston 12 APR 63.

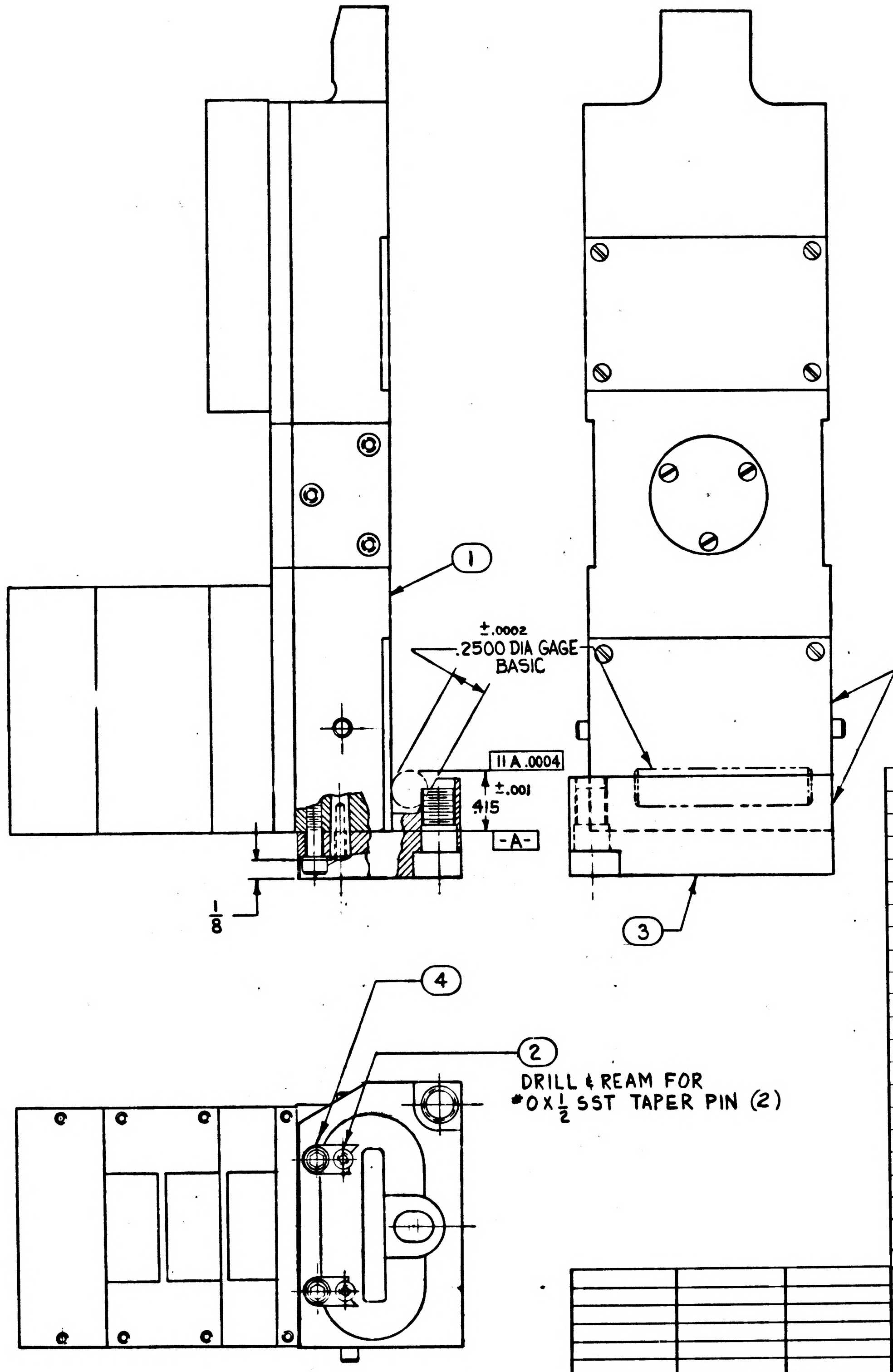
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

B | 1015665

INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
IDENTIFY USING DRAWING Nº AND REVISION LETTER
PER MIL-STD-130 (ES-267)

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		UPGRADED FOR CLASS A RELEASE		11 MAY 63	



THESE SURFACES TO BE FLUSH WITHIN ±.001

DRILL & REAM FOR #0 X 1/2 SST TAPER PIN (2)

LIST OF PARTS AND MATERIALS

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2		4	NAS1352C04LL6	SCREW, SOC HD CAP
1		3	1015682	MOUNTING CLAMP (INSEPARABLE ASS'Y)
2		2	1015510	PIN-TAPER #1/0
1		1	1015501	HOUSING MACHINING ASSEMBLY

APPLICATION

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015500-011	1015500-011	011

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN F Koracin DATE 12 APR 63
CHECKED 16 APR 63
APPROVAL Petrangi 17 APR 63
APPROVAL 17 APR 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HOUSING AND CLAMP
ASSEMBLY

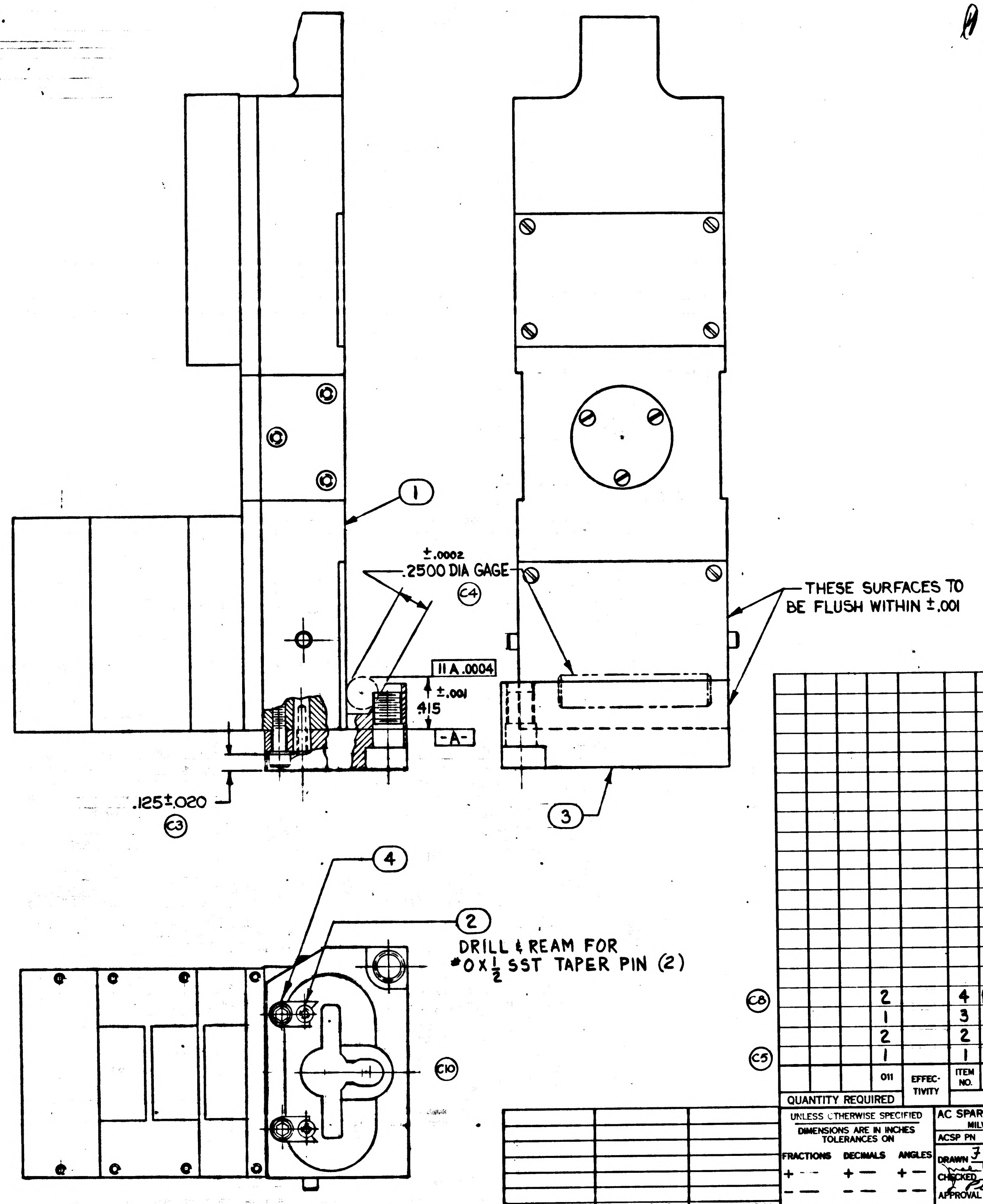
CODE IDENT NO.
SIZE D
1015665
SCALE 2:1
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

(C) NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
(C9) 2. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER ND 1002019.
(C6) 3. SERIALIZE PER ND 1002023.
(C7) 4. TORQUE SCREWS BETWEEN 6.3 AND 6.8 IN-LB.

C 1015665

REVISIONS TDRR 01379					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		UPGRADED FOR CLASS A RELEASE		11 MAY 63	Tamaru WK
C10		REVISED PER TDRR NO. 03856		21 OCT 63	WK



1
±.0002
.2500 DIA GAGE
(C4)
11 A .0004
±.001
.415
-A-
.125±.020
(C3)
THESE SURFACES TO BE FLUSH WITHIN ±.001
3
4
2
DRILL & REAM FOR #0 X 1/2 SST TAPER PIN (2)
(C10)

			2		4	NAS 1352 C04LL6	SCREW, SOC HD CAP (SEE NOTE 4) (C8)
			1		3	1015682	MOUNTING CLAMP (INSEPARABLE ASS'Y)
			2		2	1015510	PIN-TAPER #1/0
			1		1	1015501-011	HOUSING MACHINING ASSEMBLY (C5)
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
QUANTITY REQUIRED					LIST OF PARTS AND MATERIALS		

1015500-011	1015500-011	011
NEXT ASSY	USED ON	APPLICABLE DASH NO.
APPLICATION		

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — — — DECIMALS + — — — ANGLES + — — —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN F Koracin DATE 12 APR 63
CHECKED [illegible] Kawlin 16 APR 63
APPROVAL Petrangi 17 APR 63
APPROVAL [illegible] 17 APR 63
NASA APPROVAL Jack Barnard
MIT APPROVAL [illegible] W[illegible] 29 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

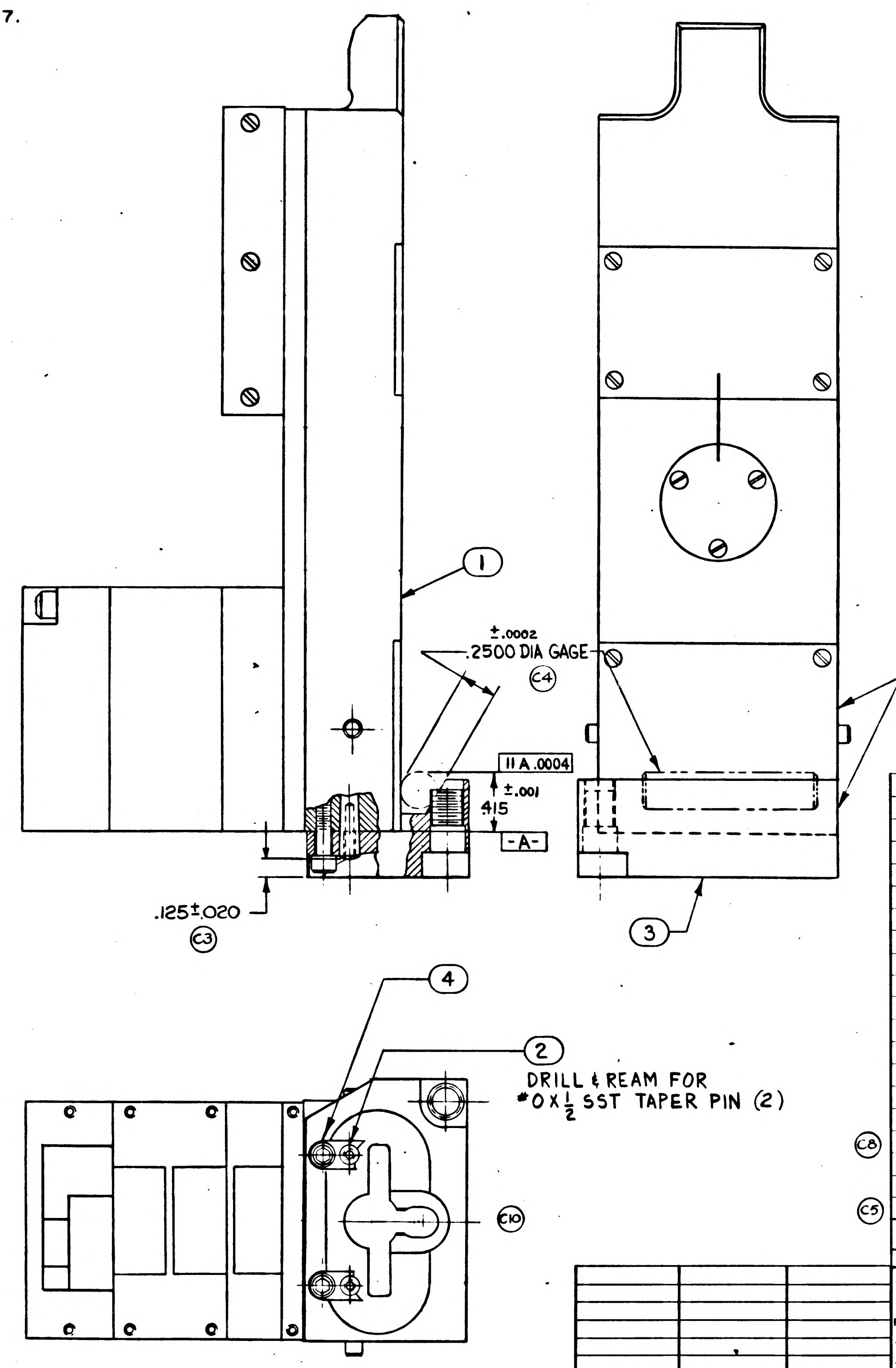
HOUSING AND CLAMP ASSEMBLY

CODE IDENT NO.
SIZE D
1015665
SCALE 2:1
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

Ⓒ1 NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
Ⓒ9 2. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER ND1002019.
Ⓒ6 3. SERIALIZE PER ND1002023.
Ⓒ7 4.

REVISIONS TDRR 01379					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		UPGRADED FOR CLASS A RELEASE		11 MAY 63	WK
C10		REVISED PER TDRR NO. 03856		21 OCT 63	WK
D		CHANGE IN ACCORDANCE WITH TDRR 10004		16 JUN 64	R.W.T. EF



THESE SURFACES ITEM 3 AND 1015502(REF) TO BE FLUSH WITHIN ±.001

Ⓒ8	2		4	NAS1352C04LL6	SCREW, SOC HD CAP (SEE NOTE 4)
	1		3	1015682	MOUNTING CLAMP (INSEPARABLE ASS'Y)
	2		2	1015510	PIN-TAPER #1/0
Ⓒ5	1		1	1015501-011	HOUSING MACHINING ASSEMBLY
	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	QUANTITY REQUIRED		LIST OF PARTS AND MATERIALS		

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015500-011	1015500-011	011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — DECIMALS + — ANGLES + —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN F Koracin DATE 12 APR 63
CHECKED Kaustin 16 APR 63
APPROVAL Petrangi 17 APR 63
APPROVAL A Model 19 APR 63
NASA APPROVAL
MIT APPROVAL 29 May 63

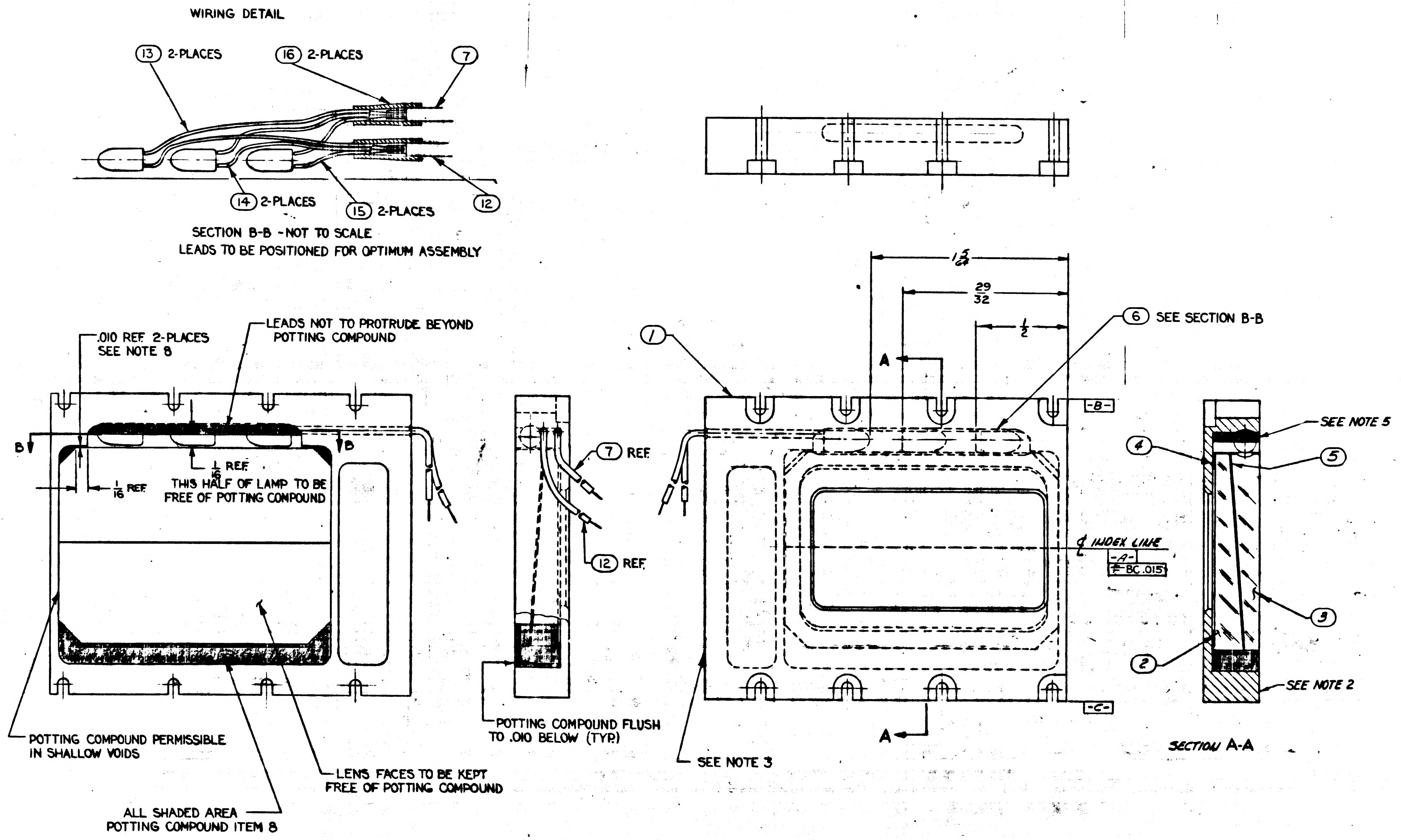
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HOUSING AND CLAMP
ASSEMBLY

CODE IDENT NO.
SIZE D
1015665
SCALE 2:1
SHEET 1 OF 1

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER MIL-STD-130 (ES-267).
3. MARK CHARACTERS "DS1" $\frac{3}{32}$ HIGH, BLACK, USING RUBBER STAMP, STENCIL OR SILK SCREEN AS PER ND-1002019.
4. SOLDER PER MIL-STD-440 USING ITEM 10
5. ENCAPSULATE PER ND-1002106
6. ETCH PORTION OF WIRES WHICH ARE TO BE ENCAPSULATED USING ND-1002146.
7. CEMENT ITEMS 2, 3 & 5 IN ACCORDANCE WITH SPEC MIL-0-13830 PAR. 3.5.11 - USING ADHESIVE PER MIL-A-3920.
8. AFTER ENCAPSULATING LAMPS AND WIRES IN PLACE APPLY SUITABLE THICKNESS OF POTTING COMPOUND ON TWO INDICATED SURFACES OF ITEMS 2, 3 & 5. WHEN POTTING COMPOUND SOLIDIFIES, ADJUST THICKNESS OF COMPOUND TO MAINTAIN PRESCRIBED POSITION OF INDEX LINE. THESE SURFACES TO ACT AS DAMS FOR SUBSEQUENT POTTING OF WINDOWS TO FRAME PER NOTE 5.

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		UPGRADED FOR CLASS A RELEASE		7 JUN 63	reh


WIRING DETAIL
13 2-PLACES
16 2-PLACES
7
14 2-PLACES
15 2-PLACES
12
.010 REF 2-PLACES SEE NOTE 8
LEADS NOT TO PROTRUDE BEYOND POTTING COMPOUND
B
B
$\frac{1}{16}$ REF
$\frac{1}{16}$ REF
THIS HALF OF LAMP TO BE FREE OF POTTING COMPOUND
POTTING COMPOUND PERMISSIBLE IN SHALLOW VOIDS
LENS FACES TO BE KEPT FREE OF POTTING COMPOUND
ALL SHADED AREA POTTING COMPOUND ITEM 8
7 REF
12 REF
POTTING COMPOUND FLUSH TO .010 BELOW (TYP)
1
$1\frac{5}{64}$
$\frac{29}{32}$
$\frac{1}{2}$
6 SEE SECTION B-B
A
A
-B-
-C-
℄ INDEX LINE
-A-
BC .015
SEE NOTE 3
SEE NOTE 5
4
5
3
2
SEE NOTE 2
SECTION A-A

SECTION B-B - NOT TO SCALE
LEADS TO BE POSITIONED FOR OPTIMUM ASSEMBLY

QUANTITY REQUIRED							
			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			2		16	MIL-I-23053	INSULATION SLEEVING HEAT SHRINK SIZE 14 - 1/4 LG.
			2		15	MIL-I-23053	INSULATION SLEEVING HEAT SHRINK SIZE 24 - 1/4 LG.
			2		14	MIL-I-23053	INSULATION SLEEVING HEAT SHRINK SIZE 24 - 1/2 LG
			2		13	MIL-I-23053	INSULATION SLEEVING HEAT SHRINK SIZE 24 - 7/8 LG.
			1		12	MIL-W-16878-E26	WIRE - 12" LG (WHITE)
			AR		10	QQS-571SN60WARP2	SOLDER
			AR		8	ND-1002106	POTTING COMPOUND
			1		7	MIL-W-16878-E26	WIRE - 12" LG (BLACK)
			3		6	1010493	LAMP-MINIATURE
			1		5	1015679	SEPARATOR
			1		4	1015678	GASKET
			1		3	1015677	WINDOW - INNER
			1		2	1015676	WINDOW - OUTER
			1		1	1015675	FRAME

LIST OF PARTS AND MATERIALS

APPLICATION		
NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015500-011	1015500-011	-011

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± $\frac{1}{64}$ DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. SCHWABE DATE 2 MAY 63
CHECKED MALIKOWSKI 11 MAY 63
APPROVAL J. PETRANYI 3 MAY 63
APPROVAL 11 MAY 63
NASA APPROVAL 7/2/63
MIT APPROVAL 2 JUL 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WEDGE LIGHTING ASSEMBLY

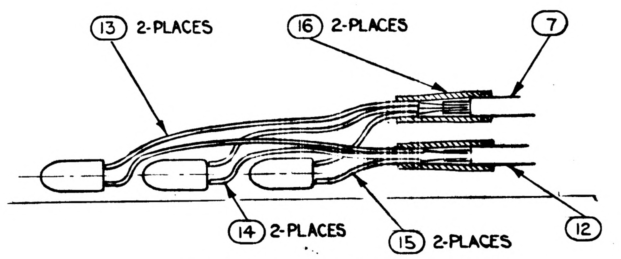
CODE IDENT NO.
SIZE E
1015666
SCALE 4:1
SHEET

1015666 D

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER MIL-STD-130 (ES-267).
3. MARK CHARACTERS "DS1" $\frac{3}{32}$ HIGH, BLACK, USING RUBBER STAMP, STENCIL OR SILK SCREEN AS PER ND-1002019.
4. SOLDER PER MIL-STD-440 USING ITEM 10
5. ENCAPSULATE PER ND-1002106
6. ETCH PORTION OF WIRES WHICH ARE TO BE ENCAPSULATED USING ND-1002146.
7. CEMENT ITEMS 2, 3 & 5 IN ACCORDANCE WITH SPEC MIL-0-13830 PAR. 3.5.11-USING ADHESIVE PER MIL-A-3920.
8. AFTER ENCAPSULATING LAMPS AND WIRES IN PLACE APPLY SUITABLE THICKNESS OF POTTING COMPOUND ON TWO INDICATED SURFACES OF ITEMS 2, 3 & 5. WHEN POTTING COMPOUND SOLIDIFIES, ADJUST THICKNESS OF COMPOUND TO MAINTAIN PRESCRIBED POSITION OF INDEX LINE. THESE SURFACES TO ACT AS DAMS FOR SUBSEQUENT POTTING OF WINDOWS TO FRAME PER NOTE 5.
9. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH WITH NAV. ORD. INST. 9620.
10. TWIST ITEMS 7 & 12 3 FULL TURNS PER INCH. LENGTHS SPECIFIED ARE FOR AFTER TWISTING.

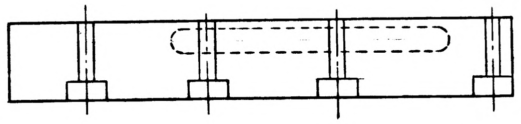
FROM	TO	CONDUCTOR STRIP	CONDUCTOR TIN
DS1-WHT.	P1-28	.093	NO
DS1-BLK.	P1-29	.093	NO

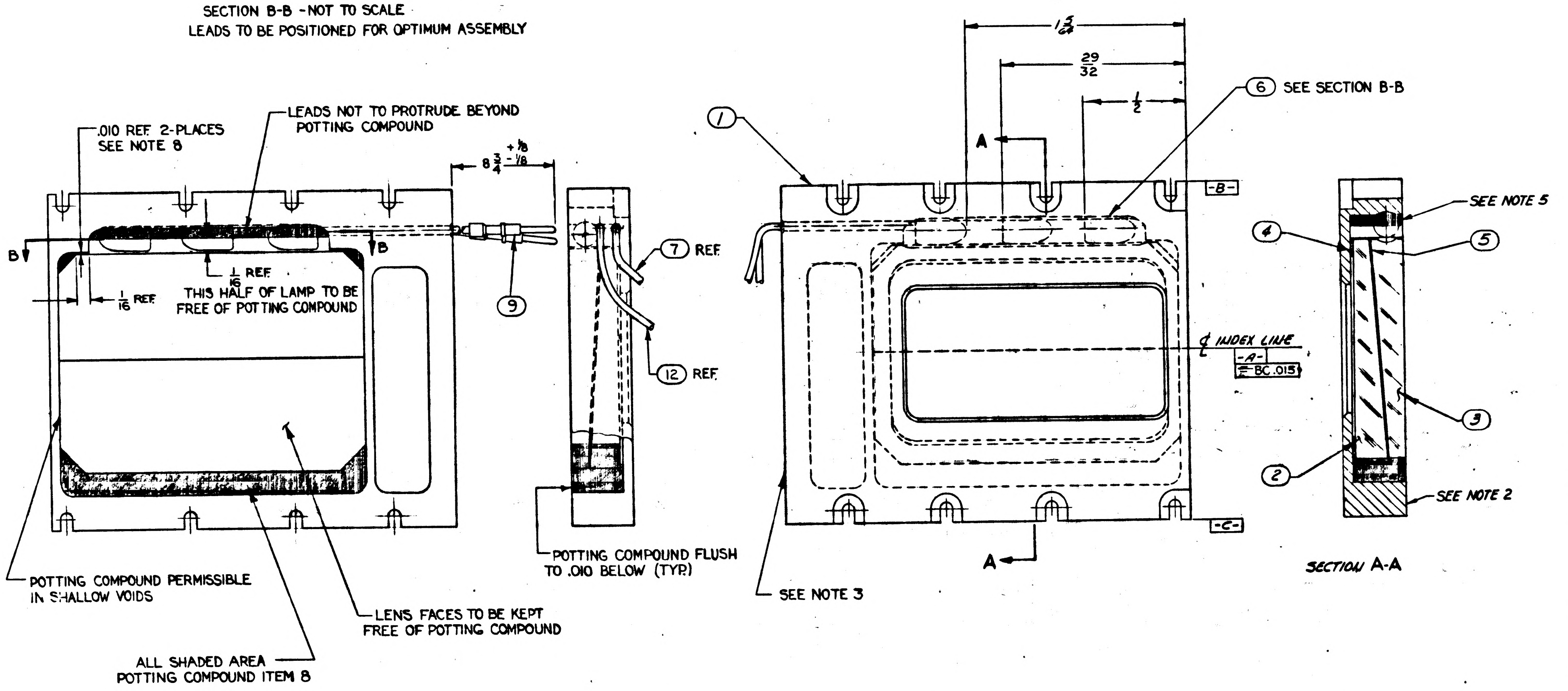
WIRING DETAIL



⑬ 2-PLACES
⑯ 2-PLACES
⑦
⑭ 2-PLACES
⑮ 2-PLACES
⑫

SECTION B-B - NOT TO SCALE
LEADS TO BE POSITIONED FOR OPTIMUM ASSEMBLY





.010 REF 2-PLACES
SEE NOTE 8
LEADS NOT TO PROTRUDE BEYOND POTTING COMPOUND
8 3/4 +1/8 -1/8
B
B
1/16 REF
1/16 REF
THIS HALF OF LAMP TO BE FREE OF POTTING COMPOUND
⑨
⑦ REF
⑫ REF
POTTING COMPOUND FLUSH TO .010 BELOW (TYP)
POTTING COMPOUND PERMISSIBLE IN SHALLOW VOIDS
LENS FACES TO BE KEPT FREE OF POTTING COMPOUND
ALL SHADED AREA POTTING COMPOUND ITEM 8
1 5/64
29/32
1/2
⑥ SEE SECTION B-B
①
A
A
-B-
-C-
℄ INDEX LINE
-A-
⌖ BC .015
SEE NOTE 3
SEE NOTE 5
④
⑤
③
②
SEE NOTE 2
SECTION A-A

REVISIONS ~~TDRR 0502~~

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		UPGRADED FOR CLASS A RELEASE		7 JUN 63	reh
E		REVISED PER TDRR# 02640		AUG. 14 1963	8/21/63

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2		16	MIL-I-23053	INSULATION SLEEVING HEAT SHRINK SIZE 14 - 4 LG
2		15	MIL-I-23053	INSULATION SLEEVING HEAT SHRINK SIZE 24 - 4 LG
2		14	MIL-I-23053	INSULATION SLEEVING HEAT SHRINK SIZE 24 - 2 LG
2		13	MIL-I-23053	INSULATION SLEEVING HEAT SHRINK SIZE 24 - 8 LG
1		12	MIL-W-16878-E26	WIRE - 12 LG (WHITE)
AR		10	QQ-S-571SN60 WARP2	SOLDER
2		9	1010464-1	PIN-CONTACT, CRIMP TYPE
AR		8	ND-1002106	POTTING COMPOUND
1		7	MIL-W-16878-E26	WIRE - 12 LG (BLACK)
3		6	1010473	LAMP-MINIATURE
1		5	1015679	SEPARATOR
1		4	1015678	GASKET
1		3	1015677	WINDOW - INNER
1		2	1015676	WINDOW - OUTER
1		1	1015675	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015500-011	1015500-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. SCHWABE DATE 2-MAY-63
CHECKED MALIKOWSKI 11 MAY 63
APPROVAL J. PETRANYI 3 MAY 63
APPROVAL 11 MAY 63
NASA APPROVAL 7/2/63
MIT APPROVAL 2 July 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WEDGE LIGHTING ASSEMBLY

CODE IDENT NO.
SIZE E
1015666
SCALE 4:1
SHEET 1 OF 1

1015666

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		UPGRADED FOR CLASS A RELEASE		7 JUN 63	rek
E		REVISED PER TDRR# 02649		AUG. 14 1963	8/21/63
F13		REVISED PER TDRR NO. 04618		20 NOV 63	WK

REVISIONS TDRR 0522

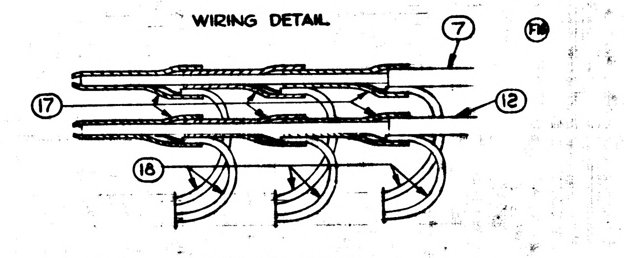
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. (F2) IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.
3. MARK CHARACTERS "DS1" $\frac{3}{32}$ HIGH, BLACK, USING RUBBER STAMP, STENCIL OR SILK SCREEN AS PER ND-1002019.
4. SOLDER PER MIL-STD-440 USING ITEM 10.
5. (F3) ENCAPSULATE PER ND-1002106 USING ITEMS 19, 20 AND 21.
6. (F4) ETCH PORTION OF WIRES WHICH ARE TO BE ENCAPSULATED PER ND 1002146 USING ITEM 22.
7. (F5) CEMENT ITEM 5 TO ITEM 2 AND 3 WITH AN EVEN COATING OF ADHESIVE PER ND 1002187 USING ITEMS 23 AND 24. ITEM 5 SHALL NOT RESTRICT VIEW THROUGH APERTURE.
8. AFTER ENCAPSULATING LAMPS AND WIRES IN PLACE APPLY SUITABLE THICKNESS OF POTTING COMPOUND ON TWO INDICATED SURFACES OF ITEMS 2, 3 & 5. WHEN POTTING COMPOUND SOLIDIFIES, ADJUST THICKNESS OF COMPOUND TO MAINTAIN PRESCRIBED POSITION OF INDEX LINE. THESE SURFACES TO ACT AS DAMS FOR SUBSEQUENT POTTING OF WINDOWS TO FRAME PER NOTE 5.
9. (F6) INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206.
10. TWIST ITEMS 7 & 12 3 FULL TURNS PER INCH. LENGTHS SPECIFIED ARE FOR AFTER TWISTING.
11. (F7) SERIALIZE PER ND 1002023.
12. (F8) COAT LAMPS PER ND 1002068 USING ITEMS 25 AND 26. PRIOR TO ENCAPSULATION AS SHOWN.
13. (F9) ALL LAMPS TO LIGHT WITH A 5.0 (MAX) VOLT AC OR DC SOURCE APPLIED TO THE PINS.

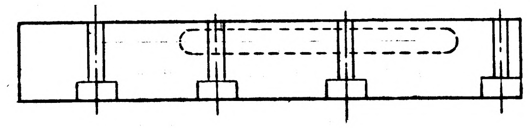
(F10) WIRE PREPARATION

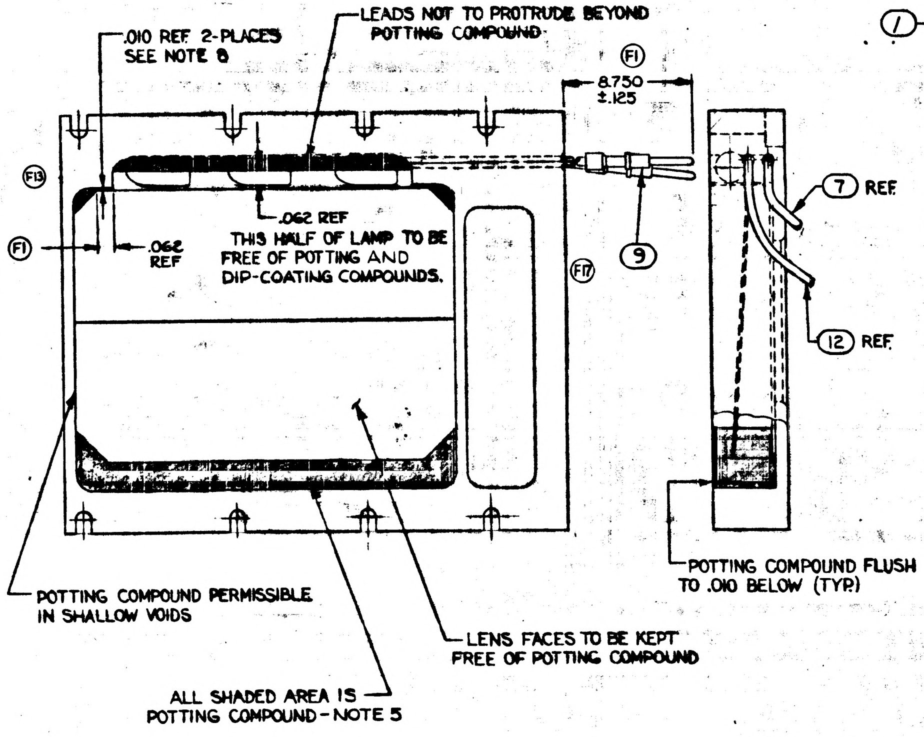
FROM	TO	CONDUCTOR STRIP	CONDUCTOR TIN
DS1-WHT.	P1-28	.093	NO
DS1-BLK.	P1-29	.093	NO

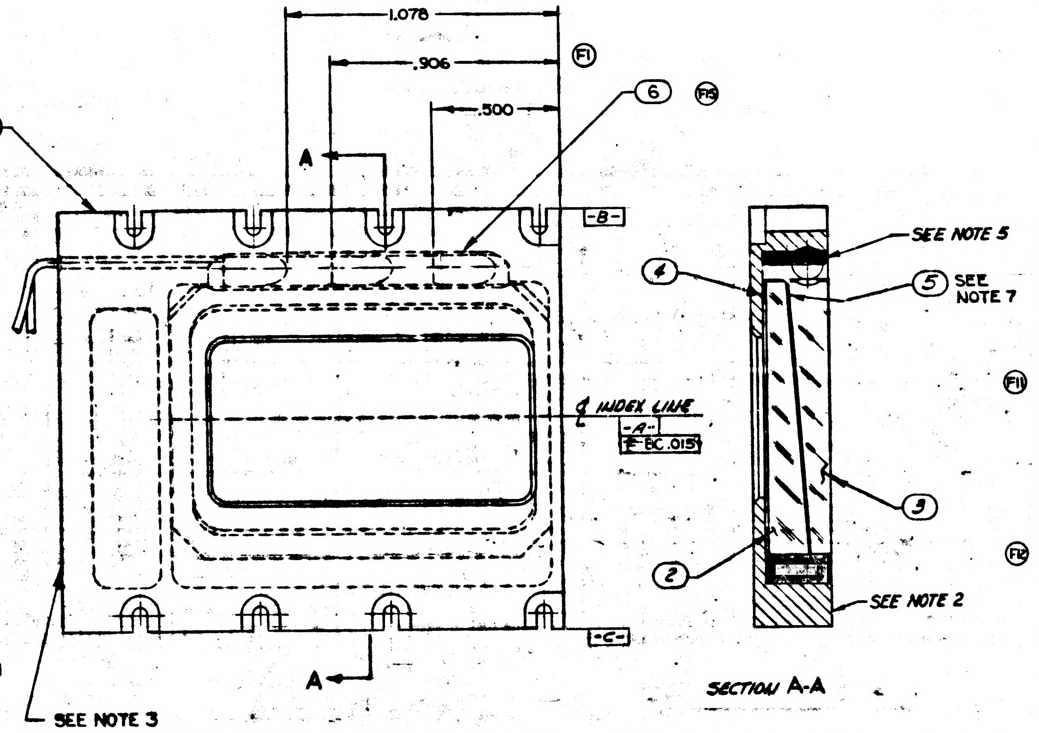
WIRING DETAIL


7
F16
17
12
18

NOT TO SCALE
LEADS TO BE POSITIONED FOR OPTIMUM ASSEMBLY




.010 REF 2-PLACES
SEE NOTE 8
LEADS NOT TO PROTRUDE BEYOND POTTING COMPOUND
F1
8.750 ±.125
F13
F1
.062 REF
.062 REF
THIS HALF OF LAMP TO BE FREE OF POTTING AND DIP-COATING COMPOUNDS.
F17
9
7 REF
12 REF
POTTING COMPOUND PERMISSIBLE IN SHALLOW VOIDS
LENS FACES TO BE KEPT FREE OF POTTING COMPOUND
ALL SHADED AREA IS POTTING COMPOUND - NOTE 5
POTTING COMPOUND FLUSH TO .010 BELOW (TYP)


1.078
.906
.500
F1
6
F15
1
A
A
-B-
-C-
℄ INDEX LINE
-A-
EC .015
SEE NOTE 3
SEE NOTE 5
4
5
SEE NOTE 7
3
2
SEE NOTE 2

SECTION A-A

(F11) REFERENCE:
1. WIRING DIAGRAM 1015670.

011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR		26	1010701	CATALYST, SRC 05
AR		25	1010700	RESIN, LTV 602
AR		24	1010679	ADHESIVE ACTIVATOR
AR		23	1010661	EPOXY RESIN
AR		22	1010702	ETCHING SOLUTION, TEFLON
AR		21	1010304	CURING AGENT, AMINE
AR		20	1010681	CURING AGENT, CLEAR
AR		19	1010663	ENCAPSULANT, EPOXY RESIN, CLEAR
AR		18	1006776-24	INSULATION SLEEVING, ELECT
AR		17	1010490	INSULATION SLEEVING HEAT SHRINK SIZE 22
1		12	MIL-W-16878-E26	WIRE - 12" LG (WHITE)
		11		
AR		10	QQ-S-571SN60WRAP2	SOLDER
2		9	1010464-1	PIN-CONTACT, CRIMP TYPE
1		7	MIL-W-16878-E26	WIRE - 12" LG (BLACK)
3		6	1010493	LAMP-MINIATURE
1		5	1015679	SEPARATOR
1		4	1015678	GASKET
1		3	1015677	WINDOW - INNER
1		2	1015676	WINDOW - OUTER
1		1	1015675	FRAME

(F12)

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015500-011	1015300-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + −
DECIMALS ±.015
ANGLES + − − −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. SCHWABE DATE 2 MAY 63
CHECKED MALIKOWSKI 11 MAY 63
APPROVAL J. Altmann 3 MAY 63
APPROVAL 11 MAY 63
NASA APPROVAL 7/3/63
MIT APPROVAL 2 July 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WEDGE LIGHTING ASSEMBLY

CODE IDENT NO.
SIZE E
1015666
SCALE 4:1
SHEET 1 OF 1

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTES:

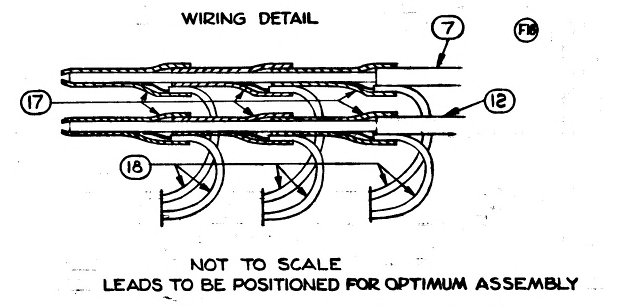
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. (F2) IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.
3. MARK CHARACTERS "DS1" $\frac{3}{32}$ HIGH, BLACK, USING RUBBER STAMP, STENCIL OR SILK SCREEN AS PER ND-1002019.
4. SOLDER PER MIL-STD-440 USING ITEM 10
5. (F3) ENCAPSULATE PER ND-1002106 USING ITEMS 19, 20 AND 21.
6. (F4) ETCH PORTION OF WIRES WHICH ARE TO BE ENCAPSULATED PER ND 1002146 USING ITEM 22.
7. (F5) CEMENT ITEM 5 TO ITEM 2 AND 3 WITH AN EVEN COATING OF ADHESIVE PER ND 1002187 USING ITEMS 23 AND 24. ITEM 5 SHALL NOT RESTRICT VIEW THROUGH APERTURE.
8. AFTER ENCAPSULATING LAMPS AND WIRES IN PLACE APPLY SUITABLE THICKNESS OF POTTING COMPOUND ON TWO INDICATED SURFACES OF ITEMS 2, 3 & 5. WHEN POTTING COMPOUND SOLIDIFIES, ADJUST THICKNESS OF COMPOUND TO MAINTAIN PRESCRIBED POSITION OF INDEX LINE. THESE SURFACES TO ACT AS DAMS FOR SUBSEQUENT POTTING OF WINDOWS TO FRAME PER NOTE 5.
9. (F6) INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206.
10. TWIST ITEMS 7 & 12 3 FULL TURNS PER INCH. LENGTHS SPECIFIED ARE FOR AFTER TWISTING.
11. (F7) SERIALIZE PER ND 1002023.
12. (F8) COAT LAMPS PER ND 1002068 USING ITEMS 25 AND 26. PRIOR TO ENCAPSULATION AS SHOWN.
13. (F9) ALL LAMPS TO LIGHT WITH A 5.0 (MAX) VOLT AC OR DC SOURCE APPLIED TO THE PINS.

REVISIONS TDRR 01502

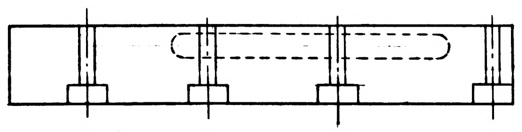
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
D		UPGRADED FOR CLASS A RELEASE		7 JUN 63	
E		REVISED PER TDRR # 02649		AUG. 14 1963	
F19		REVISED PER TDRR NO. 04618		20 NOV 63	
G		REVISED PER TDRR NO. 06726		10 MAR 64	

(F17) WIRE PREPARATION

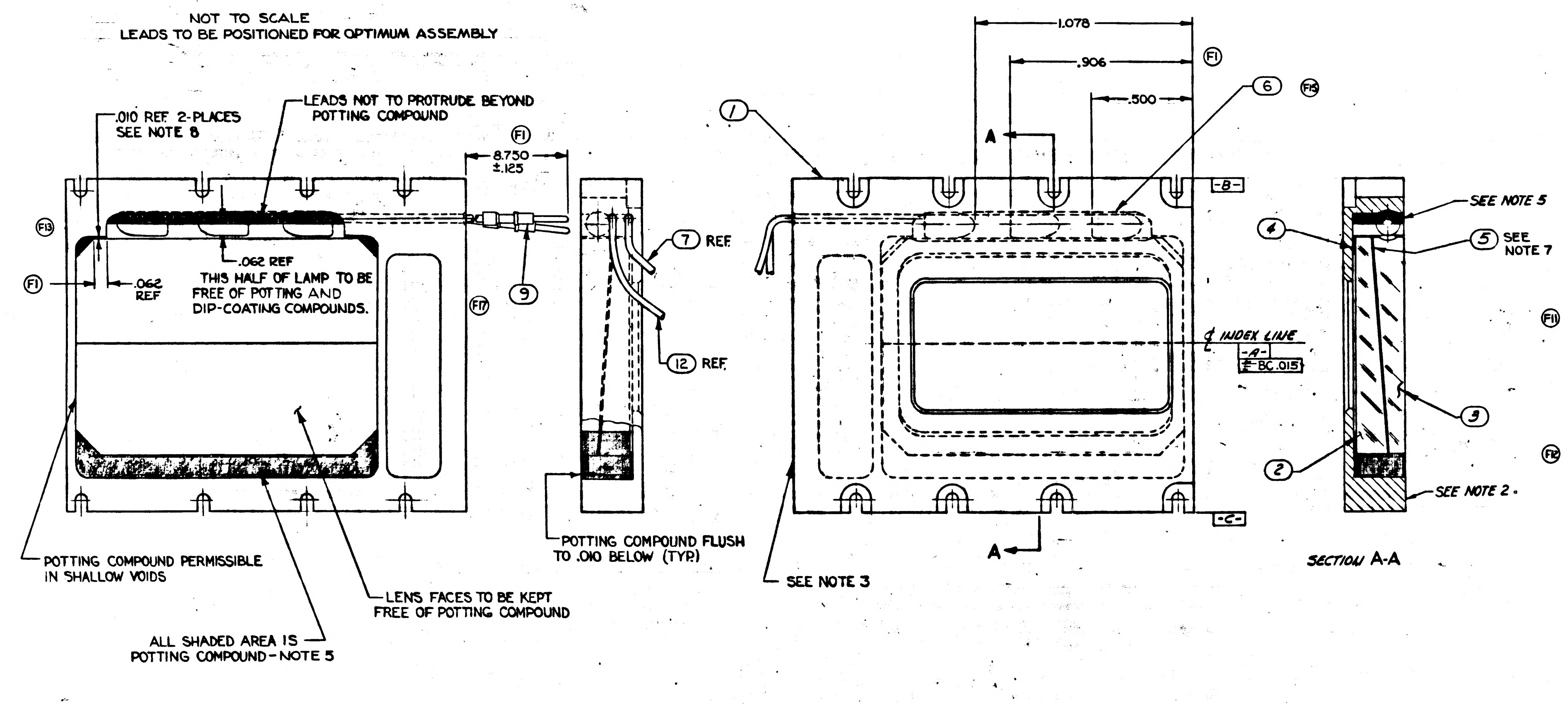
FROM	TO	CONDUCTOR STRIP	CONDUCTOR TIN
DS1-WHT.	P1-28	.093	NO
DS1-BLK.	P1-29	.093	NO


WIRING DETAIL
7
F18
17
12
18

NOT TO SCALE
LEADS TO BE POSITIONED FOR OPTIMUM ASSEMBLY



(F11) REFERENCE:
1. WIRING DIAGRAM 1015670.


.010 REF 2-PLACES
SEE NOTE 8
LEADS NOT TO PROTRUDE BEYOND POTTING COMPOUND
F1
8.750 ±.125
F13
.062 REF
F1
.062 REF
THIS HALF OF LAMP TO BE FREE OF POTTING AND DIP-COATING COMPOUNDS.
9
F17
7 REF
12 REF
1
1.078
.906
.500
F1
6
F15
A
-B-
INDEX LINE
-A-
BC .015
-C-
A
SEE NOTE 5
4
5 SEE NOTE 7
3
2
SEE NOTE 2
SECTION A-A
POTTING COMPOUND PERMISSIBLE IN SHALLOW VOIDS
LENS FACES TO BE KEPT FREE OF POTTING COMPOUND
ALL SHADED AREA IS POTTING COMPOUND - NOTE 5
POTTING COMPOUND FLUSH TO .010 BELOW (TYP)
SEE NOTE 3
F11
F12

			011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
			AR		26	1010701	CATALYST, SRC 05
			AR		25	1010700	RESIN, LTV 602
			AR		24	1010679	ADHESIVE ACTIVATOR
			AR		23	1010661	EPOXY RESIN
			AR		22	1010702	ETCHING SOLUTION, TEFLON
			AR		21	1010304	CURING AGENT, AMINE
			AR		20	1010681	CURING AGENT, CLEAR
			AR		19	1010663	ENCAPSULANT, EPOXY RESIN, CLEAR
			AR		18	1006776-24	INSULATION SLEEVING, ELECT
			AR		17	1010490	INSULATION SLEEVING HEAT SHRINK SIZE 22
			1		12	MIL-W-16878-E26	WIRE - 12" LG (WHITE)
					11		
			AR		10	QQS-571SN60 WARP2	SOLDER
			2		9	1010738-1	PIN-CONTACT, CRIMP TYPE
			1		7	MIL-W-16878-E26	WIRE - 12" LG (BLACK)
			3		6	1010493	LAMP-MINIATURE
			1		5	1015679	SEPARATOR
			1		4	1015678	GASKET
			1		3	1015677	WINDOW - INNER
			1		2	1015676	WINDOW - OUTER
			1		1	1015675	FRAME

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015500-011	1015500-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + -   DECIMALS ±.015   ANGLES + - - -
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. SCHWABE DATE 2-MAY-63
CHECKED MALIKOWSKI 11 MAY 63
APPROVAL J. PETRAWN 3 MAY 63
APPROVAL 11 MAY 63
NASA APPROVAL 7/2/63
MIT APPROVAL 2 Jul 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WEDGE LIGHTING ASSEMBLY

CODE IDENT NO.
SIZE E
1015666
SCALE 4:1
SHEET 1 OF 1

INCHES
PHOTOGRAPHIC SCALE ONLY

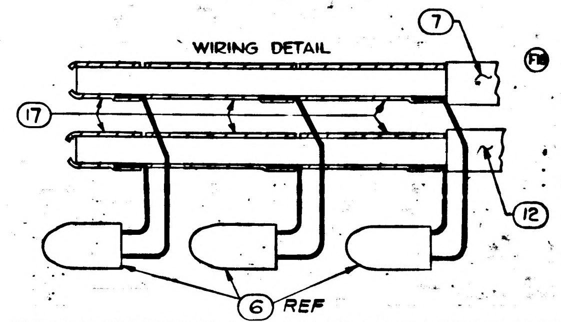
NOTES:

1. *INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.*
2. Ⓕ2 *IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER ND1002019.*
3. MARK CHARACTERS "DS1" $\frac{3}{32}$ HIGH, BLACK, USING RUBBER STAMP, STENCIL OR SILK SCREEN AS PER ND-1002019.
4. *SOLDER PER MIL-STD-440 USING ITEM 10*
5. Ⓕ3 *ENCAPSULATE PER ND-1002106 USING ITEMS 19, 20 AND 21.*
6. Ⓕ4 *ETCH PORTION OF WIRES WHICH ARE TO BE ENCAPSULATED PER ND1002146 USING ITEM 22.*
7. Ⓕ5 *CEMENT ITEM 5 TO ITEM 2 AND 3 WITH AN EVEN COATING OF ADHESIVE PER ND1002187 USING ITEMS 23 AND 24. ITEM 5 SHALL NOT RESTRICT VIEW THROUGH APERTURE.*
8. *AFTER ENCAPSULATING LAMPS AND WIRES IN PLACE APPLY SUITABLE THICKNESS OF POTTING COMPOUND ON TWO INDICATED SURFACES OF ITEMS 2,3 & 5. WHEN POTTING COMPOUND SOLIDIFIES, ADJUST THICKNESS OF COMPOUND TO MAINTAIN PRESCRIBED POSITION OF INDEX LINE. THESE SURFACES TO ACT AS DAMS FOR SUBSEQUENT POTTING OF WINDOWS TO FRAME PER NOTE 5.*
9. Ⓕ6 *INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206.*
10. *TWIST ITEMS 7 & 12 3 FULL TURNS PER INCH. LENGTHS SPECIFIED ARE FOR AFTER TWISTING.*
11. Ⓕ7 *SERIALIZE PER ND 1002023.*
12. Ⓕ8 *COAT LAMPS PER ND1002068 USING ITEMS 25 AND 26. PRIOR TO ENCAPSULATION AS SHOWN.*
13. Ⓕ9 *ALL LAMPS TO LIGHT WITH A 5.0 (MAX) VOLT AC OR DC SOURCE APPLIED TO THE PINS.*
14. *INSULATION RESISTANCE OF CONTACT PINS ITEM 9 TO FRAME SHALL BE 100 MEGOHM MINIMUM WHEN MEASURED WITH 6 ± 3 VOLTS APPLIED.*

REVISIONS *TDRR 01922*					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
D		*UPGRADED FOR CLASS A RELEASE*		7 JUN 63	*reh*
E		REVISED PER TDRR# *02649*		AUG. 14 1963	*8/21/63*
F13		REVISED PER TDRR NO. 04618		20 NOV 63	*WK*
G		REVISED PER TDRR NO. 06726		10 MAR 64	*WK*
H		REVISED PER TDRR NO. 07297		6 APR 64	*PBR*

Ⓕ10 **WIRE PREPARATION**

FROM	TO	CONDUCTOR	
		STRIP	TIN
DS1-WHT.	P1-28	.093	NO
DS1-BLK.	P1-29	.093	NO

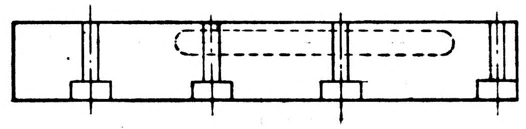


WIRING DETAIL
7
Ⓕ18
17
12
6 REF

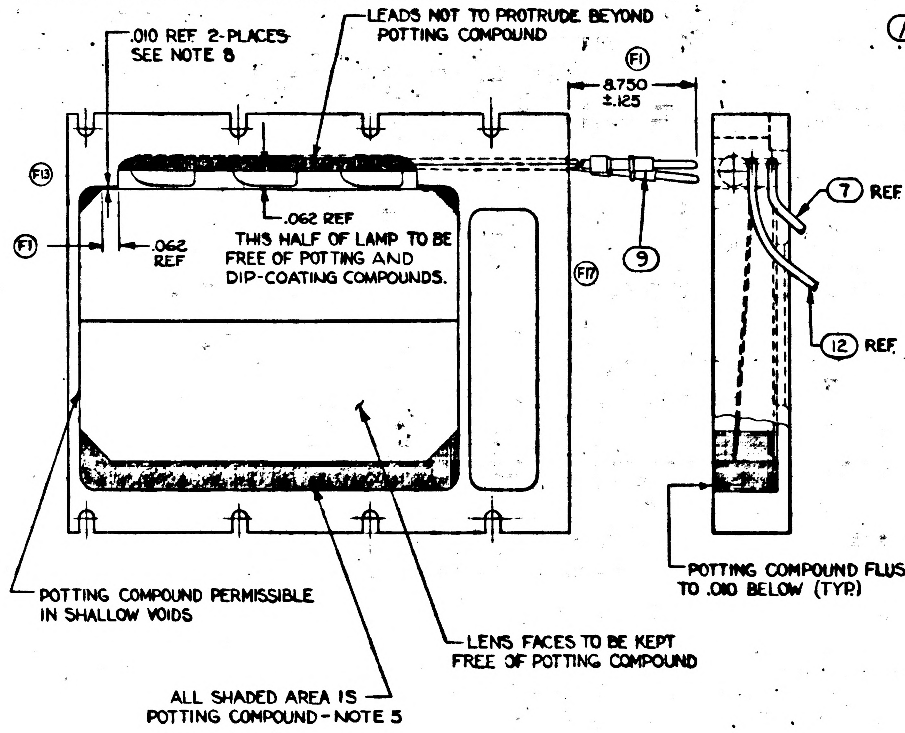
.020 MINIMUM SPACING BETWEEN NON-INSULATED LEADS, AND NON INSULATED LEADS AND FRAME.

NOT TO SCALE

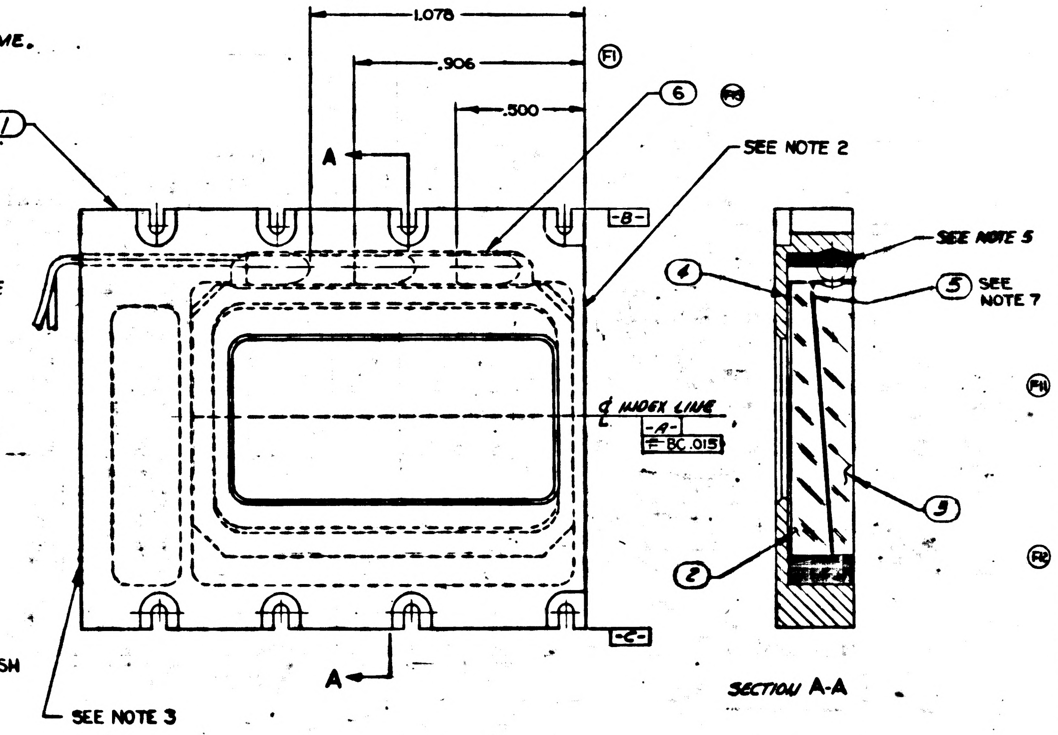
LEADS-TO BE POSITIONED FOR OPTIMUM ASSEMBLY



Ⓕ11 REFERENCE:
1. WIRING DIAGRAM 1015670.



.010 REF 2-PLACES SEE NOTE 8
LEADS NOT TO PROTRUDE BEYOND POTTING COMPOUND
Ⓕ1
8.750 ±.125
Ⓕ13
Ⓕ1
.062 REF
.062 REF
THIS HALF OF LAMP TO BE FREE OF POTTING AND DIP-COATING COMPOUNDS.
Ⓕ17
9
7 REF
12 REF
POTTING COMPOUND FLUSH TO .010 BELOW (TYP.)
POTTING COMPOUND PERMISSIBLE IN SHALLOW VOIDS
LENS FACES TO BE KEPT FREE OF POTTING COMPOUND
ALL SHADED AREA IS POTTING COMPOUND - NOTE 5



1.078
.906
.500
Ⓕ1
6
1
A
SEE NOTE 2
-B-
℄ INDEX LINE
-A-
BC .015
-C-
A
SEE NOTE 3
SEE NOTE 5
4
5 SEE NOTE 7
9
2
SECTION A-A

QUANTITY REQUIRED ON	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR		26	1010701	CATALYST, SRC 05
AR		25	1010700	RESIN, LTV 602
AR		24	1010679	ADHESIVE ACTIVATOR
AR		23	1010661	EPOXY RESIN
AR		22	1010702	ETCHING SOLUTION, TEFLON
AR		21	1010304	CURING AGENT, AMINE
AR		20	1010681	CURING AGENT, CLEAR
AR		19	1010663	ENCAPSULANT, EPOXY RESIN, CLEAR
~~AR~~		~~18~~	~~1006776-84~~	~~INSULATION SLEEVING, ELECT~~
AR		17	1010490-989	INSULATION SLEEVING HEAT SHRINK SIZE 24
1		12	MIL-W-16878-E26	WIRE - 12" LG (WHITE)
		11		
AR		10	QQ-S-571SN60 WRAP2	SOLDER
2		9	1010738-1	PIN-CONTACT, CRIMP TYPE
1		7	MIL-W-16878-E26	WIRE - 12" LG (BLACK)
3		6	1010493	LAMP-MINIATURE
1		5	1015679	SEPARATOR
1		4	1015678	GASKET
1		3	1015677	WINDOW-INNER
1		2	1015676	WINDOW-OUTER
1		1	1015675	FRAME

LIST OF PARTS AND MATERIALS

H 1015666 B

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015500-011	1013500-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + −
DECIMALS ±.015
ANGLES + − − −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. SCHWABE DATE 2 MAY 63
CHECKED MALIKOWSKI 11 MAY 63
APPROVAL J. PETRAWIN 3 MAY 63
APPROVAL 11 MAY 63
NASA APPROVAL 7/2/63
MIT APPROVAL 2 Jul 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WEDGE LIGHTING ASSEMBLY

CODE IDENT NO.
SIZE E
1015666
SCALE 4:1
SHEET 1 OF 1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70321.

(F2) 2. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.

3. MARK CHARACTERS "DS1" $\frac{3}{32}$ HIGH, BLACK USING RUBBER STAMP STENCIL OR SILK SCREEN AS PER ND-1002019.

4. SOLDER PER MIL-STD-440 USING ITEM 10

(F3) 5. ENCAPSULATE PER ND-1002106 USING ITEMS 19, 20 AND 21.

(F4) 6. ETCH PORTION OF WIRES WHICH ARE TO BE ENCAPSULATED PER ND 1002146 USING ITEM 22.

(F5) 7. CEMENT ITEM 5 TO ITEM 2 AND 3 WITH AN EVEN COATING OF ADHESIVE PER ND 1002187 USING ITEMS 23 AND 24. ITEM 5 SHALL NOT RESTRICT VIEW THROUGH APERTURE.

8. AFTER ENCAPSULATING LAMPS AND WIRES IN PLACE APPLY SUITABLE THICKNESS OF POTTING COMPOUND ON TWO INDICATED SURFACES OF ITEMS 2,3 & 5. WHEN POTTING COMPOUND SOLIDIFIES, ADJUST THICKNESS OF COMPOUND TO MAINTAIN PRESCRIBED POSITION OF INDEX LINE THESE SURFACES TO ACT AS DAMS FOR SUBSEQUENT POTTING OF WINDOWS TO FRAME PER NOTE 5.

(F6) 9. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206.

10. TWIST ITEMS 7 & 12 3 FULL TURNS PER INCH. LENGTHS SPECIFIED ARE FOR AFTER TWISTING.

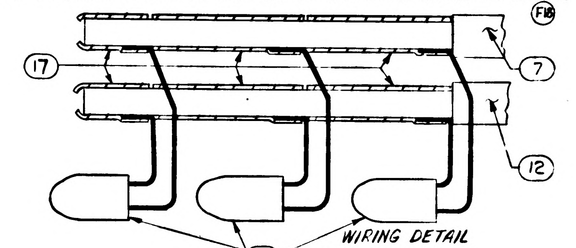
(F7) 11. SERIALIZE PER ND 1002023.

(F8) 12. COAT LAMPS PER ND 1002068 USING ITEMS 25 AND 26. PRIOR TO ENCAPSULATION AS SHOWN.

(F9) 13. ALL LAMPS TO LIGHT WITH A 5.0 (MAX) VOLT AC OR DC SOURCE APPLIED TO THE PINS.

14. MAKE INSULATION RESISTANCE MEASUREMENTS IN ACCORDANCE WITH MIL-STD-202, METHOD 302. CONNECT TEST LEADS TO EITHER CONTACT PIN AND FRAME. THE INSULATION RESISTANCE SHALL BE 100 MEGOHMS MINIMUM AT 150 VOLTS DC.

15. WITH 5.5 ± .5 VOLTS 400 CYCLES AC APPLIED TO THE CONTACT PINS THE CURRENT SHALL BE 160 MIN TO 240 MAX MILLIAMPERES.


(F18)
(17)
(7)
(12)
(6) REF
WIRING DETAIL

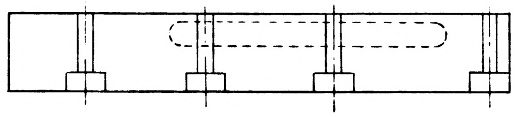
.020 MINIMUM SPACING BETWEEN NON-INSULATED LEADS, AND NON INSULATED LEADS AND FRAME.

NOT TO SCALE

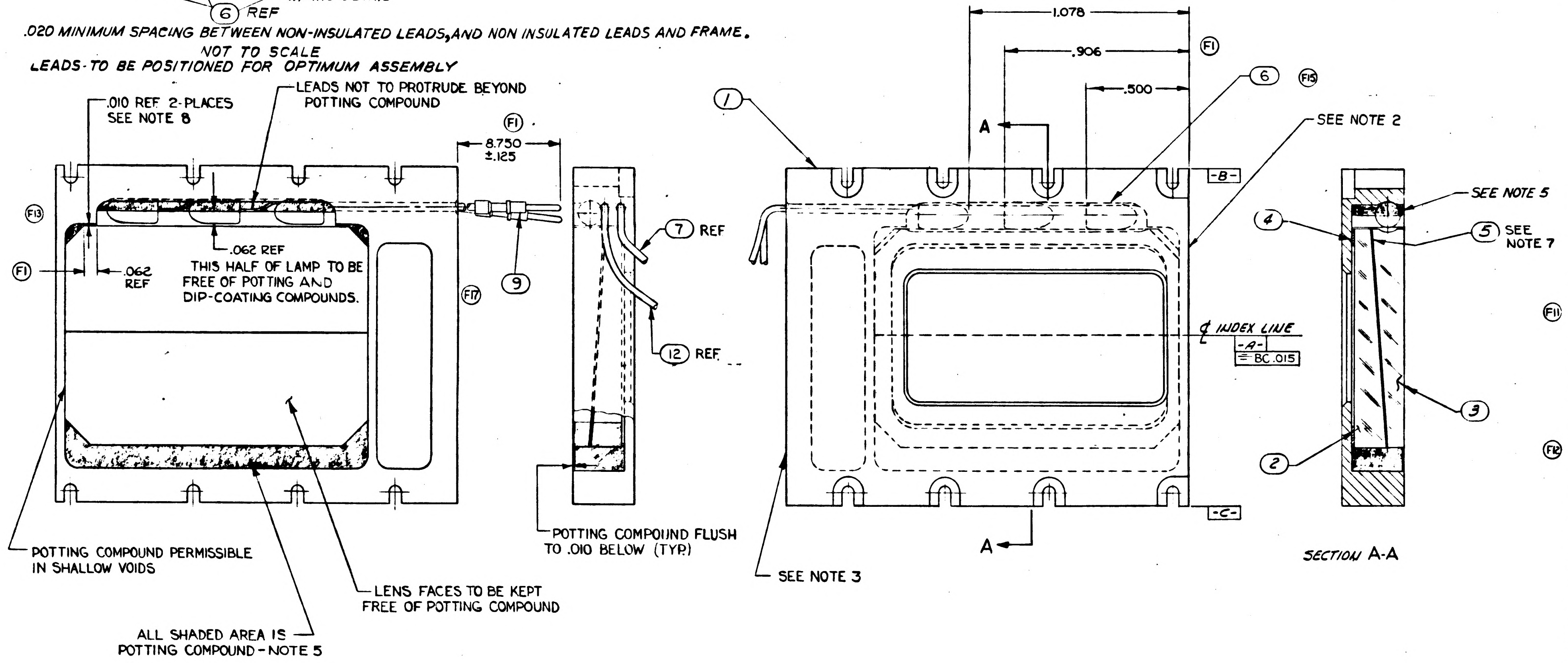
LEADS TO BE POSITIONED FOR OPTIMUM ASSEMBLY

(F17) WIRE PREPARATION

FROM	TO	CONDUCTOR	
		STRIP	TIN
DS1-WHT	P1-28	.093	NO
DS1-BLK.	P1-29	.093	NO



(F19) REFERENCE:
1. WIRING DIAGRAM 1015670.


.010 REF 2-PLACES
SEE NOTE 8
LEADS NOT TO PROTRUDE BEYOND
POTTING COMPOUND
(F1)
8.750
±.125
(F13)
.062 REF
THIS HALF OF LAMP TO BE
FREE OF POTTING AND
DIP-COATING COMPOUNDS.
(F1)
.062
REF
(F17)
(9)
(7) REF
(12) REF
POTTING COMPOUND FLUSH
TO .010 BELOW (TYP.)
POTTING COMPOUND PERMISSIBLE
IN SHALLOW VOIDS
LENS FACES TO BE KEPT
FREE OF POTTING COMPOUND
ALL SHADED AREA IS
POTTING COMPOUND - NOTE 5
1.078
.906
.500
(F1)
(6)
(F15)
(1)
A
SEE NOTE 2
-B-
℄ INDEX LINE
-A-
= BC .015
-C-
A
SEE NOTE 3
SEE NOTE 5
(4)
(5) SEE NOTE 7
(3)
(2)
SECTION A-A

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
D		UPGRADED FOR CLASS A RELEASE		7 JUN 63	
E		REVISED PER TDRR # 02619		AUG. 14 1963	
F19		REVISED PER TDRR NO. 04618		20 NOV 63	WK
G		REVISED PER TDRR NO. 06726		10 MAR 64	WK
H		REVISED PER TDRR NO. 07297		6 APR 64	JJ PBR
J		REVISED PER TDRR NO. 07862		27 APR 64	JWP DLF

REVISIONS TDRR 01902

(F11)

(F12)

QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR		26	1010701	CATALYST, SRC 05
AR		25	1010700	RESIN, LTV 602
AR		24	1010679	ADHESIVE ACTIVATOR
AR		23	1010661	EPOXY RESIN
AR		22	1010702	ETCHING SOLUTION, TEFLON
AR		21	1010304	CURING AGENT, AMINE
AR		20	1010681	CURING AGENT, CLEAR
AR		19	1010663	ENCAPSULANT, EPOXY RESIN, CLEAR
~~AR~~		~~18~~	~~1006776-84~~	~~INSULATION SLEEVING, ELECT~~
AR		17	1010490-989	INSULATION SLEEVING HEAT SHRINK SIZE 24
1		12	MIL-W-16878-E26	WIRE - 12" LG (WHITE)
		11		
AR		10	QQS-571SN60WARP2	SOLDER
2		9	1010738-1	PIN-CONTACT, CRIMP TYPE
1		7	MIL-W-16878-E26	WIRE - 12" LG (BLACK)
3		6	1010473	LAMP-MINIATURE
1		5	1015679	SEPARATOR
1		4	1015678	GASKET
1		3	1015677	WINDOW-INNER
1		2	1015676	WINDOW-OUTER
1		1	1015675	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015500-011	1015500-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS ±.015 ANGLES + − − −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

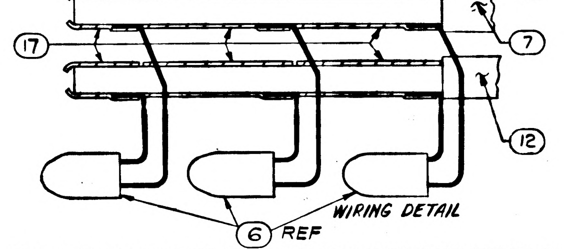
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. SCHWABE DATE 2-MAY-63
CHECKED MALIKOWSKI 11 MAY 63
APPROVAL J. PETRANYI 3 MAY 63
APPROVAL 11 MAY 63
NASA APPROVAL 7/2/63
MIT APPROVAL 7/2/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

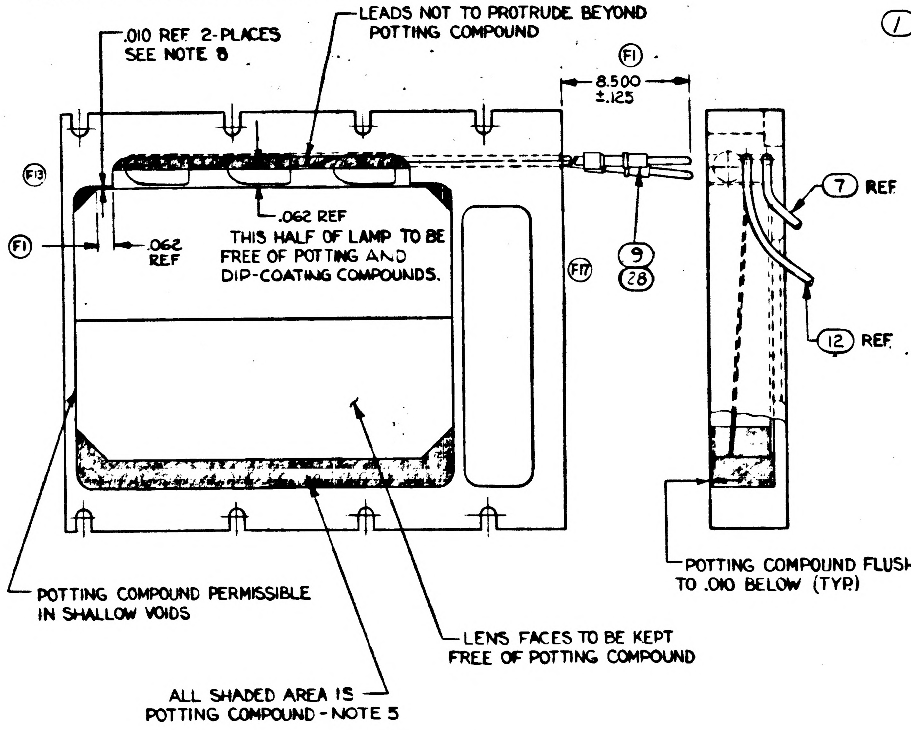
WEDGE LIGHTING ASSEMBLY

CODE IDENT NO
SIZE E
1015666
SCALE 4:1
SHEET 1 OF 1

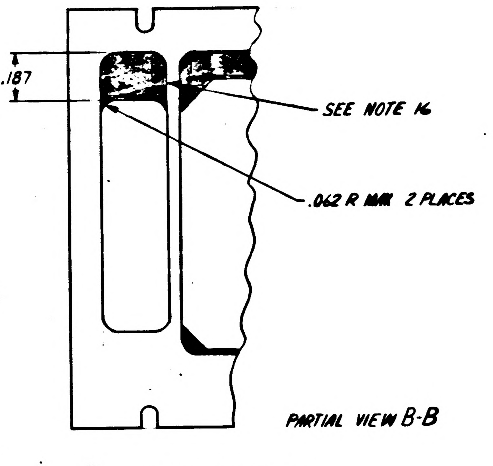
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
(F2) 2. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.
3. MARK CHARACTERS "DS1" $\frac{3}{32}$ HIGH, BLACK, USING RUBBER STAMP, STENCIL OR SILK SCREEN AS PER ND-1002019.
4. SOLDER PER MIL-STD-440 USING ITEM 10
(F3) 5. ENCAPSULATE PER ND-1002106 USING ITEMS 19, 20 AND 21.
(F4) 6. ETCH PORTION OF WIRES WHICH ARE TO BE ENCAPSULATED AND .60 ±.20 LENGTH OF INSULATION IMMEDIATELY ADJACENT TO ITEM 28 PER ND 1002146 USING ITEM 22
(F5) 7. CEMENT ITEM 5 TO ITEM 2 AND 3 WITH AN EVEN COATING OF ADHESIVE PER ND 1002187 USING ITEMS 23 AND 24. ITEM 5 SHALL NOT RESTRICT VIEW THROUGH APERTURE.
8. AFTER ENCAPSULATING LAMPS AND WIRES IN PLACE APPLY SUITABLE THICKNESS OF POTTING COMPOUND ON TWO INDICATED SURFACES OF ITEMS 2,3 & 5. WHEN POTTING COMPOUND SOLIDIFIES, ADJUST THICKNESS OF COMPOUND TO MAINTAIN PRESCRIBED POSITION OF INDEX LINE. THESE SURFACES TO ACT AS DAMS FOR SUBSEQUENT POTTING OF WINDOWS TO FRAME PER NOTE 5.
(F6) 9. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206.
10. TWIST ITEMS 7 & 12 3 FULL TURNS PER INCH. LENGTHS SPECIFIED ARE FOR AFTER TWISTING.
(F7) 11. SERIALIZE PER ND 1002023.
(F8) 12. COAT LAMPS PER ND 1002068 USING ITEMS 25 AND 26. PRIOR TO ENCAPSULATION AS SHOWN.
(F9) 13. ALL LAMPS TO LIGHT WITH A 5.0 (MAX) VOLT AC OR DC SOURCE APPLIED TO THE PINS.
14. MAKE INSULATION RESISTANCE MEASUREMENTS IN ACCORDANCE WITH MIL-STD-202, METHOD 302. CONNECT TEST LEADS TO EITHER CONTACT PIN AND FRAME. THE INSULATION RESISTANCE SHALL BE 100 MEGOHMS MINIMUM AT 150 VOLTS DC.
15. WITH 5.5 ±.5 VOLTS 400 CYCLES AC APPLIED TO THE CONTACT PINS THE CURRENT SHALL BE 160 MIN TO 240 MAX MILLIAMPERES.


F10
17
7
12
6 REF
WIRING DETAIL

.020 MINIMUM SPACING BETWEEN NON-INSULATED LEADS, AND NON INSULATED LEADS AND FRAME.
NOT TO SCALE
LEADS-TO BE POSITIONED FOR OPTIMUM ASSEMBLY


.010 REF 2-PLACES
SEE NOTE 8
LEADS NOT TO PROTRUDE BEYOND POTTING COMPOUND
F1
8.500
±.125
F13
F1
.062 REF
.062 REF
THIS HALF OF LAMP TO BE FREE OF POTTING AND DIP-COATING COMPOUNDS.
F17
9
28
7 REF
12 REF
POTTING COMPOUND FLUSH TO .010 BELOW (TYP.)
POTTING COMPOUND PERMISSIBLE IN SHALLOW VOIDS
LENS FACES TO BE KEPT FREE OF POTTING COMPOUND
ALL SHADED AREA IS POTTING COMPOUND - NOTE 5

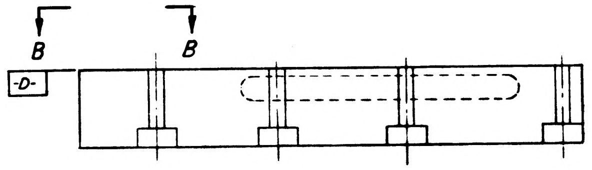
16. ADD ITEMS 29 AND 30 AS SHOWN PER ND 1002236 AND TRIM AFTER CURING, IF NECESSARY, SUCH THAT THE POTTING IS FLUSH TO .005 ABOVE SURFACE -D-.


.187
SEE NOTE 16
.062 R MAX 2 PLACES

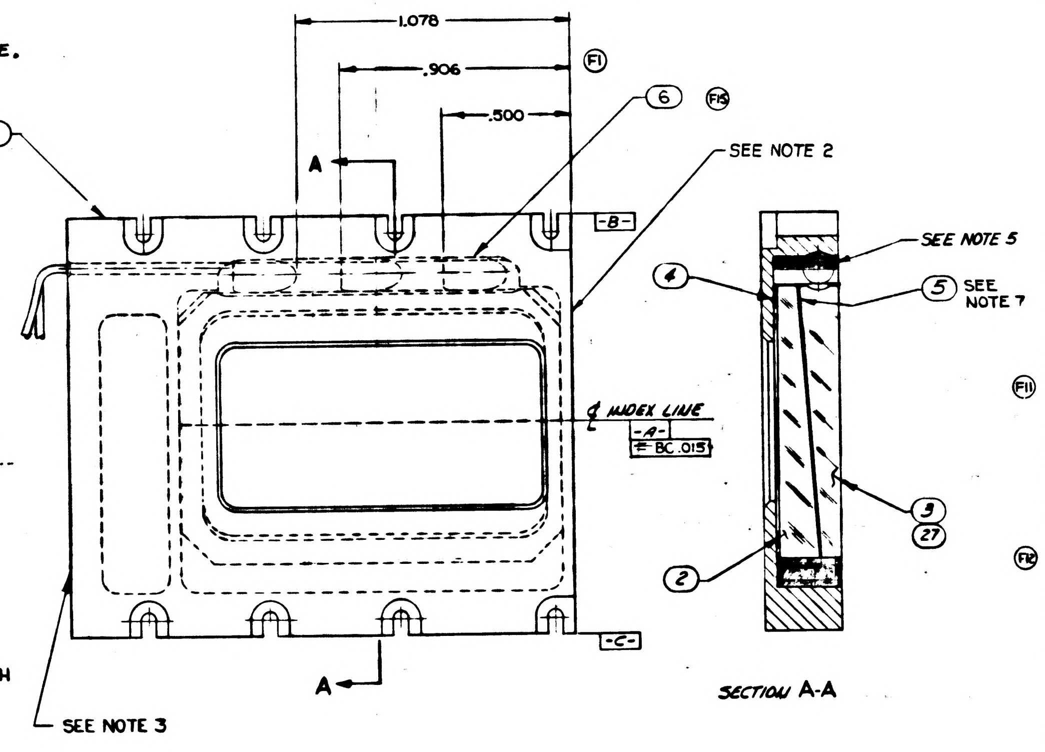
PARTIAL VIEW B-B

(F9) WIRE PREPARATION

FROM	TO	CONDUCTOR STRIP	CONDUCTOR TIN
DS1-WHT.	PI-28	.093	NO
DS1-BLK.	PI-29	.093	NO



(F9) REFERENCE:
I. WIRING DIAGRAM 1015670.


1.078
.906
.500
F1
6
F8
SEE NOTE 2
1
A
-B-
℄ INDEX LINE
-A-
BC.015
-C-
A
SEE NOTE 3
SEE NOTE 5
5 SEE NOTE 7
4
3
27
2

SECTION A-A

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
D		UPGRADED FOR CLASS A RELEASE		7 JUN 63	
E		REVISED PER TDRR # 02649		AUG. 14 1963	8/21/
F 19		REVISED PER TDRR NO. 04618		20 NOV 63	WK
G		REVISED PER TDRR NO. 06726		10 MAR 64	WK
H		REVISED PER TDRR NO. 07297		6 APR 64	PBR
J		REVISED PER TDRR NO. 07862		27 APR 64	JWP
K		REVISED PER TDRR NO. 13908		11 NOV 64	J.K.

QUANTITY REQUIRED 021	QUANTITY REQUIRED 011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
AR	—		30	1012503	COMPOUND POLYURETHANE
AR	—		29	1012504	PRIMER
2	—		28	1010738-5	PIN-CONTACT, CRIMP TYPE
1	—		27	1017540	WINDOW, INNER
AR	AR		26	1010701	CATALYST, SRC 05
AR	AR		25	1010700	RESIN, LTV 602
AR	AR		24	1010679	ADHESIVE ACTIVATOR
AR	AR		23	1010661	EPOXY RESIN
AR	AR		22	1010702	ETCHING SOLUTION, TEFLON
AR	AR		21	1010304	CURING AGENT, AMINE
AR	AR		20	1010681	CURING AGENT, CLEAR
AR	AR		19	1010663	ENCAPSULANT, EPOXY RESIN, CLEAR
	~~AR~~		~~18~~	~~1006776-84~~	~~INSULATION SLEEVING, ELECT~~
AR	AR		17	1010490-989	INSULATION SLEEVING HEAT SHRINK SIZE 24
1	1		12	MIL-W-16878-E26	WIRE - 12" LG (WHITE)
			11		
AR	AR		10	QQS-571SN60 WARP2	SOLDER
—	2		9	1010738-1	PIN-CONTACT, CRIMP TYPE
1	1		7	MIL-W-16878-E26	WIRE - 12" LG (BLACK)
3	3		6	1010493	LAMP-MINIATURE
1	1		5	1015679	SEPARATOR
1	1		4	1015678	GASKET
—	1		3	1015677	WINDOW-INNER
1	1		2	1015676	WINDOW-OUTER
1	1		1	1015675	FRAME

LIST OF PARTS AND MATERIALS

(F11)
(F12)

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015500-021	1015500-021	-021
1015500-011	1015500-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + −
DECIMALS ±.015
ANGLES + − − −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. SCHWABE DATE 2 MAY 63
CHECKED MALIKOWSKI 11 MAY 63
APPROVAL J. PETRANNY 3 MAY 63
APPROVAL 11 MAY 63
NASA APPROVAL 7/3/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

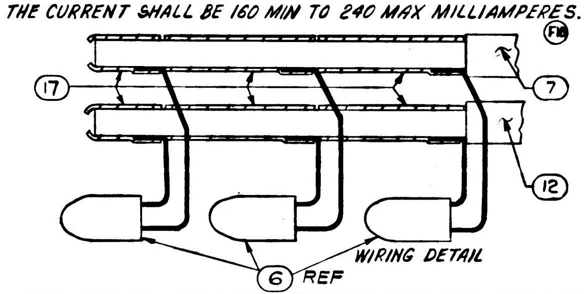
WEDGE LIGHTING ASSEMBLY

CODE IDENT NO.
SIZE E
1015666
SCALE 4/1
SHEET 1 OF 1

K
1015666

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. (F2) IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.
3. MARK CHARACTERS "DS1" $\frac{3}{32}$ HIGH, BLACK, USING RUBBER STAMP, STENCIL OR SILK SCREEN AS PER ND-1002019.
4. SOLDER PER MIL-STD-440 USING ITEM 10
5. (F3) ENCAPSULATE PER ND-1002106 USING ITEMS 19, 20 AND 21.
6. (F4) ETCH PORTION OF WIRES WHICH ARE TO BE ENCAPSULATED AND .60 ± .20 LENGTH OF INSULATION IMMEDIATELY ADJACENT TO ITEM 28 PER ND 1002146 USING ITEM 22
7. (F5) CEMENT ITEM 5 TO ITEM 2 AND 3 WITH AN EVEN COATING OF ADHESIVE PER ND 1002187 USING ITEMS 23 AND 24. ITEM 5 SHALL NOT RESTRICT VIEW THROUGH APERTURE.
8. AFTER ENCAPSULATING LAMPS AND WIRES IN PLACE APPLY SUITABLE THICKNESS OF POTTING COMPOUND ON TWO INDICATED SURFACES OF ITEMS 2, 3 & 5. WHEN POTTING COMPOUND SOLIDIFIES, ADJUST THICKNESS OF COMPOUND TO MAINTAIN PRESCRIBED POSITION OF INDEX LINE. THESE SURFACES TO ACT AS DAMS FOR SUBSEQUENT POTTING OF WINDOWS TO FRAME PER NOTE 5.
9. (F6) INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206.
10. TWIST ITEMS 7 & 12 3 FULL TURNS PER INCH. LENGTHS SPECIFIED ARE FOR AFTER TWISTING.
11. (F7) SERIALIZE PER ND 1002023.
12. (F8) COAT LAMPS PER ND 1002068 USING ITEMS 25 AND 26. PRIOR TO ENCAPSULATION AS SHOWN.
13. (F9) ALL LAMPS TO LIGHT WITH A 5.0 (MAX) VOLT AC OR DC SOURCE APPLIED TO THE PINS.
14. MAKE INSULATION RESISTANCE MEASUREMENTS IN ACCORDANCE WITH MIL-STD-202, METHOD 302. CONNECT TEST LEADS TO EITHER CONTACT PIN AND FRAME. THE INSULATION RESISTANCE SHALL BE 100 MEGOHMS MINIMUM AT 150 VOLTS DC.
15. WITH 5.5 ± .5 VOLTS 400 CYCLES AC APPLIED TO THE CONTACT PINS THE CURRENT SHALL BE 160 MIN TO 240 MAX MILLIAMPERES.

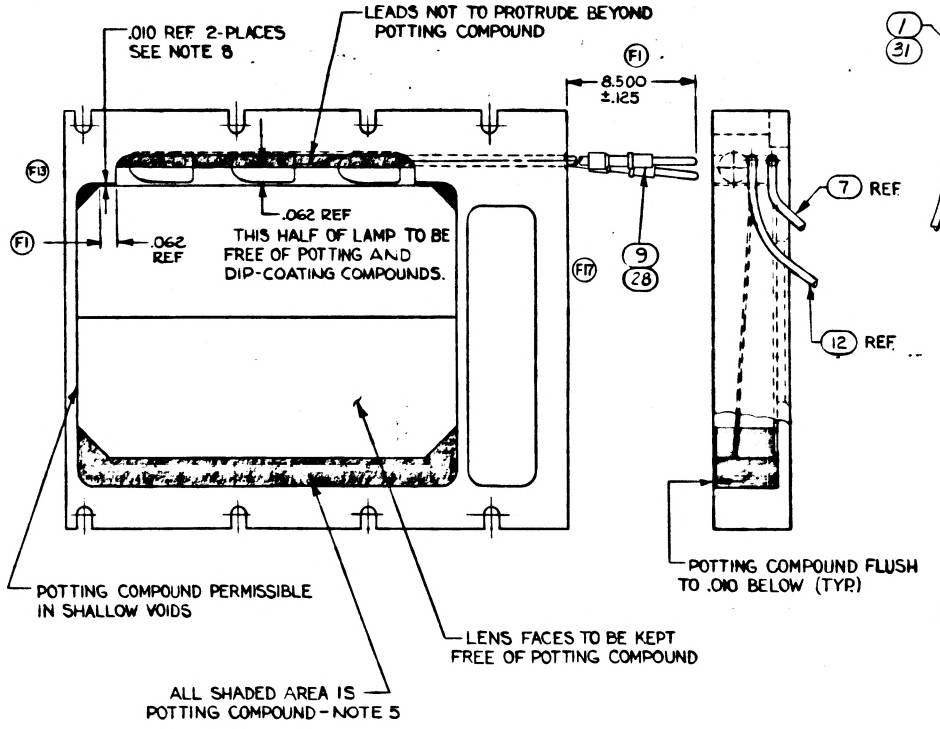

(F18)
17
7
12
6 REF

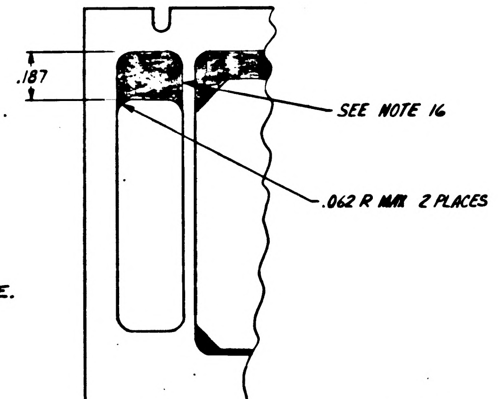
WIRING DETAIL

.020 MINIMUM SPACING BETWEEN NON-INSULATED LEADS, AND NON INSULATED LEADS AND FRAME.

NOT TO SCALE

LEADS TO BE POSITIONED FOR OPTIMUM ASSEMBLY, SEE NOTE 7.

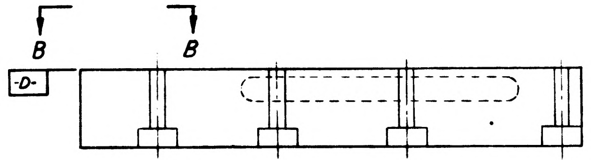

.010 REF 2-PLACES
SEE NOTE 8
LEADS NOT TO PROTRUDE BEYOND
POTTING COMPOUND
(F1)
8.500
±.125
(F13)
(F1)
.062 REF
.062
REF
THIS HALF OF LAMP TO BE
FREE OF POTTING AND
DIP-COATING COMPOUNDS.
(F17)
9
28
7 REF
12 REF
POTTING COMPOUND FLUSH
TO .010 BELOW (TYP.)
POTTING COMPOUND PERMISSIBLE
IN SHALLOW VOIDS
LENS FACES TO BE KEPT
FREE OF POTTING COMPOUND
ALL SHADED AREA IS
POTTING COMPOUND - NOTE 5

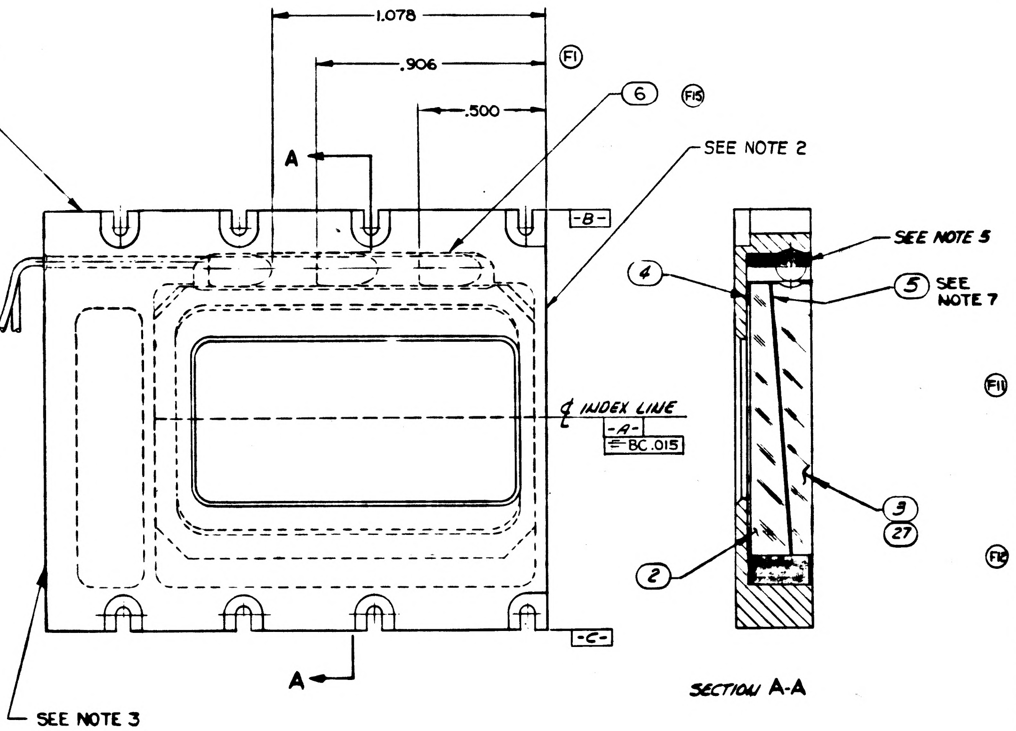

.187
SEE NOTE 16
.062 R MAX 2 PLACES

PARTIAL VIEW B-B

(F19) WIRE PREPARATION

FROM	TO	CONDUCTOR	
		STRIP	TIN
DS1-WHT.	P1-28	.093	NO
DS1-BLK.	P1-29	.093	NO




1.078
.906
.500
(F1)
6
(F15)
1
31
A
A
SEE NOTE 2
-B-
-C-
7 REF
12 REF
INDEX LINE
-A-
BC .015
SEE NOTE 3
SEE NOTE 5
4
5
SEE NOTE 7
3
27
2

SECTION A-A

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
D		UPGRADED FOR CLASS A RELEASE		7 JUN 63	rch
E		REVISED PER TDRR # 02649		AUG. 14 1963	8/21/..
F19		REVISED PER TDRR NO. 04618		20 NOV 63	WH.
G		REVISED PER TDRR NO. 06726		10 MAR 64	WK
H		REVISED PER TDRR NO. 07297		6 APR 64	JJ PBR
J		REVISED PER TDRR NO. 07862		2 APR 64	JWP DL
K		REVISED PER TDRR NO. 13908		11 NOV 64	J.K. EF
L		REVISED PER TDRR NO. 14313		23 NOV 64	

(F19) REFERENCE:
1. WIRING DIAGRAM 1015670.

(F11)

(F12)

	031	021	011	EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	1	—	—		31	1017553	FRAME, WEDGE LIGHTING ASSY
	—	AR	—		30	1012503	COMPOUND POLYURETHANE
	—	AR	—		29	1012504	PRIMER
	2	2	—		28	1010738-5	PIN-CONTACT, CRIMP TYPE
	1	1	—		27	1017540	WINDOW, INNER
	AR	AR	AR		26	1010701	CATALYST, SRC 05
	AR	AR	AR		25	1010700	RESIN, LTV 602
	AR	AR	AR		24	1010679	ADHESIVE ACTIVATOR
	AR	AR	AR		23	1010661	EPOXY RESIN
	AR	AR	AR		22	1010702	ETCHING SOLUTION, TEFLON
	AR	AR	AR		21	1010304	CURING AGENT, AMINE
	AR	AR	AR		20	1010681	CURING AGENT, CLEAR
	AR	AR	AR		19	1010663	ENCAPSULANT, EPOXY RESIN, CLEAR
			~~AR~~		~~18~~	~~1006776-84~~	~~INSULATION SLEEVING, ELECT~~
	AR	AR	AR		17	1010490-989	INSULATION SLEEVING HEAT SHRINK SIZE 24
	1	1	1		12	MIL-W-16878-E26	WIRE - 12" LG (WHITE)
					11		
	AR	AR	AR		10	QQ-S-571 SN60 WRAP 2	SOLDER
	—	—	2		9	1010738-1	PIN-CONTACT, CRIMP TYPE
	1	1	1		7	MIL-W-16878-E26	WIRE - 12" LG (BLACK)
	3	3	3		6	1010493	LAMP-MINIATURE
	1	1	1		5	1015679	SEPARATOR
	1	1	1		4	1015678	GASKET
	—	—	1		3	1015677	WINDOW-INNER
	1	1	1		2	1015676	WINDOW-OUTER
	—	1	1		1	1015675	FRAME

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

16. ADD ITEMS 29 AND 30 AS SHOWN PER ND 1002236 AND TRIM AFTER CURING, IF NECESSARY, SUCH THAT THE POTTING IS FLUSH TO .005 ABOVE SURFACE -D-.
17. AFTER POSITIONING LEADS FOR OPTIMUM ASSEMBLY AND JUST PRIOR TO ENCAPSULATING LAMPS AND LEADS, INSULATE EACH PAIR OF LAMP LEADS WITH A DROP OF ENCAPSULANT (ITEMS 19, 20, AND 21 PER ND 1002106) AND ALLOW TO CURE.

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015500-031	1015500-031	-031
1015500-021	1015500-021	-021
1015500-011	1015500-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS ±.015 ANGLES + − − −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. SCHWABE DATE 2-MAY-63
MALIKOWSKI 11 MAY 63
CHECKED
APPROVAL J. PETRANN 3 MAY 63
APPROVAL 11 MAY 63
NASA APPROVAL 7/2/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WEDGE LIGHTING ASSEMBLY

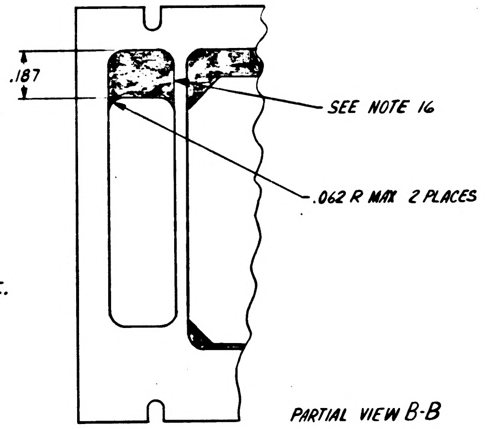
CODE IDENT NO.
SIZE E
1015666
SCALE 4/1
SHEET 1 OF 1

L
1015666

MIL 1077E-P

NOTES:

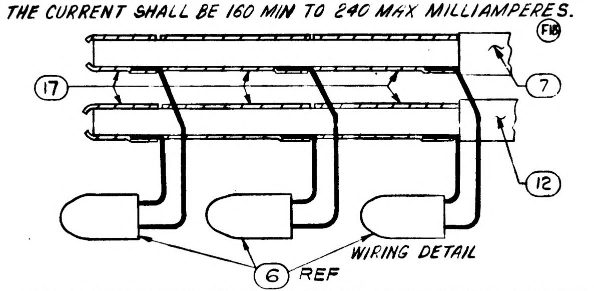
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
(F2) 2. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER ND 1002019.
3. MARK CHARACTERS "DS1" $\frac{3}{32}$ HIGH, BLACK, USING RUBBER STAMP, STENCIL OR SILK SCREEN AS PER ND-1002019.
4. SOLDER PER MIL-STD-440 USING ITEM 10
(F3) 5. ENCAPSULATE PER ND-1002106 USING ITEMS 19, 20 AND 21.
(F4) 6. ETCH PORTION OF WIRES WHICH ARE TO BE ENCAPSULATED AND .60 ±.20 LENGTH OF INSULATION IMMEDIATELY ADJACENT TO ITEM 28 PER ND 1002146 USING ITEM 22
(F5) 7. CEMENT ITEM 5 TO ITEM 2 AND 3 WITH AN EVEN COATING OF ADHESIVE PER ND 1002187 USING ITEMS 23 AND 24. ITEM 5 SHALL NOT RESTRICT VIEW THROUGH APERTURE.
8. AFTER ENCAPSULATING LAMPS AND WIRES IN PLACE APPLY SUITABLE THICKNESS OF POTTING COMPOUND ON TWO INDICATED SURFACES OF ITEMS 2, 3 & 5. WHEN POTTING COMPOUND SOLIDIFIES, ADJUST THICKNESS OF COMPOUND TO MAINTAIN PRESCRIBED POSITION OF INDEX LINE. THESE SURFACES TO ACT AS DAMS FOR SUBSEQUENT POTTING OF WINDOWS TO FRAME PER NOTE 5.
(F6) 9. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206.
10. TWIST ITEMS 7 & 12 3 FULL TURNS PER INCH. LENGTHS SPECIFIED ARE FOR AFTER TWISTING.
(F7) 11. SERIALIZE PER ND 1002023.
(F8) 12. COAT LAMPS PER ND 1002068 USING ITEMS 25 AND 26. PRIOR TO ENCAPSULATION AS SHOWN.
(F9) 13. ALL LAMPS TO LIGHT WITH A 5.0 (MAX) VOLT AC OR DC SOURCE APPLIED TO THE PINS.
14. MAKE INSULATION RESISTANCE MEASUREMENTS IN ACCORDANCE WITH MIL-STD-202, METHOD 302. CONNECT TEST LEADS TO EITHER CONTACT PIN AND FRAME. THE INSULATION RESISTANCE SHALL BE 100 MEGOHMS MINIMUM AT 150 VOLTS DC.
15. WITH 5.5 ±.5 VOLTS 400 CYCLES AC APPLIED TO THE CONTACT PINS THE CURRENT SHALL BE 160 MIN TO 240 MAX MILLIAMPERES.


.187
SEE NOTE 16
.062 R MAX 2 PLACES

PARTIAL VIEW B-B

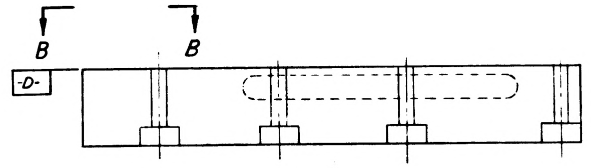
(F10) WIRE PREPARATION

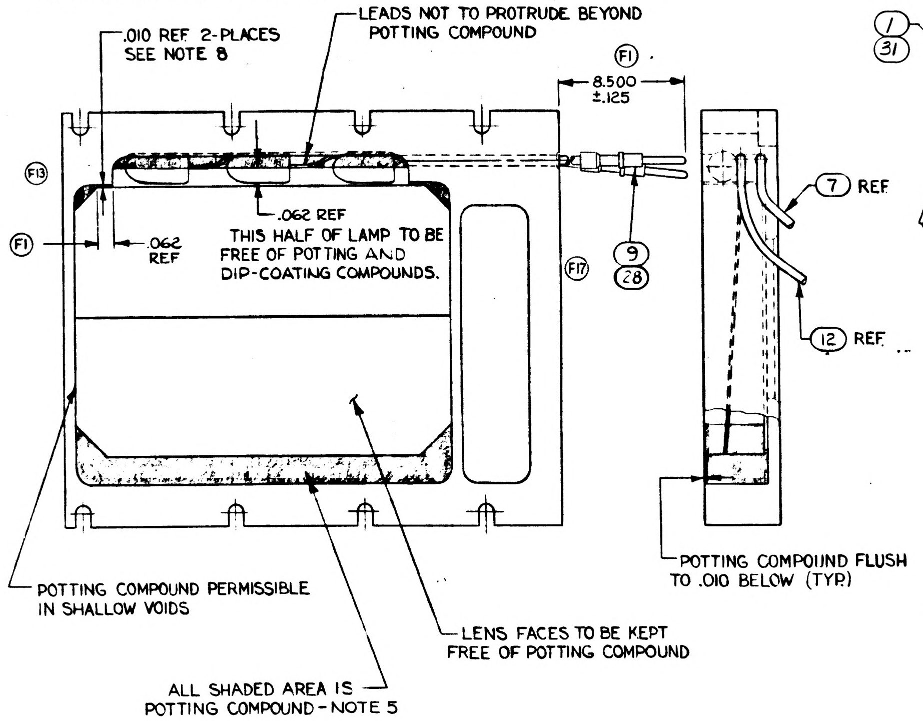
FROM	TO	CONDUCTOR	
		STRIP	TIN
DS1-WHT.	P1-28	.093	NO
DS1-BLK	P1-29	.093	NO

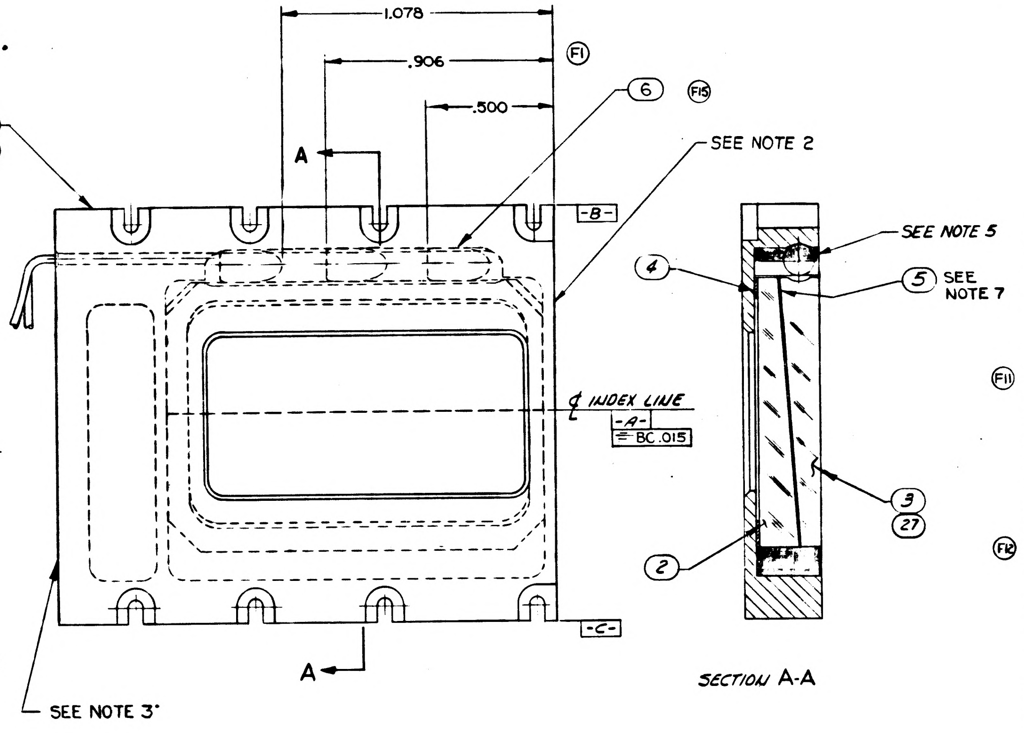

(F18)
17
7
12
6 REF

WIRING DETAIL

.020 MINIMUM SPACING BETWEEN NON-INSULATED LEADS, AND NON INSULATED LEADS AND FRAME.
NOT TO SCALE
LEADS-TO BE POSITIONED FOR OPTIMUM ASSEMBLY, SEE NOTE 7.




.010 REF 2-PLACES
SEE NOTE 8
LEADS NOT TO PROTRUDE BEYOND
POTTING COMPOUND
(F1)
8.500
±.125
(F13)
(F1)
.062
REF
.062 REF
THIS HALF OF LAMP TO BE
FREE OF POTTING AND
DIP-COATING COMPOUNDS.
(F17)
9
28
7 REF
12 REF
POTTING COMPOUND FLUSH
TO .010 BELOW (TYP.)
POTTING COMPOUND PERMISSIBLE
IN SHALLOW VOIDS
LENS FACES TO BE KEPT
FREE OF POTTING COMPOUND
ALL SHADED AREA IS
POTTING COMPOUND - NOTE 5


1.078
.906
.500
(F1)
6
(F15)
1
31
A
A
-B-
SEE NOTE 2
℄ INDEX LINE
-A-
= BC .015
-C-
SEE NOTE 3
SEE NOTE 5
4
5
SEE
NOTE 7
3
27
2
(F11)
(F12)

SECTION A-A

(F10) REFERENCE:
1. WIRING DIAGRAM 1015670.

16. ADD ITEMS 29 AND 30 AS SHOWN PER ND 1002236 AND TRIM AFTER CURING, IF NECESSARY, SUCH THAT THE POTTING IS FLUSH TO .005 ABOVE SURFACE -D-.
17. AFTER POSITIONING LEADS FOR OPTIMUM ASSEMBLY AND JUST PRIOR TO ENCAPSULATING LAMPS AND LEADS, INSULATE EACH PAIR OF LAMP LEADS WITH A DROP OF ENCAPSULANT (ITEMS 19, 20, AND 21 PER ND 1002106) AND ALLOW TO CURE.

REVISIONS TDRR 0502

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
D		UPGRADED FOR CLASS A RELEASE		7 JUN 63	reh
E		REVISED PER TDRR # 02649		AUG. 14 1963	PEF 8/21
F		REVISED PER TDRR NO. 04618		20 NOV 63	WH
G		REVISED PER TDRR NO. 06726		10 MAR 64	WK
H		REVISED PER TDRR NO. 07297		6 APR 64	PBR
J		REVISED PER TDRR NO. 07862		27 APR 64	WP
K		REVISED PER TDRR NO. 13908		11 NOV 64	J.K.
L		REVISED PER TDRR NO. 14313		23 NOV 64	RW
M		REVISED PER TDRR 1455		7 DEC 64	WP

	QUANTITY REQUIRED			EFFECTIVITY	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
	031	021	011				
	1	–	–		31	1017553	FRAME, WEDGE LIGHTING ASSY
	–	AR	–		30	1012503	COMPOUND POLYURETHANE
	–	AR	–		29	1012504	PRIMER
	2	2	–		28	1010738-5	PIN-CONTACT, CRIMP TYPE
	1	1	–		27	1017540	WINDOW, INNER
	AR	AR	AR		26	1010701	CATALYST, SRC 05
	AR	AR	AR		25	1010700	RESIN, LTV 602
	AR	AR	AR		24	1010679	ADHESIVE ACTIVATOR
	AR	AR	AR		23	1010661	EPOXY RESIN
	AR	AR	AR		22	1010702	ETCHING SOLUTION, TEFLON
	AR	AR	AR		21	1010304	CURING AGENT, AMINE
	AR	AR	AR		20	1010681	CURING AGENT, CLEAR
	AR	AR	AR		19	1010663	ENCAPSULANT, EPOXY RESIN, CLEAR
			~~AR~~		~~18~~	~~1006776-24~~	~~INSULATION SLEEVING, ELECT~~
	AR	AR	AR		17	1010490-989	INSULATION SLEEVING HEAT SHRINK SIZE 24
	1	1	1		12	MIL-W-16878-E26	WIRE - 12" LG (WHITE)
					11		
	AR	AR	AR		10	QQS-571SN60 WARP2	SOLDER
	–	–	2		9	1010738-1	PIN-CONTACT, CRIMP TYPE
	1	1	1		7	MIL-W-16878-E26	WIRE - 12" LG (BLACK)
	3	3	3		6	1010473	LAMP-MINIATURE
	1	1	1		5	1015679	SEPARATOR
	1	1	1		4	1015678	GASKET
	–	–			3	1015677	WINDOW-INNER
	1	1			2	1015676	WINDOW-OUTER
	–	1	1		1	1015675	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON	APPLICABLE DASH NO.
1015500-021	1015500-021	-031
1015500-021	1015500-021	-021
1015500-011	1015500-011	-011

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + –
DECIMALS ±.015
ANGLES + – – –
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. SCHWABE DATE 2 MAY 63
CHECKED MAJKOWSKI 2 MAY 63
APPROVAL J. PETRANYI 3 MAY 63
APPROVAL 11 MAY 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WEDGE LIGHTING ASSEMBLY

CODE IDENT NO
SIZE E
1015666
SCALE 4/1
SHEET 1 OF 1

1015666 M

A 1015668

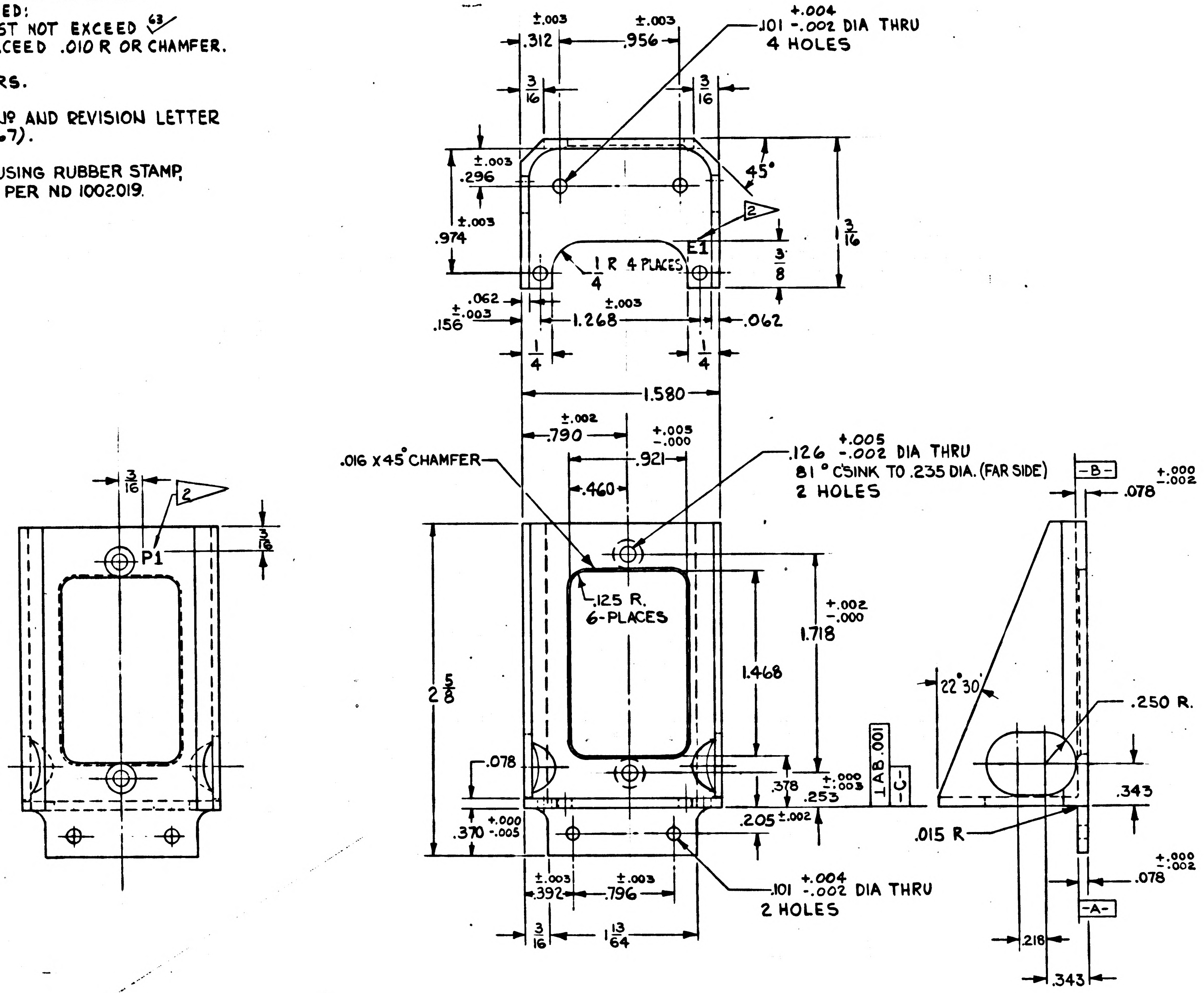
1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
MATERIAL: MIL-B-21531 BERYLLIUM (ES-7389).

MACHINE AND HEAT TREAT PER ND 1002114
UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 63✓
ALL CORNERS NOT TO EXCEED .010 R OR CHAMFER.

MUST BE FREE FROM BURRS.

IDENTIFY USING DRAWING Nº AND REVISION LETTER PER MIL-STD-130 (ES-267).

2. MARK $\frac{3}{32}$ HIGH CHARACTERS USING RUBBER STAMP, STENCIL, OR SILK SCREEN AS PER ND 1002.019.



±.003 .312
±.003 .956
.101 +.004 -.002 DIA THRU 4 HOLES
3/16
3/16
±.003 .296
45°
2
±.003 .974
3/16
1/4 R 4 PLACES
E1
3/8
1 3/16
.062 ±.003 .156
±.003 1.268
.062
1/4
1/4
1.580
±.002 .790
+.005 -.000 .921
.460
.016 X 45° CHAMFER
.126 +.005 -.002 DIA THRU
81° CSINK TO .235 DIA. (FAR SIDE)
2 HOLES
-B-
+.000 -.002 .078
3/16
2
P1
3/16
.125 R. 6-PLACES
+.002 -.000 1.718
1.468
2 5/8
22°30'
.250 R.
.078
.378
+.000 -.003 .253
⊥ A .001
-C-
.343
+.000 -.005 .370
.205 ±.002
.015 R
±.003 .392
±.003 .796
.101 +.004 -.002 DIA THRU 2 HOLES
+.000 -.002 .078
-A-
3/16
1 13/64
.218
.343

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		UPGRADED FOR CLASS A RELEASE TDRR 01436		11-MAY 63	

1015500-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
$+\frac{1}{64}$	+.005	+1°
$-\frac{1}{64}$	-.005	-1°

DO NOT SCALE THIS DRAWING

MATERIAL 1

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J Koracin 10 MAY 63
CHECKED DATE 11 MAY 63
APPROVAL 11 MAY 63
APPROVAL 11 MAY 63
NASA APPROVAL 5 Jun 63
MIT APPROVAL 5 Jun 63

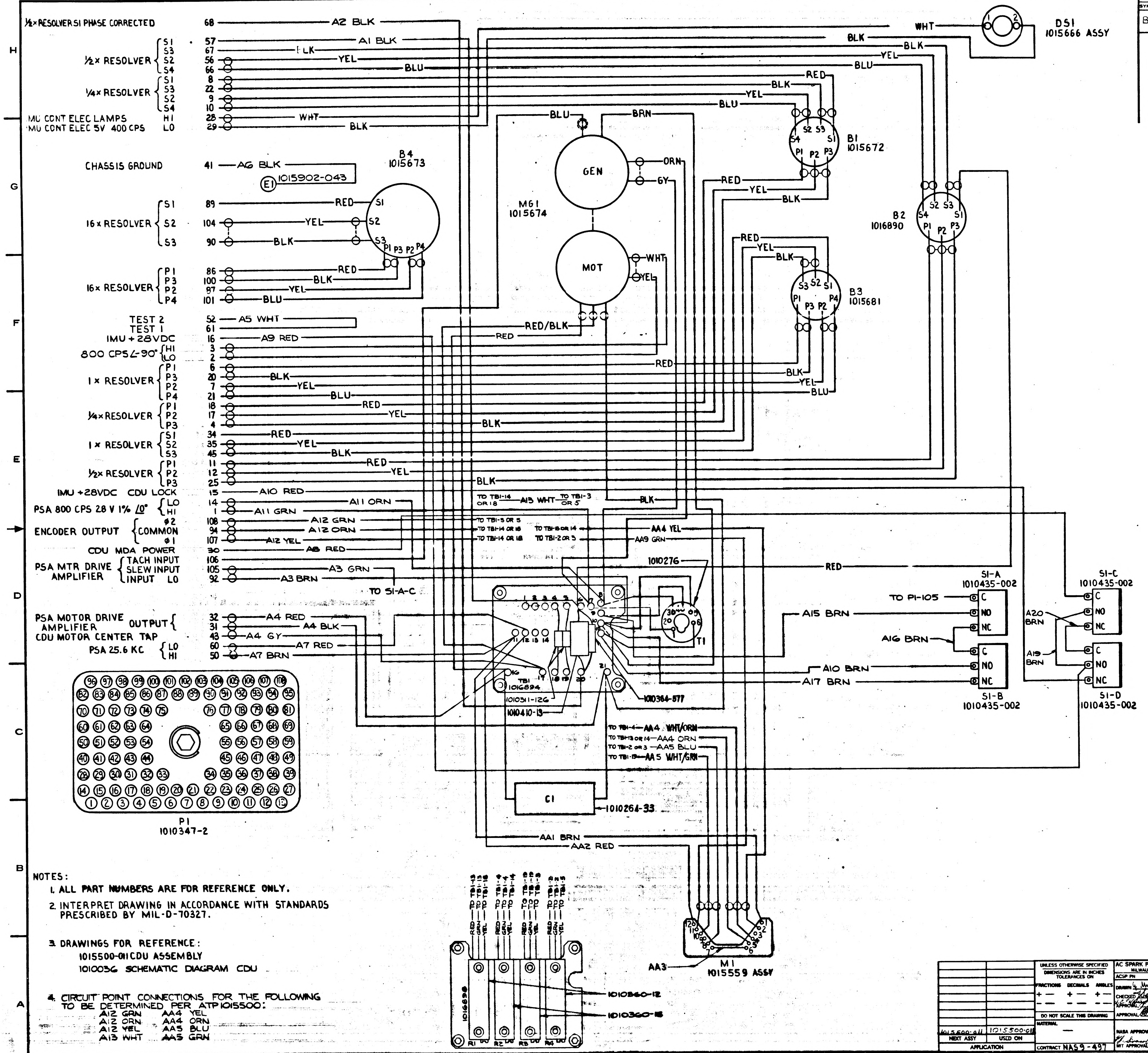
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

BRACKET, CONNECTOR

CODE IDENT NO.
SIZE D
1015668
SCALE 2:1
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		INITIAL CLASS A RELEASE TDRR 03219	9/17/63	23 JUL 63	


½× RESOLVER S1 PHASE CORRECTED 68 A2 BLK
½× RESOLVER S1 57 S3 67 S2 56 S4 66
A1 BLK
BLK
YEL
BLU
¼× RESOLVER S1 8 S3 22 S2 9 S4 10
IMU CONT ELEC LAMPS HI 28 WHT
IMU CONT ELEC 5V 400 CPS LO 29 BLK
CHASSIS GROUND 41 A6 BLK
E1 1015902-043
B4 1015673
16× RESOLVER S1 89 S2 104 S3 90
RED YEL BLK
S1 S2 S3 P1 P3 P2 P4
16× RESOLVER P1 86 P3 100 P2 87 P4 101
RED BLK YEL BLU
TEST 2 52 A5 WHT
TEST 1 61
IMU +28VDC 16 A9 RED
800 CPS ∠-90° HI 3 LO 2
1× RESOLVER P1 6 P3 20 P2 7 P4 21
BLK YEL BLU
¼× RESOLVER P1 18 P2 17 P3 4
RED YEL BLK
1× RESOLVER S1 34 S2 35 S3 45
RED YEL BLK
½× RESOLVER P1 11 P2 12 P3 25
RED YEL BLK
IMU +28VDC CDU LOCK 15 A10 RED
PSA 800 CPS 28 V 1% ∠0° LO 14 HI 1
A11 ORN A11 GRN
ENCODER OUTPUT φ2 108 COMMON 94 φ1 107
A12 GRN A12 ORN A12 YEL
CDU MDA POWER 30 A8 RED
PSA MTR DRIVE AMPLIFIER TACH INPUT 106 SLEW INPUT 105 INPUT LO 92
A3 GRN A3 BRN
TO S1-A-C
PSA MOTOR DRIVE AMPLIFIER OUTPUT 32 31
CDU MOTOR CENTER TAP 43
PSA 25.6 KC LO 60 HI 50
A4 RED A4 BLK A4 GY A7 RED A7 BRN
P1 1010347-2
GEN MOT
M61 1015674
BLU BRN ORN GY WHT YEL RED/BLK RED
DS1 1015666 ASSY
WHT BLK YEL BLU RED
B1 1015672
S4 S2 S3 S1 P1 P2 P3
B2 1016890
B3 1015681
TO TB1-14 OR 18 A13 WHT TO TB1-3 OR 5
TO TB1-5 OR 5 TO TB1-14 OR 18 TO TB1-8 OR 14 AA4 YEL
TO TB1-14 OR 18 TO TB1-2 OR 3 AA9 GRN
1010276
T1
TB1 1016894
1010511-126
1010410-13
1010364-577
TO TB1-4 AA4 WHT/ORN
TO TB1-13 OR 14 AA4 ORN
TO TB1-2 OR 3 AA5 BLU
TO TB1-15 AA5 WHT/GRN
C1
1010264-33
AA1 BRN
AA2 RED
AA3
M1 1015559 ASSY
S1-A 1010435-002
S1-B 1010435-002
S1-C 1010435-002
S1-D 1010435-002
TO P1-105
A15 BRN
A16 BRN
A10 BRN
A17 BRN
A20 BRN
A19 BRN
C NO NC
1010360-12
1010360-15
1010698
R1 R2 R3 R4

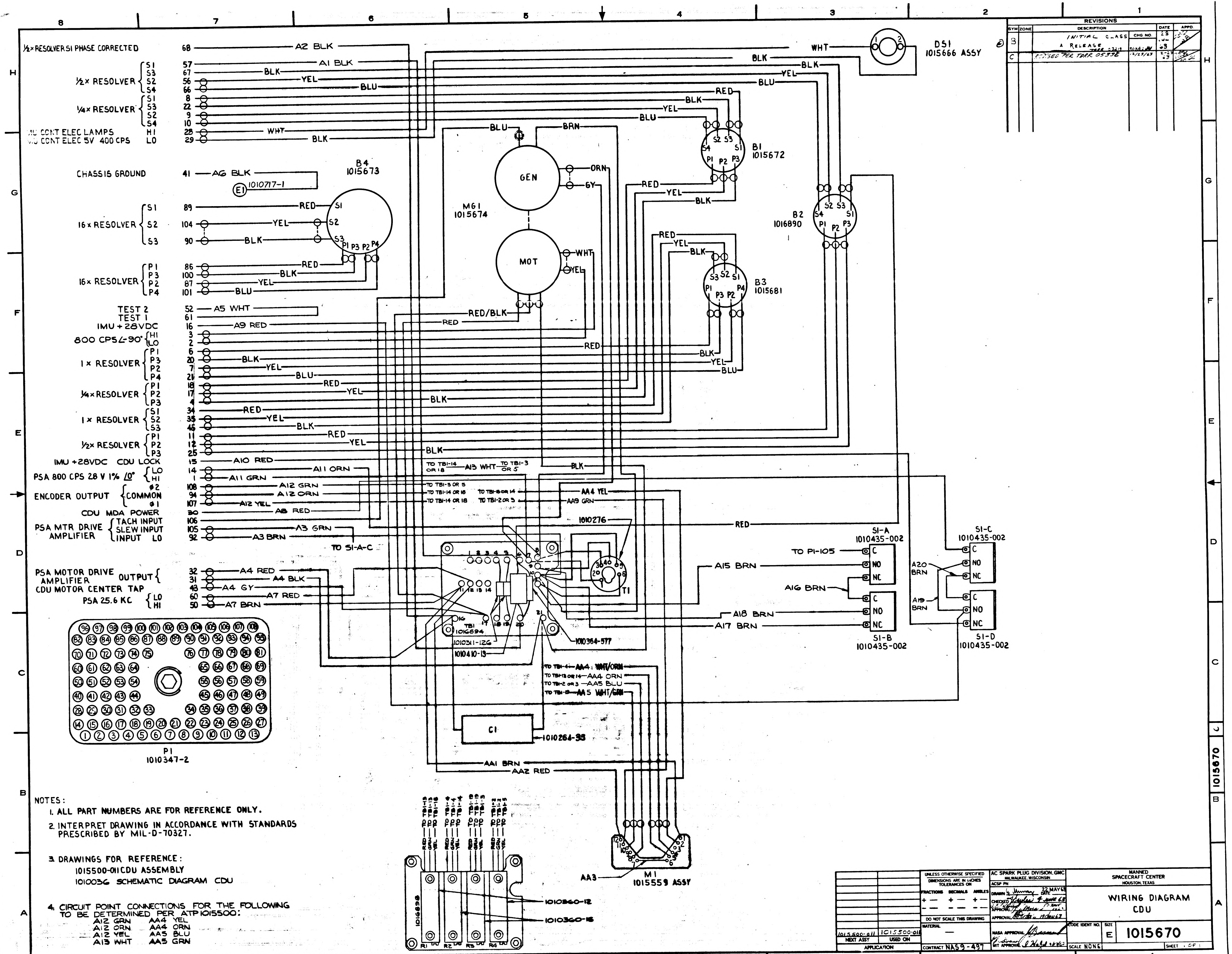
NOTES:

1. ALL PART NUMBERS ARE FOR REFERENCE ONLY.
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3. DRAWINGS FOR REFERENCE:
   - 1015500-011 CDU ASSEMBLY
   - 1010036 SCHEMATIC DIAGRAM CDU
4. CIRCUIT POINT CONNECTIONS FOR THE FOLLOWING TO BE DETERMINED PER ATP 1015500:

A12 GRN	AA4 YEL
A12 ORN	AA4 ORN
A12 YEL	AA5 BLU
A13 WHT	AA5 GRN

1015500-011	1015500-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
NEXT ASSY	USED ON	DO NOT SCALE THIS DRAWING	ACSP PN	WIRING DIAGRAM CDU
APPLICATION		MATERIAL —	DRAWN G. Murray DATE 22 MAY 63	CODE IDENT NO.
			CHECKED J Bayles 4 JUNE 63	SIZE E
			APPROVAL F. Moran 17 JUNE 63	1015670
			APPROVAL 10 JUL 63	SCALE NONE
		CONTRACT NAS9-497	NASA APPROVAL	SHEET 1 OF 1
			MIT APPROVAL 9/17/63	

1015670



½x RESOLVER S1 PHASE CORRECTED
½x RESOLVER S1 S3 S2 S4
¼x RESOLVER S1 S3 S2 S4
CDU CONT ELEC LAMPS HI
CDU CONT ELEC 5V 400 CPS LO
CHASSIS GROUND
16x RESOLVER S1 S2 S3
16x RESOLVER P1 P3 P2 P4
TEST 2
TEST 1
IMU +28VDC
800 CPS∠-90° HI LO
1x RESOLVER P1 P3 P2 P4
¼x RESOLVER P1 P2 P3
1x RESOLVER S1 S2 S3
½x RESOLVER P1 P2 P3
IMU +28VDC CDU LOCK
PSA 800 CPS 28 V 1% /0° LO HI
ENCODER OUTPUT φ2 COMMON φ1
CDU MDA POWER
PSA MTR DRIVE AMPLIFIER TACH INPUT SLEW INPUT INPUT LO
PSA MOTOR DRIVE AMPLIFIER OUTPUT
CDU MOTOR CENTER TAP
PSA 25.6 KC LO HI
A2 BLK
A1 BLK
A6 BLK
E1 1010717-1
A5 WHT
A9 RED
A10 RED
A11 ORN
A11 GRN
A12 GRN
A12 ORN
A12 YEL
A8 RED
A3 GRN
A3 BRN
A4 RED
A4 BLK
A4 GY
A7 RED
A7 BRN
TO S1-A-C
B4 1015673
M61 1015674
GEN
MOT
RED/BLK
B1 1015672
B2 1016890
B3 1015681
DS1 1015666 ASSY
TO TB1-14 OR 18
A13 WHT
TO TB1-3 OR 5
AA4 YEL
AA9 GRN
1010276
T1
TB1 1016894
1010311-126
1010410-13
1010364-577
S1-A 1010435-002
S1-B 1010435-002
S1-C 1010435-002
S1-D 1010435-002
TO P1-105
A15 BRN
A16 BRN
A18 BRN
A17 BRN
A20 BRN
A19 BRN
TO TB1-4 AA4 WHT/ORN
TO TB1-13 OR 14 AA4 ORN
TO TB1-2 OR 3 AA5 BLU
TO TB1-1 AA5 WHT/GRN
C1
1010264-35
AA1 BRN
AA2 RED
AA3
M1 1015559 ASSY
P1 1010347-2
1016898
R1 R2 R3 R4
1010360-12
1010360-16
REVISIONS
SYM ZONE DESCRIPTION CHG NO. DATE APPD
B INITIAL CLASS A RELEASE
C REVISED PER TDRR 05336

NOTES:

1. ALL PART NUMBERS ARE FOR REFERENCE ONLY.
2. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3. DRAWINGS FOR REFERENCE:
   1015500-011 CDU ASSEMBLY
   1010036 SCHEMATIC DIAGRAM CDU
4. CIRCUIT POINT CONNECTIONS FOR THE FOLLOWING TO BE DETERMINED PER ATP 1015500:

A12 GRN	AA4 YEL
A12 ORN	AA4 ORN
A12 YEL	AA5 BLU
A13 WHT	AA5 GRN

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING DIAGRAM
CDU

NEXT ASSY 1015500-011 — USED ON 1C15500-011

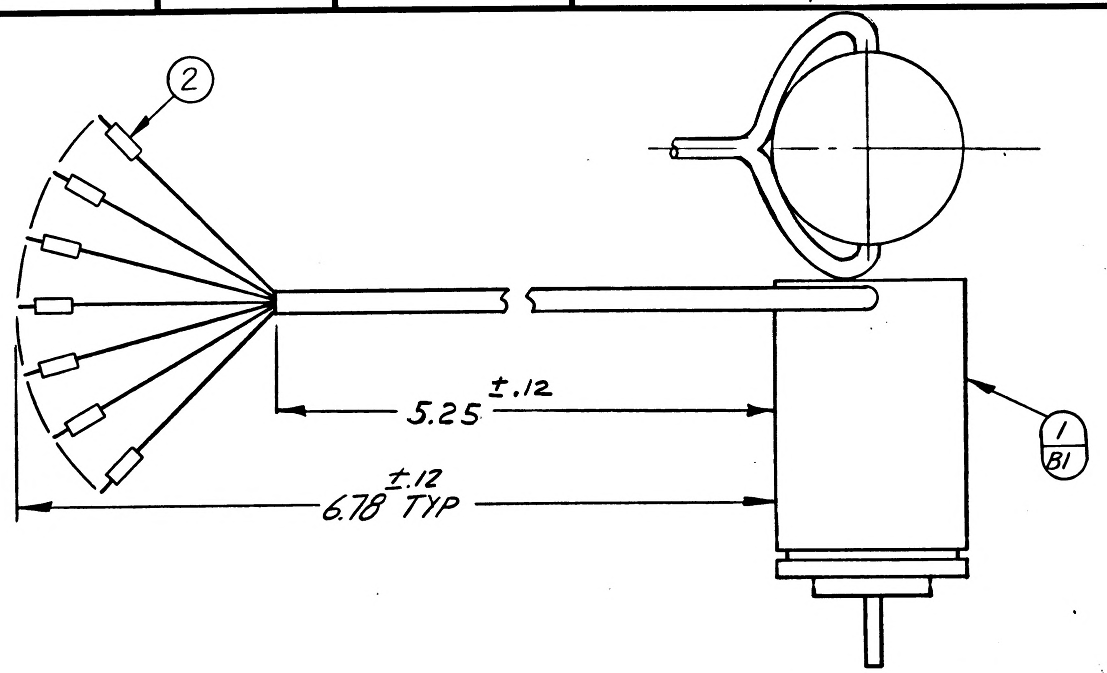
CONTRACT NAS9-497

SIZE E — 1015670

SCALE NONE

DRAWN 22 MAY 63

REVISIONS 02898					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.



FROM	TO	CONDUCTOR STRIP	CONDUCTOR TIN
B1-S1 RED	P1-8	.09	NO
B1-S3 BLK	P1-22		NO
B1-S2 YEL	P1-9		NO
B1-S4 BLU	P1-10		NO
B1-P1 RED	P1-18		NO
B1-P2 YEL	P1-17		NO
B1-P3 BLK	P1-4		NO

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. IDENTIFY USING DWG NO. AND REVISION LETTER PER MIL-STD-130 (ES-267)
3. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206
4. *TWIST THE FOLLOWING:*
   TRIPLE - P1 RED, P2 YEL, & P3 BLK
   PAIRS - S1 RED & S3 BLK
   S2 YEL & S4 BLU
   TWISTING TO CONSIST OF 3 FULL TURNS PER INCH MINIMUM.
5. *LACE CABLE AS SHOWN OVER 5¼ LENGTH USING ITEM 3.*
6. *SERIALIZE PER ND 1002023.*

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
3	AR	MIL-T-713 TYPE P	TWINE, NYLON, WAXED
2	7	1010464-1	PIN, CONTACT, CRIMP TYPE
1	1	1010428	RESOLVER

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015500-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. Murray DATE 10 MAY 63
CHECKED Sayles 4 JUNE 63
APPROVAL T. J. Moran JUNE 12 1963
APPROVAL Rodel 12 JUN 63
NASA APPROVAL 9/5/63
J. Siraco
MIT APPROVAL W. Kupfer 5 Sep 63

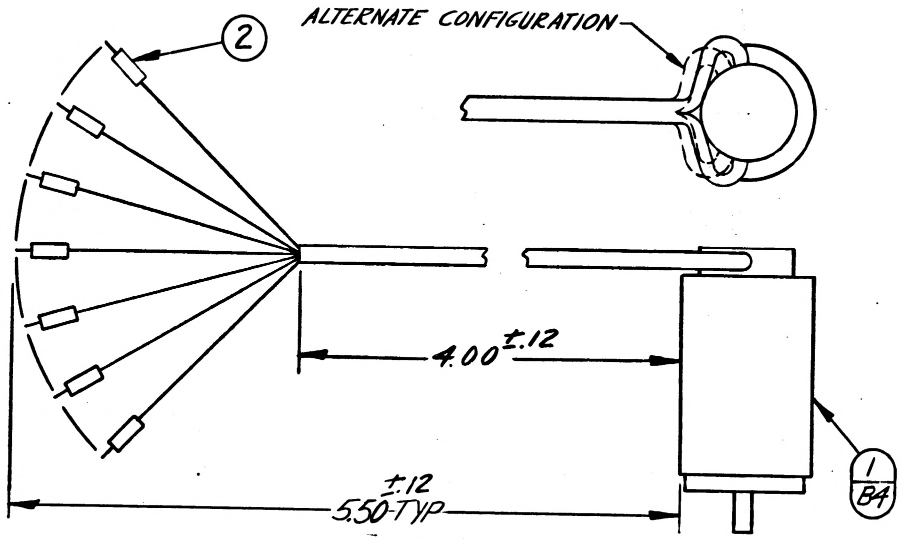
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER & PIN ASSY
1/4 X

CODE IDENT NO.
SIZE C
1015672
SCALE NONE
SHEET 1 OF 1

2 Charleston 12 June 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY



REVISIONS 02898

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A₁		REVISED PER TDRR NO. 06729		10 MAR 64	WK

CONDUCTOR	TO.		STRIP	TIN
B4-P1 RED	P1-86		.09	NO
B4-P3 BLK	P1-100			NO
B4-P2 YEL	P1-87			NO
B4-P4 BLU	P1-101			NO
B4-S1 RED	P1-89			NO
B4-S2 YEL	P1-104			NO
B4-S3 BLK	P1-90			NO

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
3. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206
4. TWIST THE FOLLOWING PAIRS:
   S2 YEL & S3 BLK
   P1 RED & P3 BLK
   P2 YEL & P4 BLU
   TWISTING TO CONSIST OF 3 FULL TURNS PER INCH MINIMUM.
5. LACE CABLE AS SHOWN OVER 4 LENGTH USING ITEM 3.
6. SERIALIZE PER ND 1002023.

A₁

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
3	AR	MIL-T-713 TYPE P	TWINE, NYLON, WAXED
2	7	1010738-1	PIN, CONTACT, CRIMP TYPE
1	1	1010351	RESOLVER

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015500-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ± .02
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. Murray DATE 13 MAY 63
CHECKED J. Baylis 4 JUNE 63
APPROVAL D. J. Moran JUNE 12, 63
APPROVAL 12 JUN 63
NASA APPROVAL 9/5/63
MIT APPROVAL W Kupfer 5 Sept 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER & PIN ASSY
16X

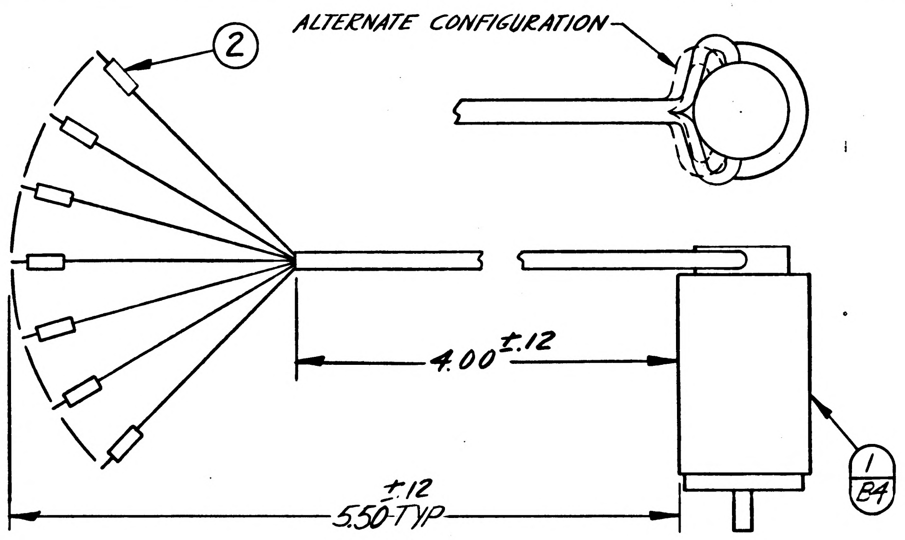
CODE IDENT NO.
SIZE C
1015673
SCALE NONE
SHEET 1 OF 1

MIL 1077C—P

Charleston 12 · Jun · 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS				02898	
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.



CONDUCTOR	TO		STRIP	TIN
B4-P1 RED	P1-86		.09	NO
B4-P3 BLK	P1-100			NO
B4-P2 YEL	P1-87			NO
B4-P4 BLU	P1-101			NO
B4-S1 RED	P1-89			NO
B4-S2 YEL	P1-104			NO
B4-S3 BLK	P1-90			NO

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
3. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206
4. TWIST THE FOLLOWING PAIRS:
   - S2 YEL & S3 BLK
   - P1 RED & P3 BLK
   - P2 YEL & P4 BLU

   TWISTING TO CONSIST OF 3 FULL TURNS PER INCH MINIMUM.
5. LACE CABLE AS SHOWN OVER 4 LENGTH USING ITEM 3.
6. SERIALIZE PER ND 1002023.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
3	AR	MIL-T-713 TYPE P	TWINE, NYLON, WAXED
2	7	1010464-1	PIN, CONTACT, CRIMP TYPE
1	1	1010351	RESOLVER

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015500-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± .02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. Murray DATE 13 MAY 63
CHECKED J Saylor 4 JUNE 63
APPROVAL D. J. Moran JUNE 12, 63
APPROVAL 17 JUN 63
NASA APPROVAL 9/5/63
MIT APPROVAL W Kupfer 5 Sept 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RESOLVER & PIN ASSY
16X

CODE IDENT NO.
SIZE C
1015673
SCALE NONE
SHEET 1 OF 1

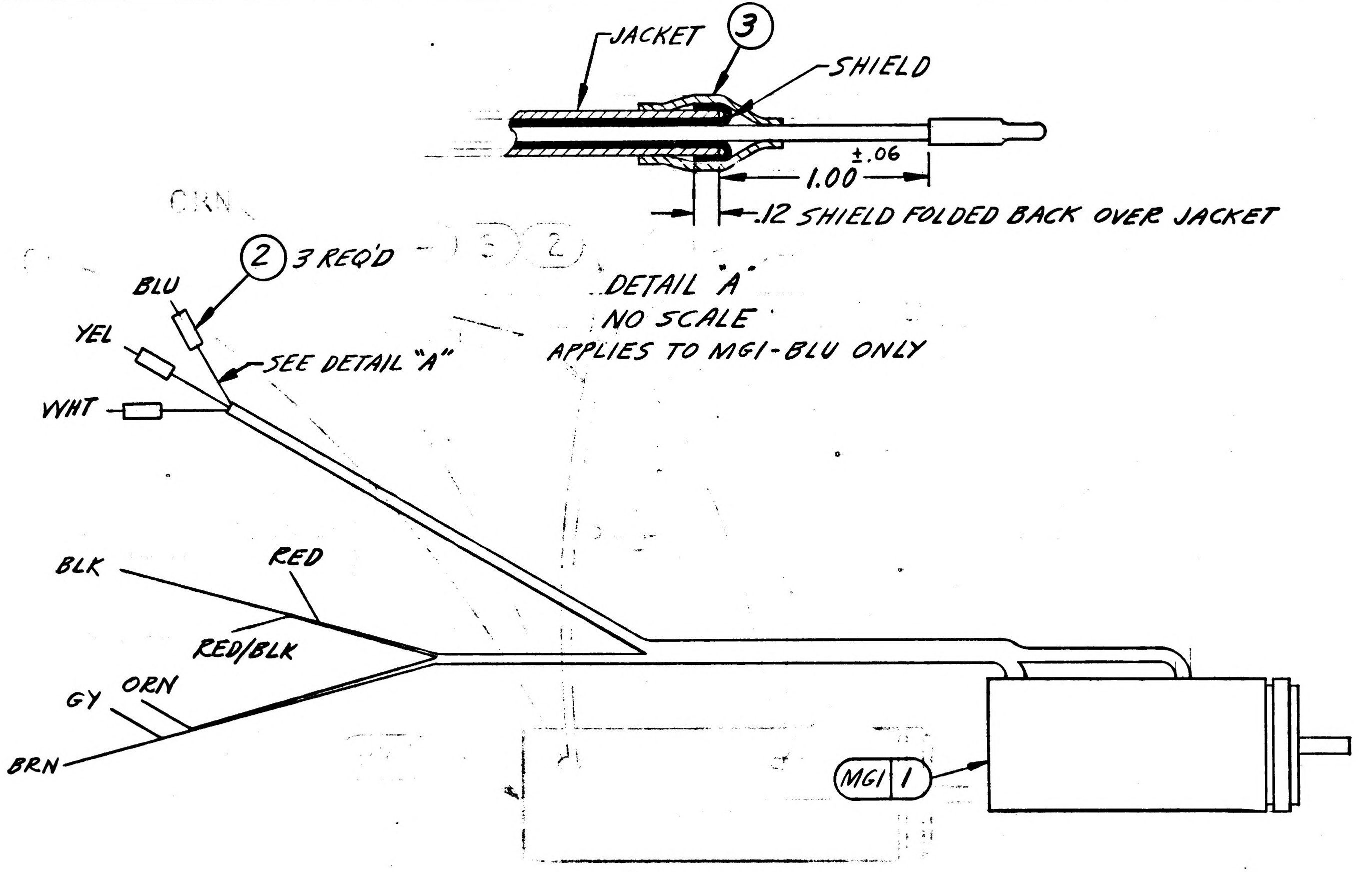
1015673

MIL 1077C—F

Charleston 12 · Jun · 63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS 02898					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR NO. 06731		10 MAR 64	WK



CONDUCTOR	TO		STRIP	TIN
MG1-RED	TB1-16		.12	YES
MG1-BLK	TB1-21		.12	YES
MG1-RED/BLK	TB1-17		.12	YES
MG1-YEL	P1-2		.09	NO
MG1-WHT	P1-3		.09	NO
MG1-ORN	TB1-7		.12	YES
MG1-GY	TB1-8		.12	YES
MG1-BRN	TB1-10		.12	YES
MG1-BLU	P1-106		.09	NO

THIS DRAWING MAY BE SCALED

1
2

NOTES.

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-7037.
2. SOLDER PER MIL-STD-440 USING ITEM 4 ALONE OR COMBINATION OF ITEMS 5 & 6
3. IDENTIFY USING DWG NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
4. LACE AS SHOWN USING ITEM 7.
5. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206.
6. TWIST THE FOLLOWING:
   TRIPLE: MG1-RED, MG1-RED/BLK & MG1-BLK.
   PAIRS: MG1-YEL & MG1-WHT
   MG1-ORN & MG1-GY
   TWISTING TO CONSIST OF 3 FULL TURNS PER INCH MINIMUM
7. SERIALIZE PER ND 1002023.

7	AR	MIL-T-713 TYPE P	TWINE, NYLON, WAXED
6	AR	MIL-F-14256	FLUX (ES-2798)
5	AR	QQ-S-571 SN60 WS	SOLDER
4	AR	QQ-S-571 SN60 WARP 2	SOLDER
3	1	1015865-110	SLEEVING-HEAT SHRINK
2	3	1010738-1	PIN, CONTACT, CRIMP TYPE
1	1	1010430	MOTOR-TACH
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

1015500-011	1015500-011
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ± .02
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. Murray DATE 13 MAY 63
CHECKED J. Sayles 4 JUNE 63
APPROVAL W. J. Moran JUNE 12 1963
APPROVAL Brodel 17 Jun 63
NASA APPROVAL W. D. 9/5/63
J. Siracco
MIT APPROVAL W. Cupper 5 Sep 63
Charleston 12 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

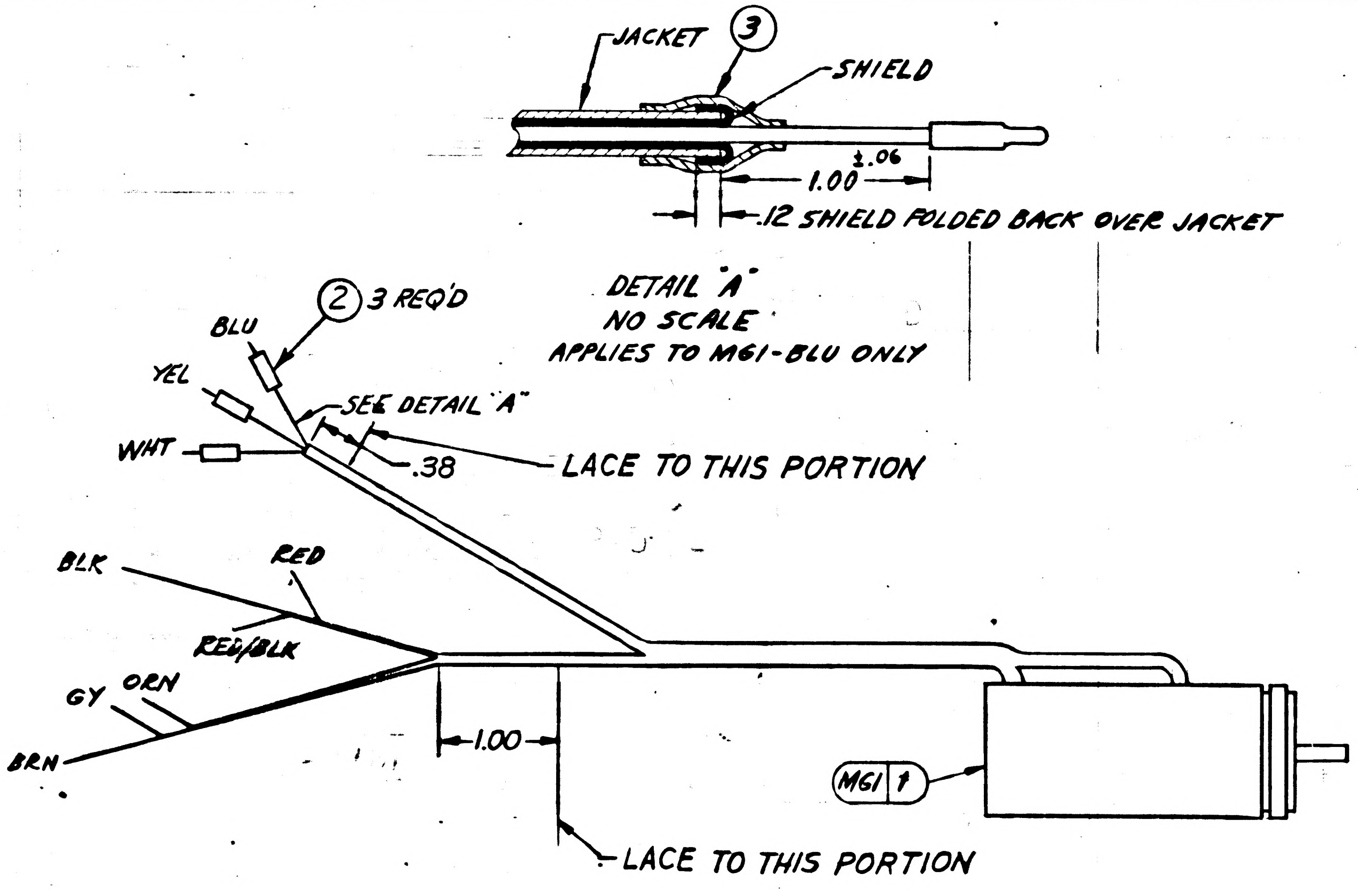
MOTOR-TACH & PIN ASSY

CODE IDENT NO.
SIZE C
1015674
SCALE FULL
SHEET 1 OF 1

MIL 1077C—P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS 02898					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR NO. 06731		10 MAR 64	
B		REVISED PER TDRR NO. 07298		6 APR 64	JJJ



JACKET
③
SHIELD
1.00 ±.06
.12 SHIELD FOLDED BACK OVER JACKET
DETAIL "A"
NO SCALE
APPLIES TO MG1-BLU ONLY
② 3 REQ'D
BLU
YEL
WHT
SEE DETAIL "A"
.38
LACE TO THIS PORTION
BLK
RED
RED/BLK
GY
ORN
BRN
1.00
MG1 ①
LACE TO THIS PORTION

CONDUCTOR	TO		STRIP	TIN
MG1-RED	TB1-16		.12	YES
MG1-BLK	TB1-21		.12	YES
MG1-RED/BLK	TB1-17		.12	YES
MG1-YEL	P1-2		.09	NO
MG1-WHT	P1-3		.09	NO
MG1-ORN	TB1-7		.12	YES
MG1-GY	TB1-8		.12	YES
MG1-BRN	TB1-10		.12	YES
MG1-BLU	P1-106		.09	NO

THIS DRAWING MAY BE SCALED

NOTES.

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-7037.
2. SOLDER PER MIL-STD-440 USING ITEM 4 ALONE OR COMBINATION OF ITEMS 5 & 6
3. IDENTIFY USING DWG NO. AND REVISION LETTER PER ND 1002019.
4. LACE AS SHOWN USING ITEM 7.
5. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206.
6. TWIST THE FOLLOWING:
   TRIPLE: MG1-RED, MG1-RED/BLK & MG1-BLK.
   PAIRS: MG1-YEL & MG1-WHT
   MG1-ORN & MG1-GY
   TWISTING TO CONSIST OF 3 FULL TURNS PER INCH MINIMUM
7. SERIALIZE PER ND 1002023.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
7	AR	MIL-T-713 TYPE P	TWINE, NYLON, WAXED
6	AR	MIL-F-14256	FLUX (ES-2798)
5	AR	QQ-S-571 SN60 WS	SOLDER
4	AR	QQ-S-571 SN60 WARP 2	SOLDER
3	1	1015865-110	SLEEVING-HEAT SHRINK
2	3	1010738-1	PIN, CONTACT, CRIMP TYPE
1	1	1010430	MOTOR-TACH

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015500-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ± .02
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. Murray DATE 13 MAY 63
CHECKED Sayles 4 June 63
APPROVAL J. J. Moran June 12 1963
APPROVAL Brodel 19 Jun 63
NASA APPROVAL 9/5/63
MIT APPROVAL W. Cooper 5 Sep 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

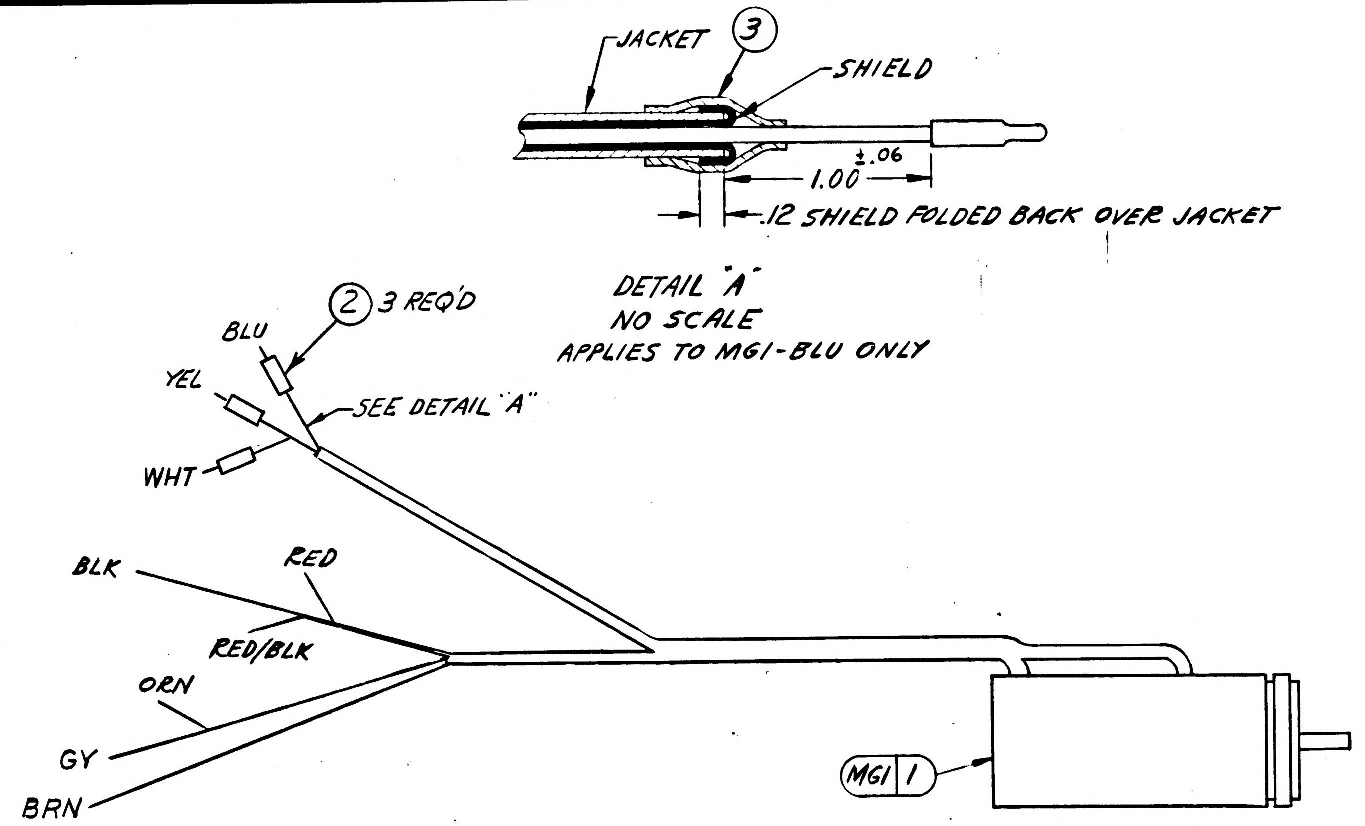
MOTOR-TACH & PIN ASSY

CODE IDENT NO.
SIZE C
1015674
SCALE FULL
SHEET 1 OF 1

Charleston 12 Jun 63

1015674 B

REVISIONS 02898					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR NO. 06731		10 MAR 64	
B		REVISED PER TDRR NO. 07298		6 APR 64	JJJ
C		REVISED PER TDRR NO. 10154		24 JUN 64	JJJ



CONDUCTOR	TO		STRIP	TIN
MG1-RED	TB1-16		.12	YES
MG1-BLK	TB1-21		.12	YES
MG1-RED/BLK	TB1-17		.12	YES
MG1-YEL	P1-2		.09	NO
MG1-WHT	P1-3		.09	NO
MG1-ORN	TB1-7		.12	YES
MG1-GY	TB1-8		.12	YES
MG1-BRN	TB1-10		.12	YES
MG1-BLU	P1-106		.09	NO

THIS DRAWING MAY BE SCALED

1 2

NOTES.

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-7037.
2. SOLDER PER MIL-STD-440 USING ITEM 4 ALONE OR COMBINATION OF ITEMS 5 & 6
3. IDENTIFY USING DWG NO. AND REVISION LETTER PER ND 1002019.
4. LACE AS SHOWN USING ITEM 7.
5. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206.
6. TWIST THE FOLLOWING:
   TRIPLE: MG1-RED, MG1-RED/BLK & MG1-BLK.
   PAIRS: MG1-YEL & MG1-WHT
   MG1-ORN & MG1-GY
   TWISTING TO CONSIST OF 3 FULL TURNS PER INCH MINIMUM
7. SERIALIZE PER ND 1002023.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
7	AR	MIL-T-713 TYPE P	TWINE, NYLON, WAXED
6	AR	MIL-F-14256	FLUX (ES-2798)
5	AR	QQ-S-571 SN60 WS	SOLDER
4	AR	QQ-S-571 SN60 WARP2	SOLDER
3	1	1010490-110	SLEEVING-HEAT SHRINK
2	3	1010738-1	PIN, CONTACT, CRIMP TYPE
1	1	1010430	MOTOR-TACH

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015500-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
±	± .02	±

DO NOT SCALE THIS DRAWING

MATERIAL ________

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN G. Murray DATE 13 MAY 63
CHECKED Sayles 4 June 63
APPROVAL D. J. Moran June 12 1963
APPROVAL Rodel 12 Jun 63
NASA APPROVAL 9/5/63
Sirocco
MIT APPROVAL W Cupper 5 Sep 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MOTOR-TACH & PIN ASSY

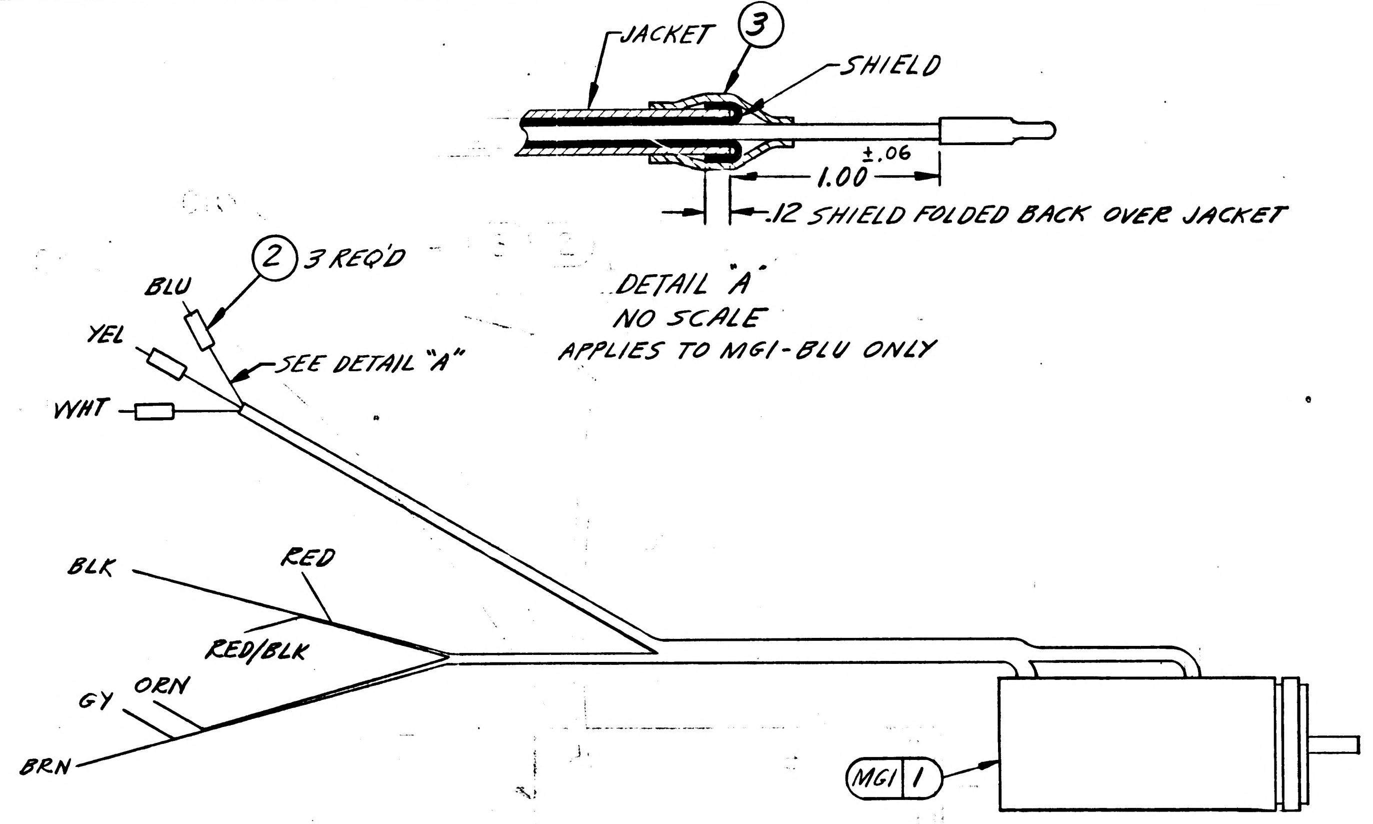
CODE IDENT NO. | SIZE C | 1015674

SCALE FULL | SHEET 1 OF 1

Charleston 12 Jun 63

MIL 1077C—P

1015674 C



REVISIONS		02898		
SYM	ZONE	DESCRIPTION	DATE	APPD.
		CHG NO.		

CONDUCTOR	TO		STRIP	TIN
MGI-RED	TBI-16		.12	YES
MGI-BLK	TBI-21		.12	YES
MGI-RED/BLK	TBI-17		.12	YES
MGI-YEL	PI-2		.09	NO
MGI-WHT	PI-3		.09	NO
MGI-ORN	TBI-7		.12	YES
MGI-GY	TBI-8		.12	YES
MGI-BRN	TBI-10		.12	YES
MGI-BLU	PI-106		.09	NO

THIS DRAWING MAY BE SCALED

1 — 2

NOTES.

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-7037.
2. SOLDER PER MIL-STD-440 USING ITEM 4 ALONE OR COMBINATION OF ITEMS 5 & 6
3. IDENTIFY USING DWG NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
4. LACE AS SHOWN USING ITEM 7.
5. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206.
6. TWIST THE FOLLOWING:
   TRIPLE: MGI-RED, MGI-RED/BLK & MGI-BLK.
   PAIRS: MGI-YEL & MGI-WHT
   MGI-ORN & MGI-GY
   TWISTING TO CONSIST OF 3 FULL TURNS PER INCH MINIMUM
7. SERIALIZE PER ND 1002023.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
7	AR	MIL-T-713 TYPE P	TWINE, NYLON, WAXED
6	AR	MIL-F-14256	FLUX (ES-2798)
5	AR	QQ-S-571 SN60 WS	SOLDER
4	AR	QQ-S-571 SN60 WARP 2	SOLDER
3	1	1015865-110	SLEEVING-HEAT SHRINK
2	3	1010464-1	PIN, CONTACT, CRIMP TYPE
1	1	1010430	MOTOR-TACH

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015500-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ± .02
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. Murray DATE 13 MAY 63
CHECKED Sayles 4 JUNE 63
APPROVAL J. Moton JUNE 12 1963
APPROVAL Brodel 17 Jun 63
NASA APPROVAL W. D. 9/5/63
J. Sisco
MIT APPROVAL W. Kupfer 5 Sep 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

MOTOR-TACH & PIN ASSY

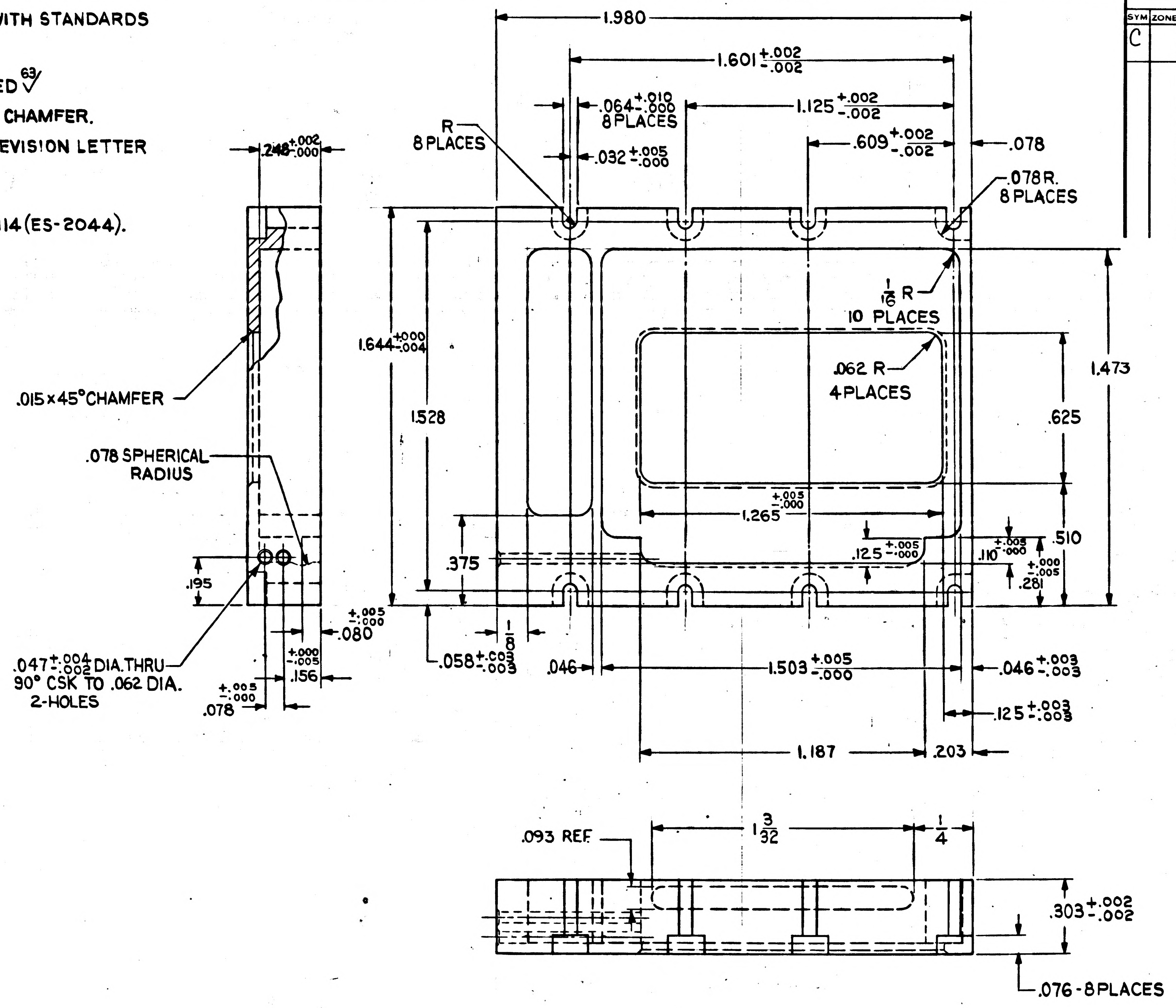
CODE IDENT NO.
SIZE C
1015674
SCALE FULL
SHEET 1 OF 1

Charleston 12 Jun 63

MIL 1077C—P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED: SURFACE ROUGHNESS MUST NOT EXCEED 63√
3. CORNERS MUST NOT EXCEED .010 R., OR CHAMFER.
4. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER MIL-STD-130 (ES-267)
5. MUST BE FREE FROM BURRS.
6. MACHINE AND HEAT TREAT PER ND 1002114 (ES-2044).



.248 +.002 -.000
.015×45° CHAMFER
.078 SPHERICAL RADIUS
.195
.047 +.004 -.002 DIA. THRU
90° CSK TO .062 DIA.
2-HOLES
.078 +.005 -.000
.156 +.000 -.005
.080 +.005 -.000
1.980
1.601 +.002 -.002
.064 +.010 -.000
8 PLACES
1.125 +.002 -.002
R
8 PLACES
.032 +.005 -.000
.609 +.002 -.002
.078
.078 R.
8 PLACES
1/16 R
10 PLACES
1.644 +.000 -.004
1.528
.062 R
4 PLACES
1.473
.625
1.265 +.005 -.000
.510
.375
.125 +.005 -.000
.110 +.005 -.000
.281 +.000 -.005
1/8
.058 +.003 -.003
.046
1.503 +.005 -.000
.046 +.003 -.003
.125 +.003 -.003
1.187
.203
.093 REF.
1 3/32
1/4
.303 +.002 -.002
.076 - 8 PLACES

REVISIONS TDRR 01902					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		UPGRADED FOR CLASS "A" RELEASE		7 JUN 63	

1015666-011	1015500-011
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+1/64 -1/64	+.005 -.005	+2° -2°

DO NOT SCALE THIS DRAWING

MATERIAL BERYLLIUM PER MIL-B-21531 (ES-7389)
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A.J. FLUDER DATE 10-MAY-63
CHECKED MALIKOWSKI 11 MAY 63
APPROVAL T. RAMAGE
APPROVAL A. KODEL 11 MAY 63
NASA APPROVAL 7/3/63
MIT APPROVAL 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME-WEDGE LIGHTING ASSEMBLY.

CODE IDENT NO.
SIZE D
1015675
SCALE 4:1
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015676 C

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		UPGRADED FOR CLASS "A" RELEASE		7 JUN 63	reh

REVISIONS TDRR 01902

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

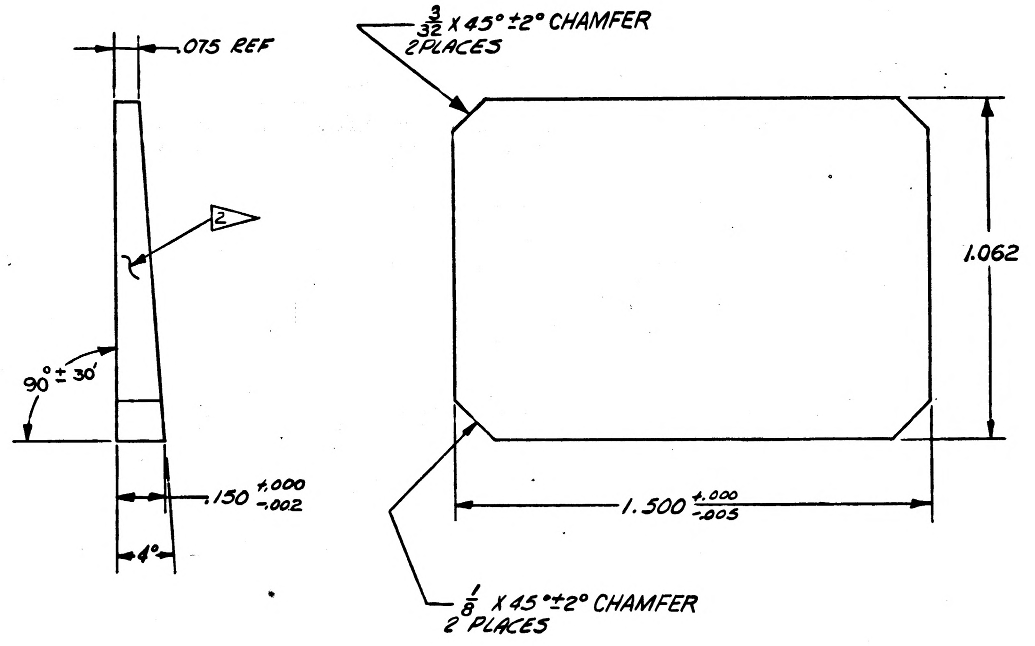
1 GLASS, GRADE "B" PER MIL SPECIFICATION JAN-G-174, TYPE 517-645 (BOROSILICATE CROWN-BSC-2) WITH NO BUBBLES OR SEEDS VISIBLE TO THE UNAIDED EYE AT A 20 INCH DISTANCE (ES-2761).

POLISH BOTH SIDES TO FLATNESS OF ONE FRINGE OR BETTER, EXCEPT EDGES AND BEVELS.

COAT ALL SURFACES EXCEPT EDGES AND BEVELS, WITH MAGNESIUM FLUORIDE PER JAN-F-675

IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER MIL-STD-130 (ES-267).

2 COAT ALL EDGES & BEVELS WITH BLACK INK PER FED. STD. TT-I-528 IN ACCORDANCE WITH MIL-0-13830 PARAGRAPH 3.5.12



1015666-011	1015500-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + 1/64 − 1/64 DECIMALS +.005 −.005 ANGLES +0°30' −0°30' DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN A. J. Fuber DATE 10-MAY-63 CHECKED 11 MAY 63 APPROVAL T. Ramage APPROVAL 11 MAY 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS WINDOW-OUTER WEDGE LIGHTING ASSEMBLY
NEXT ASSY	USED ON	MATERIAL 1	NASA APPROVAL 7/2/63	CODE IDENT NO. SIZE D 1015676
APPLICATION		CONTRACT NAS 9-497	MIT APPROVAL W Kupfer 2 July 63	SCALE 4:1 SHEET

INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

1015678 C

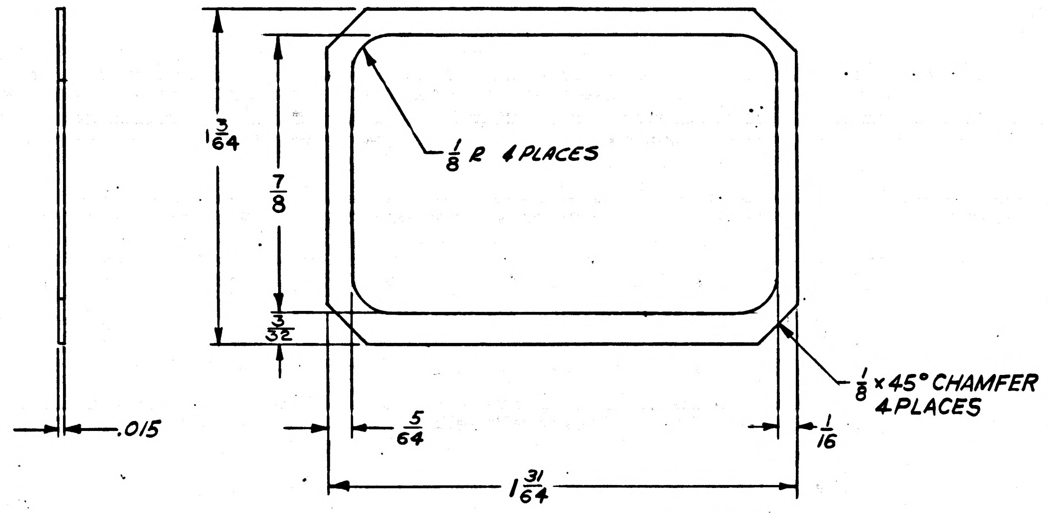
REVISIONS		TDRR 01902			
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
C		UPGRADED FOR CLASS A RELEASE		7 JUN 63	

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER MIL-STD-130(ES-267).

1 ▷ SILICONE RUBBER, 40 DUROMETER PER MIL-R-5847 (ES-73-1).

MUST BE FREE FROM FEATHER EDGES & FLASHES.



1015666-011	1015500-011	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS +1/64 -1/64 DECIMALS +.005 -.005 ANGLES +2° -2° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN A. J. FLUDER DATE 11-MAY-63 CHECKED 11 MAY 63 APPROVAL T. Ramage APPROVAL 11 MAY 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS GASKET, WEDGE
NEXT ASSY	USED ON	MATERIAL 1 ▷	NASA APPROVAL 7/2/63	CODE IDENT NO. SIZE D 1015678
APPLICATION		CONTRACT NAS 9-497	MIT APPROVAL W Kupfer 2 Jul 63	SCALE 4:1 SHEET

INCHES 0 2 PHOTOGRAPHIC SCALE ONLY

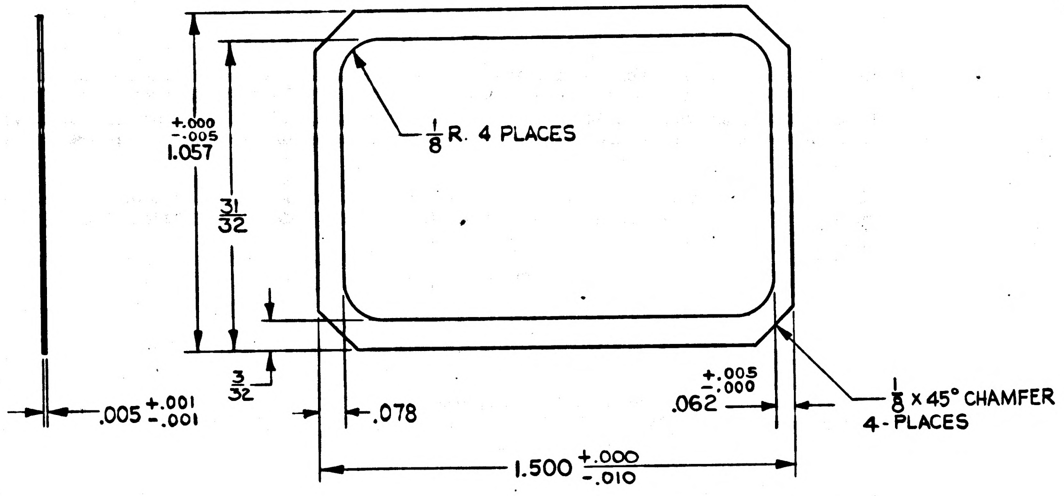
1015679 C

REVISIONS TDRR 01902					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		UPGRADED FOR CLASS A RELEASE		7 JUN 63	uh

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327.

IDENTIFY USING DRAWING NUMBER AND REVISION LETTER
PER MIL-STD-130(ES-267).

1 STAINLESS STEEL, CLASS 416, PER QQ-S-763 COND A (ES-374)
MUST BE FREE FROM BURRS
FINISH: MIL-F-14072 (SIG C) FINISH E-300 (ES-585, PASSIVATE)



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON			
FRACTIONS	DECIMALS	ANGLES	
$+\frac{1}{64}$	+.005	+2°	
$-\frac{1}{64}$	−.005	−2°	
DO NOT SCALE THIS DRAWING			

1015666-001	1015500-011	MATERIAL 1	NASA APPROVAL W. J. [illegible] 7/2/63
NEXT ASSY	USED ON		MIT APPROVAL [illegible] 2 July 63
APPLICATION		CONTRACT NAS 9-497	

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tamsen DATE 11 MAY 63
CHECKED [illegible] 11 MAY 63
APPROVAL T. Ramage
APPROVAL [illegible] 11 MAY 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SEPARATOR, WEDGE

CODE IDENT NO.
SIZE D
1015679
SCALE
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015680 A

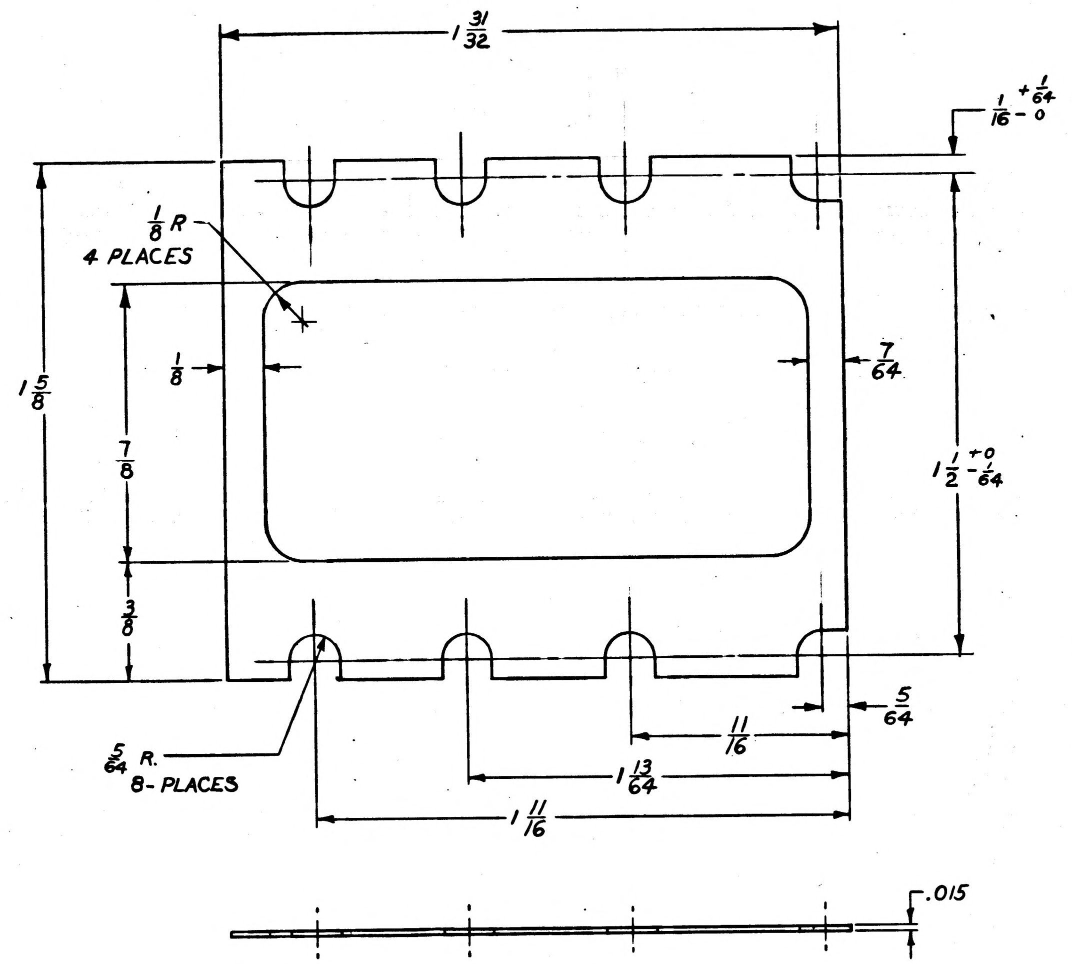
REVISIONS TDRR 01402					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		UPGRADED FOR CLASS A RELEASE		6-14 63	EL

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 MATERIAL:
SILICONE RUBBER 40 DUROMETER PER
MIL-R-5847 (ES-73-1)

2 IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER MIL-STD-130. (ES-267)

REMOVE ALL FEATHER EDGES & FLASHES



		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
		FRACTIONS +1/64 -1/64 DECIMALS +.005 -.005 ANGLES +2° -2°	ACSP PN DRAWN d/MM Swiedarke 6 JUN 63 CHECKED d/63 [illegible] 6 Jun 63 APPROVAL E. J. [illegible] 11 JUN 63 APPROVAL [illegible] 11 June 63	GASKET, WEDGE LIGHT
		DO NOT SCALE THIS DRAWING		
1015500-011	1015500-011	MATERIAL 1	NASA APPROVAL [illegible] 7/2/63	CODE IDENT NO. / SIZE D / 1015680
NEXT ASSY	USED ON		MIT APPROVAL [illegible] 2 July 63	SCALE 4:1 / SHEET
APPLICATION		CONTRACT NAS9-497		

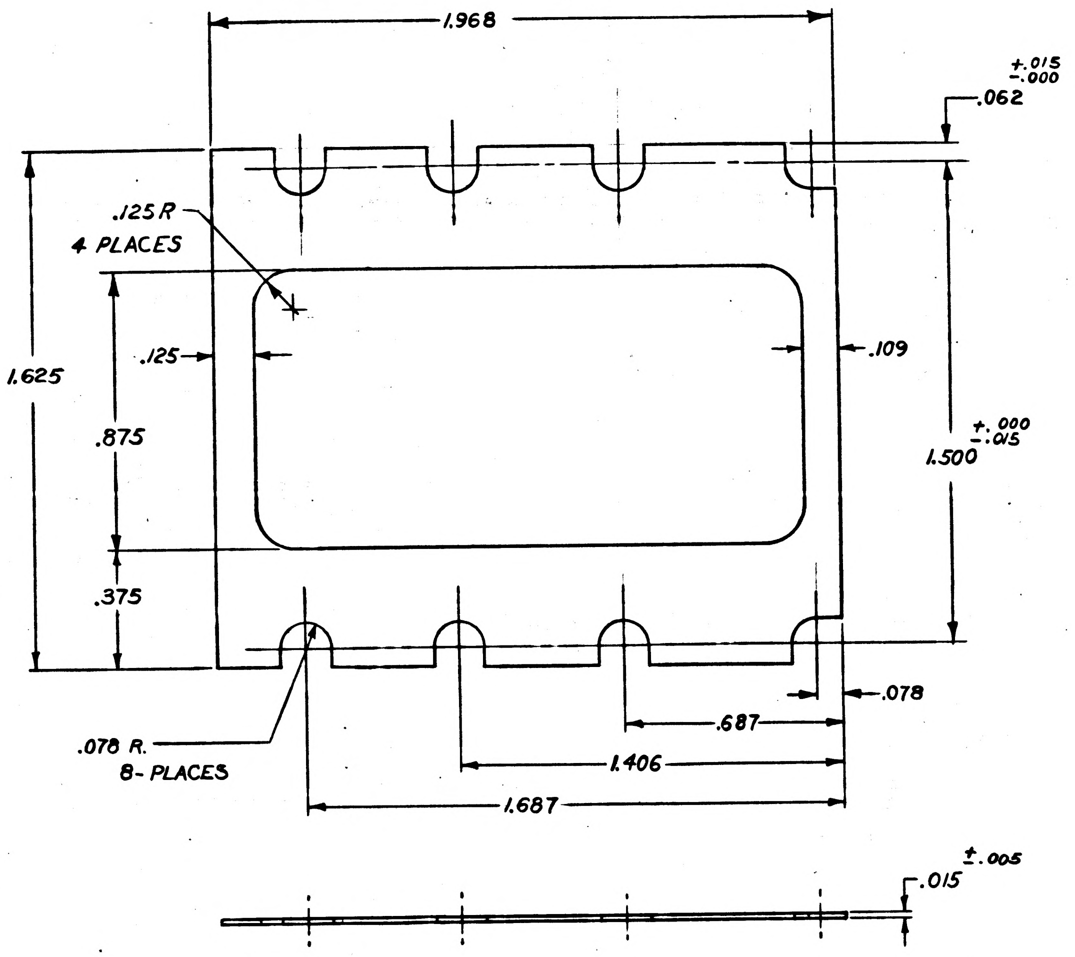
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

B 1015680

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL:
   SILICONE RUBBER 50 DUROMETER PER MIL-R-5847 (ES-73-1)
3. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER MIL-STD-130. (ES-267)
4. REMOVE ALL FEATHER EDGES & FLASHES

REVISIONS TDRR 01402

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		UPGRADED FOR CLASS A RELEASE		6-14 63	EL
B		REVISED PER TDRR # 02079		7-16-63	7/17



		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
		FRACTIONS DECIMALS ANGLES + +.015 +2° - -.015 -2°	ACSP PN	GASKET, WEDGE LIGHT
			DRAWN M Swiedarke DATE 6 JUN 63	
			CHECKED Sinker 6 Jun 63	
			APPROVAL E. J. Mackinburn 11 JUN 63	
		DO NOT SCALE THIS DRAWING	APPROVAL 11 June 63	
1015500-011	1015500-011	MATERIAL SEE NOTE 2	NASA APPROVAL 7/12/63	CODE IDENT NO. / SIZE D / 1015680
NEXT ASSY	USED ON	CONTRACT NAS9-497	MIT APPROVAL 2 July 63	SCALE 4:1 / SHEET 1 OF 1
APPLICATION				

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

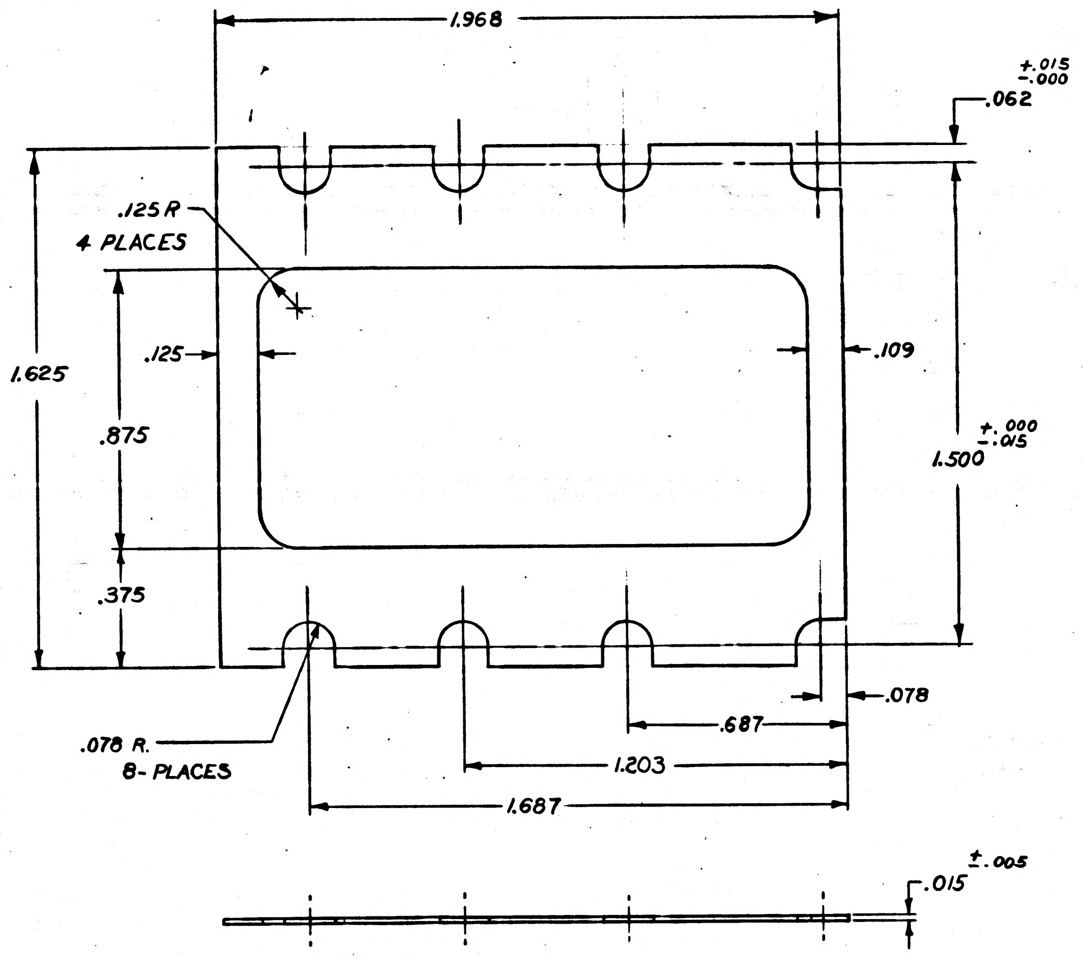
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL:
   SILICONE RUBBER 50 DUROMETER PER MIL-R-5847 (ES-73-2)
3. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER ND1002019.
4. REMOVE ALL FEATHER EDGES & FLASHES

C 1015680

REVISIONS TDRR 01402

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		UPGRADED FOR CLASS A RELEASE		6 JUN 63	EL
B		REVISED PER TDRR # 02079		7-16-63	JW 7/17
C		REVISED PER TDRR NO. 04636		25 NOV 63	WK

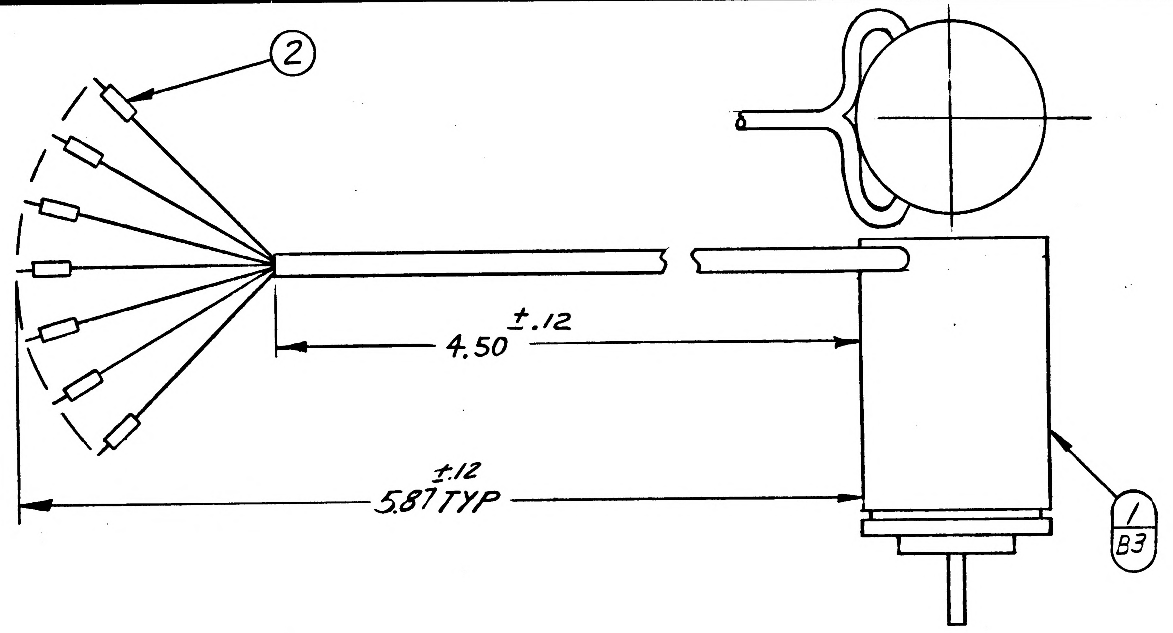


		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + – DECIMALS ±.015 ANGLES + –	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
			ACSP PN DRAWN d/MM Swiedarke DATE 6 JUN 63 CHECKED d/E3 Binder Jr 6 Jun 63 APPROVAL E. J. Marsh 11 JUN 63 APPROVAL Riedel 11 June 63	GASKET, WEDGE LIGHT		
1015500-011	1015500-011	DO NOT SCALE THIS DRAWING MATERIAL SEE NOTE 2	NASA APPROVAL 7/12/63	CODE IDENT NO.	SIZE D	1015680
NEXT ASSY	USED ON		MIT APPROVAL Sirace 2 July 63	SCALE 4:1		SHEET 1 OF 1
APPLICATION		CONTRACT NAS9-497				

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS 02898

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.



CONDUCTOR	TO		STRIP	TIN
B3-P1 RED	P1-6		.09	NO
B3-F3 BLK	P1-20			NO
B3-P2 YEL	P1-7			NO
B3-P4 BLU	P1-21			NO
B3-S1 RED	P1-34			NO
B3-S2 YEL	P1-35			NO
B3-S3 BLK	P1-45			NO

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH MIL-D-70327.
2. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER MIL-STD-130. (ES-267)
3. INSTALL CRIMP STYLE TERMINALS IN ACCORDANCE WITH ND 1002206
4. TWIST THE FOLLOWING PAIRS:
   P1 RED & P3 BLK
   P2 YEL & P4 BLU
   S2 YEL & S3 BLK
   TWISTING TO CONSIST OF 3 FULL TURNS PER INCH MINIMUM.
5. LACE CABLE OVER 4½ LENGTH AS SHOWN USING ITEM 3.
6. SERIALIZE PER ND 1002023.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
3	A/R	MIL-T-713 TYPE P	TWINE, NYLON, WAXED
2	7	1010464-1	PIN, CONTACT, CRIMP TYPE
1	1	1010341	RESOLVER

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015500-011	1015500-011

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ±.02 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. Murray DATE 29 MAY 63
CHECKED J. Wayles 4 JUNE 63
APPROVAL D. J. Moran JUNE 12 1963
APPROVAL W. Rudel 19 JUN 63
NASA APPROVAL W. J. Smith 9/5/63
J. J. Siraco
MIT APPROVAL W. Kupfer 5 Sep 63
Charleston 12. Jun. 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

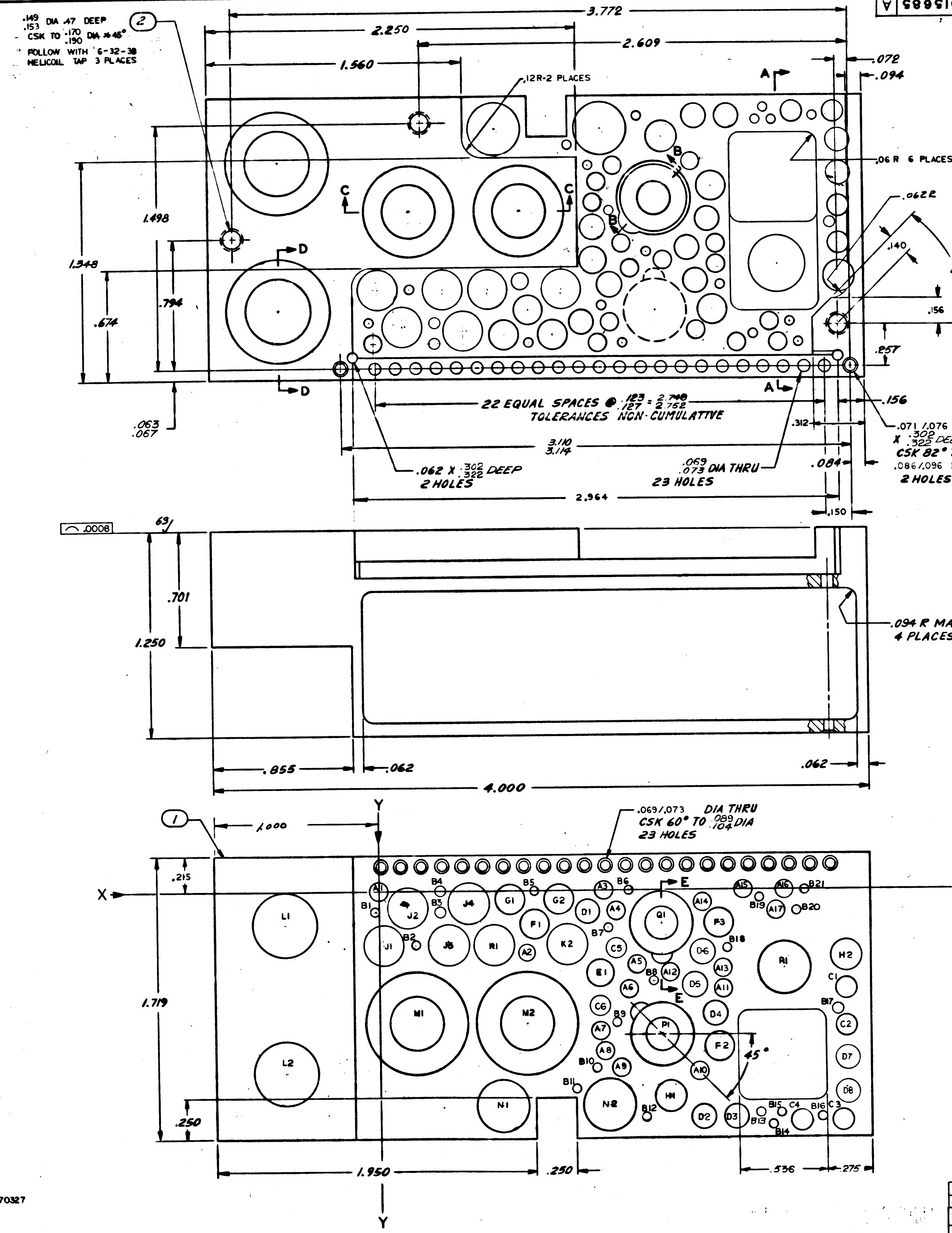
RESOLVER & PIN ASSY
1X

CODE IDENT NO.
SIZE C
1015681
SCALE
SHEET 1 OF 1

MIL 1077C—P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⌖ DIA	HOLE DIA	QTY
A	.000	.000	.006	.100 .104	17
A2	.900	.375			
A3	1.375	.000			
A4	1.450	.125			
A5	1.575	.450			
A6	1.525	.600			
A7	1.350	.850			
A8	1.375	.975			
A9	1.475	1.075			
A10	1.950	1.100			
A11	2.100	.600			
A12	1.775	.500			
A13	2.100	.475			
A14	1.975	.075			
A15	2.225	.000			
A16	2.475	.000			
A17	2.425	.125			
B1	-.025	.125	.006	.058 .062	22
B2	.225	.325			
B3	.375	.125			
B4	.375	.000			
B5	.950	.000			
B6	1.525	.000			
B7	1.400	.225			
B8	1.675	.550			
B9	1.450	.800			
B10	1.325	1.075			
B11	1.200	1.200			
B12	1.625	1.375			
B13	2.325	1.350			
B14	2.400	1.425			
B15	2.450	1.350			
B16	2.700	1.375			
B17	2.800	.725			
B18	2.125	.350			
B19	2.325	.050			
B20	2.550	.125			
B21	2.600	.000			
C1	2.850	.600	.006	.110 .114	6
C2	2.850	.850			
C3	2.825	1.400			
C4	2.575	1.400			
C5	1.450	.350			
C6	1.350	.700			
D1	1.275	.125	.006	.146 .150	8
D2	1.975	1.375			
D3	2.175	1.375			
D4	2.050	.750			
D5	1.925	.575			
D6	1.975	.375			
D7	2.850	1.025			
D8	2.850	1.225			
E1	1.350	.500	.006	.165 .169	1
F1	.950	.200	.006	.176 .180	3
F2	2.075	.950			
F3	2.075	.200			
G1	.800	.050	.006	.184 .188	2
G2	1.100	.050			
H1	1.775	1.250	.006	.192 .196	2
H2	2.850	.400			
J1	.025	.325	.006	.237 .241	4
J2	.175	.100			
J3	.425	.325			
J4	.550	.075			
K1	.700	.325	.006	.227 .231	2
K2	1.150	.325			
L1	-.575	.200	.006	SEE SEC. D-D	2
L2	-.575	1.100			
M1	.225	.800	.006	SEE SEC C-C	2
M2	.900	.800			
N1	.750	1.300	.006	.331 .335	2
N2	1.400	1.300			
P1	1.725	.875	.006	SEE SEC B-B	1
Q1	1.725	.200	.006	SEE SEC E-E	1
R1	2.475	.475	.006	SEE SEC A-A	1



.149 DIA .47 DEEP
.153
CSK TO .170 DIA ×45°
.190
FOLLOW WITH 6-32-38 HELICOIL TAP 3 PLACES
2
3.772
2.250
2.609
1.560
.072
.094
.12R-2 PLACES
A
B
C
C
.06 R 6 PLACES
.062 R
.140
45°
.156
1.498
1.348
.794
.674
D
D
.257
A
.156
22 EQUAL SPACES @ .123 / .127 = 2.748 / 2.752
TOLERANCES NON-CUMULATIVE
.312
.063
.067
3.110
3.114
.071/.076 DIA
X .302/.322 DEEP
CSK 82° TO
.086/.096 DIA
2 HOLES
.062 X .302/.322 DEEP
2 HOLES
.069/.073 DIA THRU
23 HOLES
.084
2.964
.150
.0008
63
.701
1.250
.094 R MAX
4 PLACES
.855
.062
.062
4.000
1
1.000
Y
.069/.073 DIA THRU
CSK 60° TO .089/.104 DIA
23 HOLES
X
X
.215
E
E
1.719
45°
.250
1.950
.250
.536
.275
Y

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: MAG ALLOY ZK-60A-T5 PER QQ-M-31A
3. UNLESS OTHERWISE SPECIFIED: ROUGHNESS MUST NOT EXCEED 125 ∇
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER
ALL FLAT SURFACES TO BE SQUARE WITHIN .010
PIECE MUST BE FREE FROM BURRS
4. COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER
5. INSTALL ITEM 2 PER MS 33646 EXCEPT DIM. F TO BE .594 BREAK OFF TANGS
6. FINISH: ANODIZE PER MIL-M-3171A TYPE IV, EXCEPT FOR THREADED HOLES
7. ARROWS ON X AND Y COORDINATES DESIGNATE PLUS(+) DIRECTION

1015685 A

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 03094		9/12/63	

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW-LOCKING
1	1	1015685-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	±.005	+1°
−	±.02	−½

DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 2

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED 2APR63
APPROVAL A KODEL 3APR63
APPROVAL J M BLYSHAK 3APR63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

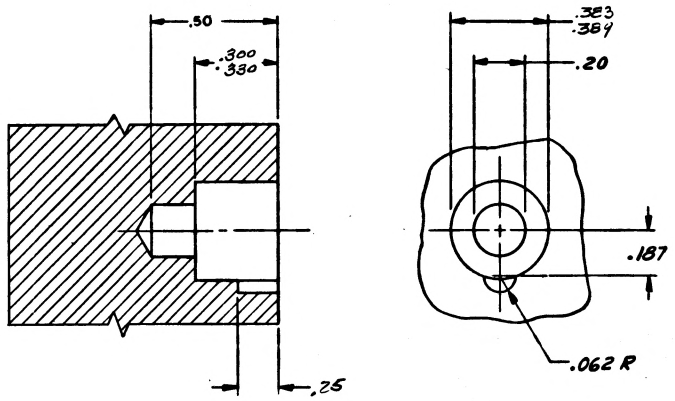
HEATSINK
FOR GIMBAL SERVO AMPLIFIER

CODE IDENT NO.
SIZE E
1015685
SCALE 4:1
SHEET 1 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

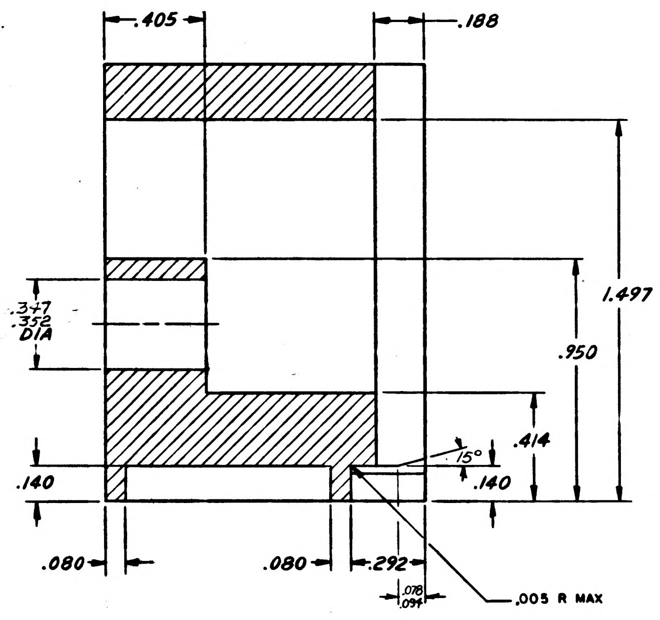
1015685 A

REVISIONS TDRR 01313					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 03094		9-12-63	J.J.M. WK



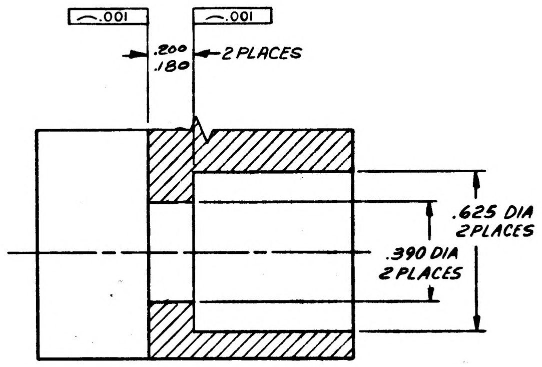
.50
.300
.330
.25
.383
.389
.20
.187
.062 R

PARTIAL SECTION E-E



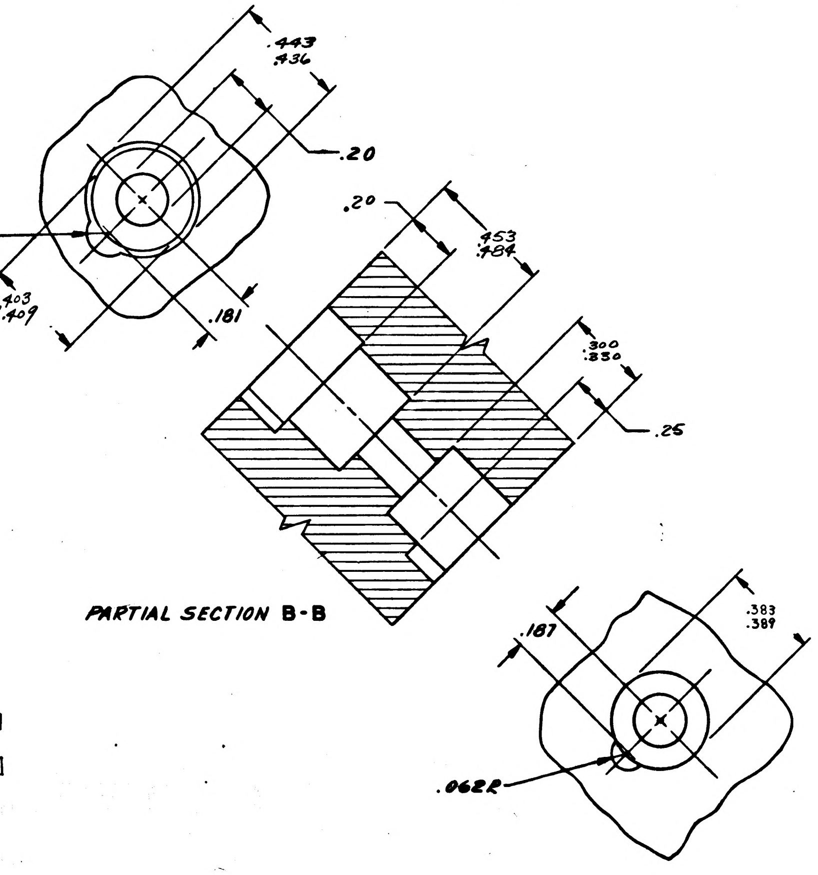
.405
.188
.347
.352
DIA
1.497
.950
.414
15°
.140
.140
.080
.080
.292
.078
.094
.005 R MAX

SECTION A-A



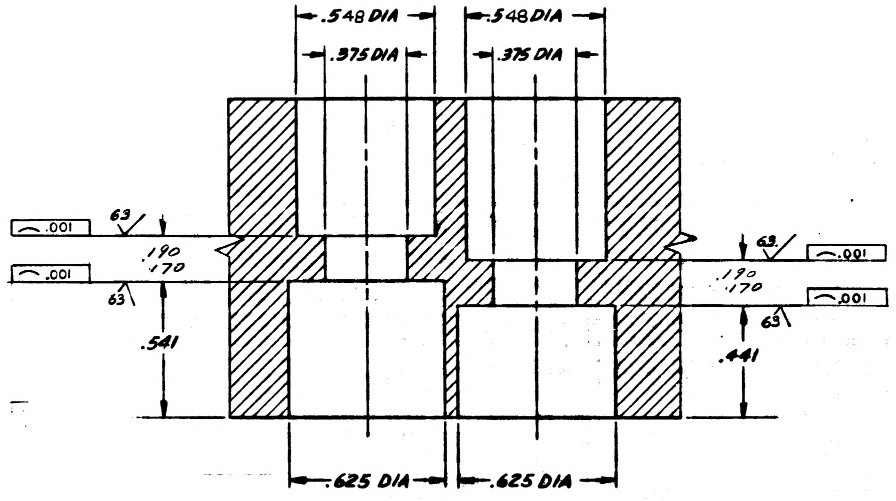
⌒.001
⌒.001
.200
.180
2 PLACES
.625 DIA
2 PLACES
.390 DIA
2 PLACES

PARTIAL SECTION D-D



.443
.436
.20
.090 R
.403
.409
.181
.20
.453
.484
.300
.330
.25
.187
.383
.389
.062R

PARTIAL SECTION B-B



.548 DIA
.548 DIA
.375 DIA
.375 DIA
⌒.001
⌒.001
63
63
.190
.170
.541
63
63
⌒.001
⌒.001
.190
.170
.441
.625 DIA
.625 DIA

PARTIAL SECTION C-C

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ \+ \+
- \- \-
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE [illegible]
CHECKED S L Hirt 2 APR 63
AKODEL 3 APR 63
APPROVAL J M BLYSHAK 3 APR 63
APPROVAL [illegible]
NASA APPROVAL [illegible] 5-22-63
MIT APPROVAL [illegible] 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
FOR GIMBAL SERVO AMPLIFIER

CODE IDENT NO.
SIZE E
1015685
SCALE 4:1
SHEET 2 OF 2

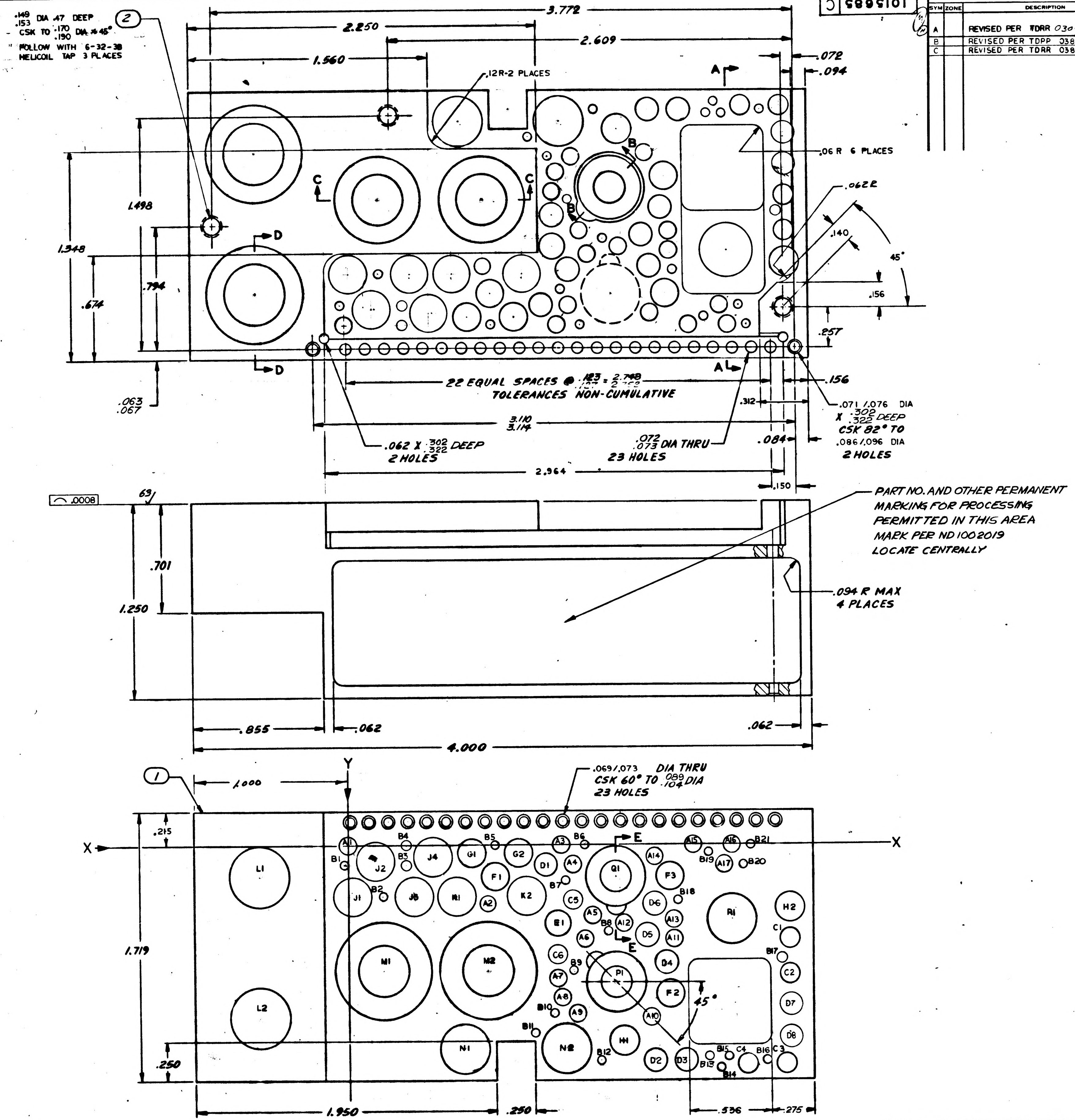
1015685 A

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 01310					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 03094		9 12 63	
B		REVISED PER TDPP 03851			
C		REVISED PER TDRR 03852			

1015685 C

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⌖ DIA	HOLE DIA	QTY
A	.000	.000	.006	.100 .104	17
A2	.900	.375			
A3	1.375	.000			
A4	.450	.125			
A5	1.575	.450			
A6	1.525	.600			
A7	1.350	.850			
A8	1.375	.975			
A9	1.475	1.075			
A10	1.950	1.100			
A11	2.100	.600			
A12	1.775	.500			
A13	2.100	.475			
A14	1.975	.075			
A15	2.225	.000			
A16	2.475	.000			
A17	2.425	.125			
B1	-.025	.125	.006	.058 .062	22
B2	.225	.325			
B3	.375	.125			
B4	.375	.000			
B5	.950	.000			
B6	1.525	.000			
B7	1.400	.225			
B8	1.675	.550			
B9	1.450	.800			
B10	1.325	1.075			
B11	1.200	1.200			
B12	1.625	1.375			
B13	2.325	1.350			
B14	2.400	1.425			
B15	2.450	1.350			
B16	2.700	1.375			
B17	2.800	.725			
B18	2.125	.350			
B19	2.325	.050			
B20	2.550	.125			
B21	2.600	.000			
C1	2.850	.600	.006	.110 .114	6
C2	2.850	.850			
C3	2.825	1.400			
C4	2.575	1.400			
C5	1.450	.350			
C6	1.350	.700			
D1	1.275	.125	.006	.146 .150	8
D2	1.975	1.375			
D3	2.175	1.375			
D4	2.050	.750			
D5	1.925	.575			
D6	1.975	.375			
D7	2.850	1.025			
D8	2.850	1.225			
E1	1.350	.500	.006	.165 .169	1
F1	.950	.200	.006	.176 .180	3
F2	2.075	.950			
F3	2.075	.200			
G1	.800	.050	.006	.184 .188	2
G2	1.100	.050			
H1	1.775	1.250	.006	.192 .196	2
H2	2.850	.400			
J1	.025	.325	.006	.237 .241	4
J2	.175	.100			
J3	.425	.325			
J4	.550	.075			
K1	.700	.325	.006	.227 .231	2
K2	1.150	.325			
L1	-.575	.200	.006	SEE SEC. D-D	2
L2	-.575	1.100			
M1	.225	.800	.006	SEE SEC C-C	2
M2	.900	.800			
N1	.750	1.300	.006	.331 .335	2
N2	1.400	1.300			
P1	.725	.875	.006	SEE SEC B-B	1
Q1	1.725	.200	.006	SEE SEC E-E	1
R1	2.475	.475	.006	SEE SEC A-A	1



.149 .153 DIA .47 DEEP
CSK TO .170 .190 DIA × 45°
FOLLOW WITH 6-32-3B HELICOIL TAP 3 PLACES
2
3.772
2.250
2.609
1.560
.12R-2 PLACES
.072
.094
A
B
C
D
E
.06 R 6 PLACES
.062 R
.140
45°
.156
1.498
1.348
.794
.674
.257
.063 .067
22 EQUAL SPACES @ .123 = 2.798
TOLERANCES NON-CUMULATIVE
.312
3.110 3.114
.062 X .302 .322 DEEP 2 HOLES
.072 .073 DIA THRU 23 HOLES
.084
.071/.076 DIA X .302 .322 DEEP CSK 82° TO .086/.096 DIA 2 HOLES
2.964
.150
.0008
63
.701
1.250
PART NO. AND OTHER PERMANENT MARKINGS FOR PROCESSING PERMITTED IN THIS AREA MARK PER ND 1002019 LOCATE CENTRALLY
.094 R MAX 4 PLACES
.855
.062
.062
4.000
1
1.000
.069/.073 DIA THRU CSK 60° TO .089 .104 DIA 23 HOLES
X
Y
.215
1.719
.250
1.950
.250
.536
.275

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: MAG ALLOY ZK-60A-T5 PER QQ-M-31A
3. UNLESS OTHERWISE SPECIFIED: ROUGHNESS MUST NOT EXCEED 125
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER
ALL FLAT SURFACES TO BE SQUARE WITHIN .010
PIECE MUST BE FREE FROM BURRS
4. COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER
5. INSTALL ITEM 2 PER MS 33646 EXCEPT DIM. F TO BE .594 BREAK OFF TANGS
6. FINISH: ANODIZE PER MIL-M-3171A TYPE IV, EXCEPT FOR THREADED HOLES
7. ARROWS ON X AND Y COORDINATES DESIGNATE PLUS(+) DIRECTION

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW-LOCKING
1	1	1015685-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	±.005	+1°
−	±.02	−½

DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 2

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED 2APR63
APPROVAL AKODIL 3APR63
APPROVAL 3APR63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

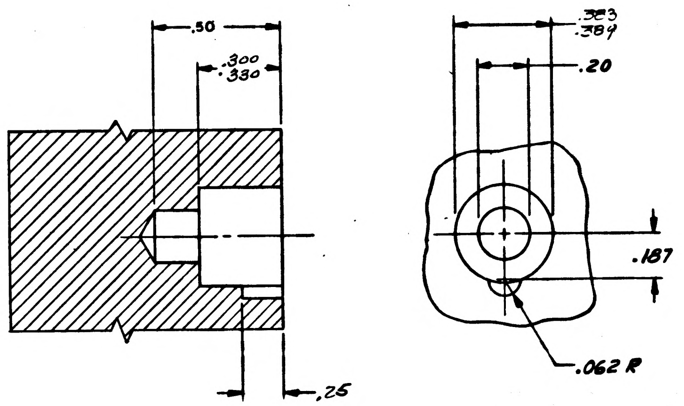
HEATSINK
FOR GIMBAL SERVO AMPLIFIER

CODE IDENT NO.
SIZE E
1015685
SCALE 4:1
SHEET 1 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

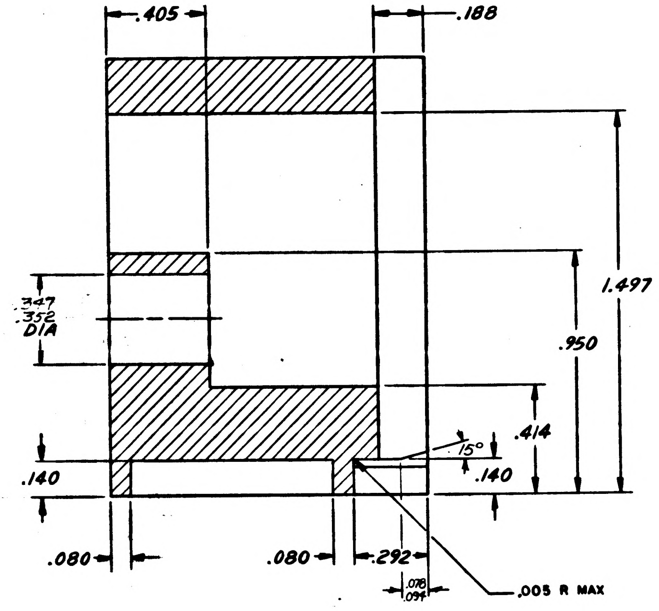
1015685 C

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 03094		4/12/63	
B		REVISED PER TDRR 03851			
C		REVISED PER TDRR 03852			



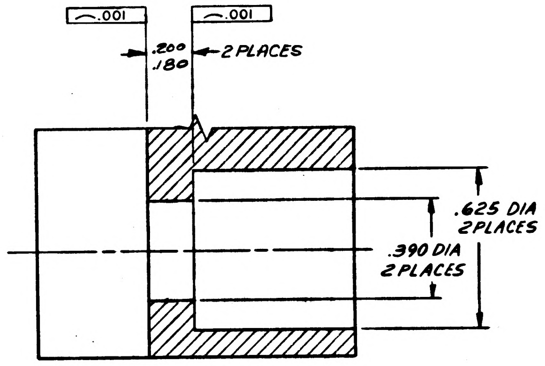
.50
.300
.330
.20
.383
.389
.187
.062 R
.25

PARTIAL SECTION E-E



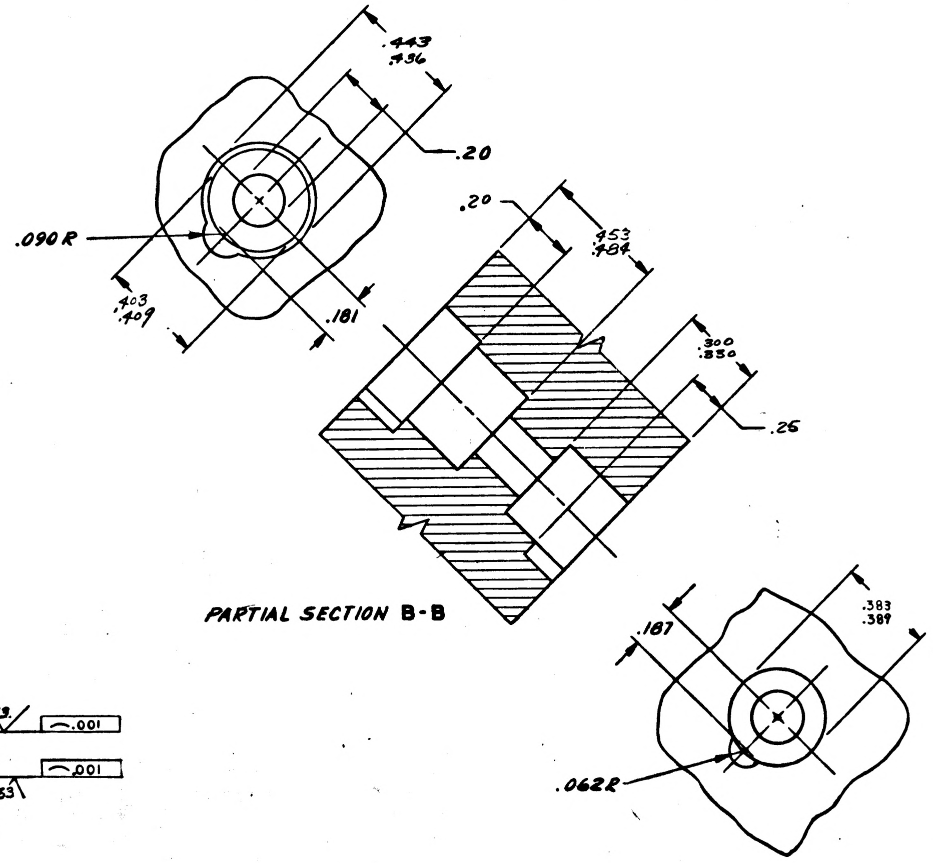
.405
.188
1.497
.347
.352
DIA
.950
.414
15°
.140
.140
.080
.080
.292
.078
.094
.005 R MAX

SECTION A-A



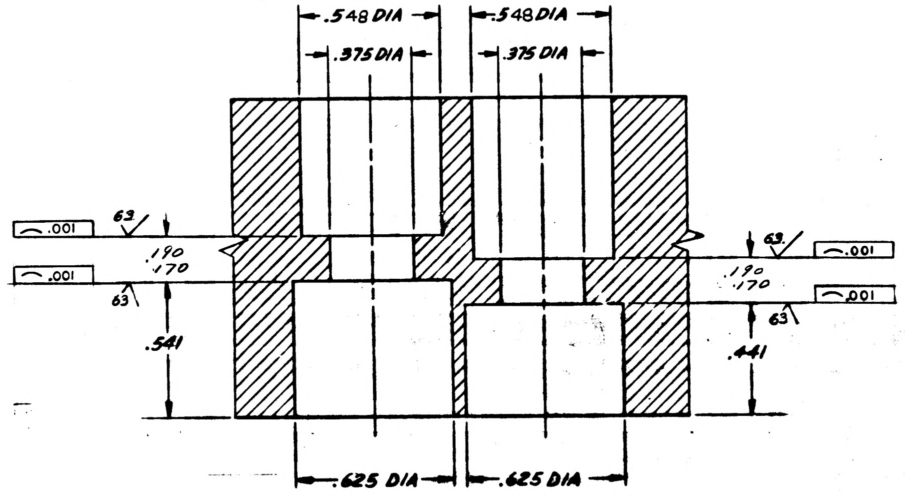
.001
.001
.200
.180
2 PLACES
.625 DIA
2 PLACES
.390 DIA
2 PLACES

PARTIAL SECTION D-D



.443
.436
.20
.090 R
.403
.409
.181
.20
.453
.464
.300
.330
.25
.187
.383
.389
.062 R

PARTIAL SECTION B-B



.548 DIA
.548 DIA
.375 DIA
.375 DIA
.001
.001
63
.190
.170
63
.541
63
.001
.190
.170
.001
63
.441
.625 DIA
.625 DIA

PARTIAL SECTION C-C

1007040	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Goschke DATE 15 MAR 63
CHECKED E. L. Hirt 2 APR 63
APPROVAL A KODEL 3 APR 63
J M BLYSHAK 3 APR 63
APPROVAL
NASA APPROVAL W. J. 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
FOR GIMBAL SERVO AMPLIFIER

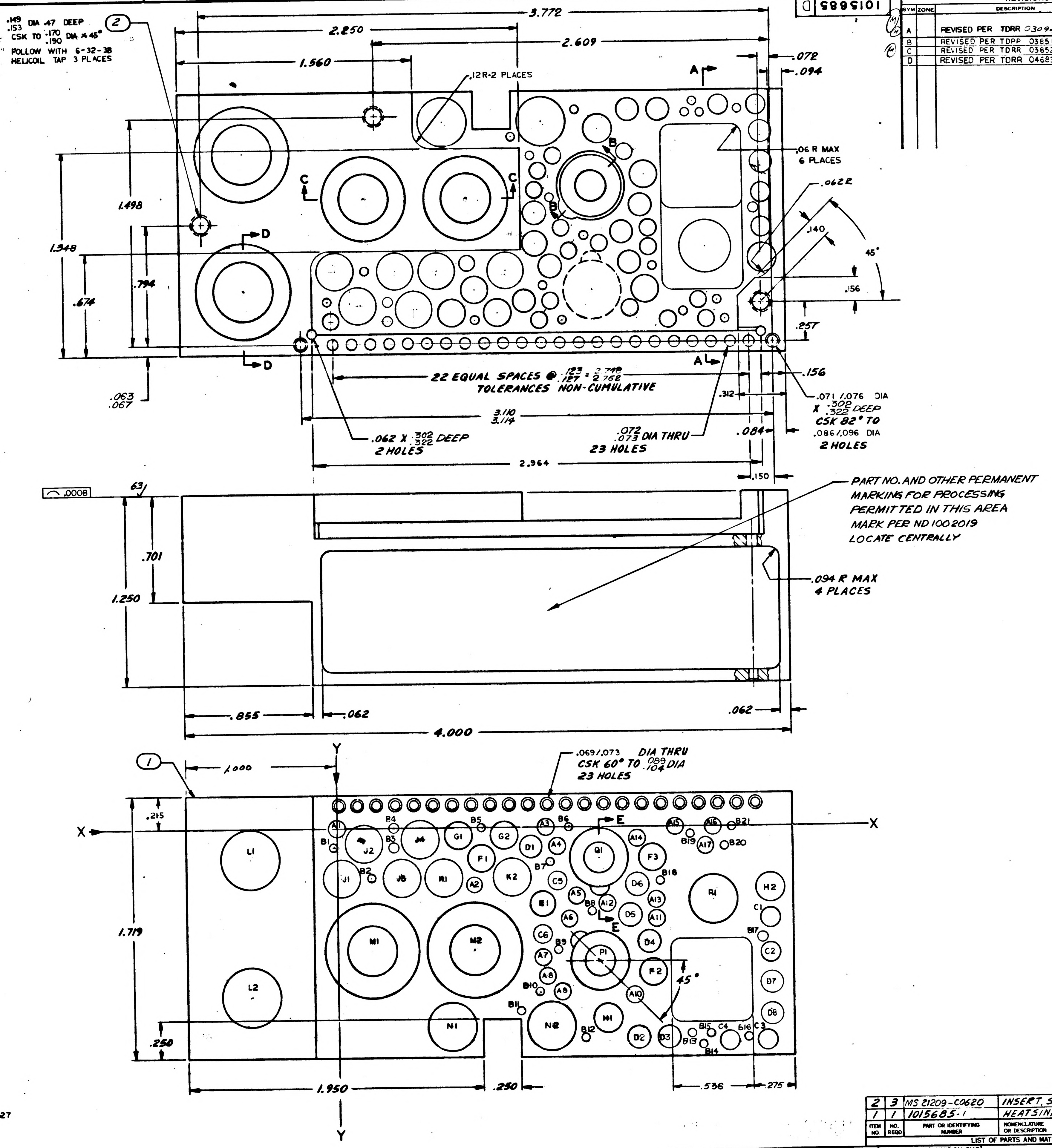
CODE IDENT NO. SIZE E 1015685
SCALE 4:1 SHEET 2 OF 2

1015685 C

INCHES
0 1
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 03094		9.12 63	
B		REVISED PER TDPP 03851			
C		REVISED PER TDRR 03852			
D		REVISED PER TDRR 04683			

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⌖ DIA	HOLE DIA	QTY
A	.000	.000	.006	.100 .104	17
A2	.900	.375			
A3	1.375	.000			
A4	.450	.125			
A5	1.575	.450			
A6	1.525	.600			
A7	1.350	.850			
A8	1.375	.975			
A9	1.475	1.075			
A10	1.950	1.100			
A11	2.100	.600			
A12	1.775	.500			
A13	2.100	.475			
A14	1.975	.075			
A15	2.225	.000			
A16	2.475	.000			
A17	2.425	.125			
B1	-.025	.125	.006	.058 .062	22
B2	.225	.325			
B3	.375	.125			
B4	.375	.000			
B5	.950	.000			
B6	1.525	.000			
B7	1.400	.225			
B8	1.675	.550			
B9	1.450	.800			
B10	1.325	1.075			
B11	1.200	1.200			
B12	1.625	1.375			
B13	2.325	1.350			
B14	2.400	1.425			
B15	2.450	1.350			
B16	2.700	1.375			
B17	2.800	.725			
B18	2.125	.350			
B19	2.325	.050			
B20	2.550	.125			
B21	2.600	.000			
C1	2.850	.600	.006	.110 .114	6
C2	2.850	.850			
C3	2.825	1.400			
C4	2.575	1.400			
C5	1.450	.350			
C6	1.350	.700			
D1	1.275	.125	.006	.146 .150	8
D2	1.975	1.375			
D3	2.175	1.375			
D4	2.050	.750			
D5	1.925	.575			
D6	1.975	.375			
D7	2.850	1.025			
D8	2.850	1.225			
E1	1.350	.500	.006	.165 .169	1
F1	.950	.200	.006	.176 .180	3
F2	2.075	.950			
F3	2.075	.200			
G1	.800	.050	.006	.184 .188	2
G2	1.100	.050			
H1	1.775	1.250	.006	.192 .196	2
H2	2.850	.400			
J1	.025	.325	.006	.237 .241	4
J2	.175	.100			
J3	.425	.325			
J4	.550	.075			
K1	.700	.325	.006	.227 .231	2
K2	1.150	.325			
L1	-.575	.200	.006	SEE SEC. D-D	2
L2	-.575	1.100			
M1	.225	.800	.006	SEE SEC C-C	2
M2	.900	.800			
N1	.750	1.300	.006	.331 .335	2
N2	1.400	1.300			
P1	1.725	.875	.006	SEE SEC B-B	1
Q1	1.725	.200	.006	SEE SEC E-E	1
R1	2.475	.475	.006	SEE SEC A-A	1



.149 .153 DIA .47 DEEP
CSK TO .170 .190 DIA × 45°
FOLLOW WITH 6-32-38 HELICOIL TAP 3 PLACES
②
3.772
2.250
2.609
1.560
.072
.094
.12R-2 PLACES
A
B
C
D
.06 R MAX 6 PLACES
.062R
.140
45°
.156
1.498
1.348
.794
.674
.257
22 EQUAL SPACES @ .123 .127 = 2.748 2.762
TOLERANCES NON-CUMULATIVE
.156
.063 .067
.312
.071/.076 DIA X .302 .322 DEEP CSK 82° TO .086/.096 DIA 2 HOLES
3.110 3.114
.062 X .302 .322 DEEP 2 HOLES
.072 .073 DIA THRU 23 HOLES
.084
2.964
.150
.0008
63
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA MARK PER ND 1002019 LOCATE CENTRALLY
.701
1.250
.094 R MAX 4 PLACES
.855
.062
.062
4.000
①
1.000
Y
X
.069/.073 DIA THRU CSK 60° TO .089 .104 DIA 23 HOLES
.215
1.719
.250
1.950
.250
.536
.275
45°
E
L1
L2
M1
M2
N1
N2
J1
J2
J3
J4
K2
G1
G2
F1
F2
F3
D1
D2
D3
D4
D5
D6
D7
D8
P1
Q1
R1
H1
H2
C1
C2
C3
C4
C5
C6
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14
B15
B16
B17
B18
B19
B20
B21
1015685 D

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: MAG ALLOY ZK-60A-T5 PER QQ-M-31A
3. UNLESS OTHERWISE SPECIFIED: ROUGHNESS MUST NOT EXCEED 125
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER
ALL FLAT SURFACES TO BE SQUARE WITHIN .010
PIECE MUST BE FREE FROM BURRS
4. COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER
5. INSTALL ITEM 2 PER MS 33646 EXCEPT DIM. F TO BE .594 BREAK OFF TANGS
6. FINISH: ANODIZE PER MIL-M-3171A TYPE IV, EXCEPT FOR THREADED HOLES
7. ARROWS ON X AND Y COORDINATES DESIGNATE PLUS(+) DIRECTION

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW-LOCKING
1	1	1015685-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	±.005	+ 1°
−	±.02	− 2

DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 2

CONTRACT

AC SPARK PLUG DIVISION. GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED 2APR63
APPROVAL A KOTDEL 3APR63
APPROVAL 3APR63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

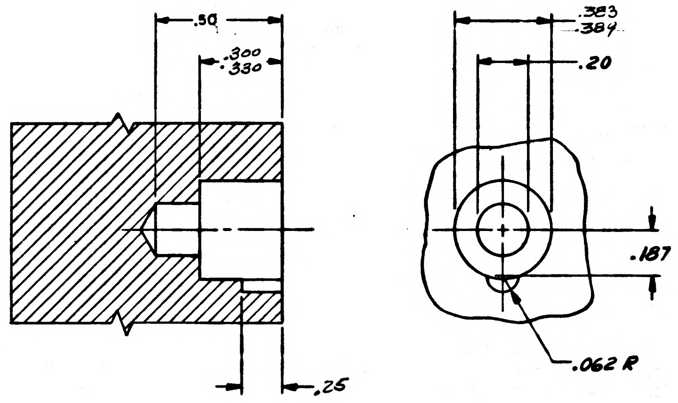
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
FOR GIMBAL SERVO AMPLIFIER

CODE IDENT NO.
SIZE E
1015685
SCALE 4:1
SHEET 1 OF 2

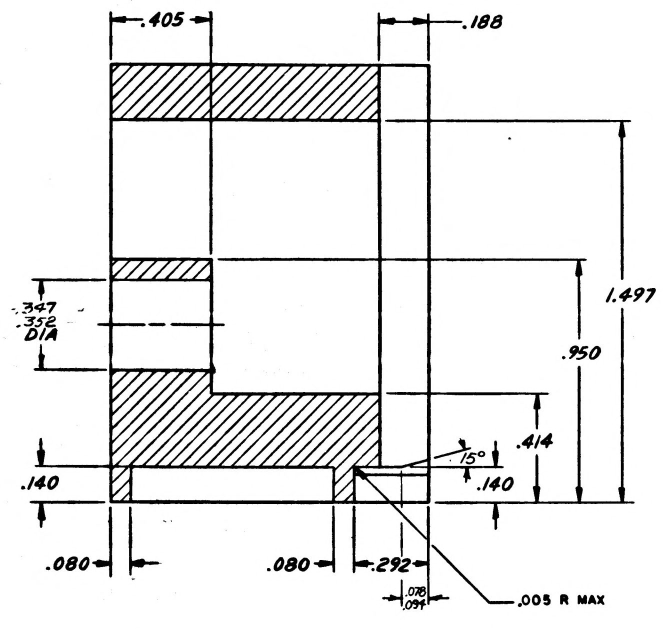
1015685 D

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
A		REVISED PER TDRR 03094		4-17-63	J.J.M.
B		REVISED PER TDRR 03851			
C		REVISED PER TDRR 03852			
D		REVISED PER TDRR 04683		9/19/63	RPK



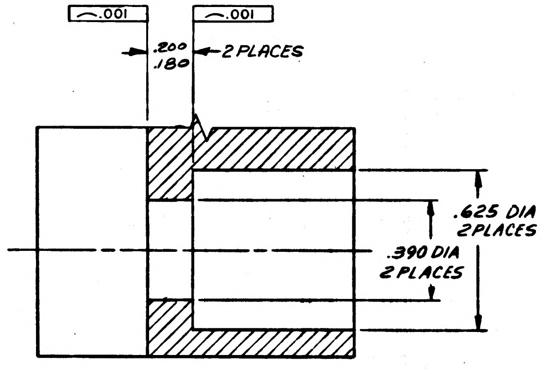
.50
.300
.330
.383
.384
.20
.187
.062 R
.25

PARTIAL SECTION E-E



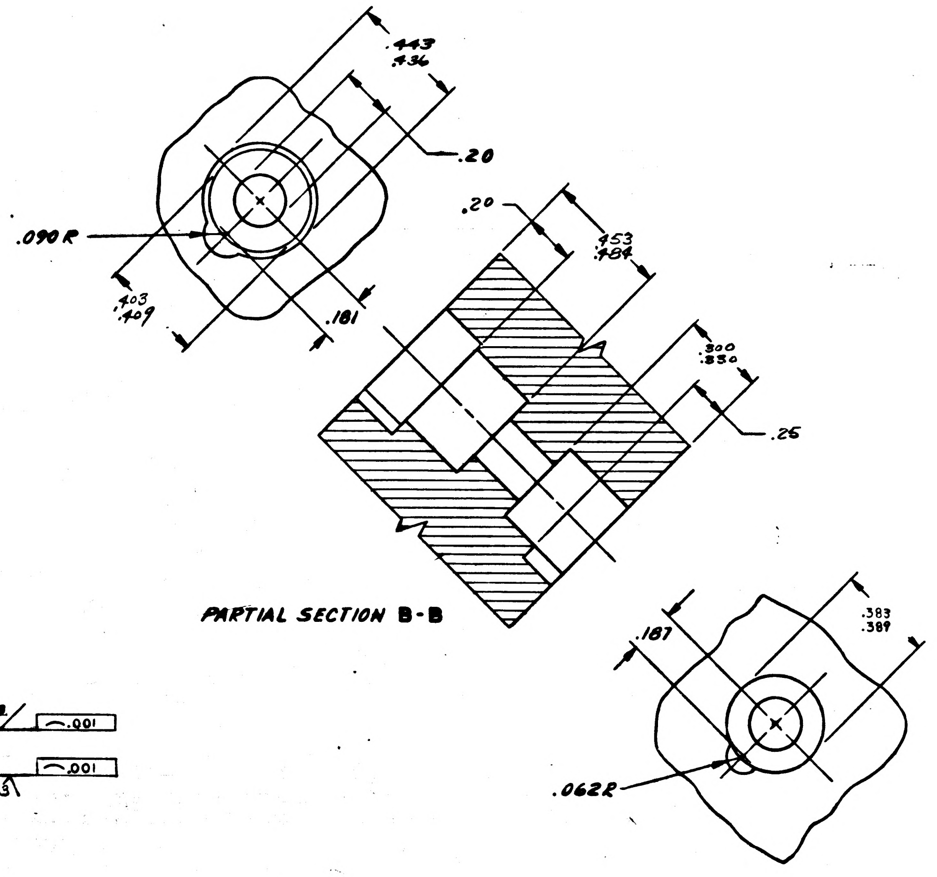
.405
.188
1.497
.347
.352
DIA
.950
.414
15°
.140
.140
.080
.080
.292
.078
.094
.005 R MAX

SECTION A-A



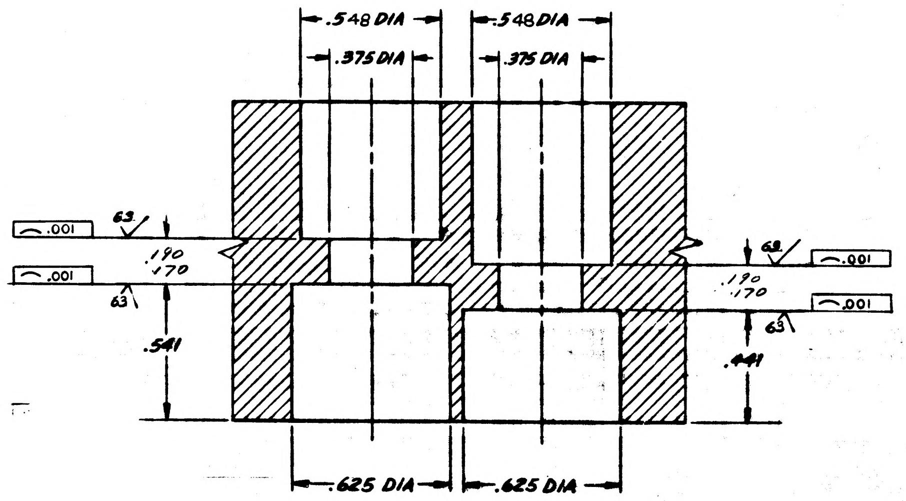
.001
.001
.200
.180
2 PLACES
.625 DIA
2 PLACES
.390 DIA
2 PLACES

PARTIAL SECTION D-D



.443
.436
.20
.090 R
.403
.409
.181
.20
.453
.484
.300
.330
.25
.187
.383
.387
.062 R

PARTIAL SECTION B-B



.548 DIA
.375 DIA
.548 DIA
.375 DIA
.001
.001
63
63
.190
.170
.541
63
63
.001
.001
.190
.170
.441
.625 DIA
.625 DIA

PARTIAL SECTION C-C

1007040	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Gaschke DATE
CHECKED 2 APR 63
APPROVAL A KODEL 3 APR 63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
FOR GIMBAL SERVO AMPLIFIER

CODE IDENT NO. SIZE E 1015685
SCALE 4:1 SHEET 2 OF 2

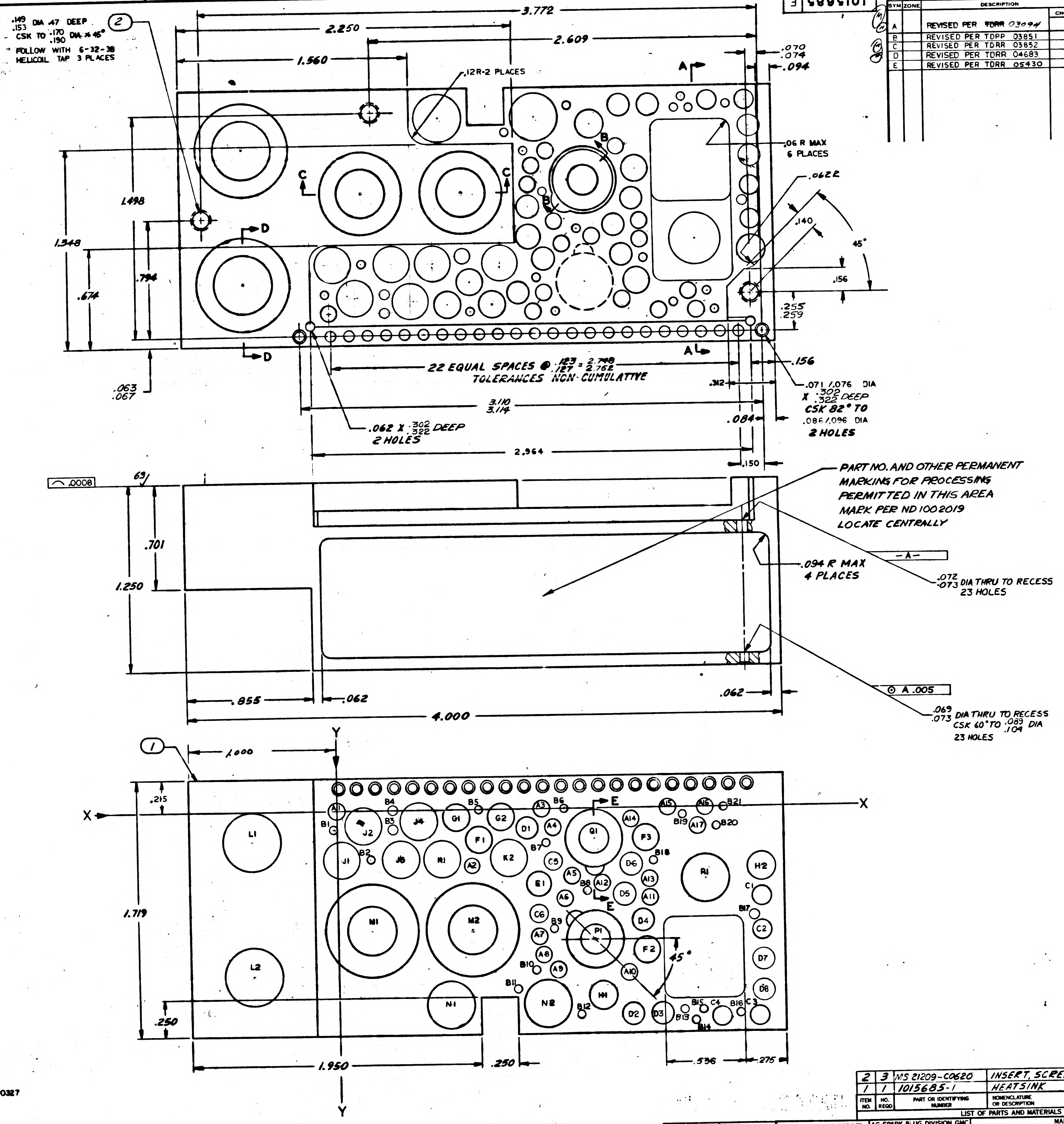
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015685 E

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 03094		9.12 63	
B		REVISED PER TDPP 03851			
C		REVISED PER TDRR 03852			
D		REVISED PER TDRR 04683			
E		REVISED PER TDRR 05430			

SEE NOTE 8

HOLE IDENT	X DIM.	Y DIM.		HOLE DIA	QTY
A1	.000	.000		.100 .104	17
A2	.900	.375			
A3	1.375	.000			
A4	.450	.125			
A5	1.575	.450			
A6	1.525	.600			
A7	1.350	.850			
A8	1.375	.975			
A9	1.475	1.075			
A10	1.950	1.100			
A11	2.100	.600			
A12	1.775	.500			
A13	2.100	.475			
A14	1.975	.075			
A15	2.225	.000			
A16	2.475	.000			
A17	2.425	.125			
B1	-.025	.125		.058 .062	22
B2	.225	.325			
B3	.375	.125			
B4	.375	.000			
B5	.950	.000			
B6	1.525	.000			
B7	1.400	.225			
B8	1.675	.550			
B9	1.450	.800			
B10	1.325	1.075			
B11	1.200	1.200			
B12	1.625	1.375			
B13	2.325	1.350			
B14	2.400	1.425			
B15	2.450	1.350			
B16	2.700	1.375			
B17	2.800	.725			
B18	2.125	.350			
B19	2.325	.050			
B20	2.550	.125			
B21	2.600	.000			
C1	2.850	.600		.110 .114	6
C2	2.850	.850			
C3	2.825	1.400			
C4	2.575	1.400			
C5	1.450	.350			
C6	1.350	.700			
D1	1.275	.125		.146 .150	8
D2	1.975	1.375			
D3	2.175	1.375			
D4	2.050	.750			
D5	1.925	.575			
D6	1.975	.375			
D7	2.850	1.025			
D8	2.850	1.225			
E1	1.350	.500		.165 .169	1
F1	.950	.200		.176 .180	3
F2	2.075	.950			
F3	2.075	.200			
G1	.800	.050		.184 .188	2
G2	1.100	.050			
H1	1.775	1.250		.192 .196	2
H2	2.850	.400			
J1	.025	.325		.237 .241	4
J2	.175	.100			
J3	.425	.325			
J4	.550	.075			
K1	.700	.325		.227 .231	2
K2	1.150	.325			
L1	-.575	.200		SEE SEC. D-D	2
L2	-.575	1.100			
M1	.225	.800		SEE SEC C-C	2
M2	.900	.800			
N1	.750	1.300		.331 .335	2
N2	1.400	1.300			
P1	1.725	.875		SEE SEC B-B	1
Q1	1.725	.200		SEE SEC E-E	1
R1	2.475	.475		SEE SEC A-A	1



.149 .153 DIA .47 DEEP
CSK TO .170 .190 DIA x 45°
FOLLOW WITH 6-32-38 HELICOIL TAP 3 PLACES
2
3.772
2.250
2.609
1.560
.070 .074
.094
.12R-2 PLACES
A
B
C
.06 R MAX 6 PLACES
.062R
.140
45°
.156
1.498
1.348
.794
.674
D
.255 .259
22 EQUAL SPACES @ .123 .127 = 2.748 2.752 TOLERANCES NON-CUMULATIVE
.156
.063 .067
.312
.071/.076 DIA X .302 .322 DEEP CSK 82° TO .086/.096 DIA 2 HOLES
3.110 3.114
.084
.062 X .302 .322 DEEP 2 HOLES
2.964
.150
.0008
63
.701
1.250
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA MARK PER ND 1002019 LOCATE CENTRALLY
-A-
.094 R MAX 4 PLACES
.072 .073 DIA THRU TO RECESS 23 HOLES
.855
.062
.062
A .005
4.000
.069 .073 DIA THRU TO RECESS CSK 60° TO .089 .104 DIA 23 HOLES
1
1.000
Y
X
X
.215
1.719
.250
1.950
.250
.536
.275
Y
E
45°
L1
L2
M1
M2
N1
N2
J1
J2
J3
J4
G1
G2
K1
K2
F1
F2
F3
D1
D2
D3
D4
D5
D6
D7
D8
E1
Q1
P1
R1
H1
H2
C1
C2
C3
C4
C5
C6
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14
B15
B16
B17
B18
B19
B20
B21

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: MAG ALLOY ZK-60A-T5 PER QQ-M-31A
3. UNLESS OTHERWISE SPECIFIED: ROUGHNESS MUST NOT EXCEED 125 ∇
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER
ALL FLAT SURFACES TO BE SQUARE WITHIN .010
PIECE MUST BE FREE FROM BURRS
4. COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER
5. INSTALL ITEM 2 PER MS 33646 BREAK OF TANGS
6. FINISH: ANODIZE PER MIL-M-3171A TYPE IV, EXCEPT FOR THREADED HOLES
7. ARROWS ON X AND Y COORDINATES DESIGNATE PLUS(+) DIRECTION
8. THE DRILLING OF ANY COMPONENT HOLE CAUSING VISABLE DEFORMATION IN AN ADJACENT HOLE OR ON AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW-LOCKING
1	1	1015685-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ xxx ±.005 +1°
− xx ±.02 −½
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 2
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE
CHECKED 2APR63
APPROVAL A KOTEL 3APR63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
FOR GIMBAL SERVO AMPLIFIER

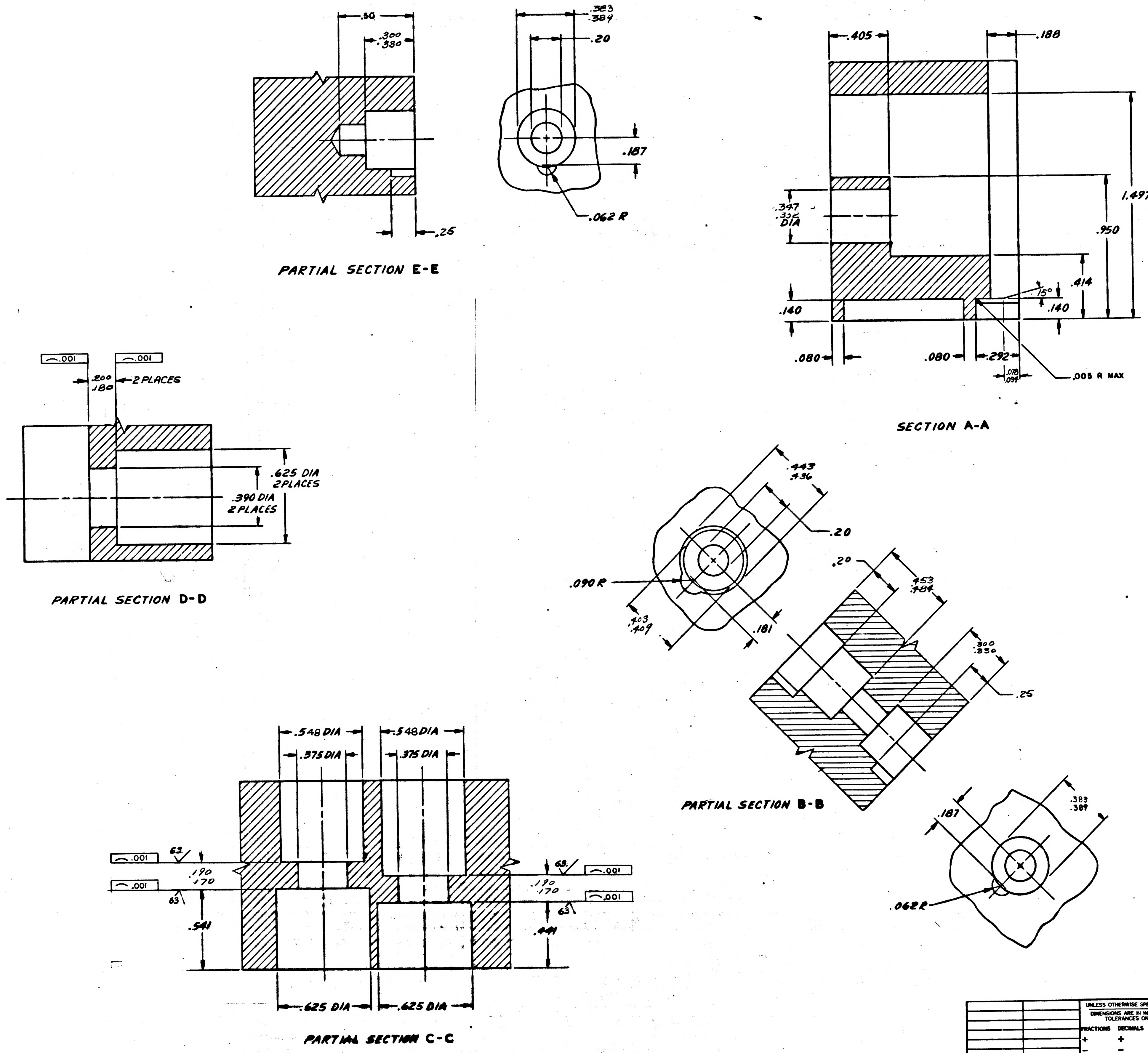
CODE IDENT NO.
SIZE E
1015685
SCALE 4:1
SHEET 1 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

MIL 10775-P

1015685 E

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
		REVISIONS TDRR 01316			
A		REVISED PER TDRR 03094		4 17 63	
B		REVISED PER TDRR 03851			
C		REVISED PER TDRR 03852			
D		REVISED PER TDRR 04683		11/19/63	RPK
E		REVISED PER TDRR 05430			



.50
.300
.330
.25
.383
.384
.20
.187
.062 R
.405
.188
1.497
.950
.414
.347
.352
DIA
15°
.140
.140
.080
.080
.292
.078
.091
.005 R MAX
.001
.001
.200
.180
2 PLACES
.625 DIA
2 PLACES
.390 DIA
2 PLACES
.443
.436
.20
.090 R
.403
.409
.181
.20
.453
.484
.300
.330
.25
.187
.383
.389
.062R
.548 DIA
.548 DIA
.375 DIA
.375 DIA
63
.190
.170
.001
.001
.541
63
.190
.170
.001
.001
.441
.625 DIA
.625 DIA

PARTIAL SECTION E-E

SECTION A-A

PARTIAL SECTION D-D

PARTIAL SECTION B-B

PARTIAL SECTION C-C

1007040	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Gaschke DATE
CHECKED 2 APR 63
APPROVAL
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
FOR GIMBAL SERVO AMPLIFIER

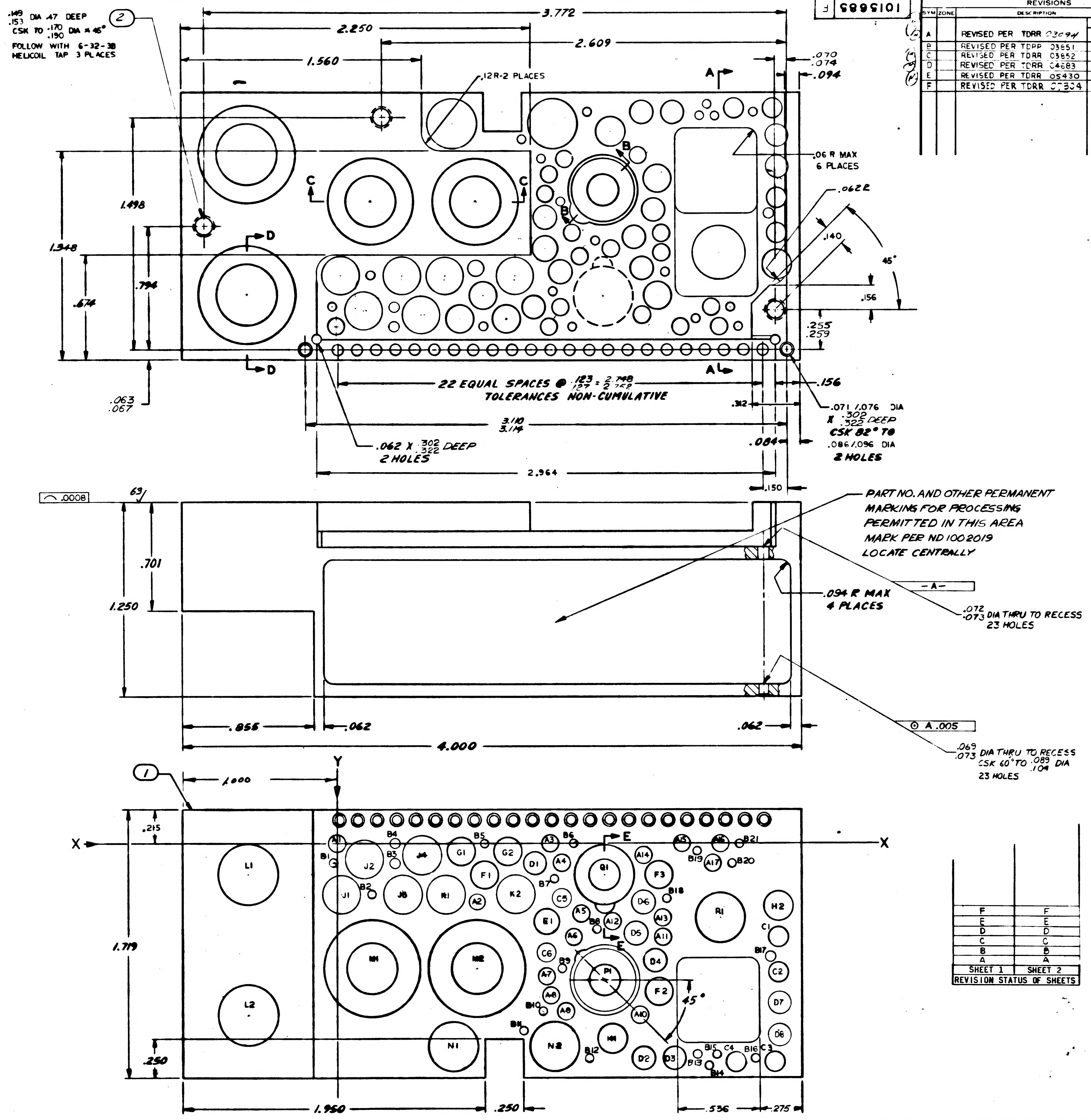
CODE IDENT NO.
SIZE E
1015685
SCALE 4:1
SHEET 2 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 03094		9 12 63	
B		REVISED PER TDPP 03851			
C		REVISED PER TDRR 03852			
D		REVISED PER TDRR 04683			
E		REVISED PER TDRR 05430			
F		REVISED PER TDRR 07304		16 APR 64	JWP DBR

SEE NOTE 8

HOLE IDENT	X DIM.	Y DIM.		HOLE DIA	QTY
A1	.000	.000		.100 .104	17
A2	.900	.375			
A3	1.375	.000			
A4	1.450	.125			
A5	1.575	.450			
A6	1.525	.600			
A7	1.350	.850			
A8	1.375	.975			
A9	1.475	1.075			
A10	1.950	1.100			
A11	2.100	.600			
A12	1.775	.500			
A13	2.100	.475			
A14	1.975	.075			
A15	2.225	.000			
A16	2.475	.000			
A17	2.425	.125			
B1	-.025	.125		.058 .062	22
B2	.225	.325			
B3	.375	.125			
B4	.375	.000			
B5	.950	.000			
B6	1.525	.000			
B7	1.400	.225			
B8	1.675	.550			
B9	1.450	.800			
B10	1.325	1.075			
B11	1.200	1.200			
B12	1.625	1.375			
B13	2.325	1.350			
B14	2.400	1.425			
B15	2.450	1.350			
B16	2.700	1.375			
B17	2.800	.725			
B18	2.125	.350			
B19	2.325	.050			
B20	2.550	.125			
B21	2.600	.000			
C1	2.850	.600		.110 .114	6
C2	2.850	.650			
C3	2.825	1.400			
C4	2.575	1.400			
C5	1.450	.350			
C6	1.350	.700			
D1	1.275	.125		.146 .150	8
D2	1.975	1.375			
D3	2.175	1.375			
D4	2.050	.750			
D5	1.925	.575			
D6	1.975	.375			
D7	2.850	1.025			
D8	2.850	1.225			
E1	1.350	.500		.165 .169	1
F1	.950	.200		.176 .180	3
F2	2.075	.950			
F3	2.075	.200			
G1	.800	.050		.184 .188	2
G2	1.100	.050			
H1	1.775	1.250		.192 .196	2
H2	2.850	.400			
J1	.025	.325		.237 .241	4
J2	.175	.100			
J3	.425	.325			
J4	.550	.075			
K1	.700	.325		.227 .231	2
K2	1.150	.325			
L1	-.575	.200		SEE SEC. D-D	2
L2	-.575	1.100			
M1	.225	.800		SEE SEC C-C	2
M2	.900	.800			
N1	.750	1.300		.331 .335	2
N2	1.400	1.300			
P1	1.725	.875		SEE SEC B-B	1
Q1	1.725	.200		SEE SEC E-E	1
R1	2.475	.475		SEE SEC A-A	1



.149 .153 DIA .47 DEEP
CSK TO .170 .190 DIA × 45°
FOLLOW WITH 6-32-3B HELICOIL TAP 3 PLACES
2
3.772
2.250
2.609
1.560
.12R-2 PLACES
.070 .074
.094
A
B
C
D
1.498
1.348
.794
.674
.06 R MAX 6 PLACES
.062R
.140
45°
.156
.255 .259
.063 .067
22 EQUAL SPACES @ .123 .127 = 2.748 2.752
TOLERANCES NON-CUMULATIVE
3.110 3.114
.312
.156
.071/.076 DIA X .302 .322 DEEP CSK 82° TO .086/.096 DIA 2 HOLES
.062 X .302 .322 DEEP 2 HOLES
.084
2.964
.150
.0008
63
.701
1.250
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA MARK PER ND 1002019 LOCATE CENTRALLY
.094 R MAX 4 PLACES
-A-
.072 .073 DIA THRU TO RECESS 23 HOLES
.855
.062
.062
4.000
⊙ A .005
.069 .073 DIA THRU TO RECESS CSK 60° TO .089 .104 DIA 23 HOLES
1
1.000
Y
X
.215
1.719
.250
1.950
.250
.536
.275
E
45°
L1 L2 M1 M2 N1 N2 P1 Q1 R1 J1 J2 J4 J5 K1 K2 G1 G2 F1 F2 F3 E1 H2 C1 C2 C3 C4 C5 C6 D1 D2 D3 D4 D5 D6 D7 A1 A2 A3 A4 A5 A6 A7 A8 A10 A11 A12 A13 A14 A15 A16 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19 B20 B21

F	F
E	E
D	D
C	C
B	B
A	A
SHEET 1	SHEET 2

REVISION STATUS OF SHEETS

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: MAG ALLOY ZK-60A-T5 PER QQ-M-31A
3. UNLESS OTHERWISE SPECIFIED: ROUGHNESS MUST NOT EXCEED 125 ▽
   ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER
   ALL FLAT SURFACES TO BE SQUARE WITHIN .010
   PIECE MUST BE FREE FROM BURRS
4. COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER
5. INSTALL ITEM 2 PER MS 33646 BREAK OF TANGS
6. FINISH: ANODIZE PER MIL-M-3171A TYPE IV, EXCEPT FOR THREADED HOLES
7. ARROWS ON X AND Y COORDINATES DESIGNATE PLUS(+) DIRECTION
8. THE DRILLING OF ANY COMPONENT HOLE CAUSING VISABLE DEFORMATION IN AN ADJACENT HOLE OR ON AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW-LOCKING
1	1	1015685-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ±.005 + 1°
− XX ±.02 − 2
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 15MAR63
CHECKED 2APR63
APPROVAL 3APR63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

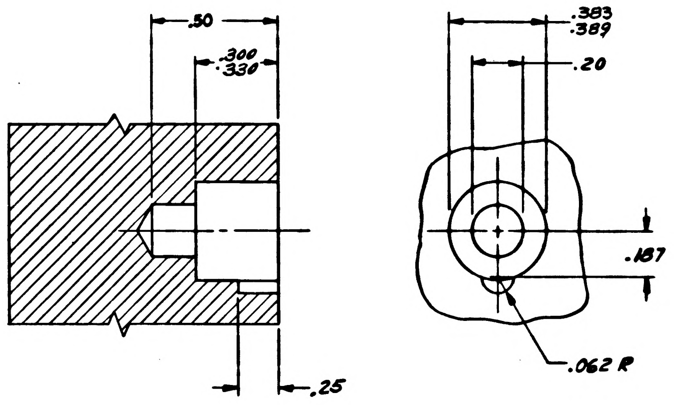
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
FOR GIMBAL SERVO AMPLIFIER

CODE IDENT NO. SIZE E 1015685
SCALE 4:1 SHEET 1 OF 2

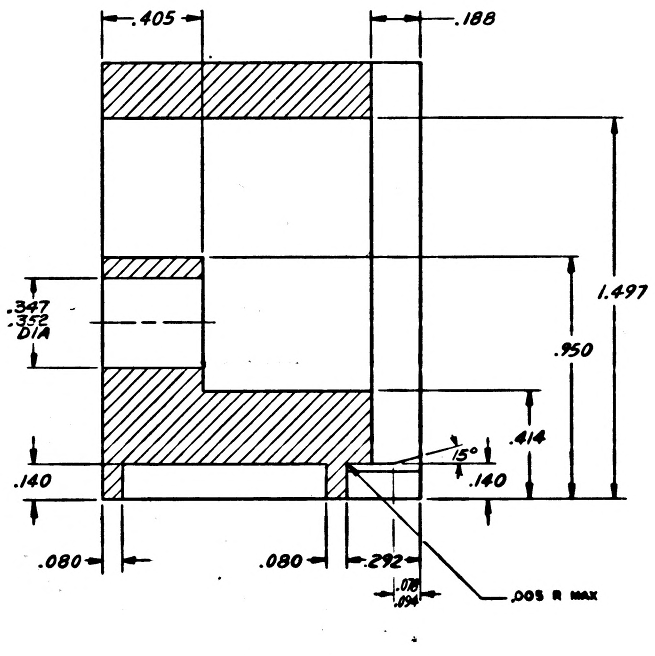
1015685	F

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 0304		[illegible] 63	WK
B		REVISED PER TDRR 03851			
C		REVISED PER TDRR 03852			WK
D		REVISED PER TDRR 04683		11/9/63	
E		REVISED PER TDRR 05430		[illegible] 63	
F		REVISED PER TDRR 07304		16 APR 64	



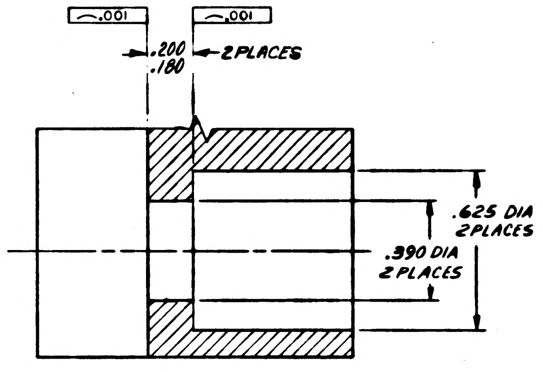
.50
.300
.330
.25
.383
.389
.20
.187
.062 R

PARTIAL SECTION E-E



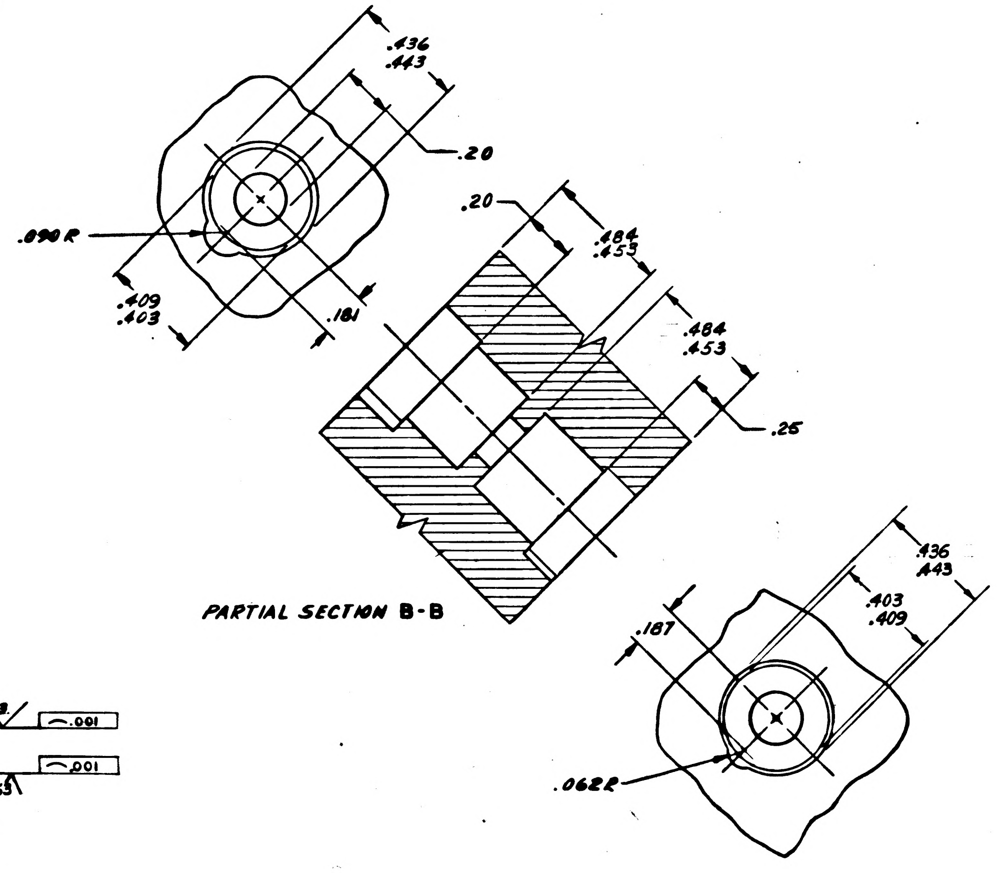
.405
.188
1.497
.950
.347
.352
DIA
.414
15°
.140
.140
.080
.080
.292
.078
.094
.005 R MAX

SECTION A-A



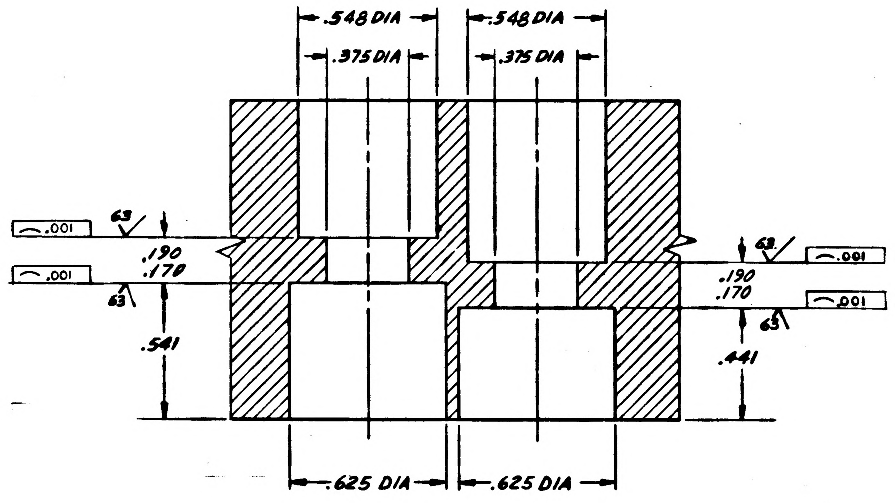
.001
.001
.200
.180
2 PLACES
.625 DIA
2 PLACES
.390 DIA
2 PLACES

PARTIAL SECTION D-D



.436
.443
.20
.090 R
.409
.403
.181
.20
.484
.453
.484
.453
.25
.436
.443
.403
.409
.187
.062 R

PARTIAL SECTION B-B



.548 DIA
.375 DIA
.548 DIA
.375 DIA
.001
.001
63
.190
.170
63
.541
63
.001
.190
.170
.001
63
.441
.625 DIA
.625 DIA

PARTIAL SECTION C-C

1007040	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Bachke DATE
CHECKED 2 APR 63
APPROVAL
APPROVAL
5-22-63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
FOR GIMBAL SERVO AMPLIFIER

CODE IDENT NO. SIZE E 1015685
SCALE 4:1 SHEET 2 OF 2

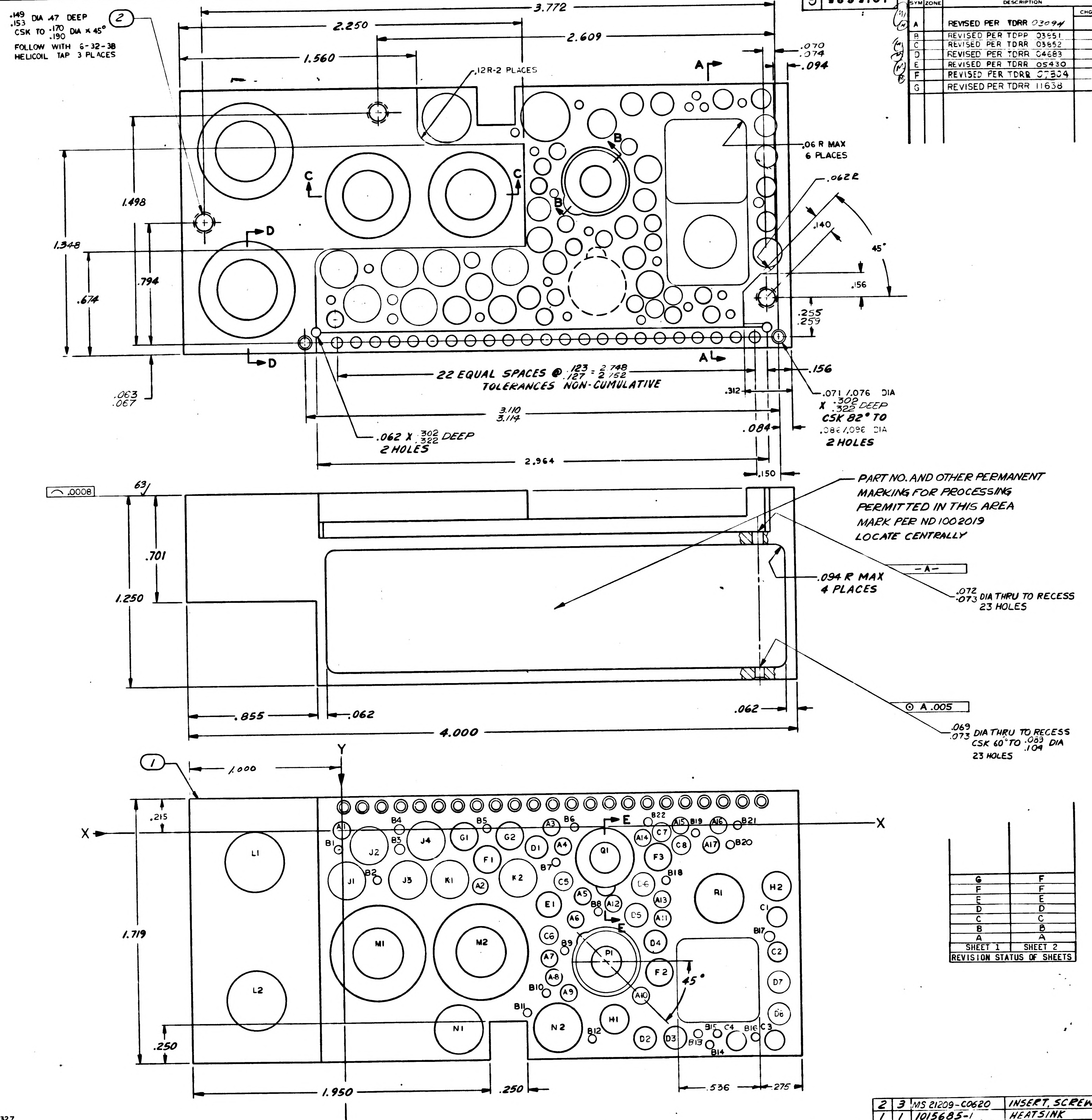
1015685	G				

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 03094		9 12 63	WC
B		REVISED PER TDPP 03951			WK
C		REVISED PER TDRR 03652			WK
D		REVISED PER TDRR 04683			
E		REVISED PER TDRR 05430			
F		REVISED PER TDRR 07504		16 APR 66	PBR
G		REVISED PER TDRR 11638		28 AUG 64	

SEE NOTE 7

HOLE IDENT	X DIM.	Y DIM.		HOLE DIA	QTY
A1	.000	.000		.100 .104	17
A2	.900	.375			
A3	.375	.000			
A4	.450	.125			
A5	1.575	.450			
A6	1.525	.600			
A7	1.350	.850			
A8	1.375	.975			
A9	1.475	1.075			
A10	1.950	1.100			
A11	2.100	.600			
A12	1.775	.500			
A13	2.100	.475			
A14	1.975	.075			
A15	2.225	.000			
A16	2.475	.000			
A17	2.425	.125			
B1	-.025	.125		.058 .062	22
B2	.225	.325			
B3	.375	.125			
B4	.775	.000			
B5	.950	.000			
B6	1.525	.000			
B7	1.400	.225			
B8	1.675	.550			
B9	1.450	.800			
B10	1.325	1.075			
B11	1.200	1.200			
B12	1.625	1.375			
B13	2.325	1.350			
B14	2.400	1.425			
B15	2.450	1.350			
B16	2.700	1.375			
B17	[illegible]	.725			
B18	2.125	.350			
B19	2.325	.050			
B20	2.550	.125			
B21	2.600	.000			
B22	2.012	-.025			
C1	2.850	.600		.110 .114	8
C2	2.850	.850			
C3	2.825	1.400			
C4	2.575	1.400			
C5	1.450	.750			
C6	1.350	.700			
C7	2.102	.040			
C8	2.230	.130			
D1	1.275	.125		.146 .150	8
D2	1.975	1.375			
D3	2.175	1.375			
D4	2.050	.750			
D5	1.925	.575			
D6	1.975	.375			
D7	2.850	1.025			
D8	2.850	1.225			
E1	1.350	.500		.165 .169	1
F1	.950	.200		.176 .180	3
F2	2.075	.950			
F3	2.075	.200			
G1	.800	.050		.184 .188	2
G2	1.100	.050			
H1	1.775	1.250		.192 .196	2
H2	2.850	.400			
J1	.025	.325		.237 .241	4
J2	.175	.100			
J3	.425	.325			
J4	.550	.075			
K1	.700	.325		.227 .231	2
K2	1.150	.325			
L1	-.575	.200		SEE SEC. D-D	2
L2	-.575	1.100			
M1	.225	.300		SEE SEC C-C	2
M2	.900	.800			
N1	.750	1.300		.331 .335	2
N2	1.400	1.300			
P1	1.725	.875		SEE SEC B-B	1
Q1	1.725	.200		SEE SEC E-E	1
R1	2.475	.475		SEE SEC A-A	1



.149 .153 DIA .47 DEEP
CSK TO .170 .190 DIA × 45°
FOLLOW WITH 6-32-3B HELICOIL TAP 3 PLACES
2
3.772
2.250
2.609
1.560
12R-2 PLACES
A
B
C
D
.070 .074
.094
.06 R MAX 6 PLACES
.062R
.140
45°
.156
.255 .259
1.498
1.348
.794
.674
.063 .067
22 EQUAL SPACES @ .123/.127 = 2.748/2.752
TOLERANCES NON-CUMULATIVE
3.110 3.114
.312
.084
.156
.071 / .076 DIA X .302/.322 DEEP CSK 82° TO .086 / .096 DIA 2 HOLES
.062 X .302/.322 DEEP 2 HOLES
2.964
.150
.0008
63
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA MARK PER ND 1002019 LOCATE CENTRALLY
-A-
.701
1.250
.094 R MAX 4 PLACES
.072 .073 DIA THRU TO RECESS 23 HOLES
A .005
.855
.062
.062
4.000
.069 .073 DIA THRU TO RECESS CSK 60° TO .083/.104 DIA 23 HOLES
1
1.000
Y
X
.215
1.719
.250
1.950
.250
.536
.275
L1
L2
M1
M2
N1
N2
P1
Q1
R1
45°

G	F
F	F
E	E
D	D
C	C
B	B
A	A
SHEET 1	SHEET 2
REVISION STATUS OF SHEETS	

NOTES:
1 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2 MATERIAL: MAG ALLOY ZK 60A-T5 PER QQ-M-31A
3. UNLESS OTHERWISE SPECIFIED: ROUGHNESS MUST NOT EXCEED 125
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER
ALL FLAT SURFACES TO BE SQUARE WITHIN .010
PIECE MUST BE FREE FROM BURRS
4. COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER
5. INSTALL ITEM 2 PER MS 33646 BREAK OF TANG
6. FINISH: ANODIZE PER MIL-M-3171A TYPE IV, EXCEPT FOR THREADED HOLES
7. ARROWS ON X AND Y COORDINATES DESIGNATE PLUS (+) DIRECTION
8. THE DRILLING OF ANY COMPONENT HOLE CAUSING VISABLE DEFORMATION IN AN ADJACENT HOLE OR ON AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW-LOCKING
1	1	1015685-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − | DECIMALS xxx ±.005 xx ±.02 | ANGLES ± 1/2°
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Goschke DATE 15 MAR 63
CHECKED E.L. Hunt 2 APR 63
APPROVAL A.K. Cole 3 APR 63
APPROVAL J.M. Blyske 3 APR 63
APPROVAL
NASA APPROVAL W.J. Rhine 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
FOR GIMBAL SERVO AMPLIFIER

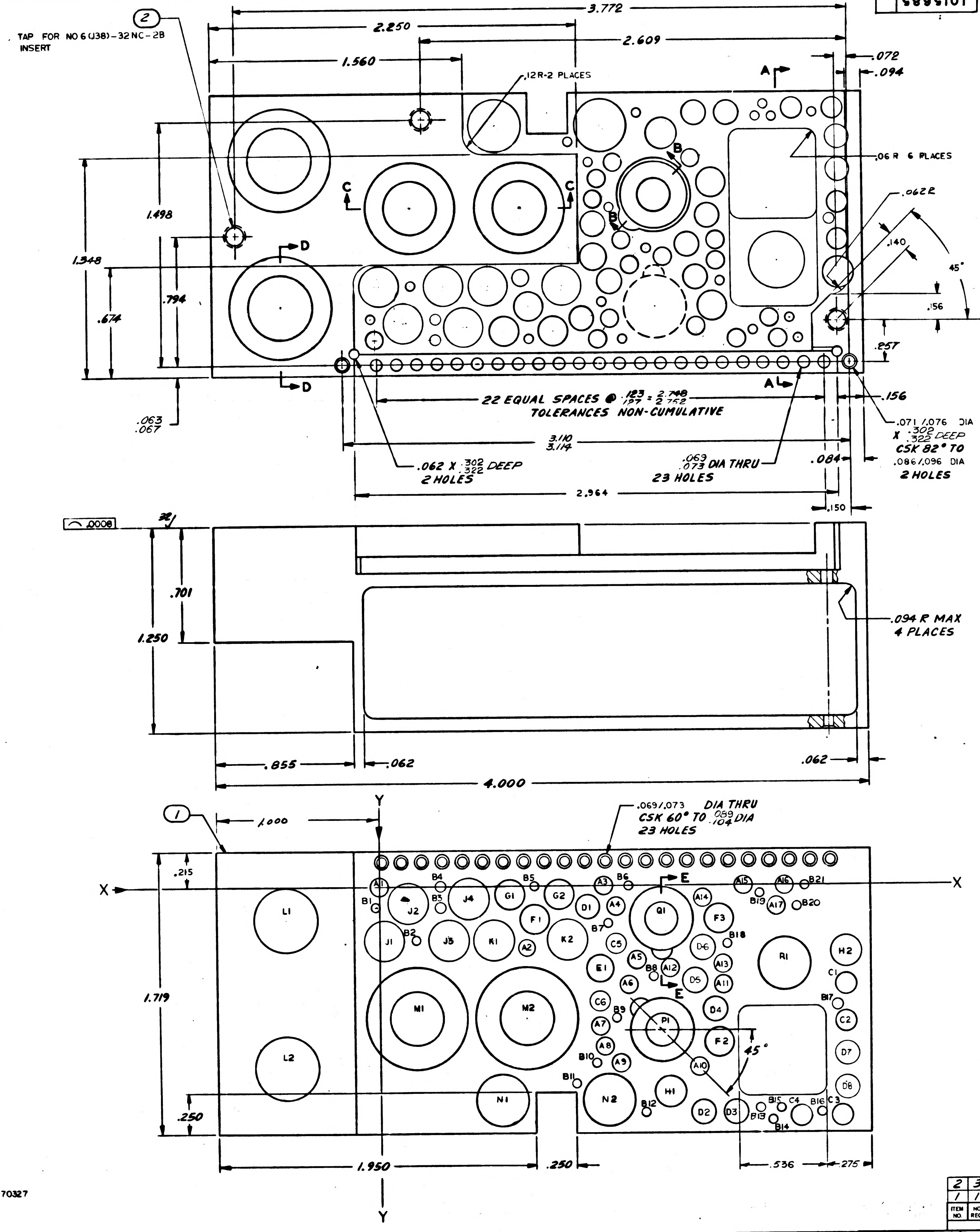
CODE IDENT NO | SIZE E | 1015685
SCALE 4:1 | SHEET 1 OF 2

MIL 1077E-P

1015685 G

1015685

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD



3.772
2.250
2.609
1.560
.072
.094
② TAP FOR NO 6 (.138) - 32 NC - 2B INSERT
.12R-2 PLACES
A
B
C
D
.06 R 6 PLACES
.062 R
.140
45°
.156
.257
1.498
1.348
.794
.674
.063
.067
22 EQUAL SPACES @ .123/.127 = 2.748/2.752
TOLERANCES NON-CUMULATIVE
.156
.071/.076 DIA X .302/.322 DEEP CSK 82° TO .086/.096 DIA 2 HOLES
3.110
3.114
.062 X .302/.322 DEEP 2 HOLES
.069/.073 DIA THRU 23 HOLES
.084
2.964
.150
.0008
32
.701
1.250
.094 R MAX 4 PLACES
.855
.062
.062
4.000
①
1.000
Y
X
.069/.073 DIA THRU CSK 60° TO .089/.104 DIA 23 HOLES
.215
1.719
.250
1.950
.250
.536
.275

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⌖ DIA	HOLE DIA	QTY
A1	.000	.000	.006	.100 .104	17
A2	.900	.375			
A3	.375	.000			
A4	.450	.125			
A5	1.575	.450			
A6	1.525	.600			
A7	1.350	.850			
A8	1.375	.975			
A9	1.475	1.075			
A10	1.950	1.100			
A11	2.100	.600			
A12	1.775	.500			
A13	2.100	.475			
A14	1.975	.075			
A15	2.225	.000			
A16	2.475	.000			
A17	2.425	.125			
B1	-.025	.125	.006	.058 .062	22
B2	.225	.325			
B3	.375	.125			
B4	.375	.000			
B5	.950	.000			
B6	1.525	.000			
B7	1.400	.225			
B8	1.675	.550			
B9	1.450	.800			
B10	1.325	1.075			
B11	1.200	1.200			
B12	1.625	1.375			
B13	2.325	1.350			
B14	2.400	1.425			
B15	2.450	1.350			
B16	2.700	1.375			
B17	2.800	.725			
B18	2.125	.350			
B19	2.325	.050			
B20	2.550	.125			
B21	2.600	.000			
C1	2.850	.600	.006	.110 .114	6
C2	2.850	.850			
C3	2.825	1.400			
C4	2.575	1.400			
C5	1.450	.350			
C6	1.350	.700			
D1	1.275	.125	.006	.146 .150	8
D2	1.975	1.375			
D3	2.175	1.375			
D4	2.050	.750			
D5	1.925	.575			
D6	1.975	.375			
D7	2.850	1.025			
D8	2.850	1.225			
E1	1.350	.500	.006	.165 .169	1
F1	.950	.200	.006	.176 .180	3
F2	2.075	.950			
F3	2.075	.200			
G1	.800	.050	.006	.184 .188	2
G2	1.100	.050			
H1	1.775	1.250	.006	.192 .196	2
H2	2.850	.400			
J1	.025	.325	.006	.237 .241	4
J2	.175	.100			
J3	.425	.325			
J4	.550	.075			
K1	.700	.325	.006	.227 .231	2
K2	1.150	.325			
L1	-.575	.200	.006	SEE SEC. D-D	2
L2	-.575	1.100			
M1	.225	.800	.006	SEE SEC C-C	2
M2	.900	.800			
N1	.750	1.300	.006	.331 .335	2
N2	1.400	1.300			
P1	1.725	.875	.006	SEE SEC B-B	1
Q1	1.725	.200	.006	SEE SEC E-E	1
R1	2.475	.475	.006	SEE SEC A-A	1

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: MAG ALLOY ZK-60A-T5 PER QQ-M-31A
3. UNLESS OTHERWISE SPECIFIED: ROUGHNESS MUST NOT EXCEED $\overset{125}{\nabla}$
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER
ALL FLAT SURFACES TO BE SQUARE WITHIN .010
PIECE MUST BE FREE FROM BURRS
4. COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER
5. INSTALL ITEM 2 PER MS 33646 EXCEPT DIM. F TO BE .594 BREAK OFF TANGS
6. FINISH: ANODIZE PER MIL-M-3171A TYPE IV, EXCEPT FOR THREADED HOLES
7. ARROWS ON X AND Y COORDINATES DESIGNATE PLUS (+) DIRECTION

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	NAS1222-06E	INSERT, SCREW-LOCKING
1	1	1015685-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	±.005	+ 1/2°
−	±.02	−

DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Goschke DATE 15MAR63
CHECKED 2APR63
APPROVAL A. KODEL 3APR63
APPROVAL J.M. BLYSMA 3APR63
APPROVAL
5-22-63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

HEATSINK
FOR GIMBAL SERVO AMPLIFIER

CODE IDENT NO
SIZE E
1015685
SCALE 4:1
SHEET 1 OF 2

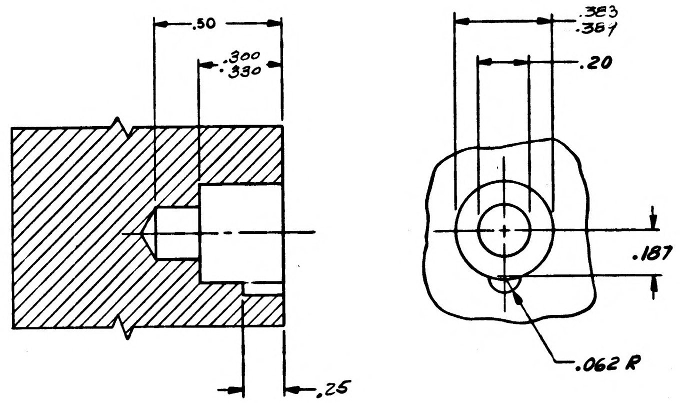
1015685

MIL 10775-F

INCHES
PHOTOGRAPHIC SCALE ONLY

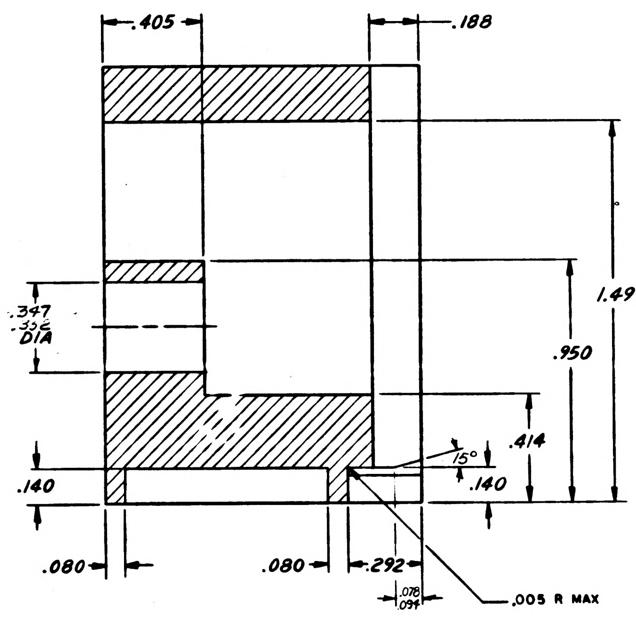
1015685

SYM	ZONE	REVISIONS DESCRIPTION	CHG NO	DATE	APPD



.50
.300
.330
.383
.387
.20
.187
.062 R
.25

PARTIAL SECTION E-E



.405
.188
.347
.336
DIA
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.950
.414
15°
.140
.140
.080
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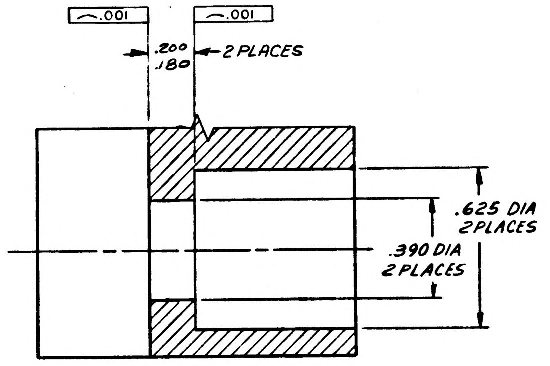
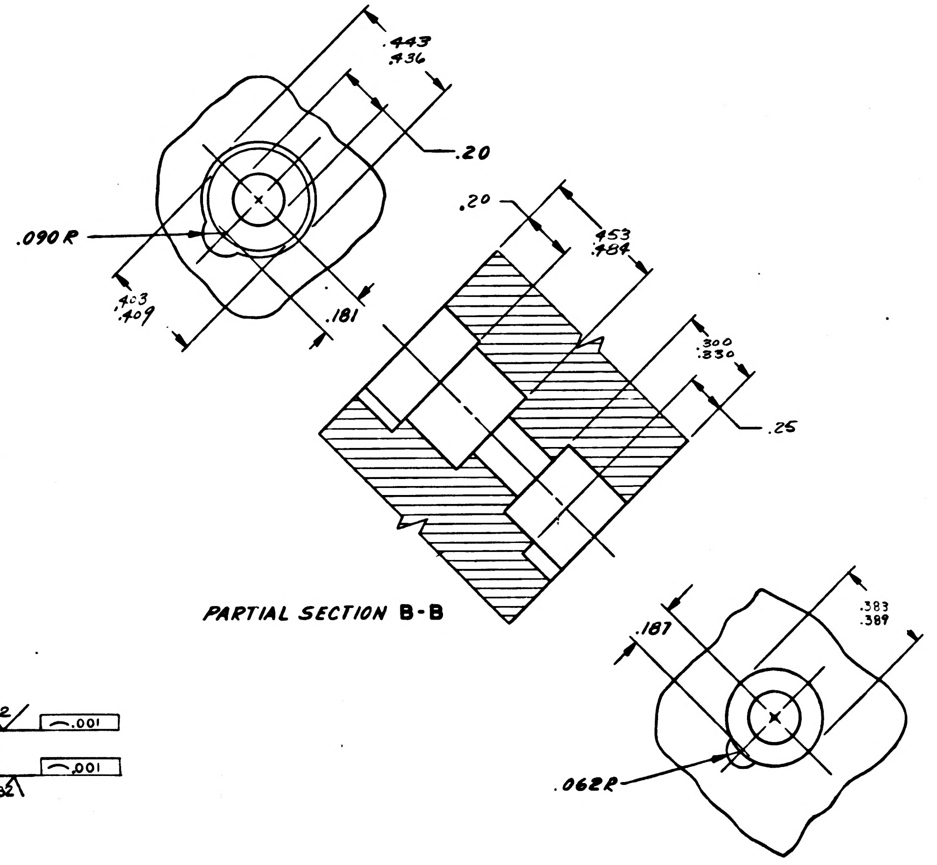
.078
.094
.005 R MAX

SECTION A-A



.001
.001
.200
.180
2 PLACES
.625 DIA
2 PLACES
.390 DIA
2 PLACES

PARTIAL SECTION D-D



.443
.436
.20
.090 R
.403
.409
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.453
.484
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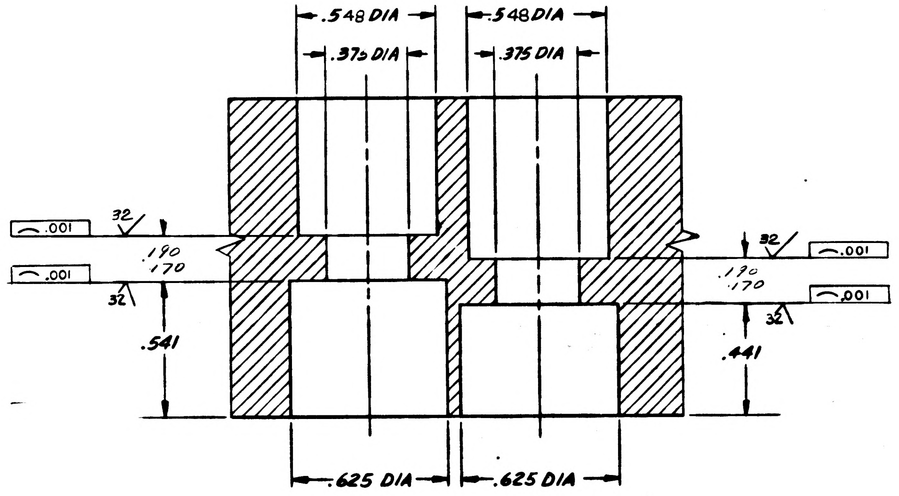
.389
.062R

PARTIAL SECTION B-B



.548 DIA
.375 DIA
.548 DIA
.375 DIA
.001
.001
32
32
.190
.170
.541
32
.001
.001
.190
.170
32
.441
.625 DIA
.625 DIA

PARTIAL SECTION C-C

1007040	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

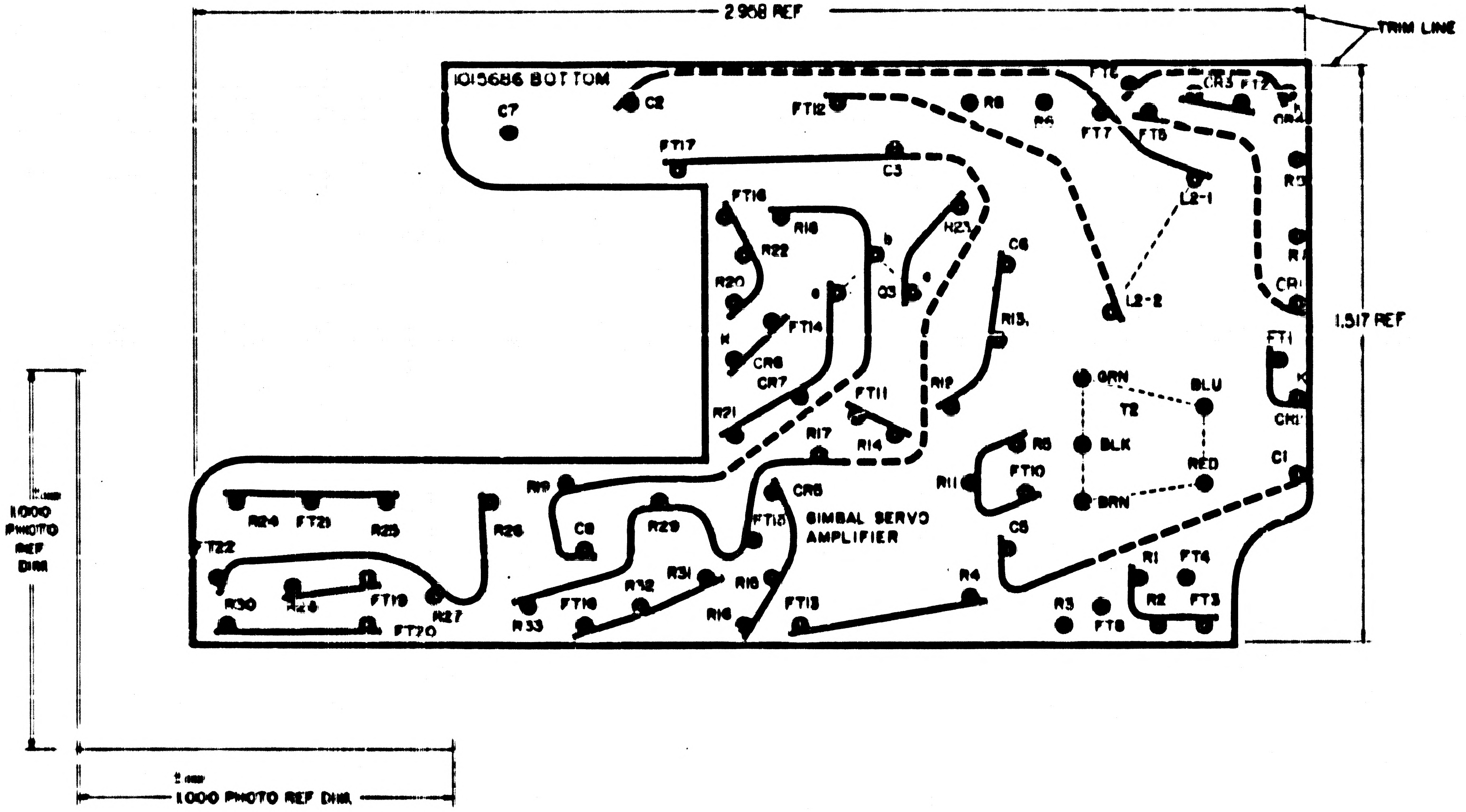
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Geschke DATE 15 MAR 63
CHECKED B. L. Hunt 2 APR 63
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL 5-22-63
MIT APPROVAL [illegible] 22 Mar 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
FOR GIMBAL SERVO AMPLIFIER

CODE IDENT NO
SIZE E
1015685
SCALE 4:1
SHEET 2 OF [illegible]

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY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1.517 REF
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FT12
R8
R6
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FT2
FT7
FT5
FT17
C3
FT16
R18
R22
R23
C6
L2-1
L2-2
R20
Q3
FT14
CR6
CR7
R13
R12
R21
FT11
R17
R14
GRN
BLU
T2
BLK
R5
R11
FT10
RED
BRN
FT1
C1
R19
CR5
R24
FT21
R25
R26
C8
R29
FT15
GIMBAL SERVO
AMPLIFIER
FT22
R30
R28
FT19
R27
FT20
R33
FT18
R32
R31
R16
R15
FT13
R4
C5
R1
FT4
R2
FT3
R3
FT8
1.000
PHOTO
REF
DIM
1.000 PHOTO REF DIM

NOTES:

[illegible]

SEE NOTE 5

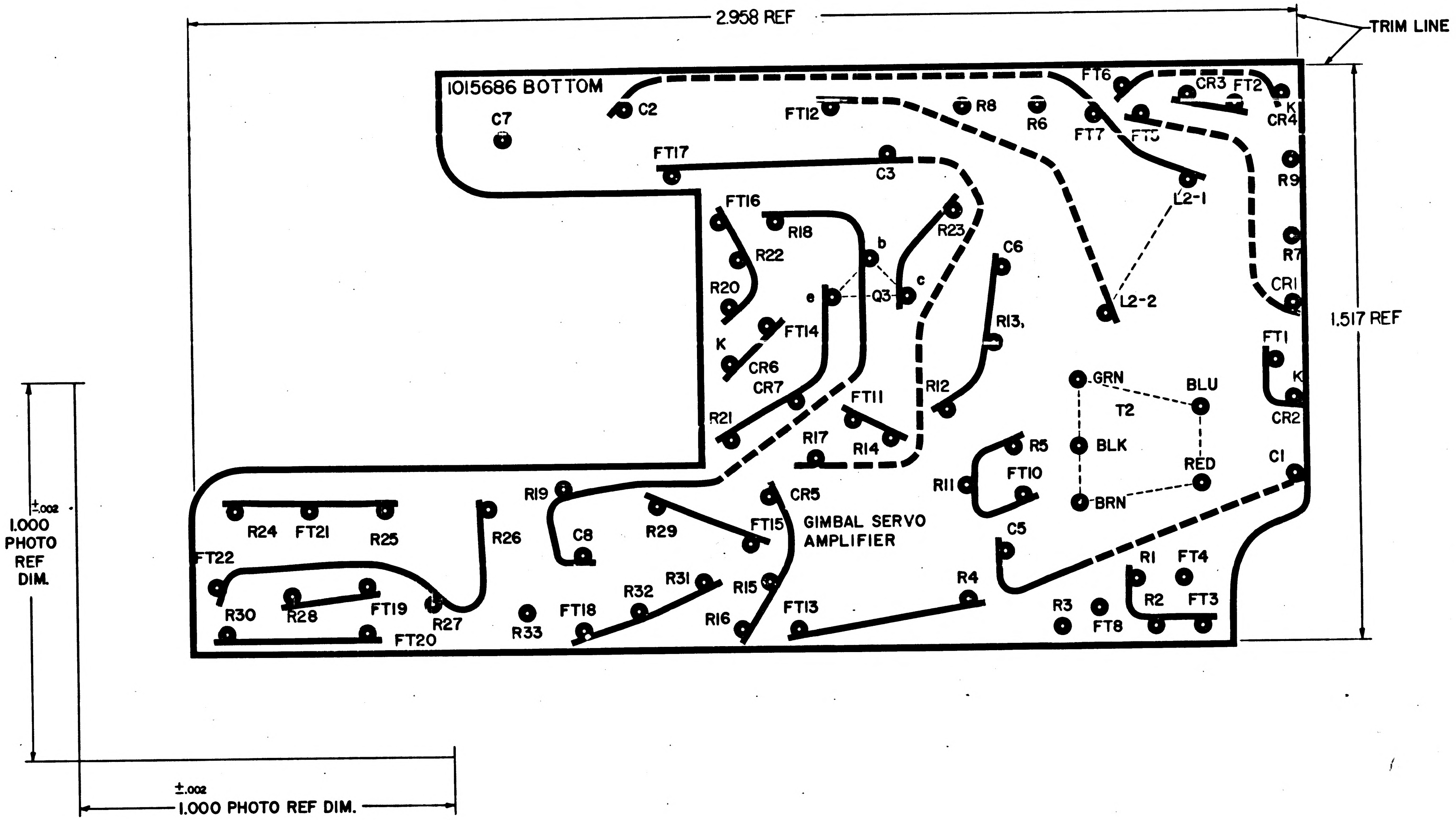
INSULATOR
PHOTOGRAPHIC MASTER

E 1015686

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS TDRR 01310

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 01870	7-2-63	JJN JK
B	REVISED PER TDRR 06271	69	RMC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TRIM LINE
1015686 BOTTOM
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C2
FT17
C3
FT12
R8
R6
FT6
FT7
FT5
CR3
FT2
K
CR4
R9
L2-1
R7
CR1
FT16
R18
R22
R20
b
c
e
Q3
R23
C6
L2-2
R13
FT14
K
CR6
CR7
R21
FT11
R17
R14
R12
GRN
BLU
T2
BLK
RED
BRN
FT1
K
CR2
C1
R5
FT10
R11
1.517 REF
R19
CR5
GIMBAL SERVO
AMPLIFIER
R24
FT21
R25
R26
C8
R29
FT15
C5
R1
FT4
R2
FT3
FT22
R30
R28
FT19
R27
FT20
R33
FT18
R32
R31
R15
R16
FT13
R4
R3
FT8
±.002
1.000
PHOTO
REF
DIM.
±.002
1.000 PHOTO REF DIM.

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCIBED BY MIL-D-70327
2. CRIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
3. CUT TO WITHIN .010 OF TRIMLINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
6. ● .045/.050 PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 5
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN D. Sullivan DATE 7 May 63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL W. J. 5-22-63
MIT APPROVAL 22 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR
PHOTOGRAPHIC MASTER
GIMBAL SERVO AMPLIFIER

CODE IDENT NO. -
SIZE E
NASA DRAWING NO. 1015686
SCALE 8:1
WT
SHEET 1 OF 1

MASTER

1015686

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01318

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 01870	9-2-63	T.J.N.
B	REVISED PER TDRR 06271		
C	REVISED PER TDRR 06952		

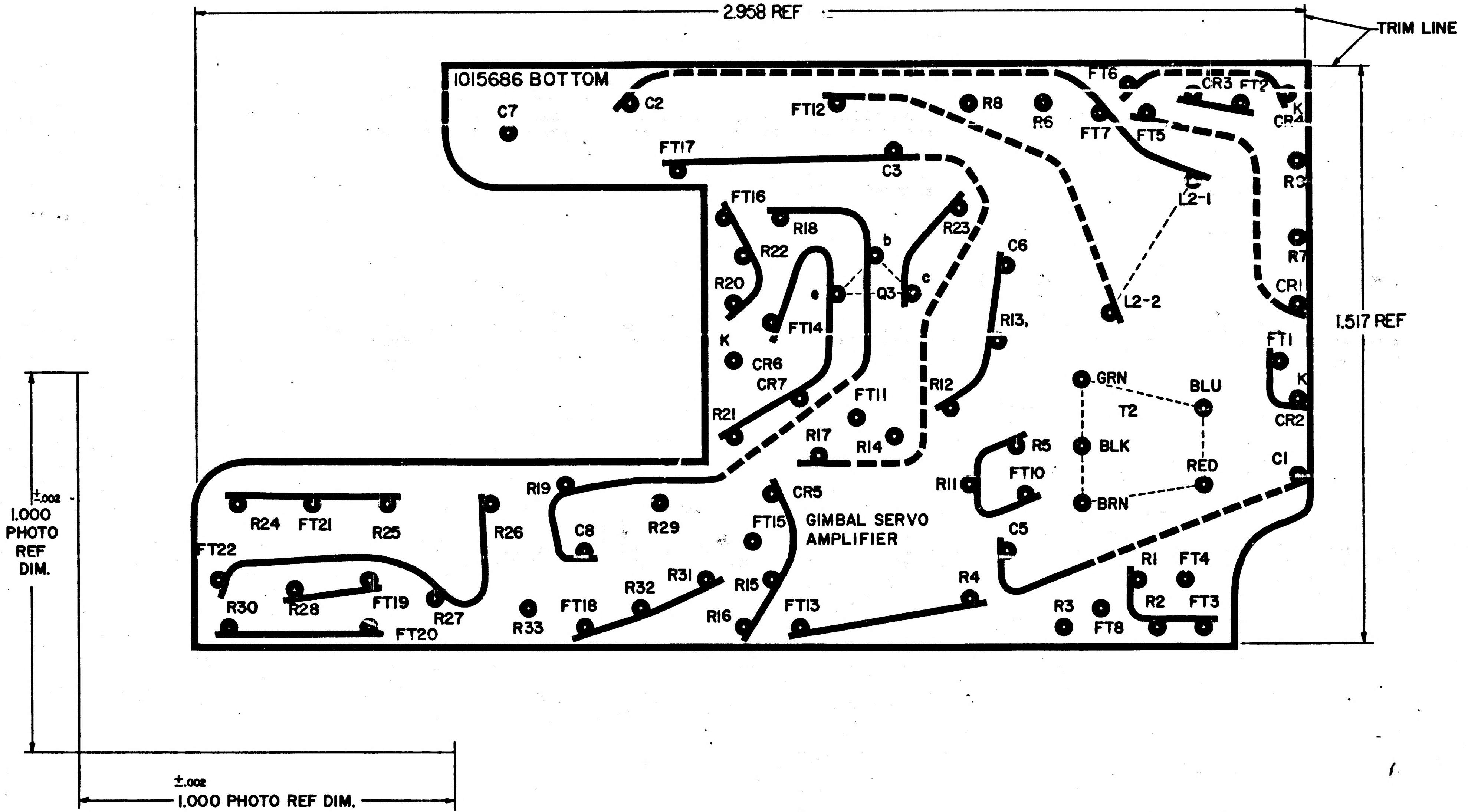
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PHOTO
REF
DIM.
±.002
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C7
C2
FT12
R8
R6
FT6
FT7
FT5
CR3
FT2
K
CR4
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R22
b
R23
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CR1
FT14
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CR6
CR7
FT1
K
GRN
BLU
T2
CR2
R21
FT11
R12
R17
R14
R5
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C1
FT10
R11
R19
CR5
BRN
R24
FT21
R25
R26
C8
R29
FT15
GIMBAL SERVO
AMPLIFIER
C5
FT22
R1
FT4
R31
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R15
R4
R30
R28
FT19
R27
R16
R3
R2
FT3
R33
FT18
FT13
FT8
FT20

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
3. CUT TO WITHIN .010 OF TRIMLINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
6. ● .045/.050 PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 5
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO.
CONTRACT
DRAWN
DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR
PHOTOGRAPHIC MASTER
GIMBAL SERVO AMPLIFIER

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015686
SCALE 8:1
WT
SHEET 1 OF 1

MASTER

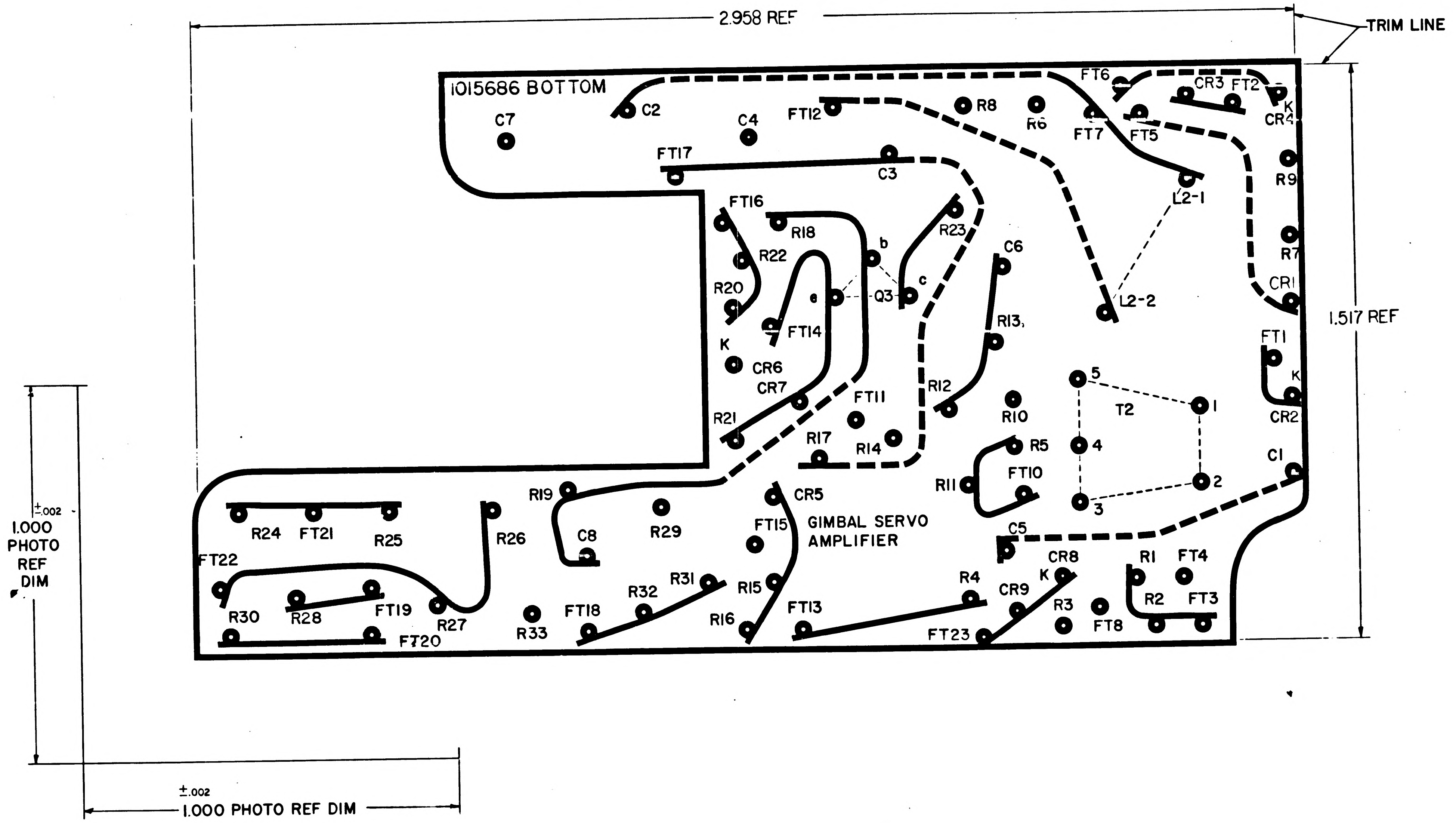
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TQ1212 31310

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 01870	7-2-69	WR
B	REVISED PER TDRR 06271	19 FEB 69	KAK W
C	REVISED PER TDRR 06952		28 WR
D	REVISED PER TDRR 11638	28 AUG 64	A.H.

V-20-64



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FT2
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CR4
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C3
R9
L2-1
FT16
R18
R22
b
R23
C6
R7
R20
e
Q3
c
L2-2
CR1
K
FT14
R13
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CR7
FT1
K
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R30
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FT19
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R16
FT13
R3
FT8
FT20
FT23
±.002
1.000 PHOTO REF DIM

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
3. CUT TO WITHIN .010 OF TRIMLINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: FILM 006/008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
6. ◉ .045/.050 PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN D Sullivan DATE 7 May 63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL W J Rhine 5-22-63
MIT APPROVAL 22 May 63

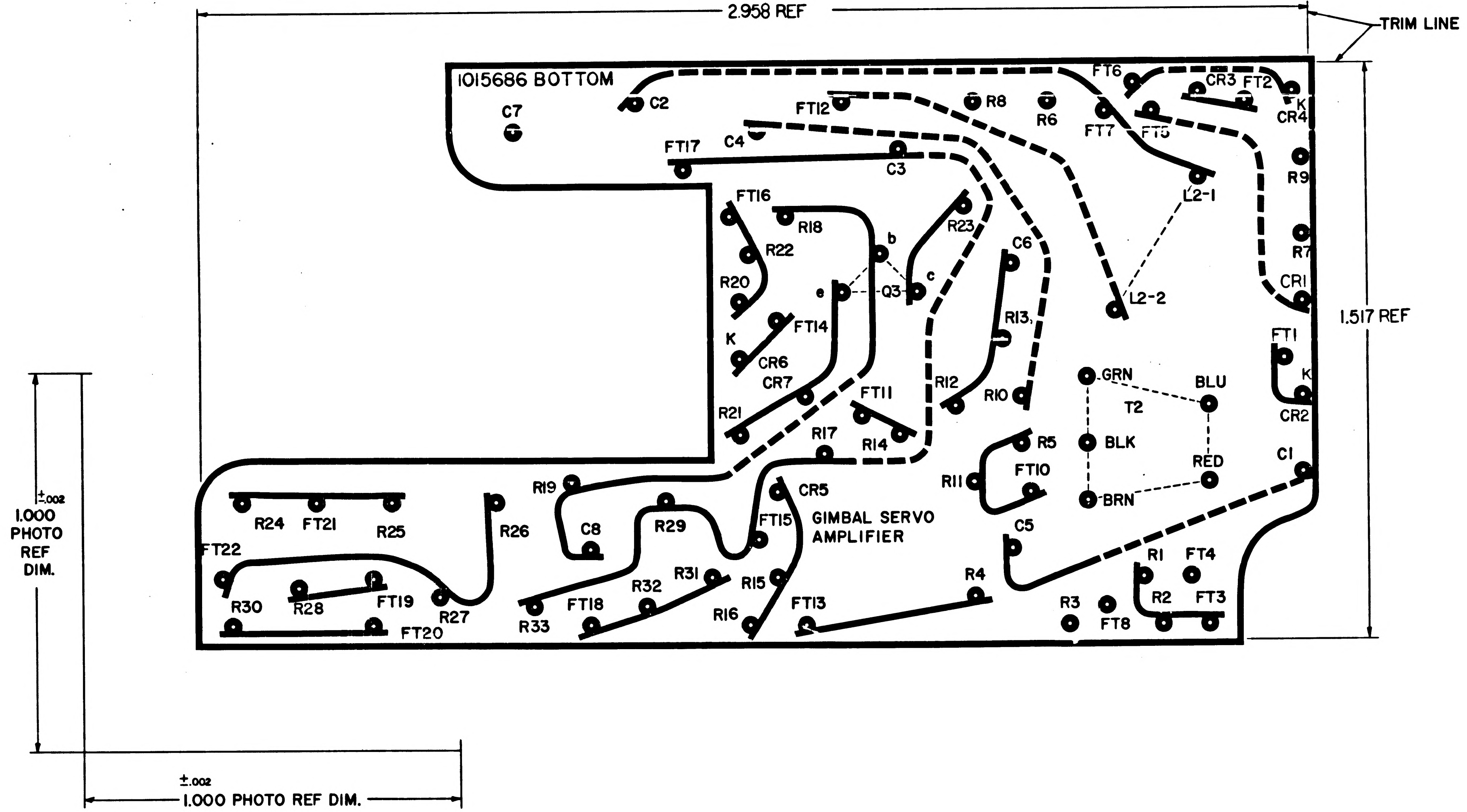
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGRAPHIC MASTER
GIMBAL SERVO AMPLIFIER

CODE IDENT NO
SIZE E
NASA DRAWING NO 1015686
SCALE 8:1
WT
SHEET 1 OF 1

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01310			
SYM	DESCRIPTION	DATE	APPROVAL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FT2
K
CR4
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C3
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R9
FT16
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R22
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e
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c
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FT14
CR6
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T2
CR2
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BLK
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GIMBAL SERVO AMPLIFIER
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FT18
R16
FT13
R3
FT8
FT20
±.002
1.000 PHOTO REF DIM.
±.002
1.000 PHOTO REF DIM.

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
3. CUT TO WITHIN .010 OF TRIMLINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
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6. ● .045/.050 PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL: SEE NOTE 5
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT
DRAWN D Sullivan DATE 7 May 63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR
PHOTOGRAPHIC MASTER
GIMBAL SERVO AMPLIFIER

CODE IDENT NO
SIZE E
NASA DRAWING NO 1015686
SCALE 8:1
WT
SHEET 1 OF 1

1015686

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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REVISIONS TDRR 01310

SYM	DESCRIPTION	DATE	APPROVAL
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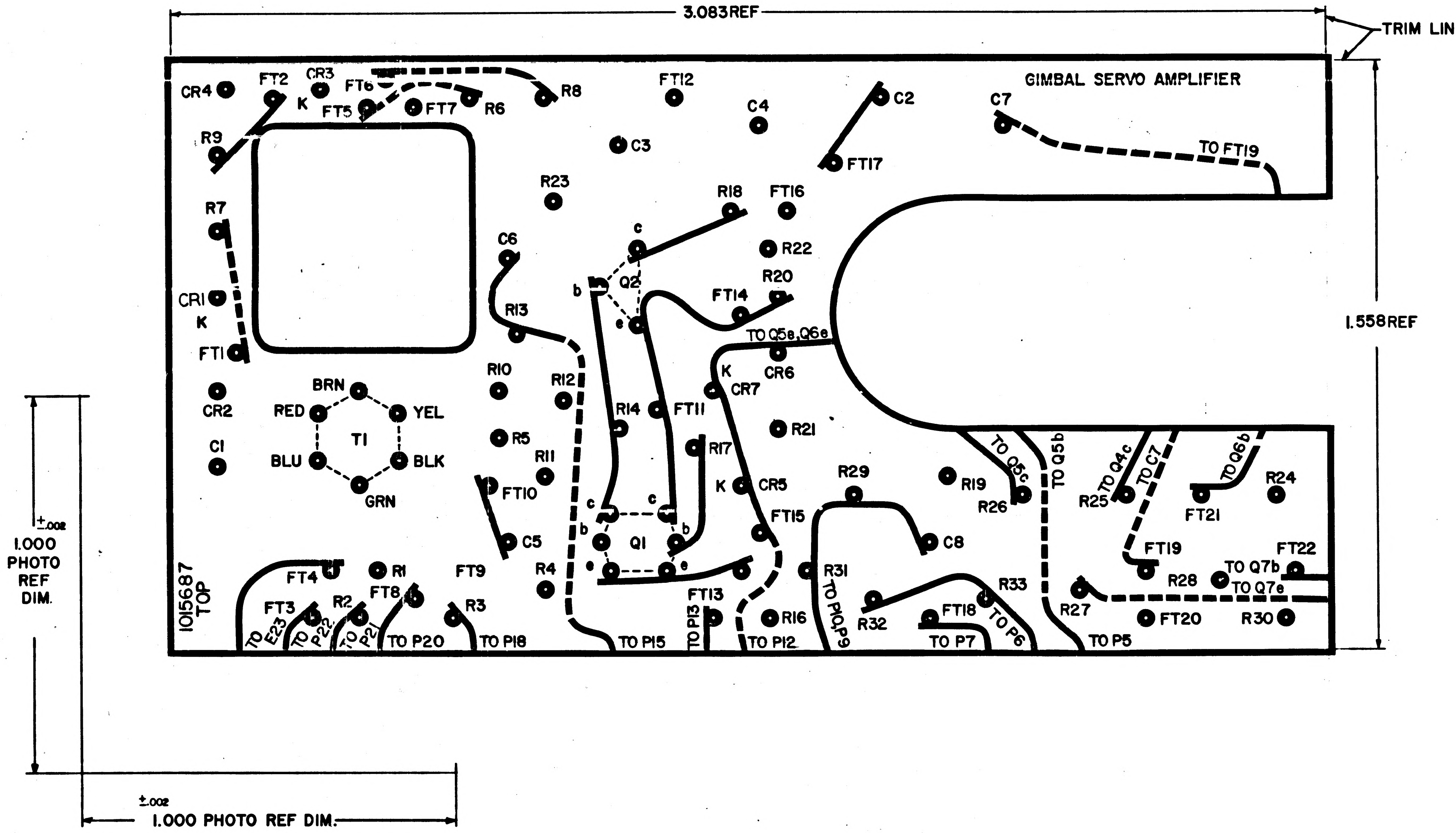

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GIMBAL SERVO AMPLIFIER
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1.000 PHOTO REF DIM. ±.002
1015687 TOP
CR4
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TO FT19
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R20
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CR1
K
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T1
R5
C1
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R28
TO Q7e
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NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
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4. CUT TO WITHIN .010 OF TRIMLINE
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
6. ● .046/.050 PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

1007040	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

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CAMBRIDGE, MASS.
DRAWN DATE 8 May 63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL W. J. 5-22-63
MIT APPROVAL 22 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGRAPHIC MASTER

GIMBAL SERVO AMPLIFIER

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015687
SCALE 8:1
WT
SHEET 1 OF 1

1015687 A

INCHES
PHOTOGRAPHIC SCALE ONLY

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REVISIONS TDRR 01310

SYM	DESCRIPTION	DATE	APPROVAL
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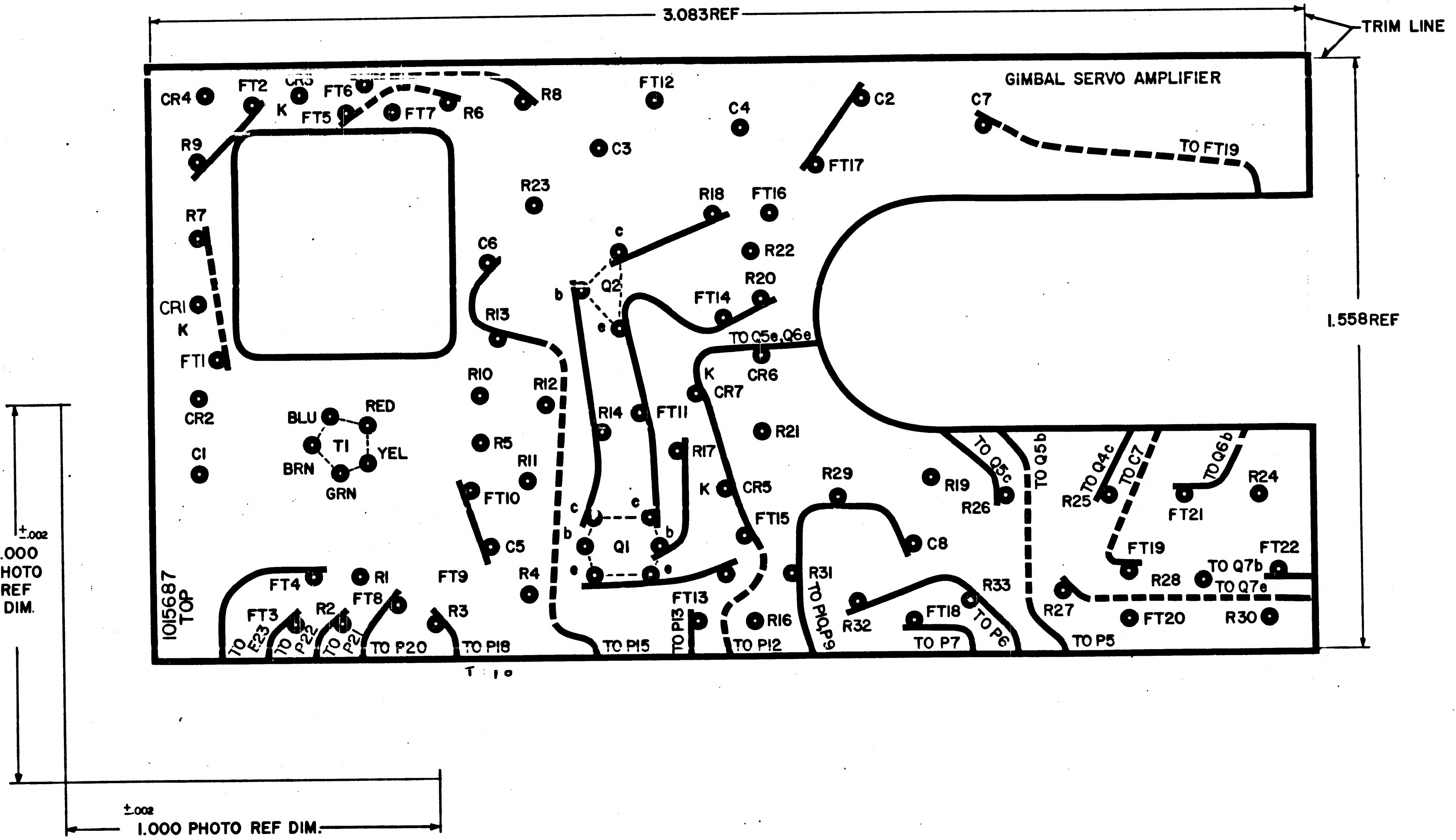
B	REVISED PER TDRR 04116	10-25-63	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FT17
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R22
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Q2
R20
e
FT14
CR1
K
R13
TO Q5e,Q6e
FT1
R10
R12
K
CR6
CR7
CR2
BLU
RED
T1
YEL
BRN
GRN
R14
FT11
R21
R5
R17
C1
R11
FT10
K
CR5
R29
R19
R26
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TO C7
TO Q6b
R25
R24
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Q1
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C5
FT15
C8
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FT22
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TO P10,P9
R32
FT18
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NOTES
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4. CUT TO WITHIN .010 OF TRIMLINE
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
6. ● .046/.050 PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN [illegible] DATE [illegible]
CHECKED [illegible]
APPROVAL
APPROVAL [illegible]
NASA APPROVAL W J [illegible] 5-22-63
MIT APPROVAL [illegible] 22 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGRAPHIC MASTER

GIMBAL SERVO AMPLIFIER

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015687
SCALE 8:1
WT
SHEET 1 OF 1

1015687 B

INCHES
PHOTOGRAPHIC SCALE ONLY

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REVISIONS TDRR 01310

SYM	DESCRIPTION	DATE	APPROVAL
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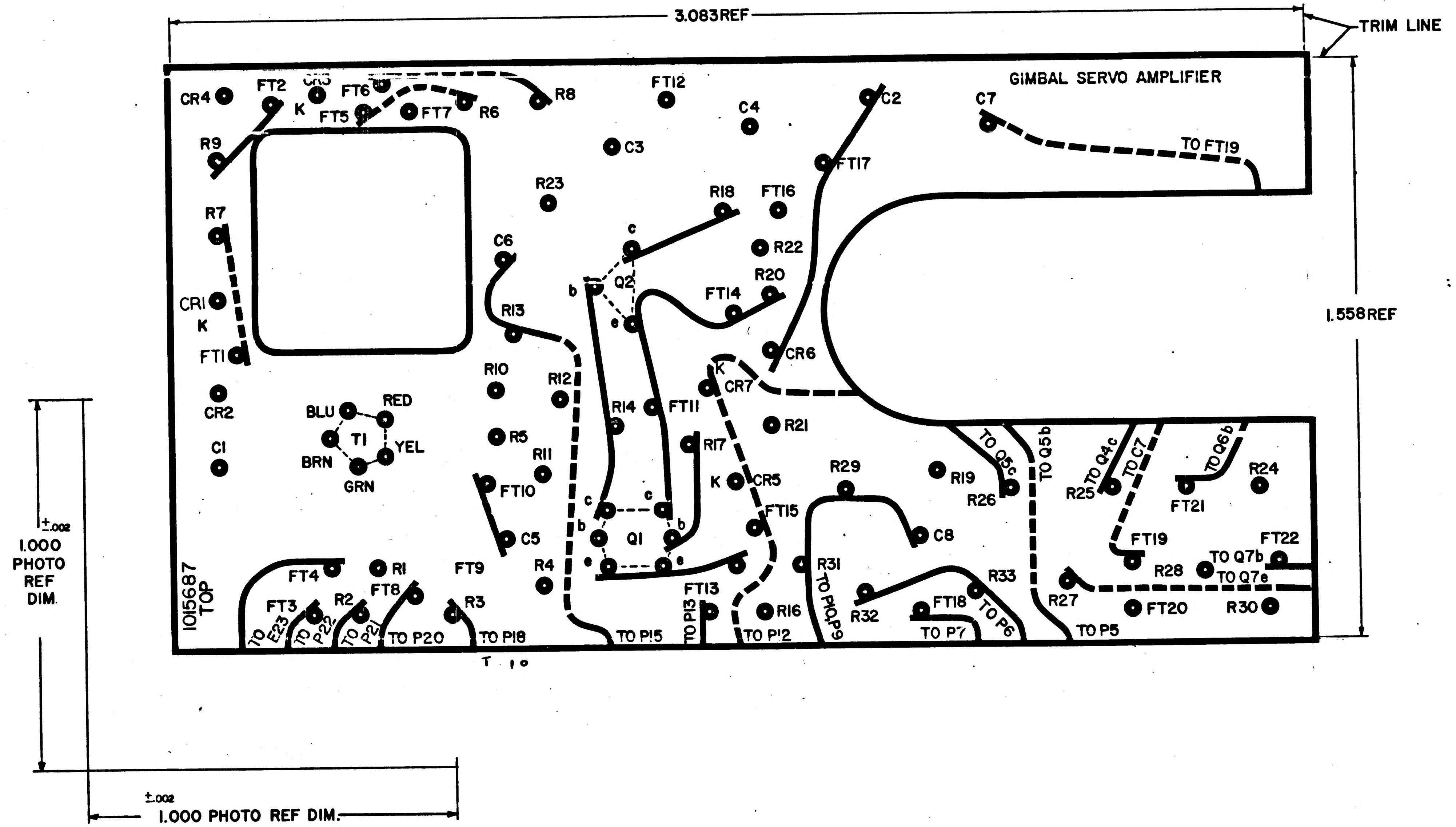
B	REVISED PER TDRR 04116	10-25-63	
C	REVISED PER TDRR 06271	4 FEB 69	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C3
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CR1
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Q2
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R13
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FT1
R10
R12
K
CR7
CR6
CR2
BLU
RED
R14
FT11
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R5
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R19
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FT21
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NOTES
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4. CUT TO WITHIN .010 OF TRIMLINE
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
6. ● .045/.050 PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

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DWG NO
CONTRACT
DRAWN [illegible] DATE [illegible]
CHECKED [illegible]
APPROVAL
APPROVAL [illegible]
NASA APPROVAL [illegible] 5-22-63
MIT APPROVAL [illegible] 22 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGRAPHIC MASTER
GIMBAL SERVO AMPLIFIER

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015687
SCALE 8:1
WT
SHEET 1 OF 1

MASTER

1015687 C

INCHES
PHOTOGRAPHIC SCALE ONLY

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REVISIONS *TDRR 01310*

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR *01869*	*7-1-63*	*WK*
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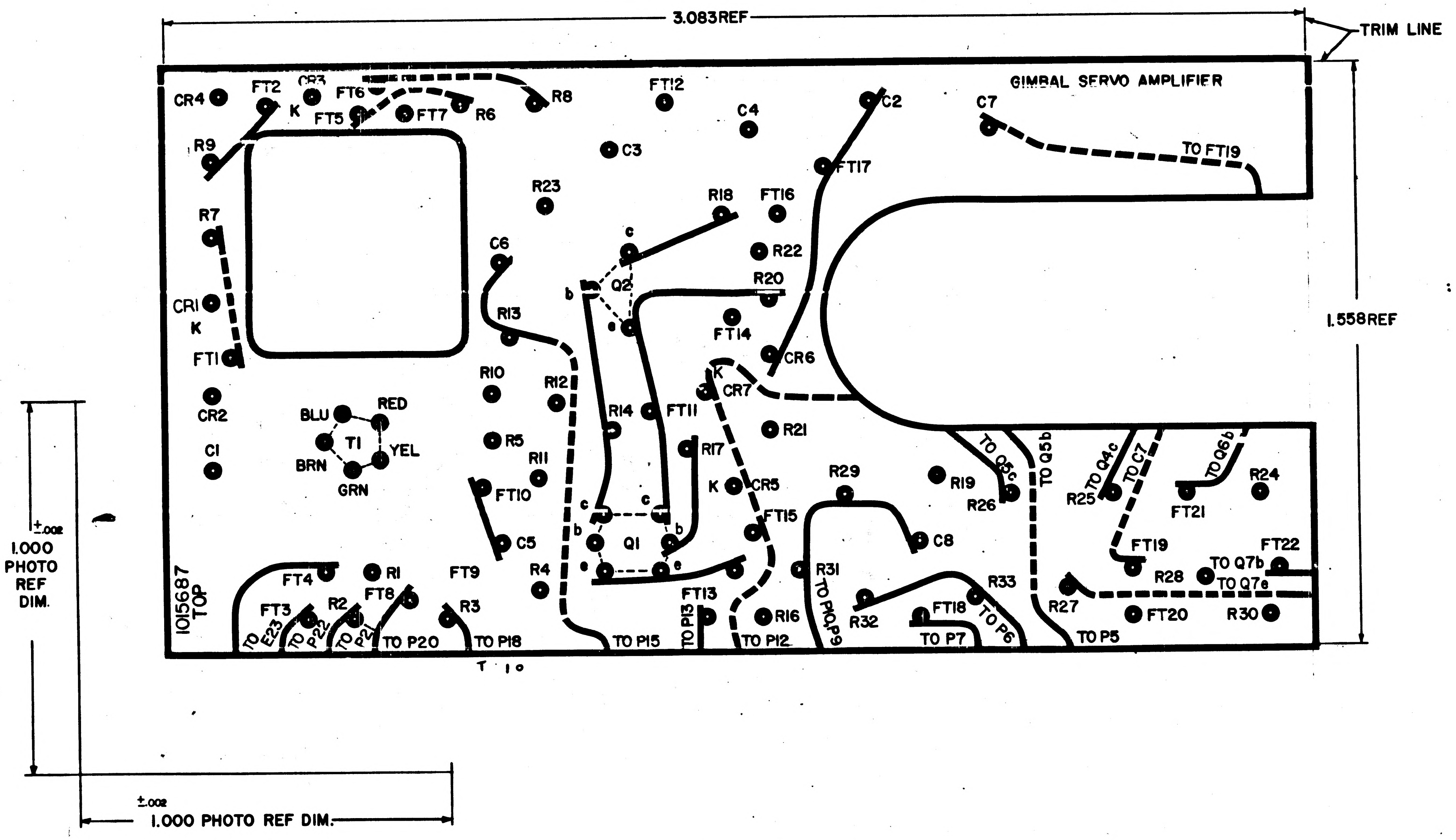
C	REVISED PER TDRR 06271		*W.K.*
D	REVISED PER TDRR 06982		*W.K.*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CR1
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R13
FT14
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CR6
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CR7
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NOTES

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4. CUT TO WITHIN .010 OF TRIMLINE
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
6. ● .045/.050 PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007040	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL *W J* *5-22-63*
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

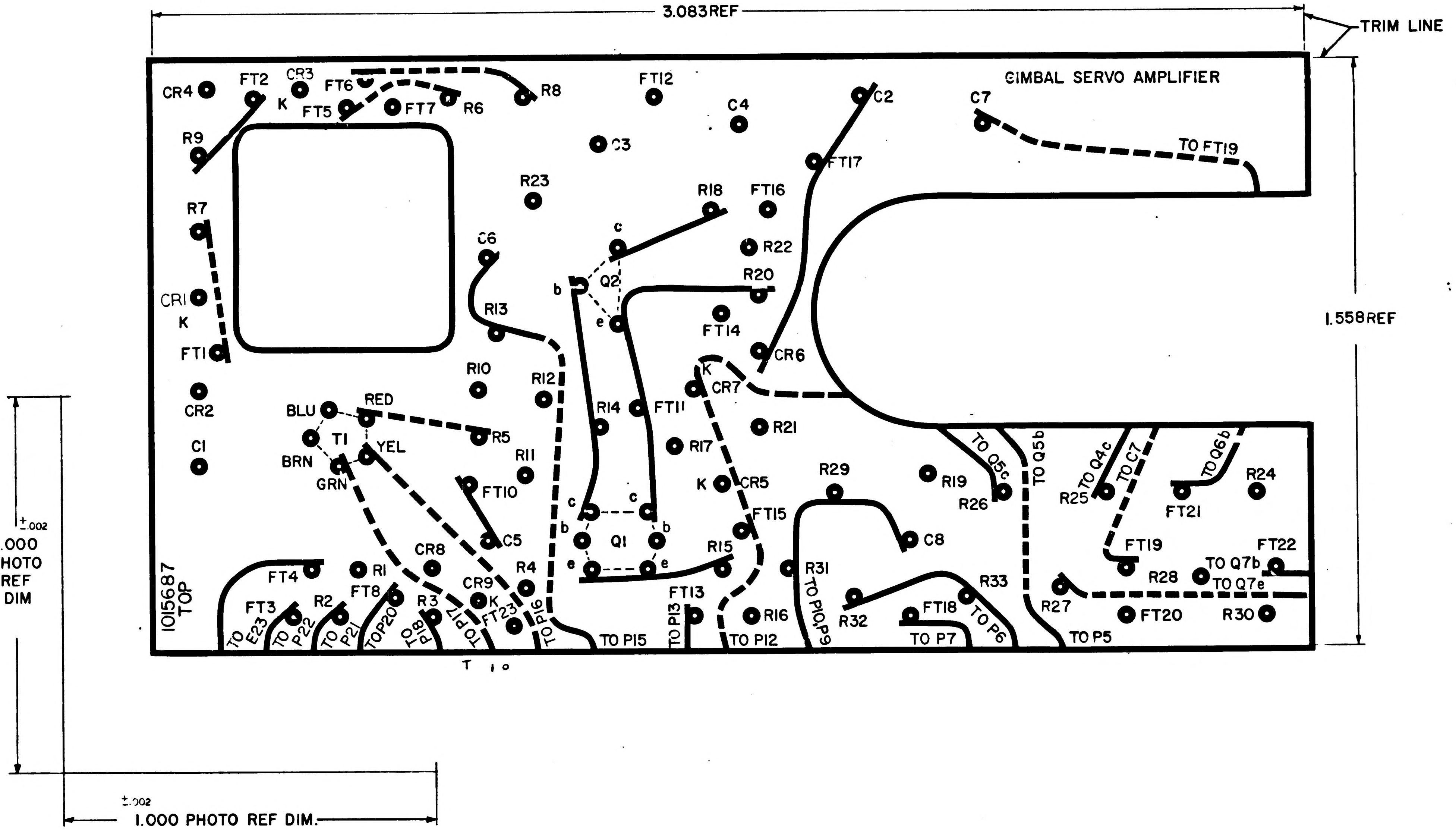
INSULATOR
PHOTOGRAPHIC MASTER
GIMBAL SERVO AMPLIFIER

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015687
SCALE 8:1
WT
SHEET 1 OF 1

INCHES
PHOTOGRAPHIC SCALE ONLY

[illegible]

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 01569	7-1-63	WK
B	REVISED PER TDRR 04116	10-25-63	RPL WR
C	REVISED PER TDRR 06271	64	JWC RPL WM
D	REVISED PER TDRR 06952		WK
E	REVISED PER TDRR 11638	28 AUG 64	A.N.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GIMBAL SERVO AMPLIFIER
1.558REF
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1015687
TOP
CR4
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7. BROKEN LINES DENOTE SLEEVING

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

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INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN DATE 8 May 63
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APPROVAL
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

INSULATOR PHOTOGRAPHIC MASTER
GIMBAL SERVO AMPLIFIER

CODE IDENT NO
SIZE E
NASA DRAWING NO 1015687
SCALE 8:1
WT
SHEET 1 OF 1

1015687 E

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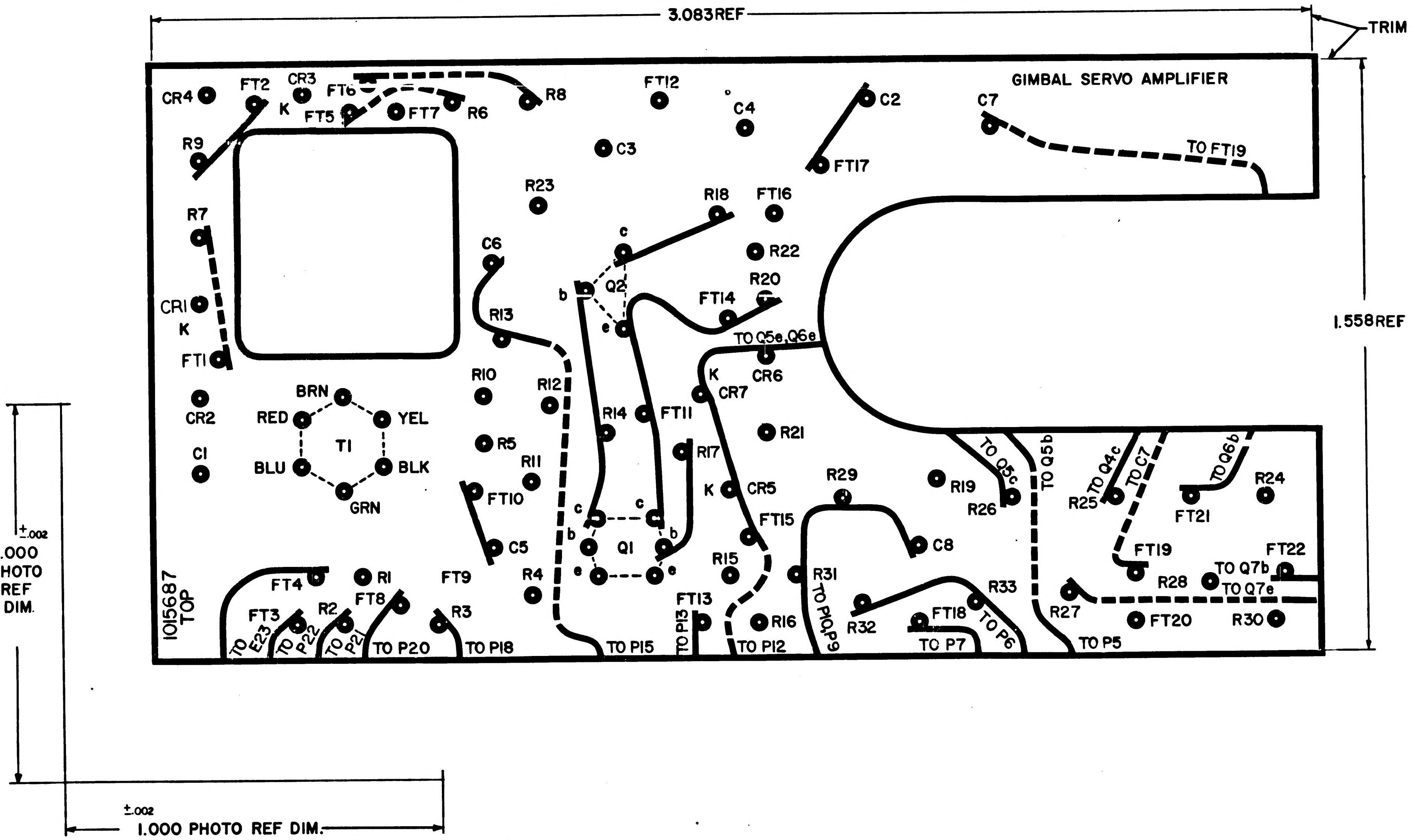
REVISIONS TDRR 01316

SYM	DESCRIPTION	DATE	APPROVAL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GIMBAL SERVO AMPLIFIER
1.558 REF
1.000 PHOTO REF DIM. ±.002
1.000 PHOTO REF DIM. ±.002
1015687 TOP
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NOTES
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6. ● .046/.050 PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
1007040	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN
DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

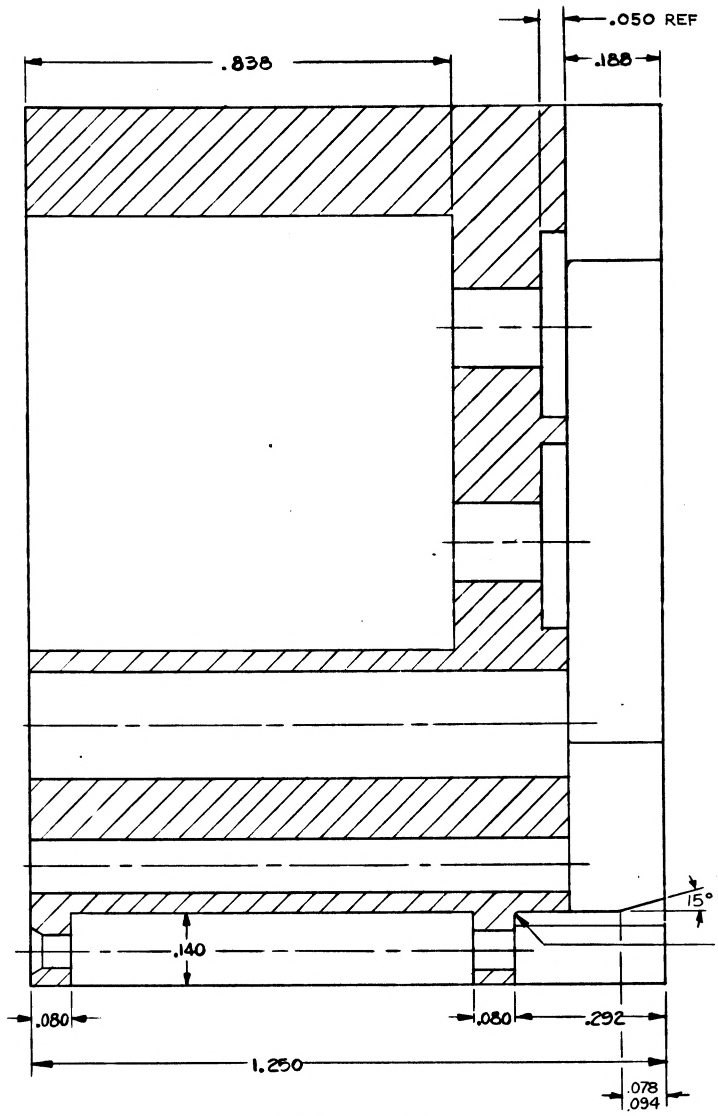
INSULATOR PHOTOGRAPHIC MASTER
GIMBAL SERVO AMPLIFIER

CODE IDENT NO.
SIZE E
NASA DRAWING NO 1015687
SCALE 8:1
WT
SHEET 1 OF 1

1015687

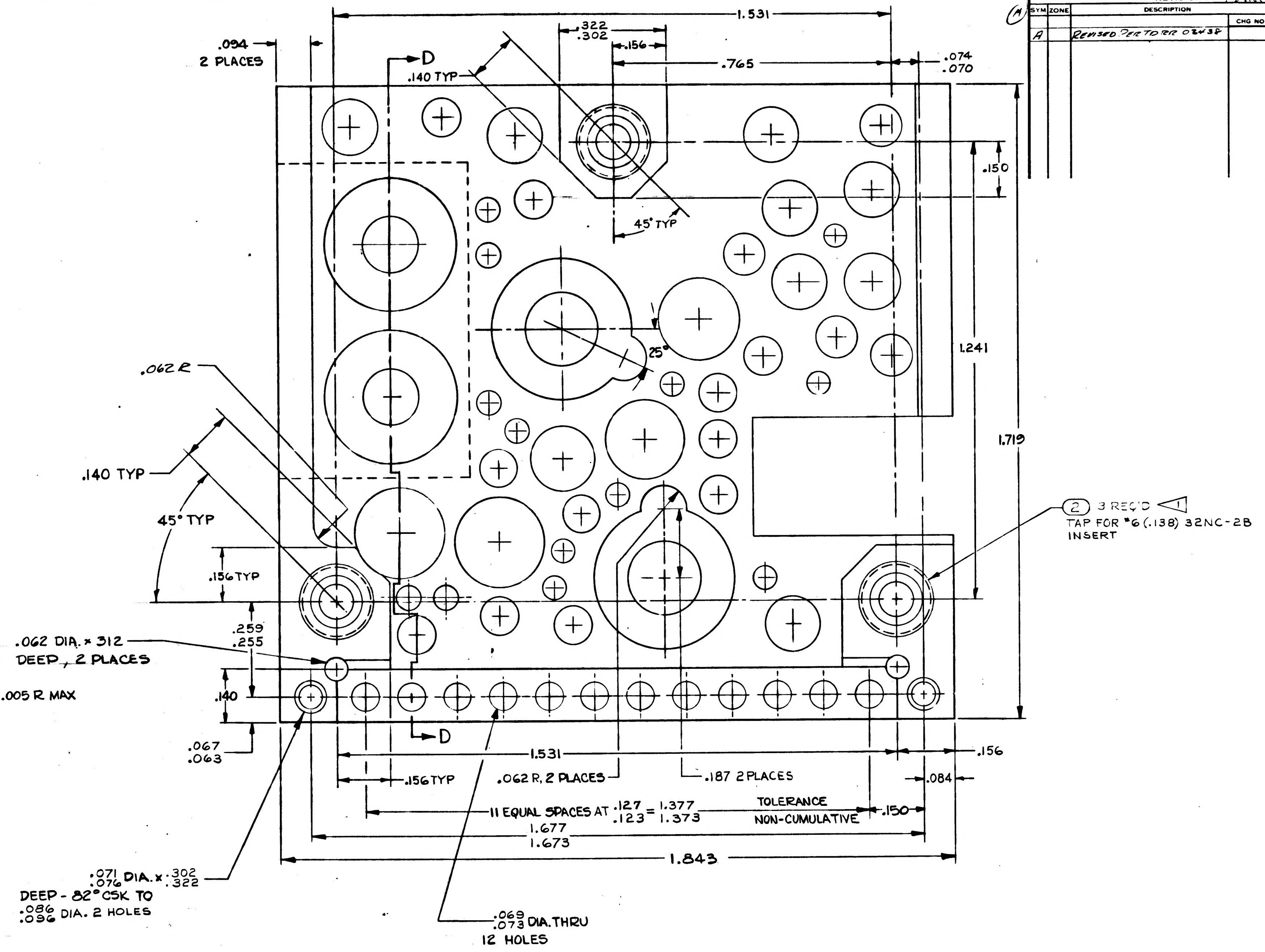
INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 01310					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 02438			W.C

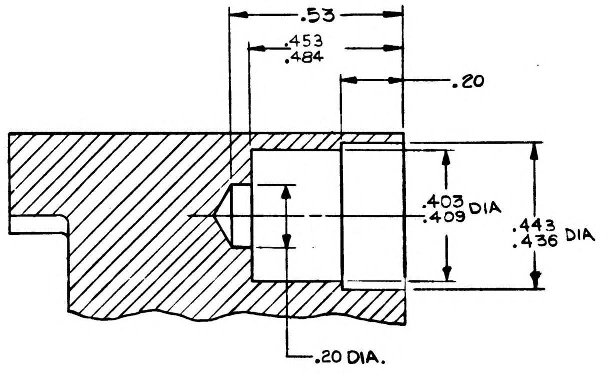


.050 REF
.838
.188
15°
.005 R MAX
.140
.080
.080
.292
1.250
.078
.094

SECTION D-D

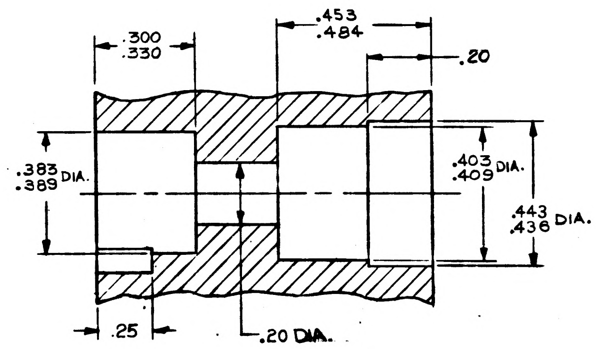


1.531
.322
.302
.156
.765
.094
2 PLACES
D
.140 TYP
.074
.070
.150
45° TYP
25°
1.241
1.719
.062 R
.140 TYP
45° TYP
.156 TYP
.259
.255
.062 DIA. × 312 DEEP, 2 PLACES
.140
.067
.063
D
2 3 REQ'D 1
TAP FOR #6 (.138) 32NC-2B
INSERT
1.531
.156
.156 TYP
.062 R, 2 PLACES
.187 2 PLACES
.084
11 EQUAL SPACES AT .127 .123 = 1.377 1.373
TOLERANCE NON-CUMULATIVE
.150
1.677
1.673
1.843
.071 .076 DIA. × .302 .322 DEEP - 82° CSK TO .086 .096 DIA. 2 HOLES
.069 .073 DIA. THRU
12 HOLES



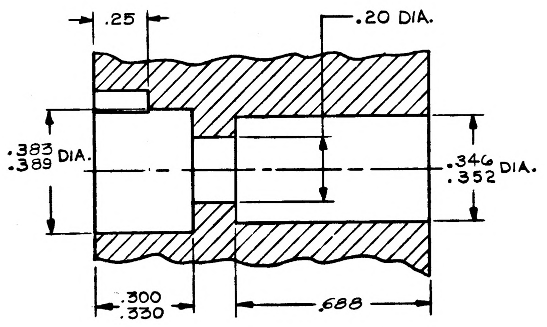
.53
.453
.484
.20
.403
.409 DIA
.443
.436 DIA
.20 DIA.

PARTIAL SECTION A-A
SCALE 5:1



.300
.330
.453
.484
.20
.383
.389 DIA.
.403
.409 DIA.
.443
.436 DIA.
.25
.20 DIA.

PARTIAL SECTION B-B
SCALE 5:1



.25
.20 DIA.
.383
.389 DIA.
.346
.352 DIA.
.300
.330
.688

PARTIAL SECTION C-C
SCALE 5:1

NEXT ASSY	USED ON
1007041	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + −. ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Cegel DATE 19 MAR 63
CHECKED Stanley 2 APRIL 63
APPROVAL J.M BLYSHAK 3 APR 63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

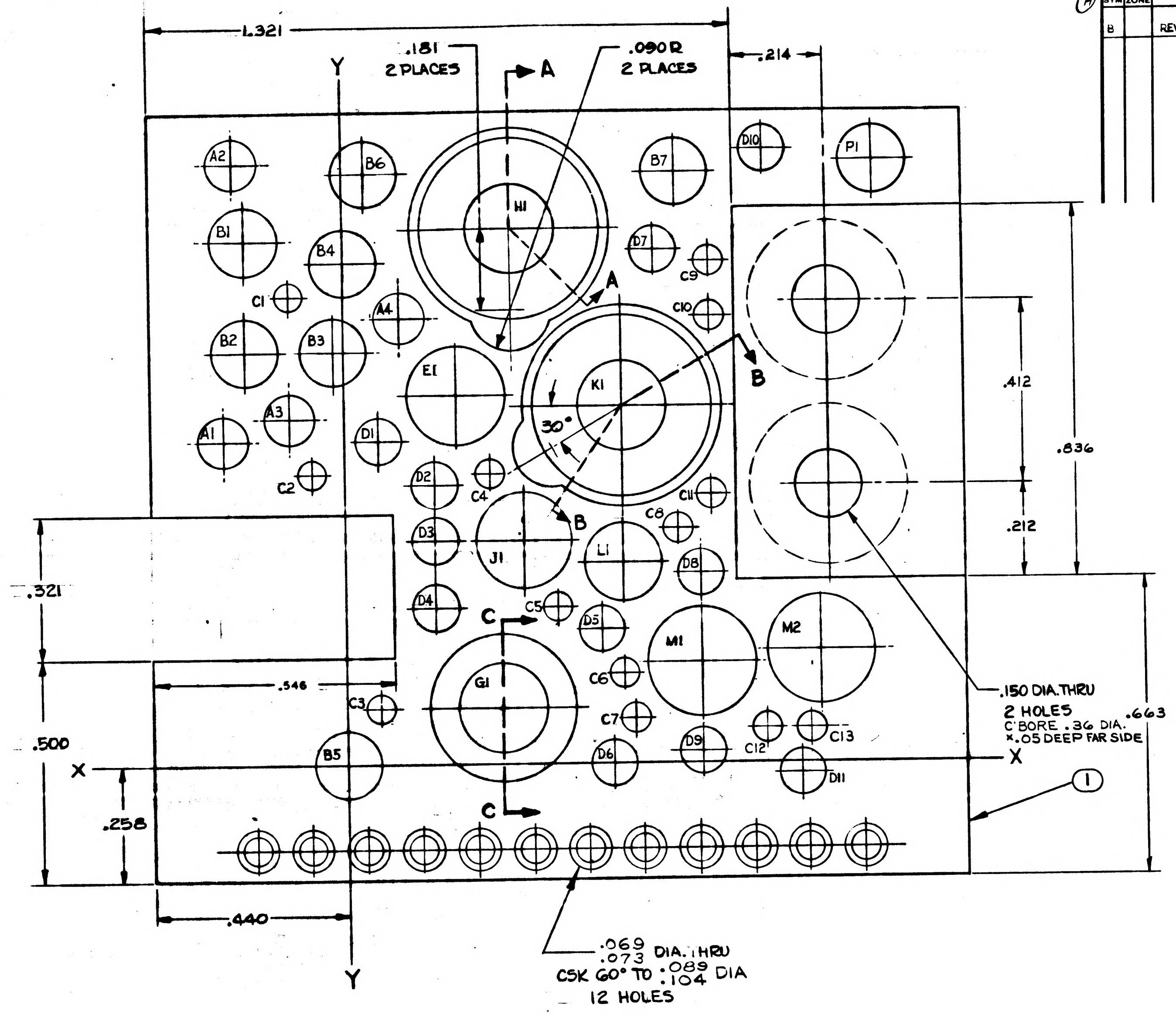
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

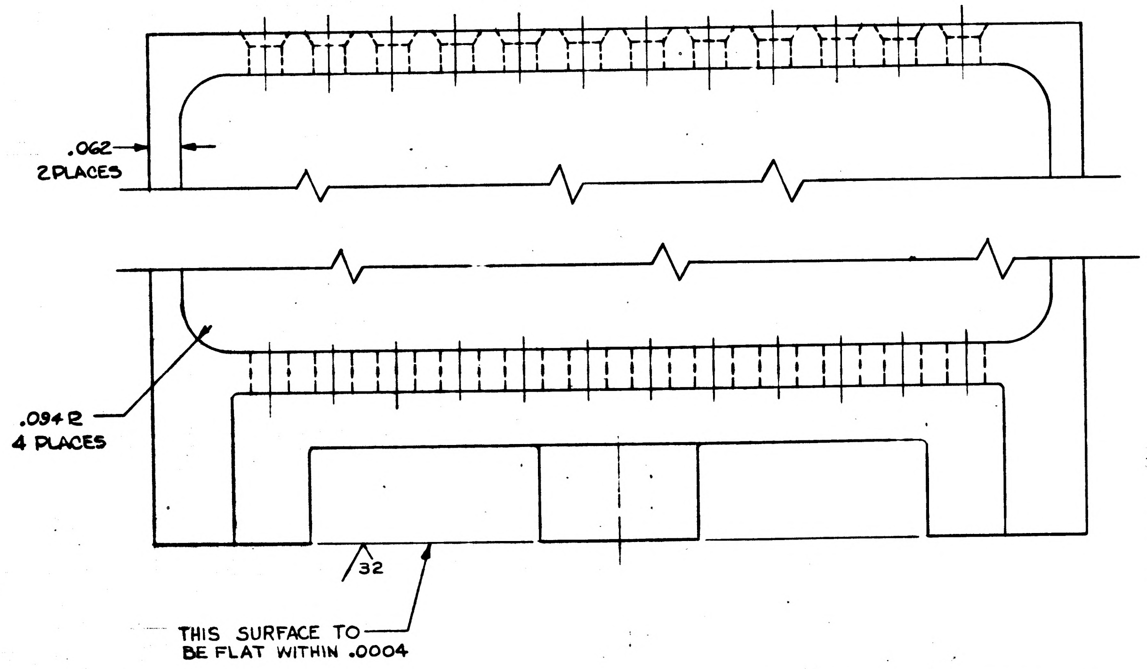
HEATSINK - GIMBAL COARSE
ALIGN AMPLIFIER

CODE IDENT NO.
SIZE E
1015689
SCALE 8:1
SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REVISED PER TDRR 02441		4 24 63	

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⌖ DIA	HOLE DIA.	QTY
A1	-.275	.725	.006	.108 .112	4
A2	-.250	1.350			
A3	-.125	.775			
A4	.125	1.000			
B1	-.225	1.175	.006	.146 .150	7
B2	-.225	.925			
B3	-.025	.925			
B4	.000	1.125			
B5	.000	.000			
B6	.050	1.325			
B7	.750	1.325			
C1	-.125	1.050	.006	.058 .062	13
C2	-.075	.650			
C3	.075	.125			
C4	.325	.650			
C5	.475	.350			
C6	.625	.200			
C7	.650	.100			
C8	.750	.525			
C9	.825	1.125			
C10	.825	1.000			
C11	.825	.600			
C12	.950	.075			
C13	1.050	.075			
D1	.075	.725	.006	.100 .104	11
D2	.200	.625			
D3	.200	.500			
D4	.200	.350			
D5	.575	.300			
D6	.600	.000			
D7	.700	1.150			
D8	.800	.425			
D9	.800	.025			
D10	.950	1.375			
D11	1.025	-.025			
E1	.250	.825	.006	.220 .224	1
G1	.350	.125	.006	SEE SECTION C-C	1
H1	.375	1.200	.006	SEE SECTION A-A	1
J1	.400	.500	.006	.212 .216	1
K1	.625	.800	.006	SEE SECTION B-B	1
L1	.625	.450	.006	.172 .176	1
M1	.800	.225	.006	.237 .241	2
M2	1.075	.250			
P1	1.200	1.350	.006	.151 .155	1


1.321
.181
2 PLACES
A
.090 R
2 PLACES
.214
Y
A1
A2
A3
A4
B1
B2
B3
B4
B5
B6
B7
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
E1
G1
H1
J1
K1
L1
M1
M2
P1
30°
B
C
.412
.836
.212
.321
.546
.500
X
.258
.440
.663
.150 DIA.THRU
2 HOLES
C'BORE .36 DIA.
×.05 DEEP FAR SIDE
①
.069
.073 DIA. THRU
CSK 60° TO .089
.104 DIA
12 HOLES


.062
2 PLACES
.094 R
4 PLACES
32
THIS SURFACE TO
BE FLAT WITHIN .0004

INTERPRET DWG. IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

UNLESS OTHERWISE SPECIFIED:
ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{125}$.

MUST BE FREE FROM BURRS & SHARP CORNERS.
ANODIZE PER MIL-M-3171A TYPE IV EXCEPT FOR THREADED HOLES

ALL FLAT SURFACES TO BE SQUARE WITHIN .010

COAT THREADS AND INSERT ITEM 2 WITH MIL-P-8585, WET ZINC CHROMATE PRIMER

1▷ INSTALL, ITEM 2, PER MS33646 EXCEPT DIM. F
TO BE .594 & BREAK OFF TANG.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	NAS1222-06E	INSERT, SCREW-LOCKING
1	1	1015689-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	1007041
USED ON	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + −
DECIMALS ±.005 ±.02
ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL MAG. ALLOY ZK-60A-T5 PER QQ-M-31A
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orgel DATE 19 MAR 63
CHECKED 2 APRIL 63
APPROVAL J M BLYSHAK 3 APR 63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

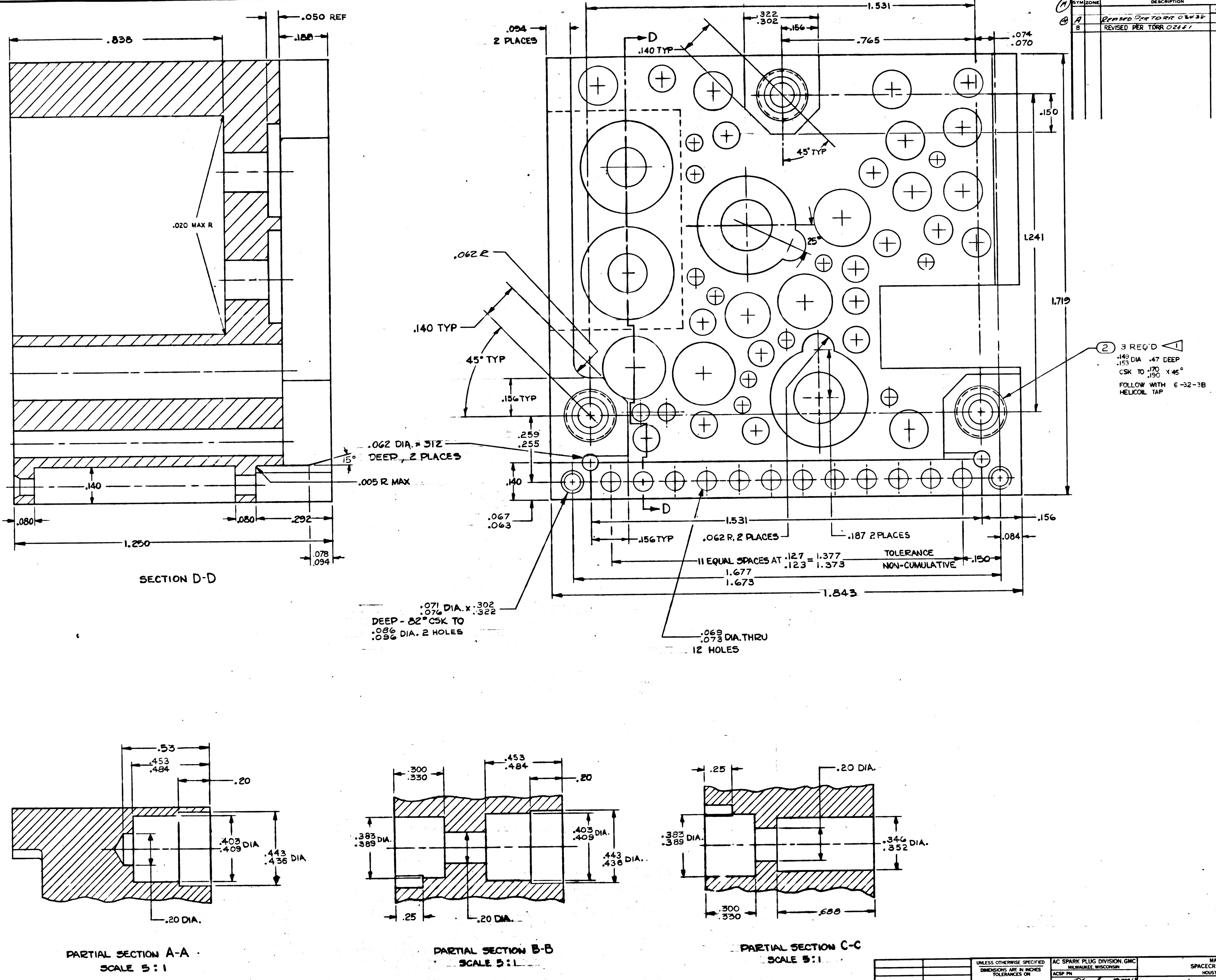
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK - GIMBAL COARSE
ALIGN AMPLIFIER

CODE IDENT NO.
SIZE E
1015689
SCALE 8:1
SHEET 1 OF 2

1015689 B

REVISIONS TDRR 01310					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		Revised per TDRR 02438		5-7-63	WR
B		REVISED PER TDRR 02881		5-26-63	



.838
.050 REF
.188
.020 MAX R
15°
.005 R MAX
.140
.080
.080
.292
1.250
.078
.094
.094
2 PLACES
D
.140 TYP
.322
.302
.156
.765
1.531
.074
.070
.150
45° TYP
25°
1.241
1.719
.062 R
.140 TYP
45° TYP
.156 TYP
.259
.255
.062 DIA. x .312 DEEP, 2 PLACES
.140
.067
.063
D
1.531
.156 TYP
.062 R, 2 PLACES
.187 2 PLACES
.156
.084
11 EQUAL SPACES AT .127/.123 = 1.377/1.373 TOLERANCE NON-CUMULATIVE
.150
1.677
1.673
1.843
.071/.076 DIA. x .302/.322 DEEP - 82° CSK TO .086/.096 DIA. 2 HOLES
.069/.073 DIA. THRU 12 HOLES
② 3 REQ'D ◁1
.149/.153 DIA .47 DEEP
CSK TO .170/.190 x 45°
FOLLOW WITH 6-32-3B HELICOIL TAP
.53
.453
.484
.20
.403/.409 DIA
.443/.436 DIA
.20 DIA.
.300
.330
.453
.484
.20
.383/.389 DIA.
.403/.409 DIA.
.443/.436 DIA.
.25
.20 DIA.
.25
.20 DIA.
.383/.389 DIA.
.346/.352 DIA.
.300
.330
.688

SECTION D-D

PARTIAL SECTION A-A
SCALE 5:1

PARTIAL SECTION B-B
SCALE 5:1

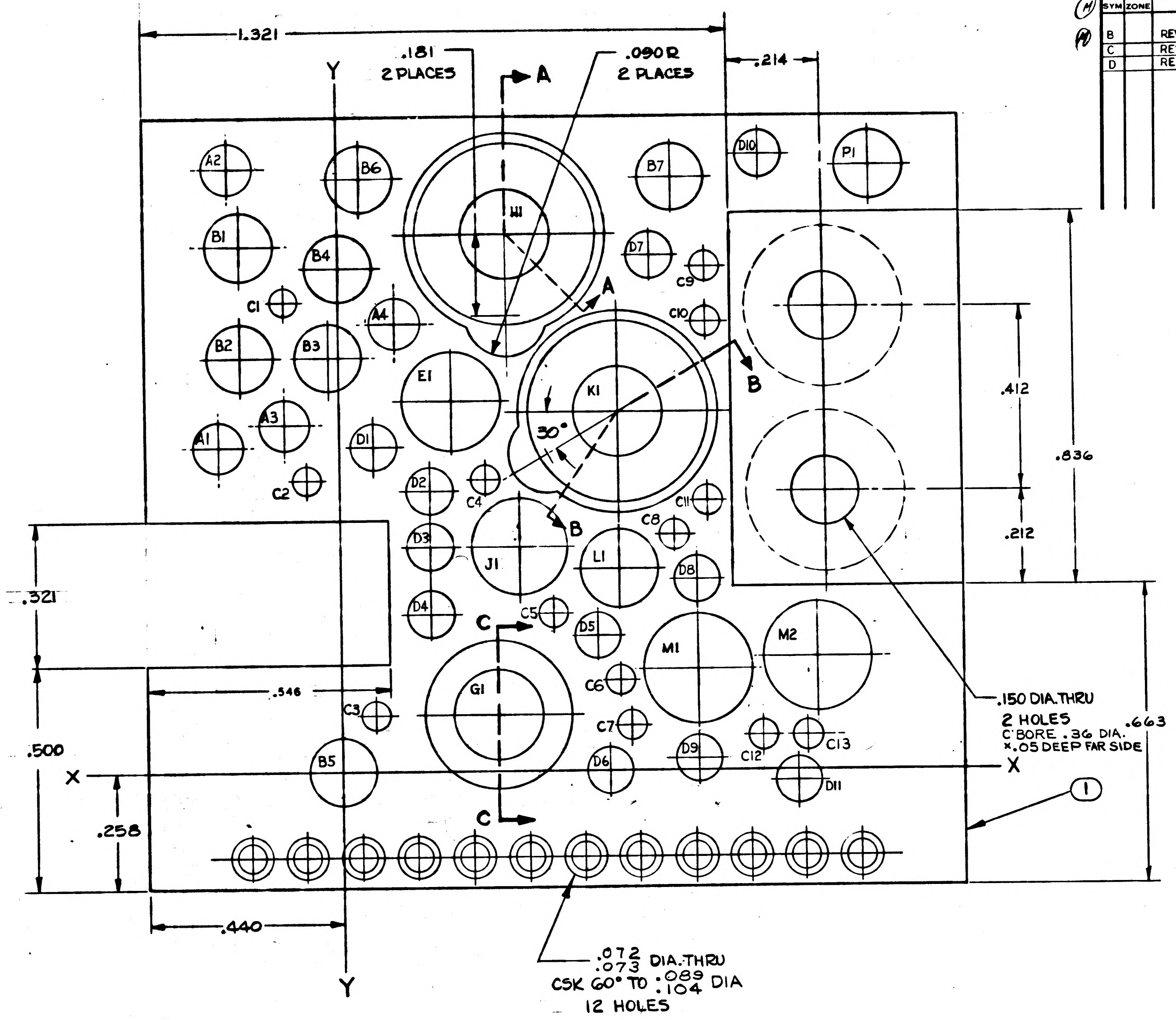
PARTIAL SECTION C-C
SCALE 5:1

1007041		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
NEXT ASSY	USED ON	DO NOT SCALE THIS DRAWING	ACSP PN	HEATSINK - GIMBAL COARSE ALIGN AMPLIFIER
APPLICATION		MATERIAL	DRAWN Orzech DATE 19 MAR 63	CODE IDENT NO.
		CONTRACT	CHECKED Manley 2 APRIL 63	SIZE E
			APPROVAL J.M. BLYSHAK 3 APR 63	1015689
			APPROVAL	SCALE 8:1
			NASA APPROVAL 5-22-63	SHEET 2 OF 2
			MIT APPROVAL 22 May 63	

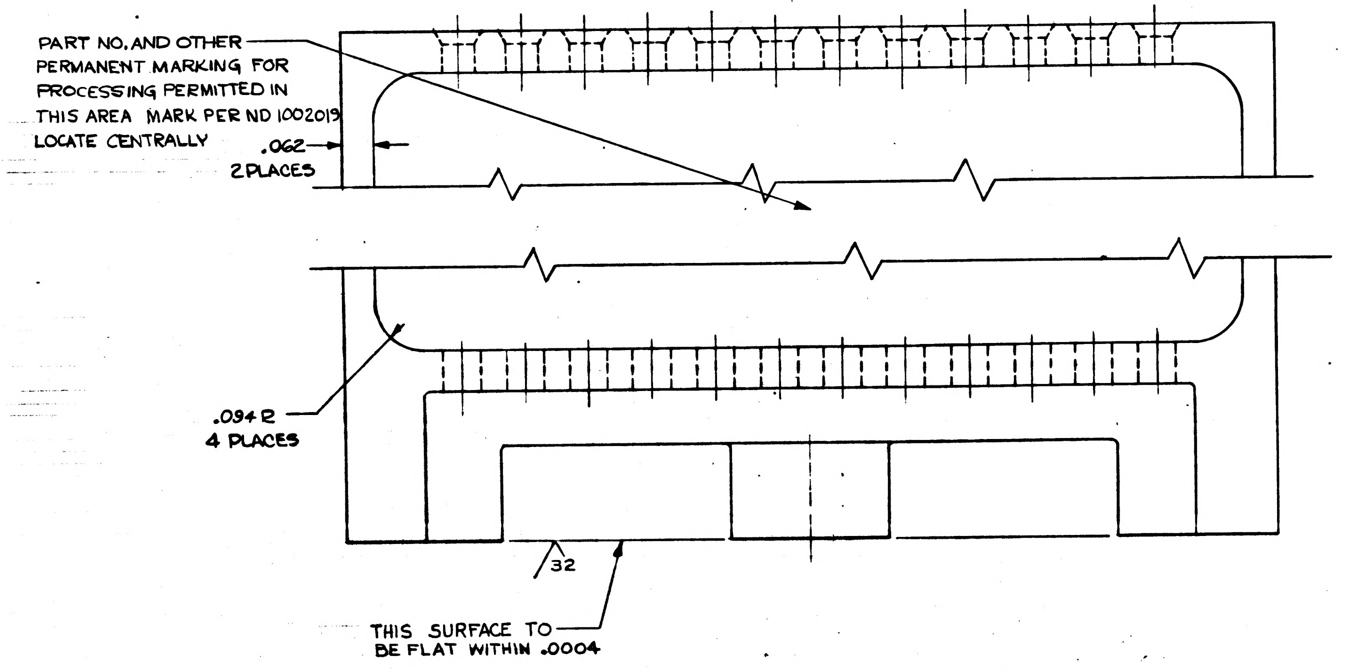
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REVISED PER TDRR 02441		2 24 63	
C		REVISED PER TDRR 08351			
D		REVISED PER TDRR 08353			

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⌖ DIA	HOLE DIA.	QTY
A1	-.275	.725	.006	.108 .112	4
A2	-.250	1.350			
A3	-.125	.775			
A4	.125	1.000			
B1	-.225	1.175	.006	.146 .150	7
B2	-.225	.925			
B3	-.025	.925			
B4	.000	1.125			
B5	.000	.000			
B6	.050	1.325			
B7	.750	1.325			
C1	-.125	1.050	.006	.058 .062	13
C2	-.075	.650			
C3	.075	.125			
C4	.325	.650			
C5	.475	.350			
C6	.625	.200			
C7	.650	.100			
C8	.750	.525			
C9	.825	1.125			
C10	.825	1.000			
C11	.825	.600			
C12	.950	.075			
C13	1.050	.075			
D1	.075	.725	.006	.100 .104	11
D2	.200	.625			
D3	.200	.500			
D4	.200	.350			
D5	.575	.300			
D6	.600	.000			
D7	.700	1.150			
D8	.800	.425			
D9	.800	.025			
D10	.950	1.375			
D11	1.025	-.025			
E1	.250	.825	.006	.220 .224	1
G1	.350	.125	.006	SEE SECTION C-C	1
H1	.375	1.200	.006	SEE SECTION A-A	1
J1	.400	.500	.006	.212 .216	1
K1	.625	.800	.006	SEE SECTION B-B	1
L1	.625	.450	.006	.172 .176	1
M1	.800	.225	.006	.237 .241	2
M2	1.075	.250			
P1	1.200	1.350	.006	.151 .155	1



1.321
.181
2 PLACES
A
.090 R
2 PLACES
.214
Y
A2
B6
H1
B7
D10
P1
B1
B4
D7
C9
C1
A4
C10
B2
B3
E1
K1
B
.412
.836
A3
30°
A1
D1
C2
D2
C4
C11
C8
D3
J1
B
L1
.212
.321
D8
D4
C
C5
D5
M1
M2
.546
G1
C6
C3
C7
C12
C13
.150 DIA.THRU
2 HOLES
C'BORE .36 DIA.
×.05 DEEP FAR SIDE
.663
.500
X
B5
D6
D9
D11
X
1
.258
C
.440
Y
.072
.073 DIA.THRU
CSK 60° TO .089
.104 DIA
12 HOLES



PART NO. AND OTHER
PERMANENT MARKING FOR
PROCESSING PERMITTED IN
THIS AREA MARK PER ND 1002019
LOCATE CENTRALLY
.062
2 PLACES
.094 R
4 PLACES
32
THIS SURFACE TO
BE FLAT WITHIN .0004

INTERPRET DWG. IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

UNLESS OTHERWISE SPECIFIED:

ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.

SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{125}$.

MUST BE FREE FROM BURRS & SHARP CORNERS.

ANODIZE PER MIL-M-3171A TYPE IV EXCEPT FOR THREADED HOLES

ALL FLAT SURFACES TO BE SQUARE WITHIN .010

COAT THREADS AND INSERT ITEM 2 WITH MIL-P-8585, WET ZINC CHROMATE PRIMER

1 INSTALL, ITEM 2, PER MS33646 EXCEPT DIM. F TO BE .594 & BREAK OFF TANG.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW-LOCKING
1	1	1015689-1	HEATSINK

LIST OF PARTS AND MATERIALS

1007041	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + - DECIMALS ±.005 ±.02 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL MAG. ALLOY ZK-60A-T5 PER QQ-M-31A
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orzel DATE 19 MAR 63
CHECKED 2 APRIL 63
APPROVAL JM BLYSHAK 3 APR 63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

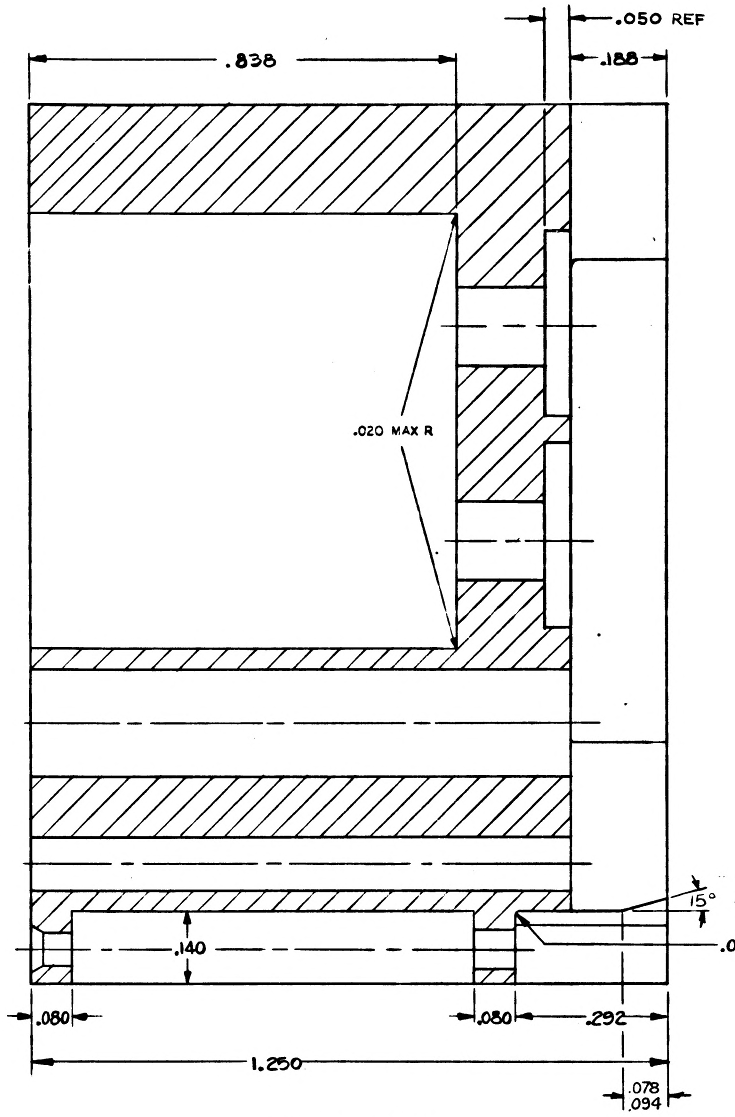
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK - GIMBAL COARSE
ALIGN AMPLIFIER

CODE IDENT NO.
SIZE E
1015689
SCALE 8:1
SHEET 1 OF 2

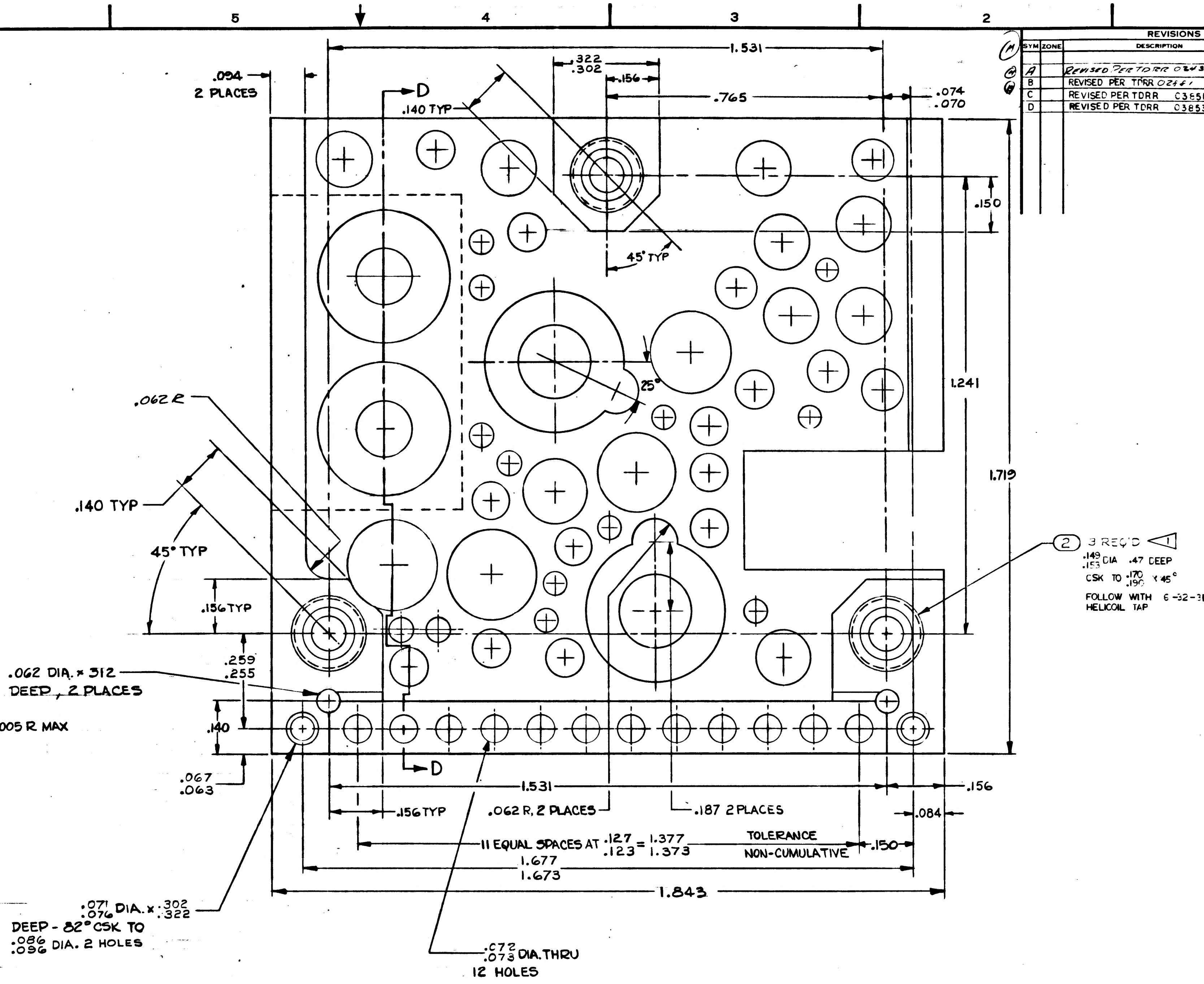
D 1015689 B

REVISIONS TDRR 01310					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02438		6-7-63	WK
B		REVISED PER TDRR 02661		6-24-63	
C		REVISED PER TDRR C3851			
D		REVISED PER TDRR 03853			

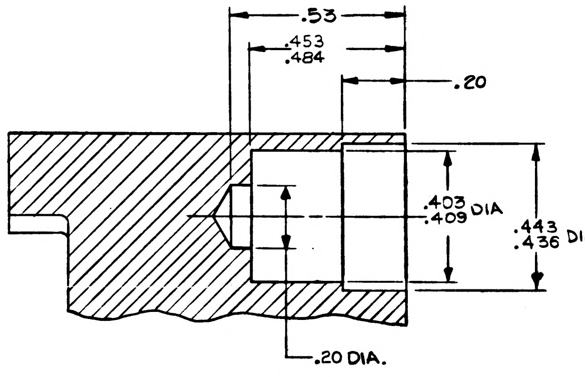


.050 REF
.838
.188
.020 MAX R
15°
.005 R MAX
.140
.080
.080
.292
1.250
.078
.094

SECTION D-D

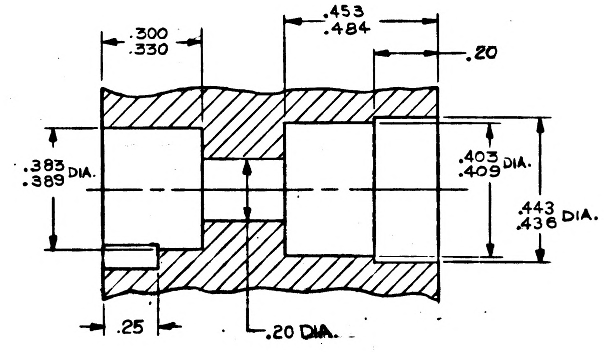


1.531
.322
.302
.156
.765
.074
.070
.094
2 PLACES
D
.140 TYP
45° TYP
.150
1.241
1.719
25°
.062 R
.140 TYP
45° TYP
.156 TYP
.259
.255
.062 DIA. x 312
DEEP, 2 PLACES
.140
.067
.063
D
1.531
.156
.156 TYP
.062 R, 2 PLACES
.187 2 PLACES
.084
11 EQUAL SPACES AT .127/.123 = 1.377/1.373
TOLERANCE
NON-CUMULATIVE
.150
1.677
1.673
1.843
.071/.076 DIA. x .302/.322
DEEP - 82° CSK TO
.086/.096 DIA. 2 HOLES
.072/.075 DIA. THRU
12 HOLES
2 3 REQ'D 1
.149/.153 DIA .47 DEEP
CSK TO .170/.190 X 45°
FOLLOW WITH 6-32-3B
HELICOIL TAP



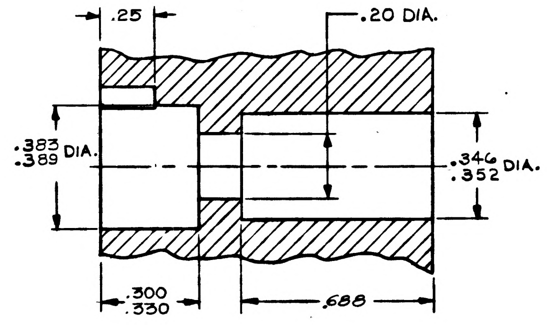
.53
.453
.484
.20
.403
.409 DIA
.443
.436 DIA
.20 DIA.

PARTIAL SECTION A-A
SCALE 5 : 1



.300
.330
.453
.484
.20
.383
.389 DIA.
.403
.409 DIA.
.443
.436 DIA.
.25
.20 DIA.

PARTIAL SECTION B-B
SCALE 5 : 1



.25
.20 DIA.
.383
.389 DIA.
.346
.352 DIA.
.300
.330
.688

PARTIAL SECTION C-C
SCALE 5 : 1

1007041	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Ozeek DATE 19 MAR 63
CHECKED 2 APRIL 63
APPROVAL J.M. BLYSHAK 3 APR 63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK- GIMBAL COARSE
ALIGN AMPLIFIER

CODE IDENT NO.
SIZE E
1015689
SCALE 8:1
SHEET 2 OF 2

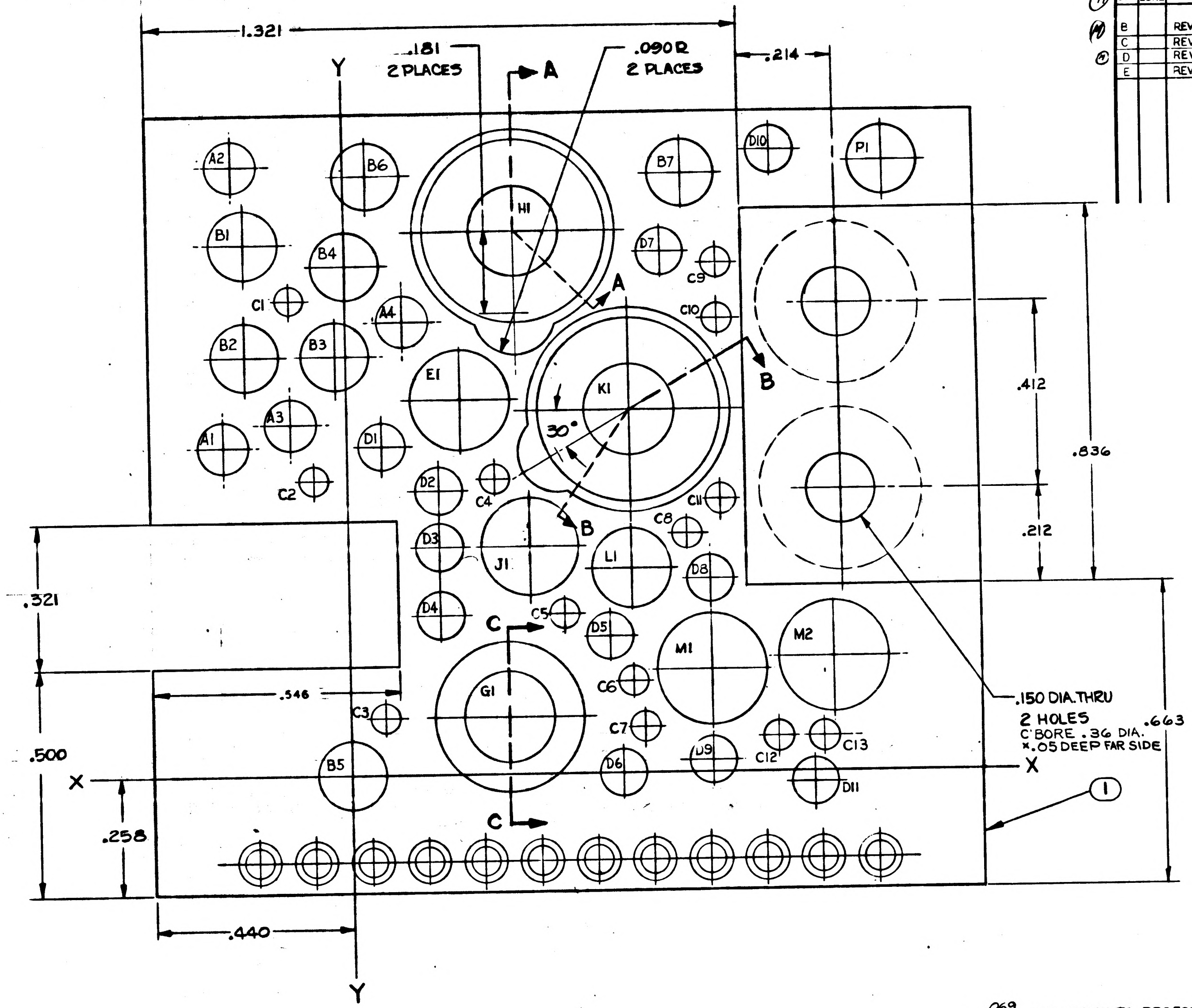
D 1015689 B

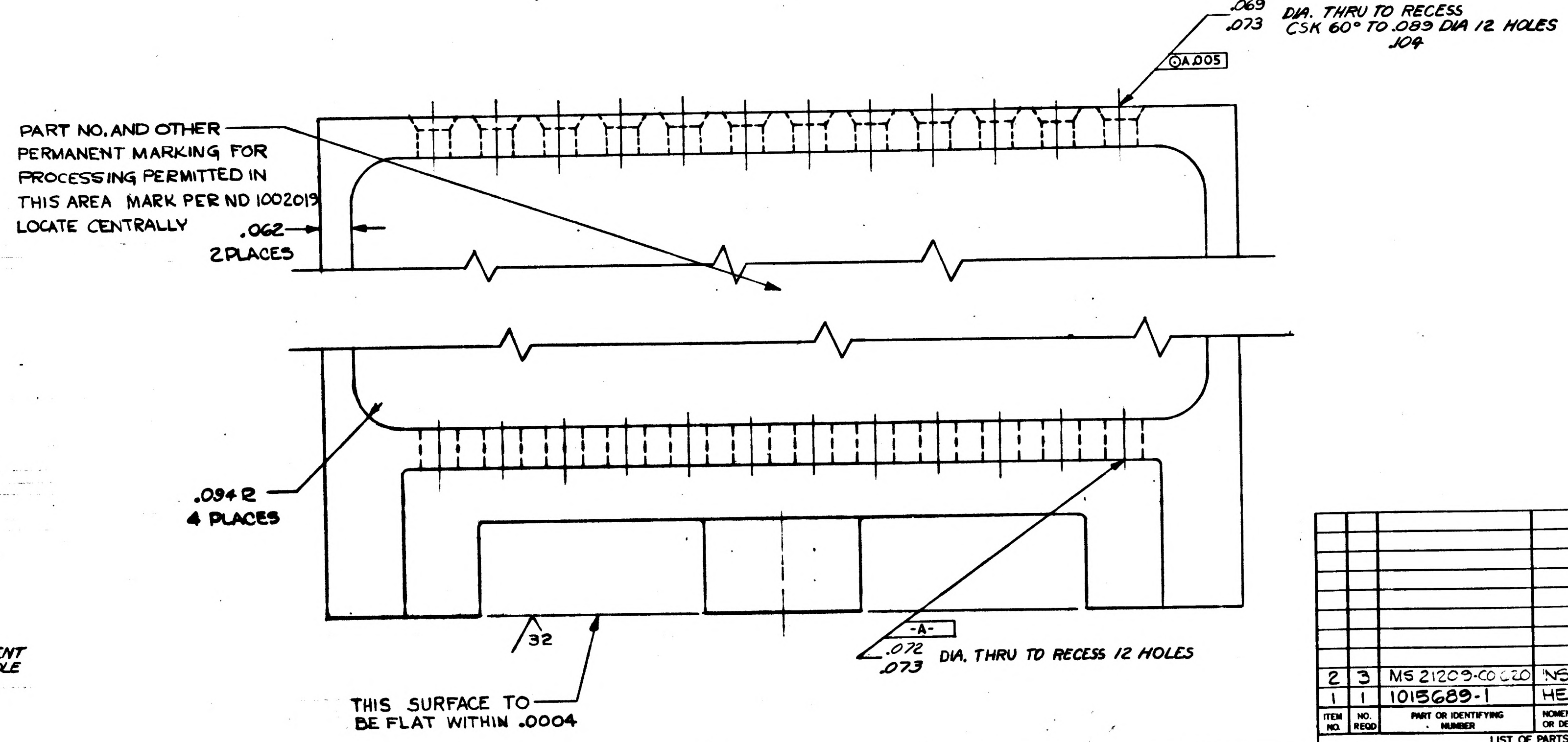
INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REVISED PER TDRR 02441		2 26 63	
C		REVISED PER TDRR 08351			
D		REVISED PER TDRR 08353			
E		REVISED PER TDRR 05447			

SEE NOTE 2

HOLE IDENT	X DIM	Y DIM		HOLE DIA.	QTY
A1	-.275	.725		.108 .112	4
A2	-.250	1.350			
A3	-.125	.775			
A4	.125	1.000			
B1	-.225	1.175		.146 .150	7
B2	-.225	.925			
B3	-.025	.925			
B4	.000	1.125			
B5	.000	.000			
B6	.050	1.325			
B7	.750	1.325			
C1	-.125	1.050		.058 .062	13
C2	-.075	.650			
C3	.075	.125			
C4	.325	.650			
C5	.475	.350			
C6	.625	.200			
C7	.650	.100			
C8	.750	.525			
C9	.825	1.125			
C10	.825	1.000			
C11	.825	.600			
C12	.950	.075			
C13	1.050	.075			
D1	.075	.725		.100 .104	11
D2	.200	.625			
D3	.200	.500			
D4	.200	.350			
D5	.575	.300			
D6	.600	.000			
D7	.700	1.150			
D8	.800	.425			
D9	.800	.025			
D10	.950	1.375			
D11	1.025	-.025			
E1	.250	.825		.220 .224	1
G1	.350	.125		SEE SECTION C-C	1
H1	.375	1.200		SEE SECTION A-A	1
J1	.400	.500		.212 .216	1
K1	.625	.800		SEE SECTION B-B	1
L1	.625	.450		.172 .176	1
M1	.800	.225		.237 .241	2
M2	1.075	.250			
P1	1.200	1.350		.151 .155	1


1.321
.181
2 PLACES
.090 R
2 PLACES
.214
Y
A
B
C
30°
A2
B6
H1
B7
D10
P1
B1
B4
D7
C9
C1
A4
C10
B2
B3
E1
K1
.412
.836
A3
A1
D1
C2
D2
C4
C11
C8
.212
.321
D3
J1
L1
D8
D4
C5
D5
M1
M2
.546
C3
G1
C6
C7
.150 DIA. THRU
2 HOLES
C'BORE .36 DIA.
×.05 DEEP FAR SIDE
.663
.500
X
B5
D6
D9
C12
C13
D11
1
.258
.440


.069
.073 DIA. THRU TO RECESS
CSK 60° TO .089 DIA 12 HOLES
.104
A .005
PART NO. AND OTHER
PERMANENT MARKING FOR
PROCESSING PERMITTED IN
THIS AREA MARK PER ND 1002019
LOCATE CENTRALLY
.062
2 PLACES
.094 R
4 PLACES
32
-A-
.072
.073 DIA. THRU TO RECESS 12 HOLES
THIS SURFACE TO
BE FLAT WITHIN .0004

INTERPRET DWG. IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

UNLESS OTHERWISE SPECIFIED:

ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.

SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{125}$.

MUST BE FREE FROM BURRS & SHARP CORNERS.

ANODIZE PER MIL-M-3171A TYPE IV EXCEPT FOR THREADED HOLES

ALL FLAT SURFACES TO BE SQUARE WITHIN .010

COAT THREADS AND INSERT ITEM 2 WITH MIL-P-8585, WET ZINC CHROMATE PRIMER

1 INSTALL, ITEM 2, PER MS 33646 & BREAK OFF TANG.

2 THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DE FORMATION IN AN ADJACENT HOLE OR ON AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERIAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0020	INSERT, SCREW-LOCKING
1	1	1015689-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007041	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ± .005 ± 1°
− XX ± .02
DO NOT SCALE THIS DRAWING
MATERIAL MAG. ALLOY ZK-60A-T5 PER QQ-M-31A
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orzel DATE 19 MAR 63
CHECKED 2 APRIL 63
APPROVAL J.M. BLYSHAK 3 APR 63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

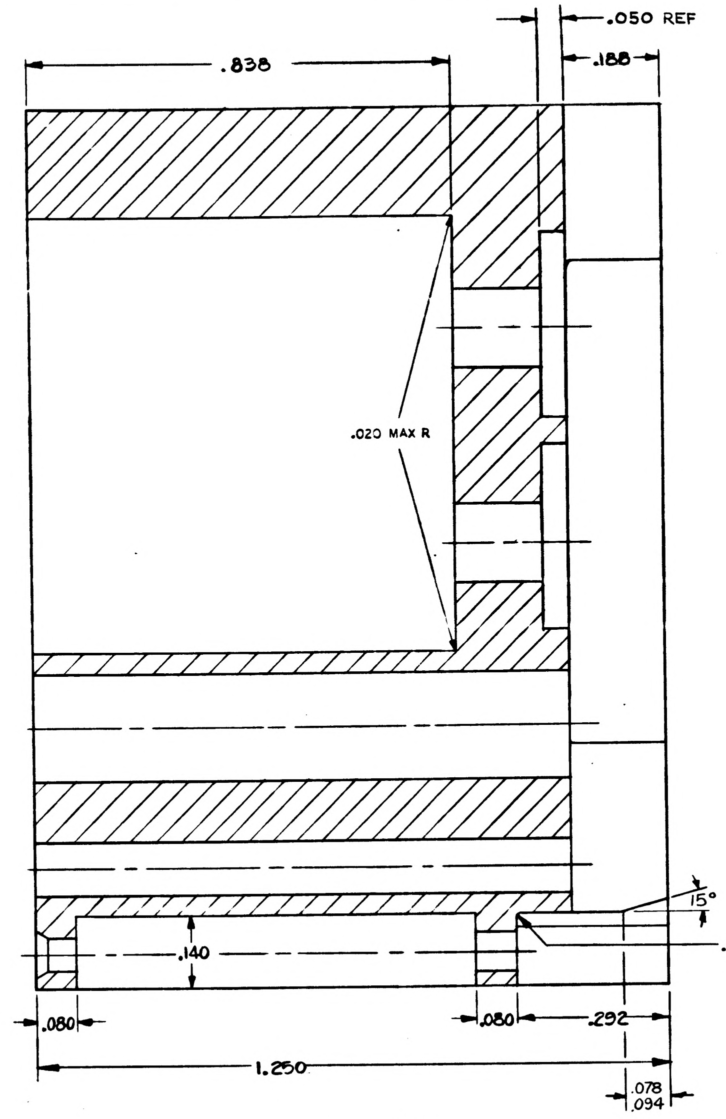
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK - GIMBAL COARSE
ALIGN AMPLIFIER

CODE IDENT NO.
SIZE E
1015689
SCALE 8:1
SHEET 1 OF 2

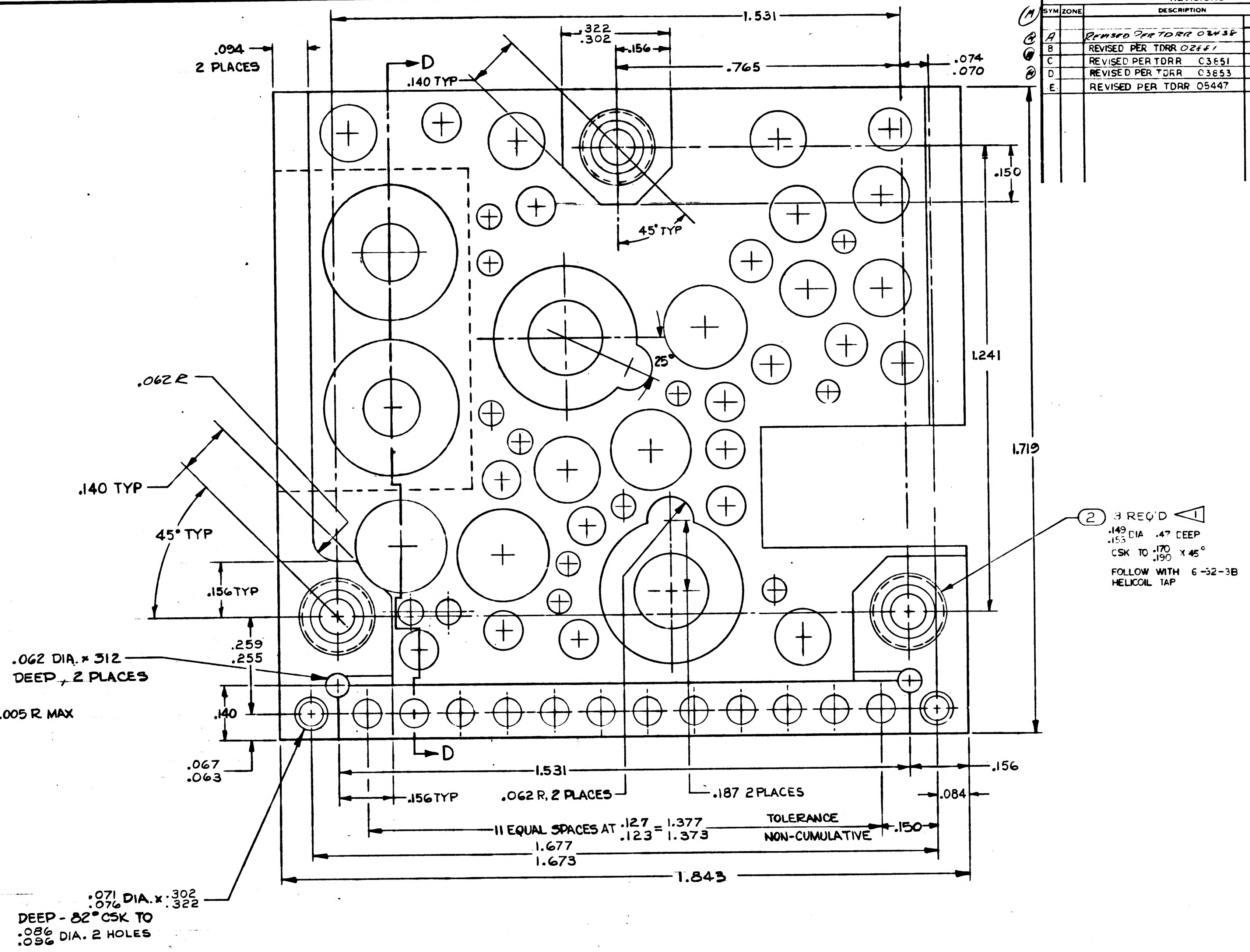
1015689 E

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02438		6-7-63	WK
B		REVISED PER TDRR 02661		6-24-63	
C		REVISED PER TDRR C3651			
D		REVISED PER TDRR C3853			
E		REVISED PER TDRR 05447			

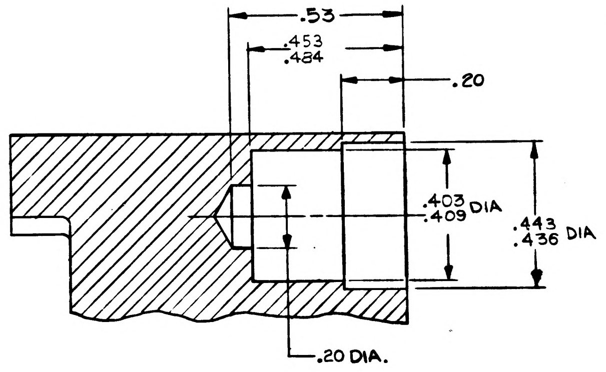


.050 REF
.188
.838
.020 MAX R
15°
.005 R MAX
.140
.080
.080
.292
1.250
.078
.094

SECTION D-D

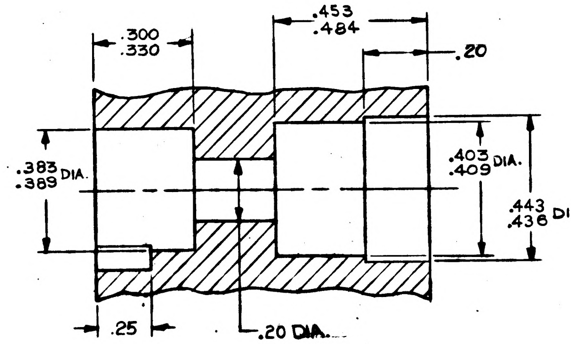


1.531
.322
.302
.156
.094
2 PLACES
D
.140 TYP
.765
.074
.070
.150
45° TYP
25°
1.241
1.719
.062 R
.140 TYP
45° TYP
.156 TYP
.259
.255
.062 DIA. x .312 DEEP, 2 PLACES
.140
D
.067
.063
1.531
.156
.156 TYP
.062 R, 2 PLACES
.187 2 PLACES
.084
11 EQUAL SPACES AT .127/.123 = 1.377/1.373
TOLERANCE NON-CUMULATIVE
.150
1.677
1.673
1.843
.071/.076 DIA. x .302/.322 DEEP - 82° CSK TO .086/.096 DIA. 2 HOLES
2
8 REQ'D
1
.149/.153 DIA .47 DEEP
CSK TO .170/.190 x 45°
FOLLOW WITH 6-32-3B HELICOIL TAP



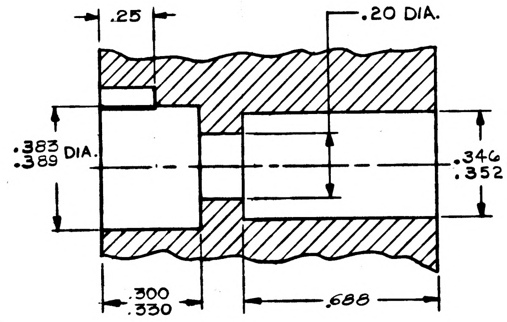
.53
.453
.484
.20
.403
.409 DIA
.443
.436 DIA
.20 DIA.

PARTIAL SECTION A-A
SCALE 5:1



.300
.330
.453
.484
.20
.383
.389 DIA.
.403
.409 DIA.
.443
.438 DIA.
.25
.20 DIA.

PARTIAL SECTION B-B
SCALE 5:1



.25
.20 DIA.
.383
.389 DIA.
.346
.352 DIA.
.300
.330
.688

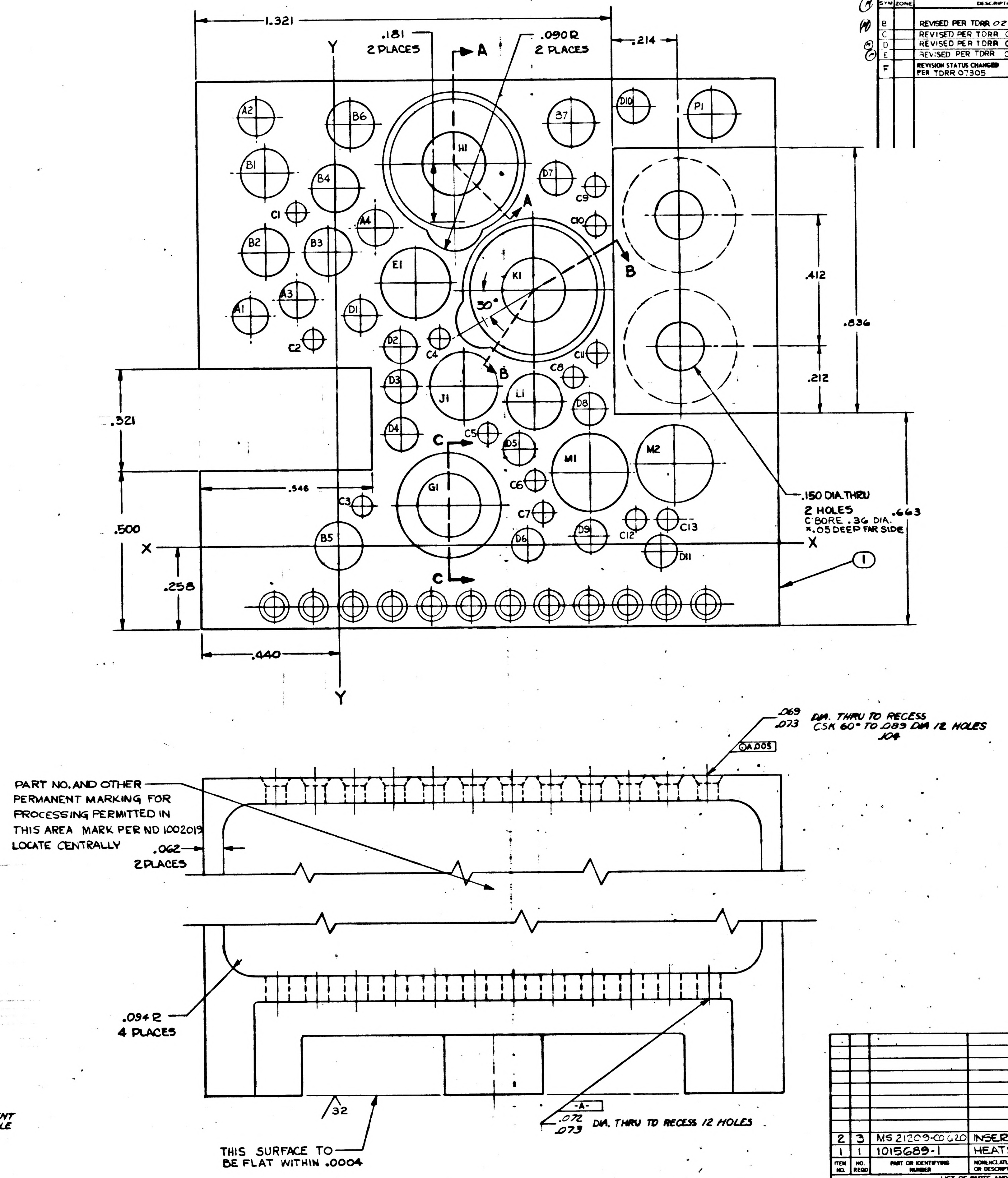
PARTIAL SECTION C-C
SCALE 5:1

1007041		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ± DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN DATE 19 MAR 63 CHECKED 2 APRIL 63 APPROVAL J.M. BLYSHAK 3 APR 63 APPROVAL	MANNED SPACECRAFT CENTER HOUSTON, TEXAS HEATSINK- GIMBAL COARSE ALIGN AMPLIFIER
NEXT ASSY	USED ON	MATERIAL	NASA APPROVAL 5-22-63	CODE IDENT NO. SIZE E 1015689
APPLICATION		CONTRACT	MIT APPROVAL 22 May 63	SCALE 8:1 SHEET 2 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
B		REVISED PER TDRR 02841		4 24 63	
C		REVISED PER TDRR 08351			WR
D		REVISED PER TDRR 08353			WR
E		REVISED PER TDRR 05447			
F		REVISION STATUS CHANGED PER TDRR 07305		7 APR 64	JJJ CP

SEE NOTE 2

HOLE IDENT	X DIM	Y DIM		HOLE DIA.	QTY
A1	-.275	.725		.108 .112	4
A2	-.250	1.350			
A3	-.125	.775			
A4	.125	1.000			
B1	-.225	1.175		.146 .150	7
B2	-.225	.925			
B3	-.025	.925			
B4	.000	1.125			
B5	.000	.000			
B6	.050	1.325			
B7	.750	1.325			
C1	-.125	1.050		.058 .062	13
C2	-.075	.650			
C3	.075	.125			
C4	.325	.650			
C5	.475	.350			
C6	.625	.200			
C7	.650	.100			
C8	.750	.525			
C9	.825	1.125			
C10	.825	1.000			
C11	.825	.600			
C12	.950	.075			
C13	1.050	.075			
D1	.075	.725		.100 .104	11
D2	.200	.625			
D3	.200	.500			
D4	.200	.350			
D5	.575	.300			
D6	.600	.000			
D7	.700	1.150			
D8	.800	.425			
D9	.800	.025			
D10	.350	1.375			
D11	1.025	-.025			
E1	.250	.825		.220 .224	1
G1	.350	.125		SEE SECTION C-C	1
H1	.375	1.200		SEE SECTION A-A	1
J1	.400	.500		.212 .216	1
K1	.625	.800		SEE SECTION B-B	1
L1	.625	.450		.172 .176	1
M1	.800	.225		.237 .241	2
M2	1.075	.250			
P1	1.200	1.350		.151 .155	1


1.321
.181
2 PLACES
.090 R
2 PLACES
.214
A
A
B
B
C
C
Y
Y
X
X
A1
A2
A3
A4
B1
B2
B3
B4
B5
B6
B7
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
E1
G1
H1
J1
K1
L1
M1
M2
P1
30°
.412
.836
.212
.321
.546
.500
.258
.440
.663
.150 DIA.THRU
2 HOLES
C'BORE .36 DIA.
x.05 DEEP FAR SIDE
1
.069
.073 DIA. THRU TO RECESS
CSK 60° TO .083 DIA 12 HOLES
.104
A .005
PART NO. AND OTHER
PERMANENT MARKING FOR
PROCESSING PERMITTED IN
THIS AREA MARK PER ND 1002019
LOCATE CENTRALLY
.062
2 PLACES
.094 R
4 PLACES
32
-A-
.072
.073 DIA. THRU TO RECESS 12 HOLES
THIS SURFACE TO
BE FLAT WITHIN .0004

INTERPRET DWG. IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

UNLESS OTHERWISE SPECIFIED:
ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED $\overset{125}{\sqrt{}}$.

MUST BE FREE FROM BURRS & SHARP CORNERS.
ANODIZE PER MIL-M-3171A TYPE IV EXCEPT FOR THREADED HOLES

ALL FLAT SURFACES TO BE SQUARE WITHIN .010

COAT THREADS AND INSERT ITEM 2 WITH MIL-P-8585, WET ZINC CHROMATE PRIMER

1 INSTALL, ITEM 2, PER MS33646
& BREAK OFF TANG.

2 *THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DE FORMATION IN AN ADJACENT HOLE OR ON AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART*

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW-LOCKING
1	1	1015689-1	HEATSINK

LIST OF PARTS AND MATERIALS

F	F
SHEET 1	SHEET 2

REVISION STATUS OF SHEETS

NEXT ASSY	USED ON
1007041	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ± .005 ± 1°
- XX ± .02
DO NOT SCALE THIS DRAWING
MATERIAL MAG. ALLOY ZK-60A-T5 PER QQ-M-31A
CONTRACT NAS 9-497

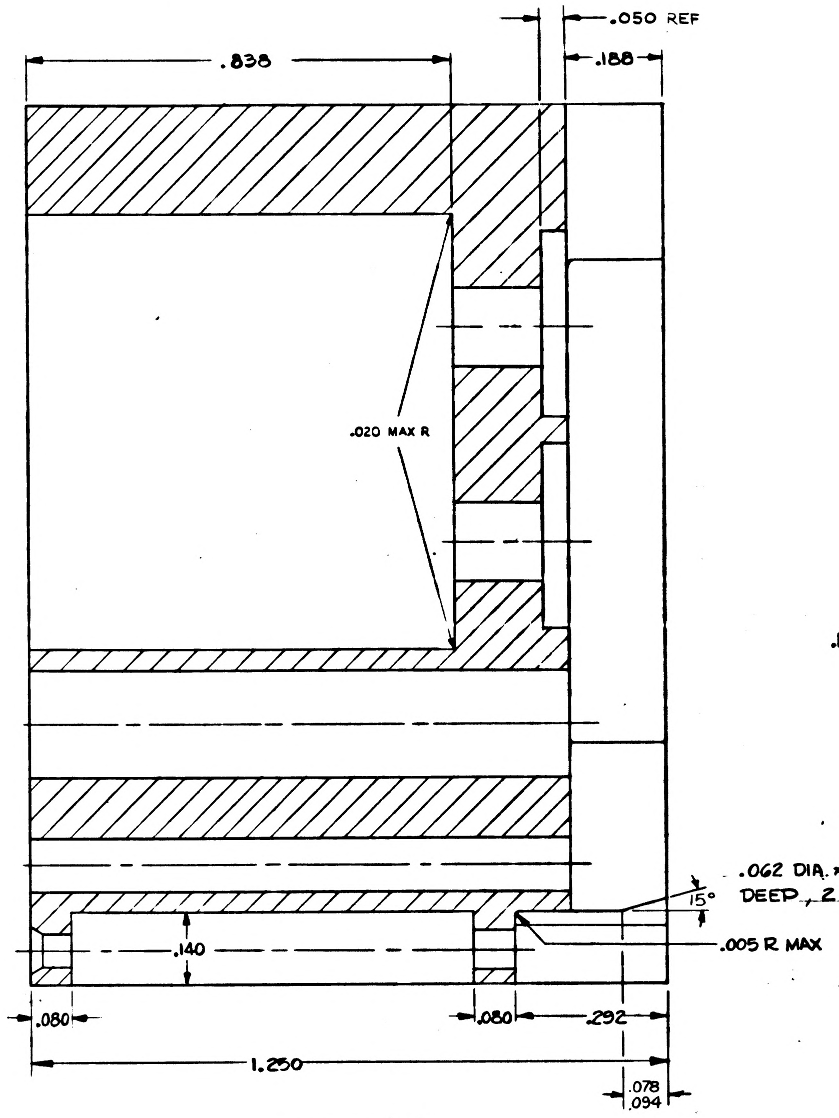
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN
DATE
CHECKED 2 APRIL 63
APPROVAL J.V. BLYSHAK
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

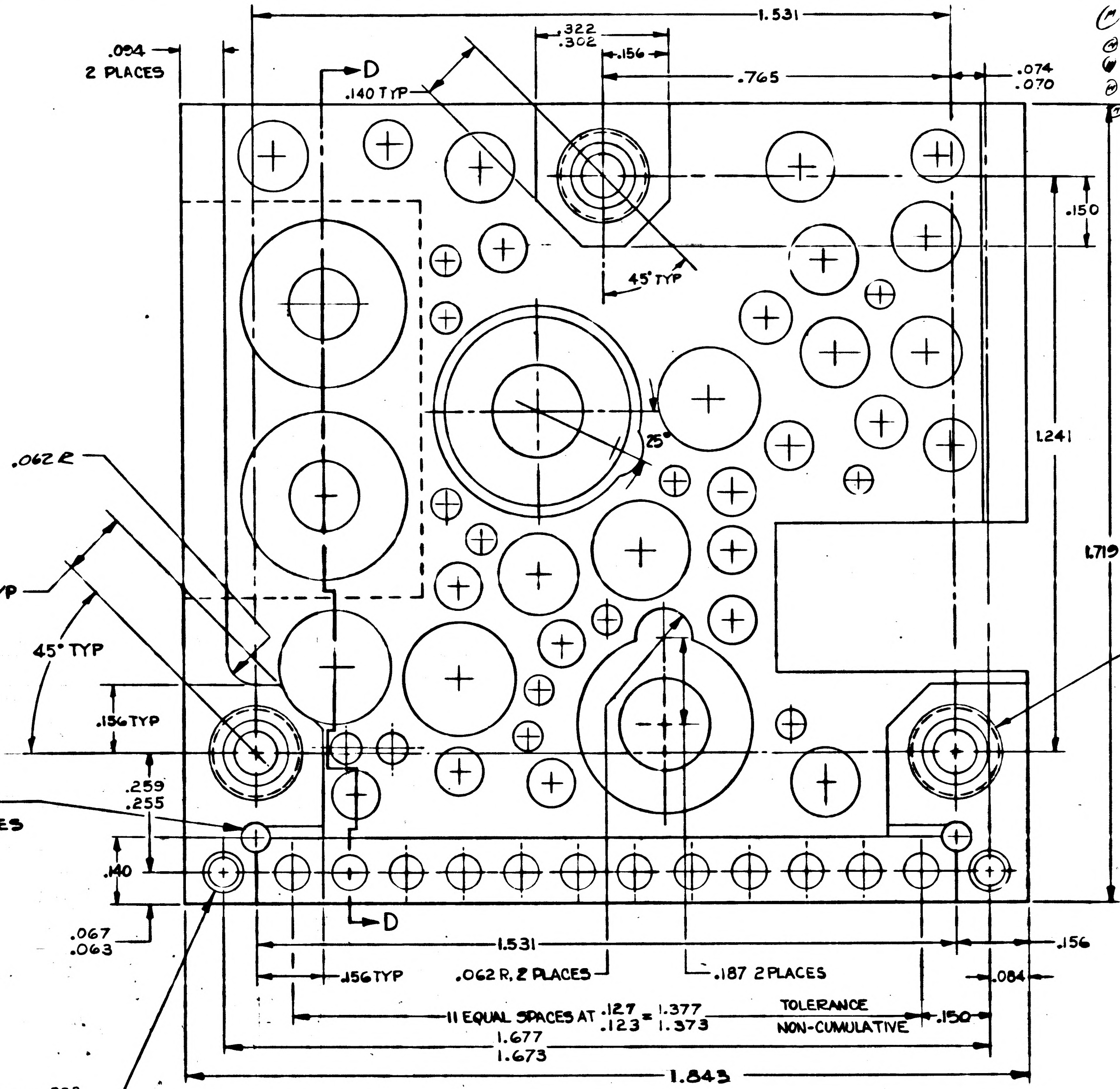
HEATSINK - GIMBAL COARSE
ALIGN AMPLIFIER

CODE IDENT NO.
SIZE E
1015689
SCALE 8:1
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR C2438		6-7-63	WK
B		REVISED PER TDRR 02661		5 26 63	
C		REVISED PER TDRR C3651			
D		REVISED PER TDRR 03853			
E		REVISED PER TDRR 05447			
F		REVISED PER TDRR 07305		7 APR 64	JJJ CF


.838
.050 REF
.188
.020 MAX R
15°
.140
.080
.080
.292
1.250
.078
.094
.005 R MAX

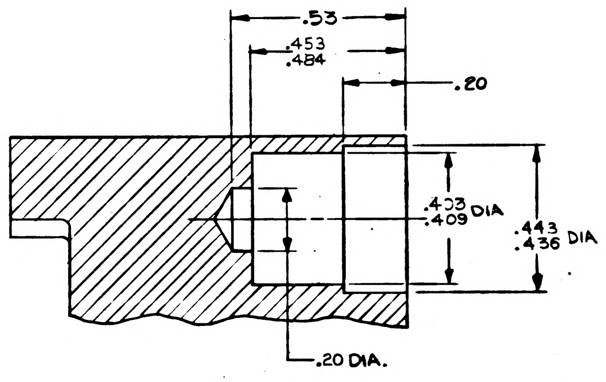
SECTION D-D


1.531
.322
.302
.156
.765
.074
.070
.094
2 PLACES
D
.140 TYP
.150
45° TYP
.062 R
.140 TYP
45° TYP
25°
1.241
1.719
.156 TYP
.259
.255
.140
.067
.063
D
1.531
.156
.156 TYP
.062 R, 2 PLACES
.187 2 PLACES
.084
11 EQUAL SPACES AT .127/.123 = 1.377/1.373
TOLERANCE NON-CUMULATIVE
.150
1.677
1.673
1.843
2

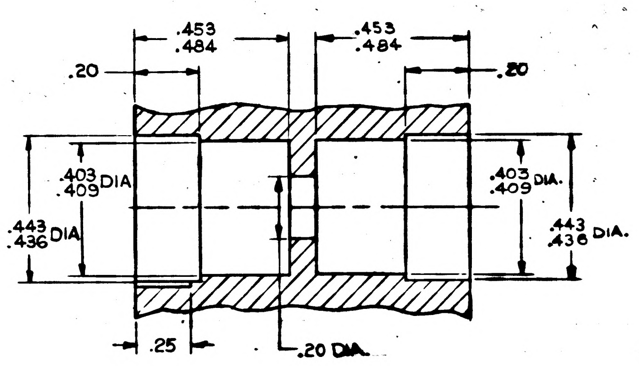
3 REQ'D ◁1
.149/.153 DIA .47 DEEP
CSK TO .170/.190 x 45°
FOLLOW WITH 6-32-3B
HELICOIL TAP

.062 DIA. x 312
DEEP, 2 PLACES

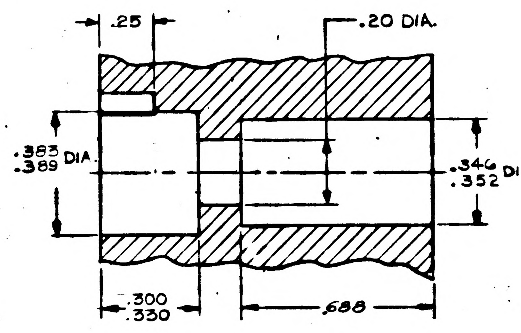
.071/.076 DIA. x .302/.322
DEEP - 82° CSK TO
.086/.096 DIA. 2 HOLES


.53
.453
.484
.20
.403
.409 DIA
.443
.436 DIA
.20 DIA.

PARTIAL SECTION A-A
SCALE 5:1


.453
.484
.453
.484
.20
.20
.403
.409 DIA
.443
.436 DIA
.403
.409 DIA.
.443
.436 DIA.
.25
.20 DIA

PARTIAL SECTION B-B
SCALE 5:1


.25
.20 DIA.
.383
.389 DIA
.346
.352 DIA.
.300
.330
.688

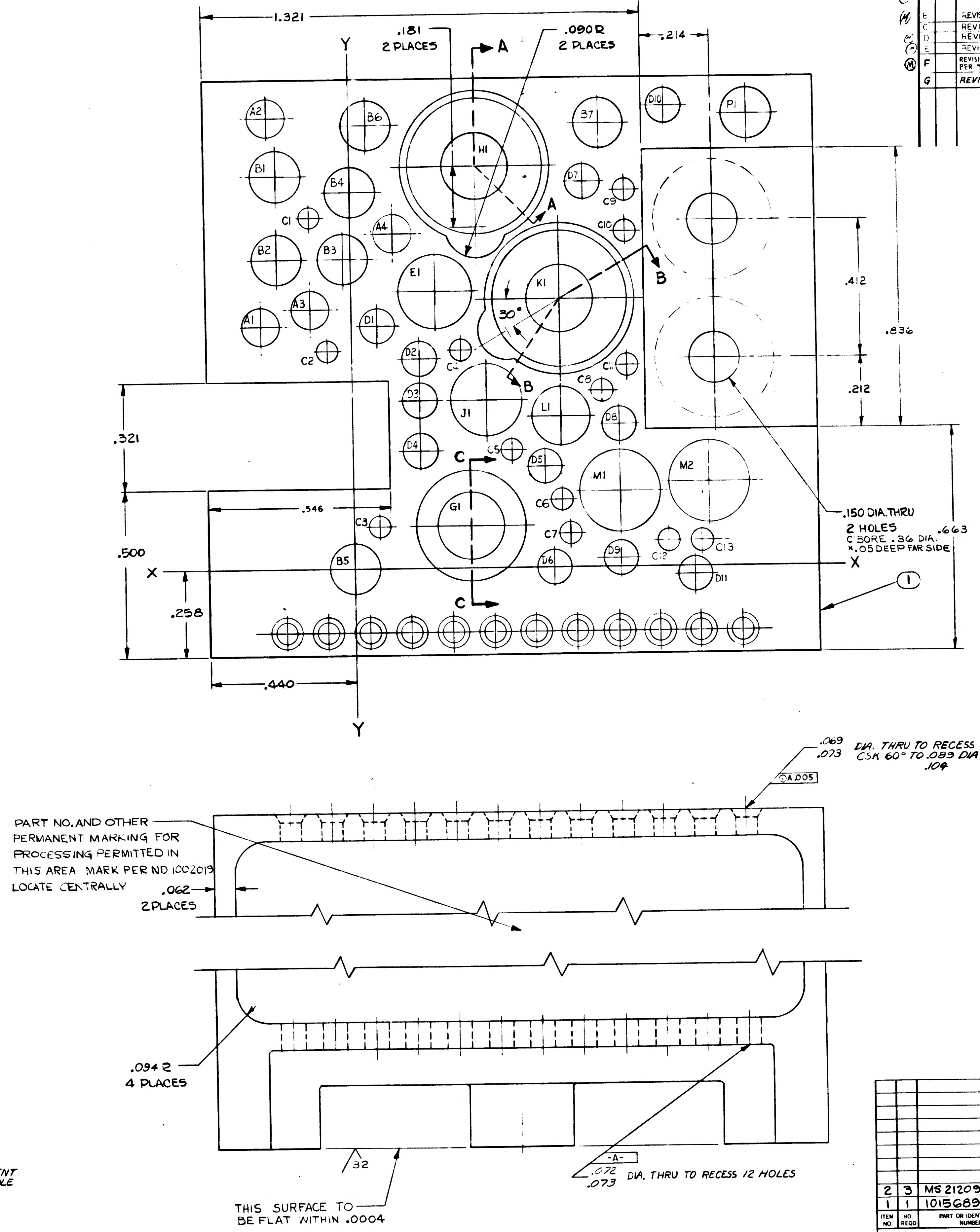
PARTIAL SECTION C-C
SCALE 5:1

1007041		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
NEXT ASSY	USED ON	DO NOT SCALE THIS DRAWING	ACSP PN	HEATSINK- GIMBAL COARSE ALIGN AMPLIFIER
APPLICATION		MATERIAL	DRAWN DATE 19 MAR 63 CHECKED 2 APRIL 63 APPROVAL J.M. BLYSHAK 3 APR 63 APPROVAL	CODE IDENT NO. SIZE E 1015689
		CONTRACT NAS 9-497	NASA APPROVAL 5-22-63 MIT APPROVAL 22 May 63	SCALE 8:1 SHEET 2 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
E		REVISED PER TDRR 02441		63	
C		REVISED PER TDRR 08351			
D		REVISED PER TDRR 08353			
E		REVISED PER TDRR 05447			
F		REVISION STATUS CHANGED PER TDRR 07305			
G		REVISED PER TDRR-19378		2-JUN-65	B.

SEE NOTE 2

HOLE IDENT	X DIM	Y DIM		HOLE DIA.	QTY
A1	-.275	.725		.108 .112	4
A2	-.250	1.350			
A3	-.125	.775			
A4	.125	1.000			
B1	-.225	1.175		.146 .150	7
B2	-.225	.925			
B3	-.025	.825			
B4	.000	1.125			
B5	.000	.000			
B6	.050	1.325			
B7	.750	1.325			
C1	-.125	1.050		.058 .062	13
C2	-.075	.650			
C3	.075	.125			
C4	.325	.650			
C5	.475	.350			
C6	.625	.200			
C7	.650	.100			
C8	.750	.525			
C9	.825	1.125			
C10	.825	1.000			
C11	.925	.600			
C12	.950	.075			
C13	1.050	.075			
D1	.075	.725		.100 .104	11
D2	.200	.625			
D3	.200	.500			
D4	.200	.350			
D5	.575	.300			
D6	.600	.000			
D7	.700	1.150			
D8	.800	.425			
D9	.800	.025			
D10	.930	1.375			
D11	1.025	-.025			
E1	.250	.825		.220 .224	1
G1	.350	.125		SEE SECTION C-C	1
H1	.375	1.200		SEE SECTION A-A	1
J1	.400	.500		.212 .216	1
K1	.625	.800		SEE SECTION B-B	1
L1	.625	.450		.172 .176	1
M1	.800	.225		.237 .241	2
M2	1.075	.250			
P1	1.200	1.350		.151 .155	1



1.321
.181
2 PLACES
.090R
2 PLACES
.214
A
B
C
Y
X
A1
A2
A3
A4
B1
B2
B3
B4
B5
B6
B7
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
E1
G1
H1
J1
K1
L1
M1
M2
P1
30°
.412
.836
.212
.321
.546
.500
.258
.440
.663
.150 DIA.THRU
2 HOLES
C BORE .36 DIA.
×.05 DEEP FAR SIDE
1
.069
.073
DIA. THRU TO RECESS
CSK 60° TO .089 DIA 12 HOLES
.104
A .005
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA MARK PER ND 1002019 LOCATE CENTRALLY
.062
2 PLACES
.094 2
4 PLACES
32
-A-
.072
.073
DIA. THRU TO RECESS 12 HOLES
THIS SURFACE TO BE FLAT WITHIN .0004

INTERPRET DWG. IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

UNLESS OTHERWISE SPECIFIED:
ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED $\overset{125}{\surd}$.

MUST BE FREE FROM BURRS & SHARP CORNERS.

ANODIZE PER MIL-M-45202, TYPE I, CLASS C EXCEPT FOR THREADED HOLES.

ALL FLAT SURFACES TO BE SQUARE WITHIN .010

COAT THREADS AND INSERT ITEM 2 WITH MIL-P-8585, WET ZINC CHROMATE PRIMER

1 INSTALL, ITEM 2, PER MS33646 & BREAK OFF TANG.

2 THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DEFORMATION IN AN ADJACENT HOLE OR ON AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART

APPLY A .31 MIN WIDTH PERIMETER OF ADHESIVE AND COATING MATERIAL PER ND1002187 TYPE II TO THE TWO SURFACES WITH COMPONENT HOLES WHICH ARE .188 AND 1.25 FROM THE HELICOIL MOUNTING SURFACE.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW-LOCKING
1	1	1015689-1	HEATSINK

LIST OF PARTS AND MATERIALS

G	F
F	=
SHEET 1	SHEET 2

REVISION STATUS OF SHEETS

NEXT ASSY	USED ON
1007041	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± XXX ±.005 ±1°
XX ±.02
DO NOT SCALE THIS DRAWING
MATERIAL MAG. ALLOY ZK-60A-T5 PER QQ-M-31A
CONTRACT NAS 9-497

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DRAWN Orzel DATE 19 MAR 63
CHECKED Hayes 2 APRIL 63
APPROVAL JM BLYSHAK 3 APR 63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

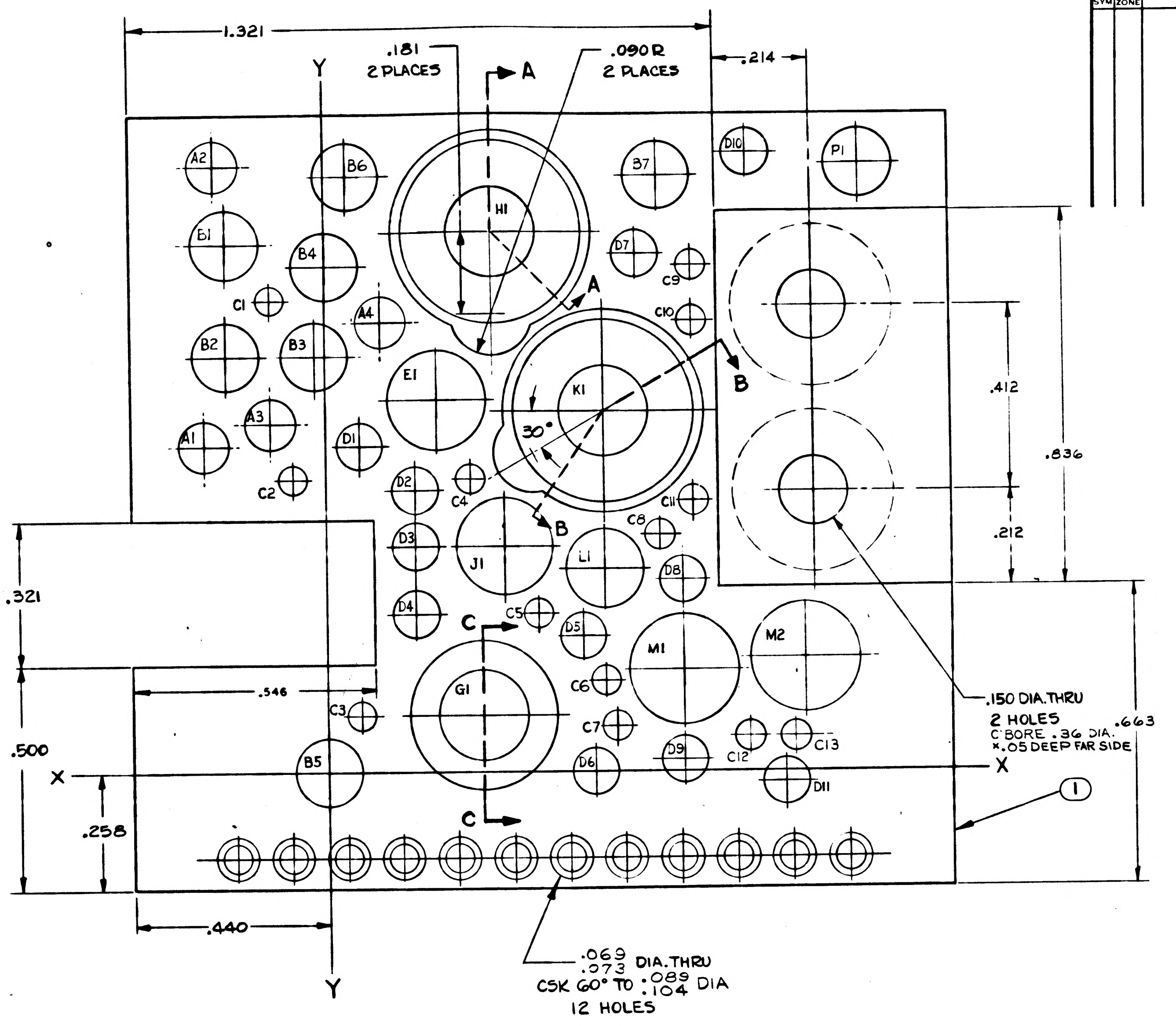
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

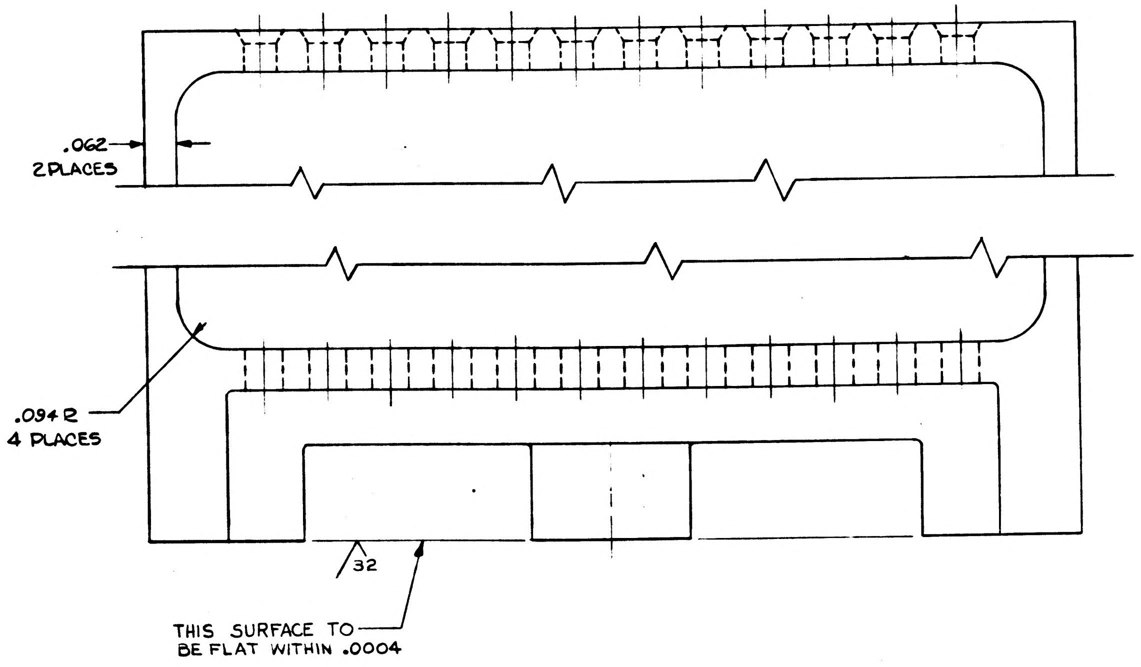
HEATSINK - GIMBAL COARSE ALIGN AMPLIFIER

CODE IDENT NO 80230
SIZE E
1015689
SCALE 8:1
SHEET 1 OF 2

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⌖ DIA	HOLE DIA.	QTY
	-.275	.725	.006	.108 .112	4
A2	-.250	1.350			
A3	-.125	.775			
A4	.125	1.000			
B1	-.225	1.175	.006	.146 .150	7
B2	-.225	.925			
B3	-.025	.325			
B4	.000	1.125			
B5	.000	.000			
B6	.050	1.325			
B7	.750	1.325			
C1	-.125	1.050	.006	.058 .062	13
C2	-.075	.650			
C3	.075	.125			
C4	.325	.650			
C5	.475	.350			
C6	.625	.200			
C7	.650	.100			
C8	.750	.525			
C9	.825	1.125			
C10	.825	1.000			
C11	.825	.600			
C12	.950	.075			
C13	1.050	.075			
D1	.075	.725	.006	.100 .104	11
D2	.200	.625			
D3	.200	.500			
D4	.200	.350			
D5	.575	.300			
D6	.600	.000			
D7	.700	1.150			
D8	.800	.425			
D9	.800	.025			
D10	.950	1.375			
D11	1.025	-.025			
E1	.250	.825	.006	.220 .224	1
G1	.350	.125	.006	SEE SECTION C-C	1
H1	.375	1.200	.006	SEE SECTION A-A	1
J1	.400	.500	.006	.212 .216	1
K1	.625	.800	.006	SEE SECTION B-B	1
L1	.625	.450	.006	.172 .176	1
M1	.800	.225	.006	.237 .241	2
M2	1.075	.250			
P1	1.200	1.350	.006	.151 .155	1


1.321
.181
2 PLACES
A
.090 R
2 PLACES
.214
Y
A2
B6
B7
D10
P1
B1
B4
H1
D7
C9
C1
A4
A
C10
B2
B3
E1
K1
B
.412
.836
A3
A1
D1
30°
C2
D2
C4
C11
B
C8
D3
J1
L1
D8
.212
.321
D4
C
C5
D5
M1
M2
.546
C3
G1
C6
C7
D9
C12
C13
.150 DIA.THRU
2 HOLES
C'BORE .36 DIA.
×.05 DEEP FAR SIDE
.663
.500
X
B5
D6
D11
X
1
.258
C
.440
.069
.073 DIA.THRU
CSK 60° TO .089
.104 DIA
12 HOLES
Y


.062
2 PLACES
.094 R
4 PLACES
32
THIS SURFACE TO
BE FLAT WITHIN .0004

INTERPRET DWG. IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

UNLESS OTHERWISE SPECIFIED:
ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{125}$.

MUST BE FREE FROM BURRS & SHARP CORNERS.
ANODIZE PER MIL-M-3171A TYPE IV EXCEPT FOR THREADED HOLES

ALL FLAT SURFACES TO BE SQUARE WITHIN .010

COAT THREADS AND INSERT ITEM 2 WITH MIL-P-8585, WET ZINC CHROMATE PRIMER

▷1 INSTALL, ITEM 2, PER MS33646 EXCEPT DIM. F TO BE .594 & BREAK OFF TANG.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	NAS1222-06E	INSERT, SCREW-LOCKING
1	1	1015689-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	1007041
USED ON	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS ±.005 ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL MAG. ALLOY ZK-60A-T5 PER QQ-M-31A
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orzel DATE 19 MAR 63
CHECKED Hayes 2 APRIL 63
APPROVAL JV BLYSHAK
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL

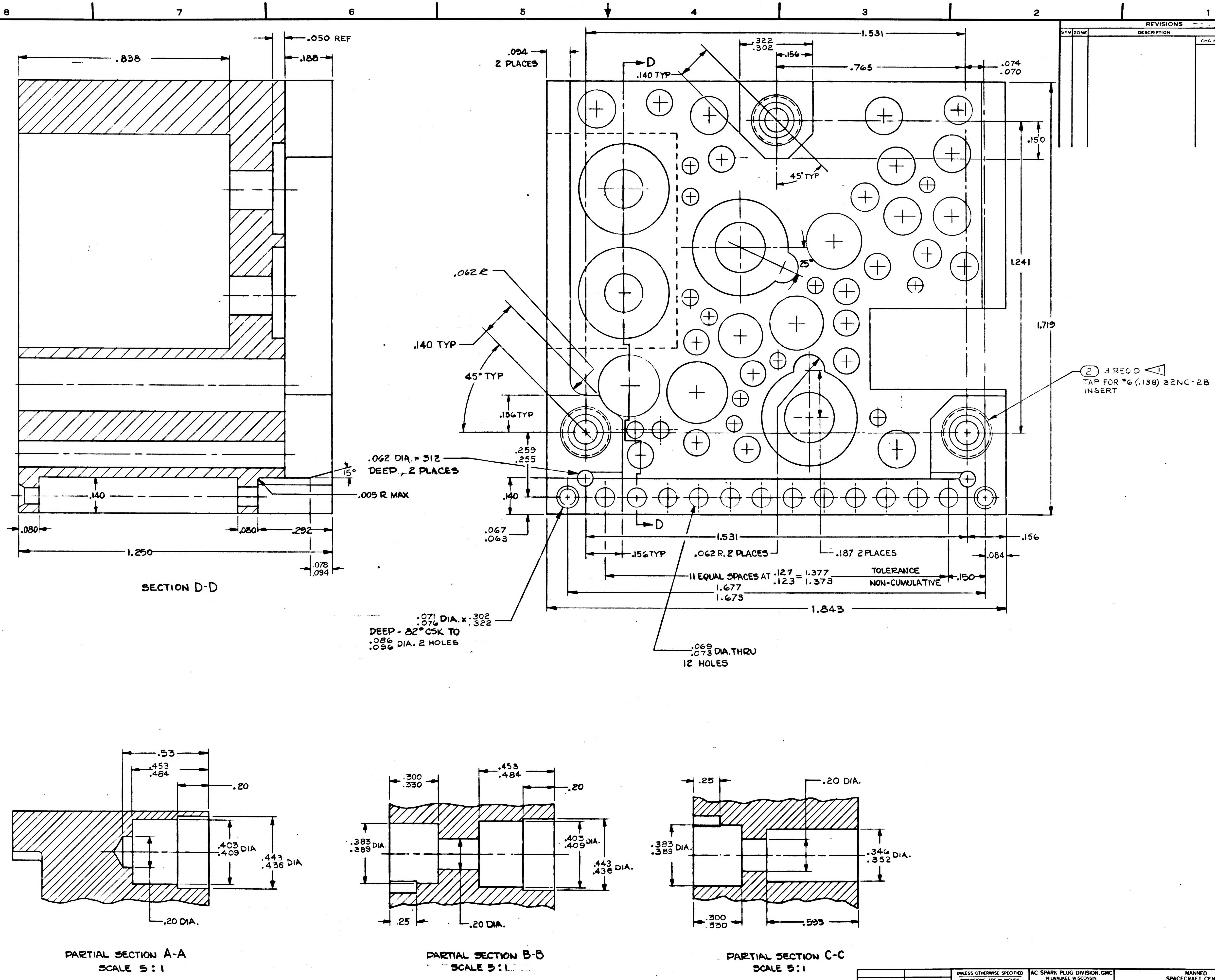
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK - GIMBAL COARSE
ALIGN AMPLIFIER

CODE IDENT NO
SIZE E
1015689
SCALE 8:1
SHEET 1 OF 2

1015689

INCHES
PHOTOGRAPHIC SCALE ONLY


.050 REF
.838
.188
.094
2 PLACES
D
.140 TYP
.322
.302
.156
1.531
.765
.074
.070
45° TYP
.150
25°
.062 R
1.241
1.719
.140 TYP
45° TYP
② 3 REQ'D ◁1
TAP FOR #6 (.138) 32NC-2B
INSERT
.156 TYP
.259
.255
.062 DIA. × .312
DEEP, 2 PLACES
15°
.140
.005 R MAX
.140
.080
.080
.292
1.250
.078
.094
.067
.063
D
1.531
.156
.156 TYP
.062 R, 2 PLACES
.187 2 PLACES
.084
11 EQUAL SPACES AT .127/.123 = 1.377/1.373
TOLERANCE
NON-CUMULATIVE
.150
1.677
1.673
1.843
SECTION D-D
.071/.076 DIA. × .302/.322
DEEP - 82° CSK TO
.086/.096 DIA. 2 HOLES
.069/.073 DIA. THRU
12 HOLES
.53
.453
.484
.20
.403
.409 DIA
.443
.436 DIA
.20 DIA.
PARTIAL SECTION A-A
SCALE 5:1
.300
.330
.453
.484
.20
.383
.389 DIA.
.403
.409 DIA.
.443
.436 DIA.
.25
.20 DIA.
PARTIAL SECTION B-B
SCALE 5:1
.25
.20 DIA.
.383
.389 DIA.
.346
.352 DIA.
.300
.330
.593
PARTIAL SECTION C-C
SCALE 5:1

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN
DO NOT SCALE THIS DRAWING	ACSP PN
MATERIAL	DRAWN Segal DATE 19 MAR 63 CHECKED 2 APRIL 63 APPROVAL J.M. BLYSHAK APPROVAL
CONTRACT	NASA APPROVAL 5-22-63 MIT APPROVAL

1007041

NEXT ASSY	USED ON
APPLICATION	

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK- GIMBAL COARSE
ALIGN AMPLIFIER

CODE IDENT NO SIZE E 1015689

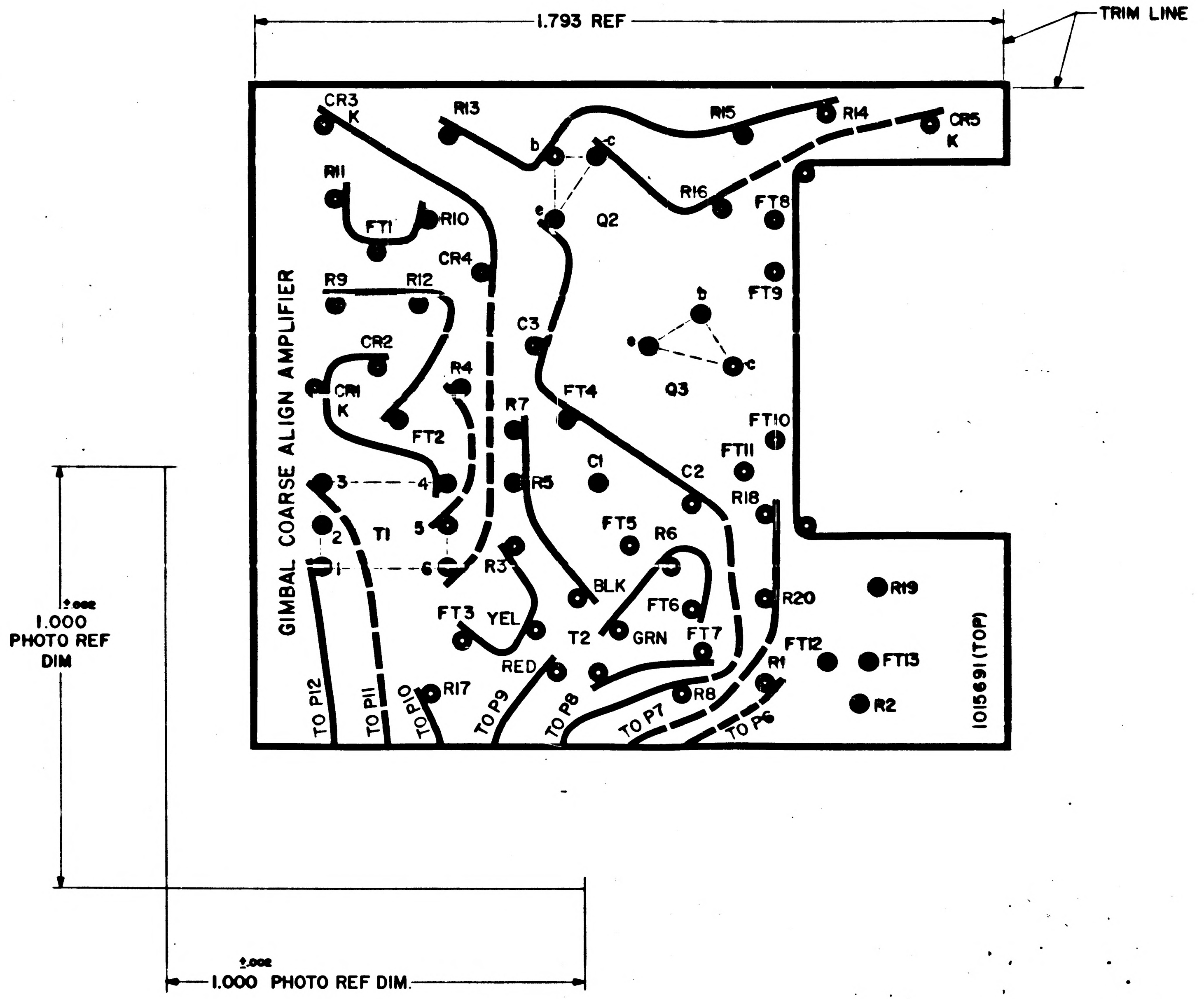
SCALE 2:1 SHEET 2 OF 2

1015689

INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 07128	10 APR 64	

REVISIONS TDRR 01310



1.793 REF
TRIM LINE
GIMBAL COARSE ALIGN AMPLIFIER
1015691 (TOP)
CR3
K
R13
b
c
e
R15
R14
CR5
K
R11
FT1
R10
Q2
R16
FT8
CR4
R9
R12
FT9
C3
CR2
b
e
c
Q3
R4
CR1
K
FT2
R7
FT4
FT10
FT11
3
4
R5
C1
C2
R18
2
T1
5
FT5
R6
1
6
R3
BLK
R19
R20
FT3
YEL
FT6
T2
GRN
FT7
FT12
FT13
RED
R1
R17
R8
R2
TO P12
TO P11
TO P10
TO P9
TO P8
TO P7
TO P6
±.002
1.000
PHOTO REF
DIM
±.002
1.000 PHOTO REF DIM.

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
3. CUT TO WITHIN .010 OF TRIM LINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: .006/.008 THICK PER L-F-340 TYPE IB, CLASS 2, STYLE IA
6. ● .045/.050 DIA PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

1007041	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 5
HEAT TREATMENT —
FINAL FINISH —

M I T
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN
DATE
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL W. J. Rhine 5-22-63
MIT APPROVAL 22 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR
PHOTOGRAPHIC MASTER
GIMBAL COARSE ALIGN AMPLIFIER

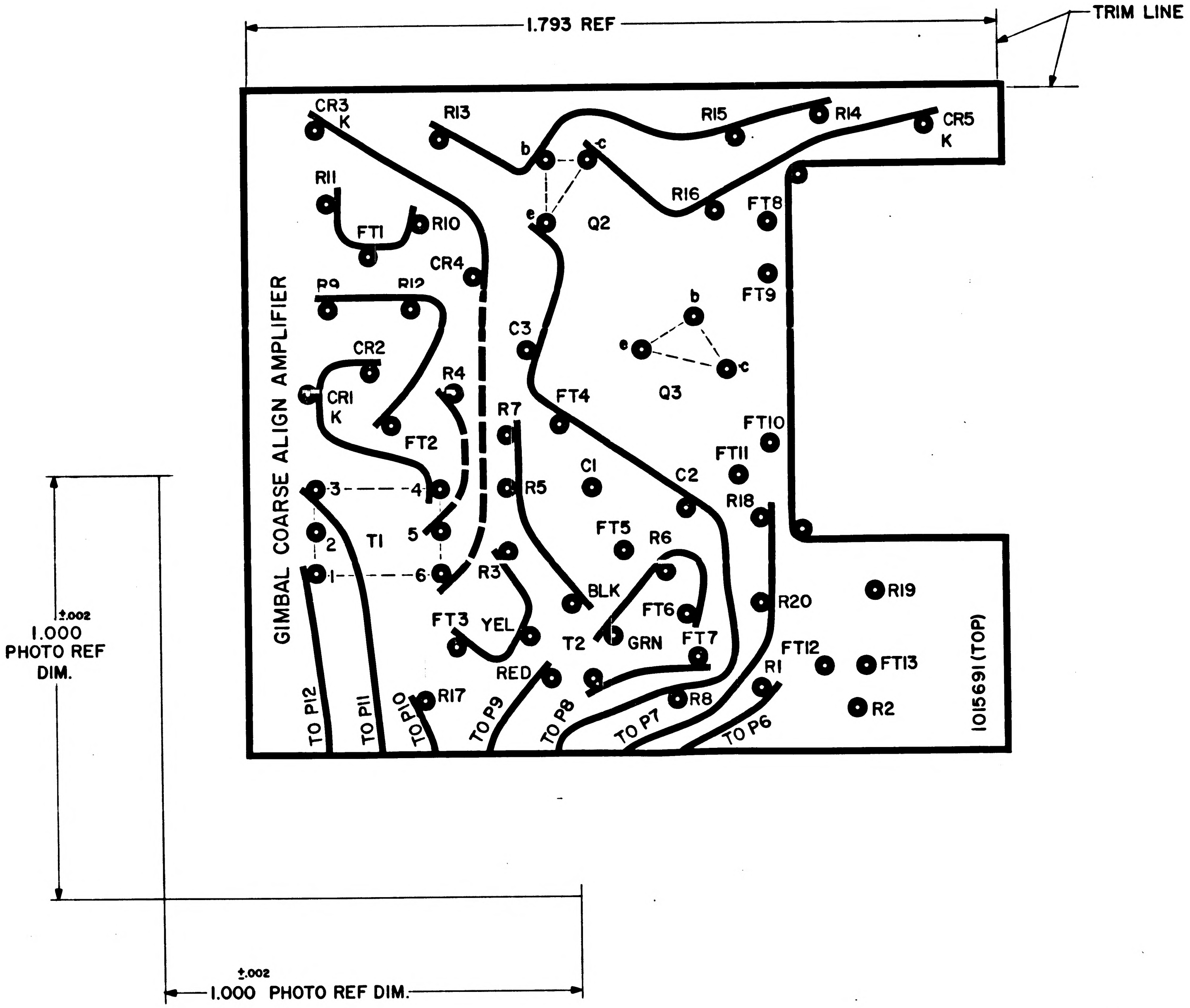
CODE IDENT NO
SIZE E
NASA DRAWING NO 1015691
SCALE 8:1
WT
SHEET 1 OF 1

1015691 A

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

SYM	DESCRIPTION	DATE	APPROVAL

REVISIONS TORR 01310



1.793 REF
TRIM LINE
GIMBAL COARSE ALIGN AMPLIFIER
1015691 (TOP)
CR3
K
R13
R15
R14
CR5
K
R11
FT1
R10
b
c
e
Q2
R16
FT8
CR4
FT9
R9
R12
C3
b
e
c
Q3
CR2
R4
CR1
K
FT2
R7
FT4
FT10
FT11
C1
C2
3
4
R5
R18
5
FT5
R6
2
T1
1
6
R3
BLK
R20
R19
FT3
YEL
FT6
T2
GRN
FT7
RED
FT12
R1
FT13
R17
R8
R2
TO P12
TO P11
TO P10
TO P9
TO P8
TO P7
TO P6
±.002
1.000
PHOTO REF
DIM.
±.002
1.000 PHOTO REF DIM.

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
3. CUT TO WITHIN .010 OF TRIM LINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: .006/.008 THICK PER L-F-340 TYPE IB, CLASS 2, STYLE IA
6. ● .045/.050 DIA PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
1007041	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 5
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT
DRAWN W. Horgan DATE 18 MAY 63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGRAPHIC MASTER
GIMBAL COARSE ALIGN AMPLIFIER

CODE IDENT NO
SIZE E
NASA DRAWING NO 1015691
SCALE 8:1
WT
SHEET 1 OF 1

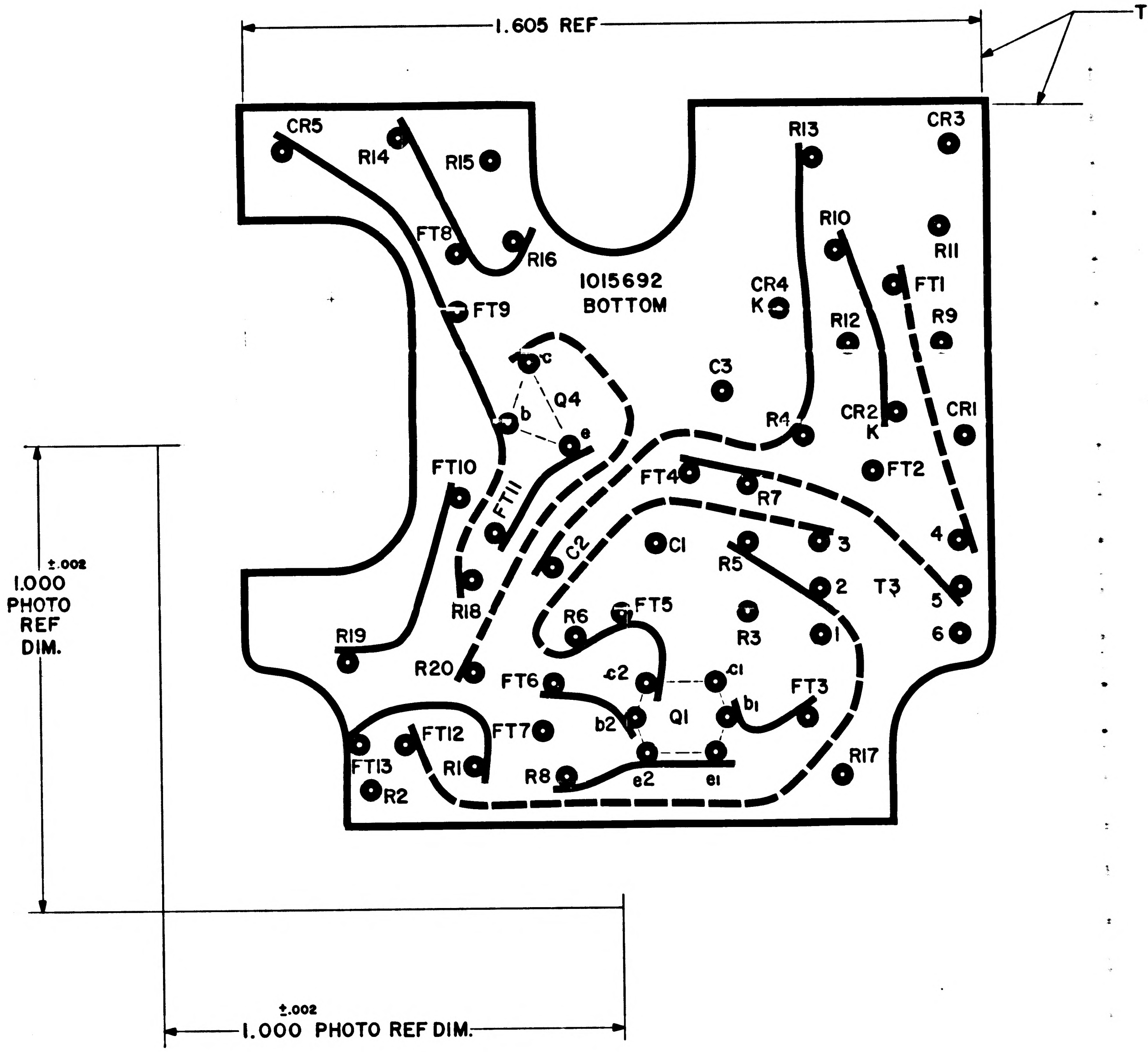
1015691

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS TDRR 01310

SYM	DESCRIPTION	DATE	APPROVAL



1.605 REF
TRIM LINE
1015692
BOTTOM
CR5
R14
R15
FT8
R16
FT9
R13
CR3
R10
R11
FT1
CR4
K
R12
R9
C3
Q4
c
b
e
R4
CR2
K
CR1
FT10
FT11
FT4
FT2
R7
C2
C1
3
4
R5
2
T3
5
R18
R6
FT5
R3
1
6
R19
R20
FT6
c2
c1
b1
FT3
FT7
b2
Q1
FT12
FT13
R1
R8
e2
e1
R17
R2
±.002
1.000
PHOTO
REF
DIM.
±.002
1.000 PHOTO REF DIM.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
3. CUT TO WITHIN .010 OF TRIM LINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN.
5. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
6. ◉ .045/.050 DIA PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

NEXT ASSY	USED ON
1007041	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 5

HEAT TREATMENT
—

FINAL FINISH
—

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT

DRAWN N. Horgan DATE 13 May 63
CHECKED R. Rungoborg [illegible]
APPROVAL
APPROVAL L. R. Tout
NASA APPROVAL W. J. Rhine 5-22-63
MIT APPROVAL W Kupfer 22 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR
PHOTOGRAPHIC MASTER
GIMBAL COARSE ALIGN AMPLIFIER

CODE IDENT NO
SIZE E
NASA DRAWING NO 1015692
SCALE 8:1
WT
SHEET 1 OF 1

1015692

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

B	1015693			

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 03851		10-15-63 LK	
B		REVISED PER TDRR 03852		10-15-63 LK	

HOLE NO.	X BASIC DIM	Y BASIC DIM	⌖ DIA	HOLE DIA	QTY
A1	-.125	1.250	.006	.100 .104	11
A2	-.075	.600			
A3	-.012	1.412			
A4	.000	.000			
A5	.025	.740			
A6	.125	.000			
A7	.200	1.225			
A8	.325	1.225			
A9	.750	.250			
A10	.762	1.087			
A11	4.100	.700			
B1	-.162	1.025	.006	.058 .062	10
B2	-.162	.862			
B3	-.150	1.125			
B4	.300	.325			
B5	.315	.750			
B6	.775	.150			
B7	.775	.487			
B8	.775	.575			
B9	.825	1.425			
B10	3.650	.800			
C1	-.225	.600	.006	.129 .131	6
C2	.150	1.400			
C3	-.125	.750			
C4	.225	.825			
C5	.425	1.120			
C6	.625	.175			
D1	3.500	.625	.006	.314 .321	5
D2	3.850	.700			
D3	4.100	.450			
D4	4.100	.950			
D5	4.100	1.300			
E1	.025	.975	.006	.252 .259	2
E2	.575	.425			
F1	.150	1.375	.006	.161 .165	
F2	.350	1.375			
G1	.025	1.240	.006	.146 .150	2
G2	.275	1.050			
H1	.350	.150	.006	.368 .375	1
R1	.725	.025	.006	.151 .155	1
J1	.025	.200	.006	.227 .231	2
J2	-.150	.400			
K1	.625	1.300	.006	.20 DIA THRU .345 .352 C BORE .593 DEEP	1
L1	.200	.525	.006	PARTIAL SECTION A-A	1
M1	.575	.850	.006	PARTIAL SECTION B-B	1
N1	1.275	.200	.006	SECTION C-C	2
N2	1.275	1.075			
S1	2.475	.637	.006	PARTIAL SECTION D-D	1
P1	3.525	.100	.006	SECTION E-E	2
P2	3.525	1.175			

UNLESS OUTHERWISE SPECIFIED:
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327

MUST BE FREE FROM BURRS.

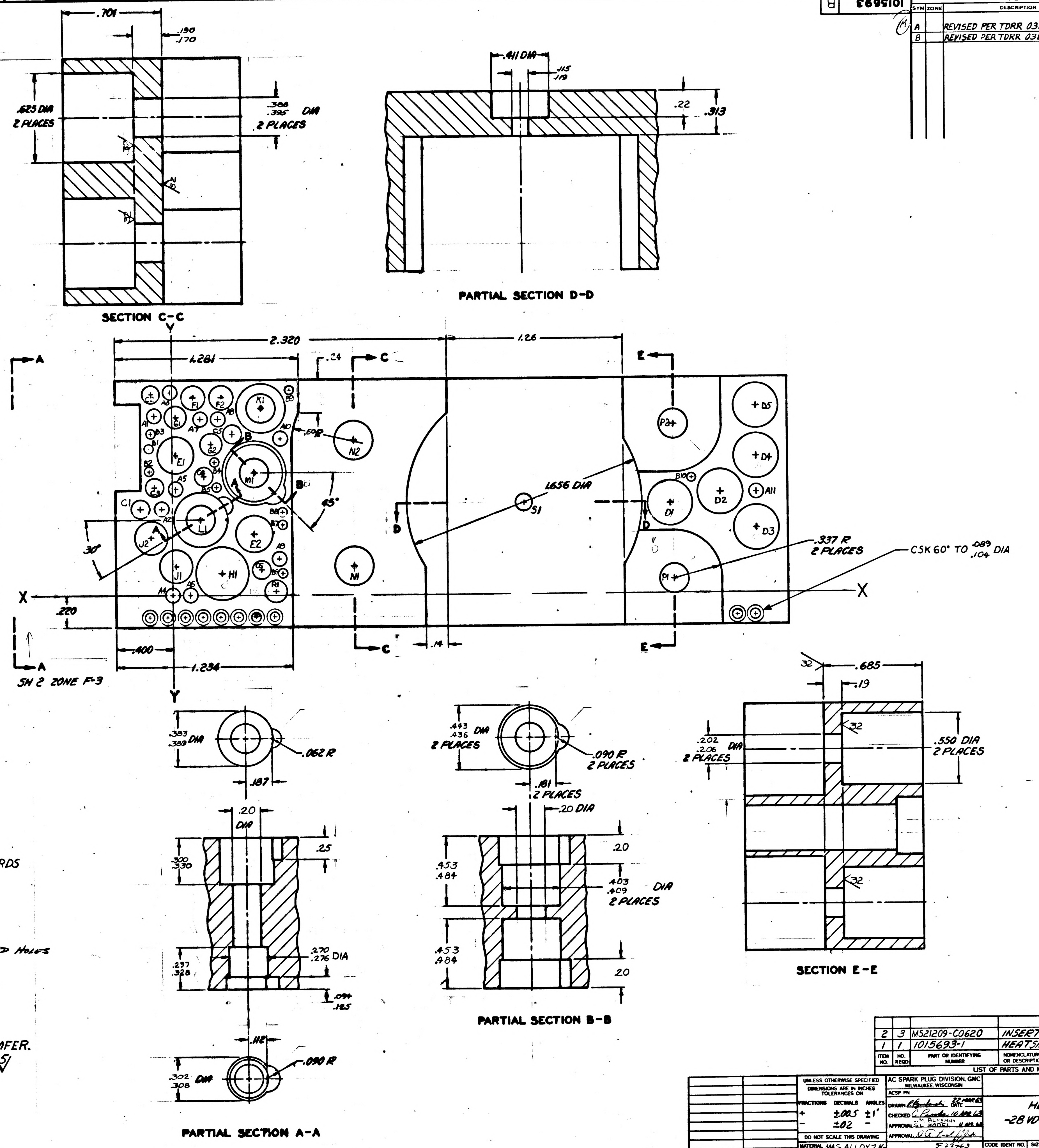
COAT ALL THREADS & ITEM 2 REF WITH MIL-P-8585
WET ZINC CHROMATE PRIMER.

1 ANODIZE PER MIL-M-3171A TYPE IV EXCEPT FOR THREADED HOLES

2 INSTALL ITEM 2 PER MS-33646
EXCEPT DIM F TO BE .594, REMOVE TANG.

ALL FLAT SURFACES TO BE SQUARE AND
FLAT WITHIN .010.

DIA "A" & INSERT HOLES TO BE FREE OF ANODIZE.
ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED .125√



.701
.190
.170
.625 DIA
2 PLACES
.388
.395 DIA
2 PLACES
SECTION C-C
.411 DIA
.115
.119
.22
.313
PARTIAL SECTION D-D
Y
2.320
1.281
.24
1.26
A
C
E
.50 R
N2
K1
F1
F2
M1
E1
E2
H1
J1
J2
L1
N1
S1
1.656 DIA
45°
30°
D
P2
P1
D1
D2
D3
D4
D5
A11
B10
.337 R
2 PLACES
CSK 60° TO .089 .104 DIA
X
.220
.400
1.234
.14
SH 2 ZONE F-3
.685
.19
32
.202
.206 DIA
2 PLACES
.550 DIA
2 PLACES
SECTION E-E
.383
.389 DIA
.062 R
.187
.443
.436 DIA
2 PLACES
.090 R
2 PLACES
.181
2 PLACES
.20 DIA
.20
DIA
.25
.300
.330
.270
.276 DIA
.237
.328
.094
.125
.453
.484
.20
.403
.409 DIA
2 PLACES
PARTIAL SECTION B-B
.112
.090 R
.302
.308 DIA
PARTIAL SECTION A-A

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW THREAD
1	1	1015693-1	HEATSINK

LIST OF PARTS AND MATERIALS

1007042	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	±.005	±1°
−	±.02	−

DO NOT SCALE THIS DRAWING

MATERIAL MAG ALLOY ZK-60A-T5 PER QQ-M-31A

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN DATE 22 MAR 63
CHECKED 10 APR 63
APPROVAL J.M. BLYSHAK S.L. KODEL 11 APR 63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

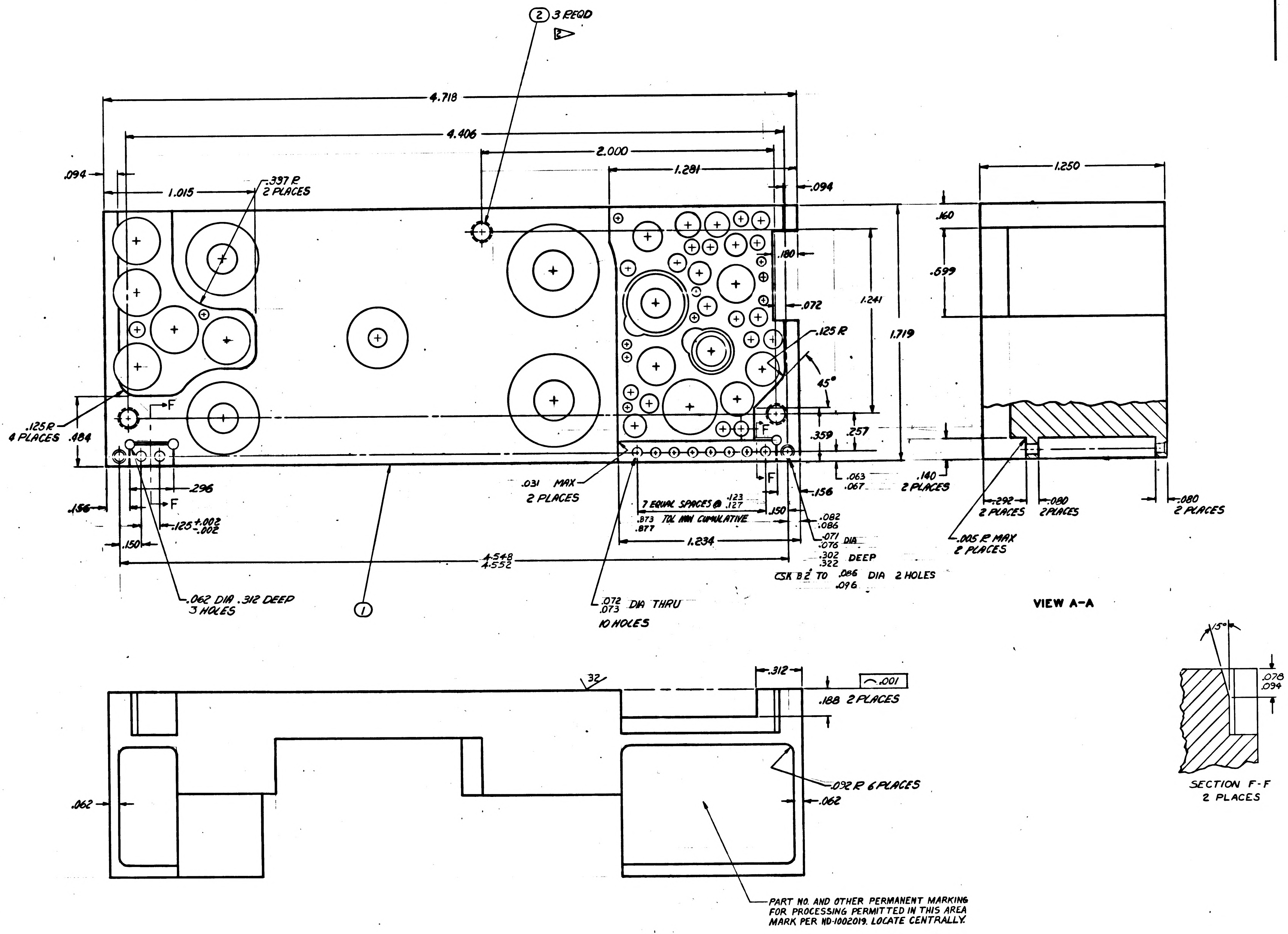
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
-28 VDC POWER SUPPLY

CODE IDENT NO.
SIZE B
1015693
SCALE 4:1
SHEET 1 OF 2

B 1015693

SYM	ZONE	REVISIONS T7RR 013.0 DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 03851		10-15-63	LK
B		REVISED PER TDRR 03852		10-15-63	LK



② 3 REQD
4.718
4.406
2.000
1.281
.094
1.015
.337 R
2 PLACES
.094
.180
.072
1.241
1.719
.125 R
45°
.359
.257
.063
.067
.140
2 PLACES
.125 R
4 PLACES
.484
.156
.296
F
F
F
F
.125 +.002 -.002
.150
.031 MAX
2 PLACES
7 EQUAL SPACES @ .123 .127
.873 .877 TOL NON CUMULATIVE
.150
1.234
.156
.082 .086
.071 .076 DIA
.302 .322 DEEP
CSK 82° TO .086 .096 DIA 2 HOLES
4.548 4.552
.062 DIA .312 DEEP
3 HOLES
①
.072 .073 DIA THRU
10 HOLES
1.250
.160
.699
.292
2 PLACES
.080
2 PLACES
.080
2 PLACES
.005 R MAX
2 PLACES
15°
.078 .094
32
.312
⌒ .001
.188 2 PLACES
.062
.092 R 6 PLACES
.062

VIEW A-A

SECTION F-F
2 PLACES

PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA MARK PER ND-1002019. LOCATE CENTRALLY.

1007042	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 25 MAR 63
CHECKED 10 APR 63
APPROVAL A KODEL 11 APR 63
APPROVAL
NASA APPROVAL 5-22-63 W.J. Rhine
MIT APPROVAL W Kupfer 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
-28 VDC POWER SUPPLY

CODE IDENT NO.
SIZE E
1015693
SCALE 4:1
SHEET 2 OF 2

B 1015693 B

INCHES
PHOTOGRAPHIC SCALE ONLY

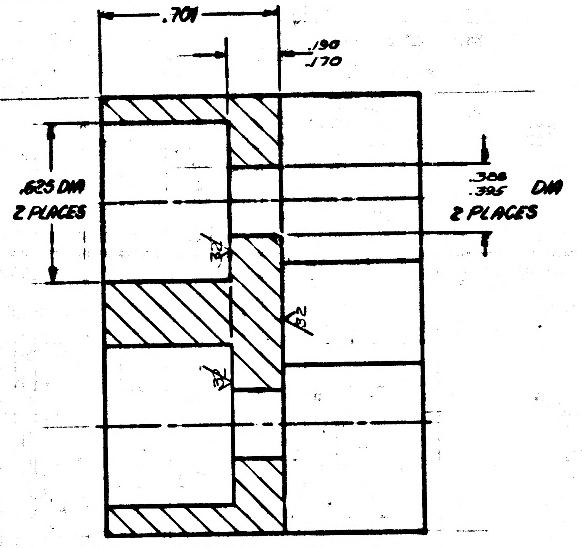
C	1015693

REVISIONS TDRR C 310

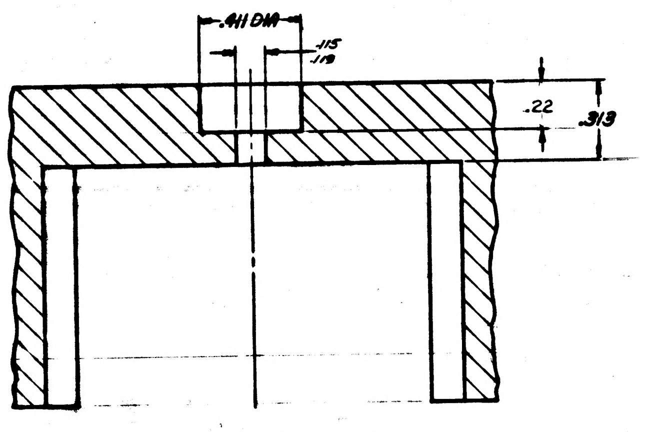
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 03851		10-15-63	LK
B		REVISED PER TDRR 03852		10-15-63	LK
C		REVISED PER TDRR 05422		27 DEC 63	EPK

SEE NOTE ③

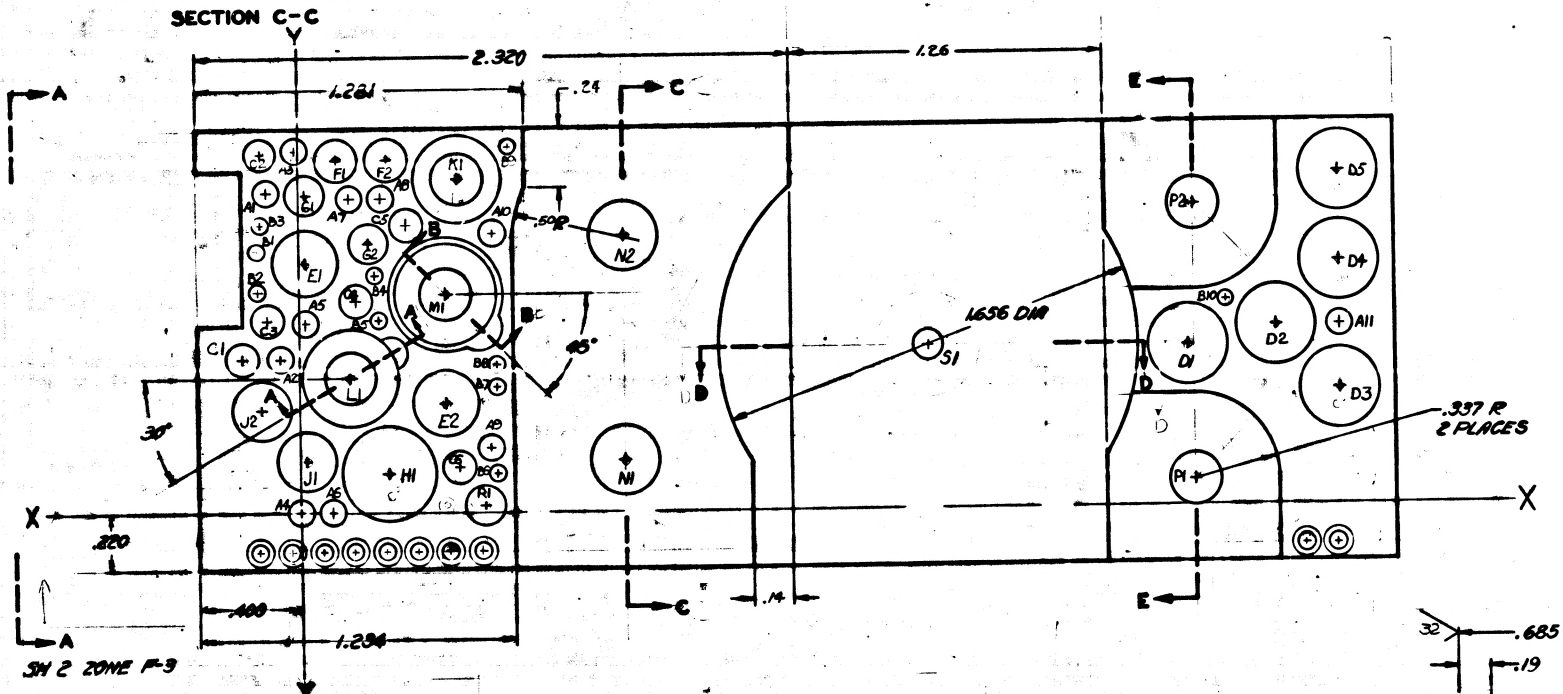
HOLE NO.	X DIM	Y DIM		HOLE DIA	QTY
A1	-.125	1.250		.100 .104	11
A2	-.075	.600			
A3	-.012	1.412			
A4	.000	.000			
A5	.025	.740			
A6	.125	.000			
A7	.200	1.225			
A8	.325	1.225			
A9	.750	.250			
A10	.762	1.087			
A11	4.100	.700			
B1	-.162	1.025		.058 .062	10
B2	-.162	.862			
B3	-.150	1.125			
B4	.300	.925			
B5	.315	.750			
B6	.775	.150			
B7	.775	.487			
B8	.775	.575			
B9	.825	1.425			
B10	3.650	.800			
C1	-.225	.600		.129 .131	6
C2	.150	1.400			
C3	-.125	.750			
C4	.225	.825			
C5	.425	1.120			
C6	.625	.175			
D1	3.500	.625		.314 .321	5
D2	3.850	.700			
D3	4.100	.450			
D4	4.100	.950			
D5	4.100	1.300			
E1	.025	.975		.252 .259	2
E2	.575	.425			
F1	.150	1.375		.161 .165	
F2	.350	1.375			
G1	.025	1.240		.146 .150	2
G2	.275	1.050			
H1	.350	.150		.368 .375	1
R1	.725	.025		.151 .155	1
J1	.025	.200		.227 .231	2
J2	-.150	.400			
K1	.625	1.300		.20 DIA THRU .345 .352 C BORE .593 DEEP	1
L1	.200	.525		PARTIAL SECTION A-A	1
M1	.575	.850		PARTIAL SECTION B-B	1
N1	1.275	.200		SECTION C-C	2
N2	1.275	1.075			
S1	2.475	.637		PARTIAL SECTION D-D	1
P1	3.525	.100		SECTION E-E	2
P2	3.525	1.175			

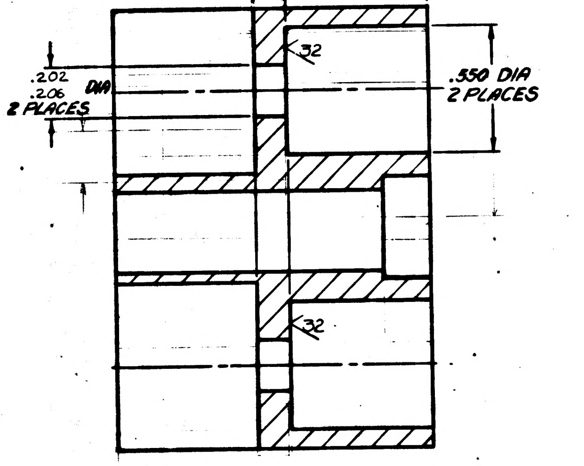

.701
.130
.170
.625 DIA
2 PLACES
.308
.395 DIA
2 PLACES
32
32
32

SECTION C-C


.411 DIA
.115
.119
.22
.313

PARTIAL SECTION D-D


Y
2.320
1.281
1.26
.24
A
C
E
K1
F1
F2
A1
A2
A3
A5
A6
A7
A8
A9
A10
B
B3
B4
C1
C5
E1
E2
G2
L1
M1
J1
J2
H1
R1
B8
N2
N1
.590
1.656 DIA
S1
D
45°
30°
P1
P2
D1
D2
D3
D4
D5
A11
B10
.337 R
2 PLACES
X
X
.220
.400
1.294
.14
SH 2 ZONE F-3


32
.685
.19
.202
.206 DIA
2 PLACES
.550 DIA
2 PLACES
32
32

SECTION E-E

UNLESS OUTHERWISE SPECIFIED:
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327

MUST BE FREE FROM BURRS.

COAT ALL THREADS & ITEM 2 REF WITH MIL-P-8585
WET ZINC CHROMATE PRIMER.

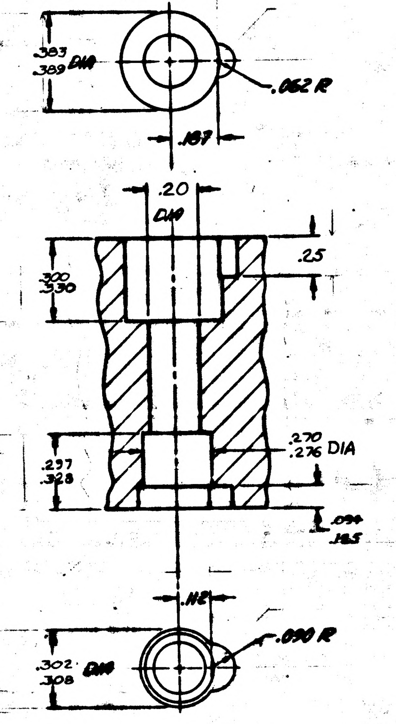
① ANODIZE PER MIL-M-3171A TYPE IV EXCEPT FOR THREADED HOLES

② INSTALL ITEM 2 PER MS-33646, REMOVE TANG.

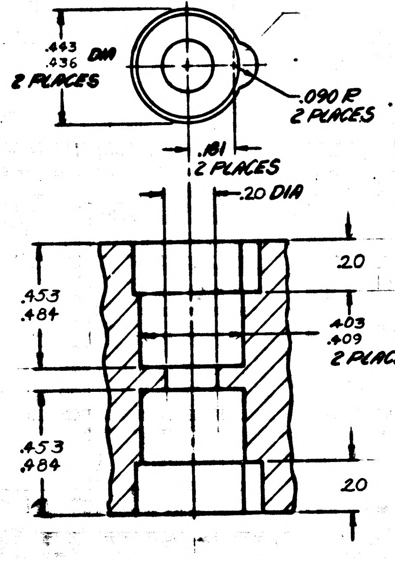
ALL FLAT SURFACES TO BE SQUARE AND
FLAT WITHIN .010.

DIA "A" & INSERT HOLES TO BE FREE OF ANODIZE.
ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√

③ THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DEFORMATION IN AN ADJACENT HOLE OR AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART


.383
.389 DIA
.062 R
.187
.20
DIA
.25
.320
.330
.270
.276 DIA
.237
.328
.094
.165
.140
.302
.308 DIA
.090 R

PARTIAL SECTION A-A


.443
.436 DIA
2 PLACES
.090 R
2 PLACES
.181
2 PLACES
.20 DIA
.20
.453
.484
.403
.409 DIA
2 PLACES
.453
.484
.20

PARTIAL SECTION B-B

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW THREAD
1	1	1015693-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007042	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ±.005 ±1°
− XX ±.02 −
DO NOT SCALE THIS DRAWING
MATERIAL MAG ALLOY ZK-60A-T5 PER QQ-M-31A
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 22 MAR 63
CHECKED 10 APR 63
APPROVAL J.M. BLYSHAK S.L. KODEL 11 APR 63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
-28 VDC POWER SUPPLY

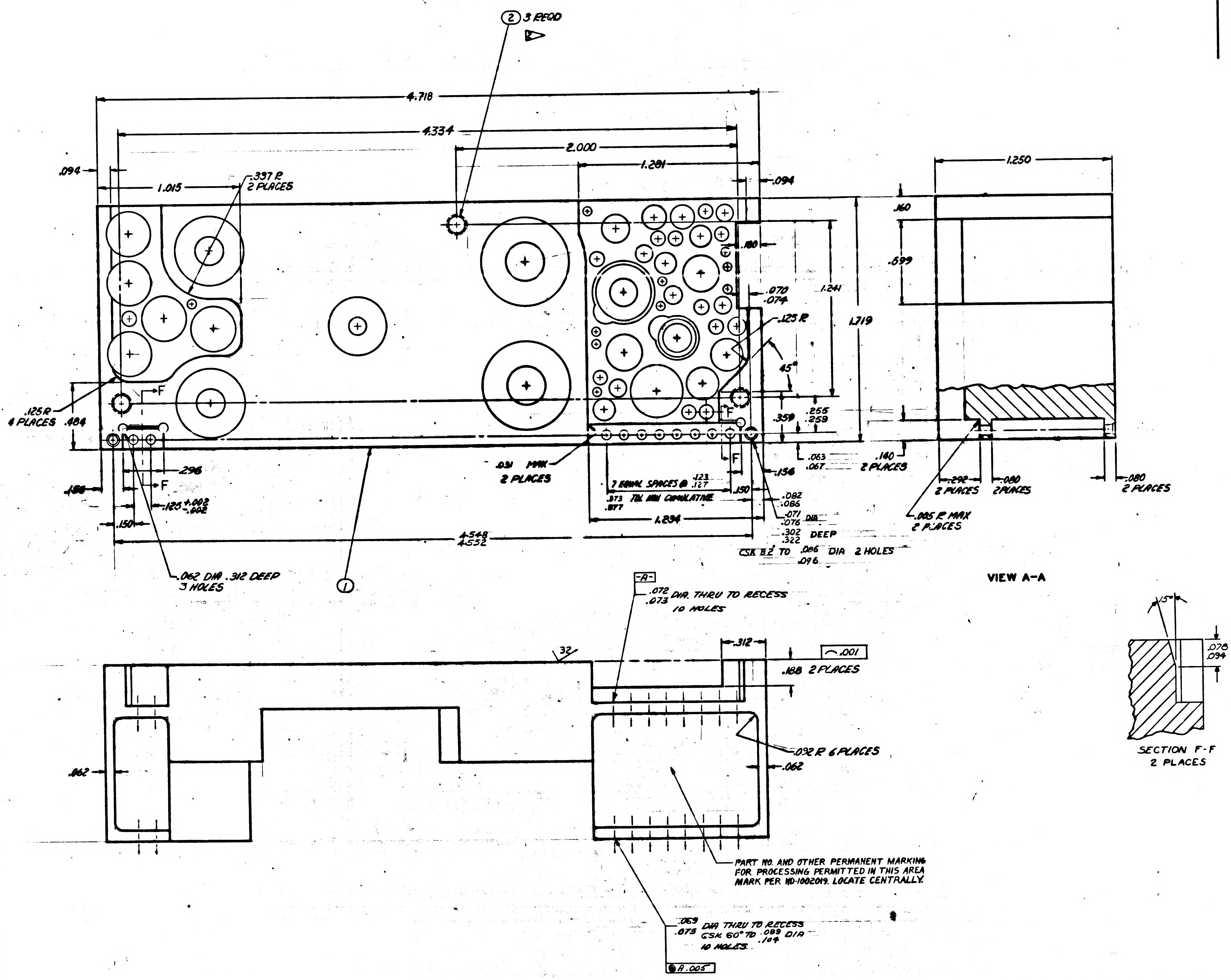
CODE IDENT NO. SIZE E 1015693
SCALE 4:1 SHEET 1 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

C 1015693

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 03851		10-15-63	LK
B		REVISED PER TDRR 03852		10-15-63	LK
C		REVISED PER TDRR 08422		27 Dec 63	EPK

REVISIONS TDRR 01310



② 3 REQD
4.718
4.334
2.000
1.281
.094
1.015
.337 R 2 PLACES
.094
.160
.180
.070 .074
1.241
.125 R
1.719
45°
.125 R 4 PLACES
.484
F
.359
.255 .259
.031 MAX 2 PLACES
.063 .067
.140 2 PLACES
.156
.296
.188
.120 +.002 -.002
.150
7 EQUAL SPACES @ .123 .127
.873 .877 TOL NON CUMULATIVE
.150
.082 .086
.071 .076 DIA
.302 .322 DEEP
1.234
4.548 4.552
CSK 82° TO .086 .096 DIA 2 HOLES
.062 DIA .312 DEEP 3 HOLES
①
1.250
.599
.292 2 PLACES
.080 2 PLACES
.080 2 PLACES
.005 R MAX 2 PLACES
VIEW A-A
-A-
.072 .073 DIA. THRU TO RECESS 10 HOLES
32
.312
.001
.188 2 PLACES
.062
.092 R 6 PLACES
.062
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA MARK PER MD-1002019. LOCATE CENTRALLY.
.069 .073 DIA THRU TO RECESS CSK 60° TO .089 .104 DIA 10 HOLES
A .005
15°
.078 .094
SECTION F-F 2 PLACES

1007042		
NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 25 MAR 63
CHECKED [illegible]
A KODEL 11 APR 63
APPROVAL [illegible]
APPROVAL [illegible]
NASA APPROVAL W. J. [illegible] 5-22-63
MIT APPROVAL [illegible] 22 May 63

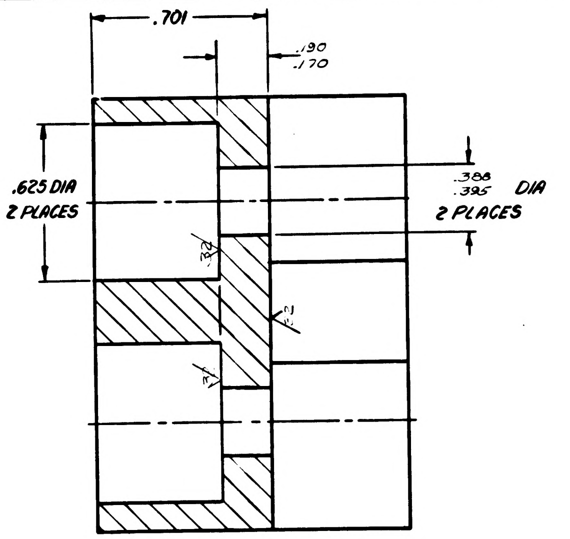
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
-28 VDC POWER SUPPLY

CODE IDENT NO.
SIZE E
1015693
SCALE 4:1
SHEET 2 OF 2

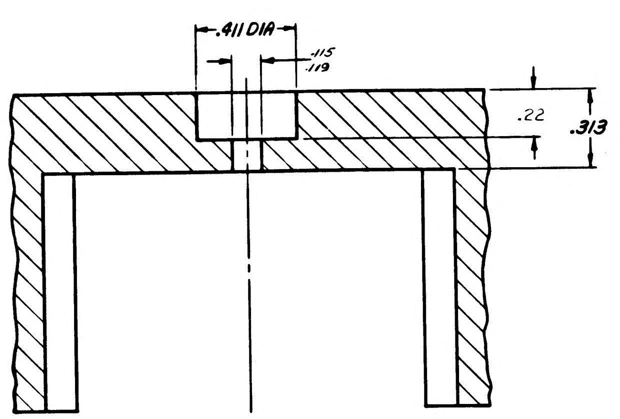
SEE NOTE 3

HOLE NO.	X DIM	Y DIM		HOLE DIA	QTY
A1	-.125	1.2[illegible]		.100 .104	11.
A2	-.275	.600			
A3	-.012	1.412			
A4	.200	[illegible]			
A5	.025	.740			
A6	.125	[illegible]			
A7	.200	1.225			
A8	.3[illegible]	1.225			
A9	.700	.250			
A10	.762	1.087			
A11	4.100	.700			
B1	-.162	1.025		.058 .062	10
B2	-.162	.862			
B3	-.1[illegible]	.125			
B4	.200	.325			
B5	.325	.250			
B6	.775	.150			
B7	.775	.437			
B8	.775	.5[illegible]			
B9	.8[illegible]	.425			
B10	3.[illegible]	.5[illegible]			
C1	-.225	.[illegible]00		.129 .131	6
C2	-.150	1.400			
C3	-.125	.750			
C4	.225	.[illegible]25			
C5	.425	1.120			
C6	.625	.175			
D1	3.500	.825		.314 .321	5
D2	3.850	.700			
D3	4.100	.450			
D4	4.100	.950			
D5	4.100	1.300			
E1	.025	.975		.252 .259	2
E2	.575	.425			
F1	.150	1.375		.161 .165	
F2	.350	1.375			
G1	.025	1.240		.146 .150	2
G2	.275	1.050			
H1	.350	.150		.368 .375	1
R1	.725	.025		.151 .155	1
J1	.025	.200		.227 .231	2
J2	-.150	.400			
K1	.625	1.300		.[illegible]0 DIA THRU .345 .352 C BORE .[illegible]93 DEEP	1
L1	.200	.525		PARTIAL SECTION A-A	1
M1	.575	.850		PARTIAL SECTION B-B	1
N1	1.275	.200		SECTION C-C	2
N2	1.275	1.075			
S1	2.475	.637		PARTIAL SECTION D-D	1
P1	3.525	.100		SECTION E-E	2
P2	3.525	1.175			



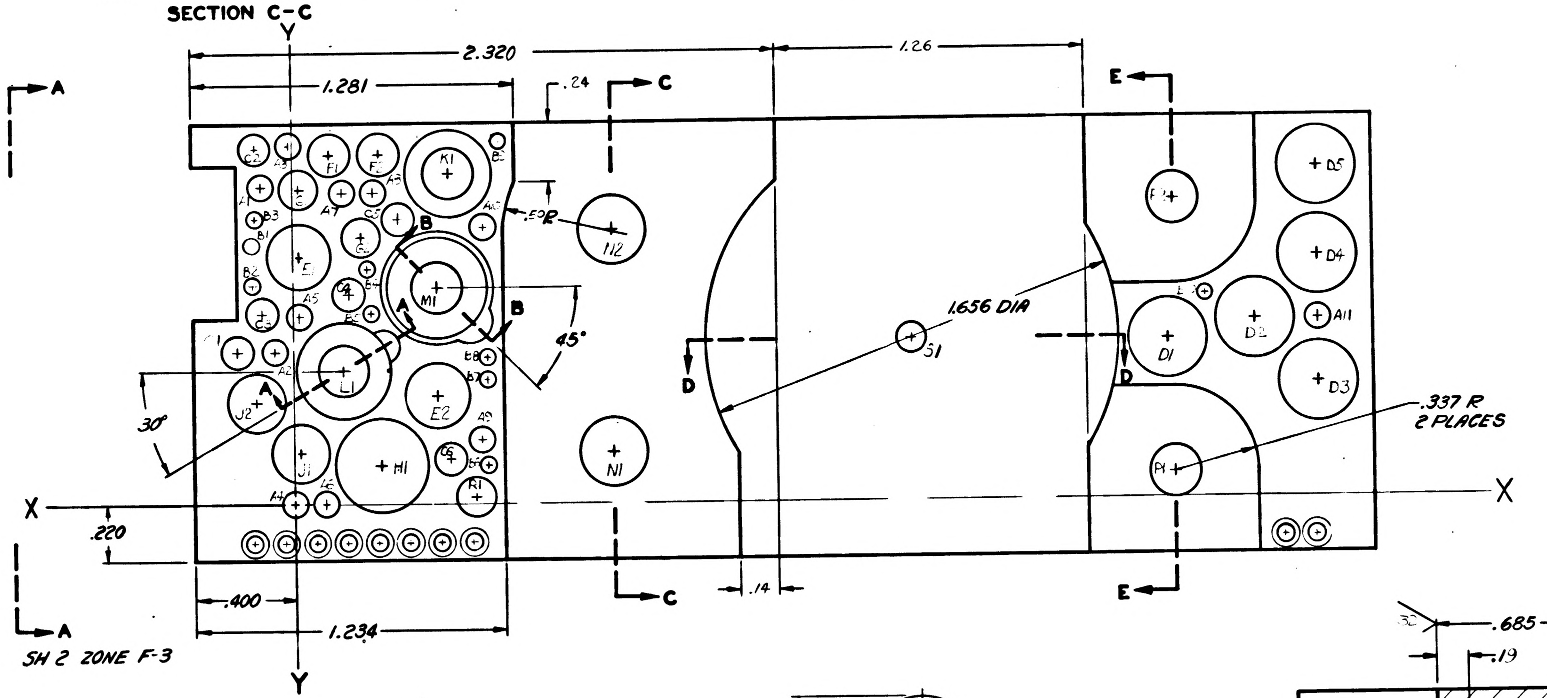
.701
.130
.170
.625 DIA
2 PLACES
.388
.395 DIA
2 PLACES

SECTION C-C

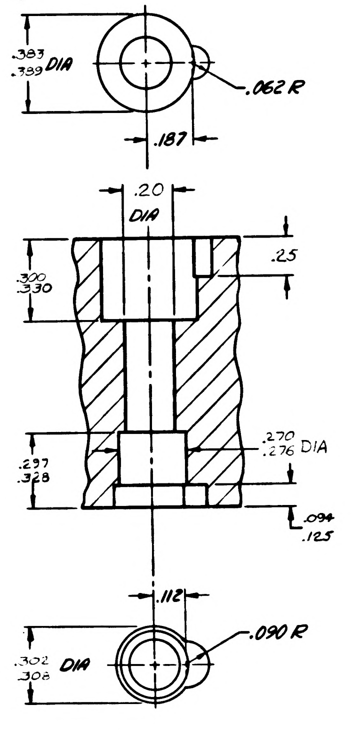


.411 DIA
.115
.119
.22
.313

PARTIAL SECTION D-D

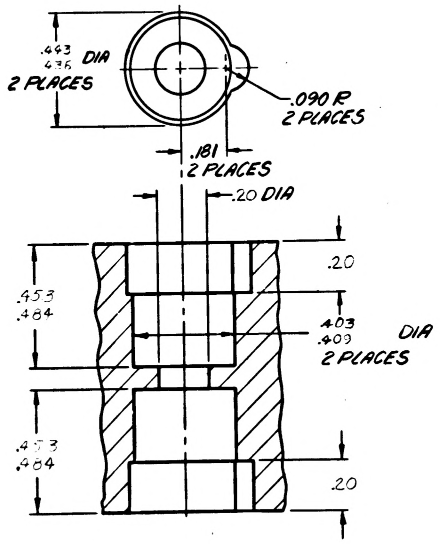


2.320
1.281
1.26
.24
C
E
A
B
45°
30°
1.656 DIA
S1
D
D1
D2
D3
D4
D5
A11
N1
N2
H1
E2
L1
M1
K1
J1
J2
P1
.337 R
2 PLACES
X
Y
.220
.400
1.234
.14
SH 2 ZONE F-3



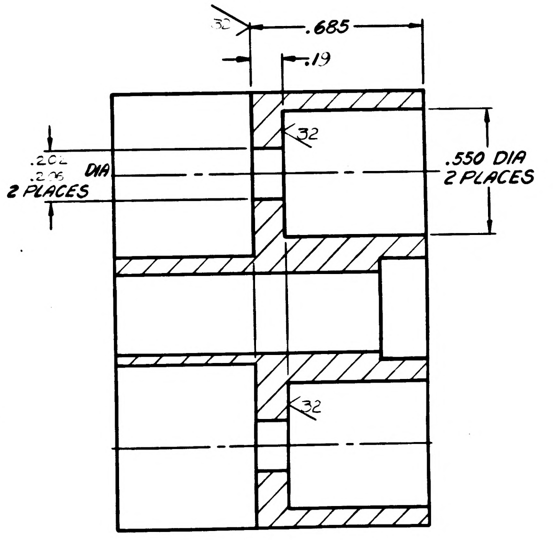
.383
.389 DIA
.062 R
.187
.20
DIA
.25
.300
.330
.270
.276 DIA
.297
.328
.094
.125
.112
.302
.308 DIA
.090 R

PARTIAL SECTION A-A



.443
.436 DIA
2 PLACES
.090 R
2 PLACES
.181
2 PLACES
.20 DIA
.20
.453
.484
.403
.409 DIA
2 PLACES
.453
.484
.20

PARTIAL SECTION B-B



30°
.685
.19
DIA
2 PLACES
.550 DIA
2 PLACES
32
32

SECTION E-E

UNLESS OUTHERWISE SPECIFIED:
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327

MUST BE FREE FROM BURRS.

COAT ALL THREADS & ITEM 2 REF WITH MIL-P-8585
WET ZINC CHROMATE PRIMER.

1 ANODIZE PER MIL-M-3171A TYPE IV EXCEPT FOR THREADED HOLES

2 INSTALL ITEM 2 PER MS-33646, REMOVE TANG.

ALL FLAT SURFACES TO BE SQUARE AND
FLAT WITHIN .010.

DIA "A" & INSERT HOLES TO BE FREE OF ANODIZE.
ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED .125√

3 THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DEFORMATION IN AN ADJACENT HOLE OR AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART

D 1015693

REVISIONS TDRR					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 03851			
B		REVISED PER TDRR 03852			
C		REVISED PER TDRR 05422			
D		REVISED PER TDRR 109 8			

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW THREAD
1	1	1015693-1	HEATSINK

LIST OF PARTS AND MATERIALS

1007042	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS .XXX ±.005 .XX ±.02 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL MAG ALLOY ZK-60A-T5 PER QQ-M-31A
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 22 MAR 63
CHECKED C. Prosko 10 APR 63
APPROVAL [illegible] 11 APR 63
APPROVAL
NASA APPROVAL 5-22-63
MIT APPROVAL 12 May 63

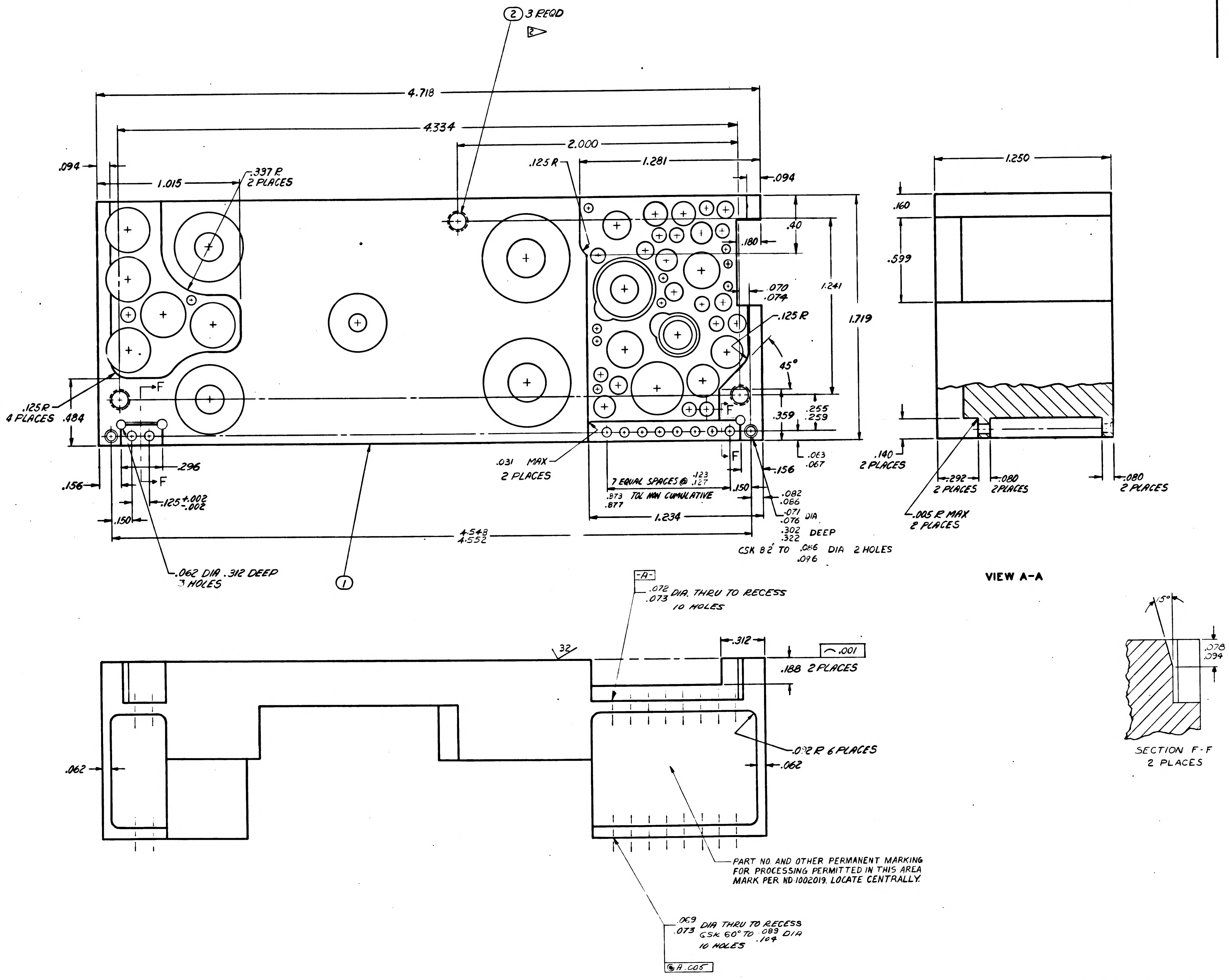
MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

HEATSINK
-28 VDC POWER SUPPLY

CODE IDENT NO
SIZE E
1015693
SCALE 4:1
SHEET 1 OF 2

1015693 D

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 03851		10-15-63	
B		REVISED PER TDRR 03852		10-5-63	
C		REVISED PER TDRR 05422			
D		REVISED PER TDRR 109			



② 3 REQD
4.718
4.334
2.000
1.281
.094
1.015
.337 R 2 PLACES
.125 R
.094
.180
.40
1.241
1.719
.070 .074
.125 R
45°
.125 R 4 PLACES
.484
.359
.255 .259
.063 .067
.156
.296
F
.125 +.002 −.002
.150
.031 MAX 2 PLACES
7 EQUAL SPACES @ .123 .127
.873 .877 TOL NON CUMULATIVE
.150
1.234
4.548 4.552
.156
.082 .066
.071 .076 DIA
.302 .322 DEEP
CSK 82° TO .086 .096 DIA 2 HOLES
.062 DIA .312 DEEP 3 HOLES
①
1.250
.160
.599
.140 2 PLACES
.292 2 PLACES
.080 2 PLACES
.080 2 PLACES
.005 R MAX 2 PLACES
VIEW A-A
-A-
.072 .073 DIA. THRU TO RECESS 10 HOLES
32
.312
.001
.188 2 PLACES
.062
.032 R 6 PLACES
.062
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA MARK PER ND-1002019. LOCATE CENTRALLY.
.069 .073 DIA THRU TO RECESS CSK 60° TO .089 .104 DIA 10 HOLES
⊚ A .005
15°
.078 .094
SECTION F-F 2 PLACES

1007042	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION. GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 25 MAR 63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL W Kupfer 22 Mar 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

HEATSINK
-28 VDC POWER SUPPLY

CODE IDENT NO | SIZE E | 1015693
SCALE 4:1 | SHEET 2 OF 2

HOLE NO.	X BASIC DIM	Y BASIC DIM	⌖ DIA	HOLE DIA	QTY
A1	-.125	1.250	.006	.100 .104	11
A2	-.075	.600			
A3	-.012	1.412			
A4	.000	.000			
A5	.025	.740			
A6	.125	.000			
A7	.200	1.225			
A8	.325	1.225			
A9	.750	.250			
A10	.762	1.087			
A11	4.100	.700			
B1	-.62	1.025	.006	.058 .062	10
B2	-.62	.862			
B3	-.[illegible]	1.125			
B4	.300	.325			
B5	.3[illegible]5	.750			
B6	.775	.150			
B7	.775	.487			
B8	.775	.575			
B9	.525	1.425			
B10	3.850	.800			
C1	-.225	.600	.006	.129 .131	6
C2	.150	1.400			
C3	-.125	.750			
C4	.225	.825			
C5	.425	1.120			
C6	[illegible]	.175			
D1	3.500	.625	.006	.314 .321	5
D2	3.850	.700			
D3	4.100	.450			
D4	4.100	.950			
D5	4.100	1.300			
E1	.025	.975	.006	.252 .259	2
E2	.575	.425			
F1	.150	1.375	.006	.161 .165	
F2	.350	1.375			
G1	.025	1.240	.006	.146 .150	2
G2	.275	1.050			
H1	.350	.150	.006	.368 .375	1
R1	.725	.025	.006	.151 .155	1
J1	.025	.200	.006	.227 .231	2
J2	-.150	.400			
K1	.625	1.300	.006	.20 DIA THRU .345 .352 C BORE .593 DEEP	1
L1	.200	.525	.006	PARTIAL SECTION A-A	1
M1	.575	.850	.006	PARTIAL SECTION B-B	1
N1	1.275	.200	.006	SECTION C-C	2
N2	1.275	1.075			
S1	2.475	.637	.006	PARTIAL SECTION D-D	1
P1	3.525	.100	.006	SECTION E-E	2
P2	3.525	1.175			

UNLESS OUTHERWISE SPECIFIED:
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327

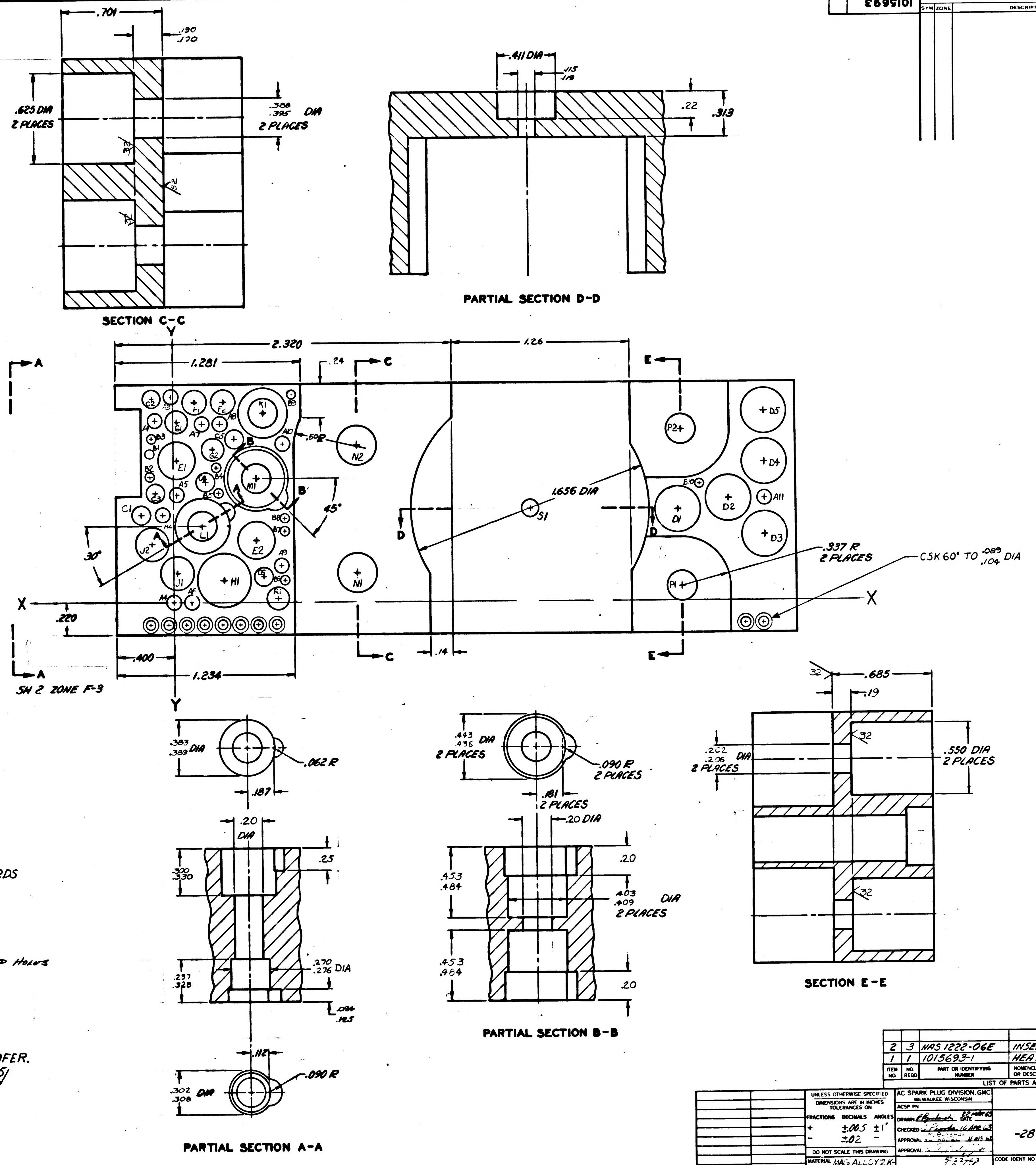
MUST BE FREE FROM BURRS.

COAT ALL THREADS & ITEM 2 REF WITH MIL-P-8585
WET ZINC CHROMATE PRIMER.

① ANODIZE PER MIL-M-3171A TYPE IV EXCEPT FOR THREADED HOLES

② INSTALL ITEM 2 PER MS-33646
EXCEPT DIM F TO BE .594, REMOVE TANG.
ALL FLAT SURFACES TO BE SQUARE AND
FLAT WITHIN .010.

DIA "A" & INSERT HOLES TO BE FREE OF ANODIZE.
ALL CORNERS MUST BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√


.701
.190
.170
.625 DIA
2 PLACES
.388
.395 DIA
2 PLACES
32
.411 DIA
.115
.119
.22
.313
2.320
1.281
1.26
.24
A
C
E
1.656 DIA
S1
45°
30°
.337 R
2 PLACES
CSK 60° TO .089 .104 DIA
X
Y
D
.220
.400
1.234
.14
SH 2 ZONE F-3
.685
.19
.550 DIA
2 PLACES
.202
.206 DIA
2 PLACES
.383
.389 DIA
.062 R
.187
.20 DIA
.25
.300
.330
.270
.276 DIA
.237
.328
.094
.125
.112
.302
.308 DIA
.090 R
.443
.436 DIA
2 PLACES
.090 R
2 PLACES
.181
2 PLACES
.20 DIA
.20
.453
.484
.403
.409 DIA
2 PLACES
A1
B1
C1
D1
D2
D3
D4
D5
E1
E2
H1
J1
J2
K1
L1
M1
N1
N2
P1
P2

SECTION C-C

PARTIAL SECTION D-D

PARTIAL SECTION B-B

SECTION E-E

PARTIAL SECTION A-A

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	NAS 1222-06E	INSERT, SCREW THREAD
1	1	1015693-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007042	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + – DECIMALS ±.005 ±.02 ANGLES ±1° –
DO NOT SCALE THIS DRAWING
MATERIAL MAG ALLOY ZK-60A-T5 PER QQ-M-31A
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 22 MAR 63
CHECKED [illegible] 16 APR 63
APPROVAL M. BLYSHAK 11 APR 63
APPROVAL [illegible]
NASA APPROVAL [illegible] 5-22-63
MIT APPROVAL [illegible] APR 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
-28 VDC POWER SUPPLY

CODE IDENT NO
SIZE E
1015693
SCALE 4:1
SHEET 1 OF 2

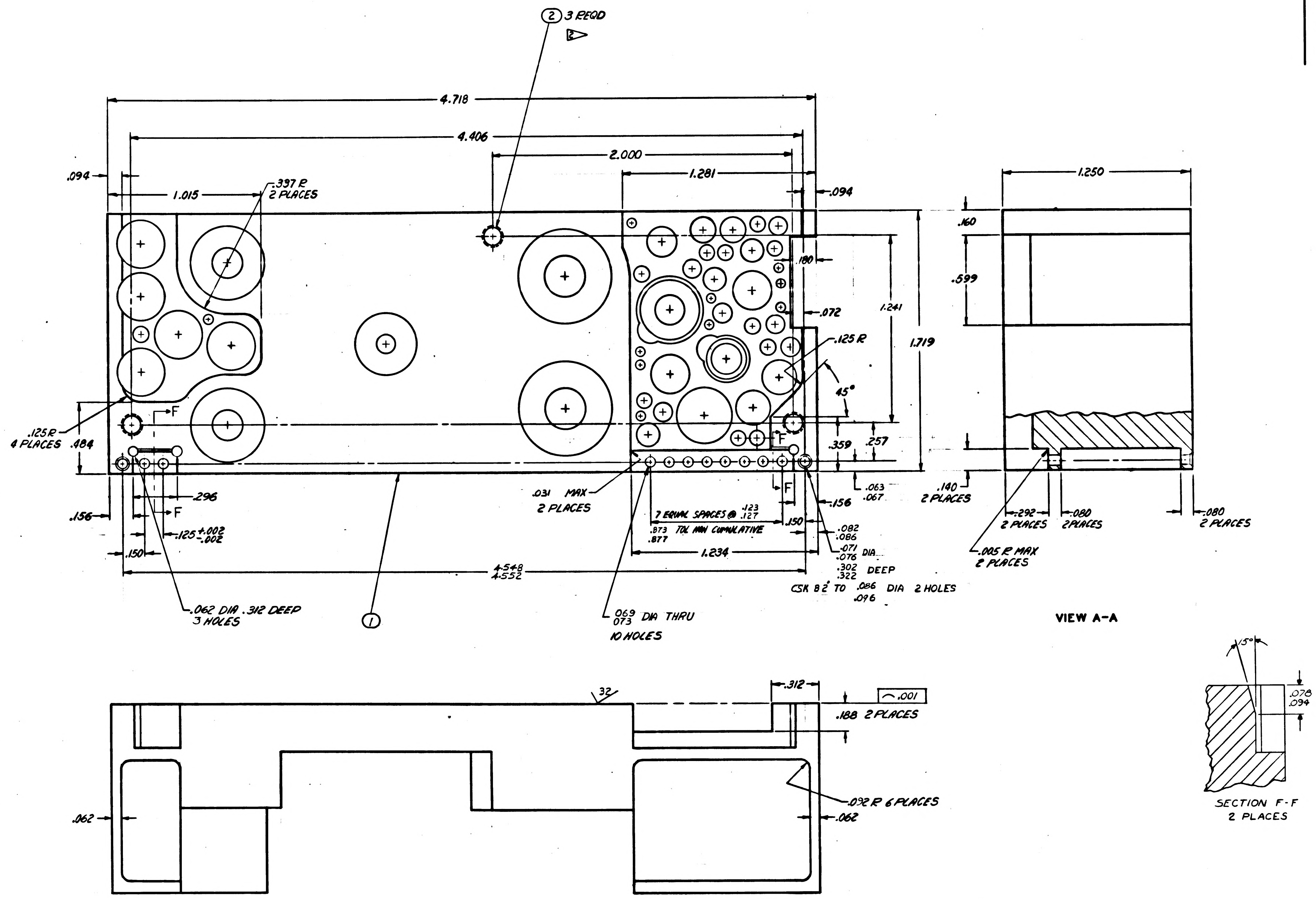
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD

REVISIONS

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD
		CHG NO		

1015693



② 3 REQD
4.718
4.406
2.000
1.281
.094
1.015
.337 R
2 PLACES
.094
.160
.599
.180
1.241
1.719
.072
.125 R
45°
.125 R
4 PLACES
.484
F
.359
.257
.063
.067
.140
2 PLACES
1.250
.296
.156
.125 +.002 -.002
F
.150
.031 MAX
2 PLACES
7 EQUAL SPACES @ .123 .127
.873 .877 TOL NON CUMULATIVE
.150
.156
.082 .086
.071 .076 DIA
.302 .322 DEEP
CSK 82° TO .086 .096 DIA 2 HOLES
1.234
4.548 4.552
.062 DIA .312 DEEP
3 HOLES
①
.069 .073 DIA THRU
10 HOLES
.292
2 PLACES
.080
2 PLACES
.080
2 PLACES
.005 R MAX
2 PLACES
VIEW A-A
15°
.078 .094
SECTION F-F
2 PLACES
32
.312
.001
.188 2 PLACES
.062
.092 R 6 PLACES
.062

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
		FRACTIONS + − DECIMALS + − ANGLES + −	ACSP PN	
			DRAWN Rlandoski DATE 25 MAR 63	HEATSINK -28 VDC POWER SUPPLY
			CHECKED 11 APR 63	
			APPROVAL A KODEL 11 APR 63 11 APR 63	
		DO NOT SCALE THIS DRAWING	APPROVAL	
1007242		MATERIAL	NASA APPROVAL 5-22-63 W.J. Rhine	CODE IDENT NO — SIZE E — 1015693
NEXT ASSY	USED ON			
APPLICATION		CONTRACT	MIT APPROVAL 22 May 63	SCALE 4:1 — SHEET 2 OF 2

1015693

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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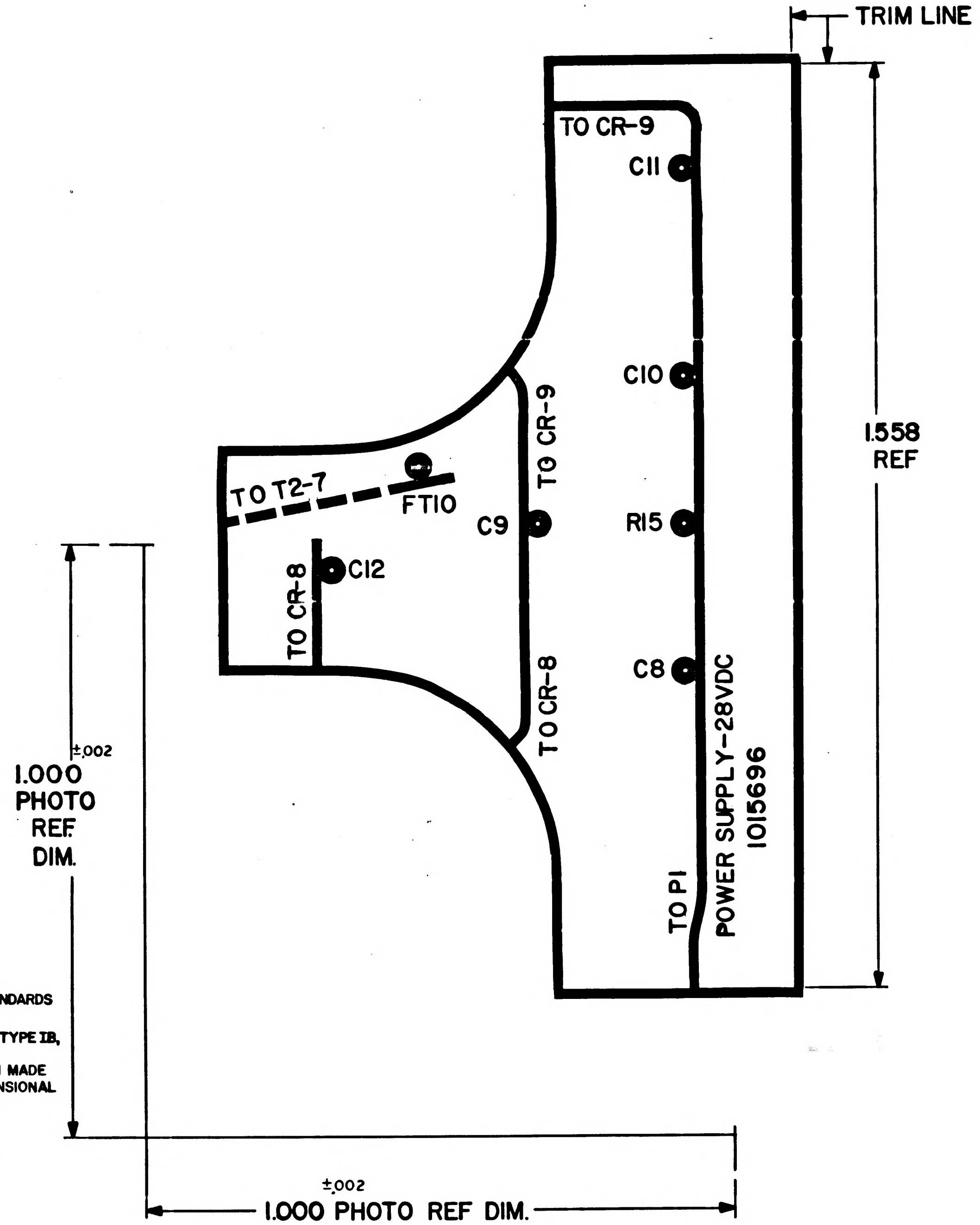
SYM	DESCRIPTION	DATE	APPROVAL

REVISIONS TDRR 01310



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: FILM .006/.008 THICK PER L-F-340 TYPE IB, CLASS 2, STYLE IA
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
4. CUT WITHIN .010 OF TRIM LINE
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
6. ● .045/.050 DIA PUNCH ALL HOLES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007042	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± # DECIMALS ± # ANGLES ± #
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT —//—
FINAL FINISH —//—

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN Z. O'Connell DATE 5-13-63
CHECKED C.L. Kingsbury 13 May 63
APPROVAL
APPROVAL
NASA APPROVAL W. J. Rhine 5-23-63
MIT APPROVAL W. Kupfer 22 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

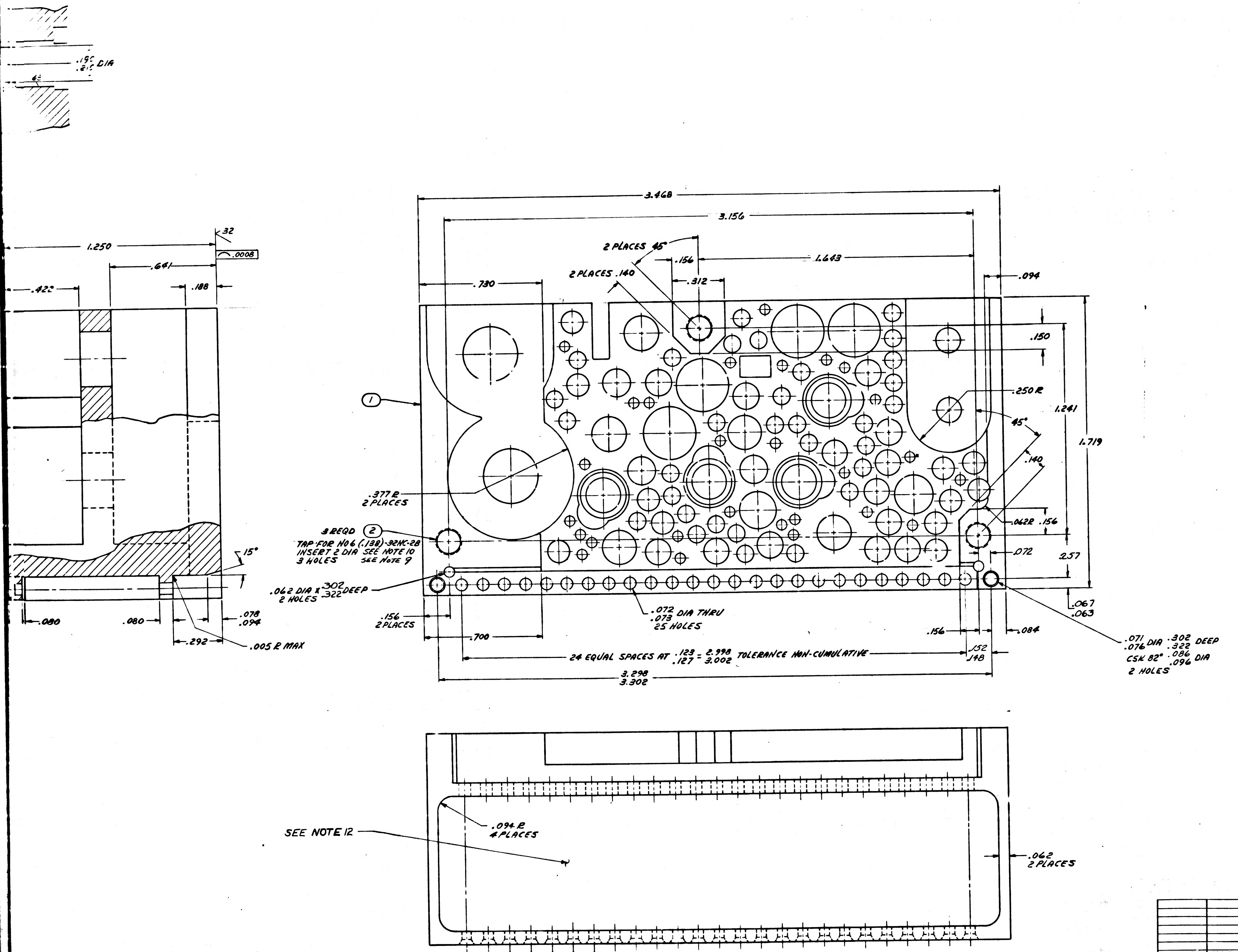
INSULATOR
PHOTOGRAPHIC MASTER
POWER SUPPLY -28VDC

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015696
SCALE 8/1
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015696

REVISIONS TDRR 02066					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 03851			
B		REVISED PER TDRR 03852			



.19c
.21c DIA
1.250
.641
.422
.188
32
.0008
15°
.080
.080
.078
.094
.292
.005 R MAX
3.468
3.156
2 PLACES 45°
.156
1.643
2 PLACES .140
.312
.730
.094
.150
.250 R
45°
1.241
1.719
.140
①
.377 R
2 PLACES
3 REQD ②
TAP FOR NO 6 (.138)-32NC-2B
INSERT 2 DIA SEE NOTE 10
3 HOLES SEE NOTE 9
.062R .156
.072
.257
.062 DIA x .302 .322 DEEP
2 HOLES
.067
.063
.156
2 PLACES
.072 .073 DIA THRU
25 HOLES
.156
.084
.700
.071 .076 DIA .302 .322 DEEP
CSK 82° .086 .096 DIA
2 HOLES
24 EQUAL SPACES AT .123 .127 = 2.998 3.002 TOLERANCE NON-CUMULATIVE
.152
.148
3.298
3.302
SEE NOTE 12
.094 R
4 PLACES
.062
2 PLACES

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW-LOCKING
1	1	1015698-1	HEATSINK

LIST OF PARTS AND MATERIALS

1007060	1007060
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+—	+.005	+½°
——	—.005	—½°

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Lermann DATE 6 JUN 63
CHECKED 19 JUNE 63
APPROVAL 19 JUN 63
APPROVAL D.R. Test 15 JUL 63
NASA APPROVAL 7/17/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK -
MOTOR DRIVE AMPLIFIER
AND SELECTOR CIRCUIT

CODE IDENT NO.
SIZE J
1015698
SCALE 5:1
SHEET

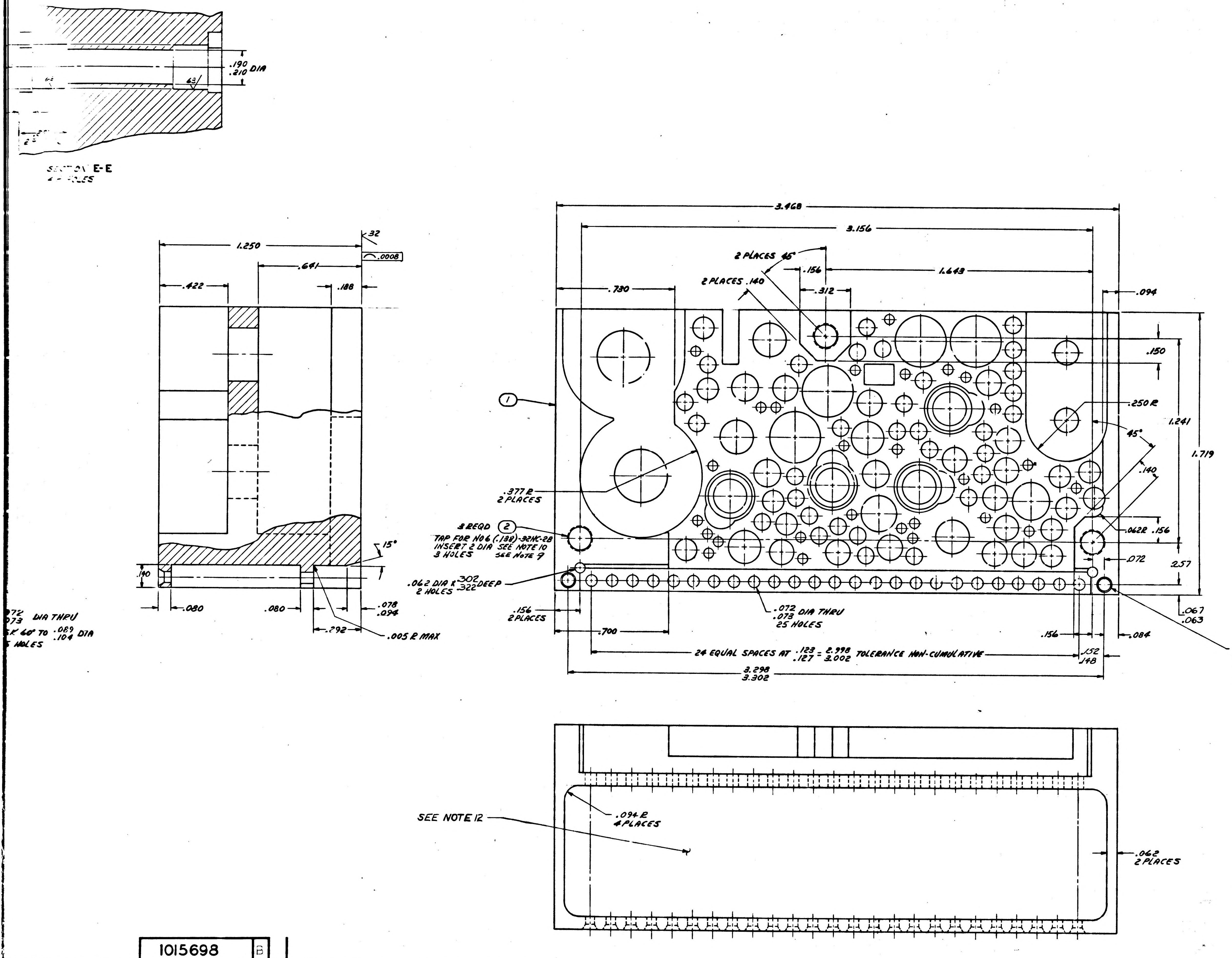
1015698

INCHES
PHOTOGRAPHIC SCALE ONLY

F3

SYM	ZONE	DESCRIPTION	CHG NO	DATE
A		REVISED PER TDRR 03335		
B		REVISED PER TDRR 03952		

REVISIONS TDRR



SECTION E-E
4 HOLES
.190
.210 DIA
63
1.250
.641
.422
.188
32
.0008
15°
.140
.080
.080
.078
.094
.292
.005 R MAX
.072
.073 DIA THRU
CSK 60° TO .089
.104 DIA
HOLES
3.468
3.156
2 PLACES 45°
.156
1.643
2 PLACES .140
.312
.730
.094
.150
1
.250 R
1.241
1.719
45°
.140
.377 R
2 PLACES
3 REQD 2
TAP FOR NO 6 (.138)-32NC-2B
INSERT 2 DIA SEE NOTE 10
3 HOLES SEE NOTE 9
.062 R .156
.072
.257
.062 DIA X .302
.322 DEEP
2 HOLES
.067
.063
.156
2 PLACES
.072 DIA THRU
.073
25 HOLES
.700
.156
.152
.148
.084
.071
.076 DIA .302
.322 DEEP
CSK 82° .086
.096 DIA
2 HOLES
24 EQUAL SPACES AT .123
.127 = 2.998
3.002 TOLERANCE NON-CUMULATIVE
3.298
3.302
SEE NOTE 12
.094 R
4 PLACES
.062
2 PLACES

1015698	B

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS2112_-C0620	INSERT SCREW-LOCKING
1	1	10156-3-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007060	1007060

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ −	+.005	+ 1/2°
− −	−.005	− 1/2°

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Lueman DATE JUN 63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL 7/17/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

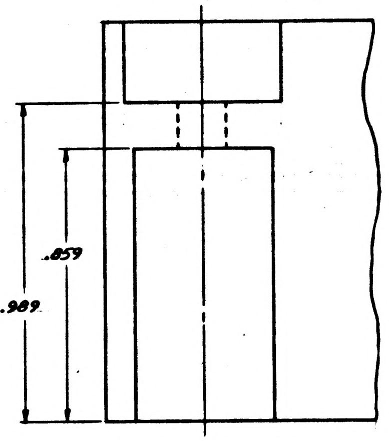
HEAT SINK -
MOTOR DRIVE AMPLIFIER
AND SELECTOR CIRCUIT

CODE IDENT NO.
SIZE J
1015698
SCALE 2:1
SHEET

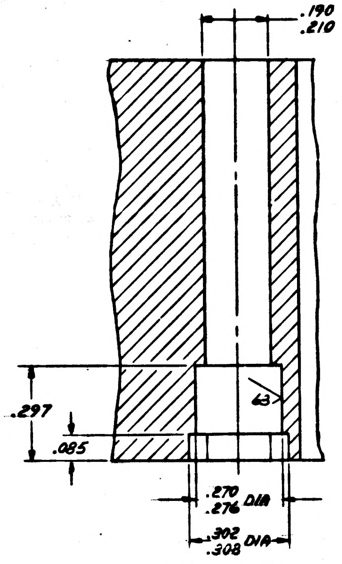
INCHES
PHOTOGRAPHIC SCALE ONLY

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⊕ DIM	HOLE DIA	QTY
A1	0.140	0.150	.006	.058 .062	27
A2	0.540	0.460			
A3	0.350	0.890			
A4	0.640	1.130			
A5	0.530	1.080			
A6	0.900	1.100			
A7	2.180	0.200			
A8	0.840	0.190			
A9	1.000	1.430			
A10	0.410	0.230			
A11	0.950	0.640			
A12	0.920	0.160			
A13	1.530	-0.030			
A14	1.230	0.240			
A15	0.150	0.550			
A16	-0.150	0.410			
A17	1.280	0.660			
A18	0.850	0.100			
A19	1.700	0.890			
A20	1.790	0.890			
A21	1.210	1.120			
A22	1.540	0.100			
A23	2.090	0.530			
A24	2.110	0.000			
A25	2.120	0.120			
A26	2.200	1.230			
A27	2.050	0.070			
B1	0.410	0.620	.006	.100 .104	31
B2	0.240	0.860			
B3	0.420	0.750			
B4	0.240	0.990			
B5	0.240	1.120			
B6	0.750	0.640			
B7	0.820	0.750			
B8	0.240	1.250			
B9	1.040	1.250			
B10	0.910	0.920			
B11	0.950	0.750			
B12	0.240	1.400			
B13	0.790	1.060			
B14	0.510	0.350			
B15	0.840	-0.010			
B16	1.140	-0.010			
B17	1.430	0.110			
B18	1.190	0.110			
B19	1.490	0.230			
B20	1.780	0.190			
B21	1.580	0.470			
B22	1.310	0.170			
B23	2.120	1.150			
B24	1.560	1.150			
B25	1.300	0.770			
B26	0.430	0.490			
B27	1.200	1.230			
B28	1.570	0.340			
B29	1.140	1.380			
B30	2.260	0.920			
B31	2.190	0.790			
C1	2.150	1.370	.006	.127 .131	5
C2	2.250	0.020			
C3	1.710	0.320			
C4	1.630	0.180			
C5	2.120	1.000			

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⊕ DIM	HOLE DIA	QTY
C6	0.000	0.160	.006	.127 .131	6
C7	0.000	0.000			
C8	-0.090	0.290			
C9	-0.260	0.350			
C10	-0.050	0.480			
C11	-0.230	0.510			
D1	0.170	0.010	.006	.146 .150	6
D2	0.350	0.350			
D3	0.280	0.520			
D4	0.280	0.170			
D5	0.350	0.010			
D6	1.310	0.010			
E1	1.660	0.010	.006	.151 .155	2
E2	0.600	0.580			
F1	0.270	0.700	.006	.153 .157	5
F2	0.390	1.050			
F3	1.120	0.920			
F4	0.990	0.040			
F5	1.640	1.010			
G1	1.750	0.490	.006	.165 .169	1
H1	1.130	0.710	.006	.202 .205	2
H2	1.890	0.040			
J1	1.060	0.250	.006	.220 .224	1
K1	0.130	0.330	.006	.227 .231	1
L1	0.470	1.300	.006	.306 .313	4
L2	0.810	1.300			
L3	1.580	0.710			
L4	1.380	0.990			
M1	2.640	1.190	.006	.321 .327	2
M2	2.530	0.470			
N1	1.080	0.490	.006	SEE SECT C-C	2
N2	1.890	1.010			
P1	1.740	1.300	.006	SEE SECT B-B	1
R1	0.630	0.890	.006	SEE SECT E-E	4
R2	1.350	0.420			
R3	0.810	0.410			
R4	1.980	0.350			
S1	0.610	0.110	.006	SEE SECT D-D	2
S2	1.940	0.710			

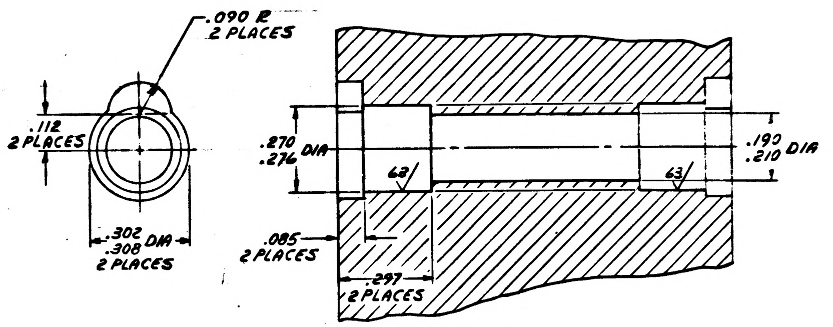


VIEW A-A



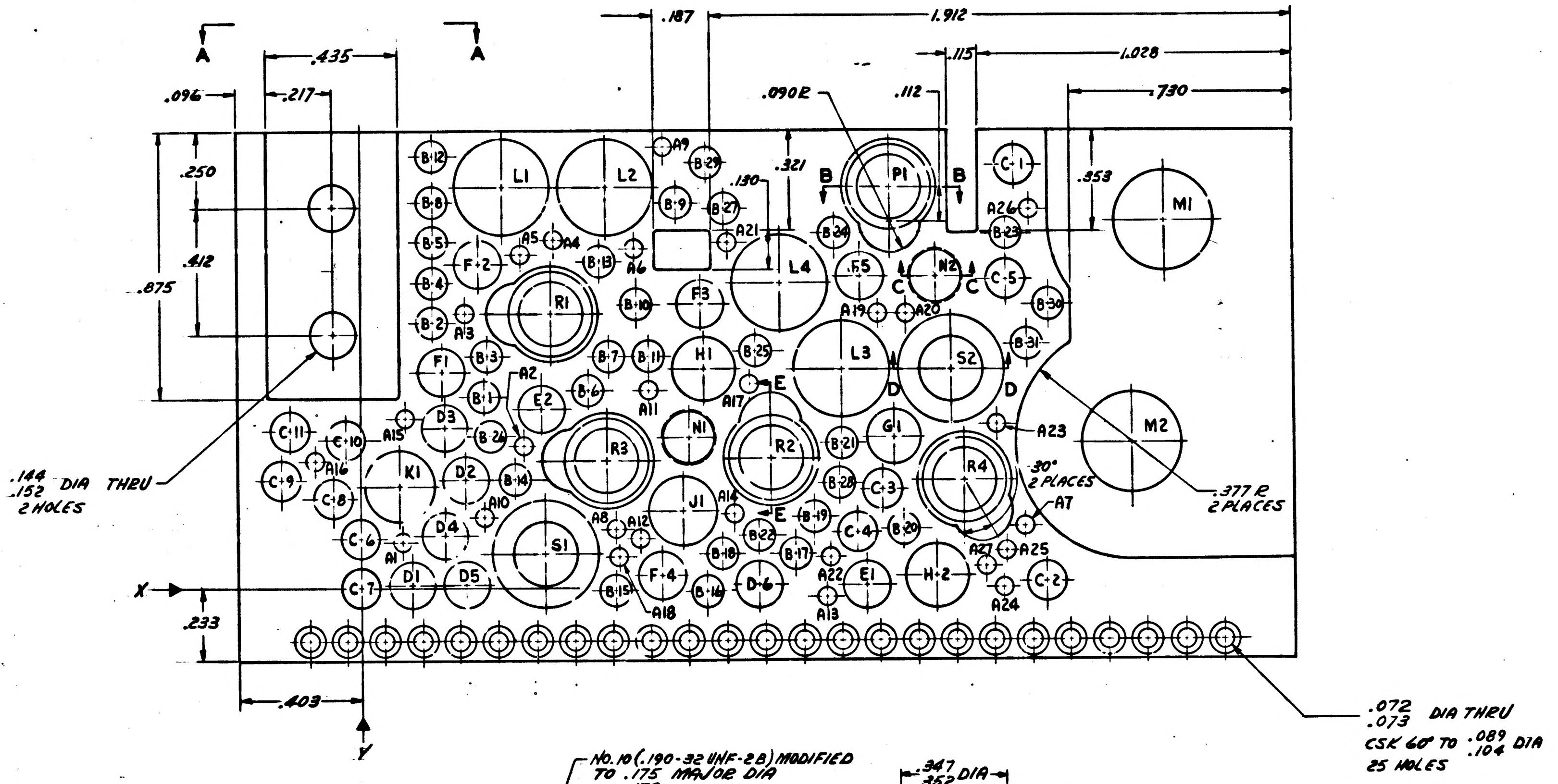
.190
.210 DIA
63
.297
.085
.270
.276 DIA
.302
.308 DIA

SECTION B-B



.090 R
2 PLACES
.112
2 PLACES
.302
.308 DIA
2 PLACES
.270
.276 DIA
63
63
.190
.210 DIA
.085
2 PLACES
.297
2 PLACES

SECTION E-E
4R HOLES



A
A
.435
.096
.217
.250
.412
.875
.144
.152 DIA THRU
2 HOLES
.187
1.912
.115
1.028
.730
.090R
.112
.130
.321
.353
B
B
C
C
D
D
E
E
.377 R
2 PLACES
30°
2 PLACES
X
Y
.233
.403
.072
.073 DIA THRU
CSK 60° TO .089
.104 DIA
25 HOLES
L1
L2
L3
L4
M1
M2
P1
N1
N2
R1
R2
R3
R4
S1
S2
K1
J1
H1
H-2
G1
F1
F-2
F3
F-4
F5
E1
E2
D1
D2
D3
D4
D5
D-6
C-1
C-2
C-3
C-4
C-5
C-6
C-7
C-8
C-9
C-10
C-11
B-1
B-2
B-3
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B-28
B-29
B-30
B-31
A1
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A20
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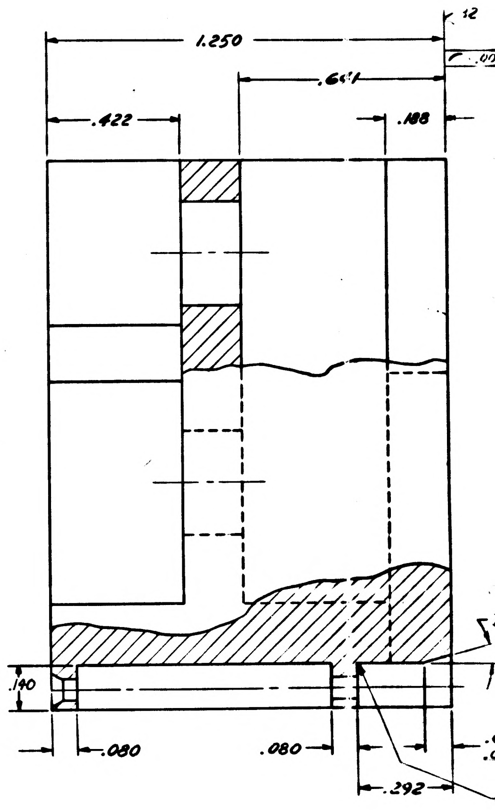
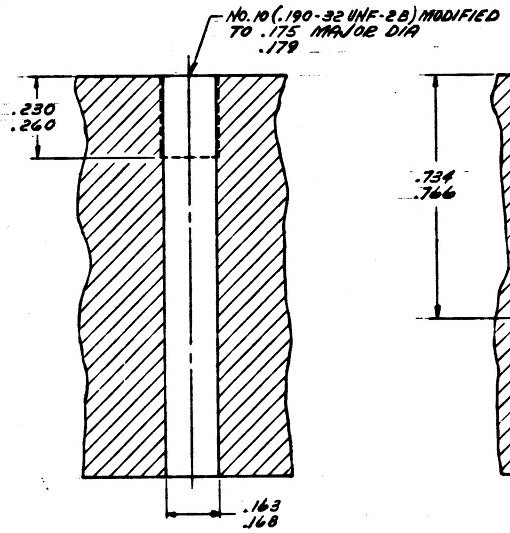
A22
A23
A24
A25
A26
A27

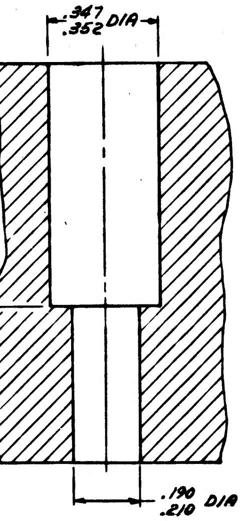


1.250
.422
.188
.140
.080
.080
.292



NO. 10 (.190-32 UNF-2B) MODIFIED
TO .175 MAJOR DIA
.179
.230
.260
.163
.168

SECTION C-C



.347
.352 DIA
.734
.766
.190
.210 DIA

SECTION D-D

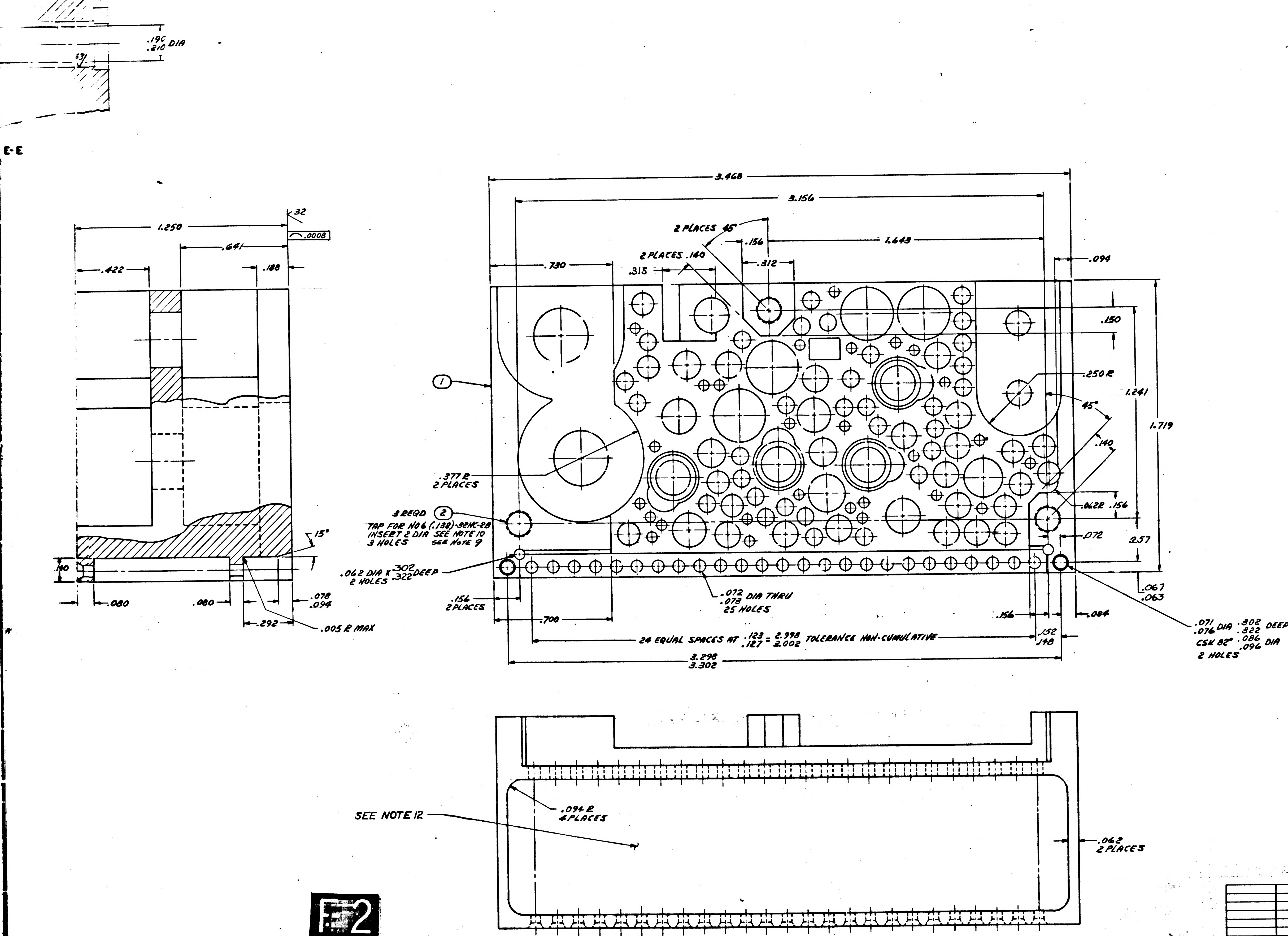
NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31A.
3. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII .010 MAX.
4. FLATNESS TO BE WITHIN .010.
5. UNLESS OTHERWISE SPECIFIED SURFACE ROUGHNESS MUST NOT EXCEED 125√.
6. TRUE POSITIONING AS SHOWN IN CHART.
7. ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.
8. REMOVE ALL BURRS AND BREAK SHARP EDGES .005-.015.
9. COAT THREADS AND ITEM NO 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
10. INSTALL ITEM NO 2 PER MS 33646, EXCEPT DIM. F TO BE .594, BREAK OFF DRIVING TANG.
11. FINISH: PLUG INSERT HOLES AND ANODIZE PER MIL-M-3171A, TYPE IV.
12. IDENTIFY USING PART NO. AND REV LETTER PER ND1002019

1015698

REVISIONS TDRR 02066

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 03851		[illegible]	[illegible]
B		REVISED PER TDRR 03852		[illegible]	[illegible]
C		REVISED PER TDRR 04665		[illegible]	[illegible]



.190
.210 DIA
.531
E-E
1.250
.641
.422
.188
32
.0008
15°
.140
.080
.080
.078
.094
.292
.005 R MAX
3.468
3.156
2 PLACES 45°
.156
1.649
2 PLACES .140
.312
.730
.315
.094
.150
1
.250 R
1.241
1.719
45°
.140
.377 R
2 PLACES
3 REQD 2
TAP FOR NO 6 (.138)-32NC-2B
INSERT 2 DIA SEE NOTE 10
3 HOLES SEE NOTE 9
.062 R .156
.072
.257
.062 DIA X .302
.322 DEEP
2 HOLES
.156
2 PLACES
.072
.073 DIA THRU
25 HOLES
.067
.063
.700
.156
.084
.152
.148
24 EQUAL SPACES AT .123
.127 = 2.998
3.002 TOLERANCE NON-CUMULATIVE
3.298
3.302
.071
.076 DIA .302
.322 DEEP
CSK 82° .086
.096 DIA
2 HOLES
SEE NOTE 12
.094 R
4 PLACES
.062
2 PLACES

F-2

2	3	MS21209-C0620	INSERT, SCREW-LOCKING
1	1	1015698-1	HEATSINK
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

1007060	1007060
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ –	+.005	+ ½°
– –	–.005	– ½°

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Lueman DATE 6 JUN 63
CHECKED Wauler 19 June 63
APPROVAL 9 JUN 63
APPROVAL D. D. Fost 15 JUL 63
NASA APPROVAL 7/17/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK -
MOTOR DRIVE AMPLIFIER
AND SELECTOR CIRCUIT

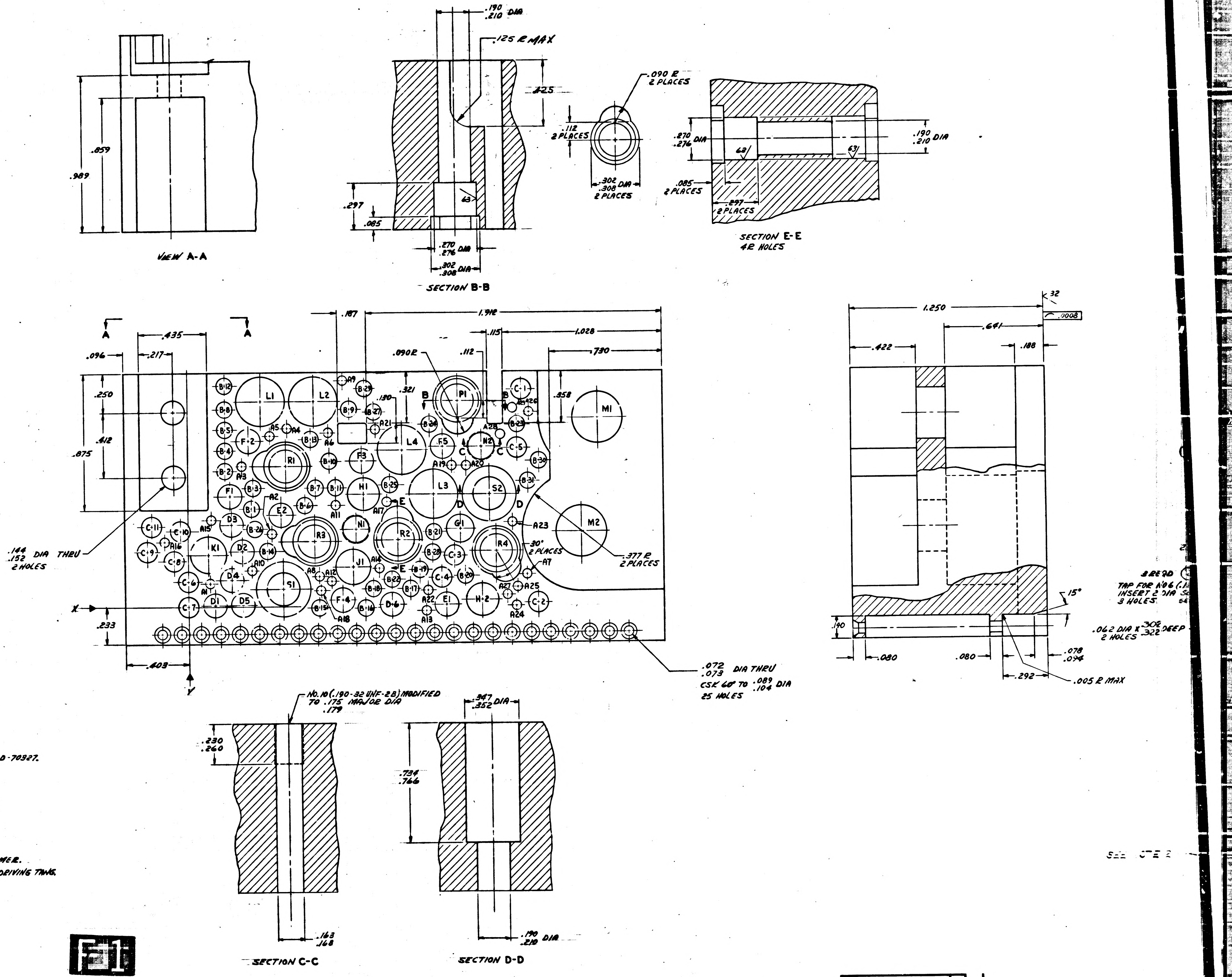
CODE IDENT NO. | SIZE J | 1015698
SCALE 5:1 | SHEET

1015698 C

INCHES
PHOTOGRAPHIC SCALE ONLY

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⊕ DIM	HOLE DIA	QTY
A1	0.140	0.150	.006	.058 .062	29
A2	0.540	0.460			
A3	0.350	0.890			
A4	0.640	1.130			
A5	0.530	1.080			
A6	0.900	1.100			
A7	2.180	0.200			
A8	0.640	0.190			
A9	1.000	1.430			
A10	0.410	0.230			
A11	0.950	0.640			
A12	0.920	0.160			
A13	1.530	-0.030			
A14	1.230	0.240			
A15	0.150	0.550			
A16	-0.150	0.410			
A17	[illegible]	0.660			
A18	[illegible]	0.100			
A19	[illegible]	0.890			
A20	[illegible]	0.890			
A21	[illegible]	1.120			
A22	1.540	0.100			
A23	2.090	0.530			
A24	[illegible]	0.000			
A25	2.120	0.120			
A26	2.200	1.230			
A27	2.050	0.070			
A28	2.010	1.080			
A29	2.090	1.250			
B1	[illegible]	0.620	.006	.100 .104	31
B2	0.260	0.860			
B3	0.420	0.750			
B4	0.240	0.990			
B5	0.240	1.120			
B6	0.750	0.640			
B7	0.820	0.750			
B8	0.240	1.250			
B9	1.040	1.250			
B10	0.910	0.920			
B11	0.950	0.750			
B12	0.240	1.400			
B13	0.790	1.060			
B14	0.510	0.350			
B15	0.840	-0.010			
B16	1.140	-0.010			
B17	1.430	0.110			
B18	1.190	0.110			
B19	1.490	0.230			
B20	1.780	0.190			
B21	1.580	0.470			
B22	1.310	0.170			
B23	2.120	1.150			
B24	1.560	1.150			
B25	1.300	0.770			
B26	0.430	0.490			
B27	1.200	1.230			
B28	1.570	0.340			
B29	1.140	1.380			
B30	2.260	0.920			
B31	2.190	0.790			
C1	2.150	1.370	.006	.127 .131	5
C2	2.250	0.020			
C3	1.710	0.320			
C4	1.630	0.180			
C5	2.120	1.000			

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⊕ DIM	HOLE DIA	QTY
C6	0.000	0.160	.006	.127 .131	6
C7	0.000	0.000			
C8	-0.090	0.290			
C9	-0.260	0.350			
C10	-0.050	0.480			
C11	-0.230	0.510			
D1	0.170	0.010	.006	.146 .150	6
D2	0.350	0.350			
D3	0.280	0.520			
D4	0.280	0.170			
D5	0.350	0.010			
D6	1.310	0.010			
E1	1.660	0.010	.006	.151 .155	2
E2	0.600	0.580			
F1	0.270	0.700	.006	.153 .157	5
F2	0.390	1.050			
F3	1.120	0.920			
F4	0.990	0.040			
F5	1.640	1.010			
G1	1.750	0.490	.006	.165 .169	1
H1	1.130	0.710	.006	.202 .205	2
H2	1.890	0.040			
J1	1.060	0.250	.006	.220 .224	1
K1	0.130	0.330	.006	.227 .231	1
L1	0.470	1.300	.006	.306 .313	4
L2	0.810	1.300			
L3	1.580	0.710			
L4	1.380	0.990			
M1	2.640	1.190	.006	.321 .327	2
M2	2.530	0.470			
N1	1.080	0.490	.006	SEE SECT C-C	2
N2	1.890	1.010			
P1	1.740	1.300	.006	SEE SECT B-B	1
R1	0.630	0.890	.006	SEE SECT E-E	4
R2	1.350	0.420			
R3	0.810	0.410			
R4	1.980	0.350			
S1	0.610	0.110	.006	SEE SECT D-D	2
S2	1.940	0.710			


VIEW A-A
.859
.989
.190 .210 DIA
.125 R MAX
.225
.297
.085
63
.270 .276 DIA
.302 .308 DIA
SECTION B-B
.090 R 2 PLACES
.112 2 PLACES
.302 .308 DIA 2 PLACES
.270 .276 DIA
.190 .210 DIA
.085 2 PLACES
.297 2 PLACES
63
SECTION E-E
4R HOLES
A
A
.435
.217
.096
.250
.412
.875
.187
1.912
.115
1.028
.730
.090R
.112
.321
.130
.958
B
B
C
C
D
D
E
E
.144 .152 DIA THRU 2 HOLES
30° 2 PLACES
.377 R 2 PLACES
X
Y
.233
.403
.072 .073 DIA THRU
CSK 60° TO .089 .104 DIA
25 HOLES
1.250
32
.0008
.641
.422
.188
15°
.190
.080
.080
.078 .094
.292
.005 R MAX
.062 DIA X .308 .322 DEEP 2 HOLES
TAP FOR NO6
INSERT 2 DIA
3 HOLES
NO. 10 (.190-32 UNF-2B) MODIFIED TO .175 .179 MAJOR DIA
.230 .260
.163 .168
SECTION C-C
.347 .352 DIA
.734 .766
.190 .210 DIA
SECTION D-D
SEE NOTE 2
F1

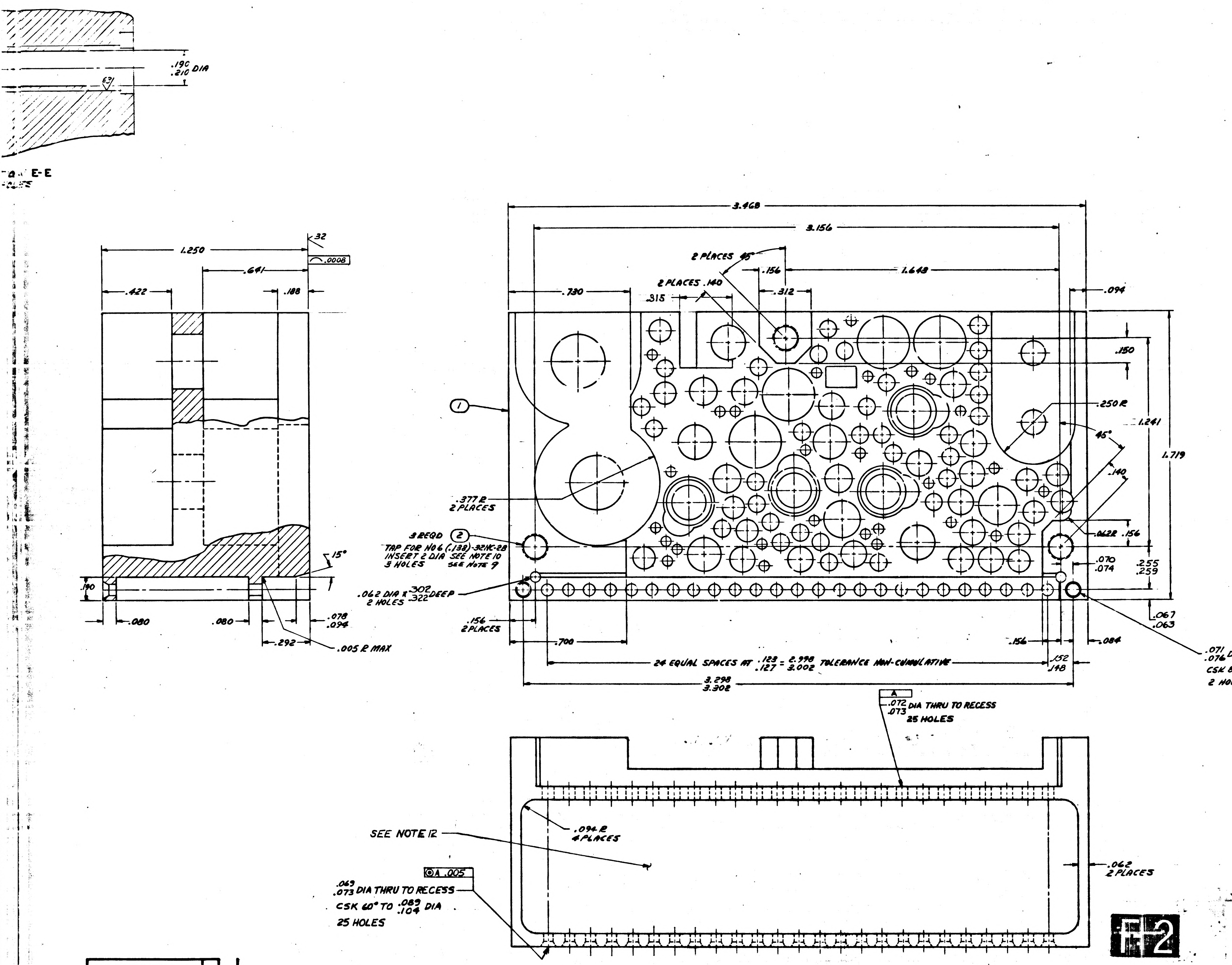
NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31A.
3. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII .010 MAX.
4. FLATNESS TO BE WITHIN .010.
5. UNLESS OTHERWISE SPECIFIED SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{125}$.
6. TRUE POSITIONING AS SHOWN IN CHART.
7. ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.
8. REMOVE ALL BURRS AND BREAK SHARP EDGES .005-.015.
9. COAT THREADS AND ITEM NO 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
10. INSTALL ITEM NO 2 PER MS 33646, EXCEPT DIM. F TO BE .594, BREAK OFF DRIVING TANG.
11. FINISH: PLUG INSERT HOLES AND ANODIZE PER MIL-M-3171A, TYPE IV.
12. IDENTIFY USING PART NO. AND REV LETTER PER ND1002019

1015698	C

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 02066					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 03851			
B		REVISED PER TDRR 03852			
C		REVISED PER TDRR 04665			
D		REVISED PER TDRR 05472			


.190
.210 DIA
E-E
1.250
.641
.422
.188
32
.0008
15°
.190
.080
.080
.078
.094
.292
.005 R MAX
3.468
3.156
2 PLACES 45°
.156
1.648
2 PLACES .140
.315
.312
.730
.094
.150
.250 R
1.241
1.719
45°
.140
1
.377 R
2 PLACES
3 REQD 2
TAP FOR NO 6 (.138)-32NC-2B
INSERT 2 DIA SEE NOTE 10
3 HOLES SEE NOTE 9
.062 R .156
.070
.074
.255
.259
.062 DIA X .302
.322 DEEP
2 HOLES
.067
.063
.156
2 PLACES
.700
.156
.084
24 EQUAL SPACES AT .123
.127 = 2.998
3.002 TOLERANCE NON-CUMULATIVE
.152
.148
3.298
3.302
.071
.076 DIA .302
.322 DEEP
CSK 82° .086
.096 DIA
2 HOLES
A
.072
.073 DIA THRU TO RECESS
25 HOLES
SEE NOTE 12
.094 R
4 PLACES
.062
2 PLACES
A .005
.069
.073 DIA THRU TO RECESS
CSK 60° TO .089
.104 DIA
25 HOLES

F2

1015698 D

2	3	MS21209-C0620	INSERT, SCREW-LOCKING
1	1	1015698-1	HEATSINK
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

1007060	1007060
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — XX ± .02 + 1/2°
— — XXX ± .005 — 1/2°
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Liermann DATE 6 JUN 63
CHECKED 19 June
APPROVAL
APPROVAL D. A. Frost 15 JUN 63
NASA APPROVAL 7/17/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK -
MOTOR DRIVE AMPLIFIER
AND SELECTOR CIRCUIT

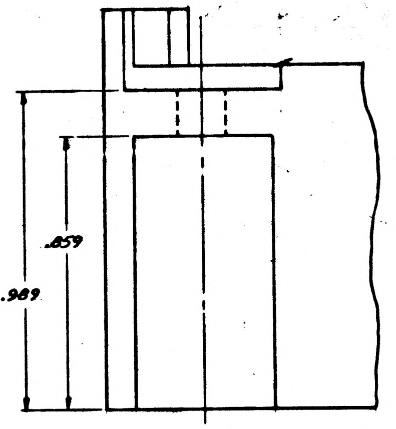
CODE IDENT NO.
SIZE J
1015698
SCALE 5:1
SHEET 1

SEE NOTE 13

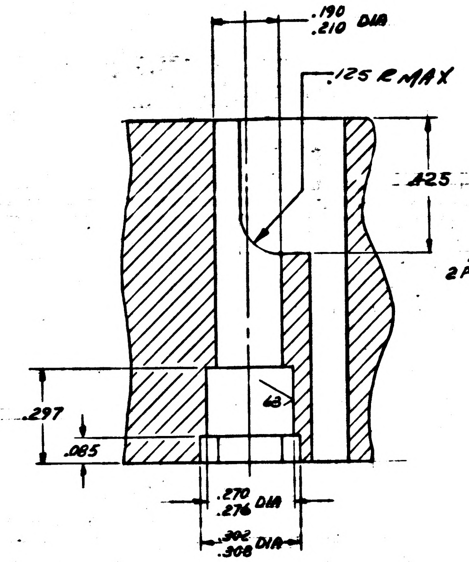
HOLE IDENT	X DIM	Y DIM		HOLE DIA	QTY
A1	0.140	0.150		.058 .062	29
A2	0.540	0.460			
A3	0.350	0.890			
A4	0.640	1.130			
A5	0.530	1.080			
A6	0.900	1.100			
A7	2.180	0.200			
A8	0.840	0.190			
A9	1.000	1.430			
A10	0.410	0.230			
A11	0.950	0.640			
A12	0.920	0.160			
A13	1.530	-0.030			
A14	1.230	0.240			
A15	0.150	0.550			
A16	-0.150	0.410			
A17	1.280	0.660			
A18	0.850	0.100			
A19	1.700	0.890			
A20	1.790	0.890			
A21	[illegible].210	[illegible].120			
A22	[illegible].540	0.100			
A23	2.090	0.530			
A24	2.110	0.000			
A25	2.120	0.120			
A26	2.200	1.230			
A27	2.050	0.070			
A28	2.010	1.080			
A29	2.090	1.250			
B1	0.410	0.620		.100 .104	31
B2	0.240	0.860			
B3	0.420	0.750			
B4	0.240	0.990			
B5	0.240	1.120			
B6	0.750	0.640			
B7	0.820	0.750			
B8	0.240	1.250			
B9	1.040	1.250			
B10	0.910	0.920			
B11	0.950	0.750			
B12	0.240	1.400			
B13	0.790	1.060			
B14	0.510	0.350			
B15	0.840	-0.010			
B16	1.140	-0.010			
B17	1.430	0.110			
B18	1.190	0.110			
B19	1.490	0.230			
B20	1.780	0.190			
B21	1.580	0.470			
B22	1.310	0.170			
B23	2.120	1.150			
B24	1.560	1.150			
B25	1.300	0.770			
B26	0.430	0.490			
B27	1.200	1.230			
B28	1.570	0.340			
B29	1.140	1.380			
B30	2.260	0.920			
B31	2.190	0.790			
C1	2.150	1.370		.127 .131	5
C2	2.250	0.020			
C3	1.710	0.320			
C4	1.630	0.180			
C5	2.120	1.000			

SEE NOTE 13

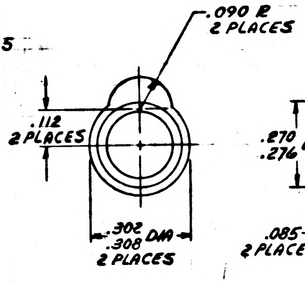
HOLE IDENT	X DIM	Y DIM		HOLE DIA	QTY
C6	0.000	0.160		.127 .131	6
C7	0.000	0.000			
C8	-0.090	0.290			
C9	-0.260	0.350			
C10	-0.050	0.480			
C11	-0.230	0.510			
D1	0.170	0.010		.146 .150	6
D2	0.350	0.350			
D3	0.280	0.520			
D4	0.280	0.170			
D5	0.350	0.010			
D6	1.310	0.010			
E1	1.660	0.010		.151 .155	2
E2	0.600	0.580			
F1	0.270	0.700		.153 .157	5
F2	0.390	1.050			
F3	1.120	0.920			
F4	0.990	0.040			
F5	1.640	1.010			
G1	1.750	0.490		.165 .169	1
H1	1.130	0.710		.202 .205	2
H2	1.890	0.040			
J1	1.060	0.250		.220 .224	1
K1	0.130	0.330		.227 .231	1
L1	0.470	1.300		.306 .313	4
L2	0.810	1.300			
L3	1.580	0.710			
L4	1.380	0.990			
M1	2.640	1.190		.321 .327	2
M2	2.530	0.470			
N1	1.080	0.490		SEE SECT C-C	2
N2	1.890	1.010			
P1	1.740	1.300		SEE SECT B-B	1
R1	0.630	0.390		SEE SECT E-E	4
R2	1.350	0.420			
R3	0.810	0.410			
R4	1.980	0.350			
S1	0.610	0.110		SEE SECT D-D	2
S2	1.940	0.710			

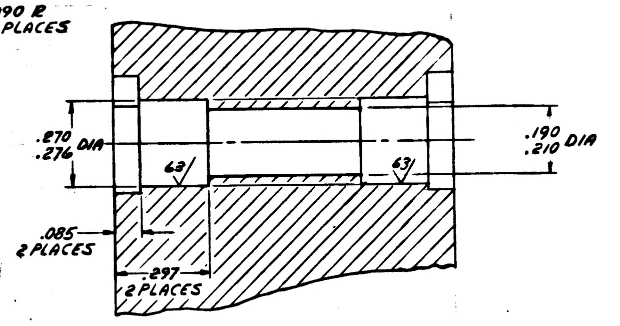


VIEW A-A

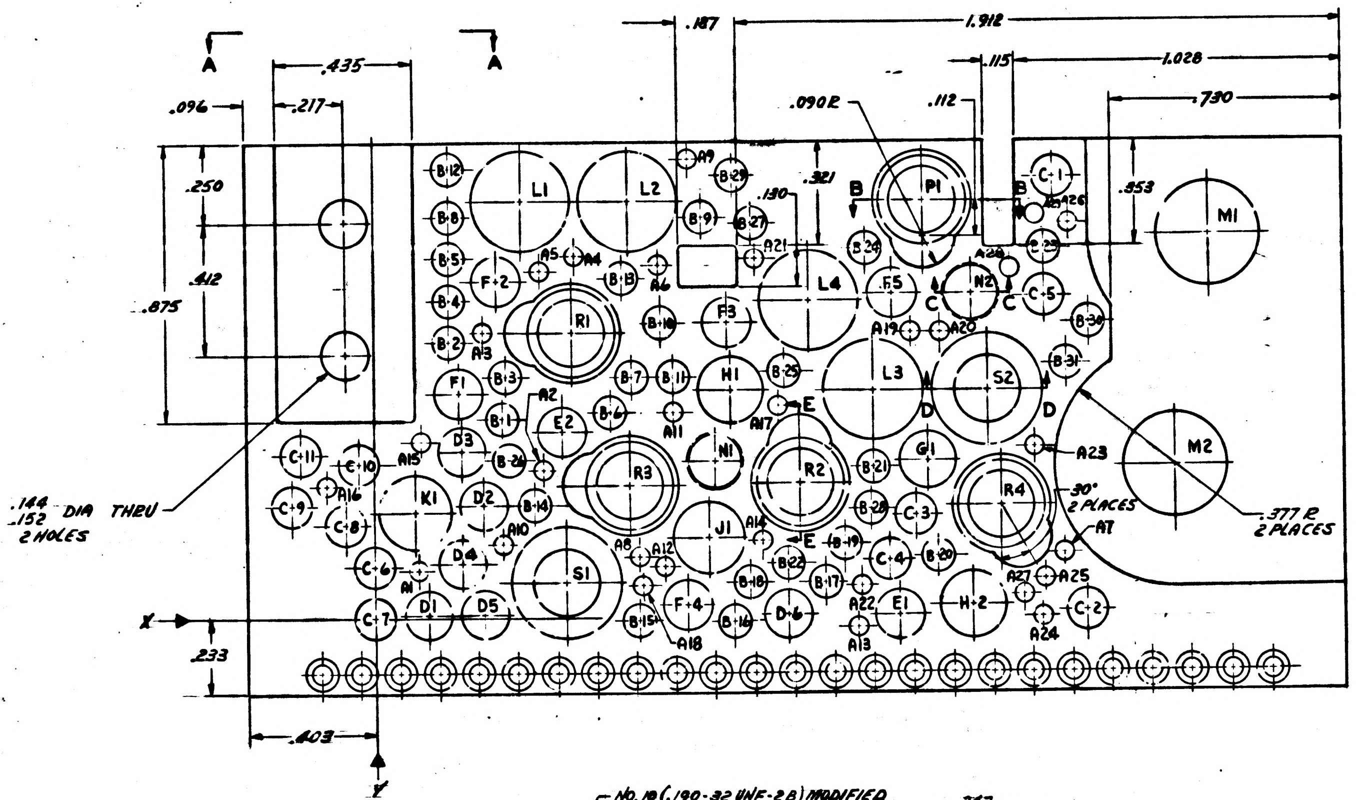

.190
.210 DIA
.125 R MAX
.425
63
.297
.085
.270
.276 DIA
.302
.308 DIA

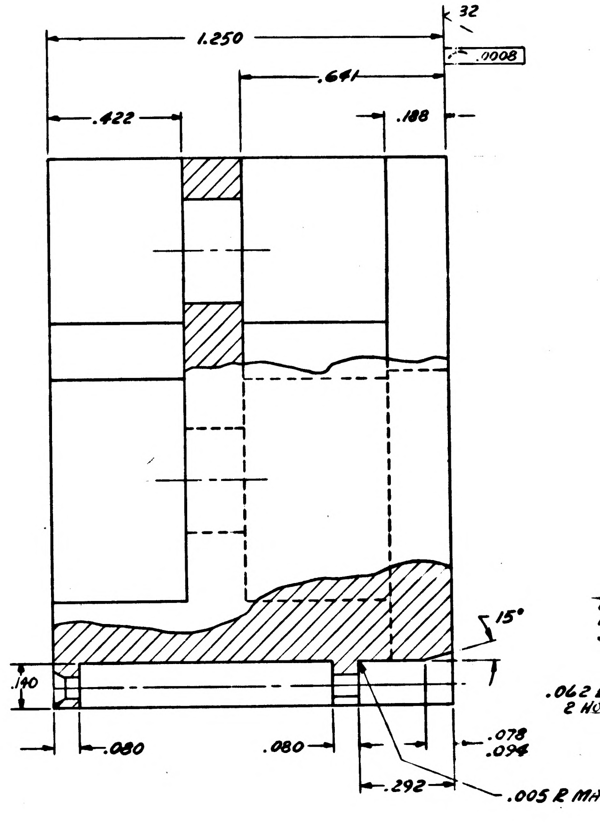
SECTION B-B

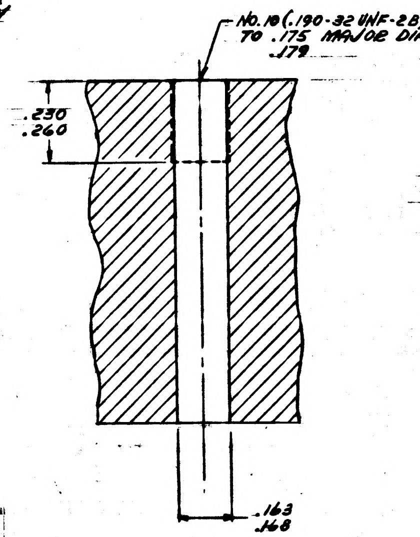

.090 R
2 PLACES
.112
2 PLACES
.302
.308 DIA
2 PLACES


.270
.276 DIA
63
63
.190
.210 DIA
.085
2 PLACES
.297
2 PLACES

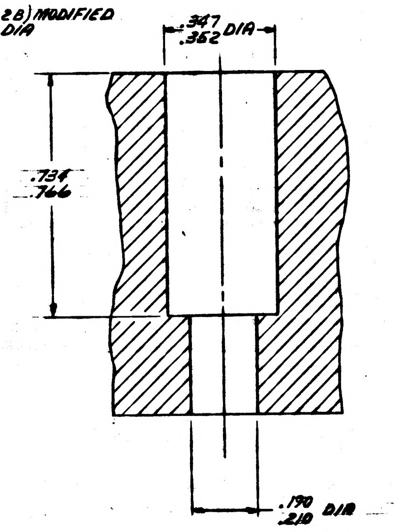
SECTION E-E
4R HOLES


A
A
.435
.096
.217
.250
.412
.875
.187
1.912
.115
1.028
.090R
.112
.730
.130
.321
.853
B
B
C
C
D
D
E
E
L1
L2
P1
M1
M2
L3
L4
R1
R2
R3
R4
S1
S2
K1
J1
N1
N2
H1
H-2
G1
E1
E2
F1
F-2
F3
F-4
F5
D1
D2
D3
D4
D5
D-6
.144
.152 DIA THRU
2 HOLES
30°
2 PLACES
.377 R
2 PLACES
X
.233
.403
Y


32
1.250
.0008
.641
.422
.188
15°
.140
.080
.080
.292
.078
.094
.005 R MA
.062
2 H


No. 10 (.190-32 UNF-2B) MODIFIED
TO .175 MAJOR DIA
.179
.230
.260
.163
.168

SECTION C-C


.347
.352 DIA
.734
.766
.190
.210 DIA

SECTION D-D

.062
.073 D
CSK 60°
25 HOLES

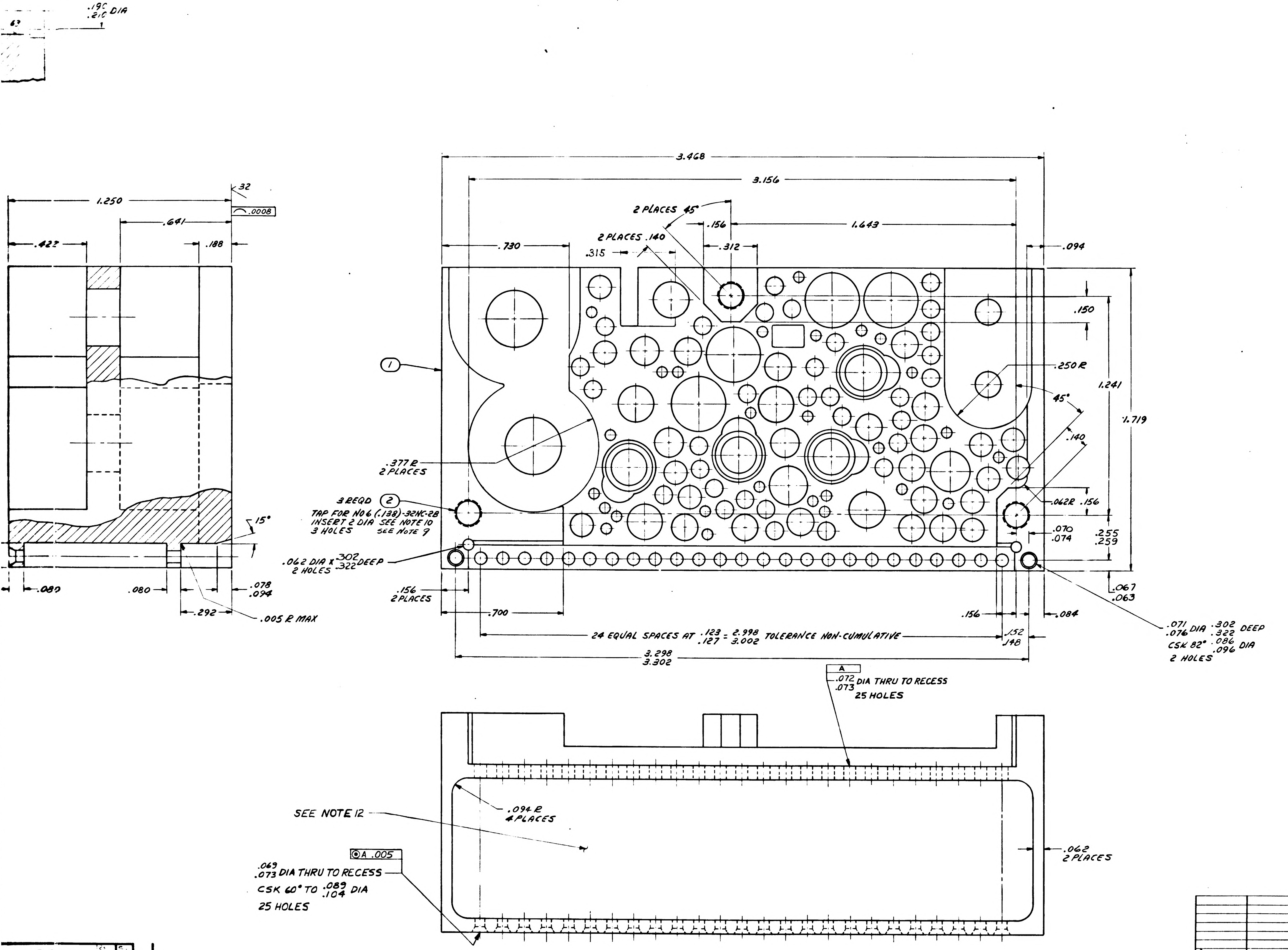
NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31A.
3. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII .010 MAX.
4. FLATNESS TO BE WITHIN .010.
5. UNLESS OTHERWISE SPECIFIED SURFACE ROUGHNESS MUST NOT EXCEED 125/√.
~~6. TRUE POSITIONING AS SHOWN IN CHART.~~
7. ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.
8. REMOVE ALL BURRS AND BREAK SHARP EDGES .005-.015.
9. COAT THREADS AND ITEM NO 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
10. INSTALL ITEM NO 2 PER MS 33646, BREAK OFF DRIVING TANG
11. FINISH: PLUG INSERT HOLES AND ANODIZE PER MIL-M-3171A, TYPE IV.
12. IDENTIFY USING PART NO. AND REV LETTER PER ND1002019
13. THE DRILLING OF ANY COMPONENT HOLE CAUSING VISABLE DEFORMATION IN AN ADJACENT HOLE OR ON AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART

1015698 D

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
-		REVISED PER TDRR 03851			
B		REVISED PER TDRR 03852			
C		REVISED PER TDRR 04665			
D		REVISED PER TDRR 05472			
E		REVISED PER TDRR 19376			



.19C
.21C DIA
1.250
.641
.422
.188
32
.0008
15°
.080
.080
.292
.078
.094
.005 R MAX
3.468
3.156
2 PLACES 45°
.156
1.643
2 PLACES .140
.315
.312
.730
.094
.150
1
.250 R
45°
1.241
1.719
.140
.377 R
2 PLACES
3 REQD 2
TAP FOR NO 6 (.138)-32NC-2B
INSERT 2 DIA SEE NOTE 10
3 HOLES SEE NOTE 9
.062 R .156
.070
.074
.255
.259
.062 DIA X .302 .322 DEEP
2 HOLES
.156
2 PLACES
.700
.067
.063
.156
.084
.071 .076 DIA .302 .322 DEEP
CSK 82° .086 .096 DIA
2 HOLES
24 EQUAL SPACES AT .123 .127 = 2.998 3.002 TOLERANCE NON-CUMULATIVE
.152
.148
3.298
3.302
A
.072 .073 DIA THRU TO RECESS
25 HOLES
.094 R
4 PLACES
SEE NOTE 12
.062
2 PLACES
A .005
.069 .073 DIA THRU TO RECESS
CSK 60° TO .089 .104 DIA
25 HOLES

2	3	MS212 . 30620	INSERT, SCREW-LOCKING
1	1	10156-3-1	HEATSINK
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

1007060	1007060
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ − XX ± .02 + ½°
− − XXX ± .005 − ½°
DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS

DRAWN Liermann DATE
CHECKED Waylen 19 JUNE
APPROVAL
APPROVAL
NASA APPROVAL 7/17/6
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK -
MOTOR DRIVE AMPLIFIER
AND SELECTOR CIRCUIT

CODE IDENT NO. 80230
SIZE J
1015698
SCALE 5:1
SHEET

1015698 E

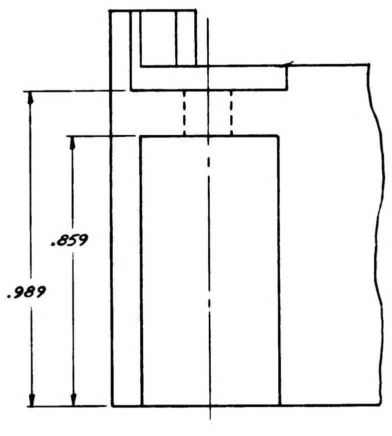
27 1015698

SEE NOTE 13

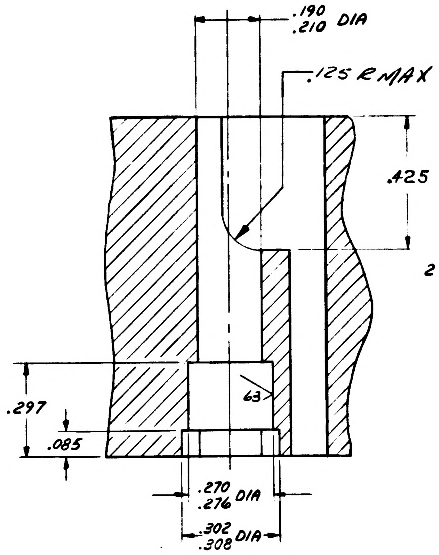
HOLE IDENT	X DIM	Y DIM		HOLE DIA	QTY
A1	0.140	0.150		.058 .062	29
A2	0.540	0.460			
A3	0.350	0.890			
A4	0.640	1.130			
A5	0.530	1.080			
A6	0.900	1.100			
A7	2.180	0200			
A8	0.840	0.190			
A9	1.000	1.430			
A10	0.410	0.230			
A11	0.950	0.640			
A12	0.920	0.160			
A13	1.530	-0.030			
A14	1.230	0.240			
A15	0.150	0.550			
A16	-0.150	0.410			
A17	1.280	0.660			
A18	0.850	0.100			
A19	1.700	0.890			
A20	1.790	0.890			
A21	1.210	1.120			
A22	1.540	0.100			
A23	2.090	0.530			
A24	2.110	0.000			
A25	2.120	0.120			
A26	2.200	1.230			
A27	2.050	0.070			
A28	2.010	1.080			
A29	2.090	1.250			
B1	0.410	0.620		.100 .104	31
B2	0.240	0.860			
B3	0.420	0.750			
B4	0.240	0.990			
B5	0.240	1.120			
B6	0.750	0.640			
B7	0.820	0.750			
B8	0.240	1.250			
B9	1.040	1.250			
B10	0.910	0.920			
B11	0.950	0.750			
B12	0.240	1.400			
B13	0.790	1.060			
B14	0.510	0.350			
B15	0.840	-0.010			
B16	1.140	-0.010			
B17	1.430	0.110			
B18	1.190	0.110			
B19	1.490	0.230			
B20	1.780	0.190			
B21	1.580	0.470			
B22	1.310	0.170			
B23	2.120	1.150			
B24	1.560	1.150			
B25	1.300	0.770			
B26	0.430	0.490			
B27	1.200	1.230			
B28	1.570	0.340			
B29	1.140	1.380			
B30	2.260	0.920			
B31	2.190	0.790			
C1	2.150	1.370		.127 .131	5
C2	2.250	0.020			
C3	1.710	0.320			
C4	1.630	0.180			
C5	2.120	1.000			

SEE NOTE 13

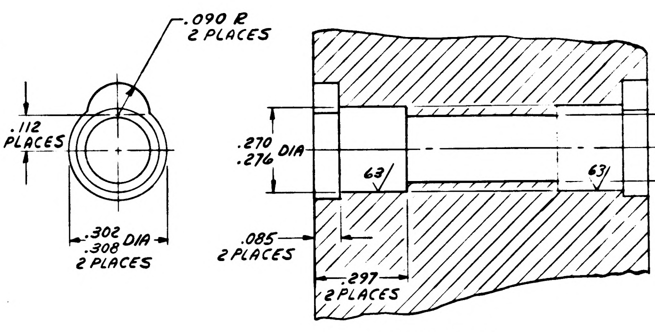
HOLE IDENT	X DIM	Y DIM		HOLE DIA	QTY
C6	0.000	0.160		.127 .131	6
C7	0.000	0.000			
C8	-0.090	0.290			
C9	-0.260	0.350			
C10	-0.050	0.480			
C11	-0.230	0.510			
D1	0.170	0.010		.146 .150	6
D2	0.350	0.350			
D3	0.280	0.520			
D4	0.280	0.170			
D5	0.350	0.010			
D6	1.310	0.010			
E1	1.660	0.010		.151 .155	2
E2	0.600	0.580			
F1	0.270	0.700		.153 .157	5
F2	0.390	1.050			
F3	1.120	0.920			
F4	0.990	0.040			
F5	1.640	1.010			
G1	1.750	0.490		.165 .169	1
H1	1.130	0.710		.202 .205	2
H2	1.890	0.040			
J1	1.060	0.250		.220 .224	1
K1	0.130	0.330		.227 .231	1
L1	0.470	1.300		.306 .313	4
L2	0.810	1.300			
L3	1.580	0.710			
L4	1.380	0.990			
M1	2.640	1.190		.321 .327	2
M2	2.530	0.470			
N1	1.080	0.490		SEE SECT C-C	2
N2	1.890	1.010			
P1	1.740	1.300		SEE SECT B-B	1
R1	0.630	0.890		SEE SECT E-E	4
R2	1.350	0.420			
R3	0.810	0.410			
R4	1.980	0.350			
S1	0.610	0.110		SEE SECT D-D	2
S2	1.940	0.710			



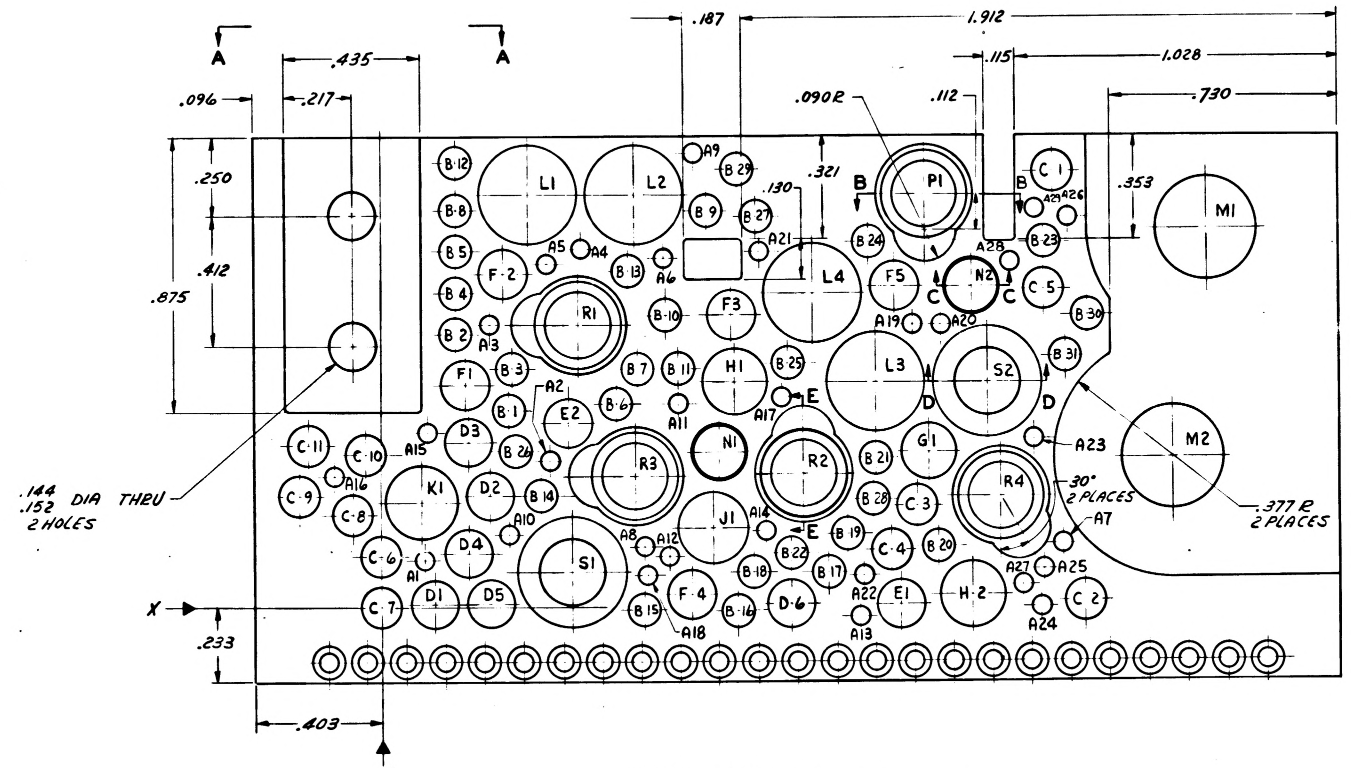
VIEW A-A

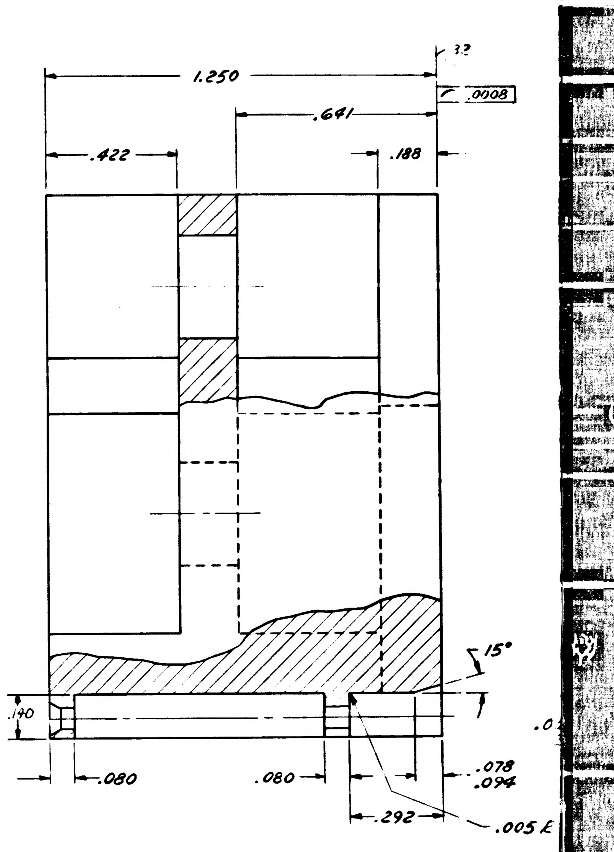

.190
.210 DIA
.125 R MAX
.425
63
.297
.085
.270
.276 DIA
.302
.308 DIA

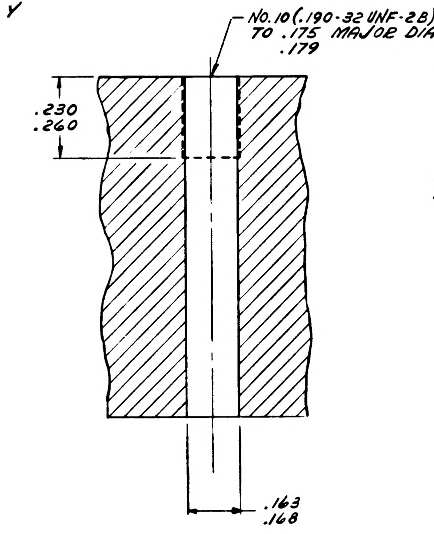
SECTION B-B


.090 R
2 PLACES
.112
2 PLACES
.302 DIA
.308
2 PLACES
.270 DIA
.276
63
.190 DIA
.210
.085
2 PLACES
.297
2 PLACES

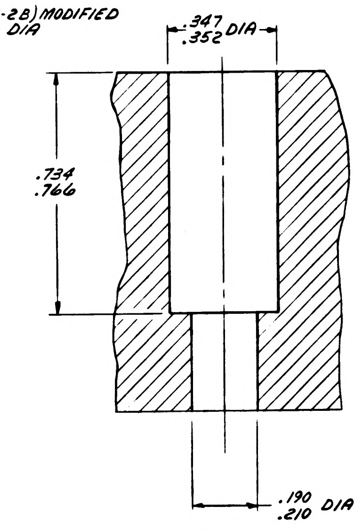
SECTION E-E
4R HOLES


A
A
.096
.435
.217
.250
.412
.875
.233
.403
X
Y
.187
1.912
.115
1.028
.090R
.112
.730
.321
.130
.353
B
B
C
C
D
D
E
E
30°
2 PLACES
.377 R
2 PLACES
.144 DIA THRU
.152
2 HOLES
L1
L2
L3
L4
M1
M2
P1
N1
N2
R1
R2
R3
R4
S1
S2
K1
J1
H1
H-2
G1
F1
F-2
F3
F4
F5
E1
E2
D1
D2
D3
D4
D5
D-6
C1
C2
C3
C4
C5
C-6
C7
C-8
C9
C10
C11
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14
B15
B16
B17
B18
B19
B20
B21
B22
B23
B24
B25
B26
B27
B28
B29
B30
B31
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
A18
A19
A20
A21
A22
A23
A24
A25
A26
A27
A28
A29


1.250
.641
.422
.188
.0008
15°
.140
.080
.080
.078
.094
.292
.005


No.10 (.190-32 UNF-2B) MODIFIED
TO .175 MAJOR DIA
.179
.230
.260
.163
.168

SECTION C-C

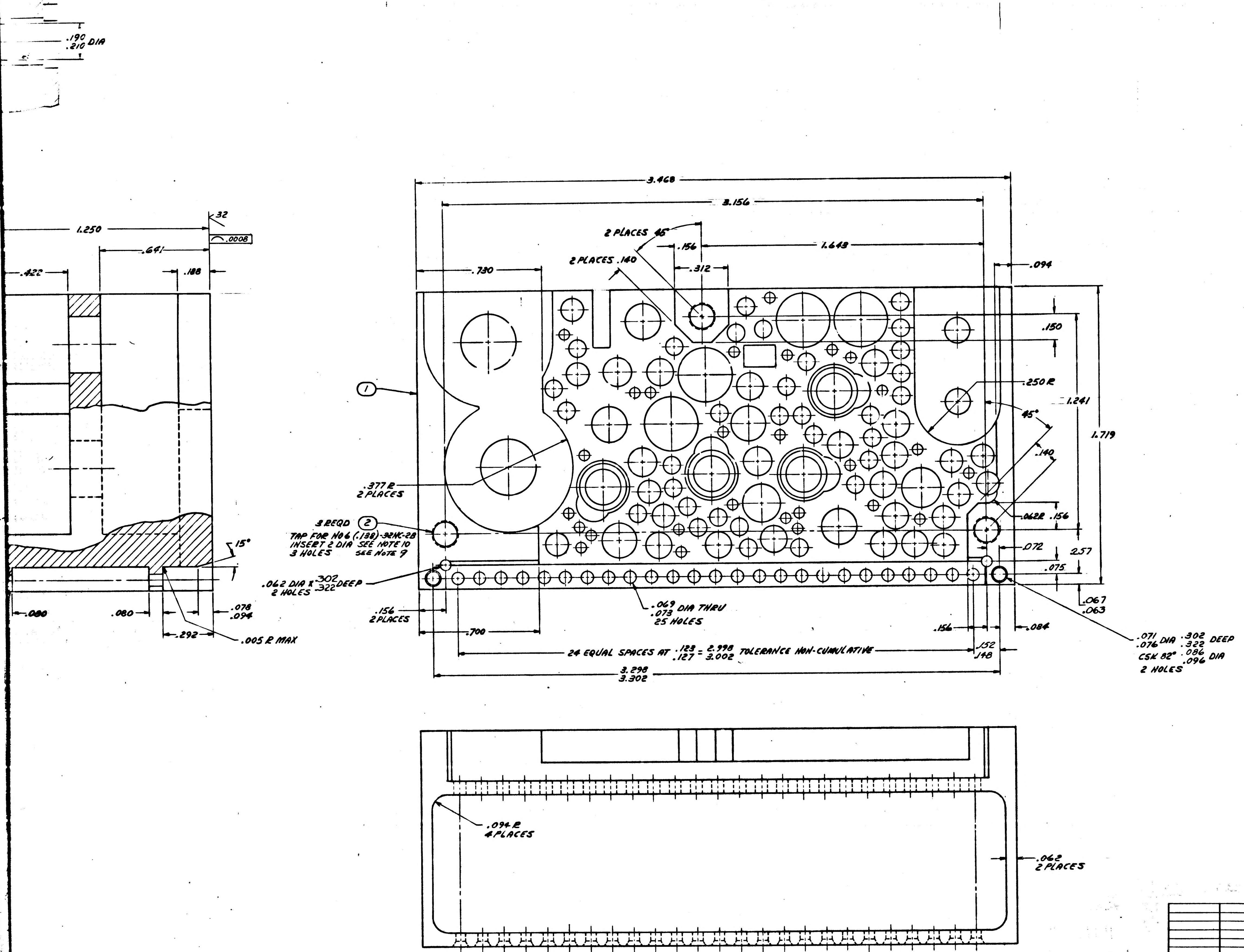

.347 DIA
.352
.734
.766
.190 DIA
.210

SECTION D-D

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31A.
3. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII .010 MAX.
4. FLATNESS TO BE WITHIN .010.
5. UNLESS OTHERWISE SPECIFIED SURFACE ROUGHNESS MUST NOT EXCEED 125√.
6. ~~TRUE POSITIONING AS SHOWN IN CHART.~~
7. ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.
8. REMOVE ALL BURRS AND BREAK SHARP EDGES .005-.015.
9. COAT THREADS AND ITEM NO 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
10. INSTALL ITEM NO 2 PER MS 33646, BREAK OFF DRIVING TANG
11. FINISH: PLUG INSERT HOLES AND ANODIZE PER MIL-M-45202, TYPE I, CLASS C.
12. IDENTIFY USING PART NO. AND REV LETTER PER ND1002019
13. THE DRILLING OF ANY COMPONENT HOLE CAUSING VISABLE DEFORMATION IN AN ADJACENT HOLE OR ON AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART
14. APPLY A .31 MIN WIDTH PERIMETER OF ADHESIVE AND COATING MATERIAL PER ND 1002187 TYPE II TO THE TWO SURFACES WITH COMPONENT HOLES WHICH ARE .188 AND 1.25 FROM THE HELICOIL MOUNTING SURFACE.

REVISIONS TOER 02066				
SYM	ZONE	DESCRIPTION	DATE	APPD.
		CHG NO		



.190
.210 DIA
1.250
32
.0008
.641
.422
.188
15°
.080
.080
.078
.094
.292
.005 R MAX
3.468
3.156
2 PLACES 45°
.156
1.648
2 PLACES .140
.312
.730
.094
.150
①
.250 R
1.241
45°
1.719
.140
.377 R
2 PLACES
.062R
.156
3 REQD ②
TAP FOR No 6 (.138)-32NC-2B
INSERT 2 DIA SEE NOTE 10
3 HOLES SEE NOTE 9
.072
.257
.075
.062 DIA X .302/.322 DEEP
2 HOLES
.067
.063
.156
2 PLACES
.069/.073 DIA THRU
25 HOLES
.700
.156
.084
.071/.076 DIA .302/.322 DEEP
CSK 82° .086/.096 DIA
2 HOLES
24 EQUAL SPACES AT .123/.127 = 2.998/3.002 TOLERANCE NON-CUMULATIVE
.152
.148
3.298
3.302
.094 R
4 PLACES
.062
2 PLACES

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	NAS 1222-06E	INSERT, SCREW-LOCKING
1	1	1015698-1	HEATSINK

LIST OF PARTS AND MATERIALS

1007060	1007060
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+−	+.005	+½°
−−	−.005	−½°

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Lunneman DATE 6 JUN 63
CHECKED 19 June 63
APPROVAL 19 JUN 63
APPROVAL D.R. Tast 15 JUL 63
NASA APPROVAL 7/17/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK -
MOTOR DRIVE AMPLIFIER
AND SELECTOR CIRCUIT

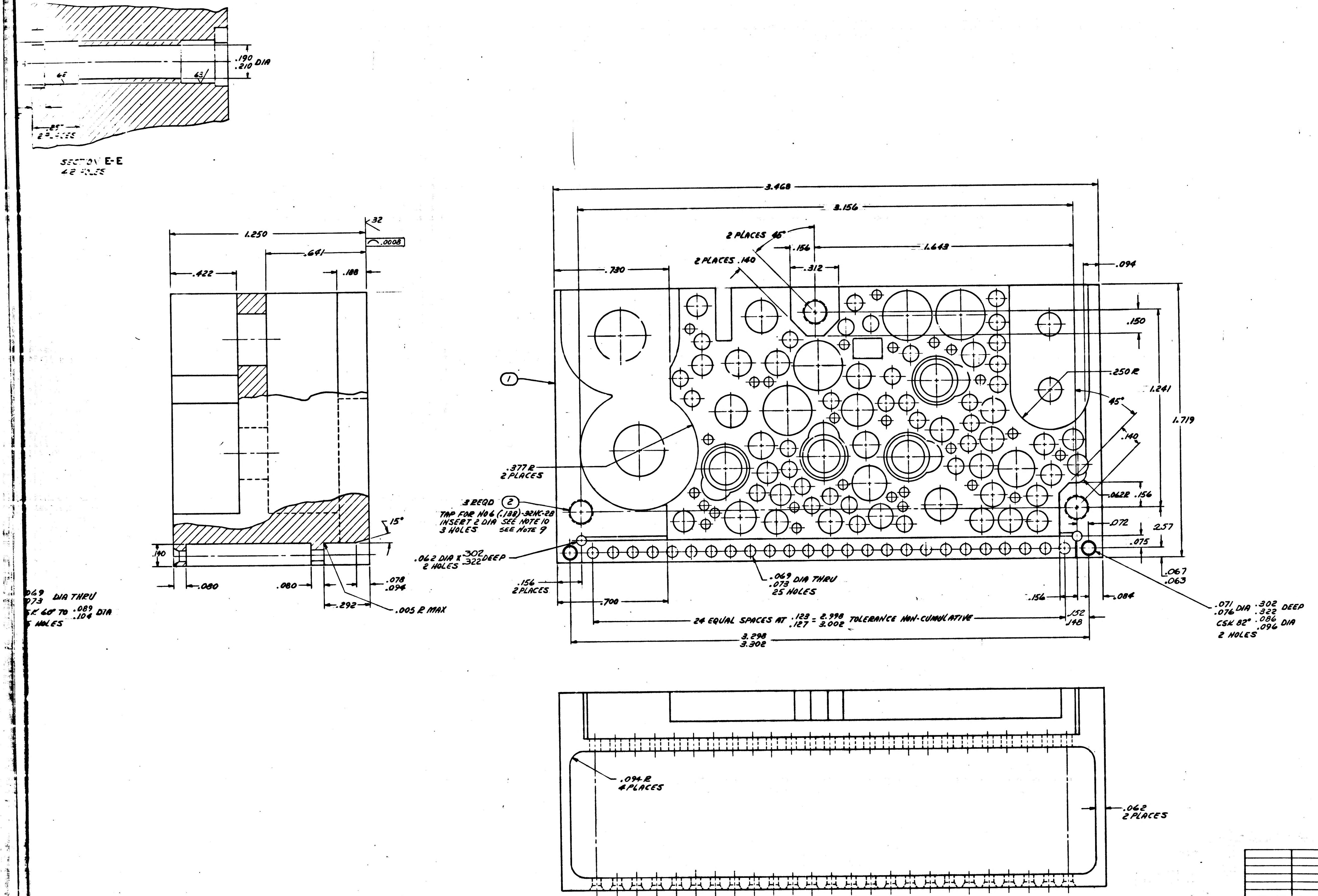
CODE IDENT NO.
SIZE J
1015698
SCALE 5:1
SHEET 1:1

1015698

015698

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

F3


SECTION E-E
42 HOLES
.190
.210 DIA
63
.25°
2 PLACES
1.250
.641
.422
.188
32
.0008
15°
.140
.080
.080
.078
.094
.292
.005 R MAX
.069
.073 DIA THRU
CSK 60° TO .089
.104 DIA
HOLES
3.468
3.156
2 PLACES 45°
.156
1.643
2 PLACES .140
.312
.730
.094
.150
.250 R
1.241
45°
1.719
.140
①
.377 R
2 PLACES
3 REQD ②
TAP FOR NO 6 (.138)-32NC-2B
INSERT 2 DIA SEE NOTE 10
3 HOLES SEE NOTE 9
.062 R .156
.072
.257
.075
.062 DIA X .302
.322 DEEP
2 HOLES
.067
.063
.069
.073 DIA THRU
25 HOLES
.156
2 PLACES
.700
.156
.084
.152
.148
.071
.076 DIA .302
.322 DEEP
CSK 82° .086
.096 DIA
2 HOLES
24 EQUAL SPACES AT .123
.127 = 2.998
3.002 TOLERANCE NON-CUMULATIVE
3.298
3.302
.094 R
4 PLACES
.062
2 PLACES

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	11CS 1222-06E	INSERT, SCREW-[illegible]
1	1	1015698-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007060	1007060

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+−	+.005	+½°
−−	−.005	−½°

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT 11CS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN [illegible] DATE 6 JUN 63
CHECKED [illegible] 19 JUNE 63
APPROVAL [illegible] 19 JUN 63
APPROVAL [illegible] 15 [illegible]

NASA APPROVAL [illegible] 7/17/63
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

HEATSINK
MOTOR DRIVE AMP.
AND SELECTOR

CODE IDENT NO

SIZE J

1015698

SCALE 5:1

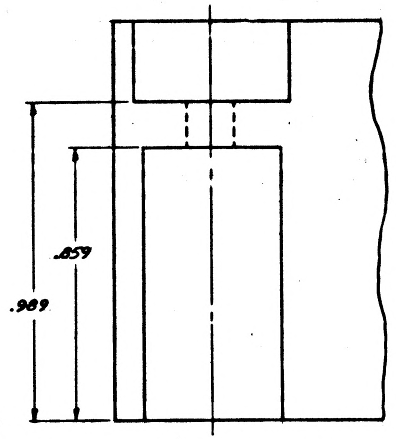
1015698

F-2

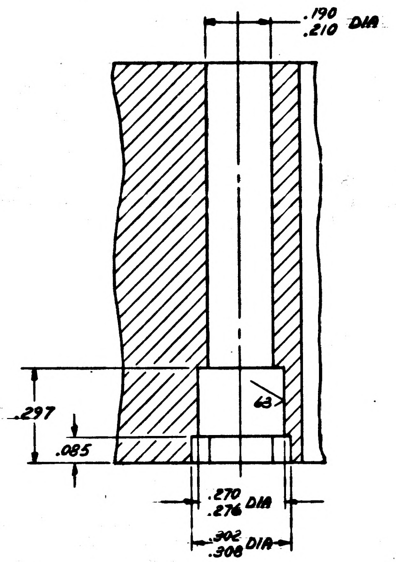
INCHES
PHOTOGRAPHIC SCALE ONLY

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⊕ DIM	HOLE DIA	QTY
A1	0.140	0.150	.006	.058 .062	27
A2	0.540	0.460			
A3	0.350	0.890			
A4	0.640	1.130			
A5	0.530	1.080			
A6	0.900	1.100			
A7	2.180	0.200			
A8	0.840	0.190			
A9	1.000	1.430			
A10	0.410	0.230			
A11	0.950	0.640			
A12	0.920	0.160			
A13	1.530	-0.080			
A14	1.230	0.240			
A15	0.150	0.550			
A16	-0.150	0.410			
A17	1.280	0.660			
A18	0.850	0.100			
A19	1.700	0.890			
A20	1.790	0.890			
A21	1.210	1.120			
A22	1.540	0.100			
A23	2.090	0.530			
A24	2.110	0.000			
A25	2.120	0.120			
A26	2.200	1.230			
A27	[illegible]	0.070			
B1	0.410	0.620	.006	.100 .104	31
B2	0.240	0.860			
B3	0.420	0.750			
B4	0.240	0.990			
B5	0.240	1.120			
B6	0.750	0.640			
B7	0.820	0.750			
B8	0.240	1.250			
B9	1.040	1.250			
B10	0.910	0.920			
B11	0.950	0.750			
B12	0.240	1.400			
B13	0.790	1.060			
B14	0.510	0.350			
B15	0.840	-0.010			
B16	1.140	-0.010			
B17	1.430	0.110			
B18	1.190	0.110			
B19	1.490	0.230			
B20	1.780	0.190			
B21	1.580	0.470			
B22	1.310	0.170			
B23	2.120	1.150			
B24	1.560	1.150			
B25	1.300	0.770			
B26	0.430	0.490			
B27	1.200	1.230			
B28	1.570	0.340			
B29	1.140	1.380			
B30	2.260	0.920			
B31	2.190	0.790			
C1	2.150	1.370	.006	.127 .131	5
C2	2.250	0.020			
C3	1.710	0.320			
C4	1.630	0.180			
C5	2.120	1.000			

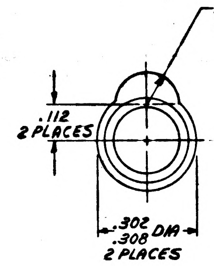
HOLE IDENT	X BASIC DIM	Y BASIC DIM	⊕ DIM	HOLE DIA	QTY
C6	0.000	0.160	.006	.127 .131	6
C7	0.000	0.000			
C8	-0.090	0.290			
C9	-0.260	0.350			
C10	-0.050	0.480			
C11	-0.230	0.510			
D1	0.170	0.010	.006	.146 .150	6
D2	0.350	0.350			
D3	0.280	0.520			
D4	0.280	0.170			
D5	0.350	0.010			
D6	1.310	0.010			
E1	1.660	0.010	.006	.151 .155	2
E2	0.600	0.580			
F1	0.270	0.700	.006	.153 .157	5
F2	0.390	1.050			
F3	1.120	0.920			
F4	0.990	0.040			
F5	1.640	1.010			
G1	1.750	0.490	.006	.165 .169	1
H1	1.130	0.710	.006	.202 .205	2
H2	1.890	0.040			
J1	1.060	0.250	.006	.220 .224	1
K1	0.130	0.350	.006	.227 .231	1
L1	0.470	1.300	.006	.306 .313	4
L2	0.810	1.300			
L3	1.580	0.710			
L4	1.380	0.990			
M1	2.640	1.190	.006	.321 .327	2
M2	2.530	0.470			
N1	1.080	0.490	.006	SEE SECT C-C	2
N2	1.890	1.010			
P1	1.740	1.300	.006	SEE SECT B-B	1
R1	0.630	0.890	.006	SEE SECT E-E	4
R2	1.350	0.420			
R3	0.810	0.410			
R4	1.980	0.350			
S1	0.610	0.110	.006	SEE SECT D-D	2
S2	1.940	0.710			

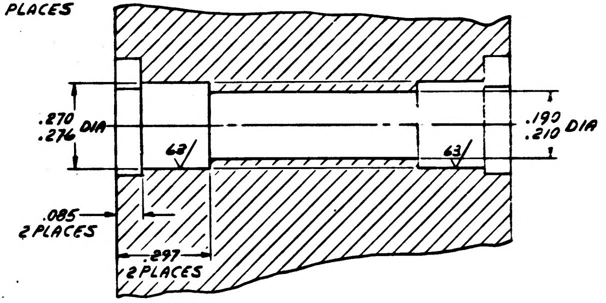


VIEW A-A

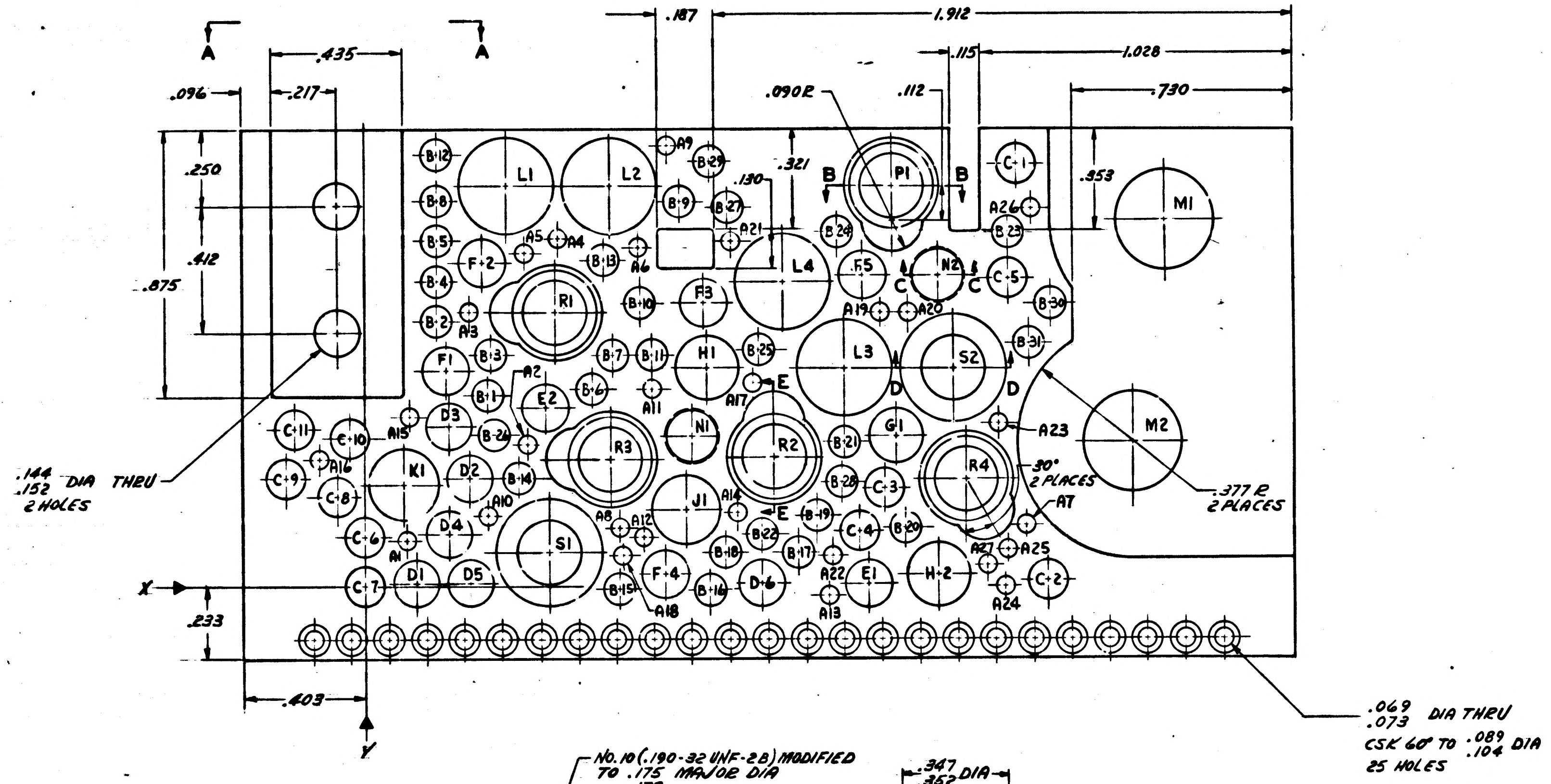

.190
.210 DIA
63
.297
.085
.270
.276 DIA
.302
.308 DIA

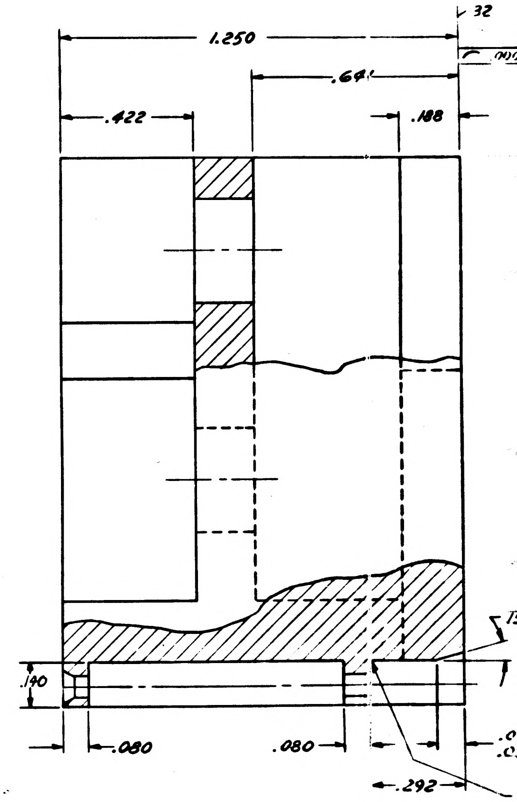
SECTION B-B

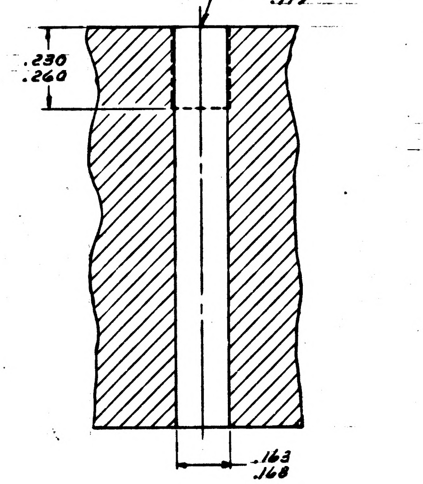

.090 R
2 PLACES
.112
2 PLACES
.302
.308 DIA
2 PLACES


.270
.276 DIA
63
63
.190
.210 DIA
.085
2 PLACES
.297
2 PLACES

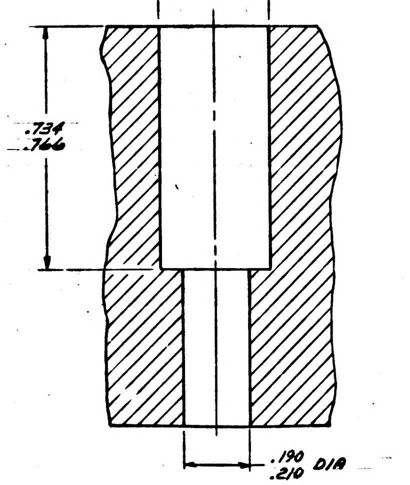
SECTION E-E
4R HOLES


A
A
.435
.096
.217
.250
.412
.875
.144
.152 DIA THRU
2 HOLES
.187
1.912
.115
1.028
.730
.090R
.112
.130
.321
.353
B
B
C
C
D
D
E
E
X
Y
.233
.403
30°
2 PLACES
.377 R
2 PLACES
.069
.073 DIA THRU
CSK 60° TO .089
.104 DIA
25 HOLES


1.250
.641
.422
.188
32
.140
.080
.080
.292


NO.10 (.190-32 UNF-2B) MODIFIED
TO .175 MAJOR DIA
.179
.230
.260
.163
.168

SECTION C-C


.347
.352 DIA
.734
.766
.190
.210 DIA

SECTION D-D

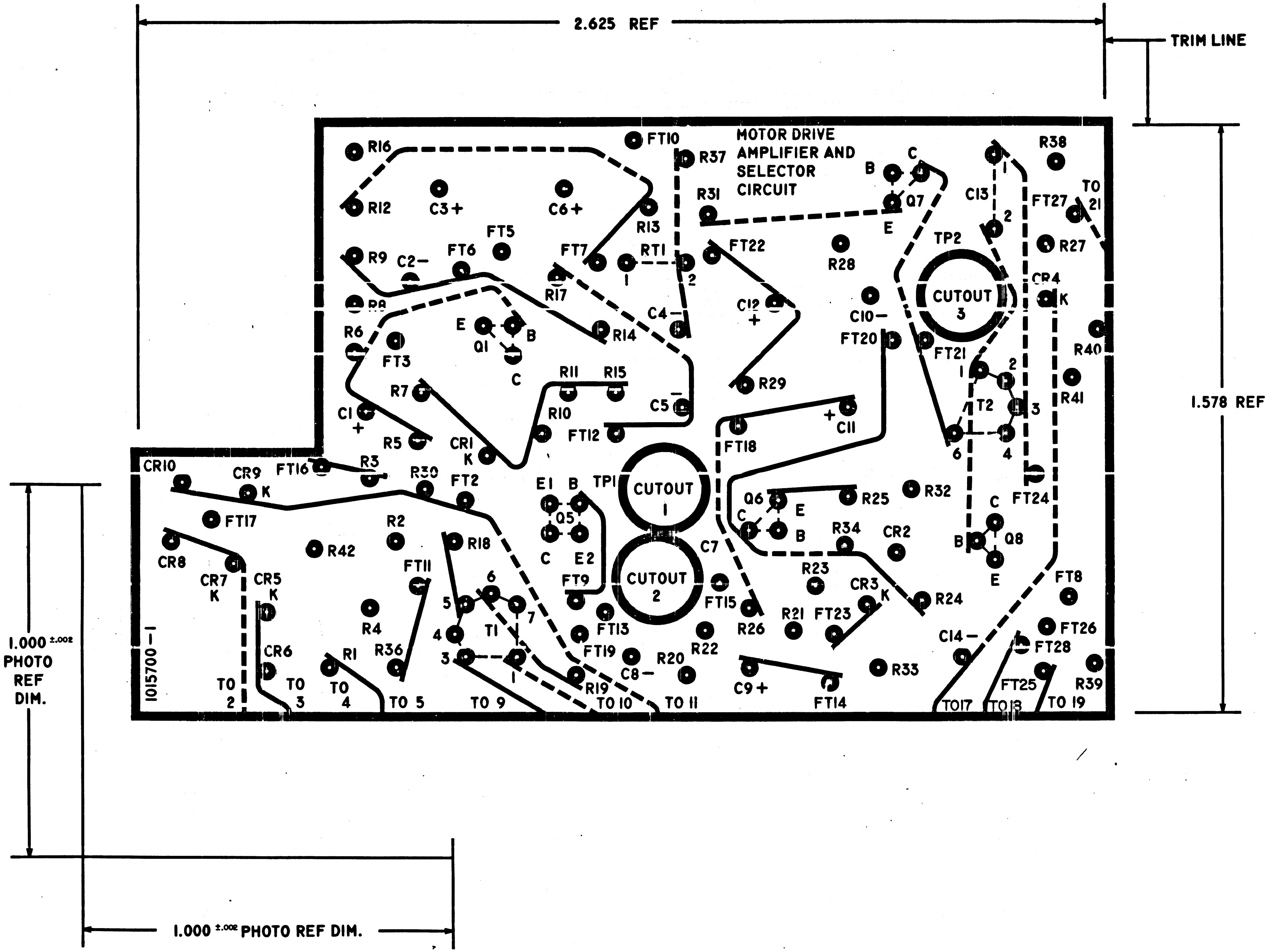
NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31A.
3. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII .010 MAX.
4. FLATNESS TO BE WITHIN .010.
5. UNLESS OTHERWISE SPECIFIED SURFACE ROUGHNESS MUST NOT EXCEED 125√.
6. TRUE POSITIONING AS SHOWN IN CHART.
7. ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.
8. REMOVE ALL BURRS AND BREAK SHARP EDGES .005-.015.
9. COAT THREADS AND ITEM NO 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.
10. INSTALL ITEM NO 2 PER MS 33646, EXCEPT DIM. F TO BE .594, BREAK OFF DRIVING TANG.
11. FINISH: PLUG INSERT HOLES AND ANODIZE PER MIL-M-3171A, TYPE IV.
12. IDENTIFY USING PART NO. AND REV LETTER PER MIL-STD-130

1015698

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 02066					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 02735		9-24-63	JJM



2.625 REF
TRIM LINE
1.578 REF
1.000 ±.002 PHOTO REF DIM.
1.000 ±.002 PHOTO REF DIM.
1015700—1
MOTOR DRIVE AMPLIFIER AND SELECTOR CIRCUIT
CUTOUT 1
CUTOUT 2
CUTOUT 3
TP1
TP2
R16
FT10
R37
R38
R12
C3+
C6+
R31
Q7
C13
FT27
TO 21
R13
RT1
FT22
R27
R9
C2−
FT6
FT5
FT7
R28
CR4
R17
C4−
C12+
C10−
R14
Q1
R6
FT3
FT20
FT21
R40
R11
R15
R29
R7
C5
T2
R41
C1+
R10
FT12
C11+
R5
CR1
FT18
CR10
CR9
FT16
R3
R30
FT2
E1
Q5
E2
Q6
R25
R32
FT24
FT17
R2
R42
R18
R34
CR2
Q8
CR8
CR7
CR5
FT11
T1
FT9
C7
R23
CR3
R24
FT8
FT15
R26
R21
FT23
FT26
R4
FT13
R22
C14−
FT28
CR6
R1
R36
FT19
R20
C8−
C9+
R33
FT25
R39
TO 2
TO 3
TO 4
TO 5
TO 9
R19
TO 10
TO 11
FT14
TO17
TO18
TO 19

NOTES –

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL FILM .006/.008 THICK L-F-340 TYPE, IB, CLASS 2, STYLE IA·
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY· DEMENSIONAL STABILITY SHALL NOT EXCEED .001 PER INCH
4. CUT TO WITHIN .010 OF TRIMLINE·
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
6. BROKEN LINES DENOTE SLEEVING·
7. ● PUNCH ALL HOLES $\frac{.045}{.050}$ DIAMETER

1007060	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Gruenewald DATE 13 June 63
CHECKED Dayle 19 June 63
APPROVAL Olson 19 June 63
APPROVAL 13 June 63
NASA APPROVAL 7/17/63
MIT APPROVAL 7/17/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR
PHOTOGRAPHIC MASTER
MOTOR DRIVE AMPLIFIER AND
SELECTOR CIRCUIT

CODE IDENT NO. | SIZE E | 1015700
SCALE 10:1 | SHEET 1 OF 3

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 02066					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
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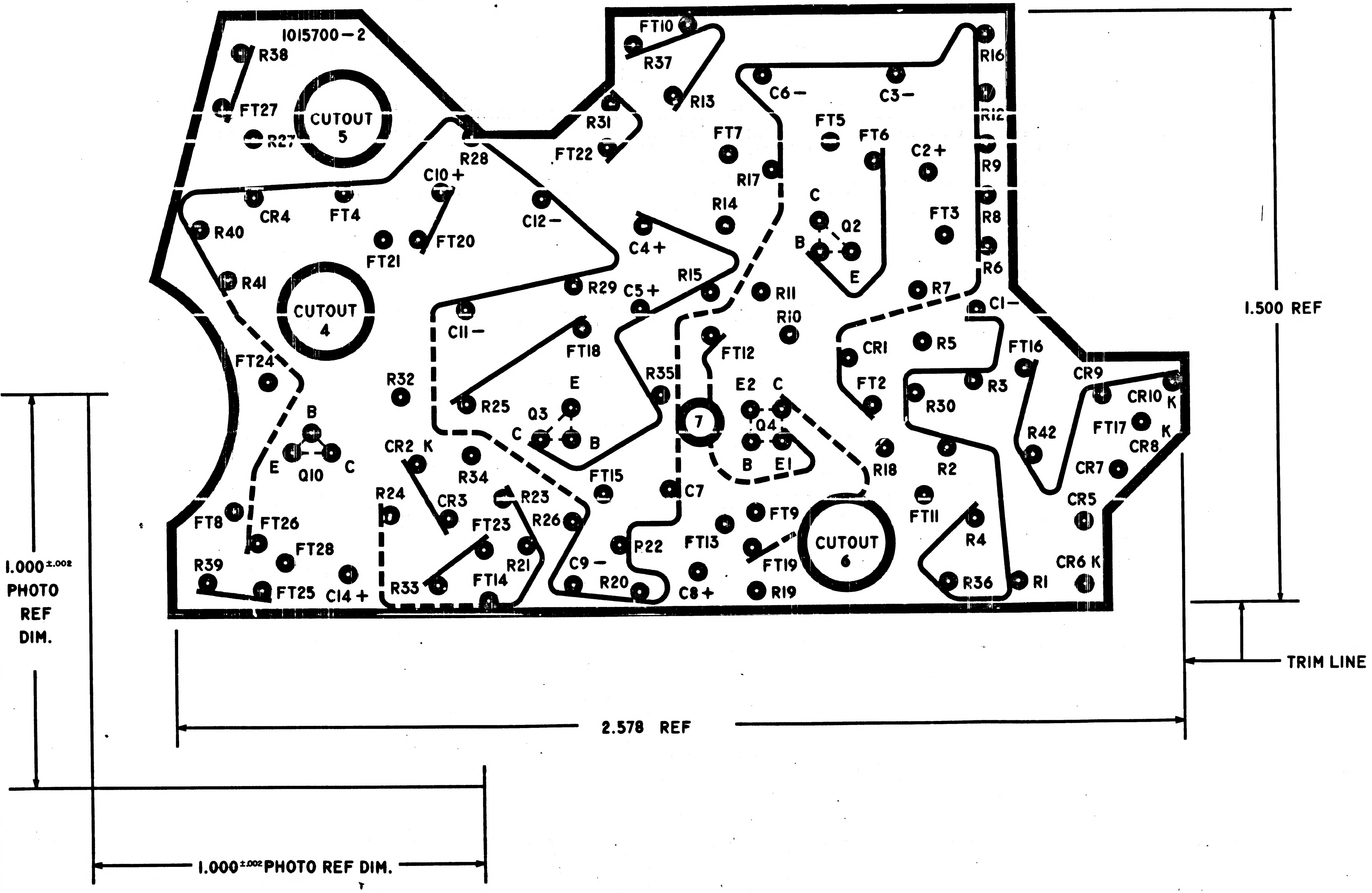


1015700-2
CUTOUT 5
CUTOUT 4
CUTOUT 6
7
R38
FT27
R27
R28
C10 +
R31
FT22
FT10
R37
R13
C6 −
C3 −
FT5
FT6
FT7
R16
R12
R9
R8
R6
C2 +
CR4
FT4
R40
FT20
FT21
C12 −
R17
R14
C
Q2
B
E
FT3
C4 +
R41
R29
C5 +
R15
R11
R10
R7
C1 −
C11 −
FT18
FT12
CR1
R5
FT16
FT24
R32
R35
E2
C
FT2
R3
CR9
CR10 K
FT17
K
CR8
B
Q10
E
C
R25
E
Q3
C
B
Q4
B
E1
R30
R18
R2
R42
CR7
CR2 K
R34
FT15
C7
CR5
R24
CR3
R23
FT11
FT8
FT26
FT23
R26
FT9
FT13
R4
FT28
R21
P22
FT19
CR6 K
R39
FT25
C14 +
R33
FT14
C9 −
R20
C8 +
R19
R36
R1
1.500 REF
TRIM LINE
2.578 REF
1.000 ±.002 PHOTO REF DIM.
1.000 ±.002 PHOTO REF DIM.

INCHES

PHOTOGRAPHIC SCALE ONLY

1007060	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+	+
−	−	−

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT

AC SPARK PLUG DIVISION. GMC
MILWAUKEE WISCONSIN

ACSP PN

DRAWN Gruenewald DATE 13 June 63

CHECKED 19 June 63

APPROVAL M. G. 19 June 63

APPROVAL D. R. 15 Jul 63

NASA APPROVAL 7/17/63

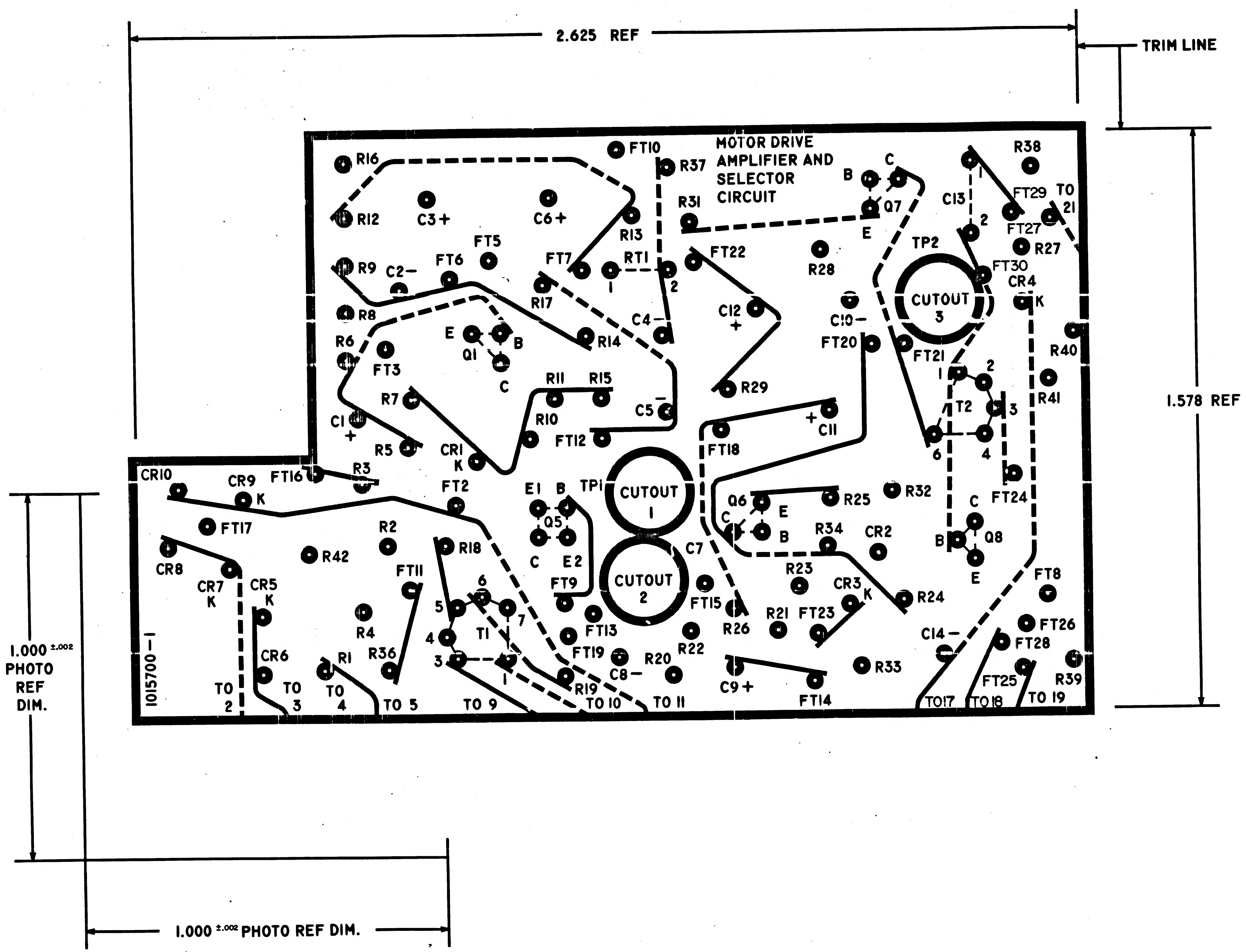
MIT APPROVAL 7/17/63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

INSULATOR
PHOTOGRAPHIC MASTER
MOTOR DRIVE AMPLIFIER AND
SELECTOR CIRCUIT

CODE IDENT NO	SIZE	
	E	1015700
SCALE 10:1		SHEET 2 OF 2

REVISIONS TDRR 02066					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 02735		5-24-63	JJM
B		REVISED PER TDRR 04665			


2.625 REF
TRIM LINE
1.578 REF
1.000 ±.002 PHOTO REF DIM.
1.000 ±.002 PHOTO REF DIM.
MOTOR DRIVE AMPLIFIER AND SELECTOR CIRCUIT
CUTOUT 1
CUTOUT 2
CUTOUT 3
1015700-1
R16
R12
C3+
C6+
FT10
R37
R31
R13
RT1
FT5
FT6
FT7
R9
C2−
R17
R8
Q1
E
B
C
R14
C4−
R6
FT3
R7
R11
R15
R10
C5
C1
R5
CR1
K
FT12
R3
FT16
CR10
CR9
FT17
FT2
R2
R42
CR8
CR7
CR5
R18
FT11
E1
B
TP1
Q5
C
E2
FT9
C7
FT13
FT19
C8−
R20
R22
T1
R4
R36
R1
CR6
R19
TO 2
TO 3
TO 4
TO 5
TO 9
TO 10
TO 11
FT22
C12
C10−
FT20
R28
R29
C11
FT18
Q6
R25
R32
R34
CR2
R23
CR3
FT15
R26
R21
FT23
R24
C9+
FT14
R33
C14−
Q7
C13
TP2
R38
FT29
TO 21
FT27
R27
FT30
CR4
FT21
T2
R40
R41
FT24
Q8
FT8
FT26
FT28
FT25
R39
TO17
TO18
TO 19

NOTES -

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL FILM .006/.008 THICK L-F-340 TYPE, IB, CLASS 2, STYLE IA.
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DEMENSIONAL STABILITY SHALL NOT EXCEED .001 PER INCH
4. CUT TO WITHIN .010 OF TRIMLINE.
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
6. BROKEN LINES DENOTE SLEEVING.
7. ● PUNCH ALL HOLES $\frac{.045}{.050}$ DIAMETER

1007060	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Gruenewald DATE 13 JUNE 63
CHECKED Dayle 19 June 63
A. KOSEL 19 JUN 63
APPROVAL Duncan 19 JUNE 63
APPROVAL 13 JUN 63
NASA APPROVAL 7/17/63
MIT APPROVAL 7/17/6

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

INSULATOR
PHOTOGRAPHIC MASTER
MOTOR DRIVE AMPLIFIER AND
SELECTOR CIRCUIT

CODE IDENT NO. SIZE E 1015700
SCALE 10:1 SHEET 1 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 02066					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
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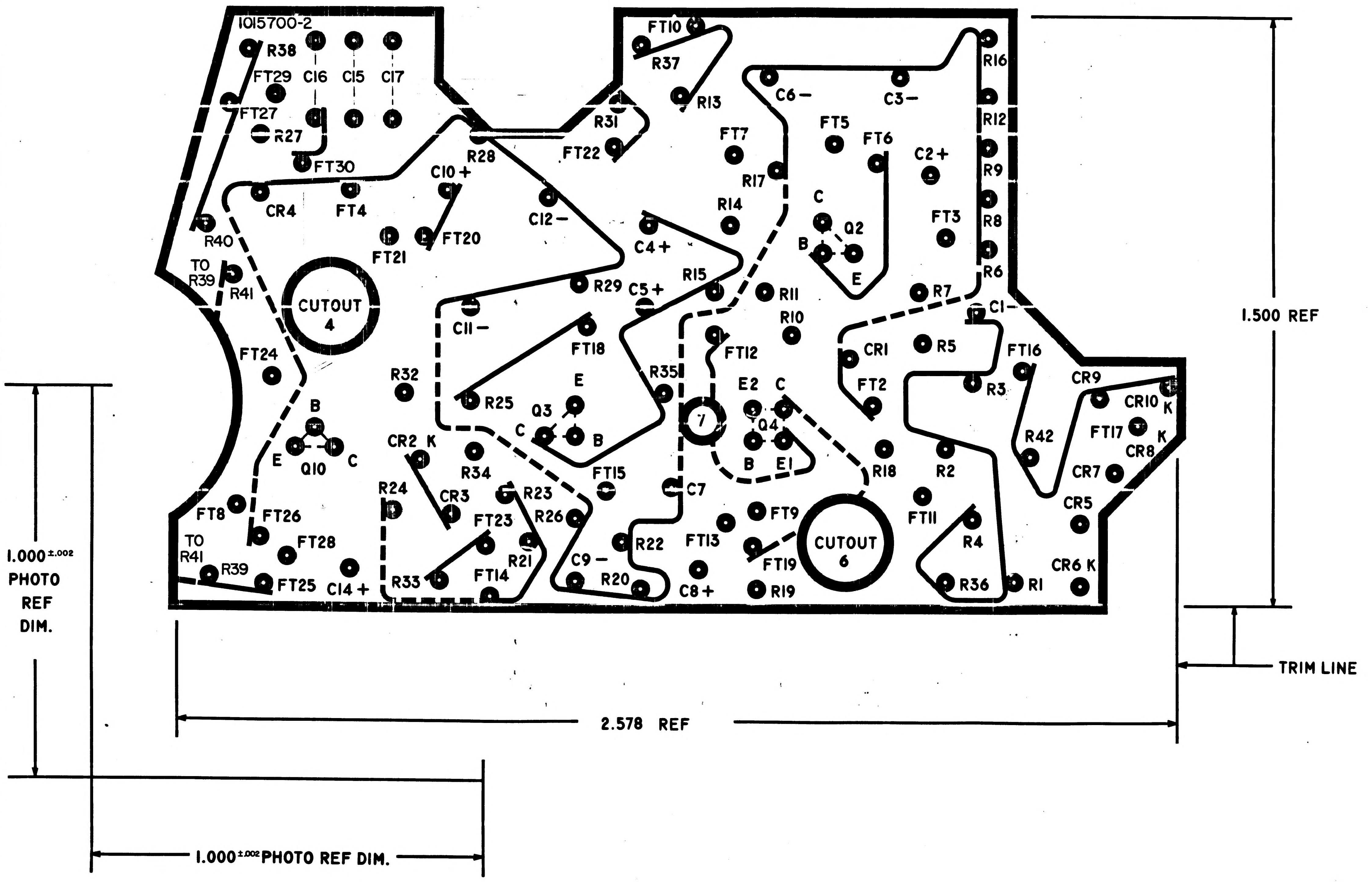
B		REVISED PER TDRR 04665		11-22-63	



1015700-2
R38
C16
C15
C17
FT29
FT27
R27
FT30
FT10
R37
R13
R31
FT22
R28
C10 +
CR4
FT4
R40
TO R39
R41
FT21
FT20
C12 −
CUTOUT 4
FT24
B
E
Q10
C
C6 −
C3 −
FT7
FT5
FT6
C2 +
R17
R14
C
Q2
B
E
FT3
R16
R12
R9
R8
R6
C4 +
R15
R29
C5 +
R11
R10
R7
C1 −
C11 −
FT18
FT12
CR1
R5
FT16
R32
R25
E
Q3
C
B
R35
7
E2
C
Q4
B
E1
FT2
R3
CR9
CR10
K
R42
FT17
CR8
K
CR2
K
R34
FT15
C7
R18
R2
CR7
CR3
R24
R23
FT23
R26
FT11
CR5
FT8
FT26
FT28
TO R41
R39
FT25
C14 +
R33
FT14
R21
C9 −
R20
R22
FT13
FT9
FT19
C8 +
R19
CUTOUT 6
R4
R36
R1
CR6 K
1.500 REF
TRIM LINE
2.578 REF
1.000 ±.002 PHOTO REF DIM.
1.000 ±.002 PHOTO REF DIM.

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1007060	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

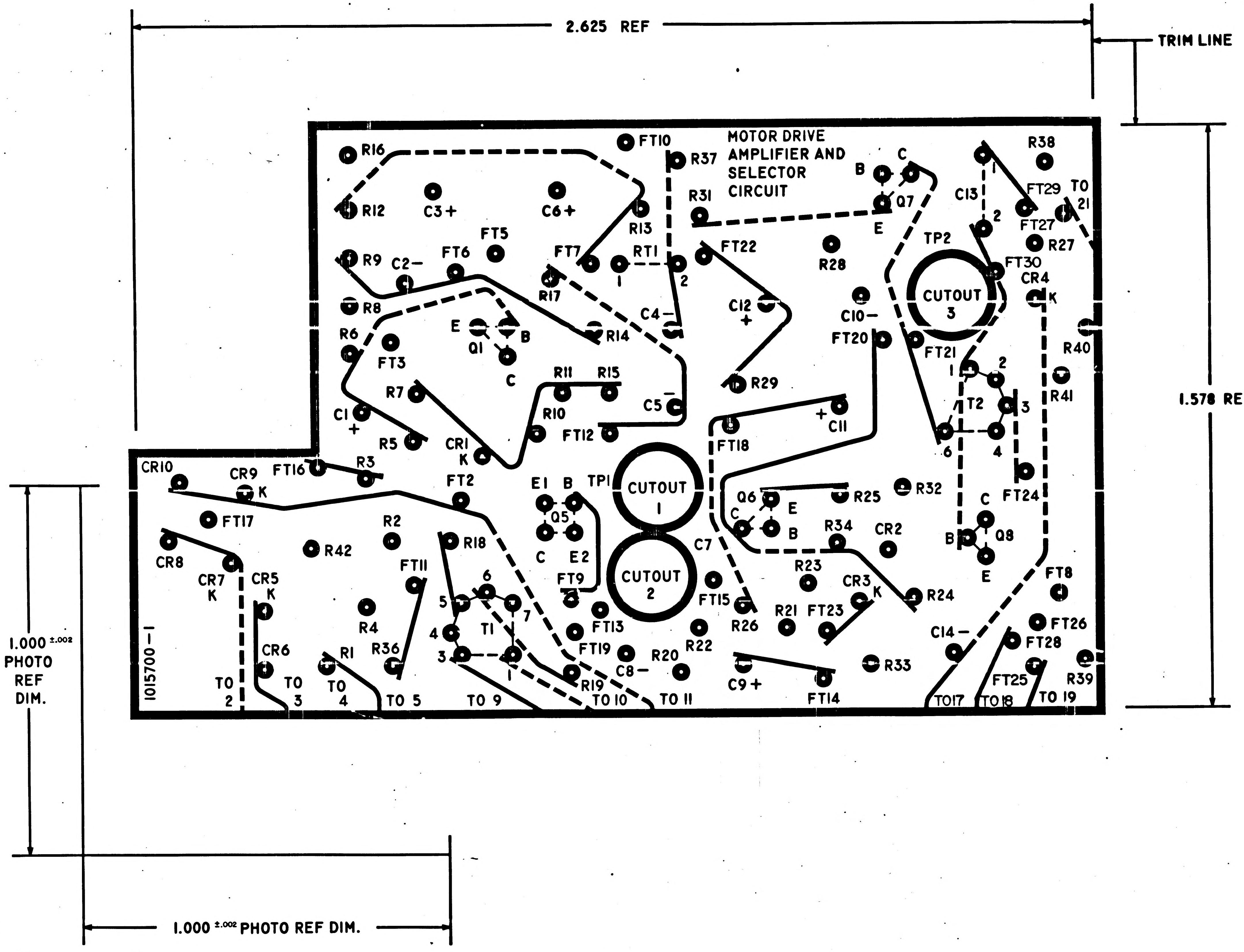
AC SPARK PLUG DIVISION. GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN Gruenewaldt DATE 13 JUNE 63
CHECKED 19 JUNE 63
APPROVAL M. B. 19 JUNE 63
APPROVAL 15 JUL 63
NASA APPROVAL 7/17/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

INSULATOR
PHOTOGRAPHIC MASTER
MOTOR DRIVE AMPLIFIER AND
SELECTOR CIRCUIT

CODE IDENT NO
SIZE E
1015700
SCALE 10:1
SHEET 2 OF 2

REV	ZONE	DESCRIPTION REVISIONS TDRR 02066	CHG NO	DATE	APPD
A		REVISED PER TDRR 02735		9 26 63	[illegible]
B		REVISED PER TDRR 04665		11 21 63	[illegible]
C		REVISED PER TDRR 07186		8 APR 64	[illegible]



2.625 REF
TRIM LINE
1.578 REF
1.000 ±.002 PHOTO REF DIM.
1.000 ±.002 PHOTO REF DIM.
MOTOR DRIVE AMPLIFIER AND SELECTOR CIRCUIT
1015700-1
CUTOUT 1
CUTOUT 2
CUTOUT 3
TP1
TP2
R16
R12
R9
R8
R6
R7
R5
R3
R2
R4
R1
R36
R42
R18
R10
R11
R15
R14
R13
R17
R37
R31
RT1
R28
R29
R38
R27
R40
R41
R32
R25
R34
R23
R24
R21
R26
R22
R20
R19
R33
R39
C3+
C6+
C2-
C1 +
C4-
C5
C12 +
C10-
C11 +
C13
C7
C8-
C9 +
C14-
CR1 K
CR2
CR3 K
CR4 K
CR5 K
CR6
CR7 K
CR8
CR9 K
CR10
Q1 E B C
Q5 E1 B C E2
Q6 C E B
Q7 B C E
Q8 C B E
T1 1 2 3 4 5 6 7
T2 1 2 3 4 6
FT2
FT3
FT5
FT6
FT7
FT8
FT9
FT10
FT11
FT12
FT13
FT14
FT15
FT16
FT17
FT18
FT19
FT20
FT21
FT22
FT23
FT24
FT25
FT26
FT27
FT28
FT29
FT30
TO 2
TO 3
TO 4
TO 5
TO 9
TO 10
TO 11
TO17
TO18
TO 19
TO 21

NOTES -

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL FILM .006/.008 THICK L-F-340 TYPE, IB, CLASS 2, STYLE IA.
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL. STABILITY. DEMENSIONAL STABILITY SHALL NOT EXCEED .001 PER INCH
4. CUT TO WITHIN .010 OF TRIMLINE.
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
6. BROKEN LINES DENOTE SLEEVING.
7. ● PUNCH ALL HOLES .046/.050 DIAMETER

C	C
SHEET 1	SHEET 2
REVISION STATUS OF SHEETS	

1007060	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION GMC
MILWAUKEE WISCONSIN
DRAWN 13 JUNE 63
CHECKED 19 June 63
19 JUNE 63
APPROVAL 19 JUNE 63
NASA APPROVAL 7/17/63
MIT APPROVAL

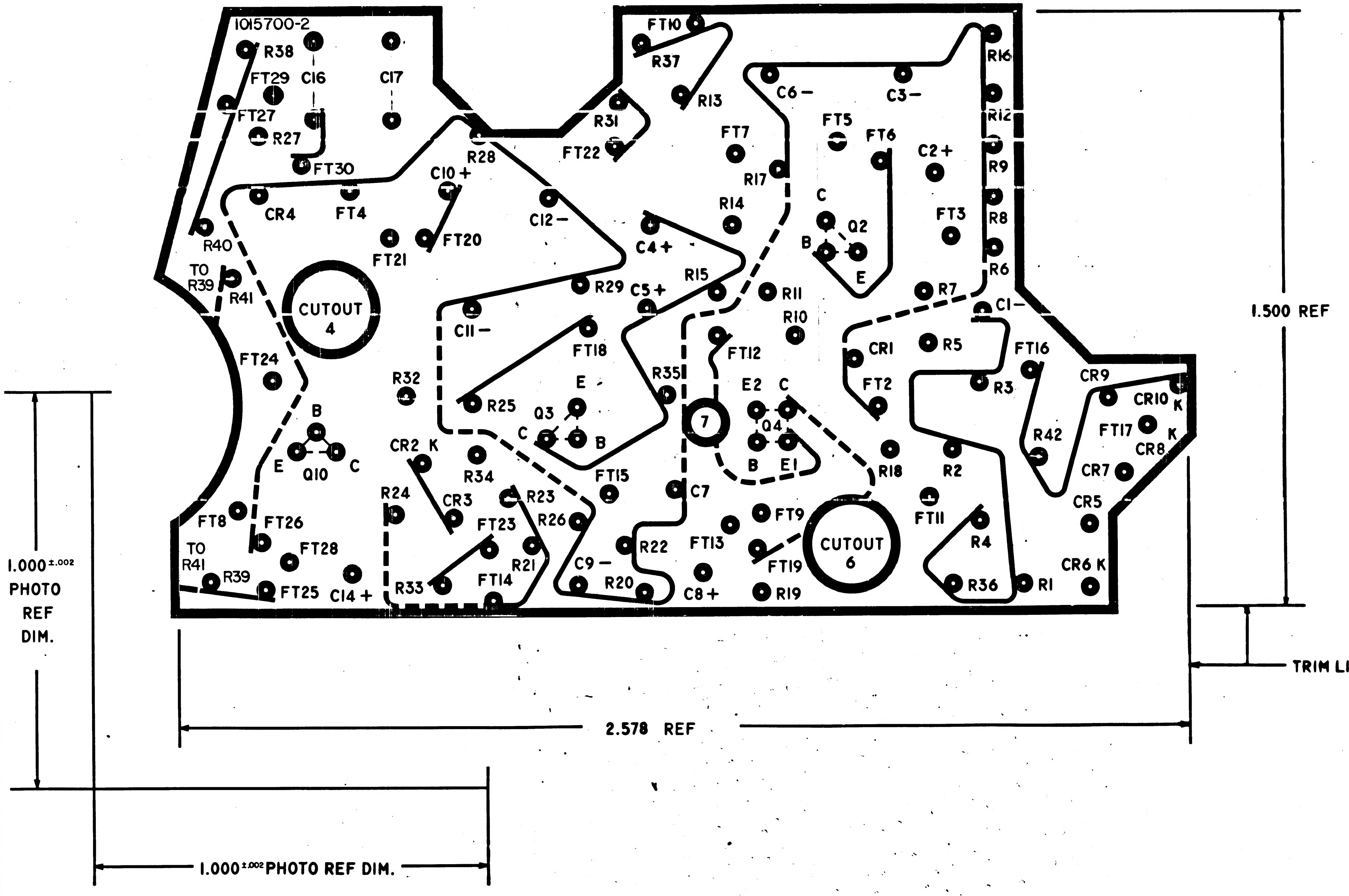
MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

INSULATOR
PHOTOGRAPHIC MASTER
MOTOR DRIVE AMPLIFIER AND
SELECTOR CIRCUIT

CODE IDENT NO
SIZE E
1015700
SCALE 10:1
SHEET 1 OF 2

REVISIONS TDRR 02066

A	REVISED PER TDRR 02735	5-26-63	[illegible]
B	REVISED PER TDRR 04665	11-22-63	[illegible] 12/3
C	REVISED PER TDRR 07136	8 APR 64	MTY



1015700-2
R38
FT29
C16
C17
FT27
R27
FT30
R28
C10 +
R31
FT22
FT10
R37
R13
C6 –
C3 –
R16
R12
R9
R8
R6
FT5
FT6
C2 +
FT7
R17
R14
C
Q2
B
E
FT3
R7
C1 –
CR4
FT4
C12 –
C4 +
R40
FT21
FT20
TO R39
R41
CUTOUT 4
R15
R11
R10
R29
C5 +
C11 –
FT18
FT12
CR1
R5
FT16
FT24
R32
R35
E2
C
CR2
FT2
R3
CR9
CR10
K
E
R25
Q3
C
B
7
Q4
B
E1
R18
R2
R42
FT17
K
CR8
Q10
CR2 K
R34
FT15
C7
CR7
FT8
FT26
R24
CR3
R23
FT23
R26
FT9
FT11
CR5
TO R41
R39
FT28
R21
C9 –
R22
FT13
FT19
CUTOUT 6
R4
CR6 K
FT25
C14 +
R33
FT14
R20
C8 +
R19
R36
R1
1.500 REF
TRIM LINE
2.578 REF
1.000 ±.002 PHOTO REF DIM.
1.000 ±.002 PHOTO REF DIM.

1007060	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION GMC
MILWAUKEE WISCONSIN
DRAWN Gruenewald 13 June 63
CHECKED [illegible] 19 JUNE 63
APPROVAL M. B[illegible] 19 JUNE 63
APPROVAL D. G. Test 15 JUL 63
NASA APPROVAL 7/17/63
MT APPROVAL [illegible]

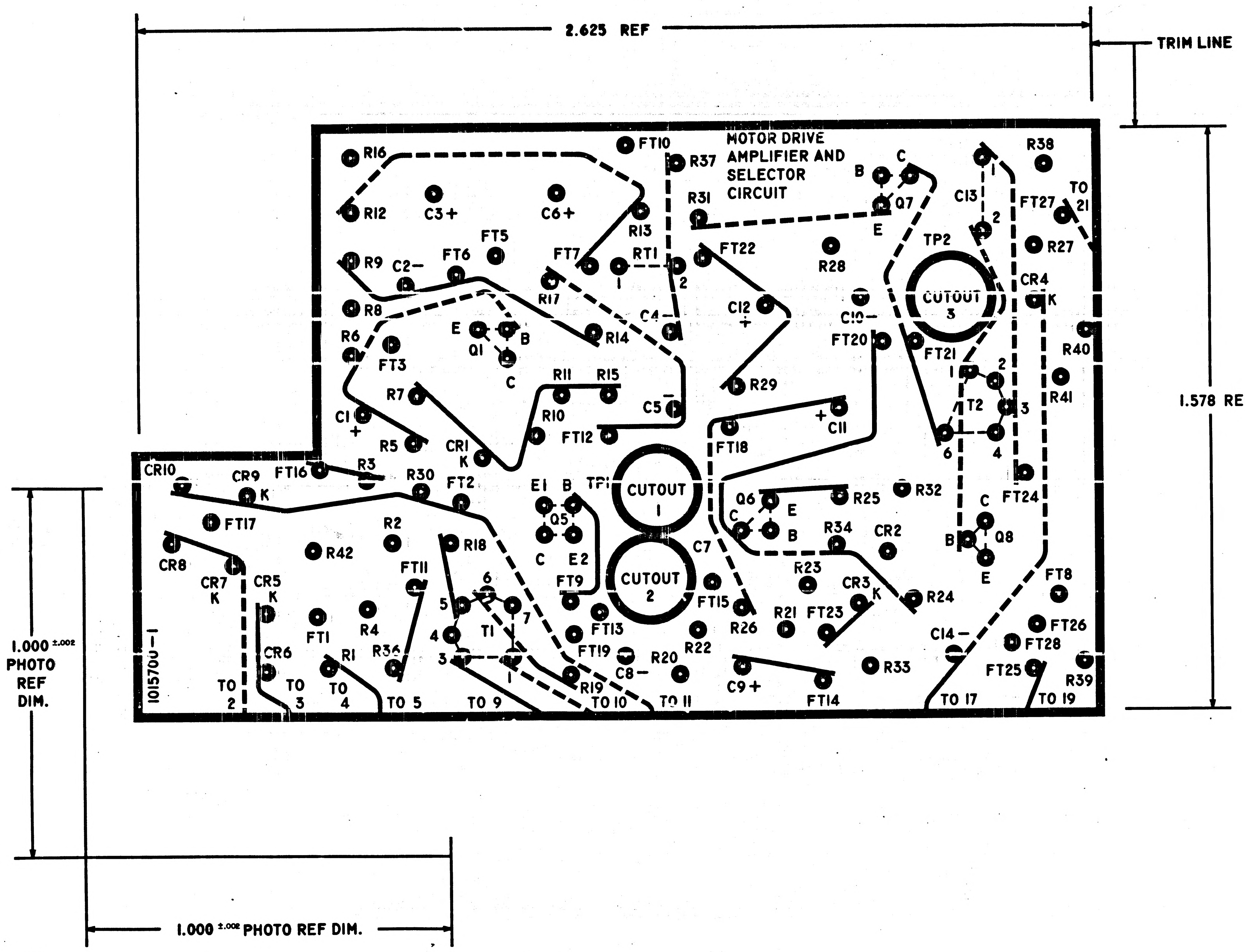
MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

INSULATOR
PHOTOGRAPHIC MASTER
MOTOR DRIVE AMPLIFIER AND
SELECTOR CIRCUIT

CODE IDENT NO
SIZE E
1015700
SCALE 10:1
SHEET 2 OF 2

C 1015700

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD



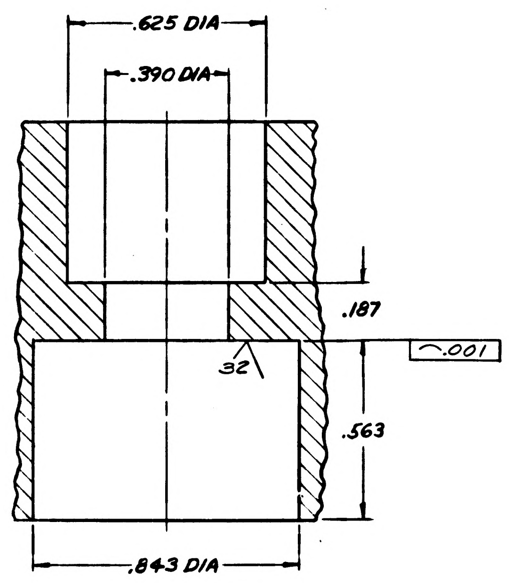
2.625 REF
TRIM LINE
1.578 REF
1.000 ±.002 PHOTO REF DIM.
1.000 ±.002 PHOTO REF DIM.
MOTOR DRIVE AMPLIFIER AND SELECTOR CIRCUIT
CUTOUT 1
CUTOUT 2
CUTOUT 3
1015700-1
TP1
TP2
R16
R12
R9
R8
R6
R7
R5
C1 +
C2−
C3+
C6+
C4−
C5
C7
C8−
C9+
C10−
C11
C12 +
C13
C14−
Q1
Q5
Q6
Q7
Q8
T1
T2
RT1
CR1 K
CR2
CR3 K
CR4 K
CR5 K
CR6
CR7 K
CR8
CR9 K
CR10
FT1
FT2
FT3
FT5
FT6
FT7
FT8
FT9
FT10
FT11
FT12
FT13
FT14
FT15
FT16
FT17
FT18
FT19
FT20
FT21
FT22
FT23
FT24
FT25
FT26
FT27
FT28
R1
R2
R3
R4
R10
R11
R13
R14
R15
R17
R18
R19
R20
R21
R22
R23
R24
R25
R26
R27
R28
R29
R30
R31
R32
R33
R34
R36
R37
R38
R39
R40
R41
R42
TO 2
TO 3
TO 4
TO 5
TO 9
TO 10
TO 11
TO 17
TO 19
TO 21

NOTES -

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL FILM .006/.008 THICK L-F-340 TYPE, IB, CLASS 2, STYLE IA.
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DEMENSIONAL STABILITY SHALL NOT EXCEED .001 PER INCH
4. CUT TO WITHIN .010 OF TRIMLINE.
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
6. BROKEN LINES DENOTE SLEEVING.
7. ● PUNCH ALL HOLES $\substack{.046\\.050}$ DIAMETER

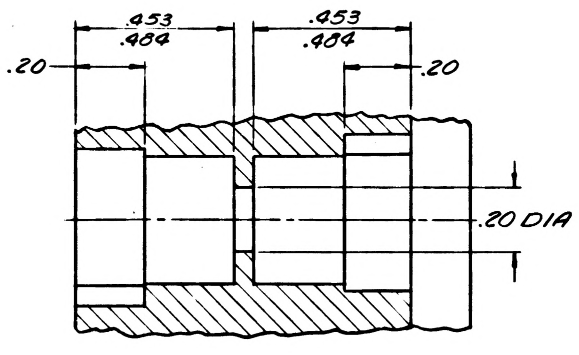
1007060		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ± DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN AC SP PN DRAWN Gruenewald DATE 13 June 63 CHECKED 19 June 63 APPROVAL 19 June 63 APPROVAL 13 Jun 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS INSULATOR PHOTOGRAPHIC MASTER MOTOR DRIVE AMPLIFIER AND SELECTOR CIRCUIT
NEXT ASSY	USED ON	MATERIAL	NASA APPROVAL 7/17/63	CODE IDENT NO. / SIZE E / 1015700
APPLICATION		CONTRACT	MIT APPROVAL	SCALE 10:1 / SHEET 1 of 2

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⌖ DIA	HOLE DIA	QTY
A1	-.280	.280	.006	.148 .152	1
B1	-.150	.200		.100 .104	4
B2	.760	.720			
B3	.300	.180			
B4	1.000	.060			
C1	-.080	.860		SEE SECTION A-A	2
C2	3.700	.820			
D1	-.020	.250		.058 .062	7
D2	.540	.480			
D3	.540	.300			
D4	.840	.060			
D5	.880	.520			
D6	1.120	-.060			
D7	1.310	.540			
E1	.000	.000		SEE SECTION C-C	1
F1	.480	.100		.584 .594	2
F2	3.590	.090			
G1	.540	.720		.227 .231	4
G2	[illegible]	[illegible]			
G3	.720	1.180			
G4	1.300	-.080			
H1	.720	.540		.193 .197	2
H2	.860	.360			
J1	.820	-.080		.127 .131	2
J2	1.000	-.120			
K1	1.100	.780		.521 .531	1
L1	3.300	-.110		SEE DETAIL	1
M1	1.200	.280		SEE SECTION B-B	1
			.006		



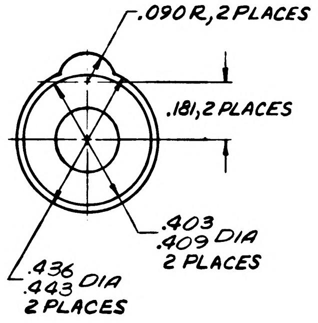
.625 DIA
.390 DIA
.187
32
⌒.001
.563
.843 DIA

PARTIAL SECTION A-A
2 PLACES

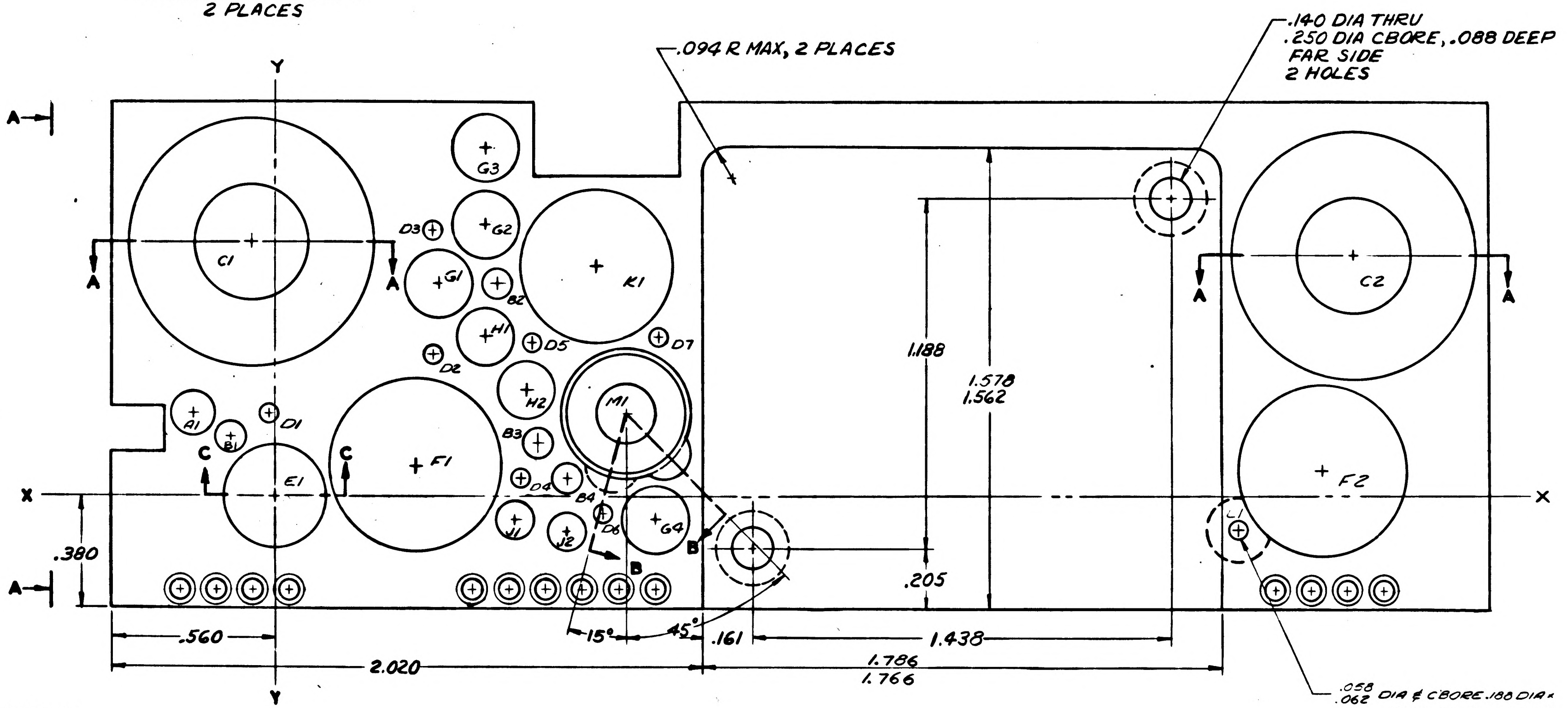


.453
.484
.453
.484
.20
.20
.20 DIA

PARTIAL SECTION B-B



.090 R, 2 PLACES
.181, 2 PLACES
.403
.409 DIA
2 PLACES
.436
.443 DIA
2 PLACES



.094 R MAX, 2 PLACES
.140 DIA THRU
.250 DIA CBORE, .088 DEEP
FAR SIDE
2 HOLES
Y
X
A
C
B
C1
C2
G3
G2
G1
D3
B2
K1
H1
D5
D7
D2
H2
M1
A1
B1
D1
B3
E1
F1
F2
D4
B4
D6
G4
J1
J2
L1
1.188
1.578
1.562
.205
.380
.560
15°
45°
.161
1.438
2.020
1.786
1.766
.058
.062 DIA ⊄ CBORE .180 DIA ×
.125 DEEP (FARSIDE)

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

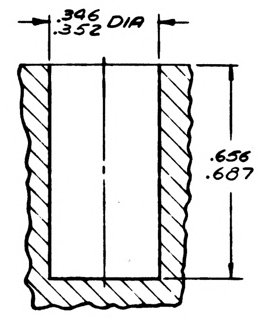
ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

1 ▷ INSTALL ITEM 2 PER MS33646 EXCEPT DIM F TO BE .594, BREAK OFF TANGS.

UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.
MUST BE FREE FROM BURRS.

2 ▷ MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325.
FINISH: ANODIZE USING MIL-A-8625, TYPE II DYED BLACK
PLUG INSERT HOLES.



.346
.352 DIA
.656
.687

PARTIAL SECTION C-C

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR [illegible]			[illegible] KR

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	4	NAS1222-06E	INSERT SCREW LOCKING
1	1	1015703-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007048	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .XX ±.02 ±1°
.XXX ±.005
DO NOT SCALE THIS DRAWING
MATERIAL 2 ▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Hillman DATE 6 MAY 63
CHECKED 16 MAY 63
APPROVAL R. OSBERG 16 MAY 63
APPROVAL A.J. KOPPEL 16 MAY 63
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

HEATSINK
AMPLIFIER.5% 800 CPS

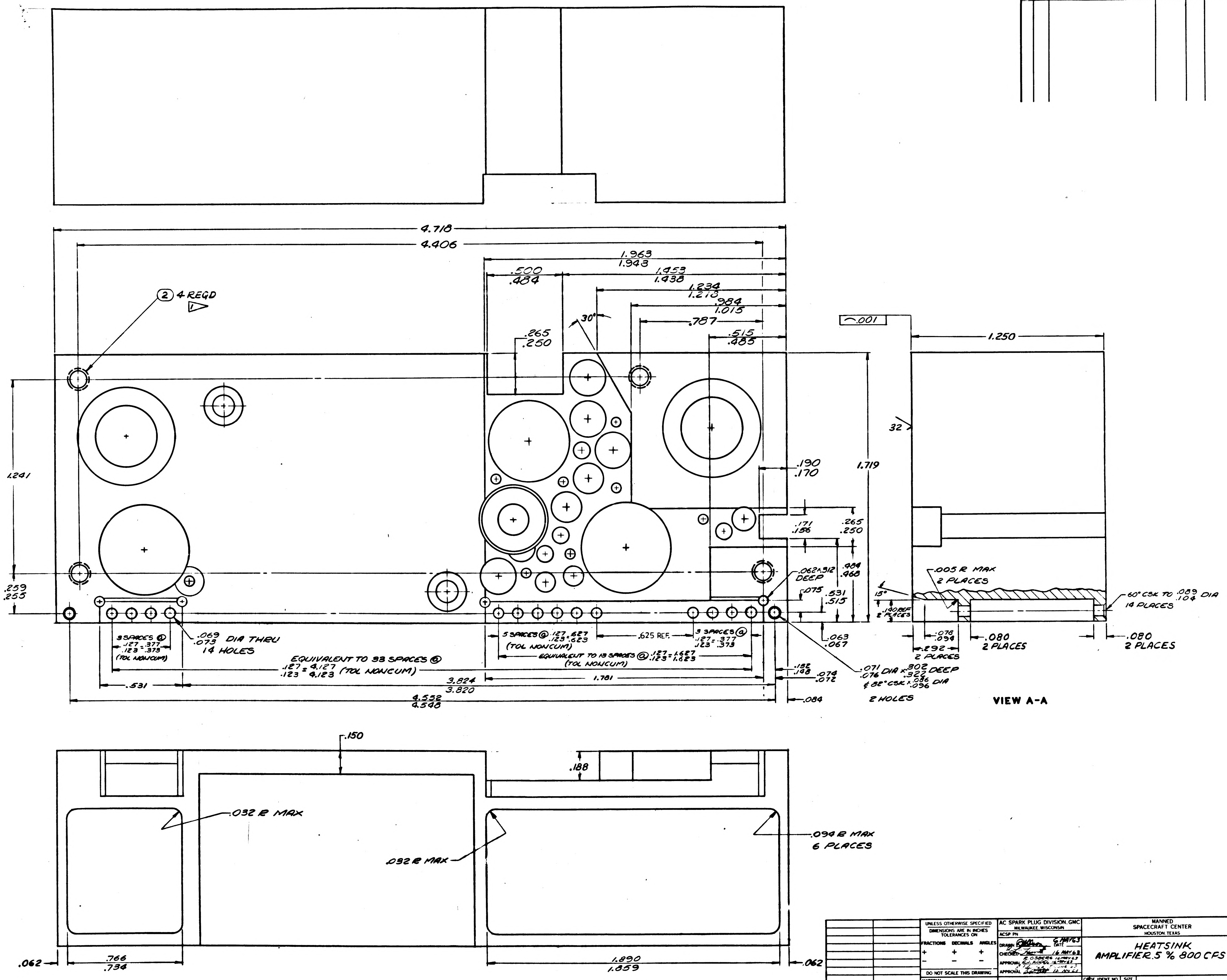
CODE IDENT NO
SIZE E
1015703
SCALE 5/1
SHEET 1 OF 2

1015703 A

Charleston 16 MAY 63

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR [illegible]			[illegible]



4.718
4.406
1.963
1.943
.500
.484
1.453
1.438
1.234
1.218
.984
1.015
.787
.515
.485
30°
.265
.250
② 4 REQD
1
⌒.001
1.250
32
1.241
1.719
.190
.170
.171
.156
.265
.250
.259
.255
.984
.968
.062 x .312 DEEP
.075
.531
.515
15°
.140 REF 2 PLACES
.005 R MAX 2 PLACES
60° CSK TO .089 .104 DIA 14 PLACES
.069 .073 DIA THRU 14 HOLES
3 SPACES @ .127 .123 = .377 .373 (TOL NONCUM)
5 SPACES @ .127 .123 = .627 .623
(TOL NONCUM)
.625 REF.
3 SPACES @ .127 .123 = .377 .373
EQUIVALENT TO 13 SPACES @ .127 .123 = 1.627 1.623 (TOL NONCUM)
EQUIVALENT TO 33 SPACES @ .127 .123 = 4.127 4.123 (TOL NONCUM)
.531
3.824
3.820
1.781
4.552
4.548
.063
.067
.152
.148
.074
.072
.084
.071 .076 DIA x .302 .322 DEEP
& 82° CSK x .086 .096 DIA
2 HOLES
.076
.094
.292
2 PLACES
.080 2 PLACES
.080 2 PLACES
VIEW A-A
.150
.188
.032 R MAX
.032 R MAX
.094 R MAX 6 PLACES
.062
.766
.734
1.890
1.859
.062

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+	+
−	−	−

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN [illegible] DATE 6 MAY 63
CHECKED [illegible] 16 MAY 63
APPROVAL R. OSBERG 16 MAY 63
APPROVAL A. J. KODEL 16 MAY 63
APPROVAL [illegible] 12 [illegible] 63

NASA APPROVAL [illegible]
MIT APPROVAL Perry K Bryant

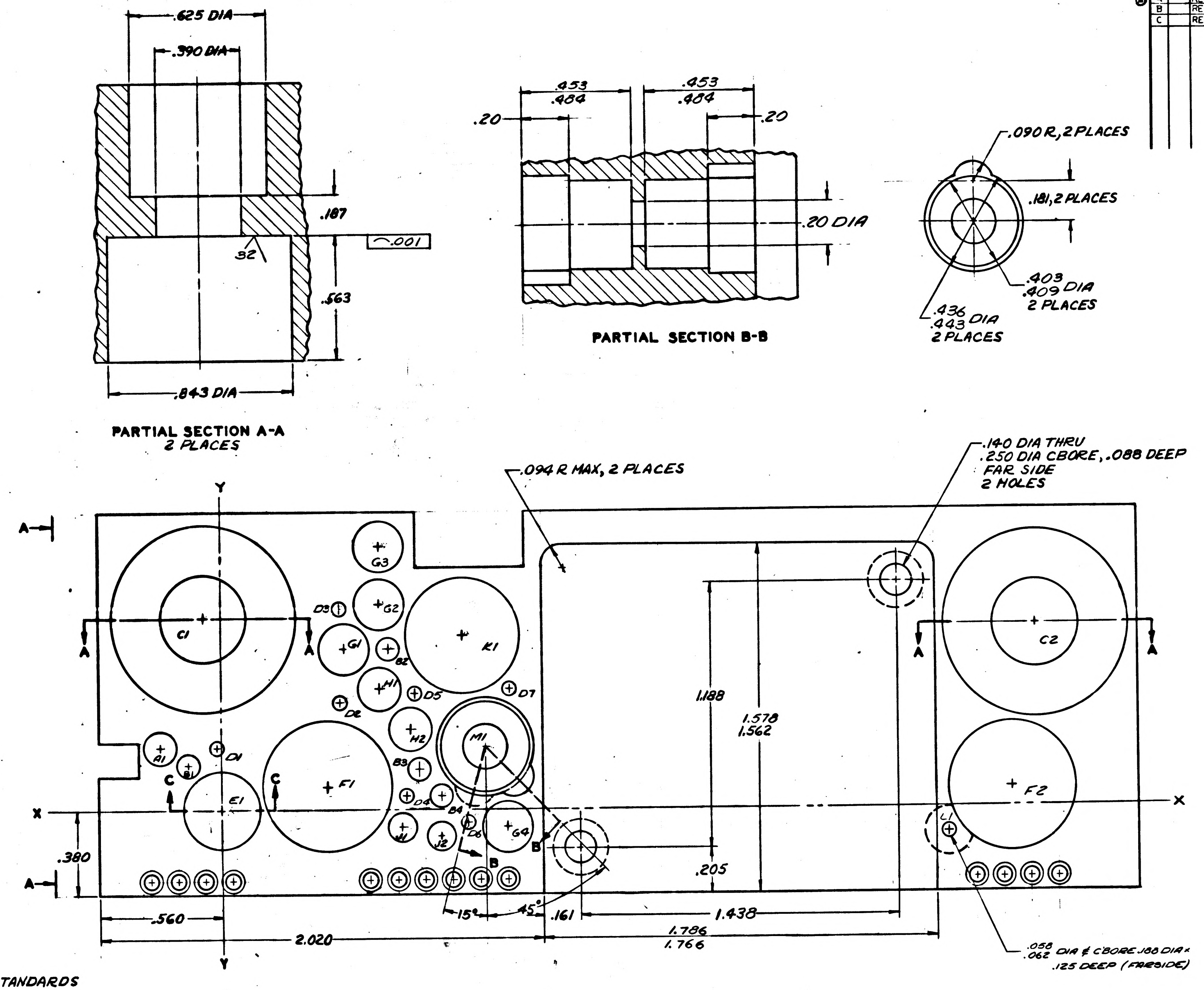
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER .5 % 800 CPS

CODE IDENT NO.	SIZE	
	E	1015703
SCALE 5/1		SHEET 2 OF 2

1015703 A

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⊕ DIA	HOLE DIA	QTY
A1	-.260	.280	.006	.148 .152	1
B1	-.150	.200		.100 .104	4
B2	.160	.720			
B3	.300	.180			
B4	1.000	.060			
C1	-.080	.860		SEE SECTION A-A	2
C2	3.700	.820			
D1	-.020	.280		.058 .062	7
D2	.540	.480			
D3	.540	.900			
D4	.840	.060			
D5	.880	.520			
D6	1.120	-.060			
D7	1.310	.540			
E1	.000	.000		SEE SECTION C-C	1
F1	.480	.100		.584 .594	2
F2	3.590	.090			
G1	.560	.120		.227 .231	4
G2	.720	.920			
G3	.720	1.180			
G4	1.300	-.060			
H1	.720	.540		.193 .197	2
H2	.860	.360			
J1	.820	-.080		.127 .131	2
J2	1.000	-.120			
K1	1.100	.780		.521 .531	1
L1	3.300	-.110		SEE DETAIL	1
M1	1.200	.280	.006	SEE SECTION B-B	1



.625 DIA
.390 DIA
.187
32
⌒.001
.563
.843 DIA
PARTIAL SECTION A-A
2 PLACES
.453
.484
.453
.484
.20
.20
.20 DIA
PARTIAL SECTION B-B
.090 R, 2 PLACES
.181, 2 PLACES
.403
.409 DIA
2 PLACES
.436
.443 DIA
2 PLACES
.094 R MAX, 2 PLACES
.140 DIA THRU
.250 DIA CBORE, .088 DEEP
FAR SIDE
2 HOLES
A
B
C
X
Y
A1
B1
B2
B3
B4
C1
C2
D1
D2
D3
D4
D5
D6
D7
E1
F1
F2
G1
G2
G3
G4
H1
H2
J1
J2
K1
L1
M1
1.188
1.578
1.562
.380
.205
.560
2.020
15°
45°
.161
1.438
1.786
1.766
.058
.062 DIA ⊄ CBORE .188 DIA ×
.125 DEEP (FARSIDE)

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

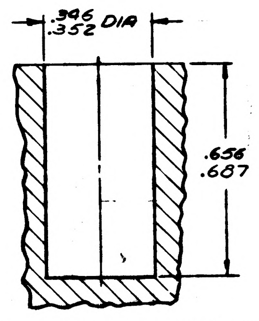
ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

1▷ INSTALL ITEM 2 PER MS33646 EXCEPT DIM "F" TO BE .594, BREAK OFF TANGS.

UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.
MUST BE FREE FROM BURRS.

2▷ MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325.
FINISH: ANODIZE USING MIL-A-8625, TYPE II DYED BLACK
PLUG INSERT HOLES.



.346
.352 DIA
.656
.687

PARTIAL SECTION C-C

REVISIONS TDRR 0 53°

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 0/6.2			
B		REVISED PER TDRR 03851			
C		REVISED PER TDRR 03853			

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	4	MS21209-C0620	INSERT SCREW LOCKING
1	1	1015703-1	HEATSINK

LIST OF PARTS AND MATERIALS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ .XX ±.02 +1°
- .XXX ±.005 -1°
DO NOT SCALE THIS DRAWING
MATERIAL 2▷

1007048
NEXT ASSY USED ON
APPLICATION

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 6 MAY 63 DATE
CHECKED 16 MAY 63
APPROVAL E. OSBERG 16 MAY 63
A.J. KODEL 16 MAY 63
APPROVAL
CONTRACT
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

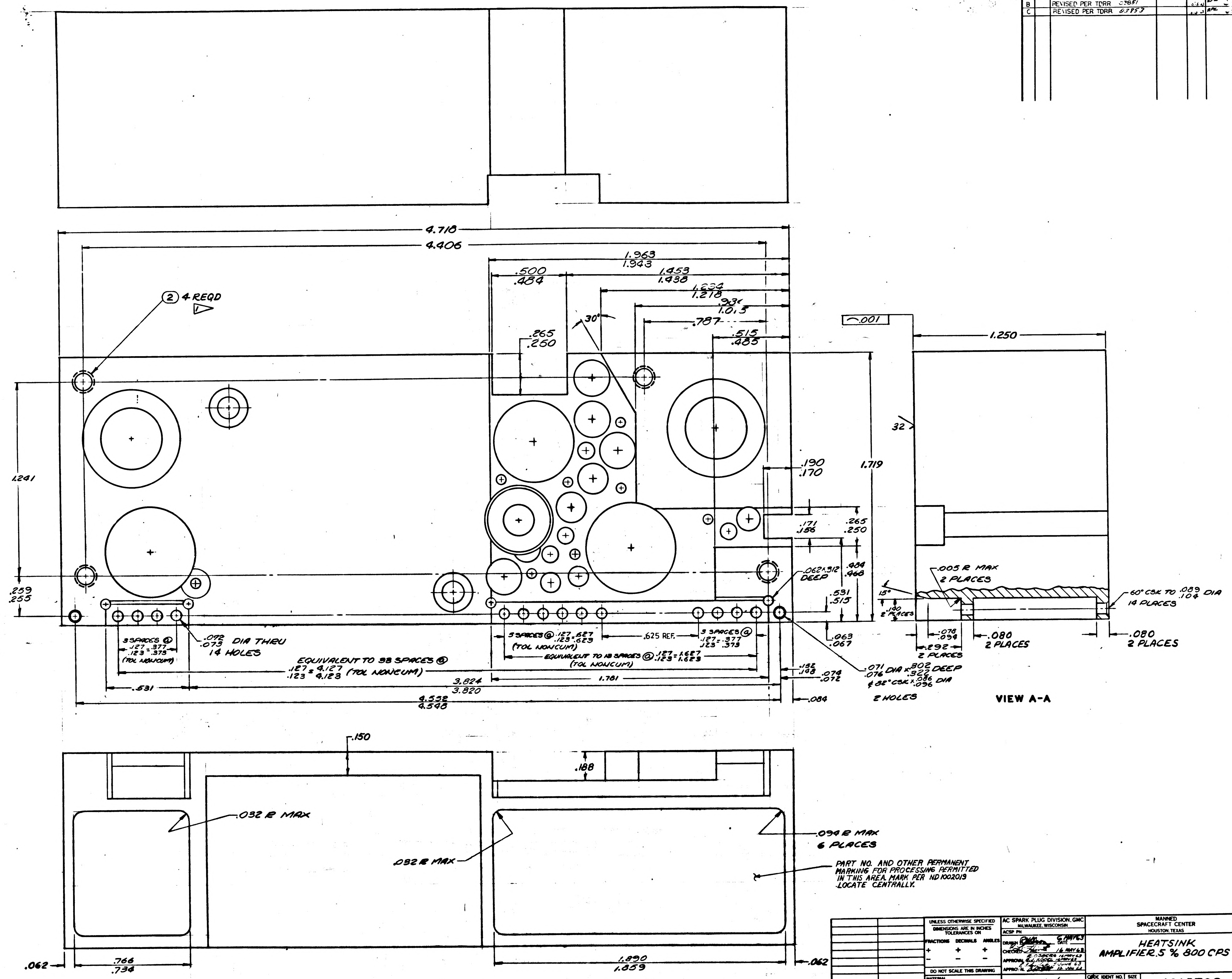
HEATSINK
AMPLIFIER.5% 800 CPS

CODE IDENT NO.
SIZE E
1015703
SCALE 5/1
SHEET 1 OF 2

1015703 C

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS -DRR 0 5E7					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR [illegible]			[illegible]
B		REVISED PER TDRR 03851		[illegible]	RPL
C		REVISED PER TDRR 03853		[illegible]	RPL



4.718
4.406
1.963
1.943
.500
.484
1.453
1.438
1.234
1.218
.986
1.013
.787
.515
.485
30°
.265
.250
② 4 REQD
1
1.241
.259
.255
.072
.073 DIA THRU
14 HOLES
3 SPACES @ .127 = .377
.123 = .373
(TOL NONCUM)
EQUIVALENT TO 33 SPACES @ .127 = 4.127
.123 = 4.123 (TOL NONCUM)
.531
3.824
3.820
4.532
4.548
5 SPACES @ .127 = .627
.123 = .623
(TOL NONCUM)
.625 REF.
3 SPACES @ .127 = .377
.123 = .373
EQUIVALENT TO 13 SPACES @ .127 = 1.627
.123 = 1.623
(TOL NONCUM)
1.781
.190
.170
.171
.156
.265
.250
.062 × .312 DEEP
.484
.468
.531
.515
.063
.067
.152
.148
.074
.072
.084
1.719
.071
.076 DIA × .302
.322 DEEP
& 82° CSK × .086
.096 DIA
2 HOLES
.001
1.250
32
15°
.140
2 PLACES
.005 R MAX
2 PLACES
60° CSK TO .089
.104 DIA
14 PLACES
.078
.094
.292
2 PLACES
.080
2 PLACES
.080
2 PLACES
VIEW A-A
.150
.188
.032 R MAX
.032 R MAX
.094 R MAX
6 PLACES
.062
.766
.734
1.890
1.859
.062

PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA. MARK PER ND 1002019 LOCATE CENTRALLY.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 6 MAY 63
CHECKED [illegible] 16 MAY 63
APPROVAL R. OSBORNE 16 MAY 63
APPROVAL R.J. KOPPEL 16 MAY 63
[illegible] 5 JUNE 63
APPROVAL [illegible] 12 JUN 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

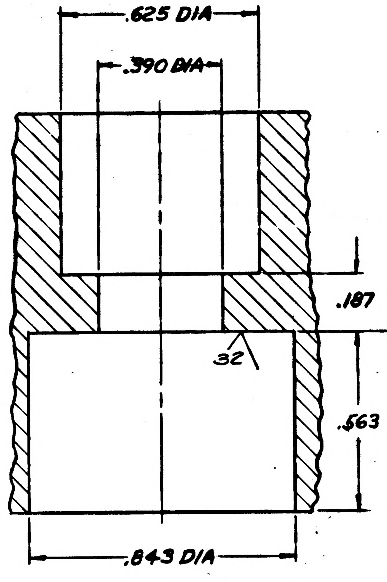
HEATSINK
AMPLIFIER .5 % 800 CPS

CODE IDENT NO.
SIZE E
1015703
SCALE 5/1
SHEET 2 OF 2

1015703 C

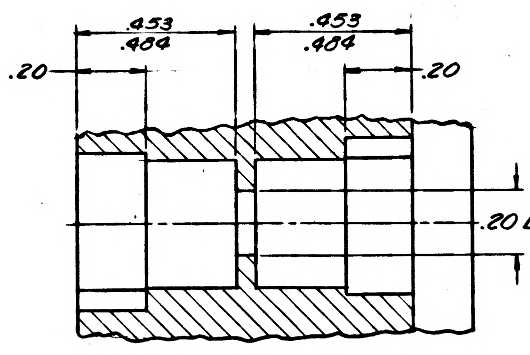
SEE NOTE 3

HOLE IDENT	X DIM	Y DIM		HOLE DIA	QTY
A1	-.280	.280		.148 .152	1
B1	-.150	.200		.100 .104	4
B2	.760	.720			
B3	.900	.180			
B4	1.000	.060			
C1	-.080	.860		SEE SECTION A-A	2
C2	3.700	.820			
D1	-.020	.280		.058 .062	7
D2	.540	.480			
D3	.540	.900			
D4	.840	.060			
D5	.880	.520			
D6	1.120	-.060			
D7	1.310	.540			
E1	.000	.000		SEE SECTION C-C	1
F1	.480	.100		.584 .594	2
F2	3.590	.090			
G1	.560	.720		.227 .231	4
G2	.720	.920			
G3	.720	1.180			
G4	1.300	-.080			
H1	.720	.540		.193 .197	2
H2	.860	.360			
J1	.820	-.080		.127 .131	2
J2	1.000	-.120			
K1	1.100	.780		.521 .531	1
L1	3.300	-.110		SEE DETAIL	1
M1	1.200	.280		SEE SECTION B-B	1



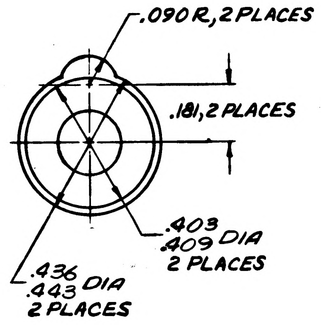
.625 DIA
.390 DIA
.187
32
.001
.563
.843 DIA

PARTIAL SECTION A-A
2 PLACES

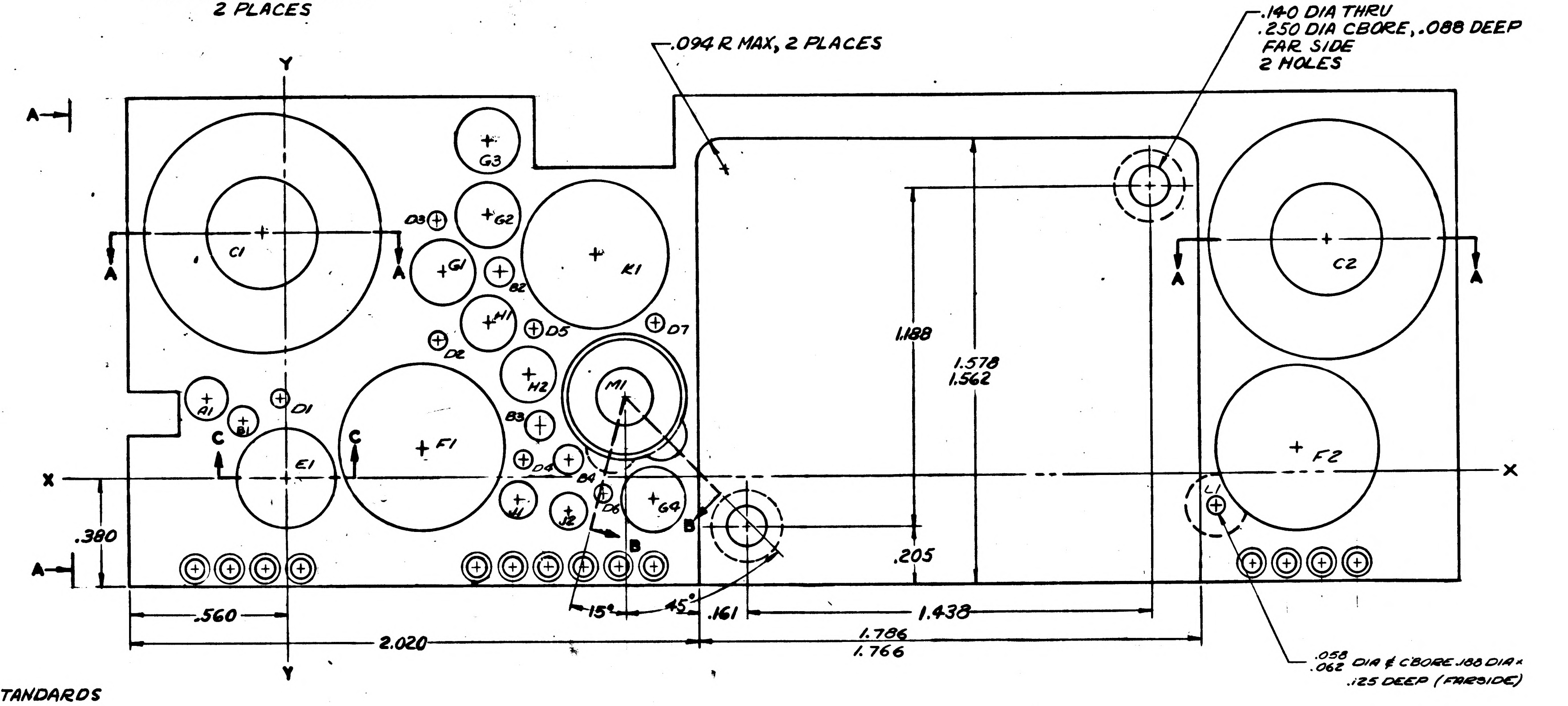


.453
.404
.453
.404
.20
.20
.20 DIA

PARTIAL SECTION B-B



.090 R, 2 PLACES
.181, 2 PLACES
.403
.409 DIA
2 PLACES
.436
.443 DIA
2 PLACES



.094 R MAX, 2 PLACES
.140 DIA THRU
.250 DIA CBORE, .088 DEEP
FAR SIDE
2 HOLES
Y
A
A
A
C1
C2
G3
G2
G1
D3
B2
K1
H1
D5
D7
D2
H2
M1
A1
B1
D1
C
C
E1
F1
B3
D4
B4
D6
J1
J2
G4
B
B
F2
L1
X
X
.380
1.188
1.578
1.562
.205
.560
2.020
15°
45°
.161
1.438
1.786
1.766
Y
.058
.062 DIA & CBORE .188 DIA ×
.125 DEEP (FARSIDE)

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

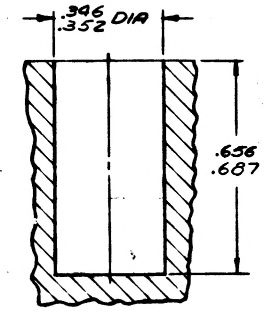
COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

1 INSTALL ITEM 2 PER MS33646
BREAK OFF TANGS.

UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.
MUST BE FREE FROM BURRS.

2 MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325.
FINISH: ANODIZE USING MIL-A-8625, TYPE II DYED BLACK
PLUG INSERT HOLES.

3 THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DEFORMATION IN ANY ADJACENT HOLE OR ON AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART



.346
.352 DIA
.656
.687

PARTIAL SECTION C-C

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 01612			
B		REVISED PER TDRR 03851			RPK
C		REVISED PER TDRR 03853			RPK
D		REVISED PER TDRR 05429		27 DEC 63	RPK

LIST OF PARTS AND MATERIALS

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	4	MS21209-C0620	INSERT, SCREW LOCKING
1	1	1015703-1	HEATSINK

NEXT ASSY	USED ON
1007048	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ .XX ±.02 +1°
- .XXX ±.005 -1°
DO NOT SCALE THIS DRAWING
MATERIAL 2
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 6 MAY 63 DATE
CHECKED 16 MAY 63
APPROVAL E. OSBERG 16 MAY 63
A.J. KODEL 16 MAY 63
APPROVAL 12 JUN 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER .5% 800 CPS

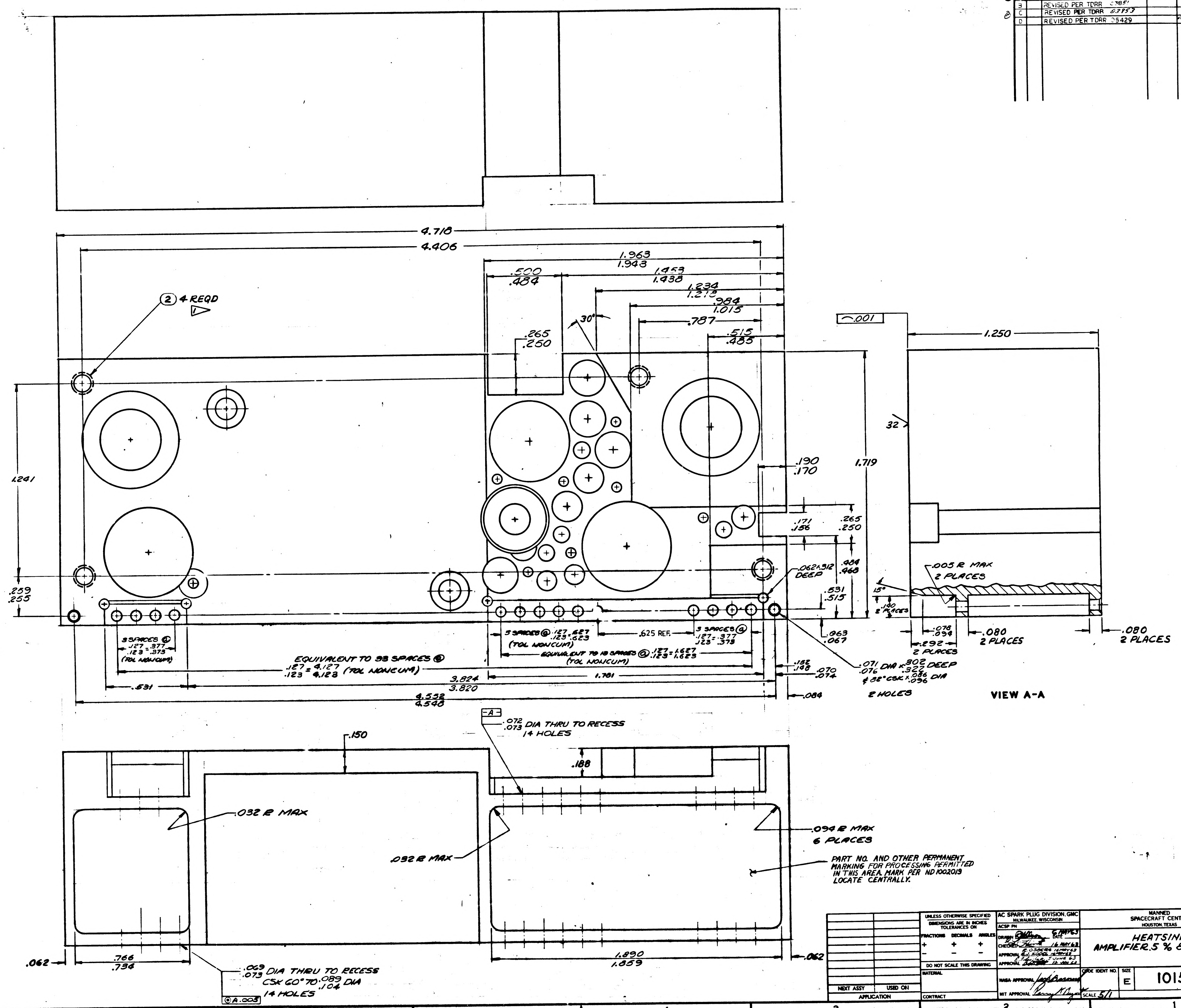
CODE IDENT NO.
SIZE E
1015703
SCALE 5/1
SHEET 1 OF 2

1015703 D

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS -DRR 0 539

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 01612			J.J.A.
B		REVISED PER TDRR 03851			RPL
C		REVISED PER TDRR 03953			RPL
D		REVISED PER TDRR 05429		27 DEC 63	RAK



4.718
4.406
1.963
1.943
1.453
1.438
1.234
1.218
.984
1.015
.787
.515
.485
.500
.484
.265
.250
30°
② 4 REQD
1
1.241
.259
.255
3 SPACES @ .127/.123 = .377/.373 (TOL NONCUM)
EQUIVALENT TO 33 SPACES @ .127/.123 = 4.127/4.123 (TOL NONCUM)
.531
3.824
3.820
4.552
4.548
5 SPACES @ .127/.123 = .627/.623 (TOL NONCUM)
.625 REF.
3 SPACES @ .127/.123 = .377/.373
EQUIVALENT TO 13 SPACES @ .127/.123 = 1.627/1.623 (TOL NONCUM)
1.781
.152
.148
.070
.074
.084
.062 x .312 DEEP
.190
.170
.171
.156
.265
.250
.484
.468
.531
.515
.063
.067
1.719
.071/.076 DIA x .302/.322 DEEP & 82° CSK x .086/.096 DIA
2 HOLES
.001
1.250
32
15°
.140 2 PLACES
.005 R MAX 2 PLACES
.078
.094
.292 2 PLACES
.080 2 PLACES
.080 2 PLACES
VIEW A-A
-A-
.072/.073 DIA THRU TO RECESS 14 HOLES
.150
.188
.032 R MAX
.032 R MAX
.094 R MAX 6 PLACES
.062
.766
.734
1.890
1.859
.062
.069/.073 DIA THRU TO RECESS CSK 60° TO .089/.104 DIA 14 HOLES
A .005

PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA. MARK PER ND 1002019 LOCATE CENTRALLY.

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 6 MAY 63
CHECKED 16 MAY 63
R. OSBERG 16 MAY 63
APPROVAL R.J. KOOPL 16 MAY 63
5 JUNE 63
APPROVAL 12 JUN 63
NASA APPROVAL
MIT APPROVAL

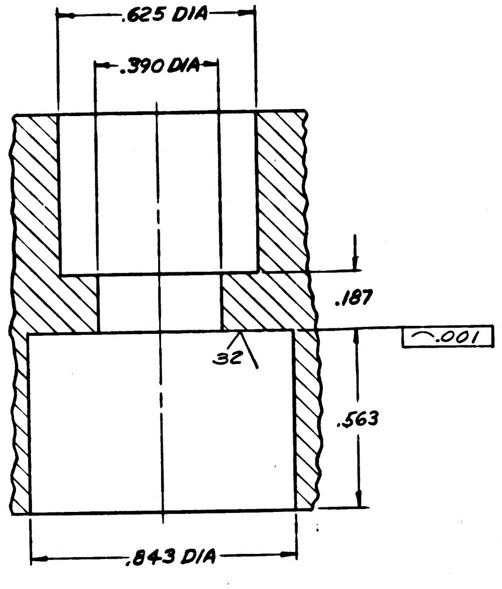
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER.5 % 800 CPS

CODE IDENT NO.
SIZE E
1015703
SCALE 5/1
SHEET 2 OF 2

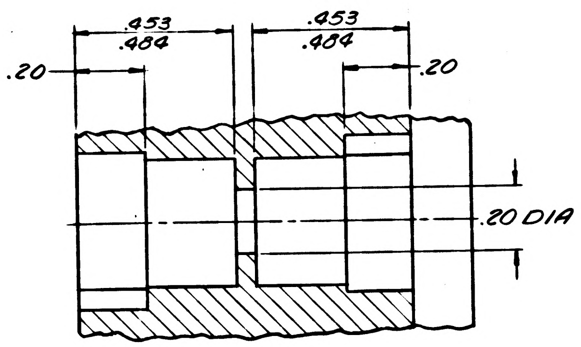
1015703 D

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⊕ DIA	HOLE DIA	QTY
A1	-.280	.280	.006	.148 .152	1
B1	-.150	.200		.100 .104	4
B2	.760	.720			
B3	.900	.180			
B4	1.000	.060			
C1	-.080	.860		SEE SECTION A-A	2
C2	3.700	.820			
D1	-.020	.280		.058 .062	7
D2	.540	.480			
D3	.540	.300			
D4	.840	.060			
D5	.880	.520			
D6	1.120	-.060			
D7	1.310	.540			
E1	.000	.000		SEE SECTION C-C	1
F1	.480	.100		.584 .594	2
F2	3.590	.090			
G1	.560	.720		.227 .231	4
G2	.720	.920			
G3	.720	1.180			
G4	1.300	-.080			
H1	.720	.540		.193 .197	2
H2	.860	.360			
J1	.820	-.080		.127 .131	2
J2	1.000	-.120			
K1	1.100	.780		.521 .531	1
L1	3.300	-.110		SEE DETAIL	1
M1	1.200	.280	.006	SEE SECTION B-B	1



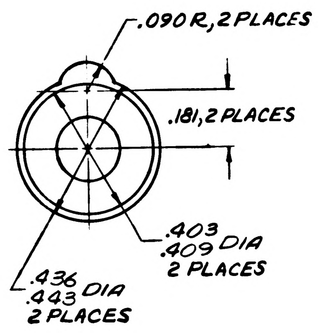
.625 DIA
.390 DIA
.187
32
⌒.001
.563
.843 DIA

PARTIAL SECTION A-A
2 PLACES

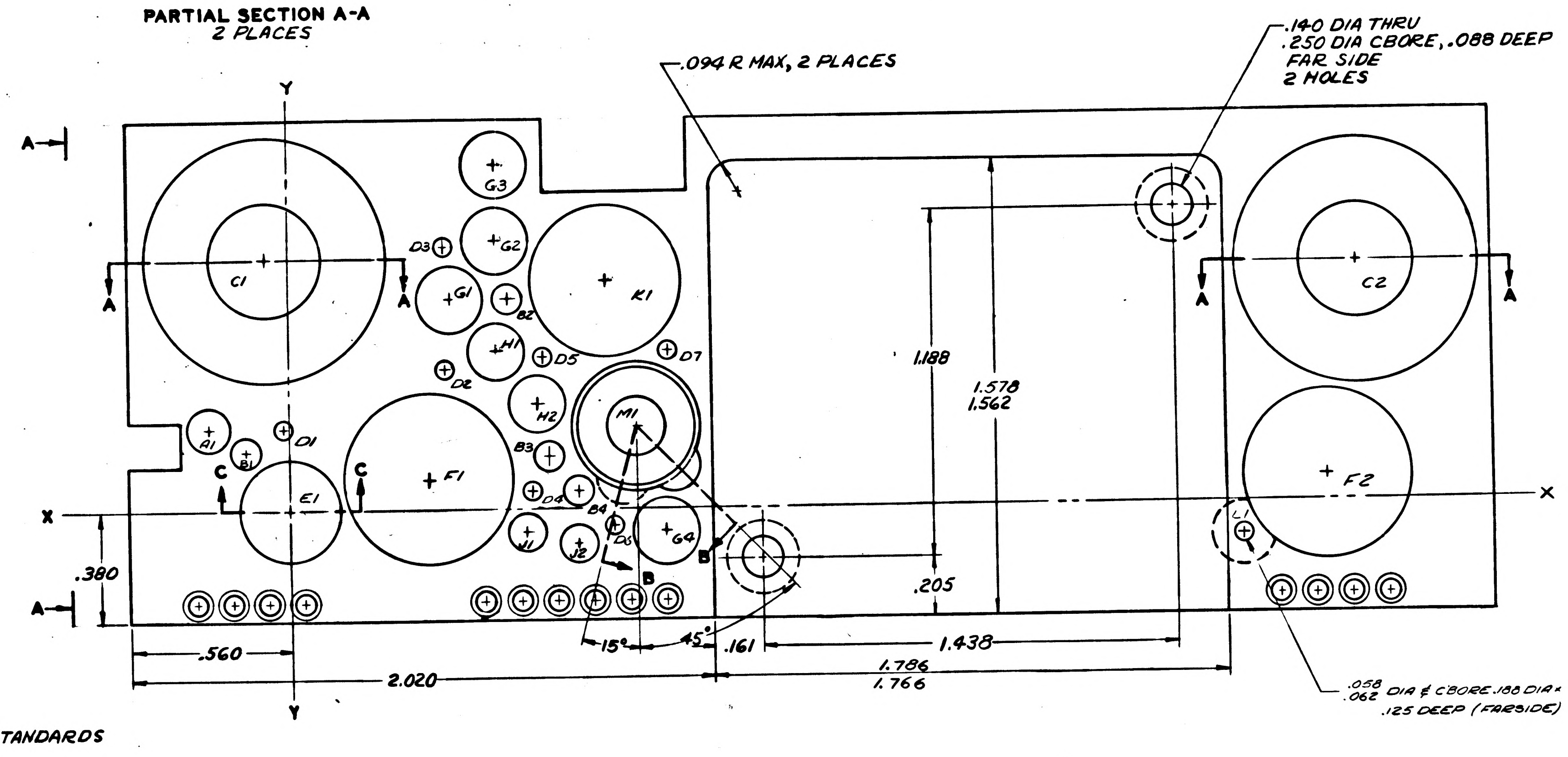


.453
.484
.453
.484
.20
.20
.20 DIA

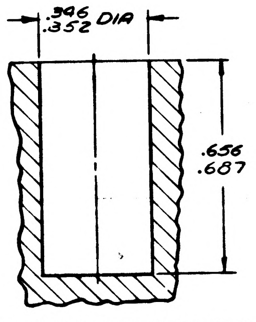
PARTIAL SECTION B-B



.090 R, 2 PLACES
.181, 2 PLACES
.403
.409 DIA
2 PLACES
.436
.443 DIA
2 PLACES



.140 DIA THRU
.250 DIA CBORE, .088 DEEP
FAR SIDE
2 HOLES
.094 R MAX, 2 PLACES
Y
A
A
A
A
A
A
C1
G3
D3
G2
G1
B2
K1
C2
H1
D5
D7
D2
H2
M1
A1
B1
D1
C
C
F1
E1
B3
D4
B4
D6
J1
J2
G4
B
B
F2
L1
X
X
Y
1.188
1.578
1.562
.380
.205
.560
15°
45°
.161
1.438
2.020
1.786
1.766
.058
.062 DIA ⊄ CBORE .180 DIA×
.125 DEEP (FARSIDE)



.346
.352 DIA
.656
.687

PARTIAL SECTION C-C

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

1 ▷ INSTALL ITEM 2 PER MS33646 EXCEPT DIM F" TO BE .594, BREAK OFF TANGS.

UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.
MUST BE FREE FROM BURRS.

2 ▷ MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325.
FINISH: ANODIZE USING MIL-A-8625 TYPE II DYED BLACK
PLUG INSERT HOLES.

REVISIONS

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDR [illegible]			[illegible]

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	4	NAS1222-06E	INSERT SCREW LOCKING
1	1	1015703-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007048	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	.XX ±.02	+1°
-	.XXX ±.005	-1°

DO NOT SCALE THIS DRAWING

MATERIAL 2 ▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN DATE 6 MAY 63
CHECKED 16 MAY 63
APPROVAL R. OSBERG 16 MAY 63
APPROVAL 16 MAY 63

NASA APPROVAL Jack Broadbent

MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

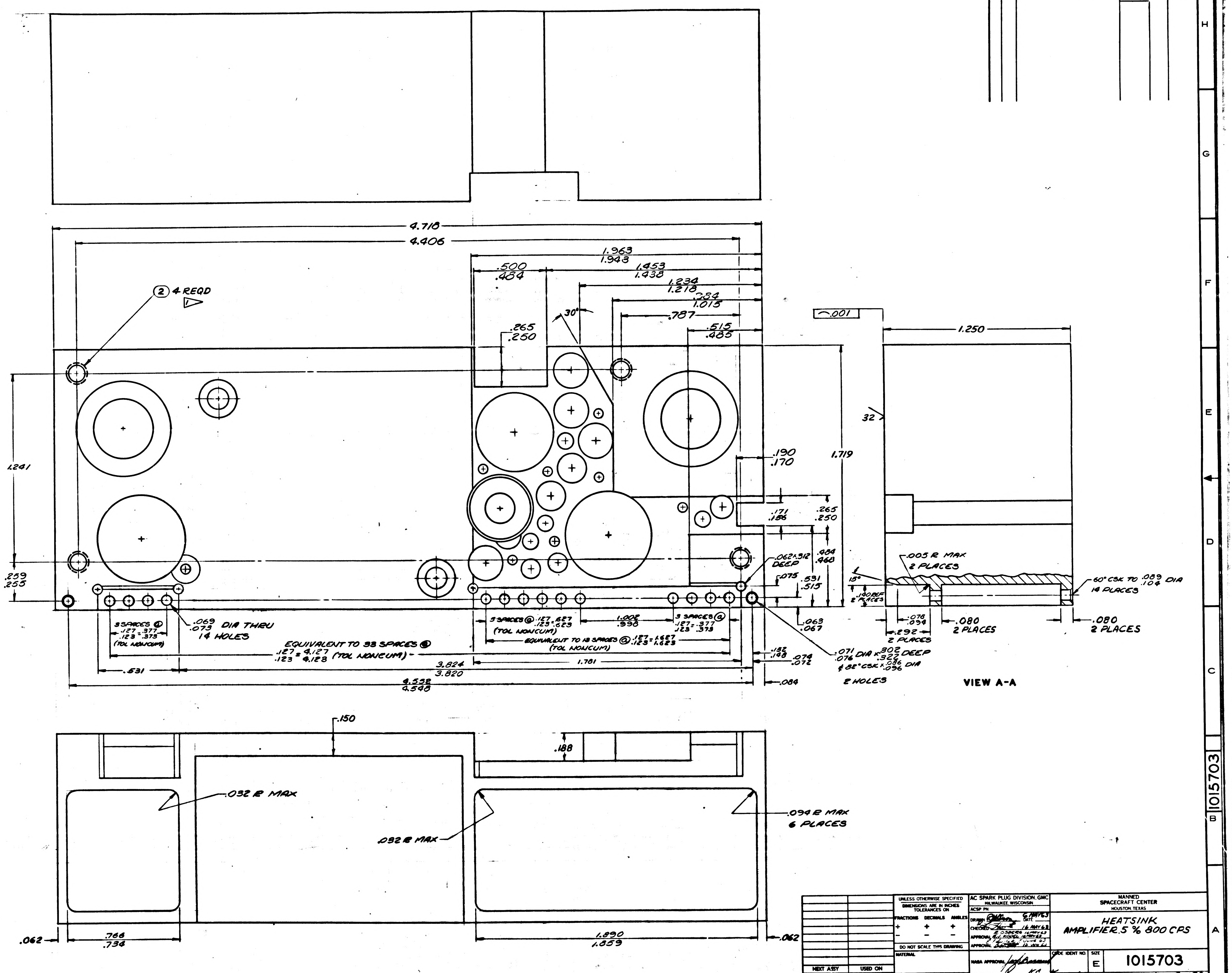
HEATSINK
AMPLIFIER 5% 800 CPS

CODE IDENT NO
SIZE E
1015703
SCALE 5/1
SHEET 1 OF 2

Charrston 16 MAY 63

1015703 A

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD



4.718
4.406
1.963
1.943
1.453
1.438
1.234
1.218
.384
1.013
.787
.515
.485
.500
.484
.265
.250
30°
② 4 REQD
.001
1.250
32
1.241
1.719
.190
.170
.171
.186
.265
.250
.484
.460
.259
.255
.062 x .312 DEEP
.075
.531
.515
.063
.067
15°
.140 REF 2 PLACES
.005 R MAX 2 PLACES
60° CSK TO .089 .104 DIA 14 PLACES
.078 .094
.292 2 PLACES
.080 2 PLACES
.080 2 PLACES
3 SPACES @ .127=.377 .123=.373 (TOL NONCUM)
.069 .073 DIA THRU 14 HOLES
5 SPACES @ .127=.627 .123=.623 (TOL NONCUM)
1.002 .998
3 SPACES @ .127=.377 .123=.373
EQUIVALENT TO 13 SPACES @ .127=1.627 .123=1.623 (TOL NONCUM)
EQUIVALENT TO 33 SPACES @ .127=4.127 .123=4.128 (TOL NONCUM)
.152 .148
.074 .072
.071 .076 DIA x .302 .322 DEEP
& 82° CSK x .086 .096 DIA
2 HOLES
.531
3.824
3.820
1.781
4.552
4.548
.084
VIEW A-A
.150
.188
.032 R MAX
.032 R MAX
.094 R MAX 6 PLACES
.062
.766
.734
1.890
1.859
.062

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

NEXT ASSY | USED ON
APPLICATION

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 6 MAY 63
CHECKED 16 MAY 63
R. O38CR6 16 MAY 63
APPROVAL R.J. KOPEL 16 MAY 63
5 JUNE 63
APPROVAL 12 MAY 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER.5 % 800 CPS

CODE IDENT NO.
SIZE E
1015703
SCALE 5/1
SHEET 2 OF 2

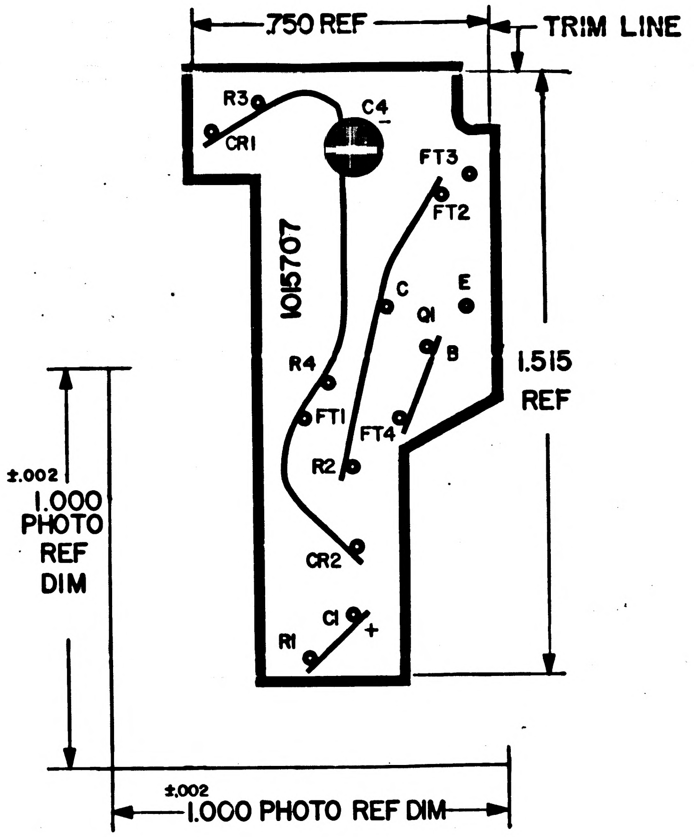
1015703

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TORR 01863

SYM	DESCRIPTION	DATE	APPROVAL



NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: FILM .006/.008 THICK PER L-F-340 TYPE IB, CLASS 2, STYLE IA
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
4. CUT WITHIN .010 OF TRIM LINE
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
6. ● .045/.055 DIA PUNCH ALL HOLES
7. ● .120/.130 DIA PUNCH ALL HOLES

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 2

HEAT TREATMENT

FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT

DRAWN DATE 5/31/63
CHECKED
APPROVAL 6-5-63
APPROVAL

NASA APPROVAL

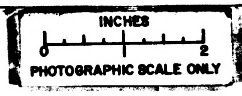
MIT APPROVAL 5 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

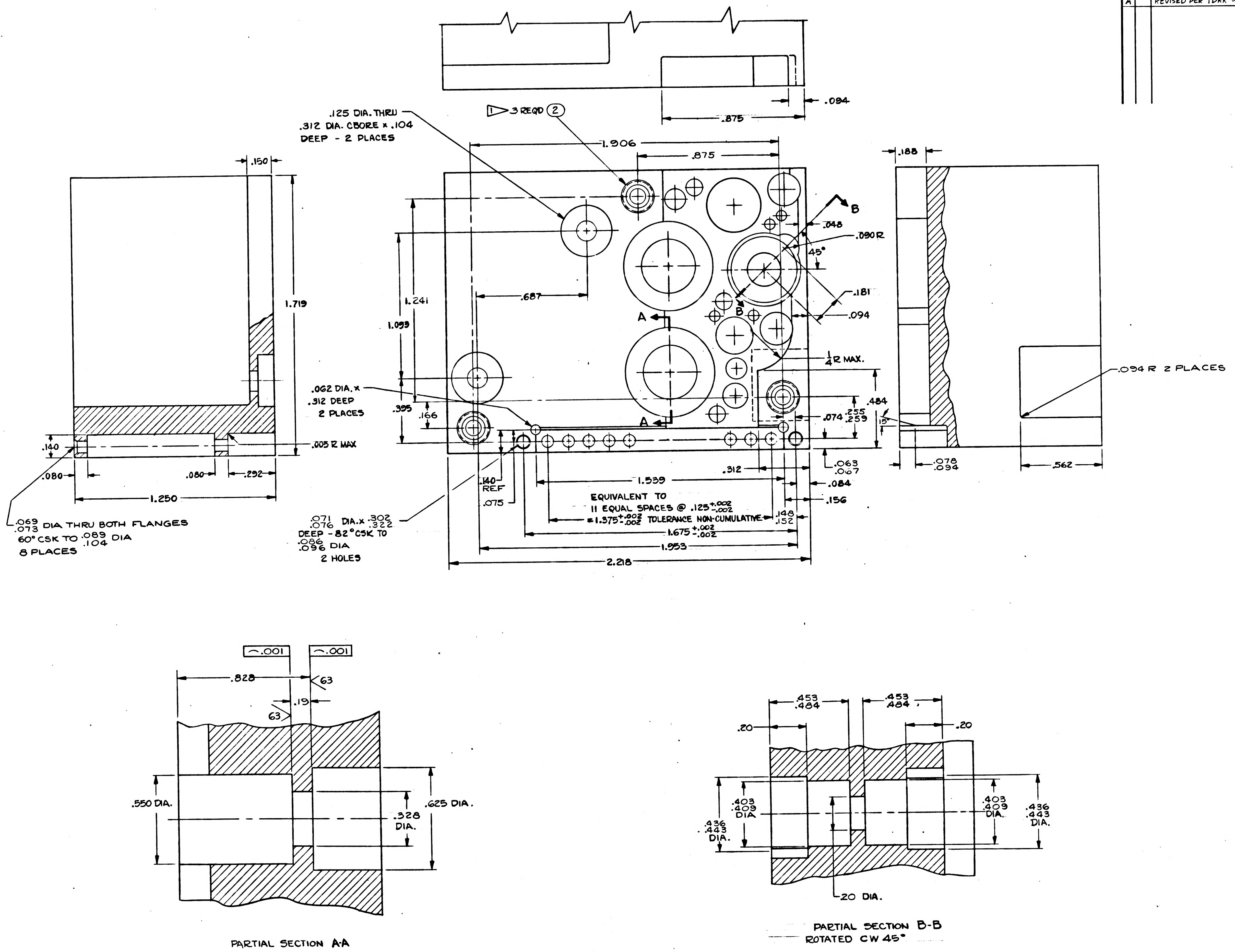
INSULATOR
PHOTOGRAPHIC MASTER R
TEMP CONTROLLER POWER SUPPLY 3200 CPS 20V

CODE IDENT NO. | SIZE D | NASA DRAWING NO. 1015707
SCALE 5/1 | WT | SHEET 1 OF 1

1015707



REVISIONS TDRR 01463					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 0302			



.094
.875
1 3 REQD (2)
.125 DIA. THRU
.312 DIA. CBORE x .104
DEEP - 2 PLACES
1.906
.875
.150
.188
1.719
1.241
1.093
.687
B
.048
.090 R
45°
.181
.094
A
B
1/4 R MAX.
.094 R 2 PLACES
.062 DIA. x
.312 DEEP
2 PLACES
.395
.166
.484
.074
.255
.259
15°
A
.140
.005 R MAX
.080
.080
.292
1.250
.063
.067
.078
.094
.562
.140 REF
.075
.312
1.539
.084
.156
EQUIVALENT TO
11 EQUAL SPACES @ .125 +.002 -.002
= 1.375 +.002 -.002 TOLERANCE NON-CUMULATIVE
.148
.152
1.675 +.002 -.002
1.953
2.218
.069 .073 DIA THRU BOTH FLANGES
60° CSK TO .089 .104 DIA
8 PLACES
.071 .076 DIA. x .302 .322
DEEP - 82° CSK TO
.086 .096 DIA
2 HOLES
⌒ .001
⌒ .001
.828
63
.19
63
.550 DIA.
.328 DIA.
.625 DIA.
.453 .484
.453 .484
.20
.20
.403 .409 DIA.
.436 .443 DIA.
.403 .409 DIA.
.436 .443 DIA.
20 DIA.
PARTIAL SECTION A-A
2 PLACES
PARTIAL SECTION B-B
ROTATED CW 45°

1007045	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+- XX ±.02 +
-- XXX ±.005 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Engel DATE 5 APR 63
CHECKED 16 APRIL 63
APPROVAL 18 APR 63
APPROVAL 31 MAY 63
APPROVAL 5 JUN 63
NASA APPROVAL
MIT APPROVAL W Kupfer 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

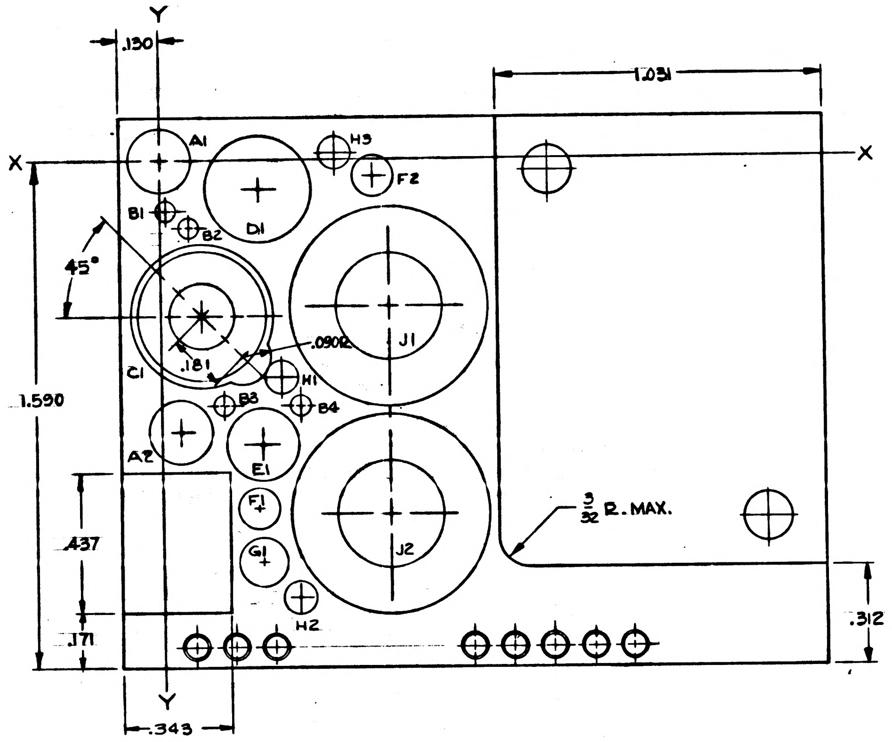
HEATSINK
TEMP. CONTROLLER POWER
SUPPLY, 3200CPS, 20V.

CODE IDENT NO.
SIZE E
1015708
SCALE 5:1
SHEET 2 OF 2

1015708

REVISIONS TDRR 01463					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REVISED PER TDRR 03851		10-14-63	LK
C		REVISED PER TDRR 03852		10-14-63	LK

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⌖ DIA	HOLE DIA	QTY
A1	.000	.000	.006	.195 .199	2
A2	.060	-.850			
B1	.020	-.180		.058 .062	4
B2	.090	-.210			
B3	.200	-.770			
B4	.440	-.770			
C1	.130	-.490		SEE SECTION B-B	1
D1	.310	-.090		.330 .337	1
E1	.320	-.890		.220 .224	1
F1	.310	-1.090		.127 .131	2
F2	.670	-.050			
G1	.320	-1.260		.153 .157	1
H1	.380	-.680		.100 .104	3
H2	.430	-1.370			
H3	.550	.020			
J1	.720	-.460		SEE SECTION A-A	2
J2	.720	-1.110			
			.006		



INTERPRET DWG. IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.

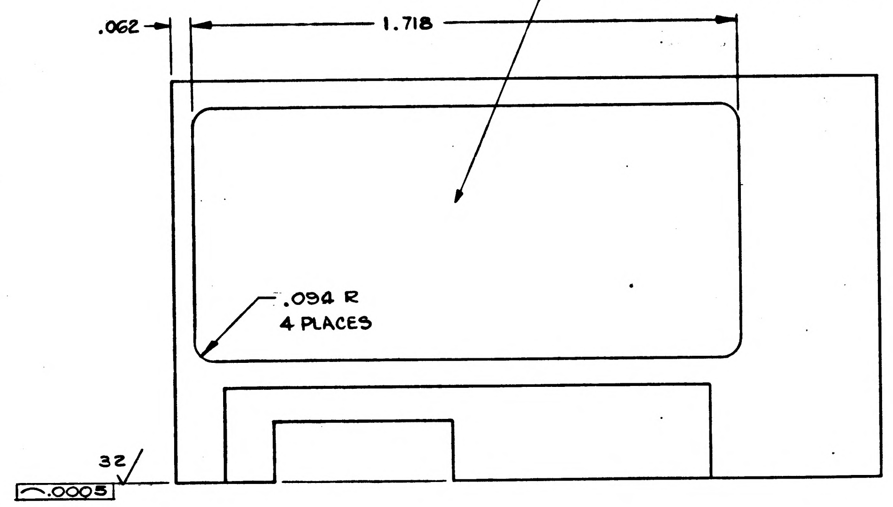
COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

1 INSTALL ITEM 2 PER MS33464 EXCEPT DIM "F" TO BE .594, BREAK OFF TANGS

UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.

MUST BE FREE FROM BURRS.

2 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31A.
FINISH: ANODIZE PER MIL-M-3171A TYPE IV EXCEPT THREADED HOLES.



PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA. MARK PER ND-1002019. LOCATE CENTRALLY.

2	3	MS21209-C0620	INSERT, SCREW-LOCKING
1	1	1015708-1	HEATSINK
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

1007045	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - .xxx ± .005 +1°
- - .xx ± .02 -1°
DO NOT SCALE THIS DRAWING
MATERIAL 2
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Ozgel DATE 3 APR. 63
CHECKED 16 APR. 63
APPROVAL APR 63
APPROVAL 31 MAY 63 5 JUN 63
NASA APPROVAL
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

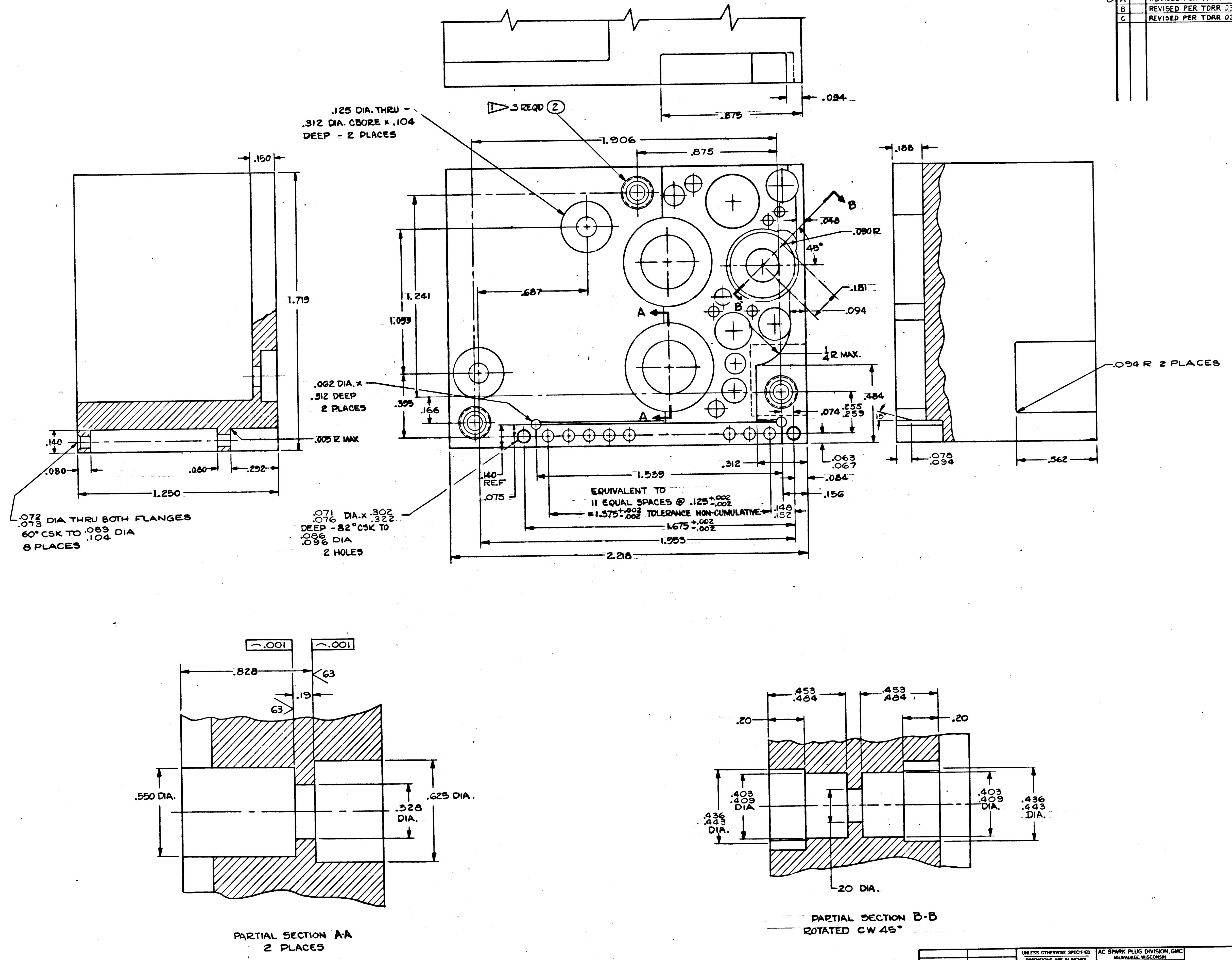
HEATSINK
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.

CODE IDENT NO. SIZE E 1015708
SCALE 5:1 SHEET 1 OF 2

1015708 C

Charleston 10-APR-63

REVISIONS TDRR 01463					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR [illegible]		[illegible]	[illegible]
B		REVISED PER TDRR 03851		6-15-63	LK
C		REVISED PER TDRR 03852		6-15-63	LK


.094
.875
1 3 REQD 2
.125 DIA. THRU
.312 DIA. CBORE x .104
DEEP - 2 PLACES
1.906
.875
.150
.188
B
.048
.090 R
45°
.181
.094
B
A
A
1.719
1.241
1.093
.687
¼ R MAX.
.094 R 2 PLACES
.062 DIA. x
.312 DEEP
2 PLACES
.395
.166
.074
.255
.259
.484
15°
.140
.005 R MAX
.080
.080
.292
1.250
.063
.067
.078
.094
.562
.312
.140 REF
.075
1.539
.084
.156
EQUIVALENT TO
11 EQUAL SPACES @ .125 +.002 -.002
= 1.375 +.002 -.002 TOLERANCE NON-CUMULATIVE
.148
.152
1.675 +.002 -.002
1.953
2.218
.072
.073 DIA THRU BOTH FLANGES
60° CSK TO .089
.104 DIA
8 PLACES
.071
.076 DIA. x .302
.322
DEEP - 82° CSK TO
.086
.096 DIA
2 HOLES
.001
.001
.828
63
.19
63
.550 DIA.
.328
DIA.
.625 DIA.
PARTIAL SECTION A-A
2 PLACES
.453
.484
.453
.484
.20
.20
.403
.409
DIA
.436
.443
DIA.
.403
.409
DIA.
.436
.443
DIA.
.20 DIA.
PARTIAL SECTION B-B
ROTATED CW 45°

1007043	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+- XX±.02 +
-- XXX±.005 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orzel DATE 5 APR 63
CHECKED 16 APRIL 63
APPROVAL 18 APR 63
APPROVAL 5 JUN 63
NASA APPROVAL 5 Jun 63
MIT APPROVAL 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
TEMP. CONTROLLER POWER
SUPPLY, 3200CPS, 20V.

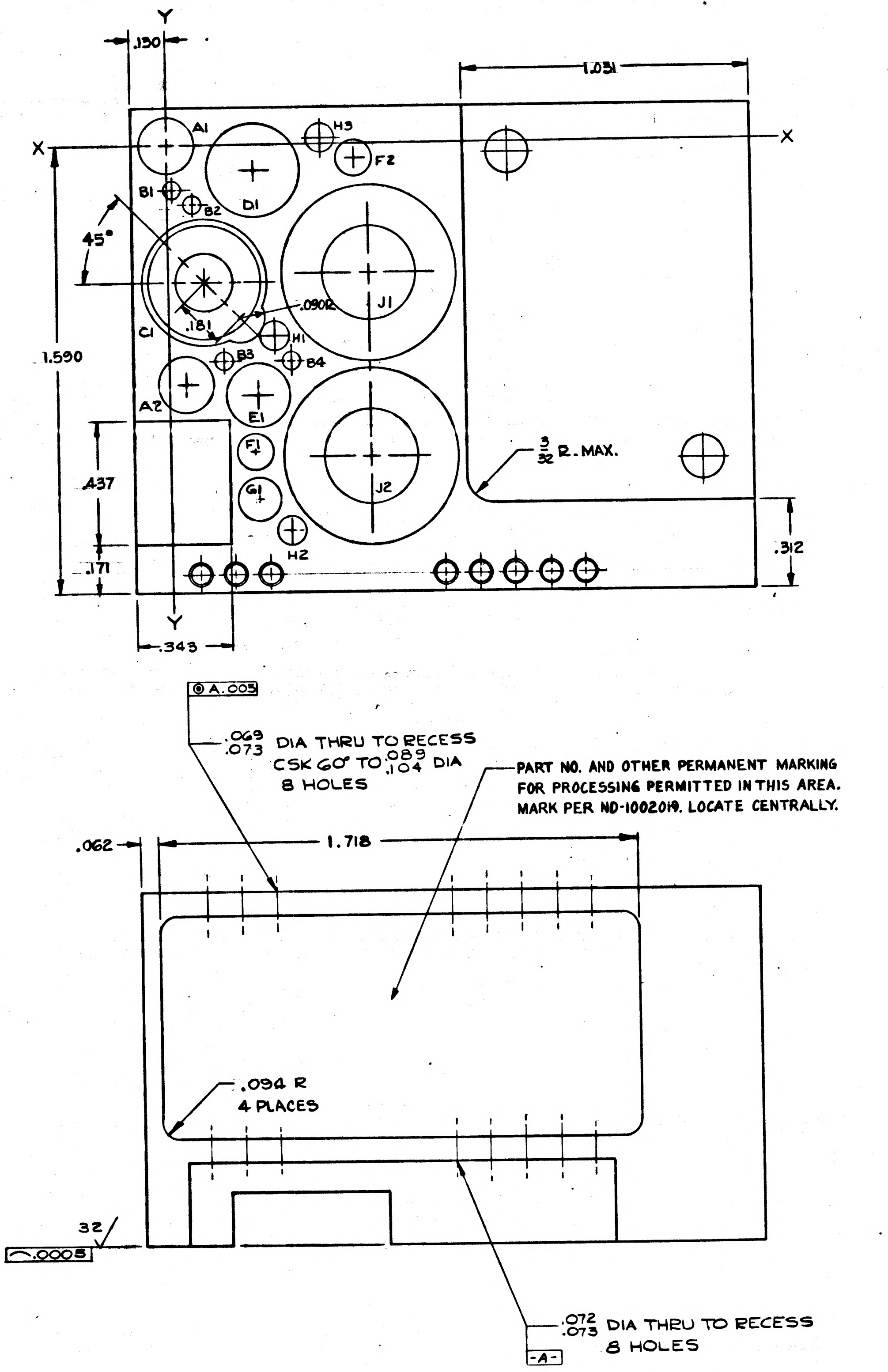
CODE IDENT NO. SIZE E 1015708
SCALE 5:1 SHEET 2 OF 2

REVISIONS TDRR 01463

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REVISED PER TDRR 03851		10-14-63	LK
C		REVISED PER TDRR 03852		10-14-63	LK
D		REVISED PER TDRR C5448		12-2-63	

SEE NOTE 3

HOLE IDENT	X DIM	Y DIM		HOLE DIA	QTY
A1	.000	.000		.195 .199	2
A2	.060	-.850			
B1	.020	-.160		.058 .062	4
B2	.090	-.210			
B3	.200	-.770			
B4	.440	-.770			
C1	.130	-.490		SEE SECTION B-B	1
D1	.310	-.090		.330 .337	1
E1	.320	-.890		.220 .224	1
F1	.310	-1.090		.127 .131	2
F2	.670	-.050			
G1	.320	-1.260		.153 .157	1
H1	.380	-.680		.100 .104	3
H2	.430	-1.370			
H3	.550	.020			
J1	.720	-.460		SEE SECTION A-A	2
J2	.720	-1.110			



Y
.130
1.031
X
X
A1
H3
F2
B1
B2
D1
45°
C1
.181
.0902
J1
H1
B3
B4
1.590
A2
E1
F1
3/32 R. MAX.
.437
G1
J2
H2
.312
.171
Y
.343
⊚ A .005
.069 .073 DIA THRU TO RECESS CSK 60° TO .089 .104 DIA 8 HOLES
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA. MARK PER ND-1002019. LOCATE CENTRALLY.
.062
1.718
.094 R 4 PLACES
32
.0005
.072 .073 DIA THRU TO RECESS 8 HOLES
-A-

INTERPRET DWG. IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

1 INSTALL ITEM 2 PER MS33464
BREAK OFF TANGS

UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.

MUST BE FREE FROM BURRS.

2 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31A.
FINISH: ANODIZE PER MIL-M-3171A TYPE IV EXCEPT THREADED HOLES.

3 THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DEFORMATION IN AN ADJACENT HOLE OR EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART

LIST OF PARTS AND MATERIALS

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW-LOCKING
1	1	1015708-1	HEATSINK

NEXT ASSY	USED ON
1007045	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± - .xxx ±.005 ± 1°
- - .xx ±.02 - 1°
DO NOT SCALE THIS DRAWING

MATERIAL 2

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 3 APR. 63 DATE
CHECKED 16 APR 63
APPROVAL APR 63
APPROVAL 31 MAY 63 5 JUN 63
NASA APPROVAL
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

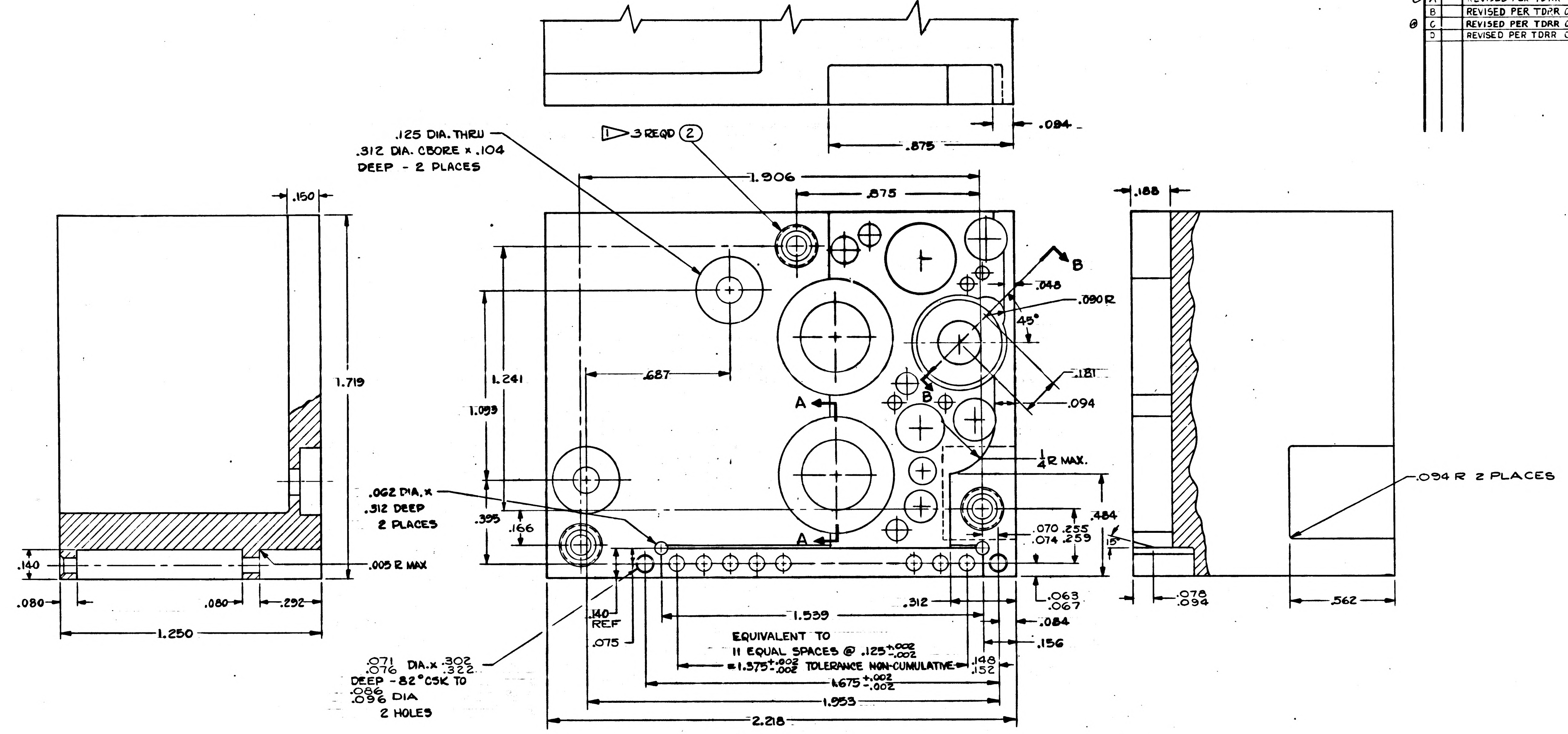
HEATSINK
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.

CODE IDENT NO.
SIZE E
1015708
SCALE 5:1
SHEET 1 OF 2

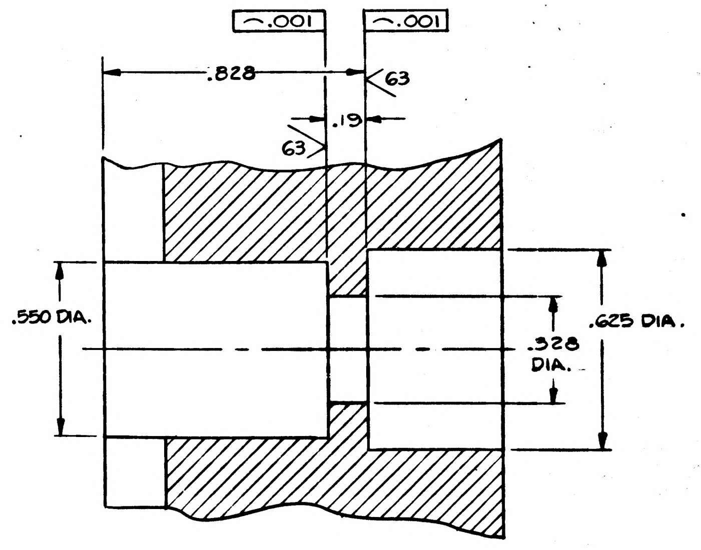
10-AUG-63

1015708

REVISIONS TDRR 01463					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 0332		[illegible]	[illegible]
B		REVISED PER TDRR 03851		6-15-63	LK
C		REVISED PER TDRR 03852		6-15-63	LK
D		REVISED PER TDRR 05448		27 DEC 63	RPK

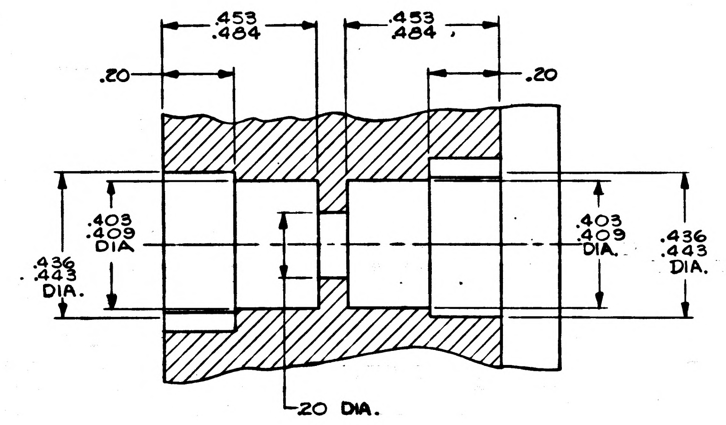


.125 DIA. THRU
.312 DIA. CBORE x .104
DEEP - 2 PLACES
1 3 REQD (2)
1.906
.875
.084
.875
.150
.188
1.719
1.241
1.093
.687
.395
.166
.048
.090 R
45°
B
.181
.094
A
1/4 R MAX.
.484
.070 .255
.074 .259
15°
.062 DIA. x
.312 DEEP
2 PLACES
.140
.080
.080
.292
.005 R MAX
1.250
.140 REF
.075
.071 .076 DIA. x .302 .322
DEEP - 82° CSK TO
.086 .096 DIA
2 HOLES
1.539
.312
.063 .067
.084
.156
EQUIVALENT TO
11 EQUAL SPACES @ .125 +.002 -.002
=1.375 +.002 -.002 TOLERANCE NON-CUMULATIVE
.148 .152
1.675 +.002 -.002
1.953
2.218
.094 R 2 PLACES
.078 .094
.562



⌒ .001
⌒ .001
.828
63
.19
63
.550 DIA.
.328 DIA.
.625 DIA.

PARTIAL SECTION A-A
2 PLACES



.453 .484
.453 .484
.20
.20
.403 .409 DIA
.436 .443 DIA.
.403 .409 DIA.
.436 .443 DIA.
.20 DIA.

PARTIAL SECTION B-B
ROTATED CW 45°

1007045	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+- XX±.02 +
-- XXX±.005 -
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Gazel DATE 5 APR 63
CHECKED 16 APRIL 63
APPROVAL 18 APR 63
APPROVAL 5 JUN 63
NASA APPROVAL
MIT APPROVAL 5 JUN 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
TEMP. CONTROLLER POWER
SUPPLY 3200CPS, 20V.

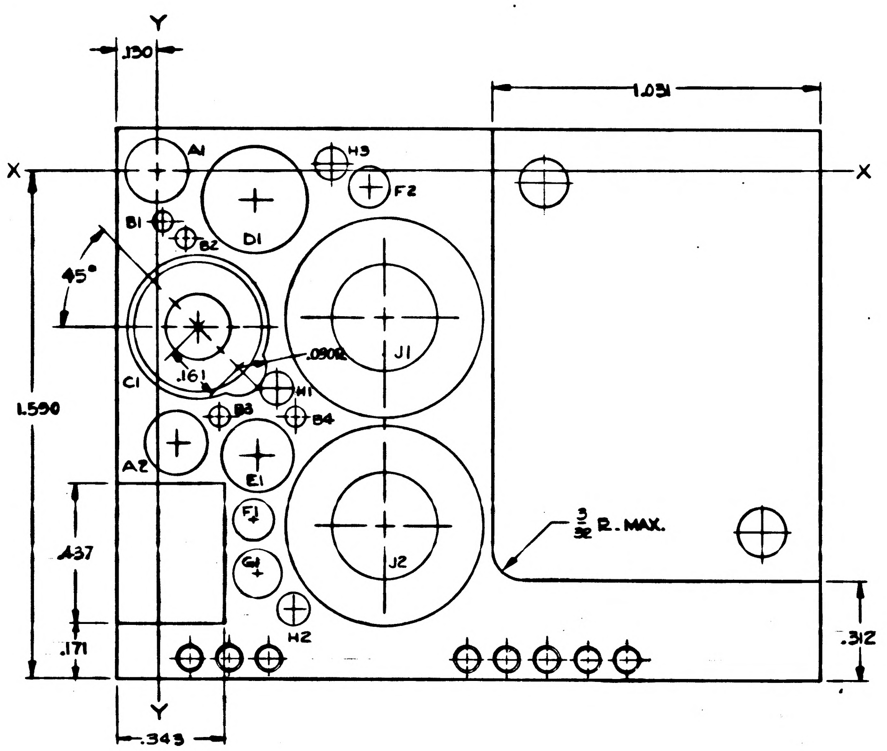
CODE IDENT NO. SIZE E 1015708
SCALE 5:1 SHEET 2 OF 2

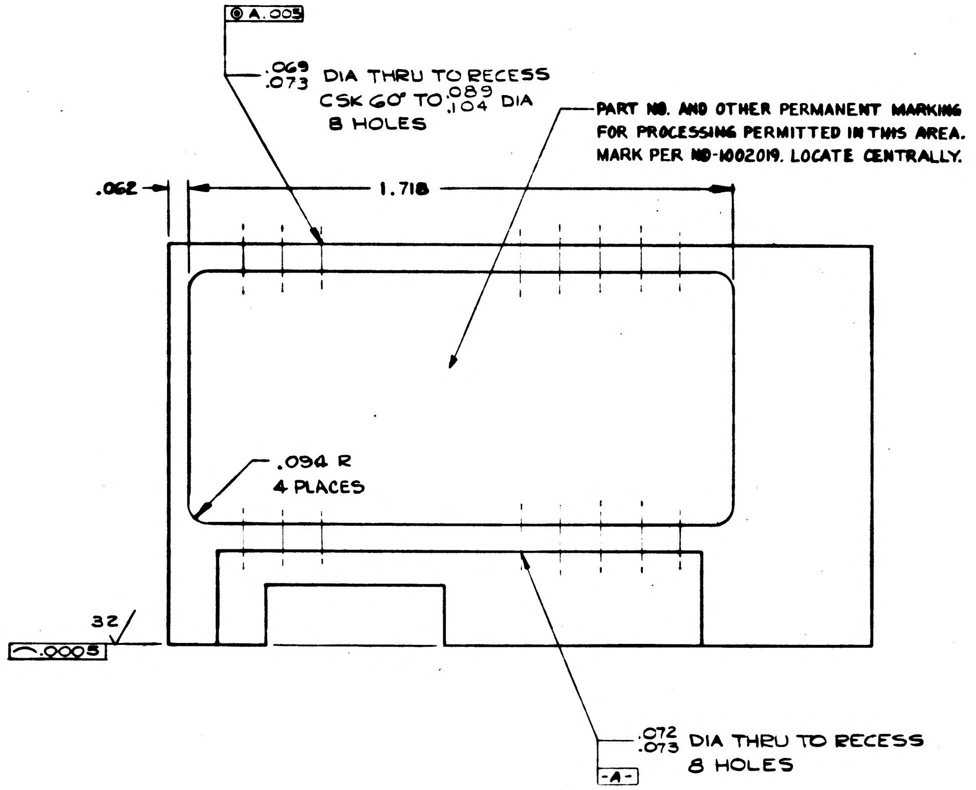
SEE NOTE 3▷

HOLE IDENT	X DIM	Y DIM		HOLE DIA	QTY
A1	.000	.000		.195 .199	2
A2	.060	-.850			
B1	.020	-.160		.058 .062	4
B2	.090	-.210			
B3	.200	-.770			
B4	.440	-.770			
C1	.130	-.490		SEE SECTION B-B	1
D1	.310	-.090		.330 .337	1
E1	.320	-.890		.220 .224	1
F1	.310	-1.090		.127 .131	2
F2	.670	-.050			
G1	.320	-1.260		.153 .157	1
H1	.380	-.680		.100 .104	3
H2	.430	-1.370			
H3	.550	.020			
J1	.720	-.460		SEE SECTION A-A	2
J2	.720	-1.110			

REVISIONS TLRR 01463

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
B		REVISED PER TDRR 03851		10-14-63	LK
C		REVISED PER TDRR 03852		10-14-63	LK
D		REVISED PER TDRR C5448		12-27-63	
E		REVISED PER TDRR 11052		31 Jul 64	





PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA. MARK PER ND-1002019. LOCATE CENTRALLY.

INTERPRET DWG. IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

1▷ INSTALL ITEM 2 PER MS33464
BREAK OFF TANGS

UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125√
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.

MUST BE FREE FROM BURRS.

2▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31A.
FINISH: ANODIZE PER MIL-M-3171A TYPE IV EXCEPT THREADED HOLES.

3▷ THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DEFORMATION IN AN ADJACENT HOLE OR EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW-LOCKING
1	1	1015708-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007045	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - xxx ±.005 +1°
- - xx ±.02 -1°
DO NOT SCALE THIS DRAWING

MATERIAL 2▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 3 APR. 63 DATE
CHECKED 16 APR. 63
APPROVAL APR 63
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

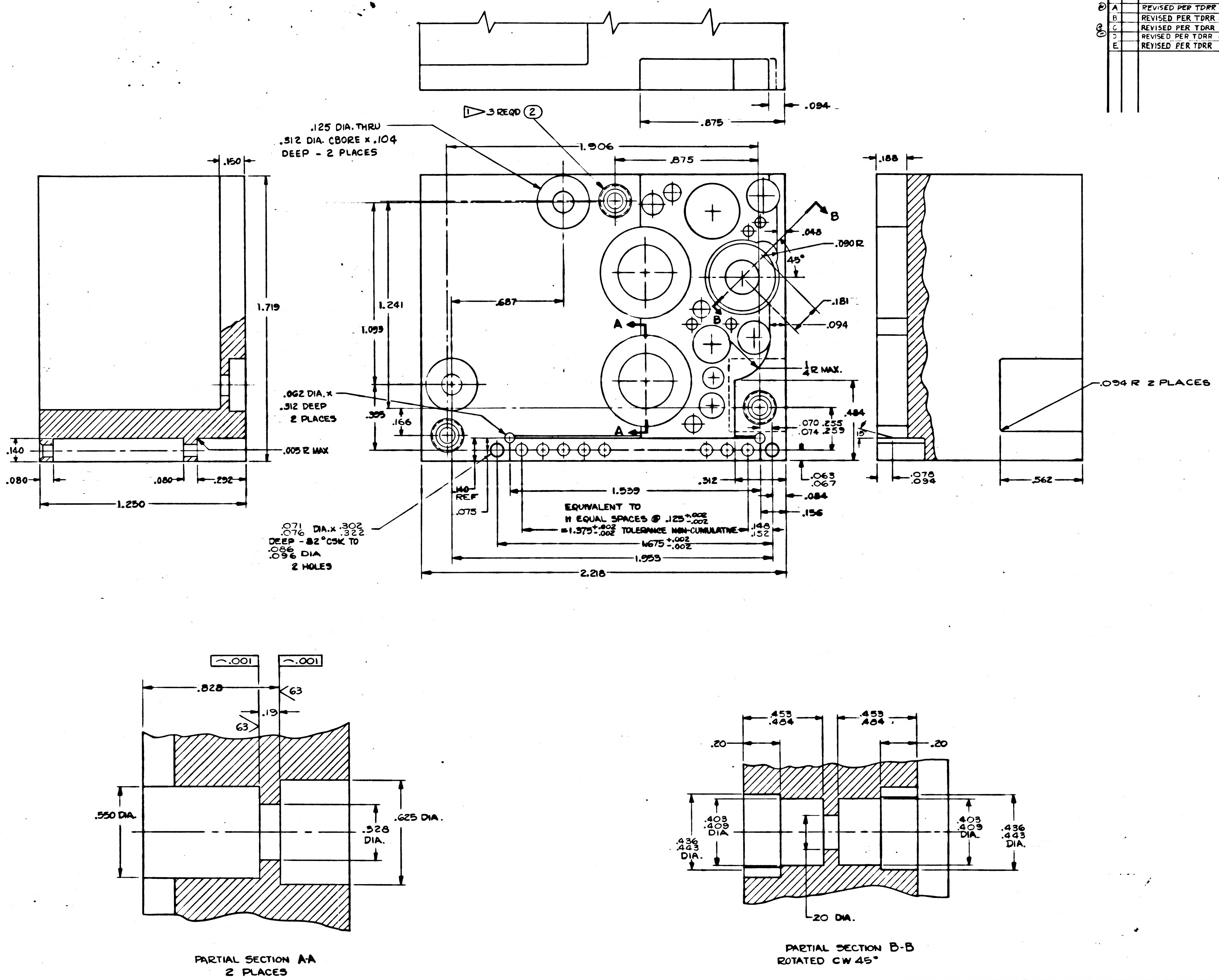
HEATSINK
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.

CODE IDENT NO.
SIZE E
1015708

SCALE 5:1
SHEET 1 OF 2

10 APR 63

REVISIONS TDRR [illegible]					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 03021		[illegible]	[illegible]
B		REVISED PER TDRR 03851		5-15-63	LK
C		REVISED PER TDRR 03852		5-15-63	LK
D		REVISED PER TDRR 05448		27 Dec 63	[illegible]
E		REVISED PER TDRR 11052		31 Jul 64	JWP



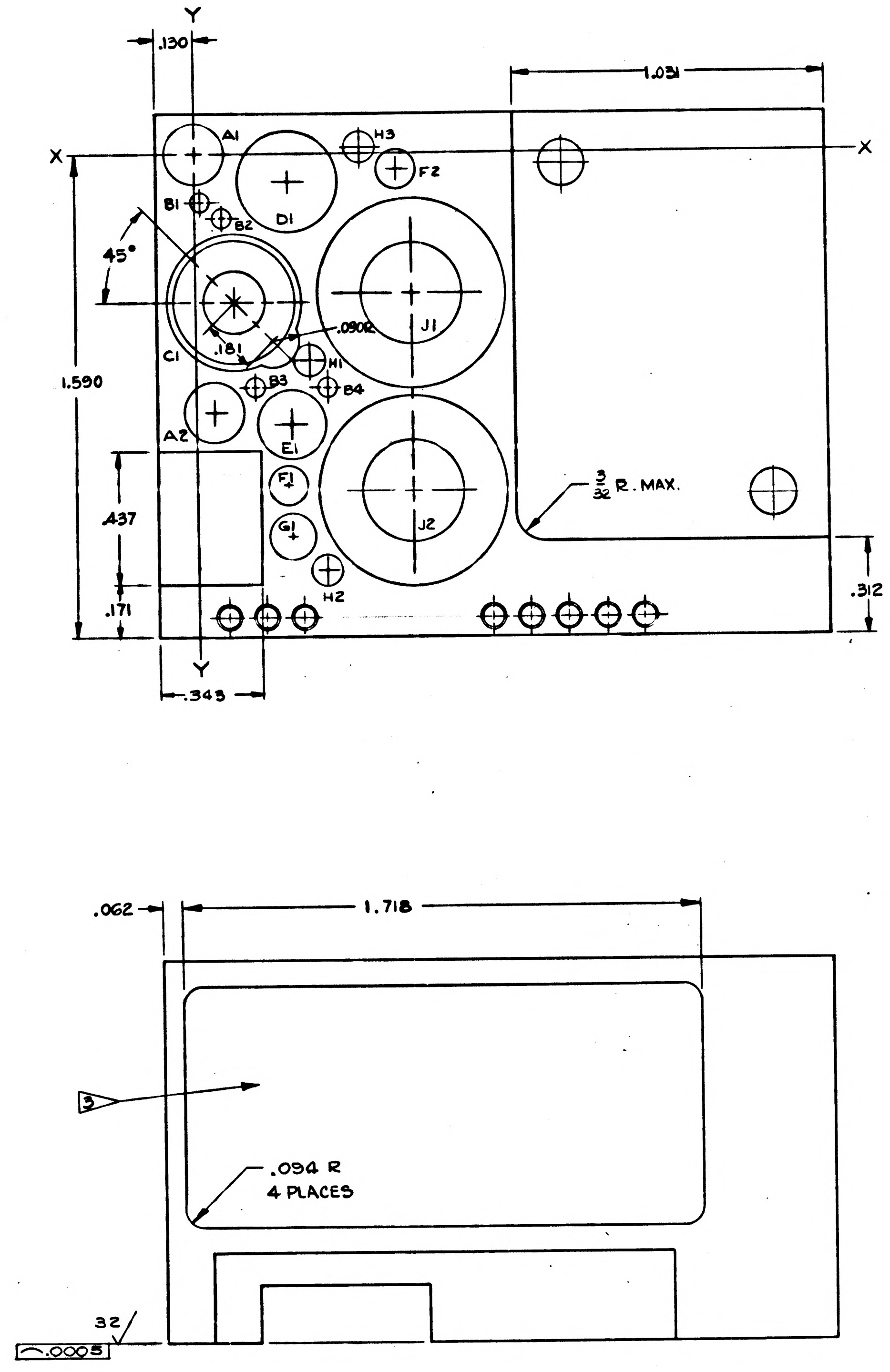
.094
.875
1 3 REQD ②
.125 DIA. THRU
.312 DIA. CBORE x .104
DEEP - 2 PLACES
1.906
.875
.150
.188
B
.048
.090 R
45°
.181
.094
1.719
1.241
1.099
.687
A
B
A
1/4 R MAX.
.094 R 2 PLACES
.062 DIA. x
.312 DEEP
2 PLACES
.393
.166
.484
.070 .255
.074 .259
15°
.140
.005 R MAX
.080
.080
.232
1.250
.140 REF
.075
.063
.067
.078
.094
.562
.312
1.539
.084
.156
.148
.152
.071 DIA. x .302
.076 .322
DEEP - 82° CSK TO
.086
.096 DIA
2 HOLES
EQUIVALENT TO
11 EQUAL SPACES @ .125 +.002 -.002
= 1.375 +.002 -.002 TOLERANCE NON-CUMULATIVE
1.675 +.002 -.002
1.953
2.218
⌒.001
⌒.001
.828
63
.19
63
.550 DIA.
.328 DIA.
.625 DIA.
.453
.484
.453
.484
.20
.20
.403
.409
DIA
.436
.443
DIA.
.403
.409
DIA.
.436
.443
DIA.
20 DIA.

PARTIAL SECTION A-A
2 PLACES

PARTIAL SECTION B-B
ROTATED CW 45°

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES +- XX ±.02 + -- XXX ±.005 - DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN [illegible] DATE 5 APR 63 CHECKED [illegible] 16 APRIL 63 APPROVAL [illegible] APPROVAL [illegible] 5 JUN 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS HEATSINK TEMP. CONTROLLER POWER SUPPLY 3200CPS, 20V.
1007043		MATERIAL	NASA APPROVAL [illegible]	CODE IDENT NO.	SIZE E	1015708
NEXT ASSY	USED ON		MIT APPROVAL [illegible] .63	
APPLICATION		CONTRACT		SCALE 5:1	SHEET 2 OF 2

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⌖ DIA	HOLE DIA	QTY
A1	.000	.000	.006	.195 .199	2
A2	.060	-.850			
B1	.020	-.160		.058 .062	4
B2	.090	-.210			
B3	.200	-.770			
B4	.440	-.770			
C	.30	-.490		SEE SECTION B-B	1
D	.310	-.090		.330 .337	1
E	.320	-.890		.220 .224	1
F	.310	-1.090		.27 .31	2
F2	.670	-.050			
G	.320	-1.260		.153 .157	1
H1	.380	-.680		.100 .104	3
H2	.430	-1.370			
H3	.550	.020			
J1	.720	-.460		SEE SECTION A-A	2
J2	.720	-1.110	.006		



INTERPRET DWG. IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

1 INSTALL ITEM 2 PER MS33464 EXCEPT DIM 'F' TO BE .594, BREAK OFF TANGS

UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.

MUST BE FREE FROM BURRS.

2 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31A.
FINISH: ANODIZE PER MIL-M-3171A TYPE IV EXCEPT THREADED HOLES.

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	NAS 1222-06E	INSERT, SCREW-LOCKING
1	1	1015708-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007045	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - xxx ±.005 +1°
- - xx ±.02 -1°
DO NOT SCALE THIS DRAWING

MATERIAL 2

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 3 APR. 63
CHECKED 16 APRIL 63
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
TEMP. CONTROLLER POWER
SUPPLY 3200 CPS, 20V.

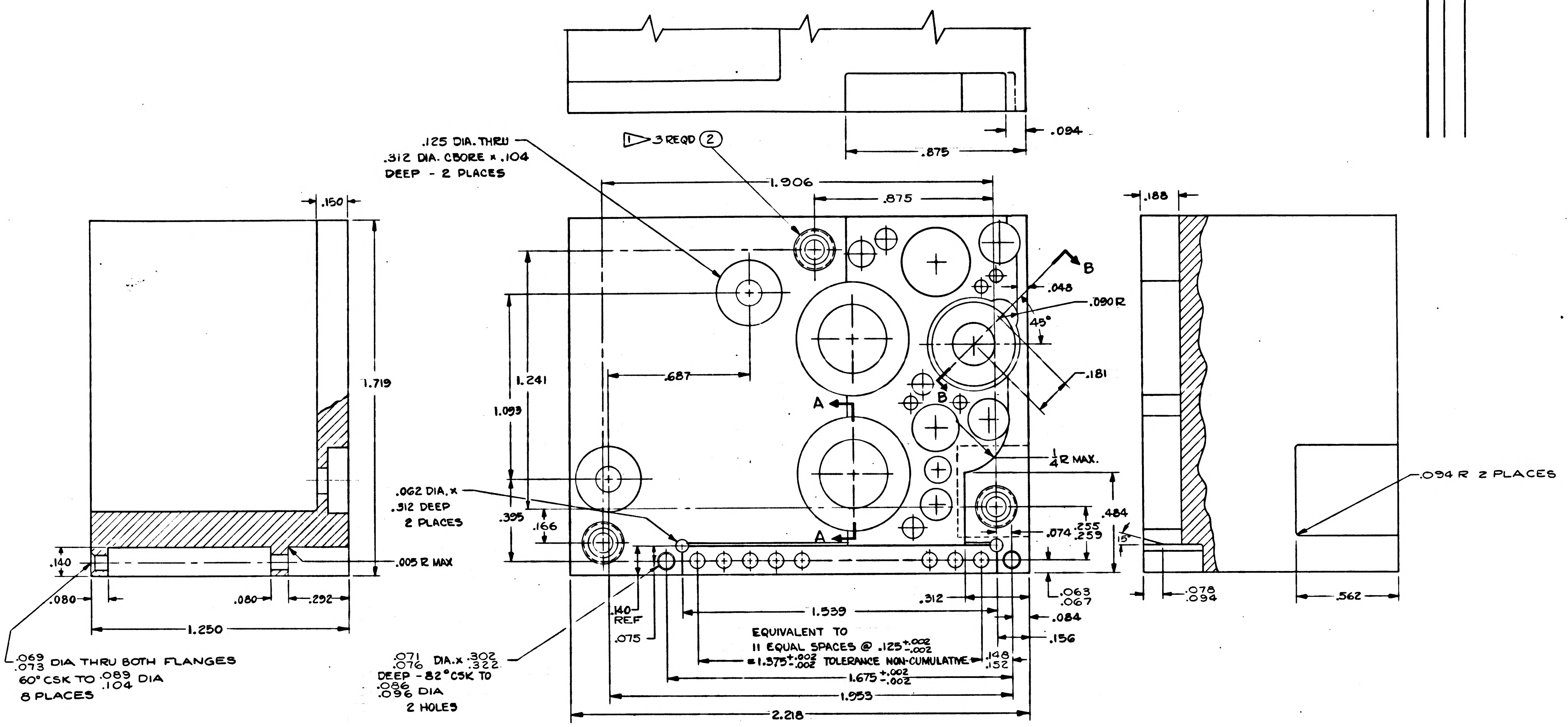
CODE IDENT NO.
SIZE E
1015708
SCALE 5:1
SHEET 1 OF 2

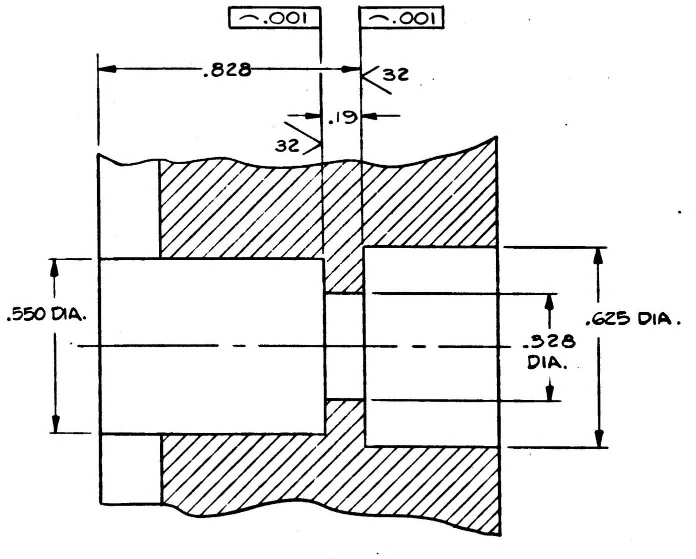
REVISIONS

SYM	ZONE	DESCRIPTION	DATE	APPD
		CHG NO.		

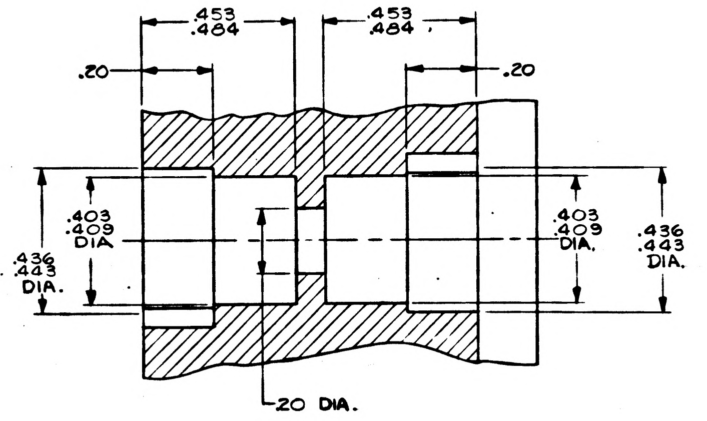
1015708

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD


.094
.875
.125 DIA. THRU
.312 DIA. CBORE × .104
DEEP - 2 PLACES
1 > 3 REQD (2)
1.906
.875
.150
1.719
.188
B
.048
.090 R
45°
.181
1.241
1.093
.687
A
B
1/4 R MAX.
.094 R 2 PLACES
.062 DIA. ×
.312 DEEP
2 PLACES
.395
.166
.484
.074
.255
.259
15°
.140
.005 R MAX
A
.080
.080
.292
.312
.063
.067
.078
.094
.562
.140 REF
1.539
.084
.075
.156
1.250
EQUIVALENT TO
11 EQUAL SPACES @ .125 +.002 -.002
=1.375 +.002 -.002 TOLERANCE NON-CUMULATIVE
.148
.152
.069
.073 DIA THRU BOTH FLANGES
60° CSK TO .089 .104 DIA
8 PLACES
.071
.076 DIA. × .302 .322
DEEP - 82° CSK TO
.086
.096 DIA
2 HOLES
1.675 +.002 -.002
1.953
2.218


⌒.001
⌒.001
.828
32
.19
32
.550 DIA.
.328 DIA.
.625 DIA.

PARTIAL SECTION A-A
2 PLACES


.453
.484
.453
.484
.20
.20
.403
.409
DIA
.436
.443
DIA.
.403
.409
DIA.
.436
.443
DIA.
.20 DIA.

PARTIAL SECTION B-B
ROTATED CW 45°

1007045	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 5 APR 63
CHECKED 16 APRIL 63
APPROVAL 18 APR 63
APPROVAL 5 JUN 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

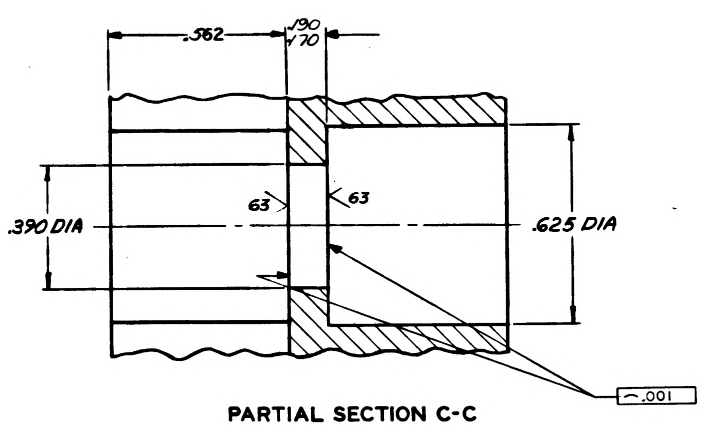
HEATSINK
TEMP. CONTROLLER POWER
SUPPLY 3200CPS, 20V.

CODE IDENT NO.
SIZE E
1015708
SCALE 5:1
SHEET 2 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

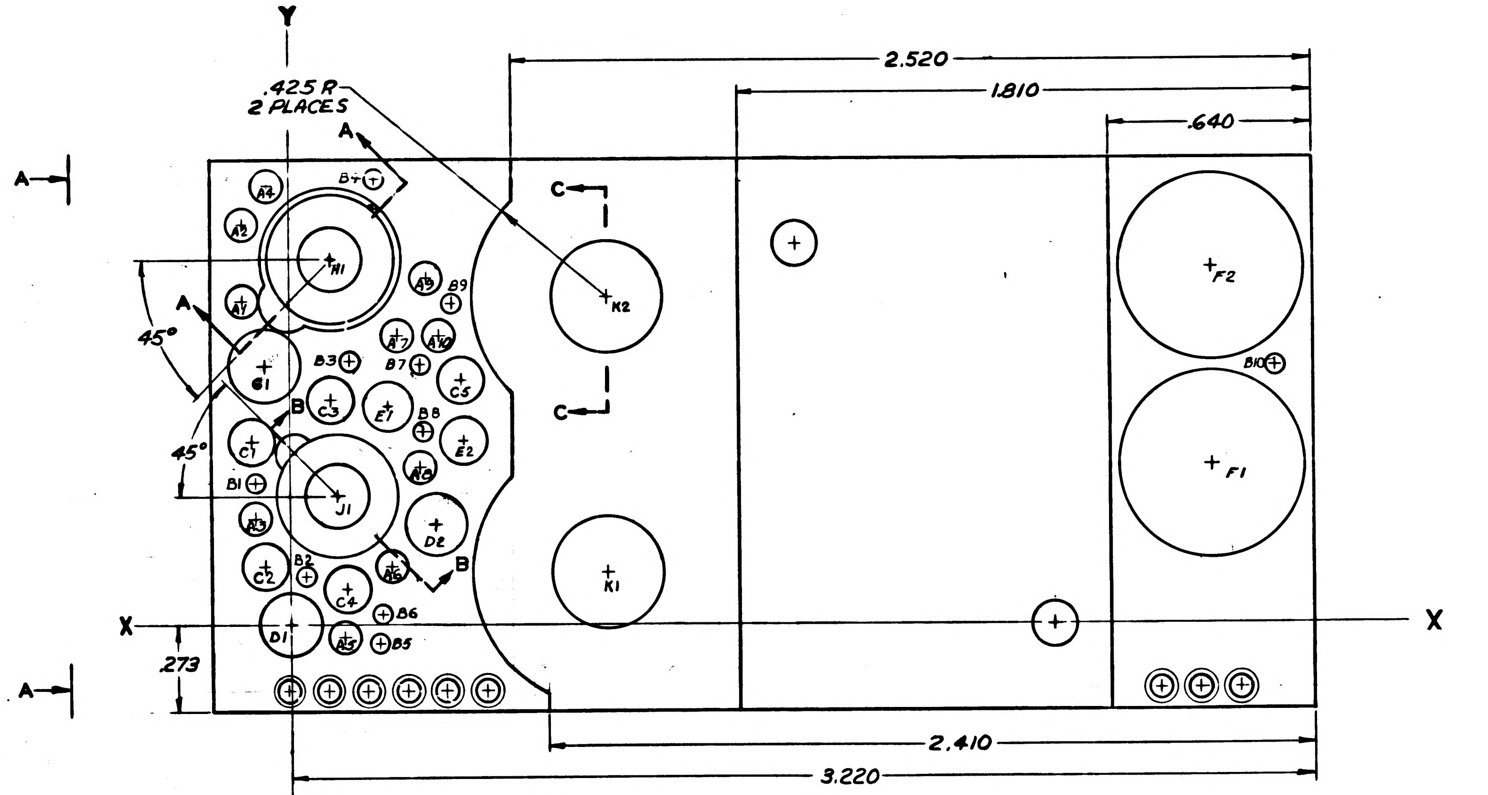
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02985			

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⌖ DIA	HOLE DIA	QTY
A1	-.150	1.010	.006	.100 .104	10
A2	-.150	1.250			
A3	-.110	.330			
A4	-.070	1.370			
A5	.170	-.040			
A6	.320	.180			
A7	.390	.900			
A8	.410	.490			
A9	.430	1.080			
A10	.470	.300			
B1	-.110	.490	.006	.058 .062	10
B2	.050	.150			
B3	.190	.820			
B4	.270	1.390			
B5	.280	-.060			
B6	.290	.030			
B7	.410	.810			
B8	.420	.600			
B9	.310	1.000			
B10	3.100	.800			
C1	-.120	.570	.006	.146 .150	5
C2	-.080	.180			
C3	.130	.700			
C4	.180	.110			
C5	.540	.760			
D1	.000	.000	.006	.192 .196	2
D2	.460	.310			
E1	.310	.680	.006	.153 .157	2
E2	.550	.570			
F1	2.900	.490	.006	.587 .597	2
F2	2.900	1.110			
G1	-.080	.810	.006	.275 .282	1
H1	.130	1.140	.006	PARTIAL SECTION A-A	1
J1	.150	.400	.006	PARTIAL SECTION B-B	1
K1	1.000	.160	.006	PARTIAL SECTION C-C	2
K2	1.000	1.020			



.562
.190
.170
63
63
.390 DIA
.625 DIA
⌒ .001

PARTIAL SECTION C-C



Y
.425 R
2 PLACES
A
A
B
B
C
C
A
A
45°
45°
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
C1
C2
C3
C4
C5
D1
D2
E1
E2
F1
F2
G1
H1
J1
K1
K2
2.520
1.810
.640
X
X
.273
2.410
3.220
Y

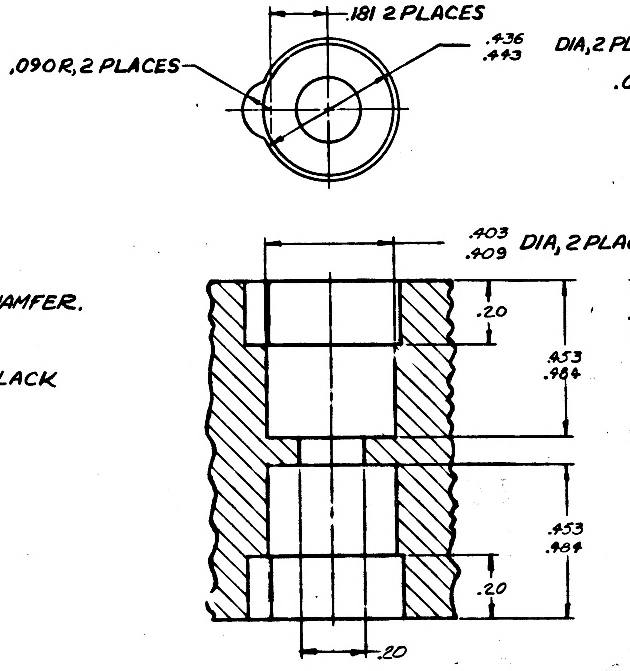
INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

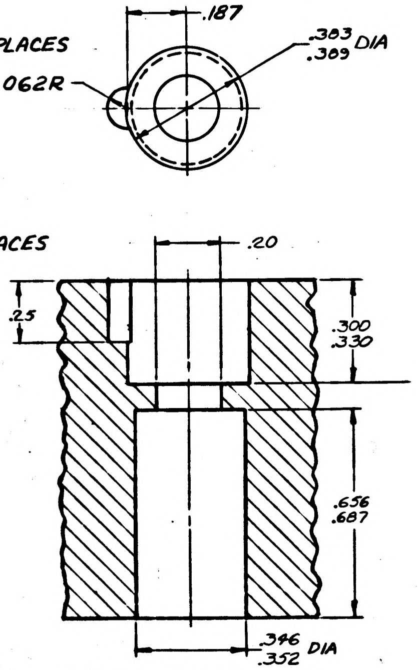
1▷ INSTALL ITEM 2 PER MS 33696 EXCEPT DIM F TO BE .594, BREAK OFF TANGS.

UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125/.
ALL CORNERS AND RADII TO BE .005-.015 R OR CHAMFER.
MUST BE FREE FROM BURRS.
2▷ MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325
FINISH: ANODIZE PER MIL-A-8625, TYPE II, DYED BLACK
PLUG INSERT HOLES



.181 2 PLACES
.436
.443
DIA, 2 PLACES
.090 R, 2 PLACES
.403
.409
DIA, 2 PLACES
.20
.453
.484
.453
.484
.20
.20

PARTIAL SECTION A-A



.187
.383
.389
DIA
.062 R
.20
.25
.300
.330
.656
.687
.346
.352
DIA

PARTIAL SECTION B-B

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW LOCKING
1	1	1015709-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007047	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ .XX ±.02 +1°
− .XXX ±.005 −1°
DO NOT SCALE THIS DRAWING
MATERIAL 2▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 16 APR 63
CHECKED 24 APR 63
J.M. BLYHAK 29 APR 63
APPROVAL 30 APR 63
28 MAY 63
APPROVAL 5 JUN 63
NASA APPROVAL
MIT APPROVAL 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

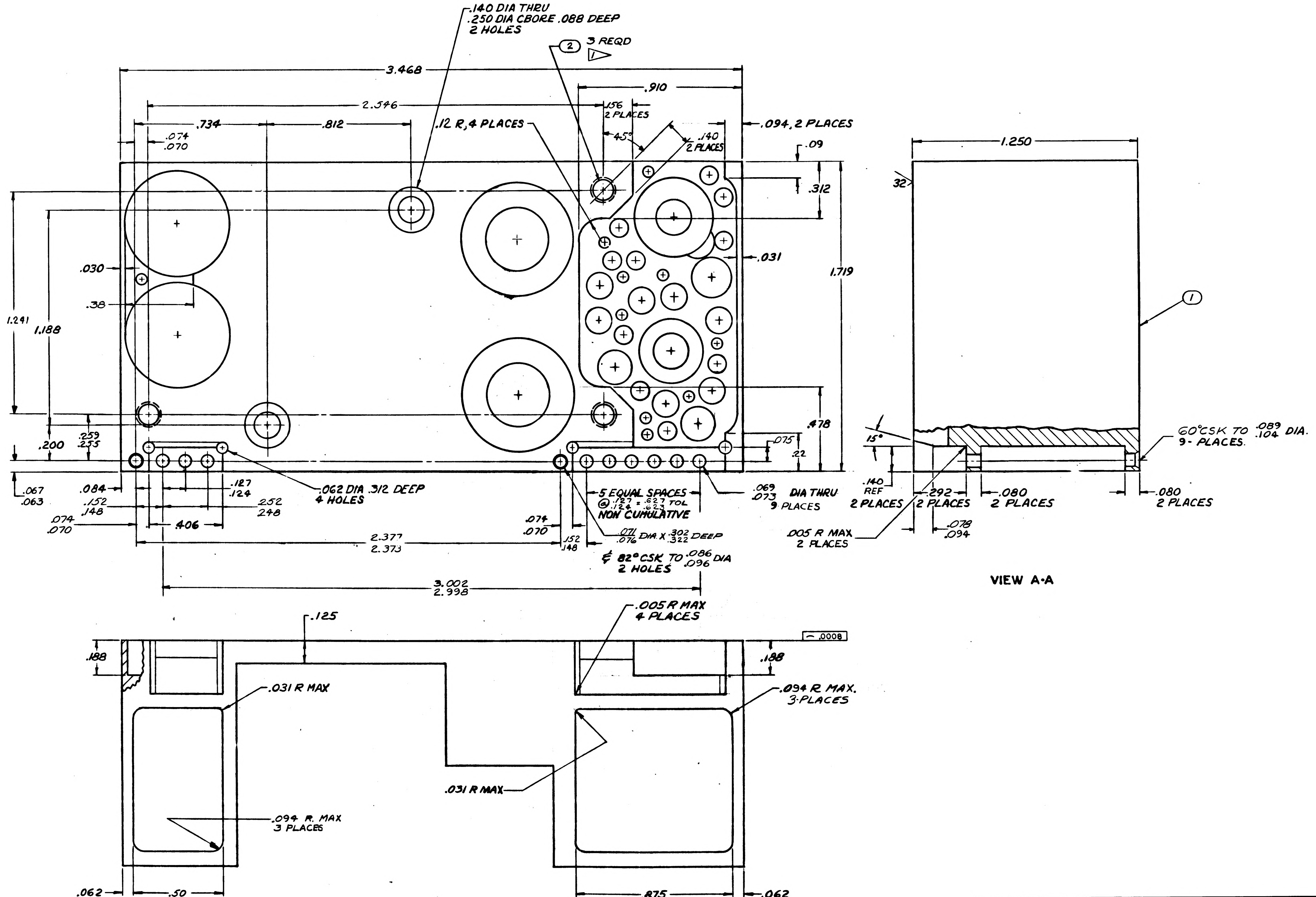
HEATSINK
AMPLIFIER 1% - 800 CPS

CODE IDENT NO. SIZE E 1015709
SCALE 5/1 SHEET 1 OF 2

1015709 A

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRC [illegible]					
SYM	ZONE	DESCRIPTION		DATE	APPD.
A		REVISED PER TDRR [illegible]	CHG NO.	[illegible]	[illegible]



.140 DIA THRU
.250 DIA CBORE .088 DEEP
2 HOLES
② 3 REQD
1
3.468
.910
2.546
.156
2 PLACES
.734
.812
.12 R, 4 PLACES
45°
.140
2 PLACES
.094, 2 PLACES
.09
.074
.070
.312
.031
.030
.38
1.241
1.188
1.719
.478
.259
.255
.200
.075
.22
.067
.063
.084
.152
.148
.127
.124
.252
.248
.074
.070
.406
.062 DIA .312 DEEP
4 HOLES
5 EQUAL SPACES
@ .127/.126 = .627/.623 TOL
NON CUMULATIVE
.069/.073 DIA THRU
9 PLACES
.074
.070
.071/.076 DIA X .302/.322 DEEP
& 82° CSK TO .086/.096 DIA
2 HOLES
2.377
2.373
.152
.148
3.002
2.998
1.250
32
①
15°
.140
REF
2 PLACES
.292
2 PLACES
.080
2 PLACES
.080
2 PLACES
.078
.094
.005 R MAX
2 PLACES
60° CSK TO .089/.104 DIA.
9 - PLACES.
VIEW A-A
.125
.005 R MAX
4 PLACES
.0008
.188
.188
.031 R MAX
.094 R MAX.
3 PLACES
.031 R MAX
.094 R. MAX
3 PLACES
.062
.50
.875
.062

1007047	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Allen DATE 15 APR 63
CHECKED 29 APR 63
J. M. BLYSHAK 29 APR
APPROVAL A. J. KODEL 30 APR 63
28 MAY 63
APPROVAL 5 JUN 63
NASA APPROVAL 5 Jun 63
MIT APPROVAL W Kupfer 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER 1% - 800 CPS

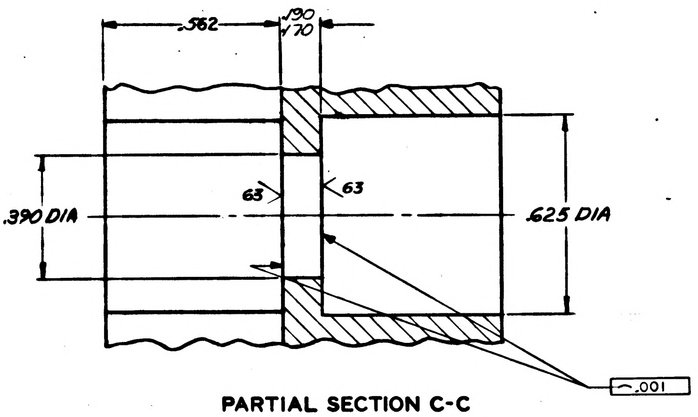
CODE IDENT NO.
SIZE E
1015709
SCALE 5/1
SHEET 2 OF 2

1015709 A

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

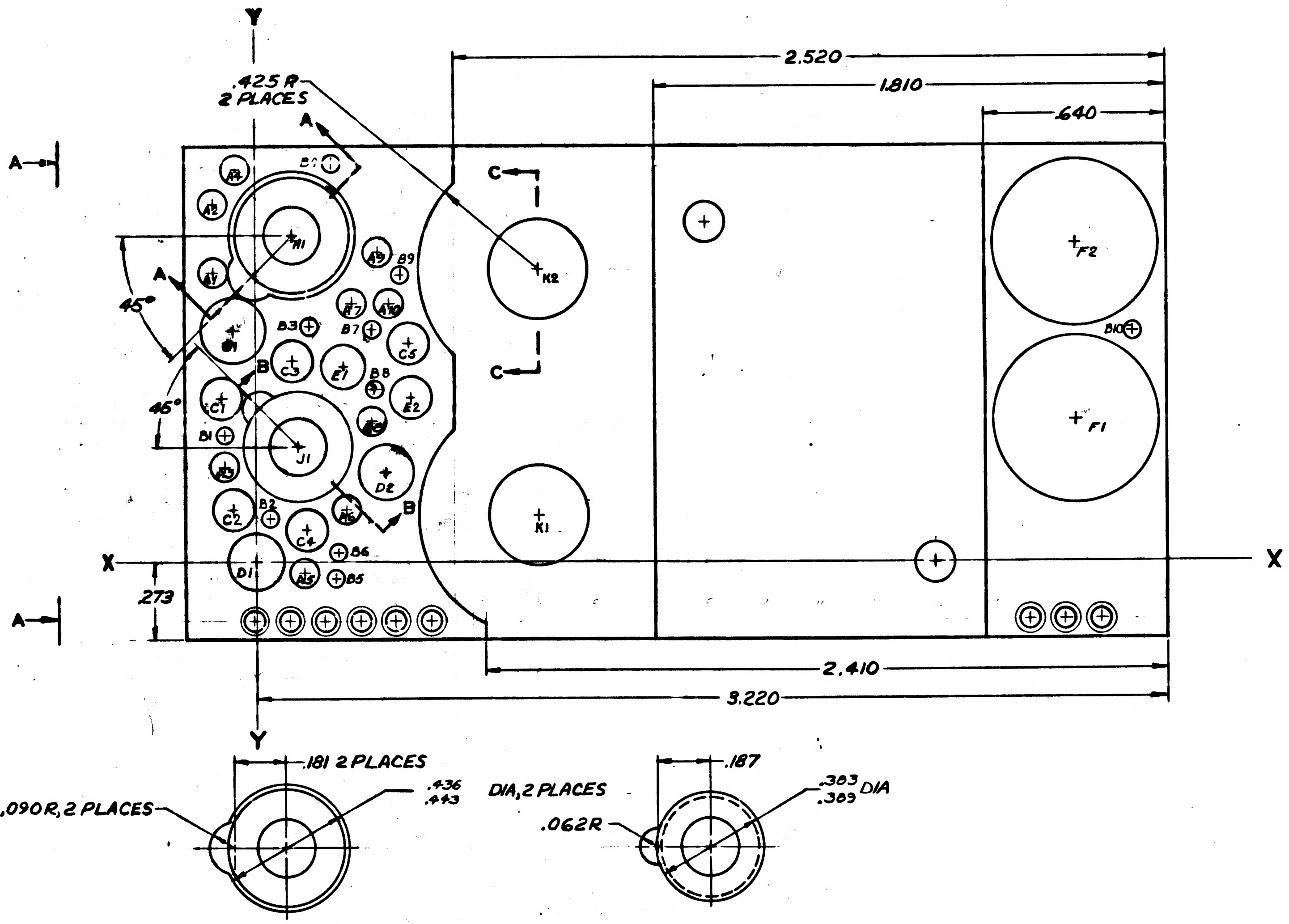
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02685		[illegible]	
B		REVISED PER TDRR 03851		[illegible]	
C		REVISED PER TDRR 03853		[illegible]	

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⌖ DIA	HOLE DIA	QTY
A1	-.150	1.010	.006	.100 .104	10
A2	-.150	1.250			
A3	-.110	.330			
A4	-.070	1.370			
A5	.170	-.040			
A6	.320	.180			
A7	.340	.900			
A8	.410	.490			
A9	.430	1.080			
A10	.470	.300			
B1	-.110	.490	.006	.058 .062	10
B2	.050	.150			
B3	.190	.820			
B4	.270	1.390			
B5	.280	-.060			
B6	.290	.030			
B7	.410	.810			
B8	.420	.600			
B9	.510	1.000			
B10	3.100	.800			
C1	-.120	.570	.006	.146 .150	5
C2	-.080	.180			
C3	.130	.700			
C4	.180	.110			
C5	.540	.760			
D1	.000	.000	.006	.192 .196	2
D2	.460	.310			
E1	.310	.680	.006	.153 .157	2
E2	.550	.570			
F1	2.900	.490	.006	.587 .597	2
F2	2.900	1.110			
G1	-.080	.810	.006	.275 .282	1
H1	.130	1.140	.006	PARTIAL SECTION A-A	1
J1	.150	.400	.006	PARTIAL SECTION B-B	1
K1	1.000	.160	.006	PARTIAL SECTION C-C	2
K2	1.000	1.020			



.562
.190
.170
63
63
.390 DIA
.625 DIA
⌒ .001

PARTIAL SECTION C-C



Y
.425 R 2 PLACES
A
A
A
A
B
B
C
C
45°
45°
2.520
1.810
.640
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10
C1 C2 C3 C4 C5
D1 D2
E1 E2
F1 F2
G1 H1 J1 K1 K2
X
X
.273
2.410
3.220
Y
.181 2 PLACES
.436
.443
DIA, 2 PLACES
.090 R, 2 PLACES
.187
.383
.389 DIA
.062 R

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.

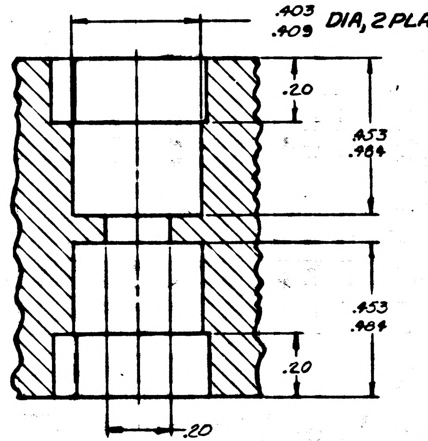
COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

1▷ INSTALL ITEM 2 PER MS 33646 EXCEPT DIM F TO BE .594, BREAK OFF TANGS.

UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125/.
ALL CORNERS AND RADII TO BE .005-.015 R OR CHAMFER.
MUST BE FREE FROM BURRS.

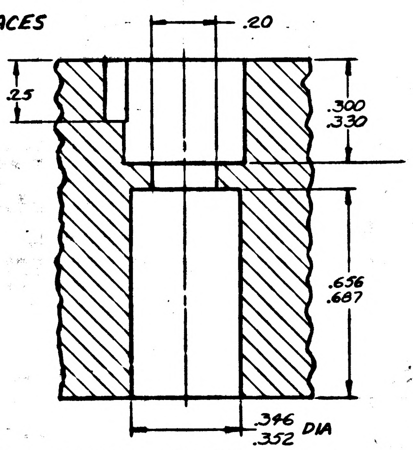
2▷ MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325

FINISH: ANODIZE PER MIL-A-8625, TYPE II, DYED BLACK
PLUG INSERT HOLES



.403
.409 DIA, 2 PLACES
.20
.453
.484
.453
.484
.20
.20

PARTIAL SECTION A-A



.20
.25
.300
.330
.656
.687
.346
.352 DIA

PARTIAL SECTION B-B

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW LOCKING
1	1	1015709-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007047	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ .XX ±.02 +1°
- .XXX±.005 -1°
DO NOT SCALE THIS DRAWING
MATERIAL 2▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 16 APR 63 DATE
CHECKED 24 APR 63
J.M. BLYHAK 29 APR 63
APPROVAL A. KODEL 30 APR 63
28 MAY 63
APPROVAL 5 JUN 63
NASA APPROVAL
MIT APPROVAL 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

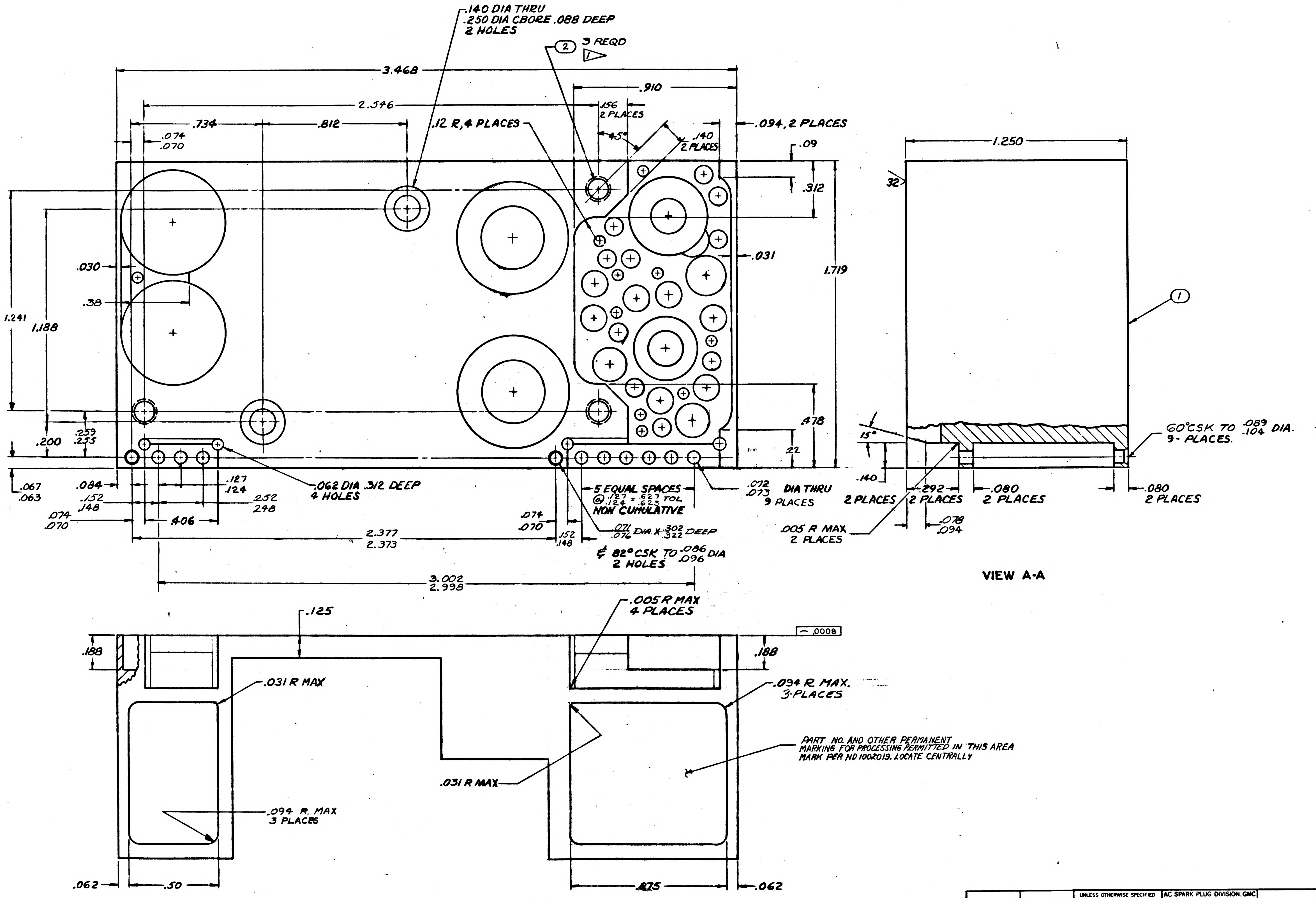
HEATSINK
AMPLIFIER 1% - 800 CPS

CODE IDENT NO.
SIZE E
1015709
SCALE 5/1
SHEET 1 OF 2

1015709 C

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 465					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR [illegible]		[illegible]	[illegible]
B		REVISED PER TDRR 03851		10-5-63	EPL
C		REVISED PER TDRR 03853		10-5-63	EPL



.140 DIA THRU
.250 DIA CBORE .088 DEEP
2 HOLES
② 3 REQD
3.468
.910
2.546
.156
2 PLACES
.734
.812
.12 R, 4 PLACES
.094, 2 PLACES
.074
.070
45°
.140
2 PLACES
.09
.312
.031
1.719
.030
.38
1.241
1.188
.478
.22
.259
.255
.200
.067
.063
.084
.152
.148
.406
.127
.124
.252
.248
.062 DIA .312 DEEP
4 HOLES
5 EQUAL SPACES
@ .127/.124 = .627/.623 TOL
NON CUMULATIVE
.072/.073 DIA THRU
9 PLACES
.074
.070
.152
.148
.071/.076 DIA X .302/.322 DEEP
2.377
2.373
℄ 82° CSK TO .086/.096 DIA
2 HOLES
3.002
2.998
1.250
32
①
15°
.140
2 PLACES
.292
2 PLACES
.080
2 PLACES
.080
2 PLACES
60° CSK TO .089/.104 DIA.
9- PLACES.
.005 R MAX
2 PLACES
.078
.094
VIEW A-A
.125
.005 R MAX
4 PLACES
.0008
.188
.188
.031 R MAX
.094 R MAX.
3 PLACES
PART NO. AND OTHER PERMANENT
MARKING FOR PROCESSING PERMITTED IN THIS AREA
MARK PER ND 1002019. LOCATE CENTRALLY
.031 R MAX
.094 R. MAX
3 PLACES
.062
.50
.875
.062

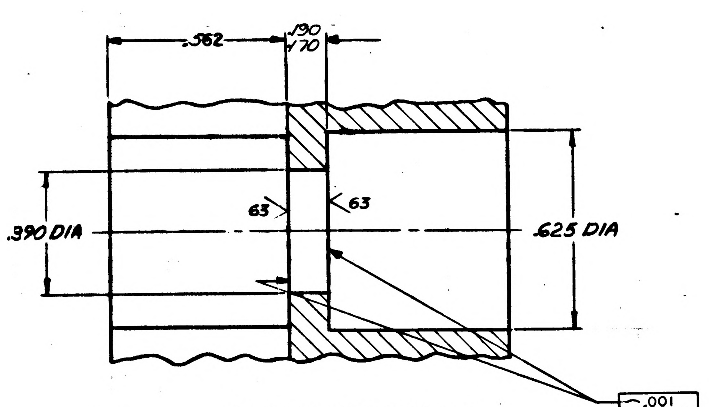
1007047		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
NEXT ASSY	USED ON	DO NOT SCALE THIS DRAWING	DRAWN [illegible] DATE [illegible] APR 63 CHECKED [illegible] 29 APR 63 J. M. SLYSHAK 29 APR APPROVAL [illegible] KODEL 30 APR 63 [illegible] 28 MAY 63 APPROVAL [illegible] 5 JUN 63	HEATSINK AMPLIFIER 1% - 800 CPS
APPLICATION		MATERIAL —	NASA APPROVAL [illegible] 5 Jun 63	CODE IDENT NO. | SIZE E | 1015709
		CONTRACT	MIT APPROVAL [illegible] 5 June 63	SCALE 5/1 | SHEET 2 OF 2

1015709 C

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02786		[illegible]	[illegible]
B		REVISED PER TDRR 03851		10-5-63	[illegible]
C		REVISED PER TDRR 03853		[illegible]	[illegible]
D		REVISED PER TDRR 05412		23 DEC 63	[illegible]

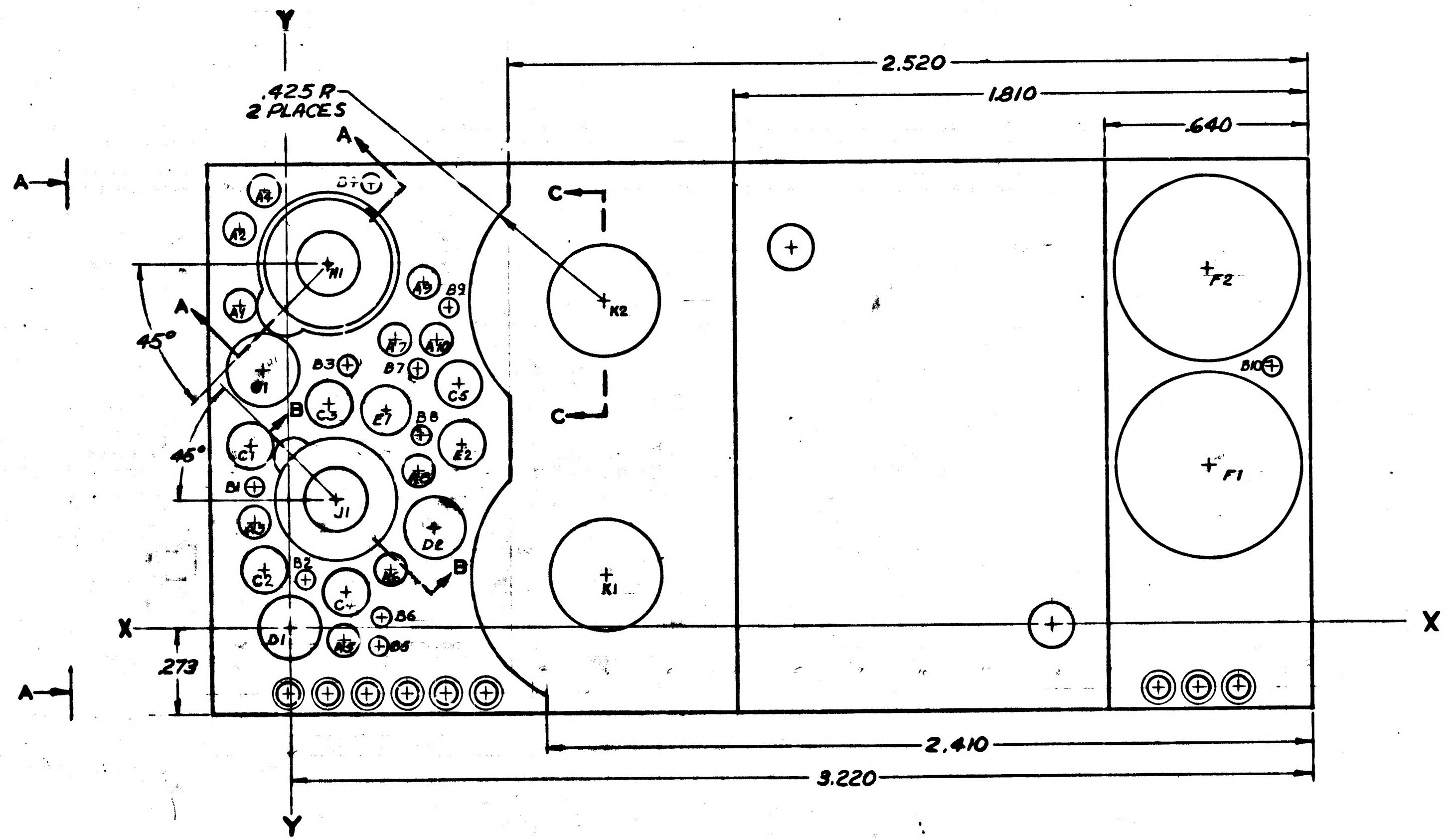
SEE NOTE 3

HOLE IDENT	X DIM	Y DIM		HOLE DIA	QTY
A1	-.150	1.010		.100 .104	10
A2	-.150	1.250			
A3	-.110	.330			
A4	-.070	1.370			
A5	.170	-.040			
A6	.320	.180			
A7	.390	.900			
A8	.410	.490			
A9	.430	1.080			
A10	.470	.300			
B1	-.110	.490		.058 .062	10
B2	.050	.150			
B3	.190	.820			
B4	.270	1.390			
B5	.280	-.060			
B6	.290	.030			
B7	.410	.810			
B8	.420	.600			
B9	.310	1.000			
B10	3.100	.800			
C1	-.120	.570		.146 .150	5
C2	-.080	.180			
C3	.130	.700			
C4	.180	.110			
C5	.540	.760			
D1	.000	.000		.192 .196	2
D2	.460	.310			
E1	.310	.680		.153 .157	2
E2	.550	.570			
F1	2.900	.490		.587 .597	2
F2	2.900	1.110			
G1	-.080	.810		.275 .282	1
H1	.130	1.140		PARTIAL SECTION A-A	1
J1	.150	.400		PARTIAL SECTION B-B	1
K1	1.000	.160		PARTIAL SECTION C-C	2
K2	1.000	1.020			



.562
.190
.170
63
63
.390 DIA
.625 DIA
.001

PARTIAL SECTION C-C



Y
.425 R
2 PLACES
A
A
A
A
B
B
C
C
45°
45°
2.520
1.810
.640
.273
2.410
3.220
X
X
Y
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10
C1 C2 C3 C4 C5
D1 D2
E1 E2
F1 F2
G1
H1
J1
K1 K2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.

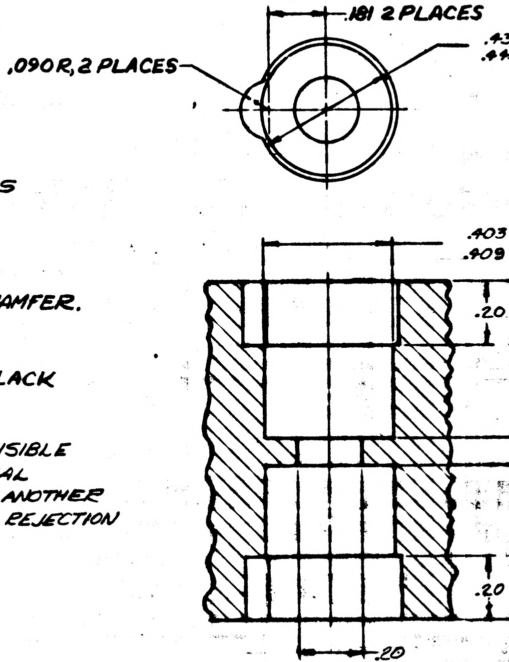
COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

1▷ INSTALL ITEM 2 PER MS 33646 BREAK OFF TANGS

UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005-.015 R OR CHAMFER.
MUST BE FREE FROM BURRS.

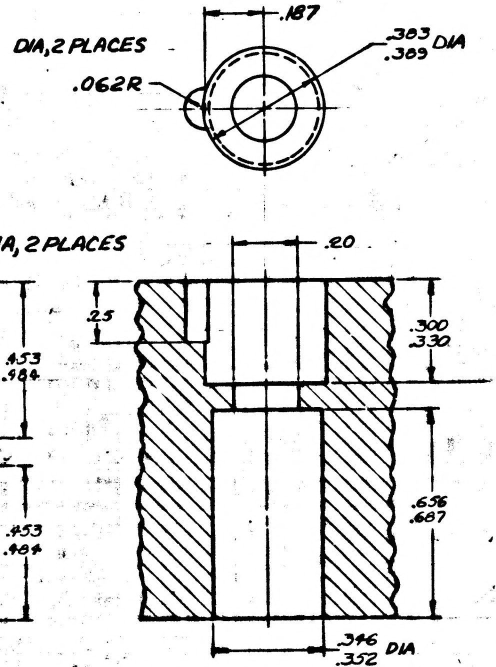
2▷ MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325
FINISH: ANODIZE PER MIL-A-8625, TYPE II, DYED BLACK
PLUG INSERT HOLES

3▷ THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DEFORMATION IN AN ADJACENT HOLE OR AN EXTERNAL SURFACE OR AN ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART



.181 2 PLACES
.090 R, 2 PLACES
.436
.443
.403
.409 DIA, 2 PLACES
.20
.453
.484
.453
.484
.20
.20

PARTIAL SECTION A-A



DIA, 2 PLACES
.187
.383
.389 DIA
.062R
.20
.25
.300
.330
.656
.687
.346
.352 DIA

PARTIAL SECTION B-B

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW LOCKING
1	1	1015709-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007047	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	.XX ±.02	+1°
-	.XXX±.005	-1°

DO NOT SCALE THIS DRAWING

MATERIAL 2▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN [illegible] 15 APR 63
DATE
CHECKED [illegible] 29 APR 63
APPROVAL J.M. BLYHAK 29 APR 63
APPROVAL [illegible] 30 APR 63
APPROVAL [illegible] 28 MAY 63 5 JUN 63

NASA APPROVAL

MIT APPROVAL [illegible] 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

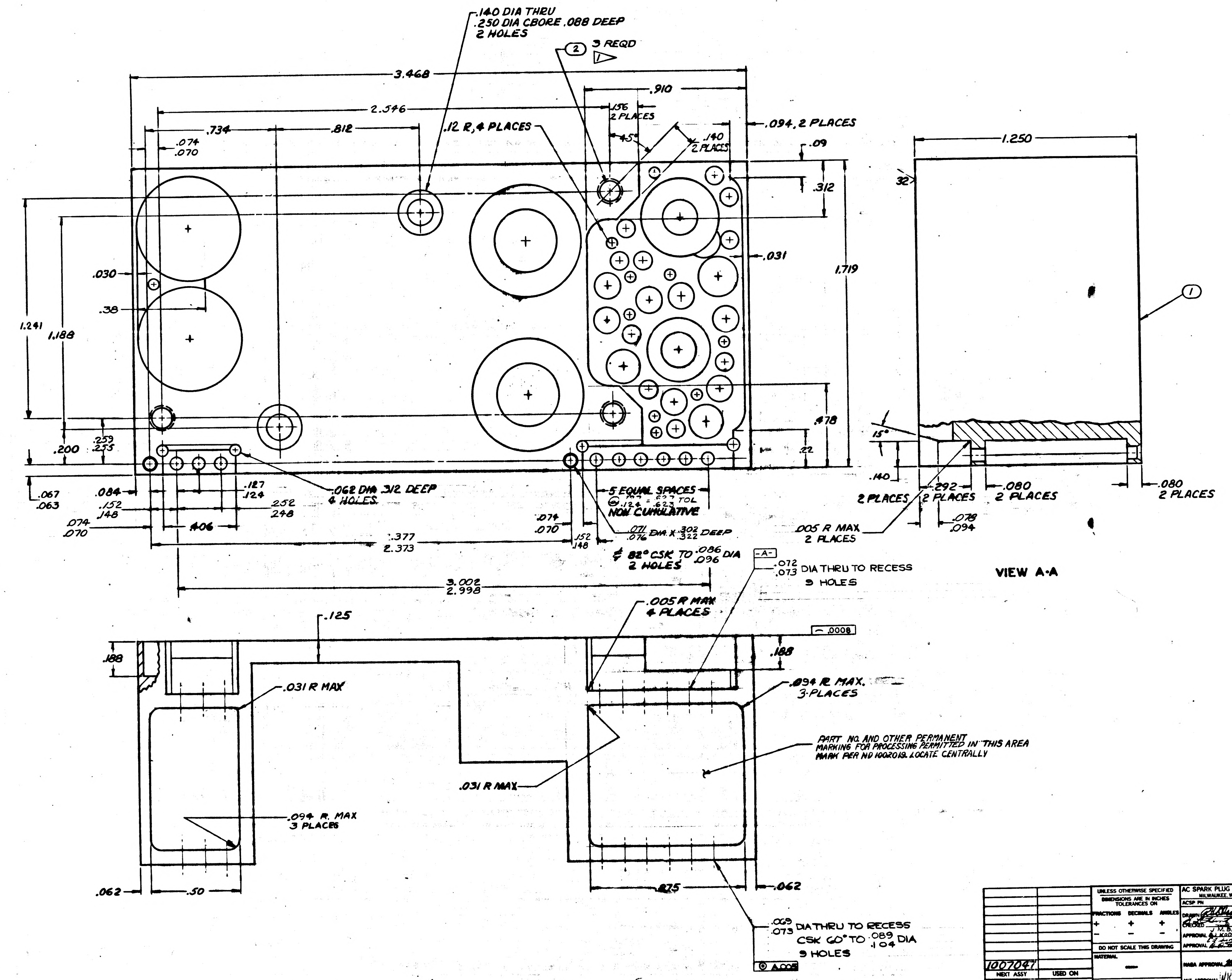
HEATSINK
AMPLIFIER 1% - 800 CPS

CODE IDENT NO.
SIZE E
1015709

SCALE 5/1
SHEET 1 OF 2

REVISIONS TDRC 01465

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02985		9-5-63	
B		REVISED PER TDRR 03851		10-5-63	RPK
C		REVISED PER TDRR 03853		10-5-63	RPK
D		REVISED PER TDRR 05412		23 Dec 63	RPK



.140 DIA THRU
.250 DIA CBORE .088 DEEP
2 HOLES
② 3 REQD
3.468
.910
2.546
.156 2 PLACES
.734
.812
.12 R, 4 PLACES
45°
.140 2 PLACES
.094, 2 PLACES
.09
.074 .070
.312
.031
1.719
.030
.38
1.241
1.188
.259 .255
.200
.478
.22
.067 .063
.084
.152 .148
.127 .124
.252 .248
.074 .070
.406
.062 DIA .312 DEEP 4 HOLES
5 EQUAL SPACES .124 ±.623 TOL NON CUMULATIVE
.074 .070
.152 .148
.071 .076 DIA X .302 .322 DEEP
82° CSK TO .086 .096 DIA 2 HOLES
2.377 2.373
3.002 2.998
-A-
.072 .073 DIA THRU TO RECESS 9 HOLES
1.250
32
①
15°
.140
2 PLACES
.292 2 PLACES
.080 2 PLACES
.080 2 PLACES
.005 R MAX 2 PLACES
.078 .094
VIEW A-A
.125
.005 R MAX 4 PLACES
.0008
.188
.188
.031 R MAX
.094 R MAX. 3 PLACES
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA MARK PER ND 1002019. LOCATE CENTRALLY
.031 R MAX
.094 R. MAX 3 PLACES
.062
.50
.875
.062
.069 .073 DIA THRU TO RECESS CSK 60° TO .089 .104 DIA 9 HOLES
A .005

1007047	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
±	±	±

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN DATE 15 APR 63
CHECKED 29 APR 63
APPROVAL J. M. BLYSHAK 29 APR
APPROVAL J. KODEL 30 APR 63
28 MAY 63
5 JUN 63
NASA APPROVAL 5 Jun 63
MIT APPROVAL 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER 1% - 800 CPS

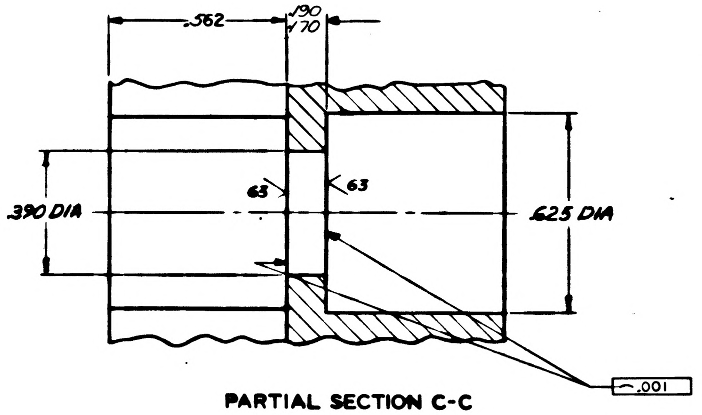
CODE IDENT NO.
SIZE E
1015709
SCALE 5/1
SHEET 2 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

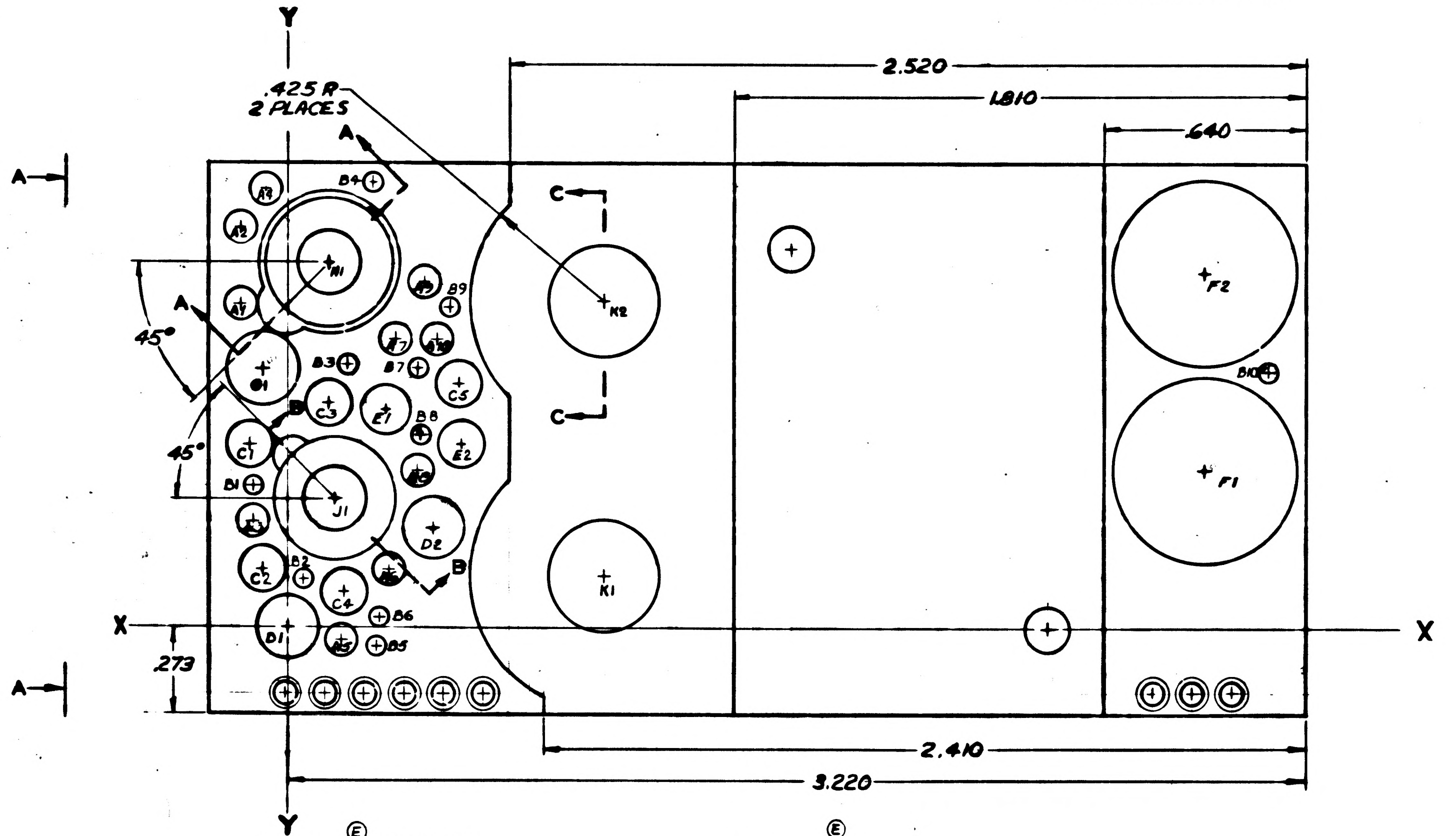
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 02985			EPL
B		REVISED PER TDRR 03851			EPL
C		REVISED PER TDRR 03853			
D		REVISED PER TDRR 05412		DEC	EPL
E		REVISED PER TDRR 11054		30 JUL 64	JJJ

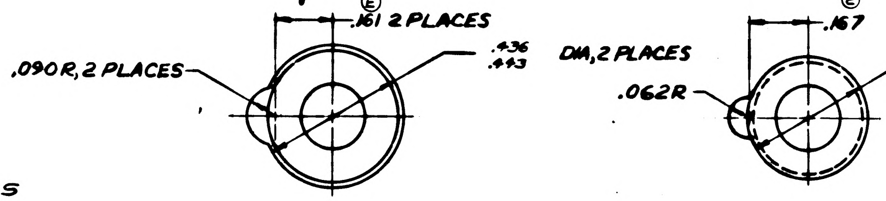
SEE NOTE 3

HOLE IDENT	X DIM	Y DIM		HOLE DIA	QTY
A1	-.150	1.010		.100 .104	10
A2	-.150	1.250			
A3	-.110	.330			
A4	-.070	1.370			
A5	.170	-.040			
A6	.320	.180			
A7	.340	.900			
A8	.410	.490			
A9	.430	1.080			
A10	.470	.300			
B1	-.115	.440		.058 .062	10
B2	.050	.150			
B3	.190	.820			
B4	.270	1.390			
B5	.280	-.060			
B6	.290	.030			
B7	.410	.810			
B8	.420	.600			
B9	.310	1.000			
B10	3.100	.800			
C1	-.120	.570		.146 .150	5
C2	-.080	.180			
C3	.130	.700			
C4	.180	.110			
C5	.540	.760			
D1	.000	.000		.192 .196	2
D2	.460	.310			
E1	.310	.680		.153 .157	2
E2	.550	.570			
F1	2.900	.490		.587 .597	2
F2	2.900	1.110			
G1	-.080	.810		.275 .282	1
H1	.130	1.140		PARTIAL SECTION A-A	1
J1	.150	.400		PARTIAL SECTION B-B	1
K1	1.000	.160		PARTIAL SECTION C-C	2
K2	1.000	1.020			


.562
.190
.170
63
63
.390 DIA
.625 DIA
.001

PARTIAL SECTION C-C


Y
.425 R
2 PLACES
A
A
45°
45°
B
B
C
C
A
A
X
X
.273
2.520
1.810
.640
2.410
3.220
Y
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
C1
C2
C3
C4
C5
D1
D2
E1
E2
F1
F2
G1
H1
J1
K1
K2


E
.161 2 PLACES
.436
.443
DIA, 2 PLACES
.090 R, 2 PLACES
E
.167
.383
.389 DIA
.062R

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.

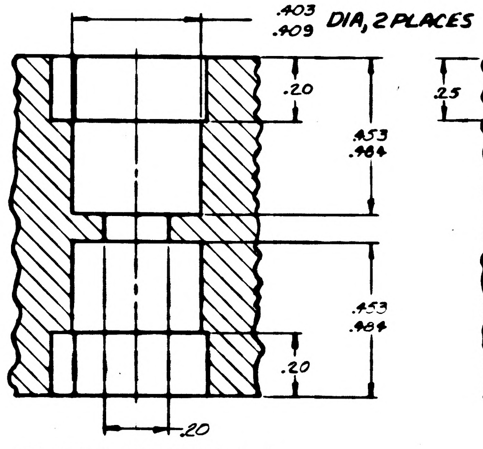
COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

1 INSTALL ITEM 2 PER MS 33646 BREAK OFF TANGS

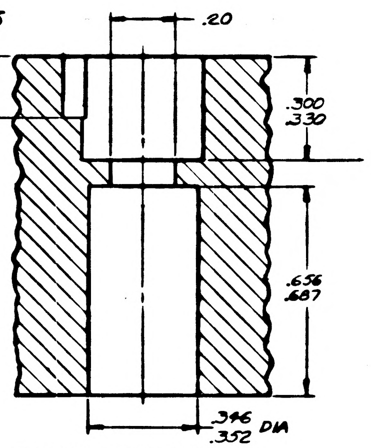
UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005-.015 R OR CHAMFER.
MUST BE FREE FROM BURRS.

2 MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325
FINISH: ANODIZE PER MIL-A-8625, TYPE II, DYED BLACK
PLUG INSERT HOLES

3 THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DEFORMATION IN AN ADJACENT HOLE OR AN EXTERNAL SURFACE OR AN ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART


.403
.409
DIA, 2 PLACES
.20
.453
.484
.453
.484
.20
.20

PARTIAL SECTION A-A


.20
.25
.300
.330
.656
.687
.346
.352 DIA

PARTIAL SECTION B-B

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW LOCKING
1	1	1015709-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007047	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	.XX ±.02	+1°
-	.XXX ±.005	-1°

DO NOT SCALE THIS DRAWING

MATERIAL 2

CONTRACT

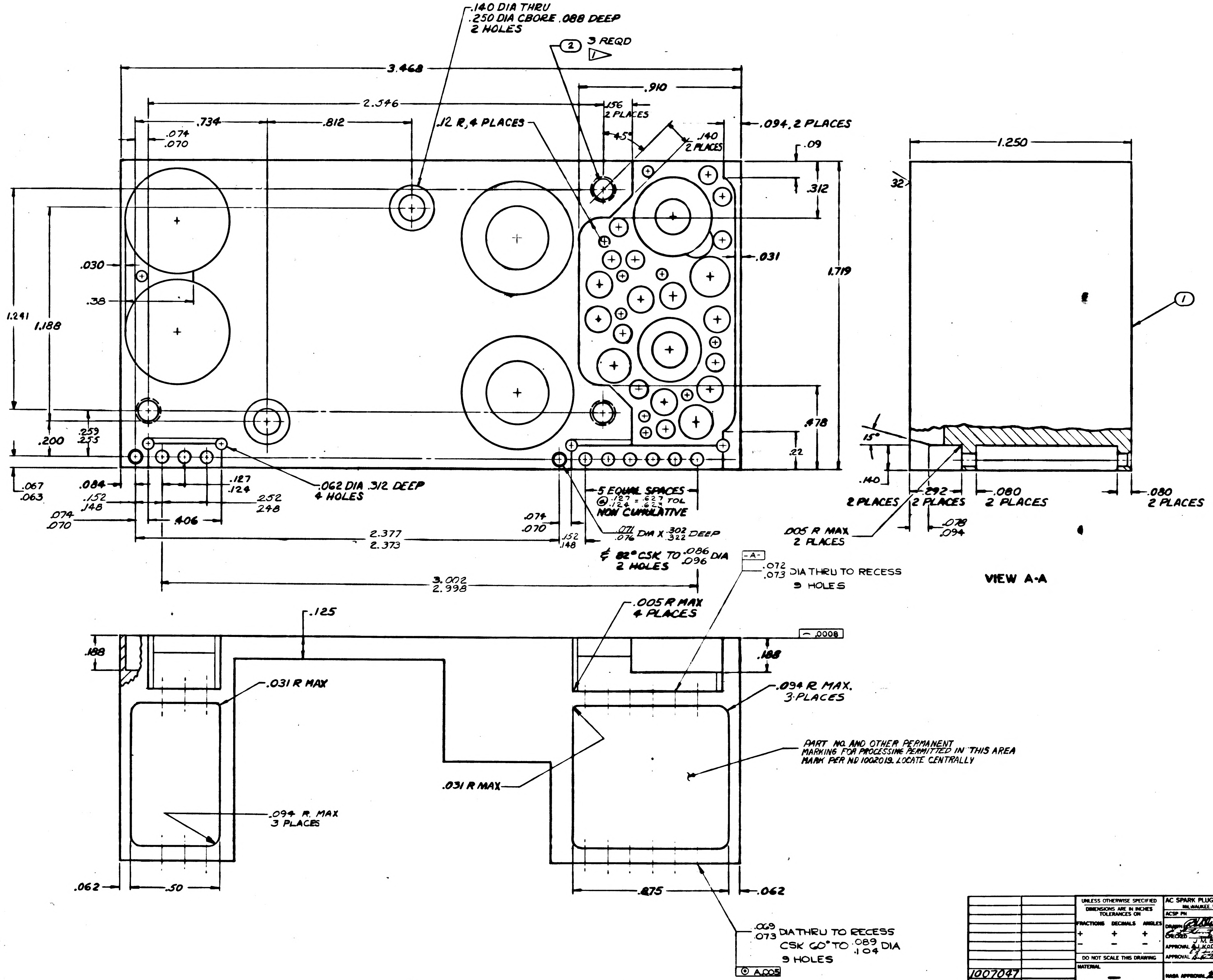
AC SPARK PLUG DIVISION GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 16 APR 63
DATE
CHECKED 24 APR 63
APPROVAL J.M. BLYHAK 29 APR 63
KADEL 30 APR 63
28 MAY 63
APPROVAL 5 JUN 63
NASA APPROVAL
MIT APPROVAL W Kupfer 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER 1% - 800 CPS

CODE IDENT NO.
SIZE E
1015709
SCALE 5/1
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR [illegible]		[illegible]	[illegible]
B		REVISED PER TDRR 03851		10-15-63	[illegible]
C		REVISED PER TDRR 03853		10-15-63	[illegible]
D		REVISED PER TDRR 05412		23 DEC 63	[illegible]
E		REVISED PER TDRR 11054		30 JUL 64	J J J



.140 DIA THRU
.250 DIA CBORE .088 DEEP
2 HOLES
(2) 3 REQD
3.468
2.546
.910
.734
.812
.12 R, 4 PLACES
.156 2 PLACES
45°
.140 2 PLACES
.094, 2 PLACES
.09
.312
.074 .070
.030
.38
1.241
1.188
.031
1.719
.478
.22
.259 .255
.200
.067 .063
.084
.152 .148
.074 .070
.127 .124
.252 .248
.406
.062 DIA .312 DEEP 4 HOLES
5 EQUAL SPACES @ .127/.124 = .627/.623 TOL NON CUMULATIVE
2.377 2.373
.074 .070
.152 .148
.071/.076 DIA X .302/.322 DEEP
℄ 82° CSK TO .086/.096 DIA 2 HOLES
-A-
.072/.073 DIA THRU TO RECESS 9 HOLES
3.002 2.998
.125
.005 R MAX 4 PLACES
.0008
.188
.188
.031 R MAX
.094 R MAX. 3 PLACES
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA MARK PER ND 1002019. LOCATE CENTRALLY
.031 R MAX
.094 R. MAX 3 PLACES
.062
.50
.875
.062
.069/.073 DIA THRU TO RECESS CSK 60° TO .089/.104 DIA 9 HOLES
A.005
1.250
32
(1)
15°
.140 2 PLACES
.292 2 PLACES
.080 2 PLACES
.080 2 PLACES
.078 .094
.005 R MAX 2 PLACES
VIEW A-A

1007047	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 15 APR 63 DATE
CHECKED 29 APR 63
J. M. BLYSHAK 29 APR
APPROVAL A. J. KODEL 30 APR 63
28 MAY 63
APPROVAL 5 JUN 63
NASA APPROVAL 5 Jun 63
MIT APPROVAL W Kopp 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

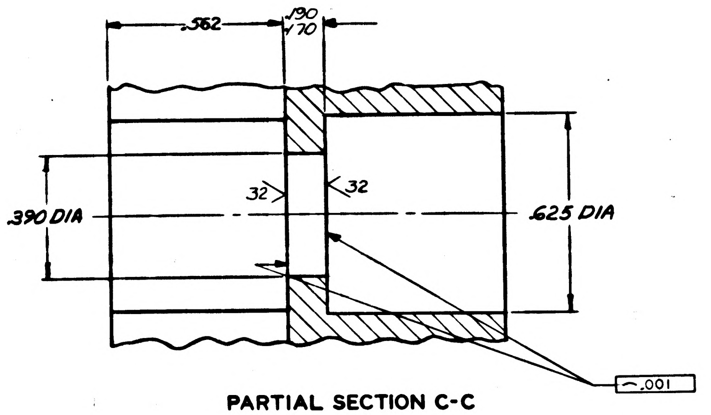
HEATSINK
AMPLIFIER 1% - 800 CPS

CODE IDENT NO.
SIZE E
1015709
SCALE 5/1
SHEET 2 OF 2

REVISIONS

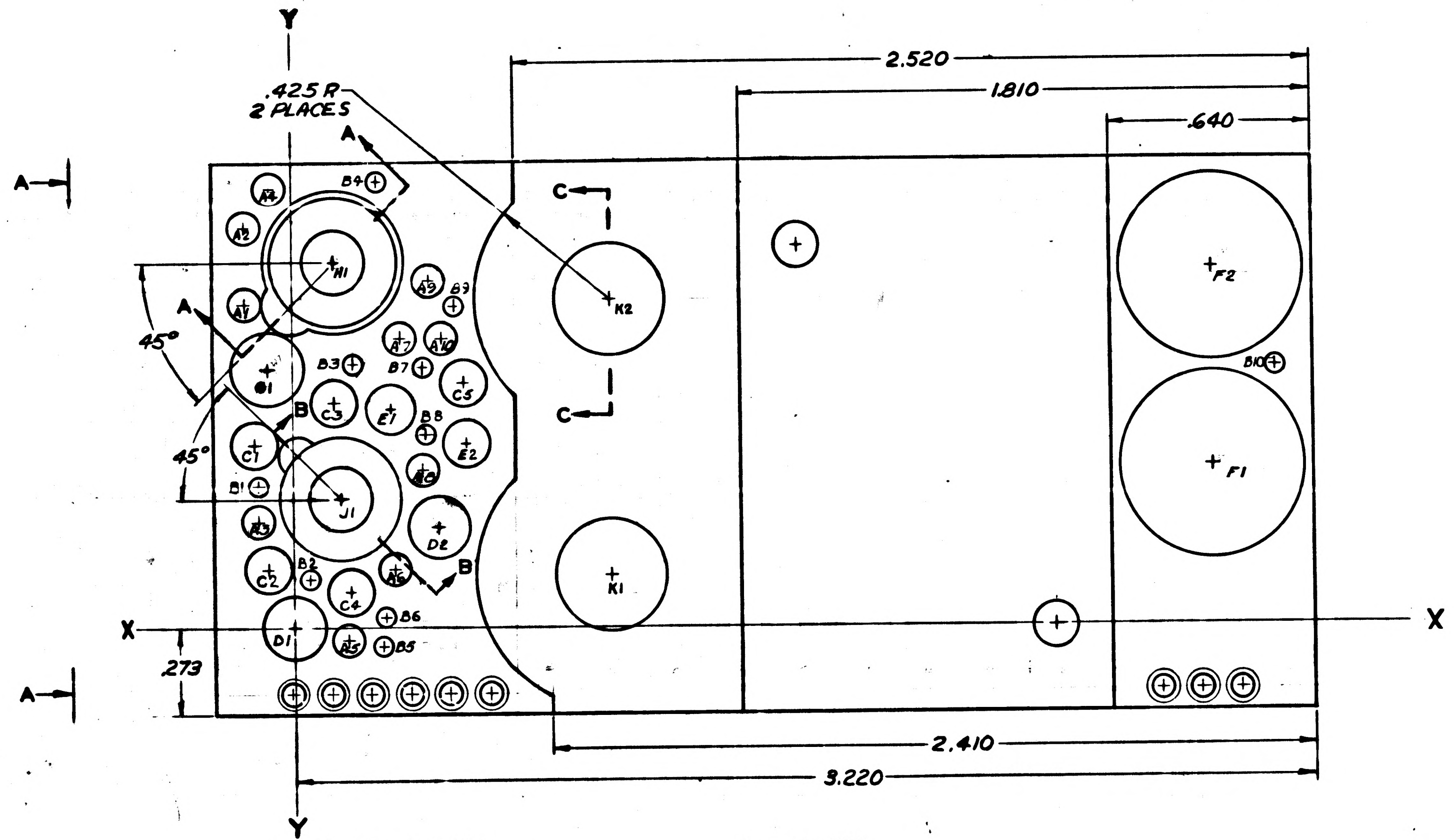
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⌖ DIA	HOLE DIA	QTY
A1	-.150	1.010	.006	.100 .104	10
A2	-.150	1.250			
A3	-.110	.330			
A4	-.070	1.370			
A5	.170	-.040			
A6	.320	.180			
A7	.390	.900			
A8	.410	.490			
A9	.430	1.080			
A10	.470	.300			
B1	-.110	.490	.006	.058 .062	10
B2	.050	.150			
B3	.190	.820			
B4	.270	1.390			
B5	.280	-.060			
B6	.290	.030			
B7	.410	.810			
B8	.420	.600			
B9	.510	1.000			
B10	3.100	.800			
C1	-.120	.570	.006	.146 .150	5
C2	-.080	.180			
C3	.130	.700			
C4	.180	.110			
C5	.540	.760			
D1	.000	.000	.006	.192 .196	2
D2	.460	.310			
E1	.310	.680	.006	.153 .157	2
E2	.550	.570			
F1	2.900	.490	.006	.584 .594	2
F2	2.900	1.110			
G1	-.080	.810	.006	.275 .282	1
H1	.130	1.140	.006	PARTIAL SECTION A-A	1
J1	.150	.400	.006	PARTIAL SECTION B-B	1
K1	1.000	.160	.006	PARTIAL SECTION C-C	2
K2	1.000	1.020			



.562
.190
.170
32
32
.390 DIA
.625 DIA
.001

PARTIAL SECTION C-C



Y
.425 R
2 PLACES
A
A
A
B
B
C
C
45°
45°
2.520
1.810
.640
2.410
3.220
.273
X
X
Y
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
C1
C2
C3
C4
C5
D1
D2
E1
E2
F1
F2
G1
H1
J1
K1
K2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

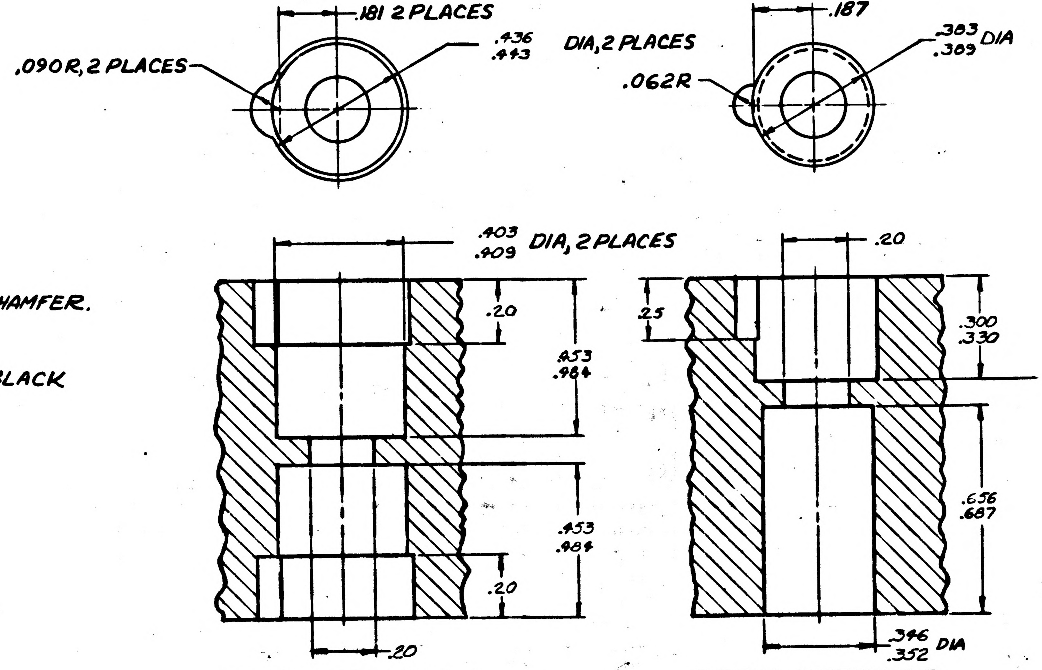
ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

1 INSTALL ITEM 2 PER MS 33646
EXCEPT DIM F TO BE .594, BREAK OFF TANGS.

UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005-.015 R OR CHAMFER.
MUST BE FREE FROM BURRS.

2 MATERIAL: ALUMINUM 6061-T6 PER QQ-A-325
FINISH: ANODIZE PER MIL-A-8625, TYPE II, DYED BLACK
PLUG INSERT HOLES



.181 2 PLACES
.436
.443
DIA, 2 PLACES
.090R, 2 PLACES
.187
.383
.389
DIA
.062R
.403
.409
DIA, 2 PLACES
.20
.20
.453
.484
.453
.484
.20
.20
.20
.25
.300
.330
.656
.687
.346
.352
DIA

PARTIAL SECTION A-A

PARTIAL SECTION B-B

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	NAS 1222-06E	INSERT, SCREW LOCKING
1	1	1015709-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007047	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ .XX ±.02 +1°
- .XXX ±.005 -1°
DO NOT SCALE THIS DRAWING

MATERIAL 2

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 16 APR 63
CHECKED 24 APR 63
J.M. BLYHAK 29 APR 63
APPROVAL 30 APR 63
28 MAY 63
APPROVAL 5 JUN 63
NASA APPROVAL
MIT APPROVAL 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

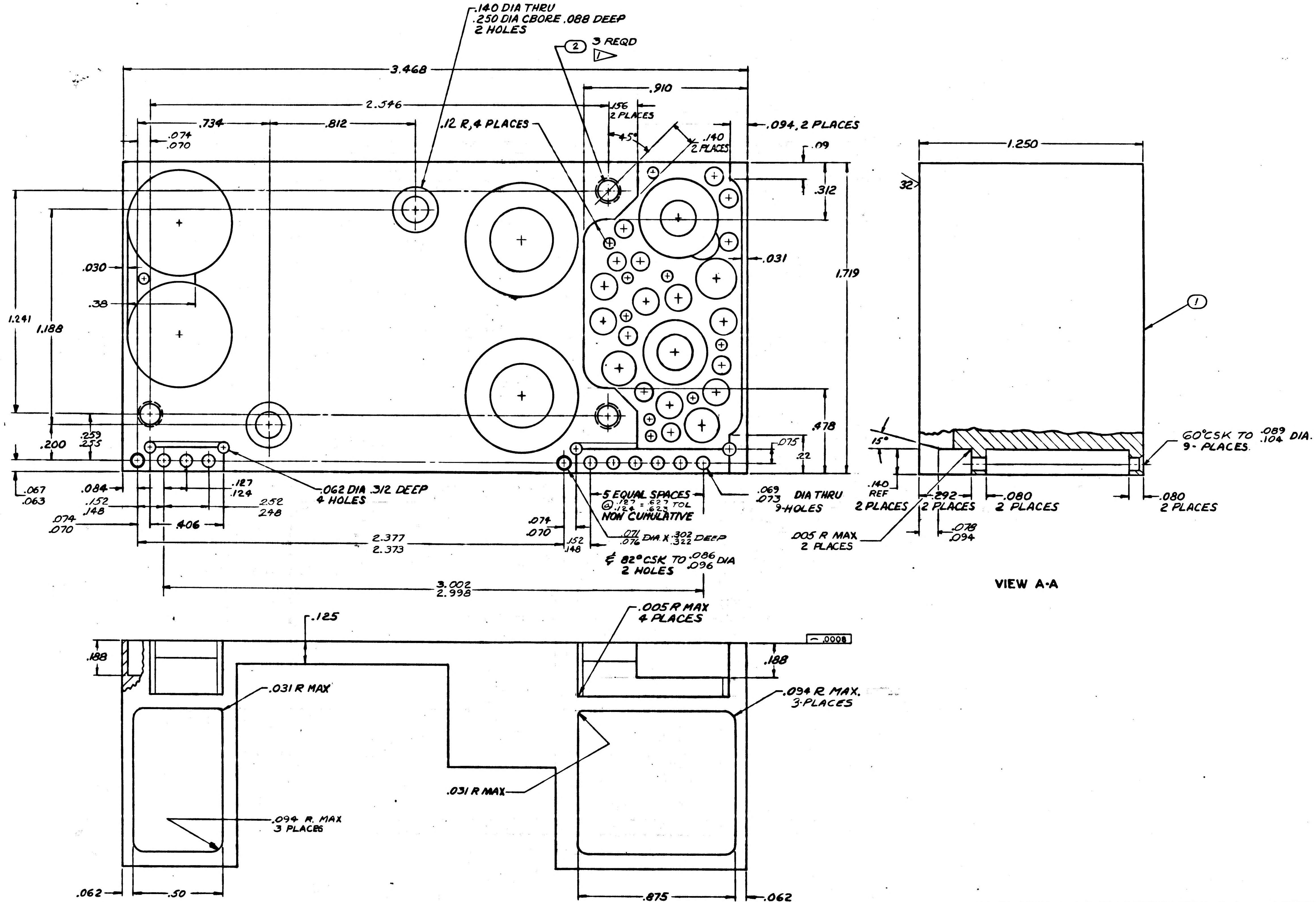
HEATSINK
AMPLIFIER 1% - 800 CPS

CODE IDENT NO.
SIZE E
1015709
SCALE 5/1
SHEET 1 OF 2

1015709

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD



.140 DIA THRU
.250 DIA CBORE .088 DEEP
2 HOLES
② 3 REQD
3.468
.910
2.546
.156 2 PLACES
.734
.812
.12 R, 4 PLACES
45°
.140 2 PLACES
.094, 2 PLACES
.074 .070
.09
.312
1.719
.031
.030
.38
1.241
1.188
.200
.259 .255
.478
.075
.22
.067 .063
.084
.152 .148
.127 .124
.252 .248
.406
.074 .070
.062 DIA .312 DEEP 4 HOLES
2.377 2.373
.074 .070
.152 .148
5 EQUAL SPACES @ .127/.124 = .627/.623 TOL NON CUMULATIVE
.071/.076 DIA X .302/.322 DEEP
℄ 82° CSK TO .086/.096 DIA 2 HOLES
.069/.073 DIA THRU 9-HOLES
3.002 2.998
1.250
32
①
15°
.140 REF 2 PLACES
.292 2 PLACES
.080 2 PLACES
.005 R MAX 2 PLACES
.078 .094
60° CSK TO .089/.104 DIA. 9- PLACES.
.080 2 PLACES
VIEW A-A
.125
.005 R MAX 4 PLACES
⌓ .0008
.188
.031 R MAX
.094 R MAX. 3-PLACES
.031 R MAX
.094 R. MAX 3 PLACES
.062
.50
.875
.062

1007047	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 5 APR 63
CHECKED 29 APR 63
J. M. SLYSHAK 29 APR
APPROVAL KODET 30 APR 63
28 MAY 63
APPROVAL 5 JUN 63
NASA APPROVAL 5 Jun 63
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER 1% - 800 CPS

CODE IDENT NO
SIZE E
1015709
SCALE 5/1
SHEET 2 OF 2

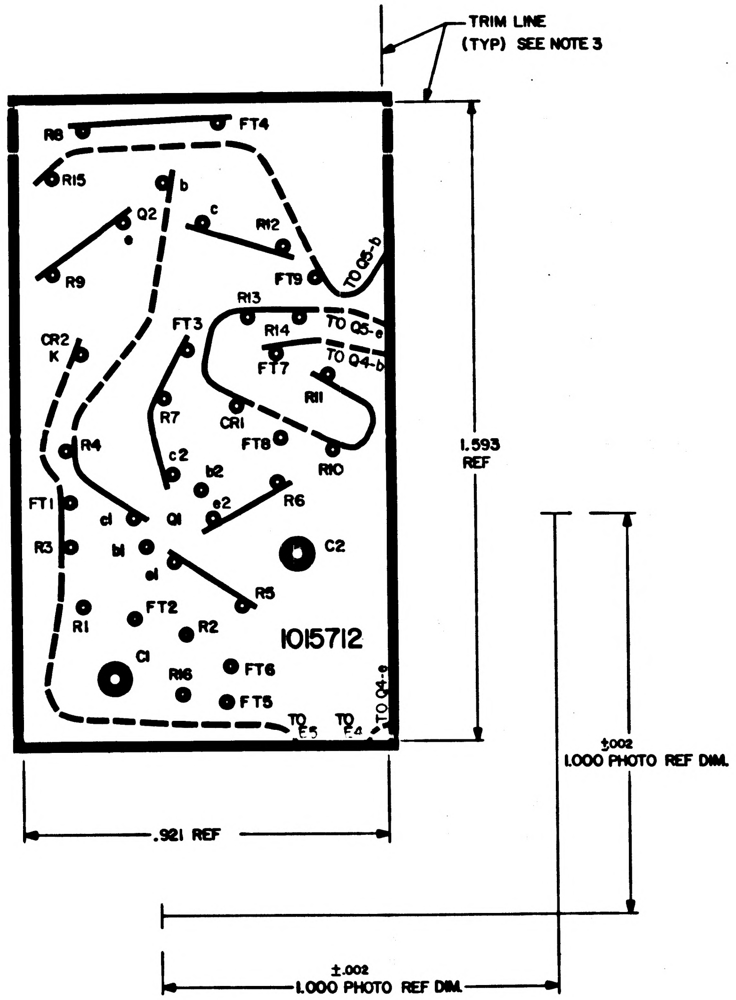
1015709

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TORR 01465

SYM	DESCRIPTION	DATE	APPROVAL


TRIM LINE
(TYP) SEE NOTE 3
R8
FT4
R15
b
Q2
c
R12
e
R9
FT9
TO Q5-b
R13
FT3
R14
TO Q5-e
CR2
K
FT7
TO Q4-b
R11
R7
CR1
R4
FT8
R10
c2
b2
R6
FT1
e2
c1
Q1
R3
b1
C2
e1
R5
R1
FT2
R2
1015712
C1
R16
FT6
FT5
TO E5
TO E4
TO Q4-e
1.593
REF
.921 REF
±.002
1.000 PHOTO REF DIM.
±.002
1.000 PHOTO REF DIM.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD, SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. CUT TO WITHIN .010 OF TRIM LINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IR, CLASS 2, STYLE IA
6. BROKEN LINES DENOTE SLEEVING
7. ◉ .045/.055 DIA PUNCH
8. ◉ .085/.095 DIA PUNCH

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007047	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
HEAT TREATMENT —
FINAL FINISH —

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN Tom Hillson DATE 27 MAY 63
CHECKED E.J. Siolak 28 MAY 63
APPROVAL A.R. Test 5 JUN 63
APPROVAL
NASA APPROVAL
MIT APPROVAL W Kupfer 5 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR
PHOTOGRAPHIC MASTER
AMPLIFIER 1%-800 CPS

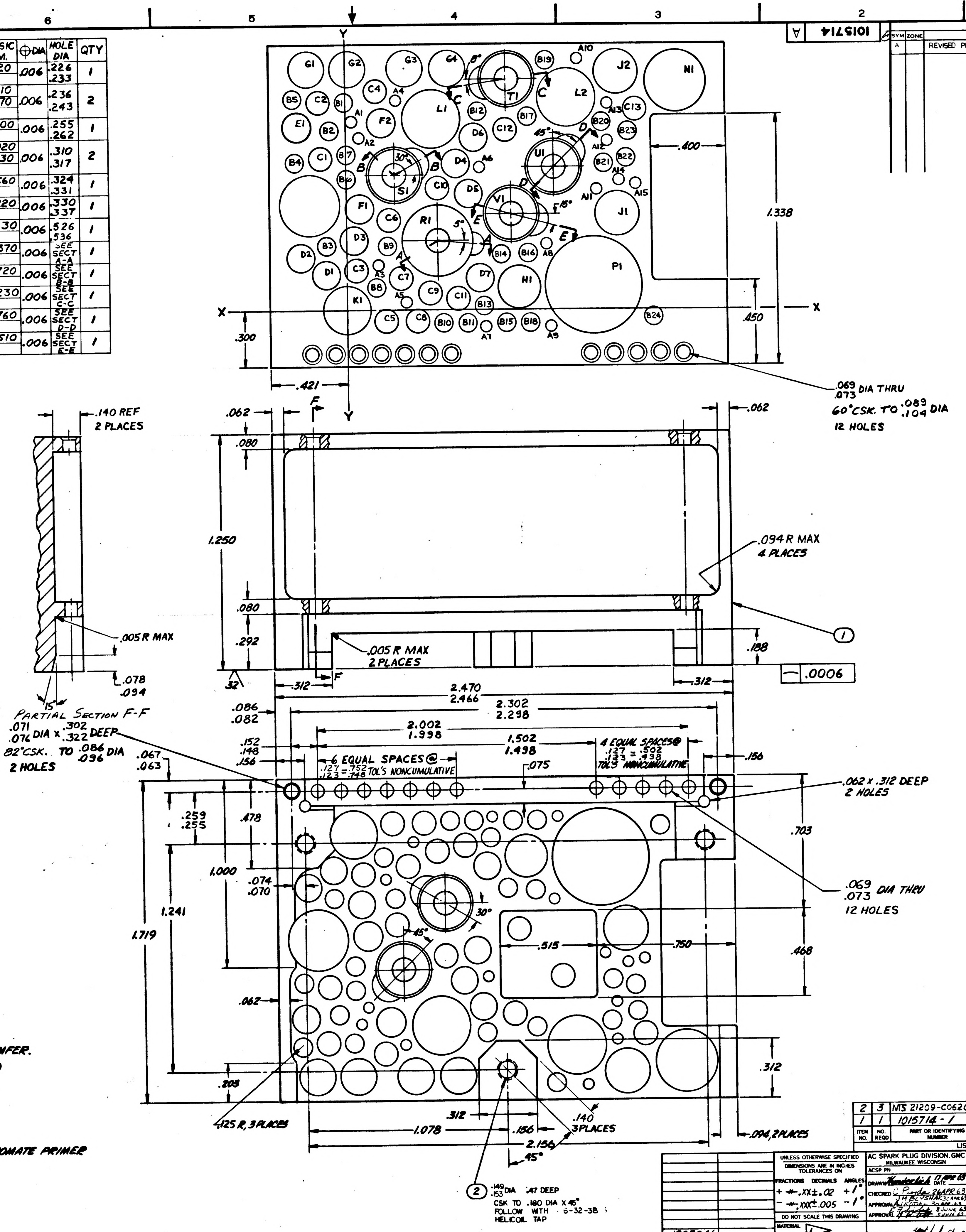
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015712
SCALE 5:1
WT
SHEET 1 OF 1

1015712

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⊕ DIA	HOLE DIA	QTY
A1	0.030	1.010	.006	.058 .062	15
A2	0.070	0.920			
A3	0.170	0.240			
A4	0.270	1.120			
A5	0.320	0.040			
A6	0.720	0.760			
A7	0.750	-0.090			
A8	1.080	0.350			
A9	1.100	-0.090			
A10	1.250	1.340			
A11	1.350	0.640			
A12	1.410	0.900			
A13	1.410	1.100			
A14	1.470	0.690			
A15	1.560	0.670			
B1	-0.010	1.110	.006	.100 .104	24
B2	-0.090	0.960			
B3	-0.110	0.340			
B4	-0.280	0.790			
B5	-0.290	1.130			
B6	0.000	0.700			
B7	0.000	0.830			
B8	0.160	0.120			
B9	0.220	0.340			
B10	0.520	-0.070			
B11	0.650	-0.070			
B12	0.710	1.060			
B13	0.740	0.020			
B14	0.830	0.290			
B15	0.860	-0.070			
B16	0.980	0.300			
B17	0.980	1.030			
B18	0.990	-0.070			
B19	1.080	1.330			
B20	1.380	1.000			
B21	1.390	0.780			
B22	1.510	0.810			
B23	1.520	0.930			
B24	1.650	-0.040			
C1	-0.140	0.810	.006	.127 .131	13
C2	-0.150	1.110			
C3	0.050	0.210			
C4	0.160	1.170			
C5	0.210	-0.060			
C6	0.230	0.480			
C7	0.290	0.170			
C8	0.380	-0.060			
C9	0.450	0.090			
C10	0.490	0.650			
C11	0.600	0.060			
C12	0.860	0.960			
C13	1.560	1.070			
D1	-0.110	0.190	.006	.146 .150	7
D2	-0.250	0.280			
D3	0.040	0.370			
D4	0.590	0.780			
D5	0.660	0.620			
D6	0.690	0.920			
D7	0.720	0.170			
E1	-0.270	0.980	.006	.151 .155	1
F1	0.070	0.540	.006	.155 .159	2
F2	0.190	1.000			
G1	-0.220	1.290	.006	.192 .196	4
G2	0.010	1.290			
G3	0.320	1.290			
G4	0.550	1.290			

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⊕ DIA	HOLE DIA	QTY
H1	0.930	0.120	.006	.226 .233	1
J1	1.460	0.510	.006	.236 .243	2
J2	1.460	1.270			
K1	0.000	0.000	.006	.255 .262	1
L1	0.460	1.020	.006	.310 .317	2
L2	1.190	1.130			
M1	-0.200	0.560	.006	.324 .331	1
N1	1.780	1.220	.006	.330 .337	1
P1	1.330	0.130	.006	.526 .536	1
R1	0.490	0.370	.006	SEE SECT A-A	1
S1	0.260	0.720	.006	SEE SECT B-B	1
T1	0.870	1.230	.006	SEE SECT C-C	1
U1	1.120	0.760	.006	SEE SECT D-D	1
V1	0.890	0.510	.006	SEE SECT E-E	1



Y
X
X
Y
G1
G2
G3
G4
B19
A10
J2
N1
T1
L2
L1
C4
A4
B5
C2
B1
A1
F2
B12
B17
B20
C13
A13
E1
B2
A2
D6
C12
B23
B4
C1
B7
S1
D4
A6
U1
A12
B22
B21
A14
B6
C10
D5
A15
A11
J1
F1
C6
R1
V1
D3
B9
B14
B16
A8
P1
D2
B3
D1
C3
A3
C7
D7
H1
B8
K1
A5
C9
C11
B13
B24
C5
C8
B10
B11
B15
B18
A7
A9
30°
45°
5°
A
B
C
D
E
.400
1.338
.450
.300
.421
.069
.073 DIA THRU
60°CSK. TO .089
.104 DIA
12 HOLES
F
F
.062
.062
.080
1.250
.080
.292
.094 R MAX
4 PLACES
①
.005 R MAX
2 PLACES
.188
—.0006
.32
.312
.312
.140 REF
2 PLACES
.005 R MAX
.078
.094
15°
PARTIAL SECTION F-F
.071
.076 DIA x .302
.322 DEEP
.82°CSK. TO .086
.096 DIA
2 HOLES
2.470
2.466
2.302
2.298
2.002
1.998
1.502
1.498
.086
.082
.152
.148
.156
6 EQUAL SPACES @ .127 = .752
.123 = .748 TOL'S NONCUMULATIVE
4 EQUAL SPACES @ .127 = .502
.123 = .498 TOL'S NONCUMULATIVE
.075
.156
.067
.063
.062 x .312 DEEP
2 HOLES
.259
.255
.478
.703
1.000
.074
.070
.069
.073 DIA THRU
12 HOLES
1.241
1.719
30°
45°
.515
.750
.468
.062
.312
.203
.125 R, 3 PLACES
.312
1.078
.156
.140
3 PLACES
2.156
45°
.094, 2 PLACES
②
.140
.153 DIA .47 DEEP
CSK TO .180 DIA x 45°
FOLLOW WITH 6-32-38
HELICOIL TAP

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327
UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED $\overset{125}{\surd}$.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.
ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010

①▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31A

②▷ INSTALL ITEM 2 PER MS33646, EXCEPT DIM. F
TO BE .594, BREAK OFF TANGS.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
PLUG INSERT HOLES

1015714 A

REVISIONS TDRR C 464					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 0301			

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW-LOCKING
1	1	1015714-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007046	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ —— .XX ± .02 +1°
– —— .XXX ± .005 –1°
DO NOT SCALE THIS DRAWING
MATERIAL ①▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Vanderlick DATE 17 APR 63
CHECKED C. Pionda 26 APR 63
J M BLYSHAK 30 APR 63
APPROVAL A. KODEL 30 APR 63
APPROVAL 3 JUNE 63
5 JUN 63
NASA APPROVAL 5 June 63
MIT APPROVAL W Kupfer 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK,
AAC, FILTER & MULTIVIBRATOR
800 CPS

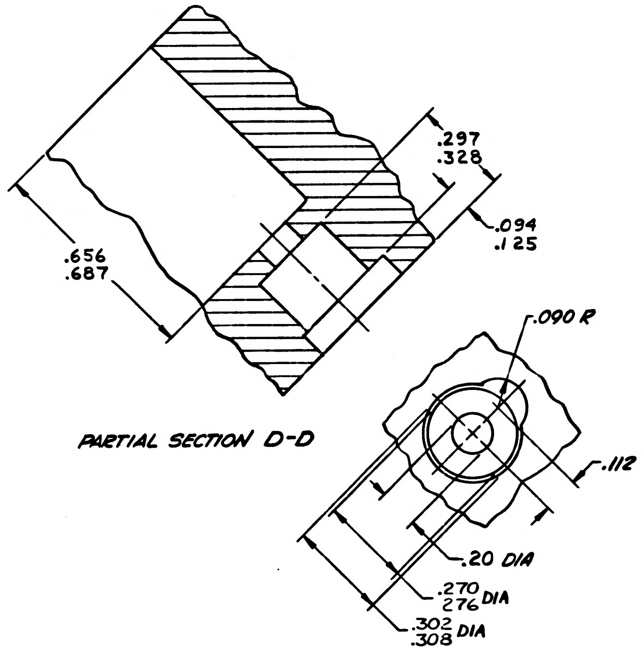
CODE IDENT NO.
SIZE E
1015714
SCALE 5:1
SHEET 1 OF 2

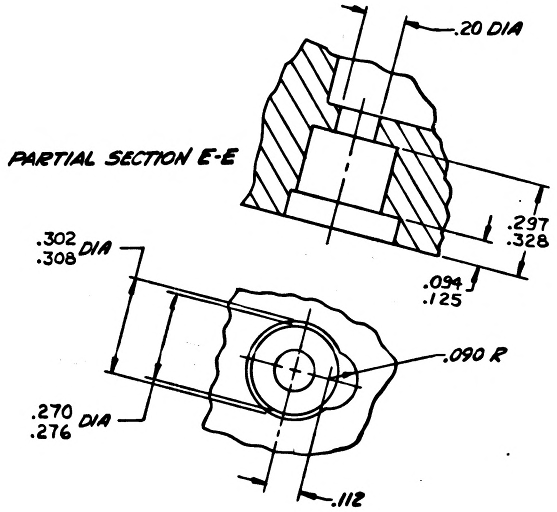
MIL 10775-P

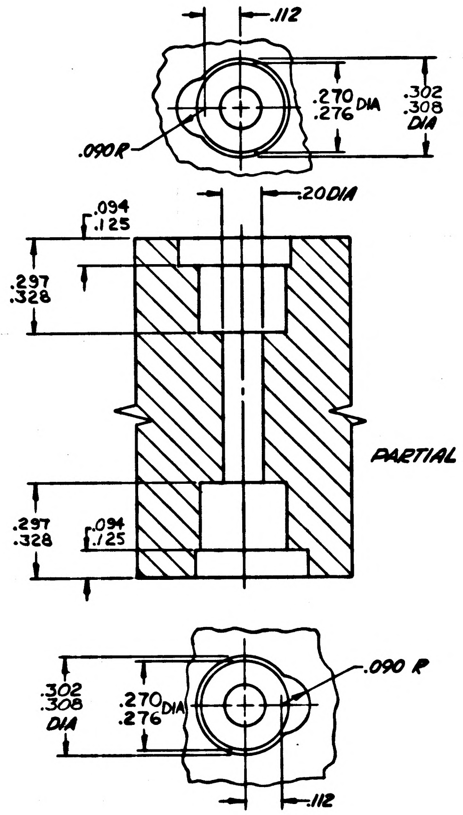
INCHES
PHOTOGRAPHIC SCALE ONLY

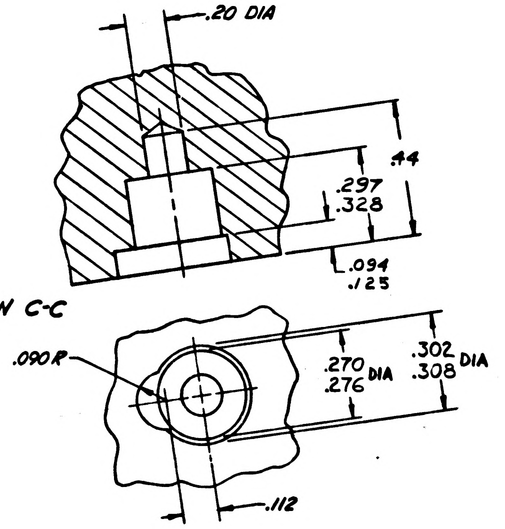
1015714 A

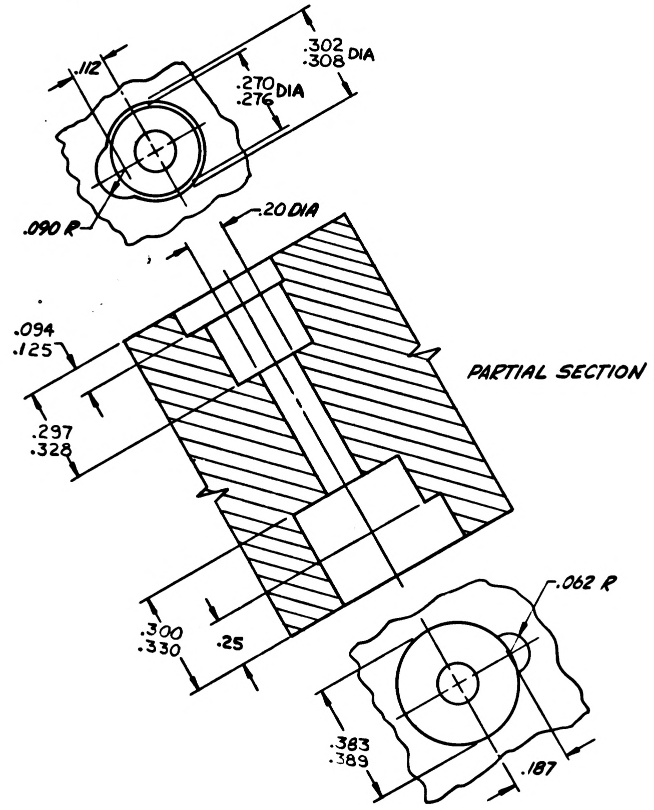
REVISIONS TDRR C-464					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 3017		6-5-63	


PARTIAL SECTION D-D
.297
.328
.094
.125
.656
.687
.090 R
.112
.20 DIA
.270
.276 DIA
.302
.308 DIA


PARTIAL SECTION E-E
.20 DIA
.297
.328
.094
.125
.302
.308 DIA
.090 R
.270
.276 DIA
.112


PARTIAL SECTION B-B
.112
.270
.276 DIA
.302
.308 DIA
.090 R
.20 DIA
.094
.125
.297
.328
.297
.328
.094
.125
.302
.308 DIA
.270
.276 DIA
.090 R
.112


PARTIAL SECTION C-C
.20 DIA
.44
.297
.328
.094
.125
.090 R
.270
.276 DIA
.302
.308 DIA
.112


PARTIAL SECTION A-A
.112
.302
.308 DIA
.270
.276 DIA
.090 R
.20 DIA
.094
.125
.297
.328
.062 R
.300
.330
.25
.383
.389
.187

1007046	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN SING
ACSP PN
DRAWN Wunderlich DATE 19 APR 63
CHECKED C. Pozda 26 APR 63
J M BLYSHAK 30 APR 63
APPROVAL A J KOPEL 30 APR 63
3 JUNE 63
APPROVAL 5 JUN 63
NASA APPROVAL 5 Jun 63
MIT APPROVAL W Kupfer 6 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

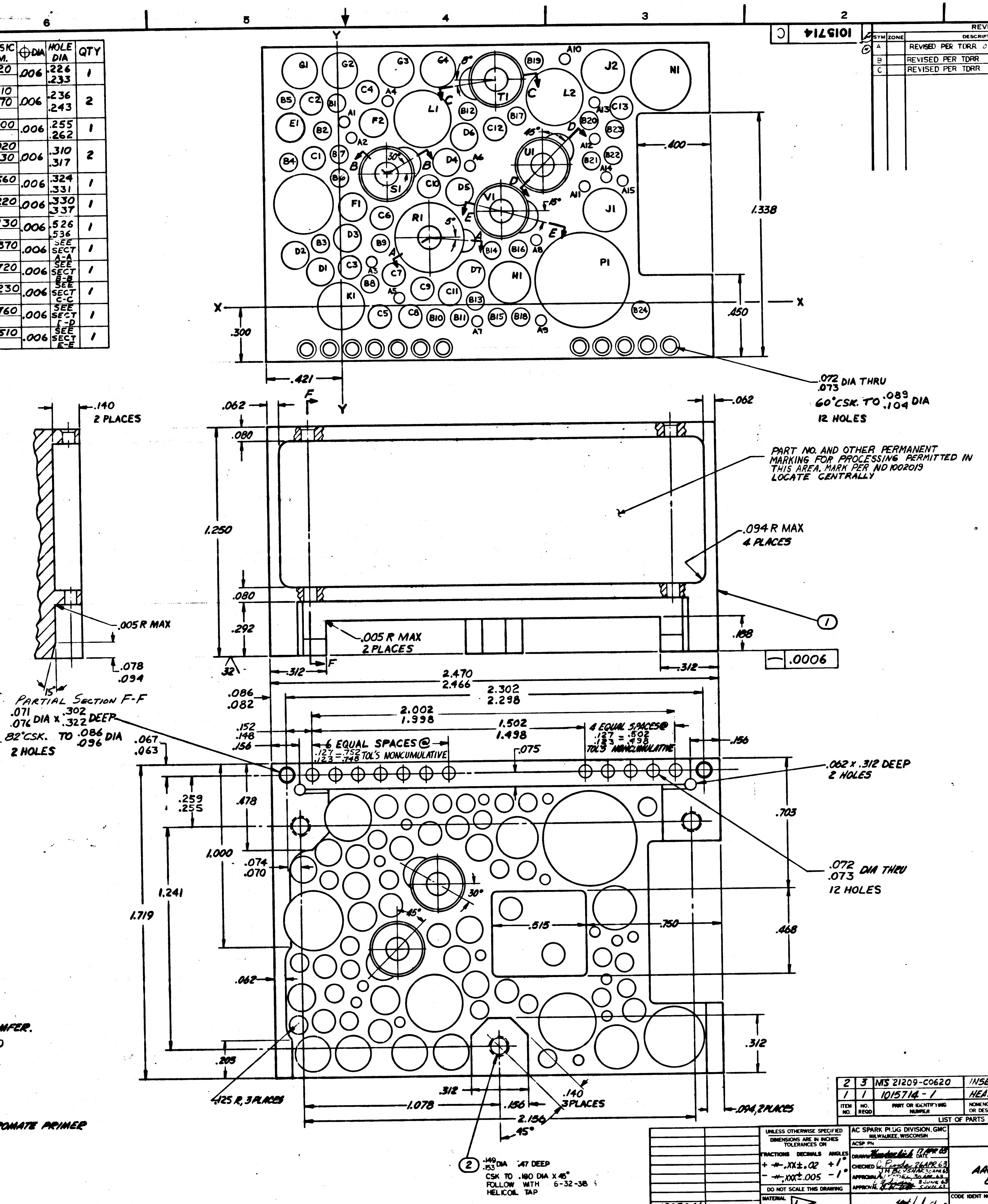
HEATSINK,
AAC, FILTER & MULTIVIBRATOR-
800 CPS

CODE IDENT NO.
SIZE E
1015714
SCALE 5:1
SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⊕ DIA	HOLE DIA	QTY
A1	0.030	1.010	.006	.058 .062	15
A2	0.070	0.920			
A3	0.170	0.240			
A4	0.270	1.120			
A5	0.320	0.040			
A6	0.720	0.760			
A7	0.750	-0.090			
A8	1.080	0.350			
A9	1.100	-0.090			
A10	1.250	1.340			
A11	1.350	0.640			
A12	1.410	0.900			
A13	1.410	1.100			
A14	1.470	0.690			
A15	1.560	0.670			
B1	-0.010	1.110	.006	.100 .104	24
B2	-0.090	0.960			
B3	-0.110	0.340			
B4	-0.280	0.790			
B5	-0.290	1.130			
B6	0.000	0.700			
B7	0.000	0.830			
B8	0.160	0.120			
B9	0.220	0.340			
B10	0.520	-0.070			
B11	0.650	-0.070			
B12	0.710	1.060			
B13	0.740	0.020			
B14	0.830	0.290			
B15	0.860	-0.070			
B16	0.980	0.300			
B17	0.980	1.030			
B18	0.990	-0.070			
B19	1.080	1.330			
B20	1.380	1.000			
B21	1.390	0.780			
B22	1.510	0.810			
B23	1.520	0.930			
B24	1.650	-0.040			
C1	-0.140	0.810	.006	.127 .131	13
C2	-0.150	1.110			
C3	0.050	0.210			
C4	0.160	1.170			
C5	0.210	-0.060			
C6	0.230	0.480			
C7	0.290	0.170			
C8	0.380	-0.060			
C9	0.450	0.090			
C10	0.490	0.650			
C11	0.600	0.060			
C12	0.860	0.960			
C13	1.560	1.070			
D1	-0.110	0.190	.006	.146 .150	7
D2	-0.250	0.280			
D3	0.040	0.370			
D4	0.590	0.780			
D5	0.660	0.620			
D6	0.690	0.920			
D7	0.720	0.170			
E1	-0.270	0.980	.006	.151 .155	1
F1	0.070	0.540	.006	.155 .159	2
F2	0.190	1.000			
G1	-0.220	1.290	.006	.192 .196	4
G2	0.010	1.290			
G3	0.320	1.290			
G4	0.550	1.290			

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⊕ DIA	HOLE DIA	QTY
H1	0.930	0.120	.006	.226 .233	1
J1	1.460	0.510	.006	.236 .243	2
J2	1.460	1.270			
K1	0.000	0.000	.006	.255 .262	1
L1	0.460	1.020	.006	.310 .317	2
L2	1.190	1.130			
M1	-0.200	0.560	.006	.324 .331	1
N1	1.780	1.220	.006	.330 .337	1
P1	1.330	0.130	.006	.526 .536	1
R1	0.490	0.370	.006	SEE SECT A-A	1
S1	0.260	0.720	.006	SEE SECT B-B	1
T1	0.870	1.230	.006	SEE SECT C-C	1
U1	1.120	0.760	.006	SEE SECT D-D	1
V1	0.890	0.510	.006	SEE SECT E-E	1


PARTIAL SECTION F-F
.140 2 PLACES
.005 R MAX
.078 .094
15°
.071 .076 DIA x .302 .322 DEEP
82° CSK. TO .086 .096 DIA
2 HOLES
.072 .073 DIA THRU
60° CSK. TO .089 .104 DIA
12 HOLES
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA. MARK PER ND 1002019 LOCATE CENTRALLY
.094 R MAX 4 PLACES
.005 R MAX 2 PLACES
.0006
.062 x .312 DEEP 2 HOLES
.072 .073 DIA THRU 12 HOLES
6 EQUAL SPACES @ .127 .123 = .752 .748 TOL'S NONCUMULATIVE
4 EQUAL SPACES @ .127 .123 = .502 .498 TOL'S NONCUMULATIVE
.125 R, 3 PLACES
.140 3 PLACES
.094, 2 PLACES
2 .149 .153 DIA .47 DEEP CSK TO .180 DIA X 45° FOLLOW WITH 6-32-38 HELICOIL TAP
X
Y
F
1.338
.450
.300
.421
.400
1.250
.080
.292
.188
.312
2.470 2.466
2.302 2.298
2.002 1.998
1.502 1.498
.086 .082
.152 .148 .156
.259 .255
.478
.703
1.000
1.241
1.719
.074 .070
.062
.205
1.078
.156
2.156
.515
.750
.468
45°
30°

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327
UNLESS OTHERWISE SPECIFIED:
ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.
ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010

1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31A

2 INSTALL ITEM 2 PER MS33646, EXCEPT DIM. F
TO BE .594, BREAK OFF TANGS.
COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

FINISH: ANODIZE USING MIL-M-3171 A, TYPE IV
PLUG INSERT HOLES

REVISIONS TDRR 0464					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 03017			
B		REVISED PER TDRR 03851			
C		REVISED PER TDRR 03852			

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW-LOCKING
1	1	1015714-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007046	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS .XX ± .02, .XXX ± .005 — ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL 1
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Kunderlich DATE 17 APR 63
CHECKED C. Pizoda 26 APR 63
J M BLYSHAK 30 APR 63
APPROVAL A J KODEL 30 APR 63
8 JUNE 63
APPROVAL 5 JUN 63
NASA APPROVAL 5 June 63
MIT APPROVAL W Kupfer 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

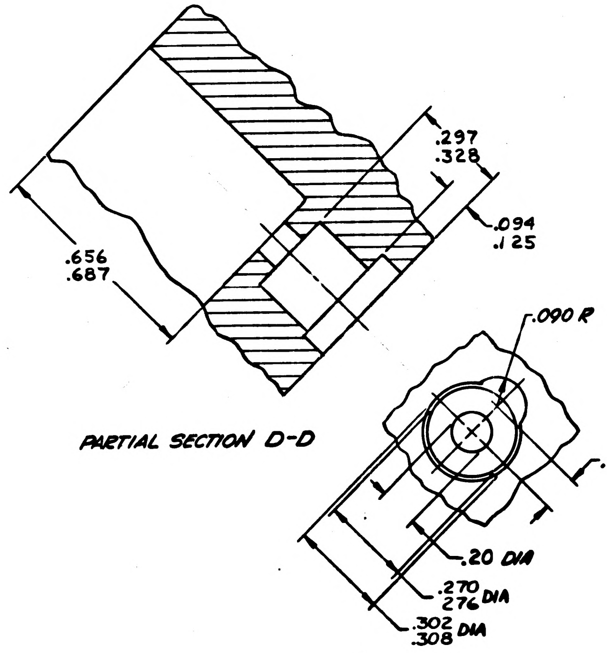
HEATSINK,
AAC, FILTER & MULTIVIBRATOR
800 CPS

CODE IDENT NO.
SIZE E
1015714
SCALE 5:1
SHEET 1 OF 2

1015714 C

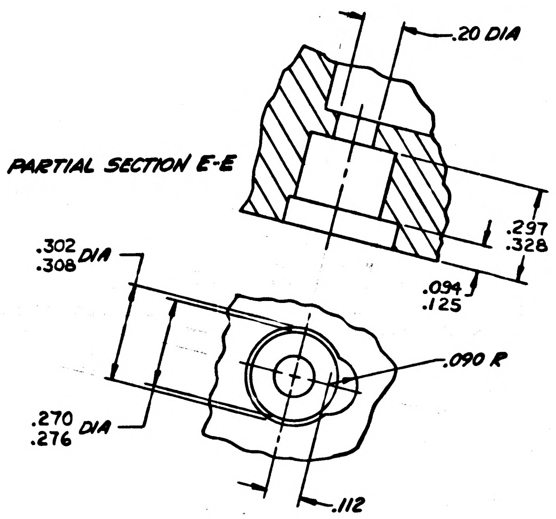
1015714 C

SYM	ZONE	REVISIONS TDRR 01464 DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 03017		6-6-63	EDL WC
B		REVISED PER TDRR 03851			EDL WC
C		REVISED PER TDRR 03852			EDL WC



.297
.328
.094
.125
.656
.687
.090 R
.112
.20 DIA
.270
.276 DIA
.302
.308 DIA

PARTIAL SECTION D-D



.20 DIA
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.125
.302
.308 DIA
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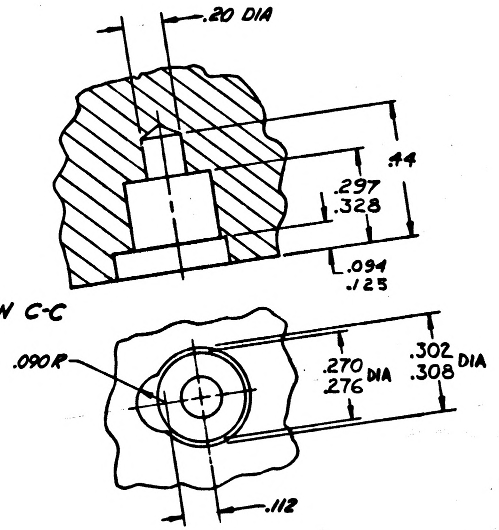
.270
.276 DIA
.112

PARTIAL SECTION E-E



.20 DIA
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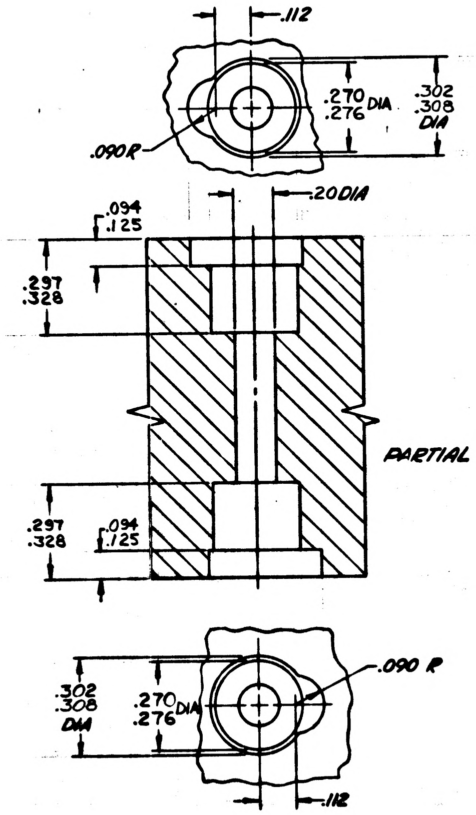
.270
.276 DIA
.302
.308 DIA
.112

PARTIAL SECTION C-C



.112
.270
.276 DIA
.302
.308 DIA
.090 R
.20 DIA
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.125
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.297
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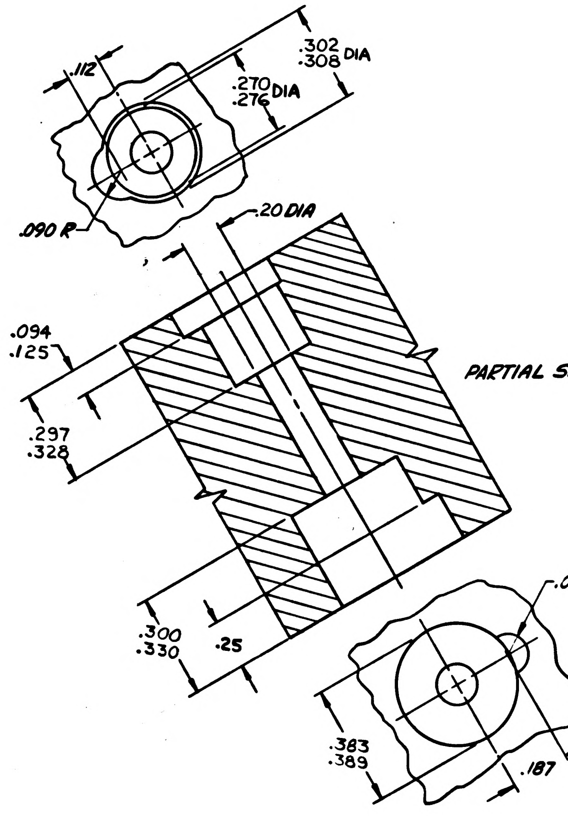
.302
.308 DIA
.270
.276 DIA
.090 R
.112

PARTIAL SECTION B-B



.112
.302
.308 DIA
.270
.276 DIA
.090 R
.20 DIA
.094
.125
.297
.328
.300
.330
.25
.062 R
.383
.389
.187

PARTIAL SECTION A-A

1007046	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN SING
ACSP PN
DRAWN 17 APR 63 DATE
CHECKED C. Purdie 26 APR 63
J M BLYSNAK 30 APR 63
APPROVAL A.J. Kopel 30 APR 63
3 JUNE 63
APPROVAL D. R. Stout 5 JUN 63
NASA APPROVAL 5 Jun 63
MIT APPROVAL W Kupfer 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK,
AAC, FILTER & MULTIVIBRATOR
800 CPS

CODE IDENT NO.
SIZE E
1015714
SCALE 5:1
SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SEE NOTE 3

HOLE IDENT	X DIM.	Y DIM.		HOLE DIA	QTY
A1	0.030	1.010		.058 .062	15
A2	0.070	0.920			
A3	0.170	0.240			
A4	0.270	1.120			
A5	0.320	0.040			
A6	0.720	0.760			
A7	0.750	-0.090			
A8	1.080	0.350			
A9	1.100	-0.090			
A10	1.250	1.340			
A11	1.350	0.640			
A12	1.410	0.900			
A13	1.410	1.100			
A14	1.470	0.690			
A15	1.560	0.670			
B1	-0.010	1.110		.100 .104	24
B2	-0.090	0.960			
B3	-0.110	0.340			
B4	-0.280	0.790			
B5	-0.290	1.130			
B6	0.000	0.700			
B7	0.000	0.830			
B8	0.160	0.120			
B9	0.220	0.340			
B10	0.520	-0.070			
B11	0.650	-0.070			
B12	0.710	1.060			
B13	0.740	0.020			
B14	0.830	0.290			
B15	0.860	-0.070			
B16	0.980	0.300			
B17	0.980	1.030			
B18	0.990	-0.070			
B19	1.080	1.330			
B20	1.380	1.000			
B21	1.390	0.780			
B22	1.510	0.810			
B23	1.520	0.930			
B24	1.650	-0.040			
C1	-0.140	0.810		.127 .131	13
C2	-0.150	1.110			
C3	0.050	0.210			
C4	0.160	1.170			
C5	0.210	-0.060			
C6	0.230	0.480			
C7	0.290	0.170			
C8	0.380	-0.060			
C9	0.450	0.090			
C10	0.490	0.650			
C11	0.600	0.060			
C12	0.860	0.960			
C13	1.560	1.070			
D1	-0.110	0.190		.146 .150	7
D2	-0.250	0.280			
D3	0.040	0.370			
D4	0.590	0.780			
D5	0.660	0.620			
D6	0.690	0.920			
D7	0.720	0.170			
E1	-0.270	0.980		.151 .155	1
F1	0.070	0.540		.155 .159	2
F2	0.190	1.000			
G1	-0.220	1.290		.192 .196	4
G2	0.010	1.290			
G3	0.320	1.290			
G4	0.550	1.290			

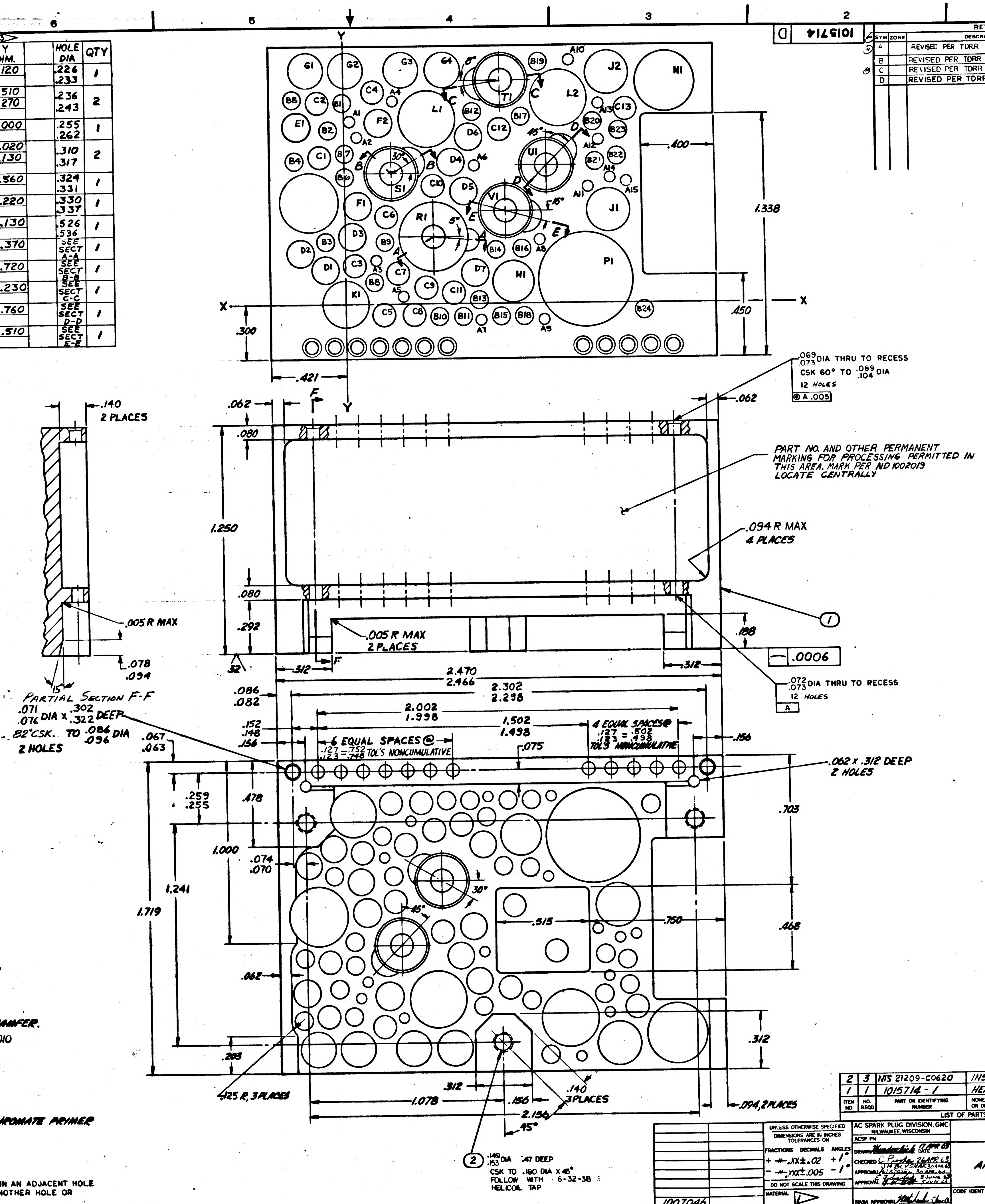
SEE NOTE 3

HOLE IDENT	X DIM.	Y DIM.		HOLE DIA	QTY
H1	0.930	0.120		.226 .233	1
J1	1.460	0.510		.236 .243	2
J2	1.460	1.270			
K1	0.000	0.000		.255 .262	1
L1	0.460	1.020		.310 .317	2
L2	1.190	1.130			
M1	-0.200	0.560		.324 .331	1
N1	1.780	1.220		.330 .337	1
P1	1.330	0.130		.526 .536	1
R1	0.490	0.370		SEE SECT A-A	1
S1	0.260	0.720		SEE SECT B-B	1
T1	0.870	1.230		SEE SECT C-C	1
U1	1.120	0.760		SEE SECT D-D	1
V1	0.890	0.510		SEE SECT E-E	1

D 1015714

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 03017			
B		REVISED PER TDRR 03851			
C		REVISED PER TDRR 03852			
D		REVISED PER TDRR 05413			

REVISIONS TO RR C



Y
X
G1
G2
G3
G4
T1
B19
A10
J2
N1
L1
L2
U1
S1
R1
V1
J1
P1
H1
K1
F1
C13
.400
1.338
.450
.300
.421
5°
45°
30°
15°
.062
.080
1.250
.292
.188
32
F
.312
2.470
2.466
2.302
2.298
2.002
1.998
1.502
1.498
.086
.082
.152
.148
.156
.075
6 EQUAL SPACES @ .127/.123 = .752/.748 TOL'S NONCUMULATIVE
4 EQUAL SPACES @ .127/.123 = .502/.498 TOL'S NONCUMULATIVE
.067
.063
.259
.255
.478
1.000
.074
.070
1.241
1.719
.062
.203
.703
.468
.750
.515
.312
1.078
.156
2.156
45°
.140
2 PLACES
.005 R MAX
.078
.094
15°
PARTIAL SECTION F-F
.071/.076 DIA x .302/.322 DEEP
82° CSK. TO .086/.096 DIA
2 HOLES
.005 R MAX
2 PLACES
.069/.073 DIA THRU TO RECESS
CSK 60° TO .089/.104 DIA
12 HOLES
◉ A .005
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA. MARK PER ND 1002019 LOCATE CENTRALLY
.094 R MAX
4 PLACES
①
.0006
.072/.073 DIA THRU TO RECESS
12 HOLES
A
.062 x .312 DEEP
2 HOLES
.125 R, 3 PLACES
.140
3 PLACES
.094, 2 PLACES
② .149/.153 DIA .47 DEEP
CSK TO .180 DIA X 45°
FOLLOW WITH 6-32-3B
HELICOIL TAP

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327
UNLESS OTHERWISE SPECIFIED:

ROUGHNESS MUST NOT EXCEED $\sqrt{}^{125}$.

ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010

1. MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31A

2. INSTALL ITEM 2 PER MS33646, BREAK OFF TANGS

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
PLUG INSERT HOLES

3. THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DEFORMATION IN AN ADJACENT HOLE OR AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW-LOCKING
1	1	1015714-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007046	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — .XX ± .02 +1°
— — .XXX ± .005 −1°
DO NOT SCALE THIS DRAWING
MATERIAL 1
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Wunderlich DATE 17 APR 63
CHECKED C. Pioske 26 APR 63
J M BLYSHAK 30 APR 63
APPROVAL A. J. KODEL 30 APR 63
APPROVAL E J Snider 8 JUNE 63
5 JUN 63
NASA APPROVAL 5 June 63
MIT APPROVAL W Koeffer 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK,
AAC, FILTER & MULTIVIBRATOR
800 CPS

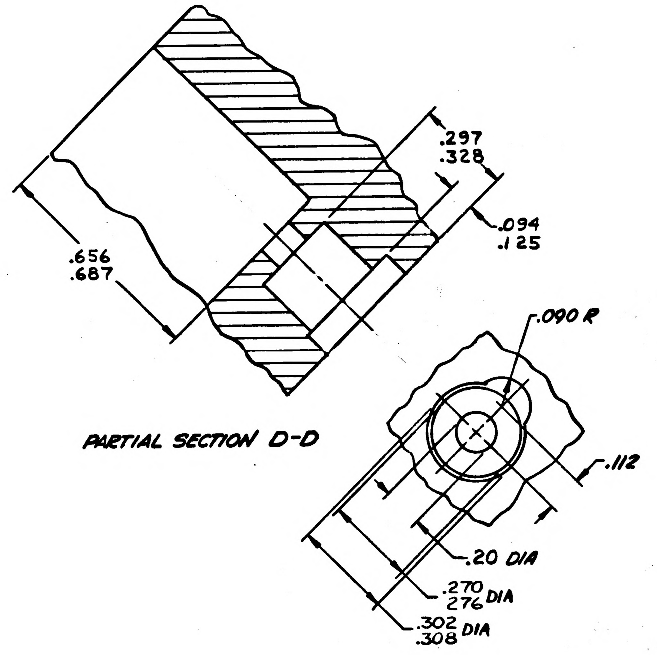
CODE IDENT NO.
SIZE E
1015714
SCALE 5:1
SHEET 1 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

D	1015714

REVISIONS TDRR 01454

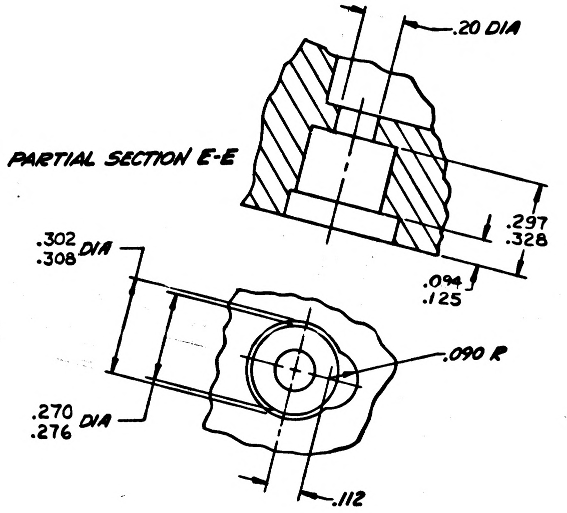
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 0307			
B		REVISED PER TDRR 03851			
C		REVISED PER TDRR 03852			
D		REVISED PER TDRR 05413			



.297
.328
.094
.125
.656
.687
.090 R
.112
.20 DIA
.270
.276 DIA
.302
.308 DIA

PARTIAL SECTION D-D

PARTIAL SECTION E-E



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.297
.328
.302
.308 DIA
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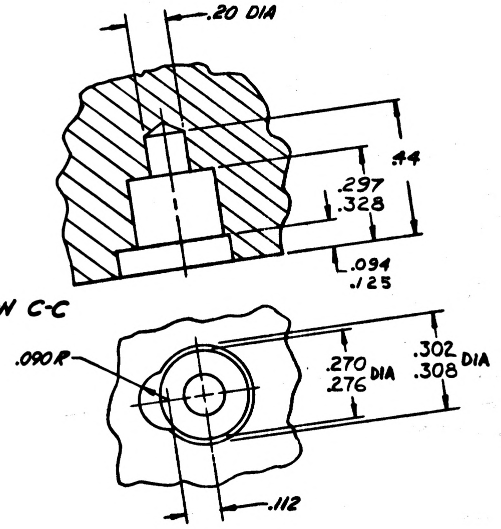
.125
.090 R
.270
.276 DIA
.112



.20 DIA
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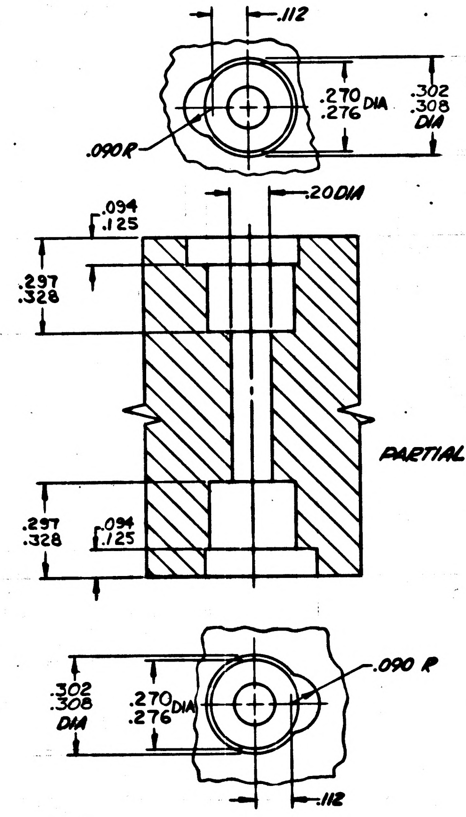
.328
.094
.125
.090 R
.270
.276 DIA
.302
.308 DIA
.112

PARTIAL SECTION C-C



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.276 DIA
.302
.308
DIA
.090 R
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.125
.20 DIA
.297
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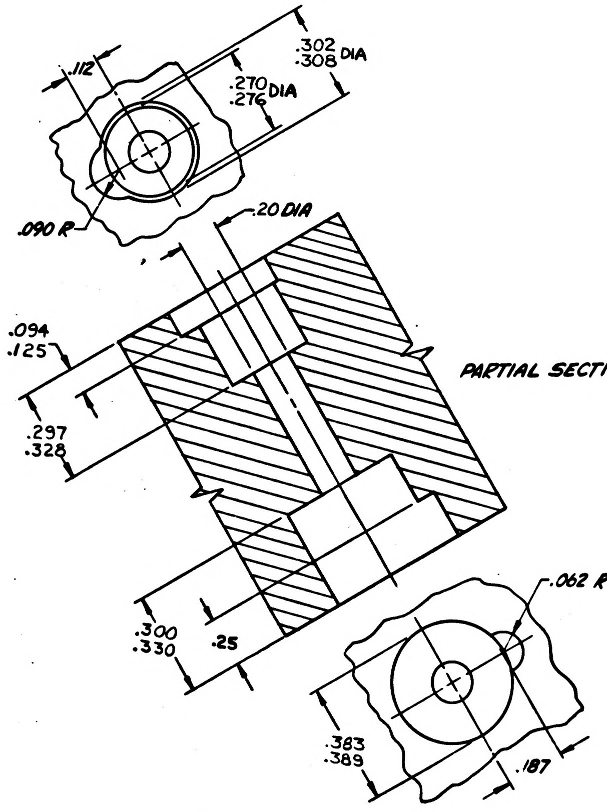
.125
.302
.308
DIA
.270
.276 DIA
.090 R
.112

PARTIAL SECTION B-B



.112
.270
.276 DIA
.302
.308 DIA
.090 R
.20 DIA
.094
.125
.297
.328
.300
.330
.25
.062 R
.383
.389
.187

PARTIAL SECTION A-A

1007046	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN & SING
ACSP PN
DRAWN Hunderlick DATE 17 APR 63
CHECKED C. Pujda 26 APR 63
J M BLYSNAK 30 APR 63
APPROVAL R.J. KODEL 30 APR 63
3 June 63
APPROVAL 5 June 63
NASA APPROVAL 5 Jun 63
MIT APPROVAL W Kupfer 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

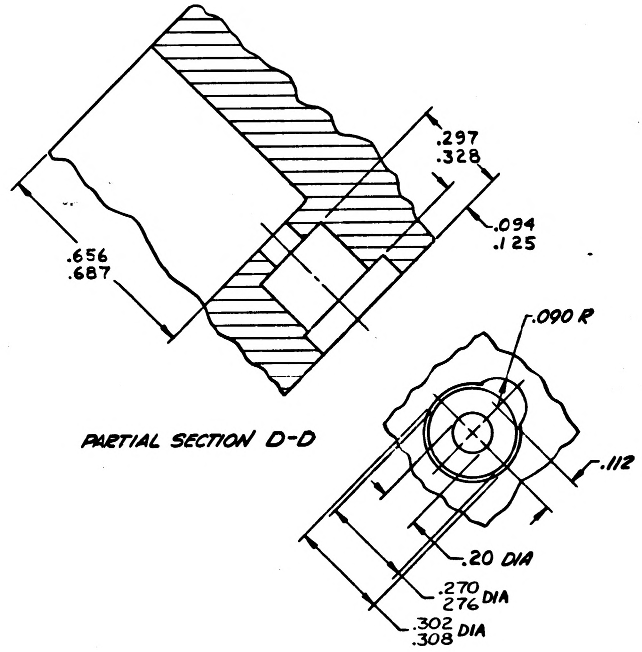
HEATSINK,
AAC, FILTER & MULTIVIBRATOR-
800 CPS

CODE IDENT NO. | SIZE E | 1015714
SCALE 5:1 | SHEET 2 OF 2

1015714

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD

REVISIONS TCRR 31434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.656
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.090 R
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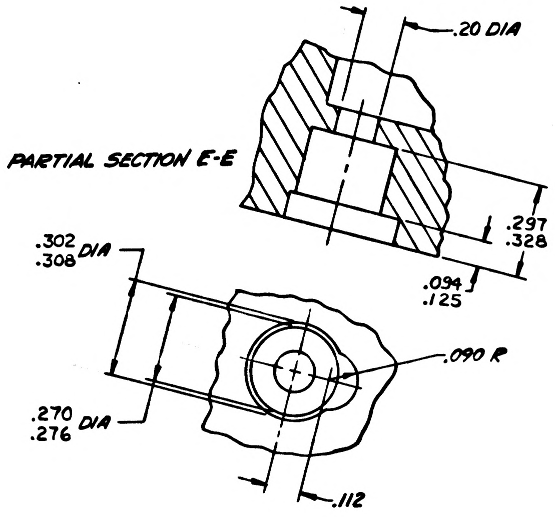
.276 DIA
.302
.308 DIA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.125
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.308 DIA
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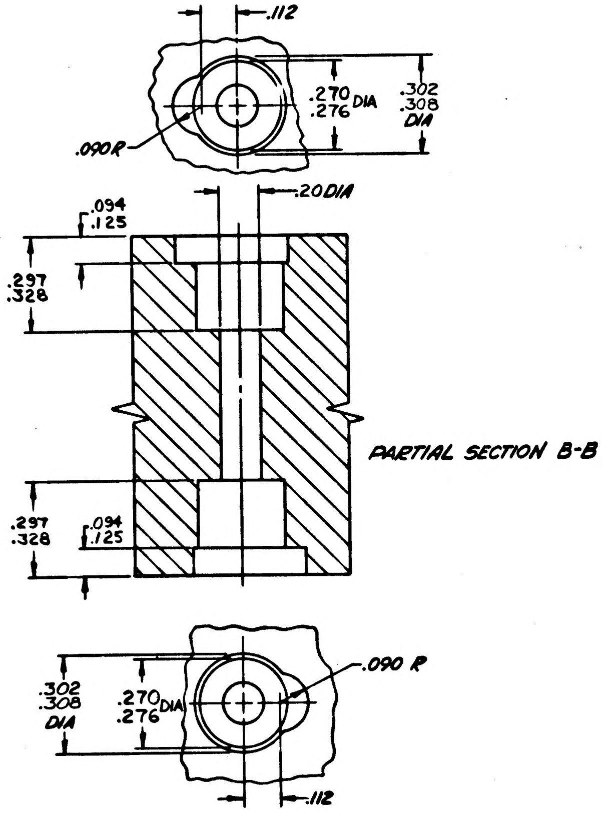
.276 DIA
.090 R
.112


PARTIAL SECTION B-B
.112
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.276 DIA
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DIA
.090 R
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.20 DIA
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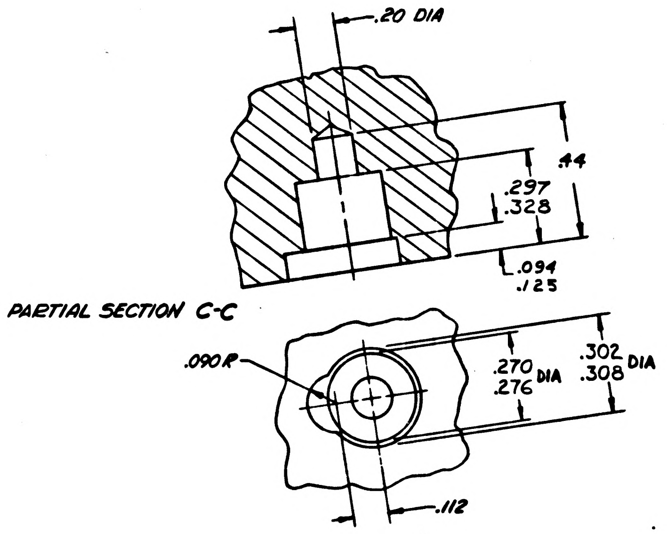
DIA
.270
.276 DIA
.090 R
.112


PARTIAL SECTION C-C
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.276 DIA
.302
.308 DIA
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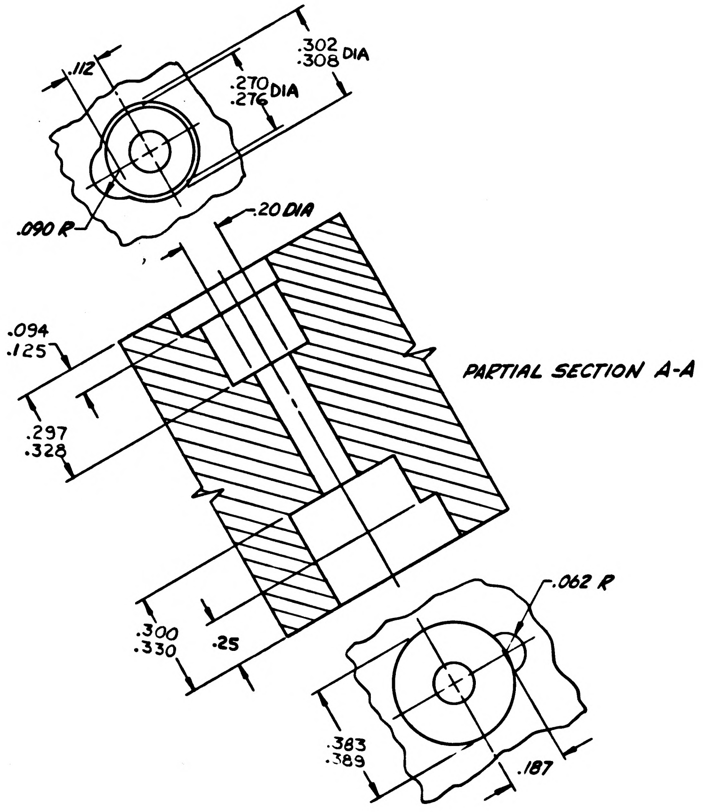
PARTIAL SECTION A-A
.112
.302
.308 DIA
.270
.276 DIA
.090 R
.20 DIA
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.297
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.300
.330
.25
.062 R
.383
.389
.187

1007046	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ + +
− − −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN & SING
ACSP PN
DRAWN Hunderlich DATE 17 APR 63
CHECKED 26 APR 63
J M BLYSHAK 30 APR 63
APPROVAL 30 APR 63
3 JUN 63
APPROVAL 5 JUN 63
NASA APPROVAL
MIT APPROVAL 6 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

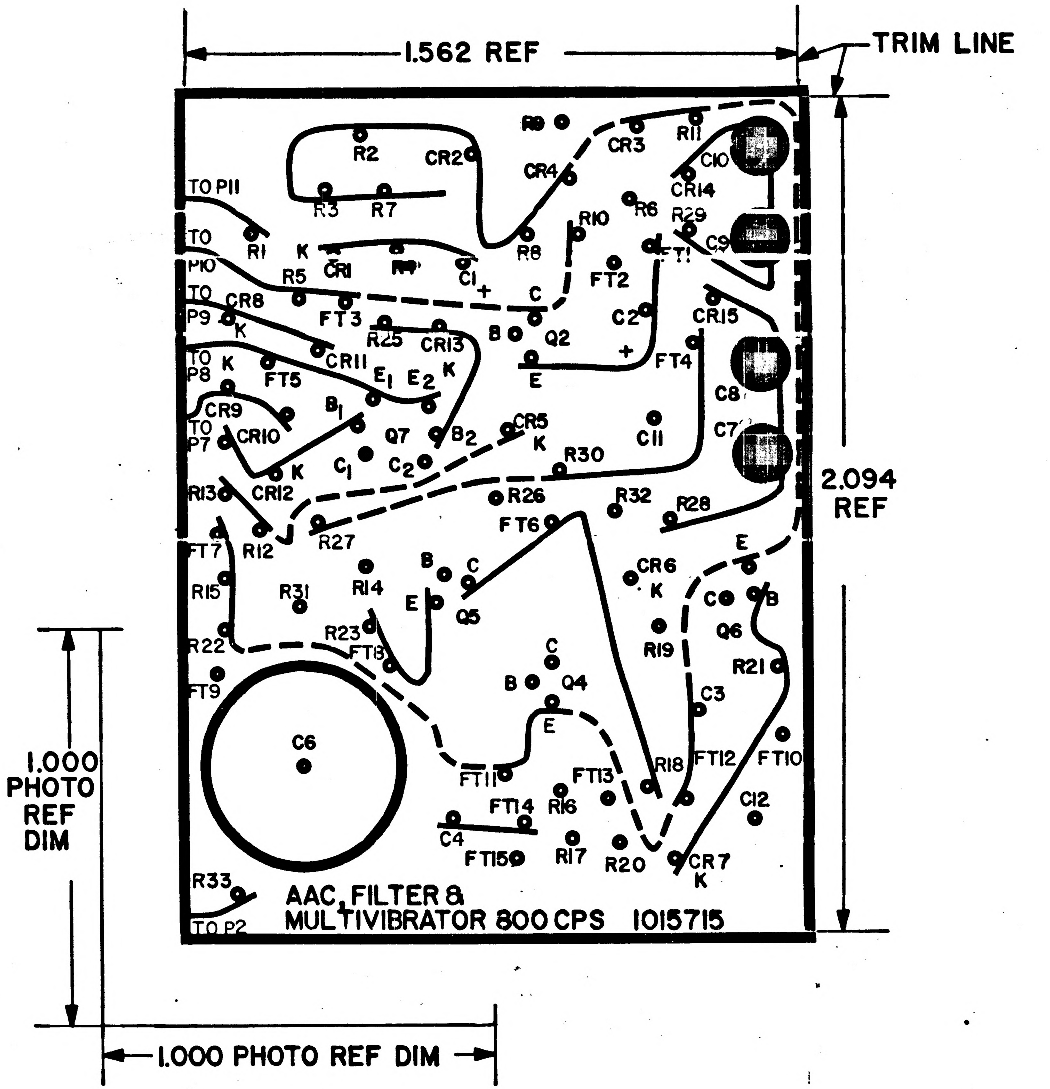
HEATSINK,
AAC, FILTER & MULTIVIBRATOR-
800 CPS

CODE IDENT NO. | SIZE E | 1015714
SCALE 5:1 | SHEET 2 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01464			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02439	8-7-63	J.J.M.


1.562 REF
TRIM LINE
2.094 REF
1.000 PHOTO REF DIM
1.000 PHOTO REF DIM
TO P11
TO P10
TO P9
TO P8
TO P7
TO P2
R1
R2
R3
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
R22
R23
R25
R26
R27
R28
R29
R30
R31
R32
R33
CR1
CR2
CR3
CR4
CR5
CR6
CR7
CR8
CR9
CR10
CR11
CR12
CR13
CR14
CR15
C1
C2
C3
C4
C6
C7
C8
C9
C10
C11
C12
Q2
Q4
Q5
Q6
Q7
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
FT10
FT11
FT12
FT13
FT14
FT15
B
C
E
K
E1
E2
B1
B2
C1
C2
AAC, FILTER &
MULTIVIBRATOR 800 CPS 1015715

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: FILM .006/.008 THICK PER L-F-340 TYPE IB, CLASS 2, STYLE IA
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
4. CUT WITHIN .010 OF TRIM LINE
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
6. ● .045/.050 DIA PUNCH ALL HOLES
7. ● .120/.130 DIA PUNCH ALL HOLES
8. BROKEN LINES DENOTE SLEEVING

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ±.005 ANGLES ±	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS. DWG. NO. CONTRACT
DO NOT SCALE THIS DRAWING	DRAWN F. Walsh DATE 5-27-63
MATERIAL SEE NOTE 2	CHECKED E. J. [illegible] 29 Mar 63
HEAT TREATMENT	APPROVAL [illegible] 6-5-63
FINAL FINISH	APPROVAL [illegible] 6-5-63
	NASA APPROVAL [illegible]
	MIT APPROVAL [illegible] 5 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGAPHIC MASTER
AAC, FILTER & MULTIVIBRATOR 800 CPS

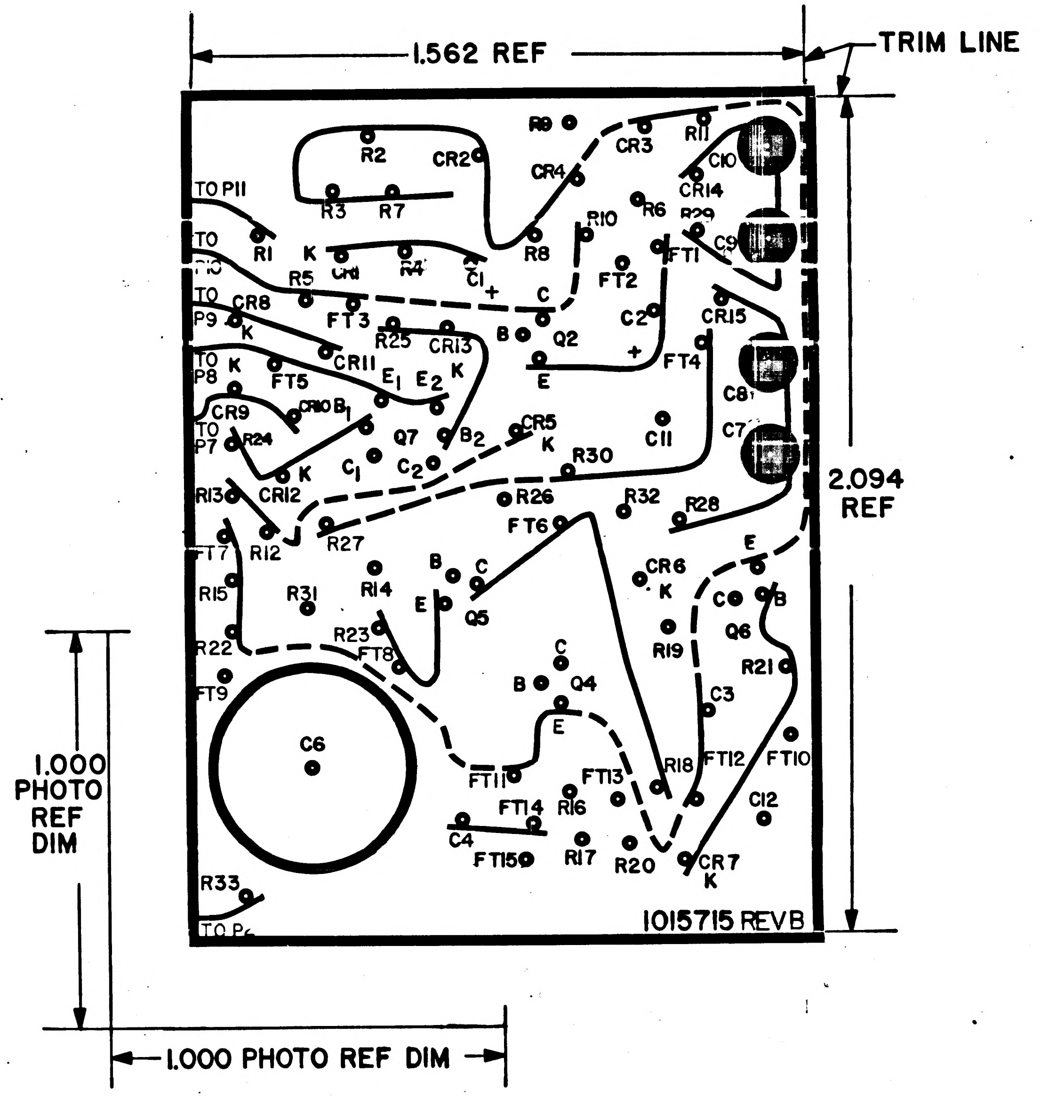
CODE IDENT NO.	SIZE	NASA DRAWING NO.
	D	1015715
SCALE 5/1	WT	SHEET 1 OF 1

1015715

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01464			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02439	8-7-63	J.J.M.
B	REVISED PER TDRR 03017	9-5-63	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TRIM LINE
2.094 REF
1.000 PHOTO REF DIM
1.000 PHOTO REF DIM
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TO P10
TO P9
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TO P6
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E2
B1
B2
C1
C2
+
1015715 REVB

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: FILM .006/.008 THICK PER L-F-340 TYPE IB, CLASS 2, STYLE IA
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
4. CUT WITHIN .010 OF TRIM LINE
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
6. ● .045/.050 DIA PUNCH ALL HOLES
7. ● .120/.130 DIA PUNCH ALL HOLES
8. BROKEN LINES DENOTE SLEEVING

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN DATE 5-29-63
CHECKED E. J. 29 Mar 63
APPROVAL 6-5-63
APPROVAL 6-5-63
NASA APPROVAL
MIT APPROVAL 5 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGAPHIC MASTER
AAC, FILTER & MULTIVIBRATOR 800 CPS

CODE IDENT NO.
SIZE D
NASA DRAWING 1015715
SCALE 5 / 1
WT
SHEET 1 OF 1

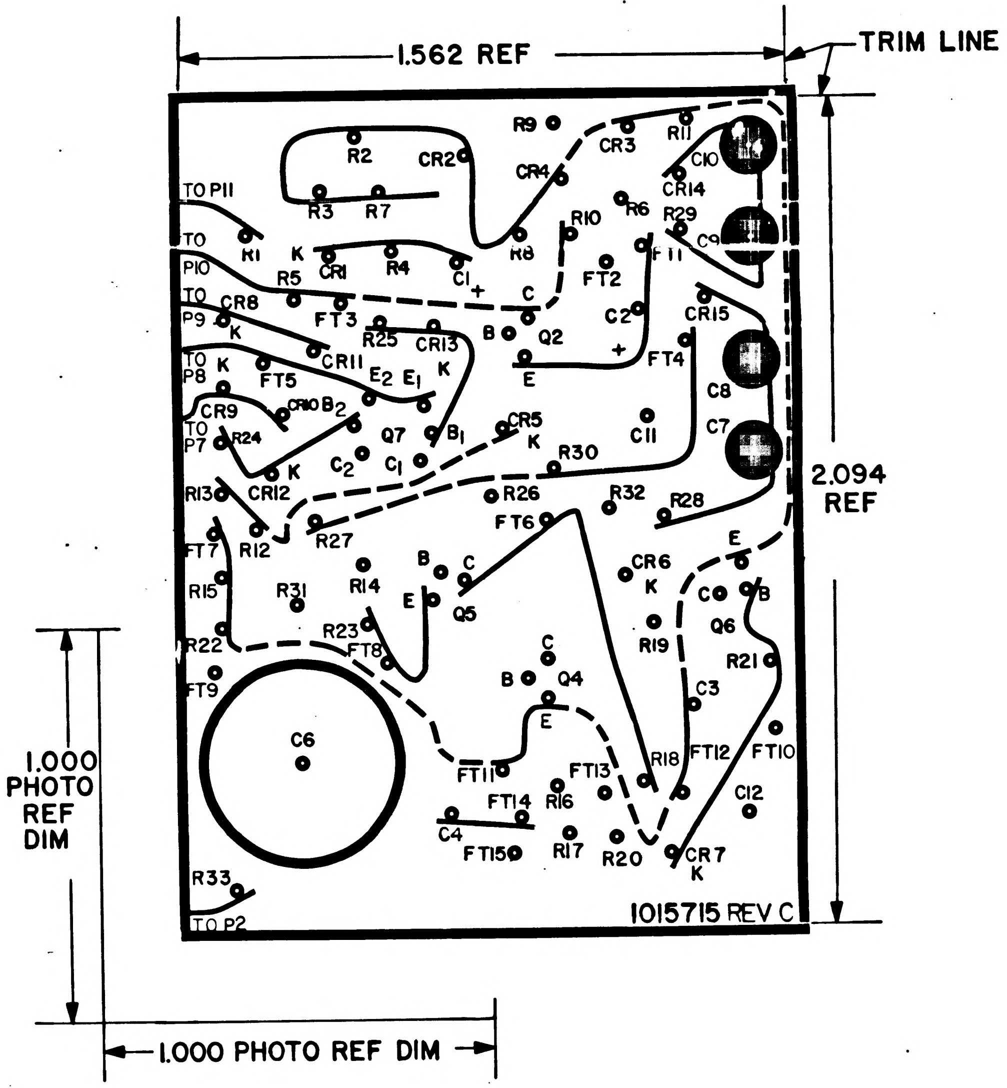
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015715 B

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS TDRR 01464

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02439	6-7-63	JJM
B	REVISED PER TDRR 03017	9-5-63	
C	REVISED PER TDRR 13232	16 OCT 64	RJM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TRIM LINE
2.094 REF
1.000 PHOTO REF DIM
1.000 PHOTO REF DIM
TO P11
TO P10
TO P9
TO P8
TO P7
TO P2
R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19 R20 R21 R22 R23 R24 R25 R26 R27 R28 R29 R30 R31 R32 R33
C1 C2 C3 C4 C6 C7 C8 C9 C10 C11 C12
CR1 CR2 CR3 CR4 CR5 CR6 CR7 CR8 CR9 CR10 CR11 CR12 CR13 CR14 CR15
Q2 Q4 Q5 Q6 Q7
FT1 FT2 FT3 FT4 FT5 FT6 FT7 FT8 FT9 FT10 FT11 FT12 FT13 FT14 FT15
B C E K
E2 E1 B2 B1 C2 C1
1015715 REV C

NOTES:

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QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO

LIST OF MATERIALS

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TOLERANCES ON
FRACTIONS ± DECIMALS .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN J.F. Walsh DATE 5-27-63
CHECKED E.J. [illegible] 29 Mar 63
APPROVAL [illegible] 6-5-63
APPROVAL [illegible] 6-5-63
NASA APPROVAL [illegible]
MIT APPROVAL [illegible] 5 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGAPHIC MASTER
AAC, FILTER & MULTIVIBRATOR 800 CPS

CODE IDENT NO.
SIZE D
NASA DRAWING 1015715
SCALE 5/1
WT
SHEET 1 OF 1

1015715 C

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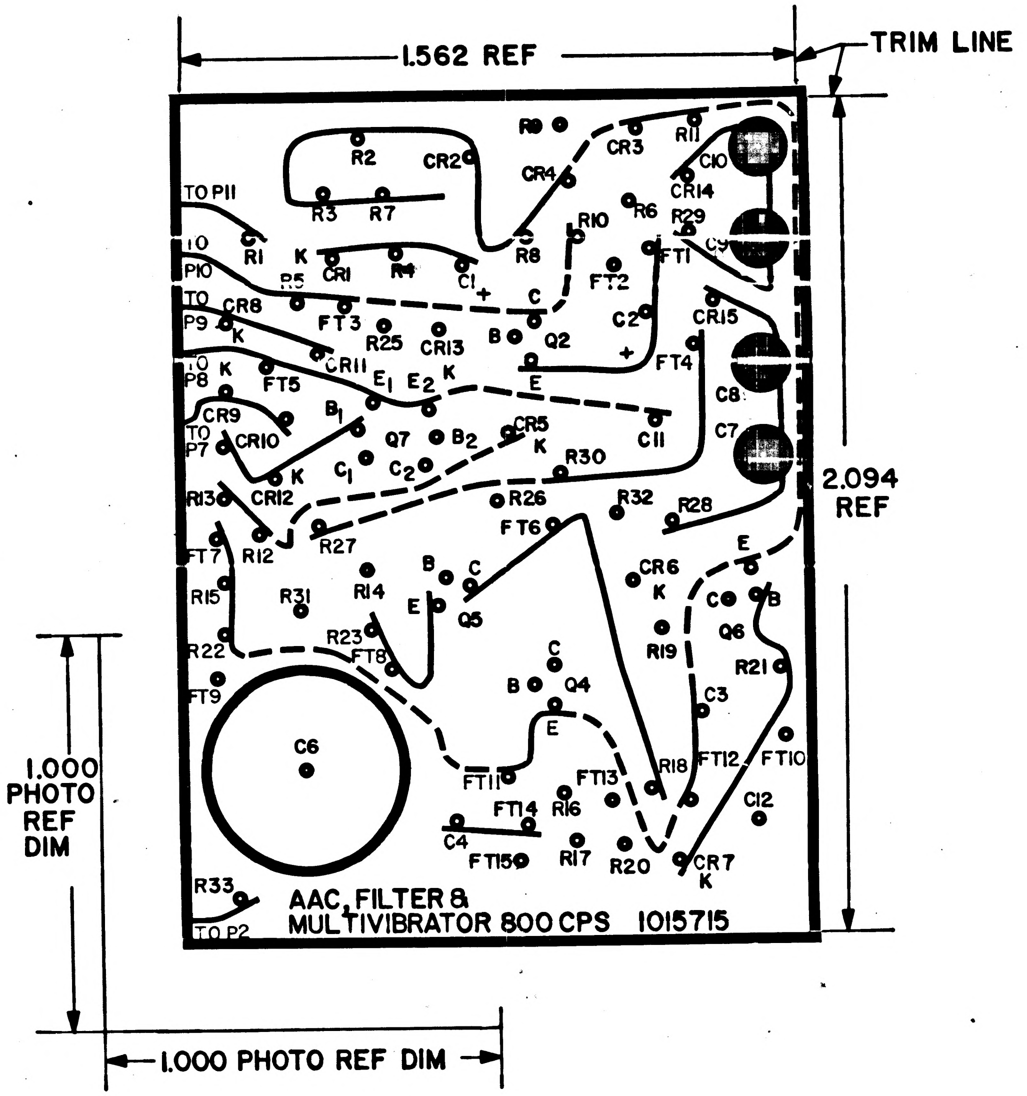
REVISIONS	TDPR 01464		
SYM	DESCRIPTION	DATE	APPROVAL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TRIM LINE
2.094 REF
1.000 PHOTO REF DIM
1.000 PHOTO REF DIM
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R2
CR2
CR3
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CR4
CR14
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R29
C9
TO P10
R1
K
CR1
R4
R5
C1
+
R8
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FT14
R16
C4
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R17
R20
CR7
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R33
TO P2
AAC, FILTER &
MULTIVIBRATOR 800 CPS 1015715

NOTES:

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MASTER

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LIST OF MATERIALS			

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APPLICATION	

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TOLERANCES ON
FRACTIONS ± DECIMALS ±.005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN F. Walsh DATE 5-27-63
CHECKED E. J. Sadlak 29 Mar 63
APPROVAL [illegible] 6-5-63
APPROVAL [illegible] 6-5-63
NASA APPROVAL [illegible] 6/4/63
MIT APPROVAL [illegible] 5 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR
PHOTOGAPHIC MASTER
AAC, FILTER & MULTIVIBRATOR
800 CPS

CODE IDENT NO.
SIZE D
NASA DRAWING 1015715
SCALE 5 / 1
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015715

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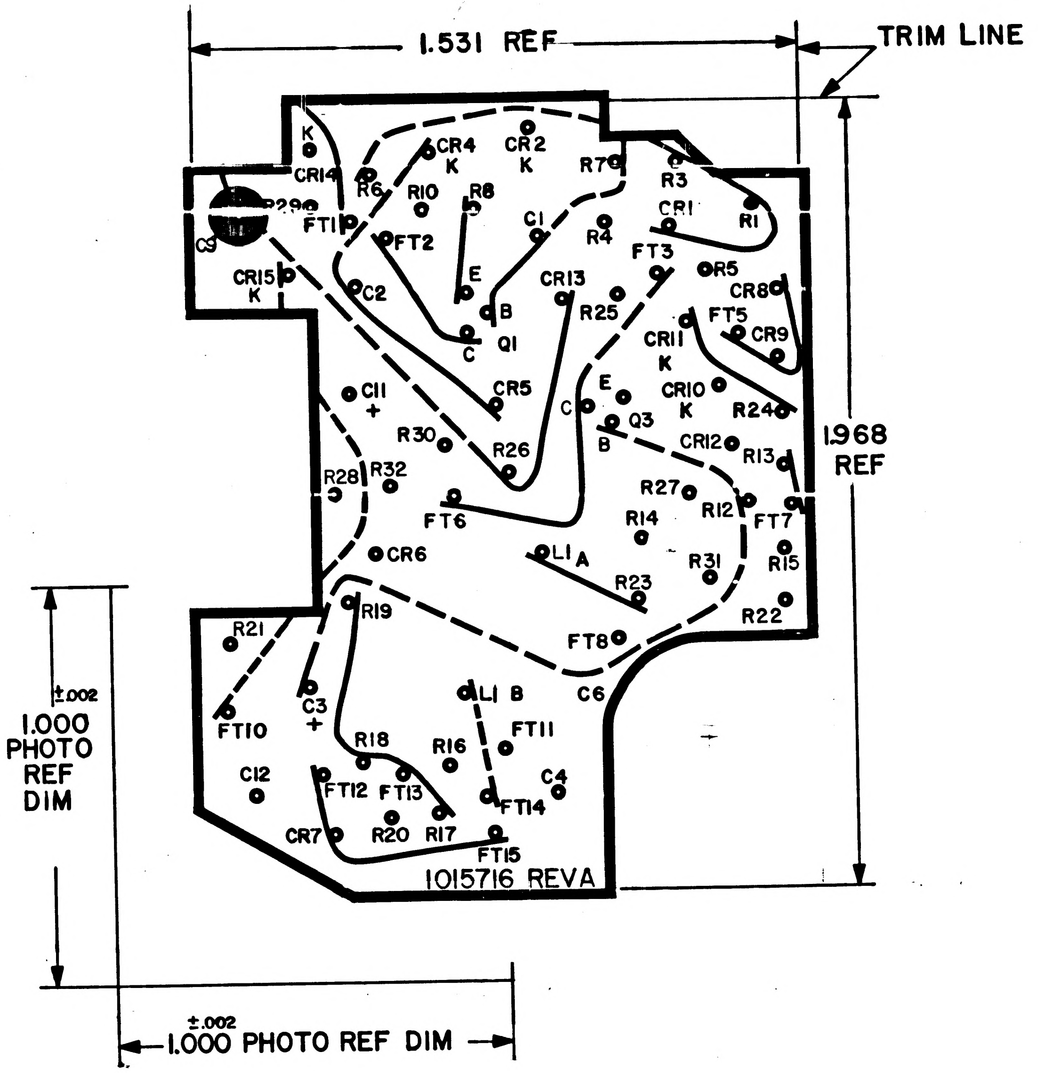
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 03017	9-5-63	WK

REVISIONS TDRR 01464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1.000 PHOTO REF DIM
±.002
1.000 PHOTO REF DIM
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CR2
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C9
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FT2
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CR13
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FT5
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CR10
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R17
FT15

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FRACTIONS ±
DECIMALS ±.005
ANGLES ±1°
DO NOT SCALE THIS DRAWING
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HEAT TREATMENT
FINAL FINISH

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN J.K. Walsh DATE 5-27-63
CHECKED E.J. [illegible] 29 MAY 63
APPROVAL [illegible] 6-5-63
APPROVAL [illegible] 6-5-63
NASA APPROVAL [illegible] 6/6/63
MIT APPROVAL W Kupfer 5 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGRAPHIC MASTER
AAC, FILTER & MULTIVIBRATOR 800 CPS

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015716
SCALE 5/1
WT
SHEET 1 OF 1

1015716 A

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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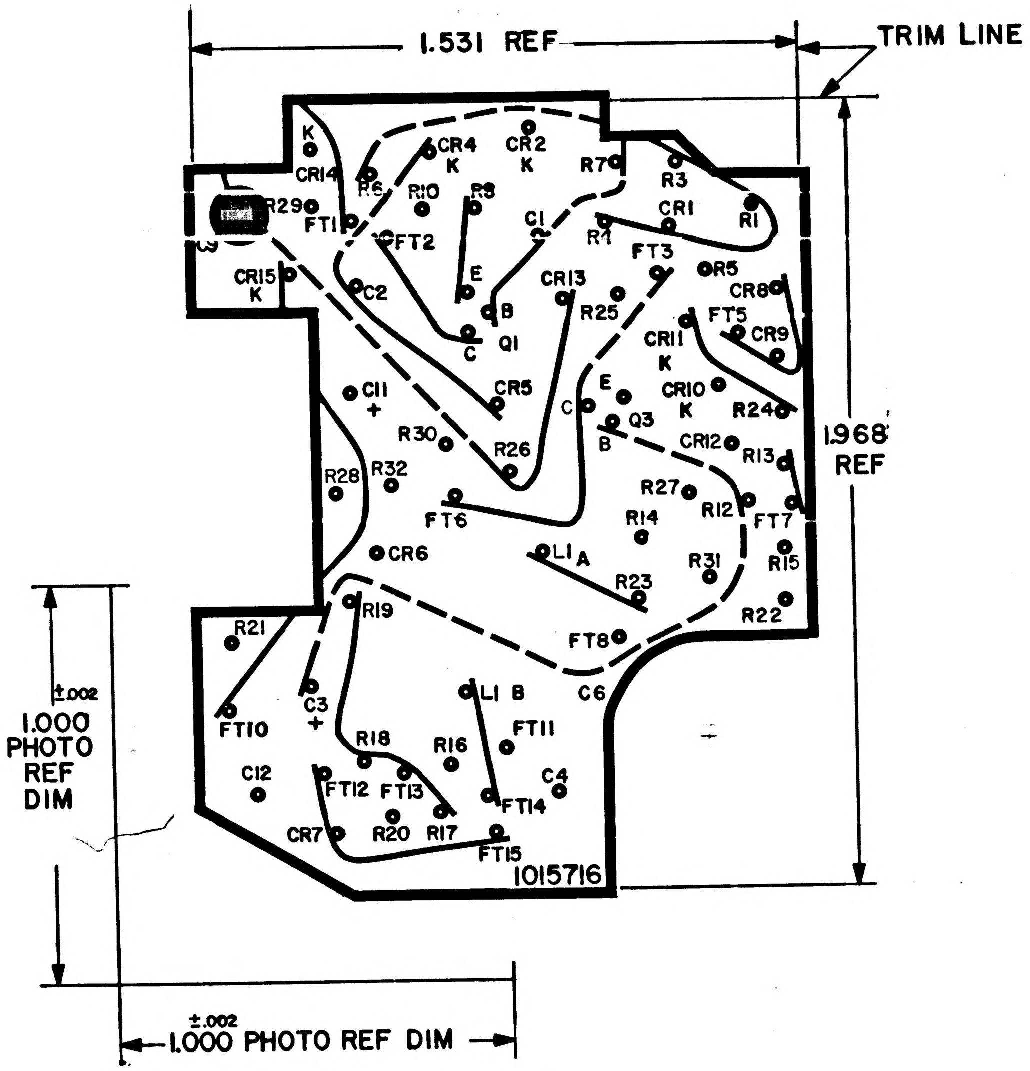
SYM	DESCRIPTION	DATE	APPROVAL
REVISIONS TDRR 01464			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1015716

NOTES:

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MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON

APPLICATION

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TOLERANCES ON
FRACTIONS ± DECIMALS ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN DATE 5-27-63
CHECKED 29 MAY 63
APPROVAL 6-5-63
APPROVAL 6-5-63
NASA APPROVAL 6/4/63
MIT APPROVAL 5 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

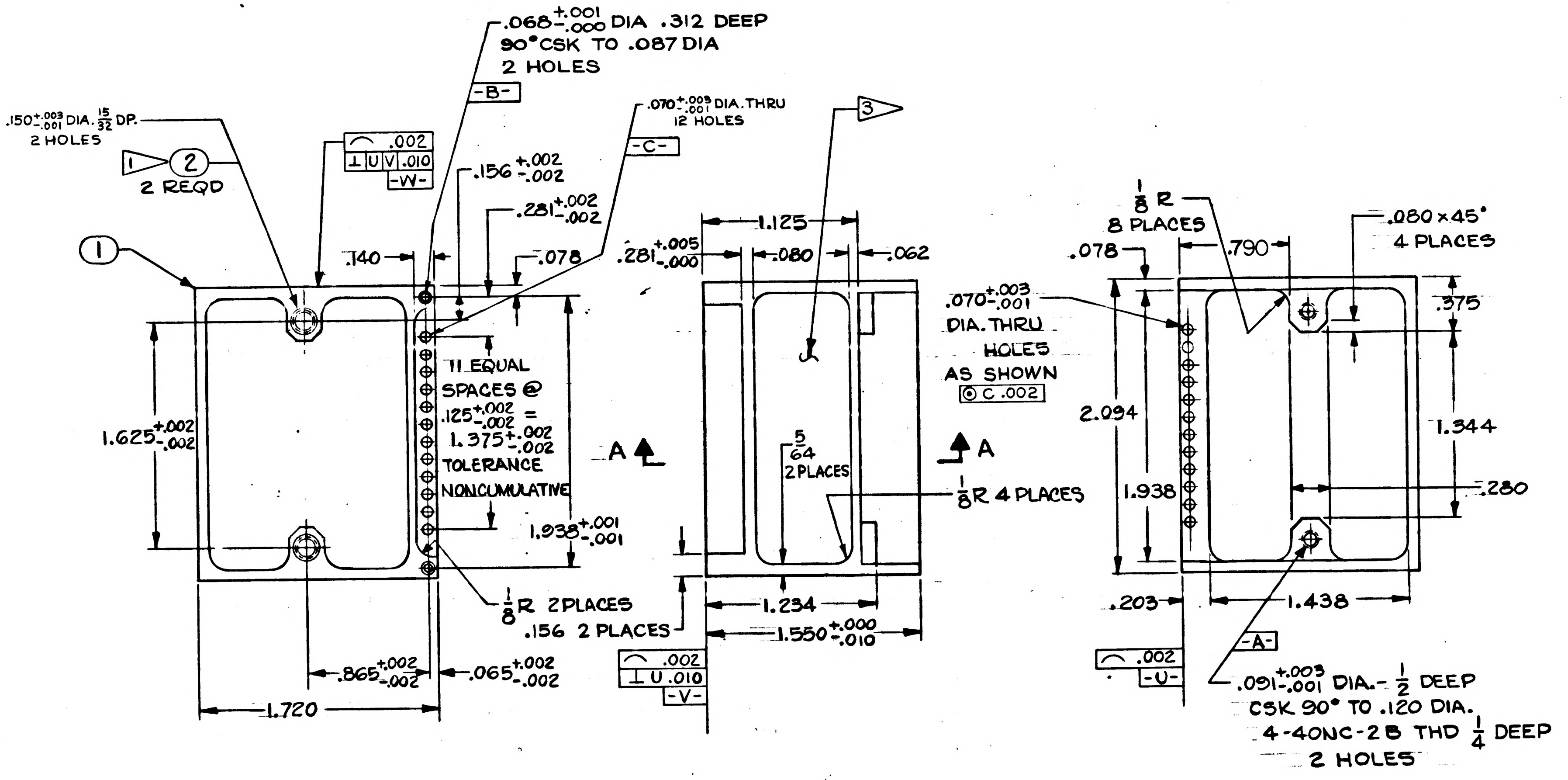
INSULATOR
PHOTOGRAPHIC MASTER
AAC, FILTER & MULTIVIBRATOR
800 CPS

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015716
SCALE 5/1 WT SHEET 1 OF 1

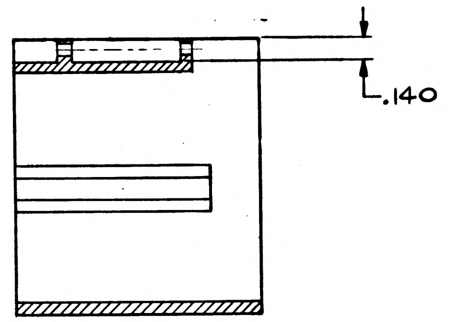
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015717

REVISIONS TDRR 224					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02072		7/24/63	H.T. WK.



.068 +.001 -.000 DIA .312 DEEP
90° CSK TO .087 DIA
2 HOLES
-B-
.150 +.003 -.001 DIA. 15/32 DP.
2 HOLES
1 2
2 REQD
.002
⊥ U V .010
-W-
.156 +.002 -.002
.281 +.002 -.002
.070 +.003 -.001 DIA. THRU
12 HOLES
-C-
1
.140
.078
11 EQUAL SPACES @ .125 +.002 -.002 = 1.375 +.002 -.002 TOLERANCE NONCUMULATIVE
1.625 +.002 -.002
1.938 +.001 -.001
1/8 R 2 PLACES
.156 2 PLACES
.865 +.002 -.002
.065 +.002 -.002
1.720
A
.281 +.005 -.000
1.125
.080
.062
3
5/64 2 PLACES
1/8 R 4 PLACES
1.234
1.550 +.000 -.010
.002
⊥ U .010
-V-
A
1/8 R 8 PLACES
.078
.790
.080 × 45° 4 PLACES
.070 +.003 -.001 DIA. THRU HOLES AS SHOWN
◎ C .002
.375
2.094
1.938
1.344
.280
.203
1.438
-A-
.002
-U-
.091 +.003 -.001 DIA. - 1/2 DEEP
CSK 90° TO .120 DIA.
4-40NC-2B THD 1/4 DEEP
2 HOLES



SECTION A-A

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

COAT THREADS & ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

1 INSTALL, 6-32-3B INSERT PER MS 33537, BREAK OFF TANGS.

UNLESS OTHERWISE SPECIFIED: ROUGHNESS MUST NOT EXCEED 125√.

ALL CORNERS & RADII TO BE .005 TO .015 R OR CHAMFER.

MUST BE FREE FROM BURRS.

2 ALUMINUM 6061-T6 PER QQ-A-325. (ES-2106)

FINISH : ANODIZE USING MIL-A-8625, TYPE II, DYED BLACK, (ES-384) - INSERT HOLES, DIA A & DIA B TO BE FREE OF ANODIZE.

3 MARK 1015717 & REV. LETTER PER MIL-STD-130 (ES-267).

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS122118	INSERT, SCREW, LOCKING
1	1	1015717-001	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015123	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+1°
- 1/64	-.005	-1°

DO NOT SCALE THIS DRAWING

MATERIAL 2

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Iszel DATE 30 APR 63
CHECKED R. Sayles 3 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME (INSEP ASSY)
RESOLVER DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015717
SCALE 2:1
SHEET

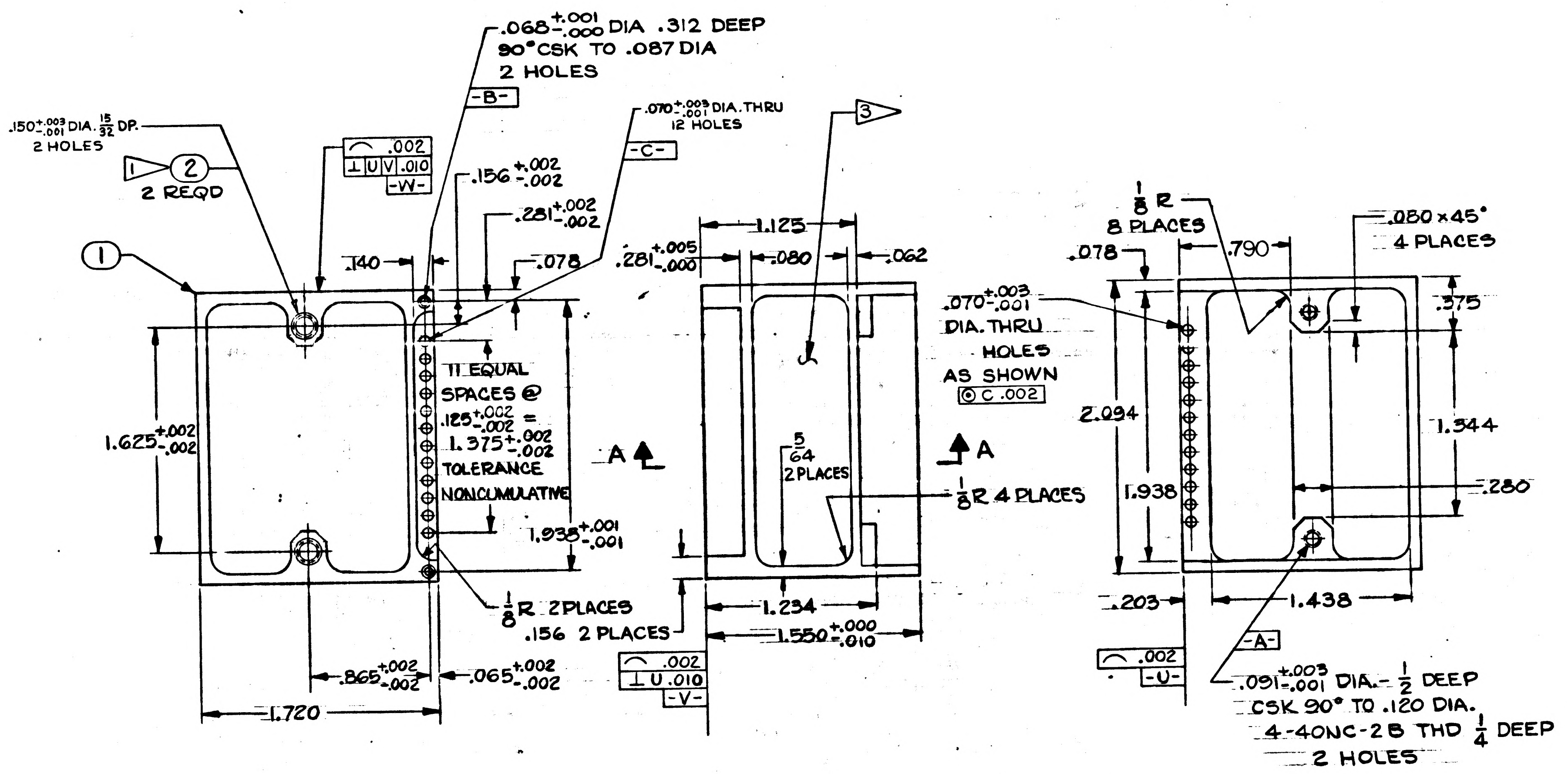
Charleston 7-MAY-63

BOTTOCKSON

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

B	1015717	2

REVISIONS TDRR 1224					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02072		7/24/63	H.T. WK.
B		REVISED PER TDRR 02875		8.26.63	RAK JW



.068 +.001 -.000 DIA .312 DEEP
90° CSK TO .087 DIA
2 HOLES
-B-
.150 +.003 -.001 DIA. 15/32 DP.
2 HOLES
1
2
2 REQD
.002
⊥ U V .010
-W-
.070 +.003 -.001 DIA. THRU
12 HOLES
-C-
.156 +.002 -.002
.281 +.002 -.002
.140
.078
.281 +.005 -.000
1.125
.080
.062
3
1.625 +.002 -.002
11 EQUAL SPACES @ .125 +.002 -.002 = 1.375 +.002 -.002
TOLERANCE NONCUMULATIVE
1.935 +.001 -.001
A
5/64 2 PLACES
1/8 R 4 PLACES
1/8 R 2 PLACES
.156 2 PLACES
1.234
1.550 +.000 -.010
.002
⊥ U .010
-V-
.865 +.002 -.002
.065 +.002 -.002
1.720
1/8 R
8 PLACES
.078
.790
.080 x 45°
4 PLACES
.070 +.003 -.001 DIA. THRU HOLES AS SHOWN
◎ C .002
.375
2.094
1.344
1.938
.280
.203
1.438
-A-
.002
-U-
.091 +.003 -.001 DIA. - 1/2 DEEP
CSK 90° TO .120 DIA.
4-40NC-2B THD 1/4 DEEP
2 HOLES

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

COAT THREADS & ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

1 INSTALL, 6-32-3B INSERT PER MS 33537, BREAK OFF TANGS.

UNLESS OTHERWISE SPECIFIED: ROUGHNESS MUST NOT EXCEED 125√.

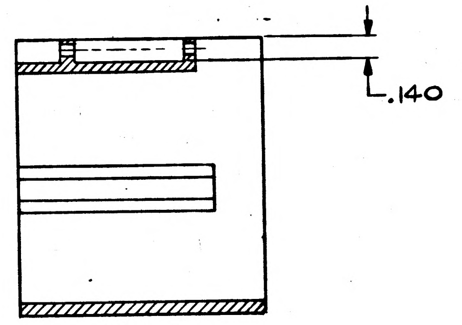
ALL CORNERS & RADII TO BE .005 TO .015 R OR CHAMFER.

MUST BE FREE FROM BURRS.

2 MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31 TYPE IV

FINISH: ANODIZE USING MIL-M-3171A, DYED BLACK, (ES-384) - INSERT HOLES, DIA A & DIA B TO BE FREE OF ANODIZE.

3 MARK 1015717 & REV. LETTER PER MIL-STD-130 (ES-267).



SECTION A-A

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS 122118	INSERT, SCREW, LOCKING
1	1	1015717-001	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015123	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+1°
- 1/64	-.005	-1°

DO NOT SCALE THIS DRAWING

MATERIAL 2

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

		DATE
DRAWN	Orgel	30 APR 63
CHECKED	Saifles	3 MAY 63
APPROVAL	[illegible]	7 MAY 63
APPROVAL	[illegible]	7 MAY 63
NASA APPROVAL	[illegible]	5/15/63
MIT APPROVAL	[illegible]	15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME (INSEP ASSY)
RESOLVER DRIVE AMPLIFIER

CODE IDENT NO.	SIZE	
	D	1015717
SCALE 2:1		SHEET --

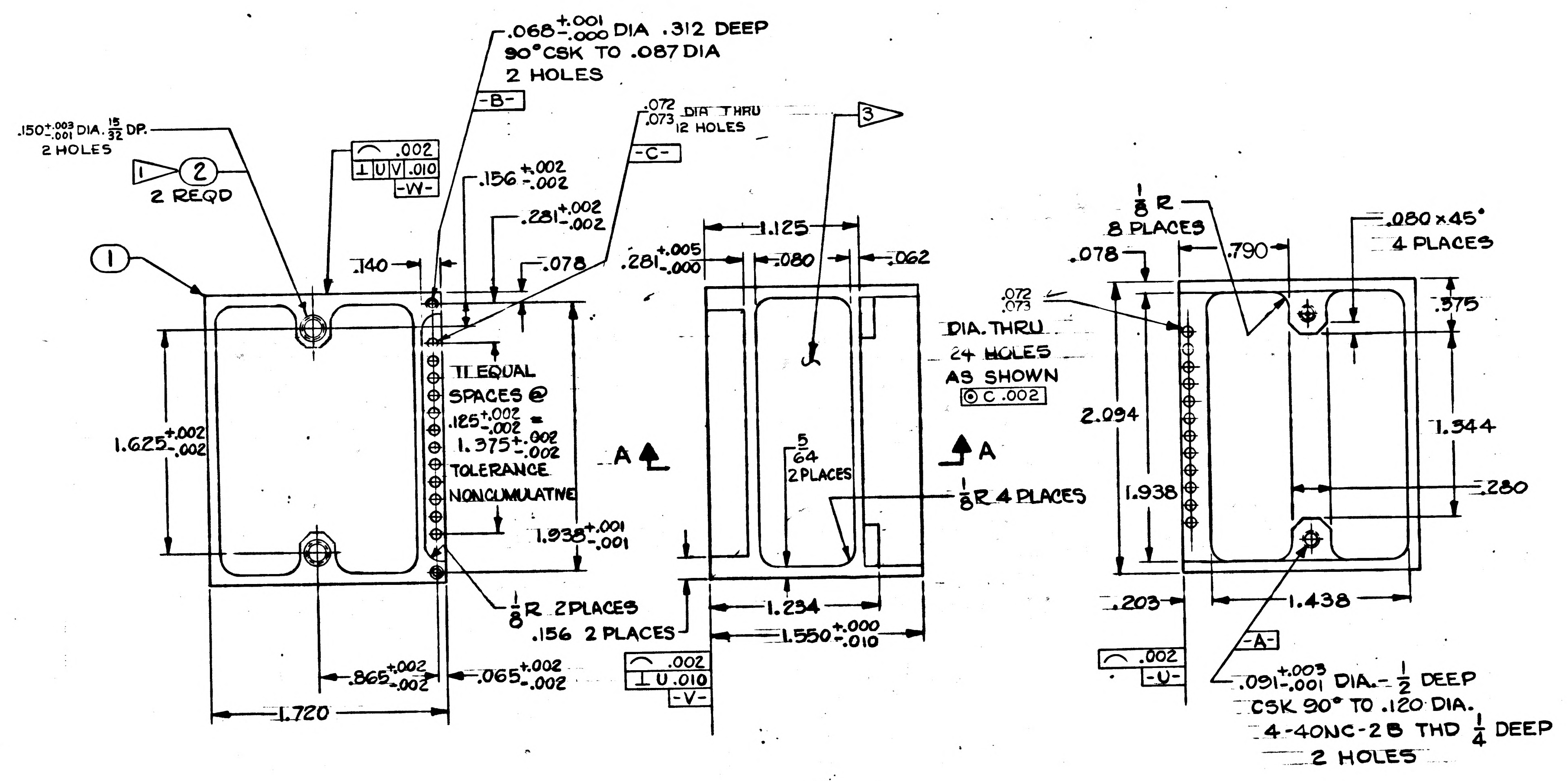
3 Charleston 7-MAY-63

Bottolfson

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

D	1015717	2

REVISIONS TDRR 1224					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02072		7-24-63	W.T. WK
B		REVISED PER TDRR 02875		8-26-63	RAK JW
C		REVISED PER TDRR 03851			RAC WK
D		REVISED PER TDRR 03854			RAC WK



.068 +.001 -.000 DIA .312 DEEP
90° CSK TO .087 DIA
2 HOLES
-B-
.150 +.003 -.001 DIA. 15/32 DP.
2 HOLES
1 ② 2 REQD
①
⌒ .002
⊥ U V .010
-W-
.156 +.002 -.002
.281 +.002 -.002
.140
.078
.072 .073 DIA THRU 12 HOLES
-C-
11 EQUAL SPACES @ .125 +.002 -.002 = 1.375 +.002 -.002 TOLERANCE NONCUMULATIVE
1.625 +.002 -.002
1.938 +.001 -.001
1/8 R 2 PLACES
.156 2 PLACES
.865 +.002 -.002
.065 +.002 -.002
1.720
A
1.125
.281 +.005 -.000
.080
.062
3
5/64 2 PLACES
1/8 R 4 PLACES
1.234
1.550 +.000 -.010
⌒ .002
⊥ U .010
-V-
A
1/8 R 8 PLACES
.078
.790
.080 × 45° 4 PLACES
.072 .073 DIA. THRU 24 HOLES AS SHOWN
◎ C .002
.375
2.094
1.938
1.344
.280
.203
1.438
-A-
⌒ .002
-U-
.091 +.003 -.001 DIA. - 1/2 DEEP
CSK 90° TO .120 DIA.
4-40NC-2B THD 1/4 DEEP
2 HOLES

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

COAT THREADS & ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

1 INSTALL, 6-32-38 INSERT PER MS 33537, BREAK OFF TANGS.

UNLESS OTHERWISE SPECIFIED: ROUGHNESS MUST NOT EXCEED 125√.

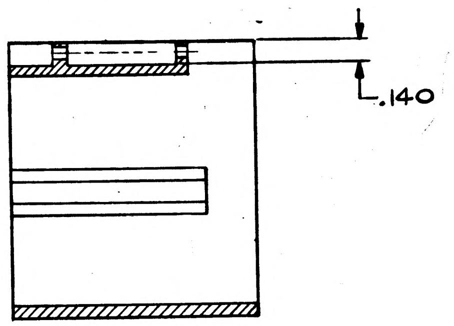
ALL CORNERS & RADII TO BE .005 TO .015 R OR CHAMFER.

MUST BE FREE FROM BURRS.

2 MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31 TYPE IV

FINISH: ANODIZE USING MIL-M-3171A, DYED BLACK, (ES-384) - INSERT HOLES, DIA A & DIA B TO BE FREE OF ANODIZE.

3 MARK 1015717 & REV. LETTER PER ND 1002019



SECTION A-A

2	2	MS21209-C0620	INSERT, SCREW, LOCKING
1	1	1015717-001	FRAME
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

1015123	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL 2
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orzel DATE 30 APR 63
CHECKED Sayles 3 MAY 63
APPROVAL Blyndal 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME (INSEP ASSY)
RESOLVER DRIVE AMPLIFIER

CODE IDENT NO. | SIZE D | 1015717
SCALE 2:1 | SHEET

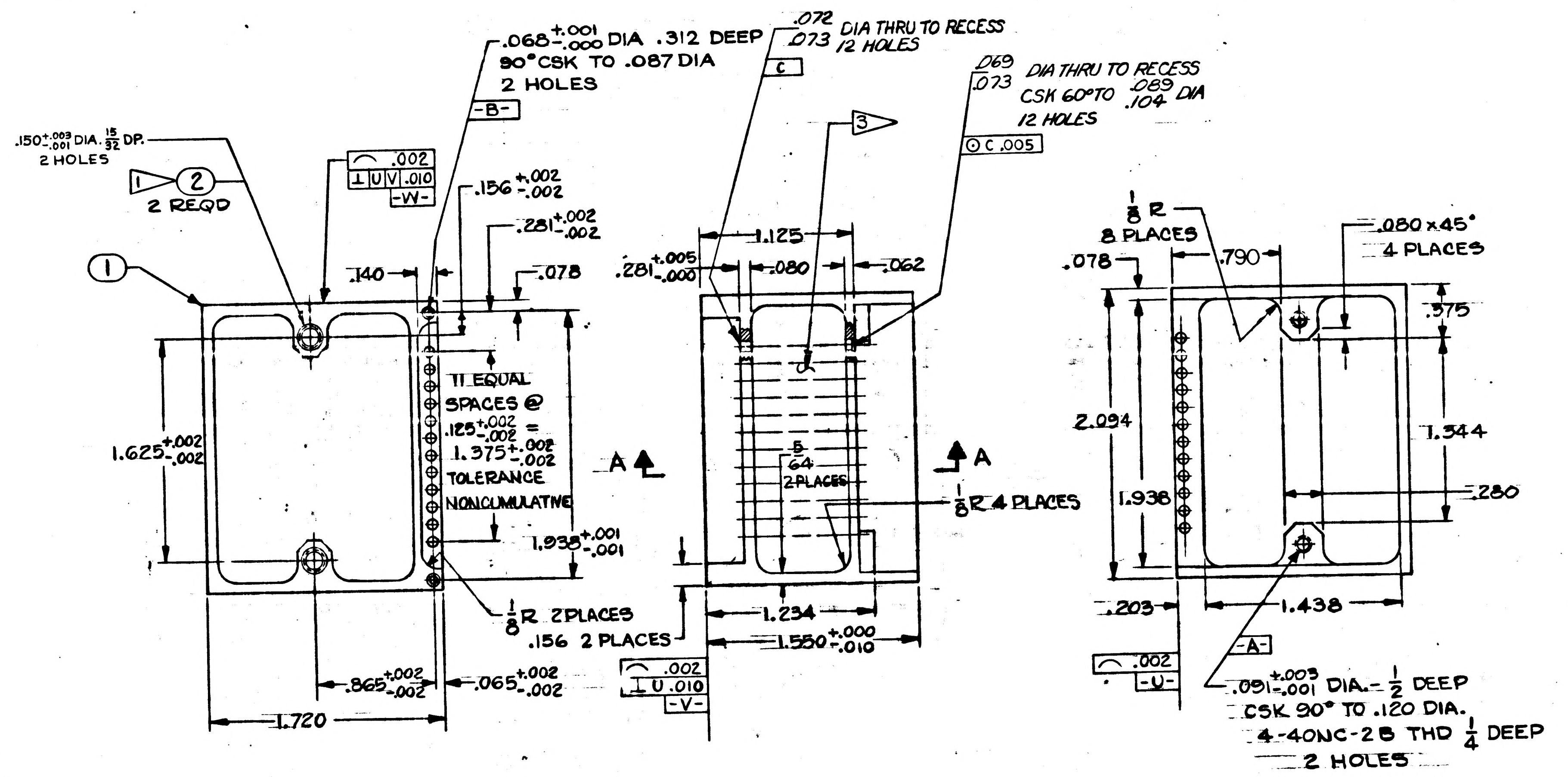
3 Charleston 7-MAY-63

Bottockson

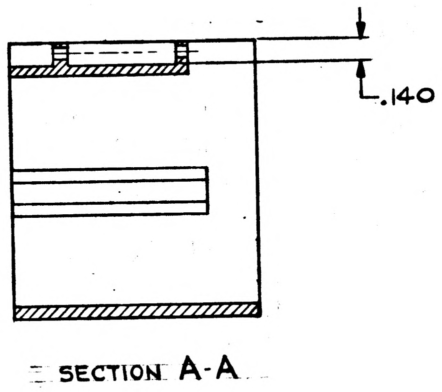
INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

1015717 | 2 | E

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02072		7-24-63	H.T. WK
B		REVISED PER TDRR 02875		8-26-63	RAK JW
C		REVISED PER TDRR 03851			RAK WK
D		REVISED PER TDRR 03854			RAK WK
E		REVISED PER TDRR 05424		27 DEC 63	RAK WK



.150 +.003 -.001 DIA. 15/32 DP. 2 HOLES
1 2
2 REQD
1
.002
⊥ U V .010
-W-
.068 +.001 -.000 DIA .312 DEEP
90° CSK TO .087 DIA
2 HOLES
-B-
.156 +.002 -.002
.281 +.002 -.002
.140
.078
11 EQUAL SPACES @ .125 +.002 -.002 = 1.375 +.002 -.002 TOLERANCE NONCUMULATIVE
1.625 +.002 -.002
1.938 +.001 -.001
1/8 R 2PLACES
.156 2 PLACES
.865 +.002 -.002
.065 +.002 -.002
1.720
A
.072 .073 DIA THRU TO RECESS 12 HOLES
C
.069 .073 DIA THRU TO RECESS
CSK 60° TO .089 .104 DIA
12 HOLES
⊙ C .005
3
1.125
.281 +.005 -.000
.080
.062
5/64 2PLACES
1/8 R 4 PLACES
1.234
1.550 +.000 -.010
.002
⊥ U .010
-V-
A
1/8 R 8 PLACES
.790
.078
.080 x 45° 4 PLACES
.375
2.094
1.344
1.938
.280
.203
1.438
-A-
.002
-U-
.091 +.003 -.001 DIA. - 1/2 DEEP
CSK 90° TO .120 DIA.
4-40NC-2B THD 1/4 DEEP
2 HOLES



SECTION A-A

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

COAT THREADS & ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER ~~(ES-2589)~~.

1 INSTALL, 6-32-3B INSERT PER MS 33646 BREAK OFF TANGS.

UNLESS OTHERWISE SPECIFIED: ROUGHNESS MUST NOT EXCEED 125√.

ALL CORNERS & RADII TO BE .005 TO .015 R OR CHAMFER.

MUST BE FREE FROM BURRS.

2 MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31 TYPE IV

FINISH : ANODIZE USING MIL-M-3171A, DYED BLACK, ~~(ES-384)~~ - INSERT HOLES, DIA A & DIA B TO BE FREE OF ANODIZE.

3 MARK 1015717 & REV. LETTER PER ND 1002019

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT, SCREW, LOCKING
1	1	1015717-001	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015123	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
± 1/64	.XX ± .02	± 1°
	.XXX ± .005	

DO NOT SCALE THIS DRAWING
MATERIAL 2
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Orzel DATE 30 APR 63
CHECKED 3 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME (INSEP ASSY)
RESOLVER DRIVE AMPLIFIER

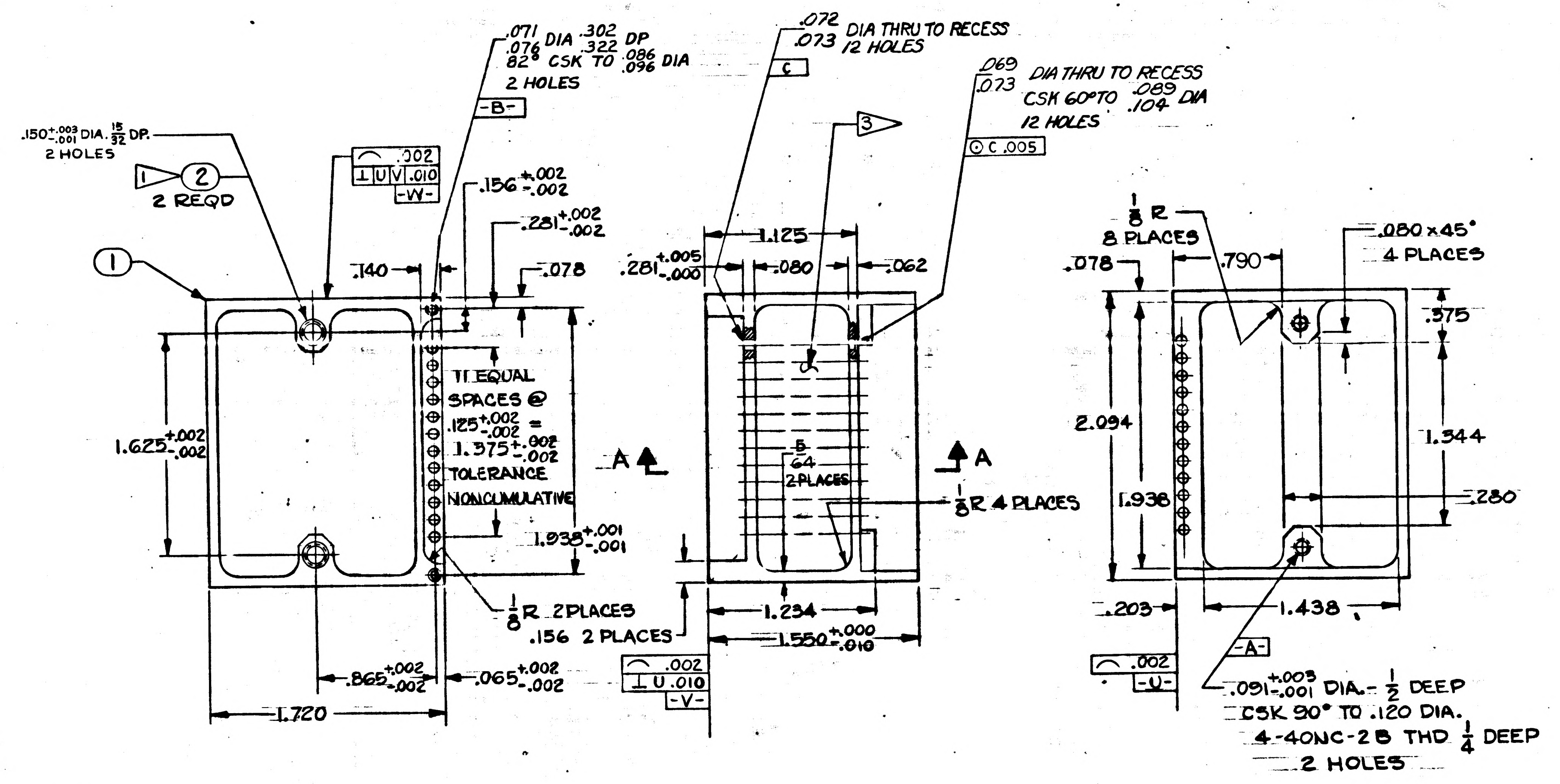
CODE IDENT NO.
SIZE D
1015717
SCALE 2:1
SHEET

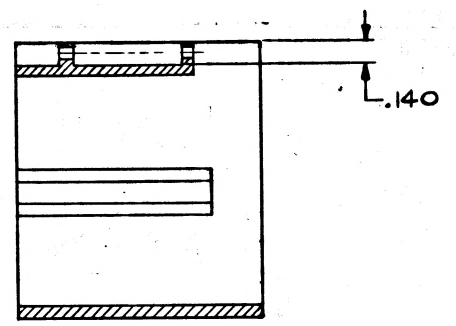
3 Chesleston 9 MAY 63
Bottolfson

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015717 F

SYM	ZONE	DESCRIPTION REVISIONS TDRR 224	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02072		7/24/63	W.T. WK
B		REVISED PER TDRR 02875		8-28-63	
C		REVISED PER TDRR 03851			
D		REVISED PER TDRR 03854			
E		REVISED PER TDRR 05424		27 DEC 63	
F		REVISED PER TDRR 05870		21 JAN 64	


.071 / .076 DIA .302 / .322 DP
82° CSK TO .086 / .096 DIA
2 HOLES
-B-
.150 +.003 -.001 DIA. 15/32 DP.
2 HOLES
1 2
2 REQD
.002
⊥ U V .010
-W-
.156 +.002 -.002
.281 +.002 -.002
.140
.078
1
11 EQUAL SPACES @ .125 +.002 -.002 = 1.375 +.002 -.002 TOLERANCE NONCUMULATIVE
1.625 +.002 -.002
1.938 +.001 -.001
1/8 R 2 PLACES
.156 2 PLACES
.865 +.002 -.002
.065 +.002 -.002
1.720
A
.072 / .073 DIA THRU TO RECESS 12 HOLES
C
3
.069 / .073 DIA THRU TO RECESS
CSK 60° TO .089 / .104 DIA
12 HOLES
⊙ C .005
1.125
.281 +.005 -.000
.080
.062
5/64 2 PLACES
1/8 R 4 PLACES
A
1.234
1.550 +.000 -.010
.002
⊥ U .010
-V-
1/8 R 8 PLACES
.078
.790
.080 x 45° 4 PLACES
.375
2.094
1.938
1.344
.280
.203
1.438
-A-
.002
-U-
.091 +.003 -.001 DIA. - 1/2 DEEP
CSK 90° TO .120 DIA.
4-40NC-2B THD 1/4 DEEP
2 HOLES



SECTION A-A

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

COAT THREADS & ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER ~~(ES 2589)~~.

1 INSTALL, 6-32-3B INSERT PER MS 33646 BREAK OFF TANGS.

UNLESS OTHERWISE SPECIFIED: ROUGHNESS MUST NOT EXCEED 125/.

ALL CORNERS & RADII TO BE .005 TO .015 R OR CHAMFER.

MUST BE FREE FROM BURRS.

2 MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31 TYPE IV

FINISH: ANODIZE USING MIL-M-3171A, DYED BLACK, ~~(ES 384)~~ - INSERT HOLES, DIA A & DIA B TO BE FREE OF ANODIZE.

3 MARK 1015717 & REV. LETTER PER ND 1002019

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT, SCREW, LOCKING
1	1	1015717-001	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015123	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±1/64 DECIMALS .XX ±.02 .XXX ±.005 ANGLES ±1°
DO NOT SCALE THIS DRAWING
MATERIAL 2
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 30 APR 63
CHECKED 3 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

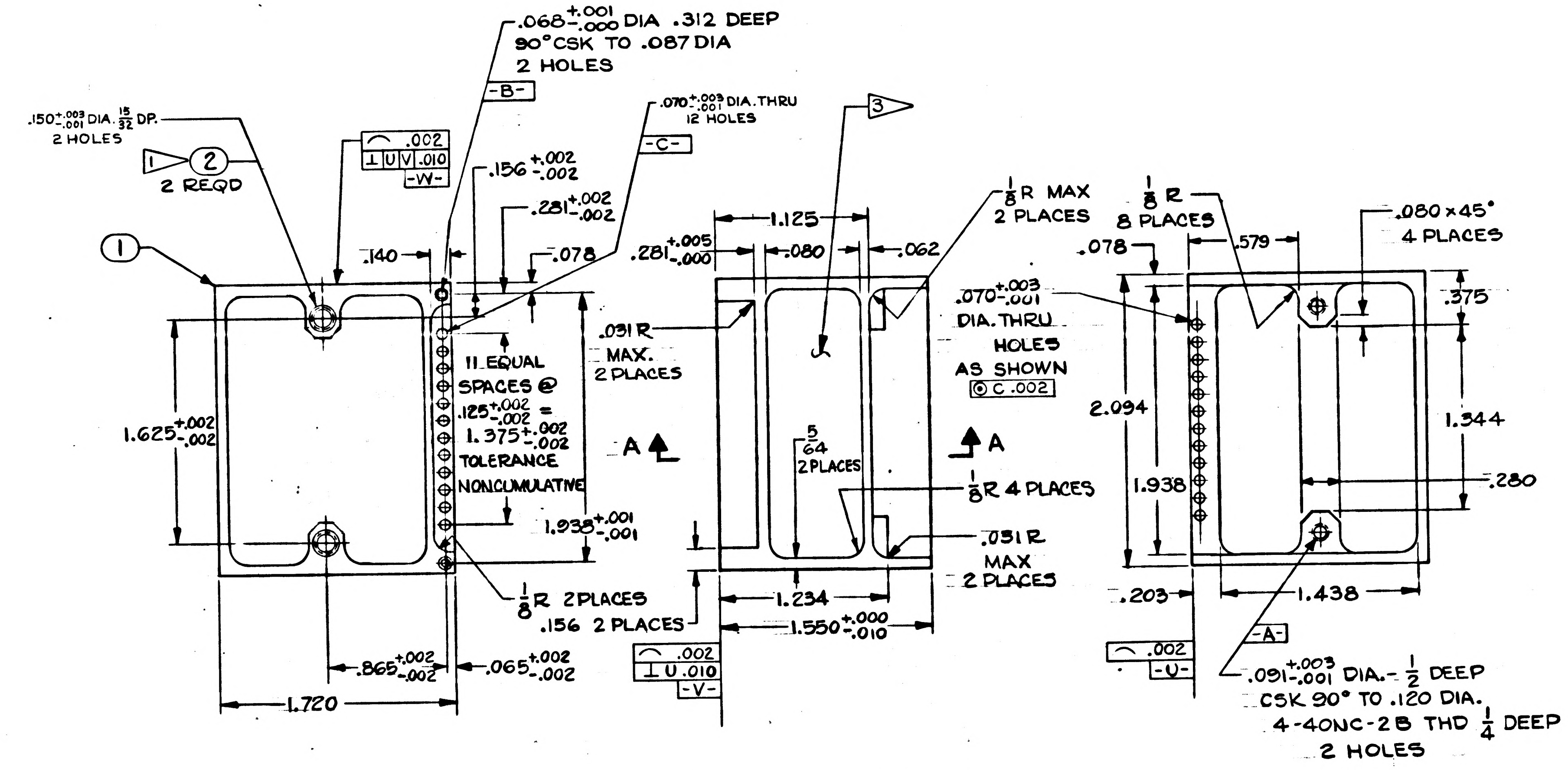
FRAME (INSEP ASSY)
RESOLVER DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015717
SCALE 2:1
SHEET

Charleston 7 May 63
BOTTOLFSON

1015717

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		REVISIONS TDRR 224			



.068 +.001 -.000 DIA .312 DEEP 90° CSK TO .087 DIA 2 HOLES
-B-
.150 +.003 -.001 DIA 15/32 DP. 2 HOLES
.002
⊥ U V .010
-W-
1 ② 2 REQD
①
.070 +.003 -.001 DIA. THRU 12 HOLES
-C-
3
.156 +.002 -.002
.281 +.002 -.002
.140
.078
11 EQUAL SPACES @ .125 +.002 -.002 = 1.375 +.002 -.002 TOLERANCE NONCUMULATIVE
1.625 +.002 -.002
1.938 +.001 -.001
1/8 R 2 PLACES
.156 2 PLACES
.865 +.002 -.002
.065 +.002 -.002
1.720
A
.281 +.005 -.000
1.125
.080
.062
.031 R MAX. 2 PLACES
5/64 2 PLACES
1/8 R MAX 2 PLACES
1/8 R 4 PLACES
.031 R MAX 2 PLACES
1.234
1.550 +.000 -.010
.002
⊥ U .010
-V-
A
1/8 R 8 PLACES
.078
.070 +.003 -.001 DIA. THRU HOLES AS SHOWN ◎ C .002
.579
.080 × 45° 4 PLACES
.375
2.094
1.344
1.938
.280
.203
1.438
-A-
.002
-U-
.091 +.003 -.001 DIA. - 1/2 DEEP CSK 90° TO .120 DIA. 4-40NC-2B THD 1/4 DEEP 2 HOLES

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

COAT THREADS & ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

1 INSTALL, 6-32-3B INSERT PER MS 33537, BREAK OFF TANGS.

UNLESS OTHERWISE SPECIFIED: ROUGHNESS MUST NOT EXCEED 125✓.

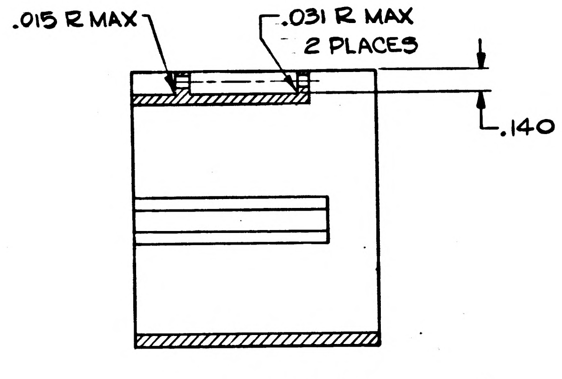
ALL CORNERS & RADII TO BE .005 TO .015 R OR CHAMFER.

MUST BE FREE FROM BURRS.

2 ALUMINUM 6061-T6 PER QQ-A-325. (ES-2106)

FINISH: ANODIZE USING MIL-A-8625, TYPE II, DYED BLACK, (ES-384) - INSERT HOLES, DIA A & DIA B TO BE FREE OF ANODIZE.

3 MARK 1015717 & REV. LETTER PER MIL-STD-130 (ES-267).



.015 R MAX
.031 R MAX 2 PLACES
.140

SECTION A-A

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS122118	INSERT, SCREW, LOCKING
1	1	1015717-001	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015123	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+1°
- 1/64	-.005	-1°

DO NOT SCALE THIS DRAWING

MATERIAL 2

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Israel DATE 30 APR 63
CHECKED [illegible] 3 MAY 63
APPROVAL [illegible] 7 MAY 63
APPROVAL [illegible] 7 MAY 63
NASA APPROVAL [illegible] 5/15/63
MIT APPROVAL [illegible] 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME (INSEP ASSY)
RESOLVER DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015717

SCALE 2:1
SHEET

Charlestown 7 MAY 63

BOTTOCKSON

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

A	1015718

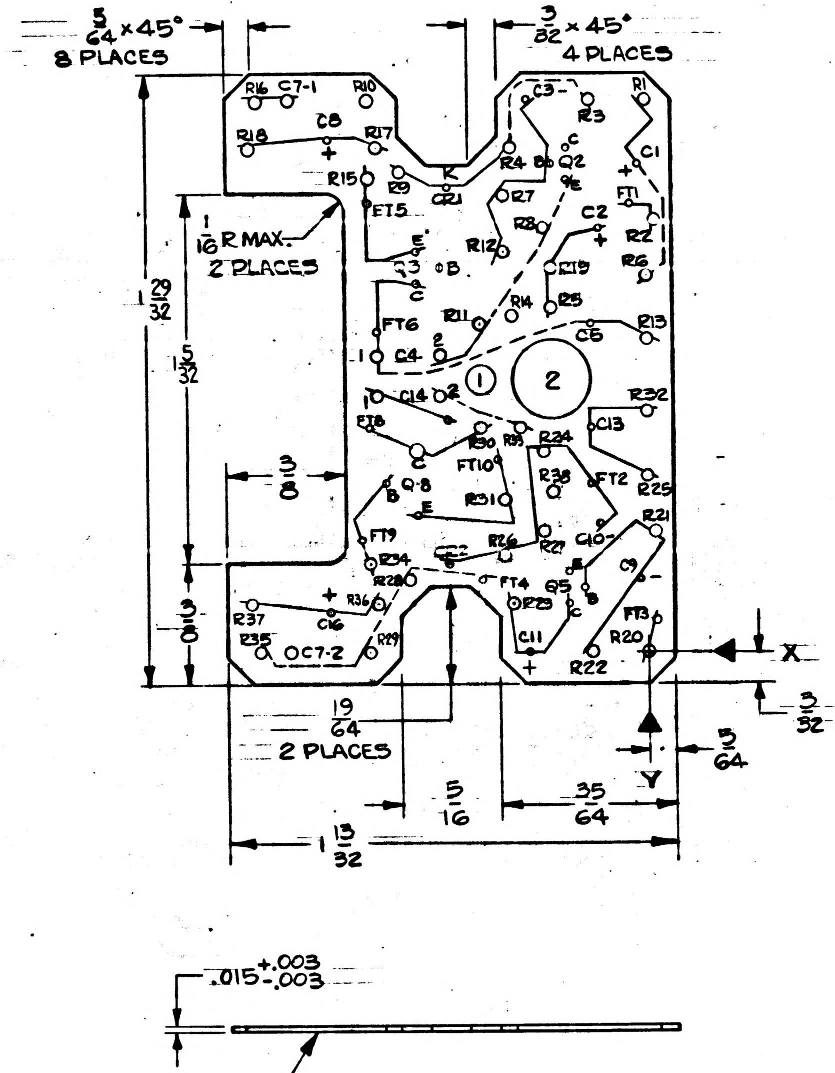
REVISIONS TDRR 1224					
SYM	ZONE	DESCRIPTION		DATE	APPD.
A		REVISED PER TDRR 02862	CHG NO.	5 24 63	EPZ

COORDINATE DIMENSIONS

HOLE No.	COORDINATE X(HORIZ)	COORDINATE Y(VERT)	HOLE DESCRIPTION TOL.+.010 -.000
C1	.025	1.525	.024 DIA THRU
C2	.150	1.325	.024
C3	.375	1.725	.024
C4-1	.650	.925	.043
C4-2	.850	.925	.043
C5	.175	1.025	.024
C7-1	1.125	1.725	.043
C7-2	1.125	.000	.043
C8	1.000	1.600	.024
C9	.025	.225	
C10	.150	.400	
C11	.375	.000	
C13	.175	.700	.024
C14-1	.650	.800	.043
C14-2	.850	.800	.043
C16	1.000	.125	.024
CR1	.625	1.450	
CR2	.625	.275	
Q2B	.300	1.525	
Q2C	.250	1.575	
Q2E	.250	1.475	
Q3B	.650	1.200	
Q3C	.725	1.150	
Q3E	.725	1.250	
Q5B	.200	.200	
Q5C	.250	.150	
Q5E	.250	.250	
Q8B	.825	.525	.024
Q8C	.725	.625	.052
Q8E	.725	.425	.024
R1	.000	1.725	.043
R2	-.025	1.350	
R3	.175	1.725	
R4	.425	1.575	
R5	.300	1.075	
R6	.000	1.175	
R7	.450	1.425	
R8	.325	1.325	
R9	.775	1.500	
R10	.875	1.725	
R11	.525	1.025	.043 DIA THRU

COORDINATE DIMENSIONS

HOLE No.	COORDINATE X(HORIZ)	COORDINATE Y(VERT)	HOLE DESCRIPTION TOL. +.010 -.000
R12	.450	1.250	.043 DIA THRU
R13	.000	.975	
R14	.425	1.050	
R15	.875	1.475	
R16	1.225	1.725	
R17	.850	1.575	
R18	1.250	1.575	
R19	.300	1.200	
R20	.000	.000	
R21	-.025	.375	
R22	.175	.000	
R23	.425	.150	
R24	.325	.625	
R25	.000	.550	
R26	.450	.300	
R27	.325	.375	
R28	.750	.225	
R29	.875	.000	
R30	.525	.700	
R31	.450	.475	
R32	.000	.750	
R33	.400	.700	
R34	.875	.275	
K35	1.225	.000	
R36	.850	.150	
R37	1.250	.150	
R38	.300	.500	.043
FT1	.050	1.400	.024
FT2	.175	.525	
FT3	-.025	.100	
FT4	.525	.225	
FT5	.875	1.400	
FT6	.850	1.000	
FT7	.625	.725	
FT8	.875	.700	
FT9	.900	.350	
FT10	.475	.600	.024
1	.525	.850	.096
2	.300	.850	.250 DIA THRU



5/64 x 45°
8 PLACES
3/32 x 45°
4 PLACES
R16 C7-1 R10
C8
R18 R17
K
R15 R9 C2
FT5
R1 C3 R3 R4 Q2 R7 C1 FT1 R8 C2 R2 R6 R12 R19 E C B FT6 R11 R14 R5 C4 C5 R13
1/16 R MAX.
2 PLACES
29/32
1 5/32
1
2
C14 R32 FT8 R30 R33 R24 C13 FT10 R38 FT2 R25 Q8 R31 B E R21 FT9 R26 R27 C10 C9 R34 R28 FT4 R29 Q5 R36 R37 C16 FT3 R35 OC7-2 C11 R20 R22
3/8
3/8
X
3/32
5/64
Y
19/64
2 PLACES
5/16
35/64
1 13/32
.015 +.003 -.003

MARK 1015718 & REV LETTER PER MIL-STD-130 (ES-267)

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

CHARACTERS & PATHS FOR MFG. REF. ONLY.

MARK PATHS AS SHOWN 1/64 WIDE.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

UNLESS OTHERWISE SPECIFIED: CHARACTERS TO BE 1/32 HIGH SAN-SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

SEE 1015718 SHEET 2 FOR PHOTOGRAPHIC MASTER

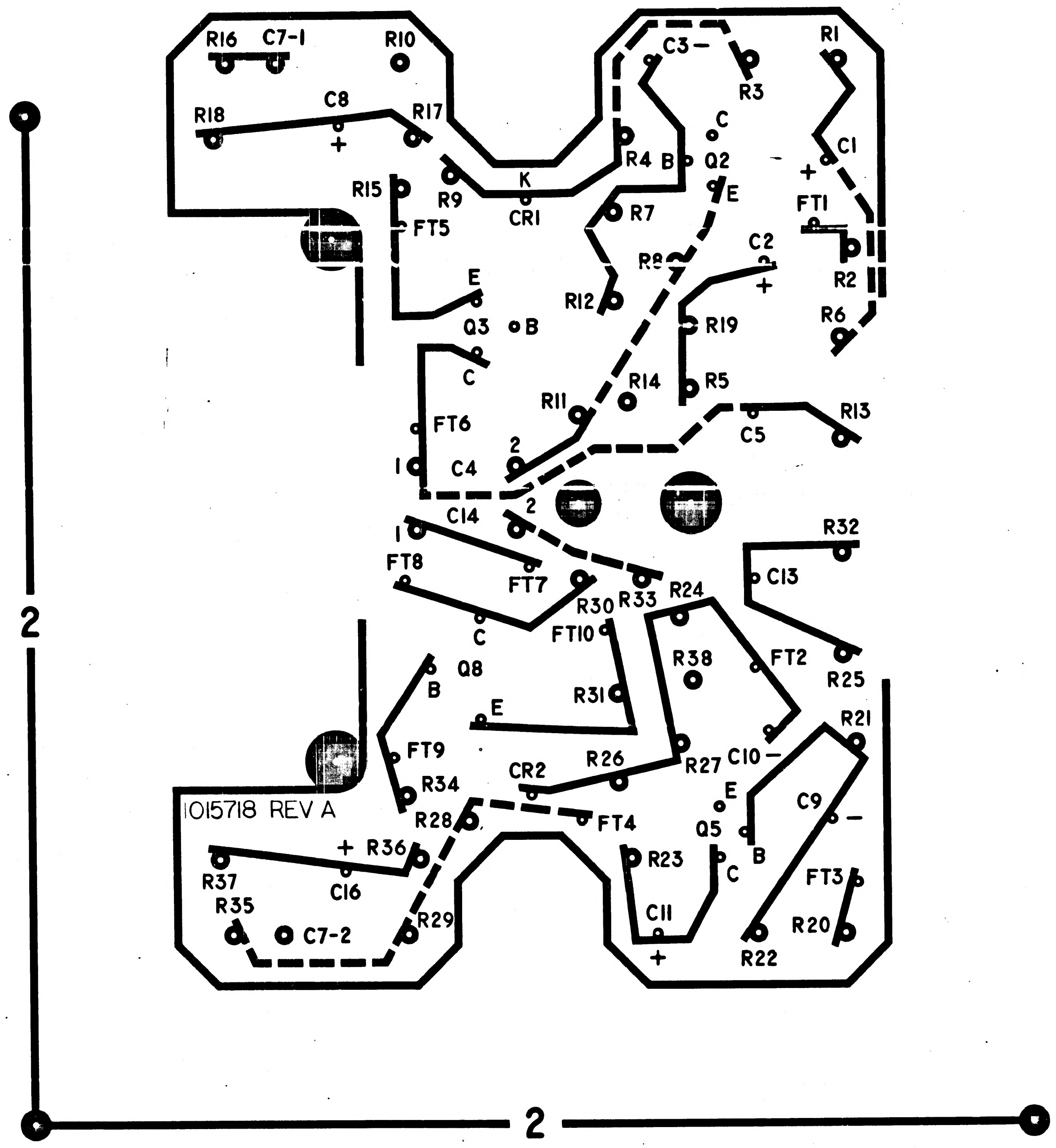
1015123		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±2° DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN Ozgeli DATE 26 APR 63 CHECKED Sayles 6 MAY 63 APPROVAL 7 MAY 63 APPROVAL 7 MAY 63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS WAFER - LOWER RESOLVER DRIVE AMPLIFIER
NEXT ASSY	USED ON	MATERIAL GLASS EPOXY MIL-P-18177, TYPE GEE (ES-2744)	NASA APPROVAL 5/14/63	CODE IDENT NO.	SIZE D	1015718
APPLICATION		CONTRACT	MIT APPROVAL 15 May 63	SCALE 4:1	SHEET 1 OF 2

Charleston 7-MAY-63

Bottolfson

INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		THIS SHEET ADDED 02862		8.28.63	EPR



R16
C7-1
R10
R18
C8
R17
R15
R9
K
CR1
FT5
E
Q3
B
C
FT6
1
C4
2
C14
FT8
FT7
C
Q8
B
E
FT9
R34
CR2
R28
R26
FT4
1015718 REV A
R36
R37
C16
R35
C7-2
R29
C3
R3
R1
C
R4
B
Q2
E
C1
FT1
R7
R8
C2
R2
R12
R6
R19
R14
R5
R11
C5
R13
R32
C13
R24
R30
R33
FT10
R38
FT2
R25
R31
R21
R27
C10
E
C9
Q5
B
R23
C
FT3
C11
R20
R22
2
2

REV A THIS SHEET ADDED

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

NEXT ASSY | USED ON
APPLICATION

AC SPARK PLUG DIVISION. GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 3 MAY63
CHECKED 6 MAY 63
APPROVAL 7 MAY63
APPROVAL 7 MAY63
NASA APPROVAL 8/28/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

WAFER LOWER,
RESOLVER DRIVE AMPLIFIER

CODE IDENT NO | SIZE D | 1015718
SCALE 8:1 | SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015718

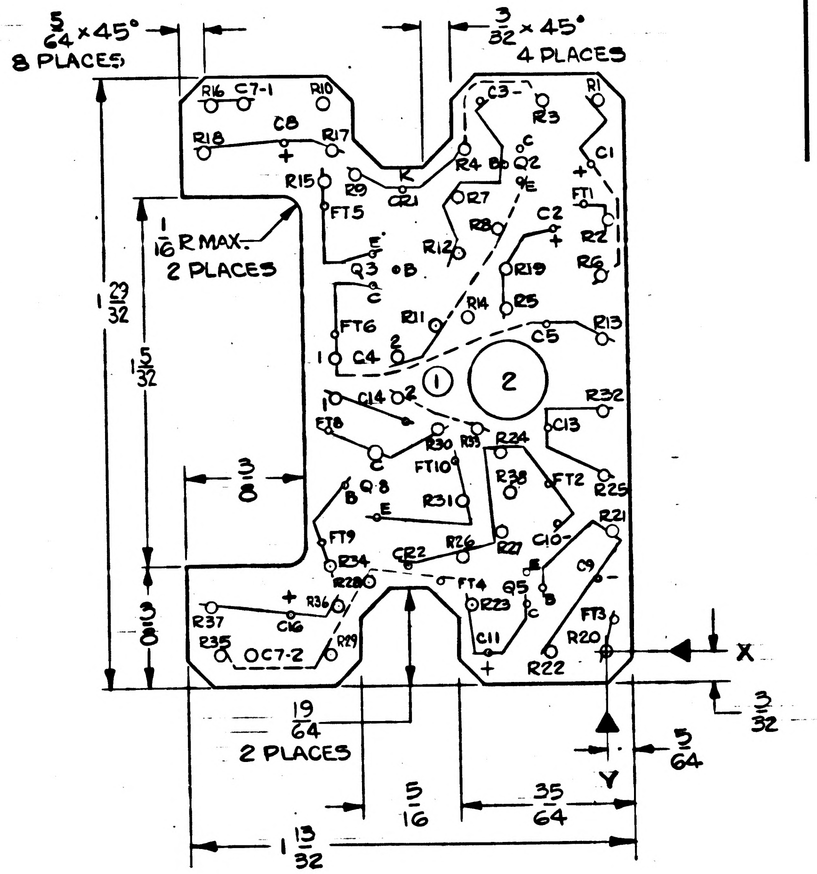
REVISIONS T DRR.224					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.

COORDINATE DIMENSIONS

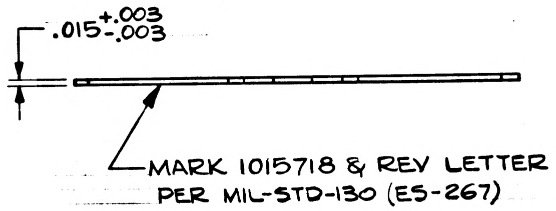
HOLE No.	COORDINATE X(HORIZ)	COORDINATE Y(VERT)	HOLE DESCRIPTION TOL. +.010 -.000
C1	.025	1.525	.024 DIA THRU
C2	.150	1.325	.024
C3	.375	1.725	.024
C4-1	.650	.925	.043
C4-2	.850	.925	.043
C5	.175	1.025	.024
C7-1	1.125	1.725	.043
C7-2	1.125	.000	.043
C8	1.000	1.600	.024
C9	.025	.225	
C10	.150	.400	
C11	.375	.000	
C13	.175	.700	.024
C14-1	.650	.800	.043
C14-2	.850	.800	.043
C16	1.000	.125	.024
CR1	.625	1.450	
CR2	.625	.275	
Q2B	.300	1.525	
Q2C	.250	1.575	
Q2E	.250	1.475	
Q3B	.650	1.200	
Q3C	.725	1.150	
Q3E	.725	1.250	
Q5B	.200	.200	
Q5C	.250	.150	
Q5E	.250	.250	
Q8B	.825	.525	.024
Q8C	.725	.625	.052
Q8E	.725	.425	.024
R1	.000	1.725	.043
R2	-.025	1.350	
R3	.175	1.725	
R4	.425	1.575	
R5	.300	1.075	
R6	.000	1.175	
R7	.450	1.425	
R8	.325	1.325	
R9	.775	1.500	
R10	.875	1.725	
R11	.525	1.025	.043 DIA THRU

COORDINATE DIMENSIONS

HOLE No.	COORDINATE X(HORIZ)	COORDINATE Y(VERT)	HOLE DESCRIPTION TOL. +.010 -.000
R12	.450	1.250	.043 DIA THRU
R13	.000	.975	
R14	.425	1.050	
R15	.875	1.475	
R16	1.225	1.725	
R17	.850	1.575	
R18	1.250	1.575	
R19	.300	1.200	
R20	.000	.000	
R21	-.025	.375	
R22	.175	.000	
R23	.425	.150	
R24	.325	.625	
R25	.000	.550	
R26	.450	.300	
R27	.325	.375	
R28	.750	.225	
R29	.875	.000	
R30	.525	.700	
R31	.450	.475	
R32	.000	.750	
R33	.400	.700	
R34	.875	.275	
R35	1.225	.000	
R36	.850	.150	
R37	1.250	.150	
R38	.300	.500	.043
FT1	.050	1.400	.024
FT2	.175	.525	
FT3	-.025	.100	
FT4	.525	.225	
FT5	.875	1.400	
FT6	.850	1.000	
FT7	.625	.725	
FT8	.875	.700	
FT9	.900	.350	
FT10	.475	.600	.024
1	.525	.850	.096
2	.300	.850	.250 DIA THRU



5/64 × 45°
8 PLACES
3/32 × 45°
4 PLACES
R16
C7-1
R10
C3
R3
R1
R18
C8
R17
R4
B
Q2
C
E
C1
R15
R9
K
CR1
R7
FT1
FT5
C2
R8
R2
1/16 R MAX.
2 PLACES
E
Q3
B
R12
R19
R6
C
R11
R14
R5
R13
FT6
C5
1
C4
2
1
2
C14
R32
FT8
C13
R30
R33
R24
C
FT10
R38
FT2
R25
Q8
B
E
R31
R21
FT9
R26
R27
C10
R34
CR2
E
C9
R28
FT4
Q5
B
C
R36
R23
R37
C16
FT3
R35
C7-2
R29
C11
R20
R22
X
Y
1 29/32
1 5/32
3/8
3/8
3/32
19/64
2 PLACES
5/64
5/16
35/64
1 13/32



MARK 1015718 & REV LETTER PER MIL-STD-130 (ES-267)

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

CHARACTERS & PATHS FOR MFG. REF. ONLY.

MARK PATHS AS SHOWN 1/64 WIDE.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

UNLESS OTHERWISE SPECIFIED: CHARACTERS TO BE 1/32 HIGH SAN-SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

NEXT ASSY	USED ON
1015123	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ 1/64	+.005	+2°
- 1/64	-.005	-2°

DO NOT SCALE THIS DRAWING

MATERIAL GLASS EPOXY MIL-P-18177, TYPE GEE (ES-2744)

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Ozgel DATE 26 APR 63
CHECKED J. Saylor 6 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 5/15/63
MIT APPROVAL W Kupfer 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER - LOWER
RESOLVER DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015718
SCALE 4:1
SHEET

Charleston 7-MAY-63

BOTTOLFSON

INCHES
2
PHOTOGRAPHIC SCALE ONLY

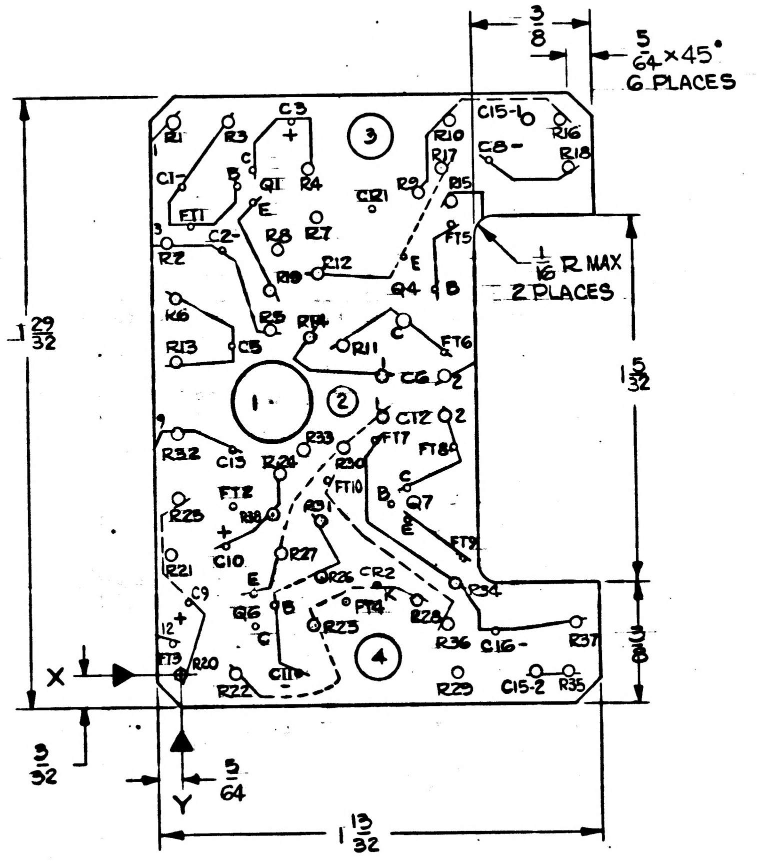
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.

COORDINATE DIMENSIONS

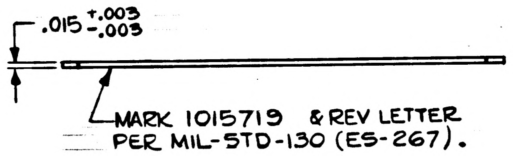
HOLE No.	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
C1	.025	1.525	.024 DIA. THRU
C2	.150	1.325	
C3	.375	1.725	
C5	.175	1.025	.024
C6-1	.650	.925	.043
C6-2	.850	.925	.043
C8	1.000	1.600	.024
C9	.025	.225	
C10	.150	.400	
C11	.375	.000	.024
C12-1	.650	.800	.043
C12-2	.850	.800	.043
C13	.175	.700	.024
C15-1	1.125	1.725	.043
C15-2	1.125	.000	.043
C16	1.000	.125	.024
CR1	.625	1.450	
CR2	.625	.275	
Q1B	.200	1.525	
Q1C	.250	1.575	
Q1E	.250	1.475	
Q4B	.825	1.200	.024
Q4C	.725	1.100	.052
Q4E	.725	1.300	.024
Q6B	.300	.200	
Q6C	.250	.150	
Q6E	.250	.250	
Q7B	.675	.525	
Q7C	.725	.575	
Q7E	.725	.475	
R1	.000	1.725	.043
R2	-.025	1.350	
R3	.175	1.725	
R4	.425	1.575	
R5	.300	1.075	.043 DIA THRU

COORDINATE DIMENSIONS

HOLE No.	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
R6	.000	1.175	.043 DIA. THRU
R7	.450	1.425	
R8	.325	1.325	
R9	.775	1.500	
R10	.875	1.725	
R11	.525	1.025	
R12	.450	1.250	
R13	.000	.975	
R14	.425	1.050	
R15	.875	1.475	
R16	1.225	1.725	
R17	.850	1.575	
R18	1.250	1.575	
R19	.300	1.200	
R20	.000	.000	
R21	-.025	.375	
R22	.175	.000	
R23	.425	.150	
R24	.325	.625	
R25	.000	.550	
R26	.450	.300	
R27	.325	.375	
R28	.750	.225	
R29	.875	.000	
R30	.525	.700	
R31	.450	.475	
R32	.000	.750	
R33	.400	.700	
R34	.875	.275	
R35	1.225	.000	
R36	.850	.150	
R37	1.250	.150	
R38	.300	.500	.043
FT1	.050	1.400	.024
FT2	.175	.525	
FT3	-.025	.100	
FT4	.525	.225	
FT5	.875	1.400	
FT6	.850	1.000	
FT7	.625	.725	
FT8	.875	.700	
FT9	.900	.350	
FT10	.475	.600	.024
1	.300	.850	.250
2	.525	.850	.096
3	.625	1.675	.156
4	.625	.050	.156 DIA THRU



3/8
5/64 × 45°
6 PLACES
1/16 R MAX
2 PLACES
1 29/32
1 5/32
3/8
X
Y
3/32
5/64
1 13/32
C3
C15-1
C8
R1
R3
Q1
R4
CR1
R9
R10
R17
R16
R18
R5
C1
FT1
C2
R8
R7
FT5
R2
R19
R12
Q4
K6
R5
R14
R13
C5
R11
FT6
C6
1
2
3
4
C12
FT7
FT8
R32
C13
R24
R33
R30
FT10
FT2
R38
R31
Q7
R25
R27
FT9
C10
R21
R26
CR2
FT4
R34
C9
Q6
R23
R28
R36
C16
R37
FT3
R20
R22
C11
R29
C15-2
R35



MARK 1015719 & REV LETTER PER MIL-STD-130 (ES-267).

INTERPRET DWG. IN ACCORDANCE WITH STDS PER MIL-D-70327.

CHARACTERS & PATHS FOR MFG REF ONLY.

MARK PATHS AS SHOWN 1/64 WIDE.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

UNLESS OTHERWISE SPECIFIED: CHARACTERS TO BE 1/32 HIGH SAN-SERIF GOTHIC, LOCATE APPROX. AS SHOWN.

1015123	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +1/64 -1/64
DECIMALS +.005 -.005
ANGLES +2° -2°
DO NOT SCALE THIS DRAWING

MATERIAL GLASS EPOXY MIL-P-18177, TYPE GEE (ES-2744)

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Oezel DATE 23 APR 63
CHECKED Tayler 7 MAY 63
APPROVAL 7 MAY 63
APPROVAL 7 MAY 63
NASA APPROVAL 5/15/63
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER - UPPER RESOLVER DRIVE AMPLIFIER

CODE IDENT NO.
SIZE D
1015719
SCALE 4:1
SHEET

Charleston 7-MAY-63

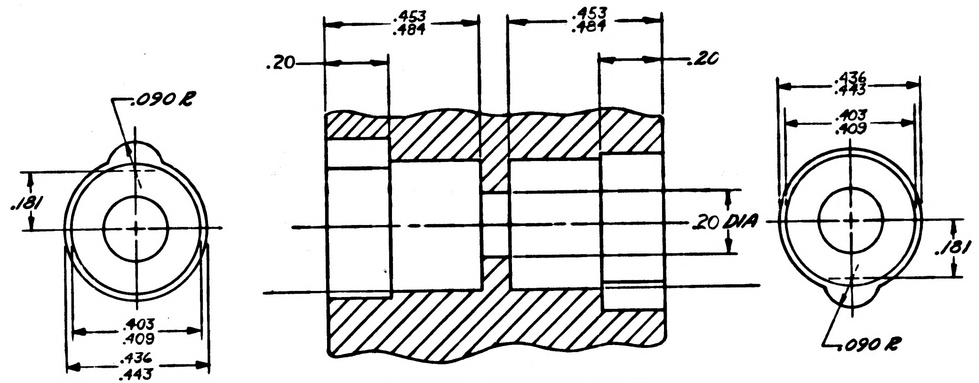
Bottolfson

INCHES
PHOTOGRAPHIC SCALE ONLY

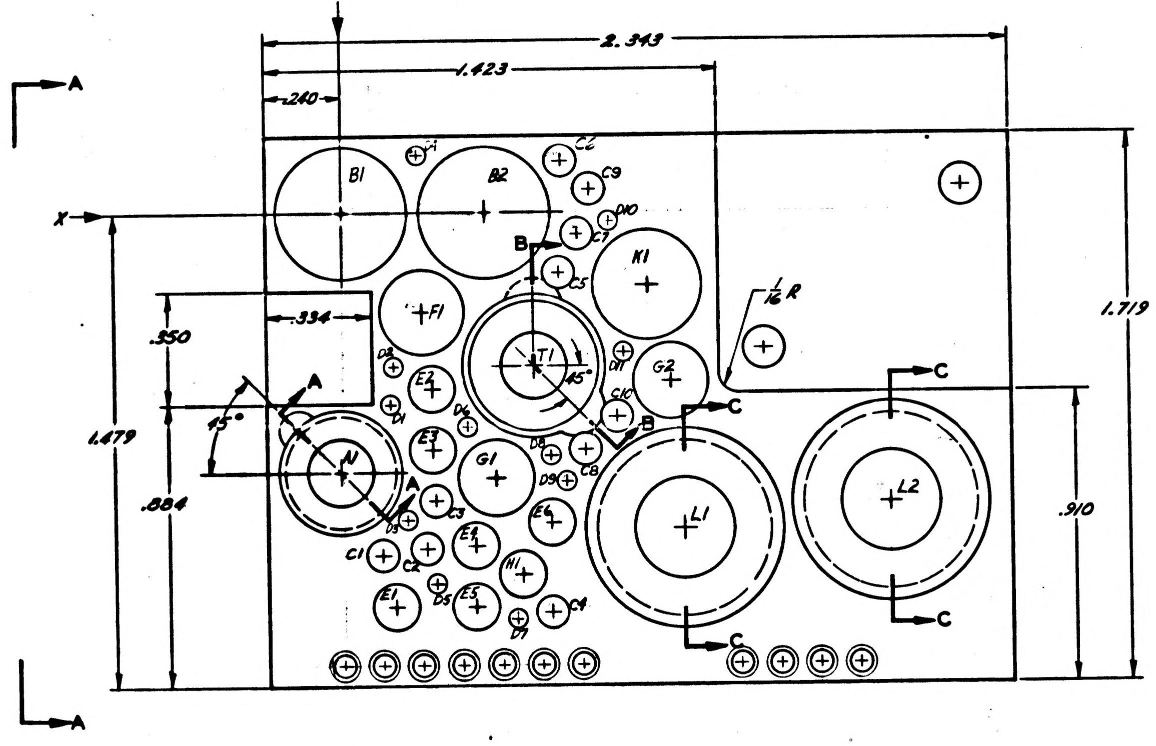
1015720 C

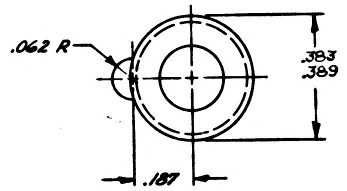
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
C		REVISED PER TDRR		5-23-63	

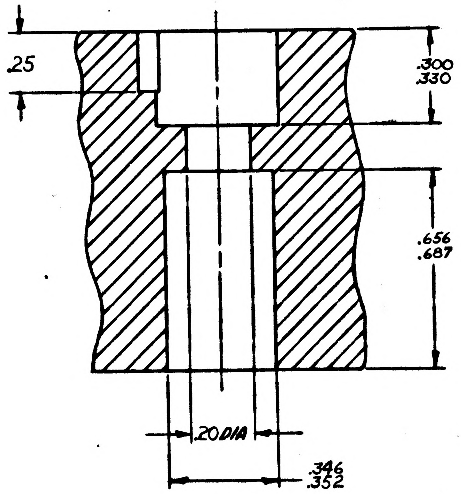
HOLE IDENT	X BASIC DIM	Y BASIC DIM	⊕ DIA	HOLE DIA	QTY
A1	-.010	.810	.006	SEE SECTION A-A	1
B1	.000	.000	.006	.419 .426	2
B2	.450	.000			
C1	.120	1.070	.006	.100 .104	10
C2	.260	1.050			
C3	.290	.910			
C4	.650	1.250			
C5	.650	.190			
C6	.690	-.160			
C7	.740	.070			
C8	.760	.740			
C9	.790	-.070			
C10	.860	.640			
D1	.150	.600	.006	.058 .062	11
D2	.160	.480			
D3	.200	.960			
D4	.240	-.180			
D5	.290	1.160			
D6	.390	.670			
D7	.540	1.270			
D8	.650	.760			
D9	.700	.840			
D10	.840	.030			
D11	.880	.440			
E1	.160	1.230	.006	.146 .150	6
E2	.280	.550			
E3	.280	.740			
E4	.410	1.040			
E5	.410	1.230			
E6	.650	.370			
F1	.260	.320	.006	.275 .282	1
G1	.480	.830	.006	.208 .212	2
G2	1.030	.530			
H1	.560	1.130	.006	.110 .114	1
J1	.600	.480	.006	SEE SECTION B-B	1
K1	.960	.230	.006	.330 .337	1
L1	1.070	.990	.006	SEE SECTION C-C	2
L2	1.720	.910			



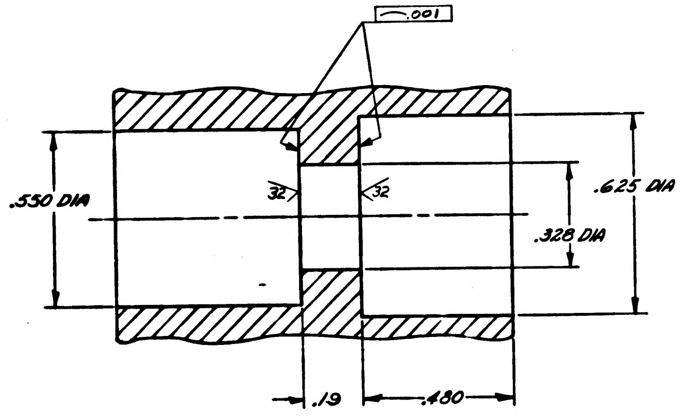
PARTIAL SECTION B-B







PARTIAL SECTION A-A
ROTATED 45° CCW



PARTIAL SECTION C-C
2 PLACES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIAMETERS IN CHART TO BE TRUE POSITIONED WITHIN .006 DIA.

ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

1▷ INSTALL, ITEM 2 PER MS33646 EXCEPT DIM "F" TO BE .594. BREAK OFF TANGS.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

MUST BE FREE FROM BURRS.

UNLESS OTHERWISE SPECIFIED:

SURFACE ROUGHNESS MUST NOT EXCEED 125√.

ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.

FINISH: ANODIZE PER MIL-M-3171A TYPE II EXCEPT THREADED HOLES

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	NAS1222-06E	INSERT, SCREW LOCKING
1	1	1015720-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007044	1007044

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	±.005	+1°
-	±.02	-1°

DO NOT SCALE THIS DRAWING

MATERIAL MAG ALLOY ZK-60A-T5 PER QQ-M-31A

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN C. M. Kuhn DATE 30 APR 63
CHECKED 10 MAY 63
APPROVAL 11 MAY 63
APPROVAL 24 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER 1% 3200 CPS
(INSEP ASSY)

CODE IDENT NO.
SIZE E
1015720
SCALE 5/1
SHEET 1 OF 2

1015720 C

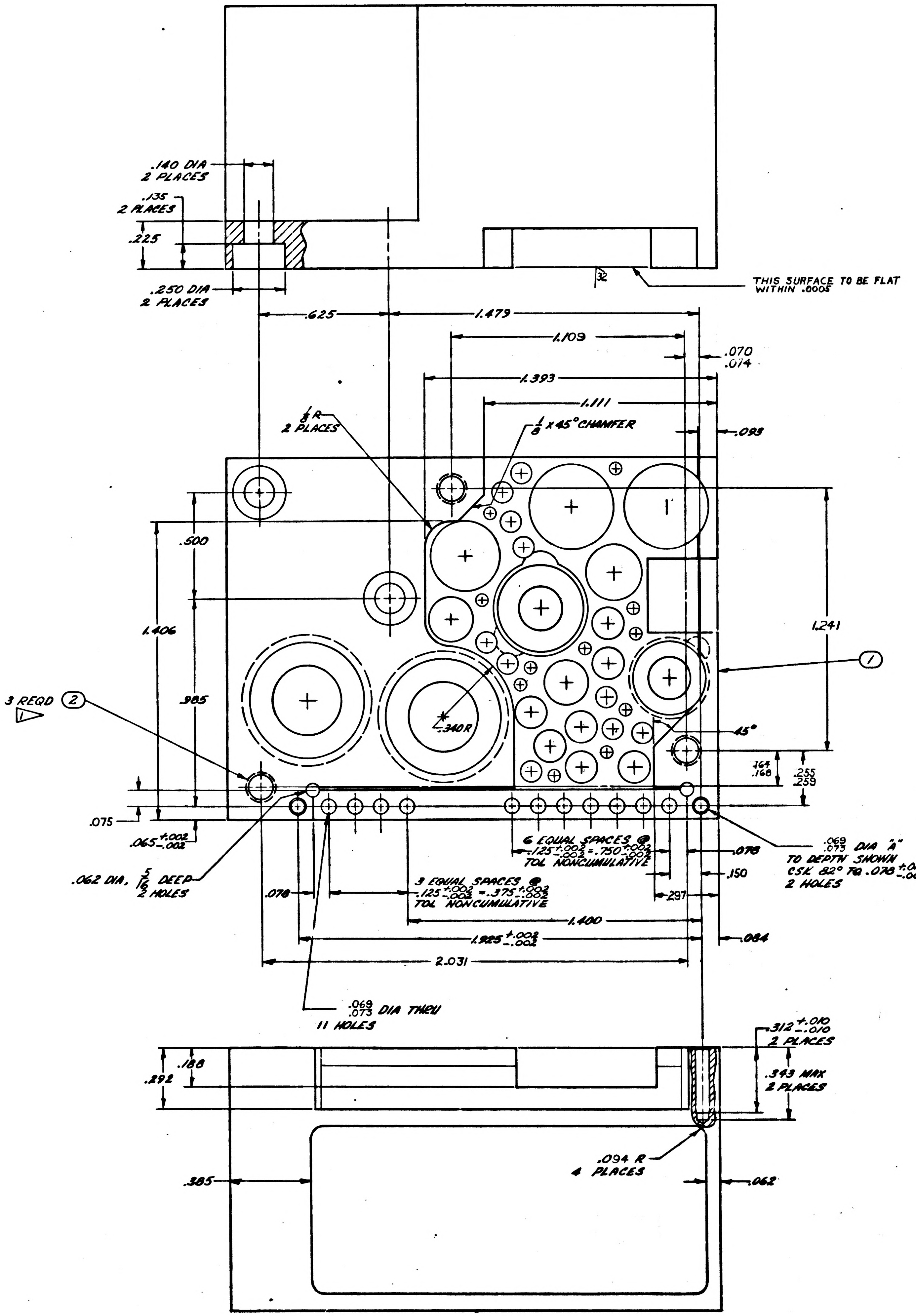
1015720 SHEET 1 OF 2

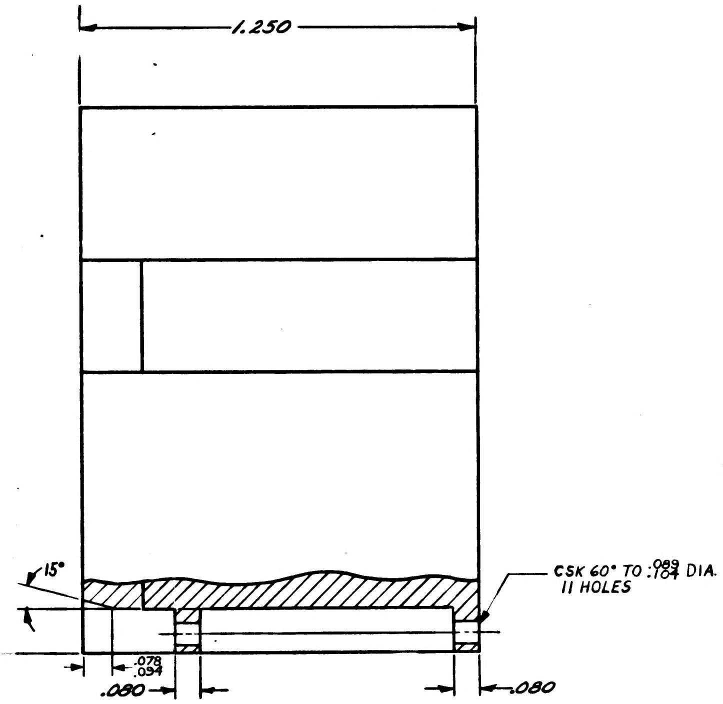
INCHES
PHOTOGRAPHIC SCALE ONLY

1015720	C

REVISIONS TDRR C1457

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
C		REVISED PER TDRR		5-23-63	


.140 DIA
2 PLACES
.135
2 PLACES
.225
.250 DIA
2 PLACES
32
THIS SURFACE TO BE FLAT WITHIN .0005
.625
1.479
1.109
.070
.074
1.393
1.111
.093
1/8 R
2 PLACES
1/8 x 45° CHAMFER
.500
1.406
.985
1.241
1
3 REQD 2
1
.340R
45°
.164
.168
.255
.259
.075
.065 +.002 -.002
.062 DIA, 5/16 DEEP
2 HOLES
6 EQUAL SPACES @ .125 +.002 -.002 = .750 +.002 -.002
TOL NONCUMULATIVE
3 EQUAL SPACES @ .125 +.002 -.002 = .375 +.002 -.002
TOL NONCUMULATIVE
.078
.078
.150
.297
1.400
1.925 +.002 -.002
2.031
.084
.069
.073 DIA "A"
TO DEPTH SHOWN
CSK 82° TO .078 +.015 -.000 DIA "A"
2 HOLES
.069
.073 DIA THRU
11 HOLES
.312 +.010 -.010
2 PLACES
.343 MAX
2 PLACES
.188
.292
.094 R
4 PLACES
.385
.062


1.250
15°
CSK 60° TO .089/.104 DIA.
11 HOLES
.078
.094
.080
.080

VIEW A-A

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN C. M. Kulp DATE 30 APR 63
CHECKED 10 MAY 63
APPROVAL 11 MAY 63
APPROVAL 24 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

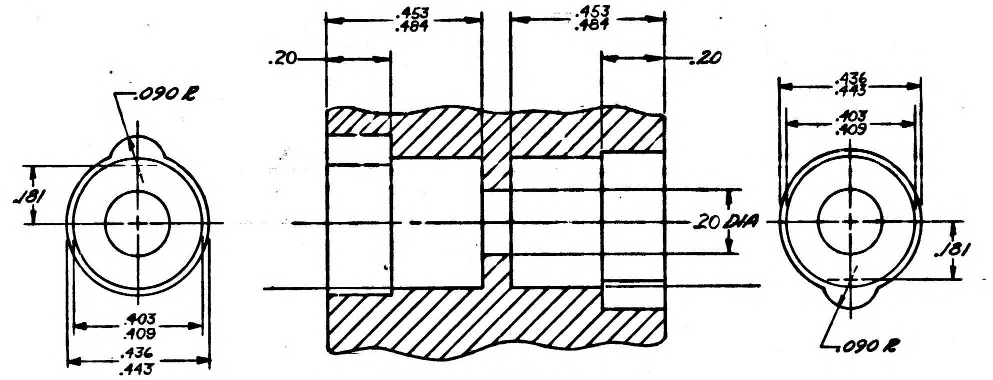
HEATSINK
AMPLIFIER 1% 3200 CPS
(INSEP ASSY)

CODE IDENT NO.
SIZE E
1015720
SCALE 5/1
SHEET 2 OF 2

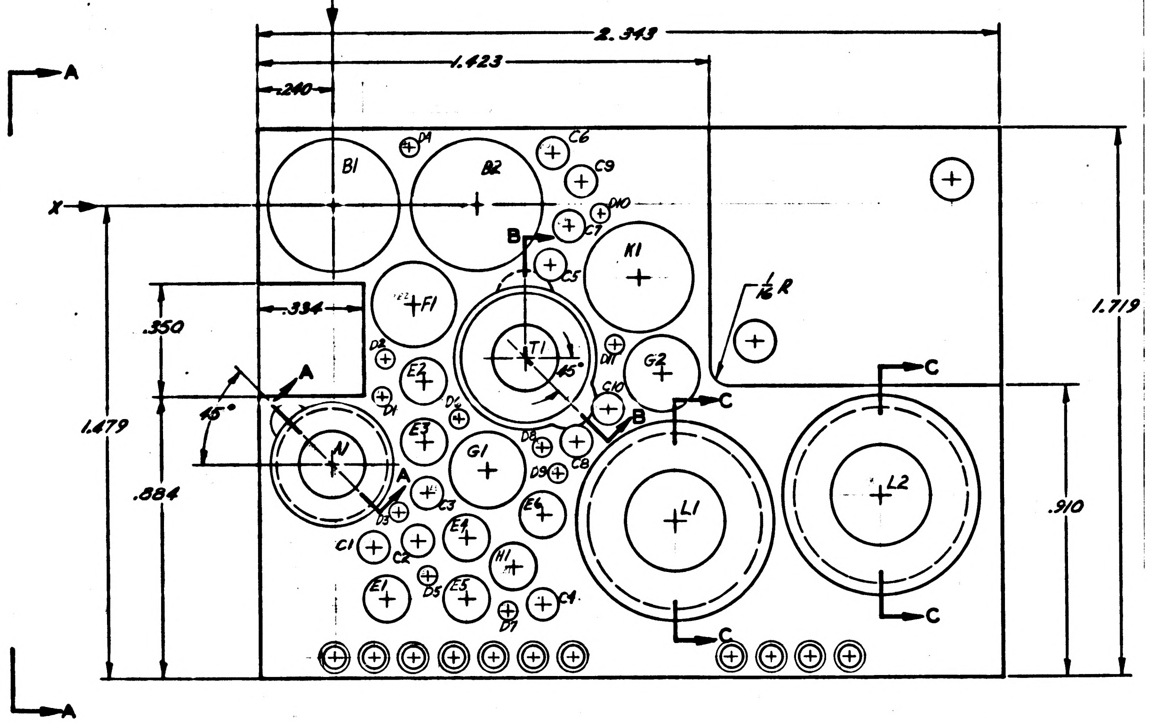
REVISIONS TDRR 01409					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REVISED PER TDRR		5-23-63	
D		REVISED PER TDRR 02999		9-5-??	
E		REVISED PER TDRR 02998		9-5-??	

E 1015720

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⊕ DIA	HOLE DIA	QTY
A1	-.010	.810	.006	SEE SECTION A-A	1
B1	.000	.000	.006	.419 .426	2
B2	.450	.000			
C1	.120	1.070	.006	.100 .104	10
C2	.260	1.050			
C3	.290	.900			
C4	.650	1.250			
C5	.680	.190			
C6	.690	-.160			
C7	.740	.070			
C8	.760	.740			
C9	.780	-.070			
C10	.860	.640			
D1	.150	.600	.006	.058 .062	11
D2	.160	.480			
D3	.200	.960			
D4	.240	-.180			
D5	.290	1.160			
D6	.390	.670			
D7	.540	1.270			
D8	.650	.760			
D9	.700	.840			
D10	.840	.030			
D11	.880	.440			
E1	.160	1.230	.006	.146 .150	6
E2	.280	.550			
E3	.280	.740			
E4	.410	1.040			
E5	.410	1.230			
E6	.650	.970			
F1	.260	.320	.006	.275 .282	1
G1	.480	.830	.006	.233 .237	2
G2	1.030	.530			
H1	.560	1.130	.006	.110 .114	1
J1	.600	.480	.006	SEE SECTION B-B	1
K1	.960	.230	.006	.330 .337	1
L1	1.070	.990	.006	SEE SECTION C-C	2
L2	1.720	.910			


.090 R
.181
.403
.408
.436
.443
.20
.453
.484
.453
.484
.20
.20 DIA
.436
.443
.403
.409
.181
.090 R

PARTIAL SECTION B-B


Y
X
A
A
2.343
1.423
.240
.334
.350
1.479
.884
1.719
.910
45°
45°
1/16 R
B
B
C
C
C
C
B1
B2
F1
G1
G2
K1
J1
L1
L2
H1
E1
E2
E3
E4
E5
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

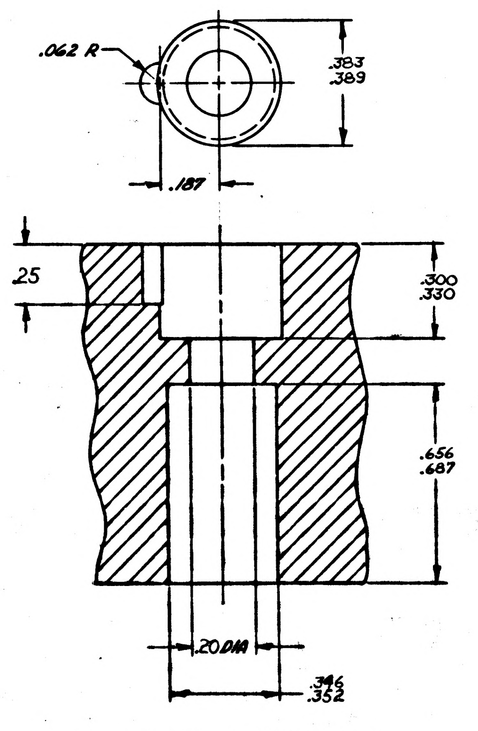
COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

1 INSTALL, ITEM 2 PER MS33646 EXCEPT DIM "F" TO BE .594. BREAK OFF TANGS.

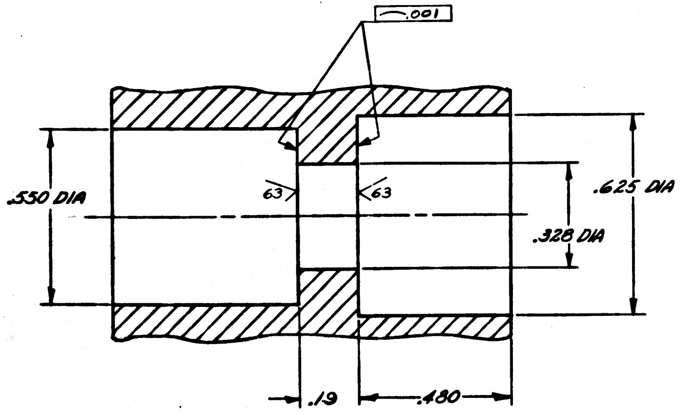
DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

MUST BE FREE FROM BURRS.

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.
FINISH: ANODIZE PER MIL-M-3171A TYPE IV
EXCEPT THREADED HOLES


.062 R
.383
.389
.187
.25
.300
.330
.656
.687
.20 DIA
.346
.352

PARTIAL SECTION A-A
ROTATED 45° CCW


.001
.550 DIA
63
63
.328 DIA
.625 DIA
.19
.480

PARTIAL SECTION C-C
2 PLACES

2	3	MS 21209-C0620	INSERT, SCREW LOCKING
1	1	1015720-1	HEATSINK
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

1007044	1007044
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS ±.005 ±.02 ANGLES +1° −1°
DO NOT SCALE THIS DRAWING
MATERIAL MAG ALLOY ZK-60A-T5 PER QQ-M-31A
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN C. M. Kulp DATE 30 APR 63
CHECKED 10 MAY 63
APPROVAL 11 MAY 63
APPROVAL A. R. 24 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER 1% 3200 CPS
(INSEP ASSY)

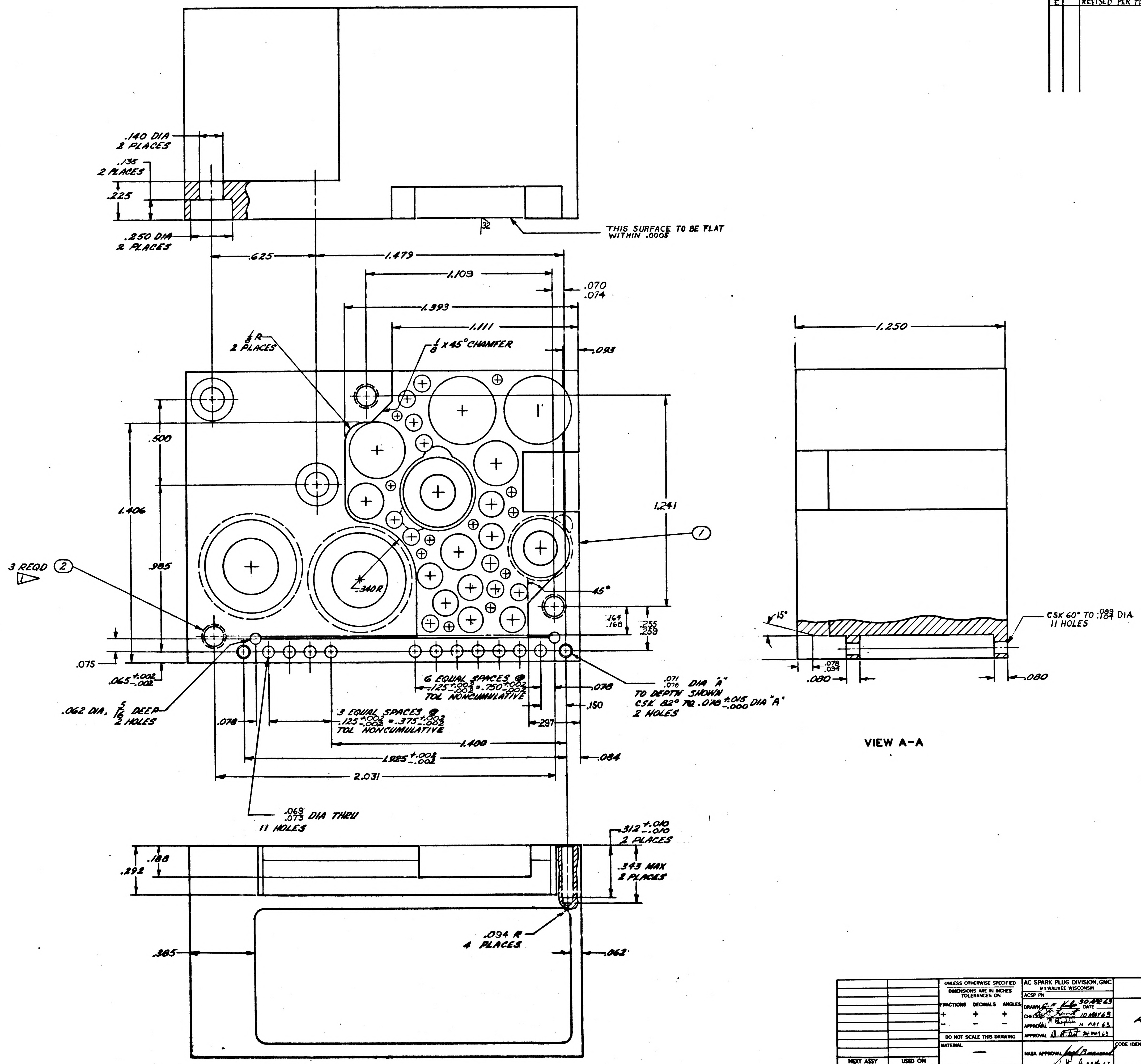
CODE IDENT NO. SIZE E 1015720
SCALE 5/1 SHEET 1 OF 2

E 1015720 B

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

1015720 E

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
		REVISIONS TDRR 01407			
C		REVISED PER TDRR		5-23-63	rd
D		REVISED PER TDRR 02999			RPL wk
E		REVISED PER TDRR 02998			wc



.140 DIA
2 PLACES
.135
2 PLACES
.225
.250 DIA
2 PLACES
32
THIS SURFACE TO BE FLAT WITHIN .0005
.625
1.479
1.109
.070
.074
1.393
1.111
1/8 R
2 PLACES
1/8 x 45° CHAMFER
.093
.500
1.406
.985
1.241
①
3 REQD ②
.340R
45°
.164
.168
.255
.259
.075
.065 +.002 -.002
.062 DIA, 5/16 DEEP
2 HOLES
6 EQUAL SPACES @ .125 +.002 -.002 = .750 +.002 -.002
TOL NONCUMULATIVE
3 EQUAL SPACES @ .125 +.002 -.002 = .375 +.002 -.002
TOL NONCUMULATIVE
.071
.076 DIA "A"
TO DEPTH SHOWN
CSK 82° TO .078 +.015 -.000 DIA "A"
2 HOLES
.078
.078
.150
.297
1.400
1.925 +.002 -.002
.084
2.031
.069
.073 DIA THRU
11 HOLES
.312 +.010 -.010
2 PLACES
.343 MAX
2 PLACES
.188
.292
.094 R
4 PLACES
.385
.062
1.250
15°
CSK 60° TO .089 .104 DIA.
11 HOLES
.078
.094
.080
.080
VIEW A-A

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+	+
−	−	−

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN C.M. Kulp 30 APR 63 DATE
CHECKED 10 MAY 63
APPROVAL 11 MAY 63
APPROVAL 24 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

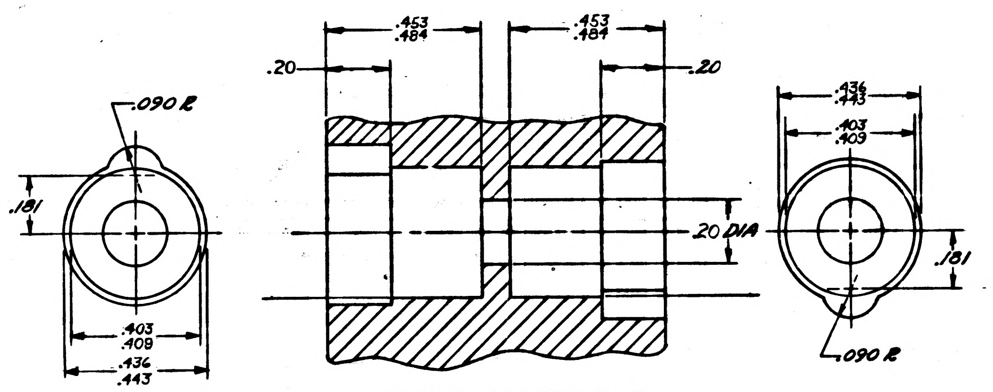
HEATSINK
AMPLIFIER 1% 3200 CPS
(INSEP ASSY)

CODE IDENT NO.
SIZE E
1015720
SCALE 5/1
SHEET 2 OF 2

1015720 E B

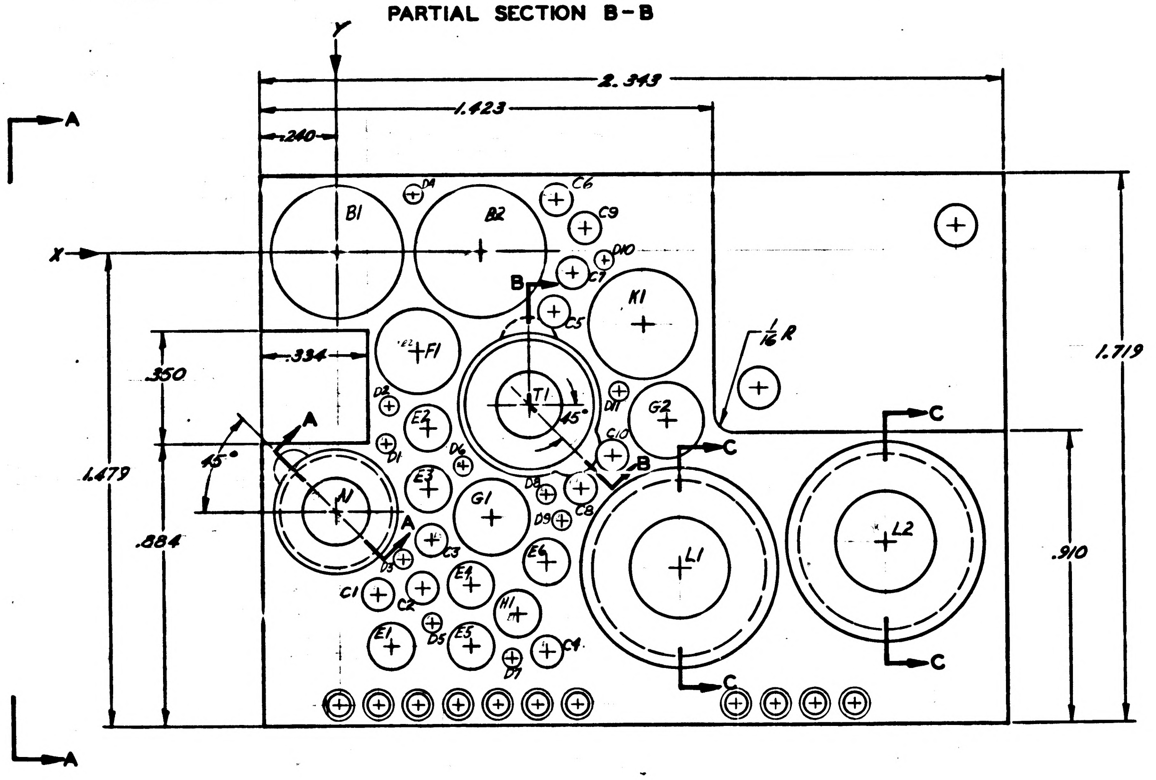
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

HOLE IDENT	X BASIC DIM	Y BASIC DIM	⊕ DIA	HOLE DIA	QTY
A1	-.010	.810	.006	SEE SECTION A-A	1
B1	.000	.000	.006	.419 .426	2
B2	.450	.000			
C1	.120	1.070	.006	.100 .104	10
C2	.260	1.050			
C3	.290	.900			
C4	.650	1.250			
C5	.680	.190			
C6	.690	-.160			
C7	.740	.070			
C8	.760	.740			
C9	.780	-.070			
C10	.860	.640			
D1	.150	.600	.006	.058 .062	11
D2	.160	.480			
D3	.200	.960			
D4	.240	-.180			
D5	.290	1.160			
D6	.390	.670			
D7	.540	1.270			
D8	.650	.760			
D9	.700	.840			
D10	.840	.030			
D11	.880	.440			
E1	.160	1.230	.006	.146 .150	6
E2	.280	.550			
E3	.280	.740			
E4	.410	1.040			
E5	.410	1.230			
E6	.650	.970			
F1	.260	.320	.006	.275 .282	1
G1	.480	.830	.006	.233 .237	2
G2	1.030	.530			
H1	.560	1.130	.006	.110 .114	1
J1	.600	.480	.006	SEE SECTION B-B	1
K1	.960	.230	.006	.330 .337	1
L1	1.070	.990	.006	SEE SECTION C-C	2
L2	1.720	.910			



.090 R
.181
.403
.409
.436
.443
.453
.484
.20
.20 DIA
.436
.443
.403
.409
.181
.090 R

PARTIAL SECTION B-B



Y
X
A
A
2.343
1.423
.240
.334
.350
1.479
.884
1.719
.910
45°
B1
B2
K1
F1
T1
G1
G2
N
L1
L2
H1
E1
E2
E3
E4
E5
E6
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
B
B
C
C
C
C
1/16 R

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

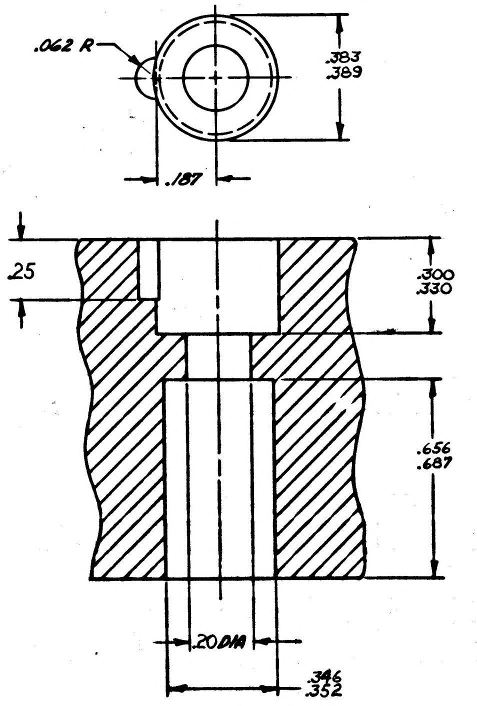
1 INSTALL, ITEM 2 PER MS33646
EXCEPT DIM "F" TO BE .594. BREAK OFF TANGS.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

MUST BE FREE FROM BURRS.

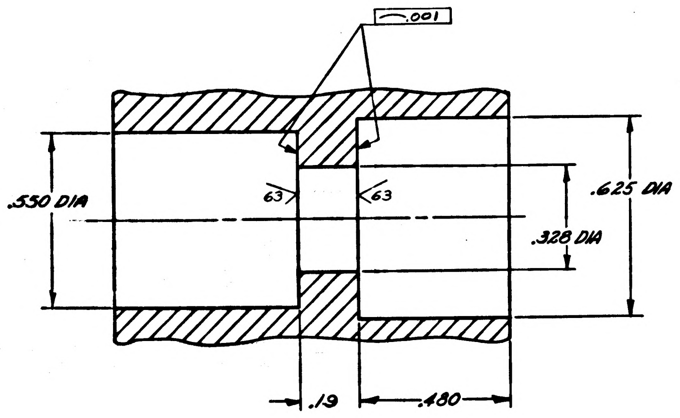
UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.

FINISH: ANODIZE PER MIL-M-3171A TYPE II
EXCEPT THREADED HOLES



.062 R
.383
.389
.187
.25
.300
.330
.656
.687
.20 DIA
.346
.352

PARTIAL SECTION A-A
ROTATED 45° CCW



.001
.550 DIA
63
63
.625 DIA
.328 DIA
.19
.480

PARTIAL SECTION C-C
2 PLACES

1015720 G

REVISIONS TDRR 01407					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REVISED PER TDRR		5-23-63	
D		REVISED PER TDRR 02979			
E		REVISED PER TDRR 02998			
F		REVISED PER TDRR 03851			
G		REVISED PER TDRR 03852			

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW LOCKING
1	1	1015720-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007044	1007044

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	±.005	+1°
-	±.02	-1°

DO NOT SCALE THIS DRAWING

MATERIAL MAG ALLOY ZK-60A-T5 PER QQ-M-31A

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN C. M. Kulo DATE 30 APR 63
CHECKED 10 MAY 63
APPROVAL 11 MAY 63
APPROVAL A. R. 24 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER 1% 3200 CPS
(INSEP ASSY)

CODE IDENT NO.
SIZE E
1015720

SCALE 5/1
SHEET 1 OF 2

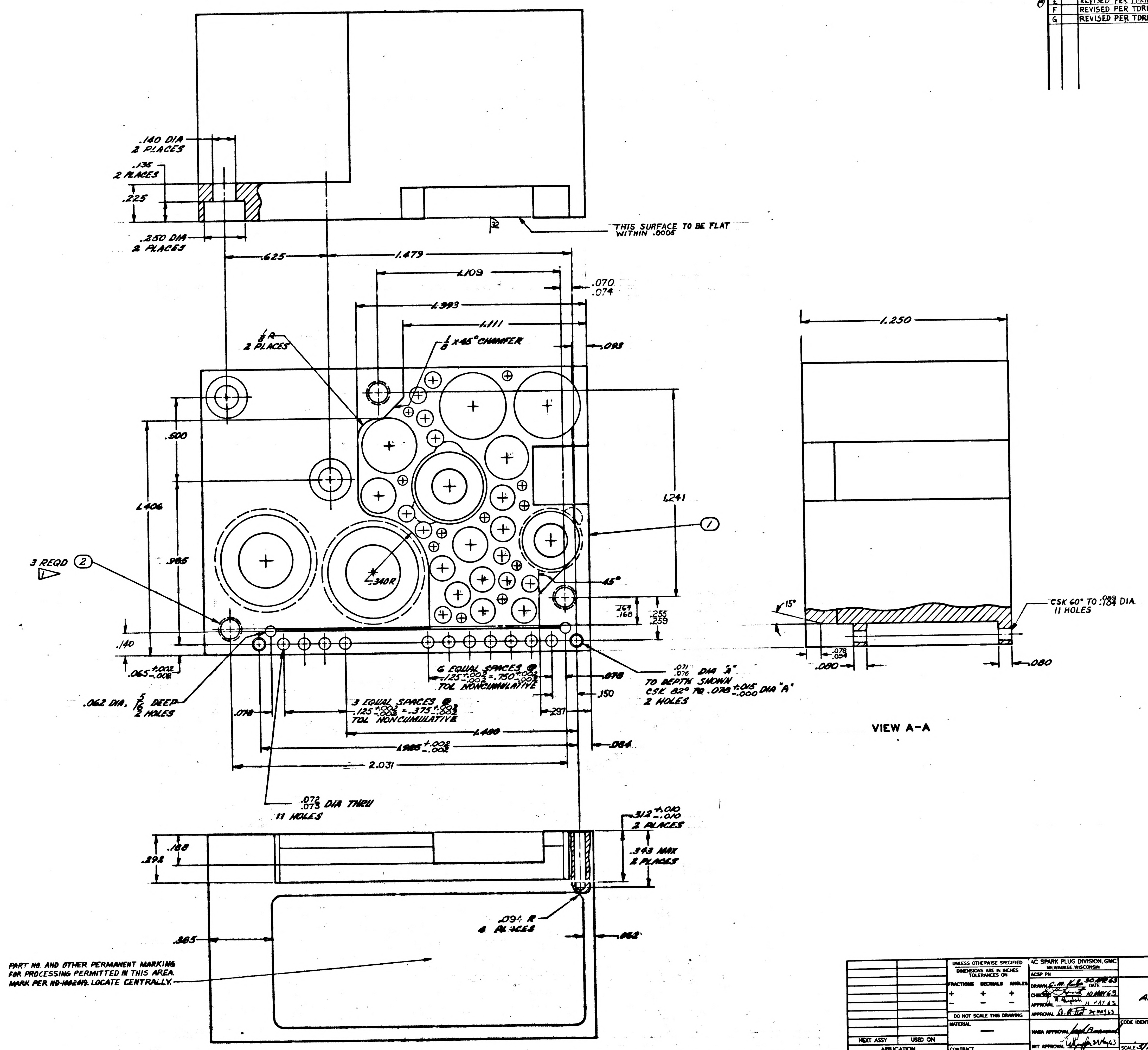
1015720 G

INCHES
PHOTOGRAPHIC SCALE ONLY

1015720	G

REVISIONS TDRR 01407

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REVISED PER TDRR		5-23-63	
D		REVISED PER TDRR 02999		9-5-63 RPK	WK
E		REVISED PER TDRR 02998		9-5-63	WK
F		REVISED PER TDRR 03851		10-15-63 LL	WK
G		REVISED PER TDRR 03852		10-15-63 LL	WK


.140 DIA
2 PLACES
.135
2 PLACES
.225
.250 DIA
2 PLACES
32
THIS SURFACE TO BE FLAT WITHIN .0005
.625
1.479
1.109
.070
.074
1.393
1.111
.093
1/8 R
2 PLACES
1/8 X 45° CHAMFER
.500
1.406
.985
1.241
1
3 REQD 2
1
.340R
45°
.164
.168
.255
.259
.140
.065 +.002 -.002
.062 DIA, 5/16 DEEP
2 HOLES
6 EQUAL SPACES @ .125 +.002 -.002 = .750 +.002 -.002
TOL NONCUMULATIVE
.078
.150
.071
.076 DIA "A"
TO DEPTH SHOWN
CSK 82° TO .078 +.015 -.000 DIA "A"
2 HOLES
.078
3 EQUAL SPACES @ .125 +.002 -.002 = .375 +.002 -.002
TOL NONCUMULATIVE
.297
1.400
1.985 +.002 -.002
.084
2.031
.072
.073 DIA THRU
11 HOLES
.312 +.010 -.010
2 PLACES
.343 MAX
2 PLACES
.188
.292
.094 R
4 PLACES
.385
.062
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA. MARK PER NO 1002019. LOCATE CENTRALLY.
1.250
15°
CSK 60° TO .089 .104 DIA.
11 HOLES
.078
.094
.080
.080

VIEW A-A

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN C. M. Kulp 30 APR 63 DATE
CHECKED 10 MAY 63
APPROVAL 11 MAY 63
APPROVAL D. A. Tat 24 MAY 63
NASA APPROVAL Jack Barnard
MIT APPROVAL 28 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER 1% 3200 CPS
(INSEP ASSY)

CODE IDENT NO.
SIZE E
1015720
SCALE 3/1
SHEET 2 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

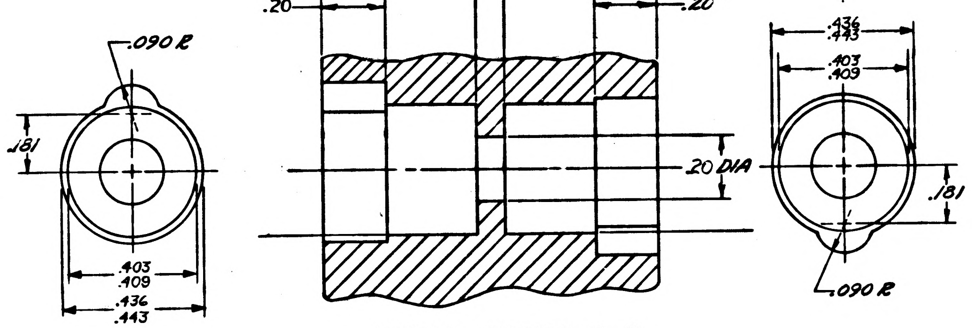
H	1015720

REVISIONS TDRR 01409

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REVISED PER TDRR		5-23-63	
D		REVISED PER TDRR 02999		9-5-63	
E		REVISED PER TDRR 02998		9-5-63	
F		REVISED PER TDRR 03851		10-15-63	
G		REVISED PER TDRR 03852		10-15-63	
H		REVISED PER TDRR 05419			

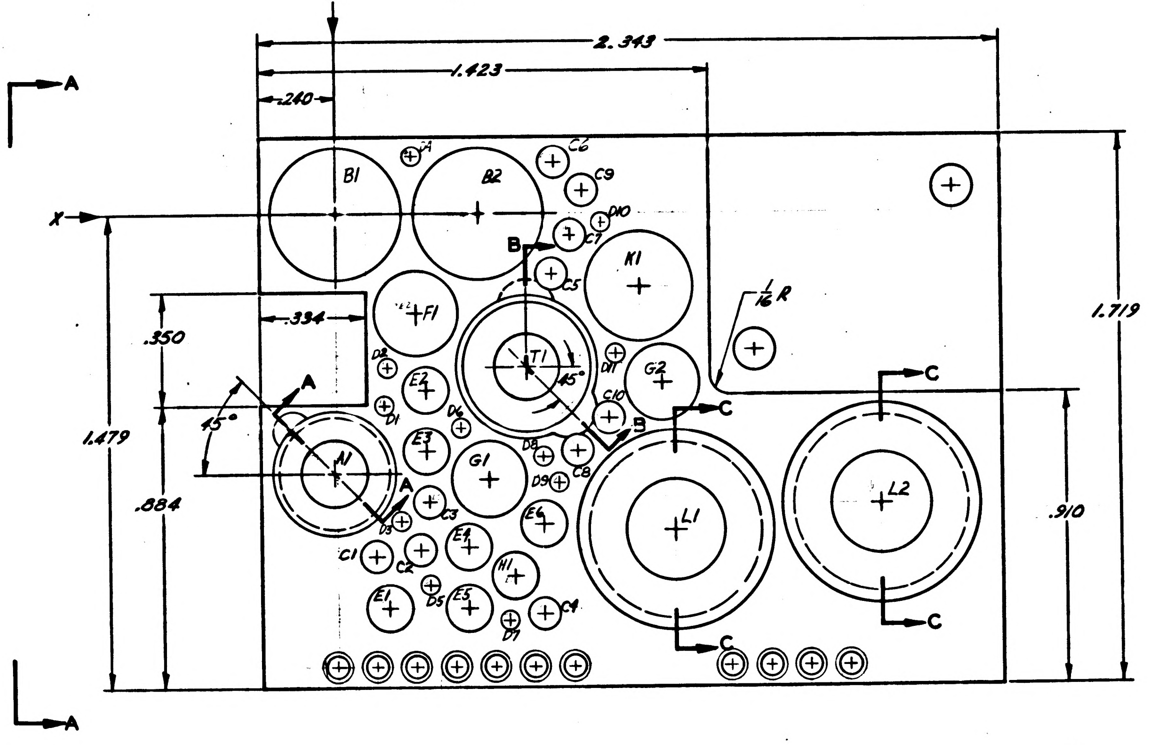
SEE NOTE 2

HOLE IDENT	X DIM	Y DIM		HOLE DIA	QTY
A1	-.010	.810		SEE SECTION A-A	1
B1	.000	.000		.419 .426	2
B2	.450	.000			
C1	.120	1.070		.100 .104	10
C2	.260	1.050			
C3	.230	.900			
C4	.650	1.250			
C5	.680	.190			
C6	.690	-.160			
C7	.740	.070			
C8	.760	.740			
C9	.780	-.070			
C10	.860	.640			
D1	.150	.600		.058 .062	11
D2	.160	.480			
D3	.200	.960			
D4	.240	-.180			
D5	.290	1.160			
D6	.390	.670			
D7	.540	1.270			
D8	.650	.760			
D9	.700	.840			
D10	.840	.030			
D11	.880	.440			
E1	.160	1.230		.146 .150	6
E2	.260	.550			
E3	.280	.740			
E4	.410	1.040			
E5	.410	1.230			
E6	.650	.970			
F1	.260	.320		.275 .282	1
G1	.480	.830		.233 .237	2
G2	1.030	.530			
H1	.560	1.130		.110 .114	1
J1	.600	.480		SEE SECTION B-B	1
K1	.960	.230		.330 .337	1
L1	1.070	.990		SEE SECTION C-C	2
L2	1.720	.910			



.090 R
.181
.403
.409
.436
.443
.453
.484
.20
.20 DIA
.436
.443
.403
.409
.181
.090 R

PARTIAL SECTION B-B



Y
X
A
A
2.343
1.423
.240
.334
.350
1.479
.884
1.719
.910
45°
45°
1/16 R
B1
B2
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
E1
E2
E3
E4
E5
E6
F1
G1
G2
H1
J1
K1
L1
L2
B
B
C
C
C
C

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

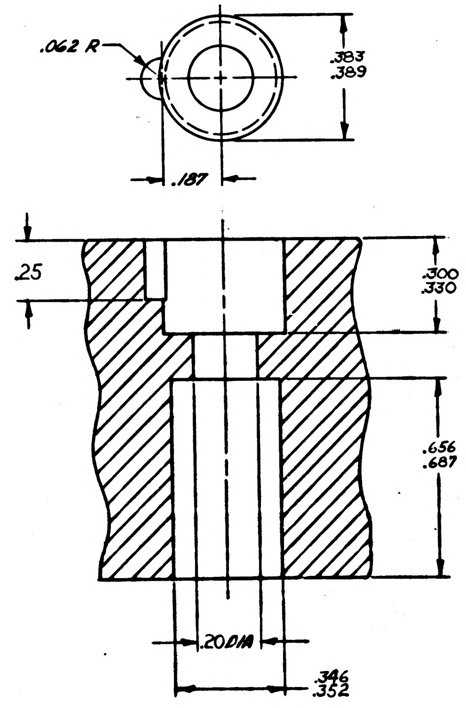
COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589).

1 INSTALL ITEM 2 PER MS33646, BREAK OFF TANGS.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.
MUST BE FREE FROM BURRS.

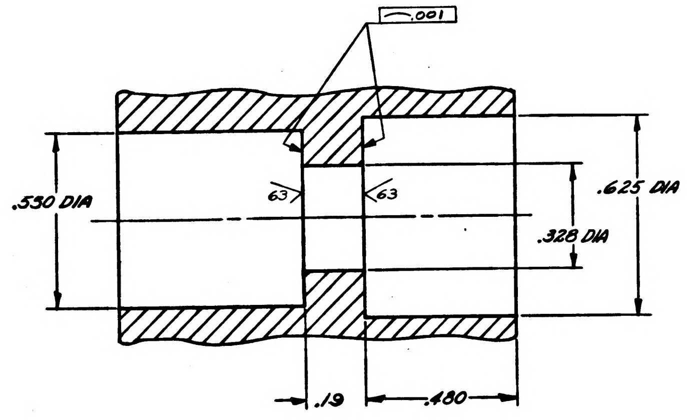
UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.
FINISH: ANODIZE PER MIL-M-3171A TYPE IV
EXCEPT THREADED HOLES

2 THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DEFORMATION IN AN ADJACENT HOLE OR AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART.



.062 R
.383
.389
.187
.25
.300
.330
.656
.687
.20 DIA
.346
.352

PARTIAL SECTION A-A
ROTATED 45° CCW



.001
.530 DIA
63
63
.625 DIA
.328 DIA
.19
.480

PARTIAL SECTION C-C
2 PLACES

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS 21209-C0620	INSERT, SCREW LOCKING
1	1	1015720-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007044	1007044

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ XXX ± .005 + 1°
- XX ± .02 - 1°
DO NOT SCALE THIS DRAWING
MATERIAL MAG ALLOY ZK-60A-T5 PER QQ-M-31A
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN C. M. Kulp DATE 30 APR 63
CHECKED 10 MAY 63
APPROVAL 11 MAY 63
APPROVAL D. R. 24 MAY 63
NASA APPROVAL
MIT APPROVAL 24 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER 1% 3200 CPS
(INSEP ASSY)

CODE IDENT NO.
SIZE E
1015720
SCALE 5/1
SHEET 1 OF 2

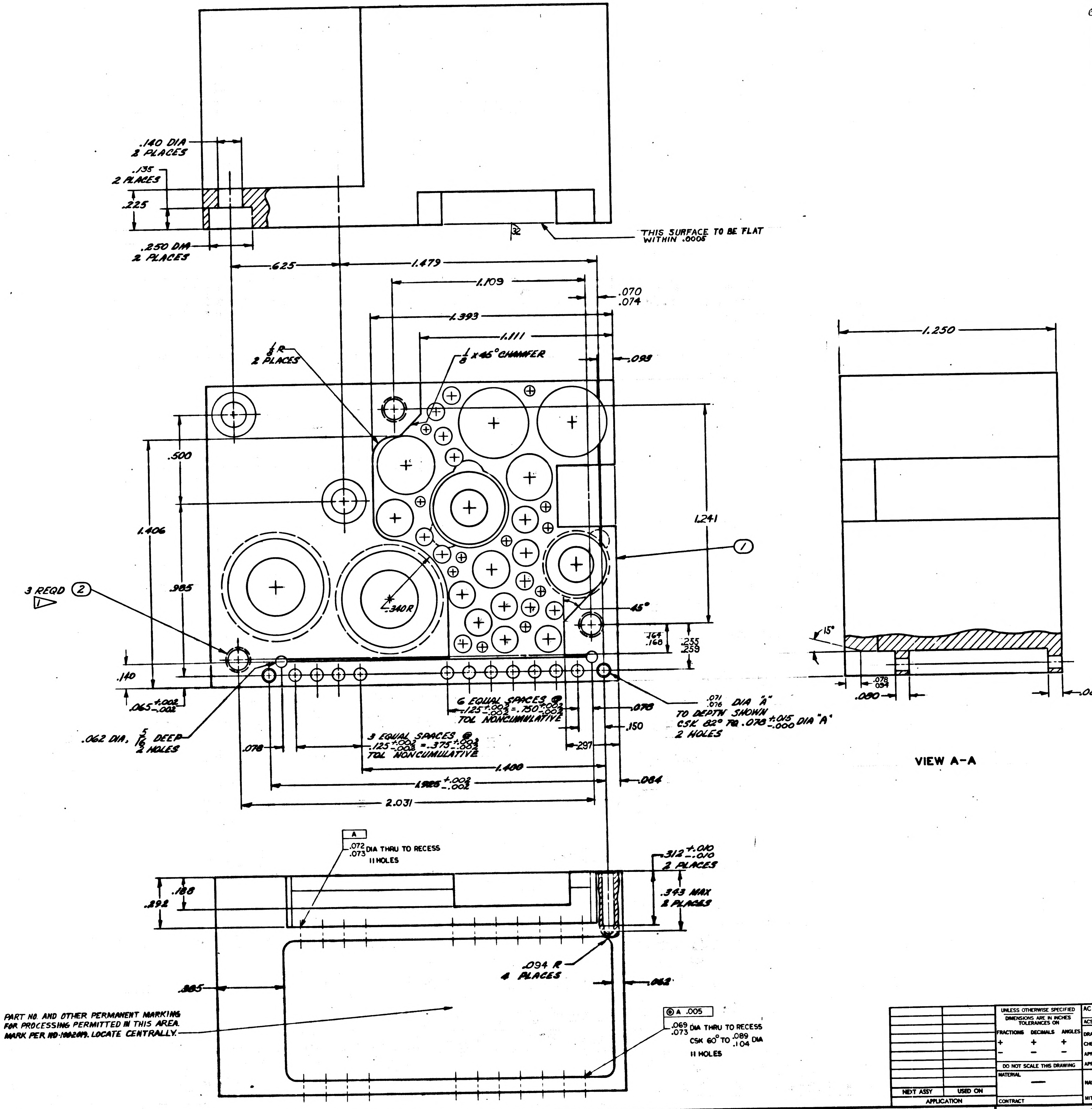
H 1015720 B

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

H 1015720

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
C		REVISED PER TDRR		5-23-63	
D		REVISED PER TDRR 02999			WK
E		REVISED PER TDRR 02998			WK
F		REVISED PER TDRR 03851		10-15-63	
G		REVISED PER TDRR 03852		10-15-63	
H		REVISED PER TDRR 05419			

REVISIONS TDRR 01407


.140 DIA 2 PLACES
.135 2 PLACES
.225
.250 DIA 2 PLACES
THIS SURFACE TO BE FLAT WITHIN .0005
.625
1.479
1.109
.070 .074
1.393
1.111
.093
1/8 R 2 PLACES
1/8 x 45° CHAMFER
.500
1.406
.985
1.241
3 REQD ② 1
①
.340R
45°
.164 .168
.255 .259
.140
.065 +.002 -.002
.062 DIA, 5/16 DEEP 2 HOLES
6 EQUAL SPACES @ .125 +.002 -.002 = .750 +.002 -.002 TOL NONCUMULATIVE
3 EQUAL SPACES @ .125 +.002 -.002 = .375 +.002 -.002 TOL NONCUMULATIVE
.078
.078
.150
.297
1.400
1.985 +.002 -.002
.084
2.031
.071 .076 DIA "A" TO DEPTH SHOWN CSK 82° TO .078 +.015 -.000 DIA "A" 2 HOLES
1.250
15°
.078 .094
.080
.080
VIEW A-A
A
.072 .073 DIA THRU TO RECESS 11 HOLES
.312 +.010 -.010 2 PLACES
.343 MAX 2 PLACES
.188
.292
.094 R 4 PLACES
.385
.062
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA. MARK PER MD-1002019. LOCATE CENTRALLY.
◎ A .005
.069 .073 DIA THRU TO RECESS CSK 60° TO .089 .104 DIA 11 HOLES

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+	+
−	−	−

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN C. M. Kuhn DATE 30 APR 63
CHECKED 10 MAY 63
APPROVAL 10 MAY 63
APPROVAL 24 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AMPLIFIER 1% 3200 CPS
(INSEP ASSY)

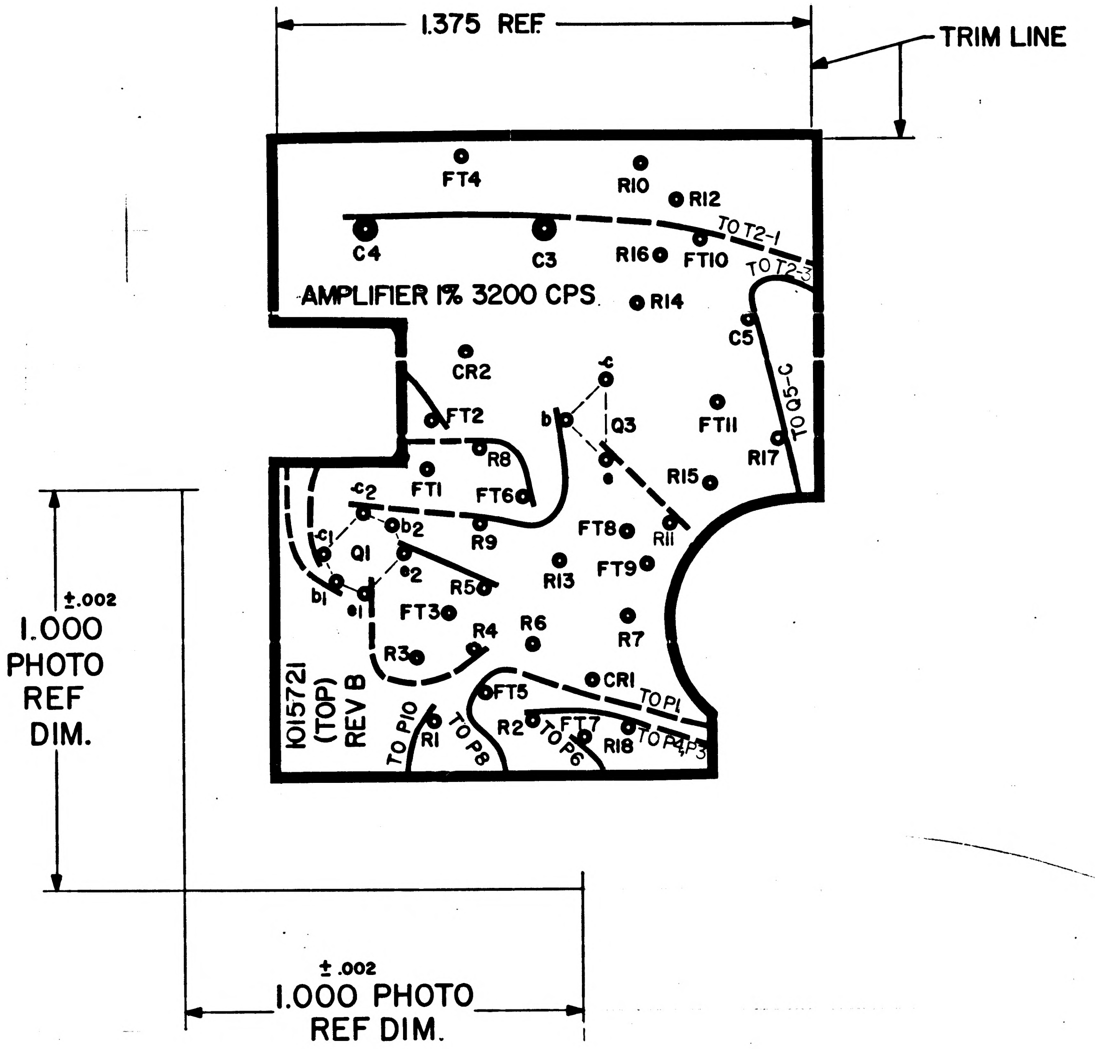
CODE IDENT NO. | SIZE E | 1015720

SCALE 5/1 | SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01407

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02998	9-5-63	EOK



1.375 REF
TRIM LINE
FT4
R10
R12
C4
C3
R16
FT10
TO T2-1
TO T2-3
AMPLIFIER 1% 3200 CPS
R14
C5
CR2
c
FT2
b
Q3
FT11
TO Q5-C
R17
R8
FT1
FT6
R15
c2
b2
R9
FT8
R11
c1
Q1
e2
R5
R13
FT9
b1
e1
FT3
R4
R6
R7
R3
1015721 (TOP) REV B
FT5
CR1
TO P1
TO P10
R1
TO P8
R2
TO P6
FT7
R18
TO P4,P3
±.002
1.000 PHOTO REF DIM.
±.002
1.000 PHOTO REF DIM.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT.
3. CUT TO WITHIN .010 OF TRIMLINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
6. ⊙ .045/.050 DIA PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING
8. ⦿ .085/.095 DIA PUNCH

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007044	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
HEAT TREATMENT —
FINAL FINISH —

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN W. Horgan DATE 5-17-63
CHECKED
APPROVAL D. R. Test 5-24-63
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W Kupfer 29 Nov 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGRAPHIC MASTER
AMPLIFIER 1% 3200 CPS

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015721
SCALE 5:1
WT
SHEET 1 OF 1

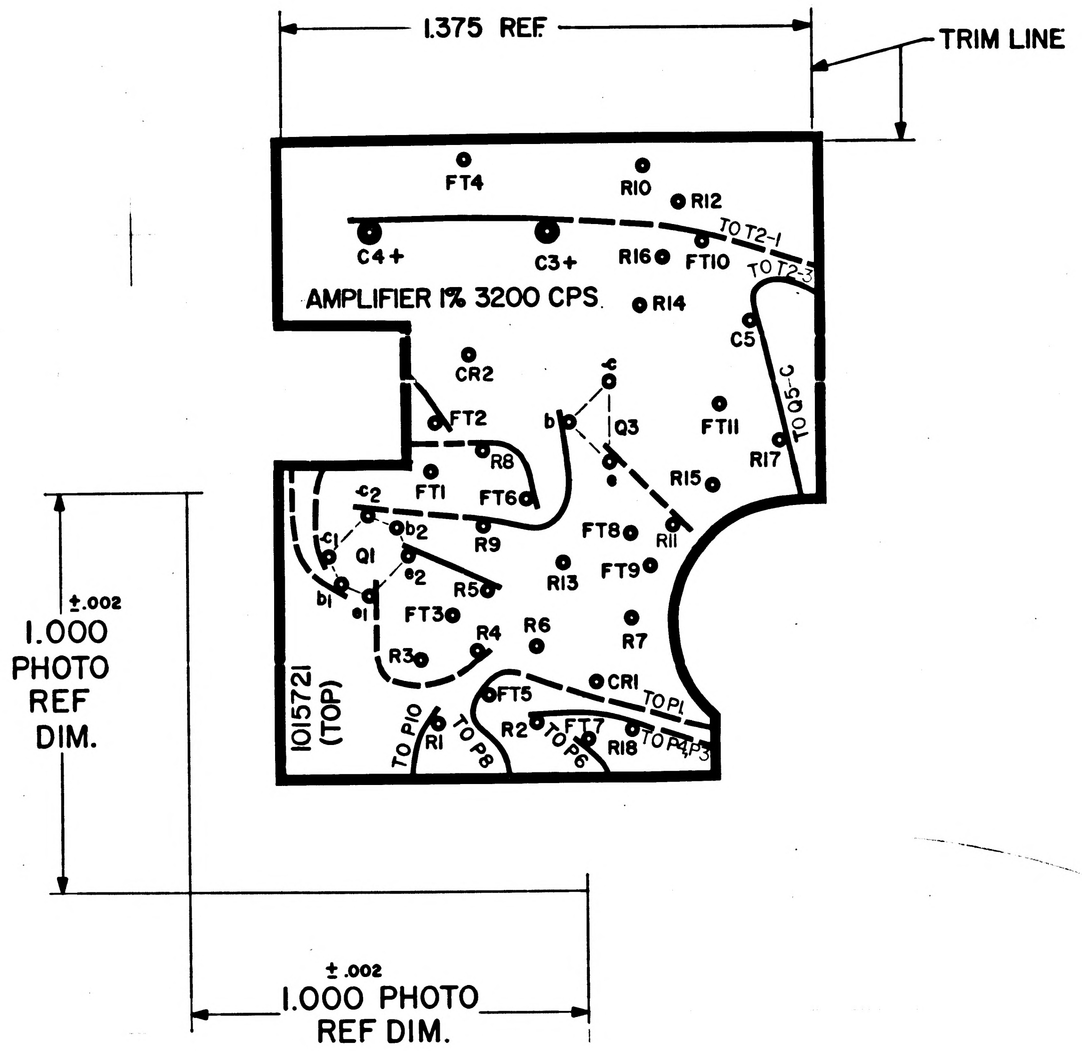
MASTER

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015721 A

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01407			
SYM	DESCRIPTION	DATE	APPROVAL


1.375 REF
TRIM LINE
FT4
R10
R12
C4+
C3+
R16
FT10
TO T2-1
TO T2-3
AMPLIFIER 1% 3200 CPS
R14
C5
CR2
TO Q5-C
FT2
b
Q3
c
FT11
R8
R17
R15
FT1
FT6
c2
FT8
R11
c1
b2
Q1
R9
R13
FT9
e2
b1
e1
R5
FT3
R4
R6
R7
R3
CR1
1015721 (TOP)
FT5
TO P1
TO P10
TO P8
R1
R2
FT7
TO P6
R18
TO P4-P3
±.002
1.000 PHOTO REF DIM.
±.002
1.000 PHOTO REF DIM.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT.
3. CUT TO WITHIN .010 OF TRIMLINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
6. ⊙ .045/.050 DIA PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING
8. ● .085/.095 DIA PUNCH

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007044	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —ǁ— DECIMALS ± —ǁ— ANGLES ± —ǁ—
DO NOT SCALE THIS DRAWING

MATERIAL
SEE NOTE 5

HEAT TREATMENT —ǁ—

FINAL FINISH —ǁ—

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT

DRAWN W. Horgan DATE 5-17-63
CHECKED
APPROVAL D. Test 5-24-63
APPROVAL

NASA APPROVAL Jack Barnard
MIT APPROVAL W Kyfor 29 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGRAPHIC MASTER
AMPLIFIER 1% 3200 CPS

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015721
SCALE 5:1 WT SHEET 1 OF 1

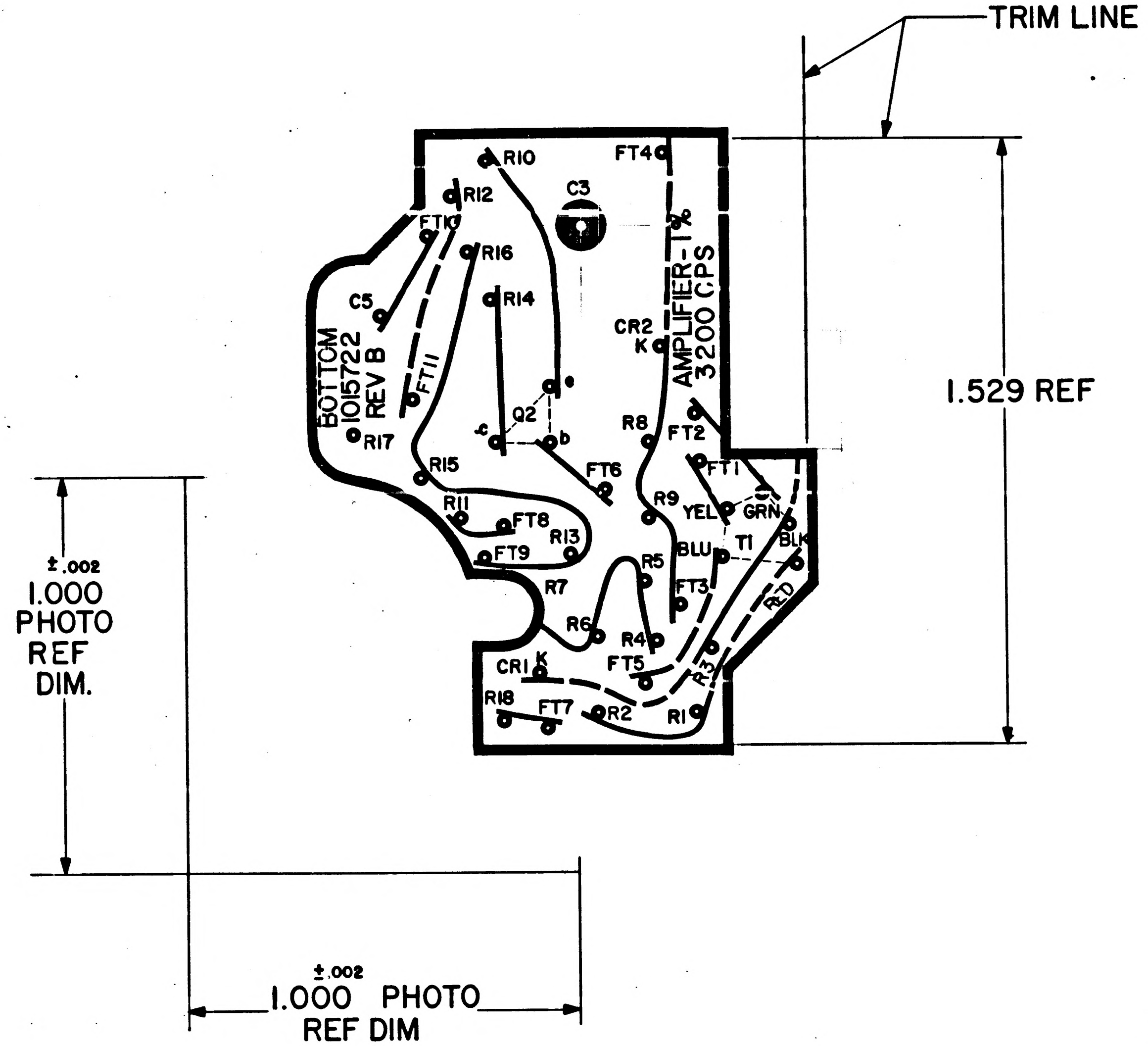
1015721

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01407

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02998	9-5-63	RDK


TRIM LINE
1.529 REF
±.002
1.000
PHOTO
REF
DIM.
±.002
1.000 PHOTO
REF DIM
BOTTOM
1015722
REV B
AMPLIFIER-1%
3200 CPS
R10
R12
FT10
R16
R14
C3
FT4
C5
FT11
CR2
K
Q2
c
e
b
R17
R15
R8
FT2
FT6
FT1
R11
FT8
R9
YEL
GRN
FT9
R13
BLU
T1
BLK
R5
R7
FT3
RED
R6
R4
CR1
K
FT5
R3
R18
FT7
R2
R1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
3. CUT TO WITHIN .010 OF TRIM LINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
6. ● .045/.050 DIA PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007044	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± -ǂ- DECIMALS ± -ǂ- ANGLES ± -ǂ-
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
HEAT TREATMENT -ǂ-
FINAL FINISH -ǂ-

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO.
CONTRACT
DRAWN W. Horgan DATE 5-20-63
CHECKED
APPROVAL D. A. Test 5-28-63
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W. Gupper 29 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR
PHOTOGRAPHIC MASTER
AMPLIFIER 1% 3200 CPS

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015722
SCALE 5:1
WT
SHEET 1 OF 1

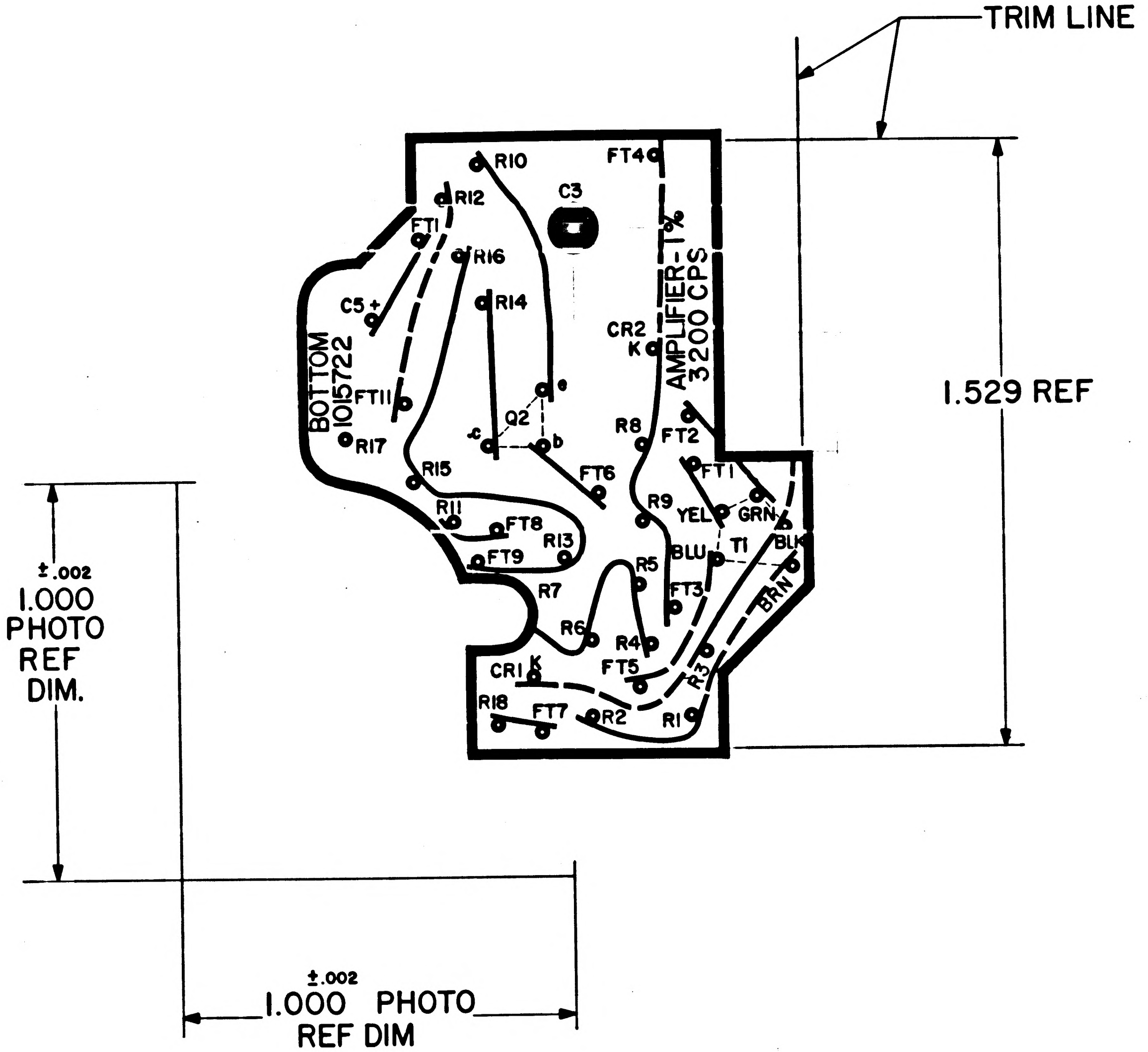
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015722 A

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01467

SYM	DESCRIPTION	DATE	APPROVAL


TRIM LINE
1.529 REF
±.002
1.000
PHOTO
REF
DIM.
±.002
1.000 PHOTO
REF DIM
BOTTOM
1015722
AMPLIFIER-1%
3200 CPS
R10
FT4
C3
R12
FT1
R16
R14
C5 +
CR2
K
e
FT11
R17
Q2
-c
b
R8
FT2
R15
FT6
FT1
R11
R9
YEL
GRN
FT8
R13
BLU
T1
BLK
FT9
R5
R7
FT3
BRN
R6
R4
CR1
K
FT5
R3
R18
FT7
R2
R1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
3. CUT TO WITHIN .010 OF TRIM LINE
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
6. ● .045/.050 DIA PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007044	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 5
HEAT TREATMENT
—
FINAL FINISH
—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG NO. CONTRACT
DRAWN W. Horgan DATE 5-20-63
CHECKED
APPROVAL A. R. Test 5-29-63
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL W. [illegible] 29 May 67

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR PHOTOGRAPHIC MASTER

AMPLFIER 1% 3200 CPS

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015722
SCALE 5:1
WT
SHEET 1 OF 1

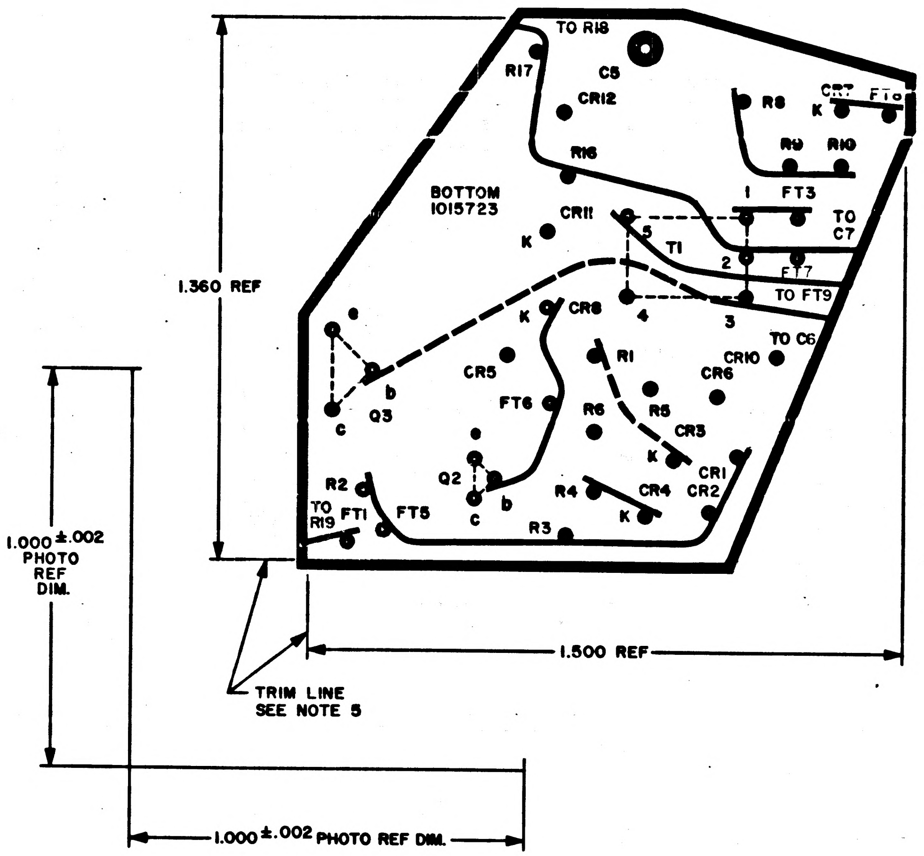
1015722

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01540

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 06637	25 FEB 64	LK



TO R18
R17
C5
CR12
R16
R8
K
CR7
FT8
R9
R10
BOTTOM
1015723
CR11
K
1
FT3
TO C7
5
T1
2
FT7
TO FT9
4
3
K
CR8
e
TO C6
CR10
CR6
R1
CR5
b
Q3
c
FT6
R6
R5
CR3
e
K
CR1
Q2
b
c
R2
R4
CR4
CR2
K
TO R19
FT1
FT5
R3
1.360 REF
1.000 ± .002 PHOTO REF DIM.
1.500 REF
TRIM LINE SEE NOTE 5
1.000 ± .002 PHOTO REF DIM.

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: .006 TO .008 THICK PLASTIC SHEET SENSITIZED AND DIMENSIONALLY STABLE PER L-F-340, TYPE IB, CLASS 2, STYLE IA
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER FOOT
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. CUT TO WITHIN .010 OF TRIM LINE
6. ⊙ .045 TO .055 DIA PUNCH ALL HOLES
7. ◉ .120 TO .130 DIA PUNCH HOLE

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007049	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± # DECIMALS ± # ANGLES ± #
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 2
HEAT TREATMENT #
FINAL FINISH #

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN DATE 6-7-63
CHECKED 7 June 63
APPROVAL 12 June 63
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL Perry K Bryant

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

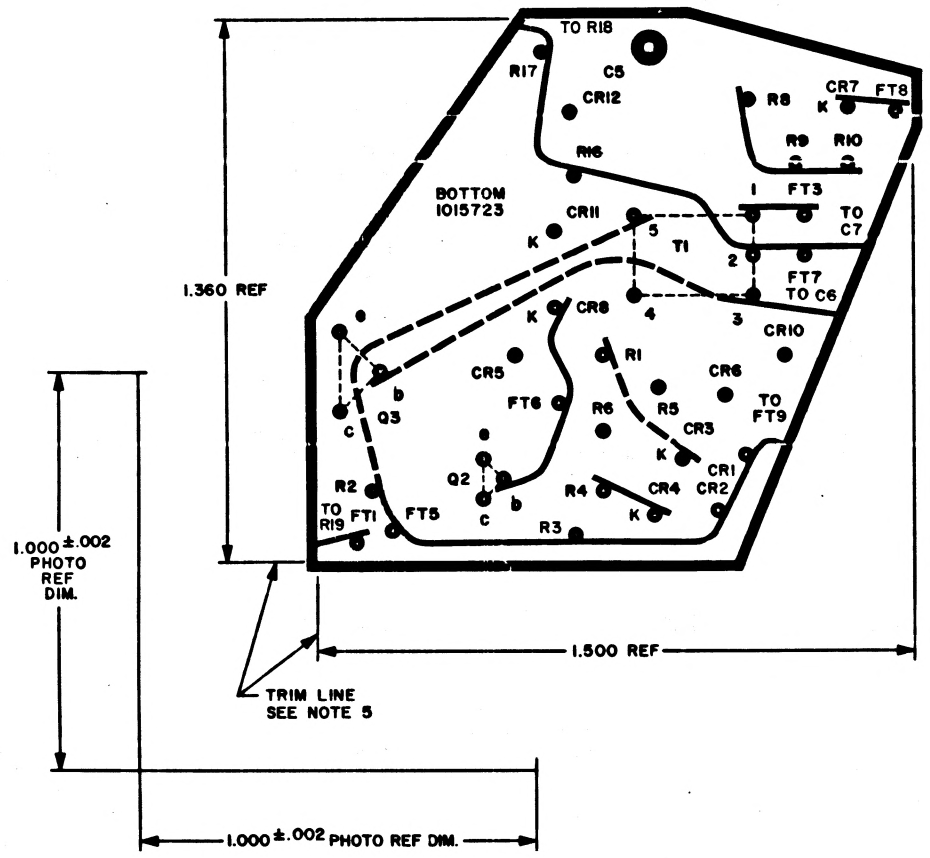
INSULATOR, PHOTOGRAPHIC MASTER
25.6 KC POWER SUPPLY

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015723
SCALE 5:1
WT
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS 70 ER 01540			
SYM	DESCRIPTION	DATE	APPROVAL


TO R18
R17
C5
CR12
R8
CR7
FT8
K
R9
R10
R16
BOTTOM
1015723
CR11
K
1
FT3
TO
C7
5
T1
2
FT7
TO C6
1.360 REF
K
CR8
4
3
CR10
e
R1
CR6
b
CR5
c
Q3
FT6
R6
R5
TO
FT9
CR3
e
K
CR1
Q2
R4
CR4
CR2
R2
b
TO
R19
FT1
FT5
c
R3
K
1.000 ±.002
PHOTO
REF
DIM.
1.500 REF
TRIM LINE
SEE NOTE 5
1.000 ±.002 PHOTO REF DIM.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: .006 TO .008 THICK PLASTIC SHEET SENSITIZED AND DIMENSIONALLY STABLE PER L-F-340, TYPE IB, CLASS 2, STYLE IA
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER FOOT
4. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
5. CUT TO WITHIN .010 OF TRIM LINE
6. ◉ .045 TO .055 DIA PUNCH ALL HOLES
7. ◉ .120 TO .130 DIA PUNCH HOLE

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007049	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 2
HEAT TREATMENT
—
FINAL FINISH
—

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN Ken Yealy DATE 6-7-63
CHECKED E. J. Sedlak 7 June 63
APPROVAL D. R. Stott 12 June 63
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL Perry K Bryant

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR, PHOTOGRAPHIC MASTER
25.6 KC POWER SUPPLY

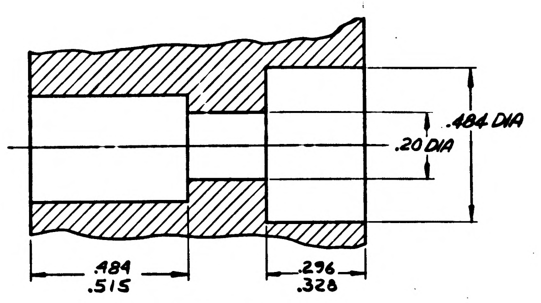
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015723
SCALE 5:1
WT
SHEET 1 OF 1

1015723

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

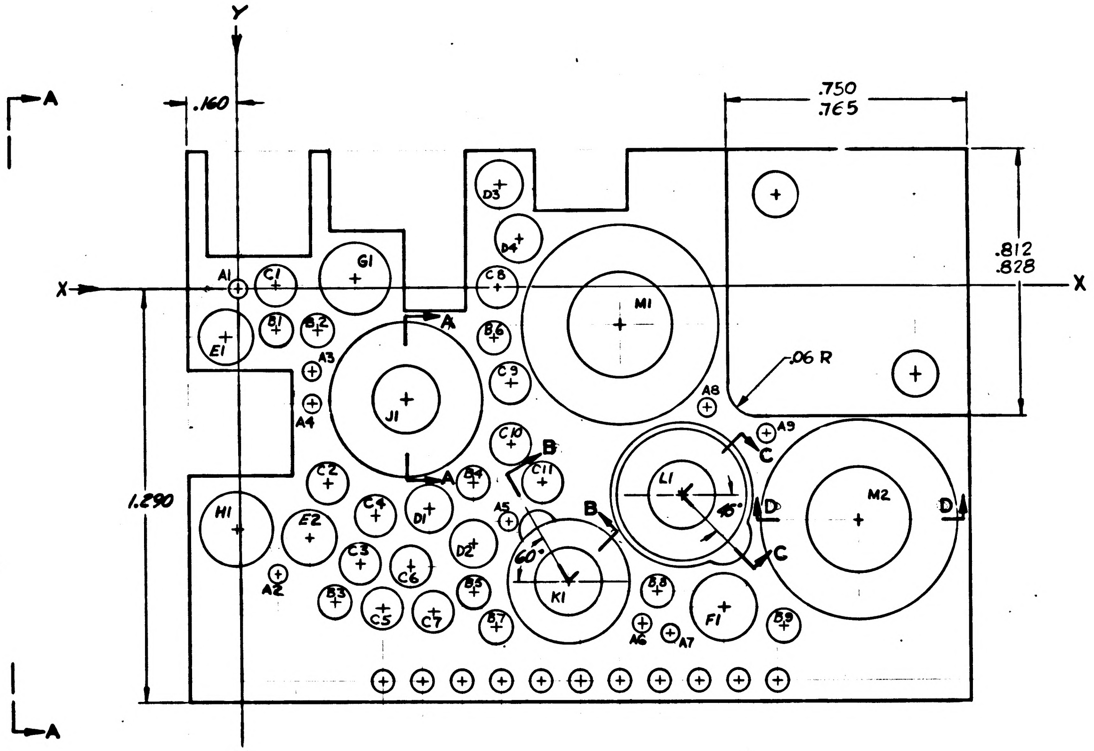
HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⊕DIM	HOLE DIA	QTY
A1	0.000	0.000	.006	.058 .062	9
A2	0.120	0.890			
A3	0.230	0.260			
A4	0.230	0.360			
A5	0.850	0.730			
A6	1.270	1.050			
A7	1.360	1.080			
A8	1.480	0.380			
A9	1.670	0.460			
B1	0.120	0.130	.006	.100 .104	9
B2	0.250	0.130			
B3	0.300	0.980			
B4	0.740	0.610			
B5	0.740	0.950			
B6	0.810	0.160			
B7	0.810	1.060			
B8	1.320	0.950			
B9	1.720	1.060			
C1	0.120	-0.010	.006	.127 .131	11
C2	0.280	0.610			
C3	0.380	0.860			
C4	0.430	0.710			
C5	0.450	1.000			
C6	0.540	0.870			
C7	0.610	1.010			
C8	0.820	0.000			
C9	0.860	0.300			
C10	0.860	0.490			
C11	0.960	0.610			
D1	0.600	0.690	.006	.146 .150	4
D2	0.740	0.800			
D3	0.830	-0.320			
D4	0.890	-0.150			
E1	-0.040	0.150	.006	.165 .169	2
E2	0.220	0.780			
F1	1.530	1.000	.006	.233 .237	1
G1	0.370	-0.030	.006	.220 .224	1
H1	-0.010	0.750	.006	.233 .237	1
J1	0.530	0.350	.006	SEE SECT A-A	1
K1	1.040	0.920	.006	SEE SECT B-B	1
L1	1.400	0.650	.006	SEE SECT C-C	1
M1	1.210	0.120	.006	SEE SECT D-D	2
M2	1.960	0.730			

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		CHANGE PER TDRR 030'5		9-5-63	EP— WC
B		REVISED PER TDCR 030.4		9-5-63	WC

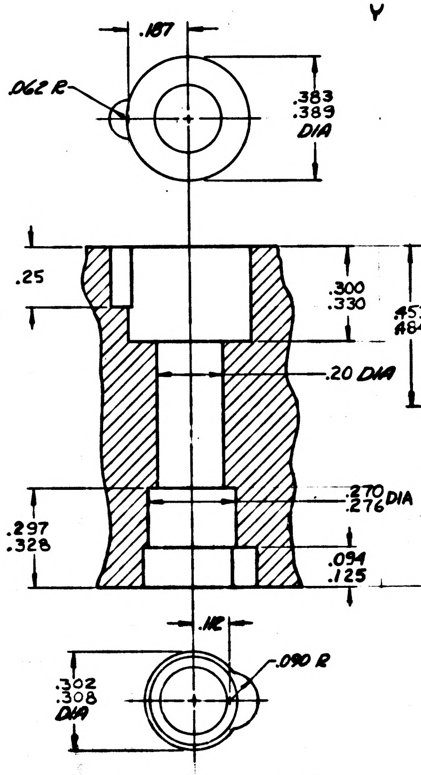


.484 DIA
.20 DIA
.484
.515
.296
.328

PARTIAL SECTION A-A

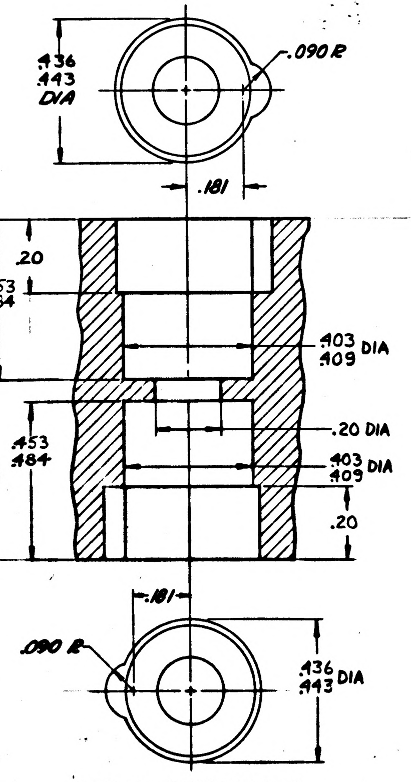


Y
X
A
.160
.750
.765
.812
.828
1.290
.06 R
A1
A2
A3
A4
A5
A6
A7
A8
A9
B
B1
B2
B3
B4
B5
B6
B7
B8
B9
C
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
D
D1
D2
D3
D4
E1
E2
F1
G1
H1
J1
K1
L1
M1
M2
60°
45°



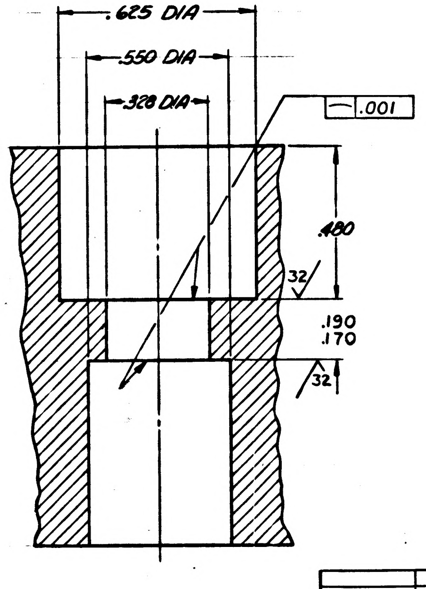
.187
.062 R
.383
.389
DIA
.25
.300
.330
.20 DIA
.270
.276 DIA
.297
.328
.094
.125
.112
.302
.308
DIA
.090 R

PARTIAL SECTION B-B



.436
.443
DIA
.090 R
.181
.20
.453
.484
.403
.409 DIA
.20 DIA
.453
.484
.403
.409 DIA
.20
.181
.090 R
.436
.443 DIA

PARTIAL SECTION C-C



.625 DIA
.550 DIA
.328 DIA
.001
.480
32
.190
.170
32

PARTIAL SECTION D-D
2 PLACES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

2 INSTALL ITEM 2 PER MS33646
EXCEPT DIM "F" TO BE .594. BREAK OFF TANGS.

MUST BE FREE FROM BURRS.

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.

1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5/QQ-M-31A
FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
PLUG INSERT HOLES

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW THREAD
1	1	1015725-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007049	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — .XX ±.02 +1°
− — .XXX ±.005 −1°
DO NOT SCALE THIS DRAWING

MATERIAL 1

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 1 MAY 63
CHECKED C. Pizzala 10 MAY 63
J.M. BLYSHAK 14 MAY 63
APPROVAL A.J. KOZEL 14 MAY 63
E. Johnick 7 JUNE 63
APPROVAL 12 JUN 63
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
POWER SUPPLY 25.6 KC
ENCODER EXCITATION

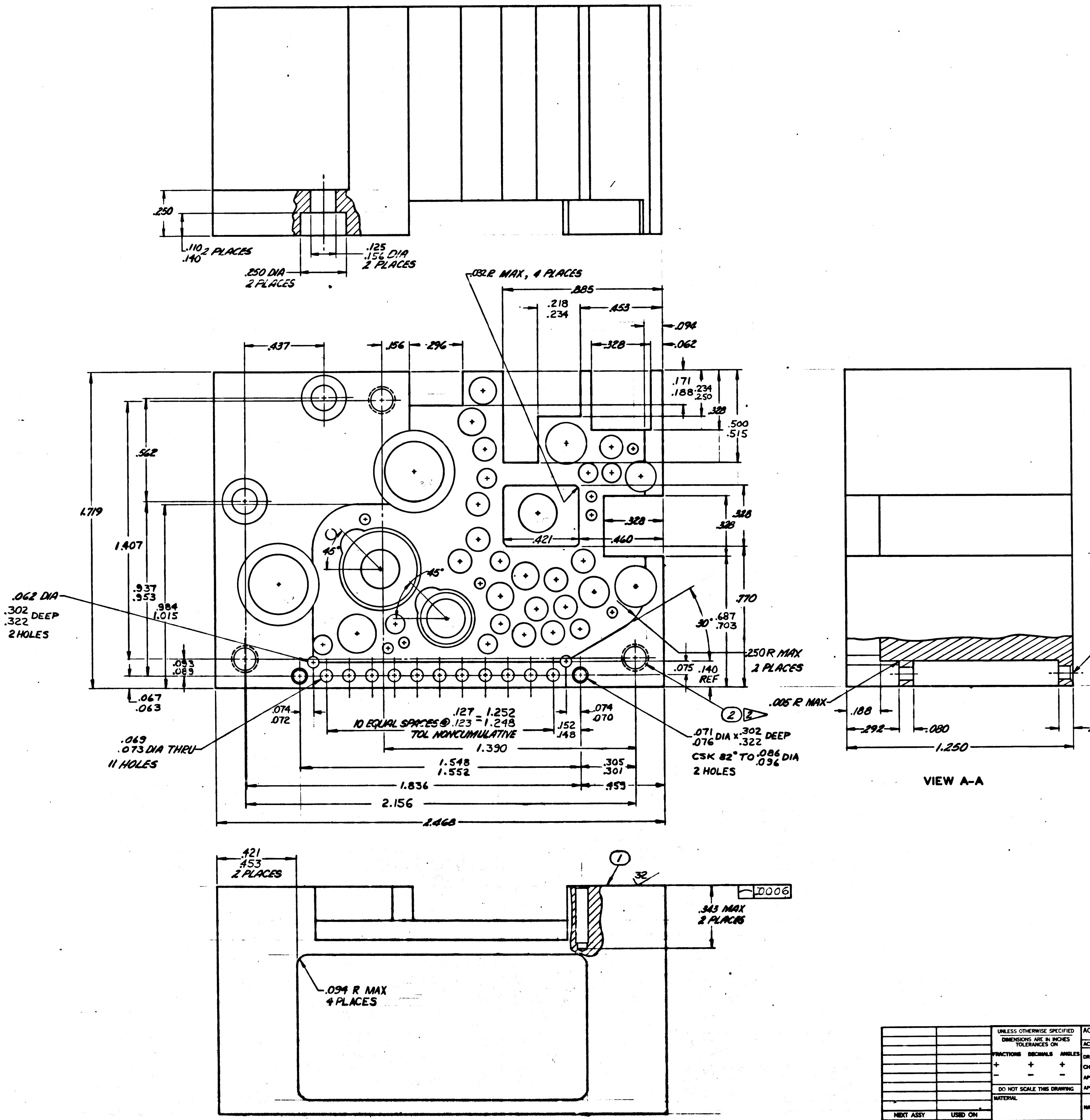
CODE IDENT NO.
SIZE E
1015725
SCALE 5/1
SHEET 1 OF 2

1015725
B

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS TDRR 03 5-63

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		CHANGE PER TDRR 03016			RPL
B		REVISED PER TDRR 03016		5-63	



.250
.110 .140 2 PLACES
.250 DIA 2 PLACES
.125 .156 DIA 2 PLACES
.032 R MAX, 4 PLACES
.885
.218 .234
.453
.094
.062
.437
.156
.296
.328
.171 .188
.234 .250
.328
.500 .515
.562
1.719
1.407
.328
.328
.421
.460
45°
45°
.937 .953
.984 1.015
.770
30°
.687 .703
.062 DIA .302 .322 DEEP 2 HOLES
.093 .089
.067 .063
.075
.140 REF
.250 R MAX 2 PLACES
.074 .072
10 EQUAL SPACES @ .127 .123 = 1.252 1.248 TOL NONCUMULATIVE
.152 .148
.074 .070
.069 .073 DIA THRU 11 HOLES
.071 .076 DIA x .302 .322 DEEP CSK 82° TO .086 .096 DIA 2 HOLES
②
1.390
1.548 1.552
.305 .301
1.836
.459
2.156
2.468
60° CSK TO .089 .104 DIA 11 HOLES
.005 R MAX
.188
.292
.080
.080
1.250
VIEW A-A
.421 .453 2 PLACES
①
32
D006
.343 MAX 2 PLACES
.094 R MAX 4 PLACES

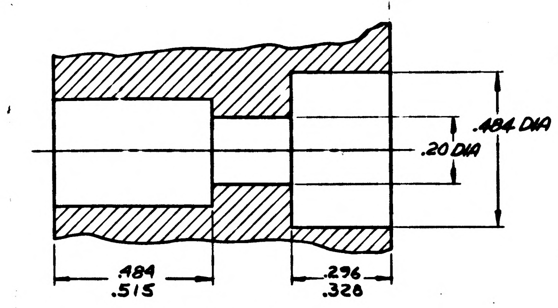
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
		FRACTIONS ± DECIMALS ± ANGLES ±	ACSP PN	HEATSINK, POWER SUPPLY 25.6 KC ENCODER EXCITATION
		DO NOT SCALE THIS DRAWING	DRAWN [illegible] DATE 9 MAY 63 CHECKED C. Pierda 10 MAY 63 J.M. BLYSHAK 14 MAY 63 APPROVAL A.J. KADEL 14 MAY 63 [illegible] 7 JUNE 63 APPROVAL [illegible] 12 JUNE 63	
		MATERIAL	NASA APPROVAL [illegible]	CODE IDENT NO. / SIZE E / 1015725
NEXT ASSY	USED ON		MIT APPROVAL [illegible] Bryant	SCALE 5/1 / SHEET 2 OF 2
APPLICATION		CONTRACT		

1015725 B

INCHES
PHOTOGRAPHIC SCALE ONLY

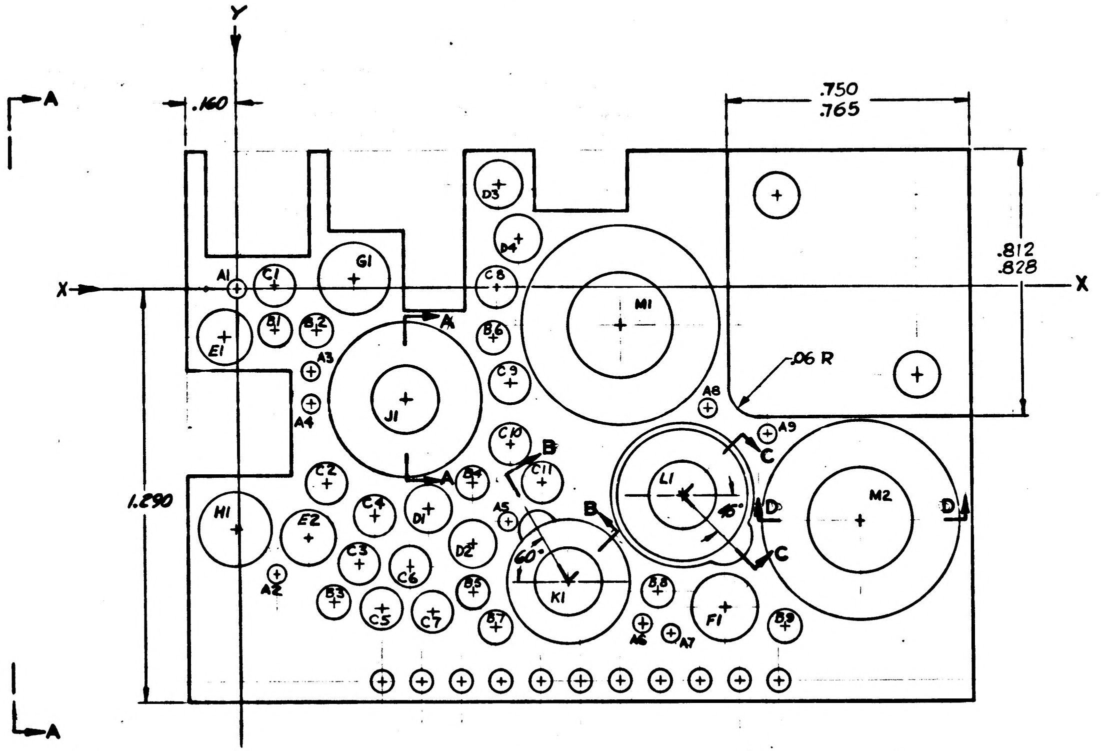
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		CHANGE PER TDRR 03015		9-5-63	
B		REVISED PER TDRR 030..		9-5-63	
C		REVISED PER TDRR 03280		9-19-63	

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⊕ DIM	HOLE DIA	QTY
A1	0.000	0.000	.006	.058 .062	9
A2	0.120	0.890			
A3	0.230	0.260			
A4	0.230	0.360			
A5	0.850	0.730			
A6	1.270	1.050			
A7	1.360	1.080			
A8	1.480	0.380			
A9	1.670	0.460			
B1	0.120	0.130	.006	.100 .104	9
B2	0.250	0.130			
B3	0.300	0.980			
B4	0.740	0.610			
B5	0.740	0.950			
B6	0.810	0.160			
B7	0.810	1.060			
B8	1.320	0.950			
B9	1.720	1.060			
C1	0.120	-0.010	.006	.127 .131	11
C2	0.280	0.610			
C3	0.380	0.860			
C4	0.430	0.710			
C5	0.450	1.000			
C6	0.540	0.870			
C7	0.610	1.010			
C8	0.820	0.000			
C9	0.860	0.300			
C10	0.860	0.490			
C11	0.960	0.610			
D1	0.600	0.690	.006	.146 .150	4
D2	0.740	0.800			
D3	0.830	-0.320			
D4	0.890	-0.150			
E1	-0.040	0.150	.006	.165 .169	2
E2	0.220	0.780			
F1	1.530	1.000	.006	.233 .237	1
G1	0.370	-0.030	.006	.220 .224	1
H1	-0.010	0.750	.006	.233 .237	1
J1	0.530	0.350	.006	SEE SECT A-A	1
K1	1.040	0.920	.006	SEE SECT B-B	1
L1	1.400	0.650	.006	SEE SECT C-C	1.
M1	1.210	0.120	.006	SEE SECT D-D	2
M2	1.960	0.730			

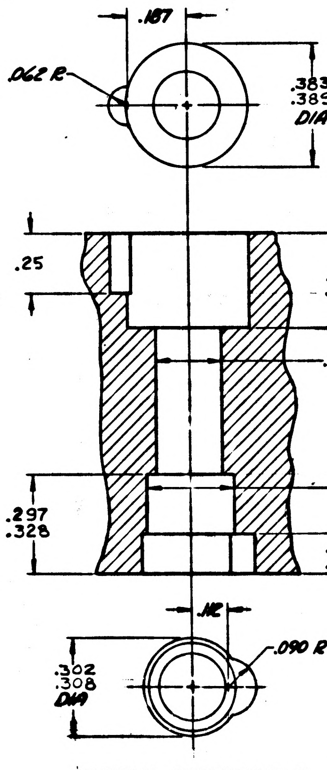


.484 DIA
.20 DIA
.484
.515
.296
.328

PARTIAL SECTION A-A

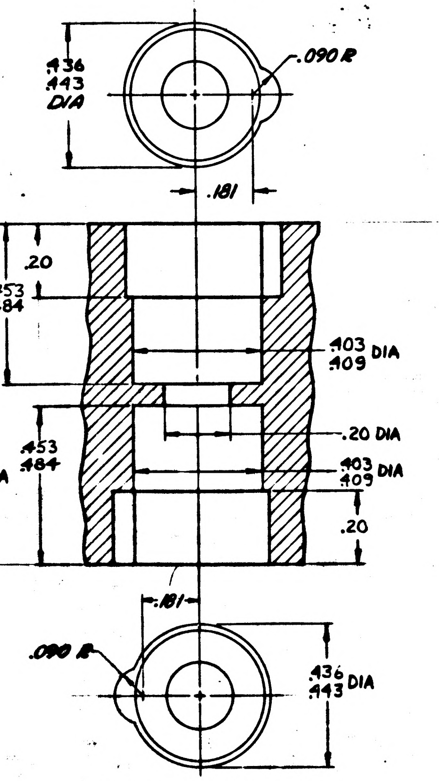


Y
A
.160
.750
.765
.812
.828
X
X
.06 R
1.290
A1
C1
G1
D3
D4
C8
M1
E1
B1
B2
A3
A4
J1
B6
C9
C10
C11
A8
A9
L1
M2
H1
C2
C4
E2
D1
B4
D2
A5
C3
C6
B5
K1
B8
F1
B9
A2
B3
C5
C7
B7
A6
A7
B
C
D
60°
45°
A



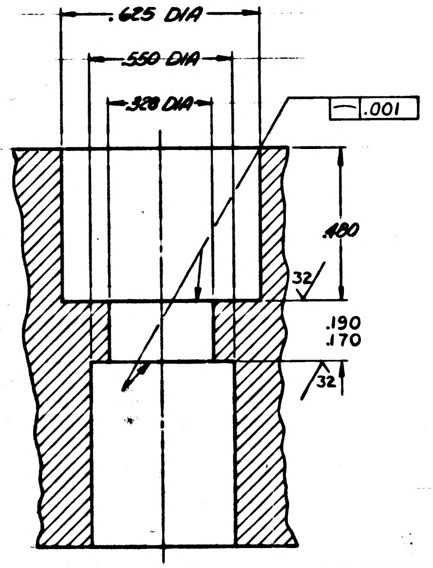
.187
.062 R
.383
.389
DIA
.25
.300
.330
.20 DIA
.270
.276 DIA
.297
.328
.094
.125
.12
.302
.308
DIA
.090 R

PARTIAL SECTION B-B



.436
.443
DIA
.090 R
.181
.20
.453
.484
.403
.409 DIA
.20 DIA
.453
.484
.403
.409 DIA
.20
.181
.090 R
.436
.443 DIA

PARTIAL SECTION C-C



.625 DIA
.550 DIA
.328 DIA
⏤ .001
.480
32
.190
.170
32

PARTIAL SECTION D-D
2 PLACES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

2 INSTALL ITEM 2 PER MS33646 EXCEPT DIM "F" TO BE .594. BREAK OFF TANGS.

MUST BE FREE FROM BURRS.

UNLESS OTHERWISE SPECIFIED:

SURFACE ROUGHNESS MUST NOT EXCEED $\sqrt{}^{125}$.

ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.

1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5/QQ-M-31A
FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
PLUG INSERT HOLES

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW THREAD
1	1	1015725-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007049	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	.XX ±.02	+1°
- —	.XXX ±.005	-1°

DO NOT SCALE THIS DRAWING
MATERIAL 1
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 1 MAY 63
CHECKED G. Pringle 10 MAY 63
J M BLYSNAK 14 MAY 63
APPROVAL G. J. KODEL 14 MAY 63
7 JUNE 63
APPROVAL 12 JUN 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

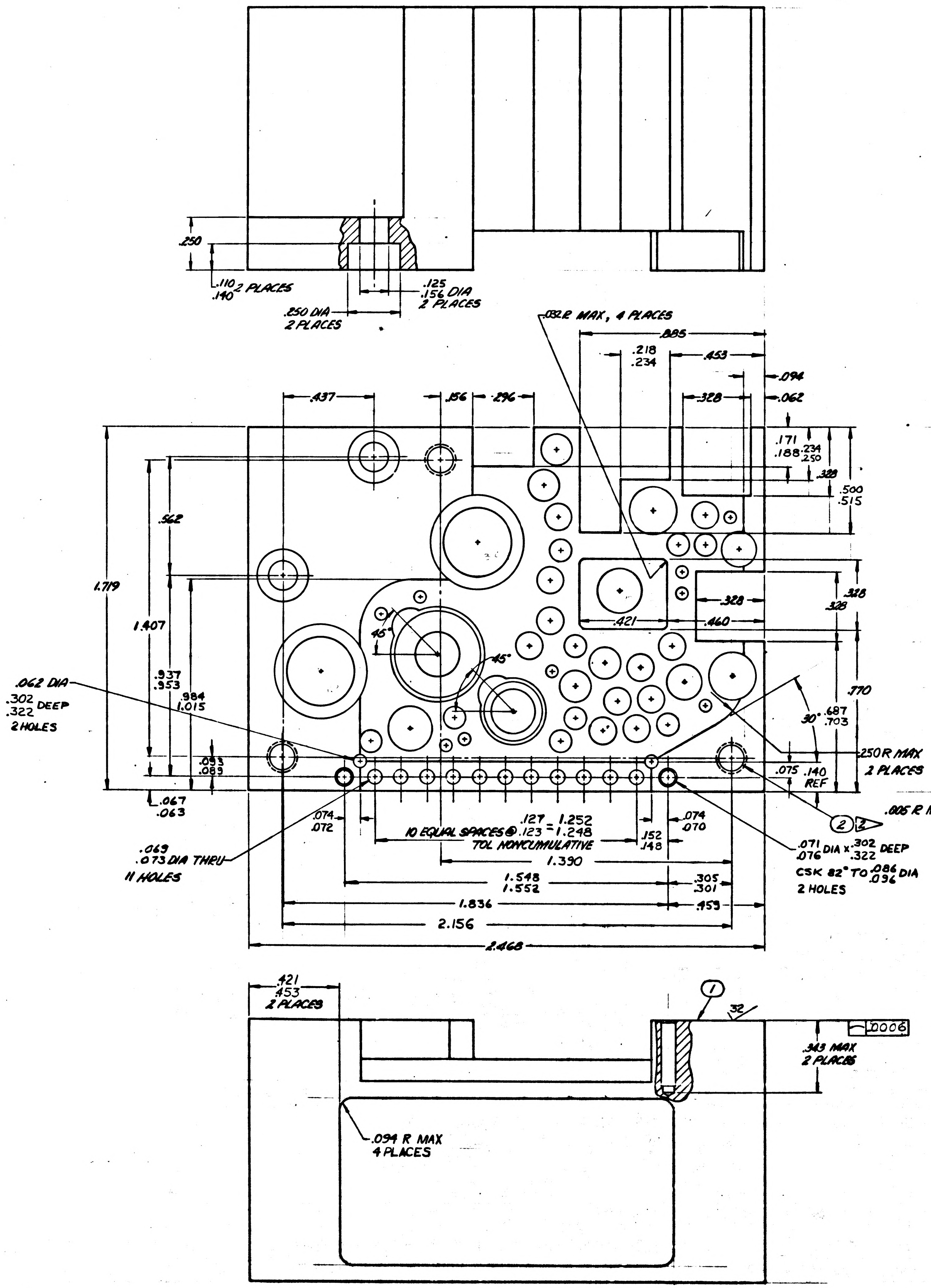
HEATSINK
POWER SUPPLY 25.6 KC
ENCODER EXCITATION

CODE IDENT NO.
SIZE E
1015725
SCALE 5/1
SHEET 1 OF 2

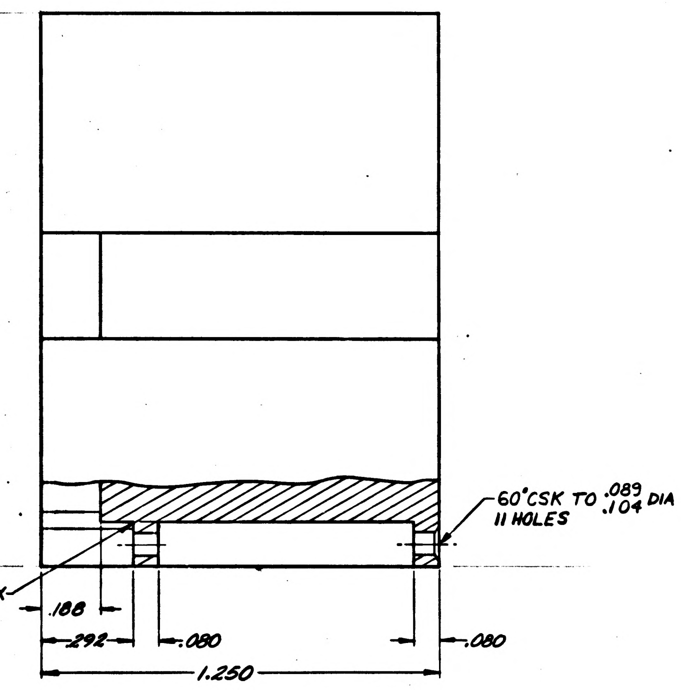
1015725

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS ~~0212~~ 0 5-0					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		CHANGE PER TDRR 03[illegible]			EPL
B		REVISED PER TDRR 03016			
C		REVISED PER TDRR 03260		7-19-63	



.250
.110
.140 2 PLACES
.125
.156 DIA
2 PLACES
.250 DIA
2 PLACES
.032 R MAX, 4 PLACES
.885
.218
.234
.453
.094
.062
.437
.156
.296
.328
.171
.188
.234
.250
.328
.500
.515
.562
1.719
1.407
.328
.328
.421
.460
45°
45°
.770
.687
.703
30°
.062 DIA
.302
.322 DEEP
2 HOLES
.937
.953
.984
1.015
.093
.089
.067
.063
.250 R MAX
2 PLACES
.075
.140
REF
.005 R MAX
2
.074
.072
.069
.073 DIA THRU
11 HOLES
10 EQUAL SPACES
.127
.123
1.252
1.248
TOL NONCUMULATIVE
.152
.148
.074
.070
.071
.076 DIA X .302
.322 DEEP
CSK 82° TO .086
.096 DIA
2 HOLES
1.390
1.548
1.552
.305
.301
1.836
.453
2.156
2.468
.421
.453
2 PLACES
1
32
.0006
.343 MAX
2 PLACES
.094 R MAX
4 PLACES



60° CSK TO .089
.104 DIA
11 HOLES
.188
.292
.080
.080
1.250

VIEW A-A

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 3 MAY 63
CHECKED C. Pivida 10 MAY 63
J.M. BLYSHAK 4 MAY 63
APPROVAL A.J. KADEL 14 MAY 63
E J [illegible] 7 JUNE 63
APPROVAL [illegible] 12 JUNE 63
NASA APPROVAL Jack Barnard
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK,
POWER SUPPLY 25.6 KC
ENCODER EXCITATION

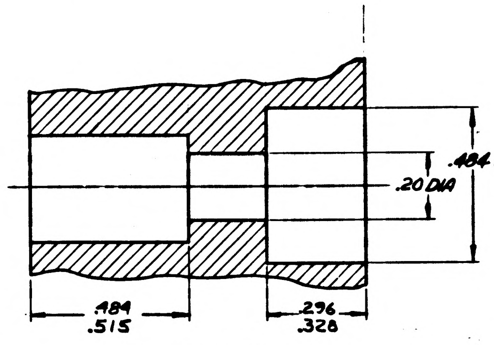
CODE IDENT NO.
SIZE E
1015725
SCALE 5/1
SHEET 2 OF 2

1015725

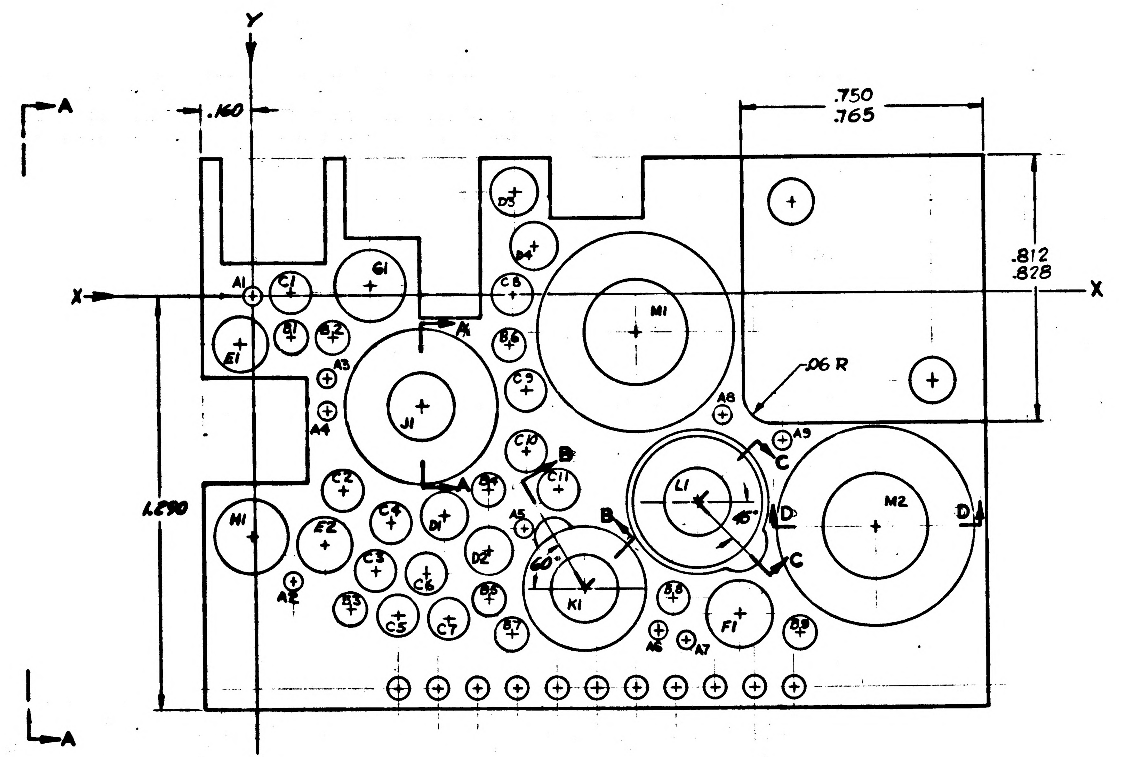
INCHES
PHOTOGRAPHIC SCALE ONLY

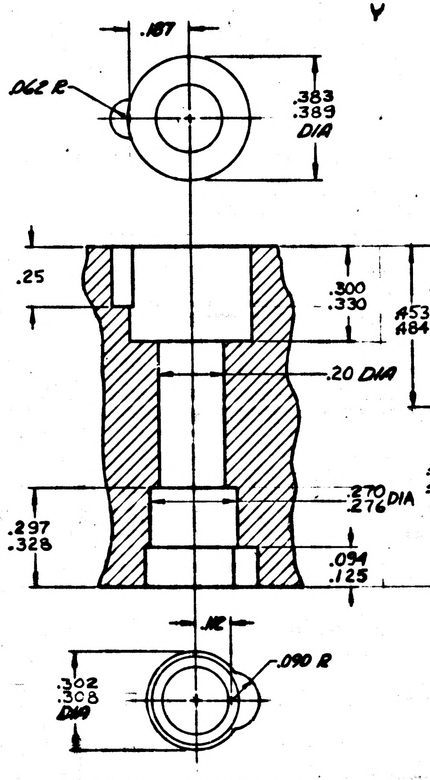
SYM	ZONE	DESCRIPTION REVISIONS TDRR 01540	CHG NO.	DATE	APPD.
A		CHANGE PER TDRR 03015		9-5-63	EK WC
B		REVISED PER TDRR 0301		9-5-63	WC
C		REVISED PER TDRR 03280		9-19-63	EK WC
D		REVISED PER TDRR 03851			EK WC
E		REVISED PER TDRR 03853			EK WC

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⊕ DIM	HOLE DIA	QTY
A1	0.000	0.000	.006	.058 .062	9
A2	0.120	0.890			
A3	0.230	0.260			
A4	0.230	0.360			
A5	0.850	0.730			
A6	1.270	1.050			
A7	1.360	1.080			
A8	1.480	0.380			
A9	1.670	0.460			
B1	0.120	0.130	.006	.100 .104	9
B2	0.250	0.130			
B3	0.300	0.980			
B4	0.740	0.610			
B5	0.740	0.950			
B6	0.810	0.160			
B7	0.810	1.060			
B8	1.320	0.950			
B9	1.720	1.060			
C1	0.120	-0.010	.006	.127 .131	11
C2	0.280	0.610			
C3	0.380	0.860			
C4	0.430	0.710			
C5	0.450	1.000			
C6	0.540	0.870			
C7	0.610	1.010			
C8	0.820	0.000			
C9	0.860	0.300			
C10	0.860	0.490			
C11	0.960	0.610			
D1	0.600	0.690	.006	.146 .150	4
D2	0.740	0.800			
D3	0.830	-0.320			
D4	0.890	-0.150			
E1	-0.040	0.150	.006	.165 .169	2
E2	0.220	0.780			
F1	1.530	1.000	.006	.233 .237	1
G1	0.370	-0.030	.006	.220 .224	1
H1	-0.010	0.750	.006	.233 .237	1
J1	0.530	0.350	.006	SEE SECT A-A	1
K1	1.040	0.920	.006	SEE SECT B-B	1
L1	1.400	0.650	.006	SEE SECT C-C	1
M1	1.210	0.120	.006	SEE SECT D-D	2
M2	1.960	0.730			

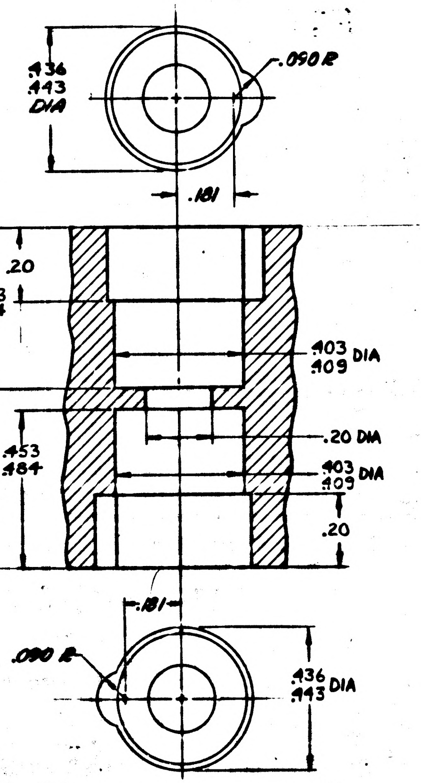

.484 DIA
.20 DIA
.484
.515
.296
.328

PARTIAL SECTION A-A

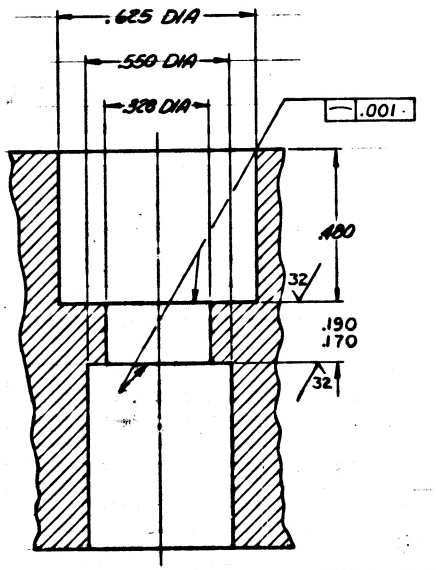

Y
A
.160
.750
.765
.812
.828
X
X
A1
C1
G1
E1
B1
A2
A3
A4
J1
D3
D4
C8
M1
B6
C9
A8
A9
.06 R
C10
B
C11
C
L1
45°
D
M2
D
H1
C2
E2
C4
D1
B4
A5
D2
C3
C6
B3
C5
C7
B2
60°
K1
B5
B8
F1
B9
A6
A7
1.290
A
Y


.187
.062 R
.383
.389
DIA
.25
.300
.330
.20 DIA
.297
.328
.270
.276 DIA
.094
.125
.112
.090 R
.302
.308
DIA

PARTIAL SECTION B-B


.434
.443
DIA
.090 R
.181
.20
.453
.484
.403
.409 DIA
.20 DIA
.453
.484
.403
.409 DIA
.20
.181
.090 R
.436
.443 DIA

PARTIAL SECTION C-C


.625 DIA
.550 DIA
.328 DIA
.001
.480
32
.190
.170
32

PARTIAL SECTION D-D
2 PLACES

INTERPEET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

▷2 INSTALL ITEM 2 PER MS33646
EXCEPT DIM "F" TO BE .594. BREAK OFF TANGS.

MUST BE FREE FROM BURRS.

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.

▷1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5/QQ-M-31A
FINISH: ANODIZE USING MIL-M-3171 A, TYPE IV
PLUG INSERT HOLES

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW THREAD
1	1	1015725-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007049	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	.XX ±.02	+ 1°
− —	.XXX ±.005	− 1°

DO NOT SCALE THIS DRAWING

MATERIAL ▷1

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 1 MAY 63
CHECKED C. Pinda 10 MAY 63
J M BLYSHAK 14 MAY 63
APPROVAL A J KODEL 14 MAY 63
7 JUNE 63
APPROVAL 12 JUNE 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
POWER SUPPLY 25.6 KC
ENCODER EXCITATION

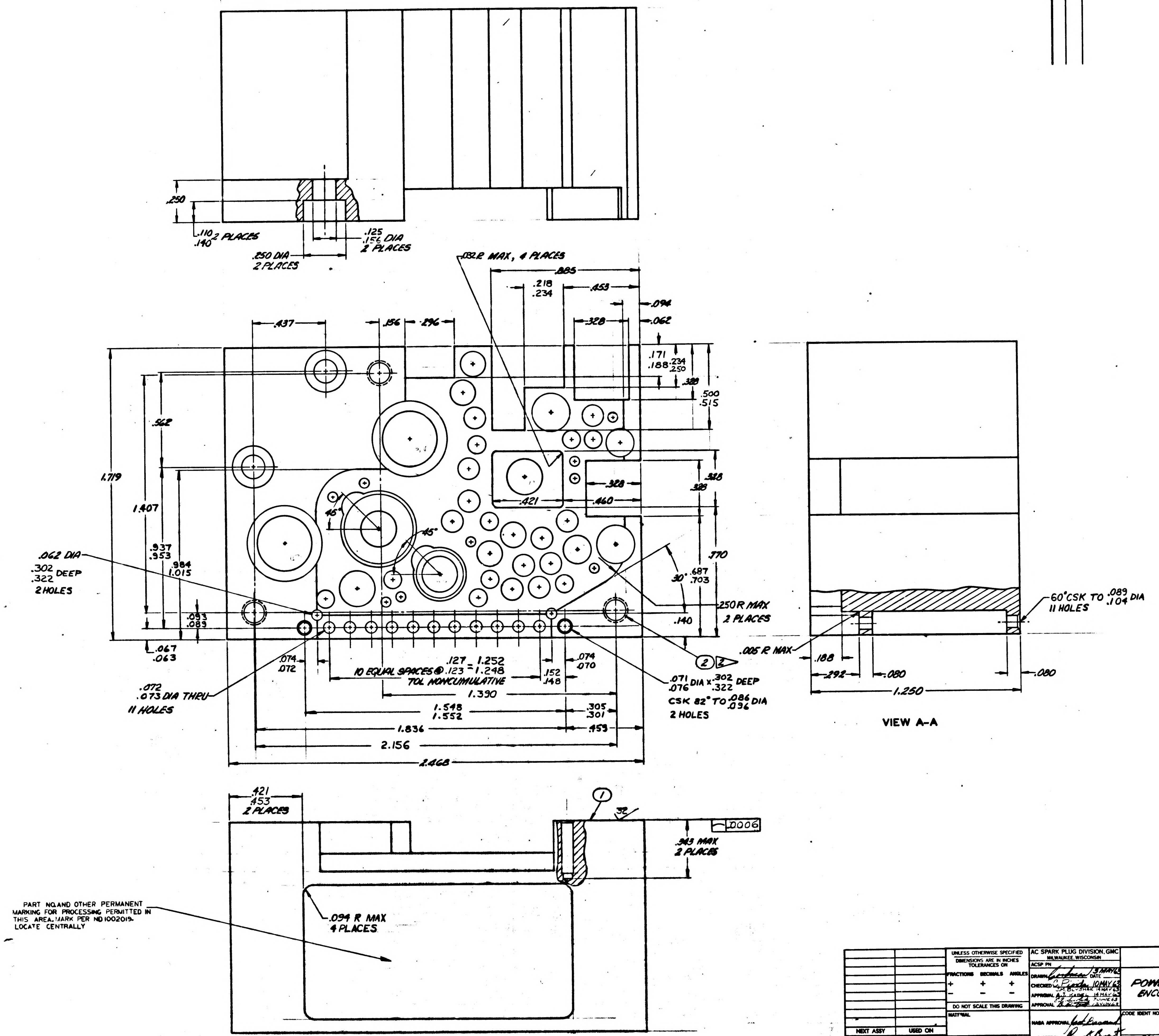
CODE IDENT NO.
SIZE E
1015725
SCALE 5/1
SHEET 1 OF 2

1015725
E

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS TO 1212 015 40

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		CHANGE PER TDRR 03 5			
B		REVISED PER TDRR 03016			
C		REVISED PER TDRR 03260		9-19-63	
D		REVISED PER TDRR 03851			
E		REVISED PER TDRR 03853			


.250
.110
.140 2 PLACES
.125
.156 DIA
2 PLACES
.250 DIA
2 PLACES
.032 R MAX, 4 PLACES
.885
.218
.234
.453
.094
.062
.437
.156
.296
.328
.171
.188
.234
.250
.328
.500
.515
.562
1.719
1.407
.328
.328
.421
.460
45°
45°
.937
.953
.984
1.015
.770
30°
.687
.703
.062 DIA
.302
.322 DEEP
2 HOLES
.093
.089
.250 R MAX
2 PLACES
.140
.067
.063
.074
.072
.127
.123
1.252
1.248
10 EQUAL SPACES @ .127/.123 = 1.252/1.248
TOL NONCUMULATIVE
.152
.148
.074
.070
2
.071
.076 DIA X .302
.322 DEEP
CSK 82° TO .086
.096 DIA
2 HOLES
.005 R MAX
.072
.073 DIA THRU
11 HOLES
1.390
1.548
1.552
.305
.301
1.836
.453
2.156
2.468
60° CSK TO .089
.104 DIA
11 HOLES
.188
.292
.080
.080
1.250
VIEW A-A
.421
.453
2 PLACES
1
32
.0006
.343 MAX
2 PLACES
.094 R MAX
4 PLACES

PART NO.AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA. MARK PER ND1002019. LOCATE CENTRALLY

NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Coffman DATE 3 MAY 63
CHECKED C. Pioda 10 MAY 63
J.M. BLYSHAK 14 MAY 63
APPROVAL A.J. KADEL 14 MAY 63
E.J. Sulek 7 JUNE 63
APPROVAL 12 JUN 63
NASA APPROVAL Jack Barnard
MIT APPROVAL Perry K Bryant

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

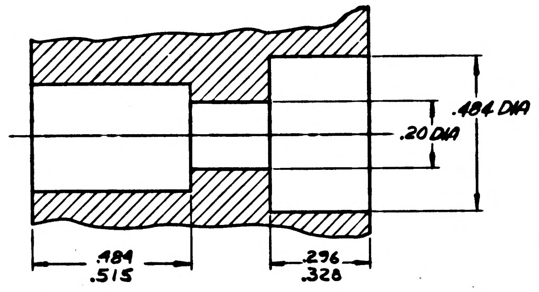
HEATSINK,
POWER SUPPLY 25.6 KC
ENCODER EXCITATION

CODE IDENT NO.
SIZE E
1015725
SCALE 5/1
SHEET 2 OF 2

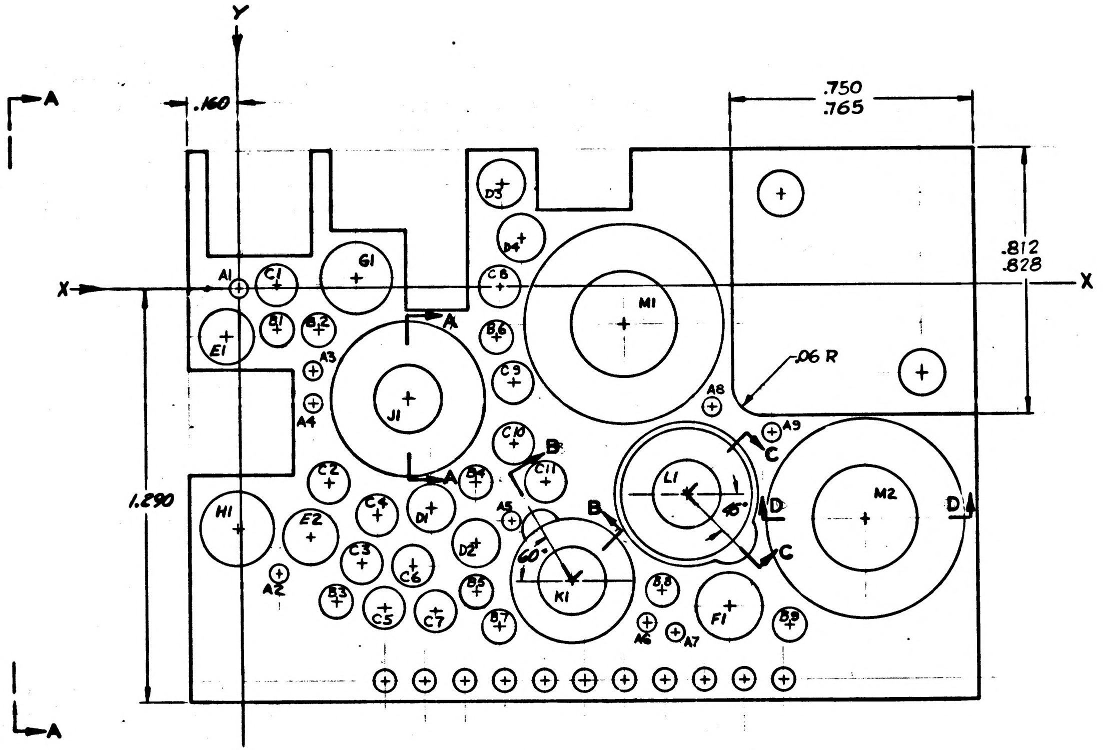
1015725

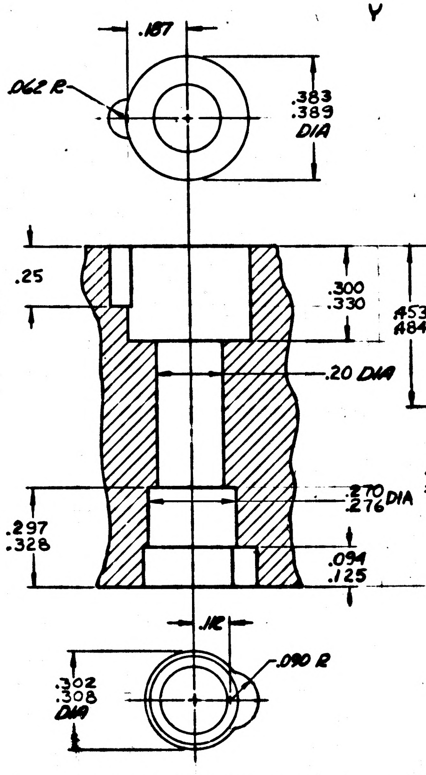
HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⊕ DIM	HOLE DIA	QTY
A1	0.000	0.000	.006	.058 .062	9
A2	0.120	0.890			
A3	0.230	0.260			
A4	0.230	0.360			
A5	0.850	0.730			
A6	1.270	1.050			
A7	1.360	1.080			
A8	1.480	0.380			
A9	1.670	0.460			
B1	0.120	0.130	.006	.100 .104	9
B2	0.250	0.130			
B3	0.300	0.980			
B4	0.740	0.610			
B5	0.740	0.950			
B6	0.810	0.160			
B7	0.810	1.060			
B8	1.320	0.950			
B9	1.720	1.060			
C1	0.120	-0.010	.006	.127 .131	11
C2	0.280	0.610			
C3	0.380	0.860			
C4	0.430	0.710			
C5	0.450	1.000			
C6	0.540	0.870			
C7	0.610	1.010			
C8	0.820	0.000			
C9	0.860	0.300			
C10	0.860	0.490			
C11	0.960	0.610			
D1	0.600	0.690	.006	.146 .150	4
D2	0.740	0.800			
D3	0.830	-0.320			
D4	0.890	-0.150			
E1	-0.040	0.150	.006	.165 .169	2
E2	0.220	0.780			
F1	1.530	1.000	.006	.233 .237	1
G1	0.370	-0.030	.006	.220 .224	1
H1	-0.010	0.750	.006	.233 .237	1
J1	0.530	0.350	.006	SEE SECT A-A	1
K1	1.040	0.920	.006	SEE SECT B-B	1
L1	1.400	0.650	.006	SEE SECT C-C	1
M1	1.210	0.120	.006	SEE SECT D-D	2
M2	1.960	0.730			

		REVISIONS TDRR 01546			
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		CHANGE PER TDRR 03015		9-5-63	WK
B		REVISED PER TDRR 030..		9-5-63	WK
C		REVISED PER TDRR 03280		9-19-63	
D		REVISED PER TDRR 03851			
E		REVISED PER TDRR 03853			
F		REVISED PER TDRR 0495			

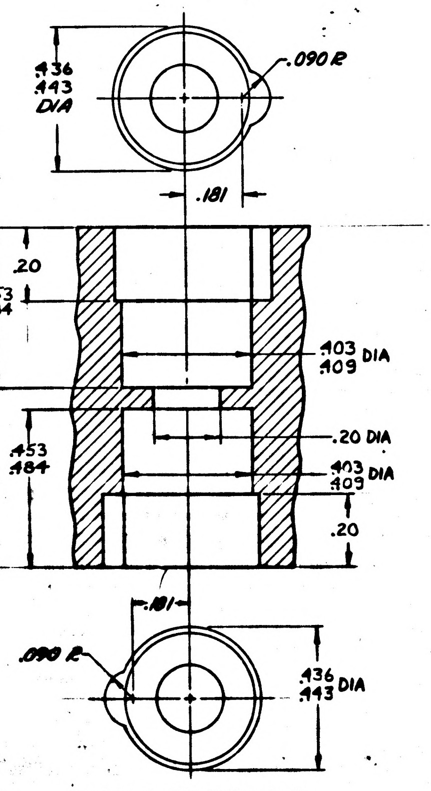

.484 DIA
.20 DIA
.484
.515
.296
.328

PARTIAL SECTION A-A

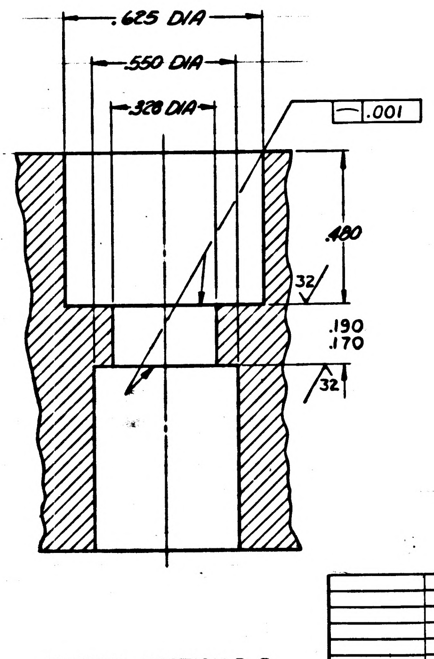

Y
X
A
.160
.750
.765
.812
.828
1.290
.06 R
60°
45°
A1
A2
A3
A4
A5
A6
A7
A8
A9
B1
B2
B3
B4
B5
B6
B7
B8
B9
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
D1
D2
D3
D4
E1
E2
F1
G1
H1
J1
K1
L1
M1
M2
B
C
D


.187
.062 R
.383
.389
DIA
.25
.300
.330
.20 DIA
.270
.276 DIA
.297
.328
.094
.125
.112
.090 R
.302
.308
DIA

PARTIAL SECTION B-B


.436
.443
DIA
.090 R
.181
.453
.484
.20
.403
.409 DIA
.20 DIA
.453
.484
.403
.409 DIA
.20
.181
.090 R
.436
.443 DIA

PARTIAL SECTION C-C


.625 DIA
.550 DIA
.328 DIA
.001
.480
32
.190
.170
32

PARTIAL SECTION D-D
2 PLACES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

2▷ INSTALL ITEM 2 PER MS33646
EXCEPT DIM "F" TO BE .594. BREAK OFF TANGS.

MUST BE FREE FROM BURRS.

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED $\overset{125}{\surd}$.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5/QQ-M-31A
FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
PLUG INSERT HOLES

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW THREAD
1	1	1015725-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007049	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	.XX ±.02	+1°
— —	.XXX ±.005	-1°

DO NOT SCALE THIS DRAWING

MATERIAL 1▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN DATE 11MAY63
CHECKED C. Pirode 10 MAY 63
J.M. BLYSHAK 4 MAY 63
APPROVAL A.J. KOBEL MAY 63
7 JUNE 63
APPROVAL 12 JUN 63

NASA APPROVAL

MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

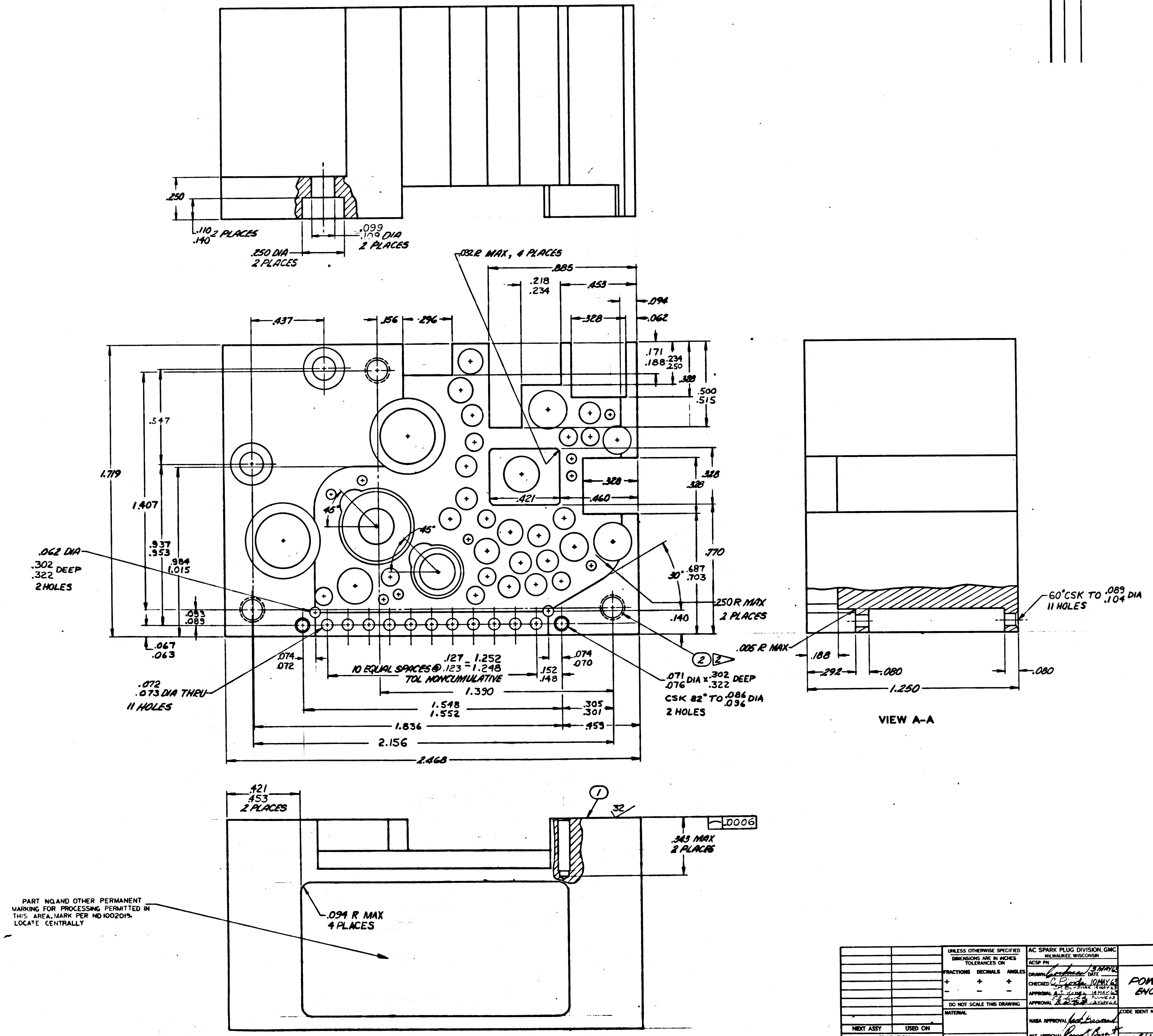
HEATSINK
POWER SUPPLY 25.6 KC
ENCODER EXCITATION

CODE IDENT NO.
SIZE E
1015725

SCALE 5/1
SHEET 1 OF 2

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		CHANGE PER TDRR 03 5			WK
B		REVISED PER TDRR 03016			WK
C		REVISED PER TDRR 03260		9-19-63	
D		REVISED PER TDRR 03851			
E		REVISED PER TDRR 03853			
F		REVISED PER TDRR 4.95			WK

REVISIONS



.250
.110
.140
2 PLACES
.099
.109 DIA
2 PLACES
.250 DIA
2 PLACES
.032 R MAX, 4 PLACES
.885
.218
.234
.453
.094
.062
.437
.156
.296
.328
.171
.188
.234
.250
.328
.500
.515
.547
1.719
1.407
.937
.953
.984
1.015
45°
45°
.421
.328
.460
.328
.328
.770
.687
.703
30°
.140
.250 R MAX
2 PLACES
.062 DIA
.302
.322 DEEP
2 HOLES
.093
.089
.067
.063
.074
.072
10 EQUAL SPACES @ .127 / .123 = 1.252 / 1.248
TOL NONCUMULATIVE
.152
.148
.074
.070
1.390
.072
.073 DIA THRU
11 HOLES
1.548
1.552
.305
.301
1.836
.453
2.156
2.468
.071
.076 DIA x .302 / .322 DEEP
CSK 82° TO .086 / .096 DIA
2 HOLES
2
3
.005 R MAX
60° CSK TO .089 / .104 DIA
11 HOLES
.188
.292
.080
1.250
.080
VIEW A-A
.421
.453
2 PLACES
1
32
.0006
.343 MAX
2 PLACES
.094 R MAX
4 PLACES

PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA. MARK PER ND 1002019. LOCATE CENTRALLY

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

NEXT ASSY | USED ON
APPLICATION

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Coolman DATE 3 MAY 63
CHECKED C. Pioida 10 MAY 63
J.M. BLYSHAK 14 MAY 63
APPROVAL A.J. KODEL 14 MAY 63
E.J. 7 JUNE 63
APPROVAL 12 JUN 63
NASA APPROVAL Jack Barnard
MIT APPROVAL Perry K Bryant

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK,
POWER SUPPLY 25.6 KC
ENCODER EXCITATION

CODE IDENT NO.
SIZE E
1015725
SCALE 5/1
SHEET 2 OF 2

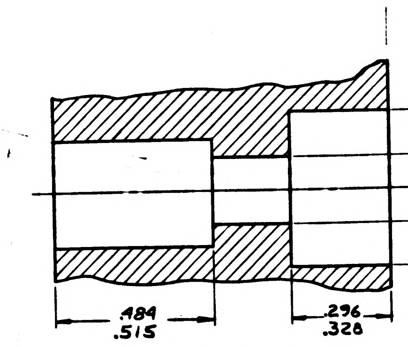
1015725 F

INCHES
PHOTOGRAPHIC SCALE ONLY

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⌖ DIM	HOLE DIA	QTY
A1	0.000	0.000	.006	.058 .062	9
A2	0.120	0.890			
A3	0.230	0.260			
A4	0.230	0.360			
A5	0.850	0.730			
A6	1.270	1.050			
A7	1.360	1.080			
A8	1.480	0.380			
A9	1.670	0.460			
B1	0.120	0.130	.006	.100 .104	9
B2	0.250	0.130			
B3	0.300	0.980			
B4	0.740	0.610			
B5	0.740	0.950			
B6	0.810	0.160			
B7	0.810	1.060			
B8	1.320	0.950			
B9	1.720	1.060			
C1	0.120	-0.010	.006	.127 .131	11
C2	0.280	0.610			
C3	0.380	0.860			
C4	0.430	0.710			
C5	0.450	1.000			
C6	0.540	0.870			
C7	0.610	1.010			
C8	0.820	0.000			
C9	0.860	0.300			
C10	0.860	0.490			
C11	0.960	0.610			
D1	0.600	0.690	.006	.146 .150	4
D2	0.740	0.800			
D3	0.830	-0.320			
D4	0.890	-0.150			
E1	-0.040	0.150	.006	.165 .169	2
E2	0.220	0.780			
F1	1.530	1.000	.006	.233 .237	1
G1	0.370	-0.030	.006	.220 .224	1
H1	-0.010	0.750	.006	.233 .237	1
J1	0.530	0.350	.006	SEE SECT A-A	1
K1	1.040	0.920	.006	SEE SECT B-B	1
L1	1.400	0.650	.006	SEE SECT C-C	1
M1	1.210	0.120	.006	SEE SECT D-D	2
M2	1.960	0.730			

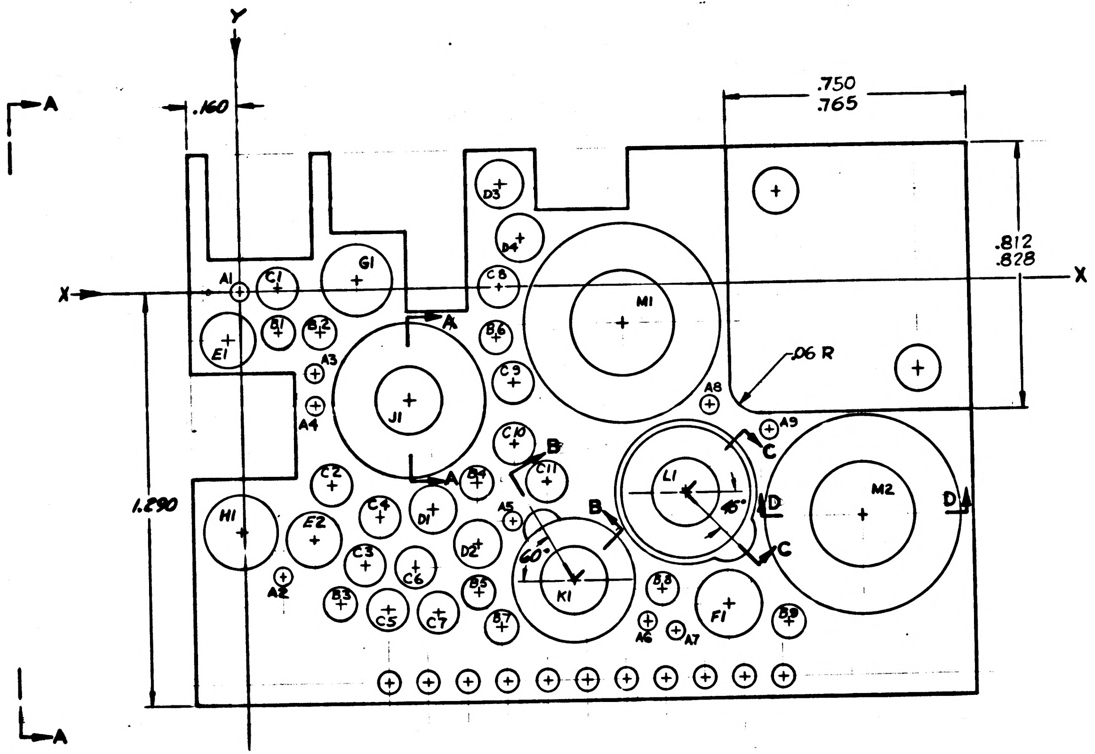
REVISIONS TDRR 01540

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		CHANGE PER TDRR 03015		9-5-63	EPL WK
B		REVISED PER TDRR 030[illegible]		9-5-63	WK
C		REVISED PER TDRR 03280		[illegible]	[illegible]
D		REVISED PER TDRR 03851			EPL
E		REVISED PER TDRR 03853			EPL
F		REVISED PER TDRR 04195		[illegible] 63	EPL
G		REVISED PER TDRR 04679		[illegible]	EPL

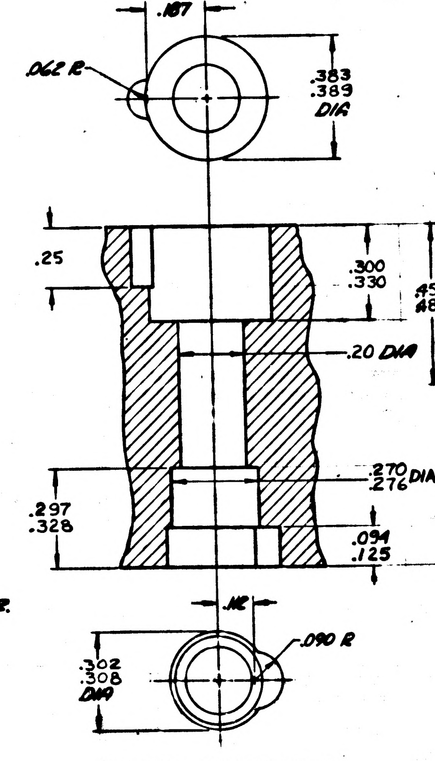


.484 DIA
.20 DIA
.484
.515
.296
.328

PARTIAL SECTION A-A

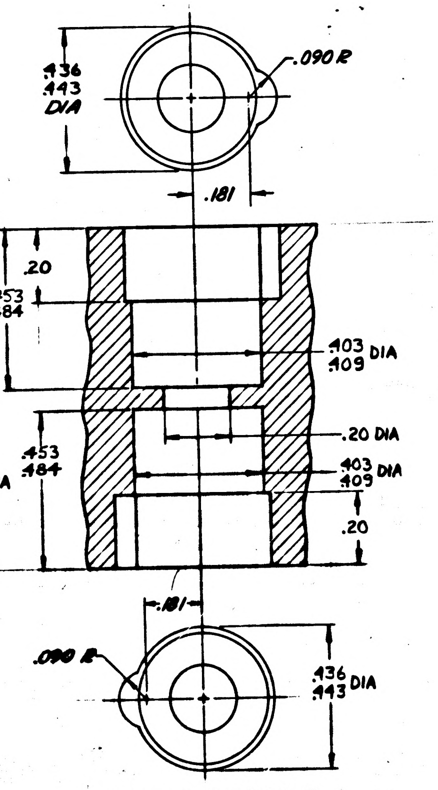


Y
X
A
.160
.750
.765
.812
.828
1.290
.06 R
A1 A2 A3 A4 A5 A6 A7 A8 A9
B1 B2 B3 B4 B5 B6 B7 B8 B9
C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11
D1 D2 D3 D4
E1 E2
F1
G1
H1
J1
K1
L1
M1 M2
B
C
D
45°
60°



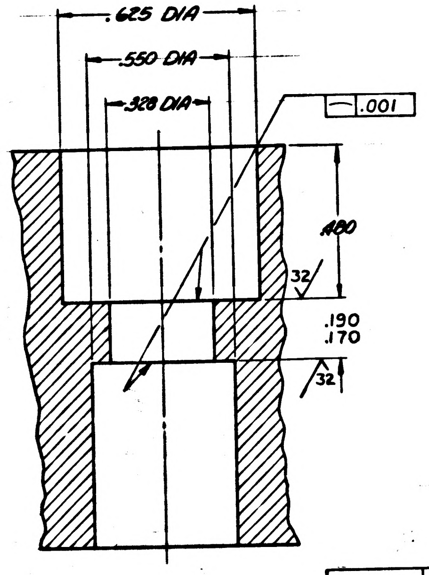
.187
.062 R
.383
.389
DIA
.25
.300
.330
.20 DIA
.270
.276 DIA
.297
.328
.094
.125
.112
.302
.308
DIA
.090 R

PARTIAL SECTION B-B



.436
.443
DIA
.090 R
.181
.20
.453
.484
.403
.409 DIA
.20 DIA
.453
.484
.403
.409 DIA
.20
.181
.090 R
.436
.443 DIA

PARTIAL SECTION C-C



.625 DIA
.550 DIA
.328 DIA
.001
.480
32
.190
.170
32

PARTIAL SECTION D-D
2 PLACES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

2▷ INSTALL ITEM 2 PER MS 33646
EXCEPT DIM "F" TO BE .594. BREAK OFF TANGS.

MUST BE FREE FROM BURRS.

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5/QQ-M-31A
FINISH: ANODIZE USING MIL-M-3171 A, TYPE IV
PLUG INSERT HOLES

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW THREAD
1	1	1015725-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1007049	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — .XX ±.02 +1°
− — .XXX ±.005 −1°
DO NOT SCALE THIS DRAWING

MATERIAL 1▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 11 MAY 63
CHECKED C. Pizoda 10 MAY 63
J M BLYSHAK 14 MAY 63
APPROVAL A J KODEL 14 MAY 63
[illegible] 7 JUNE 63
APPROVAL [illegible] 12 JUN 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
POWER SUPPLY 25.6 KC
ENCODER EXCITATION

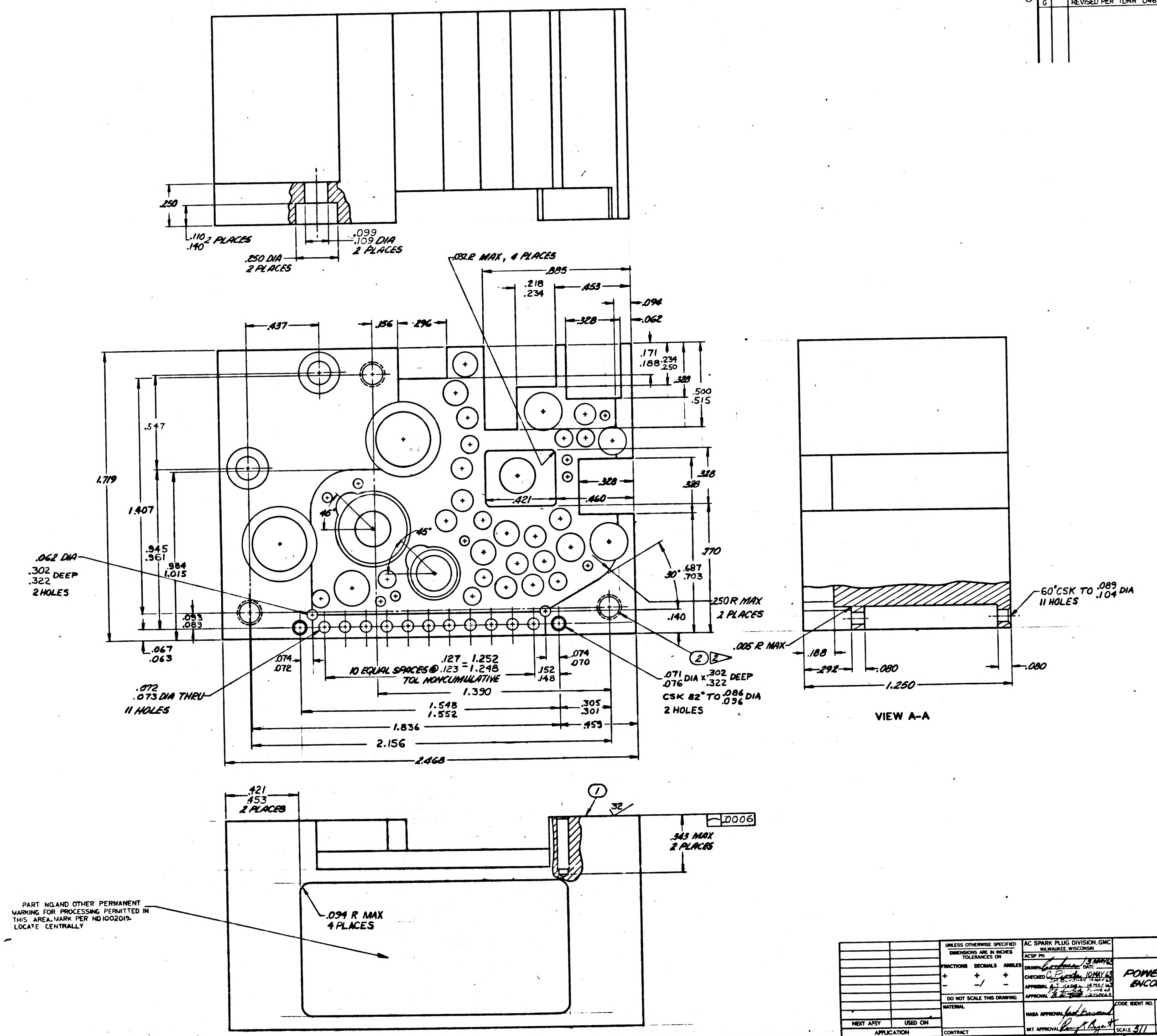
CODE IDENT NO. | SIZE E | 1015725
SCALE 5/1 | SHEET 1 OF 2

1015725

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS TO TDRR 0315

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		CHANGE PER TDRR 03015			
B		REVISED PER TDRR 03016			
C		REVISED PER TDRR 03260		7-19-63	
D		REVISED PER TDRR 03851			
E		REVISED PER TDRR 03853			
F		REVISED PER TDRR 04196			
G		REVISED PER TDRR 04679			



.250
.110
.140 2 PLACES
.250 DIA
2 PLACES
.099
.109 DIA
2 PLACES
.032 R MAX, 4 PLACES
.885
.218
.234
.453
.094
.062
.328
.437
.156
.296
.171
.188
.234
.250
.328
.500
.515
.547
1.719
1.407
.945
.961
.984
1.015
.328
.328
.421
.460
.770
46°
45°
30°
.687
.703
.062 DIA
.302
.322 DEEP
2 HOLES
.093
.089
.067
.063
.140
.250 R MAX
2 PLACES
2
.074
.072
10 EQUAL SPACES @ .127 / .123 = 1.252 / 1.248
TOL NONCUMULATIVE
.152
.148
.074
.070
.072
.073 DIA THRU
11 HOLES
1.390
.071
.076 DIA x .302 / .322 DEEP
CSK 82° TO .086 / .096 DIA
2 HOLES
1.548
1.552
.305
.301
1.836
.453
2.156
2.468
60° CSK TO .089 / .104 DIA
11 HOLES
.005 R MAX
.188
.292
.080
.080
1.250
VIEW A-A
.421
.453
2 PLACES
1
32
.0006
.343 MAX
2 PLACES
.094 R MAX
4 PLACES

PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA. MARK PER ND 1002019. LOCATE CENTRALLY

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + −/ ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 3 MAY 63
CHECKED C. Pioda 10 MAY 63
J.M. BLYSHAK 14 MAY 63
APPROVAL A.J. KADEL 14 MAY 63
E.J. Sulek 7 JUNE 63
APPROVAL 12 JUNE 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK,
POWER SUPPLY 25.6 KC
ENCODER EXCITATION

CODE IDENT NO. SIZE E 1015725
SCALE 5/1 SHEET 2 OF 2

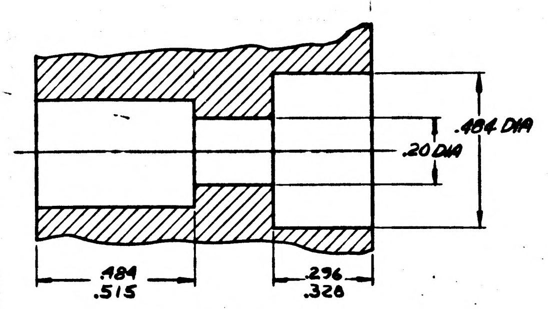
INCHES
PHOTOGRAPHIC SCALE ONLY

SEE NOTE 3

HOLE IDENT	X DIM.	Y DIM.		HOLE DIA	QTY
A1	0.000	0.000		.058 .062	9
A2	0.120	0.890			
A3	0.230	0.260			
A4	0.230	0.360			
A5	0.850	0.730			
A6	1.270	1.050			
A7	1.360	1.080			
A8	1.480	0.380			
A9	1.670	0.460			
B1	0.120	0.130		.100 .104	9
B2	0.250	0.130			
B3	0.300	0.980			
B4	0.740	0.610			
B5	0.740	0.950			
B6	0.810	0.160			
B7	0.810	1.060			
B8	1.320	0.950			
B9	1.720	1.060			
C1	0.120	-0.010		.127 .131	11
C2	0.280	0.610			
C3	0.380	0.860			
C4	0.430	0.710			
C5	0.450	1.000			
C6	0.540	0.870			
C7	0.610	1.010			
C8	0.820	0.000			
C9	0.860	0.300			
C10	0.860	0.490			
C11	0.960	0.610			
D1	0.600	0.690		.146 .150	4
D2	0.740	0.800			
D3	0.830	-0.320			
D4	0.890	-0.150			
E1	-0.040	0.150		.165 .169	2
E2	0.220	0.780			
F1	1.530	1.000		.233 .237	1
G1	0.370	-0.030		.220 .224	1
H1	-0.010	0.750		.233 .237	1
J1	0.530	0.350		SEE SECT A-A	1
K1	1.040	0.920		SEE SECT B-B	1
L1	1.400	0.650		SEE SECT C-C	1
M1	1.210	0.120		SEE SECT D-D	2
M2	1.960	0.730			

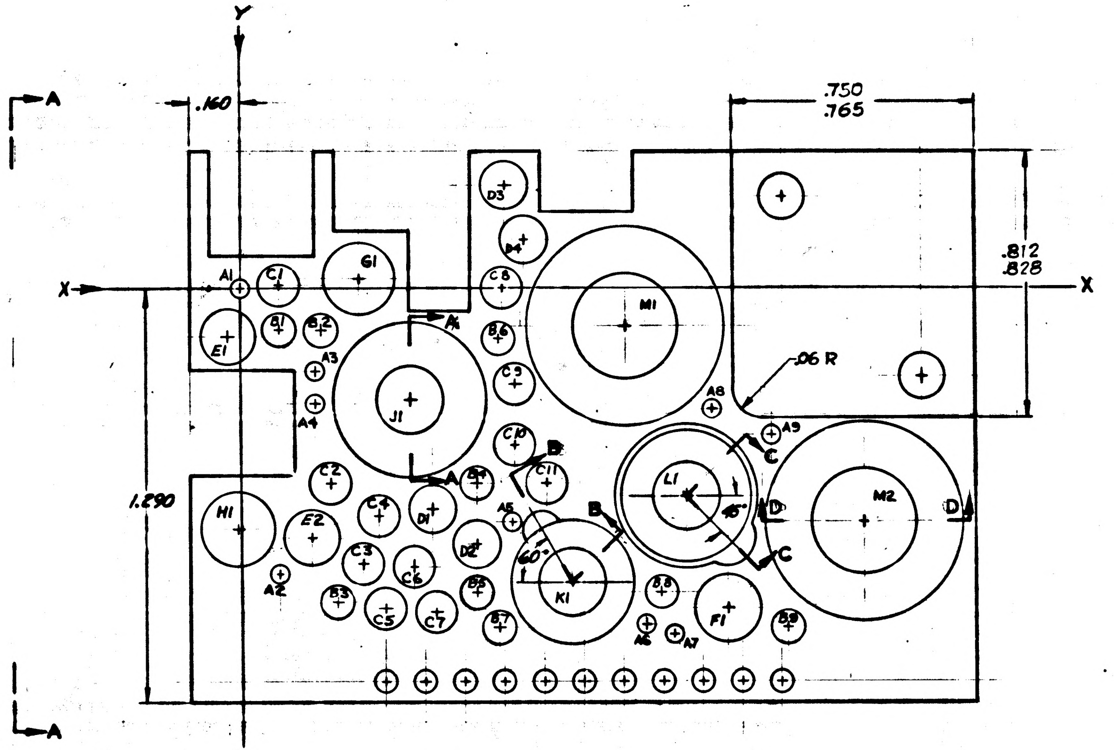
SYM	ZONE	DESCRIPTION	CHG. NO.	DATE	APPD.
A		CHANGE PER TDRR 03015		9-5-63	[illegible]
B		REVISED PER TDRR 03016		[illegible]	[illegible]
C		REVISED PER TDRR 03250		[illegible]	[illegible]
D		REVISED PER TDRR 03851			[illegible]
E		REVISED PER TDRR 03853			[illegible]
F		REVISED PER TDRR 04195		[illegible]	[illegible]
G		REVISED PER TDRR 04679		[illegible]	[illegible]
H		REVISED PER TDRR 05485		[illegible]	[illegible]

REVISIONS TDRR 01540

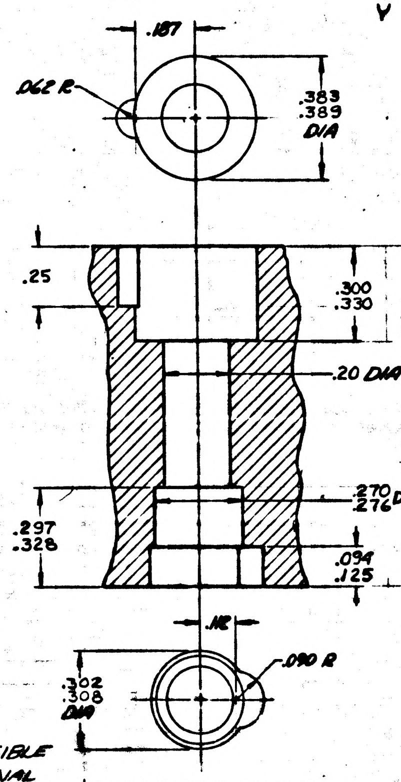


.484 DIA
.20 DIA
.484
.515
.296
.328

PARTIAL SECTION A-A

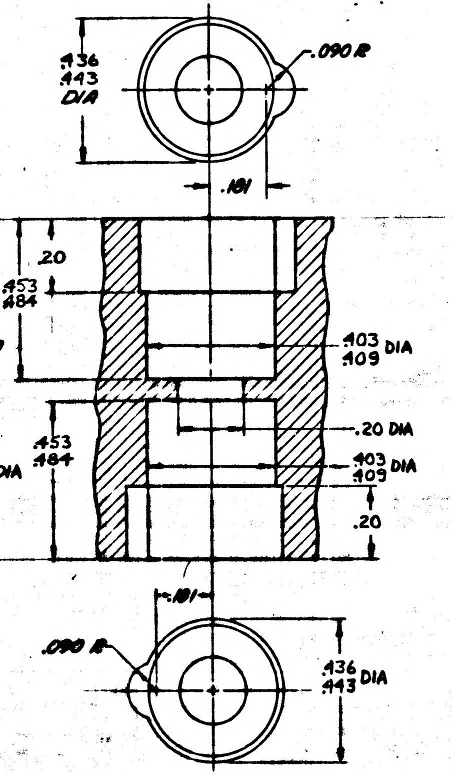


Y
X
A
.160
.750
.765
.812
.828
1.290
.06 R
A1
A2
A3
A4
A5
A6
A7
A8
A9
B1
B2
B3
B4
B5
B6
B7
B8
B9
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
D1
D2
D3
D4
E1
E2
F1
G1
H1
J1
K1
L1
M1
M2
B
C
D
60°
45°



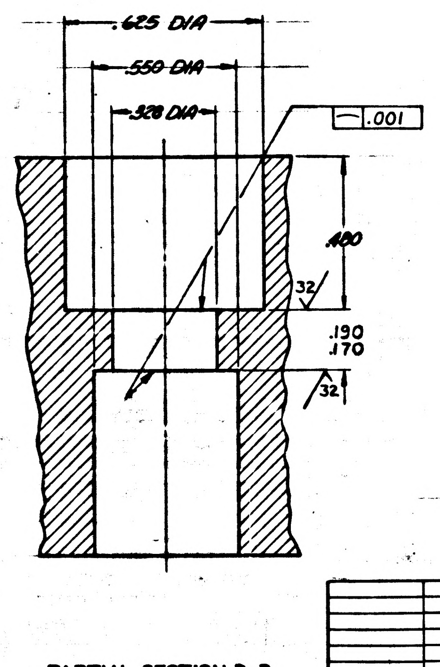
.187
.062 R
.383
.389
DIA
.25
.300
.330
.20 DIA
.270
.276 DIA
.297
.328
.094
.125
.112
.090 R
.302
.308
DIA

PARTIAL SECTION B-B



.436
.443
DIA
.090 R
.181
.20
.453
.484
.403
.409 DIA
.20 DIA
.453
.484
.403
.409 DIA
.20
.181
.090 R
.436
.443 DIA

PARTIAL SECTION C-C



.625 DIA
.550 DIA
.328 DIA
.001
.480
32
.190
.170
32

PARTIAL SECTION D-D
2 PLACES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

4 INSTALL ITEM 2 PER MS33646, BREAK OFF TANGS

MUST BE FREE FROM BURRS.

UNLESS OTHERWISE SPECIFIED:

SURFACE ROUGHNESS MUST NOT EXCEED 125/√.

ALL CORNERS AND EDGES TO BE .005 TO .015 R OR CHAMFER.

1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5/QQ-M-31A
FINISH: ANODIZE USING MIL-M-3171 A, TYPE IV
PLUG INSERT HOLES

3 THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DEFORMATION IN AN ADJACENT HOLE OR ON AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	MS21209-C0620	INSERT, SCREW THREAD
1	1	1015725-1	HEATSINK

LIST OF PARTS AND MATERIALS

1007049	
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — .XX ±.02 +1°
− — .XXX ±.005 −1°
DO NOT SCALE THIS DRAWING

MATERIAL 1

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE
CHECKED C. Pineda 10 MAY 63
J M ELYSWAK 14 MAY 63
APPROVAL A. J. KORDEL 14 MAY 63
[illegible] 9 JUNE 63
APPROVAL [illegible] 12 JUN 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

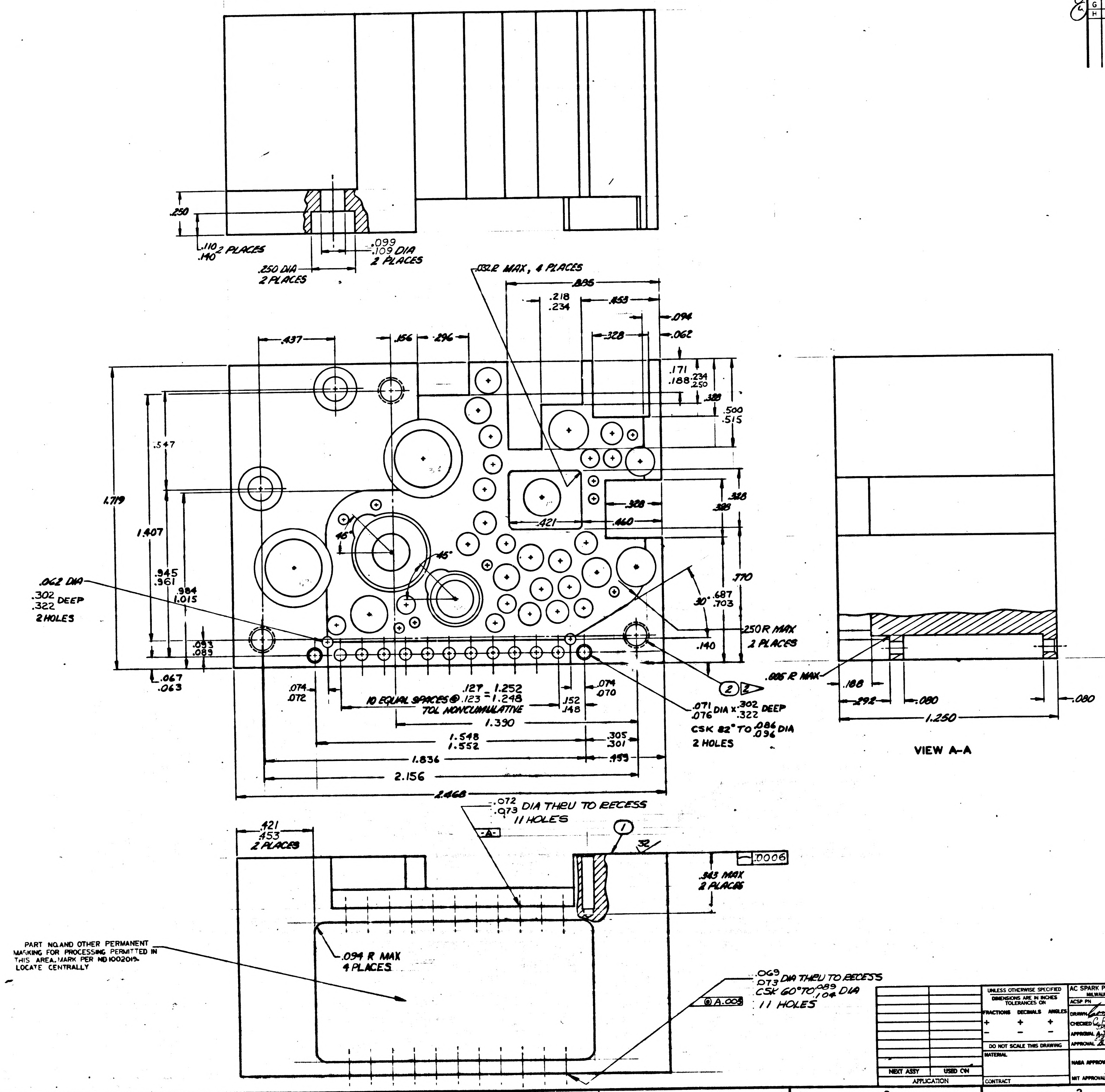
HEATSINK
POWER SUPPLY 25.6 KC
ENCODER EXCITATION

CODE IDENT NO.
SIZE E
1015725
SCALE 5/1
SHEET 1 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS TORIZ 01540

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		CHANGE PER TDRR 03015			EPK WK
B		REVISED PER TDRR 03016			WK
C		REVISED PER TDRR 03280		9/19/63	WK
D		REVISED PER TDRR 03851			EPK WK
E		REVISED PER TDRR 03853			WK
F		REVISED PER TDRR 04196		OCT 63	EPK WK
G		REVISED PER TDRR 04679			EPK
H		REVISED PER TDRR 05485		DEC 63	EPK WK



.250
.110 .140 2 PLACES
.099 .109 DIA 2 PLACES
.250 DIA 2 PLACES
.032 R MAX, 4 PLACES
.895
.218 .234
.453
.094
.062
.328
.437
.156
.296
.171 .188
.234 .250
.328
.500 .515
.547
1.719
1.407
.421
.328
.460
.328
.328
45°
45°
.945 .961
.984 1.015
.062 DIA .302 .322 DEEP 2 HOLES
.770
30°
.687 .703
.250 R MAX 2 PLACES
.140
.093 .089
.067 .063
.074 .072
10 EQUAL SPACES @ .127 .123 = 1.252 1.248 TOL NONCUMULATIVE
.152 .148
.074 .070
.071 .076 DIA x .302 .322 DEEP CSK 82° TO .086 .096 DIA 2 HOLES
2
1.390
1.548 1.552
.305 .301
1.836
.453
2.156
2.468
.005 R MAX
.188
.292
.080
.080
1.250
VIEW A-A
.421 .453 2 PLACES
.072 .073 DIA THRU TO RECESS 11 HOLES
A
1
32
.0006
.343 MAX 2 PLACES
.094 R MAX 4 PLACES
.069 .073 DIA THRU TO RECESS CSK 60° TO .089 .104 DIA 11 HOLES
A .005

PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA, MARK PER ND 1002019. LOCATE CENTRALLY

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 3 MAY 63
CHECKED C. Pionda 10 MAY 63
J.M. BLYSHAK 14 MAY 63
APPROVAL A.J. KADEL 14 MAY 63
7 JUNE 63
APPROVAL 12 JUNE 63
NASA APPROVAL
MIT APPROVAL Paul K. Bryant

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

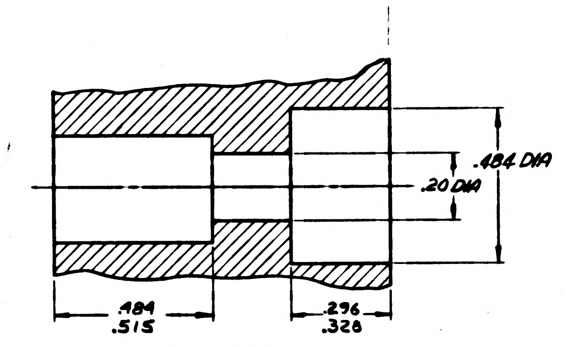
HEATSINK,
POWER SUPPLY 25.6 KC
ENCODER EXCITATION

CODE IDENT NO.
SIZE E
1015725
SCALE 5/1
SHEET 2 OF 2

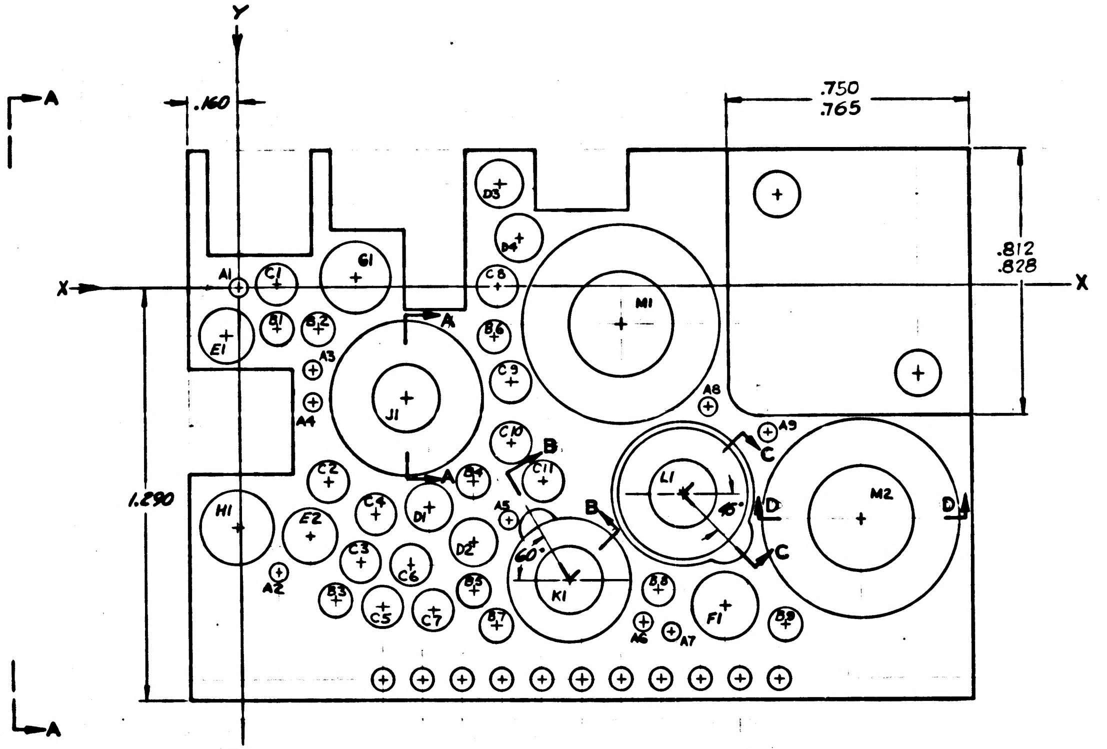
INCHES
PHOTOGRAPHIC SCALE ONLY

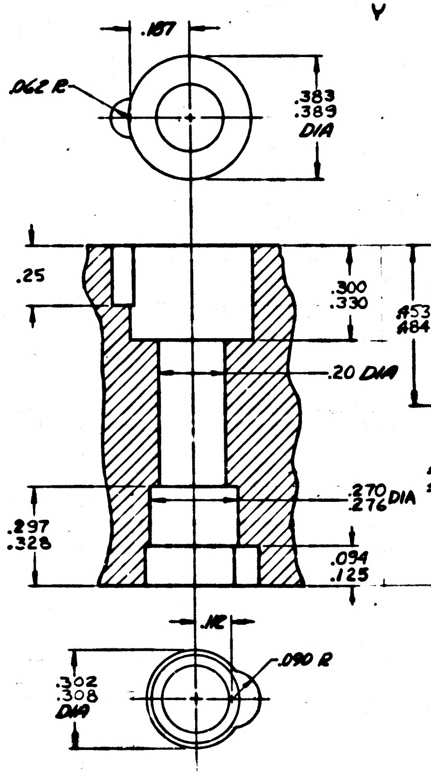
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD

HOLE IDENT	X BASIC DIM.	Y BASIC DIM.	⌖ DIM	HOLE DIA	QTY
A1	0.000	0.000	.006	.058 .062	9
A2	0.120	0.890			
A3	0.230	0.260			
A4	0.230	0.360			
A5	0.850	0.730			
A6	1.270	1.050			
A7	1.360	1.080			
A8	1.480	0.380			
A9	1.670	0.460			
B1	0.120	0.130	.006	.100 .104	9
B2	0.250	0.130			
B3	0.300	0.980			
B4	0.740	0.610			
B5	0.740	0.950			
B6	0.810	0.160			
B7	0.810	1.060			
B8	1.320	0.950			
B9	1.720	1.060			
C1	0.120	-0.010	.006	.127 .131	11
C2	0.280	0.610			
C3	0.380	0.860			
C4	0.430	0.710			
C5	0.450	1.000			
C6	0.540	0.870			
C7	0.610	1.010			
C8	0.820	0.000			
C9	0.860	0.300			
C10	0.860	0.490			
C11	0.960	0.610			
D1	0.600	0.690	.006	.146 .150	4
D2	0.740	0.800			
D3	0.830	-0.320			
D4	0.890	-0.150			
E1	-0.040	0.150	.006	.165 .169	2
E2	0.220	0.780			
F1	1.530	1.000	.006	.208 .212	1
G1	0.370	-0.030	.006	.220 .224	1
H1	-0.010	0.750	.006	.233 .237	1
J1	0.530	0.350	.006	SEE SECT A-A	1
K1	1.040	0.920	.006	SEE SECT B-B	1
L1	1.400	0.650	.006	SEE SECT C-C	1
M1	1.210	0.120	.006	SEE SECT D-D	2
M2	1.960	0.730			


.484 DIA
.20 DIA
.484
.515
.296
.328

PARTIAL SECTION A-A


Y
X
X
Y
A
A
.160
.750
.765
.812
.828
1.290
A1
A2
A3
A4
A5
A6
A7
A8
A9
B1
B2
B3
B4
B5
B6
B7
B8
B9
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
D1
D2
D3
D4
E1
E2
F1
G1
H1
J1
K1
L1
M1
M2
B
B
C
C
D
D
60°
45°


.187
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.383
.389
DIA
.25
.300
.330
.20 DIA
.270
.276 DIA
.297
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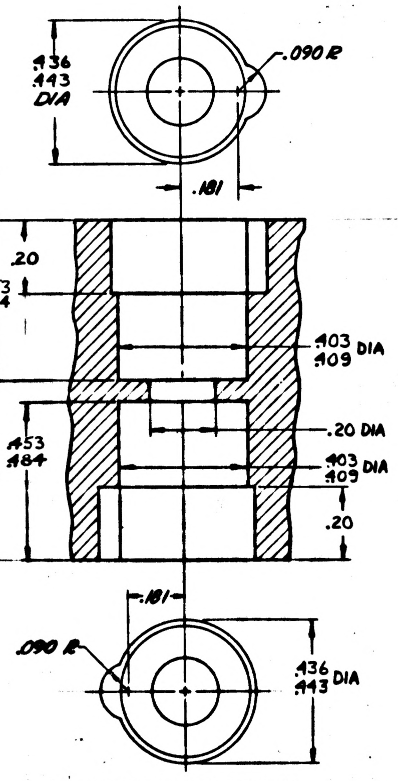
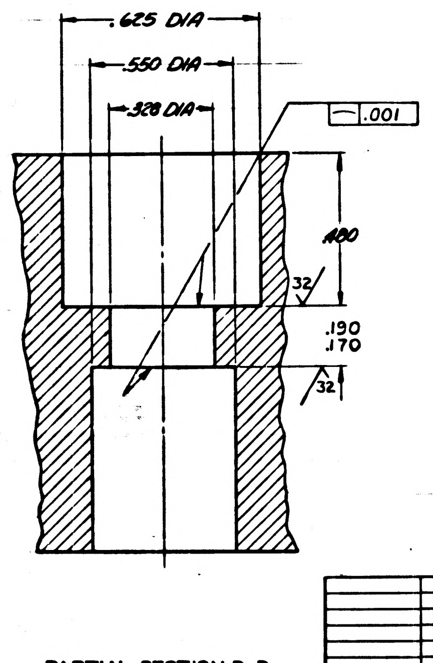
.094
.125
.112
.090 R
.302
.308
DIA

PARTIAL SECTION B-B


.436
.443
DIA
.090 R
.181
.20
.453
.484
.403
.409 DIA
.20 DIA
.453
.484
.403
.409 DIA
.20
.181
.090 R
.436
.443 DIA

PARTIAL SECTION C-C


.625 DIA
.550 DIA
.328 DIA
.001
.480
32
.190
.170
32

PARTIAL SECTION D-D
2 PLACES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

ALL FLAT SURFACES TO BE SQUARE AND/OR PARALLEL WITHIN .010.

COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER.

2▷ INSTALL ITEM 2 PER MS33646
EXCEPT DIM "F" TO BE .594. BREAK OFF TANGS.

MUST BE FREE FROM BURRS.

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 125√.
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER.

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5/QQ-M-31A
FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
PLUG INSERT HOLES

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	3	NAS 1222-06E	INSERT, SCREW THREAD
1	1	1015725-1	HEATSINK

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
10107049	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .XX ±.02 ±1°
.XXX ±.005
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE [illegible]63
CHECKED C. Pineda 10MAY63
J.M. BLYSHAK 4MAY63
APPROVAL [illegible] 63
[illegible] 7JUNE63
APPROVAL [illegible] 12JUNE63
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
POWER SUPPLY 25.6 KC
ENCODER EXCITATION

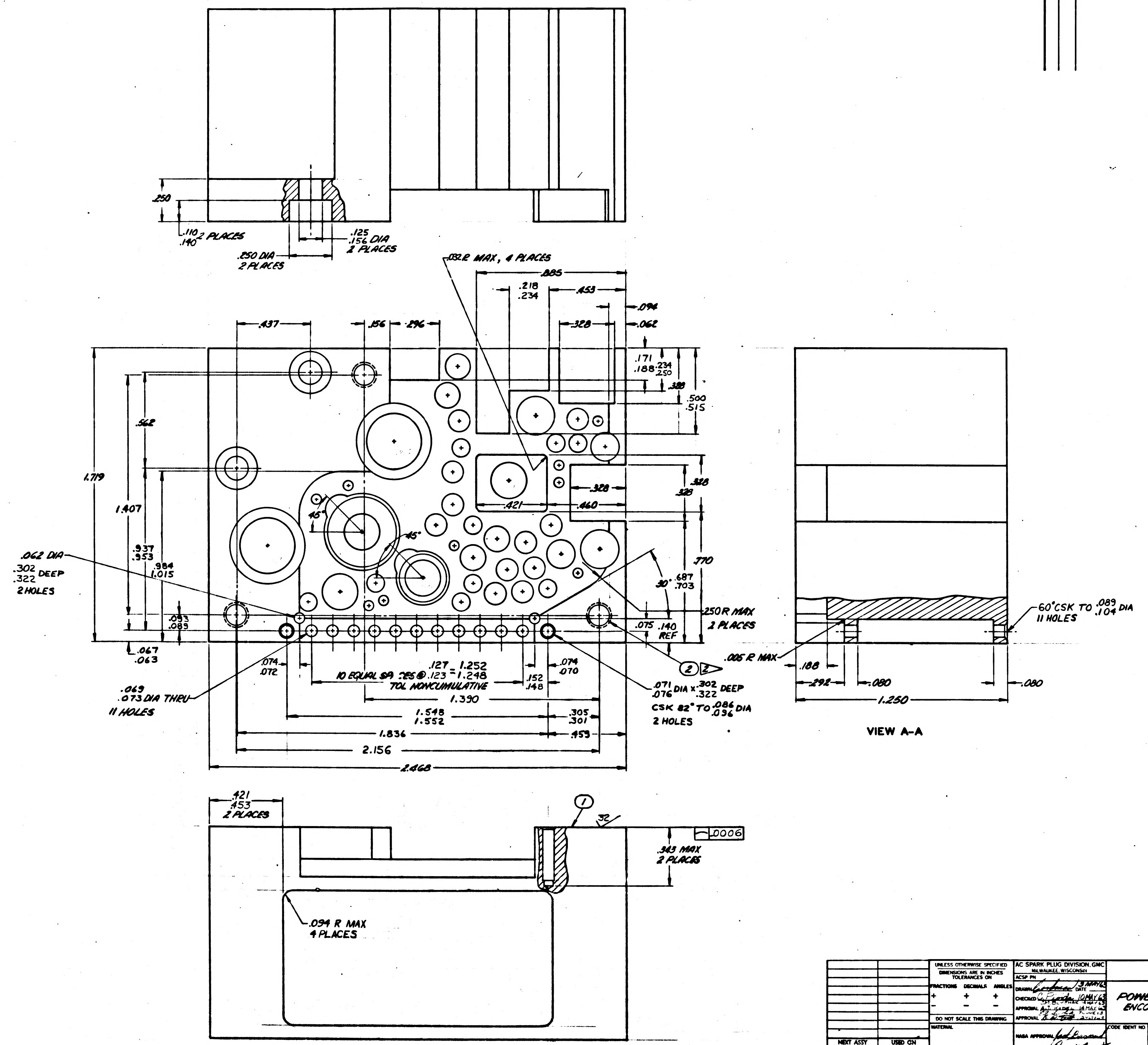
CODE IDENT NO.
SIZE E
1015725
SCALE 5/1
SHEET 1 OF 2

1015725

SHEET 1 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD


.250
.110
.140 2 PLACES
.250 DIA
2 PLACES
.125
.156 DIA
2 PLACES
.032 R MAX, 4 PLACES
.885
.218
.234
.453
.094
.062
.437
.156
.296
.328
.171
.188
.234
.250
.328
.500
.515
.562
1.719
1.407
.328
.328
.421
.460
45°
45°
.770
.937
.953
.984
1.015
30°
.687
.703
.062 DIA
.302
.322 DEEP
2 HOLES
.093
.089
.075
.140 REF
.250 R MAX
2 PLACES
.067
.063
.074
.072
10 EQUAL SPACES @ .127/.123 = 1.252/1.248
TOL NONCUMULATIVE
.152
.148
.074
.070
.071
.076 DIA x .302/.322 DEEP
CSK 82° TO .086/.096 DIA
2 HOLES
.069
.073 DIA THRU
11 HOLES
1.390
1.548
1.552
.305
.301
1.836
.453
2.156
2.468
2
.005 R MAX
60° CSK TO .089/.104 DIA
11 HOLES
.188
.292
.080
.080
1.250
VIEW A-A
.421
.453
2 PLACES
1
32
.0006
.343 MAX
2 PLACES
.094 R MAX
4 PLACES

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
		FRACTIONS + − DECIMALS + − ANGLES + −	ACSP PN	HEATSINK, POWER SUPPLY 25.6 KC ENCODER EXCITATION
			DRAWN 3 MAY 63 DATE	
			CHECKED C. Pionda 10 MAY 63 J.M. Blazchak 14 MAY 63	
			APPROVAL A.J. Kadel 14 MAY 63 9 JUNE 63	
		DO NOT SCALE THIS DRAWING	APPROVAL	
		MATERIAL	NASA APPROVAL Jack Rusnak	CODE IDENT NO. · SIZE E · 1015725
NEXT ASSY	USED ON		MIT APPROVAL Ray K Bryant	
APPLICATION		CONTRACT		SCALE 3/1 · SHEET 2 OF 2

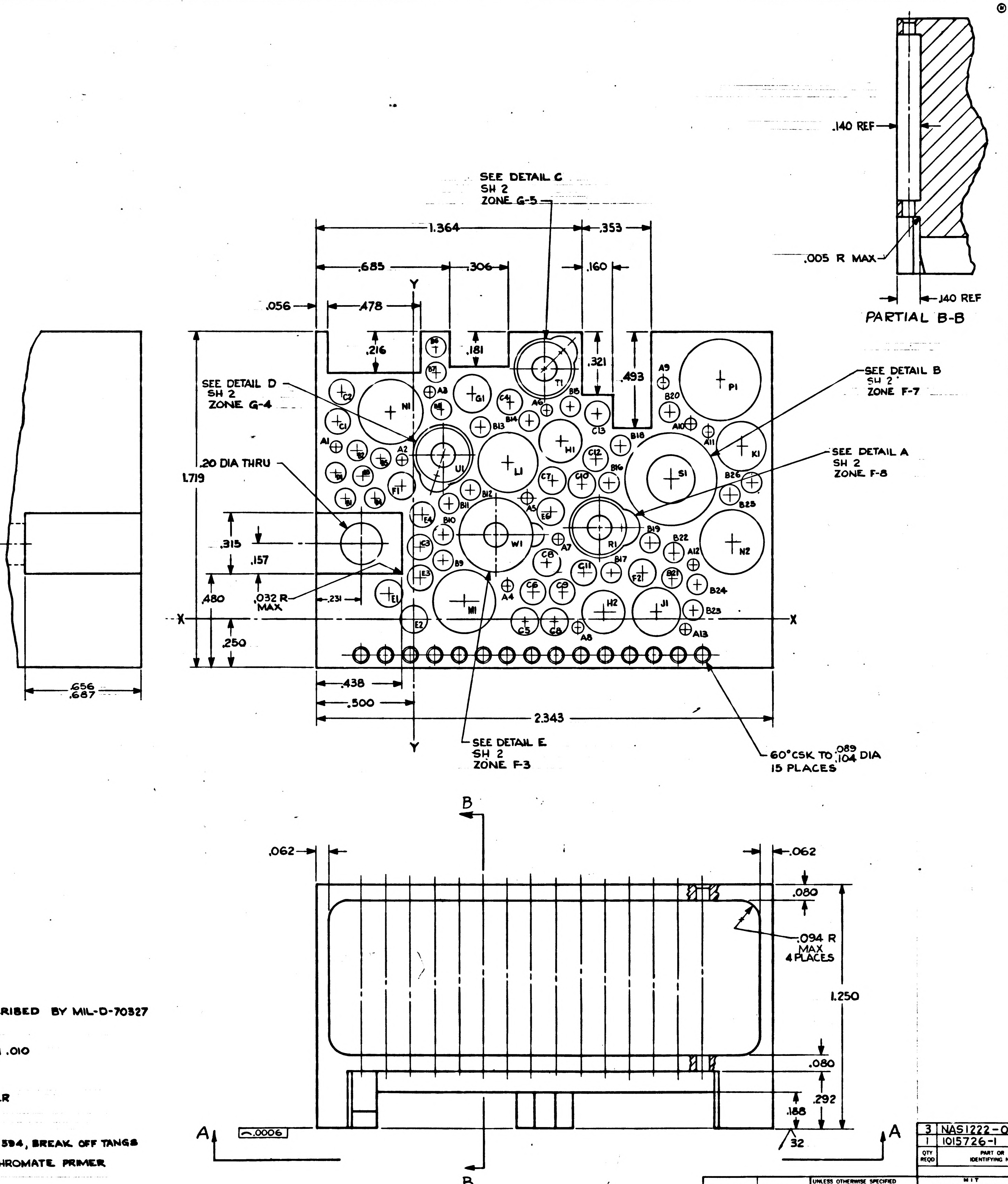
1015725

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO

REVISIONS TDRR 01615			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02071		

HOLE IDENT	"X" BASIC DIM	"Y" BASIC DIM	⌖ DIM	HOLE DES	QTY
A1	-.400	.880	.006	.058 .062	13
A2	-.060	.810			
A3	.080	1.160			
A4	.480	.170			
A5	.380	.620			
A6	.680	1.070			
A7	.740	.410			
A8	.840	-.040			
A9	1.280	1.210			
A10	1.420	1.000			
A11	1.510	.960			
A12	1.430	.290			
A13	1.390	-.050			
B1	-.350	.620	.006	.100 .104	26
B2	-.290	.860			
B3	-.260	.730			
B4	-.200	.620			
B5	-.170	.820			
B6	.110	1.260			
B7	.110	1.390			
B8	.140	1.070			
B9	.150	.300			
B10	.150	.430			
B11	.180	.590			
B12	.290	.660			
B13	.340	.900			
B14	.590	1.010			
B15	.800	1.090			
B16	1.000	.700			
B17	1.010	.240			
B18	1.060	.890			
B19	1.210	.390			
B20	1.310	1.060			
B21	1.320	.210			
B22	1.330	.340			
B23	1.430	.050			
B24	1.450	.180			
B25	1.620	.640			
B26	1.730	.700			
C1	-.390	1.010	.006	.127 .131	13
C2	-.370	1.160			
C3	.030	.370			
C4	.490	1.110			
C5	.570	-.010			
C6	.610	.140			
C7	.710	.710			
C8	.720	-.010			
C9	.760	.140			
C10	.860	.690			
C11	.870	.240			
C12	.930	.820			
C13	.940	1.050			
D1	-.400	.750	.006	.105 .109	1
E1	-.130	.130	.006	.146 .150	6
E2	0	0			
E3	.030	.210			
E4	.040	.530			
E5	.680	.290			
E6	.700	.550			
F1	-.060	.680	.006	.153 .157	2
F2	1.170	.240			
G1	.300	1.150	.006	.202 .206	1
H1	.750	.910	.006	.227 .231	2
H2	.990	.040			
J1	1.240	.040	.006	.249 .254	1
K1	1.680	.890	.006	.255 .262	1
L1	.480	.800	.006	.310 .317	1
M1	.260	.090	.006	.326 .333	1
N1	-.120	1.060	.006	.330 .337	2
N2	1.630	.400			
P1	1.570	1.230	.006	.419 .426	1
R1	.950	.470	.006	DETAIL A	1
S1	1.320	.720	.006	DETAIL B	1
T1	.670	1.280	.006	DETAIL C	1
U1	.150	.840	.006	DETAIL D	1
W1	.420	.430	.006	DETAIL E	1



.140 REF
.005 R MAX
.140 REF
PARTIAL B-B
SEE DETAIL C SH 2 ZONE G-5
1.364
.353
.685
.306
.160
.056
.478
Y
.216
.181
.321
.493
SEE DETAIL B SH 2 ZONE F-7
SEE DETAIL D SH 2 ZONE G-4
SEE DETAIL A SH 2 ZONE F-8
.20 DIA THRU
1.719
.315
.157
.032 R MAX
.231
.480
.250
X
X
.438
.500
2.343
Y
SEE DETAIL E SH 2 ZONE F-3
60° CSK TO .089 .104 DIA 15 PLACES
.656
.687
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19 B20 B21 B22 B23 B24 B25 B26
C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13
D1 E1 E2 E3 E4 E5 E6 F1 F2 G1 H1 H2 J1 K1 L1 M1 N1 N2 P1 R1 S1 T1 U1 W1
B
.062
.062
.080
.094 R MAX 4 PLACES
1.250
.080
.292
.188
32
A
.0006
A
B

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MUST BE FREE FROM BURRS

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010

UNLESS OTHERWISE SPECIFIED:
SURFACE ROUGHNESS MUST NOT EXCEED 125
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER

3 INSTALL FIND NO. 2 PER MS33646 EXCEPT DIMENSION F TO BE .594, BREAK OFF TANGS
COAT THREADS AND FIND NO. 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5/QQ-M-31A

2 FINISH: ANODIZE USING MIL-M-3171A IV PLUG INSERT HOLES

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	NAS1222-06E	INSERT, SCREW-LOCKING	2
1	1015726-1	HEATSINK	

LIST OF MATERIALS

1007043	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS .XX ± .02 .XXX ± .005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH 2

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DRAWN A SUMMERVILLE DATE 8MAY63
CHECKED J. SAYLES 16MAY63
APPROVAL R OSBERG 17MAY63
A J KOSEL 17MAY63
APPROVAL 13 JUNE 63
19 JUN 63
NASA APPROVAL 6-19-63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

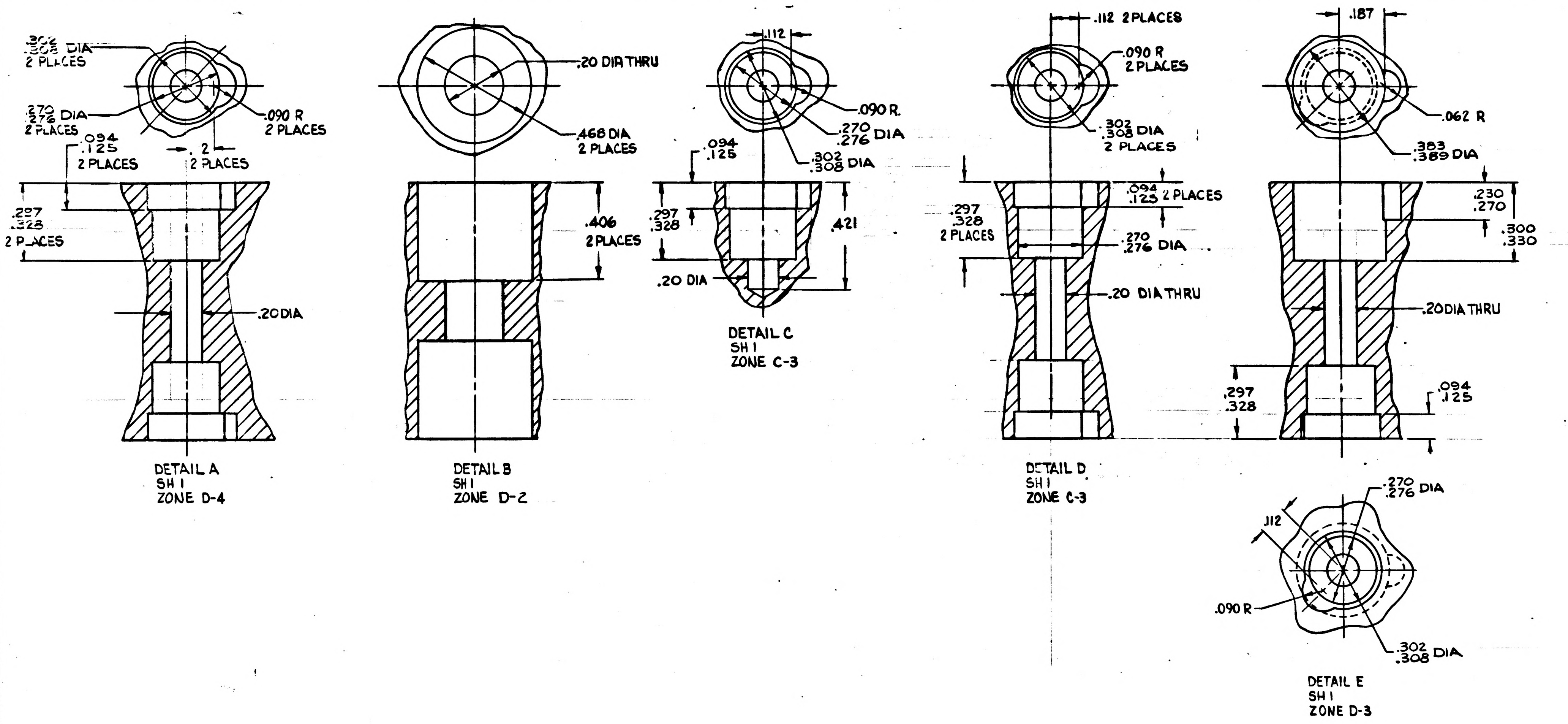
HEATSINK
AAC FILTER AND MULTIVIBRATOR
3200 CPS

CODE IDENT NO. | SIZE E | NASA DRAWING NO. 1015726
SCALE 5:1 | WT | SHEET 1 OF 2

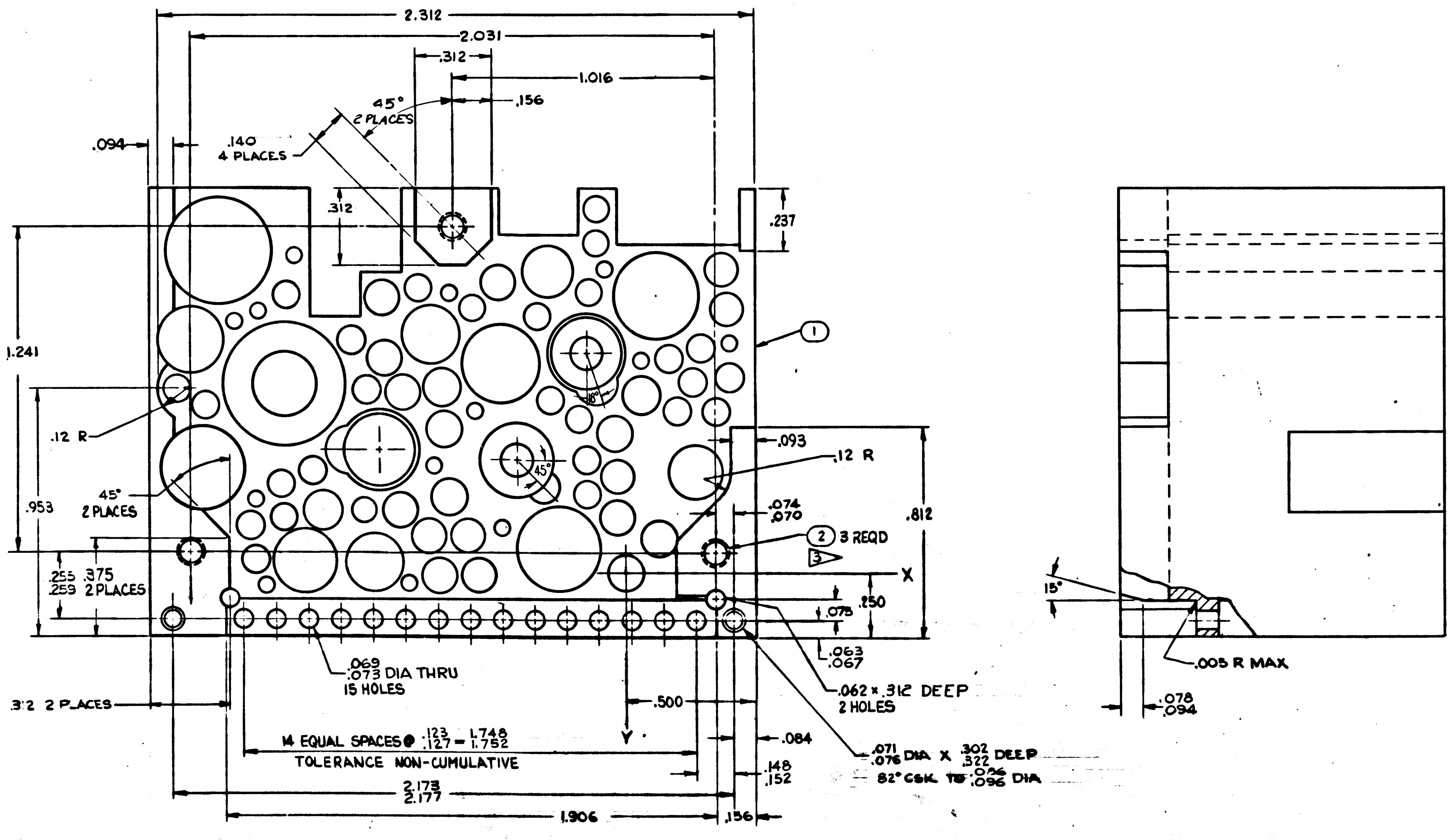
1015726 A

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION		DATE	APPD
A		REVISED PER TDRR 02071	CHG NO.		



.302 .308 DIA 2 PLACES
.270 .276 DIA 2 PLACES
.090 R 2 PLACES
.094 .125 2 PLACES
.2 2 PLACES
.297 .328 2 PLACES
.20 DIA
DETAIL A SH 1 ZONE D-4
.20 DIA THRU
.468 DIA 2 PLACES
.406 2 PLACES
DETAIL B SH 1 ZONE D-2
.112
.090 R.
.270 .276 DIA
.302 .308 DIA
.094 .125
.297 .328
.421
.20 DIA
DETAIL C SH 1 ZONE C-3
.112 2 PLACES
.090 R 2 PLACES
.302 .308 DIA 2 PLACES
.094 .125 2 PLACES
.297 .328 2 PLACES
.270 .276 DIA
.20 DIA THRU
DETAIL D SH 1 ZONE C-3
.187
.062 R
.383 .389 DIA
.230 .270
.300 .330
.20 DIA THRU
.297 .328
.094 .125
.270 .276 DIA
.112
.090 R
.302 .308 DIA
DETAIL E SH 1 ZONE D-3



2.312
2.031
.312
1.016
.156
45° 2 PLACES
.094
.140 4 PLACES
.312
.237
1
1.241
.12 R
45° 2 PLACES
.953
.093
.12 R
.812
.074 .070
2 3 REQD
3
X
.255 .259
.375 2 PLACES
.250
.078
.063 .067
.069 .073 DIA THRU 15 HOLES
.062 x .312 DEEP 2 HOLES
.312 2 PLACES
.500
Y
14 EQUAL SPACES @ .123 .127 = 1.748 1.752
TOLERANCE NON-CUMULATIVE
.084
.148 .152
2.173 2.177
1.906
.156
.071 .076 DIA X .302 .322 DEEP
82° CSK TO .096 DIA
15°
.005 R MAX
.078 .094

VIEW A-A

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DR DATE 8 MAY 63
CHECKED 16 MAY 63
ROSBERG 17 MAY 63
APPROVAL A. KODEL 17 MAY 63
APPROVAL 17 JUNE 63
NASA APPROVAL W.J. 6-18-63
MIT APPROVAL 19 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AAC FILTER AND MULTIVIBRATOR
3200 CPS

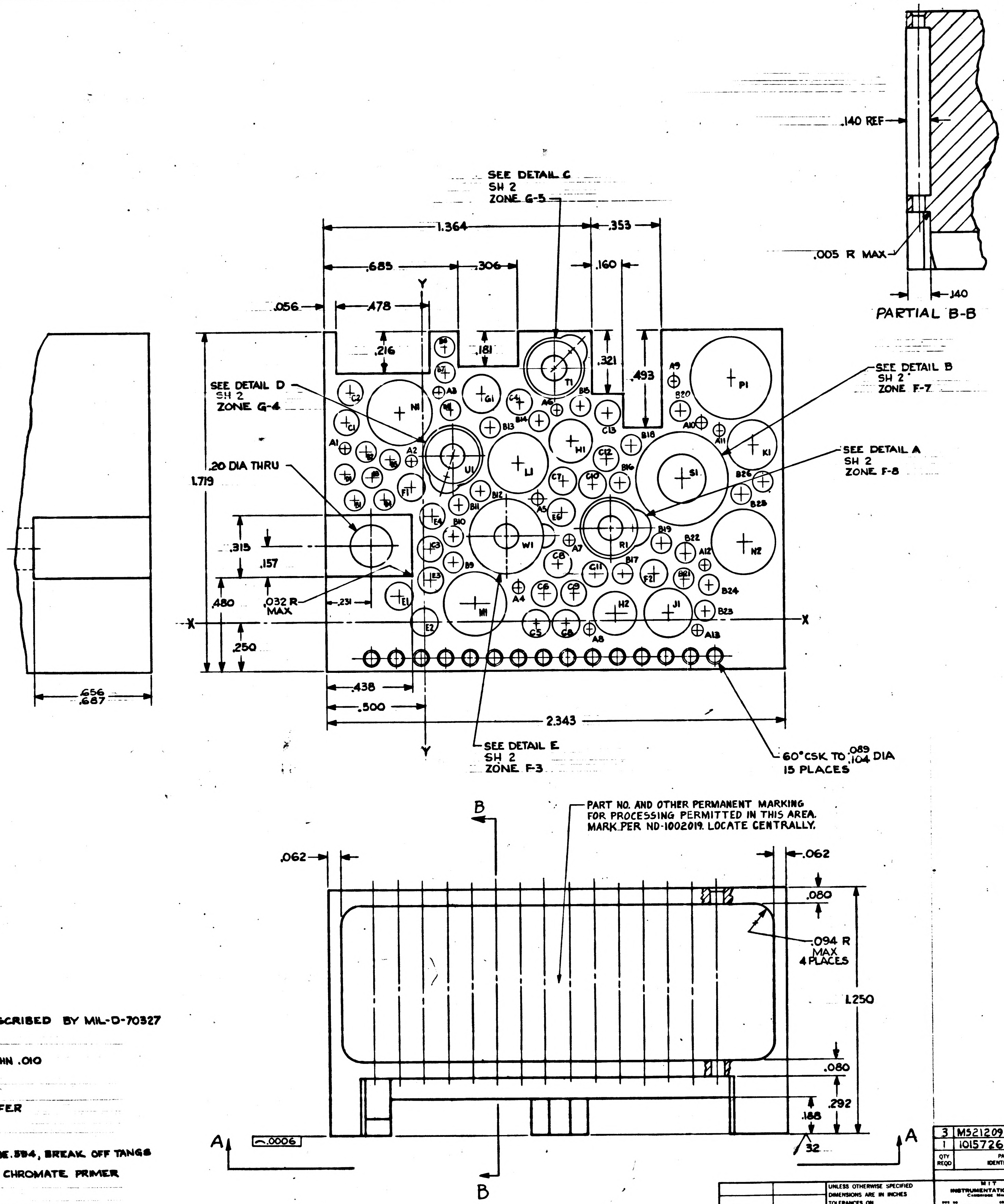
CODE IDENT NO.
SIZE E
1015726
SCALE 5:1
SHEET 2 OF 2

NOTICE – WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS [illegible] 01615

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02071	7/20/63	[illegible]
B	REVISED PER TDRR 03851	10-15-63	LK
C	REVISED PER TDRR 03852	10-15-63	LK

HOLE IDENT	'X' BASIC DIM	'Y' BASIC DIM	⌖ DIM	HOLE DES	QTY
A1	-.400	.880	.006	.058 .062	13
A2	-.060	.810			
A3	.080	1.160			
A4	.480	.170			
A5	.580	.620			
A6	.680	1.070			
A7	.740	.410			
A8	.840	-.040			
A9	1.280	1.210			
A10	1.420	1.000			
A11	1.510	.960			
A12	1.430	.290			
A13	1.390	-.050			
B1	-.350	.620	.006	.100 .104	26
B2	-.290	.860			
B3	-.260	.730			
B4	-.200	.620			
B5	-.170	.820			
B6	.110	1.260			
B7	.110	1.390			
B8	.140	1.070			
B9	.150	.300			
B10	.150	.430			
B11	.180	.590			
B12	.290	.660			
B13	.340	.980			
B14	.590	1.010			
B15	.800	1.090			
B16	1.000	.700			
B17	1.010	.240			
B18	1.060	.890			
B19	1.210	.390			
B20	1.310	1.060			
B21	1.320	.210			
B22	1.330	.340			
B23	1.430	.050			
B24	1.450	.180			
B25	1.620	.640			
B26	1.730	.700			
C1	-.390	1.010	.006	.127 .131	13
C2	-.370	1.160			
C3	.030	.370			
C4	.490	1.110			
C5	.570	-.010			
C6	.610	.140			
C7	.710	.710			
C8	.720	-.010			
C9	.760	.140			
C10	.860	.690			
C11	.870	.240			
C12	.930	.820			
C13	.940	1.050			
D1	-.400	.750	.006	.105 .109	1
E1	-.130	.130	.006	.146 .150	6
E2	0	0			
E3	.030	.210			
E4	.040	.530			
E5	.680	.290			
E6	.700	.550			
F1	-.060	.680	.006	.153 .157	2
F2	1.170	.240			
G1	.300	1.150	.006	.202 .206	1
H1	.750	.910	.006	.227 .231	2
H2	.990	.040			
J1	1.240	.040	.006	.249 .254	1
K1	1.680	.890	.006	.255 .262	1
L1	.480	.800	.006	.310 .317	1
M1	.260	.090	.006	.326 .333	1
N1	-.120	1.060	.006	.330 .337	2
N2	1.630	.400			
P1	1.570	1.230	.006	.419 .426	1
R1	.950	.470	.006	DETAIL A	1
S1	1.320	.720	.006	DETAIL B	1
T1	.670	1.280	.006	DETAIL C	1
U1	.150	.840	.006	DETAIL D	1
W1	.420	.430	.006	DETAIL E	1


.140 REF
.005 R MAX
.140
PARTIAL B-B
SEE DETAIL C
SH 2
ZONE G-5
1.364
.353
.685
.306
.160
.056
.478
Y
.216
.181
.321
.493
SEE DETAIL B
SH 2
ZONE F-7
SEE DETAIL D
SH 2
ZONE G-4
SEE DETAIL A
SH 2
ZONE F-8
.20 DIA THRU
1.719
.315
.157
.480
.032 R
MAX
.231
X
.250
.438
.500
2.343
SEE DETAIL E
SH 2
ZONE F-3
60° CSK TO .089/.104 DIA
15 PLACES
.656
.687
B
PART NO. AND OTHER PERMANENT MARKING
FOR PROCESSING PERMITTED IN THIS AREA.
MARK PER ND-1002019. LOCATE CENTRALLY.
.062
.062
.080
.094 R
MAX
4 PLACES
1.250
.080
.292
.188
32
A
.0006
A
B
3
MASTER

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MUST BE FREE FROM BURRS

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010

UNLESS OTHERWISE SPECIFIED:

SURFACE ROUGHNESS MUST NOT EXCEED 125
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER

3 ▷ INSTALL FIND NO. 2 PER MS33646 EXCEPT DIMENSION F TO BE .584, BREAK OFF TANGS

COAT THREADS AND FIND NO. 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

1 ▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5/QQ-M-31A

2 ▷ FINISH: ANODIZE USING MIL-M-3171A III PLUG INSERT HOLES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	MS21209-C0620	INSERT, SCREW-LOCKING	2
1	1015726-1	HEATSINK	

LIST OF MATERIALS

NEXT ASSY	USED ON
1007043	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS .XX ± .02 .XXX ± .005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL 1 ▷
HEAT TREATMENT
FINAL FINISH 2 ▷

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO CONTRACT
DRAWN A SUMMERVILLE DATE [illegible]
CHECKED J.SAYLES 16MAY63
APPROVAL ROSBERG 17MAY63
A.L.KOPPEL 17MAY63
15 JUN 63
APPROVAL 19 JUN 63
NASA APPROVAL 6-19-63
MIT APPROVAL 19 Jun 63

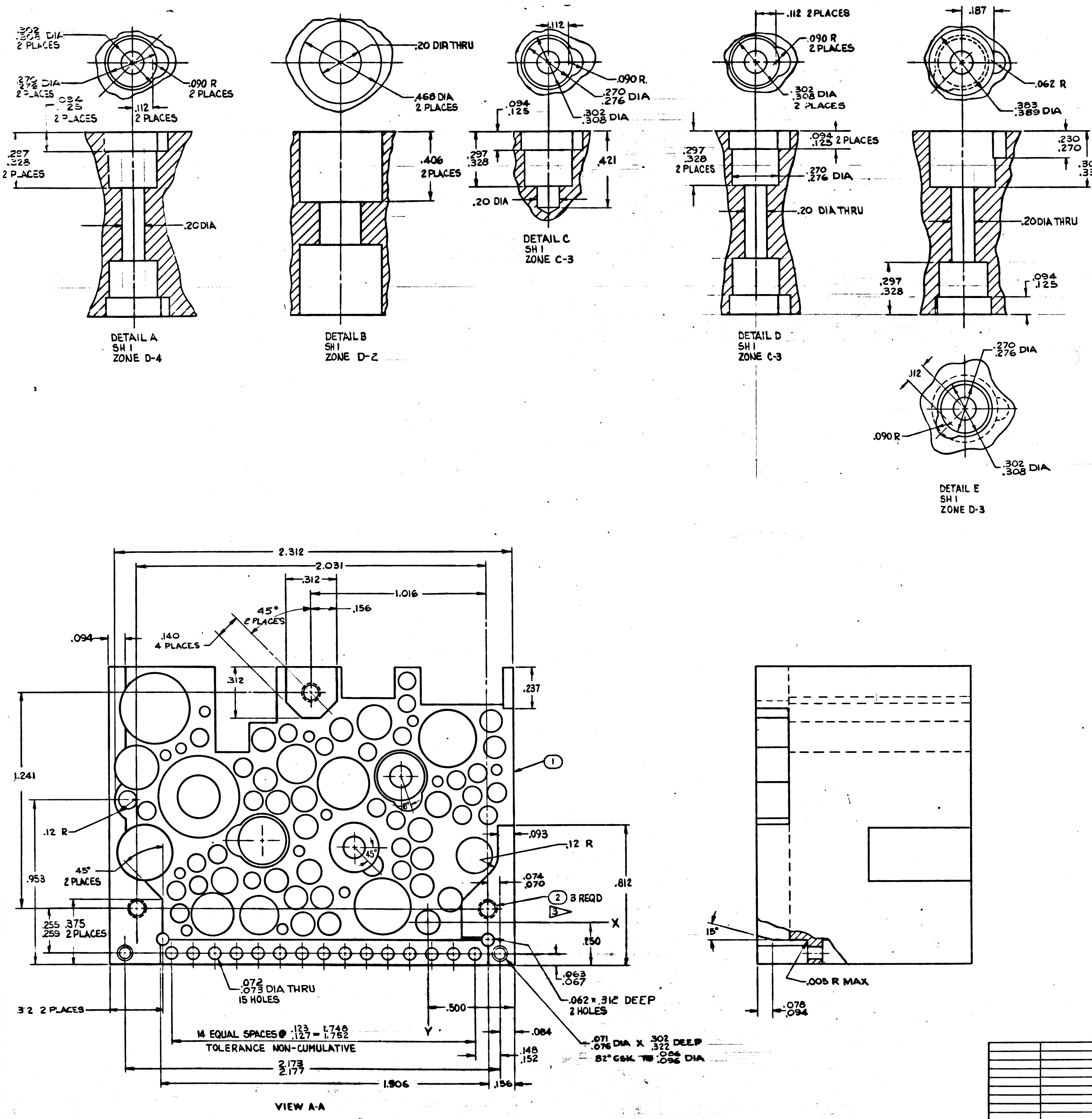
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AAC FILTER AND MULTIVIBRATOR
3200 CPS

CODE IDENT NO. SIZE E NASA DRAWING NO. 1015726
SCALE 5:1 WT SHEET 1 OF 2

1015726 C

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 02071			
B		REVISED PER TDRR 03851			
C		REVISED PER TDRR 03852			



.302 .308 DIA 2 PLACES
.272 .276 DIA 2 PLACES
.094 .125 2 PLACES
.112 2 PLACES
.090 R 2 PLACES
.297 .328 2 PLACES
.20 DIA
DETAIL A SH 1 ZONE D-4
.20 DIA THRU
.468 DIA 2 PLACES
.406 2 PLACES
DETAIL B SH 1 ZONE D-2
.112
.090 R.
.270 .276 DIA
.302 .308 DIA
.094 .125
.297 .328
.421
.20 DIA
DETAIL C SH 1 ZONE C-3
.112 2 PLACES
.090 R 2 PLACES
.302 .308 DIA 2 PLACES
.094 .125 2 PLACES
.297 .328 2 PLACES
.270 .276 DIA
.20 DIA THRU
DETAIL D SH 1 ZONE C-3
.187
.062 R
.383 .389 DIA
.230 .270
.300 .330
.20DIA THRU
.094 .125
.297 .328
.270 .276 DIA
.112
.090 R
.302 .308 DIA
DETAIL E SH 1 ZONE D-3
2.312
2.031
.312
1.016
.156
45° 2 PLACES
.140 4 PLACES
.094
.312
.237
1
1.241
.12 R
.093
.12 R
45° 2 PLACES
.953
.074 .070
2 3 REQD
3
.812
X
.255 .259
.375 2 PLACES
.250
.063 .067
.072 .073 DIA THRU 15 HOLES
.062 × .312 DEEP 2 HOLES
.312 2 PLACES
.500
Y
.084
14 EQUAL SPACES @ .123 .127 = 1.748 1.752
TOLERANCE NON-CUMULATIVE
.071 .076 DIA X .302 .322 DEEP
82° CSK TO .086 .096 DIA
2.173 2.177
.148 .152
1.906
.156
VIEW A-A
15°
.005 R MAX
.078 .094

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DR Stemmerick 8 MAY 63 DATE
CHECKED Snyder 16 MAY 63
ROSBERG 7 MAY 63
APPROVAL A. KOOPEL 17 MAY 63
APPROVAL 17 JUNE
NASA APPROVAL 6-18-63
MIT APPROVAL 19 June 63

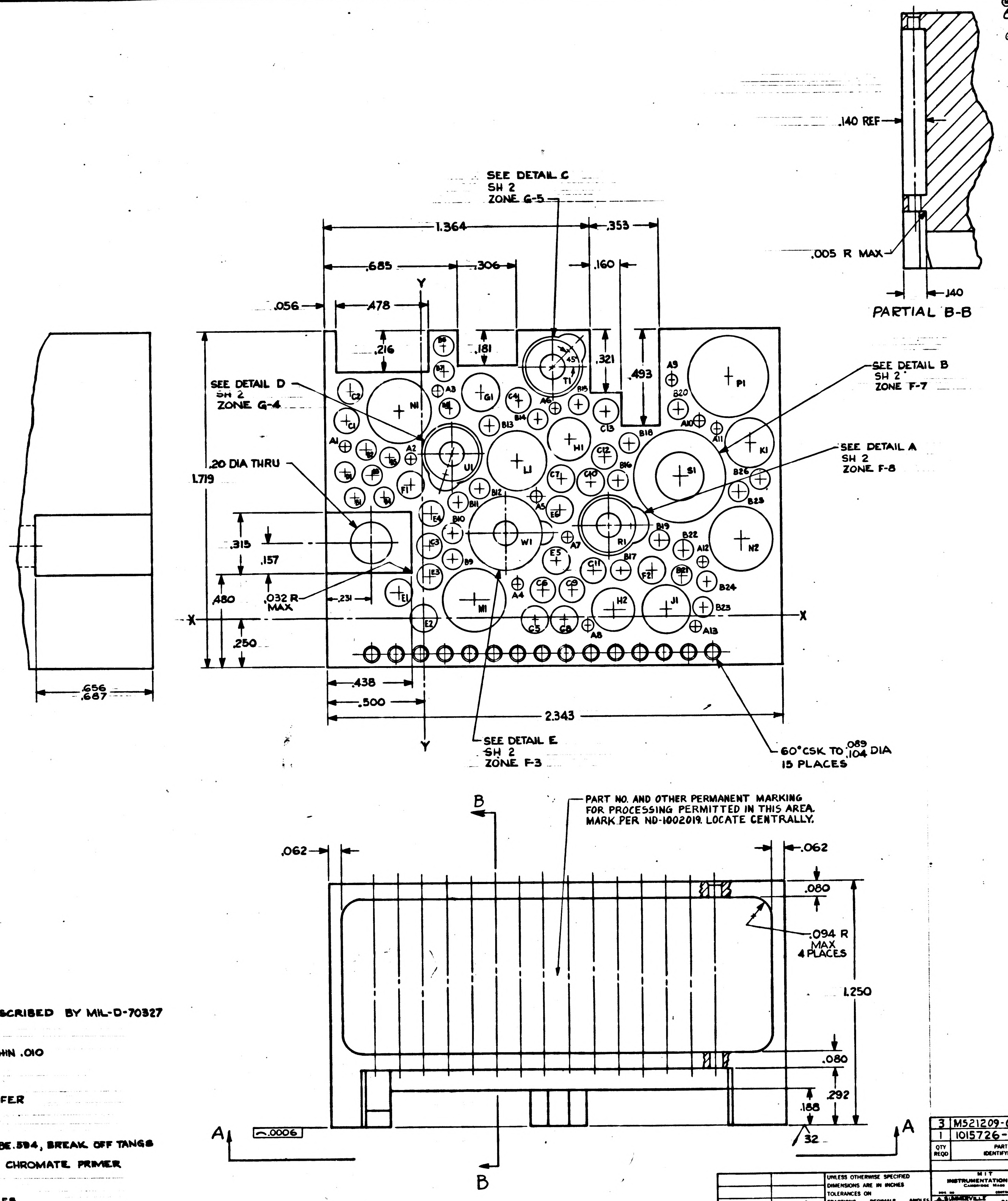
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AAC FILTER AND MULTIVIBRATOR
3200 CPS

CODE IDENT NO. SIZE E 1015726
SCALE 5:1 SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

HOLE IDENT	'X' BASIC DIM	'Y' BASIC DIM	⌖ DIM	HOLE DES	QTY
A1	−.400	.880	.006	.058 .062	13
A2	−.060	.810			
A3	.080	1.160			
A4	.480	.170			
A5	.580	.620			
A6	.680	1.070			
A7	.740	.410			
A8	.840	−.040			
A9	1.280	1.210			
A10	1.420	1.000			
A11	1.510	.960			
A12	1.430	.290			
A13	1.390	−.050			
B1	−.350	.620	.006	.100 .104	26
B2	−.290	.860			
B3	−.260	.730			
B4	−.200	.620			
B5	−.170	.820			
B6	.110	1.260			
B7	.110	1.390			
B8	.140	1.070			
B9	.150	.300			
B10	.150	.430			
B11	.180	.590			
B12	.290	.660			
B13	.340	.980			
B14	.590	1.010			
B15	.800	1.090			
B16	1.000	.700			
B17	1.010	.240			
B18	1.060	.890			
B19	1.210	.390			
B20	1.310	1.060			
B21	1.320	.210			
B22	1.330	.340			
B23	1.430	.050			
B24	1.450	.180			
B25	1.620	.640			
B26	1.730	.700			
C1	−.390	1.010	.006	.127 .131	13
C2	−.370	1.160			
C3	.030	.370			
C4	.490	1.110			
C5	.570	−.010			
C6	.610	.140			
C7	.710	.710			
C8	.720	−.010			
C9	.760	.140			
C10	.860	.690			
C11	.870	.240			
C12	.930	.820			
C13	.940	1.050			
D1	−.400	.750	.006	.105 .109	1
E1	−.130	.130	.006	.146 .150	6
E2	0	0			
E3	.030	.210			
E4	.040	.530			
E5	.680	.290			
E6	.700	.550			
F1	−.060	.680	.006	.153 .157	2
F2	1.170	.240			
G1	.300	1.150	.006	.202 .206	1
H1	.750	.910	.006	.227 .231	2
H2	.990	.040			
J1	1.240	.040	.006	.249 .254	1
K1	1.680	.890	.006	.255 .262	1
L1	.480	.800	.006	.310 .317	1
M1	.260	.090	.006	.326 .333	1
N1	−.120	1.060	.006	.330 .337	2
N2	1.630	.400			
P1	1.570	1.230	.006	.419 .426	1
R1	.950	.470	.006	DETAIL A	1
S1	1.320	.720	.006	DETAIL B	1
T1	.670	1.280	.006	DETAIL C	1
U1	.150	.840	.006	DETAIL D	1
W1	.420	.430	.006	DETAIL E	1


SEE DETAIL C
SH 2
ZONE G-5
1.364
.353
.685
.306
.160
.056
.478
.216
.181
.321
.493
SEE DETAIL D
SH 2
ZONE G-4
SEE DETAIL B
SH 2
ZONE F-7
SEE DETAIL A
SH 2
ZONE F-8
.20 DIA THRU
1.719
.315
.157
.480
.032 R MAX
.231
.250
X
Y
.438
.500
2.343
SEE DETAIL E
SH 2
ZONE F-3
60° CSK TO .089 .104 DIA
15 PLACES
.656
.687
.140 REF
.005 R MAX
.140
PARTIAL B-B
B
PART NO. AND OTHER PERMANENT MARKING FOR PROCESSING PERMITTED IN THIS AREA. MARK PER ND-1002019. LOCATE CENTRALLY.
.062
.062
.080
.094 R MAX 4 PLACES
1.250
.080
.292
.188
32
A
A
.0006

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MUST BE FREE FROM BURRS

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010

UNLESS OTHERWISE SPECIFIED:

SURFACE ROUGHNESS MUST NOT EXCEED $\overset{125}{\checkmark}$
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER

3▷ INSTALL FIND NO. 2 PER MS33646 EXCEPT DIMENSION F TO BE .594, BREAK OFF TANGS
COAT THREADS AND FIND NO. 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5/QQ-M-31A

2▷ FINISH: ANODIZE USING MIL-M-3171A III PLUG INSERT HOLES

MASTER

REVISIONS TDRR 01615			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02071	7/20/63	A.T.
B	REVISED PER TDRR 03851	10-15-63	LK
C	REVISED PER TDRR 03852	10-15-63	LK
D	REVISED PER TDRR 03958	10-23-63	W.H.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	MS21209-C0620	INSERT, SCREW-LOCKING	2
1	1015726-1	HEATSINK	1

LIST OF MATERIALS

1007043	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS .XX ± .02 .XXX ± .005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
HEAT TREATMENT
FINAL FINISH 2▷

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO CONTRACT
DRAWN A. SUMMERVILLE DATE 8MAY63
CHECKED J. SAYLES 16MAY63
R. OSBERG 17MAY63
APPROVAL A. KOPPEL 17MAY63
APPROVAL 15 JUN 63
19 JUN 63
NASA APPROVAL D. J. 6-19-63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

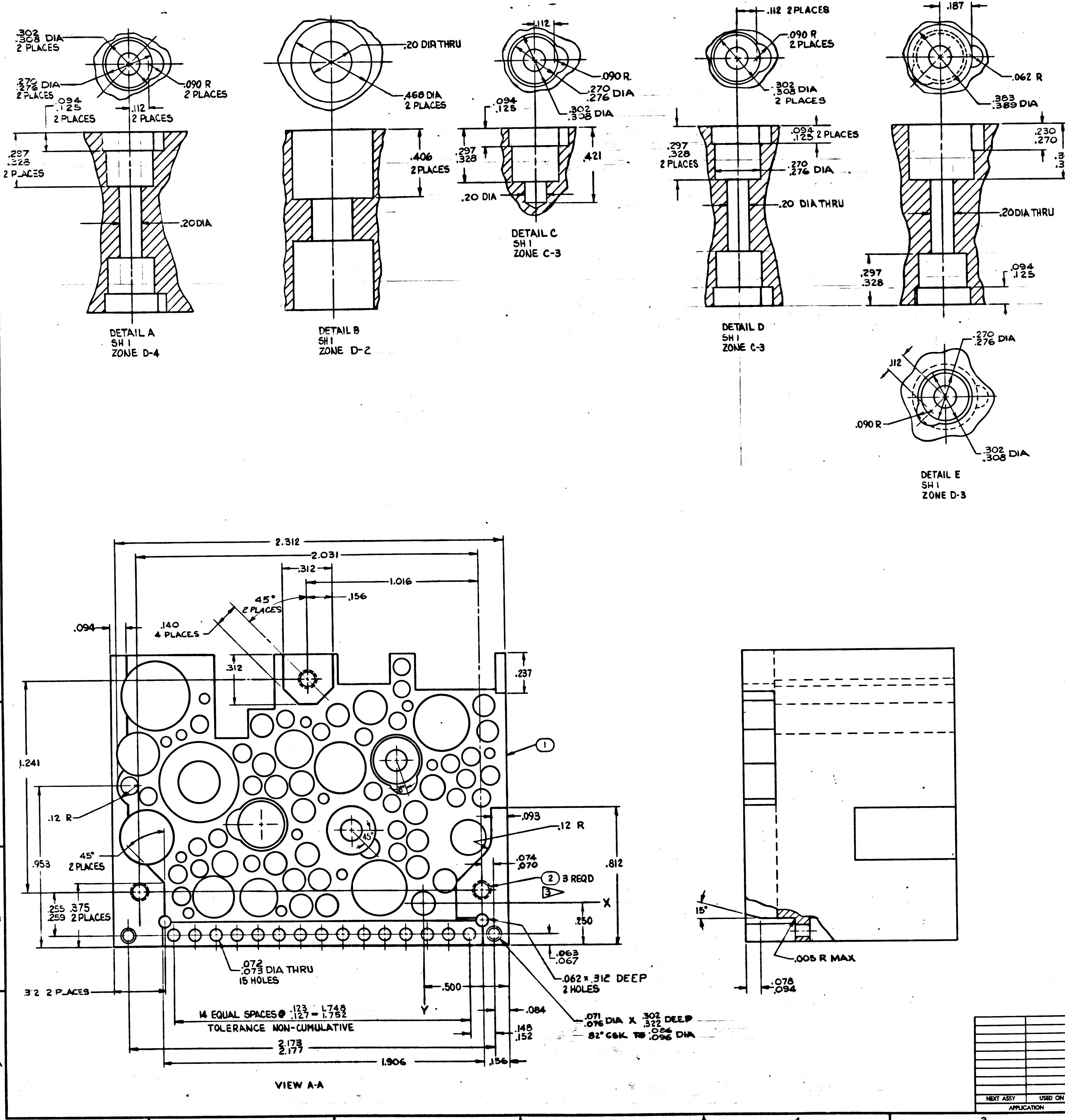
HEATSINK
AAC FILTER AND MULTIVIBRATOR
3200 CPS

CODE IDENT NO. SIZE E NASA DRAWING NO. 1015726
SCALE 5:1 WT SHEET 1 OF 2

1015726 D

INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02071		[illegible]	[illegible]
B		REVISED PER TDRR 03851		[illegible]	[illegible]
C		REVISED PER TDRR 03852		[illegible]	[illegible]
D		REVISED PER TDRR 03958		[illegible]	[illegible]



.302 .308 DIA 2 PLACES
.270 .276 DIA 2 PLACES
.094 .125 2 PLACES
.112 2 PLACES
.090 R 2 PLACES
.297 .328 2 PLACES
.20 DIA
DETAIL A
SH 1
ZONE D-4
.20 DIA THRU
.468 DIA 2 PLACES
.406 2 PLACES
DETAIL B
SH 1
ZONE D-2
.112
.090 R
.270 .276 DIA
.302 .308 DIA
.094 .125
.297 .328
.421
.20 DIA
DETAIL C
SH 1
ZONE C-3
.112 2 PLACES
.090 R 2 PLACES
.302 .308 DIA 2 PLACES
.094 .125 2 PLACES
.297 .328 2 PLACES
.270 .276 DIA
.20 DIA THRU
DETAIL D
SH 1
ZONE C-3
.187
.062 R
.383 .389 DIA
.230 .270
.300 .330
.20 DIA THRU
.297 .328
.094 .125
.270 .276 DIA
.112
.090 R
.302 .308 DIA
DETAIL E
SH 1
ZONE D-3
2.312
2.031
.312
1.016
.156
45° 2 PLACES
.094
.140 4 PLACES
.312
.237
1
1.241
.12 R
45° 2 PLACES
.953
.093
.12 R
.812
.074 .070
2 3 REQD
3
.255 .259
.375 2 PLACES
X
.250
.072 .073 DIA THRU 15 HOLES
.063 .067
.062 x .312 DEEP 2 HOLES
3°2 2 PLACES
.500
Y
.084
14 EQUAL SPACES @ .123 .127 = 1.748 1.752
TOLERANCE NON-CUMULATIVE
.148 .152
.071 .076 DIA X .302 .322 DEEP
82° CSK TO .086 .096 DIA
2.173 2.177
1.906
.156
VIEW A-A
15°
.005 R MAX
.078 .094

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DR Stromquist DATE 8 MAY 63
CHECKED Sayles 16 MAY 63
ROSBERG 17 MAY 63
APPROVAL A. KODEL 17 MAY 63
APPROVAL [illegible] 17 JUNE 63
NASA APPROVAL W. J. [illegible] 6-18-63
MIT APPROVAL W. Kupfer 19 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AAC FILTER AND MULTIVIBRATOR
3200 CPS

CODE IDENT NO.
SIZE E
1015726
SCALE 5:1
SHEET 2 OF 2

1015726 D

INCHES
PHOTOGRAPHIC SCALE ONLY

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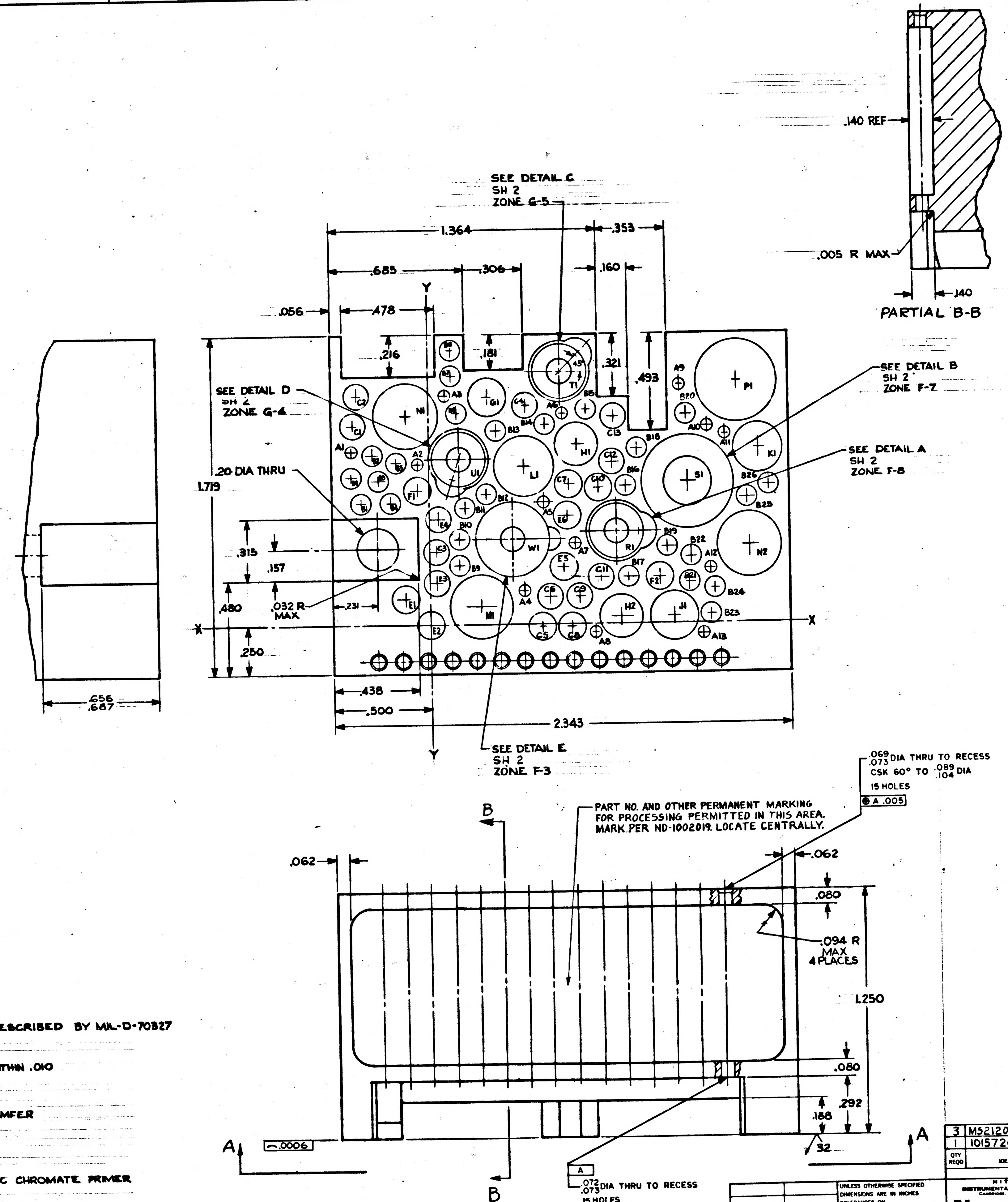
REVISIONS TDRR 01613			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02071	7/24/63	A.T.
B	REVISED PER TDRR 03851	10-15-63	LK
C	REVISED PER TDRR 03852	10-15-63	LK
D	REVISED PER TDRR 03958	10-23-63	
E	REVISED PER TDRR 05421	27 DEC 63	RAK

4

HOLE IDENT	X DIM	Y DIM		HOLE DES	QTY
A1	−.400	.880		.058 .062	13
A2	−.060	.810			
A3	.080	1.160			
A4	.480	.170			
A5	.580	.620			
A6	.680	1.070			
A7	.740	.410			
A8	.840	−.040			
A9	1.280	1.210			
A10	1.420	1.000			
A11	1.510	.960			
A12	1.430	.290			
A13	1.390	−.050			
B1	−.350	.620		.100 .104	26
B2	−.290	.860			
B3	−.260	.730			
B4	−.200	.620			
B5	−.170	.820			
B6	.110	1.260			
B7	.110	1.390			
B8	.140	1.070			
B9	.150	.300			
B10	.150	.430			
B11	.180	.590			
B12	.290	.660			
B13	[illegible]	[illegible]			
B14	.590	1.010			
B15	.800	1.090			
B16	1.000	[illegible]			
B17	1.010	.240			
B18	1.060	.890			
B19	1.210	.390			
B20	1.310	1.060			
B21	1.320	.210			
B22	1.330	.340			
B23	1.430	.050			
B24	1.450	.180			
B25	1.620	.640			
B26	1.730	.700			
C1	−.390	1.010		.127 .131	13
C2	−.370	1.160			
C3	.030	.370			
C4	.490	1.110			
C5	.570	−.010			
C6	.610	.140			
C7	.710	.710			
C8	.720	−.010			
C9	.760	.140			
C10	.860	.690			
C11	.870	.240			
C12	.930	.820			
C13	.940	1.050			
D1	−.400	.750		.105 .109	1
E1	−.130	.130		.146 .150	6
E2	0	0			
E3	.030	.210			
E4	.040	.530			
E5	.680	.290			
E6	.700	.550			
F1	−.060	.680		.153 .157	2
F2	1.170	.240			
G1	.300	1.150		.202 .206	1
H1	.750	.910		.227 .231	2
H2	.990	.040			
J1	1.240	.040		.249 .254	1
K1	1.680	.890		.255 .262	1
L1	.480	.800		.310 .317	1
M1	.260	.090		.326 .333	1
N1	−.120	1.080		.330 .337	2
N2	[illegible]	.400			
P1	[illegible]	1.230		.419 .426	1
R1	.950	.470		DETAIL A	1
S1	1.320	.720		DETAIL B	1
T1	.670	1.280		DETAIL C	1
U1	.150	.840		DETAIL D	1
W1	.420	.430		DETAIL E	1


.140 REF
.005 R MAX
.140
PARTIAL B-B
SEE DETAIL C
SH 2
ZONE G-5
1.364
.353
.685
.306
.160
.056
.478
Y
.216
.181
.321
.493
SEE DETAIL B
SH 2
ZONE F-7
SEE DETAIL D
SH 2
ZONE G-4
SEE DETAIL A
SH 2
ZONE F-8
.20 DIA THRU
1.719
.315
.157
.480
.032 R
MAX
.231
X
.250
.438
.500
2.343
SEE DETAIL E
SH 2
ZONE F-3
.656
.687
.069
.073 DIA THRU TO RECESS
CSK 60° TO .089
.104 DIA
15 HOLES
⊕ A .005
B
PART NO. AND OTHER PERMANENT MARKING
FOR PROCESSING PERMITTED IN THIS AREA.
MARK PER ND-1002019. LOCATE CENTRALLY.
.062
.062
.080
.094 R
MAX
4 PLACES
1.250
.080
.292
.188
32
A
A
.0006
B
A
.072
.073 DIA THRU TO RECESS
15 HOLES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MUST BE FREE FROM BURRS

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010

UNLESS OTHERWISE SPECIFIED:

SURFACE ROUGHNESS MUST NOT EXCEED 125
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER

3 INSTALL FIND NO. 2 PER MS33646, BREAK OFF TANGS

COAT THREADS AND FIND NO. 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

1 MATERIAL: MAGNESIUM ALLOY ZK-60A-T5/QQ-M-31A

2 FINISH: ANODIZE USING MIL-M-3171A III PLUG INSERT HOLES

4 THE DRILLING OF ANY COMPONENT HOLE CAUSING VISIBLE DEFORMATION IN AN ADJACENT HOLE OR ON AN EXTERNAL SURFACE OR ACTUAL BREAKOUT OF THE HOLE INTO ANOTHER HOLE OR EXTERNAL SURFACE SHALL BE CAUSE FOR REJECTION OF THIS PART

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
3	MS21209-C0620	INSERT, SCREW-LOCKING	2
1	1015726-1	HEATSINK	1

LIST OF MATERIALS

NEXT ASSY	USED ON
1007043	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS .XX ± .02 .XXX ± .005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL 1
HEAT TREATMENT
FINAL FINISH 2

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG NO
CONTRACT
DRAWN A. SUMMERVILLE DATE 3 MAY 63
CHECKED J. SAYLES 16 MAY 63
ROSBERG 17 MAY 63
APPROVAL A. LYONS 17 MAY 63
15 JUN 63
APPROVAL 19 JUN 63
NASA APPROVAL 6-19-63
MIT APPROVAL 19 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

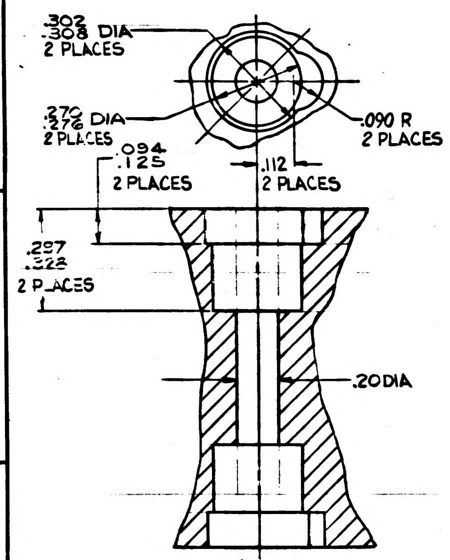
HEATSINK
AAC FILTER AND MULTIVIBRATOR
3200 CPS

CODE IDENT NO.
SIZE E
NASA DRAWING NO. 1015726
SCALE 5:1 WT SHEET 1 OF 2

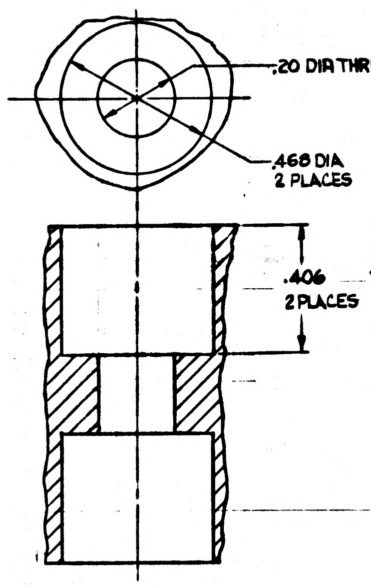
1015726 E

INCHES
PHOTOGRAPHIC SCALE ONLY

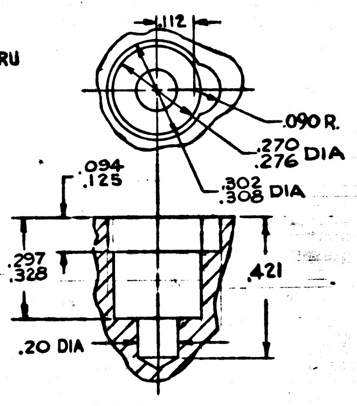
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02071		[illegible]	
B		REVISED PER TDRR 03851		[illegible]	
C		REVISED PER TDRR 03852		[illegible]	
D		REVISED PER TDRR 03958		[illegible]	
E		REVISED PER TDRR 05421		27 Dec 63	


.302
.308 DIA
2 PLACES
.270
.276 DIA
2 PLACES
.090 R
2 PLACES
.094
.125
2 PLACES
.112
2 PLACES
.297
.328
2 PLACES
.20 DIA

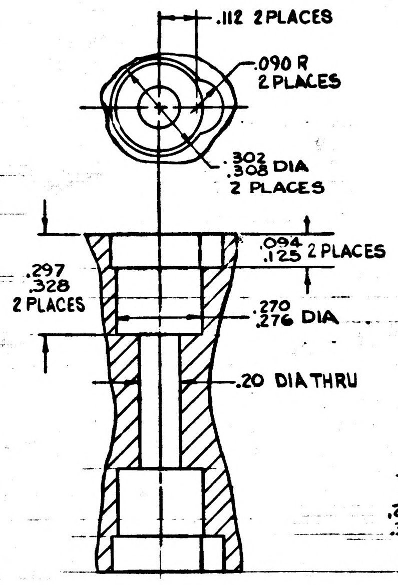
DETAIL A
SH I
ZONE D-4


.20 DIA THRU
.468 DIA
2 PLACES
.406
2 PLACES

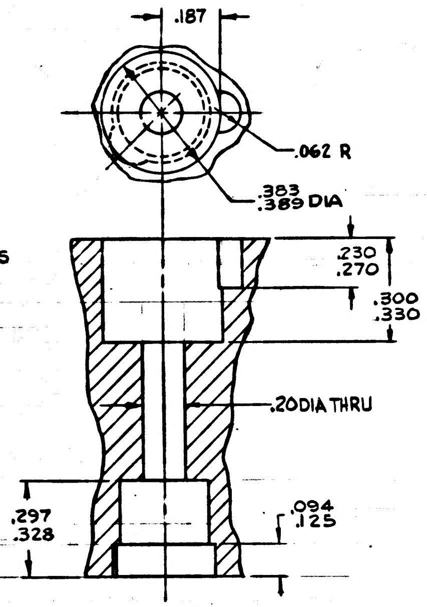
DETAIL B
SH I
ZONE D-2

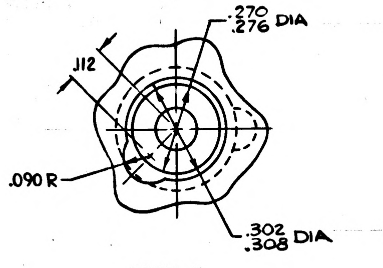

.112
.090 R.
.270
.276 DIA
.094
.125
.302
.308 DIA
.297
.328
.421
.20 DIA

DETAIL C
SH I
ZONE C-3

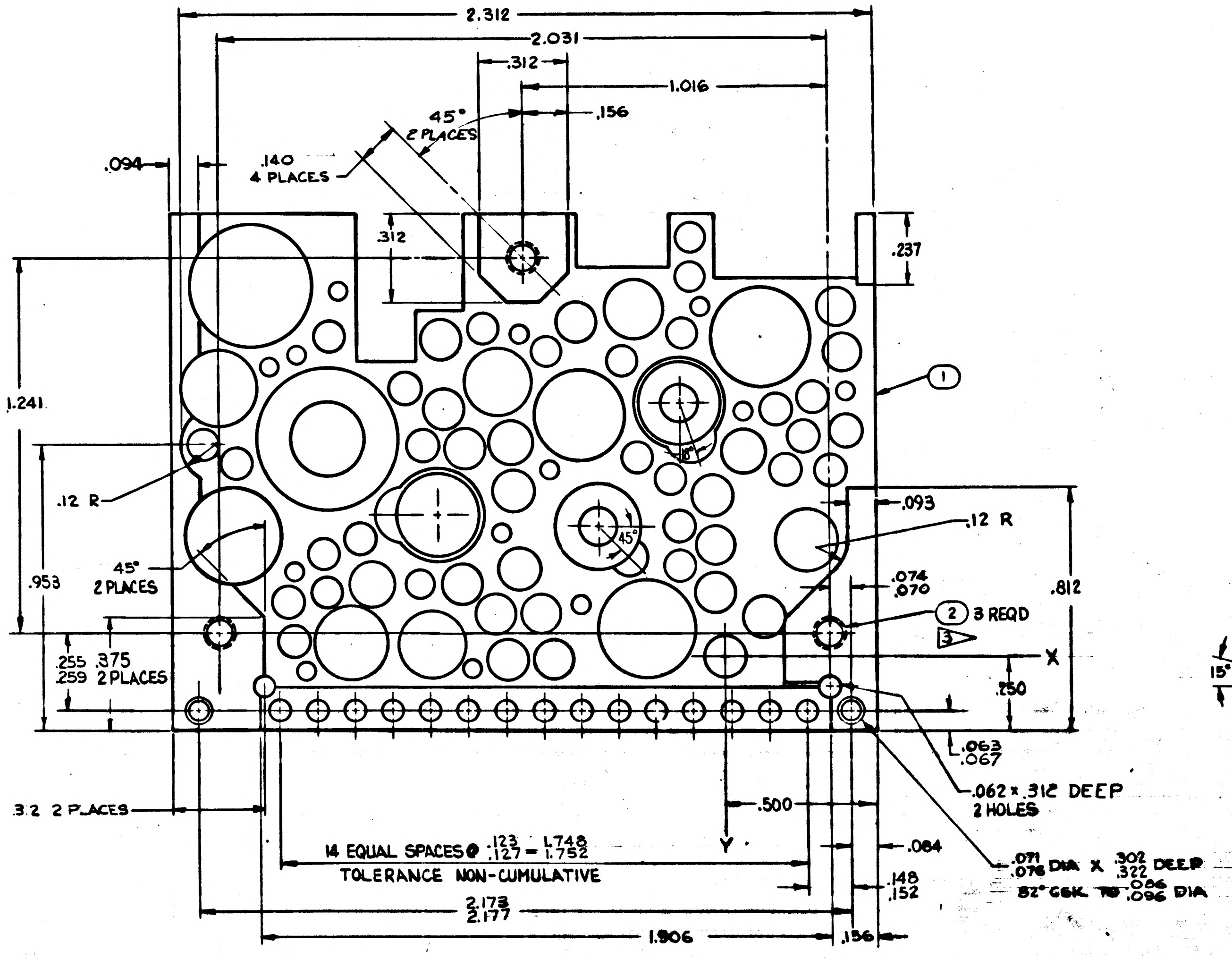

.112 2 PLACES
.090 R
2 PLACES
.302
.308 DIA
2 PLACES
.297
.328
2 PLACES
.094
.125 2 PLACES
.270
.276 DIA
.20 DIA THRU

DETAIL D
SH I
ZONE C-3

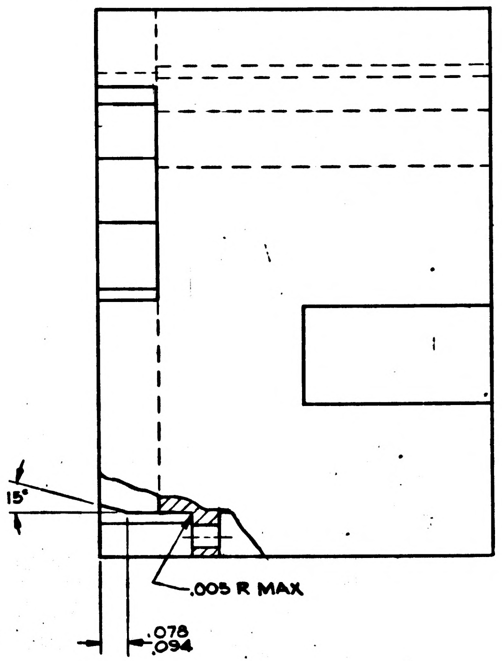

.187
.062 R
.383
.389 DIA
.230
.270
.300
.330
.20 DIA THRU
.297
.328
.094
.125


.270
.276 DIA
.112
.090 R
.302
.308 DIA

DETAIL E
SH I
ZONE D-3


2.312
2.031
.312
1.016
.156
45°
2 PLACES
.140
4 PLACES
.094
.312
.237
1
1.241
.12 R
.953
45°
2 PLACES
.093
.12 R
.074
.070
.812
2 3 REQD
3
X
.255
.259
.375
2 PLACES
.250
.063
.067
.062 x .312 DEEP
2 HOLES
3.2 2 PLACES
.500
Y
.084
14 EQUAL SPACES @ .123
.127 = 1.748
1.752
TOLERANCE NON-CUMULATIVE
.071
.076 DIA X .302
.322 DEEP
82° CSK TO .086
.096 DIA
.148
.152
2.173
2.177
1.906
.156
45°

VIEW A-A


15°
.005 R MAX
.078
.094

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± —— ± —— ± ——
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

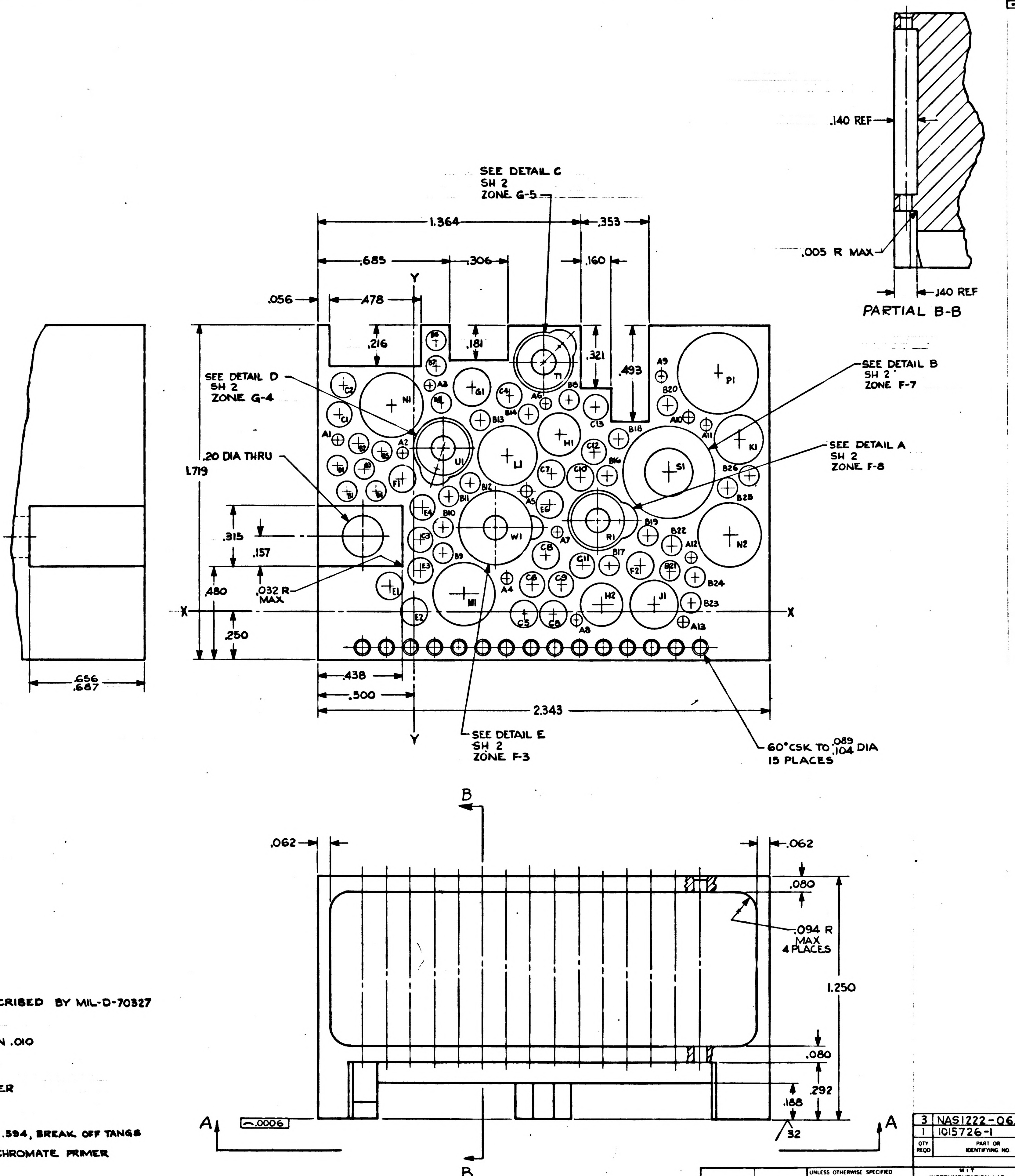
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DATE 8 MAY 63
CHECKED 16 MAY63
ROSBERG 7 MAY63
APPROVAL 17 MAY63
APPROVAL 17 JUNE63
NASA APPROVAL 6-18-63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AAC FILTER AND MULTIVIBRATOR
3200 CPS

CODE IDENT NO.
SIZE E
1015726
SCALE 5:1
SHEET 2 OF 2

HOLE IDENT	'X' BASIC DIM	'Y' BASIC DIM	⌖ DIM	HOLE DES	QTY
A1	-.400	.880	.006	.058 .062	13
A2	-.060	.810			
A3	.080	1.160			
A4	.480	1.170			
A5	.580	.620			
A6	.680	1.070			
A7	.740	.410			
A8	.840	-.040			
A9	1.280	1.210			
A10	1.420	1.000			
A11	1.510	.960			
A12	1.430	.290			
A13	1.390	-.050			
B1	-.350	.620	.006	.100 .104	26
B2	-.290	.860			
B3	-.260	.730			
B4	-.200	.620			
B5	-.170	.820			
B6	.110	1.260			
B7	.110	1.390			
B8	.140	1.070			
B9	.150	.300			
B10	.150	.430			
B11	.180	.590			
B12	.290	.660			
B13	.340	.980			
B14	.590	1.010			
B15	.800	1.090			
B16	1.000	.700			
B17	1.010	.240			
B18	1.060	.890			
B19	1.210	.390			
B20	1.310	1.060			
B21	1.320	.210			
B22	1.330	.340			
B23	1.430	.050			
B24	1.450	.180			
B25	1.620	.640			
B26	1.730	.700			
C1	-.390	1.010	.006	.127 .131	13
C2	-.370	1.160			
C3	.030	.370			
C4	.490	1.110			
C5	.570	-.010			
C6	.610	.140			
C7	.710	.710			
C8	.720	-.010			
C9	.760	.140			
C10	.860	.690			
C11	.870	.240			
C12	.930	.820			
C13	.940	1.050			
D1	-.400	.750	.006	.105 .109	1
E1	-.130	.130	.006	.146 .150	6
E2	0	0			
E3	.030	.210			
E4	.040	.530			
E5	.680	.290			
E6	.700	.550			
F1	-.060	.680	.006	.153 .157	2
F2	1.170	.240			
G1	.300	1.150	.006	.202 .206	1
H1	.750	.910	.006	.227 .231	2
H2	.990	.040			
J1	1.240	.040	.006	.249 .254	1
K1	1.680	.890	.006	.255 .262	1
L1	.480	.800	.006	.310 .317	1
M1	.260	.090	.006	.326 .333	1
N1	-.120	1.060	.006	.330 .337	2
N2	1.630	.400			
P1	1.570	1.230	.006	.419 .426	1
R1	.950	.470	.006	DETAIL A	1
S1	1.320	.720	.006	DETAIL B	1
T1	.670	1.280	.006	DETAIL C	1
U1	.150	.840	.006	DETAIL D	1
W1	.420	.430	.006	DETAIL E	1



REVISIONS
SYM
DESCRIPTION
DATE
APPROVAL
.140 REF
.005 R MAX
.140 REF
PARTIAL B-B
SEE DETAIL C
SH 2
ZONE G-5
1.364
.353
.685
.306
.160
.056
.478
Y
.216
.181
.321
.493
SEE DETAIL D
SH 2
ZONE G-4
SEE DETAIL B
SH 2
ZONE F-7
SEE DETAIL A
SH 2
ZONE F-8
.20 DIA THRU
1.719
.315
.157
.480
.032 R MAX
.250
X
X
.438
.500
2.343
SEE DETAIL E
SH 2
ZONE F-3
60° CSK TO .089 .104 DIA
15 PLACES
.656
.687
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19 B20 B21 B22 B23 B24 B25 B26
C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13
D1 E1 E2 E3 E4 E5 E6 F1 F2 G1 H1 H2 J1 K1 L1 M1 N1 N2 P1 R1 S1 T1 U1 W1
B
B
.062
.062
.080
.094 R MAX
4 PLACES
1.250
.080
.292
.188
32
A
A
.0006

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MUST BE FREE FROM BURRS

ALL FLAT SURFACES TO BE SQUARE AND OR PARALLEL WITHIN .010

UNLESS OTHERWISE SPECIFIED:

SURFACE ROUGHNESS MUST NOT EXCEED 125√
ALL CORNERS AND RADII TO BE .005 TO .015 R OR CHAMFER

3▷ INSTALL FIND NO. 2 PER MS33646 EXCEPT DIMENSION F TO BE .394, BREAK OFF TANGS

COAT THREADS AND FIND NO. 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5/QQ-M-31A

2▷ FINISH: ANODIZE USING MIL-M-3171A IV PLUG INSERT HOLES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO
3	NAS1222-06E	INSERT, SCREW-LOCKING	2
1	1015726-1	HEATSINK	

LIST OF MATERIALS

NEXT ASSY	USED ON
1007043	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS .XX ± .02 .XXX ± .005 ANGLES ± 1°
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
HEAT TREATMENT
FINAL FINISH 2▷

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS
DWG NO
CONTRACT
DRAWN A SUMMERVILLE DATE 8 MAY 63
CHECKED J. SAYLES 16 MAY 63
APPROVAL R OSBERG 7 MAY 63
APPROVAL A J KOREL 7 MAY 63
15 JUNE 63
APPROVAL 17 JUN 63
NASA APPROVAL 6-19-63
MIT APPROVAL

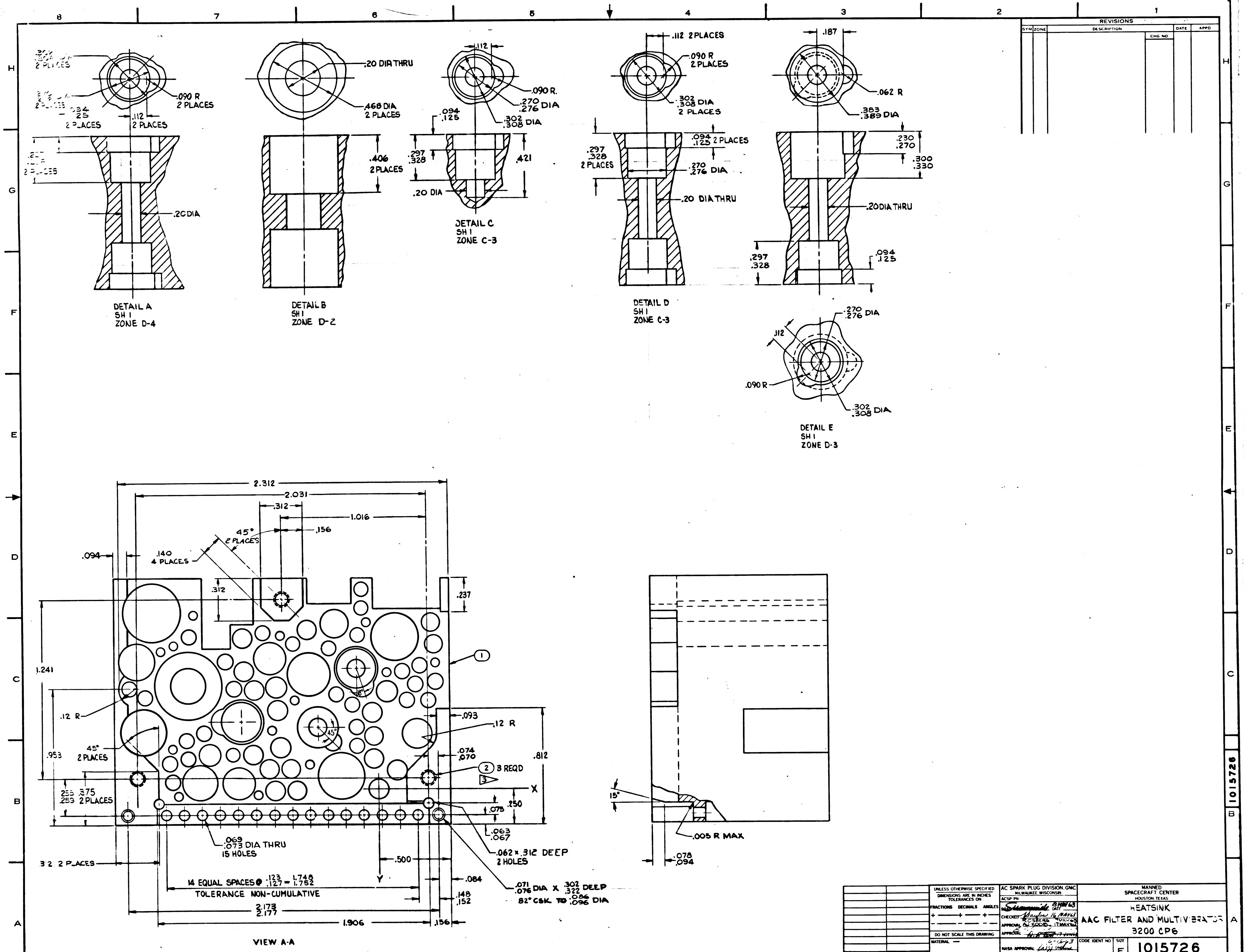
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

HEATSINK
AAC FILTER AND MULTIVIBRATOR
3200 CPS

CODE IDENT NO
SIZE E
NASA DRAWING NO 1015726
SCALE 5:1
WT
SHEET 1 OF 2

1015726

INCHES
PHOTOGRAPHIC SCALE ONLY


REVISIONS
SYM ZONE DESCRIPTION DATE APPD
CHG NO
DETAIL A
SH I
ZONE D-4
.090 R
2 PLACES
.112 2 PLACES
.20 DIA
DETAIL B
SH I
ZONE D-2
.20 DIA THRU
.468 DIA
2 PLACES
.406
2 PLACES
DETAIL C
SH I
ZONE C-3
.112
.090 R.
.270
.276 DIA
.302
.308 DIA
.094
.125
.297
.328
.421
.20 DIA
DETAIL D
SH I
ZONE C-3
.112 2 PLACES
.090 R
2 PLACES
.302
.308 DIA
2 PLACES
.094
.125 2 PLACES
.297
.328
2 PLACES
.270
.276 DIA
.20 DIA THRU
.187
.062 R
.383
.389 DIA
.230
.270
.300
.330
.20DIA THRU
.297
.328
.094
.125
DETAIL E
SH I
ZONE D-3
.270
.276 DIA
.112
.090 R
.302
.308 DIA
VIEW A-A
2.312
2.031
.312
1.016
.156
45°
2 PLACES
.140
4 PLACES
.094
.312
.237
1.241
.12 R
.953
45°
2 PLACES
.255 .375
.259 2 PLACES
.093
.12 R
.074
.070
② 3 REQD
3
X
Y
.812
.250
.075
.063
.067
.069
.073 DIA THRU
15 HOLES
.062 x .312 DEEP
2 HOLES
.312 2 PLACES
.500
.084
14 EQUAL SPACES @ .123 .127 = 1.748 1.752
TOLERANCE NON-CUMULATIVE
2.173
2.177
.148
.152
1.906
.156
.071
.076 DIA X .302 .322 DEEP
82° CSK TO .086 .096 DIA
①
15°
.005 R MAX
.078
.094
1015726

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Summerville DATE 8 MAY 63
CHECKED Baylor 16 MAY 63
ROSBERG 17 MAY 63
APPROVAL AJ KOOB 17 MAY 63
APPROVAL 17 JUN 63
NASA APPROVAL 6-15-63
MIT APPROVAL 19 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

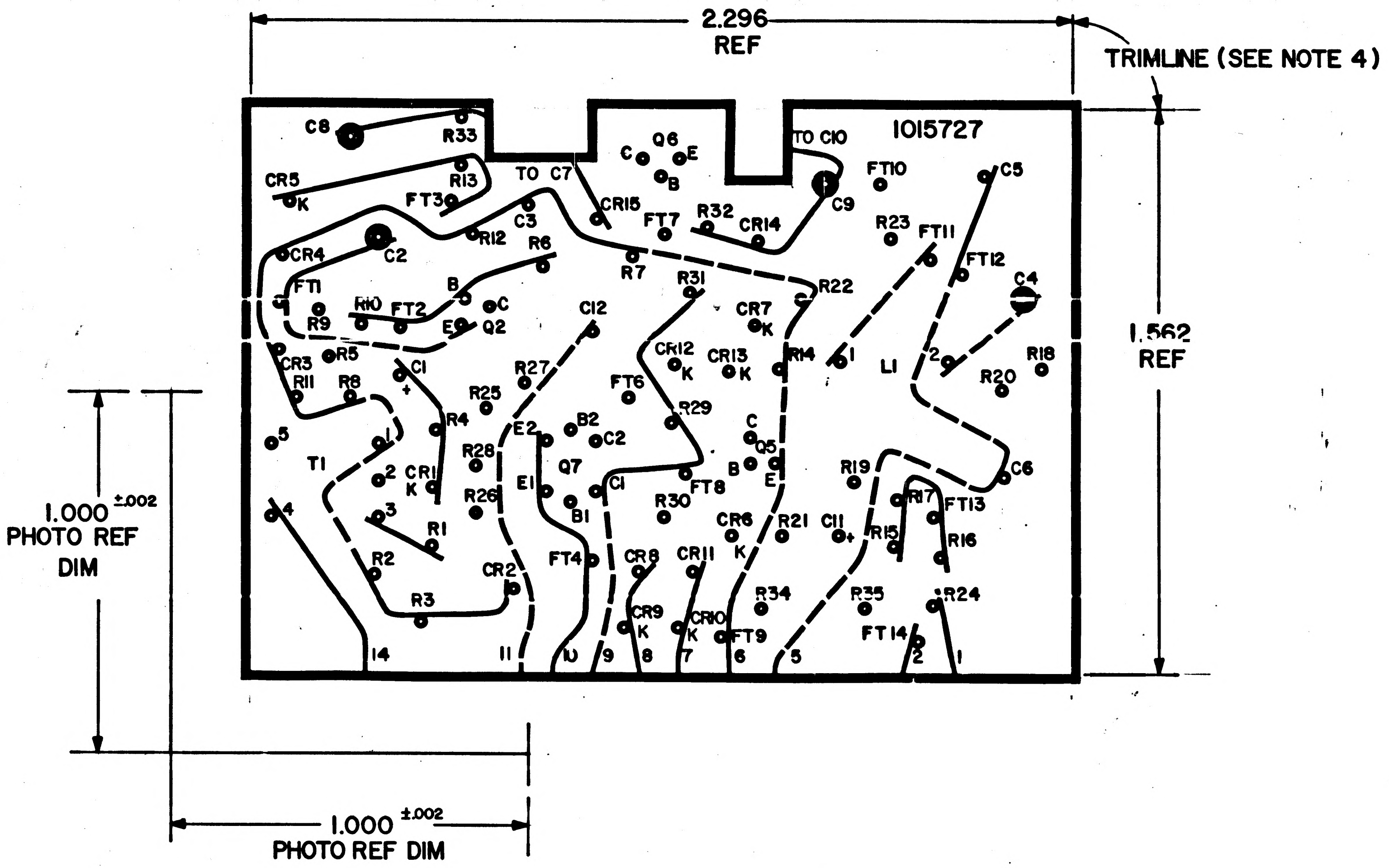
HEATSINK
AAC FILTER AND MULTIVIBRATOR
3200 CP6

CODE IDENT NO
SIZE E
1015726
SCALE 5:1
SHEET 2 OF 2

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01615

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02347	31 JUL 63	J.H. WK


2.296 REF
TRIMLINE (SEE NOTE 4)
1.562 REF
1.000 ±.002 PHOTO REF DIM
1.000 ±.002 PHOTO REF DIM
1015727
C8
R33
R13
CR5
K
FT3
TO C7
C
Q6
E
B
TO C10
C9
FT10
C5
CR15
R32
CR14
FT7
R12
C3
R6
R23
FT11
CR4
C2
R7
R31
R22
FT12
C4
FT1
B
C
R10
FT2
E
Q2
C12
CR7
K
R9
R5
CR3
R11
R8
C1
CR12
K
CR13
K
R14
L1
R18
R20
R27
FT6
R25
R4
R29
E2
B2
C2
C
Q5
T1
R28
Q7
B
E
R19
C6
CR1
K
R26
E1
C1
R30
FT8
R17
FT13
B1
CR6
K
R21
C11
R15
R16
R1
R2
CR2
FT4
CR8
CR11
R34
R35
R24
R3
CR9
K
CR10
K
FT9
FT14
14
11
10
9
8
7
6
5
2
1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER INCH
3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
4. TRIM TO WITHIN .010 OF TRIMLINE
5. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
6. BROKEN LINES DENOTE SLEEVING
7. ● .125 DIA PUNCH
8. ● .045/.055 DIA PUNCH

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN A. Gampski DATE 6/15/63
CHECKED
APPROVAL R. L. Sirlak 17 June 63
APPROVAL D. R. Fost 17 JUN 63
NASA APPROVAL W. J. Rhine 6-19-63
MIT APPROVAL W. Kupfer 19 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PHOTOGRAPHIC MASTER
WIRING BOARD, TOP
AAC FILTER & MULTIVIBRATOR 3200 CPS

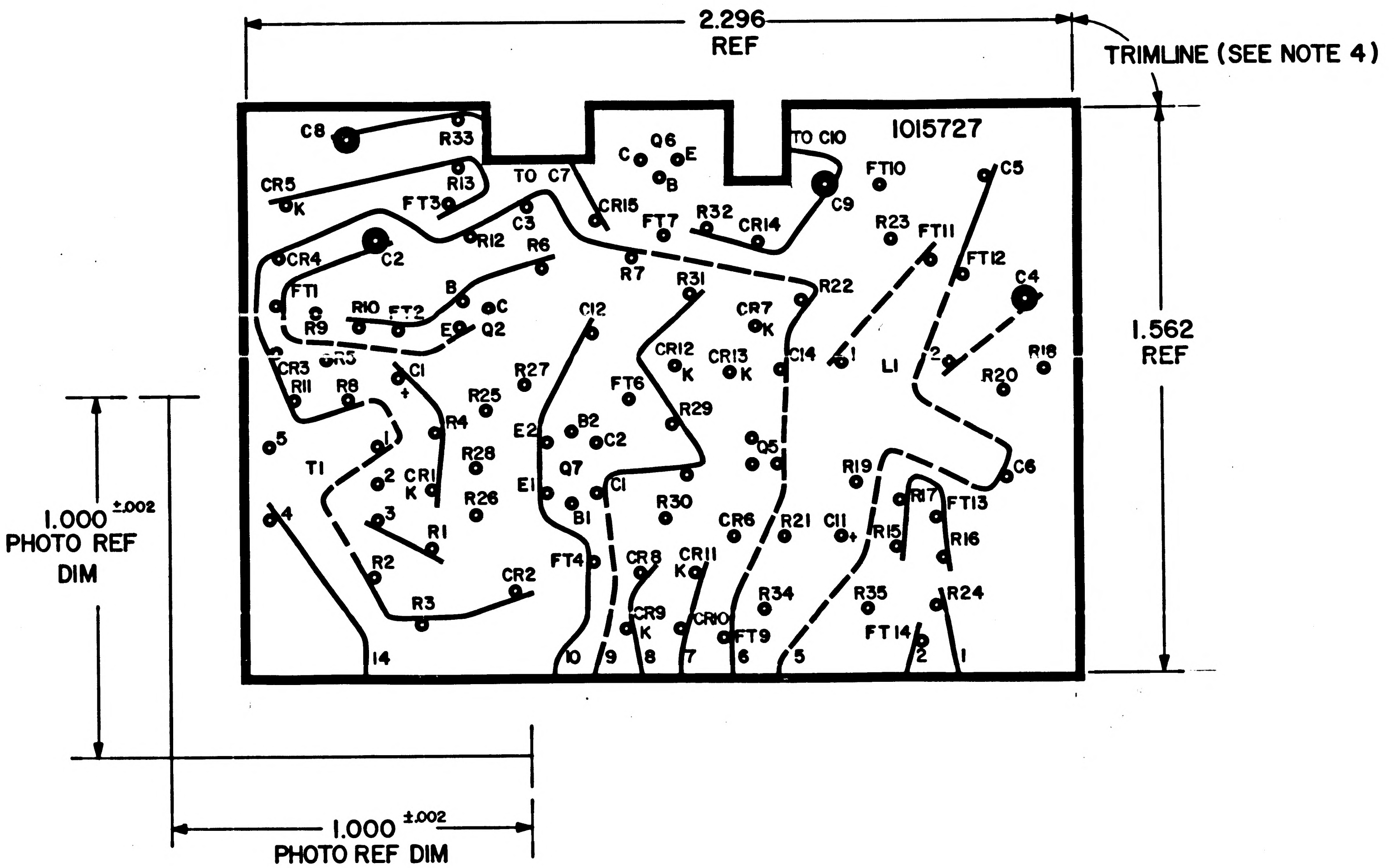
CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015727
SCALE 5/1
WT
SHEET 1 OF 1

1015727

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01615			
SYM	DESCRIPTION	DATE	APPROVAL


2.296 REF
TRIMLINE (SEE NOTE 4)
1015727
1.562 REF
1.000 ±.002 PHOTO REF DIM
1.000 ±.002 PHOTO REF DIM
C8
R33
CR5
K
R13
FT3
TO C7
C Q6 E
B
TO C10
C9
FT10
C5
CR15
FT7
R32
CR14
R23
FT11
C2
R12
C3
R6
CR4
R7
R31
R22
FT12
C4
FT1
B
C
R10
FT2
E
Q2
R9
C12
CR7
K
R18
CR3
CR5
C1
R11
R8
R27
CR12
K
CR13
K
C14
1
L1
2
R20
R25
FT6
R29
5
E2
B2
C2
Q5
T1
1
2
CR1
K
R28
Q7
E1
R19
C6
4
3
R26
B1
C1
R30
CR6
R21
C11
R17
FT13
R1
R15
R16
R2
FT4
CR8
CR11
K
CR2
R34
R35
R24
R3
CR9
K
CR10
FT9
FT14
14
10
9
8
7
6
5
2
1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL VARIATIONS SHALL NOT EXCEED .001 INCH PER INCH
3. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
4. TRIM TO WITHIN .010 OF TRIMLINE
5. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB, CLASS 2, STYLE IA
6. BROKEN LINES DENOTE SLEEVING
7. ● .125 DIA PUNCH
8. ⊙ .045/.055 DIA PUNCH

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
HEAT TREATMENT —
FINAL FINISH —

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN A. Dampski DATE 6/15/63
CHECKED
APPROVAL E. I. Sisolak 17 JUNE 63
APPROVAL D. R. Fest 17 JUN 63
NASA APPROVAL W. J. Rhine 6-19-63
MIT APPROVAL W. Kupfer 19 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PHOTOGRAPHIC MASTER
WIRING BOARD, TOP
AAC FILTER & MULTIVIBRATOR 3200 CPS

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015727
SCALE 5/1
WT
SHEET 1 OF 1

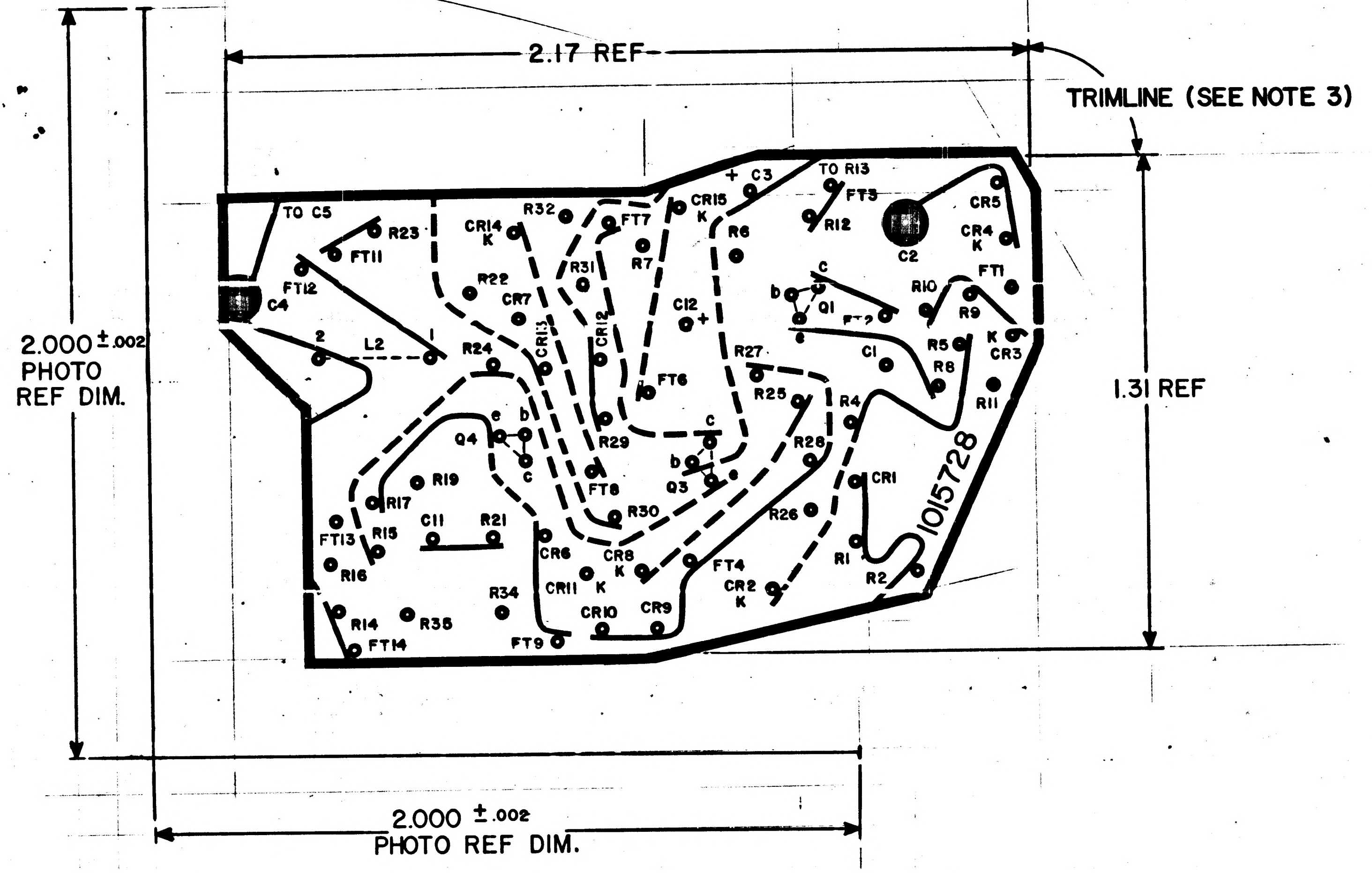
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015727

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01615

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02347	31 JUL 63	J.J.M WK


2.17 REF
TRIMLINE (SEE NOTE 3)
1.31 REF
2.000 ±.002 PHOTO REF DIM.
2.000 ±.002 PHOTO REF DIM.
TO C5
R23
FT11
FT12
C4
2
L2
1
CR14
K
R32
R22
CR7
R24
CR13
R31
CR12
FT7
R7
CR15
K
+ C3
R6
C12
+
FT6
R27
R25
TO R13
FT3
R12
C2
CR5
CR4
K
c
b
Q1
e
FT2
R10
FT1
R9
R5
K
CR3
C1
R8
R11
R4
R28
c
b
Q3
e
Q4
e
b
c
R29
FT8
R30
R19
R17
C11
R21
FT13
R15
R16
CR6
CR8
K
CR11
K
R34
CR10
CR9
R14
R35
FT14
FT9
FT4
CR2
K
R26
CR1
R1
R2
1015728

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. CUT TO WITHIN .010 OF TRIM LINE
4. MAKE MASTER PATTERN POSITIVE FILM TO DIMENSIONS SHOWN
5. MATERIAL: .006/.008 THICK PLASTIC SHEET SENSITIZED, DIMENSIONALLY STABLE PER L-F-340 TYPE IB, CLASS 2, STYLE IA
6. ● .045/.055 DIA PUNCH
7. ● .120/.130 DIA PUNCH
8. BROKEN LINES DENOTE SLEEVING

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007043	1007043
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN SPLANE DATE 9MAY63
CHECKED J. SAYLES 17MAY63
R.OSBERG 17MAY63
APPROVAL A.J. KOSEL 17MAY63
APPROVAL E.F. Sierlak 17 JUNE 63
D.R. Test 17 JUN 63
NASA APPROVAL W.J. Rhine 6-19-63
MIT APPROVAL WK 19 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR, BOTTOM
PHOTOGRAPHIC MASTER
AAC FILTER AND MULTIVIBRATOR
3200 CPS

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015728
SCALE 5:1
WT
SHEET 1 OF 1

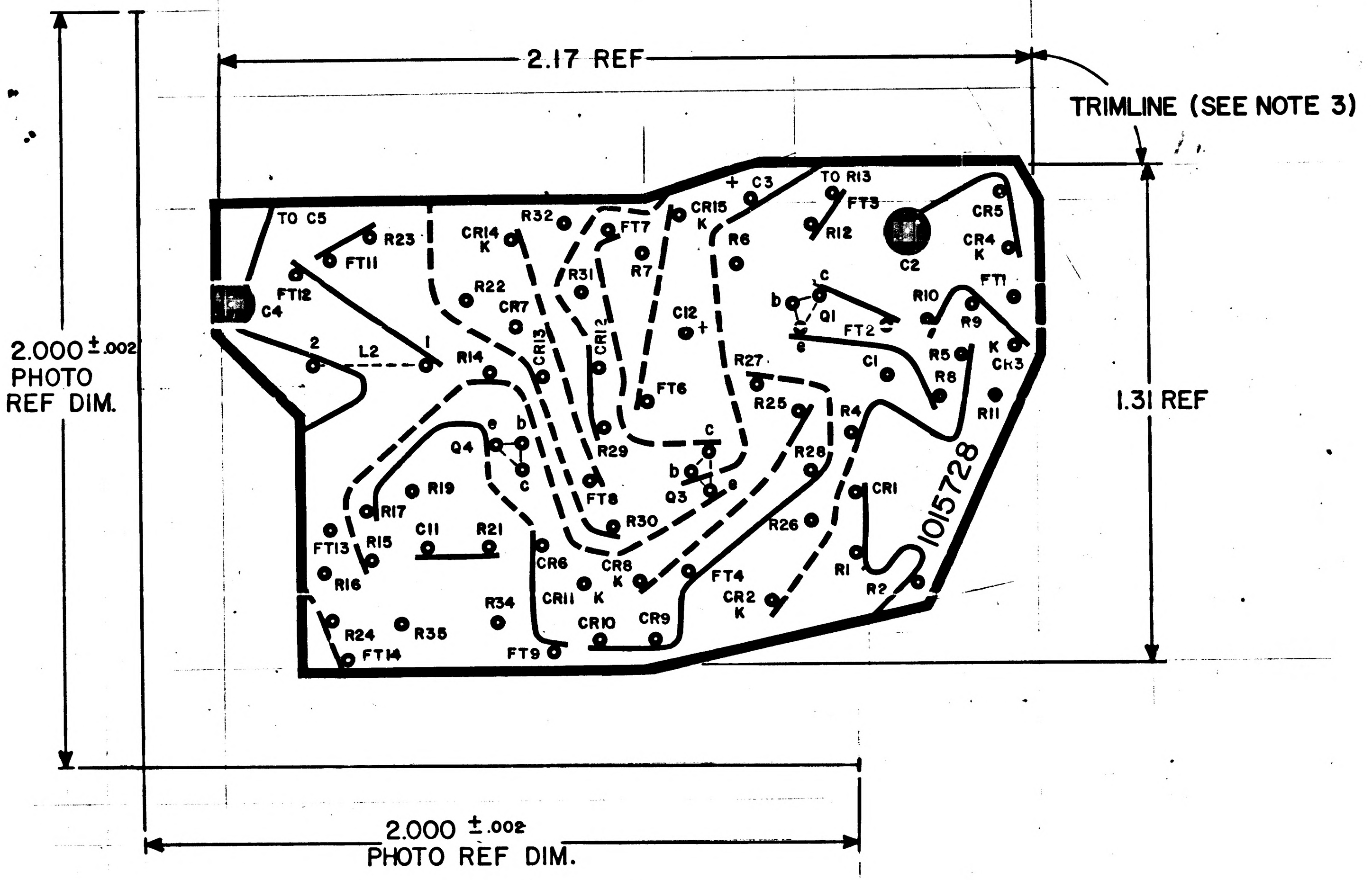
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015728

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01615

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 02347	31 JUL 63	J.J.M. WK
B	REVISED PER TDRR 03020	7-5-63	WK


2.17 REF
TRIMLINE (SEE NOTE 3)
2.000 ±.002 PHOTO REF DIM.
1.31 REF
2.000 ±.002 PHOTO REF DIM.
TO C5
R23
FT11
FT12
C4
2
L2
1
R32
CR14 K
R22
CR7
R14
CR13
CR12
R31
FT7
R7
CR15 K
+ C3
TO R13
FT3
R12
C2
CR5
CR4 K
R6
C12 +
FT6
b c e
Q1
FT2
R10
FT1
R9
K CR3
R5
R8
C1
R11
R27
R25
R4
R28
c b e
Q3
R29
FT8
R30
Q4
R19
R17
C11
R21
FT13
R15
R16
CR6
CR8 K
CR11 K
CR10
CR9
FT4
CR2 K
R26
CR1
R1
R2
1015728
R34
R24
R35
FT14
FT9

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. CUT TO WITHIN .010 OF TRIM LINE
4. MAKE MASTER PATTERN POSITIVE FILM TO DIMENSIONS SHOWN
5. MATERIAL: .006/.008 THICK PLASTIC SHEET SENSITIZED, DIMENSIONALLY STABLE PER L-F-340 TYPE IB, CLASS 2, STYLE IA
6. ● .045/.055 DIA PUNCH
7. ● .120/.130 DIA PUNCH
8. BROKEN LINES DENOTE SLEEVING

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007043	1007043

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
HEAT TREATMENT —
FINAL FINISH —

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN SPLANE DATE 9 MAY 63
CHECKED J. SAYLES 17 MAY 63
R. OSBERG 17 MAY 63
APPROVAL A.J. KODEL 17 MAY 63
17 Jun 63
APPROVAL D. R. Scott 17 JUN 63
NASA APPROVAL 6-19-63
MIT APPROVAL WK 19 Jun 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR, BOTTOM
PHOTOGRAPHIC MASTER
AAC FILTER AND MULTIVIBRATOR
3200 CPS

CODE IDENT NO.
SIZE D
NASA DRAWING NO. 1015728
SCALE 5:1
WT
SHEET 1 OF 1

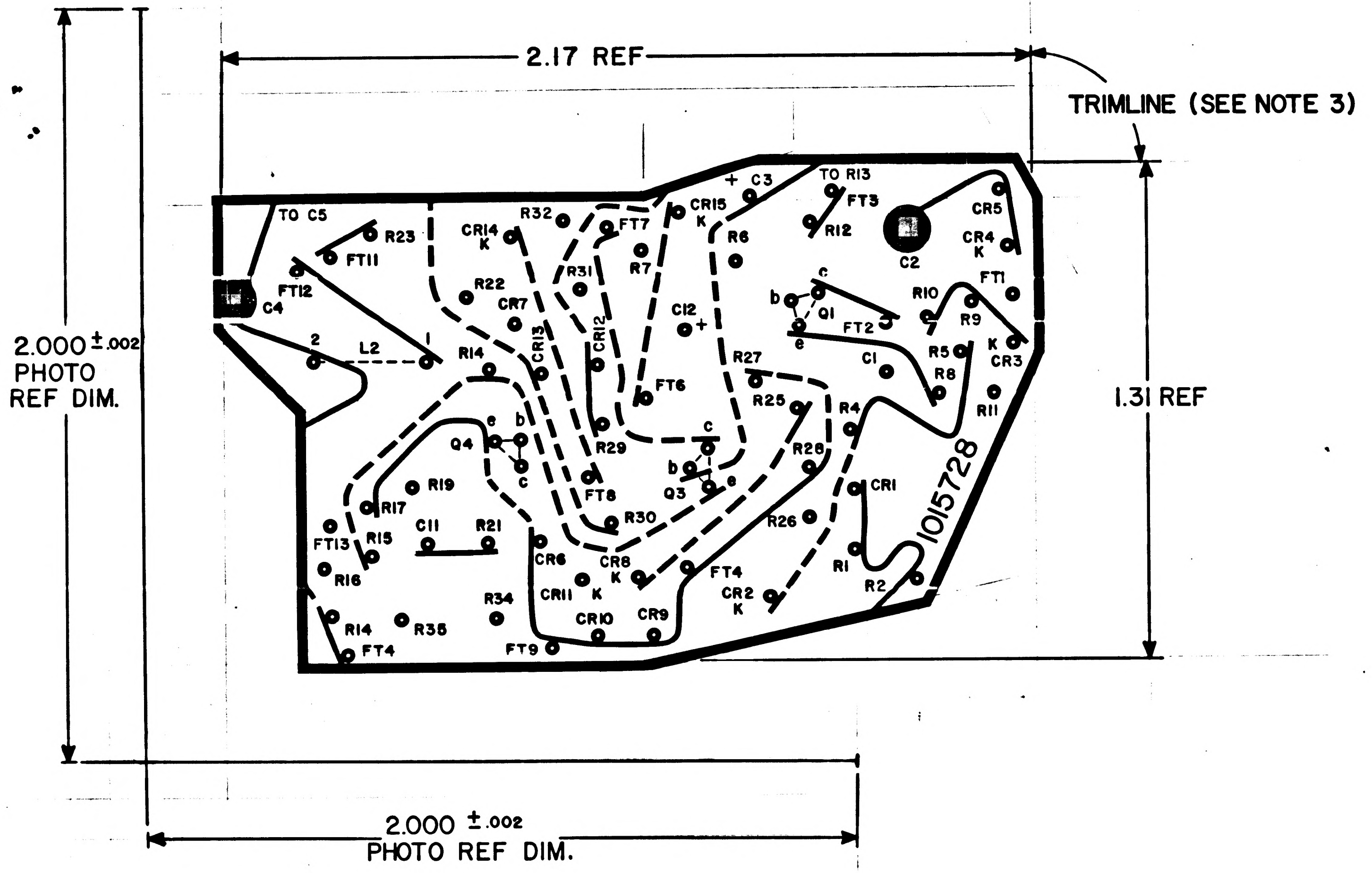
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015728 D

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS TDRR 01615

SYM	DESCRIPTION	DATE	APPROVAL


2.17 REF
TRIMLINE (SEE NOTE 3)
2.000 ±.002 PHOTO REF DIM.
1.31 REF
2.000 ±.002 PHOTO REF DIM.
TO C5
R23
FT11
FT12
C4
2
L2
1
CR14 K
R32
R22
CR7
R14
CR13
R31
CR12
FT7
R7
C12 +
FT6
CR15 K
+ C3
R6
TO R13
FT3
R12
C2
CR5
CR4 K
FT1
R10
R9
b
c
Q1
e
FT2
C1
R5
R8
K CR3
R11
R27
R25
R4
R28
c
b
Q3
e
Q4
e
b
c
R19
R17
R29
FT8
R30
C11
R21
FT13
R15
R16
CR6
CR8 K
CR11 K
R34
CR10
CR9
FT4
CR2 K
R26
CR1
R1
R2
1015728
R14
R35
FT4
FT9

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER INCH
3. CUT TO WITHIN .010 OF TRIM LINE
4. MAKE MASTER PATTERN POSITIVE FILM TO DIMENSIONS SHOWN
5. MATERIAL: .006/.008 THICK PLASTIC SHEET SENSITIZED, DIMENSIONALLY STABLE PER L-F-340 TYPE IB, CLASS 2, STYLE IA
6. ⊙ .045/.055 DIA PUNCH
7. ● .120/.130 DIA PUNCH
8. BROKEN LINES DENOTE SLEEVING

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

1007043	1007043
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± -//- DECIMALS ± -//- ANGLES ± -//-
DO NOT SCALE THIS DRAWING
MATERIAL SEE NOTE 5
HEAT TREATMENT //
FINAL FINISH //

MIT INSTRUMENTATION LAB
CAMBRIDGE, MASS
DWG. NO. CONTRACT
DRAWN SPLANE DATE 9MAY63
CHECKED J. SAYLES 17MAY63
R. OSBERG 17MAY63
APPROVAL A. J. KODEL 17MAY63
APPROVAL E. F. Surcek 17 JUNE 63
D. R. Test 17 JUN 63
NASA APPROVAL W. J. Rhine 6-19-63
MIT APPROVAL W. K. 19 June 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR, BOTTOM
PHOTOGRAPHIC MASTER
AAC FILTER AND MULTIVIBRATOR
3200 CPS

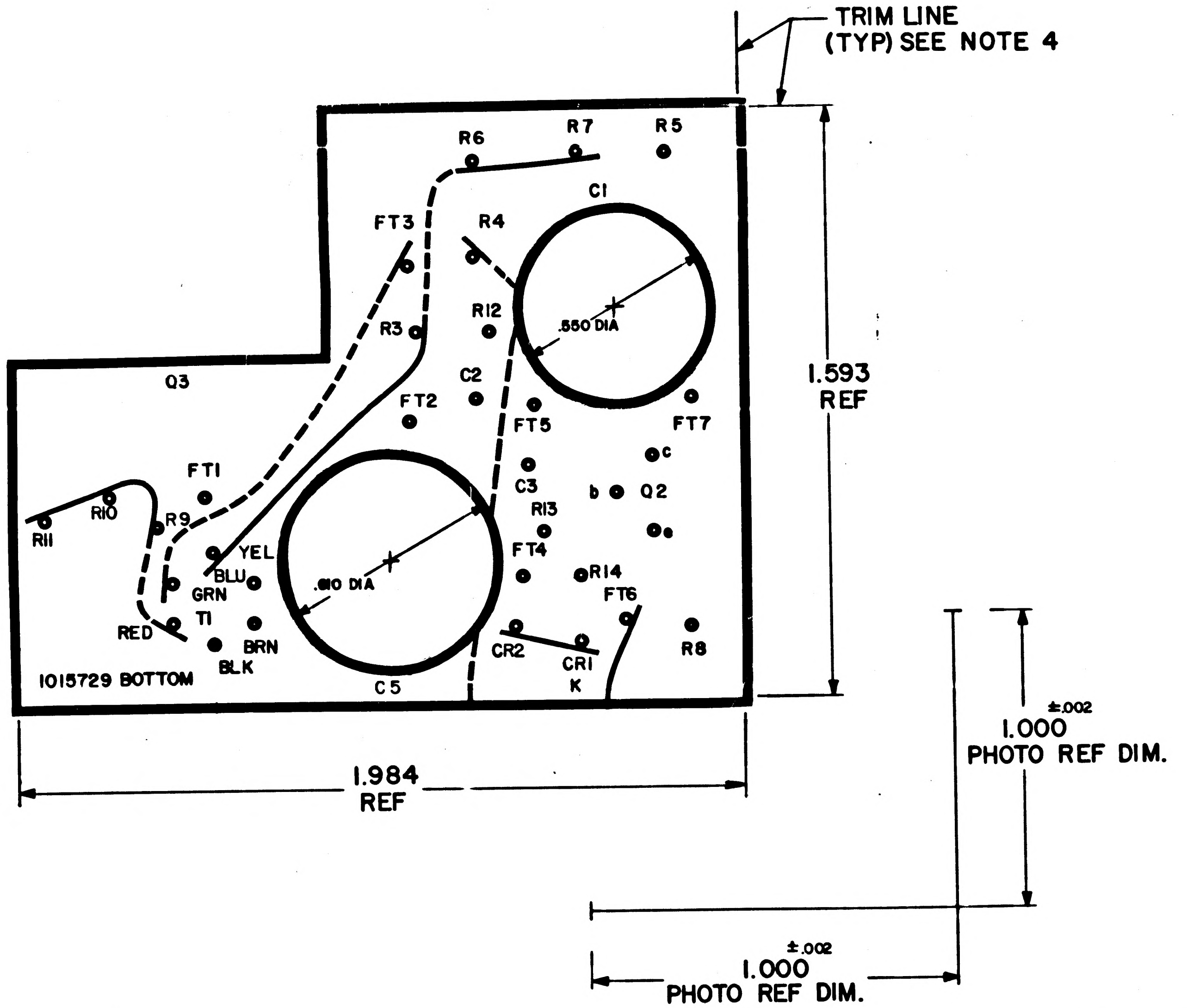
CODE IDENT NO.	SIZE	NASA DRAWING NO.
	D	1015728
SCALE 5:1	WT	SHEET 1 OF 1

1015728

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTICE — WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

SYM	DESCRIPTION	DATE	APPROVAL
	REVISIONS TORR 01539		


TRIM LINE
(TYP) SEE NOTE 4
R6
R7
R5
C1
FT3
R4
R12
.550 DIA
R3
C2
Q3
FT2
FT5
FT7
FT1
c
C3
b
Q2
R13
R11
R10
R9
e
YEL
BLU
.910 DIA
FT4
R14
GRN
FT6
T1
RED
BRN
CR2
CR1
K
R8
BLK
1015729 BOTTOM
C5
1.593
REF
1.984
REF
±.002
1.000
PHOTO REF DIM.
±.002
1.000
PHOTO REF DIM.

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATERIAL: FILM .006/.008 THICK PER L-F-340, TYPE IB CLASS 2, STYLE IA
3. ORIGINAL OF THIS DRAWING OR REPRODUCTION MADE BY PROCESS OR METHOD SHALL INSURE DIMENSIONAL STABILITY. DIMENSIONAL STABILITY SHALL NOT EXCEED .001 INCH PER FOOT
4. CUT TO WITHIN .010 OF TRIMLINE
5. MAKE MASTER PATTERN POSITIVE FILMS TO DIMENSIONS SHOWN
6. ⊙ .045/.055 DIA PUNCH ALL HOLES
7. BROKEN LINES DENOTE SLEEVING

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.

LIST OF MATERIALS

NEXT ASSY	USED ON
1007048	

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
SEE NOTE 2
HEAT TREATMENT
FINAL FINISH

MIT
INSTRUMENTATION LAB
CAMBRIDGE, MASS.
DWG. NO. CONTRACT
DRAWN J. Conley DATE 6-4-63
CHECKED E.J. Sisolak 7 JUNE 63
APPROVAL D. R. [illegible] 12 JUN 63
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL Perry K. Bryant

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

INSULATOR
AMPLIFIER 5% 800 CPS

CODE IDENT NO. SIZE D NASA DRAWING NO. 1015729
SCALE 5 : 1 WT SHEET 1 OF 8

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

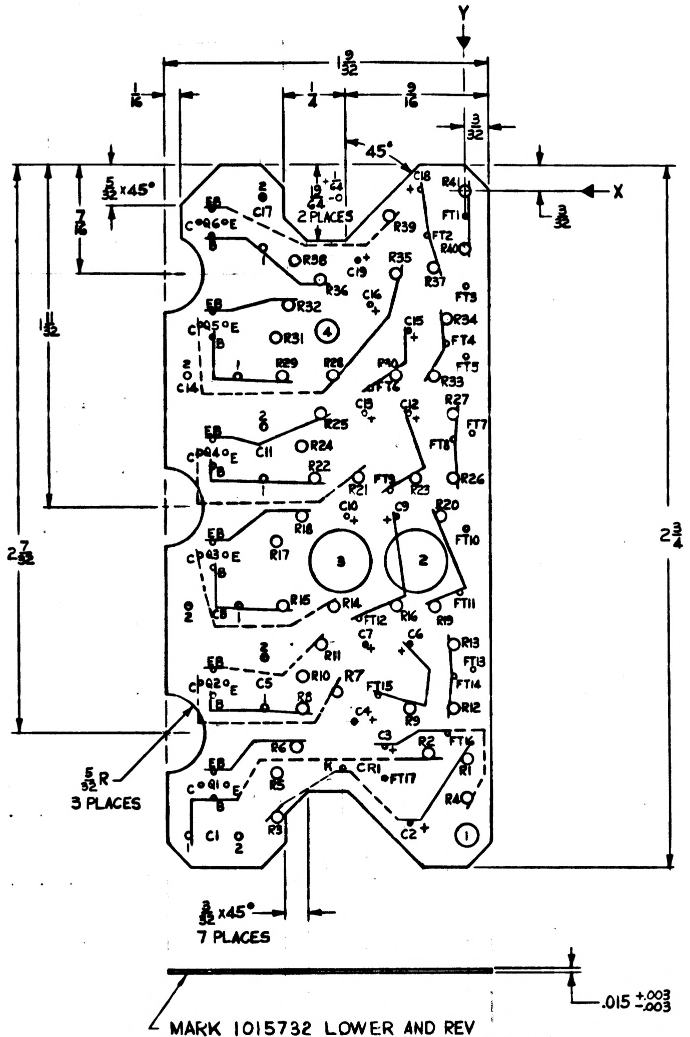
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 02160			

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
C1-1	1.100	2.525	.032 DIA THRU
C1-2	.900	2.525	
C2	.225	2.475	.024
C3	.325	2.175	
C4	.450	2.075	
C5-1	.800	2.025	.032
C5-2	.800	1.825	
C6	.225	1.775	.024
C7	.400	1.775	
C8-1	.900	1.625	.032
C8-2	1.100	1.625	
C9	.275	1.275	.024
C10	.475	1.275	
C11-1	.800	1.125	.032
C11-2	.800	.925	
C12	.225	.875	.024
C13	.400	.875	
C14-1	.900	.725	.032
C14-2	1.100	.725	
C15	.225	.550	.024
C16	.375	.450	
C17-1	.800	.225	.032
C17-2	.800	.025	
C18	.175	.000	.024
C19	.425	.275	
CR1	.500	2.250	.024 DIA THRU
FT1	.000	.100	.024 DIA THRU
FT2	.150	.175	
FT3	.000	.375	
FT4	.075	.600	
FT5	.000	.650	
FT6	.375	.775	
FT7	-.025	.950	
FT8	.050	.975	
FT9	.300	1.175	
FT10	.000	1.325	
FT11	.025	1.575	
FT12	.375	1.675	
FT13	-.025	1.875	
FT14	.050	1.900	
FT15	.350	1.975	
FT16	.075	2.125	
FT17	.325	2.300	
Q1-E	.950	2.325	.024 DIA THRU
Q1-B	1.000	2.375	
Q1-C	1.050	2.325	
Q1-EB	1.000	2.275	
Q2-E	.950	1.925	
Q2-B	1.000	1.975	
Q2-C	1.050	1.925	
Q2-EB	1.000	1.875	
Q3-E	.950	1.425	
Q3-B	1.000	1.475	
Q3-C	1.050	1.425	

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
Q3-EB	1.000	1.375	.024 DIA THRU
Q4-E	.950	1.025	
Q4-B	1.000	1.075	
Q4-C	1.050	1.025	
Q4-EB	1.000	.975	
Q5-E	.950	.525	
Q5-B	1.000	.575	
Q5-C	1.050	.525	
Q5-EB	1.000	.475	
Q6-E	.950	.125	
Q6-B	1.000	.175	
Q6-C	1.050	.125	
Q6-EB	1.000	.075	
R1	.000	2.225	.043 DIA THRU
R2	.150	2.200	
R3	.750	2.450	
R4	.000	2.375	
R5	.750	2.275	
R6	.675	2.175	
R7	.525	1.950	
R8	.650	2.025	
R9	.225	2.025	
R10	.650	1.900	
R11	.575	1.775	
R12	.050	2.025	
R13	.050	1.775	
R14	.525	1.625	
R15	.725	1.625	
R16	.275	1.625	
R17	.750	1.375	
R18	.650	1.275	
R19	.125	1.625	
R20	.100	1.275	
R21	.425	1.125	
R22	.600	1.125	
R23	.200	1.125	
R24	.650	1.000	
R25	.575	.875	
R26	.050	1.125	
R27	.050	.875	
R28	.525	.725	
R29	.725	.725	
R30	.275	.725	
R31	.750	.575	
R32	.700	.450	
R33	.125	.725	
R34	.075	.500	
R35	.275	.325	
R36	.575	.350	
R37	.125	.300	
R38	.675	.275	
R39	.300	.100	
R40	.000	.225	
R41	.000	.000	
1	.000	2.525	.096 DIA THRU
2	.200	1.450	.250 DIA THRU
3	.500	1.450	.250 DIA THRU
4	.550	.550	.096 DIA THRU



MARK 1015732 LOWER AND REV
LETTER PER MIL-STD-130 (ES-267)

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

CHARACTERS AND PATHS ARE FOR MANUFACTURING REFERENCE ONLY.

MARK PATHS AS SHOWN $\frac{1}{64}$ WIDE.

UNLESS OTHERWISE SPECIFIED:

CHARACTERS TO BE $\frac{1}{32}$ HIGH SANS-SERIF GOTHIC, LOCATE APPROX AS SHOWN.

MUST BE FREE FROM BURRS AND SHARP CORNERS.

▷ MATERIAL: GLASS EPOXY MIL-P-18177 TYPE GEE (ES-2744).

NEXT ASSY	USED ON
1015136	
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
$+\frac{1}{64}$	+.005	+2°
$-\frac{1}{64}$	-.005	-2°

DO NOT SCALE THIS DRAWING
MATERIAL ▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Schwabe DATE 10 MAY 63
CHECKED 17 MAY 63
APPROVAL 17 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL

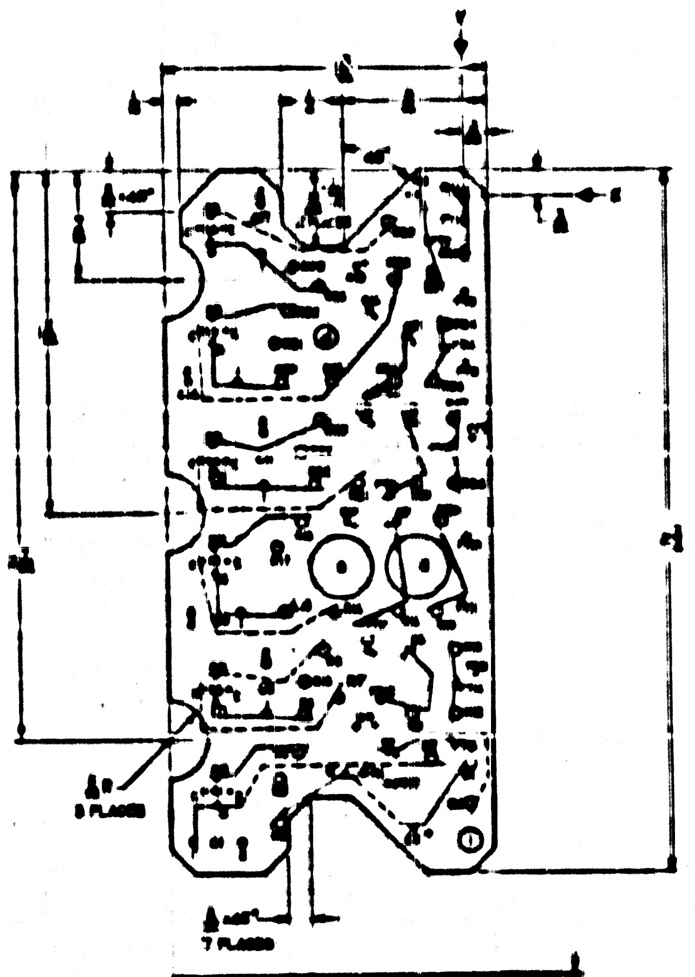
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER
BUFFER CIRCUIT

CODE IDENT NO.
SIZE E
1015732
SCALE 4:1
SHEET

COORDINATE DIMENSIONS			
HOLE NO	COORDINATE X (HORIZ)	Y (VERT)	HOLE DESCRIPTION
[illegible]	[illegible]	1.143	.094 DIA THRU
[illegible]	[illegible]	1.143	[illegible]
[illegible]	[illegible]	[illegible]	.084
[illegible]	[illegible]	[illegible]	.084
[illegible]	[illegible]	[illegible]	.084
[illegible]	[illegible]	[illegible]	.084
[illegible]	[illegible]	[illegible]	.084
[illegible]	[illegible]	[illegible]	.084
[illegible]	[illegible]	[illegible]	.084
[illegible]	[illegible]	[illegible]	.084
[illegible]	[illegible]	[illegible]	.084
[illegible]	.900	2.350	.084 DIA THRU
[illegible]	.400	[illegible]	.084 DIA THRU
[illegible]	[illegible]	[illegible]	.084 DIA THRU

COORDINATE DIMENSIONS			
HOLE NO	COORDINATE X (HORIZ)	Y (VERT)	HOLE DESCRIPTION
[illegible]	1.000	1.175	.084 DIA THRU
[illegible]	.350	[illegible]	
[illegible]	1.000	[illegible]	
[illegible]	1.044	1.044	
[illegible]	1.000	[illegible]	
[illegible]	1.000	.475	
[illegible]	1.050	[illegible]	
[illegible]	.400	.475	
[illegible]	.400	1.225	.040 DIA THRU
[illegible]	[illegible]	1.400	
[illegible]	.450	.450	
[illegible]	.200	[illegible]	
[illegible]	[illegible]	1.150	
[illegible]	[illegible]	2.025	
[illegible]	.575	1.775	
[illegible]	.550	2.025	
[illegible]	.450	1.775	
[illegible]	.725	[illegible]	
[illegible]	.680	[illegible]	
[illegible]	[illegible]	1.300	
[illegible]	.875	[illegible]	
[illegible]	.300	.160	
[illegible]	.000	.225	
[illegible]	.000	.000	
1	.000	2.525	.094 DIA THRU
2	.200	1.450	.250 DIA THRU
3	.900	1.450	.250 DIA THRU
4	.560	.560	.094 DIA THRU



MARK 1015732 LOWER AND REV LETTER PER MIL-STD-130 (ES-0637)

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

CHARACTERS AND PATHS ARE FOR MANUFACTURING REFERENCE ONLY.

MASK PATHS AS SHOWN [illegible] WIDE.

UNLESS OTHERWISE SPECIFIED:

CHARACTERS TO BE [illegible] HIGH SANS-SERIF GOTHIC, LOCATE APPROX AS SHOWN.

MUST BE FREE FROM BURRS AND SHARP CORNERS.

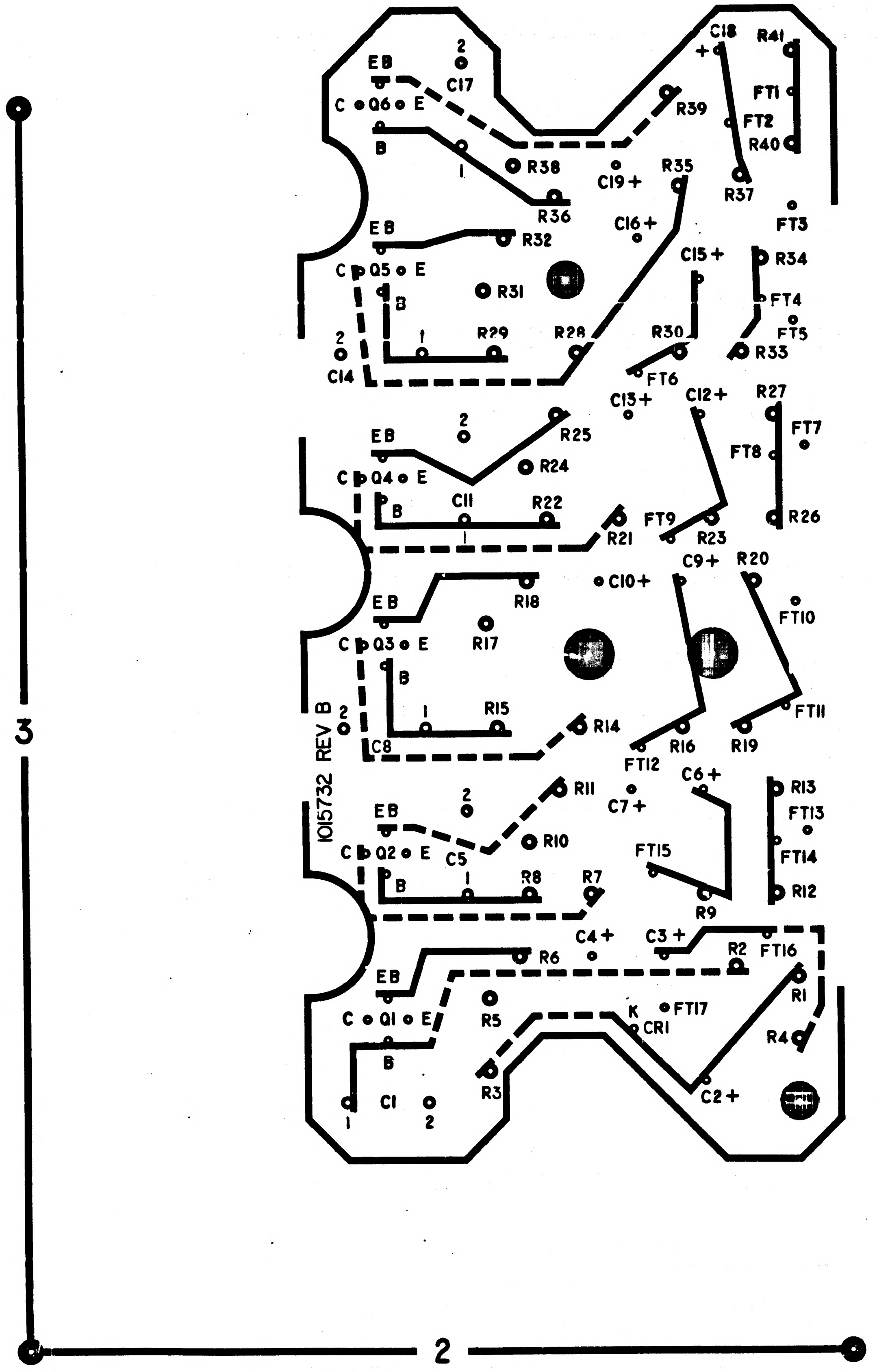
MATERIAL: GLASS EPOXY MIL-P-13949 TYPE GEE (ES-2764).

SEE [illegible] SHEET 2 FOR PHOTOGRAPHIC MASTER

MASTER LOWER
BUFFER CIRCUIT

E 1015732

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
B		THIS SHEET ADDED - 862		6-26-63	EPL



EB
2
C17
C ● Q6 ● E
B
1
R38
R36
R39
C18
R41
FT1
FT2
R40
C19 +
R35
R37
FT3
C16 +
EB
R32
C ● Q5 ● E
B
R31
C15 +
R34
FT4
FT5
2
C14
1
R29
R28
R30
R33
FT6
C13 +
C12 +
R27
FT7
FT8
EB
2
R25
R24
C ● Q4 ● E
B
C11
1
R22
R21
FT9
R23
R26
C9 +
R20
C10 +
FT10
EB
R18
C ● Q3 ● E
R17
B
1
R15
R14
R16
R19
FT11
2
C8
REV B
1015732
FT12
C6 +
C7 +
R11
R13
FT13
EB
2
R10
C ● Q2 ● E
C5
B
1
R8
R7
FT15
FT14
R12
R9
C4 +
C3 +
R2
FT16
R6
EB
R1
C ● Q1 ● E
R5
K
FT17
CR1
R4
B
R3
C2 +
1
C1
2
3
2

REV B THIS SHEET ADDED

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Gruenewald DATE 16 May 63
CHECKED 17 May 63
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER
MASTER
BUFFER CIRCUIT

CODE IDENT NO.	SIZE	
	E	1015732
SCALE 8:1		SHEET 2 OF 2

1015732 B

INCHES
PHOTOGRAPHIC SCALE ONLY

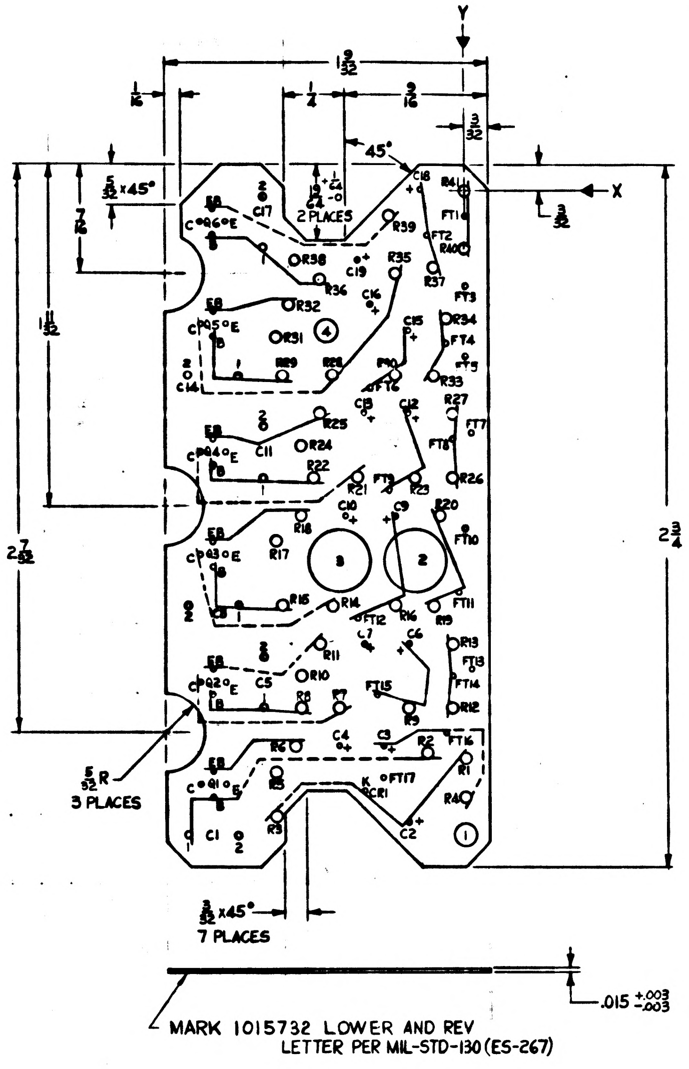
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X(HORIZ)	COORDINATE Y(VERT)	HOLE DESCRIPTION TOL. +.010 -.000
C1-1	1.100	2.525	.032 DIA THRU
C1-2	.900	2.525	
C2	.225	2.475	.024
C3	.325	2.175	
C4	.500	2.175	
C5-1	.800	2.025	.032
C5-2	.800	.825	
C6	.225	.775	.024
C7	.400	.775	
C8-1	.900	.625	.032
C8-2	1.100	.625	
C9	.275	.275	.024
C10	.475	.275	
C11-1	.800	1.125	.032
C11-2	.800	.925	
C12	.225	.875	.024
C13	.400	.875	
C14-1	.900	.725	.032
C14-2	1.100	.725	
C15	.225	.550	.024
C16	.375	.450	
C17-1	.800	.225	.032
C17-2	.800	.025	
C18	.175	.000	.024
C19	.425	.275	
CR1	.400	2.350	.024 DIA THRU
FT1	.000	.100	.024 DIA THRU
FT2	.150	.175	
FT3	.000	.375	
FT4	.075	.600	
FT5	.000	.650	
FT6	.375	.775	
FT7	-.025	.950	
FT8	.050	.975	
FT9	.300	1.175	
FT10	.000	1.325	
FT11	.025	1.575	
FT12	.375	1.675	
FT13	-.025	1.875	
FT14	.050	1.900	
FT15	.350	1.975	
FT16	.075	2.125	
FT17	.325	2.300	
Q1-E	.950	2.325	.024 DIA THRU
Q1-B	1.000	2.375	
Q1-C	1.050	2.325	
Q1-EB	1.000	2.275	
Q2-E	.950	1.925	
Q2-B	1.000	1.975	
Q2-C	1.050	1.925	
Q2-EB	1.000	1.875	
Q3-E	.950	1.425	
Q3-B	1.000	1.475	
Q3-C	1.050	1.425	

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X(HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
Q3-EB	1.000	1.375	.024 DIA THRU
Q4-E	.950	1.025	
Q4-B	1.000	1.075	
Q4-C	1.050	1.025	
Q4-EB	1.000	.975	
Q5-E	.950	.525	
Q5-B	1.000	.575	
Q5-C	1.050	.525	
Q5-EB	1.000	.475	
Q6-E	.950	.125	
Q6-B	1.000	.175	
Q6-C	1.050	.125	
Q6-EB	1.000	.075	
R1	.000	2.225	.043 DIA THRU
R2	.150	2.200	
R3	.750	2.450	
R4	.000	2.375	
R5	.750	2.275	
R6	.675	2.175	
R7	.500	2.025	
R8	.650	2.025	
R9	.225	2.025	
R10	.650	1.900	
R11	.575	1.775	
R12	.050	2.025	
R13	.050	1.775	
R14	.525	1.625	
R15	.725	1.625	
R16	.275	1.625	
R17	.750	1.375	
R18	.650	1.275	
R19	.125	1.625	
R20	.100	1.275	
R21	.425	1.125	
R22	.600	1.125	
R23	.200	1.125	
R24	.650	1.000	
R25	.575	.875	
R26	.050	1.125	
R27	.050	.875	
R28	.525	.725	
R29	.725	.725	
R30	.275	.725	
R31	.750	.575	
R32	.700	.450	
R33	.125	.725	
R34	.075	.500	
R35	.275	.325	
R36	.575	.350	
R37	.125	.300	
R38	.675	.275	
R39	.300	.100	
R40	.000	.225	
R41	.000	.000	
1	.000	2.525	.096 DIA THRU
2	.200	1.450	.250 DIA THRU
3	.500	1.450	.250 DIA THRU
4	.550	.550	.096 DIA THRU


Y
X
$1\frac{9}{32}$
$\frac{1}{16}$
$\frac{1}{4}$
$\frac{3}{16}$
$\frac{3}{32}$
45°
$\frac{5}{32}$x45°
$\frac{7}{16}$
$1\frac{11}{32}$
$2\frac{7}{32}$
$2\frac{3}{4}$
$\frac{3}{32}$
2 PLACES
$\frac{5}{32}$R
3 PLACES
$\frac{3}{32}$x45°
7 PLACES
.015 $^{+.003}_{-.003}$
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
C19
CR1
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
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R15
R16
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R26
R27
R28
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R30
R31
R32
R33
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R35
R36
R37
R38
R39
R40
R41
FT1
FT2
FT3
FT4
FT5
FT6
FT7
FT8
FT9
FT10
FT11
FT12
FT13
FT14
FT15
FT16
FT17
Q1
Q2
Q3
Q4
Q5
Q6
1
2
3
4

MARK 1015732 LOWER AND REV LETTER PER MIL-STD-130 (ES-267)

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

CHARACTERS AND PATHS ARE FOR MANUFACTURING REFERENCE ONLY.

MARK PATHS AS SHOWN $\frac{1}{64}$ WIDE.

UNLESS OTHERWISE SPECIFIED:

CHARACTERS TO BE $\frac{3}{32}$ HIGH SANS-SERIF GOTHIC, LOCATE APPROX AS SHOWN.

MUST BE FREE FROM BURRS AND SHARP CORNERS.

▷1 MATERIAL: GLASS EPOXY MIL-P-18177 TYPE GEE (ES-2744).

1015136	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
$\pm\frac{1}{64}$	+.005 -.005	+2° -2°

DO NOT SCALE THIS DRAWING

MATERIAL ▷1

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Schumbe DATE 10 MAY 63
CHECKED J Bayles 17 MAY 63
APPROVAL R Cabing 17 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER
BUFFER CIRCUIT

CODE IDENT NO.
SIZE E
1015732
SCALE 4:1
SHEET

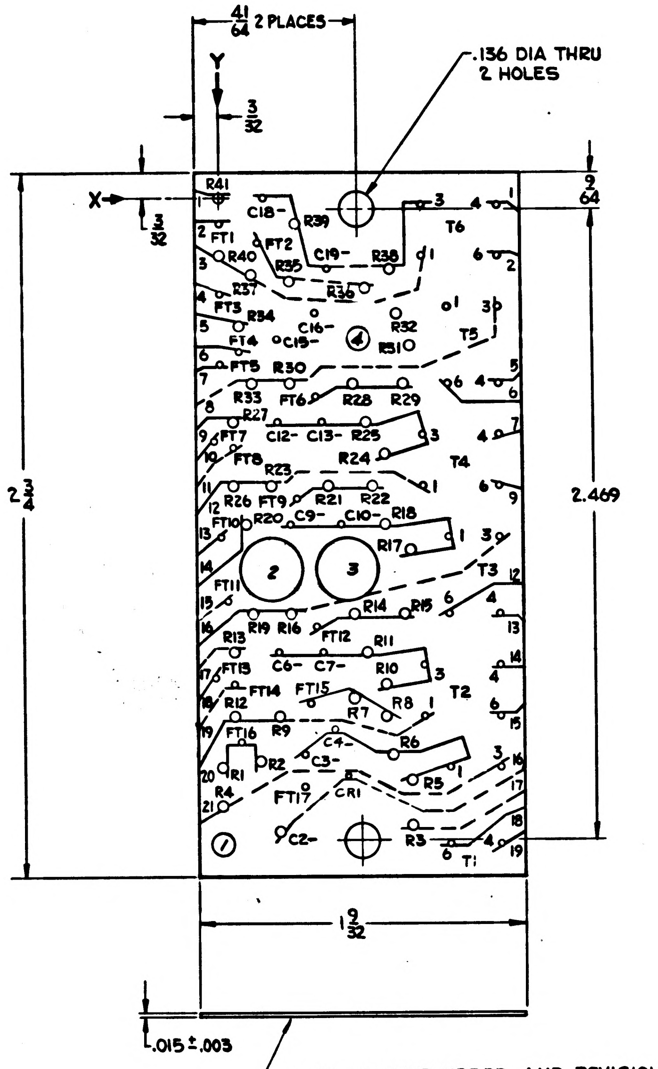
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 02160		7/23/63	

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
C 2	.225	2.475	.043 DIA THRU
C 3	.325	2.175	.024 DIA THRU
C 4	.450	2.075	
C 6	.225	1.775	
C 7	.400	1.775	
C 9	.275	1.275	
C 10	.475	1.275	
C 12	.225	.875	
C 13	.400	.875	
C 15	.225	.550	
C 16	.375	.450	
C 18	.175	.000	
C 19	.425	.275	
CR 1	.500	2.250	.024 DIA THRU
FT 1	.000	.100	.024 DIA THRU
FT 2	.150	.175	
FT 3	.000	.375	
FT 4	.075	.600	
FT 5	.000	.650	
FT 6	.375	.775	
FT 7	-.025	.950	
FT 8	.050	.975	
FT 9	.300	1.175	
FT 10	.000	1.325	
FT 11	.025	1.575	
FT 12	.375	1.675	
FT 13	-.025	1.875	
FT 14	.050	1.900	
FT 15	.350	1.975	
FT 16	.075	2.125	
FT 17	.325	2.300	
R 1	.000	2.225	.043 DIA THRU
R 2	.150	2.200	
R 3	.750	2.450	
R 4	.000	2.375	
R 5	.750	2.275	
R 6	.675	2.175	
R 7	.525	1.950	
R 8	.650	2.025	
R 9	.225	2.025	
R 10	.650	1.900	
R 11	.575	1.775	
R 12	.050	2.025	
R 13	.050	1.775	
R 14	.525	1.625	
R 15	.725	1.625	
R 16	.275	1.625	
R 17	.750	1.375	
R 18	.650	1.275	
R 19	.125	1.625	
R 20	.100	1.275	
R 21	.425	1.125	
R 22	.600	1.125	
R 23	.200	1.125	
R 24	.650	1.000	
R 25	.575	.875	
R 26	.050	1.125	

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
R 27	.050	.875	.043 DIA THRU
R 28	.525	.725	
R 29	.725	.725	
R 30	.275	.725	
R 31	.750	.575	
R 32	.700	.450	
R 33	.125	.725	
R 34	.075	.500	
R 35	.275	.325	
R 36	.575	.350	
R 37	.125	.300	
R 38	.675	.275	
R 39	.300	.100	
R 40	.000	.225	
R 41	.000	.000	
T1-1	.900	2.225	.024 DIA THRU
T1-3	1.100	2.225	
T1-4	1.100	2.525	
T1-6	.900	2.525	
T2-1	.800	2.025	
T2-3	.800	1.825	
T2-4	1.100	1.825	
T2-6	1.100	2.025	
T3-1	.900	1.325	
T3-3	1.100	1.325	
T3-4	1.100	1.625	
T3-6	.900	1.625	
T4-1	.800	1.125	
T4-3	.800	.925	
T4-4	1.100	.925	
T4-6	1.100	1.125	
T5-1	.900	.425	
T5-3	1.100	.425	
T5-4	1.100	.725	
T5-6	.900	.725	
T6-1	.800	.225	
T6-3	.800	.025	
T6-4	1.100	.025	
T6-6	1.100	.225	
1	.000	2.525	.096 DIA THRU
2	.200	1.450	.250
3	.500	1.450	.250
4	.550	.550	.096



41/64 2 PLACES
.136 DIA THRU
2 HOLES
Y
X
3/32
3/32
9/64
2 3/4
2.469
1 9/32
.015 ± .003
R41
C18
R39
FT1
FT2
R40
R35
C19
R38
R36
R37
T6
FT3
R34
C16
C15
R32
R31
T5
FT4
FT5
R30
R33
FT6
R28
R29
R27
FT7
C12
C13
R25
FT8
R24
T4
R23
R26
FT9
R21
R22
FT10
R20
C9
C10
R18
R17
FT11
T3
R19
R16
R14
R15
R13
FT12
R11
FT13
C6
C7
R10
FT14
FT15
R12
R7
R8
T2
FT16
R9
R6
C4
R1
R2
C3
R5
R4
FT17
CR1
C2
R3
T1
1
2
3
4

MARK 1015733 UPPER AND REVISION LETTER PER MIL-STD-130 (ES-267)

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

CHARACTERS AND PATHS ARE FOR MANUFACTURING REFERENCE ONLY.

MARK PATHS AS SHOWN $\frac{1}{64}$ WIDE.

UNLESS OTHERWISE SPECIFIED:

CHARACTERS TO BE $\frac{1}{32}$ HIGH SANS-SERIF GOTHIC, LOCATE APPROX AS SHOWN.

1 MATERIAL: GLASS EPOXY MIL-P-18177 TYPE GEE (ES-2744).

MUST BE FREE FROM BURRS & SHARP CORNERS

1015136	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS +.005 -.005 ANGLES + - - -
DO NOT SCALE THIS DRAWING
MATERIAL 1
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
AC SP PN
DRAWN Wunderlich DATE 6 MAY 63
CHECKED Dayley 17 MAY 63
APPROVAL R C Ching 17 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, UPPER
BUFFER CIRCUIT

CODE IDENT NO. | SIZE E | 1015733
SCALE 4:1 | SHEET

17 MAY 63

1015733 A

INCHES
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02160		7/23/63	WR
B		REVISED PER TDRR 02862			RPK

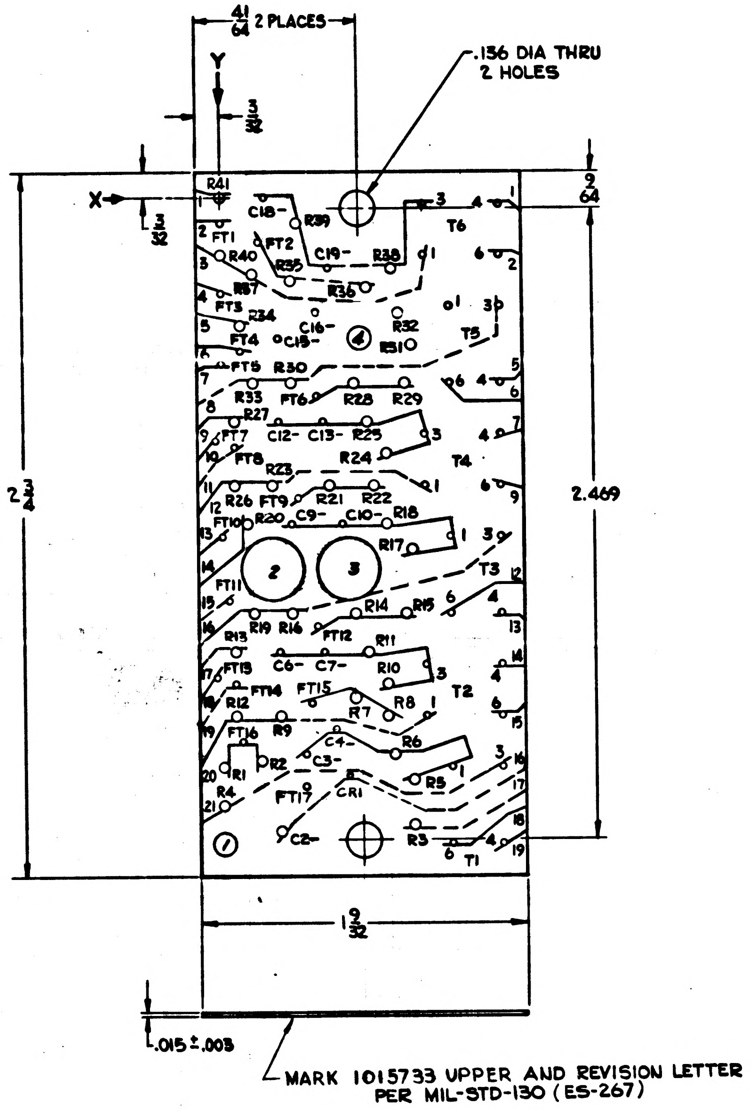
REVISIONS TDRR 0371

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
C 2	.225	2.475	.043 DIA THRU
C 3	.325	2.175	.024 DIA THRU
C 4	.450	2.075	
C 6	.225	1.775	
C 7	.400	1.775	
C 9	.275	1.275	
C 10	.475	1.275	
C 12	.225	.875	
C 13	.400	.875	
C 15	.225	.550	
C 16	.375	.450	
C 18	.175	.000	
C 19	.425	.275	
CR 1	.500	2.250	.024 DIA THRU
FT 1	.000	.100	.024 DIA THRU
FT 2	.150	.175	
FT 3	.000	.375	
FT 4	.075	.600	
FT 5	.000	.650	
FT 6	.375	.775	
FT 7	-.025	.950	
FT 8	.050	.975	
FT 9	.300	1.175	
FT 10	.000	1.325	
FT 11	.025	1.575	
FT 12	.375	1.675	
FT 13	-.025	1.875	
FT 14	.050	1.900	
FT 15	.350	1.975	
FT 16	.075	2.125	
FT 17	.325	2.300	
R 1	.000	2.225	.043 DIA THRU
R 2	.150	2.200	
R 3	.750	2.450	
R 4	.000	2.375	
R 5	.750	2.275	
R 6	.675	2.175	
R 7	.525	1.950	
R 8	.650	2.025	
R 9	.225	2.025	
R 10	.650	1.900	
R 11	.575	1.775	
R 12	.050	2.025	
R 13	.050	1.775	
R 14	.525	1.625	
R 15	.725	1.625	
R 16	.275	1.625	
R 17	.750	1.375	
R 18	.650	1.275	
R 19	.125	1.625	
R 20	.100	1.275	
R 21	.425	1.125	
R 22	.600	1.125	
R 23	.200	1.125	
R 24	.650	1.000	
R 25	.575	.875	
R 26	.050	1.125	

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
R 27	.050	.875	.043 DIA THRU
R 28	.525	.725	
R 29	.725	.725	
R 30	.275	.725	
R 31	.750	.575	
R 32	.700	.450	
R 33	.125	.725	
R 34	.075	.500	
R 35	.275	.325	
R 36	.575	.350	
R 37	.125	.300	
R 38	.675	.275	
R 39	.300	.100	
R 40	.000	.225	
R 41	.000	.000	
T1-1	.900	2.225	.024 DIA THRU
T1-3	1.100	2.225	
T1-4	1.100	2.525	
T1-6	.900	2.525	
T2-1	.800	2.025	
T2-3	.800	1.825	
T2-4	1.100	1.825	
T2-6	1.100	2.025	
T3-1	.900	1.325	
T3-3	1.100	1.325	
T3-4	1.100	1.625	
T3-6	.900	1.625	
T4-1	.800	1.125	
T4-3	.800	.925	
T4-4	1.100	.925	
T4-6	1.100	1.125	
T5-1	.900	.425	
T5-3	1.100	.425	
T5-4	1.100	.725	
T5-6	.900	.725	
T6-1	.800	.225	
T6-3	.800	.025	
T6-4	1.100	.025	
T6-6	1.100	.225	
1	.000	2.525	.096 DIA THRU
2	.200	1.450	.250
3	.500	1.450	.250
4	.550	.550	.096



41/64 2 PLACES
Y
3/32
X
.136 DIA THRU
2 HOLES
9/64
3/32
2 3/4
2.469
R41 C18 R39 T6 FT1 FT2 R40 R35 C19 R38 R37 R36 FT3 R34 C16 R32 T5 FT4 C15 R31 FT5 R30 FT6 R33 R28 R29 R27 FT7 C12 C13 R25 R24 T4 FT8 R23 R26 FT9 R21 R22 FT10 R20 C9 C10 R18 R17 FT11 T3 R14 R15 R19 R16 FT12 R13 R11 FT13 C6 C7 R10 FT14 FT15 R12 R8 T2 R7 FT16 R9 C4 R6 R1 R2 C3 R5 R4 FT17 CR1 R3 C2 T1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
1 9/32
.015 ± .003
MARK 1015733 UPPER AND REVISION LETTER PER MIL-STD-130 (ES-267)

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

CHARACTERS AND PATHS ARE FOR MANUFACTURING REFERENCE ONLY.

MARK PATHS AS SHOWN 1/64 WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE 1/32 HIGH SANS-SERIF GOTHIC, LOCATE APPROX AS SHOWN.

▷1 MATERIAL: GLASS EPOXY MIL-P-18177 TYPE GEE (ES-2744).
MUST BE FREE FROM BURRS & SHARP CORNERS

SEE 1015733 SHEET 2 FOR PHOTOGRAPHIC MASTER

NEXT ASSY	USED ON
1015136	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS +.005 -.005 ANGLES + - - -
DO NOT SCALE THIS DRAWING
MATERIAL ▷1
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Hinderlich DATE 6 MAY 63
CHECKED J Sayler 17 MAY 63
APPROVAL R C Weiz 17 May 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL W Kupfer 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

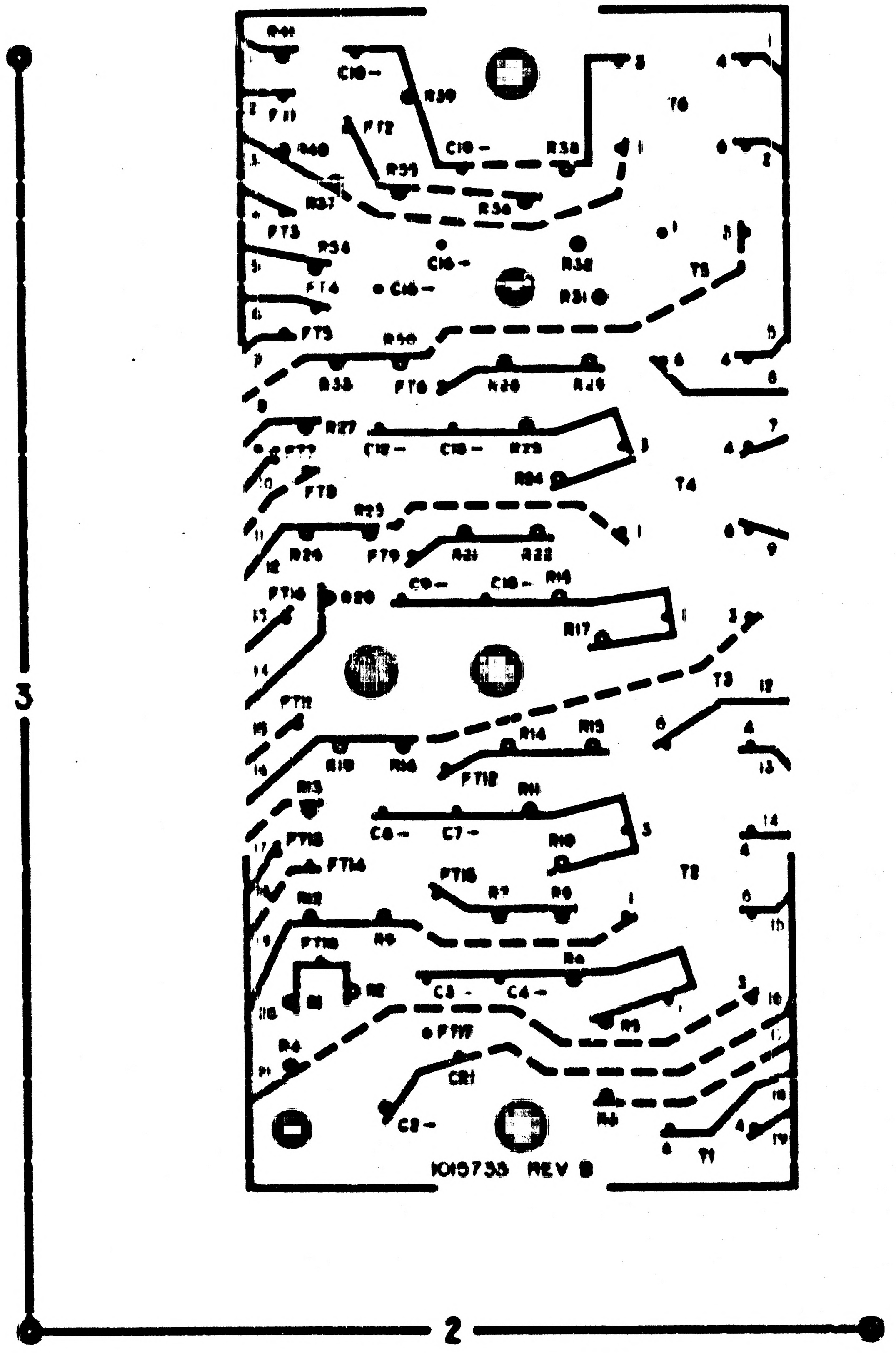
WAFER, UPPER
BUFFER CIRCUIT

CODE IDENT NO.
SIZE E
1015733
SCALE 4:1
SHEET 1 OF 2

Charleston 17 MAY 63

1015733 B

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY


R41
C10 –
R39
T6
F T1
F T2
R40
C10 –
R38
R35
R37
R36
F T3
R34
C16 –
R32
T5
F T4
C16 –
R31
F T5
R50
R33
F T6
R30
R29
R127
C12 –
C13 –
R25
F T7
R24
T4
F T8
R23
R26
F T9
R21
R22
C9 –
C10 –
R19
F T10
R20
R17
T3
F T11
R14
R15
R18
R16
F T12
R13
R11
C6 –
C7 –
F T13
R10
F T14
T2
F T15
R7
R6
R12
F T16
R9
R8
R2
R1
C3 –
C4 –
R5
F T17
R4
CR1
C2 –
R3
T1
1015733 REV B
3
2

REV B THIS SHEET ADDED

WAFER, UPPER
BUFFER CIRCUIT

C

1015733

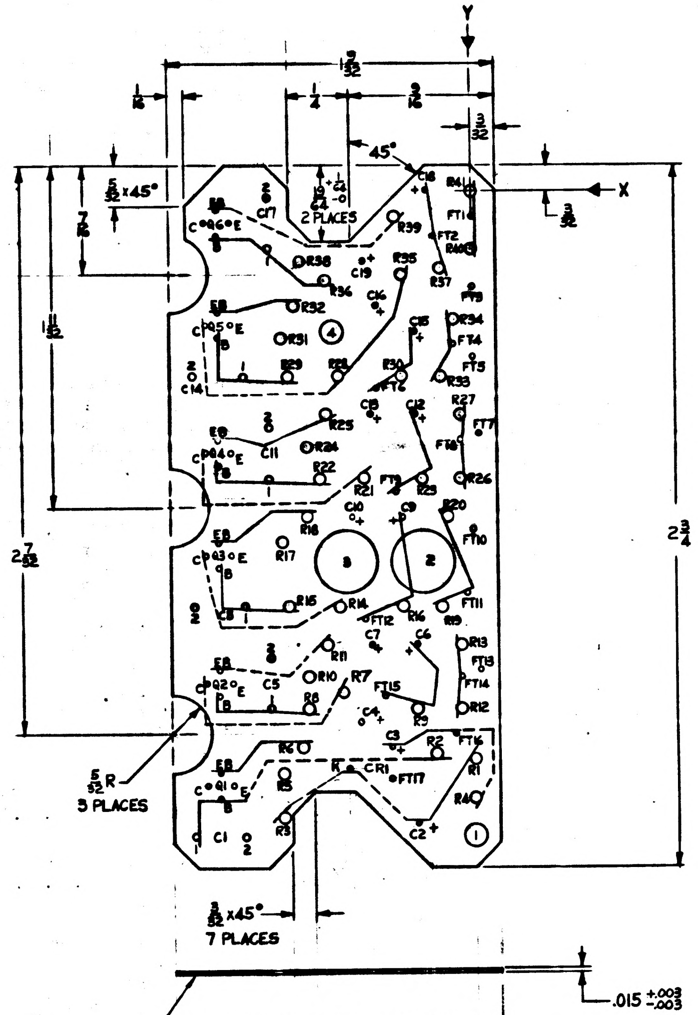
REVISIONS TDRR 01371					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02160			
B		REVISED PER TDRR 02862		28 63	RPK

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X(HORIZ)	COORDINATE Y(VERT)	HOLE DESCRIPTION TOL. +.010 -.000
C1-1	1.100	2.525	.032 DIA THRU
C1-2	.900	2.525	
C2	.225	2.475	.024
C3	.325	2.175	
C4	.450	2.075	
C5-1	.800	2.025	.032
C5-2	.800	1.825	
C6	.225	1.775	.024
C7	.400	1.775	
C8-1	.900	1.625	.032
C8-2	1.100	1.625	
C9	.275	1.275	.024
C10	.475	1.275	
C11-1	.800	1.125	.032
C11-2	.800	.925	
C12	.225	.875	.024
C13	.400	.875	
C14-1	.900	.725	.032
C14-2	1.100	.725	
C15	.225	.550	.024
C16	.375	.450	
C17-1	.800	.225	.032
C17-2	.800	.025	
C18	.175	.000	.024
C19	.425	.275	
CR1	.500	2.250	.024 DIA THRU
FT1	.000	.100	.024 DIA THRU
FT2	.150	.175	
FT3	.000	.375	
FT4	.075	.600	
FT5	.000	.650	
FT6	.375	.775	
FT7	-.025	.950	
FT8	.050	.975	
FT9	.300	1.175	
FT10	.000	1.325	
FT11	.025	1.575	
FT12	.375	1.675	
FT13	-.025	1.875	
FT14	.050	1.900	
FT15	.350	1.975	
FT16	.075	2.125	
FT17	.325	2.300	
Q1-E	.950	2.325	.024 DIA THRU
Q1-B	1.000	2.375	
Q1-C	1.050	2.325	
Q1-EB	1.000	2.275	
Q2-E	.950	1.925	
Q2-B	1.000	1.975	
Q2-C	1.050	1.925	
Q2-EB	1.000	1.875	
Q3-E	.950	1.425	
Q3-B	1.000	1.475	
Q3-C	1.050	1.425	

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X(HORIZ)	COORDINATE Y(VERT)	HOLE DESCRIPTION TOL. +.010 -.000
Q3-EB	1.000	1.375	.024 DIA THRU
Q4-E	.950	1.025	
Q4-B	1.000	1.075	
Q4-C	1.050	1.025	
Q4-EB	1.000	.975	
Q5-E	.950	.525	
Q5-B	1.000	.575	
Q5-C	1.050	.525	
Q5-EB	1.000	.475	
Q6-E	.950	.125	
Q6-B	1.000	.175	
Q6-C	1.050	.125	
Q6-EB	1.000	.075	
R1	.000	2.225	.043 DIA THRU
R2	.150	2.200	
R3	.750	2.450	
R4	.000	2.375	
R5	.750	2.275	
R6	.675	2.175	
R7	.525	1.950	
R8	.650	2.025	
R9	.225	2.025	
R10	.650	1.900	
R11	.575	1.775	
R12	.050	2.025	
R13	.050	1.775	
R14	.525	1.625	
R15	.725	1.625	
R16	.275	1.625	
R17	.750	1.375	
R18	.650	1.275	
R19	.125	1.625	
R20	.100	1.275	
R21	.425	1.125	
R22	.600	1.125	
R23	.200	1.125	
R24	.650	1.000	
R25	.575	.875	
R26	.050	1.125	
R27	.050	.875	
R28	.525	.725	
R29	.725	.725	
R30	.275	.725	
R31	.750	.575	
R32	.700	.450	
R33	.125	.725	
R34	.075	.500	
R35	.275	.325	
R36	.575	.350	
R37	.125	.300	
R38	.675	.275	
R39	.300	.100	
R40	.000	.225	
R41	.000	.000	
1	.000	2.525	.096 DIA THRU
2	.200	1.450	.250 DIA THRU
3	.500	1.450	.250 DIA THRU
4	.550	.550	.096 DIA THRU



Y
X
$1\frac{9}{32}$
$\frac{1}{16}$
$\frac{1}{4}$
$\frac{9}{16}$
$\frac{3}{32}$
45°
$\frac{5}{32}$ x45°
$\frac{7}{16}$
$\frac{19}{64}$
2 PLACES
$1\frac{11}{32}$
$2\frac{7}{32}$
$2\frac{3}{4}$
$\frac{3}{32}$
$\frac{5}{32}$ R
3 PLACES
$\frac{3}{32}$ x45°
7 PLACES
.015 $^{+.003}_{-.003}$
C Q6 E B
C Q5 E B
C Q4 E B
C Q3 E B
C Q2 E B
C Q1 E B
EB
C1 C2 C3 C4 C5 C6 C7 C9 C10 C11 C12 C13 C14 C15 C16 C17 C18 C19
CR1
R1 R2 R3 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19 R20 R21 R22 R23 R24 R25 R26 R27 R28 R29 R30 R31 R32 R33 R34 R35 R36 R37 R38 R39 R40 R41
FT1 FT2 FT4 FT5 FT6 FT7 FT8 FT9 FT10 FT11 FT12 FT13 FT14 FT15 FT16 FT17
1
2
3
4

MARK 1015732 LOWER AND REV LETTER PER MIL-STD-130 (ES-267)

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

CHARACTERS AND PATHS ARE FOR MANUFACTURING REFERENCE ONLY.

MARK PATHS AS SHOWN $\frac{1}{64}$ WIDE.

UNLESS OTHERWISE SPECIFIED:

CHARACTERS TO BE $\frac{1}{32}$ HIGH SANS-SERIF GOTHIC, LOCATE APPROX AS SHOWN.

MUST BE FREE FROM BURRS AND SHARP CORNERS.

▷ MATERIAL: GLASS EPOXY MIL-P-18177 TYPE GEE (ES-2744).

SEE 1015732 SHEET 2 FOR PHOTOGRAPHIC MASTER

1015136	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS $\pm\frac{1}{64}$ DECIMALS $\pm.005$ ANGLES $\pm 2°$
DO NOT SCALE THIS DRAWING
MATERIAL ▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Schwabe DATE 10 MAY 63
CHECKED 17 MAY 63
APPROVAL R Cabing 17 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, LOWER
BUFFER CIRCUIT

CODE IDENT NO.
SIZE E
1015732
SCALE 4:1
SHEET 1 OF 2

17 MAY 63

INCHES
PHOTOGRAPHIC SCALE ONLY

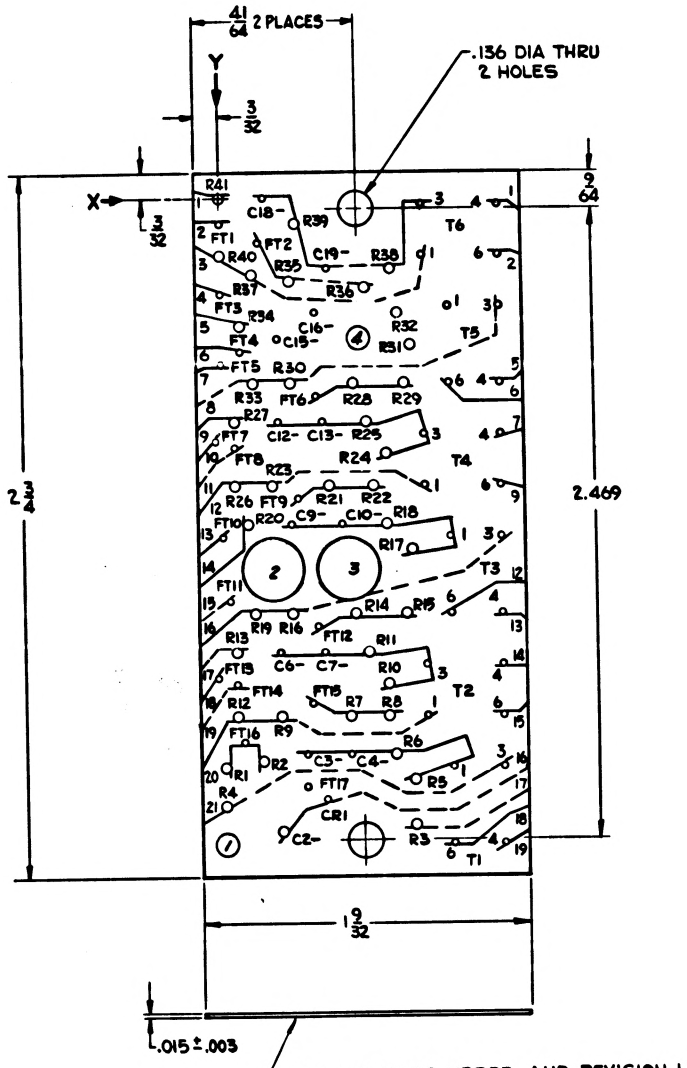
REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD

COORDINATE DIMENSIONS

HOLE NO	COORDINATE Y (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
C 2	.225	2.475	.043 DIA THRU
C 3	.325	2.175	.024 DIA THRU
C 4	.500	2.175	
C 6	.225	1.775	
C 7	.400	1.775	
C 9	.275	1.275	
C 10	.475	1.275	
C 12	.225	.875	
C 13	.400	.875	
C 15	.225	.550	
C 16	.375	.450	
C 18	.175	.000	
C 19	.425	.275	
CR 1	.400	2.350	.024 DIA THRU
FT 1	.000	.100	.024 DIA THRU
FT 2	.150	.175	
FT 3	.000	.375	
FT 4	.075	.600	
FT 5	.000	.650	
FT 6	.375	.775	
FT 7	-.025	.950	
FT 8	.050	.975	
FT 9	.300	1.175	
FT 10	.000	1.325	
FT 11	.025	1.575	
FT 12	.375	1.675	
FT 13	-.025	1.875	
FT 14	.050	1.900	
FT 15	.350	1.975	
FT 16	.075	2.125	
FT 17	.325	2.300	
R 1	.000	2.225	.043 DIA THRU
R 2	.150	2.200	
R 3	.750	2.450	
R 4	.000	2.375	
R 5	.750	2.275	
R 6	.675	2.175	
R 7	.500	2.025	
R 8	.650	2.025	
R 9	.225	2.025	
R 10	.650	1.900	
R 11	.575	1.775	
R 12	.050	2.025	
R 13	.050	1.775	
R 14	.325	1.625	
R 15	.725	1.625	
R 16	.275	1.625	
R 17	.750	1.375	
R 18	.650	1.275	
R 19	.125	1.625	
R 20	.100	1.275	
R 21	.425	1.125	
R 22	.600	1.125	
R 23	.200	1.125	
R 24	.650	1.000	
R 25	.575	.875	
R 26	.050	1.125	

COORDINATE DIMENSIONS

HOLE NO	COORDINATE X (HORIZ)	COORDINATE Y (VERT)	HOLE DESCRIPTION TOL. +.010 -.000
R 27	.050	.675	.043 DIA THRU
R 28	.525	.725	
R 29	.725	.725	
R 30	.275	.725	
R 31	.750	.575	
R 32	.700	.450	
R 33	.125	.725	
R 34	.075	.500	
R 35	.275	.325	
R 36	.575	.350	
R 37	.125	.300	
R 38	.675	.275	
R 39	.300	.100	
R 40	.000	.225	
R 41	.000	.000	
T1-1	.900	2.225	.024 DIA THRU
T1-3	1.100	2.225	
T1-4	1.100	2.525	
T1-6	.900	2.525	
T2-1	.800	2.025	
T2-3	.800	1.825	
T2-4	1.100	1.825	
T2-6	1.100	2.025	
T3-1	.900	1.325	
T3-3	1.100	1.325	
T3-4	1.100	1.625	
T3-6	.900	1.625	
T4-1	.800	1.125	
T4-3	.800	.925	
T4-4	1.100	.925	
T4-6	1.100	1.125	
T5-1	.900	.425	
T5-3	1.100	.425	
T5-4	1.100	.725	
T5-6	.900	.725	
T6-1	.800	.225	
T6-3	.800	.025	
T6-4	1.100	.025	
T6-6	1.100	.225	
1	.000	2.525	.096 DIA THRU
2	.200	1.450	.250
3	.500	1.450	.250
4	.550	.550	.096


41/64 2 PLACES
.136 DIA THRU
2 HOLES
Y
X
3/32
3/32
9/64
2 3/4
2.469
1 9/32
.015 ± .003
R41
C18-
R39
T6
FT1
FT2
R40
R35
C19-
R38
R37
R36
FT3
R34
C16-
R32
T5
FT4
C15-
R31
FT5
R30
R33
FT6
R28
R29
R27
FT7
C12-
C13-
R25
FT8
R23
R24
T4
R26
FT9
R21
R22
FT10
R20
C9-
C10-
R18
R17
T3
FT11
R19
R16
R14
R15
R13
FT12
R11
FT13
C6-
C7-
R10
T2
R12
FT14
FT15
R7
R8
FT16
R9
R6
R1
R2
C3-
C4-
R4
FT17
R5
CR1
C2-
R3
T1
1
2
3
4

MARK 1015733 UPPER AND REVISION LETTER
PER MIL-STD-130 (ES-267)

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

DIRECTION OF ARROW INDICATES PLUS (+) DIMENSION.

CHARACTERS AND PATHS ARE FOR MANUFACTURING REFERENCE ONLY.

MARK PATHS AS SHOWN $\frac{1}{64}$ WIDE.

UNLESS OTHERWISE SPECIFIED:
CHARACTERS TO BE $\frac{1}{32}$ HIGH SANS-SERIF GOTHIC, LOCATE APPROX AS SHOWN.

1 MATERIAL: GLASS EPOXY MIL-P-18177 TYPE GEE (ES-2744).
MUST BE FREE FROM BURRS & SHARP CORNERS

1015136		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS +1/64 -1/64 DECIMALS +.005 -.005 ANGLES + - - - DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN Wunderlich DATE 6 MAY 63 CHECKED J Bayley 17 MAY 63 APPROVAL R C Sh 17 May 63 APPROVAL 17 MAY 63
NEXT ASSY	USED ON	MATERIAL 1	NASA APPROVAL
APPLICATION		CONTRACT	MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WAFER, UPPER
BUFFER CIRCUIT

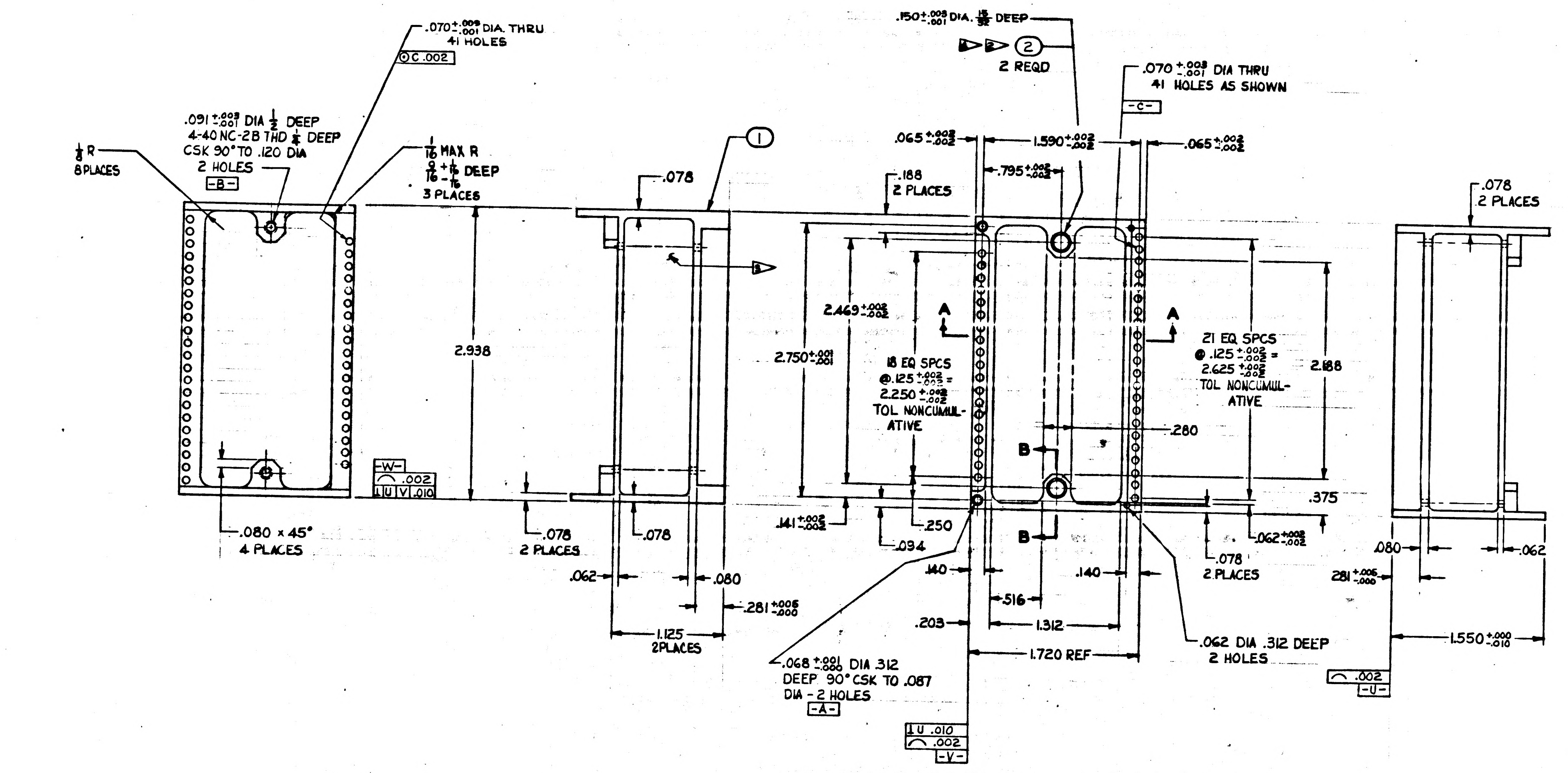
CODE IDENT NO. | SIZE E | 1015733

SCALE 4:1 | SHEET

17 MAY 63

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02875		8-26-63	

REVISIONS TDRR 01371



.070 +.003 -.001 DIA THRU
41 HOLES
○ C .002
.091 +.003 -.001 DIA 1/2 DEEP
4-40 NC-2B THD 3/8 DEEP
CSK 90° TO .120 DIA
2 HOLES
-B-
1/8 R
8 PLACES
1/16 MAX R
9/16 + 1/16 - 1/16 DEEP
3 PLACES
.078
①
2.938
-W-
⌒ .002
⊥ U V .010
.080 x 45°
4 PLACES
.078
2 PLACES
.078
.062
.080
.281 +.005 -.000
1.125
2 PLACES
.150 +.003 -.001 DIA. 15/32 DEEP
②
2 REQD
.070 +.003 -.001 DIA THRU
41 HOLES AS SHOWN
-C-
.065 +.002 -.002
1.590 +.002 -.002
.065 +.002 -.002
.795 +.002 -.002
.188
2 PLACES
2.469 +.002 -.002
2.750 +.001 -.001
18 EQ SPCS
@ .125 +.002 -.002 =
2.250 +.002 -.002
TOL NONCUMULATIVE
A
A
21 EQ SPCS
@ .125 +.002 -.002 =
2.625 +.002 -.002
TOL NONCUMULATIVE
2.188
.280
B
B
.375
.141 +.002 -.002
.250
.094
.140
.140
.516
.203
1.312
1.720 REF
.078
2 PLACES
.062 +.002 -.002
.068 +.001 -.000 DIA .312
DEEP 90° CSK TO .087
DIA - 2 HOLES
-A-
.062 DIA .312 DEEP
2 HOLES
⊥ U .010
⌒ .002
-V-
.078
2 PLACES
.080
.062
.281 +.005 -.000
1.550 +.000 -.010
⌒ .002
-U-

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV

INSERT HOLES, DIA 'A' AND DIA 'B' TO BE FREE FROM ANODIZE.

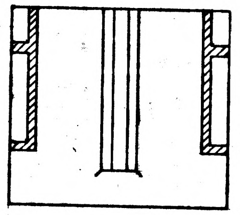
UNLESS OTHERWISE SPECIFIED:
- ALL RADII ARE 1/16 INCH.
- ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
- SURFACE ROUGHNESS MUST NOT EXCEED 125√.

MUST BE FREE FROM BURRS.

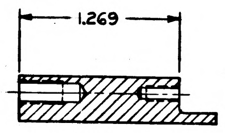
2▷ INSTALL 6-32 NC-3B INSERT PER MS33537. BREAK OFF TANG.

3▷ MARK 1015734 AND REVISION LETTER PER MIL-STD-130 (ES-267).

4▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589)



SECTION A-A



PARTIAL SECTION B-B
ITEM 2 REMOVED

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS 122118	INSERT-THREADED, LOCKING
1	1	1015734-001	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015136	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +1/64 -1/64 DECIMALS +.005 -.005 ANGLES +— -—
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Schwabe DATE 7 MAY 63
CHECKED 17 MAY 63
APPROVAL 17 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL 24 May 63

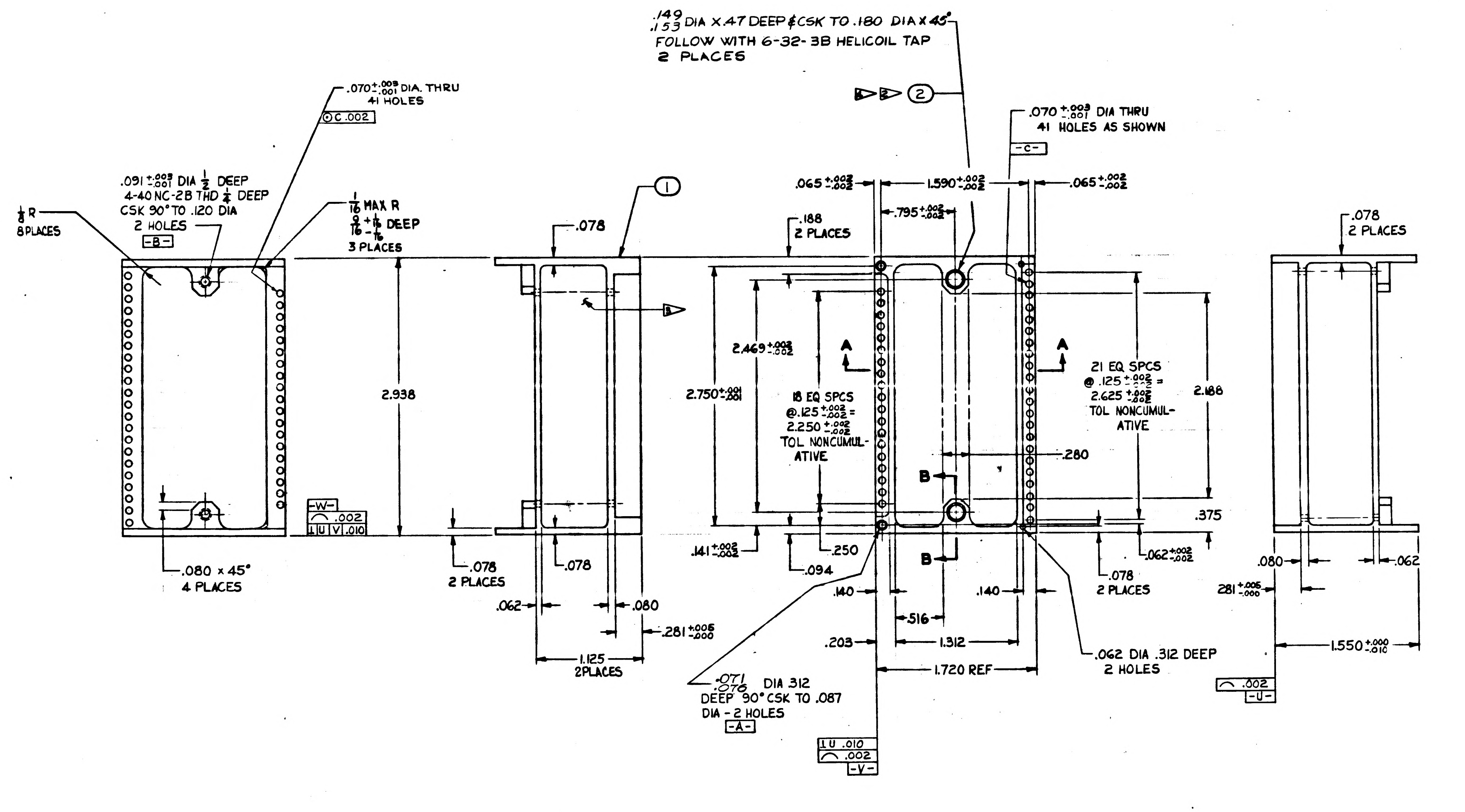
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME
(INSEP ASSY)
BUFFER CIRCUIT

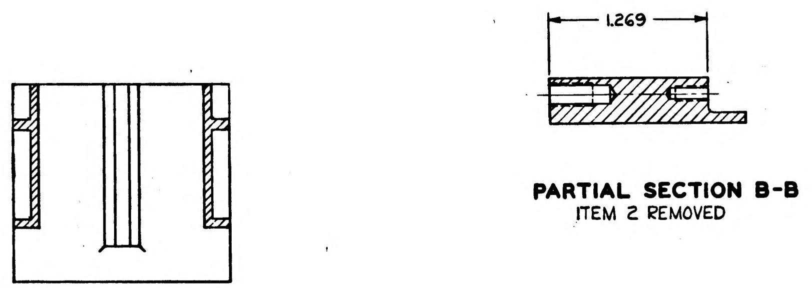
CODE IDENT NO.
SIZE E
1015734
SCALE 2:1
SHEET

17 MAY 63

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 02875		8-26-63	
B		REVISED PER TDRR 06784			



.149/.153 DIA X .47 DEEP & CSK TO .180 DIA X 45°
FOLLOW WITH 6-32-3B HELICOIL TAP
2 PLACES
2
1
.070 +.003/-.001 DIA. THRU
41 HOLES
C .002
.091 +.003/-.001 DIA 1/2 DEEP
4-40 NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA
2 HOLES
-B-
1/8 R
8 PLACES
1/16 MAX R
3/16 +1/16 -1/16 DEEP
3 PLACES
.078
2.938
-W-
.002
U V .010
.080 x 45°
4 PLACES
.078
2 PLACES
.078
.062
.080
.281 +.005/-.000
1.125
2 PLACES
.070 +.003/-.001 DIA THRU
41 HOLES AS SHOWN
-C-
.065 +.002/-.002
1.590 +.002/-.002
.065 +.002/-.002
.795 +.002/-.002
.188
2 PLACES
2.469 +.002/-.002
2.750 +.001/-.001
18 EQ SPCS
@ .125 +.002/-.002 =
2.250 +.002/-.002
TOL NONCUMULATIVE
A
A
21 EQ SPCS
@ .125 +.002/-.002 =
2.625 +.002/-.002
TOL NONCUMULATIVE
2.188
.280
B
B
.375
.141 +.002/-.002
.250
.094
.062 +.002/-.002
.078
2 PLACES
.140
.140
.516
.203
1.312
1.720 REF
.062 DIA .312 DEEP
2 HOLES
.071/.076 DIA .312
DEEP 90° CSK TO .087
DIA - 2 HOLES
-A-
U .010
.002
-V-
.078
2 PLACES
.080
.062
.281 +.005/-.000
1.550 +.000/-.010
.002
-U-



PARTIAL SECTION B-B
ITEM 2 REMOVED

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV

INSERT HOLES, DIA 'A' AND DIA 'B' TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
  ALL RADII ARE 1/16 INCH.
  ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
  SURFACE ROUGHNESS MUST NOT EXCEED 125√.

MUST BE FREE FROM BURRS.

2▷ INSTALL 6-32 NC-3B INSERT PER MS33537. BREAK OFF TANG.

3▷ MARK 1015734 AND REVISION LETTER PER MIL-STD-130 (ES-267).

4▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589)

SECTION A-A

2	2	MS21209-C0620	INSERT-THREADED, LOCKING
1	1	1015734-001	FRAME
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015136	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL 1▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Schwabe DATE 7 MAY 63
CHECKED 17 MAY 63
APPROVAL 17 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

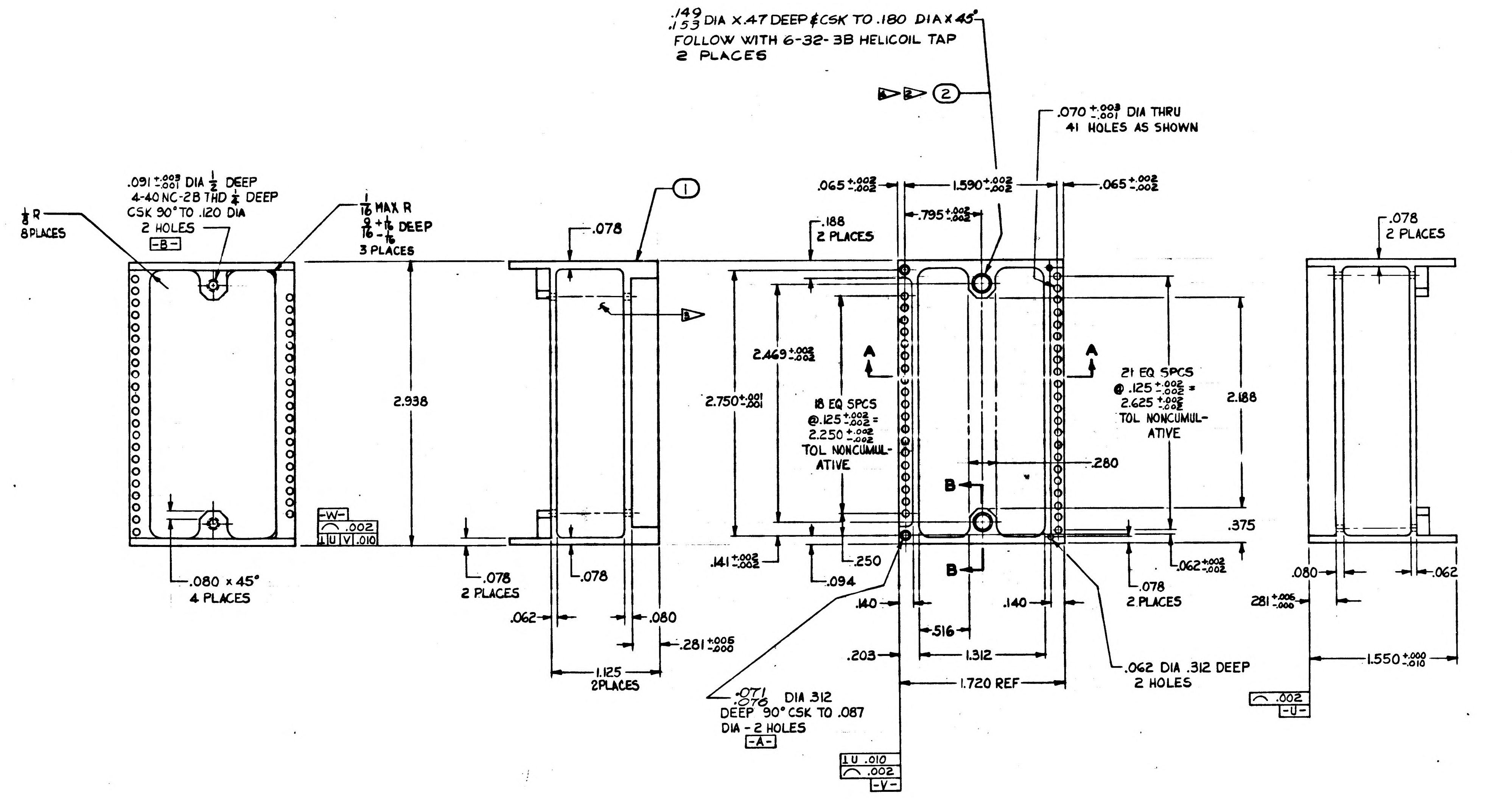
FRAME
(INSEP ASSY)
BUFFER CIRCUIT

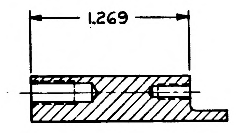
CODE IDENT NO.
SIZE E
1015734
SCALE 2:1
SHEET

1015734 B

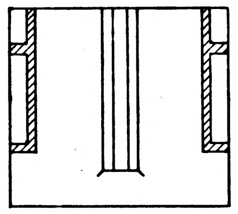
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02875		6-21-63	
B		REVISED PER TDRR			
C		REVISED PER TDRR 03780			


.149/.153 DIA X .47 DEEP & CSK TO .180 DIA X 45°
FOLLOW WITH 6-32-3B HELICOIL TAP
2 PLACES
②
.070 +.003/-.001 DIA THRU
41 HOLES AS SHOWN
.091 +.003/-.001 DIA 1/2 DEEP
4-40 NC-2B THD 3/8 DEEP
CSK 90° TO .120 DIA
2 HOLES
-B-
1/8 R
8 PLACES
1/16 MAX R
9/16 +1/16 -1/16 DEEP
3 PLACES
①
.078
2.938
-W-
.002
U V .010
.080 x 45°
4 PLACES
.078
2 PLACES
.062
.078
.080
.281 +.005/-.000
1.125
2 PLACES
.065 +.002/-.002
1.590 +.002/-.002
.065 +.002/-.002
.795 +.002/-.002
.188
2 PLACES
2.469 +.002/-.002
2.750 +.001/-.001
18 EQ SPCS
@ .125 +.002/-.002 =
2.250 +.002/-.002
TOL NONCUMULATIVE
A
21 EQ SPCS
@ .125 +.002/-.002 =
2.625 +.002/-.002
TOL NONCUMULATIVE
2.188
.280
B
.375
.141 +.002/-.002
.250
.094
.078
2 PLACES
.062 +.002/-.002
.140
.140
.516
.203
1.312
1.720 REF
.062 DIA .312 DEEP
2 HOLES
.071/.076 DIA .312
DEEP 90° CSK TO .087
DIA - 2 HOLES
-A-
U .010
.002
-V-
.078
2 PLACES
.080
.062
.281 +.005/-.000
1.550 +.000/-.010
.002
-U-



PARTIAL SECTION B-B
ITEM 2 REMOVED



SECTION A-A

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

① MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES, DIA "A" AND DIA "B" TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 INCH.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

MUST BE FREE FROM BURRS.

② INSTALL 6-32 NC-3B INSERT PER MS33537. BREAK OFF TANG.

③ MARK 1015734 AND REVISION LETTER PER MIL-STD-130 (ES-267).

④ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589)

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT-THREADED, LOCKING
1	1	1015734-001	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015136	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +1/64 -1/64
DECIMALS +.005 -.005
ANGLES + — - —
DO NOT SCALE THIS DRAWING
MATERIAL ①
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Schwabe DATE 7 MAY 63
CHECKED 17 MAY 63
APPROVAL 17 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

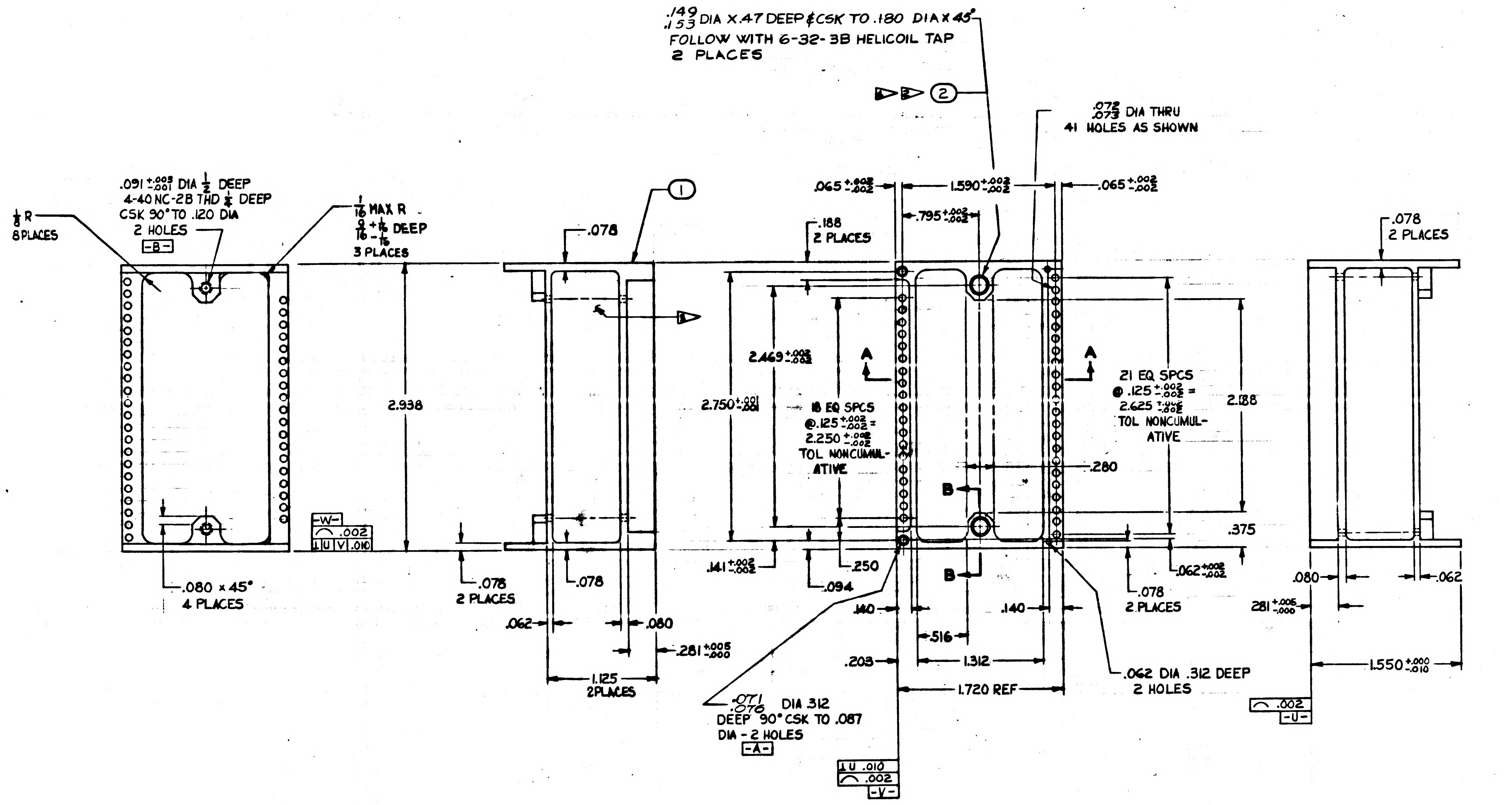
FRAME
(INSEP ASSY)
BUFFER CIRCUIT

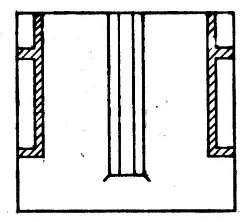
CODE IDENT NO.
SIZE E
1015734
SCALE 2:1
SHEET

17 MAY 63

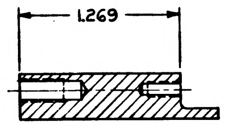
INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS					TDRR 01371
SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD.
A		REVISED PER TDRR 02875		8-21-63	
B		REVISED PER TDRR 02974		9-5-63	
C		REVISED PER TDRR 03750		10-1-63	
D		REVISED PER TDRR 03851			
E		REVISED PER TDRR 03854			


.149 / .153 DIA X .47 DEEP & CSK TO .180 DIA X 45°
FOLLOW WITH 6-32-3B HELICOIL TAP
2 PLACES
▷ ▷ ②
.072 / .073 DIA THRU
41 HOLES AS SHOWN
.091 +.003 -.001 DIA 1/2 DEEP
4-40 NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA
2 HOLES
-B-
1/8 R
8 PLACES
1/16 MAX R
9/16 +1/16 -1/16 DEEP
3 PLACES
①
.078
.188
2 PLACES
.065 +.002 -.002
1.590 +.002 -.002
.795 +.002 -.002
2.938
2.469 +.002 -.002
2.750 +.001 -.001
18 EQ SPCS
@ .125 +.002 -.002 =
2.250 +.002 -.002
TOL NONCUMULATIVE
21 EQ SPCS
@ .125 +.002 -.002 =
2.625 +.002 -.002
TOL NONCUMULATIVE
2.188
A
B
.280
.375
-W-
.002
U V .010
.080 x 45°
4 PLACES
.078
2 PLACES
.062
.080
.281 +.005 -.000
1.125
2 PLACES
.141 +.002 -.002
.250
.094
.140
.516
.203
1.312
1.720 REF
.062 +.002 -.002
.062 DIA .312 DEEP
2 HOLES
.071 / .076 DIA .312
DEEP 90° CSK TO .087
DIA - 2 HOLES
-A-
U .010
.002
-V-
-U-
1.550 +.000 -.010



SECTION A-A



PARTIAL SECTION B-B
ITEM 2 REMOVED

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31

FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES, DIA "A" AND DIA "B" TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 INCH.
ALL CORNERS TO BE .005 TO .015 R OR CHAMFER.
SURFACE ROUGHNESS MUST NOT EXCEED 125√.

MUST BE FREE FROM BURRS.

▷ INSTALL 6-32 NC-3B INSERT PER MS33537. BREAK OFF TANG.

▷ MARK 1015734 AND REVISION LETTER PER ND1002019

▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER (ES-2589)

ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
2	2	MS21209-C0620	INSERT-THREADED, LOCKING
1	1	1015734-001	FRAME

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015136	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
±1/64	+.005 -.005	± —

DO NOT SCALE THIS DRAWING

MATERIAL ▷

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

DRAWN Schwabe DATE 7 MAY 63
CHECKED 17 MAY 63
APPROVAL K. Oetting 17 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

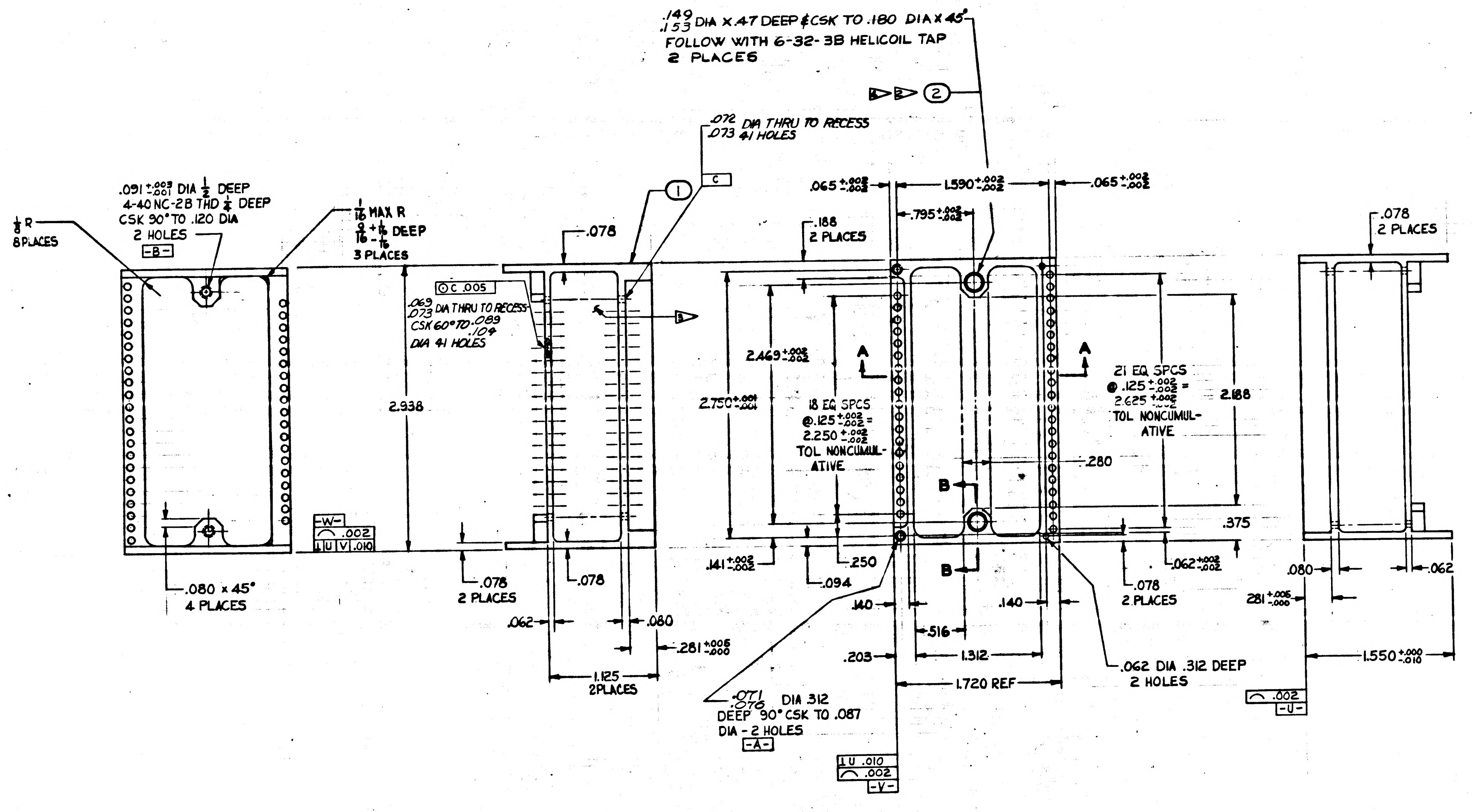
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

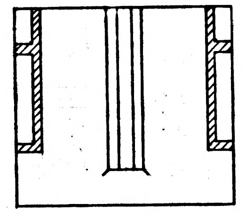
FRAME
(INSEP ASSY)
BUFFER CIRCUIT

CODE IDENT NO.
SIZE E
1015734
SCALE 2:1
SHEET

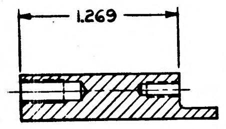
Charlotte 17 MAY 63

REVISIONS					TDRR 01371
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 02875		8-23	
B		REVISED PER TDRR 02974		9-5-63	
C		REVISED PER TDRR 03780		10-4-63	
D		REVISED PER TDRR 03851			
E		REVISED PER TDRR 03854			
F		REVISED PER TDRR 05400			


.149/.153 DIA X .47 DEEP & CSK TO .180 DIA X 45°
FOLLOW WITH 6-32-3B HELICOIL TAP
2 PLACES
2
.072/.073 DIA THRU TO RECESS
41 HOLES
1
C
1/8 R
8 PLACES
.091 +.003 -.001 DIA 1/2 DEEP
4-40 NC-2B THD 1/4 DEEP
CSK 90° TO .120 DIA
2 HOLES
-B-
1/16 MAX R
9/16 +1/16 -1/16 DEEP
3 PLACES
.078
⊙ C .005
.069/.073 DIA THRU TO RECESS
CSK 60° TO .089/.104
DIA 41 HOLES
3
2.938
-W-
⌒ .002
⊥ U V .010
.080 x 45°
4 PLACES
.078
2 PLACES
.078
.062
.080
.281 +.005 -.000
1.125
2 PLACES
.065 +.002 -.002
1.590 +.002 -.002
.065 +.002 -.002
.795 +.002 -.002
.188
2 PLACES
2.469 +.002 -.002
2.750 +.001 -.001
18 EQ SPCS
@ .125 +.002 -.002 =
2.250 +.002 -.002
TOL NONCUMULATIVE
A
A
21 EQ SPCS
@ .125 +.002 -.002 =
2.625 +.002 -.002
TOL NONCUMULATIVE
2.188
.280
B
B
.375
.141 +.002 -.002
.250
.094
.062 +.002 -.002
.078
2 PLACES
.140
.140
.516
.203
1.312
1.720 REF
.062 DIA .312 DEEP
2 HOLES
.071/.076 DIA .312
DEEP 90° CSK TO .087
DIA - 2 HOLES
-A-
⊥ U .010
⌒ .002
-V-
.078
2 PLACES
.080
.062
.281 +.005 -.000
1.550 +.000 -.010
⌒ .002
-U-



SECTION A-A



PARTIAL SECTION B-B
ITEM 2 REMOVED

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

▷ MATERIAL: MAGNESIUM ALLOY ZK-60A-T5 PER QQ-M-31
FINISH: ANODIZE USING MIL-M-3171A, TYPE IV
INSERT HOLES, DIA 'A' AND DIA 'B' TO BE FREE FROM ANODIZE.

UNLESS OTHERWISE SPECIFIED:
ALL RADII ARE 1/16 INCH.
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SURFACE ROUGHNESS MUST NOT EXCEED 125√.

MUST BE FREE FROM BURRS.

▷ INSTALL 6-32 NC-3B INSERT PER MS33646. BREAK OFF TANG.

▷ MARK 1015734 AND REVISION LETTER PER ND1002019

▷ COAT THREADS AND ITEM 2 WITH MIL-P-8585 WET ZINC CHROMATE PRIMER ~~(ES-2589)~~

2	2	MS21209-C0620	INSERT-THREADED, LOCKING
1	1	1015734-001	FRAME
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION

LIST OF PARTS AND MATERIALS

NEXT ASSY	USED ON
1015136	

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS XX ± .02 XXX ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL ▷
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Schwabe DATE 7 MAY 63
CHECKED 17 MAY 63
APPROVAL R. Ewing 17 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL 29 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME
(INSEP ASSY)
BUFFER CIRCUIT

CODE IDENT NO.
SIZE E
1015734
SCALE 2:1
SHEET

17 MAY 63

APPLICATION		**REVISIONS** TDRR 04983		
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1007143	1007153	A	REVISED PER - TDRR 05524	27 Dec 63	EPN WK
		B	REVISED PER TDRR 05534	27 Dec 63	EPN WK

Charleston
24 Oct 63

REV STATUS OF SHEETS												
REV	B	B	B	B	B	B	B	B	B	B	B	B
SHEET	1	2	3	4	5	6	7	8	9	10	11	12

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN
DRAWN J Wolski DATE 1 OCT 63
CHECKED [illegible] 24 Oct 63
APPROVAL [illegible] 10/25/63
APPROVAL [illegible] 24 OCT 63
[illegible] 11/19/63
NASA APPROVAL [illegible]
MIT APPROVAL R Hafel 11/20/63
CONTRACT NAS 9-497

WIRING HARNESS "A" (TRAY 3)

CODE IDENT NO. SIZE A 1015735 REV B
SCALE —
SHEET 1 OF 12

GFF WIRING HARNESS A B 1015735

PENNANT NOTE GENERAL NOTES

1 SEE CONDUCTOR CHART

2 SEE CONDUCTOR CHART

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

6 SPIRALLING OF THE MARKING IS ALLOWED.

7 LACE HARNESS USING ITEM 5

8 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

9 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

10 GRID MODULE IS 1 INCH.

11 UNLESS OTHERWISE SPECIFIED ---
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH.
END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.

12 BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.

13 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

14 IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY

15 INSTALL ITEM 2 PER ND1002066

MANNED SPACECRAFT CENTER HOUSTON, TEXAS SIZE A 1015735
SCALE-NONE REV LTR B SHEET 2 OF 12

MIL 2084 4-63

GFF WIRING HARNESS A B 1015735

PENNANT NOTE GENERAL NOTES

16 INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE			
	STRIP		CUT	
	WIRE	JACKET	WIRE	SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS SIZE A 1015735
SCALE-NONE REV LTR B SHEET 3 OF 12

MIL 2084 4-63

GFF WIRING HARNESS A B 1015735

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	AR	1010639- 2	WIRE 60 FT 10.5 IN TOTAL LENGTH
13	2	21	1010464- 1	CONTACT, ELECTRICAL PIN
13	3	1	MS25036- 44	TERMINAL LUG
	4	1	1010711-	SPLICE REDUCER
	5	AR	MIL-T-713	LACING TAPE TYPE P, CLASS 2, BLACK (ES-2732 NO. 18)
13	6	1	1010476-168	INSULATION, SLEEVING, ELEC HEAT SHRINK

MANNED SPACECRAFT CENTER HOUSTON, TEXAS SIZE A 1015735
SCALE-NONE REV LTR B SHEET 4 OF 12

MIL 2084 4-63

GFF WIRING HARNESS A B 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 19	1	1700	45A3P1-R4	20	N			106	45A3J2- 2	20	N			10	
A 20	1	475	45A3P1-H6	20	N			92	45A3J13-10	20	N			124	
A 21	1	450	45A3P1-F6	20	N			86	45A3J13- 9	20	N			123	
A 22	1	1800	45A3P1-K1	20	N			93	45A3J8- 7	20	N			186	
A 23	1	1800	45A3P1-L1	20	N			95	45A3J8- 4	20	N			184	
A 24	1	1750	45A3P1-H1	20	N			90	45A3J8- 1	20	N			181	
A 25	1	1595	45A3P1-M3	20	N			101	45A3J9- 7	20	N			175	
A 26	1	1545	45A3P1-N3	20	N			100	45A3J9- 4	20	N			173	
A 27	1	1470	45A3P1-L3	20	N			96	45A3J9- 1	20	N			170	
A 28	1	1320	45A3P1-F3	20	N			88	45A3J10-11	20	N			162	
A 29	1	1170	45A3P1-D3	20	N			84	45A3J10- 4	20	N			154	
A 30	1	774	45A3P1-F2	20	N			87	45A3J12- 9	20	N			130	
A 31	1	720	45A3P1-B3	20	N			79	45A3J12- 2	20	N			127	
A 32	1	695	45A3P1-A3	20	N			76	45A3J12- 1	20	N			126	
A 33	1	375	45A3P1-L6	20	N			97	45A3J13- 4	20	N			117	
A 34	1	375	45A3P1-K6	20	N			94	45A3J13- 3	20	N			116	
A 35	1	400	45A3P1-G6	20	N			91	45A3J13- 2	20	N			115	
A 36	1	300	45A3P1-D6	20	N			82	45A3J13- 1	20	N			114	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735
SCALE-NONE	REV LTR B	SHEET 6 OF 12

MIL 2085 - 4-63 WIR

GFF WIRING HARNESS A B 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 37	1	2000	45A3P1-R6	20	N			104	45A3E2	20	N			193	
A 38	1	500	45A3P1-C6	20	N			81	45A3E1	20	N		3	80	
A 39	1	650	45A3J1-21	12	N		2	192	45A3J2- 6	20	N			5	B
A 40	1	650	45A3J1-20	12	N		2	192	45A3J2- 4	20	N			7	B
A 41	1	600	45A3J1-28	12	N		2	192	45A3J3- 6	20	N			17	B
A 42	1	825	45A3J1-27	12	N		2	192	45A3J3- 4	20	N			19	B
A 43	1	1150	45A3J1-23	12	N		2	192	45A3J4- 8	20	N			35	C
A 44	1	1150	45A3J1-31	12	N		2	192	45A3J4- 5	20	N			39	C
A 45	1	1575	45A3J1- 2	12	N		2	192	45A3J6- 7	20	N			63	B
A 46	1	1875	45A3J1-36	12	N		2	192	45A3J7- 6	20	N			70	C
A 47	1	1875	45A3J1-35	12	N		2	192	45A3J7- 4	20	N			72	C
A 48	1	1800	45A3J1-19	12	N		2	192	45A3J13- 7	20	N			121	D
A 49	1	1675	45A3J1-11	12	N		2	192	45A3J13-11	20	N			125	D
A 50	1	1475	45A3J1- 3	12	N		2	192	45A3J12- 7	20	N			128	D
A 51	1	1050	45A3J1-32	12	N		2	192	45A3J10- 5	20	N			155	D
A 52	1	1000	45A3J1-24	12	N		2	192	45A3J10- 8	20	N			159	D
A 53	1	675	45A3J1-10	12	N		2	192	45A3J9- 5	20	N			174	D
A 54	1	725	45A3J1-18	12	N		2	192	45A3J9- 8	20	N			176	D

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735
SCALE-NONE	REV LTR B	SHEET 7 OF 12

MIL 2085 - 4-63 WIR

GFF WIRING HARNESS A B 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 1	1	495	45A3P1-S3	20	N			110	45A3J7- 3	20	N			73	
A 2	1	325	45A3P1-A6	20	N			75	45A3J7- 7	20	N			69	
A 3	1	650	45A3P1-S1	20	N			109	45A3J7- 9	20	N			67	
A 4	1	500	45A3P1-A1	20	N			77	45A3J6- 1	20	N			65	
A 5	1	500	45A3P1-B1	20	N			78	45A3J6- 2	20	N			64	
A 6	1	775	45A3P1-P6	20	N			103	45A3J12-12	20	N			133	
A 7	1	660	45A3P1-D2	20	N			83	45A3J6- 9	20	N			61	
A 8	1	800	45A3P1-R6	20	N			108	45A3J12-13	20	N			135	
A 9	1	850	45A3P1-S6	20	N			113	45A3J12-15	20	N			138	
A 10	1	900	45A3P1-N6	20	N			98	45A3J11- 3	20	N			140	
A 11	1	990	45A3P1-N5	20	N			99	45A3J11- 5	20	N			142	
A 12	1	1075	45A3P1-D1	20	N			85	45A3J4- 4	20	N			40	
A 13	1	1360	45A3P1-R2	20	N			107	45A3J10- 7	20	N			157	
A 14	1	1200	45A3P1-F1	20	N			89	45A3J4-11	20	N			32	
A 15	1	1485	45A3P1-S2	20	N			112	45A3J10-19	20	N			168	
A 16	1	1480	45A3P1-S4	20	N			111	45A3J3- 3	20	N			21	
A 17	1	550	45A3P1-R1	20	N			102	45A3J13- 5	20	N			119	
A 18	1	445	45A3P1-R3	20	N			105	45A3J7- 2	20	N			74	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735
SCALE-NONE	REV LTR B	SHEET 5

MIL 2085 - 4-63 WIR

GFF WIRING HARNESS A B 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 55	1	500	45A3J1- 9	12	N		2	192	45A3J8- 5	20	N			185	B
A 56	1	325	45A3J1-17	12	N		2	192	45A3J8- 8	20	N			187	B
A 57	1	400	45A3J1- 1	12	N		2	192	45A3E2	20	N			193	
A 58	1	400	45A3J1-30	12	N		2	192	45A3E2	20	N			193	
A 59	1	400	45A3J1-37	12	N		2	192	45A3E2	20	N			193	
A 60	1	300	45A3J7- 5	20	N			71	45A3J13- 6	20	N			120	B
A 61	1	300	45A3J7- 8	20	N			68	45A3J13- 8	20	N			122	B
A 62	1	200	45A3J13- 5	20	N			118	45A3J7-10	20	N			66	B
A 63	1	300	45A3J12-12	20	N			134	45A3J6-12	20	N			58	B
A 64	1	300	45A3J12-13	20	N			136	45A3J6-13	20	N			57	B
A 65	1	350	45A3J6-13	20	N			56	45A3J5-14	20	N			46	B
A 66	1	600	45A3J5-18	20	N			44	45A3J4-16	20	N			28	B
A 67	1	370	45A3J11-18	20	N			150	45A3J10-16	20	N			165	E
A 68	1	600	45A3J12-13	20	N			136A	45A3J11-14	20	N			148	D
A 69	1	370	45A3J4-16	20	N			27	45A3J3- 2	20	N			23	B
A 70	1	800	45A3J12-15	20	N			137	45A3J10-14	20	N			164	D
A 71	1	590	45A3J6-15	20	N			54	45A3J4-14	25	N			30	B
A 72	1	1100	45A3J12-15	20	N			137A	45A3J6-15	25	N			55	B

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735
SCALE-NONE	REV LTR B	SHEET 8 OF 12

MIL 2085 - 4-63 WIR

GFF WIRING HARNESS A B 1015735

CONDUCTOR			FROM					TO					
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET			TERMINATION SPEC. 1		CUT WIRE OR SHIELD / STRIP WIRE OR JACKET			TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN 2	ITEM NO.	NO.	CIRCUIT POINT	2	TIN 2	ITEM NO.	NO.	
A 73	1	270	45A3J6- 8	20	N		62	45A3J5- 7	20	N		50	C
A 74	1	400	45A3J6-10	20	N		60	45A3J5-17	20	N		42	B
A 75	1	400	45A3J6-11	20	N		59	45A3J5-20	20	N		45	B
A 76	1	370	45A3J5- 2	20	N		53	45A3J4- 1	20	N		41	C
A 77	1	300	45A3J11- 3	20	N		141	45A3J5- 3	20	N		52	E
A 78	1	300	45A3J11- 5	20	N		143	45A3J5- 5	20	N		51	E
A 79	1	345	45A3J5- 8	20	N		49	45A3J4- 6	20	N		38	B
A 80	1	390	45A3J5- 9	20	N		48	45A3J4-13	20	N		31	B
A 81	1	270	45A3J12- 8	20	N		129	45A3J11- 7	20	N		144	F
A 82	1	430	45A3J12-10	20	N		131	45A3J11-17	20	N		149	F
A 83	1	400	45A3J12-11	20	N		132	45A3J11-20	20	N		152	E
A 84	1	370	45A3J11- 2	20	N		139	45A3J10- 1	20	N		155	F
A 85	1	350	45A3J11- 8	20	N		145	45A3J10- 6	20	N		156	E
A 86	1	410	45A3J11- 9	20	N		146	45A3J10-13	20	N		165	F
A 87	1	270	45A3J10- 9	20	N		160	45A3J9- 2	20	N		171	E
A 88	1	270	45A3J10-10	20	N		161	45A3J9- 3	20	N		172	E
A 89	1	230	45A3J10-20	20	N		169	45A3J3- 7	20	N		16	E
A 90	1	300	45A3J10-19	20	N		167	45A3J4-19	20	N		26	C

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015735
SCALE-NONE | REV LTR B | SHEET 9 OF 12

MIL 2088 - 4-63 WIR

GFF WIRING HARNESS A B 1015735

CONDUCTOR			FROM					TO					
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET			TERMINATION SPEC. 1		CUT WIRE OR SHIELD / STRIP WIRE OR JACKET			TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN 2	ITEM NO.	NO.	CIRCUIT POINT	2	TIN 2	ITEM NO.	NO.	
A 91	1	600	45A3J4-19	20	N		25	45A3J2- 9	20	N		2	C
A 92	1	300	45A3J10-19	20	N		167A	45A3J3- 9	20	N		14	C
A 93	1	300	45A3J10- 7	20	N		158	45A3J4- 7	20	N		37	F
A 94	1	700	45A3J4- 7	20	N		36	45A3J2-10	20	N		1A	B
A 95	1	300	45A3J3-10	20	N		11	45A3J9-11	20	N		180	B
A 96	1	400	45A3J10- 7	20	N		158A	45A3J3-10	20	N		12	B
A 97	1	307	45A3J8-11	20	N		191	45A3J2-10	20	N		1	E
A 98	1	370	45A3J4-20	20	N		24	45A3J2- 7	20	N		4	C
A 99	1	707	45A3J4- 9	20	N		34	45A3J8- 2	20	N		182	E
A 100	1	707	45A3J4-10	20	N		33	45A3J8- 3	20	N		183	E
A 101	1	238	45A3J3- 3	20	N		20	45A3J2- 3	20	N		8	C
A 102	1	238	45A3J3- 2	20	N		22	45A3J2- 2	20	N		9	B
A 103	1	375	45A3J2- 5	20	N		6	45A3J8-10	20	N		189	F
A 104	1	325	45A3J2- 8	20	N		3	45A3J8- 9	20	N		188	F
A 105	1	363	45A3J3- 5	20	N		18	45A3J9-10	20	N		178	F
A 106	1	313	45A3J3- 8	20	N		15	45A3J9- 9	20	N		177	F
A 107	1	150	45A3J11-14	20	N		147	45A3J11-18	20	N		151	F
A 108	1	150	45A3J5-14	20	N		47	45A3J5-18	20	N		43	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015735
SCALE-NONE | REV LTR B | SHEET 10 OF 12

MIL 2088 - 4-63 WIR

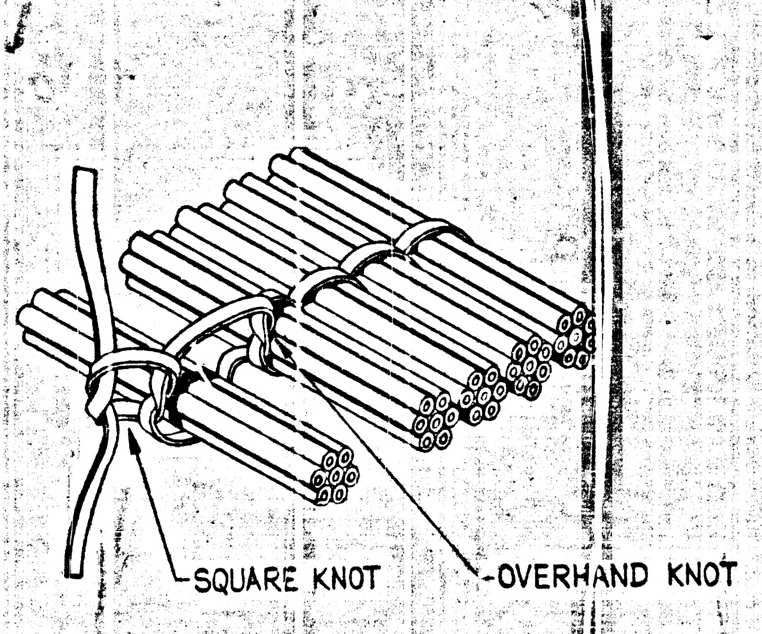
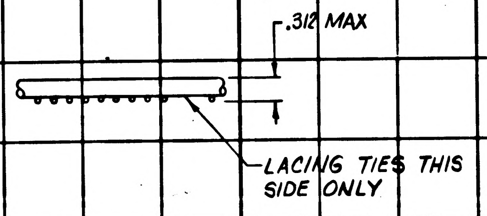


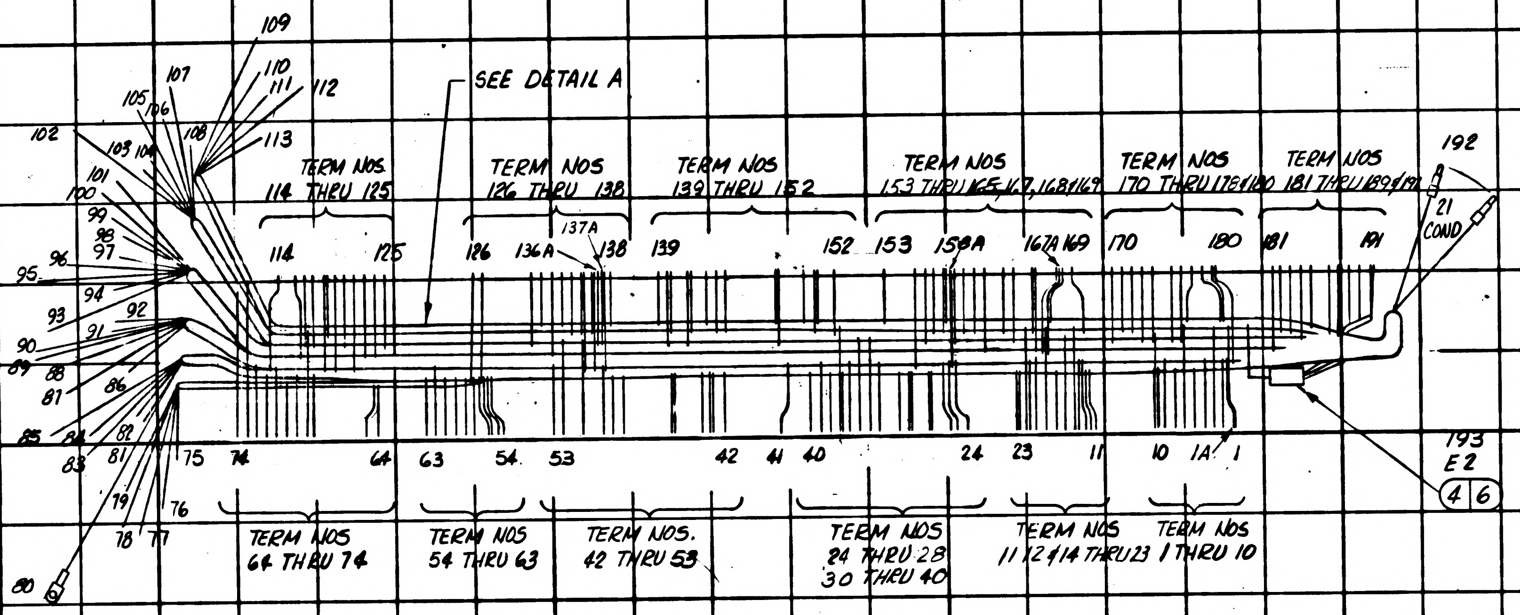
FIGURE 1
MULTIPLE SPOT TIE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015735
SCALE-NONE | REV LTR B | SHEET 11 OF 12

1015735

REVISIONS TDRR 04773					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 05524		1/21/63	
B		REVISED PER TDRR 05534		1/27/63	


.312 MAX
LACING TIES THIS SIDE ONLY


SEE DETAIL A
109
110
111
112
113
107
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96
95
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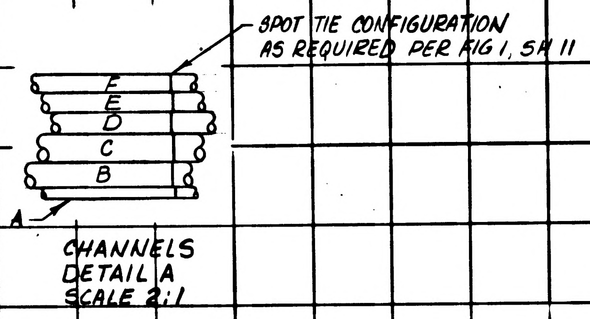
83
81
79
78
77
76
75
80
TERM NOS.
114 THRU 125
TERM NOS
126 THRU 138
TERM NOS
139 THRU 152
TERM NOS
153 THRU 165, 167, 168 & 169
TERM NOS
170 THRU 178 & 180
TERM NOS
181 THRU 189 & 191
192
21 COND
114
125
126
136A
137A
138
139
152
153
158A
167A
169
170
180
181
191
74
64
63
54
53
42
41
40
24
23
11
10
1A
1
193
E2
4
6
TERM NOS
64 THRU 74
TERM NOS
54 THRU 63
TERM NOS.
42 THRU 53
TERM NOS
24 THRU 28
30 THRU 40
TERM NOS
11 12 & 14 THRU 23
TERM NOS
1 THRU 10


SPOT TIE CONFIGURATION
AS REQUIRED PER FIG 1, SH 11
F
E
D
C
B
A

CHANNELS
DETAIL A
SCALE 2:1

1007143	1007153
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+ —	+ —	+ —
— —	— —	— —

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN J. Wolski DATE 1 OCT 63
CHECKED J. Saylor 24 OCT 63
APPROVAL 10-25-63
APPROVAL 24 OCT 63
11/19/63
NASA APPROVAL
MIT APPROVAL 11/20/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
(TRAY 3)

CODE IDENT NO. | SIZE D | 1015735

SCALE 1:1 | SHEET 12 OF 12

PENNANT NOTE	GENERAL NOTES
1	SEE CONDUCTOR CHART
2	SEE CONDUCTOR CHART
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	LACE HARNESS USING ITEM 5
8	IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
9	Y OR N IN TINNED COLUMN INDICATES YES OR NO.
10	GRID MODULE IS 1 INCH.
11	UNLESS OTHERWISE SPECIFIED --- FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.
12	BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.
13	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
14	IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY
15	INSTALL ITEM 2 PER ND1002066

PENNANT NOTE	GENERAL NOTES
16	INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

REVISIONS TDRR 04283

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER - TDRR 05524	27 Dec 63	EPK
B	REVISED PER TDRR 05534	27 Dec 63	PPK
C	REVISED PER TDRR 05580	31 Dec 63	Jwc RPK

APPLICATION

NEXT ASSY	USED ON
1007143	1007153

Charleston
24 Oct 63

REV STATUS OF SHEETS												
REV	C	C	C	C	C	C	C	C	C	C	C	C
SHEET	1	2	3	4	5	6	7	8	9	10	11	12

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 1 Oct 63 DATE
CHECKED 24 Oct 63
APPROVAL 10/25/63
APPROVAL 24 Oct 63 11/19/63
NASA APPROVAL
MIT APPROVAL 11/20/63
CONTRACT NAS 9-497

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
(TRAY 3)

CODE IDENT NO. SIZE A 1015735 REV C
SCALE — SHEET 1 OF 12

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	AR	1010639- 2	WIRE 60 FT 10.5 IN TOTAL LENGTH
13	2	21	1010464- 2	CONTACT, ELECTRICAL SOCKET
13	3	1	MS25036- 44	TERMINAL LUG
	4	1	1010711- 1	SPLICE REDUCER
	5	AR	MIL-T-713	LACING TAPE TYPE P, CLASS 2, BLACK (ES-2732 NO. 18)
13	6	1	1010476-168	INSULATION, SLEEVING, ELEC HEAT SHRINK
	7	AR	MIL-W-16878/1B-24-19STND	WIRE-WHITE

GFF WIRING HARNESS A C 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 19	1	1700	45A3P1-R4	20	N			106	45A3J2- 2	20	N			10	
A 20	1	475	45A3P1-H6	20	N			92	45A3J13-10	20	N			124	
A 21	1	450	45A3P1-F6	20	N			86	45A3J13- 9	20	N			123	
A 22	1	1800	45A3P1-K1	20	N			93	45A3J8- 7	20	N			186	
A 23	1	1800	45A3P1-L1	20	N			95	45A3J8- 4	20	N			184	
A 24	1	1750	45A3P1-H1	20	N			90	45A3J8- 1	20	N			181	
A 25	1	1595	45A3P1-M3	20	N			101	45A3J9- 7	20	N			175	
A 26	1	1545	45A3P1-N3	20	N			100	45A3J9- 4	20	N			173	
A 27	1	1470	45A3P1-L3	20	N			96	45A3J9- 1	20	N			170	
A 28	1	1320	45A3P1-F3	20	N			88	45A3J10-11	20	N			162	
A 29	1	1170	45A3P1-D3	20	N			84	45A3J10- 4	20	N			154	
A 30	1	774	45A3P1-F2	20	N			87	45A3J12- 9	20	N			130	
A 31	1	720	45A3P1-B3	20	N			79	45A3J12- 2	20	N			127	
A 32	1	695	45A3P1-A3	20	N			76	45A3J12- 1	20	N			126	
A 33	1	375	45A3P1-L6	20	N			97	45A3J13- 4	20	N			117	
A 34	1	375	45A3P1-K6	20	N			94	45A3J13- 3	20	N			116	
A 35	1	400	45A3P1-G6	20	N			91	45A3J13- 2	20	N			115	
A 36	1	300	45A3P1-D6	20	N			82	45A3J13- 1	20	N			114	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015735
SCALE - NONE | REV LTR C | SHEET 6 OF 12

MIL 2085 - 4-63 WIR

GFF WIRING HARNESS A C 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 37	1	2000	45A3P1-R6	20	N			104	45A3E2	20	N			193	
A 38	1	500	45A3P1-C6	20	N			81	45A3E1	20	N		3	80	
A 39	1	650	45A3J1-21	12	N		2	192	45A3J2- 6	20	N			5	B
A 40	1	650	45A3J1-20	12	N		2	192	45A3J2- 4	20	N			7	B
A 41	1	600	45A3J1-28	12	N		2	192	45A3J3- 6	20	N			17	B
A 42	1	825	45A3J1-27	12	N		2	192	45A3J3- 4	20	N			19	B
A 43	1	1150	45A3J1-23	12	N		2	192	45A3J4- 8	20	N			35	C
A 44	1	1150	45A3J1-31	12	N		2	192	45A3J4- 5	20	N			39	C
A 45	1	1575	45A3J1- 2	12	N		2	192	45A3J6- 7	20	N			63	B
A 46	1	1875	45A3J1-36	12	N		2	192	45A3J7- 6	20	N			70	C
A 47	1	1875	45A3J1-35	12	N		2	192	45A3J7- 4	20	N			72	C
A 48	1	1800	45A3J1-19	12	N		2	192	45A3J13- 7	20	N			121	D
A 49	1	1675	45A3J1-11	12	N		2	192	45A3J13-11	20	N			125	D
A 50	1	1475	45A3J1- 3	12	N		2	192	45A3J12- 7	20	N			128	D
A 51	1	1050	45A3J1-32	12	N		2	192	45A3J10- 5	20	N			155	D
A 52	1	1000	45A3J1-24	12	N		2	192	45A3J10- 8	20	N			159	D
A 53	1	675	45A3J1-10	12	N		2	192	45A3J9- 5	20	N			174	D
A 54	1	725	45A3J1-18	12	N		2	192	45A3J9- 8	20	N			176	D

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015735
SCALE - NONE | REV LTR C | SHEET 7 OF 12

MIL 2085 - 4-63 WIR

GFF WIRING HARNESS A C 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 1	1	495	45A3P1-S3	20	N			110	45A3J7- 3	20	N			73	
A 2	1	325	45A3P1-A6	20	N			75	45A3J7- 7	20	N			69	
A 3	1	650	45A3P1-S1	20	N			109	45A3J7- 9	20	N			67	
A 4	1	500	45A3P1-A1	20	N			77	45A3J6- 1	20	N			65	
A 5	1	500	45A3P1-B1	20	N			78	45A3J6- 2	20	N			64	
A 6	1	775	45A3P1-P6	20	N			103	45A3J12-12	20	N			133	
A 7	1	660	45A3P1-D2	20	N			83	45A3J6- 9	20	N			61	
A 8	1	800	45A3P1-R6	20	N			108	45A3J12-13	20	N			135	
A 9	1	850	45A3P1-S6	20	N			113	45A3J12-15	20	N			138	
A 10	1	900	45A3P1-N6	20	N			98	45A3J11- 3	20	N			140	
A 11	1	990	45A3P1-N5	20	N			99	45A3J11- 5	20	N			142	
A 12	1	1075	45A3P1-D1	20	N			85	45A3J4- 4	20	N			40	
A 13	1	1360	45A3P1-R2	20	N			107	45A3J10- 7	20	N			157	
A 14	1	1200	45A3P1-F1	20	N			89	45A3J4-11	20	N			32	
A 15	1	1485	45A3P1-S2	20	N			112	45A3J10-19	20	N			168	
A 16	1	1480	45A3P1-S4	20	N			111	45A3J3- 3	20	N			21	
A 17	1	550	45A3P1-R1	20	N			102	45A3J13- 5	20	N			119	
A 18	1	445	45A3P1-R3	20	N			105	45A3J7- 2	20	N			74	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015735
SCALE - NONE | REV LTR C | SHEET 5 OF 12

MIL 2085 - 4-63 WIR

GFF WIRING HARNESS A C 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	CUT WIRE OR SHIELD 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 55	1	500	45A3J1- 9	12	N		2	192	45A3J8- 5	20	N			185	B
A 56	1	325	45A3J1-17	12	N		2	192	45A3J8- 8	20	N			187	B
A 57	7	400	45A3J1- 1	12	N		2	192	45A3E2	20	N			193	
A 58	7	400	45A3J1-30	12	N		2	192	45A3E2	20	N			193	
A 59	7	400	45A3J1-37	12	N		2	192	45A3E2	20	N			193	
A 60	1	300	45A3J7- 5	20	N			71	45A3J13- 6	20	N			120	B
A 61	1	300	45A3J7- 8	20	N			68	45A3J13- 8	20	N			122	B
A 62	1	200	45A3J13- 5	20	N			118	45A3J7-10	20	N			66	B
A 63	1	300	45A3J12-12	20	N			134	45A3J6-12	20	N			58	B
A 64	1	300	45A3J12-13	20	N			136	45A3J6-13	20	N			57	B
A 65	1	350	45A3J6-13	20	N			56	45A3J5-14	20	N			46	B
A 66	1	600	45A3J5-18	20	N			44	45A3J4-16	20	N			28	B
A 67	1	370	45A3J11-18	20	N			150	45A3J10-16	20	N			165	E
A 68	1	600	45A3J12-13	20	N			136A	45A3J11-14	20	N			148	D
A 69	1	370	45A3J4-16	20	N			27	45A3J2- 2	20	N			10A	B
A 70	1	800	45A3J12-15	20	N			137	45A3J10-14	20	N			164	D
A 71	1	590	45A3J6-15	20	N			54	45A3J4-14	25	N			30	B
A 72	1	1100	45A3J12-15	20	N			137A	45A3J6-15	25	N			55	B

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015735
SCALE - NONE | REV LTR C | SHEET 8 OF 12

MIL 2085 - 4-63 WIR

CONDUCTOR			FROM					TO					
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET			TERMINATION SPEC. 1		CUT WIRE OR SHIELD / STRIP WIRE OR JACKET			TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN 2	ITEM NO.	NO.	CIRCUIT POINT	2	TIN 2	ITEM NO.	NO.	
A 73	1	270	45A3J6- 8	20	N		62	45A3J5- 7	20	N		50	C
A 74	1	400	45A3J6-10	20	N		60	45A3J5-17	20	N		42	B
A 75	1	400	45A3J6-11	20	N		59	45A3J5-20	20	N		45	B
A 76	1	370	45A3J5- 2	20	N		53	45A3J4- 1	20	N		41	C
A 77	1	300	45A3J11- 3	20	N		141	45A3J5- 3	20	N		52	E
A 78	1	300	45A3J11- 5	20	N		143	45A3J5- 5	20	N		51	E
A 79	1	345	45A3J5- 8	20	N		49	45A3J4- 6	20	N		38	B
A 80	1	390	45A3J5- 9	20	N		48	45A3J4-13	20	N		31	B
A 81	1	270	45A3J12- 8	20	N		129	45A3J11- 7	20	N		144	F
A 82	1	430	45A3J12-10	20	N		131	45A3J11-17	20	N		149	F
A 83	1	400	45A3J12-11	20	N		132	45A3J11-20	20	N		152	E
A 84	1	370	45A3J11- 2	20	N		139	45A3J10- 1	20	N		155	F
A 85	1	350	45A3J11- 8	20	N		145	45A3J10- 6	20	N		156	E
A 86	1	410	45A3J11- 9	20	N		146	45A3J10-13	20	N		163	F
A 87	1	270	45A3J10- 9	20	N		160	45A3J9- 2	20	N		171	E
A 88	1	270	45A3J10-10	20	N		161	45A3J9- 3	20	N		172	E
A 89	1	230	45A3J10-20	20	N		169	45A3J3- 7	20	N		16	E
A 90	1	300	45A3J10-19	20	N		167	45A3J4-19	20	N		26	C

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735	
SCALE - NONE	REV LTR C		SHEET 9 OF 12

CONDUCTOR			FROM					TO					
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET			TERMINATION SPEC. 1		CUT WIRE OR SHIELD / STRIP WIRE OR JACKET			TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN 2	ITEM NO.	NO.	CIRCUIT POINT	2	TIN 2	ITEM NO.	NO.	
A 91	1	600	45A3J4-19	20	N		25	45A3J2- 9	20	N		2	C
A 92	1	300	45A3J10-19	20	N		167A	45A3J3- 9	20	N		14	C
A 93	1	300	45A3J10- 7	20	N		158	45A3J4- 7	20	N		37	F
A 94	1	700	45A3J4- 7	20	N		36	45A3J2-10	20	N		1A	B
A 95	1	300	45A3J3-10	20	N		11	45A3J9-11	20	N		180	B
A 96	1	400	45A3J10- 7	20	N		158A	45A3J3-10	20	N		12	B
A 97	1	307	45A3J8-11	20	N		191	45A3J2-10	20	N		1	E
A 98	1	370	45A3J4-20	20	N		24	45A3J2- 7	20	N		4	C
A 99	1	707	45A3J4- 9	20	N		34	45A3J8- 2	20	N		182	E
A 100	1	707	45A3J4-10	20	N		33	45A3J8- 3	20	N		183	E
A 101	1	238	45A3J3- 3	20	N		20	45A3J2- 3	20	N		8	C
A 102	1	238	45A3J3- 2	20	N		22	45A3J2- 2	20	N		9	B
A 103	1	375	45A3J2- 5	20	N		6	45A3J8-10	20	N		189	F
A 104	1	325	45A3J2- 8	20	N		3	45A3J8- 9	20	N		188	F
A 105	1	363	45A3J3- 5	20	N		18	45A3J9-10	20	N		178	F
A 106	1	313	45A3J3- 8	20	N		15	45A3J9- 9	20	N		177	F
A 107	1	150	45A3J11-14	20	N		147	45A3J11-18	20	N		151	F
A 108	1	150	45A3J5-14	20	N		47	45A3J5-18	20	N		43	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735	
SCALE - NONE	REV LTR C		SHEET 10 OF 12

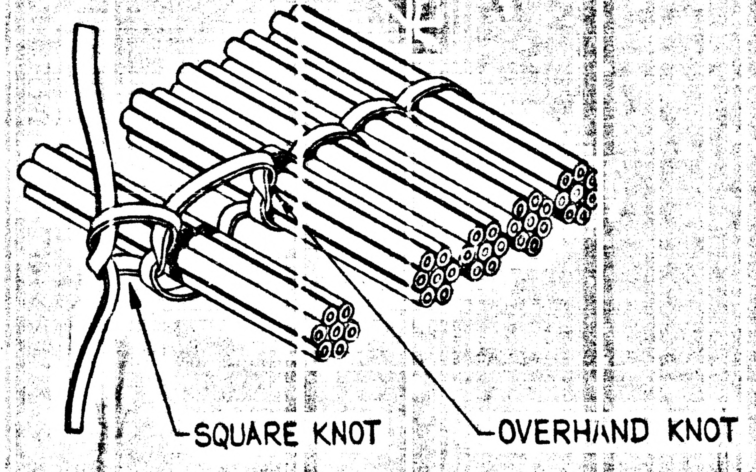
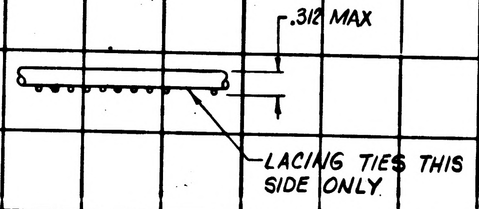


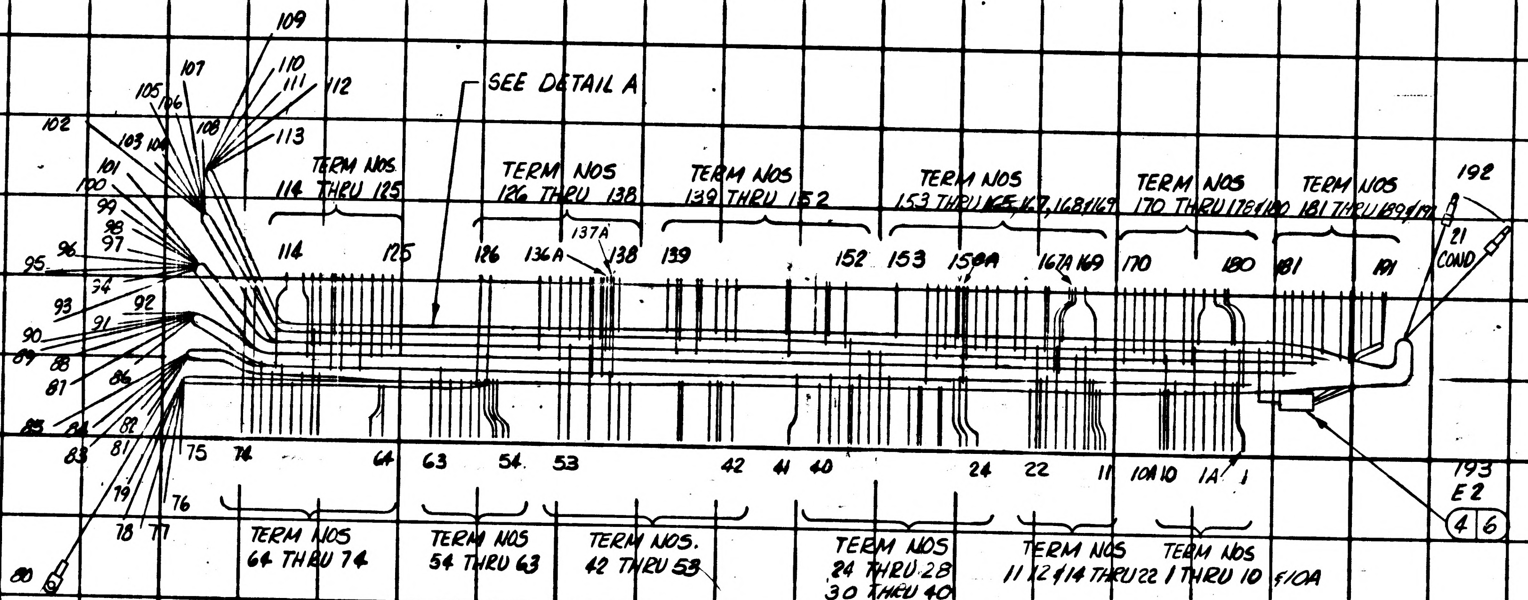
FIGURE I
MULTIPLE SPOT TIE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735	
SCALE - NONE	REV LTR C		SHEET 11 OF 12

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 05524		2/27/63	WK
B		REVISED PER TDRR 05534		2/27/63	WK
C		REVISED PER TDRR 05580		3/28/63	WK

REVISIONS TDRR 04783


.312 MAX
LACING TIES THIS SIDE ONLY


SEE DETAIL A
TERM NOS 114 THRU 125
TERM NOS 126 THRU 138
TERM NOS 139 THRU 152
TERM NOS 153 THRU 166, 167, 168 & 169
TERM NOS 170 THRU 178 & 180
TERM NOS 181 THRU 189 & 191
192
21 COND
102
103
104
105
106
107
108
109
110
111
112
113
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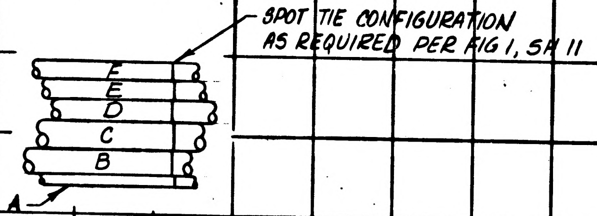
114
125
126
136A
137A
138
139
152
153
159A
167A
169
170
180
181
191
74
64
63
54
53
42
41
40
24
22
11
10A
10
1A
1
193
E2
4
6
TERM NOS 64 THRU 74
TERM NOS 54 THRU 63
TERM NOS. 42 THRU 53
TERM NOS 24 THRU 28 30 THRU 40
TERM NOS 11 12 & 14 THRU 22
TERM NOS 1 THRU 10 & 10A


SPOT TIE CONFIGURATION AS REQUIRED PER FIG 1, SH 11
F
E
D
C
B
A

CHANNELS
DETAIL A
SCALE 2:1

1007143	1007153
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J. Wolski DATE 1 OCT 63
CHECKED J. Naylor 24 OCT 63
APPROVAL 10-25-63
APPROVAL 24 OCT 63
NASA APPROVAL
MIT APPROVAL 11/20/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
(TRAY 3)

CODE IDENT NO.
SIZE D
1015735
SCALE 1:1
SHEET 12 OF 12

GFF WIRING HARNESS A D 1015735

PENNANT NOTE — GENERAL NOTES

PENNANT NOTE	GENERAL NOTES
1	SEE CONDUCTOR CHART
2	SEE CONDUCTOR CHART
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	LACE HARNESS USING ITEM 5
8	IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
9	Y OR N IN TINNED COLUMN INDICATES YES OR NO.
10	GRID MODULE IS 1 INCH.
11	UNLESS OTHERWISE SPECIFIED --- FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.
12	BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.
13	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
14	IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY
15	INSTALL ITEM 2 PER ND1002066

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015735

SCALE-NONE | REV LTR D | SHEET 2 OF 12

MIL 2064 4-63

GFF WIRING HARNESS A D 1015735

PENNANT NOTE	GENERAL NOTES
16	INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

	TOLERANCE			
APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015735

SCALE-NONE | REV LTR D | SHEET 3 OF 12

MIL 2064 4-63

APPLICATION	
NEXT ASSY	USED ON
1007143	1007153

REVISIONS TDRR 04783

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05524	27 Dec 63	RPK WK
B	REVISED PER TDRR 05534	27 Dec 63	RPK WK
C	REVISED PER TDRR 05580	31 Dec 63	RPK WK
D	REVISED PER TDRR 06733	3/3/64	JFW WK.

Charleston
24 Oct. 63

REV												
SHEET												
REV STATUS OF SHEETS REV	D	D	D	D	D	D	D	D	D	D	D	D
SHEET	1	2	3	4	5	6	7	8	9	10	11	12

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J. Woloski DATE 1 OCT 63
CHECKED 24 Oct 63
APPROVAL 10/25/63
APPROVAL 24 OCT 63
NASA APPROVAL
MIT APPROVAL 11/20/63
CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
(TRAY 3)

CODE IDENT NO. | SIZE A | 1015735 | REV D
SCALE — | SHEET 1 OF 12

GFF WIRING HARNESS A D 1015735

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	AR	1010639- 2	WIRE 60 FT 10.5 IN TOTAL LENGTH
13	2	21	1010738- 2	CONTACT, ELECTRICAL SOCKET
13	3	1	MS25036- 44	TERMINAL LUG
	4	1	1010711- 1	SPLICE REDUCER
	5	AR	MIL-T-713	LACING TAPE TYPE P, CLASS 2, BLACK (ES-2732 NO. 18)
13	6	1	1010476-168	INSULATION, SLEEVING, ELEC HEAT SHRINK
	7	AR	MIL-W-16878/1B-24-19STND	WIRE-WHITE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015735

SCALE-NONE | REV LTR D | SHEET 4 OF 12

MIL 2064 4-63

INCHES 0 1 2

GFF

WIRING HARNESS A D 1015735

CONDUCTOR NUMBER	CONDUCTOR ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / TIN 2	FROM TERMINATION SPEC. 1 ITEM NO.	FROM NO.	TO CIRCUIT POINT 2	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / TIN 2	TO TERMINATION SPEC 1 ITEM NO.	TO NO.	
A 19	1	1700	45A3P1-R4	20N		106	45A3J2- 2	20N		10	
A 20	1	475	45A3P1-H6	20N		92	45A3J13-10	20N		124	
A 21	1	450	45A3P1-F6	20N		86	45A3J13- 9	20N		123	
A 22	1	1800	45A3P1-K1	20N		93	45A3J8- 7	20N		186	
A 23	1	1800	45A3P1-L1	20N		95	45A3J8- 4	20N		184	
A 24	1	1750	45A3P1-H1	20N		90	45A3J8- 1	20N		181	
A 25	1	1595	45A3P1-M3	20N		101	45A3J9- 7	20N		175	
A 26	1	1545	45A3P1-N3	20N		100	45A3J9- 4	20N		173	
A 27	1	1470	45A3P1-L3	20N		96	45A3J9- 1	20N		170	
A 28	1	1320	45A3P1-F3	20N		88	45A3J10-11	20N		162	
A 29	1	1170	45A3P1-D3	20N		84	45A3J10- 4	20N		154	
A 30	1	774	45A3P1-F2	20N		87	45A3J12- 9	20N		130	
A 31	1	720	45A3P1-B3	20N		79	45A3J12- 2	20N		127	
A 32	1	695	45A3P1-A3	20N		76	45A3J12- 1	20N		126	
A 33	1	375	45A3P1-L6	20N		97	45A3J13- 4	20N		117	
A 34	1	375	45A3P1-K6	20N		94	45A3J13- 3	20N		116	
A 35	1	400	45A3P1-G6	20N		91	45A3J13- 2	20N		115	
A 36	1	300	45A3P1-D6	20N		82	45A3J13- 1	20N		114	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015795
SCALE - NONE
REV LTR D
SHEET 6 OF 12

GFF

WIRING HARNESS A D 1015735

CONDUCTOR NUMBER	CONDUCTOR ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / TIN 2	FROM TERMINATION SPEC. 1 ITEM NO.	FROM NO.	TO CIRCUIT POINT 2	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / TIN 2	TO TERMINATION SPEC 1 ITEM NO.	TO NO.	
A 37	1	2000	45A3P1-R6	20N		104	45A3E2	20N		193	
A 38	1	500	45A3P1-C6	20N		81	45A3E1	20N	3	80	
A 39	1	650	45A3J1-21	12N	2	192	45A3J2- 6	20N		5	B
A 40	1	650	45A3J1-20	12N	2	192	45A3J2- 4	20N		7	B
A 41	1	600	45A3J1-28	12N	2	192	45A3J3- 6	20N		17	B
A 42	1	825	45A3J1-27	12N	2	192	45A3J3- 4	20N		19	B
A 43	1	1150	45A3J1-23	12N	2	192	45A3J4- 8	20N		35	C
A 44	1	1150	45A3J1-31	12N	2	192	45A3J4- 5	20N		39	C
A 45	1	1575	45A3J1- 2	12N	2	192	45A3J6- 7	20N		63	B
A 46	1	1875	45A3J1-36	12N	2	192	45A3J7- 6	20N		70	C
A 47	1	1875	45A3J1-35	12N	2	192	45A3J7- 4	20N		72	C
A 48	1	1800	45A3J[illegible]9	12N	2	192	45A3J13- 7	20N		121	D
A 49	1	1675	45A3J1-11	12N	2	192	45A3J13-11	20N		125	D
A 50	1	1475	45A3J1- 3	12N	2	192	45A3J12- 7	20N		128	D
A 51	1	1050	45A3J1-32	12N	2	192	45A3J10- 5	20N		155	D
A 52	1	1000	45A3J1-24	12N	2	192	45A3J10- 8	20N		159	D
A 53	1	675	45A3J1-10	12N	2	192	45A3J9- 5	20N		174	D
A 54	1	725	45A3J1-18	12N	2	192	45A3J9- 8	20N		176	D

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015795
SCALE - NONE
REV LTR D
SHEET 7 OF 12

GFF

WIRING HARNESS A D 1015735

CONDUCTOR NUMBER	CONDUCTOR ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / TIN 2	FROM TERMINATION SPEC. 1 ITEM NO.	FROM NO.	TO CIRCUIT POINT 2	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / TIN 2	TO TERMINATION SPEC 1 ITEM NO.	TO NO.	
A 1	1	495	45A3P1-S3	20N		110	45A3J7- 3	20N		73	
A 2	1	325	45A3P1-A6	20N		75	45A3J7- 7	20N		69	
A 3	1	650	45A3P1-S1	20N		109	45A3J7- 9	20N		67	
A 4	1	500	45A3P1-A1	20N		77	45A3J6- 1	20N		65	
A 5	1	500	45A3P1-B1	20N		78	45A3J6- 2	20N		64	
A 6	1	775	45A3P1-P6	20N		103	45A3J12-12	20N		133	
A 7	1	660	45A3P1-D2	20N		83	45A3J6- 9	20N		61	
A 8	1	800	45A3P1-R6	20N		108	45A3J12-13	20N		135	
A 9	1	850	45A3P1-S6	20N		113	45A3J12-15	20N		138	
A 10	1	900	45A3P1-N6	20N		98	45A3J11- 3	20N		140	
A 11	1	990	45A3P1-N5	20N		99	45A3J11- 5	20N		142	
A 12	1	1075	45A3P1-D1	20N		85	45A3J4- 4	20N		40	
A 13	1	1360	45A3P1-R2	20N		107	45A3J10- 7	20N		157	
A 14	1	1200	45A3P1-F1	20N		89	45A3J4-11	20N		32	
A 15	1	1485	45A3P1-S2	20N		112	45A3J10-19	20N		168	
A 16	1	1480	45A3P1-S4	20N		111	45A3J3- 3	20N		21	
A 17	1	550	45A3P1-R1	20N		102	45A3J13- 5	20N		119	
A 18	1	445	45A3P1-R3	20N		105	45A3J7- 2	20N		74	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015795
SCALE - NONE
REV LTR D
SHEET 5 OF 12

GFF

WIRING HARNESS A D 1015735

CONDUCTOR NUMBER	CONDUCTOR ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / TIN 2	FROM TERMINATION SPEC. 1 ITEM NO.	FROM NO.	TO CIRCUIT POINT 2	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / TIN 2	TO TERMINATION SPEC 1 ITEM NO.	TO NO.	
A 55	1	500	45A3J1- 9	12N	2	192	45A3J8- 5	20N		185	B
A 56	1	325	45A3J1-17	12N	2	192	45A3J8- 8	20N		187	B
A 57	7	400	45A3J1- 1	12N	2	192	45A3E2	20N		193	
A 58	7	400	45A3J1-30	12N	2	192	45A3E2	20N		193	
A 59	7	400	45A3J1-37	12N	2	192	45A3E2	20N		193	
A 60	1	300	45A3J7- 5	20N		71	45A3J13- 6	20N		120	B
A 61	1	300	45A3J7- 8	20N		68	45A3J13- 8	20N		122	B
A 62	1	200	45A3J13- 5	20N		118	45A3J7-10	20N		66	B
A 63	1	300	45A3J12-12	20N		134	45A3J6-12	20N		56	B
A 64	1	300	45A3J12-13	20N		136	45A3J6-13	20N		57	B
A 65	1	350	45A3J6-13	20N		56	45A3J5-14	20N		46	B
A 66	1	600	45A3J5-18	20N		44	45A3J4-16	20N		28	B
A 67	1	370	45A3J11-18	20N		150	45A3J10-16	20N		165	E
A 68	1	600	45A3J12-13	20N		136A	45A3J11-14	20N		148	D
A 69	1	370	45A3J4-16	20N		27	45A3J2- 2	20N		104	B
A 70	1	800	45A3J12-15	20N		137	45A3J10-14	20N		164	D
A 71	1	590	45A3J6-15	20N		54	45A3J4-14	25N		30	B
A 72	1	1100	45A3J12-15	20N		137A	45A3J6-15	25N		55	B

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015795
SCALE - NONE
REV LTR D
SHEET 8 OF 12

INCHES
0 1 2

GFF WIRING HARNESS A D 1015735

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD	TERMINATION SPEC 1 ITEM NO.	NO.	
A 91	1	600	45A3J4-19	20	N			25	45A3J2- 9	20	N			2	C
A 92	1	300	45A3J10-19	20	N			167A	45A3J3- 9	20	N			14	C
A 93	1	300	45A3J10- 7	20	N			158	45A3J4- 7	20	N			37	F
A 94	1	700	45A3J4- 7	20	N			36	45A3J2-10	20	N			14	B
A 95	1	300	45A3J3-10	20	N			11	45A3J9-11	20	N			180	B
A 96	1	400	45A3J10- 7	20	N			158A	45A3J3-10	20	N			12	B
A 97	1	307	45A3J8-11	20	N			191	45A3J2-10	20	N			1	E
A 98	1	370	45A3J4-20	20	N			24	45A3J2- 7	20	N			4	C
A 99	1	707	45A3J4- 9	20	N			34	45A3J8- 2	20	N			182	E
A 100	1	707	45A3J4-10	20	N			33	45A3J8- 3	20	N			183	E
A 101	1	238	45A3J3- 3	20	N			20	45A3J2- 3	20	N			8	C
A 102	1	238	45A3J3- 2	20	N			22	45A3J2- 2	20	N			9	B
A 103	1	375	45A3J2- 5	20	N			6	45A3J8-10	20	N			189	F
A 104	1	325	45A3J2- 8	20	N			3	45A3J8- 9	20	N			188	F
A 105	1	363	45A3J3- 5	20	N			18	45A3J9-10	20	N			178	F
A 106	1	313	45A3J3- 8	20	N			15	45A3J9- 9	20	N			177	F
A 107	1	150	45A3J11-14	20	N			147	45A3J11-18	20	N			151	F
A 108	1	150	45A3J5-14	20	N			47	45A3J5-18	20	N			45	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A 1015735

SCALE - NONE REV LTR D SHEET 10 OF 12

GFF WIRING HARNESS A D 1015735

CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET	T I N	CUT WIRE OR SHIELD	TERMINATION SPEC 1 ITEM NO.	NO.	
A 73	1	270	45A3J6- 8	20	N			62	45A3J5- 7	20	N			50	C
A 74	1	400	45A3J6-10	20	N			60	45A3J5-17	20	N			42	B
A 75	1	400	45A3J6-11	20	N			59	45A3J5-20	20	N			45	B
A 76	1	370	45A3J5- 2	20	N			53	45A3J4- 1	20	N			41	C
A 77	1	300	45A3J11- 3	20	N			141	45A3J5- 3	20	N			52	E
A 78	1	300	45A3J11- 5	20	N			143	45A3J5- 5	20	N			51	E
A 79	1	345	45A3J5- 8	20	N			49	45A3J4- 6	20	N			38	B
A 80	1	390	45A3J5- 9	20	N			48	45A3J4-13	20	N			31	B
A 81	1	270	45A3J12- 8	20	N			129	45A3J11- 7	20	N			144	F
A 82	1	430	45A3J12-10	20	N			131	45A3J11-17	20	N			149	F
A 83	1	400	45A3J12-11	20	N			132	45A3J11-20	20	N			152	E
A 84	1	370	45A3J11- 2	20	N			139	45A3J10- 1	20	N			155	F
A 85	1	350	45A3J11- 8	20	N			145	45A3J10- 6	20	N			156	E
A 86	1	410	45A3J11- 9	20	N			146	45A3J10-13	20	N			163	F
A 87	1	270	45A3J10- 9	20	N			160	45A3J9- 2	20	N			171	E
A 88	1	270	45A3J10-10	20	N			161	45A3J9- 3	20	N			172	E
A 89	1	230	45A3J10-20	20	N			169	45A3J3- 7	20	N			16	E
A 90	1	300	45A3J10-19	20	N			167	45A3J4-19	20	N			26	C

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A 1015735

SCALE - NONE REV LTR D SHEET 9 OF 12

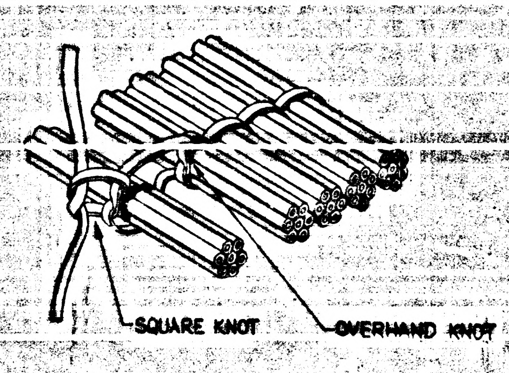


FIGURE 1
MULTIPLE SPOT TIE

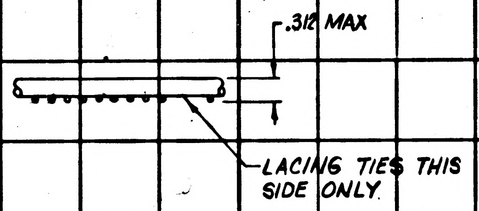
MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

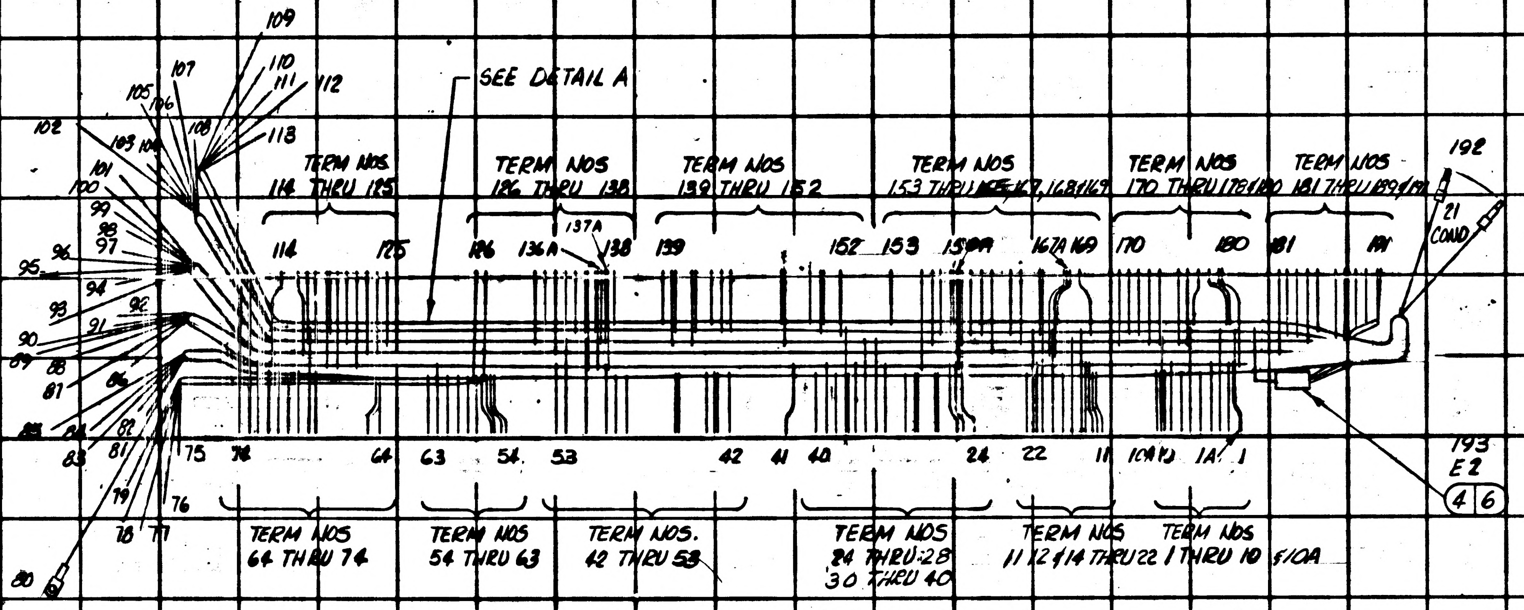
A 1015735

SCALE - NONE REV LTR D SHEET 11 OF 12

D 1015735

REVISIONS TDRR 04773					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.
A		REVISED PER TDRR 05524			WK
B		REVISED PER TDRR 05534			Wi
C		REVISED PER TDRR 05580			WK
D		REVISED PER TDRR 06733		3/9/64	WK


.312 MAX
LACING TIES THIS SIDE ONLY


SEE DETAIL A
109
110
111
112
118
107
105
106
108
102
103 104
101
100
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98
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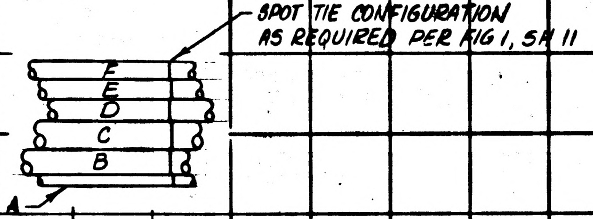
96
95
94
93
92
91
90
89
88
87
86
85
84
83
82
81
80
79
78
77
76
75
TERM NOS 114 THRU 125
TERM NOS 126 THRU 138
TERM NOS 139 THRU 152
TERM NOS 153 THRU 165, 167, 168 & 169
TERM NOS 170 THRU 178 & 180
TERM NOS 181 THRU 189 & 191
114
125
126
136A
137A
138
139
152
153
159A
167A
169
170
180
181
191
192
21 COND
193
E2
4 6
74
64
63
54
53
42
41
40
24
22
11
10A
1A
1
TERM NOS 64 THRU 74
TERM NOS 54 THRU 63
TERM NOS. 42 THRU 53
TERM NOS 24 THRU 28 30 THRU 40
TERM NOS 11 12 & 14 THRU 22
TERM NOS 1 THRU 10 & 10A


SPOT TIE CONFIGURATION AS REQUIRED PER FIG 1, SH 11
F
E
D
C
B
A

CHANNELS
DETAIL A
SCALE 2:1

MASTER

1007143	1007153
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J. Wolski 1 OCT 63 DATE
CHECKED J. Snyder 24 Oct 63
APPROVAL 10-25-63
APPROVAL 24 OCT 63
NASA APPROVAL
MIT APPROVAL 11/20/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
(TRAY 3)

CODE IDENT NO.
SIZE D
1015735
SCALE 1:1
SHEET 12 OF 12

INCHES
0 1 2
PHOTOGRAPHIC SCALE GRID

APPLICATION	
NEXT ASSY	USED ON
1007143	1007153

REVISIONS TDRR 04973

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05524	22 Dec 63	FM WR
B	REVISED PER TDRR 05534	27 Dec 63	FM WR
C	REVISED PER TDRR 05580	31 Dec 63	JMC PPK WR
D	REVISED PER TDRR 06733	3/3/64	TFW WR
E	REVISED PER TDRR 12745	28 SEP 64	JWP

Coordinated 24 Oct 63

REV STATUS OF SHEETS														
	REV	E	E	E	E	E	E	E	E	E	E	E	E	E
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN J. Wolski DATE 1 OCT 63
CHECKED Hayes 24 Oct 63
APPROVAL 10/25/63
APPROVAL 24 OCT 63 11/19/63
NASA APPROVAL
MIT APPROVAL 11/20/63
CONTRACT NAS 9-497

WIRING HARNESS "A"
(TRAY 3)

CODE IDENT NO.
SIZE A
1015735
REV E
SCALE —
SHEET 1 OF 13

GFF WIRING HARNESS A ~~D~~ E 1015735

PENNANT NOTE — GENERAL NOTES

1 SEE CONDUCTOR CHART

2 SEE CONDUCTOR CHART

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

6 SPIRALLING OF THE MARKING IS ALLOWED.

7 LACE HARNESS USING ITEM 5

8 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

9 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

10 GRID MODULE IS 1 INCH.

11 UNLESS OTHERWISE SPECIFIED ---
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH.
END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.

12 BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.

13 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

14 IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY

15 INSTALL ITEM 2 PER ND1002066

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE - NONE
REV LTR ~~D~~ E
SHEET 2 OF 13 ~~12~~

GFF WIRING HARNESS A ~~D~~ E 1015735

PENNANT NOTE — GENERAL NOTES

16 INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	TOLERANCE STRIP JACKET	TOLERANCE CUT WIRE	TOLERANCE CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE - NONE
REV LTR ~~D~~ E
SHEET 3 OF 13 ~~12~~

GFF WIRING HARNESS A ~~D~~ E 1015735

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	AR	1010639- 2	WIRE 60 FT 10.5 IN TOTAL LENGTH
13	2	21	1010738- 2	CONTACT, ELECTRICAL SOCKET
13	3	1	MS25036- 44	TERMINAL LUG
	4	1	1010711- 1	SPLICE REDUCER
	5	AR	MIL-T-713	LACING TAPE TYPE P, CLASS 2, BLACK (ES-2732 NO. 18)
13	6	1	1010476-168	INSULATION, SLEEVING, ELEC HEAT SHRINK
	7	AR	MIL-W-16878/1B-24-19STND WIRE-WHITE	
	8	AR	MIL-W-16878/1B -20-19 STND WIRE-WHITE	

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE - NONE
REV LTR ~~D~~ E
SHEET 4 OF 13 ~~12~~

GFF WIRING HARNESS A ~~D~~ E 1015735

CONDUCTOR NUMBER		ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	FROM: TERMINATION SPEC. 1 ITEM NO.	FROM: NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	TO: TERMINATION SPEC 1 ITEM NO.	TO: NO.	
A	1	1	495	45A3P1-S3	20	N		110	45A3J7- 3	20	N		73	
A	2	1	325	45A3P1-A6	20	N		75	45A3J7- 7	20	N		69	
A	3	1	650	45A3P1-S1	20	N		109	45A3J7- 9	20	N		67	
A	4	1	500	45A3P1-A1	20	N		77	45A3J6- 1	20	N		65	
A	5	1	500	45A3P1-B1	20	N		78	45A3J6- 2	20	N		64	
A	6	1	775	45A3P1-P6	20	N		103	45A3J12-12	20	N		133	
A	7	1	660	45A3P1-D2	20	N		83	45A3J6- 9	20	N		61	
A	8	1	800	45A3P1-R6	20	N		108	45A3J12-13	20	N		135	
A	9	1	850	45A3P1-S6	20	N		113	45A3J12-15	20	N		138	
A	10	1	900	45A3P1-N6	20	N		98	45A3J11- 3	20	N		140	
A	11	1	990	45A3P1-N5	20	N		99	45A3J11- 5	20	N		142	
A	12	1	1075	45A3P1-D1	20	N		85	45A3J4- 4	20	N		40	
A	13	8 ~~1~~	1360	45A3P1-R2	25 ~~20~~	Y ~~N~~		107	45A3J10- 7	25 ~~20~~	Y ~~N~~		157	
A	14	1	1200	45A3P1-F1	20	N		89	45A3J4-11	20	N		32	
A	15	1	1485	45A3P1-S2	20	N		112	45A3J10-19	20	N		168	
A	16	1	1480	45A3P1-S4	20	N		111	45A3J3- 3	20	N		21	
A	17	8 ~~1~~	550	45A3P1-R1	25 ~~20~~	Y ~~N~~		102	45A3J13- 5	25 ~~20~~	Y ~~N~~		119	
A	18	~~1~~	~~445~~	~~45A3P1-R3~~	~~20~~	~~N~~		~~105~~	~~45A3J7- 2~~	~~20~~	~~N~~		~~74~~	DELETED

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE - NONE
REV LTR ~~D~~ E
SHEET 5 OF 13 ~~12~~

GFF WIRING HARNESS A ~~D~~ E 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T I N 2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T I N 2	TO TERMINATION SPEC 1 ITEM NO.	NO.	
A 19	~~1~~	~~1700~~	~~45A3P1-R4~~	~~20N~~		~~108~~	~~45A3J2- 2~~	~~20N~~		~~10~~	DELETED
A 20	1	475	45A3P1-H6	20N		92	45A3J13-10	20N		124	
A 21	1	450	45A3P1-F6	20N		86	45A3J13- 9	20N		123	
A 22	1	1800	45A3P1-K1	20N		93	45A3J8- 7	20N		186	
A 23	1	1800	45A3P1-L1	20N		95	45A3J8- 4	20N		184	
A 24	1	1750	45A3P1-H1	20N		90	45A3J8- 1	20N		181	
A 25	1	1595	45A3P1-M3	20N		101	45A3J9- 7	20N		175	
A 26	1	1545	45A3P1-N3	20N		100	45A3J9- 4	20N		173	
A 27	1	1470	45A3P1-L3	20N		96	45A3J9- 1	20N		170	
A 28	1	1320	45A3P1-F3	20N		88	45A3J10-11	20N		162	
A 29	1	1170	45A3P1-D3	20N		84	45A3J10- 4	20N		154	
A 30	1	774	45A3P1-F2	20N		87	45A3J12- 9	20N		130	
A 31	1	720	45A3P1-B3	20N		79	45A3J12- 2	20N		127	
A 32	1	695	45A3P1-A3	20N		76	45A3J12- 1	20N		126	
A 33	1	375	45A3P1-L6	20N		97	45A3J13- 4	20N		117	
A 34	1	375	45A3P1-K6	20N		94	45A3J13- 3	20N		116	
A 35	1	400	45A3P1-G6	20N		91	45A3J13- 2	20N		115	
A 36	1	300	45A3P1-D6	20N		82	45A3J13- 1	20N		114	

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735	
SCALE - NONE	REV LTR ~~D~~ E	SHEET 6 OF 13 ~~12~~	

MIL 2085 · 4-63 WIR

GFF WIRING HARNESS A ~~D~~ E 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T I N 2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T I N 2	TO TERMINATION SPEC 1 ITEM NO.	NO.	
A 37	1	2000	45A3P1-R6	20N		104	45A3E2	20N		193	
A 38	1	500	45A3P1-C6	20N		81	45A3E1	20N	3	80	
A 39	1	650	45A3J1-21	12N	2	192	45A3J2- 6	20N		5	B
A 40	1	650	45A3J1-20	12N	2	192	45A3J2- 4	20N		7	B
A 41	1	600	45A3J1-28	12N	2	192	45A3J3- 6	20N		17	B
A 42	1	825	45A3J1-27	12N	2	192	45A3J3- 4	20N		19	B
A 43	1	1150	45A3J1-23	12N	2	192	45A3J4- 8	20N		35	C
A 44	1	1150	45A3J1-31	12N	2	192	45A3J4- 5	20N		39	C
A 45	1	1575	45A3J1- 2	12N	2	192	45A3J6- 7	20N		63	B
A 46	1	1875	45A3J1-36	12N	2	192	45A3J7- 6	20N		70	C
A 47	1	1875	45A3J1-35	12N	2	192	45A3J7- 4	20N		72	C
A 48	1	1800	45A3J1-19	12N	2	192	45A3J13- 7	20N		121	D
A 49	1	1675	45A3J1-11	12N	2	192	45A3J13-11	20N		125	D
A 50	1	1475	45A3J1- 3	12N	2	192	45A3J12- 7	20N		128	D
A 51	1	1050	45A3J1-32	12N	2	192	45A3J10- 5	20N		155	D
A 52	1	1000	45A3J1-24	12N	2	192	45A3J10- 8	20N		159	D
A 53	1	675	45A3J1-10	12N	2	192	45A3J9- 5	20N		174	D
A 54	1	725	45A3J1-18	12N	2	192	45A3J9- 8	20N		176	D

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735	
SCALE - NONE	REV LTR ~~D~~ E	SHEET 7 OF 13 ~~12~~	

MIL 2085 · 4-63 WIR

GFF WIRING HARNESS A ~~D~~ E 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T I N 2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T I N 2	TO TERMINATION SPEC 1 ITEM NO.	NO.	
A 55	1	500	45A3J1- 9	12N	2	192	45A3J8- 5	20N		185	B
A 56	1	325	45A3J1-17	12N	2	192	45A3J8- 8	20N		187	B
A 57	7	400	45A3J1- 1	12N	2	192	45A3E2	20N		193	
A 58	7	400	45A3J1-30	12N	2	192	45A3E2	20N		193	
A 59	7	400	45A3J1-37	12N	2	192	45A3E2	20N		193	
A 60	8 ~~1~~	300	45A3J7- 5	25Y ~~20N~~		71	45A3J13- 6	25Y ~~20N~~		120	B
A 61	1	300	45A3J7- 8	20N		68	45A3J13- 8	20N		122	B
A 62	8 ~~1~~	550 ~~200~~	45A3P1-R1 ~~45A3J13- 5~~	25Y ~~20N~~		105 ~~118~~	45A3J7-10	25Y ~~20N~~		66	~~B~~ E
A 63	1	300	45A3J12-12	20N		134	45A3J6-12	20N		58	B
A 64	1	300	45A3J12-13	20N		136	45A3J6-13	20N		57	B
A 65	1	350	45A3J6-13	20N		56	45A3J5-14	20N		46	B
A 66	1	600	45A3J5-18	20N		44	45A3J4-16	20N		28	B
A 67	1	370	45A3J11-18	20N		150	45A3J10-16	20N		165	E
A 68	1	600	45A3J12-13	20N		136A	45A3J11-14	20N		148	D
A 69	8 ~~1~~	425 ~~370~~	45A3J8-10 ~~45A3J4-16~~	25Y ~~20N~~		190 ~~27~~	45A3J2- 2	25Y ~~20N~~		10A	E
A 70	1	800	45A3J12-15	20N		137	45A3J10-14	20N		164	D
A 71	1	590	45A3J6-15	20N		54	45A3J4-14	25N		30	B
A 72	1	1100	45A3J12-15	20N		137A	45A3J6-15	25N		55	B

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735	
SCALE - NONE	REV LTR ~~D~~ E	SHEET 8 OF 13 ~~12~~	

MIL 2085 · 4-63 WIR

GFF WIRING HARNESS A ~~D~~ E 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T I N 2	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	T I N 2	TO TERMINATION SPEC 1 ITEM NO.	NO.	
A 73	1	270	45A3J6- 8	20N		62	45A3J5- 7	20N		50	C
A 74	1	400	45A3J6-10	20N		60	45A3J5-17	20N		42	B
A 75	1	400	45A3J6-11	20N		59	45A3J5-20	20N		45	B
A 76	1	370	45A3J5- 2	20N		53	45A3J4- 1	20N		41	C
A 77	1	300	45A3J11- 3	20N		141	45A3J5- 3	20N		52	E
A 78	1	300	45A3J11- 5	20N		143	45A3J5- 5	20N		51	E
A 79	1	345	45A3J5- 8	20N		49	45A3J4- 6	20N		38	B
A 80	1	390	45A3J5- 9	20N		48	45A3J4-13	20N		31	B
A 81	1	270	45A3J12- 8	20N		129	45A3J11- 7	20N		144	F
A 82	1	430	45A3J12-10	20N		131	45A3J11-17	20N		149	F
A 83	1	400	45A3J12-11	20N		132	45A3J11-20	20N		152	E
A 84	1	370	45A3J11- 2	20N		139	45A3J10- 1	20N		153	F
A 85	1	350	45A3J11- 8	20N		145	45A3J10- 6	20N		156	E
A 86	1	410	45A3J11- 9	20N		146	45A3J10-13	20N		163	F
A 87	1	270	45A3J10- 9	20N		160	45A3J9- 2	20N		171	E
A 88	1	270	45A3J10-10	20N		161	45A3J9- 3	20N		172	E
A 89	1	230	45A3J10-20	20N		169	45A3J3- 7	20N		16	E
A 90	1	300	45A3J10-19	20N		167	45A3J4-19	20N		26	C

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735	
SCALE - NONE	REV LTR ~~D~~ E	SHEET 9 OF 13 ~~12~~	

MIL 2085 · 4-63 WIR

GFF

WIRING HARNESS A

E 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	T I N	FROM NO.	TO CIRCUIT POINT	T I N	TO NO.	
A 91	1	600	45A3J4-19	20N	25	45A3J2- 9	20N	2	C
A 92	1	300	45A3J10-19	20N	167A	45A3J3- 9	20N	14	C
A 93	8 ~~1~~	1200 ~~300~~	45A3P1-R2 ~~45A3J10- 7~~	25Y ~~20N~~	106 ~~158~~	45A3J4- 7	25Y ~~20N~~	37	E
A 94	8 ~~1~~	700	45A3J4- 7	25Y ~~20N~~	36	45A3J2-10	25Y ~~20N~~	1A	B
A 95	~~1~~	~~300~~	~~45A3J9-10~~	~~20N~~	~~11~~	~~45A3J9-11~~	~~20N~~	~~180~~	~~B~~ DELETED
A 96	8 ~~1~~	400	45A3J10- 7	25Y ~~20N~~	158A	45A3J3-10	25Y ~~20N~~	12	B
A 97	8 ~~1~~	875 ~~307~~	45A3J8-11	25Y ~~20N~~	191	45A3J4- 7 ~~45A3J2-10~~	25Y ~~20N~~	36A ~~1~~	E
A 98	1	370	45A3J4-20	20N	24	45A3J2- 7	20N	4	C
A 99	1	707	45A3J4- 9	20N	34	45A3J8- 2	20N	182	E
A 100	1	707	45A3J4-10	20N	33	45A3J8- 3	20N	183	E
A 101	1	238	45A3J3- 3	20N	20	45A3J2- 3	20N	8	C
A 102	~~1~~	~~238~~	~~45A3J3- 2~~	~~20N~~	~~22~~	~~45A3J2- 2~~	~~20N~~	~~9~~	~~B~~ DELETED
A 103	8 ~~1~~	375	45A3J2- 5	25Y ~~20N~~	6	45A3J8-10	25Y ~~20N~~	189	F
A 104	1	325	45A3J2- 8	20N	3	45A3J8- 9	20N	188	F
A 105	8 ~~1~~	363	45A3J3- 5	25Y ~~20N~~	18	45A3J9-10	25Y ~~20N~~	178	F
A 106	1	313	45A3J3- 8	20N	15	45A3J9- 9	20N	177	F
A 107	1	150	45A3J11-14	20N	147	45A3J11-18	20N	151	F
A 108	1	150	45A3J5-14	20N	47	45A3J5-18	20N	43	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

1015735

SCALE - NONE | REV LTR E | SHEET 10 OF 13

MIL 2085 - 4-63 WIR

E 1015735

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	T I N	FROM NO.	TO CIRCUIT POINT	T I N	TO NO.	
A109	8	500	45A3J10-7	25Y	158	45A3J9-11	25Y	179	F
A110	8	250	45A3J13-6	25Y	120A	45A3J7-2	25Y	74	B
A111	8	480	45A3J9-10	25Y	178A	45A3J3-2	25Y	22	A

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

1015735

SCALE - NONE | REV LTR E | SHEET 11 OF 13

MIL 2085 - 4-63 WIR

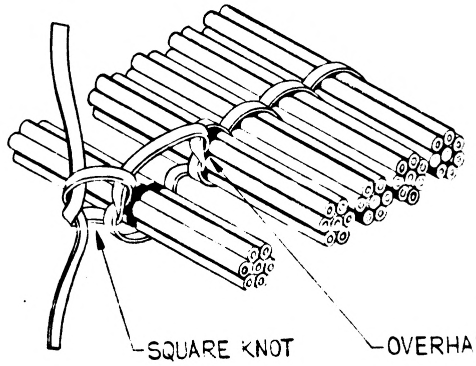

SQUARE KNOT
OVERHAND KNOT

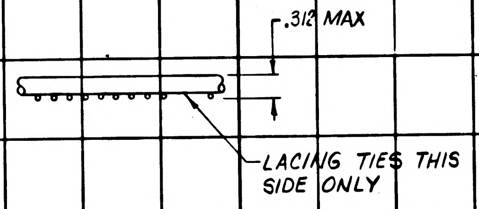
FIGURE 1
MULTIPLE SPOT TIE

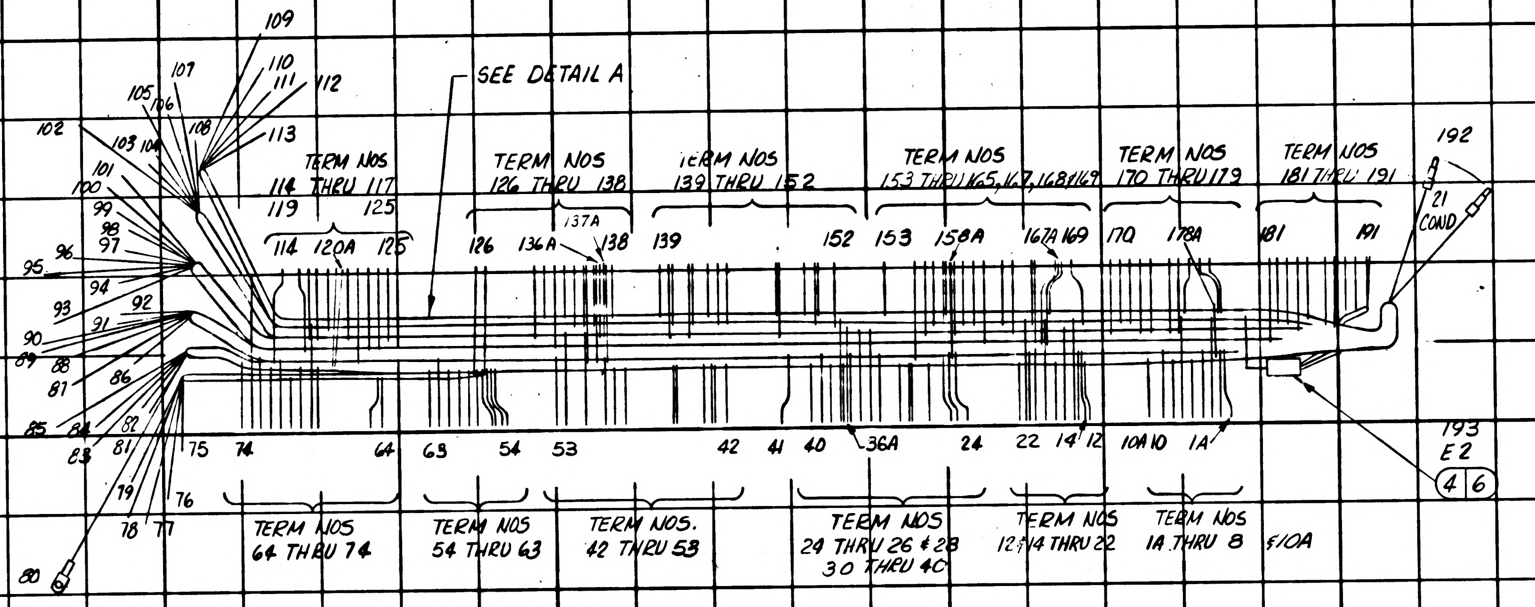
MANNED SPACECRAFT CENTER HOUSTON TEXAS	SIZE A	1015735	
SCALE - NONE	REV LTR E		SHEET 12 OF 13

E 1015735

REVISIONS TDRR 04773

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 05524		[illegible]	WK
B		REVISED PER TDRR 05534		[illegible]	WK
C		REVISED PER TDRR 05580		[illegible]	WK
D		REVISED PER TDRR 06733		[illegible]	WK
E		REVISED PER TDRR 12745		29 SEP 64	JWP


.312 MAX
LACING TIES THIS SIDE ONLY


SEE DETAIL A
109
110
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54
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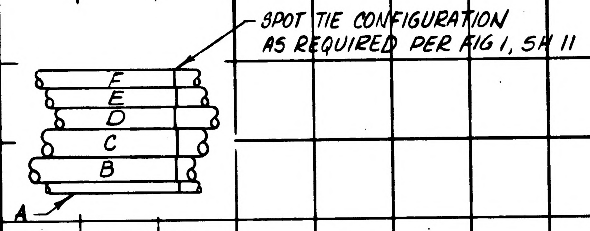
42
41
40
36A
24
22
14
12
10A
10
1A
TERM NOS 114 THRU 117 119 125
114
120A
125
TERM NOS 126 THRU 138
137A
126
136A
138
TERM NOS 139 THRU 152
139
152
TERM NOS 153 THRU 165, 167, 168 & 169
153
158A
167A
169
TERM NOS 170 THRU 179
170
178A
TERM NOS 181 THRU 191
181
191
192
A
21 COND
193
E2
4
6
TERM NOS 64 THRU 74
TERM NOS 54 THRU 63
TERM NOS. 42 THRU 53
TERM NOS 24 THRU 26 & 28 30 THRU 40
TERM NOS 12 & 14 THRU 22
TERM NOS 1A THRU 8
& 10A


SPOT TIE CONFIGURATION AS REQUIRED PER FIG 1, SH 11
F
E
D
C
B
A

CHANNELS
DETAIL A
SCALE 2:1

NEXT ASSY	USED ON
1007143	1007153

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9 497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Wolski DATE 1 OCT 63
CHECKED [illegible] 24 OCT 63
APPROVAL [illegible] 10-25-63
APPROVAL [illegible] 24 OCT 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
(TRAY 3)

CODE IDENT NO.
SIZE D
1015735
SCALE 1:1
SHEET 1 OF 13

APPLICATION		REVISIONS TDRR 04983			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1007143	1007153	A	REVISED PER TDRR 05524	27 Dec 63	EPH WK
		B	REVISED PER TDRR 05534	27 Dec 63	PK WK
		C	REVISED PER TDRR 05580	31 Dec 63	JWC PPK WK
		D	REVISED PER TDRR 06733	3/3/64	WK
	Ⓜ	E	REVISED PER TDRR 12745	28 SEP 64	WP
		F	REPLACED WITH CHANGE BY REV G PER TDRR 19781	7 JUN 65	WSM / EF

Ⓕ **REPLACED WITH CHANGE BY REV G**

Charleston
24 Oct 63

REV														
SHEET														
REV STATUS	REV	F	E	E	E	E	E	E	E	E	E	E	E	E
OF SHEETS	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13

AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
ACSP PN	
DRAWN J Wolski DATE 1 OCT 63 CHECKED Haynes 24 Oct 63 APPROVAL 10/25/63 APPROVAL 24 OCT 63 11/19/63	WIRING HARNESS "A" (TRAY 3)
NASA APPROVAL MIT APPROVAL 11/20/63	CODE IDENT NO. — SIZE A — 1015735 — REV F
CONTRACT NAS 9-497	SCALE — — SHEET 1 OF 13

GENERAL NOTES

NOTE NUMBER	DESCRIPTION
1	NOT APPLICABLE
2	DELETED
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	LACE HARNESS USING ITEM 5
8	IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
9	DELETED
10	GRID MODULE IS 1 INCH.
11	UNLESS OTHERWISE SPECIFIED --- FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.
12	BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.
13	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
14	IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY
15	INSTALL ITEM 2 PER ND1002066

GENERAL NOTES

NOTE NUMBER	DESCRIPTION
16	INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

APPLICATION

NEXT ASSY	USED ON
1007143	1007153

REVISIONS TDRR 04783

SYM	DESCRIPTION	DATE	APPROVAL
G	REPLACES REV F WITH CHANGE PER TDRR 17781	11 MAY 65	PW

Ⓖ REPLACES REV (F) WITH CHANGE

REV																
SHEET																
REV STATUS OF SHEETS REV	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN J.WOLSKI DATE 1 OCT 63
CHECKED J.SAYLES 24 OCT 63
APPROVAL SHAWCZYN 10-25-63
APPROVAL A.R. Test 6/1/65
NASA APPROVAL W.G. Rhine 6-2-65
MIT APPROVAL 6-2-65
CONTRACT NAS9-497

WIRING HARNESS A
(TRAY 3)

CODE IDENT NO. SIZE A 1015735 REV G
SCALE - SHEET 1 OF 16

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	AR	1010639- 2	WIRE 60 FT 10.5 IN TOTAL LENGTH
13	2	21	1010738- 6	CONTACT, ELECTRICAL SOCKET
13	3	1	MS25036- 44	TERMINAL LUG
	4	1	1010711- 1	SPLICE REDUCER
	5	AR	MIL-T-713	LACING TAPE TYPE P, CLASS 2, BLACK (ES-2732 NO. 18)
13	6	1	1010476-168	INSULATION, SLEEVING, ELEC HEAT SHRINK
	7	AR	MIL-W-16878/1B-24-19STND	WIRE-WHITE
	8	AR	MIL-W-16878/1B-20-19STND	WIRE-WHITE

WIRING HARNESS A 1015735 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 1	1	4.95	45A3P1-S3	110				.20	NO			
			45A3J7-3	73				.20	NO			
A 2	1	3.25	45A3P1-A6	75				.20	NO			
			45A3J7-7	69				.20	NO			
A 3	1	6.50	45A3P1-S1	109				.20	NO			
			45A3J7-9	67				.20	NO			
A 4	1	5.00	45A3P1-A1	77				.20	NO			
			45A3J6-1	65				.20	NO			
A 5	1	5.00	45A3P1-B1	78				.20	NO			
			45A3J6-2	64				.20	NO			
A 6	1	7.75	45A3P1-P6	103				.20	NO			
			45A3J12-12	133				.20	NO			
A 7	1	6.60	45A3P1-D2	83				.20	NO			
			45A3J6-9	61				.20	NO			
A 8	1	8.00	45A3P1-R6	108				.20	NO			
			45A3J12-13	135				.20	NO			
A 9	1	8.50	45A3P1-S6	113				.20	NO			
			45A3J12-15	138				.20	NO			
A 10	1	9.00	45A3P1-N6	98				.20	NO			
			45A3J11-3	140				.20	NO			
A 11	1	9.90	45A3P1-N5	99				.20	NO			
			45A3J11-5	142				.20	NO			
A 12	1	10.75	45A3P1-D1	85				.20	NO			
			45A3J4-4	40				.20	NO			

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735
SCALE-NONE	REV LTR G	SHEET 5 OF 16

MIL 2084 4-63

WIRING HARNESS A 1015735 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 13	8	13.60	45A3P1-R2	107				.25	YES			
			45A3J10-7	157				.25	YES			
A 14	1	12.00	45A3P1-F1	89				.20	NO			
			45A3J4-11	32				.20	NO			
A 15	1	14.85	45A3P1-S2	112				.20	NO			
			45A3J10-19	168				.20	NO			
A 16	1	14.80	45A3P1-S4	111				.20	NO			
			45A3J3-3	21				.20	NO			
A 17	8	5.50	45A3P1-R1	102				.25	YES			
			45A3J13-5	119				.25	YES			
A 18			DELETED									
A 19			DELETED									
A 20	1	4.75	45A3P1-H6	92				.20	NO			
			45A3J13-10	124				.20	NO			
A 21	1	4.50	45A3P1-F6	86				.20	NO			
			45A3J13-9	123				.20	NO			
A 22	1	18.00	45A3P1-K1	93				.20	NO			
			45A3J8-7	186				.20	NO			
A 23	1	18.00	45A3P1-L1	95				.20	NO			
			45A3J8-4	184				.20	NO			
A 24	1	17.50	45A3P1-H1	90				.20	NO			
			45A3J8-1	181				.20	NO			

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735
SCALE-NONE	REV LTR G	SHEET 6 OF 16

MIL 2084 4-63

WIRING HARNESS A 1015735 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 25	1	15.95	45A3P1-M3	101				.20	NO			
			45A3J9-7	175				.20	NO			
A 26	1	15.45	45A3P1-N3	100				.20	NO			
			45A3J9-4	173				.20	NO			
A 27	1	14.70	45A3P1-L3	96				.20	NO			
			45A3J9-1	170				.20	NO			
A 28	1	13.20	45A3P1-F3	88				.20	NO			
			45A3J10-11	162				.20	NO			
A 29	1	11.70	45A3P1-D3	84				.20	NO			
			45A3J10-4	154				.20	NO			
A 30	1	7.74	45A3P1-F2	87				.20	NO			
			45A3J12-9	130				.20	NO			
A 31	1	7.20	45A3P1-B3	79				.20	NO			
			45A3J12-2	127				.20	NO			
A 32	1	6.95	45A3P1-A3	76				.20	NO			
			45A3J12-1	126				.20	NO			
A 33	1	3.75	45A3P1-L6	97				.20	NO			
			45A3J13-4	117				.20	NO			
A 34	1	3.75	45A3P1-K6	94				.20	NO			
			45A3J13-3	116				.20	NO			
A 35	1	4.00	45A3P1-G6	91				.20	NO			
			45A3J13-2	115				.20	NO			
A 36	1	3.00	45A3P1-D6	82				.20	NO			
			45A3J13-1	114				.20	NO			

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735
SCALE-NONE	REV LTR G	SHEET 7 OF 16

MIL 2084 4-63

WIRING HARNESS A 1015735 G

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 37	1	20.00	45A3P1-R6	104				.20	NO			
			45A3E2	193				.20	NO			
A 38	1	5.00	45A3P1-C6	81				.20	NO			
			45A3E1	80				.20	NO		3	
A 39	1	6.50	45A3J1-21	192				.12	NO		2	B
			45A3J2-6	5				.20	NO			
A 40	1	6.50	45A3J1-20	192				.12	NO		2	B
			45A3J2-4	7				.20	NO			
A 41	1	6.00	45A3J1-28	192				.12	NO		2	B
			45A3J3-6	17				.20	NO			
A 42	1	8.25	45A3J1-27	192				.12	NO		2	B
			45A3J3-4	19				.20	NO			
A 43	1	11.50	45A3J1-23	192				.12	NO		2	C
			45A3J4-8	35				.20	NO			
A 44	1	11.50	45A3J1-31	192				.12	NO		2	C
			45A3J4-5	39				.20	NO			
A 45	1	15.75	45A3J1-2	192				.12	NO		2	B
			45A3J6-7	63				.20	NO			
A 46	1	18.75	45A3J1-36	192				.12	NO		2	C
			45A3J7-6	70				.20	NO			
A 47	1	18.75	45A3J1-35	192				.12	NO		2	C
			45A3J7-4	72				.20	NO			
A 48	1	18.00	45A3J1-19	192				.12	NO		2	D
			45A3J13-7	121				.20	NO			

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735
SCALE-NONE	REV LTR G	SHEET 8 OF 16

MIL 2084 4-63

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 49	1	16.75	45A3J1-11 45A3J13-11	192 125				.12 .20	NO NO		2	D
A 50	1	14.75	45A3J1-3 45A3J12-7	192 128				.12 .20	NO NO		2	D
A 51	1	10.50	45A3J1-32 45A3J10-5	192 155				.12 .20	NO NO		2	D
A 52	1	10.00	45A3J1-24 45A3J10-8	192 159				.12 .20	NO NO		2	D
A 53	1	6.75	45A3J1-10 45A3J9-5	192 174				.12 .20	NO NO		2	D
A 54	1	7.25	45A3J1-18 45A3J9-8	192 176				.12 .20	NO NO		2	D
A 55	1	5.00	45A3J1-9 45A3J8-5	192 185				.12 .20	NO NO		2	B
A 56	1	3.25	45A3J1-17 45A3J8-8	192 187				.12 .20	NO NO		2	B
A 57	7	4.00	45A3J1-1 45A3E2	192 193				.12 .20	NO NO		2	
A 58	7	4.00	45A3J1-30 45A3E2	192 193				.12 .20	NO NO		2	
A 59	7	4.00	45A3J1-37 45A3E2	192 193				.12 .20	NO NO		2	
A 60	8	3.00	45A3J7-5 45A3J13-6	71 120				.25 .25	YES YES			B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 61	1	3.00	45A3J7-8 45A3J13-8	68 122				.20 .20	NO NO			B
A 62	8	5.50	45A3P1-R1 45A3J7-10	105 66				.25 .25	YES YES			E
A 63	1	3.00	45A3J12-12 45A3J6-12	134 58				.20 .20	NO NO			B
A 64	1	3.00	45A3J12-13 45A3J6-13	136 57				.20 .20	NO NO			B
A 65	1	3.50	45A3J6-13 45A3J5-14	56 46				.20 .20	NO NO			B
A 66	1	6.00	45A3J5-18 45A3J4-16	44 28				.20 .20	NO NO			B
A 67	1	3.70	45A3J11-18 45A3J10-16	150 165				.20 .20	NO NO			E
A 68	1	6.00	45A3J12-13 45A3J11-14	136A 148				.20 .20	NO NO			D
A 69	8	4.25	45A3J8-10 45A3J2-2	190 10A				.25 .25	YES YES			E
A 70	1	8.00	45A3J12-15 45A3J10-14	137 164				.20 .20	NO NO			D
A 71	1	5.90	45A3J6-15 45A3J4-14	54 30				.20 .25	NO NO			B
A 72	1	11.00	45A3J12-15 45A3J6-15	137A 55				.20 .25	NO NO			B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 73	1	2.70	45A3J6-8 45A3J5-7	62 50				.20 .20	NO NO			C
A 74	1	4.00	45A3J6-10 45A3J5-17	60 42				.20 .20	NO NO			B
A 75	1	4.00	45A3J6-11 45A3J5-20	59 45				.20 .20	NO NO			B
A 76	1	3.70	45A3J5-2 45A3J4-1	53 41				.20 .20	NO NO			C
A 77	1	3.00	45A3J11-3 45A3J5-3	141 52				.20 .20	NO NO			E
A 78	1	3.00	45A3J11-5 45A3J5-5	143 51				.20 .20	NO NO			E
A 79	1	3.45	45A3J5-8 45A3J4-6	49 38				.20 .20	NO NO			B
A 80	1	3.90	45A3J5-9 45A3J4-13	48 31				.20 .20	NO NO			B
A 81	1	2.70	45A3J12-8 45A3J11-7	129 144				.20 .20	NO NO			F
A 82	1	4.30	45A3J12-10 45A3J11-17	131 149				.20 .20	NO NO			F
A 83	1	4.00	45A3J12-11 45A3J11-20	132 152				.20 .20	NO NO			E
A 84	1	3.70	45A3J11-2 45A3J10-1	139 153				.20 .20	NO NO			F

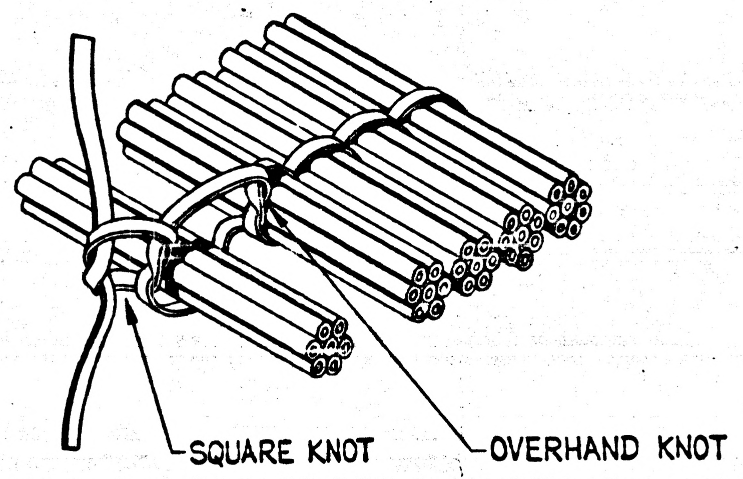
LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 85	1	3.50	45A3J11-8 45A3J10-6	145 156				.20 .20	NO NO			E
A 86	1	4.10	45A3J11-9 45A3J10-13	146 163				.20 .20	NO NO			F
A 87	1	2.70	45A3J10-9 45A3J9-2	160 171				.20 .20	NO NO			E
A 88	1	2.70	45A3J10-10 45A3J9-3	161 172				.20 .20	NO NO			E
A 89	1	2.30	45A3J10-20 45A3J3-7	169 16				.20 .20	NO NO			E
A 90	1	3.00	45A3J10-19 45A3J4-19	167 26				.20 .20	NO NO			C
A 91	1	6.00	45A3J4-19 45A3J2-9	25 2				.20 .20	NO NO			C
A 92	1	3.00	45A3J10-19 45A3J3-9	167A 14				.20 .20	NO NO			C
A 93	8	12.00	45A3P1-R2 45A3J4-7	106 37				.25 .25	YES YES			E
A 94	8	7.00	45A3J4-7 45A3J2-10	36 1A				.25 .25	YES YES			B
A 95			DELETED									
A 96	8	4.00	45A3J10-7 45A3J3-10	158A 12				.25 .25	YES YES			B

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 97	8	8.75	45A3J8-11 45A3J4-7	191 36A				.25 .25	YES YES			E
A 98	1	3.70	45A3J4-20 45A3J2-7	24 4				.20 .20	NO NO			C
A 99	1	7.07	45A3J4-9 45A3J8-2	34 182				.20 .20	NO NO			E
A 100	1	7.07	45A3J4-10 45A3J8-3	33 183				.20 .20	NO NO			E
A 101	1	2.38	45A3J3-3 45A3J2-3	20 8				.20 .20	NO NO			C
A 102			DELETED									
A 103	8	3.75	45A3J2-5 45A3J8-10	6 189				.25 .25	YES YES			F
A 104	1	3.25	45A3J2-8 45A3J8-9	3 188				.20 .20	NO NO			F
A 105	8	3.63	45A3J3-5 45A3J9-10	18 178				.25 .25	YES YES			F
A 106	1	3.13	45A3J3-8 45A3J9-9	15 177				.20 .20	NO NO			F
A 107	1	1.50	45A3J11-14 45A3J11-18	147 151				.20 .20	NO NO			F
A 1C8	1	1.50	45A3J5-14 45A3J5-18	47 43				.20 .20	NO NO			

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE-NONE
REV LTR G
SHEET 13 OF 16

LEAD IDENT	WIRE MATL ITEM	LEAD LG	CIRCUIT PT FROM (A) TO (B)	TERM. AREA NO.	JKT STRIP LG	SHLD STRIP LG	LEAD CUT LG	INS STRIP LG	TIN	NOTE ONE, FIG	ACCESSORY ITEMS	REMARKS
A 109	8	5.00	45A3J10-7 45A3J9-11	158 179				.25 .25	YES YES			F
A 110	8	2.50	45A3J13-6 45A3J7-2	120A 74				.25 .25	YES YES			B
A 111	8	4.80	45A3J9-10 45A3J3-2	178A 22				.25 .25	YES YES			A

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE-NONE
REV LTR G
SHEET 14 OF 16



MASTER

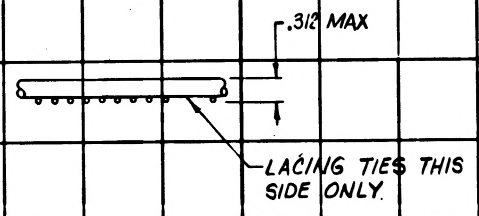
FIGURE 1
MULTIPLE SPOT TIE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE-NONE
REV LTR G
SHEET 15 OF 16

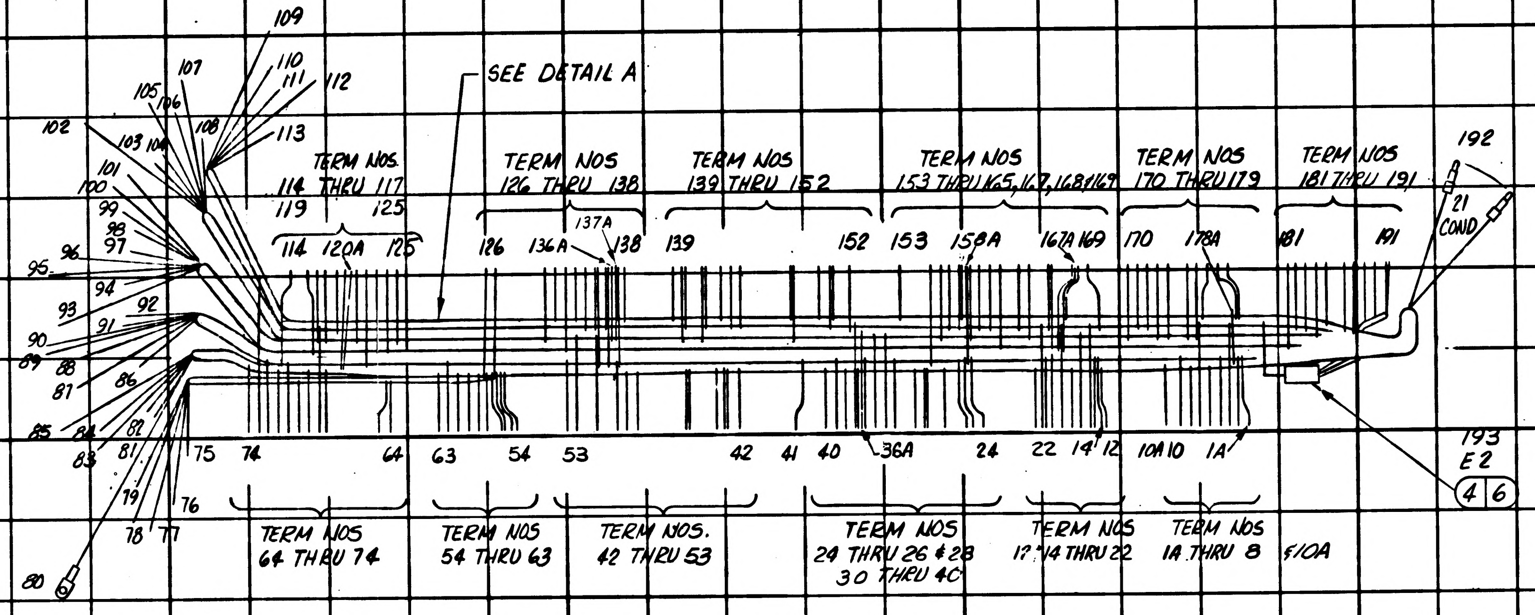
G 1015735

REVISIONS TOER 04773

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD.



.312 MAX
LACING TIES THIS SIDE ONLY



SEE DETAIL A
109
107
110
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94
93
92
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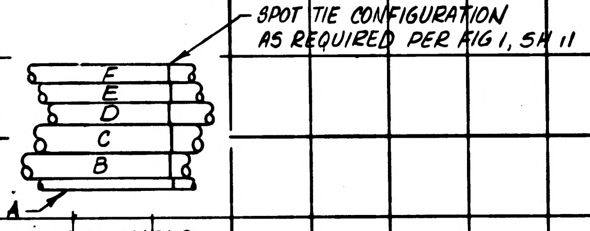
87
86
85
84
83
82
81
79
78
77
76
75
80
TERM NOS. 114 THRU 117 119 125
114
120A
125
TERM NOS 126 THRU 138
126
136A
137A
138
TERM NOS 139 THRU 152
139
152
TERM NOS 153 THRU 165, 167, 168 & 169
153
158A
167A
169
TERM NOS 170 THRU 179
170
178A
TERM NOS 181 THRU 191
181
191
192
21 COND
74
64
63
54
53
42
41
40
36A
24
22
14
12
10A
10
1A
193
E2
4 6
TERM NOS 64 THRU 74
TERM NOS 54 THRU 63
TERM NOS. 42 THRU 53
TERM NOS 24 THRU 26 & 28 30 THRU 40
TERM NOS 12, 14 THRU 22
TERM NOS 1A THRU 8 & 10A



SPOT TIE CONFIGURATION AS REQUIRED PER FIG 1, SH 11
F
E
D
C
B
A

CHANNELS
DETAIL A
SCALE 2:1

1007143	1007153
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ — + — + —
— — — — — —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J. Wolski DATE 1 OCT 63
CHECKED J. Tayler 24 OCT 63
APPROVAL 10-25-63
APPROVAL 24 OCT 63
NASA APPROVAL W. J. 6-2-65
MIT APPROVAL 6-2-65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
(TRAY 3)

CODE IDENT NO.
SIZE D
1015735
SCALE 1:1
SHEET 16 OF 16

PENNANT GENERAL NOTES

NOTE

1 SEE CONDUCTOR CHART

2 SEE CONDUCTOR CHART

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

6 SPIRALLING OF THE MARKING IS ALLOWED.

7 LACE HARNESS USING ITEM 5

8 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

9 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

10 GRID MODULE IS 1 INCH.

11 UNLESS OTHERWISE SPECIFIED ---
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH.
END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.

12 BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.

13 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

14 IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY

15 INSTALL ITEM 2 PER ND1002066

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735
SCALE-NONE	REV LTR +	SHEET 2 OF 12

PENNANT GENERAL NOTES

NOTE

16 INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE			
	STRIP		CUT	
	WIRE	JACKET	WIRE	SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735
SCALE-NONE	REV LTR +	SHEET 3 OF 12

APPLICATION		REVISIONS TDER 04283			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1007143	1007153				

Charleston 24 Oct 63

REV												
SHEET												
REV STATUS REV	+	+	+	+	+	+	+	+	+	+	+	+
OF SHEETS SHEET	1	2	3	4	5	6	7	8	9	10	11	12

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN J Wolski 7 OCT 63 DATE
CHECKED 24 Oct 63
APPROVAL 10/25/63
APPROVAL 24 OCT 63 11/4/63
NASA APPROVAL
MIT APPROVAL R Haly 11/20/63
CONTRACT NAS 9-497

WIRING HARNESS "A"
(TRAY 3)

CODE IDENT NO.	SIZE A	1015735	REV
SCALE —		SHEET 1 OF 12	

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	1	1010639- 2	WIRE 60 FT 10.5 IN TOTAL LENGTH
13	2	21	1010464- 1	CONTACT, ELECTRICAL PIN
13	3	1	1010649- 45	TERMINAL LUG
	4	1		SPLICE REDUCER
	5	AR	MIL-T-713	LACING TAPE TYPE P, CLASS 2, BLACK (ES-2732 NO. 18)
13	6	1	1010476-168	INSULATION, SLEEVING, ELEC HEAT SHRINK

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015735
SCALE-NONE	REV LTR +	SHEET 4 OF 12

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GFF WIRING HARNESS A + 1015735

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.	ROUTING
A 19	1	1455	45A3P1-R4	20	N		106	45A3J3- 2	20	N		23	
A 20	1	475	45A3P1-H6	20	N		92	45A3J13-10	20	N		124	
A 21	1	450	45A3P1-F6	20	N		86	45A3J13- 9	20	N		123	
A 22	1	1800	45A3P1-K1	20	N		93	45A3J8- 7	20	N		186	
A 23	1	1800	45A3P1-L1	20	N		95	45A3J8- 4	20	N		184	
A 24	1	1750	45A3P1-H1	20	N		90	45A3J8- 1	20	N		181	
A 25	1	1595	45A3P1-M3	20	N		101	45A3J9- 7	20	N		175	
A 26	1	1545	45A3P1-N3	20	N		100	45A3J9- 4	20	N		173	
A 27	1	1470	45A3P1-L3	20	N		96	45A3J9- 1	20	N		170	
A 28	1	1320	45A3P1-F3	20	N		88	45A3J10-11	20	N		162	
A 29	1	1170	45A3P1-D3	20	N		84	45A3J10- 4	20	N		154	
A 30	1	774	45A3P1-F2	20	N		87	45A3J12- 9	20	N		130	
A 31	1	720	45A3P1-B3	20	N		79	45A3J12- 2	20	N		127	
A 32	1	695	45A3P1-A3	20	N		76	45A3J12- 1	20	N		126	
A 33	1	375	45A3P1-L6	20	N		97	45A3J13- 4	20	N		117	
A 34	1	375	45A3P1-K6	20	N		94	45A3J13- 3	20	N		116	
A 35	1	400	45A3P1-G6	20	N		91	45A3J13- 2	20	N		115	
A 36	1	300	45A3P1-D6	20	N		82	45A3J13- 1	20	N		114	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE-NONE REV LTR + SHEET 6 OF 12

MIL 2085 - 4-63 WIR

GFF WIRING HARNESS A + 1015735

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.	ROUTING
A 37	1	2000	45A3P1-R6	20	N		104	45A3E2	20	N		193	
A 38	1	500	45A3P1-C6	20	N		81	45A3E1	20	N	3	80	
A 39	1	650	45A3J1-21	12	N	2	192	45A3J2- 6	20	N		5	B
A 40	1	650	45A3J1-20	12	N	2	192	45A3J2- 4	20	N		7	B
A 41	1	600	45A3J1-28	12	N	2	192	45A3J3- 6	20	N		17	B
A 42	1	825	45A3J1-27	12	N	2	192	45A3J3- 4	20	N		19	B
A 43	1	1150	45A3J1-23	12	N	2	192	45A3J4- 8	20	N		35	C
A 44	1	1150	45A3J1-34	12	N	2	192	45A3J4- 5	20	N		39	C
A 45	1	1575	45A3J1- 2	12	N	2	192	45A3J6- 7	20	N		63	B
A 46	1	1875	45A3J1-36	12	N	2	192	45A3J7- 6	20	N		70	C
A 47	1	1875	45A3J1-35	12	N	2	192	45A3J7- 4	20	N		72	C
A 48	1	1800	45A3J1-19	12	N	2	192	45A3J13- 7	20	N		121	D
A 49	1	1675	45A3J1-11	12	N	2	192	45A3J13-11	20	N		125	D
A 50	1	1475	45A3J1- 3	12	N	2	192	45A3J12- 7	20	N		128	D
A 51	1	1050	45A3J1-32	12	N	2	192	45A3J10- 5	20	N		155	D
A 52	1	1000	45A3J1-33	12	N	2	192	45A3J10- 8	20	N		159	D
A 53	1	675	45A3J1-10	12	N	2	192	45A3J9- 5	20	N		174	D
A 54	1	725	45A3J1-18	12	N	2	192	45A3J9- 8	20	N		176	D

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE-NONE REV LTR + SHEET 7 OF 12

MIL 2085 - 4-63 WIR

GFF WIRING HARNESS A + 1015735

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.	ROUTING
A 1	1	495	45A3P1-S3	20	N		110	45A3J7- 3	20	N		73	
A 2	1	325	45A3P1-A6	20	N		75	45A3J7- 7	20	N		69	
A 3	1	650	45A3P1-S1	20	N		109	45A3J7- 9	20	N		67	
A 4	1	500	45A3P1-A1	20	N		77	45A3J6- 1	20	N		65	
A 5	1	500	45A3P1-B1	20	N		78	45A3J6- 2	20	N		64	
A 6	1	775	45A3P1-P6	20	N		103	45A3J12-12	20	N		133	
A 7	1	660	45A3P1-D2	20	N		83	45A3J6- 9	20	N		61	
A 8	1	800	45A3P1-R6	20	N		108	45A3J12-13	20	N		135	
A 9	1	850	45A3P1-S6	20	N		113	45A3J12-15	20	N		138	
A 10	1	900	45A3P1-N6	20	N		98	45A3J11- 3	20	N		140	
A 11	1	990	45A3P1-N5	20	N		99	45A3J11- 5	20	N		142	
A 12	1	1075	45A3P1-D1	20	N		85	45A3J4- 4	20	N		40	
A 13	1	1360	45A3P1-R2	20	N		107	45A3J10- 7	20	N		157	
A 14	1	1200	45A3P1-F1	20	N		89	45A3J4-11	20	N		32	
A 15	1	1485	45A3P1-S2	20	N		112	45A3J10-19	20	N		168	
A 16	1	1480	45A3P1-S4	20	N		111	45A3J3- 3	20	N		21	
A 17	1	550	45A3P1-R1	20	N		102	45A3J13- 5	20	N		119	
A 18	1	445	45A3P1-R3	20	N		105	45A3J7- 2	20	N		74	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE-NONE REV LTR + SHEET 5 OF 12

MIL 2085 - 4-63 WIR

GFF WIRING HARNESS A + 1015735

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.	ROUTING
A 55	1	500	45A3J1- 9	12	N	2	192	45A3J8- 5	20	N		185	B
A 56	1	325	45A3J1-17	12	N	2	192	45A3J8- 8	20	N		187	B
A 57	1	400	45A3J1- 1	12	N	2	192	45A3E2	20	N		193	
A 58	1	400	45A3J1-30	12	N	2	192	45A3E2	20	N		193	
A 59	1	400	45A3J1-37	12	N	2	192	45A3E2	20	N		193	
A 60	1	300	45A3J7- 5	20	N		71	45A3J13- 6	20	N		120	B
A 61	1	300	45A3J7- 8	20	N		68	45A3J13- 8	20	N		122	B
A 62	1	200	45A3J13- 5	20	N		118	45A3J7-10	20	N		66	B
A 63	1	300	45A3J12-12	20	N		134	45A3J6-12	20	N		58	B
A 64	1	300	45A3J12-13	20	N		136	45A3J6-13	20	N		57	B
A 65	1	350	45A3J6-13	20	N		56	45A3J5-18	20	N		44	B
A 66	1	300	45A3J5-14	20	N		46	45A3J11-14	20	N		148	B
A 67	1	370	45A3J11-18	20	N		150	45A3J10-16	20	N		165	E
A 68	1	300	45A3J10-16	20	N		166	45A3J4-16	20	N		28	B
A 69	1	370	45A3J4-16	20	N		27	45A3J2- 2	20	N		10	B
A 70	1	300	45A3J12-15	20	N		137	45A3J6-15	20	N		55	B
A 71	1	590	45A3J6-15	20	N		54	45A3J4-14	25	N		30	B
A 72	1	300	45A3J4-14	20	N		29	45A3J10-14	25	N		164	B

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE-NONE REV LTR + SHEET 8 OF 12

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GFF

WIRING HARNESS A + 1015735

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	▷2	TIN	▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	▷2	TIN	▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 91	1	210	45A3J4-19	20	N			25	45A3J3- 9	20	N			14	C
A 92	1	230	45A3J3- 9	20	N			13	45A3J2- 9	20	N			2	C
A 93	1	300	45A3J10- 7	20	N			158	45A3J4- 7	20	N			37	B
A 94	1	380	45A3J4- 7	20	N			36	45A3J3-10	20	N			12	B
A 95	1	300	45A3J3-10	20	N			11	45A3J9-11	20	N			180	B
A 96	1	245	45A3J9-11	20	N			179	45A3J8-11	20	N			190	F
A 97	1	307	45A3J8-11	20	N			191	45A3J2-10	20	N			1	E
A 98	1	370	45A3J4-20	20	N			24	45A3J2- 7	20	N			4	C
A 99	1	707	45A3J4- 9	20	N			34	45A3J8- 2	20	N			182	E
A 100	1	707	45A3J4-10	20	N			33	45A3J8- 3	20	N			183	E
A 101	1	238	45A3J3- 3	20	N			20	45A3J2- 3	20	N			8	C
A 102	1	238	45A3J3- 2	20	N			22	45A3J2- 2	20	N			9	B
A 103	1	375	45A3J2- 5	20	N			6	45A3J8-10	20	N			189	F
A 104	1	325	45A3J2- 8	20	N			3	45A3J8- 9	20	N			188	F
A 105	1	363	45A3J3- 5	20	N			18	45A3J9-10	20	N			178	F
A 106	1	313	45A3J3- 8	20	N			15	45A3J9- 9	20	N			177	F
A 107	1	150	45A3J11-14	20	N			147	45A3J11-18	20	N			151	F
A 108	1	150	45A3J5-14	20	N			47	45A3J5-18	20	N			43	B

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE - NONE
REV LTR +
SHEET 10 OF 12

MIL 2085 - 4-63 WIR

GFF

WIRING HARNESS A 1015735

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ▷2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	▷2	TIN	▷2	TERMINATION SPEC. ▷1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	▷2	TIN	▷2	TERMINATION SPEC ▷1 ITEM NO.	NO.	ROUTING
A 73	1	270	45A3J6- 8	20	N			62	45A3J5- 7	20	N			50	C
A 74	1	400	45A3J6-10	20	N			60	45A3J5-20	20	N			45	B
A 75	1	400	45A3J6-11	20	N			59	45A3J5-17	20	N			48	B
A 76	1	370	45A3J5- 2	20	N			53	45A3J4- 1	20	N			41	C
A 77	1	300	45A3J11- 3	20	N			141	45A3J5- 3	20	N			52	E
A 78	1	300	45A3J11- 5	20	N			143	45A3J5- 5	20	N			51	E
A 79	1	345	45A3J5- 8	20	N			49	45A3J4- 6	20	N			38	B
A 80	1	390	45A3J5- 9	20	N			48	45A3J4-13	20	N			31	B
A 81	1	270	45A3J12- 8	20	N			129	45A3J11- 7	20	N			144	F
A 82	1	430	45A3J12-10	20	N			131	45A3J11-20	20	N			152	F
A 83	1	400	45A3J12-11	20	N			132	45A3J11-17	20	N			149	E
A 84	1	370	45A3J11- 2	20	N			139	45A3J10- 1	20	N			153	F
A 85	1	350	45A3J11- 8	20	N			145	45A3J10- 6	20	N			156	E
A 86	1	410	45A3J11- 9	20	N			146	45A3J10-13	20	N			163	F
A 87	1	270	45A3J10- 9	20	N			160	45A3J9- 2	20	N			171	E
A 88	1	270	45A3J10-10	20	N			161	45A3J9- 3	20	N			172	E
A 89	1	230	45A3J10-20	20	N			169	45A3J3- 7	20	N			16	E
A 90	1	300	45A3J10-19	20	N			167	45A3J4-19	20	N			26	C

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE - NONE
REV LTR +
SHEET 9 OF 12

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

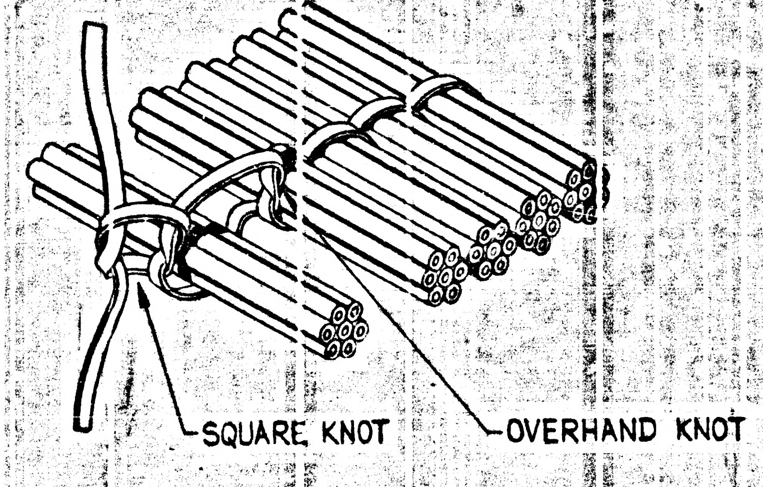
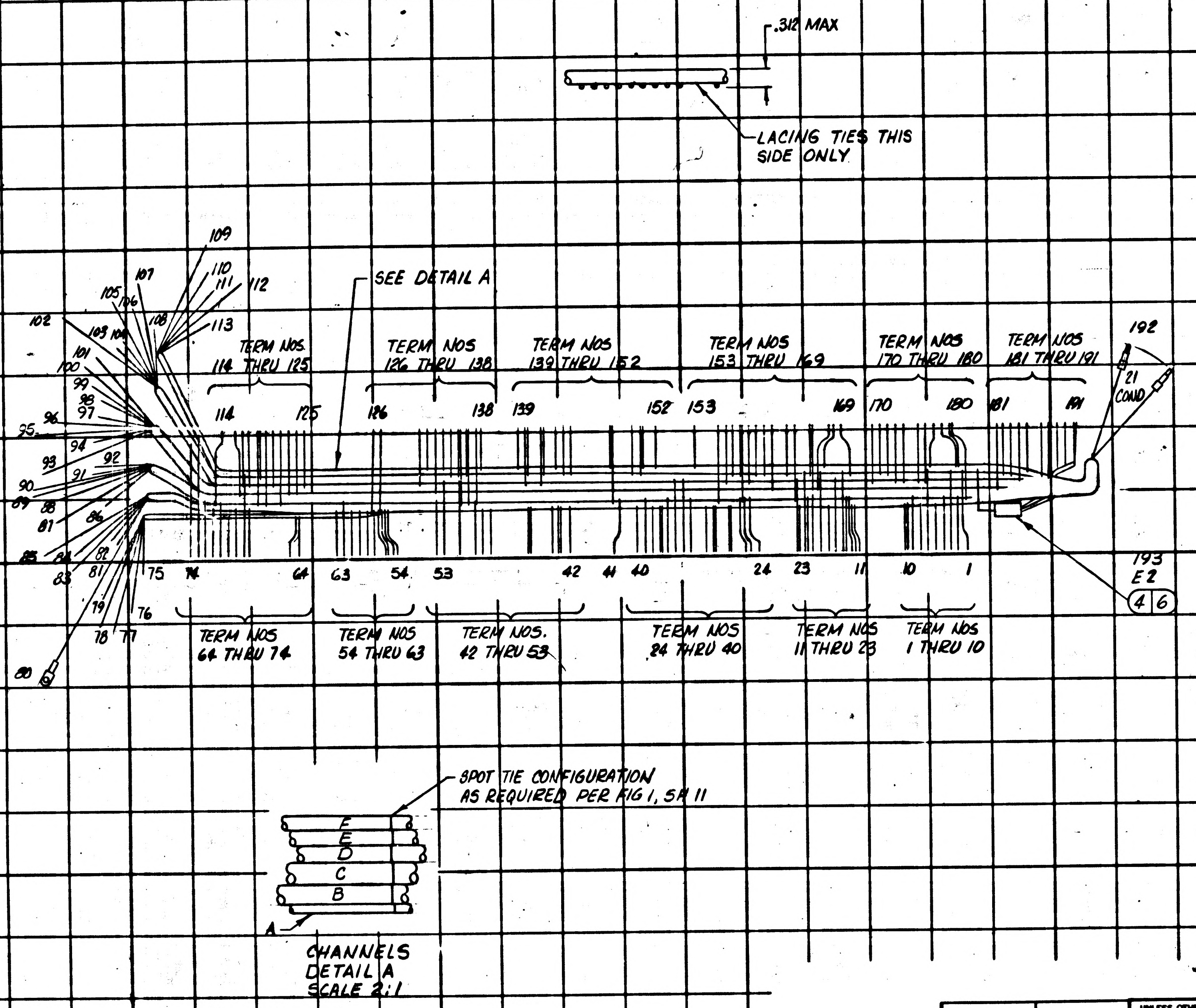


FIGURE I
MULTIPLE SPOT TIE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015735
SCALE - NONE
REV LTR
SHEET 11 OF 12

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPD.
		CHG NO.		



.312 MAX
LACING TIES THIS SIDE ONLY
SEE DETAIL A
TERM NOS. 114 THRU 125
TERM NOS 126 THRU 138
TERM NOS 139 THRU 152
TERM NOS 153 THRU 169
TERM NOS 170 THRU 180
TERM NOS 181 THRU 191
192
21 COND
193
E2
4
6
TERM NOS 64 THRU 74
TERM NOS 54 THRU 63
TERM NOS. 42 THRU 53
TERM NOS 24 THRU 40
TERM NOS 11 THRU 23
TERM NOS 1 THRU 10
114
125
126
138
139
152
153
169
170
180
181
191
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113
SPOT TIE CONFIGURATION AS REQUIRED PER FIG 1, SH 11
F
E
D
C
B
A

CHANNELS
DETAIL A
SCALE 2:1

1007143	1007153
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN J Wolski DATE 1 OCT 63
CHECKED J Saylor 24 Oct 63
APPROVAL 10-25-63
APPROVAL 24 OCT 63
NASA APPROVAL
MIT APPROVAL 11/20/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"
(TRAY 3)

CODE IDENT NO. SIZE D 1015735
SCALE 1:1 SHEET 12 OF 12

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

PENNANT NOTE	GENERAL NOTES
1	SEE CONDUCTOR CHART
2	SEE CONDUCTOR CHART
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	LACE HARNESS USING ITEM 5
8	IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
9	Y OR N IN TINNED COLUMN INDICATES YES OR NO.
10	GRID MODULE IS 1 INCH.
11	UNLESS OTHERWISE SPECIFIED --- FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.
12	BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.
13	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
14	IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY
15	INSTALL ITEM 2 PER ND1002066

PENNANT NOTE	GENERAL NOTES
16	INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

APPLICATION NEXT ASSY	USED ON
1007144	1007154

REVISIONS TDRR 04283

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05532	12/27/63	EPK

REV														
SHEET														
REV STATUS OF SHEETS REV	A	A	A	A	A	A	A	A	A	A	A	A	A	A
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

Charleston
24 Oct 63

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN C Tomsen DATE 7 OCT 63
CHECKED 24 Oct 63
APPROVAL 10/25/63
APPROVAL 29 OCT 63
11/1/63
NASA APPROVAL
MIT APPROVAL 11/20/63
CONTRACT NAS 9-497

WIRING HARNESS A
(TRAY 4)

CODE IDENT NO. | SIZE A | 1015736 | REV A
SCALE NONE | SHEET 1 OF 14

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	AR	1010639- 2	WIRE, 83 FT 0.5 IN TOTAL LENGTH
13	2	24	1010464- 2	CONTACT, ELEC
13	3	1	1010476-168	INSULATION, SLEEVING, ELEC, HEAT SHRINK
	4	1	1010711-	SPLICE REDUCER
	5	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2, BLACK (ES-2732 NO. 18)

GFR WIRING HARNESS A A 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ②	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	②	TIN	TERMINATION SPEC. ① ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	②	TIN	TERMINATION SPEC ① ITEM NO.	NO.	
A 19	1	660	45A4P1-S2	20	N		123	45A4J7-19	20	N		72	
A 20	1	740	45A4P1-S5	20	N		126	45A4J6- 3	20	N		66	
A 21	1	1150	45A4P1-A1	20	N		104	45A4J4- 1	20	N		32	
A 22	1	1110	45A4P1-A2	20	N		103	45A4J4- 2	20	N		31	
A 23	1	1300	45A4P1-P6	20	N		121	45A4J4-12	20	N		25	
A 24	1	1200	45A4P1-H6	20	N		116	45A4J4- 9	20	N		28	
A 25	1	1420	45A4P1-K3	20	N		113	45A4J3- 3	20	N		19	
A 26	1	1420	45A4P1-H3	20	N		113	45A4J3- 5	20	N		18	
A 27	1	1780	45A4P1-S4	20	N		125	45A4J2- 3	20	N		8	
A 28	1	750	45A4P1-R5	20	N		119A	45A4J6- 2	20	N		68	
A 29	1	1740	45A4P1-R4	20	N		120	45A4J2- 2	20	N		9	
A 30	1	1670	45A4P1-P3	20	N		117	45A4J8- 7	20	N		208	
A 31	1	1550	45A4P1-R1	20	N		118	45A4J9- 7	20	N		189	
A 32	1	1660	45A4P1-P2	20	N		119	45A4J8- 4	20	N		206	
A 33	1	1700	45A4P1-P1	20	N		118	45A4J8- 1	20	N		203	
A 34	1	1650	45A4P1-S1	20	N		122	45A4J9-19	20	N		201	
A 35	1	1500	45A4P1-G6	20	N		109	45A4J9-11	20	N		194	
A 36	1	1350	45A4P1-F6	20	N		109	45A4J9- 4	20	N		186	

① THE STD CONDUCTOR TERMINATION FIGURES ARE PER

② DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR A	SHEET 6 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A A 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ②	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	②	TIN	TERMINATION SPEC. ① ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	②	TIN	TERMINATION SPEC ① ITEM NO.	NO.	
A 37	1	1270	45A4P1-M3	20	N		113	45A4J10- 9	20	N		182	
A 38	1	1180	45A4P1-M2	20	N		115	45A4J10- 2	20	N		174	
A 39	1	1200	45A4P1-M1	20	N		114	45A4J10- 1	20	N		173	
A 40	1	800	45A4P1-N6	20	N		116	45A4J12- 9	20	N		159	
A 41	1	700	45A4P1-M6	20	N		116	45A4J12- 2	20	N		151	
A 42	1	800	45A4P1-L6	20	N		116	45A4J12- 1	20	N		150	
A 43	1	400	45A4P1-A6	20	N		102	45A4J13-20	20	N		149	
A 44	1	800	45A4P1-G1	20	N		105	45A4J13-17	20	N		146	
A 45	1	640	45A4P1-G5	20	N		108	45A4J13-13	20	N		140	
A 46	1	700	45A4P1-K1	20	N		114	45A4J13-12	20	N		139	
A 47	1	600	45A4P1-C1	20	N		96	45A4J13-11	20	N		138	
A 48	1	560	45A4P1-C2	20	N		97	45A4J13-10	20	N		137	
A 49	1	700	45A4P1-H1	20	N		114	45A4J13- 9	20	N		136	
A 50	1	560	45A4P1-D2	20	N		106A	45A4J13- 6	20	N		133	
A 51	1	490	45A4P1-F5	20	N		108	45A4J13- 4	20	N		131	
A 52	1	600	45A4P1-D1	20	N		105	45A4J13- 1	20	N		128	
A 53	1	2090	45A4P1-R2	20	N		120	45A4E2	20	N		215	B
A 54	1	300	45A4J7- 3	20	N		93	45A4J13- 2	20	N		129	E

① THE STD CONDUCTOR TERMINATION FIGURES ARE PER

② DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR A	SHEET 7 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A A 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ②	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	②	TIN	TERMINATION SPEC. ① ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	②	TIN	TERMINATION SPEC ① ITEM NO.	NO.	
A 1	1	340	45A4P1-D5	20	N		106	45A4J7- 1	20	N		95	
A 2	1	420	45A4P1-F3	20	N		107	45A4J7- 4	20	N		92	
A 3	1	200	45A4P1-D6	20	N		109	45A4J7- 6	20	N		90	
A 4	1	300	45A4P1-C6	20	N		101	45A4J7-10	20	N		85	
A 5	1	340	45A4P1-C5	20	N		100	45A4J7-11	20	N		84	
A 6	1	520	45A4P1-G3	20	N		107	45A4J7-13	20	N		82	
A 7	1	430	45A4P1-K4	20	N		112	45A4J7- 2	20	N		94	
A 8	1	560	45A4P1-R2	20	N		119	45A4J7- 7	20	N		88	
A 9	1	870	45A4P1-D3	20	N		107	45A4J5- 1	20	N		57	
A 10	1	780	45A4P1-F4	20	N		106	45A4J5- 4	20	N		54	
A 11	1	880	45A4P1-D4	20	N		106	45A4J5- 6	20	N		52	
A 12	1	780	45A4P1-C4	20	N		99	45A4J5-10	20	N		47	
A 13	1	820	45A4P1-C3	20	N		98	45A4J5-11	20	N		46	
A 14	1	980	45A4P1-G4	20	N		106	45A4J5-13	20	N		44	
A 15	1	600	45A4P1-S6	20	N		127	45A4J7-14	20	N		81	
A 16	1	680	45A4P1-H4	20	N		112	45A4J7-15	20	N		78	
A 17	1	600	45A4P1-R6	20	N		121	45A4J7-16	20	N		77	
A 18	1	720	45A4P1-S3	20	N		124	45A4J7-18	20	N		73	

① THE STD CONDUCTOR TERMINATION FIGURES ARE PER

② DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR A	SHEET 5 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A A 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH ②	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	②	TIN	TERMINATION SPEC. ① ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	②	TIN	TERMINATION SPEC ① ITEM NO.	NO.	
A 55	1	300	45A4J6-10	20	N		58A	45A4J12- 5	20	N		154	A
A 56	1	500	45A4J5- 7	20	N		51	45A4J11-10	20	N		171	A
A 57	1	225	45A4J11-10	20	N		172	45A4J10- 5	20	N		177	A
A 58	1	500	45A4J6-10	20	N		58	45A4J7- 7	20	N		89A	E
A 59	1	650	45A4J5- 2	20	N		56	45A4J7- 3	20	N		93A	E
A 60	1	575	45A4J7- 7	20	N		89	45A4J5- 7	20	N		50	E
A 61	1	300	45A4J7- 7	20	N		89B	45A4J13- 7	20	N		134	E
A 62	1	275	45A4J7-14	20	N		80	45A4J13-14	20	N		142	A
A 63	1	1500	45A4P1-S6	20	N		127A	45A4J9-14	20	N		196	A
A 64	1	475	45A4J9-14	20	N		197	45A4J4-15	20	N		21	A
A 65	1	620	45A4J7-14	20	N		80A	45A4J5-14	20	N		43	E
A 66	1	600	45A4J7-15	20	N		79	45A4J5-15	20	N		41	E
A 67	1	625	45A4J5-15	20	N		42	45A4J13-15	20	N		143	E
A 68	1	275	45A4J7-16	20	N		76	45A4J13-16	20	N		144	A
A 69	1	1375	45A4P1-R6	20	N		121A	45A4J4-13	20	N		24	B
A 70	1	500	45A4J4-13	20	N		23	45A4J9-16	20	N		198	A
A 71	1	275	45A4J9-16	20	N		199	45A4J3-14	20	N		13	E
A 72	1	175	45A4J3-14	20	N		14	45A4J3-18	20	N		11	E

① THE STD CONDUCTOR TERMINATION FIGURES ARE PER

② DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR A	SHEET 8 OF 14

MIL 2085 - 4-63 WIR

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 91	1	425	45A4J5-17	20	N		38	45A4J10-10	20	N		183	E
A 92	1	325	45A4J11- 5	20	N		165	45A4J10- 6	20	N		179	A
A 93	1	300	45A4J11- 8	20	N		168	45A4J10- 8	20	N		181	A
A 94	1	325	45A4J4- 8	20	N		29	45A4J3- 7	20	N		17	E
A 95	1	475	45A4J4-10	20	N		27	45A4J3-20	20	N		10	E
A 96	1	400	45A4J4-11	20	N		26	45A4J3-17	20	N		12	E
A 97	1	250	45A4J3- 2	20	N		20	45A4J9- 1	20	N		185	A
A 98	1	225	45A4J3- 8	20	N		16	45A4J9- 6	20	N		188	C
A 99	1	300	45A4J3- 9	20	N		15	45A4J9-13	20	N		195	A
A 100	1	300	45A4J2- 5	20	N		6	45A4J8-10	20	N		211	A
A 101	1	300	45A4J2- 7	20	N		4	45A4J9-20	20	N		202	A
A 102	1	275	45A4J2- 8	20	N		3	45A4J8- 9	20	N		210	A
A 103	1	325	45A4J9- 9	20	N		192	45A4J8- 2	20	N		204	A
A 104	1	325	45A4J9-10	20	N		193	45A4J8- 3	20	N		205	A
A 105	1	325	45A4J9-19	20	N		200	45A4J2- 9	20	N		2	A
A 106	1	450	45A4J9- 7	20	N		190	45A4J8-11	20	N		212	A
A 107	1	250	45A4J8-11	20	N		213	45A4J2-10	20	N		1	A
A 108	1	650	45A4J1-21	12	N	2	214	45A4J2- 6	20	N		5	E

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE REV LTR A SHEET 10 OF 14

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 109	1	650	45A4J1-20	12	N	2	214	45A4J2- 4	20	N		7	E
A 110	1	1200	45A4J1- 2	12	N	2	214	45A4J4- 7	20	N		30	E
A 111	1	220	45A4J1- 1	12	N	2	214	45A4E2	20	N		215	
A 112	1	1550	45A4J1-25	12	N	2	214	45A4J5- 8	20	N		49	C
A 113	1	1650	45A4J1-33	12	N	2	214	45A4J5- 5	20	N		53	C
A 114	1	1650	45A4J1-36	12	N	2	214	45A4J6- 6	20	N		63	C
A 115	1	1600	45A4J1-35	12	N	2	214	45A4J6- 4	20	N		65	C
A 116	1	1950	45A4J1-26	12	N	2	214	45A4J7- 8	20	N		87	E
A 117	1	2000	45A4J1-34	12	N	2	214	45A4J7- 5	20	N		91	E
A 118	1	1900	45A4J1-32	12	N	2	214	45A4J13- 5	20	N		132	A
A 119	1	1850	45A4J1-24	12	N	2	214	45A4J13- 8	20	N		135	A
A 120	1	1550	45A4J1-19	12	N	2	214	45A4J12- 7	20	N		157	B
A 121	1	1550	45A4J1-11	12	N	2	214	45A4J12-11	20	N		161	B
A 122	1	1350	45A4J1-27	12	N	2	214	45A4J11- 4	20	N		164	C
A 123	1	1350	45A4J1-28	12	N	2	214	45A4J11- 6	20	N		166	C
A 124	1	1050	45A4J1-31	12	N	2	214	45A4J9- 5	20	N		187	B
A 125	1	1200	45A4J1-18	12	N	2	214	45A4J10- 7	20	N		180	C
A 126	1	1200	45A4J1-10	12	N	2	214	45A4J10-11	20	N		184	C

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE REV LTR A SHEET 11 OF 14

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 73	1	620	45A4J5-16	20	N		39	45A4J7-16	20	N		76A	E
A 74	1	475	45A4J7-17	20	N		75	45A4J12-10	20	N		160	E
A 75	1	575	45A4J7-18	20	N		74	45A4J5-18	20	N		37	E
A 76	1	300	45A4J7-18	20	N		74A	45A4J13-18	20	N		147	A
A 77	1	275	45A4J7-19	20	N		71	45A4J6- 9	20	N		59	E
A 78	1	350	45A4J7-19	20	N		71A	45A4J13-19	20	N		148A	A
A 79	1	225	45A4J5-19	20	N		35	45A4J11- 9	20	N		169	A
A 80	1	525	45A4J11- 9	20	N		170	45A4J13-19	20	N		148	A
A 81	1	500	45A4J7- 9	20	N		86	45A4J12- 3	20	N		152	A
A 82	1	475	45A4J7-12	20	N		83	45A4J12- 4	20	N		153	A
A 83	1	250	45A4J7-20	20	N		70	45A4J6- 7	20	N		62	E
A 84	1	425	45A4J6- 3	20	N		67	45A4J11- 3	20	N		163	E
A 85	1	525	45A4J6- 2	20	N		69	45A4J11- 2	20	N		162	A
A 86	1	300	45A4J6- 5	20	N		64	45A4J12- 6	20	N		156	A
A 87	1	300	45A4J6- 8	20	N		61	45A4J12- 8	20	N		158	E
A 88	1	225	45A4J5-20	20	N		33	45A4J11- 7	20	N		167	C
A 89	1	450	45A4J5- 9	20	N		48	45A4J10- 3	20	N		175	A
A 90	1	425	45A4J5-12	20	N		45	45A4J10- 4	20	N		176	A

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE REV LTR A SHEET 9 OF 14

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN 2	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN 2	TERMINATION SPEC 1 ITEM NO.	NO.	
A 127	1	1050	45A4J1-23	12	N	2	214	45A4J9- 8	20	N		191	B
A 128	1	700	45A4J1- 9	12	N	2	214	45A4J8- 5	20	N		207	B
A 129	1	650	45A4J1-17	12	N	2	214	45A4J8- 8	20	N		209	B
A 130	1	220	45A4J1-29	12	N	2	214	45A4E2	20	N		215	
A 131	1	220	45A4J1-38	12	N	2	214	45A4E2	20	N		215	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE REV LTR A SHEET 12 OF 14

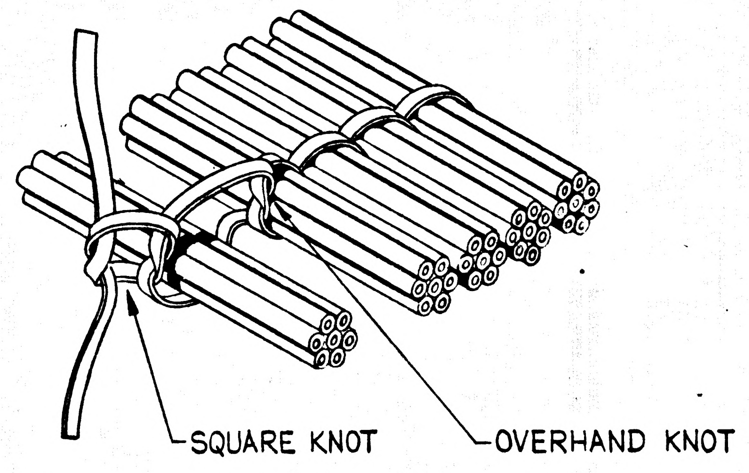
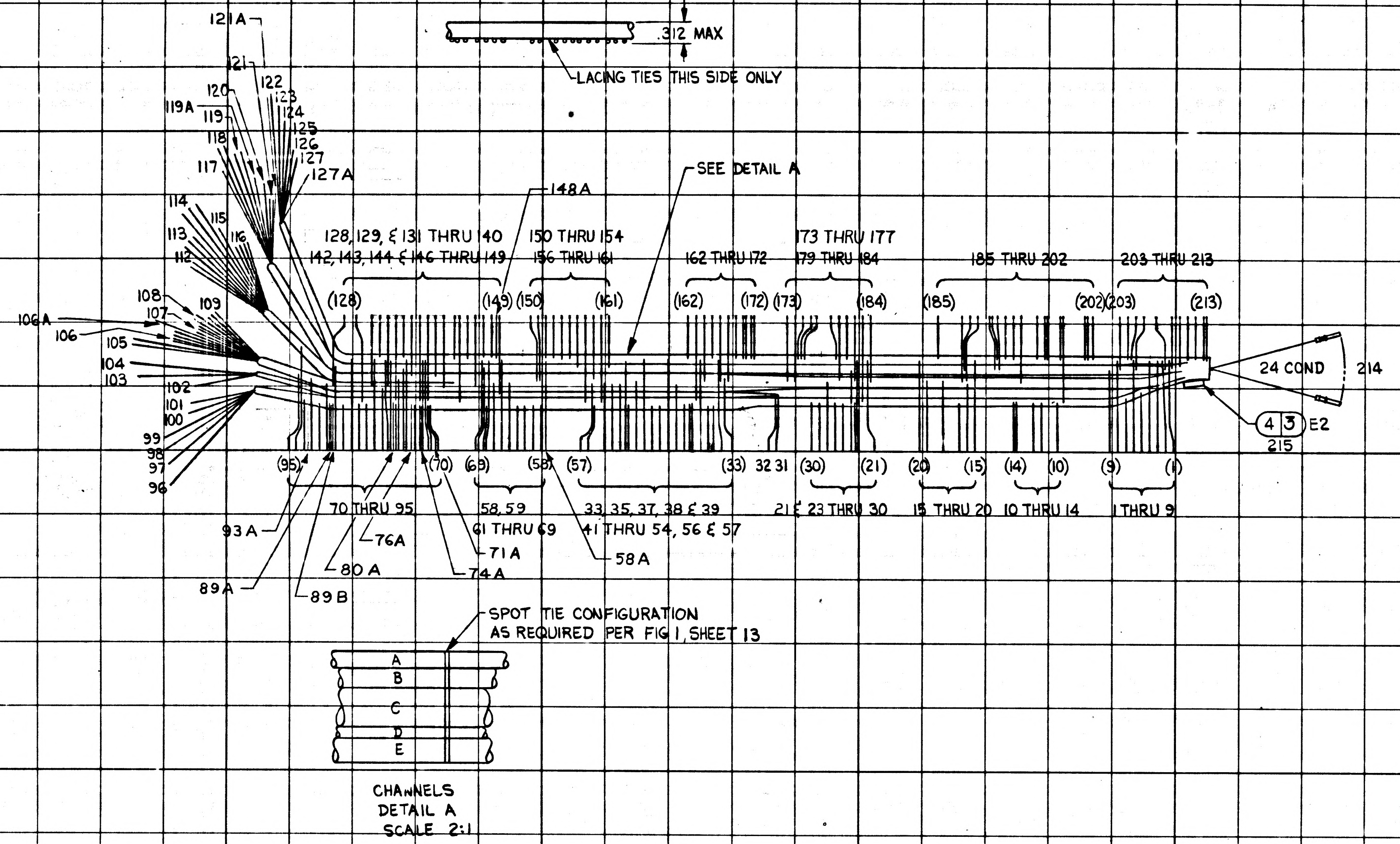

SQUARE KNOT
OVERHAND KNOT

FIGURE I
MULTIPLE SPOT TIE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR A	SHEET 13 OF 14

REVISIONS TDRR 04763

SYM	ZONE	DESCRIPTION		DATE	APPD
A		REVISED PER TDRR 05532	CHG NO.	12/27/63	WR



.312 MAX
LACING TIES THIS SIDE ONLY
SEE DETAIL A
148A
121A
121
122
123
124
125
126
127
127A
120
119A
119
118
117
114
115
116
113
112
108
107
109
106A
106
105
104
103
102
101
100
99
98
97
96
128, 129, & 131 THRU 140
142, 143, 144 & 146 THRU 149
150 THRU 154
156 THRU 161
162 THRU 172
173 THRU 177
179 THRU 184
185 THRU 202
203 THRU 213
(128)
(149)
(150)
(161)
(162)
(172)
(173)
(184)
(185)
(202)
(203)
(213)
24 COND
214
4
3
E2
215
(95)
(70)
(69)
(58)
(57)
(33)
32 31
(30)
(21)
(20)
(15)
(14)
(10)
(9)
(1)
70 THRU 95
58, 59
61 THRU 69
33, 35, 37, 38 & 39
41 THRU 54, 56 & 57
21 & 23 THRU 30
15 THRU 20
10 THRU 14
1 THRU 9
93A
76A
71A
58A
80A
74A
89A
89B
SPOT TIE CONFIGURATION
AS REQUIRED PER FIG 1, SHEET 13
A
B
C
D
E

CHANNELS
DETAIL A
SCALE 2:1

1007144 NEXT ASSY	1007154 USED ON	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS + − DECIMALS + − ANGLES + − DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION. GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN R. Tenser DATE 3 OCT 63 CHECKED J. Hayden 24 OCT 63 APPROVAL 10-25-63 APPROVAL 24 OCT 63 11/14/63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS WIRING HARNESS A (TRAY 4)
APPLICATION		MATERIAL CONTRACT NAS 9-497	NASA APPROVAL MIT APPROVAL 11/20/63	CODE IDENT NO. SIZE D 1015736 SCALE 1:1 SHEET 14 OF 14

GFR WIRING HARNESS A B 1015736

PENNANT NOTE	GENERAL NOTES
1	SEE CONDUCTOR CHART
2	SEE CONDUCTOR CHART
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	LACE HARNESS USING ITEM 5
8	IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
9	Y OR N IN TINNED COLUMN INDICATES YES OR NO.
10	GRID MODULE IS 1 INCH.
11	UNLESS OTHERWISE SPECIFIED --- FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.
12	BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.
13	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
14	IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY
15	INSTALL ITEM 2 PER ND1002066

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736	
SCALE-NONE	REV LTR B		SHEET 2 OF 14

MIL 2084 4-63

GFR WIRING HARNESS A B 1015736

PENNANT NOTE	GENERAL NOTES
16	INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	TOLERANCE STRIP JACKET	TOLERANCE CUT WIRE	TOLERANCE CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736	
SCALE-NONE	REV LTR B		SHEET 3 OF 14

MIL 2084 4-63

APPLICATION	
NEXT ASSY	USED ON
1007149	1007154

REVISIONS TDRR 04283

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05532	12/27/63	RPK
B	REVISED, TDRR 05585	12/31/63	RPK WK

REV														
SHEET														
REV STATUS OF SHEETS REV	B	B	B	B	B	B	B	B	B	B	B	B	B	B
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

Charleston
24 Oct 63

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN C Tonsen DATE 7 OCT 63
CHECKED Saylor 24 Oct 63
APPROVAL 10/25/63
APPROVAL 29 OCT 63 11/1/63
NASA APPROVAL
MIT APPROVAL 11/20/63
CONTRACT NAS 9-497

WIRING HARNESS A
(TRAY 4)

CODE IDENT NO.	SIZE A	1015736	REV B
SCALE NONE		SHEET 1 OF 14	

GFR WIRING HARNESS A B 1015736

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	AR	1010639- 2	WIRE, 83 FT 0.5 IN TOTAL LENGTH
13	2	24	1010464- 2	CONTACT, ELEC
13	3	1	1010476-168	INSULATION, SLEEVING, ELEC, HEAT SHRINK
13	4	1	1010711- 1	SPLICE REDUCER
13	5	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2, BLACK (ES-2732 NO. 18)
	6	AR	MIL-W-16878/1B-24-19STND WIRE-WHITE	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736	
SCALE-NONE	REV LTR B		SHEET 4 OF 14

MIL 2084 4-63

GFR

WIRING HARNESS A

B 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 19	1	660	45A4P1-S2	20	N		123	45A4J7-19	20	N		72	
A 20	1	740	45A4P1-S5	20	N		126	45A4J6- 3	20	N		66	
A 21	1	1150	45A4P1-A1	20	N		104	45A4J4- 1	20	N		32	
A 22	1	1110	45A4P1-A2	20	N		103	45A4J4- 2	20	N		31	
A 23	1	1300	45A4P1-P6	20	N		121	45A4J4-12	20	N		25	
A 24	1	1200	45A4P1-H6	20	N		116	45A4J4- 9	20	N		28	
A 25	1	1420	45A4P1-K3	20	N		113	45A4J3- 3	20	N		19	
A 26	1	1420	45A4P1-H3	20	N		113	45A4J3- 5	20	N		18	
A 27	1	1780	45A4P1-S4	20	N		125	45A4J2- 3	20	N		8	
A 28	1	750	45A4P1-R5	20	N		119A	45A4J6- 2	20	N		68	
A 29	1	1740	45A4P1-R4	20	N		120	45A4J2- 2	20	N		9	
A 30	1	1670	45A4P1-P3	20	N		117	45A4J8- 7	20	N		208	
A 31	1	1550	45A4P1-R1	20	N		118	45A4J9- 7	20	N		189	
A 32	1	1660	45A4P1-P2	20	N		119	45A4J8- 4	20	N		206	
A 33	1	1700	45A4P1-P1	20	N		118	45A4J8- 1	20	N		203	
A 34	1	1650	45A4P1-S1	20	N		122	45A4J9-19	20	N		201	
A 35	1	1500	45A4P1-G6	20	N		109	45A4J9-11	20	N		194	
A 36	1	1350	45A4P1-F6	20	N		109	45A4J9- 4	20	N		186	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE
REV LTR B
SHEET 6 OF 14

MIL 2085 - 4-63 WIR

GFR

WIRING HARNESS A

B 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 37	1	1270	45A4P1-M3	20	N		113	45A4J10- 9	20	N		182	
A 38	1	1180	45A4P1-M2	20	N		115	45A4J10- 2	20	N		174	
A 39	1	1200	45A4P1-M1	20	N		114	45A4J10- 1	20	N		173	
A 40	1	800	45A4P1-N6	20	N		116	45A4J12- 9	20	N		159	
A 41	1	700	45A4P1-M6	20	N		116	45A4J12- 2	20	N		151	
A 42	1	800	45A4P1-L6	20	N		116	45A4J12- 1	20	N		150	
A 43	1	400	45A4P1-A6	20	N		102	45A4J13-20	20	N		149	
A 44	1	800	45A4P1-G1	20	N		105	45A4J13-17	20	N		146	
A 45	1	640	45A4P1-G5	20	N		108	45A4J13-13	20	N		140	
A 46	1	700	45A4P1-K1	20	N		114	45A4J13-12	20	N		139	
A 47	1	600	45A4P1-C1	20	N		96	45A4J13-11	20	N		138	
A 48	1	560	45A4P1-C2	20	N		97	45A4J13-10	20	N		137	
A 49	1	700	45A4P1-H1	20	N		114	45A4J13- 9	20	N		136	
A 50	1	560	45A4P1-D2	20	N		106A	45A4J13- 6	20	N		133	
A 51	1	490	45A4P1-F5	20	N		108	45A4J13- 4	20	N		131	
A 52	1	600	45A4P1-D1	20	N		105	45A4J13- 1	20	N		128	
A 53	1	2090	45A4P1-R2	20	N		120	45A4J13- 7	20	N		134A	B
A 54	1	300	45A4J7- 3	20	N		93	45A4J13- 2	20	N		129	E

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE
REV LTR B
SHEET 7 OF 14

MIL 2085 - 4-63 WIR

GFR

WIRING HARNESS A

B 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 1	1	340	45A4P1-D5	20	N		106	45A4J7- 1	20	N		95	
A 2	1	420	45A4P1-F3	20	N		107	45A4J7- 4	20	N		92	
A 3	1	200	45A4P1-D6	20	N		109	45A4J7- 6	20	N		90	
A 4	1	300	45A4P1-C6	20	N		101	45A4J7-10	20	N		85	
A 5	1	340	45A4P1-C5	20	N		100	45A4J7-11	20	N		84	
A 6	1	520	45A4P1-G3	20	N		107	45A4J7-13	20	N		82	
A 7	1	430	45A4P1-K4	20	N		112	45A4J7- 2	20	N		94	
A 8	1	560	45A4P1-R2	20	N		119	45A4J7- 7	20	N		88	
A 9	1	870	45A4P1-D3	20	N		107	45A4J5- 1	20	N		57	
A 10	1	780	45A4P1-F4	20	N		106	45A4J5- 4	20	N		54	
A 11	1	880	45A4P1-D4	20	N		106	45A4J5- 6	20	N		52	
A 12	1	780	45A4P1-C4	20	N		99	45A4J5-10	20	N		47	
A 13	1	820	45A4P1-C3	20	N		98	45A4J5-11	20	N		46	
A 14	1	980	45A4P1-G4	20	N		106	45A4J5-13	20	N		44	
A 15	1	600	45A4P1-S6	20	N		127	45A4J7-14	20	N		81	
A 16	1	680	45A4P1-H4	20	N		112	45A4J7-15	20	N		78	
A 17	1	600	45A4P1-R6	20	N		121	45A4J7-16	20	N		77	
A 18	1	720	45A4P1-S3	20	N		124	45A4J7-18	20	N		73	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE
REV LTR B
SHEET 5 OF 14

MIL 2085 - 4-63 WIR

GFR

WIRING HARNESS A

B 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 55	1	300	45A4J6-10	20	N		58A	45A4J12- 5	20	N		154	A
A 56	1	500	45A4J5- 7	20	N		51	45A4J11-10	20	N		171	A
A 57	1	225	45A4J11-10	20	N		172	45A4J10- 5	20	N		177	A
A 58	1	500	45A4J6-10	20	N		58	45A4J7- 7	20	N		89A	E
A 59	1	650	45A4J5- 2	20	N		56	45A4J7- 3	20	N		93A	E
A 60	1	575	45A4J7- 7	20	N		89	45A4J5- 7	20	N		50	E
A 61	1	300	45A4E- 2	20	N		215	45A4J13- 7	20	N		134	B
A 62	1	275	45A4J7-14	20	N		80	45A4J13-14	20	N		142	A
A 63	1	1500	45A4P1-S6	20	N		127A	45A4J9-14	20	N		196	A
A 64	1	475	45A4J9-14	20	N		197	45A4J4-15	20	N		21	A
A 65	1	620	45A4J7-14	20	N		80A	45A4J5-14	20	N		43	E
A 66	1	600	45A4J7-15	20	N		79	45A4J13-15	20	N		143A	E
A 67	1	625	45A4J5-15	20	N		42	45A4J13-15	20	N		143	E
A 68	1	275	45A4J7-16	20	N		76	45A4J13-16	20	N		144	A
A 69	1	1375	45A4P1-R6	20	N		121A	45A4J4-13	20	N		24	B
A 70	1	500	45A4J4-13	20	N		23	45A4J9-16	20	N		198	A
A 71	1	275	45A4J9-16	20	N		199	45A4J3-14	20	N		13	E
A 72	1	175	45A4J3-14	20	N		14	45A4J3-18	20	N		11	E

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE
REV LTR B
SHEET 8 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A B 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	TO TERMINATION SPEC 1 ITEM NO.	NO.	
A 91	1	425	45A4J5-17	20	N		38	45A4J10-10	20	N		183	E
A 92	1	325	45A4J11- 5	20	N		165	45A4J10- 6	20	N		179	A
A 93	1	300	45A4J11- 8	20	N		168	45A4J10- 8	20	N		181	A
A 94	1	325	45A4J4- 8	20	N		29	45A4J3- 7	20	N		17	E
A 95	1	475	45A4J4-10	20	N		27	45A4J3-20	20	N		10	E
A 96	1	400	45A4J4-11	20	N		26	45A4J3-17	20	N		12	E
A 97	1	250	45A4J3- 2	20	N		20	45A4J9- 1	20	N		185	A
A 98	1	225	45A4J3- 8	20	N		16	45A4J9- 6	20	N		188	C
A 99	1	300	45A4J3- 9	20	N		15	45A4J9-13	20	N		195	A
A 100	1	300	45A4J2- 5	20	N		6	45A4J8-10	20	N		211	A
A 101	1	300	45A4J2- 7	20	N		4	45A4J9-20	20	N		202	A
A 102	1	275	45A4J2- 8	20	N		3	45A4J8- 9	20	N		210	A
A 103	1	325	45A4J9- 9	20	N		192	45A4J8- 2	20	N		204	A
A 104	1	325	45A4J9-10	20	N		193	45A4J8- 3	20	N		205	A
A 105	1	325	45A4J9-19	20	N		200	45A4J2- 9	20	N		2	A
A 106	1	450	45A4J9- 7	20	N		190	45A4J8-11	20	N		212	A
A 107	1	250	45A4J8-11	20	N		213	45A4J2-10	20	N		1	A
A 108	1	650	45A4J1-21	12	N	2	214	45A4J2- 6	20	N		5	E

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE-NONE | REV LTR B | SHEET 10 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A B 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	TO TERMINATION SPEC 1 ITEM NO.	NO.	
A 109	1	650	45A4J1-20	12	N	2	214	45A4J2- 4	20	N		7	E
A 110	1	1200	45A4J1- 2	12	N	2	214	45A4J4- 7	20	N		30	E
A 111	6	220	45A4J1- 1	12	N	2	214	45A4E2	20	N		215	
A 112	1	1550	45A4J1-25	12	N	2	214	45A4J5- 8	20	N		49	C
A 113	1	1650	45A4J1-33	12	N	2	214	45A4J5- 5	20	N		53	C
A 114	1	1650	45A4J1-36	12	N	2	214	45A4J6- 6	20	N		63	C
A 115	1	1600	45A4J1-35	12	N	2	214	45A4J6- 4	20	N		65	C
A 116	1	1950	45A4J1-26	12	N	2	214	45A4J7- 8	20	N		87	E
A 117	1	2000	45A4J1-34	12	N	2	214	45A4J7- 5	20	N		91	E
A 118	1	1900	45A4J1-32	12	N	2	214	45A4J13- 5	20	N		132	A
A 119	1	1850	45A4J1-24	12	N	2	214	45A4J13- 8	20	N		135	A
A 120	1	1550	45A4J1-19	12	N	2	214	45A4J12- 7	20	N		157	B
A 121	1	1550	45A4J1-11	12	N	2	214	45A4J12-11	20	N		161	B
A 122	1	1350	45A4J1-27	12	N	2	214	45A4J11- 4	20	N		164	C
A 123	1	1350	45A4J1-28	12	N	2	214	45A4J11- 6	20	N		166	C
A 124	1	1050	45A4J1-31	12	N	2	214	45A4J9- 5	20	N		187	B
A 125	1	1200	45A4J1-18	12	N	2	214	45A4J10- 7	20	N		180	C
A 126	1	1200	45A4J1-10	12	N	2	214	45A4J10-11	20	N		184	C

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE-NONE | REV LTR B | SHEET 11 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A B 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	FROM TERMINATION SPEC. 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2	TIN	TO TERMINATION SPEC 1 ITEM NO.	NO.	
A 73	1	620	45A4J5-16	20	N		39	45A4J7-16	20	N		76A	E
A 74	1	475	45A4J7-17	20	N		75	45A4J12-10	20	N		160	E
A 75	1	575	45A4J7-18	20	N		74	45A4J5-18	20	N		37	E
A 76	1	300	45A4J7-18	20	N		74A	45A4J13-18	20	N		147	A
A 77	1	275	45A4J7-19	20	N		71	45A4J6- 9	20	N		59	E
A 78	1	350	45A4J7-19	20	N		71A	45A4J13-19	20	N		148A	A
A 79	1	225	45A4J5-19	20	N		35	45A4J11- 9	20	N		169	A
A 80	1	525	45A4J11- 9	20	N		170	45A4J13-19	20	N		148	A
A 81	1	500	45A4J7- 9	20	N		86	45A4J12- 3	20	N		152	A
A 82	1	475	45A4J7-12	20	N		83	45A4J12- 4	20	N		153	A
A 83	1	250	45A4J7-20	20	N		70	45A4J6- 7	20	N		62	E
A 84	1	425	45A4J6- 3	20	N		67	45A4J11- 3	20	N		163	E
A 85	1	525	45A4J6- 2	20	N		69	45A4J11- 2	20	N		162	A
A 86	1	300	45A4J6- 5	20	N		64	45A4J12- 6	20	N		156	A
A 87	1	300	45A4J6- 8	20	N		61	45A4J12- 8	20	N		158	E
A 88	1	225	45A4J5-20	20	N		33	45A4J11- 7	20	N		167	C
A 89	1	450	45A4J5- 9	20	N		48	45A4J10- 3	20	N		175	A
A 90	1	425	45A4J5-12	20	N		45	45A4J10- 4	20	N		176	A

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE-NONE | REV LTR B | SHEET 9 OF 14

MIL 2085 - 4-63 WIR

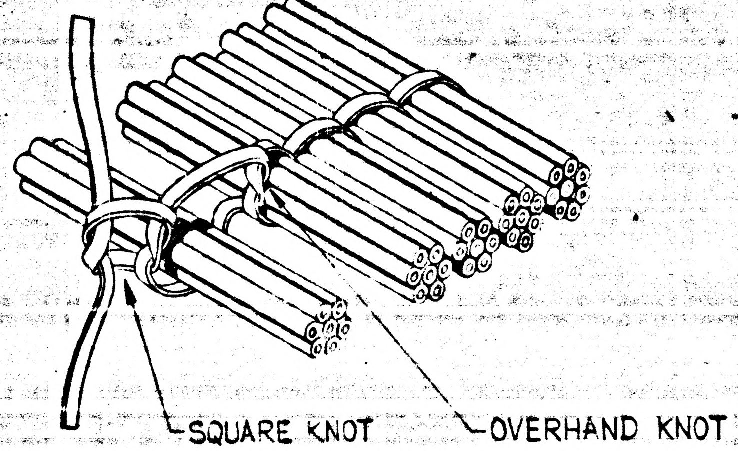


FIGURE I
MULTIPLE SPOT TIE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE-NONE | REV LTR B | SHEET 11 OF 12

GFR WIRING HARNESS A B 1015736

CONDUCTOR			FROM					TO					
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD			TERMINATION SPEC. 1		CUT WIRE OR SHIELD			TERMINATION SPEC 1		
			STRIP WIRE OR JACKET					STRIP WIRE OR JACKET					
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN 2	ITEM NO.	NO.	CIRCUIT POINT	2	TIN 2	ITEM NO.	NO.	
A 127	1	1050	45A4J1-23	12	N	2	214	45A4J9- 8	20	N		191	B
A 128	1	700	45A4J1- 9	12	N	2	214	45A4J8- 5	20	N		207	B
A 129	1	650	45A4J1-17	12	N	2	214	45A4J8- 8	20	N		209	B
A 130	6	220	45A4J1-29	12	N	2	214	45A4E2	20	N		215	
A 131	6	220	45A4J1-38	12	N	2	214	45A4E2	20	N		215	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS

SIZE A

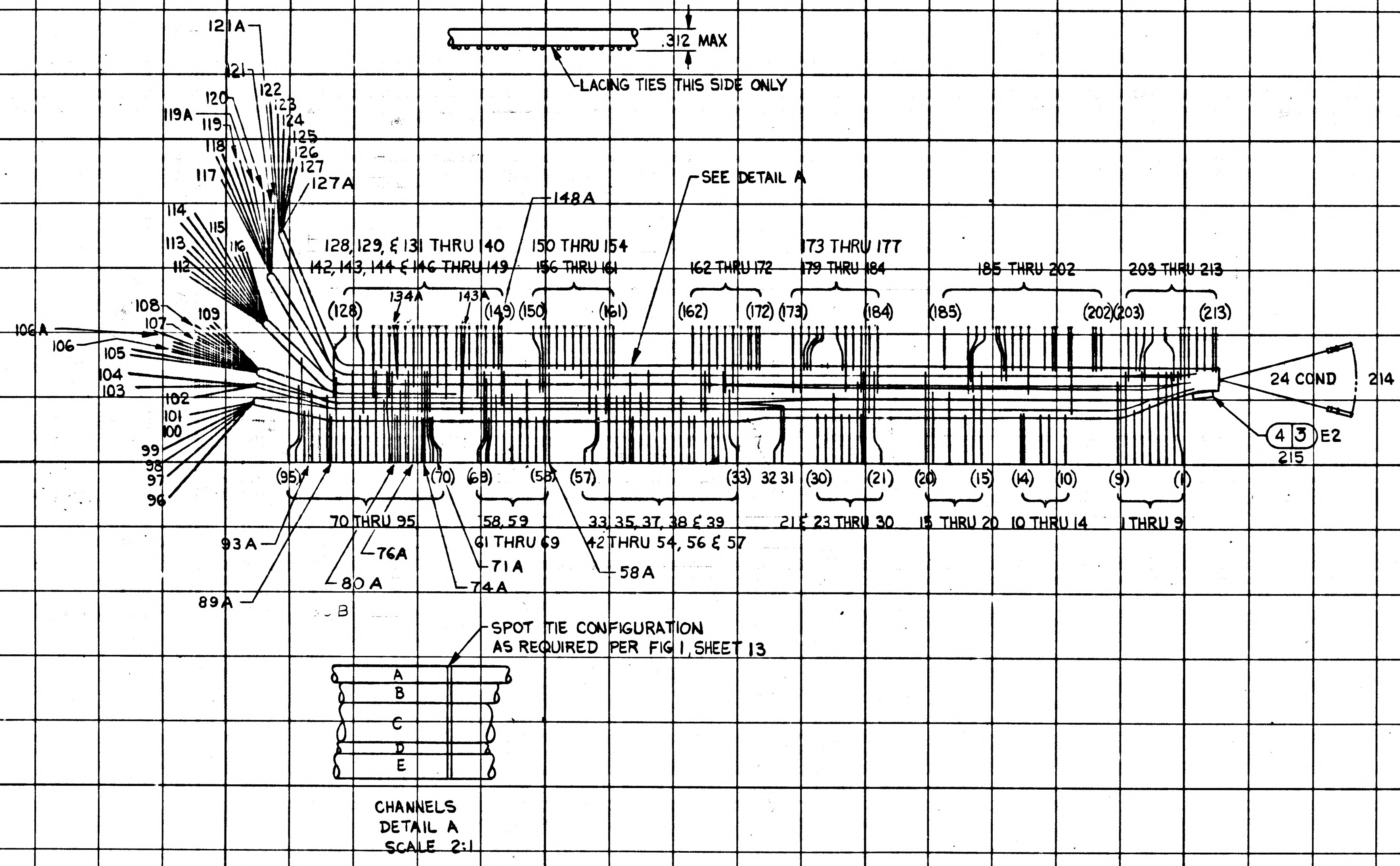
1015736

SCALE - NONE REV LTR B SHEET 12 OF 14

MIL 2085 - 4-63 WIR

1015736 B

REVISIONS TDRR 04753					
SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 05532		12/27/63	WK
B		REVISED PER TDRR 05585		31 DEC 63	WK



.312 MAX
LACING TIES THIS SIDE ONLY
SEE DETAIL A
121A
121
122
123
124
125
126
127
127A
120
119A
119
118
117
114
115
116
113
112
108
107
109
106A
106
105
104
103
102
101
100
99
98
97
96
93A
89A
148A
128, 129, & 131 THRU 140
142, 143, 144 & 146 THRU 149
150 THRU 154
156 THRU 161
162 THRU 172
173 THRU 177
179 THRU 184
185 THRU 202
203 THRU 213
(128)
134A
143A
(149)
(150)
(161)
(162)
(172)
(173)
(184)
(185)
(202)
(203)
(213)
24 COND
214
4
3
E2
215
(95)
(70)
(69)
(58)
(57)
(33)
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31
(30)
(21)
(20)
(15)
(14)
(10)
(9)
(1)
70 THRU 95
76A
80A
74A
71A
58, 59
61 THRU 69
33, 35, 37, 38 & 39
42 THRU 54, 56 & 57
58A
21 & 23 THRU 30
15 THRU 20
10 THRU 14
1 THRU 9
B
SPOT TIE CONFIGURATION
AS REQUIRED PER FIG 1, SHEET 13
A
B
C
D
E

CHANNELS
DETAIL A
SCALE 2:1

1007144	1007154
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tamsen DATE 3 OCT 63
CHECKED Sayler 24 OCT 63
APPROVAL [illegible] 10-25-63
APPROVAL [illegible] 24 OCT 63 [illegible] 11/19/63
NASA APPROVAL
MIT APPROVAL [illegible] 11/20/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
(TRAY 4)

CODE IDENT NO.
SIZE D
1015736
SCALE 1:1
SHEET 14 OF 14

APPLICATION	
NEXT ASSY	USED ON
1007144	1007154

REVISIONS TDRR 04783

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05532	12/27/63	EPK WK
B	REVISED, TDRR 05585	12/31/63	EPK WK
C	REVISED PER TDRR 06733	3/3/64	JFW WK

Charleston
24 Oct 63

REV															
SHEET															
REV STATUS OF SHEETS	REV	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN DATE 7 OCT 63
CHECKED 24 OCT 63
APPROVAL 10/25/63
APPROVAL 22 OCT 63
NASA APPROVAL
MIT APPROVAL 11/12/63
CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
(TRAY 4)

CODE IDENT NO.
SIZE A
1015736
REV C
SCALE NONE
SHEET 1 OF 14

GFR WIRING HARNESS A C 1015736

PENNANT NOTE	GENERAL NOTES
1	SEE CONDUCTOR CHART
2	SEE CONDUCTOR CHART
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	LACE HARNESS USING ITEM 5
8	IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
9	Y OR N IN TINNED COLUMN INDICATES YES OR NO.
10	GRID MODULE IS 1 INCH.
11	UNLESS OTHERWISE SPECIFIED --- FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.
12	BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.
13	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
14	IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY
15	INSTALL ITEM 2 PER ND1002066

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015736
SCALE-NONE REV LTR C SHEET 2 OF 14

MIL 2084 4-63

GFR WIRING HARNESS A C 1015736

PENNANT NOTE	GENERAL NOTES
16	INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE			
	STRIP		CUT	
	WIRE	JACKET	WIRE	SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015736
SCALE-NONE REV LTR C SHEET 3 OF 14

MIL 2084 4-63

GFR WIRING HARNESS A C 1015736

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	AR	1010639- 2	WIRE, 83 FT 0.5 IN TOTAL LENGTH
13	2	24	1010738- 2	CONTACT, ELEC
13	3	1	1010476-168	INSULATION, SLEEVING, ELEC, HEAT SHRINK
13	4	1	1010711- 1	SPLICE REDUCER
13	5	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2, BLACK (ES-2732 NO. 18)
	6	AR	MIL-W-16878/1B-24-19STND WIRE-WHITE	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015736
SCALE-NONE REV LTR C SHEET 4 OF 14

MIL 2084 4-63

INCHES
0 1 2

GFR

WIRING HARNESS A

C 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2▷	CIRCUIT POINT 2▷	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2▷	T I N	TERMINATION SPEC. 1▷ ITEM NO.	NO.	CIRCUIT POINT 2▷	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2▷	T I N	TERMINATION SPEC 1▷ ITEM NO.	NO.	
A 1	1	340	45A4P1-D5	20	N		106	45A4J7- 1	20	N		95	
A 2	1	420	45A4P1-F3	20	N		107	45A4J7- 4	20	N		92	
A 3	1	200	45A4P1-D6	20	N		109	45A4J7- 6	20	N		90	
A 4	1	300	45A4P1-C6	20	N		101	45A4J7-10	20	N		85	
A 5	1	340	45A4P1-C5	20	N		100	45A4J7-11	20	N		84	
A 6	1	520	45A4P1-G3	20	N		107	45A4J7-13	20	N		82	
A 7	1	430	45A4P1-K4	20	N		112	45A4J7- 2	20	N		94	
A 8	1	560	45A4P1-R2	20	N		119	45A4J7- 7	20	N		88	
A 9	1	870	45A4P1-D3	20	N		107	45A4J5- 1	20	N		57	
A 10	1	780	45A4P1-F4	20	N		106	45A4J5- 4	20	N		54	
A 11	1	880	45A4P1-D4	20	N		106	45A4J5- 6	20	N		52	
A 12	1	780	45A4P1-C4	20	N		99	45A4J5-10	20	N		47	
A 13	1	820	45A4P1-C3	20	N		98	45A4J5-11	20	N		46	
A 14	1	980	45A4P1-G4	20	N		106	45A4J5-13	20	N		44	
A 15	1	600	45A4P1-S6	20	N		127	45A4J7-14	20	N		81	
A 16	1	680	45A4P1-H4	20	N		112	45A4J7-15	20	N		78	
A 17	1	600	45A4P1-R6	20	N		121	45A4J7-16	20	N		77	
A 18	1	720	45A4P1-S3	20	N		124	45A4J7-18	20	N		73	

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE-NONE
REV LTR C
SHEET 5 OF 14

MIL 2085 - 4-65 WIN

GFR

WIRING HARNESS A

C 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2▷	CIRCUIT POINT 2▷	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2▷	T I N	TERMINATION SPEC. 1▷ ITEM NO.	NO.	CIRCUIT POINT 2▷	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2▷	T I N	TERMINATION SPEC 1▷ ITEM NO.	NO.	
A 19	1	660	45A4P1-S2	20	N		123	45A4J7-19	20	N		72	
A 20	1	740	45A4P1-S5	20	N		126	45A4J6- 3	20	N		66	
A 21	1	1150	45A4P1-A1	20	N		104	45A4J4- 1	20	N		32	
A 22	1	1110	45A4P1-A2	20	N		103	45A4J4- 2	20	N		31	
A 23	1	1300	45A4P1-P6	20	N		121	45A4J4-12	20	N		25	
A 24	1	1200	45A4P1-H6	20	N		116	45A4J4- 9	20	N		28	
A 25	1	1420	45A4P1-K3	20	N		113	45A4J3- 3	20	N		19	
A 26	1	1420	45A4P1-H3	20	N		113	45A4J3- 5	20	N		18	
A 27	1	1780	45A4P1-S4	20	N		125	45A4J2- 3	20	N		8	
A 28	1	750	45A4P1-R5	20	N		119A	45A4J6- 2	20	N		68	
A 29	1	1740	45A4P1-R4	20	N		120	45A4J2- 2	20	N		9	
A 30	1	1670	45A4P1-P3	20	N		117	45A4J8- 7	20	N		208	
A 31	1	1550	45A4P1-R1	20	N		118	45A4J9- 7	20	N		189	
A 32	1	1660	45A4P1-P2	20	N		119	45A4J8- 4	20	N		206	
A 33	1	1700	45A4P1-P1	20	N		118	45A4J8- 1	20	N		203	
A 34	1	1650	45A4P1-S1	20	N		122	45A4J9-19	20	N		201	
A 35	1	1500	45A4P1-G6	20	N		109	45A4J9-11	20	N		194	
A 36	1	1350	45A4P1-F6	20	N		109	45A4J9- 4	20	N		186	

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE-NONE
REV LTR C
SHEET 6 OF 14

MIL 2085 - 4-65 WIN

GFR

WIRING HARNESS A

C 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2▷	CIRCUIT POINT 2▷	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2▷	T I N	TERMINATION SPEC. 1▷ ITEM NO.	NO.	CIRCUIT POINT 2▷	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2▷	T I N	TERMINATION SPEC 1▷ ITEM NO.	NO.	
A 37	1	1270	45A4P1-M3	20	N		113	45A4J10- 9	20	N		182	
A 38	1	1180	45A4P1-M2	20	N		115	45A4J10- 2	20	N		174	
A 39	1	1200	45A4P1-M1	20	N		114	45A4J10- 1	20	N		173	
A 40	1	800	45A4P1-N6	20	N		116	45A4J12- 9	20	N		159	
A 41	1	700	45A4P1-M6	20	N		116	45A4J12- 2	20	N		151	
A 42	1	800	45A4P1-L6	20	N		116	45A4J12- 1	20	N		150	
A 43	1	400	45A4P1-A6	20	N		102	45A4J13-20	20	N		149	
A 44	1	800	45A4P1-G1	20	N		105	45A4J13-17	20	N		146	
A 45	1	640	45A4P1-G5	20	N		108	45A4J13-13	20	N		140	
A 46	1	700	45A4P1-K1	20	N		114	45A4J13-12	20	N		139	
A 47	1	600	45A4P1-C1	20	N		96	45A4J13-11	20	N		138	
A 48	1	560	45A4P1-C2	20	N		97	45A4J13-10	20	N		137	
A 49	1	700	45A4P1-H1	20	N		114	45A4J13- 9	20	N		136	
A 50	1	560	45A4P1-D2	20	N		106A	45A4J13- 6	20	N		133	
A 51	1	490	45A4P1-F5	20	N		108	45A4J13- 4	20	N		131	
A 52	1	600	45A4P1-D1	20	N		105	45A4J13- 1	20	N		128	
A 53	1	2090	45A4P1-R2	20	N		120	45A4J13- 7	20	N		134A	B
A 54	1	300	45A4J7- 3	20	N		93	45A4J13- 2	20	N		129	E

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE-NONE
REV LTR C
SHEET 7 OF 14

MIL 2085 - 4-65 WIN

GFR

WIRING HARNESS A

C 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2▷	CIRCUIT POINT 2▷	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2▷	T I N	TERMINATION SPEC. 1▷ ITEM NO.	NO.	CIRCUIT POINT 2▷	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2▷	T I N	TERMINATION SPEC 1▷ ITEM NO.	NO.	
A 55	1	300	45A4J6-10	20	N		58A	45A4J12- 5	20	N		154	A
A 56	1	500	45A4J5- 7	20	N		51	45A4J11-10	20	N		171	A
A 57	1	225	45A4J11-10	20	N		172	45A4J10- 5	20	N		177	A
A 58	1	500	45A4J6-10	20	N		58	45A4J7- 7	20	N		89A	E
A 59	1	650	45A4J5- 2	20	N		56	45A4J7- 3	20	N		93A	E
A 60	1	575	45A4J7- 7	20	N		89	45A4J5- 7	20	N		50	E
A 61	1	300	45A4E- 2	20	N		215	45A4J13- 7	20	N		134	B
A 62	1	275	45A4J7-14	20	N		80	45A4J13-14	20	N		142	A
A 63	1	1500	45A4P1-S6	20	N		127A	45A4J9-14	20	N		196	A
A 64	1	475	45A4J9-14	20	N		197	45A4J4-15	20	N		21	A
A 65	1	620	45A4J7-14	20	N		80A	45A4J5-14	20	N		43	E
A 66	1	600	45A4J7-15	20	N		79	45A4J13-15	20	N		143A	E
A 67	1	625	45A4J5-15	20	N		42	45A4J13-15	20	N		143	E
A 68	1	275	45A4J7-16	20	N		76	45A4J13-16	20	N		144	A
A 69	1	1375	45A4P1-R6	20	N		121A	45A4J4-13	20	N		24	B
A 70	1	500	45A4J4-13	20	N		23	45A4J9-16	20	N		198	A
A 71	1	275	45A4J9-16	20	N		199	45A4J3-14	20	N		13	E
A 72	1	175	45A4J3-14	20	N		14	45A4J3-18	20	N		11	E

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE-NONE
REV LTR C
SHEET 8 OF 14

MIL 2085 - 4-65 WIN

INCHES
0 1 2

GFR WIRING HARNESS A C 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC ITEM NO.	NO.	
A 91	1	425	45A4J5-17	20	N		38	45A4J10-10	20	N		183	E
A 92	1	325	45A4J11- 5	20	N		165	45A4J10- 6	20	N		179	A
A 93	1	300	45A4J11- 8	20	N		168	45A4J10- 8	20	N		181	A
A 94	1	325	45A4J4- 8	20	N		29	45A4J3- 7	20	N		17	E
A 95	1	475	45A4J4-10	20	N		27	45A4J3-20	20	N		10	E
A 96	1	400	45A4J4-11	20	N		26	45A4J3-17	20	N		12	E
A 97	1	250	45A4J3- 2	20	N		20	45A4J9- 1	20	N		185	A
A 98	1	225	45A4J3- 8	20	N		16	45A4J9- 6	20	N		188	C
A 99	1	300	45A4J3- 9	20	N		15	45A4J9-13	20	N		195	A
A 100	1	300	45A4J2- 5	20	N		6	45A4J8-10	20	N		211	A
A 101	1	300	45A4J2- 7	20	N		4	45A4J9-20	20	N		202	A
A 102	1	275	45A4J2- 8	20	N		3	45A4J8- 9	20	N		210	A
A 103	1	325	45A4J9- 9	20	N		192	45A4J8- 2	20	N		204	A
A 104	1	325	45A4J9-10	20	N		193	45A4J8- 3	20	N		205	A
A 105	1	325	45A4J9-19	20	N		200	45A4J2- 9	20	N		2	A
A 106	1	450	45A4J9- 7	20	N		190	45A4J8-11	20	N		212	A
A 107	1	250	45A4J8-11	20	N		213	45A4J2-10	20	N		1	A
A 108	1	650	45A4J1-21	12	N	2	214	45A4J2- 6	20	N		5	E

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE - NONE | REV LTR C | SHEET 10 OF 14

MIL 2088 - 4-63 WIN

GFR WIRING HARNESS A C 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC ITEM NO.	NO.	
A 109	1	650	45A4J1-20	12	N	2	214	45A4J2- 4	20	N		7	E
A 110	1	1200	45A4J1- 2	12	N	2	214	45A4J4- 7	20	N		30	E
A 111	6	220	45A4J1- 1	12	N	2	214	45A4E2	20	N		215	
A 112	1	1550	45A4J1-25	12	N	2	214	45A4J5- 8	20	N		49	C
A 113	1	1650	45A4J1-33	12	N	2	214	45A4J5- 5	20	N		53	C
A 114	1	1650	45A4J1-36	12	N	2	214	45A4J6- 6	20	N		63	C
A 115	1	1600	45A4J1-35	12	N	2	214	45A4J6- 4	20	N		65	C
A 116	1	1950	45A4J1-26	12	N	2	214	45A4J7- 8	20	N		87	E
A 117	1	2000	45A4J1-34	12	N	2	214	45A4J7- 5	20	N		91	E
A 118	1	1900	45A4J1-32	12	N	2	214	45A4J13- 5	20	N		132	A
A 119	1	1850	45A4J1-24	12	N	2	214	45A4J13- 8	20	N		135	A
A 120	1	1550	45A4J1-19	12	N	2	214	45A4J12- 7	20	N		157	B
A 121	1	1550	45A4J1-11	12	N	2	214	45A4J12-11	20	N		162	B
A 122	1	1350	45A4J1-27	12	N	2	214	45A4J11- 4	20	N		164	C
A 123	1	1350	45A4J1-28	12	N	2	214	45A4J11- 6	20	N		166	C
A 124	1	1050	45A4J1-31	12	N	2	214	45A4J9- 5	20	N		187	B
A 125	1	1200	45A4J1-18	12	N	2	214	45A4J10- 7	20	N		180	C
A 126	1	1200	45A4J1-10	12	N	2	214	45A4J10-11	20	N		184	C

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE - NONE | REV LTR C | SHEET 11 OF 14

MIL 2088 - 4-63 WIN

GFR WIRING HARNESS A C 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC ITEM NO.	NO.	
A 73	1	620	45A4J5-16	20	N		39	45A4J7-16	20	N		76A	E
A 74	1	475	45A4J7-17	20	N		75	45A4J12-10	20	N		160	E
A 75	1	575	45A4J7-18	20	N		74	45A4J5-18	20	N		37	E
A 76	1	300	45A4J7-18	20	N		74A	45A4J13-18	20	N		147	A
A 77	1	275	45A4J7-19	20	N		71	45A4J6- 9	20	N		59	E
A 78	1	350	45A4J7-19	20	N		71A	45A4J13-19	20	N		146A	A
A 79	1	225	45A4J5-19	20	N		35	45A4J11- 9	20	N		169	A
A 80	1	525	45A4J11- 9	20	N		170	45A4J13-19	20	N		146	A
A 81	1	500	45A4J7- 9	20	N		86	45A4J12- 3	20	N		152	A
A 82	1	475	45A4J7-12	20	N		83	45A4J12- 4	20	N		153	A
A 83	1	250	45A4J7-20	20	N		70	45A4J6- 7	20	N		62	E
A 84	1	425	45A4J6- 3	20	N		67	45A4J11- 3	20	N		163	E
A 85	1	525	45A4J6- 2	20	N		69	45A4J11- 2	20	N		162	A
A 86	1	300	45A4J6- 5	20	N		64	45A4J12- 6	20	N		156	A
A 87	1	300	45A4J6- 8	20	N		61	45A4J12- 8	20	N		158	E
A 88	1	225	45A4J5-20	20	N		33	45A4J11- 7	20	N		167	C
A 89	1	450	45A4J5- 9	20	N		48	45A4J10- 3	20	N		175	A
A 90	1	425	45A4J5-12	20	N		45	45A4J10- 4	20	N		176	A

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE - NONE | REV LTR C | SHEET 9 OF 14

MIL 2088 - 4-63 WIN

GFR WIRING HARNESS A C 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC. ITEM NO.	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET	TIN	TERMINATION SPEC ITEM NO.	NO.	
A 127	1	1050	45A4J1-23	12	N	2	214	45A4J9- 8	20	N		191	B
A 128	1	700	45A4J1- 9	12	N	2	214	45A4J8- 5	20	N		207	B
A 129	1	650	45A4J1-17	12	N	2	214	45A4J8- 8	20	N		209	B
A 130	6	220	45A4J1-29	12	N	2	214	45A4E2	20	N		215	
A 131	6	220	45A4J1-38	12	N	2	214	45A4E2	20	N		215	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE - NONE | REV LTR C | SHEET 12 OF 14

MIL 2088 - 4-63 WIN

INCHES 0 1 2

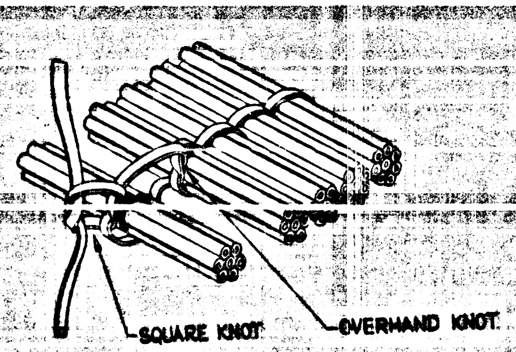

SQUARE KNOT
OVERHAND KNOT

FIGURE 1
MULTIPLE SPOT TIE

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

A

1015736

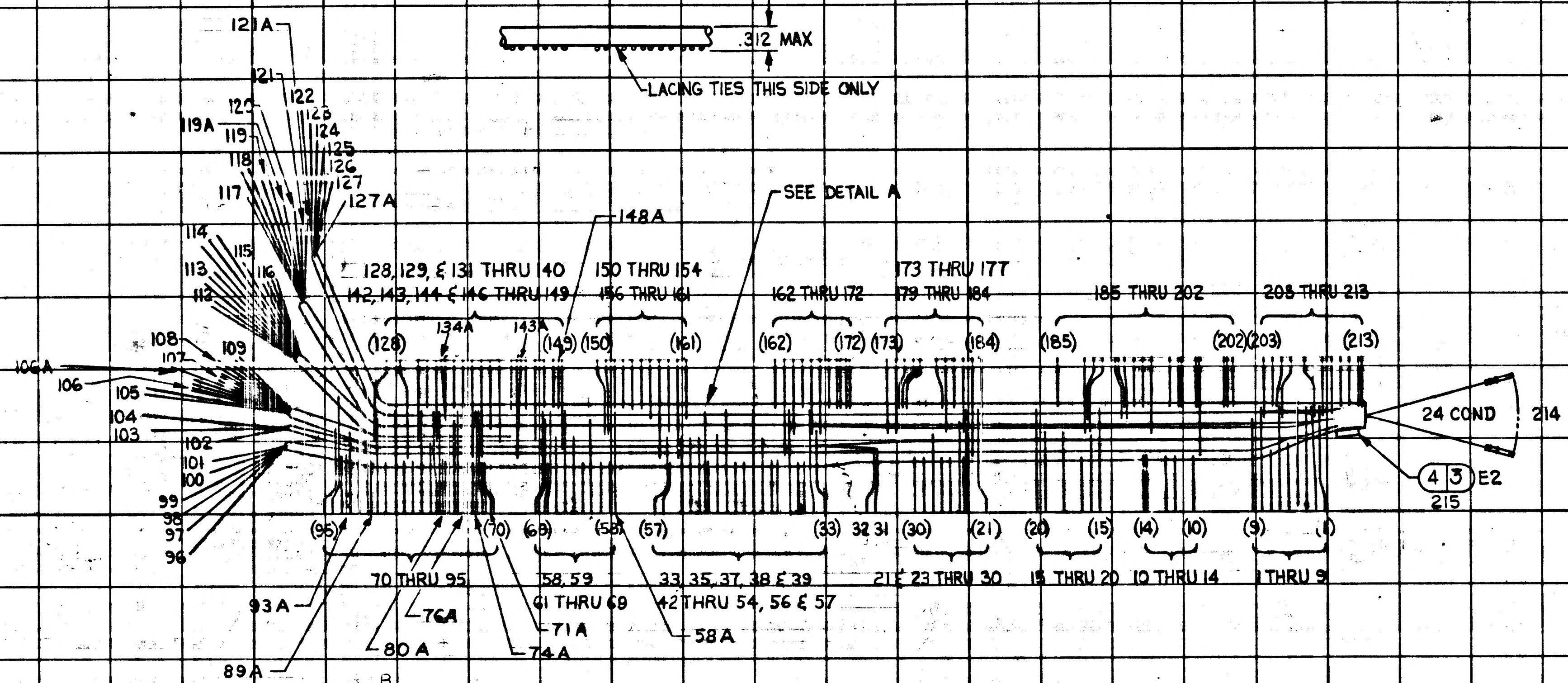
SCALE - NONE

REV LTR C

SHEET 13 OF 14

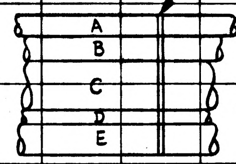
REVISIONS TDRR 04783

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
A		REVISED PER TDRR 05532		12/20/63	WK
B		REVISED PER TDRR 05585		31 DEC 63	WK
C		REVISED PER TDRR 06733		3/3/64	WK



.312 MAX
LACING TIES THIS SIDE ONLY
SEE DETAIL A
121A
121
122
123
124
125
126
127
127A
120
119A
119
118
117
114
115
116
113
112
108
107
109
106A
106
105
104
103
102
101
100
99
98
97
96
148A
128, 129, & 131 THRU 140
142, 143, 144 & 146 THRU 149
134A
143A
(128)
(149)
150 THRU 154
156 THRU 161
(150)
(161)
162 THRU 172
(162)
(172)
173 THRU 177
179 THRU 184
(173)
(184)
185 THRU 202
(185)
(202)
208 THRU 213
(203)
(213)
24 COND
214
4 3 E2
215
(95)
(70)
(68)
(58)
(57)
(33)
32 31
(30)
(21)
(20)
(15)
(14)
(10)
(9)
(1)
70 THRU 95
58, 59
61 THRU 69
33, 35, 37, 38 & 39
42 THRU 54, 56 & 57
21 & 23 THRU 30
15 THRU 20
10 THRU 14
1 THRU 9
93A
76A
80A
71A
74A
58A
89A

SPOT TIE CONFIGURATION
AS REQUIRED PER FIG 1, SHEET 13



CHANNELS
DETAIL A
SCALE 2:1

1007144	1007154
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tamura DATE 3 OCT 63
CHECKED Sayler 24 OCT 63
APPROVAL 10-25-63
APPROVAL 24 OCT 63
NASA APPROVAL
MIT APPROVAL 11/20/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
(TRAY 4)

CODE IDENT NO. | SIZE D | 1015736
SCALE 1:1 | SHEET 14 OF 14

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

APPLICATION		REVISIONS TDRR 04283			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1007144	1007154	A	REVISED PER TDRR 05532	12/27/63	RPK WK
		B	REVISED, TDRR 05585	12/31/63	DHB RPK WK
		C	REVISED PER TDRR 06733	3/3/64	JFW ADL WK
		D	REVISED PER TDRR 06890	3/3/64	JFW RPK WK

Charleston
24 Oct 63

REV														
SHEET														
REV STATUS OF SHEETS REV	D	D	D	D	D	D	D	D	D	D	D	D	D	D
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN C Tomson DATE 9 OCT 63
CHECKED 24 OCT 63
APPROVAL 10/25/63
APPROVAL 22 OCT 63

NASA APPROVAL
MIT APPROVAL 11/20/63

CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
(TRAY 4)

CODE IDENT NO. | SIZE A | 1015736 | REV D
SCALE NONE | SHEET 1 OF 14

GFR WIRING HARNESS A D 1015736

PENNANT NOTE	GENERAL NOTES
1	SEE CONDUCTOR CHART
2	SEE CONDUCTOR CHART
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	LACE HARNESS USING ITEM 5
8	IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
9	Y OR N IN TINNED COLUMN INDICATES YES OR NO.
10	GRID MODULE IS 1 INCH.
11	UNLESS OTHERWISE SPECIFIED --- FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.
12	BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.
13	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
14	IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY
15	INSTALL ITEM 2 PER ND1002066

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE-NONE | REV LTR D | SHEET 2 OF 14

MIL 2084 4-63

GFR WIRING HARNESS A D 1015736

PENNANT NOTE	GENERAL NOTES
16	INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE-NONE | REV LTR D | SHEET 3 OF 14

MIL 2084 4-63

GFR WIRING HARNESS A D 1015736

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	AR	1010639- 2	WIRE, 83 FT 0.5 IN TOTAL LENGTH
13	2	24	1010738- 2	CONTACT, ELEC
13	3	1	1010476-168	INSULATION, SLEEVING, ELEC, HEAT SHRINK
13	4	1	1010711- 1	SPLICE REDUCER
13	5	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2, BLACK (ES-2732 NO. 18)
	6	AR	MIL-W-16878/1B-24-19STND	WIRE-WHITE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE-NONE | REV LTR D | SHEET 4 OF 14

MIL 2084 4-63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GFR WIRING HARNESS A D 1015736

CONDUCTOR				FROM							TO							
	NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. ITEM NO.	1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC ITEM NO.	1	NO.	
A	19	1	660	45A4P1-S2	20	N				123	45A4J7-19	20	N				72	
A	20	1	740	45A4P1-S5	20	N				126	45A4J6- 3	20	N				66	
A	21	1	1150	45A4P1-A1	20	N				104	45A4J4- 1	20	N				32	
A	22	1	1110	45A4P1-A2	20	N				103	45A4J4- 2	20	N				31	
A	23	1	1300	45A4P1-P6	20	N				121	45A4J4-12	20	N				25	
A	24	1	1200	45A4P1-H6	20	N				116	45A4J4- 9	20	N				28	
A	25	1	1420	45A4P1-K3	20	N				113	45A4J3- 3	20	N				19	
A	26	1	1420	45A4P1-H3	20	N				113	45A4J3- 5	20	N				18	
A	27	1	1780	45A4P1-S4	20	N				125	45A4J2- 3	20	N				8	
A	28	1	750	45A4P1-R5	20	N				119A	45A4J6- 2	20	N				68	
A	29	1	1740	45A4P1-R4	20	N				120	45A4J2- 2	20	N				9	
A	30	1	1670	45A4P1-P3	20	N				117	45A4J8- 7	20	N				208	
A	31	1	1550	45A4P1-R1	20	N				118	45A4J9- 7	20	N				189	
A	32	1	1660	45A4P1-P2	20	N				119	45A4J8- 4	20	N				206	
A	33	1	1700	45A4P1-P1	20	N				118	45A4J8- 1	20	N				203	
A	34	1	1650	45A4P1-S1	20	N				122	45A4J9-19	20	N				201	
A	35	1	1500	45A4P1-G6	20	N				109	45A4J9-11	20	N				194	
A	36	1	1350	45A4P1-F6	20	N				109	45A4J9- 4	20	N				186	

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR D	SHEET 6 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A D 1015736

CONDUCTOR				FROM							TO							
	NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. ITEM NO.	1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC ITEM NO.	1	NO.	
A	37	1	1270	45A4P1-M3	20	N				113	45A4J10- 9	20	N				182	
A	38	1	1180	45A4P1-M2	20	N				115	45A4J10- 2	20	N				174	
A	39	1	1200	45A4P1-M1	20	N				114	45A4J10- 1	20	N				173	
A	40	1	800	45A4P1-N6	20	N				116	45A4J12- 9	20	N				159	
A	41	1	700	45A4P1-M6	20	N				116	45A4J12- 2	20	N				151	
A	42	1	800	45A4P1-L6	20	N				116	45A4J12- 1	20	N				150	
A	43	1	400	45A4P1-A6	20	N				102	45A4J13-20	20	N				149	
A	44	1	800	45A4P1-G1	20	N				105	45A4J13-17	20	N				146	
A	45	1	640	45A4P1-G5	20	N				108	45A4J13-13	20	N				140	
A	46	1	700	45A4P1-K1	20	N				114	45A4J13-12	20	N				139	
A	47	1	600	45A4P1-C1	20	N				96	45A4J13-11	20	N				138	
A	48	1	560	45A4P1-C2	20	N				97	45A4J13-10	20	N				137	
A	49	1	700	45A4P1-H1	20	N				114	45A4J13- 9	20	N				136	
A	50	1	560	45A4P1-D2	20	N				106A	45A4J13- 6	20	N				133	
A	51	1	490	45A4P1-F5	20	N				108	45A4J13- 4	20	N				131	
A	52	1	600	45A4P1-D1	20	N				105	45A4J13- 1	20	N				128	
A	53	1	2090	45A4P1-R2	20	N				120	45A4J13- 7	20	N				134A	B
A	54	1	300	45A4J7- 3	20	N				93	45A4J13- 2	20	N				129	E

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR D	SHEET 7 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A D 1015736

CONDUCTOR				FROM							TO							
	NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. ITEM NO.	1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC ITEM NO.	1	NO.	
A	1	1	340	45A4P1-D5	20	N				106	45A4J7- 1	20	N				95	
A	2	1	420	45A4P1-F3	20	N				107	45A4J7- 4	20	N				92	
A	3	1	200	45A4P1-D6	20	N				109	45A4J7- 6	20	N				90	
A	4	1	300	45A4P1-C6	20	N				101	45A4J7-10	20	N				85	
A	5	1	340	45A4P1-C5	20	N				100	45A4J7-11	20	N				84	
A	6	1	520	45A4P1-G3	20	N				107	45A4J7-13	20	N				82	
A	7	1	430	45A4P1-K4	20	N				112	45A4J7- 2	20	N				94	
A	8	1	560	45A4P1-R2	20	N				119	45A4J7- 7	20	N				88	
A	9	1	870	45A4P1-D3	20	N				107	45A4J5- 1	20	N				57	
A	10	1	780	45A4P1-F4	20	N				106	45A4J5- 4	20	N				54	
A	11	1	880	45A4P1-D4	20	N				106	45A4J5- 6	20	N				52	
A	12	1	780	45A4P1-C4	20	N				99	45A4J5-10	20	N				47	
A	13	1	820	45A4P1-C3	20	N				98	45A4J5-11	20	N				46	
A	14	1	980	45A4P1-G4	20	N				106	45A4J5-13	20	N				44	
A	15	1	600	45A4P1-S6	20	N				127	45A4J7-14	20	N				81	
A	16	1	680	45A4P1-H4	20	N				112	45A4J7-15	20	N				78	
A	17	1	600	45A4P1-R6	20	N				121	45A4J7-16	20	N				77	
A	18	1	720	45A4P1-S3	20	N				124	45A4J7-18	20	N				73	

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR D	SHEET 5 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A D 1015736

CONDUCTOR				FROM							TO							
	NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC. ITEM NO.	1	NO.	CIRCUIT POINT	STRIP WIRE OR JACKET 2	T I N	CUT WIRE OR SHIELD 2	TERMINATION SPEC ITEM NO.	1	NO.	
A	55	1	300	45A4J6-10	20	N				58A	45A4J12- 5	20	N				154	A
A	56	1	500	45A4J5- 7	20	N				51	45A4J11-10	20	N				171	A
A	57	1	225	45A4J11-10	20	N				172	45A4J10- 5	20	N				177	A
A	58	1	500	45A4J6-10	20	N				58	45A4J7- 7	20	N				89A	E
A	59	1	650	45A4J5- 2	20	N				56	45A4J7- 3	20	N				93A	E
A	60	1	575	45A4J7- 7	20	N				89	45A4J5- 7	20	N				50	E
A	61	1	300	45A4E- 2	20	N				215	45A4J13- 7	20	N				134	B
A	62	1	275	45A4J7-14	20	N				80	45A4J13-14	20	N				142	A
A	63	1	1500	45A4P1-S6	20	N				127A	45A4J9-14	20	N				196	A
A	64	1	475	45A4J9-14	20	N				197	45A4J4-15	20	N				21	A
A	65	1	620	45A4J7-14	20	N				80A	45A4J5-14	20	N				43	E
A	66	1	600	45A4J7-15	20	N				79	45A4J13-15	20	N				143A	E
A	67	1	625	45A4J5-15	20	N				42	45A4J13-15	20	N				143	E
A	68	1	275	45A4J7-16	20	N				76	45A4J13-16	20	N				144	A
A	69	1	1375	45A4P1-R6	20	N				121A	45A4J4-13	20	N				24	B
A	70	1	500	45A4J4-13	20	N				23	45A4J9-16	20	N				198	A
A	71	1	275	45A4J9-16	20	N				199	45A4J3-14	20	N				13	E
A	72	1	175	45A4J3-14	20	N				14	45A4J3-18	20	N				11	E

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR D	SHEET 8 OF 14

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GFR WIRING HARNESS A D 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 91	1	425	45A4J5-17	20	N		38	45A4J10-10	20	N		183	E
A 92	1	325	45A4J11- 5	20	N		165	45A4J10- 6	20	N		179	A
A 93	1	300	45A4J11- 8	20	N		168	45A4J10- 8	20	N		181	A
A 94	1	325	45A4J4- 8	20	N		29	45A4J3- 7	20	N		17	E
A 95	1	475	45A4J4-11	20	N		26	45A4J3-20	20	N		10	E
A 96	1	400	45A4J4-10	20	N		27	45A4J3-17	20	N		12	E
A 97	1	250	45A4J3- 2	20	N		20	45A4J9- 1	20	N		185	A
A 98	1	225	45A4J3- 8	20	N		16	45A4J9- 6	20	N		188	C
A 99	1	300	45A4J3- 9	20	N		15	45A4J9-13	20	N		195	A
A 100	1	300	45A4J2- 5	20	N		6	45A4J8-10	20	N		211	A
A 101	1	300	45A4J2- 7	20	N		4	45A4J9-20	20	N		202	A
A 102	1	275	45A4J2- 8	20	N		3	45A4J8- 9	20	N		210	A
A 103	1	325	45A4J9- 9	20	N		192	45A4J8- 2	20	N		204	A
A 104	1	325	45A4J9-10	20	N		193	45A4J8- 3	20	N		205	A
A 105	1	325	45A4J9-19	20	N		200	45A4J2- 9	20	N		2	A
A 106	1	450	45A4J9- 7	20	N		190	45A4J8-11	20	N		212	A
A 107	1	250	45A4J8-11	20	N		213	45A4J2-10	20	N		1	A
A 108	1	650	45A4J1-21	12	N	2	214	45A4J2- 6	20	N		5	E

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015736
SCALE - NONE REV LTR D SHEET 10 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A D 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 109	1	650	45A4J1-20	12	N	2	214	45A4J2- 4	20	N		7	E
A 110	1	1200	45A4J1- 2	12	N	2	214	45A4J4- 7	20	N		30	E
A 111	6	220	45A4J1- 1	12	N	2	214	45A4E2	20	N		215	
A 112	1	1550	45A4J1-25	12	N	2	214	45A4J5- 8	20	N		49	C
A 113	1	1650	45A4J1-33	12	N	2	214	45A4J5- 5	20	N		53	C
A 114	1	1650	45A4J1-36	12	N	2	214	45A4J6- 6	20	N		63	C
A 115	1	1600	45A4J1-35	12	N	2	214	45A4J6- 4	20	N		65	C
A 116	1	1950	45A4J1-26	12	N	2	214	45A4J7- 8	20	N		87	E
A 117	1	2000	45A4J1-34	12	N	2	214	45A4J7- 5	20	N		91	E
A 118	1	1900	45A4J1-32	12	N	2	214	45A4J13- 5	20	N		132	A
A 119	1	1850	45A4J1-24	12	N	2	214	45A4J13- 8	20	N		135	A
A 120	1	1550	45A4J1-19	12	N	2	214	45A4J12- 7	20	N		157	B
A 121	1	1550	45A4J1-11	12	N	2	214	45A4J12-11	20	N		161	B
A 122	1	1350	45A4J1-27	12	N	2	214	45A4J11- 4	20	N		164	C
A 123	1	1350	45A4J1-28	12	N	2	214	45A4J11- 6	20	N		166	C
A 124	1	1050	45A4J1-31	12	N	2	214	45A4J9- 5	20	N		187	B
A 125	1	1200	45A4J1-18	12	N	2	214	45A4J10- 7	20	N		180	C
A 126	1	1200	45A4J1-10	12	N	2	214	45A4J10-11	20	N		184	C

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015736
SCALE - NONE REV LTR D SHEET 11 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A D 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 73	1	620	45A4J5-16	20	N		39	45A4J7-16	20	N		76A	E
A 74	1	475	45A4J7-17	20	N		75	45A4J12-10	20	N		160	E
A 75	1	575	45A4J7-18	20	N		74	45A4J5-18	20	N		37	E
A 76	1	300	45A4J7-18	20	N		74A	45A4J13-18	20	N		147	A
A 77	1	275	45A4J7-19	20	N		71	45A4J6- 9	20	N		59	E
A 78	1	350	45A4J7-19	20	N		71A	45A4J13-19	20	N		148A	A
A 79	1	225	45A4J5-19	20	N		35	45A4J11- 9	20	N		169	A
A 80	1	525	45A4J11- 9	20	N		170	45A4J13-19	20	N		148	A
A 81	1	500	45A4J7- 9	20	N		86	45A4J12- 3	20	N		152	A
A 82	1	475	45A4J7-12	20	N		83	45A4J12- 4	20	N		153	A
A 83	1	250	45A4J7-20	20	N		70	45A4J6- 7	20	N		62	E
A 84	1	425	45A4J6- 3	20	N		67	45A4J11- 3	20	N		163	E
A 85	1	525	45A4J6- 2	20	N		69	45A4J11- 2	20	N		162	A
A 86	1	300	45A4J6- 5	20	N		64	45A4J12- 6	20	N		156	A
A 87	1	300	45A4J6- 8	20	N		61	45A4J12- 8	20	N		158	E
A 88	1	225	45A4J5-20	20	N		33	45A4J11- 7	20	N		167	C
A 89	1	450	45A4J5- 9	20	N		48	45A4J10- 3	20	N		175	A
A 90	1	425	45A4J5-12	20	N		45	45A4J10- 4	20	N		176	A

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015736
SCALE - NONE REV LTR D SHEET 9 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A D 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT 2	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 127	1	1050	45A4J1-23	12	N	2	214	45A4J9- 8	20	N		191	B
A 128	1	700	45A4J1- 9	12	N	2	214	45A4J8- 5	20	N		207	B
A 129	1	650	45A4J1-17	12	N	2	214	45A4J8- 8	20	N		209	B
A 130	6	220	45A4J1-29	12	N	2	214	45A4E2	20	N		215	
A 131	6	220	45A4J1-38	12	N	2	214	45A4E2	20	N		215	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1015736
SCALE - NONE REV LTR D SHEET 12 OF 14

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

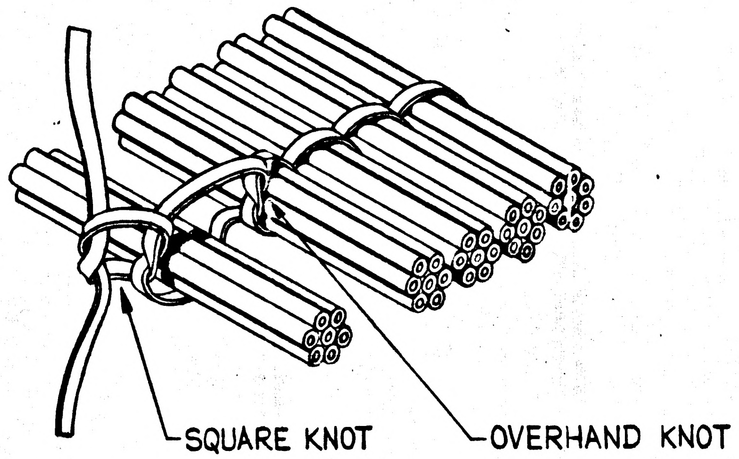
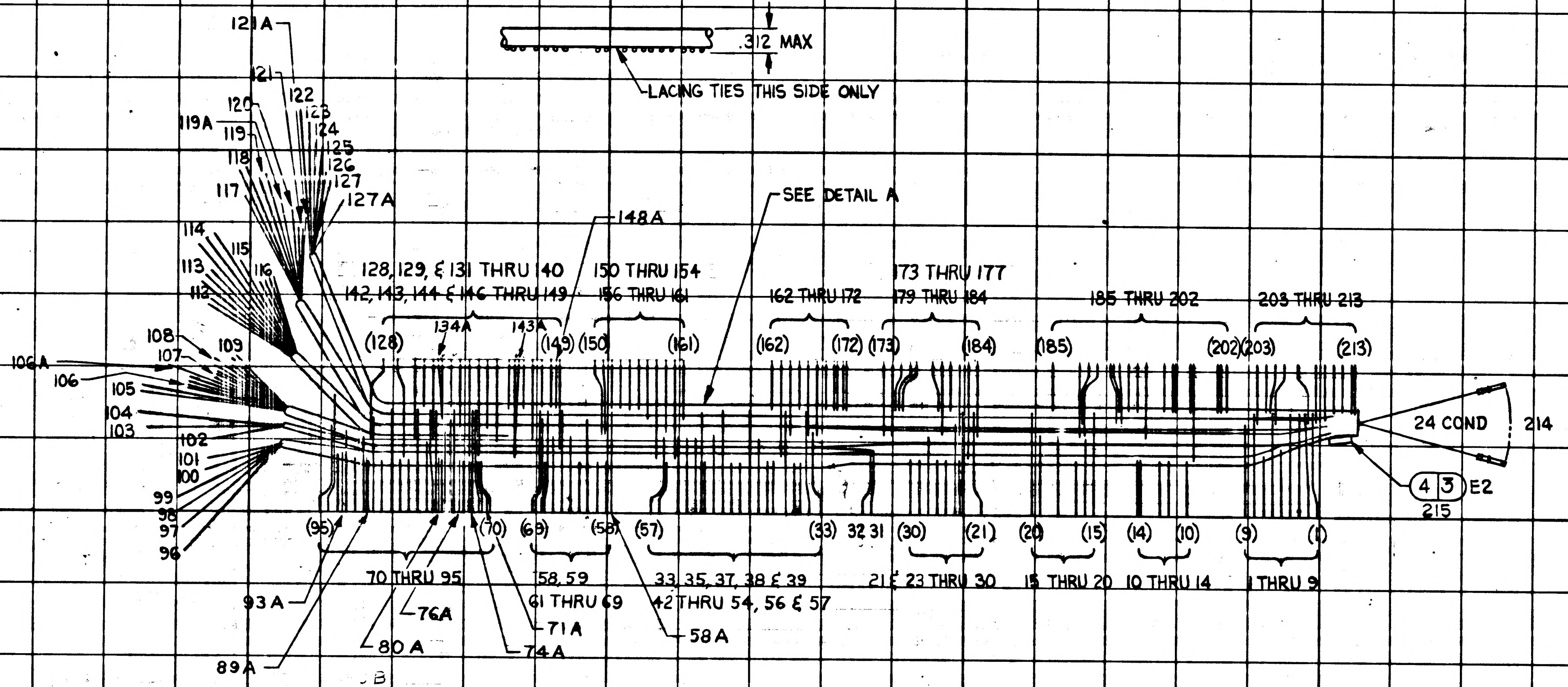

SQUARE KNOT
OVERHAND KNOT

FIGURE I
MULTIPLE SPOT TIE

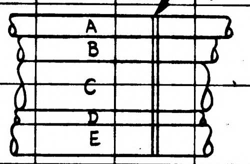
MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR D	SHEET 13 OF 14

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD
		REVISIONS TDRR 04783			
A		REVISED PER TDRR 05532		12/27/63	EPK WR
B		REVISED PER TDRR 05585		31 DEC 63	EPK WR
C		REVISED PER TDRR 06733		3/3/64	WR
D		REVISED PER TDRR 06890		3/31/64	EPK WR


.312 MAX
LACING TIES THIS SIDE ONLY
SEE DETAIL A
121A
121
122
123
124
125
126
127
127A
120
119A
119
118
117
114
115
116
113
112
108
107
109
106A
106
105
104
103
102
101
100
99
98
97
96
148A
128, 129, & 131 THRU 140
142, 143, 144 & 146 THRU 149
134A
143A
(128)
(149)
150 THRU 154
156 THRU 161
(150)
(161)
162 THRU 172
(162)
(172)
173 THRU 177
179 THRU 184
(173)
(184)
185 THRU 202
(185)
(202)
203 THRU 213
(203)
(213)
24 COND
214
4 3 E2
215
(95)
(70)
(69)
(58)
(57)
(33)
32 31
(30)
(21)
(20)
(15)
(14)
(10)
(9)
(1)
70 THRU 95
58, 59
61 THRU 69
33, 35, 37, 38 & 39
42 THRU 54, 56 & 57
21 & 23 THRU 30
15 THRU 20
10 THRU 14
1 THRU 9
93A
76A
80A
71A
74A
58A
89A

SPOT TIE CONFIGURATION AS REQUIRED PER FIG 1, SHEET 13



CHANNELS
DETAIL A
SCALE 2:1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS .± ANGLES ± DO NOT SCALE THIS DRAWING	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN DRAWN R. Tamayo DATE 3 OCT 63 CHECKED Hayden 24 OCT 63 APPROVAL 10-25-63 APPROVAL 24 OCT 63 11/19/63	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	WIRING HARNESS A (TRAY 4)
MATERIAL	NASA APPROVAL	CODE IDENT NO.	SIZE D 1015736
CONTRACT NAS 9-497	MIT APPROVAL 11/20/63	SCALE 1:1	SHEET 14 OF 14

1007144	1007154
NEXT ASSY	USED ON
APPLICATION	

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

PENNANT NOTE GENERAL NOTES

PENNANT NOTE	GENERAL NOTES
1	SEE CONDUCTOR CHART
2	SEE CONDUCTOR CHART
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	LACE HARNESS USING ITEM 5
8	IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
9	Y OR N IN TINNED COLUMN INDICATES YES OR NO.
10	GRID MODULE IS 1 INCH.
11	UNLESS OTHERWISE SPECIFIED --- FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.
12	BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.
13	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
14	IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY
15	INSTALL ITEM 2 PER ND1002066

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE-NONE | REV LTR E | SHEET 2 OF 14

PENNANT NOTE	GENERAL NOTES
16	INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART. UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE. STRIP WIRE. STRIP JACKET. CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE-NONE | REV LTR E | SHEET 3 OF 14

APPLICATION	
NEXT ASSY	USED ON
1007144	1007158

REVISIONS TDRR 04283

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05532	12/27/63	EPK WK
B	REVISED, TDRR 05585	12/31/63	EPK WK
C	REVISED PER TDRR 06733	3/3/64	JFW ADL WK
D	REVISED PER TDRR 06890	3/31/64	JFW PPK WK
E	REVISED PER TDRR 06884	4/7/64	ADL PPK WK

REV														
SHEET														
REV STATUS REV	E	E	E	E	E	E	E	E	E	E	E	E	E	E
OF SHEETS SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

Charleston 24 Oct 63

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN C Tomsen DATE 7 OCT 63
CHECKED J Naylor 24 Oct 63
APPROVAL 10/25/63
APPROVAL 24 OCT 63 11/1/63
NASA APPROVAL
MIT APPROVAL 11/20/63
CONTRACT NAS 9-497

WIRING HARNESS A
(TRAY 4)

CODE IDENT NO. | SIZE A | 1015736 | REV E
SCALE NONE | SHEET 1 OF 14

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	AR	1010639- 2	WIRE. 83 FT 0.5 IN TOTAL LENGTH
13	2	24	1010738- 2	CONTACT. ELEC
13	3	1	1010476-168	INSULATION. SLEEVING. ELEC. HEAT SHRINK
13	4	1	1010711- 1	SPLICE REDUCER
13	5	AR	MIL-T-713	LACING TAPE. TYPE P. CLASS 2. BLACK (ES-2732 NO. 18)
	6	AR	MIL-W-16878/1B-24-19STND	WIRE-WHITE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE-NONE | REV LTR E | SHEET 4 OF 14

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GFR WIRING HARNESS A E 1015736

	CONDUCTOR			FROM					TO					
	INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC. 1		CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC 1		
	NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	ITEM NO.	NO.	CIRCUIT POINT	2	T I N	ITEM NO.	NO.	
A	19	1	660	45A4P1-S2	20	N		123	45A4J7-19	20	N		72	
A	20	1	740	45A4P1-S5	20	N		126	45A4J6- 3	20	N		66	
A	21	1	1150	45A4P1-A1	20	N		104	45A4J4- 1	20	N		32	
A	22	1	1110	45A4P1-A2	20	N		103	45A4J4- 2	20	N		31	
A	23	1	1300	45A4P1-P6	20	N		121	45A4J4-12	20	N		25	
A	24	1	1200	45A4P1-H6	20	N		116	45A4J4- 9	20	N		28	
A	25	1	1420	45A4P1-K3	20	N		227	45A4J3- 3	20	N		19	
A	26	1	1420	45A4P1-H3	20	N		113	45A4J3- 5	20	N		18	
A	27	1	1780	45A4P1-S4	20	N		125	45A4J2- 3	20	N		8	
A	28	1	750	45A4P1-R5	20	N		119A	45A4J6- 2	20	N		68	
A	29	1	1740	45A4P1-R4	20	N		236	45A4J2- 2	20	N		9	
A	30	1	1670	45A4P1-P3	20	N		117	45A4J8- 7	20	N		208	
A	31	1	1550	45A4P1-R1	20	N		234	45A4J9- 7	20	N		189	
A	32	1	1660	45A4P1-P2	20	N		119	45A4J8- 4	20	N		206	
A	33	1	1700	45A4P1-P1	20	N		118	45A4J8- 1	20	N		203	
A	34	1	1650	45A4P1-S1	20	N		122	45A4J9-19	20	N		201	
A	35	1	1500	45A4P1-G6	20	N		225	45A4J9-11	20	N		194	
A	36	1	1350	45A4P1-F6	20	N		220	45A4J9- 4	20	N		186	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE
REV LTR E
SHEET 6 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A E 1015736

	CONDUCTOR			FROM					TO					
	INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC. 1		CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC 1		
	NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	ITEM NO.	NO.	CIRCUIT POINT	2	T I N	ITEM NO.	NO.	
A	37	1	1270	45A4P1-M3	20	N		231	45A4J10- 9	20	N		182	
A	38	1	1180	45A4P1-M2	20	N		115	45A4J10- 2	20	N		174	
A	39	1	1200	45A4P1-M1	20	N		230	45A4J10- 1	20	N		173	
A	40	1	800	45A4P1-N6	20	N		233	45A4J12- 9	20	N		159	
A	41	1	700	45A4P1-M6	20	N		232	45A4J12- 2	20	N		151	
A	42	1	800	45A4P1-L6	20	N		229	45A4J12- 1	20	N		150	
A	43	1	400	45A4P1-A6	20	N		102	45A4J13-20	20	N		149	
A	44	1	800	45A4P1-G1	20	N		221	45A4J13-17	20	N		146	
A	45	1	640	45A4P1-G5	20	N		224	45A4J13-13	20	N		140	
A	46	1	700	45A4P1-K1	20	N		226	45A4J13-12	20	N		139	
A	47	1	600	45A4P1-C1	20	N		96	45A4J13-11	20	N		138	
A	48	1	560	45A4P1-C2	20	N		97	45A4J13-10	20	N		137	
A	49	1	700	45A4P1-H1	20	N		114	45A4J13- 9	20	N		136	
A	50	1	560	45A4P1-D2	20	N		106A	45A4J13- 6	20	N		133	
A	51	1	490	45A4P1-F5	20	N		108	45A4J13- 4	20	N		131	
A	52	1	600	45A4P1-D1	20	N		105	45A4J13- 1	20	N		128	
A	53	1	2090	45A4P1-R2	20	N		120	45A4J13- 7	20	N		134A	B
A	54	1	300	45A4J7- 3	20	N		93	45A4J13- 2	20	N		129	E

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE
REV LTR E
SHEET 7 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A E 1015736

	CONDUCTOR			FROM					TO					
	INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC. 1		CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC 1		
	NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	ITEM NO.	NO.	CIRCUIT POINT	2	T I N	ITEM NO.	NO.	
A	1	1	340	45A4P1-D5	20	N		217	45A4J7- 1	20	N		95	
A	2	1	420	45A4P1-F3	20	N		218	45A4J7- 4	20	N		92	
A	3	1	200	45A4P1-D6	20	N		109	45A4J7- 6	20	N		90	
A	4	1	300	45A4P1-C6	20	N		101	45A4J7-10	20	N		85	
A	5	1	340	45A4P1-C5	20	N		100	45A4J7-11	20	N		84	
A	6	1	520	45A4P1-G3	20	N		222	45A4J7-13	20	N		82	
A	7	1	430	45A4P1-K4	20	N		228	45A4J7- 2	20	N		94	
A	8	1	560	45A4P1-R2	20	N		235	45A4J7- 7	20	N		88	
A	9	1	870	45A4P1-D3	20	N		107	45A4J5- 1	20	N		57	
A	10	1	780	45A4P1-F4	20	N		219	45A4J5- 4	20	N		54	
A	11	1	880	45A4P1-D4	20	N		216	45A4J5- 6	20	N		52	
A	12	1	780	45A4P1-C4	20	N		99	45A4J5-10	20	N		47	
A	13	1	820	45A4P1-C3	20	N		98	45A4J5-11	20	N		46	
A	14	1	980	45A4P1-G4	20	N		223	45A4J5-13	20	N		44	
A	15	1	600	45A4P1-S6	20	N		127	45A4J7-14	20	N		81	
A	16	1	680	45A4P1-H4	20	N		112	45A4J7-15	20	N		78	
A	17	1	600	45A4P1-R6	20	N		237	45A4J7-16	20	N		77	
A	18	1	720	45A4P1-S3	20	N		124	45A4J7-18	20	N		73	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE
REV LTR E
SHEET 5 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A E 1015736

	CONDUCTOR			FROM					TO					
	INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC. 1		CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC 1		
	NUMBER	ITEM NO.	2	CIRCUIT POINT	2	T I N	ITEM NO.	NO.	CIRCUIT POINT	2	T I N	ITEM NO.	NO.	
A	55	1	300	45A4J6-10	20	N		58A	45A4J12- 5	20	N		154	A
A	56	1	500	45A4J5- 7	20	N		51	45A4J11-10	20	N		171	A
A	57	1	225	45A4J11-10	20	N		172	45A4J10- 5	20	N		177	A
A	58	1	500	45A4J6-10	20	N		58	45A4J7- 7	20	N		89A	E
A	59	1	650	45A4J5- 2	20	N		56	45A4J7- 3	20	N		93A	E
A	60	1	575	45A4J7- 7	20	N		89	45A4J5- 7	20	N		50	E
A	61	1	300	45A4E- 2	20	N		215	45A4J13- 7	20	N		134	B
A	62	1	275	45A4J7-14	20	N		80	45A4J13-14	20	N		142	A
A	63	1	1500	45A4P1-S6	20	N		127A	45A4J9-14	20	N		196	A
A	64	1	475	45A4J9-14	20	N		197	45A4J4-15	20	N		21	A
A	65	1	620	45A4J7-14	20	N		80A	45A4J5-14	20	N		43	E
A	66	1	600	45A4J7-15	20	N		79	45A4J13-15	20	N		143A	E
A	67	1	625	45A4J5-15	20	N		42	45A4J13-15	20	N		143	E
A	68	1	275	45A4J7-16	20	N		76	45A4J13-16	20	N		144	A
A	69	1	1375	45A4P1-R6	20	N		121A	45A4J4-13	20	N		24	B
A	70	1	500	45A4J4-13	20	N		23	45A4J9-16	20	N		198	A
A	71	1	275	45A4J9-16	20	N		199	45A4J3-14	20	N		13	E
A	72	1	175	45A4J3-14	20	N		14	45A4J3-18	20	N		11	E

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE
REV LTR E
SHEET 8 OF 14

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GFR WIRING HARNESS A E 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 91	1	425	45A4J5-17	20	N		38	45A4J10-10	20	N		183	E
A 92	1	325	45A4J11- 5	20	N		165	45A4J10- 6	20	N		179	A
A 93	1	300	45A4J11- 8	20	N		168	45A4J10- 8	20	N		181	A
A 94	1	325	45A4J4- 8	20	N		29	45A4J3- 7	20	N		17	E
A 95	1	475	45A4J4-11	20	N		26	45A4J3-20	20	N		10	E
A 96	1	400	45A4J4-10	20	N		27	45A4J3-17	20	N		12	E
A 97	1	250	45A4J3- 2	20	N		20	45A4J9- 1	20	N		185	A
A 98	1	225	45A4J3- 8	20	N		16	45A4J9- 6	20	N		188	C
A 99	1	300	45A4J3- 9	20	N		15	45A4J9-13	20	N		195	A
A 100	1	300	45A4J2- 5	20	N		6	45A4J8-10	20	N		211	A
A 101	1	300	45A4J2- 7	20	N		4	45A4J9-20	20	N		202	A
A 102	1	275	45A4J2- 8	20	N		3	45A4J8- 9	20	N		210	A
A 103	1	325	45A4J9- 9	20	N		192	45A4J8- 2	20	N		204	A
A 104	1	325	45A4J9-10	20	N		193	45A4J8- 3	20	N		205	A
A 105	1	325	45A4J9-19	20	N		200	45A4J2- 9	20	N		2	A
A 106	1	450	45A4J9- 7	20	N		190	45A4J8-11	20	N		212	A
A 107	1	250	45A4J8-11	20	N		213	45A4J2-10	20	N		1	A
A 108	1	650	45A4J1-21	12	N	2	214	45A4J2- 6	20	N		5	E

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR E	SHEET 10 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A E 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 109	1	650	45A4J1-20	12	N	2	214	45A4J2- 4	20	N		7	E
A 110	1	1200	45A4J1- 2	12	N	2	214	45A4J4- 7	20	N		30	E
A 111	6	220	45A4J1- 1	12	N	2	214	45A4E2	20	N		215	
A 112	1	1550	45A4J1-25	12	N	2	214	45A4J5- 8	20	N		49	C
A 113	1	1650	45A4J1-33	12	N	2	214	45A4J5- 5	20	N		53	C
A 114	1	1650	45A4J1-36	12	N	2	214	45A4J6- 6	20	N		63	C
A 115	1	1600	45A4J1-35	12	N	2	214	45A4J6- 4	20	N		65	C
A 116	1	1950	45A4J1-26	12	N	2	214	45A4J7- 8	20	N		87	E
A 117	1	2000	45A4J1-34	12	N	2	214	45A4J7- 5	20	N		91	E
A 118	1	1900	45A4J1-32	12	N	2	214	45A4J13- 5	20	N		132	A
A 119	1	1850	45A4J1-24	12	N	2	214	45A4J13- 8	20	N		135	A
A 120	1	1550	45A4J1-19	12	N	2	214	45A4J12- 7	20	N		157	B
A 121	1	1550	45A4J1-11	12	N	2	214	45A4J12-11	20	N		161	B
A 122	1	1350	45A4J1-27	12	N	2	214	45A4J11- 4	20	N		164	C
A 123	1	1350	45A4J1-28	12	N	2	214	45A4J11- 6	20	N		166	C
A 124	1	1050	45A4J1-31	12	N	2	214	45A4J9- 5	20	N		187	B
A 125	1	1200	45A4J1-18	12	N	2	214	45A4J10- 7	20	N		180	C
A 126	1	1200	45A4J1-10	12	N	2	214	45A4J10-11	20	N		184	C

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR E	SHEET 11 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A E 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 73	1	620	45A4J5-16	20	N		39	45A4J7-16	20	N		76A	E
A 74	1	475	45A4J7-17	20	N		75	45A4J12-10	20	N		160	E
A 75	1	575	45A4J7-18	20	N		74	45A4J5-18	20	N		37	E
A 76	1	300	45A4J7-18	20	N		74A	45A4J13-18	20	N		147	A
A 77	1	275	45A4J7-19	20	N		71	45A4J6- 9	20	N		59	E
A 78	1	350	45A4J7-19	20	N		71A	45A4J13-19	20	N		148A	A
A 79	1	225	45A4J5-19	20	N		35	45A4J11- 9	20	N		169	A
A 80	1	525	45A4J11- 9	20	N		170	45A4J13-19	20	N		148	A
A 81	1	500	45A4J7- 9	20	N		86	45A4J12- 3	20	N		152	A
A 82	1	475	45A4J7-12	20	N		83	45A4J12- 4	20	N		153	A
A 83	1	250	45A4J7-20	20	N		70	45A4J6- 7	20	N		62	E
A 84	1	425	45A4J6- 3	20	N		67	45A4J11- 3	20	N		163	E
A 85	1	525	45A4J6- 2	20	N		69	45A4J11- 2	20	N		162	A
A 86	1	300	45A4J6- 5	20	N		64	45A4J12- 6	20	N		156	A
A 87	1	300	45A4J6- 8	20	N		61	45A4J12- 8	20	N		158	E
A 88	1	225	45A4J5-20	20	N		33	45A4J11- 7	20	N		167	C
A 89	1	450	45A4J5- 9	20	N		48	45A4J10- 3	20	N		175	A
A 90	1	425	45A4J5-12	20	N		45	45A4J10- 4	20	N		176	A

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR E	SHEET 9 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A E 1015736

CONDUCTOR			FROM					TO					
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	CIRCUIT POINT 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CIRCUIT POINT 2	CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 127	1	1050	45A4J1-23	12	N	2	214	45A4J9- 8	20	N		191	B
A 128	1	700	45A4J1- 9	12	N	2	214	45A4J8- 5	20	N		207	B
A 129	1	650	45A4J1-17	12	N	2	214	45A4J8- 8	20	N		209	B
A 130	6	220	45A4J1-29	12	N	2	214	45A4E2	20	N		215	
A 131	6	220	45A4J1-38	12	N	2	214	45A4E2	20	N		215	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR E	SHEET 12 OF 14

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

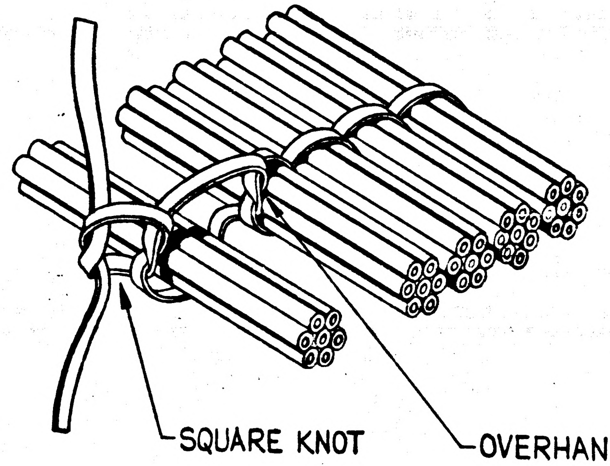
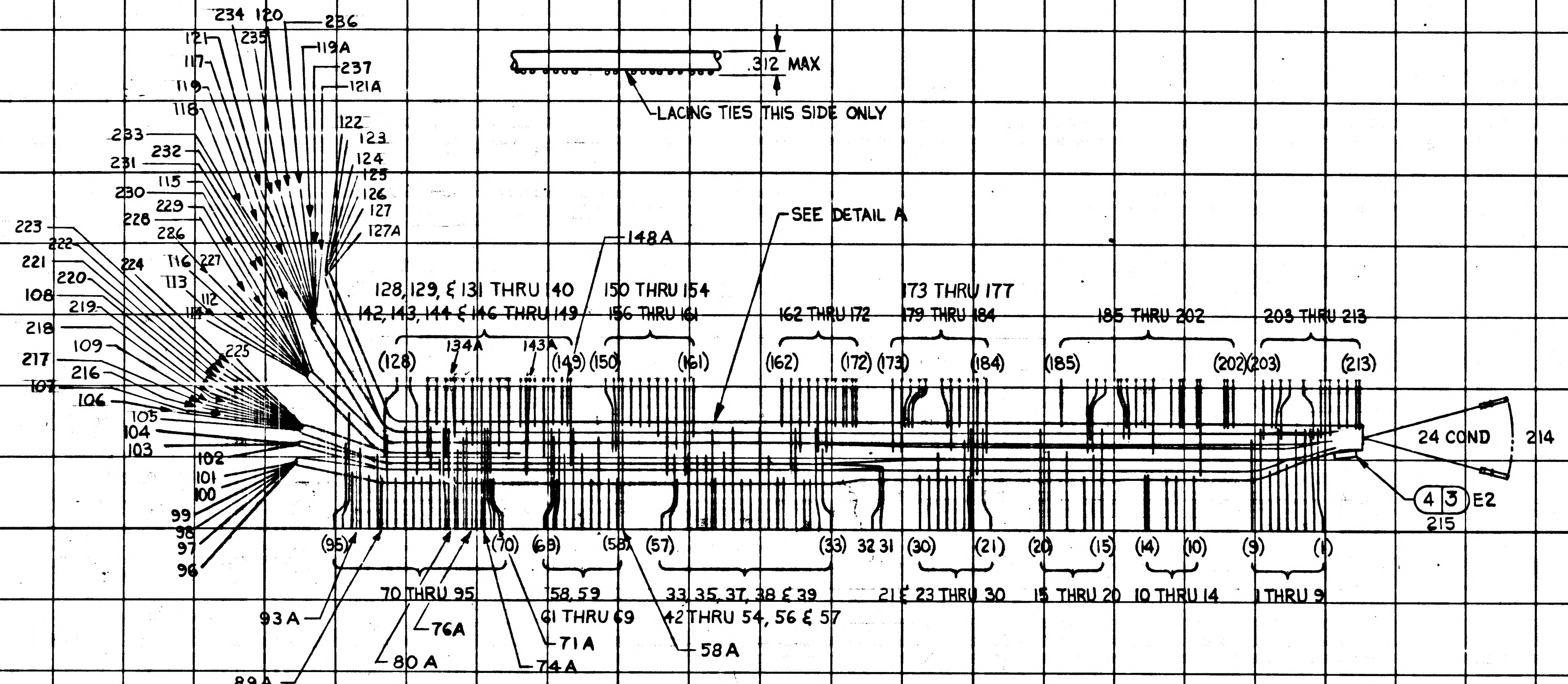

SQUARE KNOT
OVERHAND KNOT

FIGURE 1
MULTIPLE SPOT TIE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR E	SHEET 13 OF 14

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

E	1015736	2				
REVISIONS *TDRR 04783*						
SYM	ZONE	DESCRIPTION		CHG NO.	DATE	APPD
A		REVISED PER TDRR 05532			12/07/63	WK
B		REVISED PER TDRR 05585			31 DEC 63	RPK WK
C		REVISED PER TDRR 06733			3/3/64	WK
D		REVISED PER TDRR 06890			3/31/64	RPK WK
E		REVISED PER TDRR 06884			4/17/64	RPK WK


.312 MAX
LACING TIES THIS SIDE ONLY
SEE DETAIL A
234 120
236
235
121
119A
117
237
119
121A
118
122
123
233
232
124
231
125
115
126
230
229
127
228
127A
226
223
222
221
224
116
227
148A
220
113
112
108
219
111
128, 129, & 131 THRU 140
142, 143, 144 & 146 THRU 149
150 THRU 154
156 THRU 161
162 THRU 172
173 THRU 177
179 THRU 184
185 THRU 202
203 THRU 213
218
109
225
134A
143A
217
216
107
106
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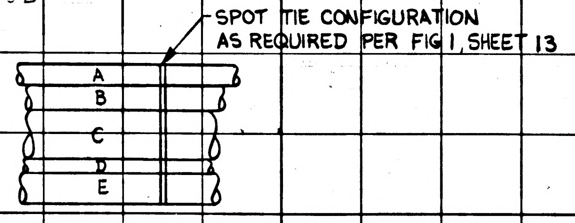
97
96
(128)
(149)
(150)
(161)
(162)
(172)
(173)
(184)
(185)
(202)
(203)
(213)
24 COND
214
4 3 E2
215
(95)
(70)
(69)
(58)
(57)
(33)
32
31
(30)
(21)
(20)
(15)
(14)
(10)
(9)
(1)
70 THRU 95
58, 59
33, 35, 37, 38 & 39
21 & 23 THRU 30
15 THRU 20
10 THRU 14
1 THRU 9
61 THRU 69
42 THRU 54, 56 & 57
93A
76A
71A
58A
80 A
74A
89A


SPOT TIE CONFIGURATION
AS REQUIRED PER FIG 1, SHEET 13
A
B
C
D
E

CHANNELS
DETAIL A
SCALE 2:1

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES + + + − − −	AC SPARK PLUG DIVISION, GMC MILWAUKEE, WISCONSIN ACSP PN	MANNED SPACECRAFT CENTER HOUSTON, TEXAS
		DO NOT SCALE THIS DRAWING	DRAWN R. Tomasi DATE 3 OCT 63 CHECKED 24 OCT 63 APPROVAL 10-26-63 APPROVAL 24 OCT 63	WIRING HARNESS A *(TRAY 4)*
1007144	1007154	MATERIAL	NASA APPROVAL	CODE IDENT NO. / SIZE D / 1015736
NEXT ASSY	USED ON			
APPLICATION		CONTRACT NAS 9-497	MIT APPROVAL	SCALE 1:1 / SHEET 14 OF 14

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

APPLICATION	
NEXT ASSY	USED ON
1007144	1007154

REVISIONS TDRR 04783

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05532	12/27/63	LTK WK
B	REVISED, TDRR 05585	12/31/63	WK
C	REVISED PER TDRR 06733	3/3/64	WK
D	REVISED PER TDRR 06890	3/3/64	RPK WK
E	REVISED PER TDRR 06884	4/7/64	PPK WK
F	REVISED PER TDRR 12756	28 SEP 64	JWP

Ruedesten
24 Oct 63

REV STATUS OF SHEETS															
REV															
SHEET															
REV	F	E	E	E	F	E	F	E	E	E	E	E	E	E	
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN A. Tomsen DATE 7 OCT 63
CHECKED 24 Oct 63
APPROVAL 10/24/63
APPROVAL 29 OCT 63

WIRING HARNESS A
(TRAY 4)

NASA APPROVAL
MIT APPROVAL 11/20/63

CODE IDENT NO.
SIZE A
1015736
REV F

CONTRACT NAS 9-497
SCALE NONE
SHEET 1 OF 14

PENNANT NOTE GENERAL NOTES

1 SEE CONDUCTOR CHART

2 SEE CONDUCTOR CHART

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

6 SPIRALLING OF THE MARKING IS ALLOWED.

7 LACE HARNESS USING ITEM 5

8 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

9 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

10 GRID MODULE IS 1 INCH.

11 UNLESS OTHERWISE SPECIFIED ---
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH.
END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.

12 BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.

13 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

14 IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY

15 INSTALL ITEM 2 PER ND1002066

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE-NONE REV LTR E SHEET 2 OF 14

PENNANT NOTE GENERAL NOTES

16 INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	TOLERANCE STRIP JACKET	TOLERANCE CUT WIRE	TOLERANCE CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE-NONE REV LTR E SHEET 3 OF 14

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	AR	1010839- 2	WIRE, 83 FT 3.5 IN TOTAL LENGTH
13	2	24	1010758- 2	CONTACT, ELEC
13	3	1	1010476-168	INSULATION, SLEEVING, ELEC, HEAT SHRINK
13	4	1	1010711- 1	SPLICE REDUCER
13	5	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2, BLACK (ES-2732 NO. 18)
	6	AR	MIL-W-16878/18-24-19	STND WIRE-WHITE

MANNED
SPACECRAFT
CENTER
HOUSTON TEXAS
SIZE A
1015736
SCALE-NONE REV LTR E SHEET 4 OF 14

CONDUCTOR NUMBER	CONDUCTOR ITEM NO	INDIVIDUAL LENGTH 2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	FROM TERMINATION SPEC 1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TO TERMINATION SPEC 1 ITEM NO.	[illegible]
1	1	340	45A4P1-~~[illegible]~~ D6	20	N		~~217~~ 109	45A4J7- 1	20	N		95
2	1	420	45A4P1-F3	20	N		218	45A4J7- 4	20	N		82
3	1	200	45A4P1-~~[illegible]~~ D5	20	N		~~109~~ 217	45A4J7- 6	20	N		90
4	1	300	45A4P1-C6	20	N		101	45A4J7-10	20	N		86
5	1	340	45A4P1-C5	20	N		100	45A4J7-11	20	N		84
6	1	320	45A4P1-G3	20	N		222	45A4J7-13	20	N		82
7	1	480	45A4P1-K4	20	N		228	45A4J7- 2	20	N		94
8	1	560	45A4P1-R2	20	N		235	45A4J7- 7	20	N		88
9	1	870	45A4P1-~~[illegible]~~ D4	20	N		~~107~~ 216	45A4J5- 1	20	N		53
10	1	780	45A4P1-F4	20	N		219	45A4J5- 4	20	N		54
11	1	880	45A4P1-~~[illegible]~~ D3	20	N		~~216~~ 107	45A4J5- 6	20	N		52
12	1	780	45A4P1-C4	20	N		99	45A4J5-10	20	N		47
13	1	820	45A4P1-C3	20	N		98	45A4J5-11	20	N		46
14	1	980	45A4P1-G4	20	N		223	45A4J5-13	20	N		44
15	1	600	45A4P1-S6	20	N		127	45A4J7-14	20	N		81
16	1	680	45A4P1-H4	20	N		112	45A4J7-15	20	N		76
17	1	600	45A4P1-R6	20	N		237	45A4J7-16	20	N		77
18	1	720	45A4P1-S3	20	N		124	45A4J7-18	20	N		73

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE REV LTR ~~E~~ F SHEET 5 OF 14

CONDUCTOR			FROM					TO					
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD / STRIP WIRE OR JACKET			TERMINATION SPEC 1		CUT WIRE OR SHIELD / STRIP WIRE OR JACKET			TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN 2	ITEM NO	NO	CIRCUIT POINT	2	TIN 2	ITEM NO.	NO	
A 19	1	660	45A4P1-S2	20	N		123	45A4J7-19	20	N		72	
A 20	1	740	45A4P1-S5	20	N		126	45A4J6- 3	20	N		66	
A 21	1	1150	45A4P1-A1	20	N		104	45A4J4- 1	20	N		32	
A 22	1	1120	45A4P1-A2	20	N		103	45A4J4- 2	20	N		31	
A 23	1	1300	45A4P1-P6	20	N		121	45A4J4-12	20	N		25	
A 24	1	1200	45A4P1-H6	20	N		116	45A4J4- 9	20	N		26	
A 25	1	1420	45A4P1-K3	20	N		227	45A4J3- 3	20	N		19	
A 26	1	1420	45A4P1-H3	20	N		113	45A4J3- 5	20	N		18	
A 27	1	1780	45A4P1-S4	20	N		125	45A4J2- 3	20	N		8	
A 28	1	750	45A4P1-R5	20	N		119A	45A4J6- 2	20	N		68	
A 29	1	1740	45A4P1-R4	20	N		236	45A4J2- 2	20	N		9	
A 30	1	1670	45A4P1-P3	20	N		117	45A4J8- 7	20	N		208	
A 31	1	1550	45A4P1-R1	20	N		234	45A4J9- 7	20	N		189	
A 32	1	1660	45A4P1-P2	20	N		119	45A4J8- 4	20	N		206	
A 33	1	1700	45A4P1-P1	20	N		118	45A4J8- 1	20	N		203	
A 34	1	1650	45A4P1-S1	20	N		122	45A4J9-19	20	N		201	
A 35	1	1500	45A4P1-G6	20	N		225	45A4J9-11	20	N		194	
A 36	1	1350	45A4P1-F6	20	N		220	45A4J9- 4	20	N		186	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR E	SHEET 6 OF 14

MIL 2086 - 4-63 WIR

GFR WIRING HARNESS A F 1015736

	CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH	FROM CIRCUIT POINT	STRIP WIRE OR JACKET	FROM NO	TO CIRCUIT POINT	STRIP WIRE OR JACKET	TO NO	
A	37	1	1270	45A4P1-M3	20N	231	45A4J10- 9	20N	182	
A	38	1	1180	45A4P1-M2	20N	115	45A4J10- 2	20N	174	
A	39	1	1200	45A4P1-M1	20N	230	45A4J10- 1	20N	173	
A	40	1	800	45A4P1-N6	20N	233	45A4J12- 9	20N	159	
A	41	1	700	45A4P1-M6	20N	232	45A4J12- 2	20N	151	
A	42	1	800	45A4P1-L6	20N	229	45A4J12- 1	20N	150	
A	43	1	400	45A4P1-A6	20N	102	45A4J13-20	20N	149	
A	44	1	800	45A4P1-G1	20N	221	45A4J13-17	20N	146	
A	45	1	640	45A4P1-G5	20N	224	45A4J13-13	20N	140	
A	46	1	700	45A4P1-[illegible]	20N	226	45A4J13-12	20N	139	
A	47	1	600	45A4P1-C1	20N	96	45A4J13-11	20N	138	
A	48	1	560	45A4P1-C2	20N	97	45A4J13-10	20N	137	
A	49	1	700	45A4P1-H1	20N	114	45A4J13- 9	20N	136	
A	50	1	560	45A4P1-~~[illegible]~~ D1	20N	~~106~~ 105	45A4J13- 6	20N	135	
A	51	1	490	45A4P1-F5	20N	108	45A4J13- 4	20N	131	
A	52	1	600	45A4P1-~~B1~~ D2	20N	~~108~~ 106	45A4J13- 1	20N	126	
A	53	1	2090	45A4P1-R2	20N	120	45A4J13- 7	20N	134	B
A	54	1	300	45A4J7- 3	20N	93	45A4J13- 2	20N	129	E

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS

SIZE A

1015736

SCALE - NONE REV LTR F SHEET OF 14.

MSC 2085 - 4 63 WIR

GFR WIRING HARNESS A E 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2 / T I N	TERMINATION SPEC 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2 / T I N	TERMINATION SPEC 1 ITEM NO.	NO.	
A 55	1	300	45A4J6-10	20N		58A	45A4J12- 5	20N		154	A
A 56	1	500	45A4J5- 7	20N		51	45A4J11-10	20N		171	A
A 57	1	225	45A4J11-10	20N		172	45A4J10- 5	20N		177	A
A 58	1	500	45A4J6-10	20N		58	45A4J7- 7	20N		89A	E
A 59	1	650	45A4J5- 2	20N		56	45A4J7- 3	20N		93A	E
A 60	1	575	45A4J7- 7	20N		89	45A4J5- 7	20N		50	E
A 61	1	300	45A4E- 2	20N		215	45A4J13- 7	20N		134	B
A 62	1	275	45A4J7-14	20N		80	45A4J13-14	20N		142	A
A 63	1	1500	45A4P1-S6	20N		127A	45A4J9-14	20N		196	A
A 64	1	475	45A4J9-14	20N		193	45A4J4-15	20N		21	A
A 65	1	620	45A4J7-14	20N		80A	45A4J5-14	20N		43	E
A 66	1	600	45A4J7-15	20N		79	45A4J13-15	20N		143A	E
A 67	1	625	45A4J5-15	20N		42	45A4J13-18	20N		143	E
A 68	1	275	45A4J7-16	20N		76	45A4J13-16	20N		144	A
A 69	1	1375	45A4P1-R6	20N		121A	45A4J4-13	20N		24	B
A 70	1	500	45A4J4-13	20N		23	45A4J9-16	20N		198	A
A 71	1	275	45A4J9-16	20N		199	45A4J3-14	20N		13	E
A 72	1	175	45A4J3-14	20N		14	45A4J3-18	20N		11	E

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE · NONE | REV LTR E | SHEET 8 OF 14

MIL 2085 · 4-63 WIR

GFR WIRING HARNESS A E 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2 / T I N	TERMINATION SPEC. 1 ITEM NO	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2 / T I N	TERMINATION SPEC 1 ITEM NO.	NO.	
A 73	1	620	45A4J5-16	20N		39	45A4J7-16	20N		76A	E
A 74	1	475	45A4J7-17	20N		75	45A4J12-10	20N		160	E
A 75	1	575	45A4J7-18	20N		74	45A4J5-18	20N		57	E
A 76	1	300	45A4J7-18	20N		74A	45A4J13-18	20N		147	A
A 77	1	275	45A4J7-19	20N		71	45A4J6- 9	20N		59	E
A 78	1	250	45A4J7-19	20N		71A	45A4J13-19	20N		148A	A
A 79	1	225	45A4J5-19	20N		35	45A4J11- 9	20N		169	A
A 80	1	525	45A4J11- 9	20N		170	45A4J13-19	20N		146	A
A 81	1	500	45A4J7- 9	20N		86	45A4J12- 3	20N		152	A
A 82	1	475	45A4J7-12	20N		83	45A4J12- 4	20N		153	A
A 83	1	250	45A4J7-20	20N		70	45A4J6- 7	20N		62	E
A 84	1	425	45A4J6- 3	20N		67	45A4J11- 3	20N		163	E
A 85	1	525	45A4J6- 2	20N		69	45A4J11- 2	20N		162	A
A 86	1	300	45A4J6- 5	20N		64	45A4J12- 6	20N		156	A
A 87	1	300	45A4J6- 8	20N		61	45A4J12- 8	20N		158	E
A 88	1	225	45A4J5-20	20N		33	45A4J11- 7	20N		167	C
A 89	1	450	45A4J5- 9	20N		48	45A4J10- 3	20N		175	A
A 90	1	425	45A4J5-12	20N		45	45A4J10- 4	20N		176	A

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE · NONE | REV LTR E | SHEET 9 OF 14

MIL 2085 · 4-63 WIR

GFR WIRING HARNESS A E 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2 / T I N	TERMINATION SPEC. 1 ITEM NO	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2 / T I N	TERMINATION SPEC 1 ITEM NO.	NO.	
A 91	1	425	45A4J5-17	20N		38	45A4J10-10	20N		183	E
A 92	1	325	45A4J11- 5	20N		165	45A4J10- 6	20N		179	A
A 93	1	300	45A4J11- 8	20N		168	45A4J10- 8	20N		181	A
A 94	1	325	45A4J4- 8	20N		29	45A4J3- 7	20N		17	E
A 95	1	475	45A4J4-11	20N		26	45A4J3-20	20N		10	E
A 96	1	400	45A4J4-10	20N		27	45A4J3-17	20N		12	E
A 97	1	250	45A4J3- 2	20N		20	45A4J9- 1	20N		185	A
A 98	1	225	45A4J3- 8	20N		16	45A4J9- 6	20N		188	C
A 99	1	300	45A4J3- 9	20N		15	45A4J9-13	20N		195	A
A 100	1	300	45A4J2- 5	20N		6	45A4J8-10	20N		211	A
A 101	1	300	45A4J2- 7	20N		4	45A4J9-20	20N		202	A
A 102	1	275	45A4J2- 8	20N		3	45A4J8- 9	20N		210	A
A 103	1	325	45A4J9- 9	20N		192	45A4J8- 2	20N		204	A
A 104	1	325	45A4J9-10	20N		193	45A4J8- 3	20N		205	A
A 105	1	325	45A4J9-19	20N		200	45A4J2- 9	20N		2	A
A 106	1	450	45A4J9- 7	20N		190	45A4J8-11	20N		212	A
A 107	1	250	45A4J8-11	20N		213	45A4J2-10	20N		1	A
A 108	1	650	45A4J1-21	12N	2	214	45A4J2- 6	20N		9	E

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE · NONE | REV LTR E | SHEET 10 OF 14

MIL 2085 4-63 WIR

GFR WIRING HARNESS E 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2	FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2 / T I N	TERMINATION SPEC. 1 ITEM NO.	NO.	TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT	2 / T I N	TERMINATION SPEC 1 ITEM NO.	NO.	
A 109	1	650	45A4J1-20	12N	2	214	45A4J2- 4	20N		7	E
A 110	1	1200	45A4J1- 2	12N	2	214	45A4J4- 7	20N		30	E
A 111	8	220	45A4J1- 1	12N	2	214	45A4E2	20N		215	
A 112	1	1550	45A4J1-25	12N	2	214	45A4J5- 8	20N		49	C
A 113	1	1650	45A4J1-33	12N	2	214	45A4J5- 5	20N		53	C
A 114	1	1650	45A4J1-36	12N	2	214	45A4J6- 6	20N		63	C
A 115	1	1600	45A4J1-35	12N	2	214	45A4J6- 4	20N		65	C
A 116	1	1950	45A4J1-26	12N	2	214	45A4J7- 8	20N		87	E
A 117	1	2000	45A4J1-34	12N	2	214	45A4J7- 5	20N		91	E
A 118	1	1900	45A4J1-32	12N	2	214	45A4J13- 5	20N		132	A
A 119	1	1850	45A4J1-24	12N	2	214	45A4J13- 8	20N		135	A
A 120	1	1550	45A4J1-19	12N	2	214	45A4J12- 7	20N		157	B
A 121	1	1550	45A4J1-11	12N	2	214	45A4J12-11	20N		161	B
A 122	1	1350	45A4J1-27	12N	2	214	45A4J11- 4	20N		164	C
A 123	1	1350	45A4J1-28	12N	2	214	45A4J11- 6	20N		166	C
A 124	1	1050	45A4J1-31	12N	2	214	45A4J9- 5	20N		187	B
A 125	1	1200	45A4J1-18	12N	2	214	45A4J10- 7	20N		180	C
A 126	1	1200	45A4J1-10	12N	2	214	45A4J10-11	20N		184	C

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736
SCALE · NONE | REV LTR E | SHEET 11 OF 14

MIL 2085 · 4-63 WIR

CONDUCTOR			FROM					TO					
INDIVIDUAL LENGTH			CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC 1		CUT WIRE OR SHIELD STRIP WIRE OR JACKET			TERMINATION SPEC 1		
NUMBER	ITEM NO.	2	CIRCUIT POINT	2	TIN	ITEM NO.	NO.	CIRCUIT POINT	2	TIN	ITEM NO.	NO.	
127	1	1050	45A4J1-23	12	N	2	214	45A4J9- 8	20	N		191	B
128	1	700	45A4J1- 9	12	N	2	214	45A4J8- 5	20	N		207	B
129	1	650	45A4J1-17	12	N	2	214	45A4J8- 8	20	N		209	B
130	6	220	45A4J1-29	12	N	2	214	45A4E2	20	N		215	
131	6	220	45A4J1-38	12	N	2	214	45A4E2	20	N		215	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR E	SHEET 12 OF 14

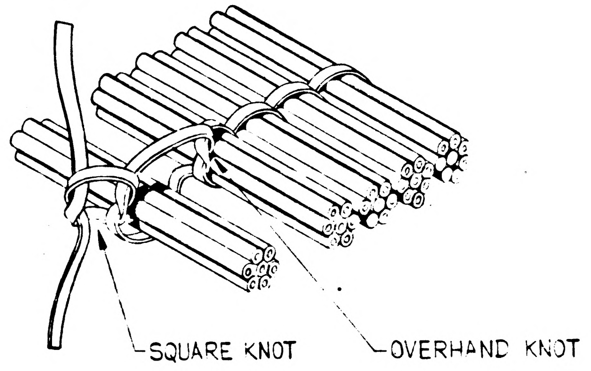

SQUARE KNOT
OVERHAND KNOT

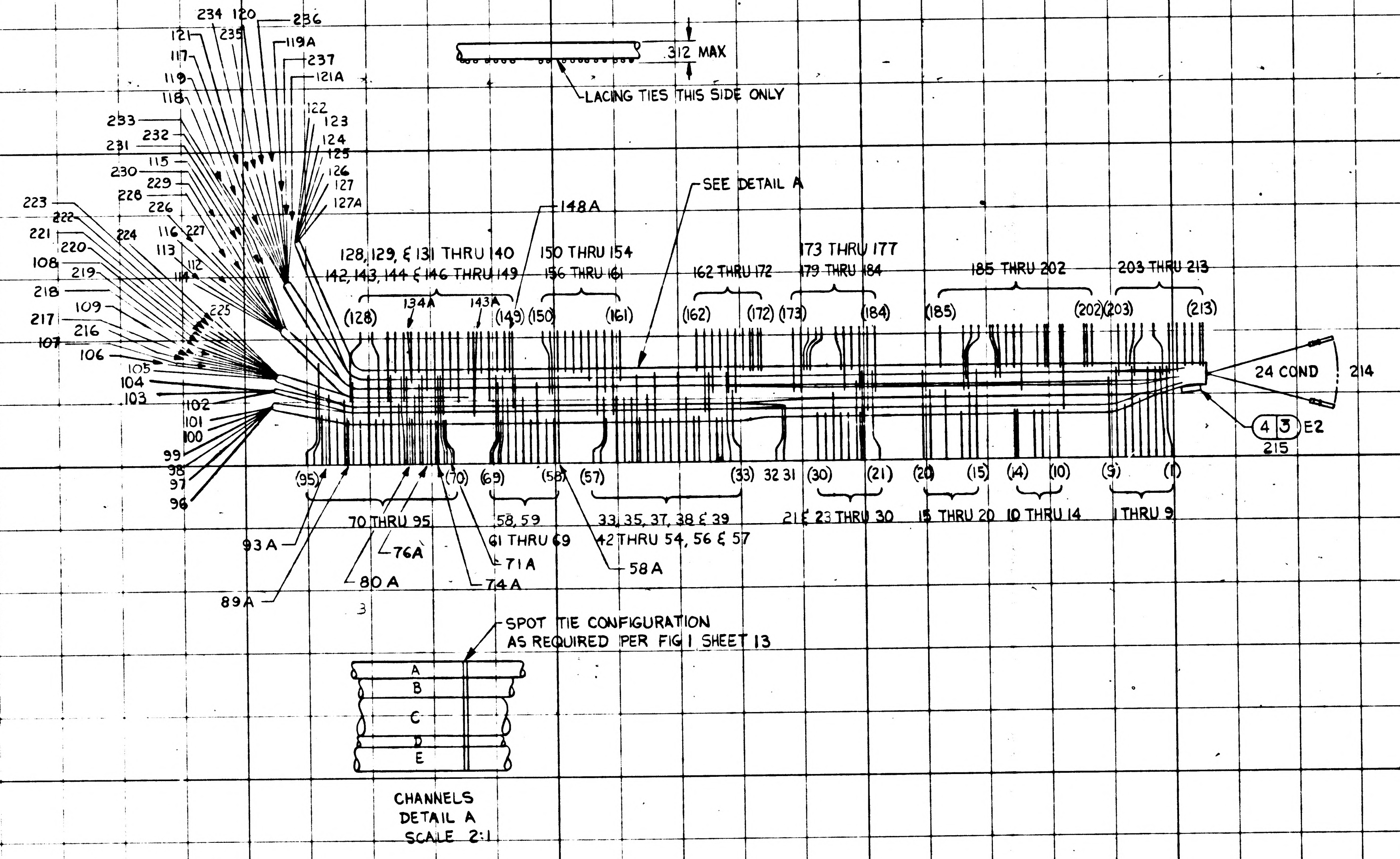
FIGURE 1
MULTIPLE SPOT TIE

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE NONE	REV LTR E	SHEET 13 OF 14

E 1015736 2

REVISIONS TDRR 04743

SYM	ZONE	DESCRIPTION	CHG NO	DATE	APPD
A		REVISED PER TDRR 05532		12/27/63	WK
B		REVISED PER TDRR 05585		3/ 63	EPK WK
C		REVISED PER TDRR 06733		3/7/64	WK
D		REVISED PER TDRR 06890		3/31/64	EPK WK
E		REVISED PER TDRR 06884		4/17/64	EPK WK



.312 MAX
LACING TIES THIS SIDE ONLY
234 120
236
235
121
119A
117
237
119
121A
118
122
123
124
125
126
127
127A
233
232
231
115
230
229
228
226
223
222
221
224
116
227
113
112
114
220
108
219
218
109
217
216
107
106
225
105
104
103
102
101
100
99
98
97
96
148A
SEE DETAIL A
128, 129, & 131 THRU 140
142, 143, 144 & 146 THRU 149
134A
143A
(128)
(149)
150 THRU 154
156 THRU 161
(150)
(161)
162 THRU 172
(162)
(172)
173 THRU 177
179 THRU 184
(173)
(184)
185 THRU 202
(185)
(202)
203 THRU 213
(203)
(213)
24 COND
214
4 3 E2
215
(95)
(70)
(69)
(58)
(57)
(33)
32 31
(30)
(21)
(20)
(15)
(14)
(10)
(9)
(1)
70 THRU 95
58, 59
61 THRU 69
33, 35, 37, 38 & 39
42 THRU 54, 56 & 57
21 & 23 THRU 30
15 THRU 20
10 THRU 14
1 THRU 9
93A
76A
71A
58A
80A
74A
89A
SPOT TIE CONFIGURATION
AS REQUIRED PER FIG 1 SHEET 13
A
B
C
D
E

CHANNELS
DETAIL A
SCALE 2:1

COPY

1007144	1007154
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN [illegible] DATE 3 OCT 63
CHECKED [illegible] 24 OCT 63
APPROVAL [illegible] 10-25-63
APPROVAL [illegible] 24 OCT 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

WIRING HARNESS A
(TRAY 4)

CODE IDENT NO
SIZE D
1015736
SCALE 1:1
SHEET 14 OF 14

APPLICATION	
NEXT ASSY	USED ON
1007144	1007154

REVISIONS TDRR 04253

SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 05532	12/27/63	LFK
B	REVISED, TDRR 05585	12/31/63	FDK WK
C	REVISED PER TDRR 06733	3/3/64	WK
D	REVISED PER TDRR 06890	3/31/64	FDK WK.
E	REVISED PER TDRR 06884	4/7/64	FDK WK
F	REVISED PER TDRR 12756	28 SEP 64	JWP
G	REVISED PER TDRR 12744	29 SEP 64	JWP

Charleston
24 Oct 63

REV STATUS OF SHEETS															
REV	G	E	E	G	G	G	G	G	G	G	E	G	E	G
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN C Tmsm DATE 7 OCT 63
CHECKED 24 Oct 63
APPROVAL 10/25/63
APPROVAL 29 OCT 63
11/1/63

NASA APPROVAL
MIT APPROVAL 11/20/63

CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
(TRAY 4)

CODE IDENT NO.
SIZE A
1015736
REV G

SCALE NONE
SHEET 1 OF 14

GFR WIRING HARNESS A E 1015736

PENNANT NOTE	GENERAL NOTES
1	SEE CONDUCTOR CHART
2	SEE CONDUCTOR CHART
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	LACE HARNESS USING ITEM 5
8	IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
9	Y OR N IN TINNED COLUMN INDICATES YES OR NO.
10	GRID MODULE IS 1 INCH.
11	UNLESS OTHERWISE SPECIFIED --- FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.
12	BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.
13	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
14	IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY
15	INSTALL ITEM 2 PER ND1002066

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR E	SHEET 2 OF 14

MIL 2084 4 63

GFR WIRING HARNESS A E 1015736

PENNANT NOTE	GENERAL NOTES
16	INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	STRIP JACKET	CUT WIRE	CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR E	SHEET 3 OF 14

MIL 2084 4 63

GFR WIRING HARNESS A X G 1015736

LIST OF MATERIALS

PENNANT NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	AR	1010639- 2	WIRE, 83 FT 0.5 IN TOTAL LENGTH
13	2	24	1010738- 2	CONTACT, ELEC
13	3	1	1010476-168	INSULATION, SLEEVING, ELEC, HEAT SHRINK
13	4	1	1010711- 1	SPLICE REDUCER
13	5	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2, BLACK (ES-2732 NO. 18)
	6	AR	MIL-W-16878/1B-24-19STND WIRE-WHITE	
	7	AR	MIL-W-16878/1B-20-19STND WIRE-WHITE	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR X G	SHEET 4 OF 14

MIL 2084 4 63

GFR WIRING HARNESS A X X G 1015736

	CONDUCTOR NUMBER	INDIVIDUAL LENGTH ITEM NO.	▷2	FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	▷2	TIN	TERMINATION SPEC. ▷1 ITEM NO.	NO.	TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	▷2	TIN	TERMINATION SPEC ▷1 ITEM NO.	NO.
A	1	1	340	45A4P1-~~D5~~ D6	20	N		~~217~~ 109	45A4J7- 1	20	N		95
A	2	1	420	45A4P1-F3	20	N		218	45A4J7- 4	20	N		92
A	3	1	200	45A4P1-~~D6~~ D5	20	N		~~109~~ 217	45A4J7- 6	20	N		90
A	4	1	300	45A4P1-C6	20	N		101	45A4J7-10	20	N		85
A	5	1	340	45A4P1-C5	20	N		100	45A4J7-11	20	N		84
A	6	1	520	45A4P1-G3	20	N		222	45A4J7-13	20	N		82
A	7	1	430	45A4P1-K4	20	N		228	45A4J7- 2	20	N		94
A	8	7~~1~~	560	45A4P1-R2	~~20~~ 25	~~N~~ Y		235	45A4J7- 7	~~20~~ 25	~~N~~ Y		88
A	9	1	870	45A4P1-~~D3~~ D4	20	N		~~107~~ 216	45A4J5- 1	20	N		57
A	10	1	780	45A4P1-F4	20	N		219	45A4J5- 4	20	N		54
A	11	1	880	45A4P1-~~D4~~ D3	20	N		~~216~~ 107	45A4J5- 6	20	N		52
A	12	1	780	45A4P1-C4	20	N		99	45A4J5-10	20	N		47
A	13	1	820	45A4P1-C3	20	N		98	45A4J5-11	20	N		46
A	14	1	980	45A4P1-G4	20	N		223	45A4J5-13	20	N		44
A	15	1	600	45A4P1-S6	20	N		127	45A4J7-14	20	N		81
A	16	1	680	45A4P1-H4	20	N		112	45A4J7-15	20	N		78
A	17	1	600	45A4P1-R6	20	N		237	45A4J7-16	20	N		77
A	18	1	720	45A4P1-S3	20	N		124	45A4J7-18	20	N		73

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE - NONE	REV LTR X X G	SHEET 5 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A ~~F~~ G 1015736

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC 1> ITEM NO.	NO.	
A 19	1	660	45A4P1-S2	20	N			123	45A4J7-19	20	N			72	
A 20	1	740	45A4P1-S5	20	N			126	45A4J6- 3	20	N			66	
A 21	1	1150	45A4P1-A1	20	N			104	45A4J4- 1	20	N			32	
A 22	1	1110	45A4P1-A2	20	N			103	45A4J4- 2	20	N			31	
A 23	1	1300	45A4P1-P6	20	N			121	45A4J4-12	20	N			25	
A 24	1	1200	45A4P1-H6	20	N			116	45A4J4- 9	20	N			28	
A 25	1	1420	45A4P1-K3	20	N			227	45A4J3- 3	20	N			19	
A 26	1	1420	45A4P1-H3	20	N			113	45A4J3- 5	20	N			18	
A 27	1	1780	45A4P1-S4	20	N			125	45A4J2- 3	20	N			8	
A 28	7 ~~1~~	350 ~~750~~	45AJ12-6 ~~45A4P1-R5~~	25 ~~20~~	Y ~~N~~			155 ~~119~~A	45A4J6- 2	25 ~~20~~	Y ~~N~~			68	A
A 29	~~1~~	~~1740~~	~~45A4P1-R4~~	~~20~~	~~N~~			~~236~~	~~45A4J2- 2~~	~~20~~	~~N~~			~~9~~	DELETED
A 30	1	1670	45A4P1-P3	20	N			117	45A4J8- 7	20	N			208	
A 31	7 ~~1~~	1550	45A4P1-R1	~~20~~ 25	~~N~~ Y			234	45A4J9- 7	~~20~~ 25	~~N~~ Y			189	
A 32	1	1660	45A4P1-P2	20	N			119	45A4J8- 4	20	N			206	
A 33	1	1700	45A4P1-P1	20	N			118	45A4J8- 1	20	N			203	
A 34	1	1650	45A4P1-S1	20	N			122	45A4J9-19	20	N			201	
A 35	1	1500	45A4P1-G6	20	N			225	45A4J9-11	20	N			194	
A 36	1	1350	45A4P1-F6	20	N			220	45A4J9- 4	20	N			186	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE
REV LTR ~~F~~ G
SHEET 6 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A ~~E~~ ~~F~~ G 1015736

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC 1> ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC 1> ITEM NO.	NO.	
A 37	1	1270	45A4P1-M3	20	N			231	45A4J10- 9	20	N			182	
A 38	1	1180	45A4P1-M2	20	N			115	45A4J10- 2	20	N			174	
A 39	1	1200	45A4P1-M1	20	N			230	45A4J10- 1	20	N			173	
A 40	1	800	45A4P1-N6	20	N			233	45A4J12- 9	20	N			159	
A 41	1	700	45A4P1-M6	20	N			232	45A4J12- 2	20	N			151	
A 42	1	800	45A4P1-L6	20	N			229	45A4J12- 1	20	N			150	
A 43	1	400	45A4P1-A6	20	N			102	45A4J13-20	20	N			149	
A 44	1	800	45A4P1-G1	20	N			221	45A4J13-17	20	N			146	
A 45	1	640	45A4P1-G5	20	N			224	45A4J13-13	20	N			140	
A 46	1	700	45A4P1-K1	20	N			226	45A4J13-12	20	N			139	
A 47	1	600	45A4P1-C1	20	N			96	45A4J13-11	20	N			138	
A 48	1	560	45A4P1-C2	20	N			97	45A4J13-10	20	N			137	
A 49	1	700	45A4P1-H1	20	N			114	45A4J13- 9	20	N			136	
A 50	1	560	45A4P1-~~D2~~ D1	20	N			105 ~~106~~A	45A4J13- 6	20	N			133	
A 51	1	490	45A4P1-F5	20	N			108	45A4J13- 4	20	N			131	
A 52	1	600	45A4P1-~~D1~~ D2	20	N			106 ~~105~~	45A4J13- 1	20	N			128	
A 53	7 ~~1~~	2090	45A4P1-R2	25 ~~20~~	Y ~~N~~			120	45A4J13- 7	25 ~~20~~	Y ~~N~~			134A	B
A 54	1	300	45A4J7- 3	20	N			93	45A4J13- 2	20	N			129	E

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE
REV LTR ~~E~~ ~~F~~ G
SHEET 7 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A ~~F~~ G 1015736

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC 1> ITEM NO.	NO.	
A 55	7 ~~1~~	590 ~~300~~	45A4J7-7 ~~45A4J6-10~~	25 ~~20~~	Y ~~N~~			88A ~~58A~~	45A4J12- 5	25 ~~20~~	Y ~~N~~			154	A
A 56	7 ~~1~~	500	45A4J5- 7	25 ~~20~~	Y ~~N~~			51	45A4J11-10	25 ~~20~~	Y ~~N~~			171	A
A 57	7 ~~1~~	620 ~~225~~	45A4J5- 7 ~~45A4J11-10~~	25 ~~20~~	Y ~~N~~			51A ~~172~~	45A4J10- 5	25 ~~20~~	Y ~~N~~			177	~~A~~ E
A 58	7 ~~1~~	500	45A4J6-10	25 ~~20~~	Y ~~N~~			58	45A4J7- 7	25 ~~20~~	Y ~~N~~			89A	E
A 59	1	650	45A4J5- 2	20	N			56	45A4J7- 3	20	N			93A	E
A 60	7 ~~1~~	850 ~~575~~	45A4P1-R2 ~~45A4J7- 7~~	25 ~~20~~	Y ~~N~~			120A ~~89~~	45A4J5- 7	25 ~~20~~	Y ~~N~~			50	~~A~~ B
A 61	1	300	45A4E- 2	20	N			215	45A4J13- 7	20	N			134	B
A 62	1	275	45A4J7-14	20	N			80	45A4J13-14	20	N			142	A
A 63	1	1500	45A4P1-S6	20	N			127A	45A4J9-14	20	N			196	A
A 64	1	475	45A4J9-14	20	N			197	45A4J4-15	20	N			21	A
A 65	1	620	45A4J7-14	20	N			80A	45A4J5-14	20	N			43	E
A 66	1	600	45A4J7-15	20	N			79	45A4J13-15	20	N			143A	E
A 67	1	625	45A4J5-15	20	N			42	45A4J13-15	20	N			143	E
A 68	1	275	45A4J7-16	20	N			76	45A4J13-16	20	N			144	A
A 69	1	1375	45A4P1-R6	20	N			121A	45A4J4-13	20	N			24	B
A 70	1	500	45A4J4-13	20	N			23	45A4J9-16	20	N			198	A
A 71	1	275	45A4J9-16	20	N			199	45A4J3-14	20	N			13	E
A 72	1	175	45A4J3-14	20	N			14	45A4J3-18	20	N			11	E

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MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE
REV LTR ~~F~~ G
SHEET 8 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A ~~F~~ G 1015736

CONDUCTOR			FROM						TO						
NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC. 1> ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2>	T I N	2>	TERMINATION SPEC 1> ITEM NO.	NO.	
A 73	1	620	45A4J5-16	20	N			39	45A4J7-16	20	N			76A	E
A 74	1	475	45A4J7-17	20	N			75	45A4J12-10	20	N			160	E
A 75	1	575	45A4J7-18	20	N			74	45A4J5-18	20	N			37	E
A 76	1	300	45A4J7-18	20	N			74A	45A4J13-18	20	N			147	A
A 77	1	275	45A4J7-19	20	N			71	45A4J6- 9	20	N			59	E
A 78	1	350	45A4J7-19	20	N			71A	45A4J13-19	20	N			148A	A
A 79	1	225	45A4J5-19	20	N			35	45A4J11- 9	20	N			169	A
A 80	1	525	45A4J11- 9	20	N			170	45A4J13-19	20	N			148	A
A 81	1	500	45A4J7- 9	20	N			86	45A4J12- 3	20	N			152	A
A 82	1	475	45A4J7-12	20	N			83	45A4J12- 4	20	N			153	A
A 83	1	250	45A4J7-20	20	N			70	45A4J6- 7	20	N			62	E
A 84	1	425	45A4J6- 3	20	N			67	45A4J11- 3	20	N			163	E
A 85	7 ~~1~~	125 ~~525~~	45A4J10-6 ~~45A4J6- 2~~	25 ~~20~~	Y ~~N~~			165A ~~69~~	45A4J11- 2	25 ~~20~~	Y ~~N~~			162	A
A 86	7 ~~1~~	300	45A4J6- 5	25 ~~20~~	Y ~~N~~			64	45A4J12- 6	25 ~~20~~	Y ~~N~~			156	A
A 87	1	300	45A4J6- 8	20	N			61	45A4J12- 8	20	N			158	E
A 88	1	225	45A4J5-20	20	N			33	45A4J11- 7	20	N			167	C
A 89	1	450	45A4J5- 9	20	N			48	45A4J10- 3	20	N			175	A
A 90	1	425	45A4J5-12	20	N			45	45A4J10- 4	20	N			176	A

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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MANNED
SPACECRAFT
CENTER
HOUSTON, TEXAS
SIZE A
1015736
SCALE - NONE
REV LTR ~~F~~ G
SHEET 9 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A + 1015736

PENNANT GENERAL NOTES

NOTE	
1	SEE CONDUCTOR CHART
2	SEE CONDUCTOR CHART
3	INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
4	MARK CONDUCTOR IDENTIFICATION PER ND1002019.
5	SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.
6	SPIRALLING OF THE MARKING IS ALLOWED.
7	LACE HARNESS USING ITEM 5
8	IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).
9	Y OR N IN TINNED COLUMN INDICATES YES OR NO.
10	GRID MODULE IS 1 INCH.
11	UNLESS OTHERWISE SPECIFIED --- FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH. END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.
12	BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.
13	VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
14	IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY
15	INSTALL ITEM 2 PER ND1002066

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE-NONE	REV LTR +	SHEET 2 OF 14

MIL 2084 4-63

GFR WIRING HARNESS A + 1015736

PENNANT GENERAL NOTES

NOTE	
16	INSTALL ITEMS 3 AND 4 PER ND

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD.	TOLERANCE STRIP WIRE	TOLERANCE STRIP JACKET	TOLERANCE CUT WIRE	TOLERANCE CUT SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE-NONE	REV LTR +	SHEET 3 OF 14

MIL 2084 4-63

APPLICATION	
NEXT ASSY	USED ON
1007144	1007154

REVISIONS TO RR 04283

SYM	DESCRIPTION	DATE	APPROVAL

Charleston
24 Oct 63

REV														
SHEET														
REV STATUS REV	+	+	+	+	+	+	+	+	+	+	+	+	+	+
OF SHEETS SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN C Tomsen DATE 7 OCT 63
CHECKED 24 Oct 63
APPROVAL 10/25/63
APPROVAL 29 OCT 63 11/4/63
NASA APPROVAL
MIT APPROVAL 11/20/63
CONTRACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
(TRAY 4)

CODE IDENT NO.	SIZE A	1015736	REV
SCALE NONE		SHEET 1 OF 14	

GFR WIRING HARNESS A + 1015736

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	AR	1010639- 2	WIRE, 83 FT 0.5 IN TOTAL LENGTH
13	2	24	1010464- 2	CONTACT, ELEC
13	3	1	1010476-168	INSULATION, SLEEVING, ELEC, HEAT SHRINK
	4	1		SPLICE REDUCER
	5	AR	MIL-T-713	LACING TAPE, TYPE P, CLASS 2, BLACK (ES-2732 NO. 18)

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	1015736
SCALE-NONE	REV LTR +	SHEET 4 OF 14

MIL 2084 4-63

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

GFR WIRING HARNESS A + 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.	ROUTING
A 19	1	660	45A4P1-S2	20	N		123	45A4J7-19	20	N		72	
A 20	1	740	45A4P1-S5	20	N		126	45A4J6- 3	20	N		66	
A 21	1	1150	45A4P1-A1	20	N		104	45A4J4- 1	20	N		32	
A 22	1	1110	45A4P1-A2	20	N		103	45A4J4- 2	20	N		31	
A 23	1	1300	45A4P1-P6	20	N		121	45A4J4-12	20	N		25	
A 24	1	1200	45A4P1-H6	20	N		116	45A4J4- 9	20	N		28	
A 25	1	1420	45A4P1-K3	20	N		113	45A4J3- 3	20	N		19	
A 26	1	1420	45A4P1-H3	20	N		113	45A4J3- 5	20	N		18	
A 27	1	1780	45A4P1-S4	20	N		125	45A4J2- 3	20	N		8	
A 28	1	750	45A4P1-R5	20	N		119A	45A4J6- 2	20	N		68	
A 29	1	1740	45A4P1-R4	20	N		120	45A4J2- 2	20	N		9	
A 30	1	1670	45A4P1-P3	20	N		117	45A4J8- 7	20	N		208	
A 31	1	1550	45A4P1-R1	20	N		118	45A4J9- 7	20	N		189	
A 32	1	1660	45A4P1-P2	20	N		119	45A4J8- 4	20	N		206	
A 33	1	1700	45A4P1-P1	20	N		118	45A4J8- 1	20	N		203	
A 34	1	1650	45A4P1-S1	20	N		122	45A4J9-19	20	N		201	
A 35	1	1500	45A4P1-G6	20	N		109	45A4J9-11	20	N		194	
A 36	1	1350	45A4P1-F6	20	N		109	45A4J9- 4	20	N		186	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736

SCALE - NONE | REV LTR + | SHEET 6 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A + 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.	ROUTING
A 37	1	1270	45A4P1-M3	20	N		113	45A4J10- 9	20	N		182	
A 38	1	1180	45A4P1-M2	20	N		115	45A4J10- 2	20	N		174	
A 39	1	1200	45A4P1-M1	20	N		114	45A4J10- 1	20	N		173	
A 40	1	800	45A4P1-N6	20	N		116	45A4J12- 9	20	N		159	
A 41	1	700	45A4P1-M6	20	N		116	45A4J12- 2	20	N		151	
A 42	1	800	45A4P1-L6	20	N		116	45A4J12- 1	20	N		150	
A 43	1	400	45A4P1-A6	20	N		102	45A4J13-20	20	N		149	
A 44	1	800	45A4P1-G1	20	N		105	45A4J13-17	20	N		146	
A 45	1	640	45A4P1-G5	20	N		108	45A4J13-13	20	N		140	
A 46	1	700	45A4P1-K1	20	N		114	45A4J13-12	20	N		139	
A 47	1	600	45A4P1-C1	20	N		96	45A4J13-11	20	N		138	
A 48	1	560	45A4P1-C2	20	N		97	45A4J13-10	20	N		137	
A 49	1	700	45A4P1-H1	20	N		114	45A4J13- 9	20	N		136	
A 50	1	560	45A4P1-D2	20	N		106A	45A4J13- 6	20	N		133	
A 51	1	490	45A4P1-F5	20	N		108	45A4J13- 4	20	N		131	
A 52	1	600	45A4P1-D1	20	N		105	45A4J13- 1	20	N		128	
A 53	1	2090	45A4P1-R2	20	N		120	45A4E2	20	N		215	B
A 54	1	300	45A4J7- 3	20	N		93	45A4J13- 2	20	N		129	E

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736

SCALE - NONE | REV LTR + | SHEET 7 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A + 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.	ROUTING
A 1	1	340	45A4P1-D5	20	N		106	45A4J7- 1	20	N		95	
A 2	1	420	45A4P1-F3	20	N		107	45A4J7- 4	20	N		92	
A 3	1	200	45A4P1-D6	20	N		109	45A4J7- 6	20	N		90	
A 4	1	300	45A4P1-C6	20	N		101	45A4J7-10	20	N		85	
A 5	1	340	45A4P1-C5	20	N		100	45A4J7-11	20	N		84	
A 6	1	520	45A4P1-G3	20	N		107	45A4J7-13	20	N		82	
A 7	1	430	45A4P1-K4	20	N		112	45A4J7- 2	20	N		94	
A 8	1	560	45A4P1-R2	20	N		119	45A4J7- 7	20	N		87	
A 9	1	870	45A4P1-D3	20	N		107	45A4J5- 1	20	N		57	
A 10	1	780	45A4P1-F4	20	N		106	45A4J5- 4	20	N		54	
A 11	1	880	45A4P1-D4	20	N		106	45A4J5- 6	20	N		52	
A 12	1	780	45A4P1-C4	20	N		99	45A4J5-10	20	N		47	
A 13	1	820	45A4P1-C3	20	N		98	45A4J5-11	20	N		46	
A 14	1	980	45A4P1-G4	20	N		106	45A4J5-13	20	N		44	
A 15	1	600	45A4P1-S6	20	N		127	45A4J7-14	20	N		81	
A 16	1	680	45A4P1-H4	20	N		112	45A4J7-15	20	N		78	
A 17	1	600	45A4P1-R6	20	N		121	45A4J7-16	20	N		77	
A 18	1	720	45A4P1-S3	20	N		124	45A4J7-18	20	N		73	

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736

SCALE - NONE | REV LTR + | SHEET 5 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A + 1015736

CONDUCTOR NUMBER	ITEM NO.	INDIVIDUAL LENGTH 2>	FROM CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC. 1> ITEM NO.	NO.	TO CIRCUIT POINT	STRIP WIRE OR JACKET 2>	TIN	TERMINATION SPEC 1> ITEM NO.	NO.	ROUTING
A 55	1	425	45A4J13- 3	20	N		130	45A4J12- 5	20	N		154	A
A 56	1	425	45A4J12- 5	20	N		155	45A4J11-10	20	N		171	A
A 57	1	225	45A4J11-10	20	N		172	45A4J10- 5	20	N		177	A
A 58	1	538	45A4J10- 5	20	N		178	45A4J5- 3	20	N		55	A
A 59	1	200	45A4J5- 2	20	N		56	45A4J6-10	20	N		58	E
A 60	1	575	45A4J7- 7	20	N		89	45A4J5- 7	20	N		50	E
A 61	1	575	45A4J5- 7	20	N		51	45A4J13- 7	20	N		134	E
A 62	1	275	45A4J7-14	20	N		80	45A4J13-14	20	N		142	A
A 63	1	1075	45A4J13-14	20	N		141	45A4J9-14	20	N		196	A
A 64	1	475	45A4J9-14	20	N		197	45A4J4-15	20	N		21	A
A 65	1	425	45A4J4-15	20	N		22	45A4J5-14	20	N		43	E
A 66	1	600	45A4J7-15	20	N		79	45A4J5-15	20	N		41	E
A 67	1	625	45A4J5-15	20	N		42	45A4J13-15	20	N		143	E
A 68	1	275	45A4J7-16	20	N		76	45A4J13-16	20	N		144	A
A 69	1	362	45A4J5-16	20	N		40	45A4J4-13	20	N		24	E
A 70	1	500	45A4J4-13	20	N		23	45A4J9-16	20	N		198	A
A 71	1	275	45A4J9-16	20	N		199	45A4J3-14	20	N		13	E
A 72	1	175	45A4J3-14	20	N		14	45A4J3-18	20	N		11	E

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736

SCALE - NONE | REV LTR + | SHEET 8 OF 14

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GFR WIRING HARNESS A + 1015736

CONDUCTOR			FROM					TO					ROUTING
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 91	1	425	45A4J5-17	20	N		38	45A4J10-10	20	N		183	E
A 92	1	325	45A4J11- 5	20	N		165	45A4J10- 6	20	N		179	A
A 93	1	300	45A4J11- 8	20	N		168	45A4J10- 8	20	N		181	A
A 94	1	325	45A4J4- 8	20	N		29	45A4J3- 7	20	N		17	E
A 95	1	475	45A4J4-10	20	N		27	45A4J3-20	20	N		10	E
A 96	1	400	45A4J4-11	20	N		26	45A4J3-17	20	N		12	E
A 97	1	250	45A4J3- 2	20	N		20	45A4J9- 1	20	N		185	A
A 98	1	225	45A4J3- 8	20	N		16	45A4J9- 6	20	N		188	C
A 99	1	300	45A4J3- 9	20	N		15	45A4J9-13	20	N		195	A
A 100	1	300	45A4J2- 5	20	N		6	45A4J8-10	20	N		211	A
A 101	1	300	45A4J2- 7	20	N		4	45A4J9-20	20	N		202	A
A 102	1	275	45A4J2- 8	20	N		3	45A4J8- 9	20	N		210	A
A 103	1	325	45A4J9- 9	20	N		192	45A4J8- 2	20	N		204	A
A 104	1	325	45A4J9-10	20	N		193	45A4J8- 3	20	N		205	A
A 105	1	325	45A4J9-19	20	N		200	45A4J2- 9	20	N		2	A
A 106	1	450	45A4J9- 7	20	N		190	45A4J8-11	20	N		212	A
A 107	1	250	45A4J8-11	20	N		213	45A4J2-10	20	N		1	A
A 108	1	650	45A4J1-21	12	N	2	214	45A4J2- 6	20	N		5	E

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736

SCALE - NONE | REV LTR + | SHEET 10 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A + 1015736

CONDUCTOR			FROM					TO					ROUTING
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 109	1	650	45A4J1-20	12	N	2	214	45A4J2- 4	20	N		7	E
A 110	1	1200	45A4J1- 2	12	N	2	214	45A4J4- 7	20	N		30	E
A 111	1	220	45A4J1- 1	12	N	2	214	45A4E2	20	N		215	
A 112	1	1550	45A4J1-25	12	N	2	214	45A4J5- 8	20	N		49	C
A 113	1	1650	45A4J1-33	12	N	2	214	45A4J5- 5	20	N		53	C
A 114	1	1650	45A4J1-36	12	N	2	214	45A4J6- 6	20	N		63	C
A 115	1	1600	45A4J1-35	12	N	2	214	45A4J6- 4	20	N		65	C
A 116	1	1950	45A4J1-26	12	N	2	214	45A4J7- 8	20	N		87	E
A 117	1	2000	45A4J1-34	12	N	2	214	45A4J7- 5	20	N		91	E
A 118	1	1900	45A4J1-32	12	N	2	214	45A4J13- 5	20	N		132	A
A 119	1	1850	45A4J1-24	12	N	2	214	45A4J13- 8	20	N		135	A
A 120	1	1550	45A4J1-19	12	N	2	214	45A4J12- 7	20	N		157	B
A 121	1	1550	45A4J1-11	12	N	2	214	45A4J12-11	20	N		161	B
A 122	1	1350	45A4J1-27	12	N	2	214	45A4J11- 4	20	N		164	C
A 123	1	1350	45A4J1-28	12	N	2	214	45A4J11- 6	20	N		166	C
A 124	1	1050	45A4J1-31	12	N	2	214	45A4J9- 5	20	N		187	B
A 125	1	1200	45A4J1-18	12	N	2	214	45A4J10- 7	20	N		180	C
A 126	1	1200	45A4J1-10	12	N	2	214	45A4J10-11	20	N		184	C

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736

SCALE - NONE | REV LTR + | SHEET 11 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A + 1015736

CONDUCTOR			FROM					TO					ROUTING
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 73	1	575	45A4J5-16	20	N		39	45A4J13-16	20	N		145	A
A 74	1	475	45A4J7-17	20	N		75	45A4J12-10	20	N		160	E
A 75	1	575	45A4J7-18	20	N		74	45A4J5-18	20	N		37	E
A 76	1	475	45A4J5-18	20	N		36	45A4J13-18	20	N		147	A
A 77	1	275	45A4J7-19	20	N		71	45A4J6- 9	20	N		59	E
A 78	1	525	45A4J6- 9	20	N		60	45A4J5-19	20	N		34	E
A 79	1	225	45A4J5-19	20	N		35	45A4J11- 9	20	N		169	A
A 80	1	525	45A4J11- 9	20	N		170	45A4J13-19	20	N		148	A
A 81	1	500	45A4J7- 9	20	N		86	45A4J12- 3	20	N		152	A
A 82	1	475	45A4J7-12	20	N		83	45A4J12- 4	20	N		153	A
A 83	1	250	45A4J7-20	20	N		70	45A4J6- 7	20	N		62	E
A 84	1	425	45A4J6- 3	20	N		67	45A4J11- 3	20	N		163	E
A 85	1	525	45A4J6- 2	20	N		69	45A4J11- 2	20	N		162	A
A 86	1	300	45A4J6- 5	20	N		64	45A4J12- 6	20	N		156	A
A 87	1	300	45A4J6- 8	20	N		61	45A4J12- 8	20	N		158	E
A 88	1	225	45A4J5-20	20	N		33	45A4J11- 7	20	N		167	C
A 89	1	450	45A4J5- 9	20	N		48	45A4J10- 3	20	N		175	A
A 90	1	425	45A4J5-12	20	N		45	45A4J10- 4	20	N		176	A

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736

SCALE - NONE | REV LTR + | SHEET 9 OF 14

MIL 2085 - 4-63 WIR

GFR WIRING HARNESS A + 1015736

CONDUCTOR			FROM					TO					ROUTING
INDIVIDUAL LENGTH NUMBER	ITEM NO.	2	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC. 1 ITEM NO.	NO.	CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT	2	TIN	TERMINATION SPEC 1 ITEM NO.	NO.	
A 127	1	1050	45A4J1-23	12	N	2	214	45A4J9- 8	20	N		191	B
A 128	1	700	45A4J1- 9	12	N	2	214	45A4J8- 5	20	N		207	B
A 129	1	650	45A4J1-17	12	N	2	214	45A4J8- 8	20	N		209	B
A 130	1	220	45A4J1-29	12	N	2	214	45A4E2	20	N		215	
A 131	1	220	45A4J1-38	12	N	2	214	45A4E2	20	N		215	

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015736

SCALE - NONE | REV LTR + | SHEET 12 OF 14

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

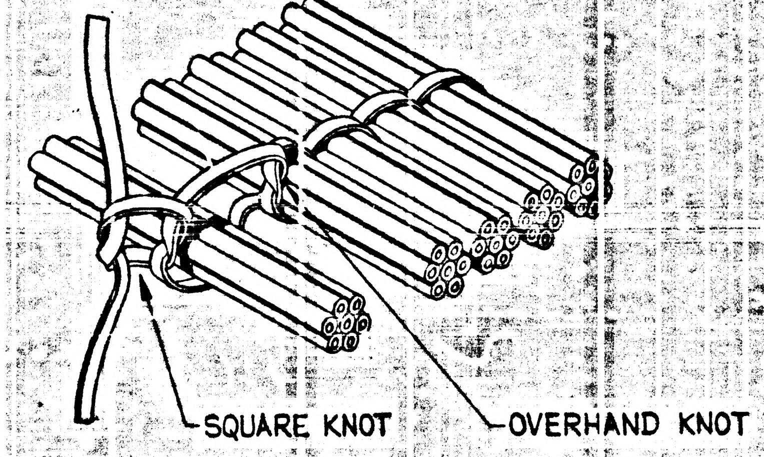

SQUARE KNOT
OVERHAND KNOT

FIGURE 1
MULTIPLE SPOT TIE

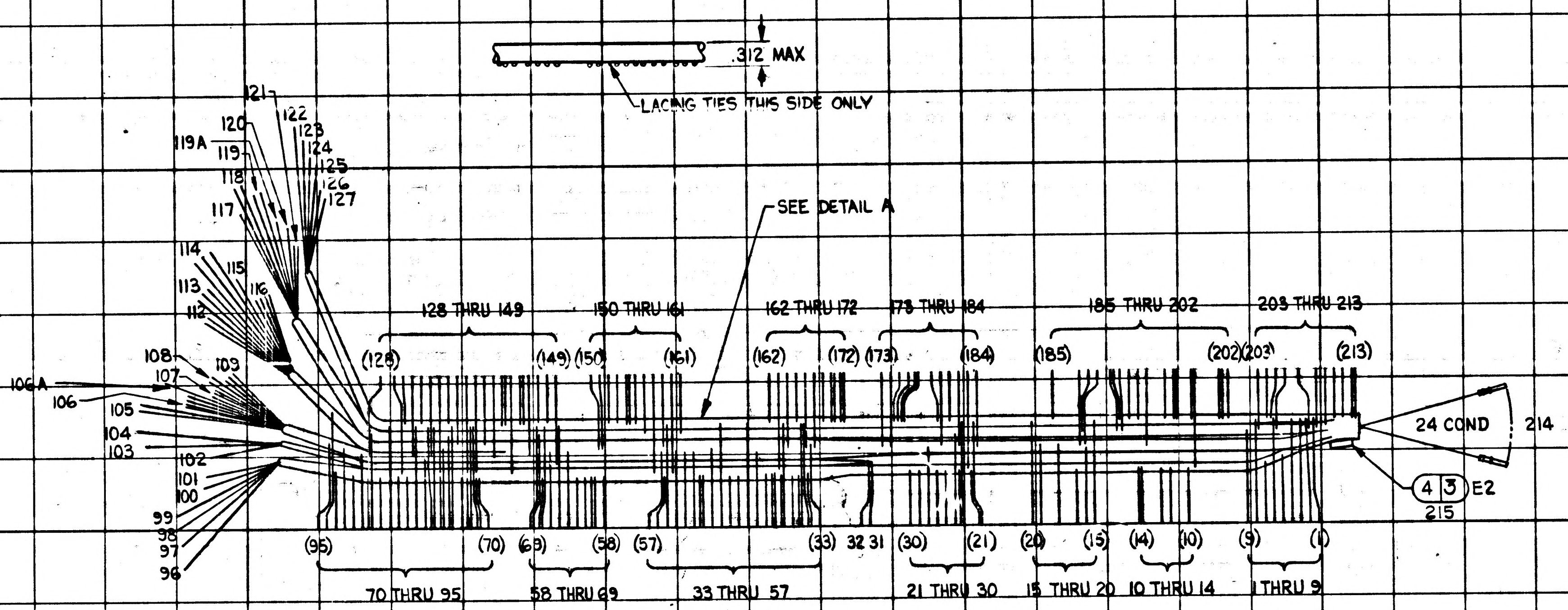
MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SIZE A	10157316
SCALE - NONE	REV LTR	SHEET 13 OF 14

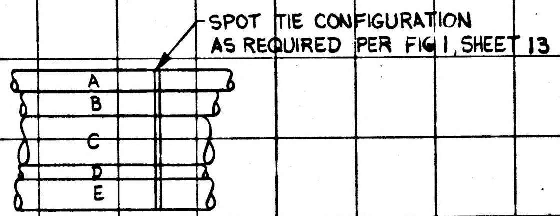
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1015736 | 2

REVISIONS 7ORR 04743

SYM	ZONE	DESCRIPTION	CHG NO.	DATE	APPD


.312 MAX
LACING TIES THIS SIDE ONLY
SEE DETAIL A
121
122
120
123
119A
119
124
125
118
126
127
117
114
115
113
116
112
108
109
107
106A
106
105
104
103
102
101
100
99
98
97
96
128 THRU 149
(128)
(149)
150 THRU 161
(150)
(161)
162 THRU 172
(162)
(172)
173 THRU 184
(173)
(184)
185 THRU 202
(185)
(202)
203 THRU 213
(203)
(213)
24 COND
214
4 3 E2
215
(95)
(70)
(69)
(58)
(57)
(33)
32 31
(30)
(21)
(20)
(15)
(14)
(10)
(9)
(1)
70 THRU 95
58 THRU 69
33 THRU 57
21 THRU 30
15 THRU 20
10 THRU 14
1 THRU 9


SPOT TIE CONFIGURATION
AS REQUIRED PER FIG 1, SHEET 13
A
B
C
D
E

CHANNELS
DETAIL A
SCALE 2:1

NEXT ASSY	USED ON
1007144	1007154

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

FRACTIONS	DECIMALS	ANGLES
+	+	+
−	−	−

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R. Tamaen DATE 3 OCT 63
CHECKED Snyder 24 OCT 63
APPROVAL [illegible] 10-25-63
APPROVAL [illegible] 24 OCT 63
[illegible] 11/13/63
NASA APPROVAL
MIT APPROVAL D. Hal[illegible] 11/20/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A
(TRAY 4)

CODE IDENT NO.
SIZE D
1015736
SCALE 1:1
SHEET 14 OF 14

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

APPLICATION		REVISIONS TDRR 0+2F3			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
1007149	1007159	A	REVISED TDRR 05492	27 Dec 63	BPK
		B	REVISED TDRR 05540	27 Dec 63	BPK
		C	REVISED TDRR 06881	4/7/64	EPK

Charleston
28 Oct 63

REV STATUS OF SHEETS							
REV	C	C	C	C	C	C	C
SHEET	1	2	3	4	5	6	7

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN
DRAWN 16 OCT 63 DATE
CHECKED 26 Oct 63
APPROVAL 10-29-63
APPROVAL 29 Oct 63 11/1/63
NASA APPROVAL
MIT APPROVAL Hafel 11/20/63
CONTRACT NAS 9-497

WIRING HARNESS "A"
(TRAY 9)

CODE IDENT NO.
SIZE A
1015760
REV C
SCALE NONE
SHEET 1 OF 7

PENNANT GENERAL NOTES

NOTE

1 SEE CONDUCTOR CHART

2 SEE CONDUCTOR CHART

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

6 SPIRALLING OF THE MARKING IS ALLOWED.

7 LACE HARNESS USING ITEM 2

8 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

9 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

10 GRID MODULE IS 1 INCH.

11 UNLESS OTHERWISE SPECIFIED ---
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .12 INCH.
END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .06 INCH.

12 BREAKOUTS OF INDIVIDUAL OR GROUPS OF CONDUCTORS ARE MINIMUM CONFIGURATION.

13 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

14 IN CONDUCTOR CHART CONDUCTOR LENGTHS ARE FOR REFERENCE ONLY

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015760
SCALE-NONE | REV LTR C | SHEET 2 OF 7

MIL 2084 4-63

PENNANT GENERAL NOTES

NOTE

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

APPLICABLE LENGTH FOR WIRE OR CABLE. STRIP WIRE. STRIP JACKET. CUT WIRE OR CUT SHIELD.	TOLERANCE			
	STRIP		CUT	
	WIRE	JACKET	WIRE	SHIELD
UNDER 1 INCH	+.03-.00	+.06-.06	+.06-.06	+.06-.06
1 INCH TO 6 INCHES	+.06-.00	+.25-.25	+.25-.25	+.25-.25
6 INCHES TO 6 FEET		+.50-.50	+.50-.50	+.50-.50
OVER 6 FEET				

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015760
SCALE-NONE | REV LTR C | SHEET 3 OF 7

MIL 2084 4-63

PENNANT LIST OF MATERIALS

NOTE	ITEM	QTY	PART NO	DESCRIPTION
13	1	1	1010639- 2	WIRE 16 FT. 10.8 IN. TOTAL LENGTH
	2	AR	MIL-T-713	LACING TAPE TYPE P CLASS 2 BLACK (ES-2732 NO. 18)

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1015760
SCALE-NONE | REV LTR C | SHEET 4 OF 7

MIL 2084 4-63

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NASA DOCUMENT
PS 1015401
3 Oct. 1962
Class A Release
TDRR No. 00051

DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
COMPONENT LEAD:
IRON-NICKEL ALLOY, COPPER CLAD, ANNEALED, GOLD PLATED

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Record of Revisions and Amendments

Revision Letter	Amendment Number	Date of Revision or Amendment

This specification consists of page i to iii and 1 to 4 inclusive

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DESIGN REQUIREMENT SPECIFICATIONS
FOR
PROCUREMENT OF
COMPONENT LEAD:
IRON-NICKEL ALLOY, COPPER CLAD, ANNEALED, GOLD PLATED

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

TABLE OF CONTENTS

Section	Title	Page
1.	SCOPE	1
2.	APPLICABLE DOCUMENTS	1
3.	REQUIREMENTS	1
4.	QUALITY ASSURANCE AND COMPLIANCE	3
5.	NOTES	4

This document has been prepared for the purchase of material used in the manufacture of components; the performance requirements and tolerance of the components; the construction specifications; and inspection and test procedures for the components, used on Apollo G & N Equipment.

This document shall be used to check that parts and materials are procured, assembled, and tested to the latest approved and/or authenticated documentation. In case of conflict between this document and drawings and/or specifications the document with the latest date applies.

This document does not supersede any existing publication or instructions.

MIT Instrumentation Laboratory ____ 10/4/62
Date

NASA/MSC Approval ____ 10-4-62
Date

MATERIALS SPECIFICATION
FOR
COMPONENT LEAD:
IRON-NICKEL ALLOY, COPPER CLAD, ANNEALED, GOLD PLATED

1. INTRODUCTION

1.1 **Scope.** This specification covers gold plated iron-nickel alloy, copper clad for weldable lead materials and conductors used in the fabrication of welded electronic modules.

2. APPLICABLE DOCUMENTS

SPECIFICATIONS

Federal -

Federal Standard Test Method No. 151

Military -

Gold Plating (Electro Deposited) MIL-G-45204, Type I, Class I

3. REQUIREMENTS

3.1 **Description.** This material shall consist of an inner core of nickel-iron alloy with an outer sleeving of copper brazed to it. The finished component lead shall be gold plated and in an annealed condition.

3.2 The chemical composition of the core and the outer sleeving shall be as shown in Table I.